OFFICIAL GAZETTE

UNITED STATES PATENT OFFICE

VOL. 7 & 8

1875

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VOLUME VII.

JANUARY 5 TO JUNE 29, INCLUSIVE.

1875.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1875.

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DIGEST OF DECISIONS OF THE COMMISSIONER OF PATENTS AND OF U. S. COURTS IN PATENTS AND TRADE-MARKS.

ERRATA.

On page 97, illustrations, No. 158,777, for "Bullet-Patching Machines. H. Borchardt, New Haven, Conn.," read *Barrels. Robert W. Baylor, Norfolk, Va.*

On page 157, the eight lines next following the second line from top of last column should be inserted immediately after "brief" of No. 159,180.

On page 419, transpose briefs **160,723** and **160,724.**

On pages 653 and 655, indexes, for "Fire-extinguisher," J. T. Hall, "118," No. 162,232, read *Tire-tightener*, 31.

On page 668, for "162,138," &c., read **162,238.** *Harness-Motion for Looms. Orrin W. Kenison, Lawrence, Mass.* [*Filed March* 2, 1875.] Also, transpose cuts **162,238,** page 668, and **162,138,** page 657.

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JANUARY—JUNE, 1875.

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United States Patent Office.

VOL. 7.—NO. 1. TUESDAY, JANUARY 5, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

SMITH *vs.* BARTER.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the applications of George T. Smith, filed the 12th day of July, 1871, and the 20th day of May, 1872, and the patent granted to Benj. F. Barter, April 9, 1872, for an* IMPROVEMENT IN METHODS OF DRESSING FLOUR.—*Decided November 14, 1874.*]

Where two parties have each an application pending at the same time before the Office, and one of them obtains a patent, he will derive no advantage from it if an interference is declared afterward between it and the other application, but he must establish his title by the same proof as if he was still an applicant.

The right of an inventor in this country to a patent is not impaired by anything of the same nature as his invention which has been achieved abroad, provided it has not been patented nor described in any printed publication.

Evidence of what one of the parties has done in another country toward reducing the contested invention to practice is not admissible upon an interference.

The party who first reduces an invention to actual use is entitled to the patent for it, although the other may have first conceived it, if he did not exercise reasonable diligence in reducing it to practice.

THACHER, *Commissioner:*

The matter involved in this controversy is presented in two separate applications filed by Smith. The first claims an invention shown, but not claimed, in Barter's patent, consisting of a bolting-surface, through which a current of air is forced in an upward direction, carrying with it the dust mingled with the flour, which falls in an opposite direction, while a series of brushes traverse the lower surface of the bolting-cloth, to keep its meshes clear.

Smith's second application contains two claims, the first covering "two or more reciprocating bolting surfaces, or shakers, separated from each other by longitudinal partitions, the cloth upon one shaker differing in fineness from the cloth upon the other." The second claim sets forth a combination between the bolts described in the first claim and a preparatory bolt, which divides the middlings into different grades, the finer grade being delivered to the shaker clothed with the finer cloth, and the coarser to the coarser cloth. The first claim conflicts with Barter's second, and the second with his first.

The application upon which Barter's patent was granted was filed February 20, 1872. Smith's first application, covering that portion of the subject-matter first described, was filed July 12, 1871. This gives him the advantage of a record date earlier than that made by Barter, who can derive no advantage from the grant of his patent, since all the applications were before the Office at the same time. The remaining portion of the invention, covered by Smith's second application, was substantially embraced in a caveat filed by him October 23, 1871, more than three months prior to Barter's first appearance in the Office. This caveat has been filed in evidence.

The history of invention upon either side is easily ascertained, the material facts admitting but little dispute. Upon the 10th day of February, 1871, Smith began work as stone-dresser in the Washburn Mills, in Minneapolis. In the early part of April following he was placed in charge of the mill as foreman. There was in the building, at this time, a machine in use for cleaning middlings, called, after the inventor, the "Lacroix." The owners of the mill had been experimenting with it, but were on the point of abandoning its use, since it was impossible to make the flour and middlings pass through the bolting-cloths. Smith examined the machine, and, discovering the difficulty, undertook to remedy it. It had been necessary to employ a man constantly to brush the lower surface of the bolting-cloth by hand, to keep it sufficiently clear to allow the flour to fall through, instead of passing over the "tail" of the bolt and falling among the feed and refuse. It occurred to Smith, therefore, to apply an automatic reciprocating brush, or series of brushes, driven by the

feed-roll shaft of the machine over the lower surface of the bolting-cloth. The work was immediately commenced, and the machine, with this device attached, was again set running before the middle of April. It operated so well that a separate machine, embodying the invention, was begun a few days later, and was finished and set at work during the early part of May, 1871. This was the invention embraced in Smith's first application. Soon after this apparatus was applied to the first machine Smith observed that the current of air forced up through the bolting-cloths carried with it not only the dust and lighter impurities, but also the finer part of the flour. He immediately devised what he calls a "double machine," in which the difficulty was removed. It was constructed with two separate air-chambers, placed over the bolting apparatus, and having a fan above, so arranged that separate currents of air could be drawn up through each bolting-cloth into each chamber. The bolts consisted of reciprocating shakers, one clothed with fine, the other with coarse, cloth. This machine he placed under a revolving bolt, by which the middlings were divided, the fine grade being delivered to the fine cloth of the shaker, and the coarser portion to the coarse cloth. This mechanism constituted the second part of the invention, and was completed in June, or early in July, 1871. Being supplied, like the others, with travelling brushes, it fully embodied all the material parts of the disputed invention.

A single question is made at this point as to Smith's part in originating that portion of the machine embraced in his second application. It is raised by the testimony of Geo. H. Christian, who employed Smith, and who swears that he invented the "double machine" himself, except as to the automatic brushes, which he admits to be the invention of Smith. I have carefully examined all the testimony upon this point, and am satisfied that the allegation is not proved. It rests mainly upon the evidence of Christian himself, supported by proof of such circumstances and declarations as seem to point to the conclusion sought. Many of the facts established, however, are entirely consistent with an opposite view, and some of the most material assertions are so obscured by denial and redenial that it is impossible to rest a decision upon them. The following facts stand out clearly, however, and appear to substantiate the first conclusion. Smith invented the brushes put on the "Lacroix" machine; he chiefly superintended the construction of the "double machine," the first one built being short, while the long machine, which was the form preferred by Christian, was not built until after the other was finished; the men employed upon it received their orders from Smith, and supposed him to be the originator; and, finally, Christian took from him a shop-license to use the invention in dispute, dated July 23, 1871. The matter claimed by Christian is clearly embraced in this instrument, and it is shown that he manifested some anxiety to secure the right conveyed thereby. I cannot hold these facts reasonably consistent with the presumption that Christian was the inventor of the mechanism which he sought a right to use.

In behalf of Barter it is claimed, both in his statement and testimony, that the invention was conceived by him in England, in 1845; that it was reduced to actual practice in that country, in the Wolverton Mills, in 1867; but the machine was afterward taken to pieces and laid aside until some time after his arrival in this country, in 1868.

Before proceeding further, the competency of this proof must be noticed. It was admitted and considered by the Examiner of Interferences, but rejected by the Examiners-in-Chief. To admit it, not only upsets the long and well established practice of the Office, but also defeats the provisions of the 62d section of the law of 1870, which declares that no patent shall be held void because of a foreign use or discovery prior to the patentee's invention, provided it has not been patented or described in any printed publication. If such use cannot defeat rights vested by the grant of a patent, it ought not to affect the inchoate right existing in an applicant therefor. The correct doctrine in such cases is very clearly stated in *Tucker* vs. *Davis*, (2 O. G., 224):

> The mere existence of a device in a foreign country is not a fact having any significance, or to be recognized at all in connection with our patent laws. * * * A foreign inventor, whether a citizen of the United States or not is immaterial, can only benefit the public here by publishing his invention here. The original inventor, first to produce his invention in this country, either by inventing it here or by bringing it with him from abroad, is the first to have done an act capable of benefiting the public here, and the one to be rewarded by a patent. It follows that evidence of any act not coming within this limitation is not pertinent to an issue of priority, and should not be admitted.

The cases of *Hovey* vs. *Hufeland et al.*, (2 O. G., 493,) and *Bartholomew* vs. *Sawyer*, (4 Blatchford, 347,) are also directly in point.

This testimony offered by Barter can only be admitted, therefore, to prove the time when he brought to this country the knowledge of a perfected invention, and can have no significance in determining at what time he reduced it to practice here subsequent to his arrival. The material evidence in this case is that which discloses Barter's acts between the time of his arrival here and the month of July, 1871, when his adversary had completed and embodied in a machine the invention now claimed by both.

Barter, after landing in the United States, went to Chicago, where, he says, he began building a machine for cleaning middlings, and a smut-machine. He made a few patterns of the pulleys required, but they were destroyed by fire in the Preble foundry, in the summer of 1869, and he abandoned his enterprise, as he says, because he had no means to prosecute it. In December, 1869, he ran a mill in Wisconsin, where he remained until February, 1870, when he went to Minnesota, and in May of that year entered the service of Bean, Bangs & Co., at Faribault. It was to these gentlemen that he claims to have exhibited a drawing of his invention, of which an alleged copy has been filed in evidence, and marked "Exhibit B." It, without doubt, illustrates the invention in dispute, and Barter swears that it was made, shown, and explained to his employers in August, 1870. The first machine built by him was finished and put in operation in December, 1871. When it was commenced Barter cannot precisely tell, but he thinks it was in April, or, perhaps, in May, preceding. Considerable delay seems to have occurred in its construction, for it was not until late in the autumn that active steps were taken to complete it, although the want of such a machine was continually felt by the company employing him, for, in the meantime, they had reorganized their mill, and having no machine for cleaning and separating the middlings, they stored them away until the deficiency could be supplied.

There are several facts developed by the testimony which somewhat impair the force of the evidence that Barter had knowledge of this invention when he came to this country. During the summer of 1871, after Smith had completed his invention, Barter, in company with Bean, visited Minneapolis, to buy a machine for cleaning middlings. There is good reason for believing that at this time they obtained knowledge of what Smith had done. Both admit that they saw frames which were being built for Smith by one Clark, who had some kind of partnership with Smith, and held, by assignment, an interest in his invention. Smith swears positively that he showed and explained his machine to Barter. This Barter denies; but Smith's father swears that he saw them talking together by the machine, and fixes the fact by the circumstance that, at the request of his son, he brought bags to them for samples of the middlings. Upon the return of Barter and Bean to Faribault the following day, Bean wrote to one Pray, mentioning their visit to Minneapolis and their interview with Clark. The letter is filed in evidence, and the following language, referring to Clark, is found therein:

> It seems that he makes different compartments and applies the blast with different powers, and uses three machines, instead of one. I mention this, so if there is anything in it you can take advantage of it. We want a machine, and, if you can furnish it, would prefer to buy it of you. In the meantime please say nothing about my having written this, as Clark would feel hard about it.

This evidence cannot be made to harmonize with the presumption that Barter possessed knowledge of this very invention, the most important feature of which is described in Bean's letter before his visit to Minneapolis. It must be borne in mind, also, that it is claimed that the invention had been described to Bean before this visit, yet there is no intimation in his letter quoted, or in his conversation with persons at Minneapolis, that he possessed any information of this description. It is a noticeable fact, too, that the witnesses called to identify the drawing said to have been exhibited by Barter in August, 1870, (of which "Exhibit B" purports to be a copy,) are not positive in their statements. The original drawing is said to have been made on a board; and when the witnesses compare "Exhibit B" with this drawing on the board they are very cautious, and do not positively state that the two drawings illustrate identical inventions.

There is in my mind, therefore, more than a suspicion that Barter's invention, up to the time of his visit to Minneapolis, did not include the features of the perfected mechanism involved in this controversy.

But, if the evidence was entirely conclusive in favor of Barter on this point, I should hesitate to award priority to him. No principle is better established than that the first inventor is he who first reduces the invention to practical form by embodying it in a machine capable of useful operation, modified, it is true, by the proviso that if the first to conceive the invention is second in reduction to practice, his right to the invention shall not be destroyed if he was using due diligence in perfecting it. I do not understand that any exception to this rule is to be made in this instance, even if it is admitted that Barter brought full knowledge of the invention to this country. The question of right between these two parties must be determined by what Barter did toward the reduction of the invention to practice here. If he unreasonably delayed putting his invention into concrete form in the country, and in the meantime a subsequent, but independent, inventor made the same invention and reduced it to practice, the latter has the superior right. This appears to be the relative position of Smith and Barter in this controversy. If Barter had mental possession of the invention claimed by him, he had every inducement to put it into practice, especially after he entered the employment of Bean, Bangs & Co. He was employed by, and in intercourse with, millers in different places, and must have become acquainted with the demand for just such a machine, especially after going to Faribault, where his employers were earnestly inquiring for a successful middlings-purifier. Yet he delayed the construction of a single machine embodying this invention until after he had visited Minneapolis, where he, undoubtedly, became acquainted with Smith's invention. Smith, though he may have been second in conception, was unquestionably first to reduce the invention to practical form. Putting the best possible construction upon Barter's evidence, I do not think it can be said that he was using such reasonable diligence in the reduction of his invention to practice as to defeat Smith's right to a patent.

With this view of the unsatisfactory nature of Barter's evidence, and holding this to be the proper application of the rule as to reduction to practice in this case, I must affirm the decision of the Examiners-in-Chief, and award priority of invention to Smith.

TROTTER *vs.* BARTLETT.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the application of Charles W. Trotter, administrator of Jonathan G. Trotter, deceased, and the patent of Nathan Bartlett, for* "IMPROVEMENT IN FURNACES FOR MAKING WHITE OXIDE OF ZINC."—*Decided December 21, 1874.*]

The inventor of an apparatus who has reduced it to actual practice and then left it, is not entitled to claim improvements upon it which have been invented and applied by others, although he may have contemplated them and labored upon them, if he never reduced them to form, nor embodied them in any visible representation.

THACHER, *Commissioner:*

The claims of the respective parties are substantially identical, and are as follows:

1. The chamber H, made widest at the mouth and tapering to the escape, as and for the purpose described.
2. The mode of working zinc-oxide furnaces, by supplying the ore at the front from time to time and shifting that contained in the furnace along toward the rear, and removing the residuum thereat, as described.

Both the Examiners-in-Chief and Examiner of Interferences unite in asserting that no evidence has been adduced in the case showing that Jonathan Trotter ever constructed the improvements which form the subject of controversy, or directed others to do so, or that he even intimated that he originated the same. Of course, if this is so, no good reason can exist for granting to Trotter's legal representatives a patent. For, notwith-

standing the length of time the deceased may have been engaged in this particular line of business, or how deeply he may have realized the necessity of the improvements in question, how much he may have studied and talked of the subject, how numerous and continuous may have been his experiments in that direction, or how nearly his efforts may have been successful, yet if he fell short of completing the invention, or of attaining sufficient knowledge of the same to direct others to make it without the exercise of ingenuity on their part, he cannot be considered an original inventor at all. (*Pitts vs. Hall*, 2 Blatchf., 229.) Much less should such efforts be considered sufficient to defeat another, who, although a workman, yet independently conceived, completed, and obtained letters patent for that which his employer had been vainly seeking.

From the preliminary statement of the administrator it appears that the deceased applicant had been engaged in the manufacture of white oxide of zinc from 1852 to the time of his death, about the 15th of April, 1873, and that, during that time, he had made many improvements in the machinery and processes relating to his art, for some of which he had obtained patents. It is also alleged that the inventions described and claimed in the application were devised by him in 1870, explained during the same year to a Mr. William Dixson, and finally completed and put in practical operation about the 15th of August, 1872.

After a careful consideration of the testimony adduced, I am convinced that it entirely fails to support the latter allegations.

According to the testimony of Mr. Dixson, referred to above, he had various conversations with Jonathan Trotter during the years 1870 and 1871, in which the latter related to him his past experiences in making white oxide of zinc, and explained to him some alterations and improvements in the manufacture of the same, which he then had in contemplation; but Dixson says he is unable to describe the proposed improvements, as Trotter did not state definitely what they were. He also declares he has no knowledge of certain pencil-marks, indicating the present improved shape of the furnace-chamber made by Trotter, it is supposed, on an old patent of his, and shown by him to Dixson, as his administrator would have it believed, at the interviews above described. Dixson further testifies that he was induced by these representations of Trotter to become one of a copartnership in June, 1871, composed of Jonathan G. Trotter, Samuel C. West, and himself, and formed for the purpose of manufacturing white oxide of zinc at Elizabethport, N. J. Thereupon Trotter planned the works and became general manager of the concern. Furnaces were built and finished, and operations commenced about the last of August, 1872. The witness says he was in constant attendance at the works as a manager, under the direction of Trotter, from the time of the completion of the furnaces until the 7th of October, 1872. His testimony, too, clearly shows that up to the latter date neither the style of the furnace-chamber, which forms the subject of the first claim of both parties, nor the process, which forms the subject of their second claim, was used by his company. The chamber was square, or nearly so, and not tapering to the escape, and the process employed was to charge the furnace with ore through a hole at the top of the rear end, spread the charge entirely over the bottom of the furnace, rake the same occasionally from front to rear, and, finally, when the zinc was worked off, the charge was raked out at the rear end, and a new one introduced.

About the time last mentioned, October 7, 1872, Dixson being obliged to return to his home, in the western part of New York, and Trotter being confined, most of the time, to the house by sickness, Nathan Bartlett, the patentee, was employed by Trotter & Co. to superintend their works. When Dixson returned, in April, 1873, the improvements in controversy had been made. He did not know by whom, and he does not allege that they had been constructed by Trotter's directions, or in accordance with his wishes.

It is clearly established by the testimony of Trotter's own witnesses that, during the time Dixson was absent, Bartlett had substantially the entire management of the works, so far as the practical operation of the same was concerned. There is no satisfactory evidence whatever of any directions having been given by Trotter, or any propositions made by him, relative to the particular improvements in dispute.

James Loughman swore, on the direct examination, that he knew that all changes and alterations made in the construction and operation of the furnaces were first ordered by Trotter, or submitted to him for his approval; but he contradicts this when cross-examined. It is uncorroborated, and the contrary fact is established by the testimony of other witnesses on both sides. It is clear that the improvements in question were made under the independent personal supervision of Bartlett, who swears that he originated them during the latter part of December, 1872, and the early part of January, 1873. Previous to that time there were, it is true, openings in the front end of the furnace, before which small platforms were placed, and through which a few shovelsful of ore were occasionally introduced. This did not vary, but in the slightest degree, the usual process of introducing the entire charge through a hole in the top at the rear end, spreading the same over the floor of the furnace-chamber, and roasting it all at once.

Bartlett introduced all the ore through the openings in front by greatly enlarging the platforms, and banking thereon successive charges of the ore, which were introduced into the furnace as the previous charges were pushed forward. He then, for the purpose of concentrating the heat upon the ore just before a charge was drawn off, drew the walls of the furnace toward each other, in funnel shape, from the middle to the rear end. Both improvements proved to be of very great advantage.

When the improvement first alluded to was made Trotter was absent from the works, and when the second was constructed he was absent from the State.

The most that can be affirmed, from the evidence in the case, of the knowledge of Jonathan Trotter of these improvements is, that he knew of and approved them after they were made.

Upon such a state of facts, it is useless to invoke the general doctrine that an employer is presumed to be the inventor of the idea which he employs a workman to reduce to practice. Such a presumption is always *prima facie*, and not a conclusive one of law. It has no foundation for its support in the present case, and, if it ever had, the proofs advanced have entirely overcome it.

The decision of the Examiners-in-Chief is affirmed, and priority awarded to Bartlett.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Any person may oppose either extension.

Hearings upon the respective applications are appointed for the days named in each case.

Arguments must be filed ten days before the day of hearing.

311.—Whole number, **31,315.**—**Machinery for Grinding the Card-Teeth of Carding-Cylinders.**—Granted to CHARLES HARDY, February 5, 1861. Application filed October 30, 1874. Testimony closes January 5, 1875. Hearing January 20, 1875.

320.—Whole number, **31,324.**—**Looms.**—Granted to WILLIAM MESSERLAND, February 5, 1861. Application filed November 9, 1874. Testimony closes January 5, 1875. Hearing January 20, 1875.

323.—Whole number, **31,327.**—**Construction of the Fire-Chambers and in Operating the Fires of Reverberatory Furnaces.**—Granted to JACOB REESE, February 5, 1861. Application filed November 6, 1874. Testimony closes January 5, 1875. Hearing January 20, 1875.

326.—Whole number, **31,330.**—**Collars for Ornamental Carriage-Work.**—Granted to MOSES SEWARD, February 5, 1861. Application filed August 31, 1874. Testimony closes January 5, 1875. Hearing January 20, 1875.

374.—Whole number, **31,378.**—**Harvesting-Machines.**—Granted to RUFUS DUTTON, February 12, 1861; reissued in two divisions, numbered 4,124 and 4,125, September 20, 1870, No. 4,125 having been again reissued December 27, 1870. Application filed November 12, 1874. Testimony closes January 12, 1875. Hearing January 27, 1875.

380.—Whole number, **31,384.**—**Machines for Molding Pottery.**—Granted to WILLIAM LINTON, February 12, 1861. Application filed November 11, 1874. Testimony closes January 12, 1875. Hearing January 27, 1875.

398.—Whole number, **31,402.**—**Machines for Binding Grain.**—Granted to STEPHEN REYNOLDS, February 12, 1861. Application filed November 12, 1874. Testimony closes January 12, 1875. Hearing January 27, 1875.

439.—Whole number, **31,443.**—**Felly-Machines.**—Granted to CHARLES H. DENISON, February 19, 1861. Application filed November 19, 1874. Testimony closes January 19, 1875. Hearing February 3, 1875.

441.—Whole number, **31,445.**—**Limekilns.**—Granted to RICHARD DONALDSON, February 19, 1861, and reissued May 19, 1863. Application filed November 18, 1874. Testimony closes January 19, 1875. Hearing February 3, 1875.

498.—Whole number, **31,502.**—**Machines for Breaking Coal.**—Granted to R. A. WILDER, February 19, 1861. Application filed November 18, 1874. Testimony closes January 19, 1875. Hearing February 3, 1875.

507.—Whole number, **31,511.**—**Lamps.**—Granted to CHAS. W. CASSON, February 19, 1861, and reissued August 9, 1864. Application filed November 14, 1874. Testimony closes January 19, 1875. Hearing February 3, 1875.

521.—Whole number, **31,525.**—**Machines for the Manufacture of Hoe-Blanks.**—Granted to NATHAN BRAND, February 26, 1861, and reissued in two divisions, numbered 1,481 and 1,482, May 26, 1863. Application filed October 3, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

529.—Whole number, **31,533.**—**Weighing Apparatus.**—Granted to AUGUSTUS B. DAVIS, February 26, 1861. Application filed November 27, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

530.—Whole number, **31,534.**—**Scale-Beams.**—Granted to AUGUSTUS B. DAVIS, February 26, 1861. Application filed November 27, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

542.—Whole number, **31,546.**—**Polishing Iron Bars and Rods.**—Granted to BERNARD LAUTH, February 26, 1861. Application filed November 3, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

563.—Whole number, **31,566.**—**Drying Tunnels.**—Granted to FRANCIS H. SMITH, February 26, 1861; reissued June 30, 1868, July 11, 1871, and March 26, 1872. Application filed November 27, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

574.—Whole number, **31,578.**—**Machines for Folding Paper.**—Granted to WILLIAM H. MILLIKEN and JOHN MILLIKEN, February 26, 1861, and reissued in two divisions, numbered 3,785 and 3,786, January 4, 1870. Application filed October 26, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

575.—Whole number, **31,579.**—**Corn-Planters.**—Granted to FRANCIS B. PRESTON, February 26, 1861. Application filed November 27, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date January 5, 1875.]

7,969.—**Advertising-Desks.**—WILLIAM T. BROMWELL, St. Louis, Mo. Application filed December 18, 1874. Term of patent 3½ years.

7,970 to 7,976, inclusive.—**Carpet.**—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Applications filed December 16, 1874. Term of patents 3½ years.

7,977 to 7,981, inclusive.—**Carpet.**—JOSEPH M. CHRITTE, Kidderminster, England, assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass. Applications filed December 16, 1874. Term of patents 3½ years.

7,982.—**Side of a Fulling-Mill Case.**—JAMES E. HUNTER, North Adams, Mass. Application filed March 21, 1874. Term of patent 7 years.

7,983 and 7,984.—**Carpet.**—CHARLES S. LILLEY, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Applications filed December 16, 1874. Term of patents 3½ years.

7,985.—**Carpet.**—CHARLES W. SWAPE, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed December 16, 1874. Term of patent 3½ years.

7,986.—**Carpet.**—ROBERT ALLAN, Yonkers, N. Y., assignor to ALEXANDER SMITH & SONS CARPET COMPANY, same place. Application filed December 26, 1874. Term of patent 3½ years.

7,987.—**Smoking-Pipe.**—ISAAC DEMUTH, New York, N. Y. Application filed December 17, 1874. Term of patent 7 years.

7,988.—**Bottle.**—EUGENE R. DURKEE, Brooklyn, N. Y. Application filed December 28, 1874. Term of patent 3½ years.

7,989 to 7,991, inclusive.—**Carpet.**—EUGENE PETIT, Paris, France, assignor to ALEXANDER SMITH & SONS CARPET COMPANY, Yonkers, N. Y. Applications filed December 26, 1874. Term of patents 3½ years.

7,992.—**Nursing-Bottle.**—VALENTINE H. SMITH, Philadelphia, Pa. Application filed December 24, 1874. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Certificate bearing date January 5, 1875.]

2,150.—Yeast-Cakes.—AMERICAN YEAST COMPANY, Fond Du Lac, Wis. Application filed November 30, 1874.

"'American Yeast.'"

2,151.—Cigars.—FREEDMAN, HESSLEIN & Co., Detroit, Mich. Application filed December 12, 1874.

"'Columbia,' and the monogram composed of the letters M. C. C."

2,152.—Neck-Ties.—HELLENBERG & LOEWENSTEIN, New York, N. Y. Application filed December 24, 1874.

"a star combined with the words 'warranted for durability.'"

2,153.—Illuminating-Oil.—WILLIAM E. JERVEY, New Orleans, La. Application filed December 21, 1874.

"'Insurance' and 'Oil.'"

2,154.—Tobacco-Pouches.—NOVELTY COMPANY, New York, N. Y. Application filed December 23, 1874.

"the representation of a rat."

2,155.—Cigars.—S. LOWENTHAL & Co., Cincinnati, Ohio. Application filed November 21, 1874.

"'Pedro.'"

2,156.—Playing-Cards.—VICTOR E. MAUGER, New York, N. Y. Application filed December 21, 1874.

"'Grand Pachas.'"

2,157.—Felon-Cure.—WILLIAM H. PUFFER, Athol, Mass. Application filed December 7, 1874.

"'The Great Medicine's Felon Cure,' and the figure of an Indian holding a bow in the right hand."

2,158.—Shirts.—THE BURLOCK MANUFACTURING COMPANY, Bridgeport, Conn., and New York, N. Y. Application filed December 4, 1874.

"'B.' 'M.' 'Co.' in a monogram, in the center of a lozenge or diamond."

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TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED JANUARY 5, 1875.

158,850. Buckles. James Adair, Kilbuck Township, Pa. [Filed Dec. 14, 1874.]

Brief.—The flange of a buckle is made discontinuous, so that a strap with either fixed or free ends may be readily attached. A bar carrying a lug may be placed at a right angle to the tongue, which closes the opening in the frame, and makes it appear continuous.



1. The combination of a movable tongue and a discontinuous rim or hook to form a buckle, substantially as described.
2. The combination of a buckle and a discontinuous keeper, substantially as described.
3. A buckle-tongue having a lateral lug or projection, for the purpose set forth.

158,851. Printers' Quoins. Benj. F. Allen, Boston, Mass. [Filed Oct. 23, 1874.]



A printer's quoin, B, constructed of suitable metal, and provided with a central screw, C, having a hexagonal or square flat-faced head c, substantially as and for the purpose set forth.

158,852. Corn-Planters. Henry Bagley, Mechanicsville, Iowa. [Filed Sept. 16, 1874.]

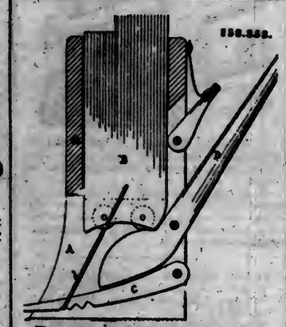
Brief.—To the under side of the seed-slide is attached a small partition-plate, which, with the stationary cup-shaped plate on the frame, forms a seed-cup. The slide is provided with two holes, so that when the slide is pushed backward the corn falls from one directly to the ground, and from the other into the cup, and is retained until the slide moves forward, carrying with it the partition. The seed, being released, falls to the ground. Attached loosely to the runners, and extending from one side of the frame to the other, is a bent rod on which a seat is pivoted, having attached below a short cross bar, on which rests the longitudinal bar for adjusting the seat.



1. The seed-slide J, having a plate or partition upon the under side, in combination with the stationary cup-shaped piece A, substantially as and for the purposes specified.
2. The bar or bars D D, loosely connected with the runners A A, in combination with the bar E and seat F, all constructed and operating substantially as and for the purposes specified.

158,853. Lifting-Jacks. Elmore B. Bamlin, Rochester Depot, Ohio. [Filed June 29, 1874.]

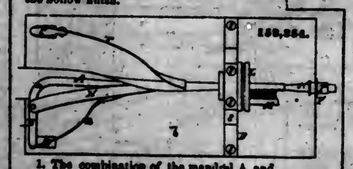
Brief.—The lifting-bar slides within the frame, and is operated by the cam-shaped lever-head, by the depression of which the bar is raised and held in position by the pawl.



The combination of sliding lifting-bar B and pivoted lifting lever-arm C, connected together by arms b, with the lever D journaled in the frame A, substantially as described, and for the object specified.

158,854. Paper-Tube Machines. Ambel G. Batchelder, Lowell, Mass. [Filed Nov. 26, 1874.]

Brief.—The strip of paper is folded around the mandrel by the series of curved elastic fingers; then passes into the rotary edge-layer, which is provided with a brush, which closes the flap; thence over the conical expander onto the evener, where the outside is finished by the hollow finish.



1. The combination of the mandrel A and the series of elastic benders E F G, arranged therewith substantially as set forth.
2. The combination of the mandrel A, the series of elastic benders E F G, arranged therewith as specified, and the auxiliary elastic bender H, to operate with the aforesaid series E F G, and between the side benders F G above the mandrel, in manner and for the purpose as explained.
3. The combination of the mandrel A, its series of strip-benders E F G, and the rotary edge-layer or tube K, arranged to operate with them as specified.
4. In combination with the mandrel A and its series of strip-benders E F G, the rotary brush M, applied to revolve around the mandrel, as explained.
5. The combination of the mandrel A, the rotary edge-layer K, the brush M, the expander N, the cylinder O, and the finisher P, arranged and applied substantially in the manner to operate as specified.

158,855. Stove-Stools. Angus L. Bobo, New York, N. Y. [Filed May 21, 1874.]

Brief.—The bracket-arm is pivoted in its supporting-casts, so that it can be turned to the right or left under the counter, or cast at right angles thereto, and it is locked in either position by the bevel wedge-shaped projections at the lower pivot of the bracket engaging with the bevel-notches in the lower pivot-cast. The cast is attached to the outer end of the bracket by a hinged pivot, so constructed and arranged that the cast can be rotated upon the pivot, or be folded down with its surface parallel to the face of the counter.



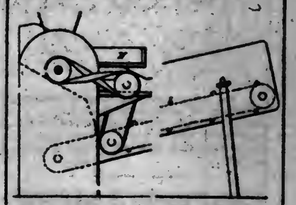
158,856. Hoop-Ring Blanks. W. D. Brown, Leroy, Ill. [Filed June 24, 1873.]



The improved ring-blank for meat-rings, made of an approximately three-quarter oval or elliptic form, so that one end may be passed through the animal's meat, and both ends joined outside the flesh, substantially as described.

158,857. Corn-Shellers. James Burke, Ottawa, Ill. [Filed Feb. 1, 1873.]

Brief.—Protector catches and retains any ears of corn accidentally dropped while shoveling the same into the hopper, and prevents them from being thrown upon the sieve and carried off with the chaff.



The attachment to and combination with a corn-sheller of a protector, N, substantially as and for the purposes described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

158,358. CAR-AXLE BOXES. Thos. H. Burridge, St. Louis, Mo., assignor of one-half his right to Jas. W. Butcher, same place. [Filed Aug. 17, 1874.]

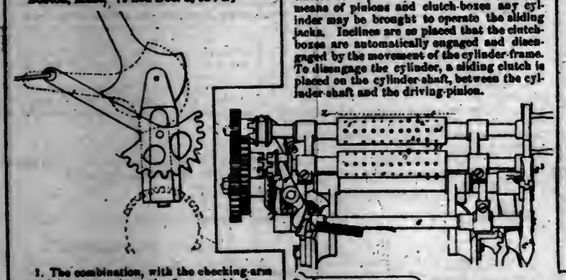
Brief.—Improvement on Patent No. 151,562.



1. The lubricating-cradle K M N O P, having bearings H I, in combination with an axle-journal and oil-box, substantially as described.

2. The counter-balance E, in combination with the rocking lubricator, as and for the purpose set forth.

158,359. VEHICLE DEVICES FOR CHECKING HORSES. W. T. Burton and J. B. Burton, Boston, Mass. [Filed Dec. 2, 1874.]

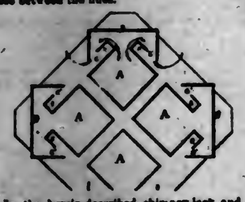


1. The combination, with the checking-arm c and its supporting-rod, of a movable lever to engage or disengage the teeth of the checking-arm with those of the hub, as and for the purpose set forth.

2. The catch b to hold the support e of the rod b in place, and combined therewith to keep the teeth of the checking-arm and the hub in engagement.

158,360. CHIMNEY-JACKS. F. M. Campbell, St. Louis, Mo. [Filed Nov. 16, 1874.]

Brief.—External air is prevented from entering the smoke-flues by the shields, and the legs or flanges. It can pass through the space between the flues.



In the herein-described chimney-jack and ventilator, the combination of the flues A, inclosing the space I, having outlet e and shield D, provided with legs c, in the manner substantially as described, and for the purpose set forth.

158,361. CAR-SPRINGS. Benj. A. Clooney, New York, N. Y., assignor to the New York Car-Spring Company, same place. [Filed Aug. 28, 1874.]

Brief.—To secure strength and elasticity.



1. A spring composed of half round or grooved half-round steel bars coiled into a spiral form, to operate substantially as set forth.

2. A spring composed of half-round or grooved half-round bars, in combination with a cap and base, and elastic cushions inserted in a recess in the cap and base, to operate substantially as set forth.

158,362. SHEDDING AND PATTERN MECHANISMS FOR LOOMS. Geo. Crompton and H. Wyman, Worcester, Mass. [Filed Nov. 16, 1874.]

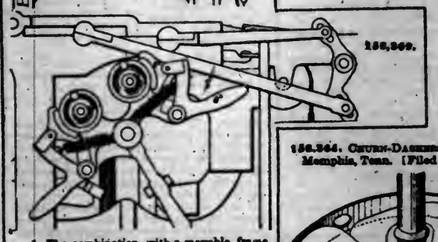
Brief.—Two or more pattern-cylinders are carried on a pivoted movable frame, and by means of pinions and clutch-boxes any cylinder may be brought to operate the sliding jacks. Inclines are so placed that the clutch-boxes are automatically engaged and disengaged by the movement of the cylinder-frame. To disengage the cylinder, a sliding clutch is placed on the cylinder-shaft, between the cylinder-shaft and the driving-pinion.

1. The combination, with a movable frame and two or more pattern cylinders or indicators, of clutch-boxes and a series of toothed wheels, substantially as described, whereby any pattern-cylinder may be brought in position with the jacks and be moved through its clutch to operate the jacks of the harness or be allowed to remain at rest, as and for the purpose set forth.

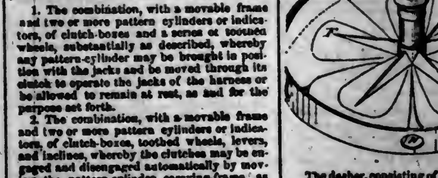
2. The combination, with a movable frame and two or more pattern cylinders or indicators, of clutch-boxes, toothed wheels, levers, and inclines, whereby the clutches may be engaged and disengaged automatically by moving the pattern-cylinder carrying-frame, as and for the purpose set forth.

3. The combination of the shaft e and arm e' f', with lever f, and clutch and pattern-cylinder for disengaging the clutch to move the pattern-cylinder without turning the operating toothed wheel or other part of the loom, as and for the purpose set forth.

4. The crank-shaft, the sleeve B', the pin or toothed wheels B' B', the crown-wheel, the shaft B' and bevel-pinions, combined with the toothed wheels and pattern-cylinders, carried in a movable frame, substantially as described.



158,363.



1. As a propeller for vehicles, the combination of lazy-tongs L P and operating mechanism consisting of the double-threaded reciprocating screws S S' and nuts N N', all to operate substantially as and for the purpose described.

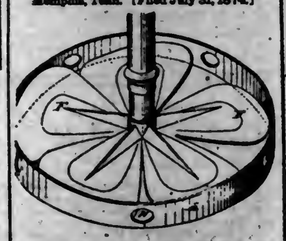
2. The combination of the vehicle or truck A', shaft V, reciprocating screw S S', nuts N N', lazy-tongs L P c, and vehicle or truck A, substantially as and for the purpose set forth.

3. In combination with the truck A A', lazy-tongs L P, and operating-screw S S', the stops b b', placed at both ends of the truck, substantially as and for the purposes described.

4. In combination with the trucks A A', the lazy-tongs L P and operating mechanism S S', the pawl and ratchet R R' upon the axle of the running-gear, substantially as and for the purposes described.

5. The combination of the vehicle A A', lazy-tongs L P c, nuts N N', and reciprocating screws S S' upon the shaft V, with suitable power for revolving the shaft V, the pawl and ratchets p' R R', and stops b b', constructed, united, and adapted to operate substantially as herein set forth.

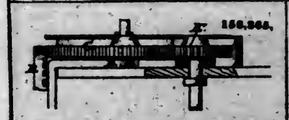
158,364. CHURN-DASHERS. John E. Finley, Memphis, Tenn. [Filed July 31, 1874.]



The dasher, consisting of the propeller-wheel P F, the thimble T, the encircling rim R with holes H H, and the air-chamber B with holes O O, as shown and described.

158,365. CHURNS. John E. Finley, Memphis, Tenn. [Filed Mar. 26, 1874.]

Brief.—Two parallel vertical dashers are operated by horizontal gearing on top, receiving motion from a driving-wheel pivoted at the side of the churn to a bent plate, upon which the gear-wheels at top are also pivoted.



158,365.

The arrangement of the plate D on top of the lid, having bearings for supporting the dasher-pinions E E and the intermediate drive-wheel C, and bent over the sides of the churn to support the main driving-wheel B in a vertical position below the plane of the top, and to secure the lid to the churn, as shown and described.

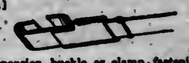
158,366. DIES FOR MAKING HOES. Francis J. Fischer, Hamilton, Ohio. [Filed Nov. 27, 1874.]

Brief.—Two pairs of dies (the first and fourth stationary, the second and third co-operating therewith) attached to a drop. The first presents a vertically-projecting punch, surrounded by three projecting fingers, to regulate the position of the end of the plate on the punch, to be punched by the fall of the second upon it. The fourth die has a hole to limit and shape the external diameter of the socket, and a divergent groove across the face for the re-enforce; the three having a rounded conical punch, that forms the eye by driving the metal down into the hole, and a flat face perpendicular thereto for driving the metal into the re-enforce groove.



The combination of the dies represented in Figs. 1, 2, 3, and 4, constructed as described, for making hoes in the manner specified.

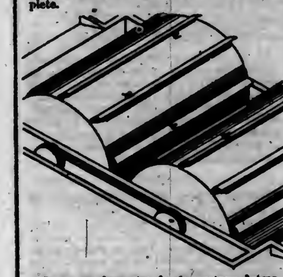
158,367. SUSPENSION-BUCKLES. Edwin J. Fraser, San Francisco, Cal. [Filed Nov. 4, 1874.]



A suspension-buckle or clamp-fastening, consisting of the plate A, with its upwardly-projecting hook b and ring or buckle c, in combination with the sliding band g, with its downwardly-projecting lip f, substantially as and for the purpose described.

158,368. AMALGAMATORS. Edwin J. Fraser, San Francisco, Cal. [Filed Sept. 14, 1874.]

Brief.—The pulp is carried under the surface of the mercury by the buckets s of the first cylinder, and on the opposite side of this is deflected by partitions, so that the buckets of the second cylinder shall carry it under in the same way. Amalgamation is thus complete.



Is an amalgamator, having rotary drums, provided with buckets s c, the partitions F F, arranged with their upper edges above the surface of the mercury and their lower edges below its surface, as and for the purpose described.

158,369. CLOTHES-WRINGERS. Oscar F. Glidden, Boston, Mass. [Filed Nov. 13, 1874.]

Brief.—A bar or shelf has two cams that operate, with two sets of jaw-levers, in connection with two springs and a pair of rollers, for wringing the clothes and holding the mechanism to a tub.



The combination of the actuator G, the two sets of jaw-levers E E H H, the springs F F, and the lower roller-supporting levers, O O, all arranged upon a pivotal shaft, D, and applied to the rollers A B, substantially as specified.

158,370. HOLDBACKS. Jacob B. Goldsmith, Rockport, Mass. [Filed July 16, 1874.]

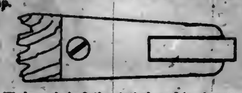
Brief.—To release the holdback-straps in case the traces become detached.



The holdback-iron formed of the bar a, having the screw-shank c, arm g, brace p, and having pivoted to the bar a the lever L, provided with an eye, a, in one of its arms, all combined substantially as shown and described.

158,371. BRAKE-TRIPS FOR VEHICLES. Jacob B. Goldsmith, Rockport, Mass. [Filed July 16, 1874.]

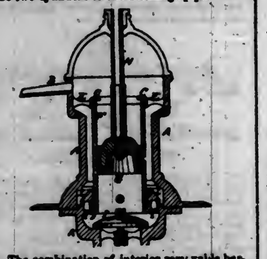
Brief.—To prevent the injury of the shaft-tip.



The metal shaft-tip, slotted, and having upon the pin a an elastic roller, all combined substantially as shown and described.

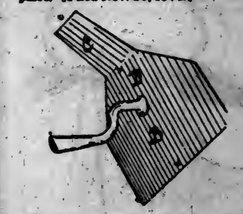
158,372. PUMPS. Lewis Goodwin, Gold Hill, Nev., and Saml. A. West, San Francisco, Cal. [Filed June 15, 1874.]

Brief.—The interior removable cylinder is supported at the top by a ring concentric with the outside casing, attached to it by projecting arms; at the bottom by a counterbrait in the edge of the flange projecting inwardly from the lower part of the pump. The valves are so arranged that the water passes between the two cylinders to the discharge-pipe.



The combination of interior removable barrel F, supported by the ring C and arms E, and the flanges D, so as to stand concentrically within the casing A, with the valves I and L, the whole constructed to operate substantially as herein described.

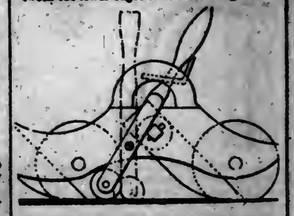
158,373. HOES. Stephen Green, Lebanon, Mo., assignor to Barna T. Stowell, same place. [Filed Nov. 30, 1874.]



The hoe herein described, consisting of an angular blade, as shown, and a goose-neck tang attached at right angles to said blade by a collar and rivet, as specified.

158,374. CORNSTALK-ENVOLVING AND DRAG HARROWS. Jas. T. Henderson, Woodbury, Tenn. [Filed Dec. 16, 1874.]

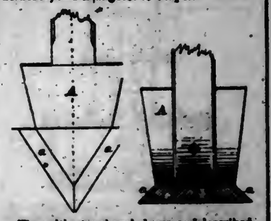
Brief.—There are two side pieces, of runner form, in which are journaled two shafts armed with revolving cutters. Forward of each of these is a cross-beam, to which is secured a series of curved cutting-knives, which extend rearwardly and downward, terminating between the lower edges of the revolving disks.



The combination, with a harrow, having a series of revolving cutters arranged upon a transverse shaft journaled in the side frames, of the stationary cutting-blades or harrow-teeth, arranged upon a transverse shaft and extending in a diagonal rearward direction from said shaft, and terminating between the revolving cutters, substantially as herein shown and described.

158,375. CULTIVATOR-SHOVELS. Thos. J. Houston, Madison County, Ohio. [Filed Oct. 7, 1874.]

Brief.—The cutting part of the shovel is horizontal upon the ground, and is hollow underneath, and triangular in shape.



The cultivator-shovel shown and described, with the upright A and fort part C made in a single piece, so as to form the cavity a' beneath, having the angular sides a, as hereinbefore set forth.

158,376. BITMEN-DAM CLAMPS. F. Hichmann, Reading, assignor to Saml. S. White, Philadelphia, Pa. [Filed Dec. 19, 1874.]

Brief.—The clamp has upon its lower part recessed jaws to hold the rubber while the clamp is being forced to its place.

156,876.



A rubber-dam clamp constructed, substantially as hereinbefore set forth, with recessed jaws to receive and carry the rubber down over the tooth.

156,877. BURNING AND FINISHING TOOLS FOR DENTAL BRIDGES. F. Hickman, Reading, assignor to Saml. S. White, Philadelphia, Pa. [Filed Dec. 10, 1874.]

Brief.—The burring-wheel is arranged so that it can be set at any required angle, and has wires attached for holding a sponge to contain water for cooling the wheel.

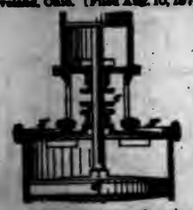


1. The combination of the handle, the arbor-bracket pivoted thereon, the locking-rack on the bracket, and the spring locking-bolt, movable endwise in the handle, these members being constructed and operating in combination, substantially as hereinbefore set forth, whereby the angle of the arbor relatively to the handle may be varied.

2. The combination of the handle, the bracket pivoted thereon, the arbor retained in the bracket, the disk mounted thereon, the coiled spring, and the bit, these members being constructed and operating substantially as hereinbefore set forth, whereby the tool is adapted to be driven from the hand-piece of a dental engine.

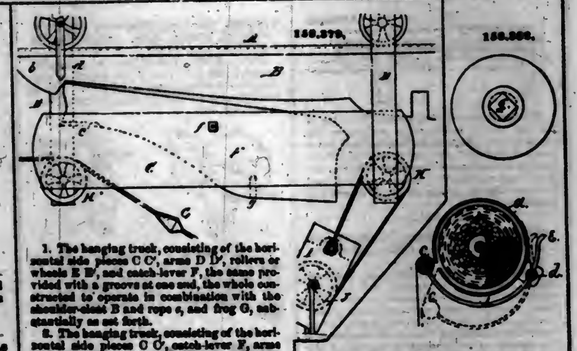
3. The sponge-holder mounted on the adjustable bracket, for the purposes set forth.

156,878. STEAM-CYLINDER HEADS FOR COMPOUND ENGINES. Josephus F. Holloway, Cleveland, Ohio. [Filed Aug. 10, 1874.]



The head C for a compound engine, constructed in form of a tubular perineal, and having steading-bosses within it at top and bottom, exhaust and steam passages cast within one of its walls, and bare bolting accessions on two of its sides, in combination with one or more removable side sections, which complete the head of the lower cylinder, B, and permit access therein, substantially in the manner and for the purpose herein described.

156,879. HAY-ELEVATORS. C. B. Kershaw, Sherburne, N. Y. [Filed Dec. 16, 1874.]



1. The hanging truck, consisting of the horizontal side pieces C C', arms D D', rollers or wheels E E', and catch-lever F, the same provided with a groove at one end, the whole constructed to operate in combination with the shoulder-plate B and rope e, and frog G, substantially as set forth.

2. The hanging truck, consisting of the horizontal side pieces C C', catch-lever F, arms D D', carrying pulleys H H, and rollers or wheels E E', the latter provided with swinging arms or guides d d, substantially as and for the purpose set forth.

3. In combination with the shoulder-catch B, hanging truck provided with the catch-lever F, having groove e and hole g of the pulley-block I, and pulley J, hooks K K, rope e, and frog G, the whole constructed to operate as set forth.

156,880. HEATING-DRUMS. J. N. Kneeland, Barr Oak, Mich. [Filed Nov. 13, 1874.]

Brief.—The spiral coil surrounds the pipe, in which is a damper, by means of which the draft may be made direct or indirect.



The combination of the coil of pipe B with the vertical flue A, the communicating-valve D, and the passages E and F, substantially as described, for the purposes set forth.

156,881. SHOT-PURSE. Lester J. Knowles, Worcester, Mass. [Filed Nov. 16, 1874.]

Brief.—The valve-chambers are provided with angular division-pieces, which form valve-seats, and also direct any foreign substances passing through the pump. The base of the cylinder is provided with a chamber for the purpose of retaining any substances that may pass over the division-plate in the inlet-chamber. Said substances are removed through a door opening into said chamber. The former is provided with hinged bolts.



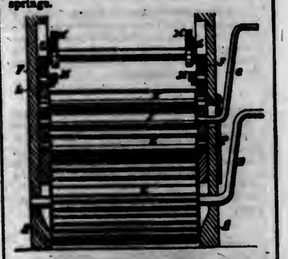
1. In combination with the valve-chambers B and C, the valves F and G and valve-chamber divisions d as i e, formed substantially as shown, arranged and operating substantially as and for the purposes set forth.

2. The combination, with valve-chambers B and C, provided with division-pieces d and e, of the chamber H below the plates E, substantially as and for the purposes set forth.

3. The combination, with the base of the cylinder D, of hinged door I and hinged bolt, ling-bolts d d, substantially as and for the purpose set forth.

156,882. COMBINED WASHING AND WRINGING MACHINES. J. S. Memphin and W. C. Marr, Ottawa, Iowa. [Filed Apr. 4, 1874.]

Brief.—The rollers for a washing-machine, and the rollers for a wringer, are all journaled in the same frame, are operated by separate cranks, and adjusted by a lever-frame and springs.



1. In combination with grooved standards A, cylinder C, and series of rollers E', the sliding blocks F, lever-frame H, connecting-links O, and springs I, as herein described.

2. In combination, with the spring-pressed lever-frame H and sliding blocks F, of the washer, the wringing-rollers J K, lever M, and connections L N, arranged as shown, and operating in the manner set forth.

156,883. BOBBIN-HOLDERS FOR SPOOLING-MACHINES. Thomas A. Mathewson, Pawtucket, R. I. [Filed Dec. 12, 1874.]

Brief.—Tension is given the thread, as it runs from the bobbin, by friction on the edge of the slot, or by the spring pressure-bar. The degree of tension is regulated by turning the holder on its axis and changing the position of the slot.

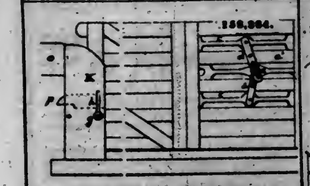
1. The combination of the cylindrical bobbin-receptacle A open at one end, and having a slit along one side, with the slot f and screw g, by which the same is secured to the frame of the machine, and by which the same can be adjusted to give any required frictional tension, substantially as and for the purpose herein described.

2. In a bobbin-holder, the combination, with the cylindrical and adjustable receptacle A, of the hinged tension-bar C, substantially as and for the purpose set forth.

156,884. GATES. Moses R. McEwain, Palo Grove, Wis. [Filed July 30, 1874.]

Brief.—The gate rises vertically at the latch end, turning about the bolt, and assisted by the counterpoise, until a projection encounters a bolt placed for its support, when the center of rotation is transferred to that point, and the bolt traverses in slots, permitting the gate to assume a vertical position, sustained upon the projection and retained by the bolt. The triple bolt is for the purpose of maintaining rigidity between the small and large sections of the gate when closed.

156,884.

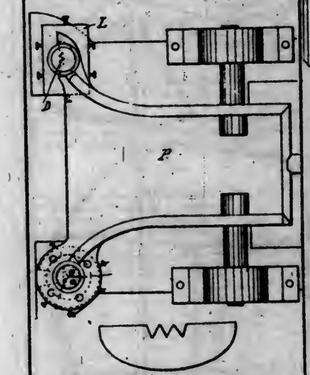


1. The gate A, consisting of the sections a and a', the bolts c and f, slotted levers d, and hooks e, combined and operating together as described.

2. The gate A, provided with the bolt f, notched projection p, and weighted bar e, and slot i, in combination with the upright post E, provided with a vertical slot, h, as and for the purposes described.

156,885. MACHINES FOR TRIMMING BOOT AND SHOE HEEL COUNTERS. J. R. Moffitt, Chelsea, Mass. [Filed Aug. 21, 1874.]

Brief.—A die is provided for cutting the notched counter-blank to be molded and pressed into form; also, a die for holding and trimming the counter after it has been formed, both operated by the same lever, and adapted for simultaneous action.



1. The combination, with the lever E, carrying the punch D and die E, of the die L and stationary punch M, substantially as shown and described, and for the purposes set forth.

2. In combination with the dies, the revolving wipers g h and the parts i j of the lever E, one of the wipers operating to elevate and the other to depress the lever, as and for the purpose described.

3. In a machine for making and trimming heel-counters, the stationary punch M, adapted for holding the shaped article to be trimmed, in combination with the moving die L, substantially as and for the purpose described.

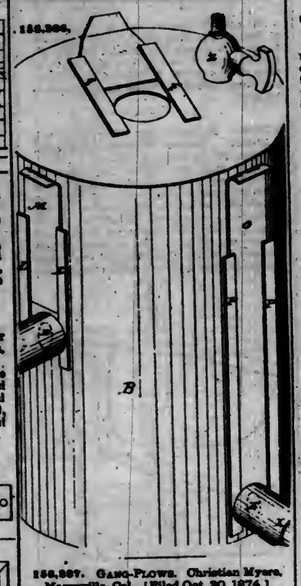
4. In combination with a punch having a contour adapted for punching a notched blank for heel-counters, a sectional die having its notched part or parts adjustable, substantially as and for the purpose set forth.

156,886. RESERVOIRS FOR WATER-WORKS. Wm. Henry Morrison, Indianapolis, Ind. [Filed Oct. 1, 1874.]

Brief.—A system of reservoirs placed under ground, and, connected with the water-mains, and with supply-pipes, is employed to give a uniform and continuous supply of water.

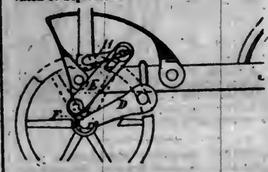
The pressure-reservoirs B B, having the inlet-opening D, connecting with the main pipe, and the outlet-opening E, and stop-cock Z, and sliding gates M and O, or their mechanical equivalents, when operated substantially as described, for the purposes specified.

156,886.



156,887. GANG-PLOWS. Christian Myers, Marysville, Cal. [Filed Oct. 30, 1874.]

Brief.—The cranks turn upon the fixed center of the axle. A rock-shaft with crank-arms is connected by links to the axle at its lowest point, and has a lever made rigid upon it, by which the axle is turned and the plows elevated or depressed.



In a gang-plow, the fixed axle C, provided with the articulated crank-journals D, connected by links E to the ends of the double-crank rocking-shaft H, provided with the hand-lever L, working in the notched rack M, substantially as and for the purposes hereinbefore set forth.

156,888. TILTING CHAIRS. R. W. Myers, New York, N. Y. [Filed Oct. 23, 1874.]

Brief.—The outer ends of the lateral bars of the spider are provided with cams, upon which the rear ends of the springs ride, and the tension of the springs on cams is regulated by screws and nuts at their rear ends.



1. The combination, in a tilting-chair, of the spider B, having the cams b b, with the springs C C, substantially as and for the purposes set forth.

2. The spider B, cams b, springs C, and tension-regulating mechanism D d, in combination, substantially as and for the purpose specified.

156,889. GAS-REGULATORS. A. Parsons, Chicago, Ill. [Filed Oct. 10, 1874.]

Brief.—The diaphragm carries the perforated gas-tube up or down, and controls escape of gas by means of a valve depending from the tube. A lip or key open the tube prevents its turning while attaching the tip and its connections.



The elastic diaphragm F, arranged between the two parts of the cone A, in combination with the perforated tube B, provided with the key c and adjustable valve C, as specified.

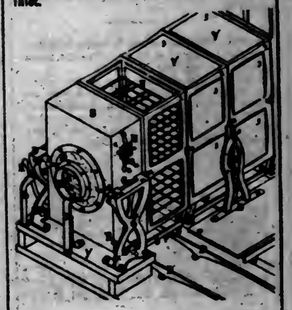
156,890. CARD-PILES. Miles S. Prentice, Jacob Babel, and Wm. A. Talcott, Rockford, Ill. [Filed Nov. 27, 1874.]



A card-pile constructed, substantially as described, with a back, on which the cards rest, a stud, on which they are strung, a flange on one side, against which they abut, the other side being open to allow the cards to be swung outlaterally, and a clamping or pressure spring to retain the cards in place.

156,891. GLUE-DRYERS. A. H. Sandbolzer, Needham, Mass. [Filed Nov. 17, 1874.]

Brief.—The crates form a continuous drying-chamber. One of the end crates is made movable, and the other provided with a yielding or sliding frame, to render them adjustable for the insertion of intermediate crates. Mechanism is provided for crowding and holding the crates in close contact. When required, one of these nearest the hot-air inlet can be run out of place upon rails, transferred upon transverse rails, and inserted near the opposite end of the drier, the intermediate crates having been moved up toward the air-inlet.



1. In an apparatus for drying or evaporating glue, the following instrumentalities, to wit: In the improved glue-drier described, an open-sided crate having a cast-metal frame and sheet-metal panels, the panels being cast in, substantially as and for the purpose specified.

2. A series of open-sided detachable crates provided with pans, in combination with a device or devices for holding the crates together to form a continuous hollow trunk, through which air is passed for drying or evaporating purposes, substantially as specified.

3. In combination with the crates V¹ V V¹, the stationary crate C and movable crate B, substantially as and for the purpose specified.

4. The crate B, standards D D, levers E E, lever K, and pinions *s s*, combined to operate substantially as and for the purpose described.

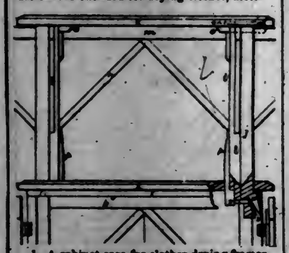
5. The fixed crate C, provided with the sliding frame X¹, combined and arranged to operate substantially in the manner and for the purpose set forth.

6. In combination with the crates V V V¹ V¹, the mechanism for locking or holding a portion of the crates while one is being removed, substantially as and for the purpose specified.

7. The standards B B, levers S S, stops *t t*, cleats *u u*, and rod T, combined to operate substantially as and for the purpose set forth.

156,393. CLOTHES-DRYING. Chas. T. Shafer, Springfield, Ohio. [Filed Oct. 7, 1874.]

Brief.—The front and rear doors of the cabinet have their upper stiles extended for holding clothes. Other frames are hinged inside the doors. An inside frame with several pivoted frames slides upward, and the frames are turned outward for drying clothes, also.



1. A cabinet-case for clothes-drying frames, constructed as shown, with doors having their top stiles extended entirely across the opening in the front and back of the same, as described, to form frames for drying clothes when opened, in the manner set forth.

2. In combination with the case A, constructed as described, and provided with doors *a*, *b*, *c*, and *d*, having their top stiles extended in the manner shown, the drying-frames *b*¹ *d*, pivoted vertically within the same, as and for the purpose specified.

3. Frame C, with its pivoted frames *f j k l* m a and its locking and releasing devices, as shown, in combination with case A, (from which it is elevated,) provided with doors *a b c d* and pivoted frames *b*¹ *d*, all arranged as described, as and for the purpose hereinbefore set forth.

156,395. GRATES. Rene Stimson, Montpelier, Vt., assignor to Thos. J. Deavitt, same place. [Filed May 24, 1872.]

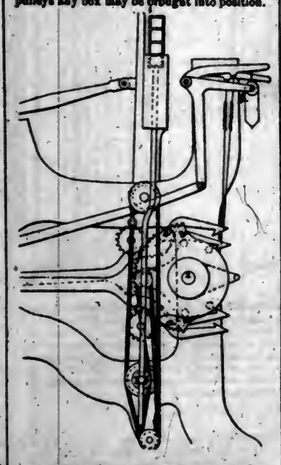
Brief.—Alternate grate-bars are connected and hinged to the grate-rim, and may be dropped below the fixed bars. Cinders can be removed through the wide spaces thus left between the stationary bars, which in the meantime retain the mass of coal.



The movable alternate grate-bars C C, hinged at their ends to the supporting-rim A, and provided with a latch or catch for holding the moving ends of such bars C C, or allowing them to be dropped, in combination with the stationary bars B B, as and for the purposes set forth.

156,394. SHUTTLE-BOX MECHANISMS FOR LOOMS. Horace Wyman, Worcester, Mass. [Filed June 26, 1873.]

Brief.—Each drop-box rod is connected with a cord extending around or partially around a vertical series of pulleys, some of which are placed on crank-arms reciprocated by segment-gears. As either crank-arm is operated its reciprocating end bears upon the cord, and in such manner as to raise or lower the box-rod, and by means of the series of cranks and pulleys any box may be brought into position.



A system of grooved pulleys, cranks, and cording, substantially as described, combined with the pattern mechanism and drop-boxes of a fancy loom, and operated and operating to control the boxes, as set forth.

156,395. SHEDDING MECHANISMS FOR LOOMS. Horace Wyman, Worcester, Mass., assignor of one-half his right to O. Crompton, same place. [Filed Dec. 9, 1874.]

Brief.—When the heddles are down the sliding jacks are locked by means of stationary bars. The rock-shaft, for operating the jacks, is provided with a clutch device, consisting of a loose arm and a sliding pin, by means of which the pattern-cylinder can be reversed, and the shedding mechanism operated independently of the other parts of the loom. The rock-shaft carries the double pawl for driving the pattern-cylinder, and also the lever which controls the pin of the clutch device.



156,396.



1. The combination, with notched jacks, or notched and eared jacks, of stationary holding-bars for holding the harness-frames in position, substantially as set forth.

2. The combination, with notched jacks and stationary holding-bars, of an evener-bar, for placing the notched jacks in engagement with such bars, substantially as set forth.

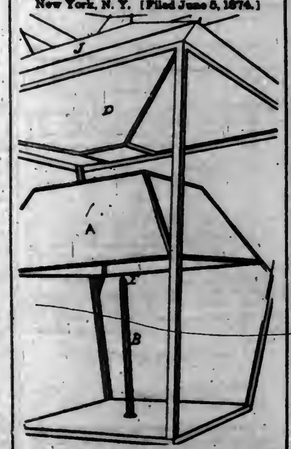
3. The combination, with the rocking-shaft for actuating the shedding or harness mechanism, of an arm or clutch adapted to be engaged with, or to be disengaged from, such rocking-shaft, substantially as and for the purpose described.

4. The combination, with the rocking-shaft for actuating the harness mechanism, of the collar *b*, arm *c*, pin *d*, and lever *e*, substantially as described.

5. The combination, with the rocking-shaft of the shedding mechanism and arm *a*, of mechanism, substantially as described, for disengaging said arm from the rocking-shaft, and a reversible pawl for reversing the pattern-cylinder, as and for the purpose set forth.

156,397. STEAM-CONDENSERS. Edwin C. Brincherhoff, New York, N. Y. [Filed Nov. 30, 1874.]

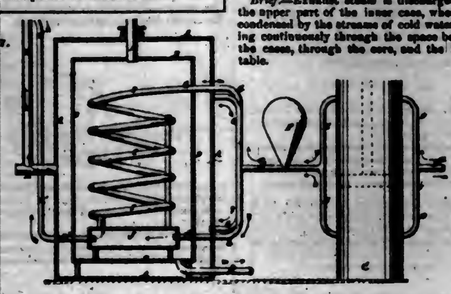
Brief.—Exhaust steam is discharged into the upper part of the inner case, where it is condensed by the streams of cold water passing continuously through the space between the cases, through the core, and the hollow table.



The combination of reflectors, A throwing the light downward and inward, D throwing outward and downward the light received through A, and H, in like manner, throwing the light received through D downward and outward, as shown and described.

156,398. STREET-LAMPS. Charles B. Boyle, New York, N. Y. [Filed June 5, 1874.]

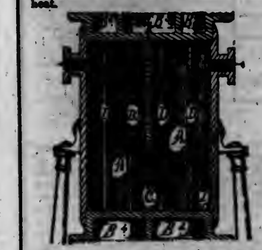
156,397.



The combination of cases A B, having intermediate water-space, the hollow table having pipes G I K, and the therewith-connected pump C, having pipes D E and air-chamber F, all as and for the purpose described.

156,399. FEED-WATER HEATERS. Joseph R. Brown and William A. Foskett, New Haven, Conn. [Filed Sept. 30, 1874.]

Brief.—The middle compartments have a greater number of tubes in them, whereby the water is retained longer in contact with the steam, thereby absorbing a greater amount of heat.



The combination, in a surface-condenser, of the case A, circulating-tubes D D D D, the compartments B¹, B², B³, B⁴, and B⁵, the compartments B² and B⁴ containing a less number of tubes than the intermediate ones, and the baffle-plate C, the parts being arranged to operate substantially as and for the purpose set forth.

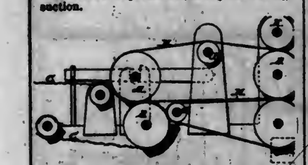
156,400. THILL-COUPLINGS. Jas. R. Burville, Bainbridge, Ohio, assignor of one-half his right to Wm. H. H. Dunn, same place. [Filed Nov. 30, 1874.]



The thill-coupling consisting of the body A, provided with the hooks *b*, the clip-band B, provided with the inclined face, the T-headed thill-iron D, the inclined bar E, bearing at one end directly against the thill-iron, and at the opposite end against the inclined face of the band, and the bolt H, all combined as set forth.

156,400. PAPER-MAKING MACHINES. Jas. Butler, Philadelphia, Pa. [Filed July 28, 1874.]

Brief.—An endless rubber belt carries web from coucher to press-rolls, lifting the web by suction.

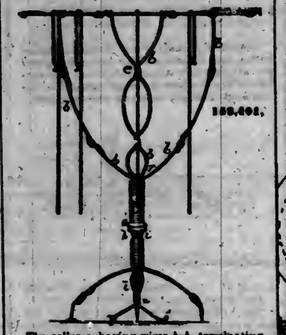


1. The endless apron H, in combination with the rollers A, B, and D, and lapping upon both the wire-cloth apron U and felt apron F, as and for the purpose set forth.

2. In combination, the roller K, doctor L, apron H, and rollers A and D, arranged and operated as set forth.

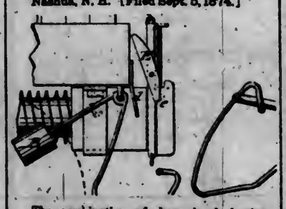
156,401. COMBINED TOWEL-RACKS AND WASH-STANDS. Reuben P. Buttles, Marshfield, Pa. [Filed May 23, 1874.]

Brief.—The adjustable bars are held in place by two concentric circles at the top of the frame. The wires forming the frame are fastened at their ends in a collar, and the foot and standard are held together by a long wire-pin, which has a point bearing against the floor.



The collar *c*, having wires *b b*, terminating at their upper ends in concentric circles, in combination with the collar *h*, provided with wires *i i*, terminating at their lower ends in hooks *p* and eyes *p'*, and central pin *r*, substantially as and for the purpose set forth.

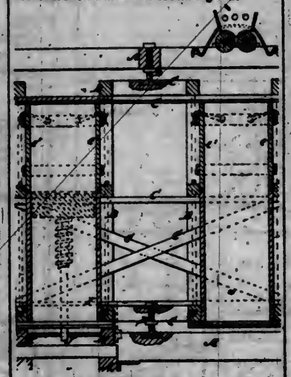
156,402. CAR-COUPLINGS. Geo. W. Call, Nashua, N. H. [Filed Sept. 5, 1874.]



The combination of draw-head, having notch *e*, frame E¹, pivoted latch E, and guard *d*, as and for the purpose described.

156,403. COTTON-PRESSES. Wm. T. Crenshaw and Robt. C. Carothers, Burton, Tex. [Filed Nov. 14, 1874.]

Brief.—While compression is taking place in one box, the other stands beneath the hopper, the bottom of which fits upon two rollers, that feed the cotton into the baling-box.

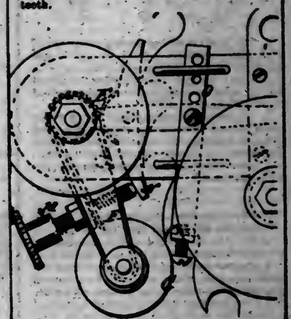


1. The hopper K, provided with perforations and the rollers L, to permit discharge of dust while the cotton is fed downward, as shown and described.

2. The bails I, hinged to the frame A, and provided with handles J, in combination with the press-box mounted on pivot-bearings D D, and provided with projecting beams at the base, as and for the purpose specified.

156,404. SAW-SHARPENERS. John Crook and Jas. A. Crook, Augusta, Ohio. [Filed Nov. 14, 1874.]

Brief.—The operative parts of the machine are mounted on a radius-bar, which is attached to the saw-arbor. The grinders are mounted in a swinging frame attached to the radius-bar, so as to be brought in contact with the teeth.



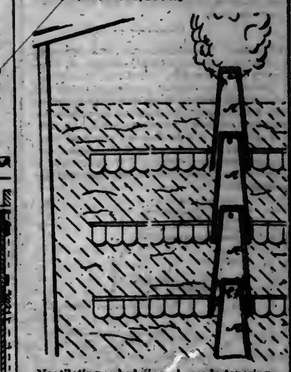
1. The adjustable bearing-pieces B, spring-clamp lever D, and the cam E, combined with the radius-bar A, substantially as specified.

2. The combination of the grinder-carrying frame F, adjusting stop-gage M, and the stop N with the radius-bar A, substantially as specified.

3. The combination of the gage O with the grinder-carrying frame F, radius-bar A, stop-gage M, and stop N, substantially as specified.

4. In a saw-gummer, the combination of the large and small grinding-wheels G H, the threaded mandrel I, and screw-collars P with pivoted carrying-frame F and bar A, as shown and described, for the purpose specified.

156,405. END-PIPES FOR LEAD-COBBOCKING HOUSES. Peter H. Decker, Moreston, N. Y. [Filed Dec. 12, 1874.]



Ventilating or bed pieces A, made tapering, and provided with blocks *a'* in the interior of their lower parts, with holes or openings in the lower and upper parts of their sides, and with caps at their upper ends, substantially as herein shown and described.

156,406. BOTTLE-STOPPERS. Charles de Quillfeldt, New York, N. Y. [Filed Nov. 30, 1874.]

Brief.—A stopper-carrying yoke is pivoted at some distance from the ends of a wire lever-frame, which swings in the eyes of a wire band attached to the neck of the bottle. The elastic stopper has a cylindrical stem, perforated for the passage of the yoke, and is tightly secured to the bottle by a sleeve-shaped and flanged cap-piece.



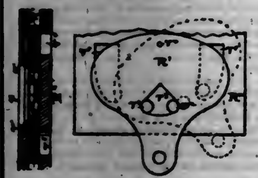
No. 166,606.

1. The bottle-stopping device, composed of a pivoted lever-frame applied to neck of bottle, with eccentrically-hinged yoke carrying the elastic stopper and cap-piece, arranged and operated substantially in the manner and for the purpose set forth.

2. The elastic stopper, hung by its perforated stem or shank to upper part of hinged yoke, in combination with the same and a sleeve-shaped cap-piece placed over the stopper below the yoke, substantially for the purpose described.

166,607. SEEDING-MACHINES. S. Dixon, Rosaville, Ill. [Filed July 26, 1874.]

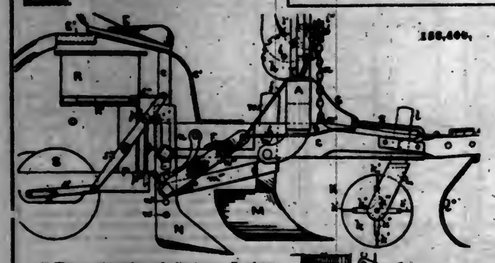
Brief.—At the bottom of the seed-box are pivoted two oscillating seed-cup boxes, having circular slots and triangular-shaped depressions, into which the seed is collected. On each side and at the bottom of the box are slots, through which project the extended ends of the seed-disks, for connection with crank mechanism.



The seed-box B, having slots r, with inclined edges r', the oscillating seed-cup boxes R' R', having slots r' and depressions r', and the plate R'', having slots r', all operating in combination, substantially as and for the purpose specified.

166,608. CORRUGATED STALK-CUTTERS, PLOWS, AND SHREDDING-MACHINES. S. Dixon, Rosaville, Ill. [Filed Feb. 24, 1874.]

Brief.—Drag-hooks for straightening the stalks; a rotating cutting-cylinder for cutting the stalks, and having a central disk-cutter for dividing the hills; a double mold-board plow for spreading a wide furrow; a pair of ridging-plows; a seed-dropping device, and a covering-roller, are all arranged to operate at the same time by the forward movement of the machine.



166,608.

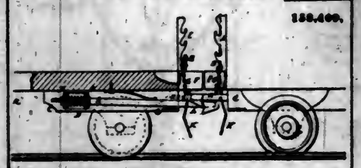
1. The combination of the beam C, plows M N', and stalk-cutter K with the seed-planting device O E E, all constructed and operating as and for the purpose specified.

2. The stalk-cutter K, having the central disk i and blades i', substantially as and for the purpose specified.

3. The beam C, connected with the axle A by brackets G G and rods g g, and adjustably connected by means of the chain s, shaft F'', fulcrum F', slotted standards H, lever I, rock A, and plates P, substantially as and for the purpose specified.

166,609. CAR-COUPLINGS. Henry Dutcher, Port Jervis, N. Y. [Filed Dec. 6, 1874.]

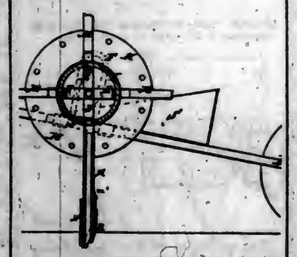
The peculiar heels a' and the projections or buffers a', formed upon the forward ends of the coupling-bars A, connected with the car-bodies by cross-bars B and springs D, all combined substantially as shown and described.



166,609.

166,610. CORN-PLANTERS. Jens Hyvard, Red Wing, Minn. [Filed Oct. 24, 1874.]

Brief.—The frame is attached rigidly to the rear axle, and connected with the front axle by slotted standards, which allow the axle to rise and fall to conform to the unevenness of the ground. Between the frame and the axle is inserted an adjusting-wedge, for elevating the seeding-wheels.



1. The frame E, attached rigidly to rear axle B and connected with front axle G of the seeding-wheels by slotted standard F, all combined and operating as and for the purpose described.

2. The combination, with axle G, of the seed-wheels and frame E, having slotted standards F F, of the wedge S, as and for the purpose described.

166,611. FEATHER DUSTING-BRUSHES. A. D. Griswold, New York, N. Y., assignor to Myrtilla Griswold, same place. [Filed Dec. 1, 1874.]

Brief.—A feather dusting-brush wholly constructed of feathers mounted on elastic stems.



166,611.

As a new article of manufacture, a feather dusting-brush, constructed of a series of bunches of feathers or of single feathers, each of said bunches or single feathers being secured to one end of an elastic stem or prolongation, without the intervention of a head, and the other end of the said elastic stem secured directly to the head of the handle, substantially in the manner and for the purpose described.

166,612. FEED-WATER HEATERS AND FILTERS. Edward P. Fenn, Kansas City, Mo. [Filed June 5, 1874.]

Brief.—The filtering-pans are kept in position by guides and cam. The steam, ascending, comes in contact with the water while descending, and is prevented from escaping direct by a deflector, L. The top or lid is easily removed by unscrewing the clamp-fastenings.

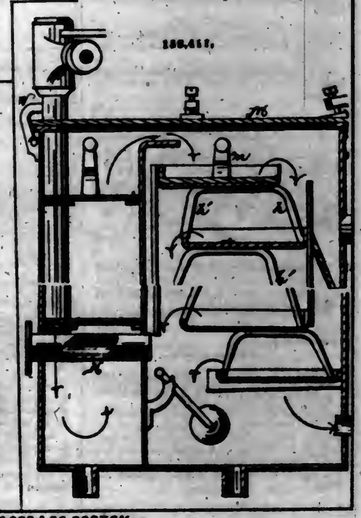
1. The combination, with the pans G, of the guides c, brackets b, feet b b', and cam-levers n, substantially as and for the purposes herein set forth.

2. The combination of the shell A, pans G G, steam-inlet H, steam-outlet K, and the steam-director L, said steam-director being arranged, with relation to the steam-outlet and the pans, substantially as and for the purposes herein set forth.

3. The combination, with the shell A and lid M, of a series of screw-clamp fastenings, each consisting of the bent link or bar N, hinged or jointed at s, the set-screw p, and inclined raised surface s, all constructed and arranged substantially as and for the purposes herein set forth.

166,613. CORN-PLANTERS. Thomas Hall, Jr., Bloomington, Ill. [Filed Dec. 7, 1874.]

Brief.—The seed-slide is operated by a lever, and the seed-tube is provided with a spring-arm, which presses the seed into the ground.



166,613.

1. The combination of the seed-slide D, lever E, and spring-arm F, substantially as and for the purpose specified.

2. The combination of the seed-slide D, lever E, spring-arm F, and seed-tube C, substantially as and for the purpose specified.

166,614. SEED-PLANTERS. Thomas Hall, Jr., Bloomington, Ill. [Filed Dec. 7, 1874.]

Brief.—The seed-slide is operated by a lever, and the seed-tube is provided with a spring-arm, which presses the seed into the ground.

166,614.

1. The combination of the seed-slide D, lever E, and spring-arm F, substantially as and for the purpose specified.

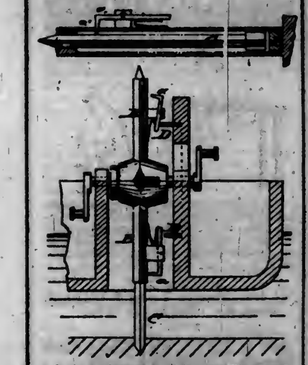
2. The combination of the seed-slide D, lever E, spring-arm F, and seed-tube C, substantially as and for the purpose specified.

166,615. SPRING BED-BOTTOMS. Geo. W. Hatch, Fond du Lac, Wis. [Filed Oct. 24, 1874.]



In a bed-bottom, the wire springs C, each formed of a series of bends, c, having an upward inclination, straight connecting portions b, and eyes b', said springs being arranged lengthwise of the slats B, as shown and described.

166,616. PROPELLING-WHEELS FOR CANAL-BOATS. Gustav Kuydrisk, New Ulm, Minn. [Filed Oct. 3, 1874.]

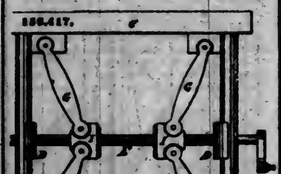


1. As an improvement in propelling canal-boats, a rotating propelling-wheel having radial guide-sleeves with spurred sliding extension propelling-arms retained and cushioned therein, substantially in the manner and for the purpose set forth.

2. The combination of spring-levers e, entering through perforation e' of the sleeve B, with sliding propelling-arm C, for retaining the same inside of the sleeve until detached, as described.

3. The combination of spring-levers e with arc-shaped flange or rod D of the wheel-box, for engaging ends of levers and releasing sliding propelling-arms for entering into the bottom of the canal at the proper time, as specified.

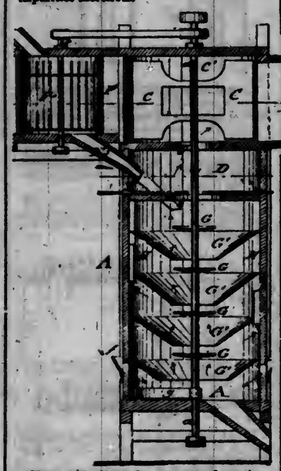
166,617. COTTON-PRESSES. Tryon J. M. Jewell, New York, N. Y., assignor of his right to T. W. Burger and E. Gardinier, same place. [Filed May 1, 1874.]



The single screw B, formed with threads running in opposite directions, and having its bearings in the disconnected and independent blocks D, arranged to slide upon the posts B, the nuts I, and the toggle-joints G pivoted at top in fixed and permanent relation to the top beam C, and at bottom at or near the extremities of the platen F, the whole combined for joint operation, substantially as and for the purpose specified.

166,618. MIDDLINGS-PURIFIERS. Edwin W. Johnson, Forreston, Ill., assignor to himself and Joseph U. Knoble, same place. [Filed Oct. 10, 1874.]

Brief.—Middlings, after being subjected to a whipping or beating action, are passed over a series of revolving saucers and stationary inverted conical funnels, and subjected to ascending air-currents, for removing the light impurities therefrom.



166,618.

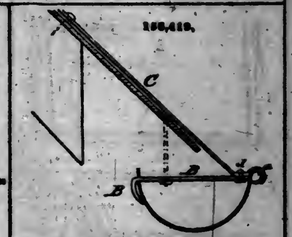
The combination of a superposed suction-fan, C, whose case has the side conductor E and bottom hole b', with the subjacent chamber D A, the former having small inlet spout F' and central aperture b, while the latter has successive saucers and funnels G G', all arranged substantially as and for the purpose specified.

166,619. HAYES-TROUGH HANGERS. Edwd. Kirk, Jr., Sheridan, Ill. [Filed Nov. 14, 1874.]

The combination, with the brace B, slotted at d', and the strap C, having sleeve e, of the nutted bolt d, as and for the purpose described.

166,620. CHERRY-PITTERS. Wm. B. Knapp, Tecumseh, Mich., assignor to himself and F. Bemmann, same place. [Filed Aug. 10, 1874.]

Brief.—The pitter consists of a tube open at both ends, a knob or handle being secured around one end, while the other end is notched or toothed. The cherry is pressed against the toothed end, and the pit drops through the tube, leaving the cherry whole and ready for use.



166,620.



A cherry-pitter consisting of a tube, A, open at both ends, having a knob or handle, B, placed upon one end, and teeth c' formed upon its other end, substantially as herein shown and described.

166,621. CORRUGATING DRAWERS AND FOLDING DESKS. John A. Knight, Auburn, Me. [Filed Mar. 23, 1874.]

Brief.—To the inside of the drawer brackets are attached, to which is pivoted the flexible writing-desk, which can be made rigid by folding arms that are connected thereto.

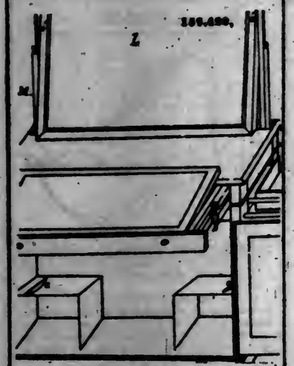
166,621.

A drawer, provided with brackets g g, in combination with the flexible desk-surface A and folding arms D D, by means of which the desk-surface may be made rigid when said arms are extended, or flexible and capable of being rolled into a narrow compass when the folding arms are closed, substantially as described, and for the purpose set forth.

166,622. LOOKING-GLASS ATTACHEMENTS FOR BUREAUS, &c. John A. Knight, Auburn, Me. [Filed Mar. 23, 1874.]

Brief.—A frame sliding in supplemental slides bears a looking-glass frame, so that the glass can be raised above the top of the bureau, and inclined at any desired position.

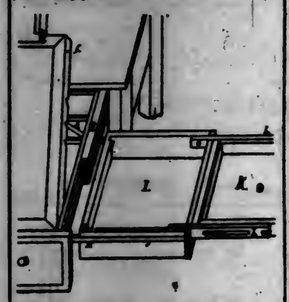
160,489.



The combination of the frame *e'*, provided with the looking-glass L, of the frame K, and supplemental sliders M M, substantially as described, and for the purpose specified.

160,490. DRAWERS. John A. Knight, Auburn, Me. (Filed Mar. 28, 1874.)

Brief.—Two supplementary drawers slide into the main drawer from the side of the case, and are contained in said drawer. The lid of the main drawer, which is used for writing purposes, is provided on its under surface with a looking-glass.



1. The combination, with the drawer A, of the frame e and adjustable lid C, pivoted at *f*, and provided with a looking-glass, O, on its under surface, substantially as described, and for the purpose specified.

2. The supplementary drawers G, H, and I, having extension-slides and swinging tray K, in combination with the drawer A, provided with the inner hinged and adjustable lid C, substantially as described, and for the purpose set forth.

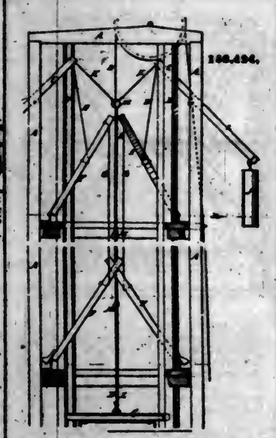
160,491. SELF-CLOSING HATCHWAYS. S. Lawrence, New York, N. Y. (Filed Dec. 19, 1874.)

Brief.—The hatch-doors are connected with each other by ropes, the upper ones being connected by weighted levers. A rope connected to the hoisting-rope at intervals branches at the top to connect with the weighted levers. As the car is elevated the closing-rope is slackened, and the weighted levers open the doors. When the car has descended the rope is tightened and the levers are drawn down, thus closing the doors.

1. The combination of the cords G H K L, the levers I, and the weights J with the hatchway-covers F, the frame A, and the carriage C, substantially as herein shown and described.

2. The combination of the rings M with the cord L and the hoisting-rope D, substantially as herein shown and described.

160,492.



160,493. FIRE-BOX ATTACHMENTS TO STEAM-BOILERS. John Lee, Hazleton, Pa. (Filed Oct. 17, 1874.)

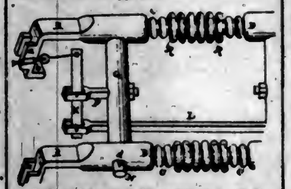
Brief.—The rivet-joints are protected within the fire-box from extreme heat by a hollow casting, suspended by thimbles communicating with the water-space of the boiler.



The combination, with boiler and fire-box, of a hollow casting, B, having the projecting tubes C C, as and for the purpose specified.

160,494. CAR-BRAKES. Michael Madden, Harrisburg, Pa., assignor of one-half his right to William C. McFadden, same place. (Filed Oct. 1, 1874.)

Brief.—Forward and rear shoes on each side connected to ends of spiral spring, which is expanded by action of levers on cross-bars, when brakes are applied.



1. The plungers A, in combination with the springs B, substantially as and for the purpose set forth.

2. The plungers A, in combination with the transverse bars G, said plungers being connected in pairs by the springs B, for operation substantially as shown and described.

3. The brake-rigging frame A E G, in combination with the lever K, draft-jaw bar F, and connecting-rod I, all for operation substantially as set forth.

160,495. THREAD-WINDING GUIDES. E. L. Manchester and J. A. Bolen, Springfield, Mass. (Filed Dec. 7, 1874.)

Brief.—The thread-guide is provided with a grooved wheel to bear on the spool and guide the thread, rendering the friction and wear much lighter than where the ordinary guide bears upon the spool.

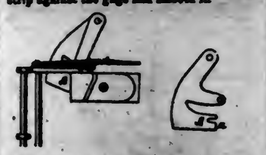
160,496.



The combination of a revolving laying device, F, with a thread-spooling guide, substantially as specified.

160,497. BUFFLERS. James McCullough, Aspinwall, Neb. (Filed July 26, 1874.)

Brief.—Material for ruffle and band supported on spindles projecting from standard rising from presser. The ruffler-blade is a horizontally-vibrating arm, actuated through a connecting-rod and bell-crank lever. The blade engages the strip of cloth resting on a separator-plate, and one of the teeth of the blade bears on the cloth harder than the other, and acts to throw the edge of the passing strip against the gage and smooth it.



The combination, with the presser-foot having the cloth-supporting spindle and the separator-plate P, of the pivoted supporting-plate A, having depressed point *a*, and the connecting-arm H and elbow-lever, all constructed, arranged, and operating as set forth.

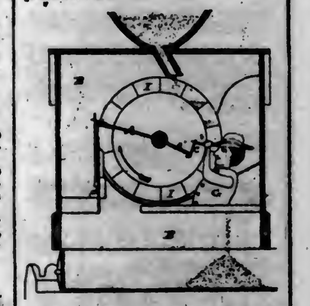
160,498. GARTERS. Louisa F. McDonald, Belfast, Me. (Filed Oct. 10, 1874.)



A garter composed essentially of the elastic A, loop B, buckle C, and plates D *& E*, combined and arranged in the manner described, for the purpose set forth.

160,499. MECHANICAL TOYS. H. Mencke, Providence, R. I., assignor of one-half his right to C. Vigneron, same place. (Filed Apr. 1, 1874.)

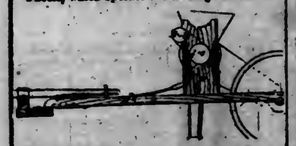
Brief.—Arms extending from both sides of the shaft, and also from both ends of the shaft, give motion to double sets of figures, seen through the windows engaged at different pretended work.



The sand-mill toy herein described, consisting essentially of the box B, provided with the axle H, arms A A' on each side of the wheel I, the hopper F, figures G, and openings W, substantially as and for the purpose set forth.

160,501. CORN-PLANTERS. Hiram Moore, Green Lake Township, Green Lake County, Wis. (Filed June 11, 1872.)

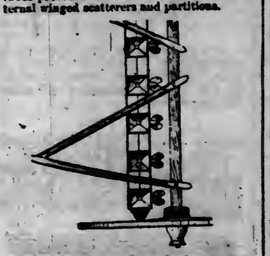
Brief.—To a tongue flexibly secured to the main cross-beam by a staple are attached two diagonal braces, extending backwardly and rearwardly, and passing under hooks on the main frame, for preventing the dropping-frames from rising too high. These frames are flexibly attached to the main frame, and their rear ends are supported by bearing-wheels, which operate the seeding devices.



The loose tongue with its diagonal braces, the draft-frame, the planting-frames, their supporting-wheels, and the pivoted links connecting the draft-frame and planting-frame, these members being constructed, combined, and operating substantially as hereinabefore set forth.

160,502. GRASS-SEED SOWERS. Hiram Moore, Green Lake Township, Green Lake County, Wis. (Filed June 11, 1872.)

Brief.—To the under side of the thills is attached a trough having hoppers therein, beneath which revolves a sectional shaft having seed-wheels, for delivering the seed to tubes provided at their lower ends with external winged scatterers and partitions.

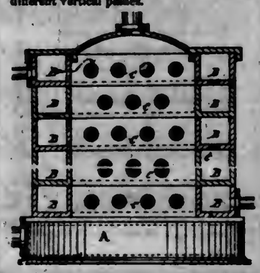


1. The combination of a seed-tube, an external winged scatterer, I, and a vertical partition between the scatterer and tube, these members being constructed to operate substantially as set forth.

2. The combination of the axle, the thills, the hopper, the sectional feed-wheel shaft, and the sleeve and pins connecting the shaft-sections, these members being constructed and operating substantially as set forth.

160,503. GAS-CONDENSERS. Peter Munsinger, Philadelphia, Pa., assignor to Morris, Tasker & Co., same place. (Filed Nov. 10, 1874.)

Brief.—The water-chambers are annular, placed one above the other, and have horizontal water-tubes passing between their inner sides, those of the alternate chambers in different vertical planes.



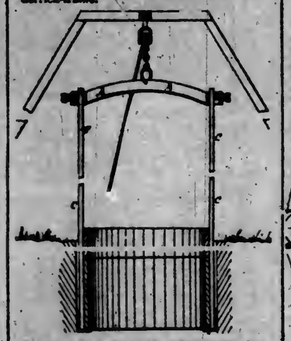
1. The series of chambers B, having perforated bottoms and provided with water-tubes C, in combination with the gas box or case A, substantially in the manner and for the purpose above described.

2. In a gas-condenser having a series of water-chambers, B, a gas box or case, A, and water-tubes C, having open communication with said chambers, the combination of the induction water-pipe *b*, with chamber B at one end of the condenser and a water-exit pipe at the other and same end as the gas-inlet, whereby as the water passes to the exit-end of the condenser its temperature is gradually raised by the action of heat of the gas upon the surfaces of the tubes, and the gradual condensation of the gas is effected as it passes between the tubes, substantially as described.

3. In a gas-condenser, the combination of the water-tubes C in different vertical planes in the alternate chambers, whereby the gas is deflected as it passes between the tubes, substantially as described.

160,504. LINING WELLS. D. L. Newcomb, Kenton, Ohio. (Filed Sept. 23, 1874.)

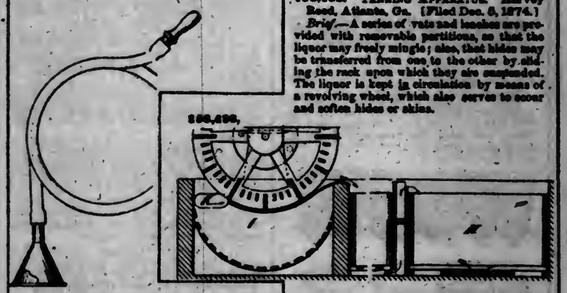
Brief.—The lining is let down from above, after the completion of the well, by means of long rods, leading from the lower portion to a cross-bar above, suspended by a tackle to a derrick-frame.



The mode of lining or tubing wells from top downward by means of a cross bar or beam, A, in combination with strips of wood or metal, or ropes or chains, C, made fast to and supported by said cross bar or beam A, the rope and tackle F G, and a suitable scaffold, substantially as shown and described.

160,505. TOY BUBBLE-PIPES. F. W. Pease, Metuchen, N. J. (Filed Aug. 20, 1874.)

Brief.—More convenient to use, and obviates the fragility of the common pipe.



As an improved article of manufacture, a bubble-pipe composed of a flexible tube, mouth-piece, and a bowl provided at its edges with one or more ledges or grooves for holding and supplying the solution, made and arranged to operate substantially as shown and described.

160,506. SEWING-MACHINE CASTERS. Jno. H. Plank, Bloomfield, Iowa. (Filed May 23, 1874.)

Brief.—Improvement on Patent No. 138,606, June 3, 1873. A bent lever, the lower portion forming rectangular legs, is pivoted to one of the tongues of the socket-plates in such manner that the casters at one end may be lifted off the floor, and the weight of the machine transferred to the rectangular legs, braced back against shoulders of the end piece; the opposite movement of the lever releasing the legs as a support, and restoring the whole to normal position.



The legs H and a lever, I, pivoted to one of the tongues D of the socket-plates A, and arranged in relation to the shoulders K as described, for supporting and steadying the machine, substantially as specified.

160,507. RAILWAY-TIES. Saml. L. Porter and Duane Peck, Rochelle, Ill. (Filed Sept. 10, 1874.)

Brief.—A railroad-tie consisting of two inverted hollow castings, having flat upper surfaces for rails to rest upon; said castings being united by rods or stays passing diagonally from one to the other, crossing midway between the rails, and there secured by upper and lower clamping-plates, the outer ends of the rods being notched into extensions on the castings. Projections on top of the support take into notches in foot of rail, which latter is held down on support by round-headed bolts.



1. The rail-joint support A A, having extensions C C' and cross-bars C C, as and for the purpose described.

2. The combination, with the braces C C, of the central re-enforcements D E, connected and arranged as shown and described.

3. The guide-flanges *b*, attached to bed-pieces, and having lips *b'* adapted to work in recesses of rail, as and for the purpose specified.

4. The combination of recessed rails, beds having holders *b' b'*, and adjustable clamping-bolts, to allow the rail to be raised or lowered without moving the beds.

160,508. TANNING APPARATUS. Harvey Reed, Atlanta, Ga. (Filed Dec. 9, 1874.)

Brief.—A series of vats and leaches are provided with removable partitions, so that the liquor may freely mingle; also, that hides may be transferred from one to the other by sliding the rack upon which they are suspended. The liquor is kept in circulation by means of a revolving wheel, which also serves to scour and soften hides or skins.

160,508.

1. The combination, in a series of tan-vats, of removable partitions and racks for suspending the hides, substantially as specified.

2. The combination of a series of tan-vats, a

series of leaches, and a propelling wheel, arranged as described, the leaches and the vats provided with passages for an endless current of the liquor to be forced around through the leaches and vats in succession, substantially as specified.

3. The combination of a series of removable leaches and removable partitions, substantially as specified.

4. The wheel M, provided with internal and external projecting blades, as arranged, adapted to soften and cover hides or skins, and to keep the liquor in continuous circulation, substantially as and for the purpose described.

168,439. FEATHER-EDGE SKIVING-KNIFE FOR SHOE-MAKERS. Silas H. Reynolds and Geo. B. Newhall, Lynn, Mass. [Filed July 1, 1874.]

Brief.—The knife, as slotted and pivoted, may be rotated as the cutting edge is worn away.



The knife *c*, formed as a segment of a circle, provided with a slot or slots, *c*, and turning upon its pivot *b*, all substantially as shown and described.

168,440. SEED-PLANTERS. W. C. Reynolds, Collierstown, Va. [Filed Aug. 15, 1874.]

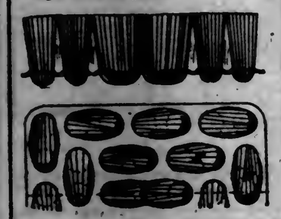
Brief.—Within the hopper, and upon side supports, is placed a false bottom, having side openings, through which the seed passes to the slide. This bottom is intended to partially relieve the slide from the superincumbent weight of seed.



A false bottom, F, for seeder-hoppers, provided with adjacent support and side apertures, as and for the purposes specified.

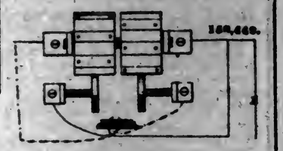
168,441. DOOR-MAT. Orrin Rice, Adrian, Ill. [Filed Mar. 21, 1874.]

Brief.—The sheet-metal plate is punched in such a manner that the flanges of the openings take into the tufts of corn-husks that are woven into them, and then hold them from being forced out of place.



The improved mat, formed of the corn-husk tufts A and the sheet-metal back-plate B, provided with pairs of holes, the ends of each tuft being drawn through the respective holes of a pair, and held therein in the manner described.

168,442. AUTOMATIC OR CHEMICAL TELEGRAPHY. Wm. E. Sawyer, Washington, D. C. [Filed Nov. 10, 1874.]





1. A sheet, roll, or strip of paper, perforated for telegraphic transmission, in lines running from left to right, as in an ordinary printed page, substantially as shown and described.

2. The combination of a line, main transmitting-battery, contact-point brush or roller therefor, a local battery, and contact-point brush or roller therefor, with a circuit through the primary wire of an induction-coil, and a contact-point brush or roller throwing the secondary wire of the induction-coil into line and connecting the line to earth, substantially as set forth.

3. The combination, with a line, its battery and contact-point brush or roller therefor, or an induction-coil and contact-point brush or roller therefor connecting the line to earth, and throwing the secondary induced current into the line, for the purpose of clearing the same of tailings, as set forth.

4. The combination, with a line and its transmitting-battery, of an induction-coil, the secondary current from which is thrown into the line immediately after each signaling-pulsation, substantially as described.

5. The method of operating an automatic or chemical telegraph by first simultaneously, or nearly so, closing the transmitting-circuit and the local primary circuit of an induction-coil, and then, upon breaking the transmitting-circuit, and instantly before breaking the local primary circuit, of the induction-coil, closing the circuit of the line through the secondary wire of the induction-coil and to earth, substantially as and for the purpose specified.

6. In combination with the main-line circuit, a metallic point, brush, or roller connected or connecting to an induction-coil and to earth, substantially as and for the purposes specified.

7. The combination of a metallic point, brush, or roller closing the circuit of a local battery through the primary wire of an induction-coil, and a metallic point, brush, or roller closing the circuit of the secondary wire thereof to the line, the local circuit being broken at or just after the completion of the secondary-wire circuit, as set forth.

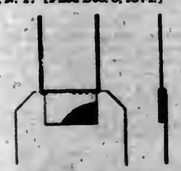
8. In a chemical-telegraph receiving-instrument, the combination, with a sheet within a sheet-circuit, of the primary and secondary wires of an induction-coil and resistances, as set forth.

9. A non-inductive resistance, composed of a length of wire arranged in parallel returning layers, substantially as shown and described.

10. The combination, with a line or circuit, of a commutator, or circuit-changer or current-diverter, and two series of apparatus or batteries composed of different parts or sections or two circuits, or two parts of one apparatus or battery, the series, parts or sections, or circuits restored to being alternately connected to the line by the commutator, substantially as and for the purposes specified.

11. In chemical telegraphs, the method of producing a clear sharp record, assuming a positive-battery current to be the impulse to be recorded, by charging the line in the following manner: First, transmitting an induced positive-impulse; second, a battery positive impulse; third, an induced negative impulse, followed or not by a negative-battery impulse, or with the polarities named reversed, substantially as set forth.

168,443. TAGS. Covedre B. Sheldon, New York, N. Y. [Filed Dec. 5, 1874.]



As a new article of manufacture, the tag constructed, as described, by fastening the ends of the twine under the folded corners of the card at an obtuse angle to the parallel sides of the twine.

168,444. SLATE-FRAMES. Chas. J. Shields, Adrian, Mich. [Filed Nov. 5, 1874.]

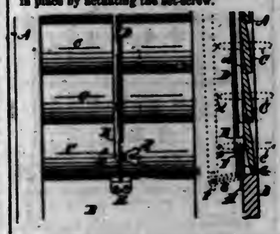
Brief.—The pencil-holder slides in the hole bored for it, and has a projecting tang, by which to slide it to the mouth of the hole to receive the pencil. It is held in place by the friction of a spring.



The sliding pencil-holder having the spring and thumb-piece, in combination with the slate-frame, adapted to receive the same, substantially as shown, and for the purpose specified.

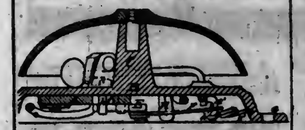
168,445. BLIND-STOPS. Edwd. S. Shrock, Lincoln, Ill. [Filed July 22, 1874.]

Brief.—A slotted connecting-bar is hinged or pivoted at its lower end to the blind-rail, while its upper end is connected by means of a thumb or set screw to the end of the slat-rod. The adjustment of the slats is desired position is readily effected, and they are held in place by actuating the set-screw.



The slotted bar G, hinged or pivoted to the rail B by means of a staple or plate, H, and arranged to operate in combination with the rod D, plate F, and set-screw F, substantially as and for the purpose specified.

168,446. DOOR-BELLS. Amos L. Swan, Cherry Valley, N. Y. [Filed Apr. 11, 1874.]

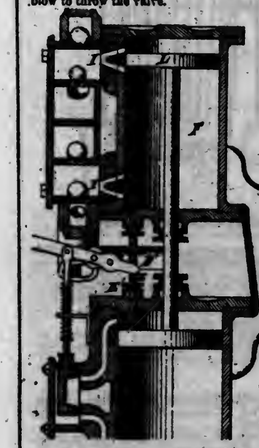


1. The combination, with the slotted sector-lever A, and the horned cam E pivoted thereto, of the fixed stop *h*, connecting said sector-lever and cam, substantially as specified.

2. The combination, with the sector-lever A and horned cam E, pivoted together, of the fixed stop *h*, hammer-crank *c'*, spring *g'*, connection F, and stop H, adjustable for single or double strokes, substantially as specified.

168,447. STEAM-PUMPS. Fuller Trump, Springfield, Ohio, assignor to Jas. Loffel & Co., same place. [Filed Dec. 4, 1874.]

Brief.—The pump-piston being suddenly relieved of pressure causes it to receive a sudden impulse, which gives the tappets a quick blow to throw the valve.



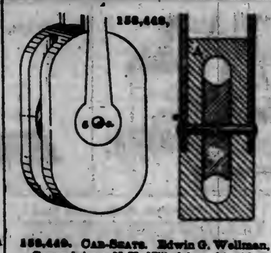
1. In combination with the steam-cylinder, the valve of which is actuated by a tappet at each stroke of the piston, a pump-cylinder constructed with double ports, the channels of which open on opposite sides of the piston of the pump when near the end of the stroke, substantially as set forth.

2. In combination with the cylinder F and piston-head L, and double ports *l*, the tappet-rod E, lever D, valve-stem and springs of the steam-valve, substantially as set forth.

168,448. PULLEY-BLOCKS. John Weir, New York, N. Y. [Filed Dec. 12, 1874.]

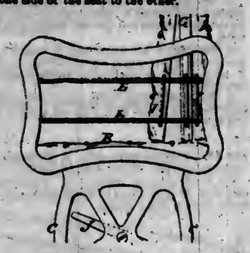
1. The U-shaped bail C, having tapered or flared extremities, embedded into the wood of the block, the said extremities receiving the riveted ends of the sheave-axle *a*, substantially in the manner shown, and for the purpose specified.

2. The U-shaped bail C, having tapered or flared extremities, with circular or polygonal bosses *c c*, to receive the riveted ends of the sheave-axle *a*, when the said extremities and bosses are embedded into the wood of the block, nearly or quite flush with the same, substantially in the manner shown, and for the purposes set forth.



168,449. CAR-SEATS. Edwin G. Wellman, Canandaigua, N. Y. [Filed Aug. 20, 1874.]

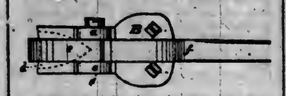
Brief.—A seat with a three-part back centrally divided, said back sliding on rods from one side of the seat to the other.



1. The three-part back, having sections F F, made each in two parts, divided on the line H, as and for the purpose described.

2. The combination of three connected joints F G F, having each a staple, I, with rods E E on the arms, as and for the purpose specified.

168,450. PINCH-BARS. William Wertz, Camden, N. J. [Filed June 27, 1874.]



1. The bar or lever A, with curved lifting-face *e* and reverse curve *f*, substantially as and for the purpose set forth.

2. The construction of the front end of the shoe B with a concave, *d*, as and for the purpose specified.

168,452. PARALLEL RULERS. H. Andrews, New Haven, Conn. [Filed July 13, 1874.]

Brief.—The parallel lines are ruled from the adjustable inclined bar, and the space between the lines depends upon the inclination of this bar.

1. The stationary bar A, provided with teeth in one edge, combined with the movable bar B, provided with a pawl, *d*, constructed so as to pass freely over the teeth in one direction, but to act against the teeth in the opposite direction, substantially as described.

2. In combination with the stationary bar A, provided with teeth in one edge, the movable bar B, provided with the pawl *d*, the adjustable bar C, substantially as described.

168,451. RABBIT STOCK-FENCES. Francis T. Wilson, Ames, Iowa, assignor to himself and B. J. Bartlett, same place. [Filed Oct. 2, 1874.]

Brief.—Two short pointed pieces are inserted into an eye formed in the horizontal wire, crossing each other and secured by a staple, so as to present points in four directions.



The combination of the pieces B and staple D with the eye A on the rod C of a wire fence, substantially as specified.

168,453. BRICK-MACHINES. Edwin F. Andrews, St. Louis, assignor of two-thirds his right to Alfred W. Roper, St. Louis, and Jos. D. Roebuck, Glasgow, Mo. [Filed Dec. 10, 1874.]

Brief.—Cams on a transverse shaft operate a tilt-hammer, and simultaneously, in the first instance, press against a block, (afterward tilted out of the way,) to move the mold forward for reception of the clay. The hammering thereon being completed, the mold is again automatically advanced to have its contents struck onto a table. The unceasing rotation of the cams now acts on other devices, to return the mold-carriage for another operation.

1. The combination of trip-hammer E F I, fixed mold-bottom U, and sliding portion S, substantially as set forth.

2. The sliding bottomless portion S, having extension S', to receive the clay, and combined with the reciprocating knife Y, all as set forth.

3. The combination of the sliding portion S with discharging-plunger *x*, having a guide, *y*, entering the groove *z* in the mold, all substantially as and for the purpose set forth.

4. The combination of the plunger or ram *x*, lever *s*, jointed arm or cam-yoke *a*, cam I', and sliding frame T, forcing the yoke into the course of the cam as the bottomless mold arrives at its discharging position, as described.

5. The combination of the reciprocating frames 4 and 9, having inclined lugs 8 and 10, and associated with rest I between the bars of the frame 3, all substantially as and for the purpose set forth.

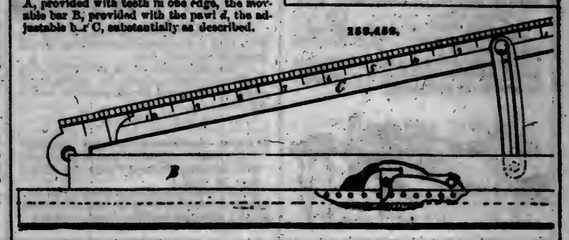
6. The combination of the feeler N, bell-cranks L and P, hammer-helve E, lugs or pins K, and hook Q, substantially as and for the purpose set forth.

7. The combination of the pin K, bell-crank L, feeler N, mold S U, hammer F, helve E, hook Q, and bell-crank P, to cause the filling of the mold until the same is filled to a certain height, when the filling is stopped, all substantially as set forth.

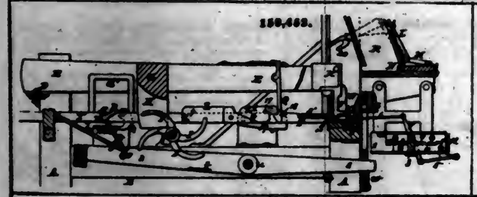
8. The combination of cams I', mold-slide T, tilting bearing-block Z, sliding block *b*, pin or lug *a*, ratchet-rod *c*, dog *c*, helve K, and fixed and adjustable stops *g* and *g'*, all substantially as set forth.

9. The combination of pivoted block or arm *j*, cam I', sliding frame T, cam-yoke *a*, lever *s*, pins *l*, hooks *k*, and ledges *m*, all substantially as and for the purpose set forth.

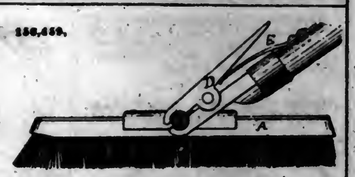
168,453.



156,453.



156,459.



A scrubbing-brush consisting of brushes A A; united by a plate, B B, having neck b and a holder, D E F, as shown and described.

156,454. SAW-CLAMPS. S. P. Babcock, Adrian, Mich. [Filed July 20, 1874.]

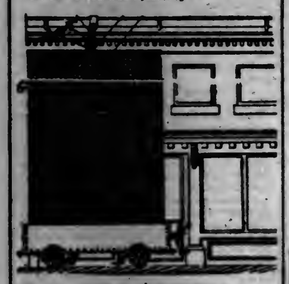
Brief.—Abutments within the jaws bear alternately to each other upon the saw, and prevent vibration. The movable jaw is adjusted for blades of different thickness by means of a bolt, which secures the straining-iron adjustably to the board.



1. The combination of the jaws A B, the former having the projections *i i*, and the latter the projection *j*, constructed and arranged as and for the purpose set forth.

2. The combination, with the jaw B, having the springs *c c* and the board D, of the lever H, straining-iron K, and bolt S, for adjusting the jaw B, as and for the purpose set forth.

156,455. FIRE-SHIELDS. John Babson, Boston, Mass., and J. B. Mulford, New York, N. Y. [Filed Oct. 3, 1874.]



A screen or apron, C, of asbestus-cloth, employed as a protection of buildings or other property from fire, in manner substantially as herein set forth.

156,456. HEEL-TRIMMING MACHINES. Cyrus C. Ballou, Albany, assignor to East New York Boot, Shoe, and Leather Manufacturing Company, New York, N. Y. [Filed Aug. 20, 1873.]

Brief.—The centering-spring is flattened in reverse directions, to permit it to play horizontally as well as vertically.



1. The combination of the cutter-head F, having the side flanges J J, with the knives H H, as and for the purpose herein set forth.

2. The cutter-head F, having projections *f f'* interlocking into the circular grooves of the rollers K and L, as and for the purpose specified.

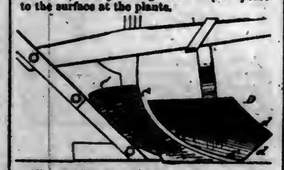
3. The inside roller, K, when arranged in relation to the shaft B, bushing E, and spring M, substantially as and for the purposes set forth.

4. The shaft B and cutter-head F, in combination with the spring D, and adjusting-screw N, substantially as and for the purpose herein described.

5. The centering-spring B, when flattened in reverse directions, as and for the purposes specified.

156,457. COTTON-SCRAPERS. G. W. Beard, Grenada, Miss. [Filed Nov. 16, 1874.]

Brief.—A concave scraper on a curved standard, its edge rising from the plow-point to the surface of the plants.



The combination, with bar-share plow C, of the scraper D, concaved on its working-face, and having the edge *d'* corresponding to that *c'* of plow, the said scraper and plow being secured to separate standards, and relatively arranged, as and for the purpose specified.

156,458. WASH-BOILER ATTACHMENTS. William J. Bennett, Beaver Dam, Wis. [Filed Dec. 11, 1874.]

Brief.—A secondary or false bottom has upturned lips, to prevent fabrics from stopping the cavities intended for the ascending seds. A slide-valve is also used to close the orifices at the inner sides of top ends of tubes at the ends of the false bottom.



1. The plate A, provided with the semicircular slots *a*, and upwardly-bent lips *b*, for the purposes herein set forth.

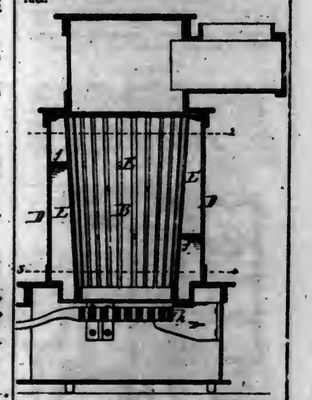
2. The combination of the perforated tube C, shield D, with rod *d* and the spring G, all substantially as and for the purposes herein set forth.

156,460. SCRUBBING-BRUSHES. Michael Biglin, Marr, assignor of one-half his right to M. F. Reap, Pleasant Valley, Pa. [Filed Nov. 21, 1874.]

Brief.—A casting attaches two brushes side by side, leaving a journal between the two, to which a clamping-handle is loosely attached.

156,460. FURNACES AND HEATERS. Felix Blasiczk and Georg W. M. Bauer, Vienna, Austria. [Filed Oct. 26, 1874.]

Brief.—The webs between the bars direct the uprising air lawardly through the mass of fuel.

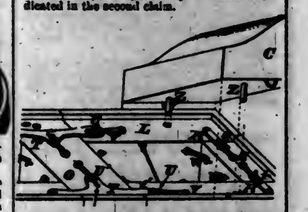


1. The combination, in a fire-box, of a casing, D, and a series of vertical plates or bars, E, arranged with their rear edges in contact with the said casing, to form intermediate air-channels, communicating at their lower ends with an air passage or chamber, all as and for the purpose set forth.

2. The combination, with the bars E, arranged within the casing D, of air-deflecting ribs *f* between the bars, as specified.

156,461. SECTIONAL MATTRESSES. George Block, Newport, Ky. [Filed Aug. 28, 1874.]

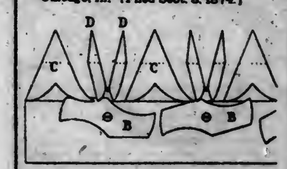
Brief.—The mattress consists of an upper and a lower section, each composed of several members, and the members of the lower section are coupled together by the devices indicated in the second claim.



1. The divided mattress consisting of the upper section A, composed of separable members C D E, and the lower section B, composed of two or more separable members coupled together, substantially as described.

2. The coupling devices consisting of slotted straps S T, staples Q U U', and hooks R V V', in combination with the several members I J K L M N O of the lower section B, substantially as set forth.

156,462. HARVESTER-CUTTERS. Edwin J. Blood, Vernon, Wis., and Albt. D. Hager, Chicago, Ill. [Filed Sept. 3, 1874.]



A finger-guard composed of alternate fingers C D D, constructed as shown and described, and finger E, with straight and slant ing sides, when combined and arranged to operate, in connection with knives B, in the manner substantially as and for the purpose set forth.

156,463. ATTACHMENTS OF BELLS TO HAMES. Mathew F. Boland, Philadelphia, Pa. [Filed Dec. 10, 1874.]



1. The bridge C, formed by prolonging and bending the metallic side band of a hame, and riveting the end of the band on the opposite side, substantially as described.

2. The bridge C, constructed as described, in combination with the bell D, substantially as and for the purpose specified.

156,464. BOTTLE-STOPPERS. Wendel Bourguignon, Providence, R. I. [Filed Oct. 24, 1874.]

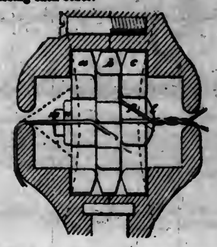
Brief.—By revolving a collar placed around the neck of the bottle, and having oppositely-inclined slots, the cap containing the cork is fastened in the bottle or removed therefrom.



In combination with the oppositely-inclined grooved band C, the cap A, provided with arms B B' and suitable fastening-pins *b b'*, constructed to operate substantially as and for the purpose set forth.

156,465. GRAIN-BINDERS. S. D. Carpenter, Madison, Wis. [Filed Dec. 8, 1874.]

Brief.—Three spur-wheels, united by a bolt, are located in a shuttle, which, as it moves along, causes the wheels to rotate and twist the band. When this is accomplished the wheels are caused to move at unequal rates of speed, when the wire is severed by the spurs or teeth passing each other.



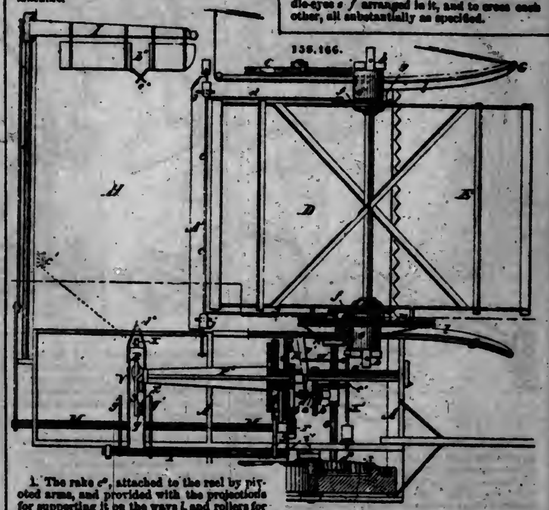
1. The herein-described twister, consisting of the three spur-wheels *a b c*, when constructed and arranged to operate substantially as described.

2. The shuttle-race D, provided with the cogs, constructed and arranged as herein described, whereby the twister is caused to twist the band, cut off the wire, and retain the spool end of the same, substantially as and for the purpose set forth.

3. The twister-wheels *a*, *b*, and *c* united by and journaled on a bolt which has no other support, the said wheels and bolt being fitted loosely within the shuttle, substantially as shown and described.

156,466. GRAIN-BINDING HARVESTERS. S. D. Carpenter, Madison, Wis. [Filed Dec. 8, 1874.]

Brief.—The cut grain that falls upon the platform is carried by a rake back upon a secondary platform, where it is carried by a sibling rake to the binding arrangement, and, when bound, automatically thrown from the machine.



156,466.

1. The rake *c'*, attached to the reel by pivoted arms, and provided with the projections for supporting it on the ways *l*, and rollers for supporting it on the platform, in combination with the actuating-cams *e*, all constructed and arranged to operate as and for the purpose set forth.

2. The cams *e*, arranged to be adjusted as set forth, whereby the movement of the rake *c* can be regulated, as described.

3. The rock-shaft Y, provided with the arms *g'*, arranged in relation to the binder in such a manner that said arms shall rest under the bundle while being bound, said shaft Y having attached the pivoted rods, arranged to be operated by the pin *i* of wheel *e*, substantially as described, whereby, when the bundle is bound, the arms *g'* are caused to remove it from the machine, as set forth.

4. In combination with the reel E and rake *c*, the cams *e*, levers *f*, and rods *h*, arranged to operate the rake, as set forth.

5. The platforms D and H, in combination with the reciprocating rake I and hinged cut-off A', arranged to operate substantially as and for the purpose set forth.

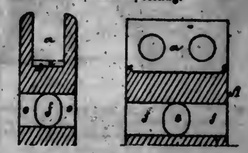
6. The swinging arm *s*, constructed and operated substantially as described, in combination with the rock-shaft M, provided with the pinion *r*, for imparting an intermittent reciprocating motion to the rake I, as set forth.

7. The wheel *u*, secured upon the shaft *n'*, and carrying the elbow-lever *r'*, in combination with the cam *t* and the shaft *o'*, with its pinion *p'*, arranged to operate as described, for imparting motion to the compressing or binding arms, as set forth.

8. The sheave or pulley X, inclosed within the spring-case *n'*, for guiding the binding-wire of a reaping and binding mechanism.

156,467. HAMMERS FOR DRESSING STONE. Wm. W. Castle, Belfast, Me. [Filed Dec. 9, 1874.]

Brief.—The hammer-head has recesses for holding the dressing chisels. Each of the recesses has two projecting lips, which prevent the chisel-heads from upsetting.

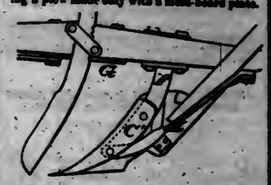


1. In a hammer for dressing stone, the head A, provided with the lips *e e*, arranged with each of its cutter-holding recesses *a*, as and for the purposes set forth.

2. The head as provided with the two handle-eyes *s f* arranged in it, and to cross each other, all substantially as specified.

156,468. STUMP-PLOWS. Vesco M. Charles, Clay City, Ill. [Filed Oct. 3, 1874.]

Brief.—Devices for bracing and strengthening a plow made only with a mold-board plate.

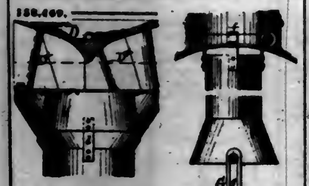


In a plow, the combination, with the narrow-flanged mold-board C, of the bifurcated standard F, and the portion *h*, curved and fitted to the back of the mold-board, the diagonal brace E, and brace I, substantially as and for the purpose set forth.

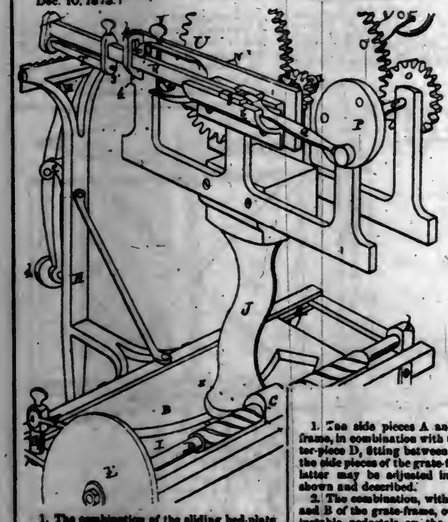
156,469. LOCOMOTIVE SMOKE-STACKS. Edwd. Cleary, Houston, Tex. [Filed Dec. 10, 1874.]

In combination with a smoke-stack, constructed as described, the petticoat-pipe F, provided with the springs *f* and the slotted bar G, substantially as and for the purpose shown and described.

No. 158,469.



No. 158,470.



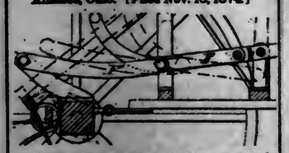
1. The combination of the sliding bed-plate B, provided with the segmental slot l and nut C, the adjustable standard J carrying the filing mechanism, the screw D, the disk E, provided on its face with a series of concentric circles divided as described, and the adjustable index F, all constructed and arranged to operate substantially as and for the purposes herein set forth.

2. In combination with the reciprocating filing-bar R, the pressure-spring U with roller l, for the purposes herein set forth.

3. The combination, with the reciprocating filing-bar R, of the pressure-spring U, roller l, and adjusting-screw V, substantially as and for the purposes herein set forth.

No. 158,470. SAW-FILING MACHINES. Jerome Cleveland, Tecumseh, Mich., assignor to himself and H. Haines, same place. [Filed Dec. 10, 1873.]

No. 158,471. HORSE HAY-RAKES. A. W. Coates, Alliance, Ohio. [Filed Nov. 16, 1874.]



The foot-lever G G', pivoted over a front-closed and rear-open box, g, and combined on a hay-rake with the toggle F F', as and for the purposes specified.

No. 158,472. GRATE-FRAMES. H. M. Creamer, Brooklyn, N. Y. [Filed Sept. 5, 1874.]

Brief.—The frame is adjustable both vertically and horizontally, to adapt it for different-sized fire-places.

No. 158,472.

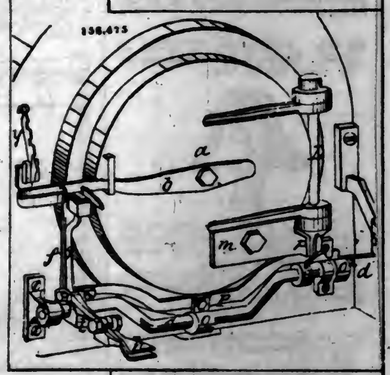


1. The side pieces A and B of the grate-frame, in combination with the adjustable center-piece D, fitting between the upper ends of the side pieces of the grate-frame, whereby the latter may be adjusted in width, as herein shown and described.

2. The combination, with the side pieces A and B of the grate-frame, of the vertically-adjustable pedestals on the lower ends of the side pieces for adjusting the same in height, substantially as and for the object specified.

3. An adjustable or variable grate-frame, consisting of two separate pieces constructed to join at the top and center, two separate pedestals, a separate center-piece, and means of uniting them, combined substantially as herein described.

No. 158,473.



A shirt bosom provided with the graduated scale D, by which to cut out the front neck-piece, and the graduated scale E, by which to cut out the rear neck-piece, substantially as described.

No. 158,473. OX-SHOES. John R. Davis, Bradford, Vt., assignor of one-half his right to George Baldwin, same place. [Filed Nov. 21, 1874.]

Brief.—The foot or upper surface of the shoe is provided with two cavities for the reception of the soft parts of the divided hoof, and the tread-surface with double side calks.



1. The sectional ox-shoe, having the recess *b* for the reception of the pad, and the recess *b'* for the reception of the head of an ox's hoof, substantially as specified.

2. In a sectional ox-shoe, the combination of the calks *d d'* and the flanges *e e'* upon the lower lateral edges thereof, substantially as and for the purpose set forth.

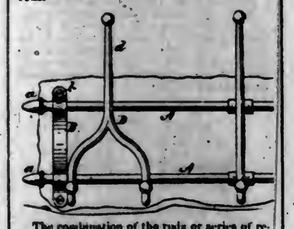
No. 158,474. DEVICES FOR OPENING AND CLOSING FURNACE-DOORS. Saml. L. Denney, Gap, Pa. [Filed Nov. 16, 1874.]

Brief.—By depressing the first lever the latch is disengaged. By continuing the pressure the lower lever is depressed, which operates a shaft having an arm that connects with the door near the hinge. The door is closed by a second arm on the shaft, which operates on a lug projecting from a plate on the door.

The combination of the shaft *e*, stands *d d*, levers *c* and A, lifting-rod *g*, horizontal lever F, arms *c' c''*, plate *m*, spring *w*, and catch-spring X, substantially in the manner as herein set forth.

No. 158,475. CLOTHES AND HAT RACKS. R. R. Dorr, Burlington, Iowa. [Filed July 22, 1874.]

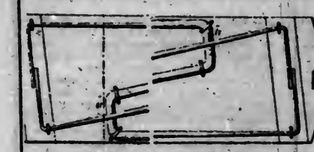
Brief.—The rods are provided with screw-cap nuts, and the hooks are adjustable on the rods.



The combination of the rods or series of removable rods A A, brackets B, screw-cap nuts *a*, and adjustable hooks D, substantially as and for the purpose specified.

No. 158,476. SHEET-BOOMS. Thos. M. Denham and Edward Denham, New Bedford, Mass. [Filed Nov. 26, 1874.]

No. 158,477. TORSION-SPRINGS. Richd. Dudley, Erie, Pa. [Filed Dec. 10, 1874.]

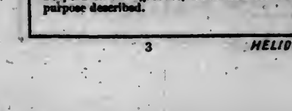


1. The torsion-spring B, formed with a curve at its head *b*, said head being so bent as to allow the long arm of the opposite spring to pass over or under the same, substantially as described.

2. A torsion-spring, B, having the long arm B of a tapering form, substantially as and for the purpose specified.

No. 158,478. FIRE-SHOVELS. Jas. Edgar, New York, and Alfred Bardell, Brooklyn, N. Y. [Filed Nov. 26, 1874.]

Brief.—The edges of the upper sheet being bent over the edges of the lower, a smooth surface is formed for the grasp of the hand.



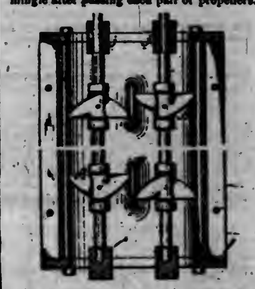
The combination of the protector C with the extension or handle B of a sheet-metal fire-shovel, the protector being constructed to cover and overlap the edges of the handle, and secured thereon, substantially in the manner herein shown and described.

No. 158,479. CURLING-IRONS. Sigmond Feder and L. Rosenstein, Memphis, Tenn. [Filed Aug. 16, 1874.]

In a curling-iron composed of the concentric tubes A B, the combination of the point B' and nozzle B* with the point A' and nozzle A*, substantially as shown and specified.

No. 158,480. ROTARY PUMPS. G. S. Follensbee, Lewiston, Me. [Filed June 20, 1874.]

Brief.—The propellers upon the parallel shafts are placed opposite each other, and are separated by diaphragms to counteract the whirling movement of the currents, which mingle after passing each pair of propellers.



1. The combination of the casing D of oblong or elliptical sectional form, its partitions *a* and parallel shafts B B', carrying propellers A A, arranged adjacent to the said partitions, substantially as described.

2. The combination of the flanged sections *b b'* of the casing, the longitudinal grooves formed in the same, and the rope packing *d*, adapted to said grooves, all as and for the purpose described.

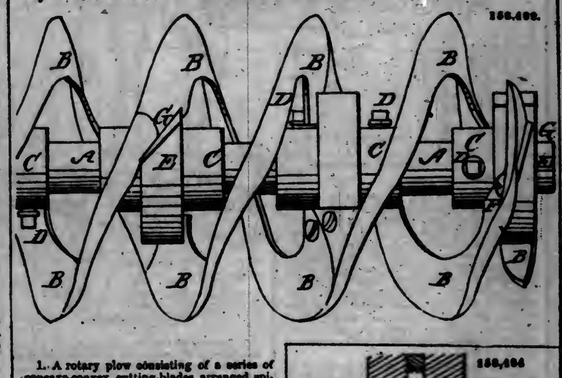
No. 158,481. SLEDS. Stephen E. Foster, Minneapolis, Minn. [Filed Dec. 6, 1874.]



The plates *a e*, provided with a semicircular depression and bolts *b b*, in combination with bars C, cross-beam B, and runners A A, substantially as and for the purpose set forth.

No. 158,482. ROTARY PLOWS. Wm. H. Foyo, San Francisco, Cal. [Filed Dec. 22, 1874.]

Brief.—Circular knives, made in sections, are coiled around a shaft in continuous spiral form. These knives are concavo-convex in cross-section, and are sufficiently thin to be somewhat flexible. They are secured to movable collars upon the shaft, by which means they can be sprung apart or compressed, to vary the width of furrow



1. A rotary plow consisting of a series of concavo-convex cutting-blades arranged spirally around a supporting and driving shaft, substantially as described, for the purpose specified.

2. The spiral cutting-blades adapted for adjustment upon the shaft, for the purpose of regulating their cut, and the consequent width of the furrows, substantially as described.

3. The combination of the adjustable collars and slotted wedges with the concavo-convex cutting-blades and the main supporting-shaft, substantially as described, for the purpose specified.

4. A rotary plow having two sets of concavo-convex blades arranged spirally around the supporting-shaft, so as to extend outward in opposite directions from the center thereof toward the ends, substantially as described, for the purpose specified.

5. The blades of a rotary plow, each made with a spiral curve, and with a concavo-convex form transversely, substantially as described, for the purpose specified.

No. 158,483. SODA-WATER AND SYRUP COCKS. William Gee, New York, N. Y. [Filed Dec. 1, 1874.]

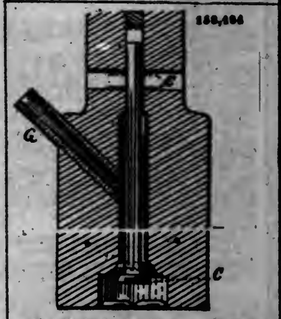
Brief.—The soda-water passes under the main valve of the cock into the passage in the stem, and enters the chamber in the elbow, from whence it passes into the tube through the perforations, by means of which an unbroken column is produced, and also a gentle draft of the syrup, which causes both to be thoroughly mixed as they enter the tumbler.

The perforated tube E, in combination with the chamber *t* in the elbow *f*, substantially as and for the purpose shown and described.

No. 158,484. DIES FOR HEADING BOLTS. Robt. Gracey, Alliance, Ohio, assignor of two-thirds his right to Chas. E. Marchand and Thos. E. Morgan, same place. [Filed July 10, 1874.]

Brief.—The die is in the main rectangular, but at the orifice is to a slight depth circular, and of a diameter equal to that of the die proper diagonally. The valve, to permit, when open, the flow of water, closes by contact with the bolt-blank, but, so soon as contact has ceased, opens again by the weight of its stem, or, that failing, by the force of a spring.

No. 158,484

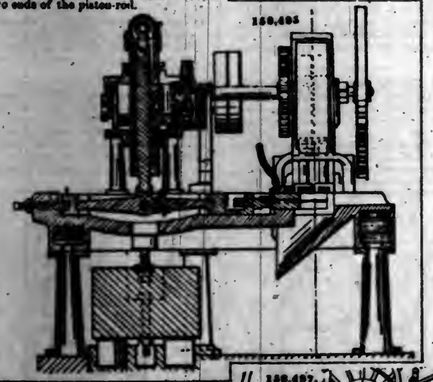


1. A die for forming heads upon bolts and screws, having a cavity in its outer surface for shaping the heads, an aperture extending therefrom, in which a valve is placed for controlling the flow of water through said cavity for the purpose of washing away any oxide or dirt which may accumulate therein, and for keeping the die cool while in use, and the latter provided with a tube or passage for conducting the water to the aperture through which the valve-stem moves, substantially as described.

2. In a die for forming heads upon bolts and screws, the combination of a heading-cavity, the valve C, stop E, spring F, and water-induction pipe G, the parts being arranged to operate substantially as and for the purpose set forth.

156,486. MACHINES FOR HEADING BOLTS. Robt. Ormsby, Allianee, Ohio, assignor of two-thirds his right to Chas. E. Marchand and Thos. B. Morgan, same place. [Filed July 10, 1874.]

Brief.—The movable section of the griping-die is actuated, through the medium of toggle-links, by the weight of a heavy cam-yoke, to close the die, and by a cam that raises the yoke and toggles to open it. The header is actuated, through the medium of toggle-links, by a steam-engine, to raise the toggles and retract the header, and by a weight to distend the toggles and impart the blow, the weight and toggles being connected, respectively, to the two ends of the piston-rod.



1. The combination, substantially as described and shown, of the devices for griping the bolt-blank, comprehending the dies E K, toggle-links L, cams X, and weighted cam-yoke Y, the devices for heading the bolt, comprehending the header H, toggle-links J, and the weight S, and the steam-engine for elevating said toggle-links J and weight S.

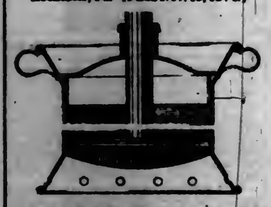
2. The mode of combination of the drop-weight S, the toggle-links J, and the steam-engine, said toggle-links and weight being connected to the two extremities of the piston-rod of said engine, substantially as shown and described.

3. The combination, as described and shown, of the toggle-links L, cams X, and the weighted cam-yoke Y with the dies E K.

4. The combination, with the devices as specified in the first claim for griping and heading the bolt-blank and the steam-engine, of cam E and weighted lever d, for reciprocating the valve of said engine.

5. The combination of the weight S, rods T T, adjusting-nuts b b, cross-head E, piston-rod P, connecting-rod V, toggle-levers J J', and heading-die H, the parts being arranged substantially as described and shown, whereby the heading-die, which forms a stop for the blank when it is inserted, is made adjustable for the purpose of determining the amount of metal which shall constitute the head of the bolt or other device.

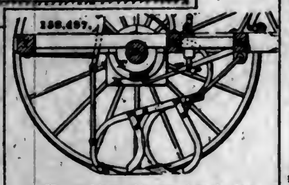
156,496. STARCH-STRAINERS. W. Graham, Rochester, Pa. [Filed Nov. 18, 1874.]



In starch-strainers having perforated walls A, the combination of the plunger B, grooved disk C, and gum ring D, substantially as shown and described.

156,497. CORN-PLANTERS. Marshall Gregg, California, Mo., assignor of one-half his right to William A. Lyons, Chamois, Mo. [Filed Sept. 9, 1874.]

Brief.—Within the frame are secured seed boxes, through which passes the axle of the bearing-wheels for agitating the seed. Upon this axle is secured a cam-wheel, which strikes as it revolves the projecting ends of the slides moving in the seed-boxes below the axle. The slides are retracted by spring-bars, which are forced apart (carrying the seed-slides out of contact with the cam-wheel) by a T-shaped lever working between them.



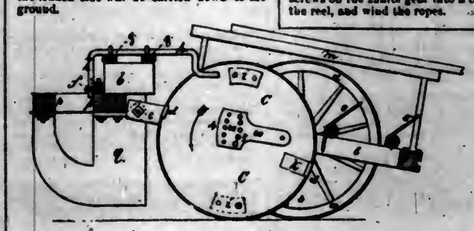
1. The seed-boxes M, secured to the frame, and having the axle-shaft B passing through them, in combination with the seed-dropping device D D, as and for the purpose set forth.

2. The combination of the cam E, fast upon the axle-shaft, the slides D, the inner ends of which bear against the cam, the springs F F, and seed-boxes M, secured to the frame directly over the axle, substantially as set forth.

3. The combination of the cam E, seed-slides D D, springs F F, and spreader or two-armed lever P, substantially as and for the purpose set forth.

156,498. CORN-PLANTERS. Henry P. Hall, Bloomington, Ill. [Filed Sept. 12, 1874.]

Brief.—Within adjustable bearings, near the center of the frame, is placed a wheel provided on its periphery with markers and cams, the latter striking in their rotation the rear ends of bent rocking arms, which actuate the seed-slides. To check inaccuracies in planting, the cam-wheel has a lead inserted into its periphery, so that when the wheel is raised the loaded side will be carried down to the ground.

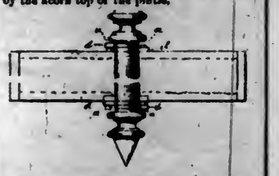


1. The wheel C, provided with the markers *d d*, weight *h*, and cams *i i*, and made adjustable in adjustable plates or bearings *n n*, attached to a frame connected with a corn-planter, for the purposes herein set forth.

2. The combination of the adjustable weighted marking-wheel C, provided with cams *i i*, the crank-shafts A A, and the sliding bar *f*, which forms or is connected to the dropping mechanism of a corn-planter, substantially as and for the purposes herein set forth.

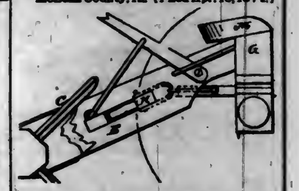
156,499. HINGES. Frederick J. Hattorf, New Haven, Conn. [Filed Dec. 5, 1874.]

Brief.—A pair of permanent attaching plates, constructed with a trunnion at each end, and a flange upon their outer edge, are fitted with a corresponding pair of plated or ornamental covering plates carrying the eye and pintle, and constituting the hinge proper. These covering-plates are held in place by suitable link-connections, which engage both the pintle and the trunnions, and are secured by the acorn top of the pintle.



The permanent plates A B, each constructed with the flange C upon its outer edge, and with a trunnion, *c*, at each end, combined with the jointed covering-plate D and links *d d*, substantially as described.

156,500. HORSE HAY-RAKES. A. T. HAYS, McLean County, Ill. [Filed Apr. 16, 1874.]

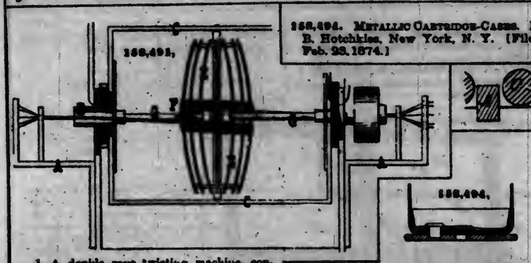


The combination, with the front axle, sand-board, and wheels of a wagon, of the bolster G, the inclined arms E E, rigidly connected to the bolster, the coupling I flexibly connected to the cross-bar H, and king-bolt *b*, and the rake-head A, provided with turn-teeth C C at each end, and turn-teeth D D at the center, all substantially as and for the purposes herein set forth.

156,501. ROPE AND CORDAGE MACHINES. Luther B. Kirby, Belleville, N. J. [Filed June 30, 1874.]

Brief.—A two-part reel is journaled in the spinning-frame at right angles to it. The spinning-frame has hollow bearings, and the strands, led through these at either end, are twisted into ropes. Pinions on shafts at either side of the frame gear into stationary cog-wheels, and, as the frame revolves, endless screws on the shafts gear into a cog-wheel on the reel, and wind the ropes.

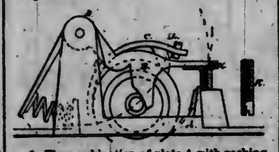
156,494. METALLIC CARTRIDGE-CASES. B. B. Hotchkiss, New York, N. Y. [Filed Feb. 23, 1874.]



A metallic cartridge-case having a valve opening inward, substantially as and for the purposes herein specified.

156,495. SAW-HOLDERS. R. B. Hugunin, New York, N. Y. [Filed Dec. 30, 1874.]

Brief.—A ratchet-wheel composed of a series of wheels fastened together, and having their teeth at irregular distances from each other, is secured upon the set-shaft and acted upon by a set of pawls of different lengths.



1. The combination of plate A with rocking arm B, roller M, and the arm-adjusting screw E, substantially as and for the purposes specified.

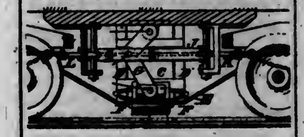
2. The combination of plate A with rocking arm B, roller M, arm-adjusting screw E, and the double-armed balance-clamp adjusting-screw L, substantially as and for the purposes specified.

3. The combination of plate A with roller-arm B, roller M, arm-adjusting screw E, and depression extending inwardly from the plate furnished with screw-thread at its deepest point, substantially as and for the purposes specified.

4. The combination of plate A, roller-arm B, roller M, and the arm-adjusting screw E, having a neck, F, and a bearing, H, and working through a slot or opening, G, in arm B, substantially as and for the purposes specified.

156,496. CAR-BRAKES. Numon N. Horton, Kansas City, Mo. [Filed Nov. 26, 1874.]

Brief.—Brake-shoes applied to rails, and operated and retracted in vertical guides by force applied near their bottom. Levers and chains so combined that the brake will be operated by a draft from either end of the car.



1. The combination of the brake-shoes C C, to work within vertical guides D D, the transverse beam I, bearing on said shoes near their lower ends, and the springs E E for elevating the shoes when released, all constructed and to operate substantially as set forth.

2. The combination of the brake-shoes C C, transverse beam I, toggle-lever G, and universal knuckle-joint H, as and for the purposes set forth.

3. The combination, with the brake-shoes C C and transverse beam I, of the toggle G, the yoke J, and the horizontal levers K L, for permitting the movement of the toggle in one and the same direction by a draft from either end of the car, as set forth.

156,502. HEAD-BLOCKS FOR SAW-MILLS. John R. Jackson, Putnamville, Ind. [Filed Sept. 5, 1874.]

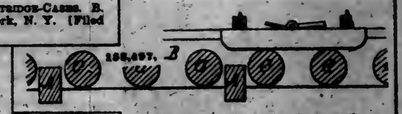
Brief.—The rollers in the stringers for a roller-sled for logs are made detachable by cross-trees provided with cars and wedges. The sled is provided with side rollers and a crank brake-lever with friction-shoes.



Ratchet-wheel *e*, dogs *g*, frame *v*, gage *o*, pawls *s*, and the two levers *t* and *k*, all arranged and combined as and for the purpose described.

156,497. ROLLER LOG-SLIDES. Chancey B. Jackson and Chas. N. Humphrey, Philipsburg, Pa.; said Humphrey assignor of his right to Hoover, Harris & Co. [Filed Nov. 21, 1874.]

Brief.—Set-screws are arranged with the balance-arms, roller, and springs of a sash-holder, so as to graduate the pressure at will, without removing the fixture from the sash-frame.



1. The log-sled D, having horizontally-rotating anti-friction wheels E, in combination with the crank-shaft B, provided with shoes *s s* and rollers O O, journaled in the stringers B B, the upper surfaces of which are provided with metallic strips *b b*, substantially as described and for the purpose set forth.

2. The detachable rollers C, stringers B, and cross-trees A, combined and arranged substantially as specified.

156,498. STEEL BRUSHES FOR CLEANING CASTINGS. Chas. W. Jenkins, Richmond, Va. [Filed July 8, 1874.]

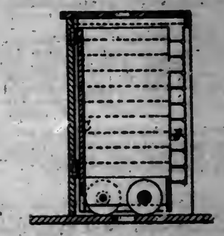
Brief.—The removable tufts of steel are held in place in the back of the brush by a hinged cover.



The body A, provided with conical openings, in combination with the grooves D and their conical heads, and the cover B, as and for the purpose set forth.

156,499. FRUIT-DRIERS. Edgar A. Jones, Sturgis, and Chas. W. Jones, Centreville, Mich. [Filed Aug. 26, 1874.]

Brief.—The car is placed in a heated chamber to be filled with fruit. As each sliding shelf or screen is inserted in the car, a corresponding damper in the wall of the chamber is closed to prevent access of cold air. When the car is filled it is removed to a drying-chamber.



1. In a fruit-drier, the hot-air chamber, permanently closed on two sides, with a door to admit a car, and having its front closed by L-shaped slats, provided with suitable means for retaining them in proper position, as and for the purpose set forth.

2. The combination, with the hot-air chamber A, of the car or truck C, closed on three sides, and provided with fruit-screens, and having its open front closed by the L-shaped slats on the front of said chamber, corresponding in number to said screens, as and for the purpose set forth.

156,500. CAR-LAMPS. John Kirby, Jr., Adrian, Mich. [Filed July 24, 1874.]

Brief.—A car-lamp frame adapted to a candle-holder and its globe is fitted to receive a lamp and its chimney.

In a car-lamp having a smoke-pipe, E, and upper and lower spring globe-holders E F, and a frame, the combination of the annular reflector F, having the chimney-holding springs *e*, with the brace-ring *e*, as and for the purpose described.

No. 158,500.



158,501. TORPEDO-BOATS. H. F. Knapp, New York, N. Y. [Filed Sept. 23, 1873.]

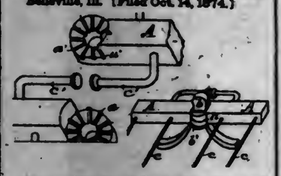


1. The combination of the propeller D and propeller-shaft C with the percussion-torpedo E, all arranged as specified.

2. The rudder J, combined with the spring L and plates g, as and for the purpose described.

3. The combination of the flexible tube N with the cylinder M, piston g, rudder J, and spring L, all arranged as specified.

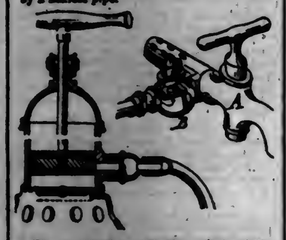
158,502. GAGE FOR ANIMALS. A. Kuntze, Belleville, Ill. [Filed Oct. 14, 1874.]



The combination of the bars A A', journal a, having groove a' and cogs a², prongs c, clamps c', screws b b', all constructed to operate as and for the purpose set forth.

158,503. APPARATUS FOR AERATING ALE AND BEER IN CASES. Moses Lajoie and Mathias Poncelet, Detroit, Mich. [Filed Nov. 7, 1874.]

Brief.—A check-valve in connection with a cock, and an air-pump connected therewith by a flexible pipe.



The combination, with the cock A, of the check-valve B, and an air-pump connected therewith by a flexible pipe, substantially as and for the purpose set forth.

158,504. SHOW-CASES. Adam Lange and Carl Lange, St. Louis, Mo. [Filed Aug. 12, 1874.]

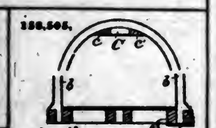
Brief.—A round front case combined with a square case, and so connected as to form one complete show-case.

158,505.



The bottom and top cases A B, having panels E, a, c', c², and c³, side panels d d', panes d² d³ D d' c', and transparent doors F, forming the complete show-case, as herein shown and described.

158,505.



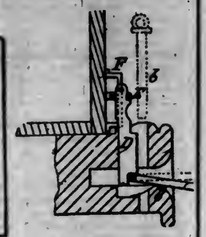
158,506. CONSTRUCTION OF RAILWAY-CARS. John B. Looper, Godfrey, Ill. [Filed June 6, 1874.]

Brief.—Improvement on Patent No. 147,777.

1. The air-passage C and lintels c c', in combination with the body composed of the inner and outer shells a a', ribs B, and bottom sills A A' A², substantially as and for the purpose set forth.

2. The air-tight doors D, having rubber facing d, in combination with a car having open bottom air-spaces b, and the body of which is composed of ribs B and inner and outer shells a a', substantially as shown and described.

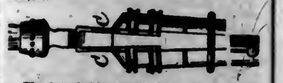
158,507. CAR-COUPLINGS. Peter L. Monk, Paris, Ill. [Filed Apr. 25, 1874.]



The lever E, secured by staple F and supported by spring c, in combination with the vertically-movable notched pin D and front bearing b', substantially as and for the purpose set forth.

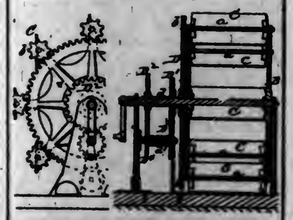
158,508. BRUSH AND MOP HOLDERS. John O. Montignani, Albany, N. Y. [Filed Oct. 23, 1874.]

Brief.—The clamps that hold the mop or brush are cast with sockets at their ends for the reception of the two prongs of the split handle.



The detachable metallic clamping-jaws C C, each constructed with a socket, c, and notches or serrations, in combination with a handle, A, having the elastic arms a a, and carrying the sliding clamping-ring D, the whole being arranged for operation, substantially as and for the purpose described.

158,509. FEATHERING PADDLE-WHEELS. J. S. Morgan, Hazleton, Ind. [Filed Oct. 27, 1874.]



The combination, with the shaft A and bands B B, of the pivoted buckets or paddles C C, with pinions b b, the gear-wheels D D' placed loosely on the shaft, the gear-wheel D² secured to the shaft, and the gear-wheels D³ D⁴ placed on a counter-shaft, c, all constructed and arranged to operate substantially as and for the purposes herein set forth.

158,510. RECIPROCATING STEAM-ENGINES. John C. Clark, Elmira, N. Y., administrator of Milton V. Nobles, deceased, assignor to Elmira Steam-Engine Company, same place. [Filed Oct. 10, 1874.]

1. In a steam-engine, the rotary valve D, consisting of a transverse body, w, and two segment-shaped wings, n n', extending from the opposite sides thereof in different but parallel planes, thereby forming in the face and back of the valve segment-shaped steam and exhaust recesses, substantially as specified.

2. The combination, with the rotary valve D, having the semicircular wings n n', and the rear rotating exhaust-recess r, of the steam-chest A², the cylindrical head C, forming the valve-seat, its rim-ports s s', and annular exhaust-channel s', communicating with the exhaust-pipe, substantially as specified.

3. The rotary valve D, having the semicircular wings n n' and transverse body w, in combination with the rim-ports s s' of a steam-chest, substantially as described.

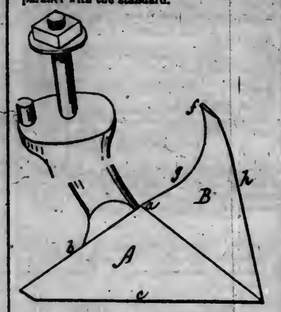
4. The combination, with the steam-chest A², steam-cylinders A A', and steam-passages a a', of the rotary valve D, having the semicircular wings n n', forming steam and exhaust recesses, and the head C, having the annular groove s', communicating with the exhaust-outlet s', substantially as specified.

5. The sleeve g, having the shoulders h opposite each other, and the pin i on crank-shaft E, in combination with the double-plane rotary valve D, steam-passages a a', and the rotating exhaust-recess r, for the purpose of reversing the engine, in the manner set forth.

6. The combination, with the transverse body w, of the rotary valve D, its semicircular wings n n', and the rim-ports of the steam-chest, of the elastic packing p p, recessed into the ends of said transverse body, substantially as specified.

158,512. CULTIVATOR-TEETH. Rodney P. Odell, Jr., Parma Centre, assignee of one-half his right to S. K. Odell, North Greece, N. Y. [Filed Dec. 3, 1874.]

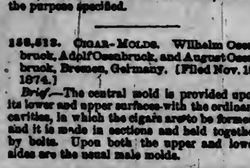
Brief.—The tooth on one side is curved upward, ending in an oblique point, standing parallel with the standard.



A cultivator-tooth, consisting of the wing A and land-side B, formed in a single piece, the wing being made in the form of an equilateral triangle, with the square corner d, and the land-side provided with the upright curved point f, standing back from the rear of the tooth, as herein shown and described, and for the purpose specified.

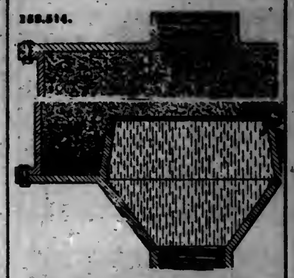
158,513. GEAR-MOLDS. Wilhelm Osenbruck, Adolf Osenbruck, and August Osenbruck, Bremen, Germany. [Filed Nov. 19, 1874.]

Brief.—The central mold is provided upon its lower and upper surfaces with the ordinary cavities, in which the cigars are to be formed, and it is made in sections and held together by bolts. Upon both the upper and lower sides are the usual male molds.



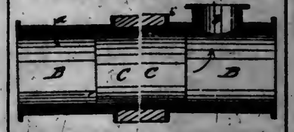
The combination, in a cigar-mold, of the central body A, constructed with sockets E in its upper and lower surfaces; the top and bottom parts B C, each constructed with the segments G, having sockets, and fitting within the upper and lower sockets E of the central body A; and the cross-bands F, connecting the parts together, substantially in the manner and for the object specified.

158,514.



158,515. GAS-RETORTS. Saml. P. Parham, New York, N. Y. [Filed Aug. 15, 1874.]

Brief.—The lining is of wrought-iron, and is cemented at the ends to the neck-pieces of the retort. A slight air-space is left between it and the clay shell, to permit expansion.



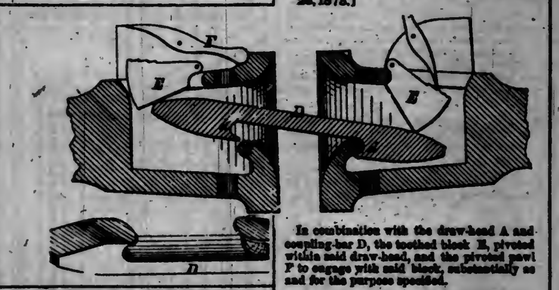
As a new article of manufacture, a retort for making an illuminating-gas directly from liquid naphtha, consisting of clay shell A, lining C, extending beyond both ends of the clay-shell and into the necks of the retort, and the end tubes B a B b, all attached as shown and described.

158,516. STEAM-GENERATORS FOR COOKING, &c. Thos. T. Pearson, Hopewell Corners, Canada. [Filed May 9, 1874.]



A steam-generator for cooking and other purposes, constructed substantially as described—that is, having a generating-chamber, A, a water-chamber, B, aperture E, tube F, and hole D, arranged to operate as described.

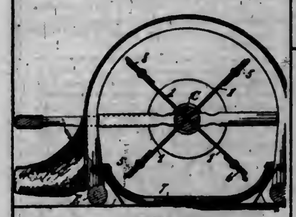
158,517. CAR-COUPLINGS. Winfield S. Peck, North Norwich, N. Y. [Filed Apr. 28, 1873.]



In combination with the draw-head A and coupling-bar D, the toothed block E, pivoted within said draw-head, and the pivoted pawl F to engage with said block, substantially as and for the purpose specified.

158,518. CHIMNEY-CUTTERS. M. Phillips, Springfield, Ill. [Filed Oct. 30, 1874.]

Brief.—A triangular knife, pivoted near the top of its perpendicular, has edges upon its base and perpendicular, to cut downwardly and toward the slotted central column, which rotates with it to the desired line of cutting.



1. In combination with the shaft or axle, the leather or other elastic arms I I, for supporting the beaters or fans, mortised and secured in the axle and locked to each other, substantially as shown and described.

2. The beater or beaters C, formed of leather or other similar flexible material, constructed and applied substantially as shown and described.

3. In combination with the drop flaps or pans D, the elastic plate f, applied substantially as described, and serving to press the flap: downward, and also to prevent the escape of dust.

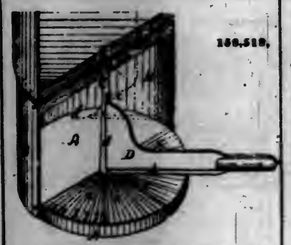
4. In combination with the case, the pasteboard end pieces B, having the elastic pieces f applied to them, substantially as and for the purpose set forth.

158,519. FILTERS. John Outerson and A. Outerson, Windsor Locks, Conn. [Filed Sept. 10, 1874.]

Brief.—The filtering medium is composed of paper-maker's half-stuff.

A filter composed of paper-makers' half-stuff, contained in a suitable vessel.

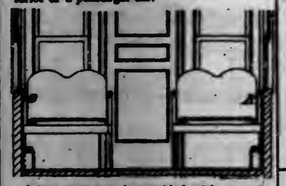
156,519.



In combination with the cheese-box A B, and with the slotted bar C journaled therein, the knife D, having two cutting-edges, *d* and *d*, relatively arranged substantially as and for the purpose specified.

156,520. PASSENGER-CARS. Daniel Price, Lockport, N. Y. [Filed June 22, 1874.]

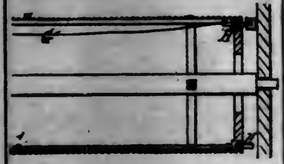
Brief.—Metallic lining throughout the interior of a passenger-car.



A passenger-car, A, provided with a metal lining, B, substantially as shown and described.

156,521. FLOUR-BOLTS. Lewis V. Bathbun, East Pembroke, N. Y. [Filed May 26, 1874.]

Brief.—Devices for cleaning the meshes of the bolting-cloth.



1. In a bolting-reel for flouring-mills, the whipping-cord G, located within the reel and directly beneath the cloth, the spring H, to which the end of the cord is attached, and the cam *l*, against which the spring acts, the whole combined as described, to produce the whipping motion on the inner surface of the cloth, as and for the purposes specified.

2. The bolt *h*, spring *f*, offset *i*, and inclined end *k*, in combination with the cords G and cam *l*, as and for the purposes specified.

156,522. UNITING HANDLES TO SAD-IRONS. William J. Reagan, Boyer's Ford, Pa., assignor to Boyer's Ford Iron Foundry, same place. [Filed Nov. 4, 1874.]

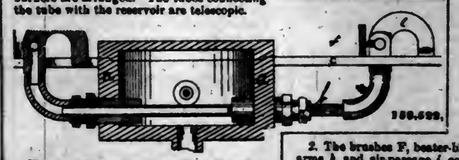
Brief.—The handle is formed with double-beveled recesses, and united to the body of the sad-iron in the process of casting.



The within-described sad-iron handle, having a transverse dovetailed and beveled recess or recesses, as and for the purpose set forth.

156,523. TIRE-HEATING APPARATUS. Saml. G. Reed, Wellesley, Mass. [Filed June 15, 1874.]

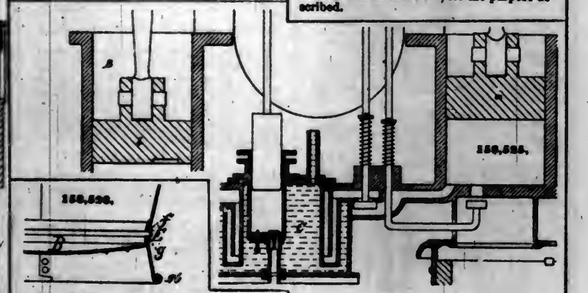
Brief.—Each of the tire-supports radiating from the chamber is accompanied by a row of gas-burners and a guard, the latter turning as upon a pintle on the tube on which the burners are arranged. The tubes connecting the tube with the reservoir are telescopic.



156,522.

The combination, substantially as described, of the cylinder *a*, slotted supports *c c c*, telescoping pipes *b b b*, guards *e e e*, and swiveled burners *f f f*, as and for the purpose set forth.

156,524. COAL-SCUTTLES. H. Reynolds, Green Point, N. Y. [Filed Aug. 12, 1874.]



156,525.

156,526.

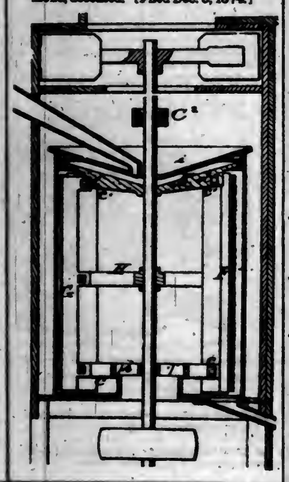
The solid bottom B of a coal-hod, having an upturned flange, D, and in the flange an external bead, E, forming the shoulders *f g*, the former to receive the lower edge of the body A, and the latter to rest upon the upper edge of the base C, the bottom B and the lower portion of the upturned flange being embraced within the upper portion of the base C, as shown and described.

156,525. BEATER-BLADES. Alex. K. Rider, Walden, N. Y., assignor to Rider, Worcester & Co., same place. [Filed May 20, 1874.]

Brief.—The pump draws a part of the heated air from the main cylinder; the remainder is condensed by the cooler.

The exhaustive pump B, combined with the main cylinder A and cooler or condenser C, so as to work with a partial vacuum, substantially as set forth.

156,526. BRUSH-MILLS. William Richmond, Lockport, N. Y., executor of James Richmond, deceased. [Filed Dec. 6, 1874.]



1. The brushes F F, provided with serrated lugs *b b*, which engage with corresponding serrations on the arms *c* and flanges *c'*, in combination with the beater-blades G attached directly to the brush-heads by the bolts *d*, and spiders H, substantially as described, and for the purpose set forth.

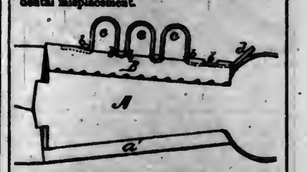
2. The brushes F, beater-blades G, oblique arms *h*, and air-passage *i*, combined and arranged with case D in the manner and for the purposes described.

3. The notched lugs *b b* and the brushes F, combined with teeth on arms C and flanges C', and with bolts *d* for adjusting the brushes, substantially as described.

4. Smut-mill brushes F, having angular or double-beveled backs *e e*, for the purpose described.

156,527. SHEEP-SHEARS. Frederick Riedling, Upper Sandusky, Ohio. [Filed Dec. 5, 1874.]

Brief.—A detachable leather covering is closely fitted to the shank of a pair of sheep-shears, and a continuous leather strap is so arranged that, passing through suitable slots in this covering, it is made to form adjustable loops or finger-stalls, the use of which gives a better clasp, and prevents slipping or accidental misplacement.



1. The combination, with the shank of a pair of sheep-shears, of the loops *s* of continuous strap C, held by a suitable securing device, substantially as specified.

2. The combination, with the covering B, having slots *h* of the continuous strap C, arranged in the said slots, so as to form adjustable loops or finger-stalls *s*, substantially as specified.

156,527. GAS-REGULATORS. Silas C. Sellsbury, New York, N. Y. [Filed Aug. 19, 1874.]

Brief.—The valve is supported apart from its seat by legs, which also keep it apart from the tube in which it moves. The valve-seat and a superposed seat are adjustable. The valve and seats are inclosed in a case slightly tapered to fit closely into a gas-pipe. The whole may be coupled between gas-pipes.

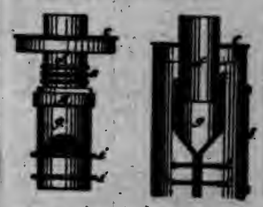


1. The valve B, provided with astem, G, and lugs *c c*, in combination with adjustable rings C and I, and tube A, to keep the valve in proper position.

2. As a new article of manufacture, a valve, B, provided with a stem, G, and lugs *a a*, adjustable rings C and I, and tube A adapted to fit within the supply-pipe, in the manner set forth.

156,528. STENCH-TRAPS. John P. Schmitz, San Francisco, Cal. [Filed Mar. 9, 1874.]

Brief.—A pipe with ribs, elastic piece, clamp, and elastic rings, all in combination, to make the apparatus self-acting.



1. The circular elastic rings *i i*, in combination with the elastic piece *g*, having flattened or collapsed ends, substantially as and for the purpose described.

2. The cover C and the pipe *f* with its ribs or rings O, substantially as shown and described, for the purposes set forth.

3. The stench-trap, consisting essentially of the case A, having door *h*, the cover C, the pipe *f* with ribs O, the elastic piece *g*, the clamping-board K, and the elastic rings *i*, all constructed and arranged substantially as shown and described.

156,529. HORSESHOEING APPARATUS. C. Schnoor, Davenport, Iowa. [Filed Oct. 30, 1874.]

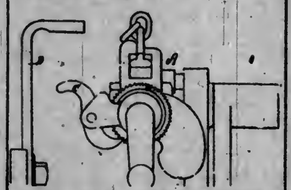
Brief.—The adjustable support is adapted to the knee.



The adjustable knee-support E, constructed and arranged to operate substantially as shown and described.

156,530. TRAVERSE MECHANISMS FOR RING SPINNING-FRAMES. John Scott, Lowell, Mass., assignor to Lowell Machine-Shop, same place. [Filed Dec. 9, 1874.]

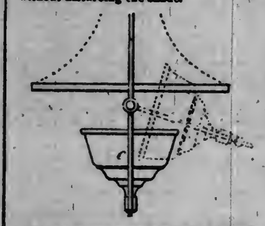
Brief.—The builder is a vibrating frame, connected by means of a chain to the ring-rail and reciprocating it. The end of the chain is attached to a rack in gear with a worm; and in order to move the rack endwise, so as to vary the amount of movement of the ring-rail, the worm-shaft has on one end a ratchet-wheel and a weighted lever carrying a loosely-pivoted pawl engaging the ratchet, and at each upward movement of the builder the pawl strikes the abutment, and turns the ratchet and worm-wheel. As the builder moves down, the weighted carrier moves the pawl over the ratchet-teeth, and prepares it for a repetition of the operation.



The adjustable abutment D, the vibratory pawl C, and gravitating vibratory pawl-carrier B, provided with the stop *r'*, in combination with the yarn-load builder A, all being substantially and to operate as and for the purposes specified.

156,531. LAMP-PENDANTS. Frederick R. Seidensticker, West Meriden, Conn., assignor to Bradley & Hubbard, same place. [Filed Dec. 16, 1874.]

Brief.—The lower hinged part may be swung aside to permit the removal of the lamp-fount without disturbing the shade.



A lamp-pendant, consisting of the two parts A C hinged together, substantially as and for the purpose specified.

156,532. COFFEE-FILTERS. E. R. Shattuck, Olean, N. Y. [Filed Aug. 26, 1874.]

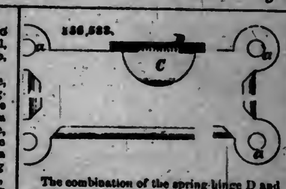


The combination of the outer reticulated cylinder A, having a detachable reticulated cover, B, provided with a central aperture, *c*, and a bail, E, and the inner cylinder C, having a fixed reticulated top, and an open bottom, the latter rigidly secured within the former cylinder, as specified, and for the purpose set forth.

156,533. TICKET-CLASPS. M. L. Shattuck, New York, N. Y. [Filed Oct. 15, 1874.]

Brief.—A piece of sheet metal, with three sides bent over to form a frame, has a spring-flap on the fourth side to hold the card in place.

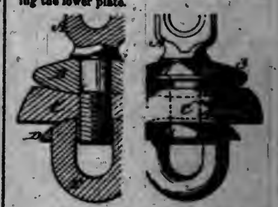
156,534.



The combination of the spring-hinge D and oscillating leaf or flap C with the card-holder A, having the bottom and side flanges *b* and eatable openings *a*, substantially as described, for the purpose specified.

156,535. BUCKETS FOR CHAIN-PUMPS. J. D. Shoots, Horseheads, N. Y., assignor of one-half his right to Robt. Colwell, same place. [Filed Nov. 12, 1874.]

Brief.—The rubber disk is made with beveled edges, and may be expanded by turning the lower plate.



The combination of the ring A with depending screw, the convex plate B, the rubber disk C, concave on both faces and inclined on its periphery, the plate D, with convex surface, and the loop E, all substantially as set forth.

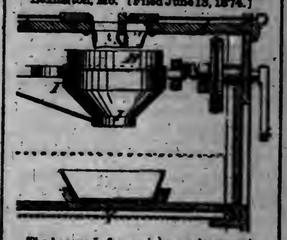
156,536. BEARINGS FOR CAR-AXLES. H. L. Sidman, Jersey City, N. J. [Filed Nov. 24, 1874.]

Brief.—Smooth bearing-surface at top. Longitudinal grooves at sides for retaining surplus oil.



A bearing for axle-boxes with parallel longitudinal oil-channels B and a central bearing-surface, *c*, substantially as shown and described.

156,537. FLOUR-SIFTERS. A. W. Smith, Lexington, Mo. [Filed June 13, 1874.]



The hopper I, for receiving and supporting the ordinary sieve H, and supported between the pivoted frame and the sliding plate O, and actuated substantially as described, for the purposes herein set forth.

156,538. CROSSCUT-SAW HANDLES. Wm. E. Stansbury, Detroit, Mich. [Filed July 15, 1874.]

Brief.—Crosscut-saws of varying breadths are secured to their handles by means of a slotted rod, stationary screw-collar, and cylindrical nut.

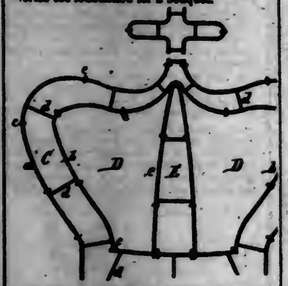
No. 156,537.



In connection, the hollowed handle A, fitted with the collar C and cylinder-nut D, and the slotted rod E, extending through the handle A and secured by a nut, *b*, the several parts constructed and arranged substantially as described and shown.

No. 156,538. FLOWER-FRAME. H. Steffens, New York, N. Y. [Filed Dec. 9, 1874.]

Brief.—A skeleton frame constructed of small wire, having the general form of a crown, forms the foundation for a bouquet.



1. In a flower-frame, the lateral wires a b, arranged about in a line with each other, and connected together, one within the other, by transverse wires *c* and bottom wires *d*, to form a crown-shaped figure, in combination with the interior wire *e*, substantially as described, whereby is created the compartments C D D E, as and for the purpose specified.

2. In a flower-frame, the wires a b, constructed and arranged, one within the other, to form a crown-shaped figure, the outer one of said wires being bent to form a cross or other suitable-shaped figure on top of the crown, and all connected together by wires *c d*, substantially in the manner shown and described.

No. 156,539. CEMENT PIPES. Melvin Stephens, Brooklyn, N. Y. [Filed Nov. 3, 1874.]

Brief.—Near the end of the pipe is a recess of less diameter than the extreme end of the pipe. The socket has a contracted mouth, which, when the parts are joined, is opposite to the recess, confining the cement or other packing material.



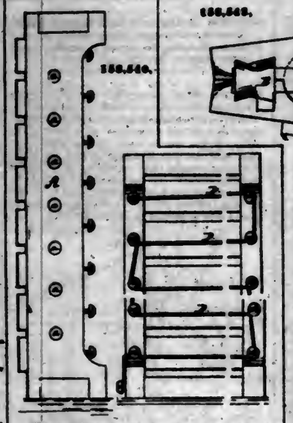
1. The socket *a*, having a contracted mouth, in combination with the pipe *c*, made with a depression, *b*, adjacent to the end of the mouth, substantially as and for the purposes set forth.

2. The cement-lined pipe, made with the sheet-iron of the socket contracted at the mouth, for the purposes specified.

3. The cement-lined pipe, made with the sheet-iron at the smaller end contracted, or made with a groove at *b*, so as to leave the end of the pipe of larger diameter than the groove or recess around the pipe, for the purposes set forth.

No. 156,540. BEEHIVE-RACKS. J. B. Stratton, Waterloo, N. Y. [Filed June 4, 1874.]

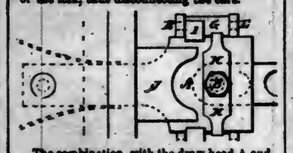
Brief.—The perforated side pieces of the frame and the slatted bottom allow free circulation around the yeast-cakes being dried. The cakes are set on edge upon the bottom slats, and are maintained in nearly a vertical position by the wires.



The combination of the grating or slats B, and the cords, wires, or slats D, with the perforated frame A, in the manner hereinbefore set forth and described.

No. 156,541. CAR-COUPLINGS. Frank Street, Council Bluffs, Iowa. [Filed May 20, 1874.]

Brief.—In case a car should leave the track, the projection would strike the short arm of the lever, and throw the long arm up in contact with the head of the pin, and raise it out of the link, thus disconnecting the cars.



The combination, with the draw-head A and headed coupling-pin B, of the standards E, rollers G with arms H I, and the projection J on the front of the car, all constructed substantially as and for the purposes set forth.

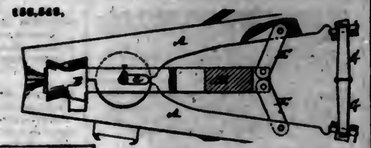
No. 156,542. VEGETABLE-SLICERS. Nathan Sweetland, Providence, R. I., assignor to the American Butt Company, same place. [Filed Oct. 9, 1874.]

Brief.—The revolving plate carrying the knife has also a gage-bar held by a set-screw, to limit the thickness of the slice, the substance being held in a stationary hopper, and pressed down by a follower.



The combination, in a vegetable-slicing machine, of the revolving disk K, fixed knives R R, and adjustable throat-plates T T, constructed and operated in the manner specified.

No. 156,543. CAR-COUPLINGS. James Wilson Treadway, Crown Point Centre, N. Y. [Filed Dec. 1, 1874.]

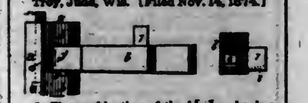


1. The horizontal pivoted jaws A A, forming a draw-head and bumper, having toggle-joints to open and close the same, and a lateral draw-bar, H, in combination with a fixed center pin or bolt, *b*, upon which the said opening and closing jaws may be rotated, substantially as and for the purpose described.

2. The combination of the toggle-joints G G and B E, the fulcrate jaws A A, and the slide B, essentially as described.

3. The combination of the convex clamps I I with the fulcrate jaws A A and a center-pin or king-bolt, *b*, substantially as specified.

No. 156,544. THILL-COUPLINGS. Ahiezer M. Troy, Judd, Wis. [Filed Nov. 14, 1874.]



1. The combination of the block *c*, having the recess *d*, ear *b*, and notch *b*, with the block *g*, having the ear *b'*, and the two extensions *e*, the screw-bolt *h*, pin 2, and part *j* 3, all to operate substantially as set forth.

2. The combination of the block *c*, having a dovetailed recess in one end, with the block *g*, made to fit in this recess, and provided with the two extensions *e*, substantially as shown.

3. The combination of the thills *i*, having hollow ends, with the part *j* and cam 3, provided with the head 7 and set-screw 8, substantially as specified.

No. 156,545. HAND CORN-PLANTERS. Edwd. S. Turner, Hester, Mo. [Filed Oct. 15, 1874.]

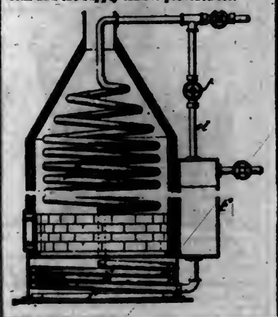
Brief.—To the main arm is secured the hopper, within which is pivoted to rotate the seed-disk, having suitable orifices, and provided on its periphery with notches, which engage with a lever on the pivoted arm, for imparting motion to the disk. The flow of seed is graduated by a cut-off.



In a hand corn-planter the rotary dropper B, actuated by the spring-lever D, and provided with chambers to receive the corn, in combination with the hollow block C, cut-offs *e e*, plate *c*, and support-block F, as constructed and arranged with the hopper *b*, substantially in the manner and for the purpose as set forth.

No. 156,546. STEAM-HEATERS. A. VON HOYA, Brooklyn, E. D., N. Y. [Filed Dec. 9, 1874.]

Brief.—By means of the branch pipe and the stop-cocks the circulation through the coils and the supply-tank is provided for.



In a steam-heater, the combination, with the steam-generating coil B and water-supply tank F, of the branch pipe *d*, having stop-cock *f*, and steam-pipe *e*, having stop-cock *c*, substantially as and for the purpose described.

No. 156,547. WASHING-MACHINES. James H. Van De Water, Conquest, N. Y., assignor of one-half his right to G. A. Crocker, Ashtabula, Ohio. [Filed Nov. 7, 1874.]



1. The combination, with the sucker *a b* and the yielding web of radial arms, of the driving-eccentric *f*, connected to the sucker-rod by the jointed connection *g*, to produce the advantages herein stated.

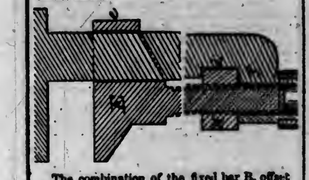
2. The combination, with the reciprocating sucker *a b*, of the web of hinged radial vanes *k*, substantially as and for the purpose herein set forth.

3. The radial vanes *k*, in combination with their carrying-sleeve *m* and the spring *n*, substantially as herein set forth.

4. The combination, with the web of radial arms *k*, of the sleeve *m* and the curb *o*, whereby these parts form stops *r s* to limit the movement of the arms upon their hinges, as described.

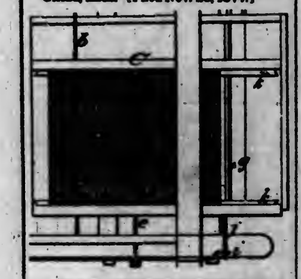
No. 156,548. WRENCHES. Benj. L. Walker, Sing Sing, N. Y. [Filed Dec. 10, 1874.]

Brief.—The main bar is offset from the handle. The screw-stem of the movable jaw passes into the handle, and receives the end thrust direct.



The combination of the fixed bar B, offset from the tubular shank *b*, and carrying the fixed jaw D, the movable jaw E, having its screw-threaded shank G working in the tubular shank *b*, and the nut H, engaging with the threaded shank, and supported on the tubular shank at the offset *f* of said fixed bar, substantially as shown and described.

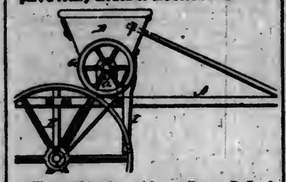
No. 156,549. GRAIN-SEPARATORS. P. Werner, Gilead, Mich. [Filed Nov. 26, 1874.]



A shoe which is composed of sections C C', supported on rods *b b'*, and reciprocated in opposite directions from crank-shaft B, as described, the upper section being provided with inclined ledges *k*, for the purpose set forth.

No. 156,550. SEED-PLANTERS. J. F. Warner, Dakota City, Neb. [Filed July 20, 1874.]

Brief.—Upon the frame are secured forked standards for the reception of a transverse shaft, which passes through the seed-box. This shaft has upon it, and within the seed-box, seed-wheels, for raising the seed to the delivery-spouts. At either end of the shaft, and resting upon the circumference of the driving-wheels, are small wheels, which impart a rotary motion to the seed-shaft.



The combination, with a sulky, A B C, of the platform E, secured thereon, and provided with slotted standards *e a* at its ends, the removable seed-box D, placed on the platform, and provided with shafts *d d*, and the wheels G G, secured on said shafts, and impinging against the outer periphery of the driving-wheels C C, all substantially as and for the purposes herein set forth.

No. 156,551. LIDS FOR STOVES. Wm. Weaver, Phœnixville, Pa. [Filed Dec. 16, 1874.]

Brief.—V-shaped radial flanges, thicker at their outer than at their inner ends, serve to elevate the cooking-vessel above the plane of the lid-top.

As a new article of manufacture, a stove-plate, *c*, having a number of radial flanges formed upon its top, substantially as shown.

No. 156,552. COLTERS. Alanson P. Webber, Saratoga, Ill. [Filed Oct. 3, 1874.]

Brief.—The shaft of the colter has enlarged ends, which have bearings in blocks attached to main standard, the latter being slotted to the bottom under the shaft.



1. The fork A, having the lower portion cut away, in combination with the parts D, furnishing bearings for the colter-shaft upon the outside of the fork, as and for the purpose herein specified.

2. The interposed plate E, in combination with the fork A and bearings D, for excluding the dirt and forming an oil-cup, substantially as described.

No. 156,553. MOWING-MACHINES. George H. Weeks, Aurora, N. Y., assignor of one-half his right to Charles E. Gould, same place. [Filed Oct. 16, 1874.]

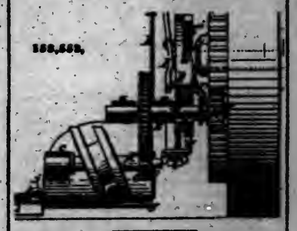
1. The combination of the segmental bracket E', stirrup D, elongated passage *b*, bearing-offsets G, pinion-shaft F, and axle C, whereby the stirrup, notwithstanding it is fitted upon the pinion-shaft, and is capable of raising and lowering it as required, is prevented from pulling upon and straining said shaft F when the machine is in operation, substantially as set forth.

2. The combined caster-wheel and draft-pole iron, constructed with a swivel-box, F, for the shaft of the caster-wheel to swivel in, with two hinging-brackets, *b*, for the draft-pole to hinge upon, and with two ears, *m*, for the adjusting-lever Q to be pivoted to, in combination with the tongue S, the caster-wheel F', the draft-frame E, and the adjusting-lever Q, substantially in the manner and for the purpose described.

3. The combination of the dovetail *g* on the end of the sickle-bar, the dovetail socket *h* in the driving-head M, the hooking-coupling *i*, and the pin *j*, substantially in the manner shown and described.

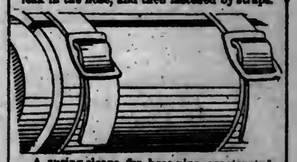
4. The inverted arch-shaped pendent hanger J on the under side of the bed-plate of the draft-frame, and in line with the cutting apparatus, constructed with end bearings for a short shaft, and with guiding-ledges on its bottom to confine and guide the driving-head of the sickle, and serving for supporting the cutting apparatus and the device which reciprocates the sickle, and also shielding said device and the pinion, which is on the same shaft with it, substantially as and for the purpose described.

5. The sickle-driver arranged on the pinion-driving shaft K, and within the hanger J, formed of two oval disks, L' D', which are placed diagonally on the shaft a short distance apart, with their faces parallel, in combination with the ball N on the perpendicular extension of the heel of the sickle-bar, and passed directly into the groove formed between the working faces of the disks, substantially in the manner and for the purpose described.



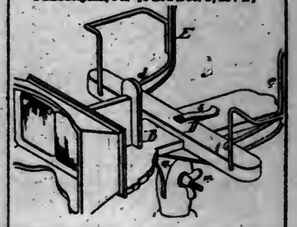
No. 156,554. LEAK-STOPPERS FOR HOSE. Wm. W. Whitcomb, Boston, Mass. [Filed Feb. 16, 1874.]

Brief.—A sleeve made of vulcanized rubber or other suitable material, in the form of a short section of a cylinder slit throughout its length, has incorporated a spring of tempered sheet-steel. The sleeve is sprung around the leak in the hose, and then fastened by straps.



A spring-sleeve for hose-pipe, constructed substantially as herein described, having a spring of one sheet of steel, with suitable covering.

No. 156,555. STEREOSCOPES. M. A. B. Whitner, Philadelphia, Pa. [Filed Dec. 9, 1874.]

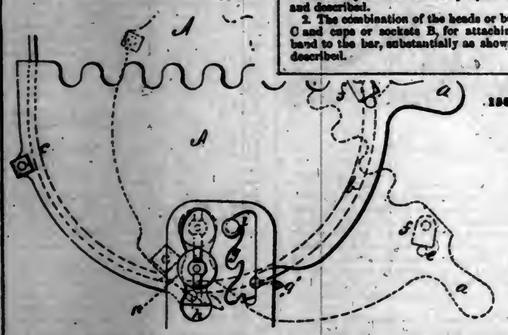


1. In a stereoscopic instrument, the within-described picture-holder, consisting of the cross-bar D, frames E, and guards H, all combined and constructed substantially as and for the purpose herein set forth.

2. The frames E, inclined at *d*, and rounded at *f*, as and for the purpose set forth.

156,555. GRATES. Jas. W. Williams, Charlottesville, Va. [Filed Dec. 11, 1874.]

Brief.—The back of the grate slides in guides upon the sides. The front is pivoted upon the sides at the top, and is secured at rest by means of a latch.



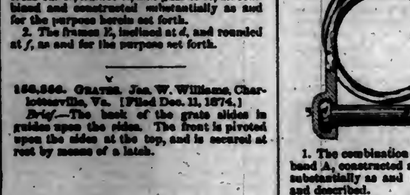
1. The combination of the slotted toothed legs B and the thumb-screw *p*, with the basket-grate A, enabling the grate to be raised, lowered, or tilted, as and for the purpose specified.

2. The curved sliding back plate *c*, in combination with the side plates of basket-grate A, and its bottom bars *d*, for purposes herein described.

3. The dumping axial bar-grate *b*, in combination with the slotted side plates of basket A, and locking-button *p*, as and for the purposes set forth.

156,556. COMB-PLANTERS. O. P. Williams, Bayous City, Mo. [Filed July 11, 1874.]

Brief.—Pivoted to a segment is the cross-beam, to which is hinged the bow-shaped beam, upon the rear end of which are secured corrying-plows. To the segment, and extending forward, is a connecting-rod, which is attached to the front transverse rocking bar, having bearing at each side of the platform. To this rocking bar is attached a crank-lever, which extends up within reach of the operator, for adjusting the plows.



The covers G G, applied upon the free ends of a U-shaped downwardly-bent beam, *f f*, pivoted at its front end to a cross-beam, K, and sustained by stirrups *r*, the segments *l* playing freely on axle *s* at each side of the platform B, and connected, by links *m*, to a front transverse rocking bar, *n'*, having bearings at each side of the platform, by means of arms *n*, and the lower *p* on one end of the rocking bar *n'*, constructed and arranged as and for the purpose specified.

156,557. HORSE-TAIL PROTECTORS. Geo. B. Willmot, West Meriden, Conn. [Filed Dec. 26, 1874.]

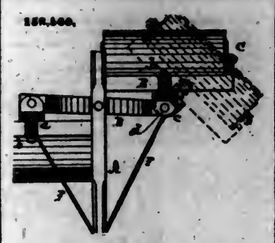
156,558.



1. The combination of the bar E and elastic band A, constructed and arranged to operate substantially as and for the purpose shown and described.

2. The combination of the heads or buttons C and cups or sockets B, for attaching the band to the bar, substantially as shown and described.

156,559.

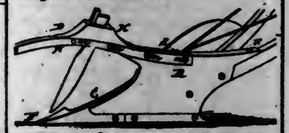


1. The tongue A and fixed cross-bar B, in combination with the roller-frames E E, double swivel, Fig. 2, arranged in front and rear of the bar, the rear roller being pivoted to the end of the bar B, having a floating and circular movement, as and for the purpose specified.

2. The double swivel, Fig. 2, composed of the bolt *b*, cars *c*, and bolt *d*, in combination with the roller-frame E, and cross-bar B, the rollers being attached to the ends of the said bar B, one in front and the other in rear, as specified.

156,560. PLOWS. John Yocum, Dunnville, Canada, assignor of one-half his right to L. Mansocar, same place. [Filed Oct. 26, 1874.]

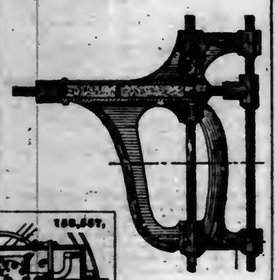
Brief.—The land-side plate extends from the bottom of the plow to the top of the beam, having a grooved extension to receive the beam, and a colter-socket cast upon it. It has a recess to receive the sole and point, and flanges for the mold-board.



1. The land-side plow-plate E, having the extension beam-piece H *h*, provided with a groove for the beam B, and a raised socket, K, for the colter, all constructed as shown and described.

2. The combination of the plate E D S, beam B, mold-board C, point F, and land-side handle G, as constructed and operating as shown and described.

156,561. JOURNALS FOR HARVESTER-FRAMES. Wm. A. Wood, Albany, N. Y. [Filed July 9, 1874.]



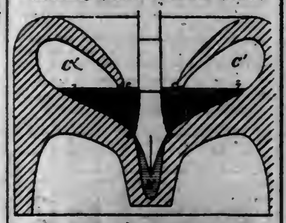
1. A metal harvester-frame provided with removable thimble-bearings for the shafts mounted therein, substantially as and for the purpose set forth.

2. The combination of removable thimble-bearings with the frame of a harvesting-machine in the process of manufacture, substantially as described.

156,562. LAND-ROLLERS. John Woolridge, Dean's Corners, Ill., assignor of two-thirds his right to A. B. Smith, same place. [Filed Nov. 13, 1874.]

Brief.—A fixed bar is secured transversely to the rear end of the tongue, and at one end, upon the front side, a roller is horizontally swiveled, and to the rear side of the opposite end of the cross-bar a roller is horizontally swiveled, having also a radial movement around its point of attachment.

156,563. INKSTANDS. A. W. Brinkerhoff, Upper Sandusky, Ohio. Patent No. 126,514, dated May 7, 1872. [Filed Oct. 4, 1873.]



1. An ink-chamber, C, of an inkstand, having an interior conical bottom surface, *b*, narrow dipping ink-well E, the diameter of the highest part of which is less than the broadest portion of an ordinary writing-pen, for the purpose of preventing the nib of the pen from striking the bottom of the well.

2. An inkstand having the interior conical bottom surface *b*, terminating at its lowest part in a deep narrow dipping ink-well, E, having a nearly upright wall, substantially as and for the purposes specified.

REISSUES

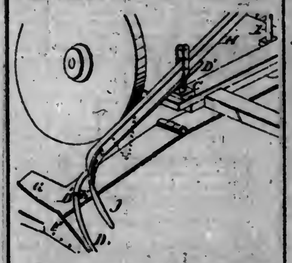
6,906. INKSTANDS. A. W. Brinkerhoff, Upper Sandusky, Ohio. Patent No. 126,514, dated May 7, 1872. [Filed Oct. 4, 1873.]

1. An ink-chamber, C, of an inkstand, having an interior conical bottom surface, *b*, narrow dipping ink-well E, the diameter of the highest part of which is less than the broadest portion of an ordinary writing-pen, for the purpose of preventing the nib of the pen from striking the bottom of the well.

2. An inkstand having the interior conical bottom surface *b*, terminating at its lowest part in a deep narrow dipping ink-well, E, having a nearly upright wall, substantially as and for the purposes specified.

6,901. TRACK-CLEARERS FOR HARVESTERS. Orin Du Bois, San José, Cal. Patent No. 137,361, dated Apr. 1, 1873. [Filed June 20, 1874.]

Brief.—A bar extends diagonally from the point of the grain-divider to the frame of the machine, for the purpose of inclining the grain or grass, and to throw the cut away from that which is uncut.



1. In a mowing or reaping machine, the arm or finger H, made adjustable by means of the standards C and I, substantially as described.

2. The sharp-edged dividing or separating plate F, with its housing G, in combination with the rod D, substantially as and for the purpose above described.

6,902. LUBRICATORS. Henry McGrew, Detroit, Mich. Patent No. 134,436, dated Dec. 31, 1872. [Filed Jan. 10, 1874.]



1. In an oil-cup, the combination of a jointed or hinged valve-stem having a valve, and a valve-seat, constructed and arranged that the valve may have a vibratory movement in the seat, substantially as and for the purpose described.

2. In combination with said jointed valve-stem D, the supplementary stem D' and valve *f'*, with relation to the seat *e'* in the outflow of an oil-cup, substantially as and for the purposes described.

3. The combination of the shell A, cap A', glass cup B, plug C, stem *c*, boss *b*, washers *d d*, valve-seat *e*, jointed valve-stem D, and valve *f*, as shown and described, for the purposes specified.

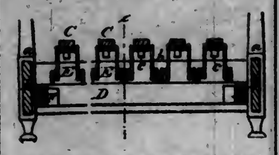
4. The combination of the shell A, cap A', glass cup B, plug C, stem *c*, boss *b*, washers *d d*, valve-seats *e e'*, jointed valve-stem D, supplementary valve-stem D', and valves *f f'*, as shown and described, substantially as and for the purpose set forth.

6,903. LUBRICATING WHEELS AND PULLEYS. J. King McLanahan, Hollidaysburg, Pa. Patent No. 143,830, dated Oct. 21, 1873. [Filed Apr. 11, 1874.]



The combination, with a wheel and its oil-chamber revolving therewith, and having a feeding-passage leading to the axle, of a feeding-stem extending into said feeding-passage, and serving, at each revolution of the wheel alternately to dip into the oil, and to feed the dipped portion into said feeding passage, substantially as specified.

6,904. END-BOTTOMS. Saml. Pearson, Cincinnati, Ohio, assignor to R. G. Gory. Patent No. 40,494, dated Aug. 18, 1863; reissue No. 5,904, dated Oct. 14, 1873. [Filed Sept. 24, 1874.]



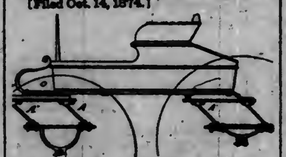
1. The combination of the double helical spring, a slat, C, and an independent connecting device or pin, *c*, substantially as and for the purpose described.

2. The spring E, having double helices with spaces between them, through which a slat the full length of the bed may pass without obstruction, in combination with a slat, C, substantially as and for the purpose described.

3. A bed-bottom in which the slats are disconnected from each other, and sustained by the springs E, having the bent stirrup *d* to prevent lateral displacement of the slat, substantially as described.

4. In combination, a reversible slat, C, spring E, and pin *c*, substantially as and for the purpose described.

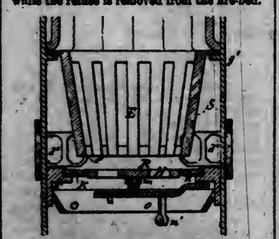
6,905. TORSIONAL SPRINGS. C. W. Saladee, Pittsburg, assignor to L. Dobbins, Erie, Pa. Patent No. 113,451, dated Apr. 4, 1871. [Filed Oct. 14, 1874.]



The U-shaped torsional springs A, rigidly secured at or near their corners N, that the strain may be divided, substantially as and for the purpose set forth.

6,906. BASE-BURNING STOVES. Jas. Spear, Philadelphia, Pa. Patent No. 100,336, dated Mar. 1, 1870; reissue No. 6,460, dated June 17, 1873. [Filed Dec. 3, 1874.]

Brief.—Through the windows the condition of the contents of the stove may be observed, while the refuse is removed from the fire-bed.



1. The combination of a receptacle or chamber to contain the ignited fuel and refuse therefrom, a horizontally-vibrating grate-surface or fire-bed of larger diameter than the inside of the clinker-discharge end of the said chamber, and the clinker-cleaning opening R, to admit a poker to clean the upper surface of the grate, substantially as herein described.

2. The combination of a fire-chamber, a grate-surface or fire-bed, consisting of a dumping-grate, H, and a surrounding ring, K, and a clinker-cleaning opening, R, above the ring, substantially as herein described.

3. The combination of a fire-chamber, the ring K, forming part of the grate-surface or fire-bed, and the clinker-cleaning opening R, above the ring, substantially as herein described.

4. The combination of a fire-chamber having its clinker-discharge end E grated or illuminating and projecting downward within the air-chamber S, a grate-surface or fire-bed projecting beyond the inside diameter of the slate and clinker discharge end of the fire-chamber, and the clinker-cleaning opening R, substantially as herein described.

5. The combination of a fire-chamber having its clinker-discharge end projecting downward within the air-chamber S, a grate-surface or fire-bed consisting of a dumping-grate, H, and a surrounding ring, K, and the clinker-cleaning opening, R, above the ring, substantially as herein described.

6. The combination of the vertical clinker-cleaning opening R and mica lights S^2, in doors opposite the opening, substantially as herein described.

7. The combination of the vertical clinker-cleaning opening R, mica lights S^2, and clinker-cleaning doors C, opposite the opening, substantially as herein described.

8. The combination of a fire-chamber, the clinker-cleaning opening R, between the fire-chamber and grate-surface, clinker-cleaning doors C, opposite the said opening, and mica lights S^2, opposite the illuminating-section E of the fire-chamber, substantially as described.

9. The combination of a fire-chamber and a grate-surface or fire-bed, which is supported from the wall of a stove, on a plane below the clinker-cleaning opening R, by means of lugs b^2 and cross-bar N, substantially as herein described.

10. The combination of a fire-chamber and a grate-ring, K, supported from the wall of the stove, on a plane below the clinker-cleaning opening R, by means of lugs b^2, substantially as herein described.

11. The combination of a fire-chamber having its discharge-end E illuminating, the grate-ring K, and the clinker-cleaning opening R, above the ring, substantially as herein described.

12. The combination of a fire-chamber having its slate and clinker discharge end contracted and projecting downward, a grate-ring, K, and a clinker-cleaning opening, R, above the ring, substantially as herein described.

6,907. BASE-BURNING STOVES. Jas. Spear, Philadelphia, Pa. Patent No. 100,336, dated Mar. 1, 1870; reissue No. 6,460, dated June 17, 1873. [Filed Dec. 3, 1874.]

Brief.—Space is left between lower end of fire-pot and the fire-bed, for the removal of refuse.



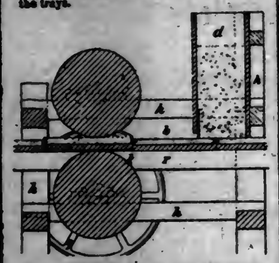
1. The combination of a fire-chamber, a grate-surface or fire-bed projecting beyond the inside diameter of the slate and clinker discharge end thereof, the clinker-cleaning opening R, and grate-supporting lugs C, projecting from the fire-chamber, substantially as herein described.

2. The combination of a fire-chamber and a grate-ring, D, supported on a plane below the clinker-cleaning opening R by means of lugs C, projecting from the fire-chamber, substantially as herein described.

3. The combination of a fire-chamber, the grate-ring D, supported on a plane below the clinker-cleaning opening R by means of lugs G projecting from the fire-chamber, and a central vibrating or dumping grate, H, supported from the ring, substantially as herein described.

6,209. APPARATUS FOR COMPACTING GRANULAR SUGAR INTO BLOCKS. A. F. W. Partz, Oakland, Cal. Patent No. 132,894, dated Dec. 10, 1872. [Filed Sept. 24, 1874.]

Brief.—Granular sugar passes constantly down through the box d, the bottom of which is formed by a tray, which receives the sugar. The height of the sugar in the tray is determined by the adjustable slide in the lower part of the box front. A series of these trays is constantly presented to the box, from which they ran on rails to pressing rollers, by which the sugar is compacted to the dimensions of the trays.



The combination of the bottomless filling-box d with the pressing-roller p, the tracks r, and molds b, substantially as and for the purpose herein described.

6,209. COMPACTING SUGAR INTO BLOCKS. A. F. W. Partz, Oakland, Cal. Patent No. 132,894, dated Dec. 10, 1872. [Filed Sept. 24, 1874.]

The process above described of compacting loose granular sugar in independent molds by passing the molds with the sugar between pressing-rollers.

6,210. CIGAR-MOLDS. John Prentice, New York, N. Y., assignor, by mesne assignments, to Wm. H. Terwilliger and J. S. Lockwood. Patent No. 80,764, dated Jan. 12, 1869. [Filed Apr. 16, 1874.]

Brief.—The upper and lower molds are made of thin flexible metal, so that as one enters the other, they yield as they close in upon the cigar, and resume their natural position when separated. The male mold has sharp edges to avoid a fin on the cigar.



1. A cigar-mold constructed of elastic metal or other suitable material, so that one part of the mold will close or shut into the other with a springing or yielding action, the part that receives being provided with comparatively sharp edges, substantially as herein shown and described.

2. A yielding cigar-mold, composed of sheet metal, capable of contracting when one part is pressed into the other, and again resuming its form when released, substantially as described.

3. In combination with the molds a b, the backings c b, provided with hinge 2, projections 4, shoulder 5, and catches 6, substantially as for the purposes set forth.

6,211. COAL SCREENS AND CHUTES. M. R. Roberts, San Francisco, Cal. Patent No. 140,077, dated June 17, 1873. [Filed Aug. 4, 1873.]



1. The receiving-hopper B B', in combination with the reservoir O, with its screen or grating side D, chute F, with its toothed gate h, and one or more independent screens, I, all combined and arranged substantially as and for the purpose above described.

2. The metal blank or false bottom K, in combination with the receiving-hopper B B', reservoir O, chute F, and gate h, substantially as and for the purpose above described.

3. The combination of the hopper B B', for receiving the coal from a swinging bucket, the reservoir O, arranged to receive the coal as it passes from the hopper, with the chute F and gate h, all constructed to operate substantially as and for the purpose set forth.

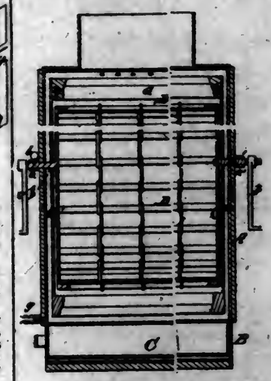
4. In combination with the elongated hopper, the screen D, reservoir O, and chute F, with its gate h, the combination being substantially such as is herein set forth.

6,212. BIT-STOCKS. Clemens B. Ross, Sunderland, assignor, by mesne assignments, to the Miller's Falls Manufacturing Company, Miller's Falls, Mass. Patent No. 62,044, dated Apr. 16, 1867. [Filed Nov. 17, 1873.]

Brief.—Two longitudinally-moving gripping-jaws, having wedge-shaped outer ends, are operated in suitable grooves in the bolster by a revolving screw-rod. The stock is attached to the head, so that it can be operated without revolving the head.

6,213. WASHING-MACHINES. H. D. STAFF, TEXAS, TEX.: assignor of one-half interest to Rice S. Flournoy, same place. Patent No. 147,905, dated Feb. 24, 1874. [Filed July 11, 1874.]

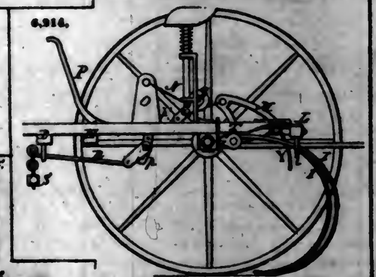
Brief.—The grated cylinder and the blades of the outer cylinder are so arranged on the same journals that they may be revolved in opposite directions at the same time, and the grated cylinder may be held stationary by a set-screw bearing against one of its journals. The outer drum and the grated cylinder are provided with suitable doors at the top for the introduction of the article to be washed, and the water is introduced through the perforated top.



The combination, with the grated cylinder D and the outer cylinder G^1, of the gudgeons E E', attached, respectively, to the heads G^2 G^3, the tubular bearings a a', attached centrally to the heads of the drum A, set-screw b, and the cranks F F', substantially as and for the purpose set forth.

6,214. HORSE HAY-RAKES. Robt. Wilson, Ithaca, N. Y. Patent No. 156,005, dated Oct. 13, 1874. [Filed Dec. 12, 1874.]

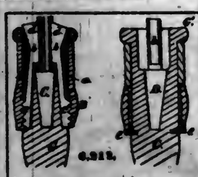
Brief.—A chain connected at its rear end to an arm projecting upward from the rake-head, and at its front end to a standard on the thills, is depressed by means of a hand-lever provided with a grooved friction-roller, which acts upon the chain when the teeth are to be lifted.



1. In combination with the pivoted rake-teeth I I' and the pressure-bar L, the bell-rank M, chain N, lever P, forked bar Q, and grooved pulley q, substantially as and for the purpose specified.

2. In combination with the locking-bar T, the vertically-adjustable bearing V, substantially as specified.

3. The three-pronged lever P, pivoted to the frame of a rake, and adapted for use in connection with a draft-rod, E, and the device for raising the rake-teeth, substantially as specified.



1. The combination of the G, having socket D, a lo[ck]-head, G^1, longitudinally [ad]-justable bolt E, having wedge-[sh]aped ends b b, and a revolving screw [d] operating on said bolt.

2. The com[bi]nation with the shaft g of ste[m] J, with the groove [a], forming the collar C [as] specified.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 2. TUESDAY, JANUARY 12, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

REES *vs.* RICHARDS AND BERRY.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the applications of Edmund H. Rees and the letters patent granted to Richards and Berry, October 7, 1873, for* "IMPROVEMENT IN TENONING-MACHINES."—*Decided December 18, 1874.*]

If the party who first conceived a machine followed up the idea diligently, and was the first to reduce it to actual practice, he is entitled to a patent for it, although his competitors had complete working drawings of it previously prepared, and had obtained a patent.

But he can claim the machine only in the form in which he had constructed it, and not in other modifications, which he does not appear to have contemplated, though they are analogous in principle.

THACHER, *Commissioner:*

The subject-matter involved in this interference is defined by the Primary Examiner as "the arrangement of a rotating cutter in a vertically-reciprocating frame between two horizontal tables." The purpose of the invention is to tenon long sills without turning the timber end for end. To accomplish this the tool is made to cut in both directions, and, sinking below the plane of the table after the downward cut is made, it allows the stuff to be moved longitudinally, to bring the other end to the tool.

Upon the part of Richards and Berry, the evidence alleges that Berry conceived the invention in January, 1872. At that time Richards was absent in Europe, and until he returned, upon the 15th of February, nothing was done, save that Berry described the proposed machine to one Orton. Both were in the employment of Richards, London & Kelley, of Philadelphia, Berry as machinist and draftsman, and Orton as foreman of the works. The patterns were begun February 26, 1872, and a complete working drawing, Berry says, was finished about March 14th following. The latter has been filed in evidence as an exhibit. This testimony is corroborated by Orton, who is the only witness called to give direct proof of the allegations upon which the patentees chiefly rest their right.

Rees testifies that when this invention was made he was general superintendent of the Mansfield, Ohio, Machine Works. It is stated that he conceived it in the latter part of the year 1871, and that a full sized working machine was set at work March 15, 1872. Between these dates "Exhibit D and E" was made. This drawing shows an end tenoner having a single table only. Rees swears that when the drawings were made the other table had not been finished, and admits that, as represented in the exhibit, the cutters could not pass below the plane of the table. To accomplish the work on both ends in the manner proposed they were obliged to lay a thick piece of plank upon the table shown in the drawing, and to employ an auxiliary table on the other side of the cutter-head. This arrangement is shown in a model marked "Rees Exhibit Model M." The extra table was made, Rees says, for the first machine, and was used March 15, 1872. Chas. F. Royce was at the time employed in the Mansfield Works, and swears that Rees showed him sketches and explained the idea of the machine to him at various times. The sketches, he thinks, were exhibited about "a week or a month" subsequent to the 10th day of December, 1871, when he began work at Mansfield. He was present and saw the machine tested, and operated it until he could instruct another man. He swears that it was set at work to tenon long stuff a day or two after it was first started, which was the last of February or the first of March, and he describes an arrangement

identical with that shown in "Rees Model M," already mentioned. Walters testifies to substantially the same effect. He says that Rees explained the object of the machine to him in January, 1872, saying that he would "use a wooden table on one end for the present," and would construct an iron table when he had seen it work. Walters was foreman of the works, and built the first machine, which, he says, was finished March 13, 14, or 15, 1872, and tried the 15th or 16th, and a day or two afterward the other table was added and a trial made upon long sills.

William Anderson, who was the pattern-maker at the works, testifies that he was employed upon the machine the nine last days of January, 1872, and during other periods following until he began work on the "double table," the 12th day of April, for which he made patterns from sketches given him by Rees upon that date.

Nelson Abbott, who was the superintendent of the works, saw the machine used on long sills the day after it was first tried. He swears that the extra wooden sill-table was then used.

Rees swears that the idea of his invention was suggested to him upon seeing a car-borer, which had been furnished to the Mansfield Works by J. A. Fay & Co., of Cincinnati. It is shown that this machine was forwarded to them upon the 27th of November, 1871.

Daniel L. Lyon testifies that he was at the Mansfield Works in the early part of February, 1872, and that Rees showed him this car-borer and explained his invention to him in connection therewith.

B. F. Burlingame testifies that in the last of March or first part of April, 1872, Rees came to his place and described to him the machine illustrated in "Exhibit Model M." About the tenth of the latter month he visited Rees and saw it in operation. He describes the tables then employed, which were identical with those seen in the model.

I have examined the alleged discrepancies in the evidence presented in behalf of Rees, but fail to discover such material contradictions, upon substantial and material points, as to warrant a rejection of his claims. There seems to be no reasonable doubt that he originated this invention in the latter part of 1871, and the evidence establishing the date of the embodiment of his idea in a working machine is clear and satisfactory.

On the other hand, there is some reason for doubt whether the patentees had made any invention in this direction prior to the production of working drawings about the middle of March, 1872. It is true Berry alleges that detailed sketches of some parts of the machine were made prior to the 26th day of February, 1872, and Orton says that he saw sketches early in March. The evidence of such sketches rests entirely upon the statement of these two interested parties, and is not conclusive, the original sketches not having been produced, and the proof showing that, at the best, they were mere fugitive drawings. It is also developed by Rees, in his rebutting testimony, that upon the 6th day of March, 1872, E. J. Barney, superintendent of the Barney and Smith Manufacturing Company, of Dayton, Ohio, wrote to Richards, London & Kelley in regard to an end-tenoning machine, alluding in the letter to the inconvenience of turning the lumber as experienced in the form of machine usually employed, and proposing a construction almost identical with that now in dispute. Upon the 11th of March an answer was returned by the firm that the apparatus proposed was practicable, and upon the 23d tracings were sent, with specifications, showing it. Upon the 22d of the same month Richards, London & Kelley wrote to J. N. Mileham, superintendent of the Buffalo Car-Works, for whom a "tenoner" had been ordered February 5, 1872, of the old pattern, in which the stuff was turned end for end, that they had changed the machine so far as to require a new set of patterns; that they should build it in such manner that the stick could be passed along, through, or by the side of, the machine, cutting the tenons on one end by the cutters going down, and on the other end by bringing the cutter-heads up, and, in this connection, they said, "this change we made to suit other parties, and we know you have no objections to such a machine."

The presumption that the change mentioned was the one suggested by Barney is very strong, and prevents much reliance being placed upon testimony going to prove an earlier date for the invention on the part of Richards and Berry than some time in March, 1872. But, even if this testimony was entirely credible, I do not think it would disturb applicant's right to his invention. He was the first to originate and describe the same to others, after which he proceeded with due diligence to embody his idea in practical working form, in which he was also first.

Richards and Berry were second in originating the invention, and all that they have to show, prior to the construction and use of a working machine by Rees, is a working drawing, which cannot effect the standing of Rees as the first to reduce to practice, in view of the fact that he was diligently prosecuting his efforts in this direction, although the earliest actual use of his first machine was subsequent to the date of this drawing.

Upon the issue defined in the declaration of interference, I have no hesitation in awarding priority to Rees. This issue, however, is somewhat general, being limited only to machines in which, in the language of the declaration, "a cutter-head reciprocates between two tables." But it is plain that there is considerable difference in mechanical construction between the first working machine devised by Rees, and illustrated by his Exhibit M, and that shown in the Richards and Berry patent. In the former apparatus the tables are not united as in the machine adopted by the patentees. It comprised simply a rest placed upon one side of the cutters, with an independent auxiliary table, which was placed upon the other side when long stuff was worked, a thick plank being bolted to the permanent stand to raise the sill to a sufficient height. The two supporting-surfaces, however, were not in the same horizontal plane, and the whole mechanism differed in construction and adaptation from the apparatus shown in the patent, although identical therewith in principle. I am satisfied that Rees is not entitled to claim as his invention subject-matter which is not substantially embraced in his first machine. Whether or not there is a patentable difference between the machine of the patentees and that first constructed by applicant I am not called upon to decide, as a patent for the peculiar construction adopted by Richards and Berry, and which the evidence shows they were first to devise, has already been granted, and the question is, therefore, beyond the jurisdiction of the Commissioner of Patents. But as Rees was not the first to originate this particular construction, he is not entitled to show it in his application, and the latter must, therefore, be amended by striking from the record everything in relation thereto. With this restriction, the decision of the Examiners-in-Chief, awarding priority to Rees, is affirmed.

WARE *vs.* BULLOCK.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the application of Reuel W. Ware for letters patent for an* IMPROVEMENT IN CARRIAGE-SPRINGS *and the patent granted to Jacob Bullock, December 9, 1873, for a similar invention.—Decided November 24, 1874.*]

Where a party has a caveat pending in the Office, if another obtains a patent for the same invention without notice to the former, he will gain no advantage by it, but must establish his case as if he were an applicant.

Mere descriptions of an invention, and fugitive sketches which have not been preserved, will receive little consideration in determining the questions of priority between two rival applicants.

Whoever first reduces an invention to practice and makes an application of it to use will usually be held the prior inventor.

THACHER, *Commissioner:*

The Examiner of Interferences and the Examiners-in-Chief have reached opposite conclusions in this case upon substantially the same state of facts. I have, therefore, given it a more critical attention than would be necessary were the tribunals agreed in their finding, in order to set at rest the doubt raised by the conflicting decisions below.

The parties stand before the Office precisely as if both applications were still pending, Bullock's patent having issued without notice of the caveat filed by Ware the previous year. He has, however, the earlier record date, his application being filed June 7, 1873, while Ware did not appear in the Office, except by his caveat, until January 31, 1874.

The invention in controversy is a carriage-spring, composed of metal and wood, the two being united at the ends and in the middle. This device Ware says he conceived in the summer of the year 1871, and he proves very satisfactorily that he disclosed it to one Jeremiah Eells, a carriage-maker, in October, urging, as the latter test fies, that he join with him in obtaining a patent, the demands of business being so great that he had no time to devote to it. This proposal was rejected, and during the winter that ensued nothing was done with the invention. But, in April, 1872, he bought from Eells a skeleton-wagon, to which the spring was applied, the witness directing him to parties from whom he could obtain the metallic portion. Upon the tenth day of June a caveat describing it was filed in the Office, and on the first of July a new wagon was ordered containing the invention, and having a metallic plate stamped with the words "Patent Pending," attached to it. Ware's model was finished, he says, in September, 1872, but was not filed until his application was made.

Bullock testifies that he conceived the invention in the summer of 1869, and disclosed it to a certain Charles Fox in the month of May, the discovery being made by means of a letter containing a rough draft of the device. To his son George, also, and to one A. C. Pomeroy, he swears that he described and illustrated it by sketches, the character of which will be noticed hereafter. Of the whole number made by Bullock, two have been filed in evidence, made in the "back part" of an old account-book. He also testifies that he made a model in August, 1871, with the aid of Fox, but, unfortunately, he has failed to lay the slightest foundation for this allegation in his preliminary statement, and I must, therefore, exclude it. It was not until the autumn of 1872 that the invention was embodied, and Bullock testifies to a still later date, swearing that the first use of the invention was in the very last part of January, 1873.

If the case rested upon this testimony, the question of priority would be of comparatively easy solution. But evidence has been introduced to show that Bullock, prior to his embodiment of the device, or to any distinct and well-ascertained act of invention, obtained knowledge of Ware's invention. One John Powell is brought forward, who swears positively that in the autumn of the year 1872, while working in Bullock's carriage-shop, he saw the wagons which Eells was building for Ware at Hancock, and communicated the invention to his master, whose subsequent reduction to practice was a copy of the invention thus disclosed to him.

This statement would have less weight, were it not for the testimony by which it is followed. Eells is produced, who made the first wagons built for Ware. It appears that one of these was stored in a barn in Hancock, owned by Marvin Wheeler, and the witness swears that Bullock, being in his shop about the first of January, 1873, was conducted by him to the barn and shown the Ware carriage. "He examined the combination-springs," Eells says, "and I asked him if he ever saw anything like them. He said he never did."

The first buggy built by Bullock was sold to James G. Fisher, who swears that he was in the shop before it was finished, and heard Powell remark that it "was got up after a wagon that was got up in Hancock," and this evidence is corroborated by Bristol, a workman in the shop, who says he heard the conversation, and by a Mr. Hotchkiss, who also bought one of the wagons subsequently built, who saw the Fisher wagon, and was told by Powell that it was of the same style as one in Hancock, devised by "a railroad man."

An attempt is made to cast discredit upon this testimony by showing that the first carriage made by Bullock was not delivered to the purchaser, Fisher, until the last part of January, 1873; that the springs were not on it at the time of the alleged conversation; and that Powell could not, therefore, have been present and made the statements to which he so positively swears. But this is met by the evidence of Fisher, who distinctly remembers that the wagon was in his carriage-house upon Thanksgiving Day, in November, 1872, and whose testimony in this regard is corroborated by that of his daughter, who was at his house, and by Bristol, who painted the wagon in the fall, and declares that the springs were on, and that Powell, to the best of his recollection, was there. As the latter did not leave

Bullock's employment until some time in December, I see no reason for doubting the statement. However, it is still further corroborated by the two Hotchkisses, father and son, who saw the wagon at the shop and got into it to test the springs.

The photograph, Exhibit I, is filed as an exact representation of the Ware wagon, shown him by Eells, who swears positively to its identity. The objections made to the introduction of this exhibit must fail. Photographs are constantly admitted in courts of justice as instruments of evidence. The photograph is used in this case for the purpose of establishing identity between the Ware invention and that subsequently embodied by Bullock, not to prove the date of the former, and, for this purpose, is competent evidence.

The evidence presented by Bullock is given solely by himself, his son, George; his son-in-law, Fox; and Pomeroy, the latter only testifying to some rough sketches made on a work-bench in a blacksmith's shop, and immediately erased. He is the only witness who is not, in some degree at least, identified in interest with Bullock. I am not disposed to give undue prominence to this consideration, but, in the determination of all questions of right, it must have its appropriate weight. Such testimony is admissible, but its authority and conclusiveness is a matter of judgment. There are circumstances, aside from those already mentioned, which affect the credibility of these witnesses. The letter of 1869 is presented without the envelope; a model is sworn to as having been built in 1871, while the preliminary statement alleges no such fact; sketches are made in the end of an old ledger and upon a bench, most of which are afterward lost, or immediately erased. These are the acts of invention upon which Bullock's claim is based. It has been repeatedly held by the Office that such evidence is subject to the gravest suspicion, and cannot be considered proof unless supported by clear and unexceptionable testimony of disinterested witnesses. I would not rest an award of priority upon this ground alone, but, taken in connection with other circumstances mentioned, its bearing in this case is important.

The Board of Examiners-in-Chief have found in favor of Ware, the first, in their opinion, to perfect the invention, embody it in practical form, and confer its benefits upon the public. This view appears to be a reasonable deduction from the facts shown. If Bullock's statement is to be admitted, he conceived the device in May, 1869, and from that time until August, 1871, he did nothing further than to illustrate it by sketches. In the month last named, he says, he made a model embodying it, but this allegation, resting only on the testimony of himself and his son-in-law, Fox, and being entirely at variance with the substantive acts of invention recited in his preliminary statement, cannot be accepted as satisfactorily proven. The next step was the actual embodiment of the invention in December, 1872, or January, 1873. Ware, on the other hand, conceived the matter in dispute in 1871, and embodied it in the spring of 1872, as early as the month of April. In June he filed his caveat and proceeded to make and sell wagons having this spring.

Upon such a statement of facts, the Board properly held Ware to be the first inventor, in contemplation of law, and their decision is accordingly affirmed.

BLOOMFIELD BROWER.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Bloomfield Brower for letters patent for* IMPROVEMENT IN WRITING-PENS.—*Decided December* 15, 1874.]

The practice of plating articles of metal with nickel in order to harden their surfaces and give them a polish is common, and to apply it to pens is a mere double use, and is not entitled to a patent.

THACHER, *Commissioner:*

Applicant claims—

A metallic writing-pen, nickel plated.

The principal objects attained by the now well-known art of nickel-plating are the preservation of the articles to which it is applied from corrosion, and the production of a bright silvery appearance.

Applicant, however, to avoid the force of the objection of double use—metallic articles of various kinds having for a long time been nickel-plated—insists that new results, in addition to those above mentioned, are produced when this process is applied to a pen, viz: The production of extreme hardness at the points, and also exemption from cramp in the hand sometimes experienced from the constant use of ordinary metallic pens.

It is believed that the advantages thus claimed for this device are fictitious. The nickel of commerce possesses the same relative degree of hardness as iron, with which it is so intimately associated; and, unless effected by some process not indicated by applicant, the nickel-plating would be no harder than the points of the steel pens to which he proposes to apply it.

In regard to the exemption from cramp in the hand, alleged as sometimes arising from constant use of steel pens, the applicant very briefly lays claim to this result for his device without advancing any explanation of his discovery, or adducing any satisfactory evidence in its support.

I concur in the opinion of the Examiners-in-Chief that the only quality alleged as entitling this pen to novelty is its greater durability, and that this is to be attributed to its resisting the corrosive action of ink. As this benefit is obtained by nickel plating in all cases, to employ it upon a pen is a mere double use, and therefore not patentable.

The decision in the case of *Osborne and Dayton*, Commissioner's Decisions 1870, p. 149, refusing letters patent for a nickel-plated bird-cage, is precisely in point.

The decision of the Examiners-in-Chief is affirmed.

JAS. S. RAY.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of James S. Ray for letters patent for an* IMPROVEMENT IN COFFIN-HANDLES.—*Decided November* 17, 1874.]

A hollow metal coffin-handle having its ends inserted into rings in bars on the casket, and then indented into the rings, and farther attached by inserting plugs, being found an improvement both in point of economy and security, held entitled to a patent.

THACHER, *Commissioner:*

The invention consists in a hollow drawn metal handle attached to the bars on the casket by inserting its ends into the rings formed in the bars, and striking up indentations from the interior of the tube into the metal of the rings. A tip is afterward plugged into each end of the handle in the usual manner. The several parts are all old, and are shown in the references united either by a wedge-plug, which enlarges the end of the tube and jams it against the ring, or by enlarging the tube at the point where it is embraced by the bar. In view of these references, and of the familiar method of fastening the ferrules of canes, the case has been rejected on the ground that applicant has applied a well-known mechanical expedient to an old device to accomplish a known result.

There is no doubt that he has produced a cheaper article than any shown in the cases cited, and one in which the parts are more securely united. I think sufficient ingenuity is shown in their combination, as a whole, to warrant the very limited claim made by the last amendment. It covers the combination of the handle, the pivoted bar, and the tip, the two former being united by indenting the metal prior to the insertion of the plug. The specification sets forth the state of the art, and as the public can by no possibility be misled as to the scope of the claim, the benefit of the doubt raised by the case must be given to the applicant.

The decision of the Board is reversed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, EASTERN DISTRICT OF MICHIGAN.

THE GOODYEAR DENTAL VULCANITE COMPANY *et al. vs.* GEORGE WILLIS.

[*In equity.—November term*, 1874.]

The principles upon which the several circuit courts of the United States are bound by the decisions of each other examined and discussed.

The adherence to decisions is by no means confined to those which precede the case in question in the same tribunal. Those of co-ordinate courts are equally influential.

The circuit courts of the United States, although divided in jurisdiction geographically, constitute a single system, and where one court has fully considered and deliberately decided a question, every suggestion of propriety and fit public action demand it should be followed until modified by the appellate court.

The circumstances of the appeal to the Supreme Court in the case of *Gardner* vs. *Goodyear Dental Vulcanite Company* (3 PAT. OFF. GAZ., 295) considered.

The conditions under which the use of one material instead of another in constructing a known machine or article may be patentable, considered and explained. *Hotchkiss* vs. *Greenwood*, (11 How., 248,) and *Hicks* vs. *Kelsey*, (18 Wall., 670,) cited and discussed.

Cummings applied for a patent in April, 1855, and was rejected in 1856. He filed a new application in 1864, and the patent was then granted. The invention went into public use in 1859. *Held*, That where successive applications are made in the procuration of a patent, where there is no proof of actual abandonment the subsequent application will be deemed a continuation of the first.

The invention having been patented in England by a third person: *Held*, That, in order to support the objection resting upon the issuance of a foreign patent, proof should be given connecting the complainant with its procuration.

[This was a bill in equity filed against the defendant, a dentist, for infringement of reissued Letters Patent No. 1,904, granted to The Dental Vulcanite Company, assignee of John A. Cummings, for "Improvement in Artificial Gums and Palates." The claim in the patent is for "the plate of hard rubber or vulcanite, or its equivalent, for holding artificial teeth, or teeth and gums, substantially as described."

Cummings filed his caveat May 14, 1852. Applied for a patent April 12, 1855. This application was rejected May 19, 1855, and again rejected August 14, 1855, and again rejected by the Commissioner of Patents February 6, 1856. In 1859 a motion was made before the Commissioner for a rehearing, or for an appeal to the Board of Examiners, which motion was denied. On March 25, 1864, a renewed application was filed. On April 7, 1864, the Patent Office wrote to Cummings acknowledging that injustice had been done in the former rejection, and the patent was thereupon allowed, and was issued on June 7, 1864. There was evidence that tended to show poverty on the part of the inventor and efforts by him to raise money to prosecute his application during these periods. The invention went into public use about 1859.]

[*Benjamin F. Lee*, for complainants.
John F. Follett and Calvin C. Burt, for defendant.

EMMONS, *J.:*

In ordinary circumstances the condition of judicial opinion in reference to all the points involved in the record would render unnecessary their discussion upon principle, and in a case where such rulings have been so numerous, and directly upon the points, and so elaborate in argument, it is unusual to do more than refer to them generally, as settling the points in issue. Such, however, is the exceptional feeling and excitement existing in the minds of the numerous defendants in suits brought on this patent in this and adjoining districts, resulting, we believe, from the want of knowledge on their part of the real history of previous litigations, and the character and number of opinions which have been already pronounced, that it is deemed a duty by my brethren and myself to reproduce that which we are well aware is already familiar to the bench and bar. It will attract the attention here of all those interested in these litigations, while the sources from which such information is to be obtained are inaccessible to, or at least are not examined by, them. It was asserted with much earnestness and confidence by defendant's counsel that a careful review of the judgments already pronounced sustaining the complainants' patent, and contrasting the record before us with those upon which such opinions were based, would result in our taking up the questions before us and deciding them upon principle, wholly unembarrassed by judicial action elsewhere. We have listened for three days to an argument of great ability and research, and with much confidence retain the opinion we entertained at the outset, that in all the subordinate federal jurisdictions these questions should be deemed at rest until the court of last resort should reverse some of the judgments already rendered. We think the learned counsel for the defendant much underrated the effect which it is our duty to give to judgments pronounced by co-ordinate courts, where precisely the same points are brought in litigation before us. The learning upon this subject is familiar, but the motives with which we discuss these matters at all will be subserved by referring to a few of the leading judgments upon this subject here. Those to which we refer have applied the principle in patent cases, but it is by no means peculiar to them. It is a principle of general jurisprudence, a disregard of which

would produce a conflict of opinion in the federal judiciary, alike unseemly and impolitic.

In 3 Story, 133, *Washburn* vs. *Gould*, Justice Story, sitting in the Massachusetts circuit, said: "The rule of comity always observed by the Justices of the Supreme Court in cases which admitted of being carried before the whole court was to conform to the opinions of each other, if any had been given." Justice McLean had previously given a ruling upon the same point in the Ohio circuit in 3 McLean, 250, *Brooks* vs. *Bicknell*, and Justice Story therefore said, "although his mind was not without much difficulty on this point, he should rule for the plaintiffs, in accordance with the opinion of Mr. Justice McLean." In 3 Fisher, 363, *Am. Wood Paper Co.* vs. *Fiber Disintegrating Co.* before Benedict, J., eastern district of New York, there had been previous suits on the same five patents in other districts, and especially a suit in the eastern district of Pennsylvania, which decided the points in issue as to two of the patents. Judge Benedict said, as to these two patents, "The determination of the court in the case referred to furnishes an authority from which I should not feel at liberty, had I the inclination, to dissent." In 3 Fisher, 443, *Goodyear* vs. *Berry*, Leavitt, J., southern district of Ohio, a patent had been sustained in several other circuits. Judge Leavitt says: "In so far as principles involving the validity of these patents have been settled by these decisions, they will be regarded as final and authoritative on this court." In 4 Fisher, 624, *Tighlman* vs. *Mitchell*, southern district of New York, Blatchford, J., quotes with approbation our remarks in *Tighlman* vs. *Werk*, southern district of Ohio, 1868, in which it is said, "Although the record in this case in reference to some views which a superior court may possibly take contains some material additional proofs, still they are not such as to authorize the same court to overrule its former deliberate adjudications, and to disregard the judgments of a co-ordinate one in a case in all respects substantially like it." In 6 PAT. OFFICE GAZ., p. 154, *Goodyear Dental Vulcanite Co.* vs. *Root*, Justice Hunt, sitting in the northern district of New York, considers as authoritative the previous decisions in Massachusetts on the same patent. To the support of the generality sustained by these judgments it is unnecessary to say that numerous citations might be added, all showing that, in the opinion of the most enlightened jurists, we should be guilty of grossly violating well-established judicial usage and propriety should we disregard the adjudications already made in reference to the validity of the patent before us.

The principle which inclines a court to adhere to its own decision of a similar point, although subsequently convinced it was erroneous, though not in all respects applicable here, furnishes a strong analogy, and a reason on which our own actions should be based. (See Ram. on Legal Judgment, 203, *et seq.*) It there abundantly appears that the adherence to decisions is by no means confined to those which precede it in the same tribunal. Those of co-ordinate courts are equally influential. The Queen's Bench, common pleas, and the exchequer, where there is a common appellate court to review the decisions of each, follow with the utmost respect each other's adjudications.

Upon reasons having much influence here, appellate courts often follow a series of adjudications made by subordinate tribunals where they have been acquiesced in, and have become, in some sense, a rule of property. It is not because they are obligatory but from the unfitness of shifting rules. This is by no means closely applicable here, where judgments are recent and refer to the individual rights of the complainant. But many of the evils, it is quite apparent, which this class of judgments seeks to avoid would be produced should we disregard the rule. In the elaborate treatment of this general subject in the book to which we have referred, both by the English and American authors, it is significant that they make no distinction between prior decisions of the same and co-ordinate tribunals. It is enough to call for the application of the principle that the courts have the same jurisdiction under the same government to decide the same points, that there is a common appellate court finally to adjust the difference between them.

If one system of co-ordinate courts more than another calls for the application of this general principle it is that of the circuit courts of the United States. They all have similar special jurisdiction, and are all, in an eminent degree, looked to for all those rules of right and property created under the Federal Statutes, and in reference to the subjects coming within the Federal Constitution. Although divided in jurisdiction geographically, they constitute a single system; and when one court has fully considered and deliberately decided a question, every suggestion of propriety and fit public action demand it should be followed until modified by the appellate court.

The comment at the bar upon this subject assumed that the final decrees and elaborately-reasoned decisions of circuit judges, with full citations and criticisms of authorities, often involving the entire history of the law upon the subject discussed, are to be ranked with what are termed *nisi prius* decisions. They are in all respects judgments *in banc*. They not only have the deliberation and care of judgments in the high courts of chancery in England and this country, but the court of itself bears the same relation to the whole judicial system that such courts do to those in which they exist. There is but one appellate court above them. A superior tribunal also reviews the judgments of the English chancery, and so of nearly all the like state tribunals.

Although we would by no means confine our acquiescence in the decisions of our brother judges to cases where the particular patent has been adjudged to be valid, or that a particular device infringes upon it, still we think that eminently beyond other cases is the rule applicable to them. The right of the complainant is a special franchise granted by the political power. A special organism is created for the purpose of ascertaining his right to the grant. When issued, the several federal courts are authorized to review the rectitude of this action, and from their determination an appeal lies to the court of last resort. It is an indivisible system for ascertaining the rightfulness and the limits of the patent, and when, in any co-ordinate department of it, judgment has been pronounced, that duty should be deemed performed until reversed by an appellate tribunal. It would present an unseemly spectacle for the same governmental grant to receive half a dozen different constructions in as many co-ordinate courts, all authorized to define it and inform the citizens what it

means, and all having the force of law cotemporaneously under the same government. We cannot speak with great certainty, but do affirm with much confidence, that the expenses paid in our country for patent litigations are rapidly approximating the entire sum demanded for royalties. Until some special tribunal is instituted for the determination of these questions, and some general mode of reviewing these public grants, which shall test definitely the rightfulness of the grants, it will result in a large saving of money to the great masses of our citizens who are using these improvements, to let them and their advisers of the profession understand that a fair and full examination in one court, followed by a judgment, will, in the other co-ordinate tribunals, be acquiesced in as law, if there is no appeal and reversal.

It is said a present party defendant before the court could not have appealed from the former judgment. The court, as this one has repeatedly done, will carefully guard against any such hardship as to conclude the citizen by a proceeding to which he was not a party, of which he had no notice, and where, in fact, no appeal has been taken. If a desire by a defendant is expressed to test in a superior court the rectitude of what has been already adjudicated, and a complainant should refuse to stipulate that the proofs taken in another cause might be filed in the one pending, the rule would not be followed in the granting of preliminary injunction. Nor is there any hardship upon the complainant. If he insist that the record upon which a former judgment is rendered is full and fair, it is but just that he should suffer it to be imported into a present proceeding before he could ask a preliminary injunction. The defendant can then examine, and if he desires to add to it before the final hearing he can do so; if not, he can appeal to the Supreme Court upon the record as it is, and test the validity of what has been decided. Such a practice we believe far more beneficent and inexpensive to the defendant, as it is economical of the time of the court.

The following decisions, noticed, we think, in the order in which they were made, every one of them upon records *precisely* like that before us, or less favorable to the complainants, decide (most of them with much fullness of argument) every point necessary to authorize a decree for complainants. In 3 Fisher, 87, *Dental Vulcanite Co.* vs. *Wetherbee*, before Justice Clifford, in 1868, the bill was filed to restrain an infringement of the patent now before us. The defendant there, as here, insisted that the patent was invalid because it did not embrace that which was the subject of a patent. That if it did, it was void for want of novelty, and that Cummings was not the inventor. That if he invented he abandoned it. That there was a forfeiture of his rights, if any he had, under the statute, because he suffered it to go into use more than two years before he applied for his patent. That the reissue was void, because not warranted by the original patent. The cause was argued by counsel as eminent as any in the nation. Justice Clifford, after taking much time for deliberation, in a painstaking judgment, overruled every objection taken by the defense. *Goodyear Dental Vulcanite Co.* vs. *Gardner* was a similar case before the learned Justice, in 1868, and the same defense, among others, was substantially taken. The application for a preliminary injunction was argued by B. F. Curtis and Causten Browne, for complainants, and B. F. Thurston and S. D. Law and John A. Foster, for defendants. It is seldom that more professional ability is brought to the discussion of a similar application. Justice Clifford again, in his judgment, sustained the patent and overruled all the objections to it. (See pamph. rep. of case.) This cause was subsequently brought to final hearing on pleadings and proofs, and in 4 Fisher, 224, will be found the opinion of Justice Clifford rendered in favor of complainants after much deliberation, leave having been expressly given the respondents to reargue the questions of law and fact presented in the Wetherbee case. We will note, in connection with this case in the Supreme Court, the imputations cast upon it by the defense, observing here only that there is no accusation of impropriety in the case, before or at the time of the motion for interlocutory injunction. In 5 Patent Office GAZETTE, p. 585, *Goodyear Dental Vulcanite Co.* vs. *Smith*, the same defenses were in evidence as in the case now before us, the records being identical, with the exception of a small amount of additional testimony on the part of the defense in this case, of so little importance that it was not noticed at the bar by either side.

The cause was argued at great length by able counsel before Judge Shepley, who rendered an elaborate judgment in favor of complainants. In 6 Pat. Office GAZETTE, p. 154, *Goodyear Dental Vulcanite Co.* vs. *Root*, the same questions were presented to Justice Hunt, sitting in the northern district of New York, who, after argument, again sustained the patent. Subsequently, in suits by the same complainants against Charles S. Stockton and Frank A. Cummings, argument was had by the same counsel on the same record as in the Smith case, before Judge Nixon, in the district of New Jersey, who again sustained the patent at September term, 1874. A decree in favor of complainants against William H. Gates was granted at October term, 1874, on the same record as in the Smith case before Judges McKennan and Cadwalader, in the eastern district of Pennsylvania.

The case of *Goodyear Dental Vulcanite Company* vs. *Gardner*, *ante*, was appealed to the Supreme Court, and every ruling necessary for the support of the judgment in the court below affirmed by that tribunal. The effect of this judgment, as an authority here, is earnestly assailed, because the court, before the opinion was actually delivered, although judgment had been rendered, dismissed the appeal. We do not see, in the reasons for this dismissal, anything which decreases the obligation on our part to follow the rule of law necessarily involved in the judgment. The complainants, in the court below, for the purpose of securing an argument and a hearing, had advanced money for the fees of the defendant's counsel. For this reason the appeal in the Supreme Court was dismissed; but before this fact was brought to the attention of the court, the cause had been fully argued and judgment rendered, as in other cases. The circumstances under which the defense was prosecuted insured more than ordinary diligence on the part of counsel. The record before us shows that they were retained by the associated dentists, in convention at New York. They received a retainer in hand, with the promise of a large conditional fee of between $15,000 and $20,000, in case they succeeded in reversing the decision of the court below. The fact that money

had been advanced by these complainants was fully stated to this association, and, after much deliberation and advice of their counsel, they elected to test the questions at issue upon the record, as it then remained in the Supreme Court, because they were advised that no better one could be made for their interests. Gardner, at that time, was well understood by all parties in interest to be but a nominal defendant. The real parties in interest, who alone were prosecuting the defense, were fully advised of every fact, and in circumstances as well calculated to insure a favorable result as any which by any possibility could be presented upon the known facts, the case was decided against them. This judgment, as evidence of the law, and of what the court of last resort must evidently decide in like case, is obligatory upon us here. No such counter imputation has been made of the bar, and there may be facts outside of this record which would render such a suggestion extremely unjust to the real parties in interest, and who alone promoted the defense in the Supreme Court; but if all the conditions are before us, it would seem that a case of much ill faith on their part is presented. They were fully apprised of the facts. The complainants knew that they were so apprised of them. Both sides were equally cognizant of the just and necessary rule upon which the appeal after decree was dismissed. We are constrained to say that we do not see how, with anything like honor, they could refuse to abide by a judgment fairly obtained with full argument, in circumstances to which they, after much consideration, assented.

This series of decisions, without one in conflict with them, presents conditions in which it is our undoubted duty to apply the principle which makes the judgments of co-ordinate courts obligatory where they have been upon the same points and the same subject-matter.

As we have already intimated, ordinarily we should terminate our consideration of this case here. A matter so often and so authoritatively decided would not be discussed, upon principle, did we not believe that a brief reference to the reasons upon which these adjudications rest would be locally beneficial.

Defendant's counsel, in the first place, insist that the subject-matter, as they construe the claim, is not patentable. That in view of the state of the art—of what had been done before—the production of this plate did not involve invention, and that it had been in use by the dental profession. Our consideration of this head will be very brief—little more than a reference to a few of the reasons given in the adjudications which we have already cited. We know of no better statement of the claim than that given in the very able opinion of Judge Shepley in the case of these complainants *vs.* Daniel H. Smith. He says—

> It is for a set of artificial teeth, as a new article of manufacture, consisting of a plate of hard rubber or vulcanite with teeth, or teeth and gums, secured thereto, in the manner described in the patent, by embedding the teeth and pins in the vulcanizable compound, so that it shall surround the teeth and pins while the compound is in a soft state before it is vulcanized, so that when the compound is vulcanized the teeth are firmly secured by the pins embedded in the vulcanite, and there is a tight joint between the vulcanite and the teeth.

This definition includes alike the process of producing and the thing produced. Defendant's counsel earnestly contended that this case comes within the cases of *Hotchkiss* vs. *Greenwood*, (11 How., 248,) and *Hicks* vs. *Kelsey*, (18 Wall., 670,) which they insist hold that where one material is substituted for another in the production of a manufacture substantially like what already existed, a mere increase in efficiency would not sustain a patent. To apply that principle here would be an undue extension of the doctrine held by those cases. We approve, substantially, what was said by Judge Shepley, of the case of *Hotchkiss* vs. *Greenwood*, that, "In effect, the court decided that the peculiar effect claimed was not new, and therefore not patentable, and not that the combination might not have been patentable, had any effect been shown which was new, peculiar, and useful. If the knobs of porcelain or clay used by the complainants in that case had been new, or if, being old, the complainants, by a novel use of them in the old combination, had accomplished a new and useful result, differing not merely in degree but in kind from the result of the old combination, the patent would clearly have been valid, and the case cited is certainly not an authority to the contrary." In *Hicks* vs. *Kelsey*, the court says: "The use of one material instead of another in constructing a known machine is, in *most cases*, so obviously a matter of mere mechanical judgment, and not of invention, that it cannot be called an invention, *unless* some new and useful result, *an increase of efficiency*, or a decided saving in the operation, is clearly attained." This recent case fully concedes what otherwise we should attempt to show from the adjudications. We think, as it clearly intimates, that cases may exist where the degree of superiority may be such as to amount, within the law of patents, to a difference in kind. It is a mere matter of phraseology, and describing it either way should work no difference in principle. Here the dental profession had for many years striven to produce joints between the artificial teeth and plate that should be permanently impervious to the fluids of the mouth. Treating this as the specific object of effort anterior to the patentee's production, it had never been done at all. His manufacture is wholly new, and, if necessary to the support of his highly meritorious claim, we would, in this regard, thus treat it. In view of this feature, and of the greatly-added strength, its far greater adaptability to the surfaces of the mouth, in some uses its lightness, its elasticity, its resistance to chemical action, its vastly diminished cost, and several other important features detailed by the experts, the whole constitutes a product so substantially different from everything that preceded it as to bring it within the true spirit of the law which protects property in useful inventions.

We cannot take time to review the testimony of the experts. What Judge Shepley said of the record before him is literally applicable to that before us. He says: "To overcome the presumption that it is a new manufacture arising from the grant of the letters patent, the respondent has not introduced the opinion of any expert who is willing, in view of the state of the art as known to him and proved in the case, to testify that this was not, at the date of the original application, a new manufacture. Reliance is placed upon the evidence introduced in the case by the respondent to convince the court of the fact, upon which respondent's experts were not convinced, that the manufacture patented, as distinguished from those which had preceded it, was not a new manufacture."

In connection with what we have already said as to differences created by increased efficiency in degree only, and that which, according to existing technical distinctions, is a difference in kind, we were much impressed with the answer of Edward S. Renwick, one of the leading experts for the defendant. A question called upon him to say distinctly whether the use of vulcanite in the mode described did not involve invention. He concedes, assuming Cummings did not invent vulcanite, that if the change of material introduced a property which was different in kind from those before known in dental plates, and was valuable, it would impart a useful property they did not before possess, and that would constitute a new manufacture. A consideration of his entire testimony, and that of the great body of experts in this case, will show, we think, manifestly, that they deemed *that* a difference in *kind*, which is as wide in fact and practical utility as that which characterizes this dental plate. Vulcanite was well known and its properties familiar. Gutta-percha was also well known, and had been actually manipulated in the dental art. The whole profession had been earnestly directing its attention specifically to the object so successfully accomplished by this invention, yet no one, until Cummings suggested it, approximated the results he obtained, nor was this great improvement rapidly adopted after its mention in journals peculiarly accessible to the profession. It made its way slowly, and only with the aid of much urgency and industry, and against persistent opposition, to nearly universal adoption. The proof develops no one instance of its use not traceable directly to knowledge derived from Cummings. However plausible may be the argument that because the properties of vulcanite were well known, and the mere forms of these plates and teeth familiar, the history of this invention demonstrates that, as a matter of fact, the highest skill of a learned profession, with all its elements for years before them, not only failed to discover it originally, but required years of argument and experiment before they would adopt it. As we should naturally expect in such conditions, there is an absence in the record of expert testimony, showing that this claim, as judicially construed, did not involve invention. No case ever before us more eminently called for the application of the rule so frequently relied on to uphold the novelty of inventions, which deduces the fact of novelty from the extent of the revolution immediately resulting in that department of the arts in which they are employed.

Formally, the objection was taken that the reissue was not warranted by the original patent. The present claim, as construed by the court, is so undeniably indicated in the original patent that, although we did not understand the counsel for the defense as by any means waiving the point, we did understand by what passed at the bar, and explanations that were made in answer to interrogatories from the bench, that little reliance was placed upon this position. No useful purpose would be subserved in noticing it further. We have no doubt whatever the reissue was warranted by the original patent.

It is also insisted that the complainants' manufacture was anticipated by several pre-existing dental plates. It is not deemed necessary to contrast any of these devices with that before us. It has been frequently done by other tribunals before which they have also been proved, and in every instance judicially pronounced to be wholly unlike that described in complainants' claim. There is not sufficient similarity to demand at our hands a comparison. We quote again from the opinion of Judge Shepley, already noticed, the conclusion at which he arrives after a careful and minute discussion of a part, and a general reference to the residue, of the exhibits here claimed as anticipating the patent. After discussing the cast-tin plates made by Hawes and Royce, he says: "Without going into a detailed examination of the Wildman plates, made by casting tin around the roots of the teeth upon gold or silver plates, the unsuccessful attempts to use gutta-percha, the experiments of Dr. Hill with a secret compound of gutta-percha and some metallic salt, it is sufficient to state that none of these, much less any of the printed publications of which notice is given in the answer, suggest or describe an article of manufacture substantially like that described and claimed in the reissued patent on which this suit in equity is based."

It was also urged on the argument here, as it has been in the other cases referred to, that the rights of the complainants had been forfeited under section 7 of the act of 1836, as amended by the act of 1839, which provides that if the claimant shall suffer his invention to go into public use with his consent and allowance for more than two years prior to his application for a patent, it shall be deemed abandoned; and that it was also forfeited under section 8 of the act of 1836, and the additional act of 1839, providing that if the invention shall be patented in a foreign country more than six months prior, and be introduced into public and common use in the United States before the application for a patent, it shall be deemed void. Defendant's counsel concede that if the application for this patent was made in 1855 instead of 1864, then these objections have no application, because no use whatever was proven in this country, nor was the patent issued in England before that date. If the application made in 1864 was but a continuation of the proceeding launched in 1855, so that we may consider the application then made as that upon which the patent rests, neither the two years' period under the one section nor the six months under the other would apply. That within the meaning of these provisions, where successive applications are made in the procuration of a patent, where there is no proof of actual abandonment, the subsequent application will be deemed a continuation of the first, is fully sustained by the following adjudications. (1 Fisher, 377, *Bell* vs. *Daniels;* Leavitt, J., southern district of Ohio, 1858.) The application filed January, 1838, was then rejected. There was no withdrawal. In March, 1840, a new application was filed, and a patent granted 1840. The court says: "This question is decided by section 7 of the act of 1836. That section provides that when a patent is refused the application shall still be in force, unless the applicant, in a manner pointed out, elects to withdraw it." (3 Fish., 616, *Blandy* vs. *Griffith*, southern district of Ohio; Swayne, J., 1869.) The application filed May 3, 1856; June 15, 1857, rejected on appeal; May 26, 1858, last application filed; patent granted August 3, 1858. Sales by inventor continuous from summer of 1855. The applicant never exercised his right of withdrawal. Mr. Justice Swayne says, p. 617,

'The application of May 26, 1858, was in itself too late; but we think it may be properly held to have been in the nature of a petition for the review of the previous rulings, and to have related back to the prior application, and that the final action of the Commissioner was not original and independent action, but a renewal and prolongation of the former proceedings, and a reversal of the previous rejections." In 1 Wall., 317, *Godfrey* vs. *Eames*, application January, 1855; rejected May, 1855; withdrawal and new application, 1857; sales in fall of 1854; patent granted March 2, 1858. Mr. Justice Swayne, delivering the opinion of the court, said: "In our judgment, if a party choose to withdraw his application for a patent and pay the forfeit, intending at the time of such withdrawal to file a new petition, and he accordingly do so, the two petitions are to be considered as parts of the same transaction, and both as constituting one continuous application within the meaning of the law." (Pp. 325-6.) All the following judgments sustain and apply the same principle. The last application is deemed an indivisible part of the proceeding commenced by the first. They all hold that the original application is that upon which the law considers the patent depends. 5 Fish., 250, *Clark* vs. *Scott*, Blatchford, J.; 7 Blatchf., 521, *Singer* vs. *Braunedorf*, Blatchford, J.; 5 Fish, p. 198, *McMillan* vs. *Barclay*, McKennan, J.; 5 Fisher, 473, *Johnson* vs. *Fasman*, Woods, J.; 3. Pat Off. GAZ, p. 630, *Jones* vs. *Sewell*, Clifford, J.; 1 Fish., p. 11, *Adams* vs. *Edwards*, Woodbury, J.; 1 Fisher, 527; *Adams* vs. *Jones*, Grier and McCandless, JJ.; 1 Fisher, 546, *Sayles* vs. *C. & N. W. R. R. Co.*, Drummond, J. These decisions dispose of the objection that the rights of the patentee were forfeited because the application was not made in time. This disposition of the objection of forfeiture renders unnecessary what we should otherwise deem it proper to show, that in order to support that part of it resting upon the issuance of a foreign patent, proof should be given connecting the complainant with its procuration.

No objection was more strenuously urged than that predicated upon 1 Wall., 317, *Godfrey* vs *Eames*, which the defendant claims intimates that there may be an abandonment in fact, intermediate the first and succeeding applications, which will so sever the proceeding as to make the patent rest in legal contemplation upon the last, and if two years before *it* the thing has gone into public use with the consent or allowance of the patentee, it shall be deemed abandoned. To answer this objection, and negative the idea that Cummings, by his delay in the prosecution of his claim, intended to abandon it, the complainants have put into the record voluminous proofs, showing a continuous and persistent assertion of his right and intention to maintain it. The testimony shows numerous and fruitless attempts to procure assistance to defray the expenses of his application by offering shares of the patent, if obtained, and otherwise, and in the later periods of his delay such a degree of ill health, poverty, and general depression on his part, as shows good reason why he did not prosecute more vigorously his application. The facts do not warrant, nor was the argument pressed, that there was fatal delay prior to 1859. At that time, Cummings had become insolvent, and his health seriously impaired by chronic diseases, which ultimately terminated his life. The testimony leaves no room for doubt that after this period he wholly ceased to furnish any considerable part of the support of his family. His wife's small separate property was first mortgaged and then sold, to procure what is proved to be the small and sometimes too scanty expenditure upon which they lived. The praiseworthy efforts of his wife as the keeper of a boarding-house, the pawning of her few personal ornaments, and her general care and support of a diseased and dispirited husband, present a picture as affecting as it is demonstrative of Cummings's inability, from sheer poverty, to prosecute his application. The only diligence of which, in his physical and pecuniary condition, he was capable, he manifested by such a constant reiteration of his rights as showed that the idea, in the words of some of the witnesses, "had taken complete possession of his mind," and incapacitated him for all other business. His offer of portions of the future patent were frequently repeated during the whole period till 1864, when, after its partial use by the profession had demonstrated its utility, for the first time his proposition was accepted, the means obtained, and the patent procured. His history and condition during this entire time exclude the idea that he intended to abandon his claim. The *prima facie* evidence of a contrary intention springing from the fact that he did make the last application is not overcome by the evidence *aliunde*, but is proven to be consonant with the real intention of the inventor.

There is one most remarkable feature in several of the discussions of this subject before other tribunals, and which with great emphasis presented itself in this. We do not refer to it to censure counsel in the present cause, as those of equal eminence have elsewhere, in the presence of excited defendants, made similar denunciations. That Goodyear should have a patent for vulcanite, and compel dentists to pay a royalty for using it, and that Cummings should procure a patent for a dental plate made of that same substance, and compel them also to pay a tribute for its use, is treated as an astounding novelty and an atrocious fraud. The accident that subsequent transfers have lodged the present patent in the same hands which held that of Goodyear, presents to the unprofessional mind, unacquainted with the wholly distinct character of the two rights, plausible grounds for this unfounded criticism. A large share of the strong feeling and the strong conviction that injustice has been done the dental profession has sprung from what seems to us a wholly unjustifiable perversion of the most familiar truisms in patent law. It is but the simple—the every day recurring—case where one patentee employs the invention of a prior one. In such instances, it must be true that he who uses the manufacture or article which involves both, must pay a royalty to each inventor. Cummings' invention neither authorized him nor any one else to use the invention of Goodyear, nor could the latter make these dental plates with his material without the consent of Cummings or his grantees. When Goodyear's patent expired he and his associates had just as much right to become the assignees of Cummings as any other citizen. The accidental circumstance that the same man issued licenses first under one patent and then under the other is unimportant and even trivial. Such instances in this department of business are very frequent, and the union of such interests, instead of being injurious, is beneficial to the public, not only from the economy but the convenience of procuring licenses. Self-evident as all this is to the legal profession and to those dealing in this species of property, an impolitic and much-to-be-regretted impression has been created in the minds of the dental profession, that they have been wronged and actually oppressed by what has been termed "the mercenary marriage or illicit connection of these two rights." It would seem too evident to require additional illustration that the rights under this patent, and the obligations of those who use it, are in no way changed in the slightest degree by the immaterial fact that Goodyear once had a patent for vulcanite that has now expired. *Its* use is free alike to the dentists and these complainants. The one charges and the other pays neither more nor less than if vulcanite was a natural substance common as ordinary clay. It is the real valve of Cummings' invention alone which is sold, and which they purchase or not, as they please, being free to use *vulcanite* without any royalty whatever, for any purpose not involving his invention.

Our purpose in thus referring to a few of the reasons which induce us to decide this case in favor of the complainants upon principle, irrespective of the prior adjudications, has been to suggest to the numerous other defendants having like cases pending what we believe to be the uselessness of additional argument before subordinate tribunals. If this patent is to be held invalid after so many judgments sustaining its validity, we are clearly of the opinion that it should be done by the court of last resort. The interests of the numerous defendants now litigating in the circuits would be far better promoted by an early appeal to the Supreme Court than in wasting so much time and money by the creation of numerous similar records, and paying for repeated arguments before co-ordinate courts. We do not think they can be effective there without a violation of the well-established and necessary principle to which we referred in the outset, which renders authoritative upon us the long list of adjudications elsewhere rendered.

Decree for complainants.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Any person may oppose either extension.

Hearings upon the respective applications are appointed for the days named in each case.

Arguments must be filed ten days before the day of hearing.

374.—Whole number, 31,378.—Harvesting-Machines.—Granted to RUFUS DUTTON, February 12, 1861; reissued in two divisions, numbered 4,194 and 4,125, September 20, 1870, No. 4,125 having been again reissued December 27, 1870. Application filed November 12, 1874. Testimony closes January 12, 1875. Hearing January 27, 1875.

390.—Whole number, 31,394.—Machines for Molding Pottery.—Granted to WILLIAM LINTON, February 12, 1861. Application filed November 11, 1874. Testimony closes January 12, 1875. Hearing January 27, 1875.

398.—Whole number, 31,402.—Machines for Binding Grain.—Granted to STEPHEN REYNOLDS, February 12, 1861. Application filed November 12, 1874. Testimony closes January 12, 1875. Hearing January 27, 1875.

439.—Whole number, 31,443.—Folly-Machines.—Granted to CHARLES H. DENISON, February 19, 1861. Application filed November 19, 1874. Testimony closes January 19, 1875. Hearing February 3, 1875.

441.—Whole number, 31,445.—Limekilns.—Granted to RICHARD DONALDSON, February 19, 1861, and reissued May 19, 1863. Application filed November 18, 1874. Testimony closes January 19, 1875. Hearing February 3, 1875.

498.—Whole number, 31,502.—Machines for Breaking Coal.—Granted to R. A. WILDER, February 19, 1861. Application filed November 18, 1874. Testimony closes January 19, 1875. Hearing February 3, 1875.

507.—Whole number, 31,511.—Lamps.—Granted to CHAS. W. CARDON, February 19, 1861, and reissued August 9, 1864. Application filed November 14, 1874. Testimony closes January 19, 1875. Hearing February 3, 1875.

521.—Whole number, 31,525.—Machines for the Manufacture of Hoe-Blanks.—Granted to NATHAN BRAND, February 26, 1861, and reissued in two divisions, numbered 1,481 and 1,482, May 26, 1863. Application filed October 3, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

529.—Whole number, 31,533.—Weighing Apparatus.—Granted to AUGUSTUS B. DAVIS, February 26, 1861. Application filed November 27, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

530.—Whole number, 31,534.—Scale-Beams.—Granted to AUGUSTUS B. DAVIS, February 26, 1861. Application filed November 27, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

549.—Whole number, 31,546.—Polishing Iron Bars and Rods.—Granted to BERNARD LAUTH, February 26, 1861. Application filed November 3, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

562.—Whole number, 31,566.—Drying Tunnels.—Granted to FRANCIS H. SMITH, February 26, 1861; reissued June 30, 1868, July 11, 1871, and March 26, 1872. Application filed November 27, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

574.—Whole number, 31,578.—Machines for Folding Paper.—Granted to WILLIAM H. MILLIKEN and JOHN MILLIKEN, February 26, 1861, and reissued in two divisions, numbered 3,785 and 3,786, January 4, 1870. Application filed October 26, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

575.—Whole number, 31,579.—Corn-Planters.—Granted to FRANCIS B. PRESTON, February 26, 1861. Application filed November 27, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date January 12, 1875.]

7,993.—Font of Printing-Types.—DAVID WOLFE BRUCE, New York, N. Y. Application filed December 8, 1874. Term of patent 14 years.

7,994.—Font of Printing-Types.—JULIUS HERRIET, New York, N. Y., assignor to DAVID WOLFE BRUCE, same place.—Case A. Application filed December 8, 1874. Term of patent 14 years.

7,995.—Font of Printing-Types.—JULIUS HERRIET, New York, N. Y., assignor to DAVID WOLFE BRUCE, same place. Application filed December 8, 1874. Term of patent 14 years.

7,996.—Cooking-Range.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, assignors to NICHOLAS S. VEDDER, Troy, N. Y. Application filed December 30, 1874. Term of patent 3½ years.

7,997.—Franklin Stove.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, assignors to NICHOLAS S. VEDDER, Troy, N. Y. Application filed December 30, 1874. Term of patent 3½ years.

7,998.—Heating-Stove.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, assignors to NICHOLAS S. VEDDER, Troy, N. Y. Application filed December 30, 1874. Term of patent 3½ years.

7,999.—Cooking-Stove.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, assignors to NICHOLAS S. VEDDER, Troy, N. Y. Application filed December 30, 1874. Term of patent 3½ years.

8,000.—Medal.—HENRY G. BRACK, New York, N. Y. Application filed December 12, 1873. Term of patent 3½ years.

8,001.—Carpets.—HEINRICH F. GOETZE, Boston, Mass., assignor to ROXBURY CARPET COMPANY, same place. Application filed December 30, 1874. Term of patent 3½ years.

8,002.—Reed-Organ Cases.—JOHN R. LOMAS, New Haven, Conn., assignor to B. SHONINGER, same place. Application filed December 31, 1874. Term of patent 14 years.

8,003.—Carpets.—THOMAS J. STEARNS, Boston, Mass., assignor to ROXBURY CARPET COMPANY, same place. Application filed December 30, 1874. Term of patent 3½ years.

8,004.—Cooking-Stoves.—NICHOLAS S. VEDDER and FRANCIS RITCHIE, Troy, and TOBIAS S. HEISTER, Lansingburg, assignors to NICHOLAS S. VEDDER, Troy, N. Y. Application filed December 30, 1874. Term of patent 3½ years.

8,005 and 8,006.—Base-Burning Stoves.—NICHOLAS S. VEDDER and FRANCIS RITCHIE, Troy, and TOBIAS S HEISTER, Lansingburg, assignors to NICHOLAS S. VEDDER, Troy, N. Y. Applications filed December 30, 1874. Term of patents 3½ years.

8,007.—Fancy Cassimere.—FREDERICK SNOW BOSWORTH, Providence, R. I., assignor to WETBOSSET MILLS, same place. Application filed January 2, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date January 12, 1875.]

2,159.—Cooking-Stoves.—BONNET, DUFFY & CO., Quincy, Ill. Application filed December 29, 1874.

"'Franklin Cook.'"

2,160.—Baking-Powders.—HAMILTON & CO., Fort Wayne, Ind. Application filed December 18, 1874.

"'Crown Baking-Powder.'"

2,161.—Cigars.—S. LOWENTHAL & CO., Cincinnati, Ohio. Application filed December 12, 1874.

"a representation of a winged dragon displayed on a heraldic shield."

2,162.—Piano-Fortes.—ARION PIANO-FORTE COMPANY, New York, N. Y.—Case A. Application filed January 7, 1875.

"the representation of a human figure, intending to be Arion riding on a dolphin."

2,163.—Piano-Fortes.—ARION PIANO-FORTE COMPANY, New York, N. Y.—Case B. Application filed January 7, 1875.

"'Arion Piano-Forte.'"

2,164.—Nursing-Bottles.—M. S. BURR & CO., Boston, Mass. Application filed December 21, 1874.

"the representation of an eagle and the words 'The Eagle Nursing-Bottle.'"

2,165.—Sewing Silk and Twist.—W. H. COPCUTT & CO., Yonkers, N. Y.—Case A. Application filed January 4, 1875.

"'Merchants Union.'"

2,166.—Sewing Silk and Twist.—W. H. COPCUTT & CO., Yonkers, N. Y.—Case B. Application filed January 4, 1875.

"'THE FAVORITE.'"

2,167.—Medicines.—DUNDAS DICK & CO., New York, N. Y. Application filed January 2, 1875.

"the representation of five maple-leaves."

2,168.—Cooking-Stoves.—FULLER, WARREN & CO., Troy, N. Y. Application filed January 2, 1875.

"'REPORTER.'"

2,169.—Varnishes.—A. E. HOPPOCK & CO., Newark, N. J. Application filed December 28, 1874.

"'S. P. S.'"

2,170.—Soap.—DANIEL F. PACKER, Mystic river, Conn. Application filed January 2, 1875.

"the representation of three cakes of soap, with the words 'Florida Water Soap' thereon."

COPIES OF DRAWINGS OF BACK ISSUES.

Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 31, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTING; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)	6,500
SEWING-MACHINES and attachments	2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes	4,000
PRINTING; including presses, type, and printers' furniture	2,500
FELTING and HATS; including caps, bonnets, flock, &c.	1,900
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs	1,400
CARRIAGES and WAGONS	6,000
BRIDGES; including ferry-guards, girders and columns, piers	408
CARDING, CLOTH, CORDAGE, KNITTING, SILK, SPINNING, WEAVING	4,800
RAILWAYS, complete, about	3,500
ELECTRICITY, (in progress,) to July, 1871	888
TEXTILE, (in progress,) to July, 1871, about	4,800

The OFFICIAL GAZETTE of the United States Patent Office is published weekly by the Patent Office. It is printed by authority of an act of Congress, which provides for its gratuitous distribution to libraries at the rate of eight for each congressional district.

The GAZETTE contains the decisions of the Commissioner of Patents, and such decisions of the courts in patent causes as are believed to possess general interest to inventors and patentees.

During the past year a complete synopsis of foreign patent laws, prepared by members of the British Legation in foreign countries, has been printed in the GAZETTE. Also an epitome of the proceedings of the Vienna International Patent Congress, with the action of that body to perpetuate itself. Matters of this character will receive further attention in the GAZETTE.

The claims of all patents granted are printed in the GAZETTE, bearing the same date as the issue of the patent, accompanied by a brief synopsis of the invention and a portion of the drawing.

The illustrations are photographic reproductions on a reduced scale of the drawings accompanying the original application, and preserve their fidelity, which was sometimes lost under the old plan of drawing or tracing and engraving.

Application for extension of patents, and the action of the Office in such cases, have their earliest publication in the GAZETTE. Disclaimers filed in the Office are nowhere else published.

Changes in the rules of practice of the Office are announced in the GAZETTE, which affords a much readier mode of communication with parties interested than to await a new edition of the Rules of Practice.

Finally, any matter believed to be of interest to inventors in their official intercourse with the Office, will receive in the GAZETTE the attention the subject warrants.

The following abbreviated forms of the Patent Office classification by subject-matter may be of assistance to persons ordering copies of specifications and drawings by class. Of course the classes vary somewhat in number of patents, and in following a branch of industry it may be necessary to group several classes to secure absolute completeness. These groupings will readily suggest themselves to the inventor or mechanic.

Copy of classification in full for the use of subscribers furnished on application.

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BOUND VOLUMES OF PATENTS.

The bound volumes of patents, containing the specifications and drawings of patents in full from May 30, 1871, to within a few months of date, may be consulted at the following places:

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Patent Office, Great Seal, London, England.
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Also at State Historical Societies of Madison, Wis., and St. Paul, Minn.; and at Territorial libraries of—

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COPIES OF SPECIFICATIONS AND DRAWINGS.

Persons desiring copies of all specifications and drawings of any particular class of patents can purchase them at the rate of ten cents each, and have them mailed, free, to their address, as soon as possible after the patents are issued, by leaving a deposit of not less than three dollars with the Commissioner of Patents. The index of classes for subscribers, date of September, 1871, is furnished gratis to any applicant.

In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

Copies of the specifications and drawings of design patents will be furnished by the Patent Office at the cost of making them. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

FINAL FEES.

The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited, and the invention therein described will become public property, as against the applicant therefor, unless he shall make a new application within two years from the date of notice of the original allowance.

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TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED JANUARY 12, 1875.

158,562. BLIND-SLAT ADJUSTER. David Aaron, Marysville, Cal. [Filed June 27, 1874.]



The crank *h*, spring *k*, and tube *c*, in combination with a slotted arm, *j*, screw *i*, and connecting-rod *f*, so as to allow the arm *j* self-adjustability, as set forth.

158,563. CAR-TRUCKS. Jas. A. Anderson, Cleveland, Ohio. [Filed Oct. 28, 1874.]

Brief.—Short independent axle for each wheel, with bearings in flanges of oil-cups; said cups being attached by cam to an immovable frame.



In a railway-car truck, the wheels B supported by pins *b*, in combination with the lames C made with offsets to cover the hub of the wheel, and provided with an oil-chamber, *c*, and lid *c'*, substantially as and for the purpose described.

158,564. MEDICINE-DROPPERS. J. Barnes, Brooklyn, N. Y. [Filed July 21, 1874.]



The combined stopper and drop-discharger, consisting of a dropping-tube, a compressible bulb, and a bottle-stopper, substantially as described.

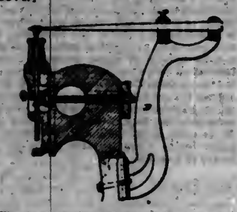
158,565. PRESSER-ROLLERS FOR SEWING-MACHINES. Merrick M. Barnes, Boston, Mass. [Filed July 31, 1874.]

Brief.—The presser-roller frame is hinged to a support attached to the presser-bar, and has an arm that engages a screw on the support, to hold the presser-roller in working action. The drawing shows the presser-roller turned aside from its working position.



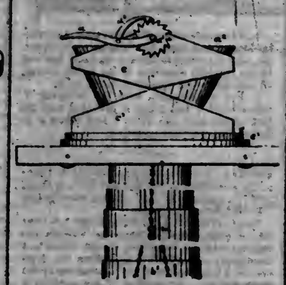
The combination, substantially as set forth, of the swinging arm of the presser-foot with its grooved spring, tapering pin, and spring, and the adjusting-screw with its shoulder, whereby the presser-foot may be firmly locked automatically when shut, all arranged for the purpose set forth.

158,566. SHOE-NAILING MACHINES. P. B. Barstow, Trenton, N. J. [Filed Sept. 5, 1874.]



The horizontal wood spring D', supported in recesses upon bracket D, in combination with adjusting set-screw D' and hammer-spindle C, all substantially as and for the purpose described.

158,567. MODES OF LOADING COAL, &c. Charles H. Bean, Brooklyn, N. Y. [Filed Nov. 14, 1874.]



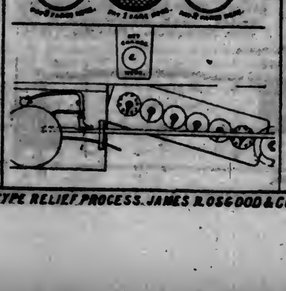
1. The construction and use of a telescopic coal-feeder, for the purpose of letting down gently from a height, coal and other similarly affected articles, substantially as described.

2. In combination with the telescopic coal-feeder, the tipping and balancing frames *c* and *c'*, and the circular turning plates *a* and *a'*, or their equivalents, for producing the turning and inclining operation, as described, and for the purpose specified.

3. In combination with the telescopic coal-feeder, the chains *b* and *b'*, the windlass *a'*, the lever *e*, and the ratchet *e'*, or their equivalents, substantially as described, and for the purposes specified.

158,568. FARE-REGISTERING DEVICES. J. A. Brown, Boston, Mass. [Filed Nov. 27, 1874.]

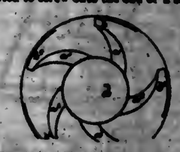
Brief.—The passenger passes the fare through the door marked with the number of fares he wishes to pay, the swinging of the door automatically recording an alarm, and operating the registering device.



A device for registering fares of conductors and other conveyances, consisting of a series of two or more doors connected with any suitable indicator and an alarm-bell, each door being provided with a sign to indicate the amount to be paid through it, and the whole operating substantially as and for purposes stated.

158,569. SHOE-TREEING MACHINES FOR BOOT AND SHOE SOLES. Robert P. Burns, New York, N. Y., assignor to the Burns Machine Company, same place. [Filed Oct. 23, 1874.]

Brief.—The hollow circular cutter-head is provided with longitudinal spiral cutters, also vertical knife-blades supported upon the inner face of the shield, all cast in one piece, and adapted to screw onto the end of a shaft.



1. The hollow circular cutter-head E, having the spiral cutters *a*, *a'*, *a''*, *a'''*, and *a''''*, arranged parallel to its axis; also, provided with a circular disk or shield at its outer end, the periphery of which extends beyond the spiral cutters, and having upon its inner face the vertical cutters *b*, *b'*, *b''*, *b'''*, and *b''''*, all constructed from one solid piece of metal, arranged and operating substantially as and for the purposes herein shown and described.

2. In combination with the hollow circular cutter-head E, provided with the two sets of cutters and shield, the double adjusting-gage F, operating substantially as and for the purposes described and set forth.

3. In combination with the hollow circular cutter-head E, provided with the two sets of cutters and shield, the double set of guides I I, adjustable by means of thumb-screws K, substantially as and for the purposes as described.

158,570. TILE-MACHINES. Thos. B. Chandler and Franklin Taylor, Indianapolis, Ind. [Filed Oct. 20, 1874.]

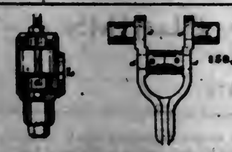
Brief.—An oblong case surmounted by an upright cylinder containing a vertical revolving spindle with lateral blades, at the bottom of which an eccentric friction-wheel reciprocates a frame in the box, with a plunger at each end, forcing out therefrom tiles formed of the clay supplied by the blades.



The pressure-box E, provided with packing-plates K K, the piston Z, having the recess H, and provided with piston-heads J J, with adjustable packing-plates K' K', in combination with the operating mechanism, consisting of the shaft B, crank P, and roller O, as and for the purpose specified.

158,571. PITMAN. Thos. B. Chandler, Indianapolis, Ind., assignor of one-half his right to Franklin Taylor, same place. [Filed Oct. 20, 1874.]

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON



158,571.

The pitman, consisting of a flexible rod, D, hollow wrist-pins C C, wrist B B, and spherical boxes B C, combined as described, substantially as and for the purpose specified.

158,572. HEATING-STOVES. G. Comstock, Keokuk, Iowa. [Filed Sept. 11, 1874.]

Brief.—The pipe-collar is supported upon the base-plate through the medium of a supporting-arm. The base-plate and rounded body form a convenient space for foot-warming.



1. The combination of the rounded horizontal sheet-metal body A and the rest T from pipe-connection N to base-plate H, substantially as set forth.

2. The combination of the double-plate columns F' and the base-plate H, to support the stove, substantially as set forth.

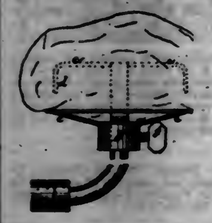
3. The combination of the rounded horizontal body A and the end plates having double plates F' outside of the body down to the base-plate H, substantially as set forth.

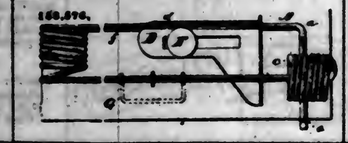
4. The combination of the separate base-support H and the rounded horizontal sheet-metal body A, substantially as set forth.

5. The combination of the rounded horizontal stove-body A, having circulation of hot smoke below the ash-chamber, with a base-plate, H, projecting outward at or below the bottom of one or both sides of body A, substantially as set forth.

158,573. SPONGE-HOLDERS. R. G. Conradson and A. Ferrell, Brooklyn, N. Y. [Filed Apr. 17, 1874.]

Brief.—A straight or bent stem is provided on its upper end with three forks, and terminating at the ends in prongs bent downward at right angles to the forks. The stem is made pointed at the other end to pierce the sponge, as it can be pressed up against the prongs. A circular sleeve is slipped over the pointed end of the stem, and pressed against the sponge, and held in this position by aid of a set-screw applied to the side of the sleeve-holder.





158,574.

In combination with stem A, provided with forks c and prongs d and handle I, the sleeve D, holder e, and set-screw g, substantially as and for the purpose set forth.

158,575. BUTTON-HOLE-CUTTING ATTACHMENTS FOR SEWING-MACHINES. Isaac S. Craig, Somerville, Mass. [Filed June 5, 1874.]

Brief.—The cutter is arranged upon the end of a swinging arm, which is hinged at its other end to the table-top, and is operated by means of a screw-bolt, which passes through it and through a slot in the table-top; the said bolt being provided on its lower end with a head, having its upper or inside surface beveled off in a direction opposite to that of the screw-thread, so that, as said bolt is revolved, the screw-thread thereon, operating in the hinged arm in connection with the widened surfaces of the head, acting on the under side of the table, forces the cutter down upon the cutter-block, which is made adjustable by means of a screw.



1. The combination, with the stationary cutter-block f and table T, of the lever B, its cutter, and the screw D, having its head inclined in the opposite direction to its screw-thread, all combined and operating as set forth.

2. The combination, with the table-top T, cutter-block f, and clamp d, provided with the locking-pin p, of the slide a and screw c, as and for the purpose specified.

158,576. JOURNAL-BOXES. David A. Deming and Sterling W. Wicker, Seneca Falls, N. Y., assignor to H. C. Silsby, same place. [Filed June 19, 1873.]

Brief.—The oil flows from a top reservoir into a nearly annular chamber outside the bearing, and, by apertures, to the inside and out again; also, by other pipes from the reservoir, to a longitudinal groove on the top of the inner surface. By rotation of the shaft both supplies circulate around it, and pass out to complete the circulation.



1. The combination, in journal-boxes of rotary steam engines and pumps, of the chambers D' and D with the pipes b b, the opening H, and the holes S S, substantially as and for the purposes hereinbefore described.

2. The groove K K, M M, and N N, the pipes c c, the opening H, and the holes S S, when the several parts are combined in journal-boxes of rotary steam engines and pumps, in the manner and for the purposes substantially as specified.

158,578. TUCK-MARKERS FOR SEWING-MACHINES. John Y. Detwiler and A. E. Detwiler, Toledo, Ohio. [Filed May 7, 1874.]

158,578.

The tuck-marker herein described, consisting of the wire A B C, bent in the form shown and described, its top front edge beveled to a sharp marking-edge, e, and constructed with the scale f, formed upon it, attaching loop G, and guide-plate D, secured to the wire A by the lip d, which embraces the wire, and on which it is adjusted, and securing-screw E, all constructed, arranged, and adapted to operate substantially as and for the purposes set forth.

158,577. SHOETS FOR FIRE-ARMS. Thomas Dunstone, Santa Cruz, Cal. [Filed Nov. 28, 1874.]



1. The cylindrical rotating carrier or sleeve B, provided with one or more sights, D and E, and constructed to operate substantially as and for the purpose herein described.

2. The guard G and the set-screw F in combination with the rotating sleeve B and sights D and E, substantially as herein described.

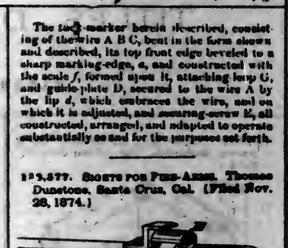
158,579. MANUFACTURE OF PILES FOR BEAMS. Robert S. Durfee, New York, N. Y. [Filed Aug. 18, 1873.]

Brief.—A pile of iron bars is first welded and rolled to form. Another pile is then made of the bar just described, and bars of steel, one of which is of blistered or puddled steel, interposed between the other steel bar and the iron body. The advantage resulting is, that a less degree of heat is required to properly weld this pile than would be required to weld at the same time the iron pile, also.



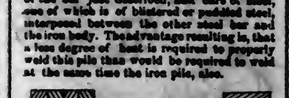
The process of making beams, girders, and rails, substantially as described and shown.

158,579. ROTARY ENGINES. J. S. Fairfax, Baltimore, Md. [Filed May 26, 1874.]

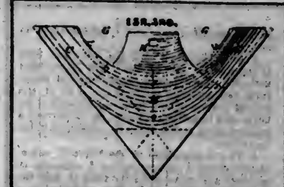


In combination with an outer casing, a revolving cylinder made of suitable material, and having its periphery wrought into undulating spiral grooves with roughened surfaces, for the purpose of affording greater frictional resistance to the impinging particles of the motive fluid, and of utilizing the same by revolving it into a rotary motion, as described.

158,580. PLOWS. Arthur B. Farquhar, York, Pa. [Filed Sept. 10, 1874.]

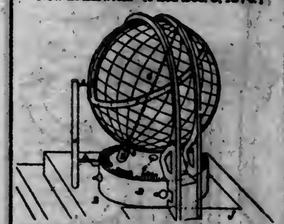


The sweep B, made of a triangular plate of steel, the shorter sides forming the cutting-edges, and shaped to present a level point rising to the rear in regular curved lines, and having the notches G cut away, as shown and described, forming the wings C, with curved edges I, all as and for the purpose set forth.



158,580.

158,581. GLOBES. Elias B. Fitz, St. John, New Brunswick. [Filed Dec. 9, 1874.]



1. The arched standards H I, in combination with the inclined globe G and disk D, substantially as and for the purposes stated.

2. The standards H I, mounted upon a frame or support independent of the base A, and arranged to slide thereupon to and fro with respect to the globe, substantially as and for purposes stated.

3. The pointers e and e, in combination with the globe and the horizon-ring K and band L, substantially as and for purposes stated.

4. The graduated disk D, pointers e and e, and globe G, substantially as and for purposes stated.

5. In combination with the globe G, the rotary disk D, supporting the same, and provided with a scale of divisions representing the signs of the ecliptic, substantially as and for the purposes set forth.

6. The combination of the base A, standards H I, disk D, globe G, pointers e and e, and ring K, the whole being substantially as and for purposes stated.

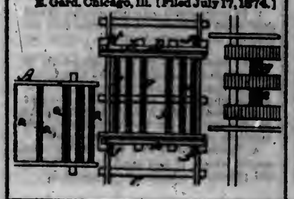
158,582. GAS-BURNERS. Andrew Fulton, Albany, N. Y. [Filed Dec. 21, 1874.]

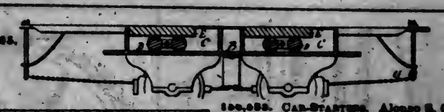
Brief.—There is a shoulder upon the screw-nipple for preventing the escape of gas, and a conical valve and conical seat for guiding the float.



The body or base A, with an annular chamber, a, for the reception of glycerine or other suitable fluid, and an upwardly-projecting screw-nipple, b, formed with an annular rim or shoulder, d, in combination with the hollow cap B, diaphragm f, having a conical valve-seat, and the float C, with conical valve h, as and for the purpose described.

158,583. BRICK TRUCKS AND STANDS. W. B. Gard, Chicago, Ill. [Filed July 17, 1874.]





158,585.

1. A truck, G, for handling bricks, in combination with the hack-frames, combined to operate substantially as and for the purpose specified.

2. A truck, G, for handling bricks, provided with elevating and lowering lifters m m m, combined to operate substantially as and for the purpose specified.

3. The combination of the sliding lifters m m m, cords or chains n n and p p, winding-shaft r, and pulleys s s, substantially as and for the purpose specified.

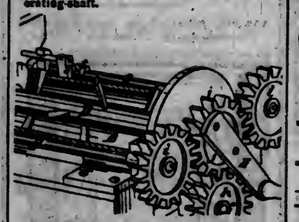
4. A hack-frame, B, provided with elevating-timbers d d, combined substantially as and for the purpose specified.

5. A transferring-truck, D, in combination with rollers y y and ways A A, substantially as and for the purpose specified.

6. A brick-handling apparatus, composed essentially of a roller-way, A, hack-frames B B, and handling-truck G combined, operating together substantially as herein specified.

158,584. BRICK-MACHINES. W. B. Gard, Chicago, Ill. [Filed July 20, 1874.]

Brief.—Clay is forced through the opening in the pug-mill into the transversely-located molding-chamber, within which the bricks are molded by reciprocating pistons. The plungers are connected by rods engaging with gearing at one end, and with cam-slots on the plungers at the other end. At the moment the brick is compressed by the reciprocating plungers, it is ejected by a transverse plunger operated by cam-gearing thereon and the operating-shaft.



1. In a machine for molding and compressing bricks, a mold-box, C, forming the discharge end or bottom of the pug-mill, and provided with molding and compressing plungers G H H, which have a reciprocating movement therein, substantially as and for the purpose herein specified.

2. In a machine for molding and compressing bricks, the combination of compressing-plungers G H H, moving transversely to the pug-mill in a mold-box, C, with a screw or other driver, N, in the pug-mill, which presses the clay into the mold-box, substantially as and for the purpose herein specified.

3. The combination of a mold-box, C, having inner clay-receiving apertures a a and outer brick-discharging apertures b b, with reciprocating plungers G H H, which compress and mold the bricks therein, and pass them from the said inner to the said outer apertures, substantially as and for the purpose herein specified.

4. The combination of the plungers G H H, having respective vertical or transverse cam-slots d d, with the driving-cranks L M M, the latter exceeding the former slightly in length, substantially as and for the purpose herein specified.

5. The hollowed inner surfaces e e of the cam-slots d d in the outer plungers H H, formed in relation to the cam-slot e of the inner plunger G, substantially as and for the purpose herein specified.

6. The hollowed surfaces e e of the cam-slot e in the inner plunger G, in combination with the discharging-apertures b b of the mold-box C, substantially as and for the purpose herein specified.

7. The brick-discharging followers p p, operating as described, in combination with the mold-box C, having discharge-apertures b b, substantially as and for the purpose herein specified.

158,585. CAR-STARTERS. Alonzo S. Gear, Boston, Mass. [Filed Dec. 9, 1874.]

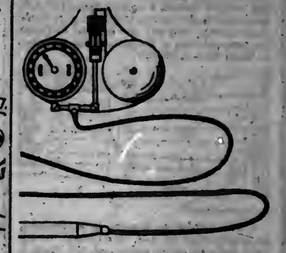
Brief.—Car-body on rollers, and provided with projections, which communicate its impetus to the truck, and so assist in starting the wheels. Rest-rods form ways permitting longitudinal, but preventing vertical, motion.

1. In combination with the car-body A and its projections E E, the truck-frame B, boxes C C, and rolls D D, substantially as described.

2. In combination with the car-body A and truck-frame B, the bent rods H H, substantially as and for the purpose set forth.

158,586. SAFETY DEVICES FOR PREVENTING VESSELS FROM RUNNING ON SHORE. Edward D. Gird, Syracuse, N. Y. [Filed May 14, 1874.]

Brief.—A cylinder open at one end, and having an air-chamber and piston, is suspended from the vessel by means of a hollow flexible tube. The water, passing through the opening in the cylinder, presses against the piston, which, being forced upward, compresses the air, and forces it through the tube to the pressure-gage or register, and operates the piston in the cylinder B, which presses against the spring. This piston also operates the rod connected with the bell. The approach of shoal water is indicated on the register, and the decreased pressure on the pistons releases the spring, and causes an alarm to be sounded on the bell.



The combination of the cylinder F, the line J, the cylinder B, spring X, rod V, and ball K, constructed substantially as and for the purpose set forth.

158,587. LININGS FOR CYLINDERS. Ebenezer Hill, Jr., South Norwalk, Conn. [Filed Oct. 10, 1874.]

Brief.—The lining is held in the cylinder by the flange or screws at the bottom, and is secured firmly therein by the screw stuffing-box.

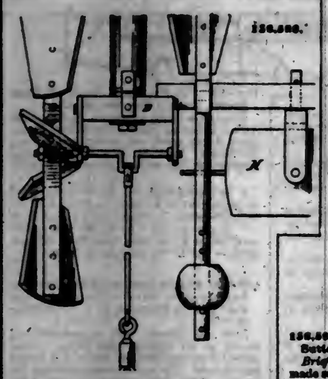


The combination of a lining, B, having a flange, b, and a stuffing-box, C, provided with a screw-thread to secure the lining in a cylinder, A, when constructed substantially as shown, and for the purpose specified.

158,588. WINDMILLS. Samuel D. Hopkins, Trumansburg, N. Y. [Filed Nov. 14, 1874.]

Brief.—A depending hanger carrying a horizontally-revolving beam, provided with a regulating-vane, and carrying the cranked axle and line, and a weighted rod connected with the regulating-vane, and having at its upper end a vane, whereby the regulating-vane on the horizontal beam is limited in its movement, and always retained in position, so that the currents of air act upon it for moving it, and bringing the fan-wheel into position for receiving the currents of air.

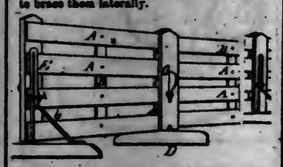
156,589.



The combination, with a depending hanger, horizontal revolving beam D, and vane H, of a weighted rod carrying at its upper end a vane, and connected with the vane on the horizontal bar, substantially as and for the purpose described.

156,590. PORTABLE FENCE. J. W. Johnson, Columbus, Tex. (Filed Oct. 10, 1874.)

Brief.—The panels are sustained by links and wedges against a support formed of rod-iron, bent double at top, and having its lower ends secured to a sill, one serving to clamp the lower portion of the panels, and the other to brace them laterally.



1. The bracket or support E, constructed, as described, of rod-iron, bent to form the upright a, double at its upper end, the brace b, and open clamp d, and fastened to the base-block D, substantially as and for the purposes herein set forth.

2. The combination of the panel A B U, support D E a b d, link h, and key G, as shown and described, for the purposes herein set forth.

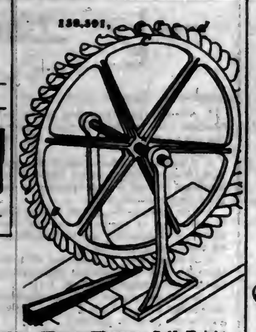
156,600. DRYING APPARATUS. W. J. Johnson, Boston, Mass. (Filed Nov. 10, 1874.)

Brief.—Hot air may be passed through the drying-chamber, and steam admitted to the ends, which surrounds it except on the front.



The internal hot-air chamber B, provided with induction and eduction pipes F D, and the stove or furnace G provided with the pipe O, in combination with the steam-chest A surrounding the chamber B, substantially as and for the purpose described.

156,591.

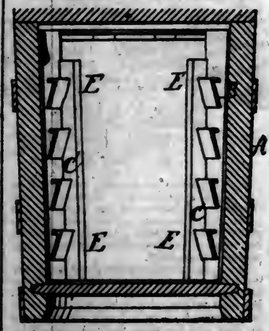


156,591. WATER-WHEELS. S. N. Knight, Sutter Creek, Cal. (Filed Nov. 21, 1874.)

Brief.—The buckets of this water-wheel are made scoop-shaped, and the base of the scoop or outer side of each bucket which is farthest from the wheel-rim is cut out in a semicircular form, so as to provide a sufficient opening for the entrance of the stream of water into the buckets, while their sides extend upward close to the bucket next above.

A water-wheel, having the scoop-shaped buckets *d d d* secured to its outer rim C, as above described, each of said buckets having a semicircular recess, *i*, in its outer side, substantially as and for the purpose above described.

156,592. BUTTER-TUBS. John G. Koehler, Philadelphia, Pa. (Filed Oct. 7, 1874.)



1. The combination, with the receptacle E of a butter-tub, A, of the ice-chambers F, removably fitted to said receptacle at the ends thereof, the projecting ledges C, and the shelves D, substantially as and for the purpose set forth.

2. The receptacle E, constructed with the upright strips E, extending transversely near the sides thereof, in combination with the ice-chambers F, removably fitted in the receptacle between the strips E and sides of the receptacle, and separated from the storage portion of the receptacle by said strips E, the parts being constructed, arranged, and operating substantially as and for the purpose set forth.

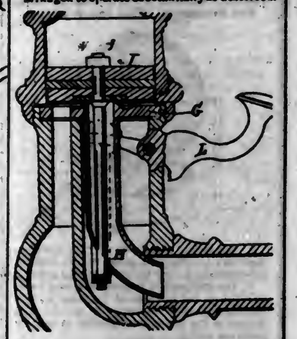
156,593. FAUCETS. Henry B. Leach, Boston, Mass. (Filed Oct. 26, 1874.)

1. The curved tube H, depending from the under side of the valve-seat concentric with the discharge-orifice through said seat and arranged to change the flow of the water from a vertical to a horizontal direction, and discharge it into a delivery-nozzle of greater capacity, substantially as described.

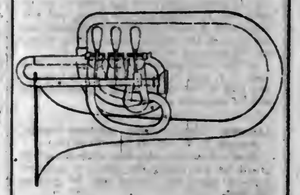
2. The removable valve-seat disk G, provided with the opening *b*, in combination with the curved tube H depending from the under side thereof, and the valve I, substantially as described.

3. In combination with the valve-seat disk G and curved tube H, the valve I, provided with the stem *f* projecting downward therefrom and passing through the wall of the curved portion of said tube and secured at its lower end to suitable devices for imparting a reciprocating motion thereto, substantially as described.

4. The combination of the valve I, valve-stem *f*, divided connecting-rod J, arranged to embrace and move upon the tube H, and the forked pivoted lever L, all constructed and arranged to operate substantially as described.



156,594. BRASS MUSICAL INSTRUMENTS. H. G. Lehnert, Philadelphia, Pa. (Filed May 29, 1874.)



1. In a musical instrument, the pipe D, having the parts E, F, and G, arranged relatively, as shown, thereby forming a ring to go over the hand of the player and rest upon each shoulder, bell in front, substantially in the manner described.

2. The reversible shank *b* of the mouth-piece A, provided with a bend, *f*, substantially as set forth, to accommodate either side of the mouth, and adapt it otherwise for different players.

3. The tubes H H' H'' H''', inclined relatively to the tuning-slide or water-key, and to each other to carry away the water freely, substantially as set forth.

156,595. TRACTION-ENGINES. Wm. C. Leon, Fort Byron, Ill. (Filed Aug. 18, 1874.)

Brief.—A floor within the wheel, supported by the frame of the vehicle for the engine; geared wheels for communicating power from the engine to the wheels; and a supplemental traction-frame.

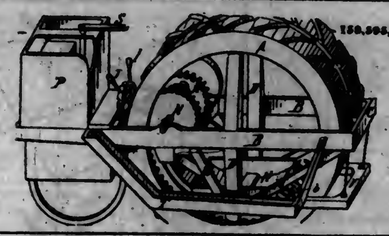
1. In combination with the uprights D and rails B and C, the floor E, supported from the same by the supports M, for the purpose set forth.

2. In combination with traction-wheels or rims without lugs, provided with internal segmental racks, the geared wheels H, shaft G, and shifting devices, substantially as specified.

3. In combination with the main frame of a traction-engine, the traction-frame V, substantially as and for the purposes shown.

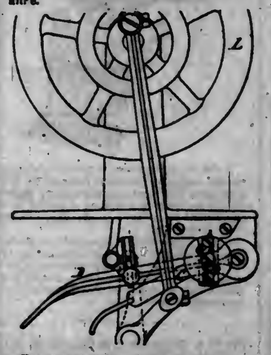
4. In combination with the wheels or rims, geared wheels H and shaft G, the shaft K and pinions J, substantially as specified.

156,596.



156,596. SEWING-MACHINES. J. R. McCune, Hamilton, Canada, assignor to R. M. Wanzer, same place. (Filed June 20, 1874.)

Brief.—By moving the slotted lever the blocks are moved to or from each other, so that the pin of the feed-regulating lever may come to rest against such blocks as it is elevated or depressed to reverse the feed, and insure that the forward and reverse stitch be alike.



The slotted disk-lever C and movable blocks *a e*, combined with the feed-regulating lever D, having pins *i* and *k*, all operating substantially as and for the purpose specified.

156,597. CAR-COUPLINGS. Patticon F. McClure, Junction City, Kans. (Filed Nov. 13, 1874.)



1. The combination, in the draw-heads F F, of the links A A', having their front edges beveled and provided with projections upon their faces, against which the coupling-pins impinge, substantially as and for the purpose set forth.

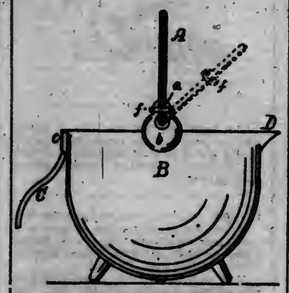
2. The combination, in the draw-heads, of the links A A', having their front edges beveled, and the inclined projections *b b*, provided with guides *a a*, the links at one of their ends being of T-shape form, adapted to fit and work in grooves or recesses formed in the sides of the draw-head.

3. In an automatic car-coupler, the levers B B' and pins D D', in combination with the links A A', all constructed substantially as set forth.

4. The automatic car-coupler, consisting of the levers B B', pins D D', links A A', provided with bevel projections *b b* and guides *a a*, all constructed to operate as set forth.

156,598. CULINARY VESSELS. G. R. Moore, Philadelphia, Pa. (Filed Dec. 15, 1874.)

Brief.—A culinary vessel with lugs on one side for an adjustable handle, a hinged ball that may be stayed, and a lip, all for pouring out liquids.



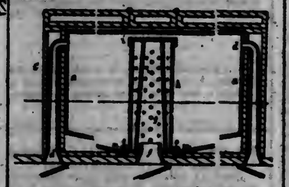
1. The combination of the stopped or stayed ball A and the detachable handle C upon the culinary vessel B, as and for the purpose specified.

2. The combination of a stopped or stayed ball, A, and the pouring-out lip E upon a culinary vessel B, as and for the purpose specified.

3. The prong *a* of the ear *b*, in combination with the ball A and ring *f*, as and for the purpose specified.

156,599. AIR COOLING AND PURIFYING APPARATUS. B. Emerson Page, Boston, Mass. (Filed Dec. 7, 1874.)

Brief.—The air rising from the chamber to be cooled passes successively against two perforated pipes, which deprive it of its impurities and moisture. The channels between the two and the central imperforate pipe conduct the drip to the central trough. The perforated tubes separate the same should the current be reversed, so as to ascend large lateral tubes *d d*, and descend through central smaller tubes.



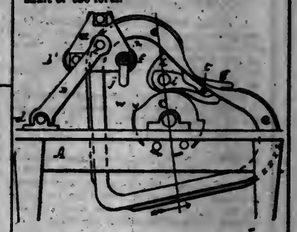
1. The combination of the perforated tubes *g* and A with the tank A, substantially as and for the purpose hereinbefore set forth.

2. The combination of the tubes *d d* with the tank A, chamber B, and perforated tubes *g* and *h*, substantially as hereinbefore described.

3. The combination of the valves *e f*, tubes *f* and *d*, tank A, and chamber B, all arranged as and for the purpose hereinbefore set forth.

156,600. MACHINES FOR BENDING METAL. Bert A. Peck, Sycamore, Ill. (Filed Sept. 10, 1874.)

Brief.—An irregular form, composed of flanges and web, in conjunction with a gang of rollers mounted on trunnions and hinged arms, held to form by rollers mounted on an eccentric pin. The metal is passed under a latch, where it is clamped and held, while the form is rotated, by means of the cam on the shaft of the form.

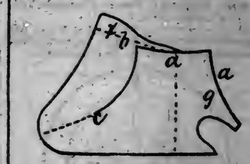


1. A gang of two or more compression-rollers, *b b'*, and friction-rollers *f f*, all supported in a frame supported on trunnions, in combination with the arms D D, and an irregular form, substantially as and for the purposes set forth.

2. The eccentric-pin *n p* and friction-rollers *f f*, in combination with compression-rollers *b b*, supported in a frame on trunnions, and an irregular form, substantially as and for the purposes specified.

3. An irregular form, B, with stationary eccentric C, in combination with the latch *g*, substantially as and for the purposes specified.

156,601. SHOE-UPPERS. John L. Perry, Turner, assignor of one-half his right to J. E. Ash, same place, and W. E. Keith, North Auburn, Me. (Filed Aug. 17, 1874.)



The improved shoe-upper described, the same consisting of a single piece of leather cut on the line *a b c* to form the heel-stay *a*, and having the part *g* provided with the edge *d*, corresponding with the line or edge *b c*, substantially as and for the purpose specified.

156,602. CHIMNEY-GUARDS. E. Priesman, Sacramento, Cal. (Filed Aug. 5, 1874.)

Brief.—A ring, rigidly upheld and surrounded by a coil of wire, constitutes a flexible guard for a lamp chimney or shade.



A lamp-shade guard, consisting of the bracket-rod E, arranged to be secured against the wall, in combination with the ring A and encircling spring C, all constructed and operated as set forth.

156,603. MILK-COOLERS. Luke J. Roberts, Waterbury, Vt. (Filed Apr. 14, 1874.)

Brief.—The separable pans receive and tilt together.

158,603.

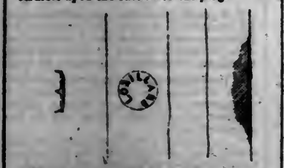


1. The combination and arrangement of the separable pans A and B with table C and standard D, and a suitable support, E, whereby the whole device may be horizontally revolved, substantially as and for the purposes set forth.

2. The rotary table C, attached to standard D by the hinge and hook, substantially as and for the purposes set forth.

158,604. PLUG-TOBACCO. Chas. Sieller, New York, N. Y. [Filed Nov. 27, 1874.]

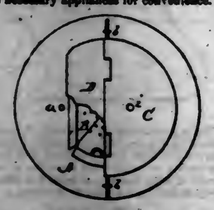
Brief.—A label of tin, having raised letters, is pressed into the plug, over which the finishing leaf is placed, so that the letters are discernible upon the outside of the plug.



Plug tobacco having a label lying beneath the ultimate wrapper of tobacco leaf, and discernible through said leaf, substantially as and for the purposes herein specified.

158,605. COMBINED CISTERN-TOPS AND FILTERS. Ephraim D. Emery, Corsicana, Tex. [Filed July 9, 1874.]

Brief.—A covering for cisterns, which has combined therewith a filtering apparatus, and the necessary appliances for convenience.



The combination of the disk A, provided with opening *a* and staples *b b*, the conical perforated filter B, and the cover C D, having opening *f*, all constructed substantially as and for the purposes herein set forth.

158,606. LOCK PICKING MECHANISM. W. Sherren, Manchester, N. H. [Filed June 2, 1874.]

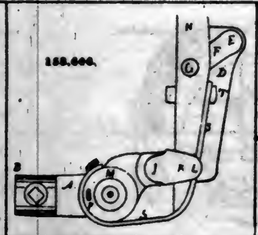
Brief.—To give a parallel motion to the picker, the stick is hung, by means of a swinging arm, to the upper end of an arm extending up from the support on the lay rock-shaft. The lower end of the stick works against the face of a reaching arm having a projection to hold the stick in place. The stick is drawn back by a cutted spring arranged around a cup-shaped stud, and within a cup-shaped pulley connected by a strap with the stick.

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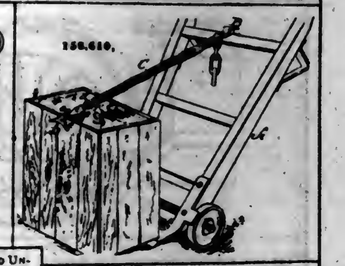
1. The combination of the arm D, extending up from the stud A, pivot E, swinging arm F, picker-staff H, reaching arm K, and projection L, constructed to operate substantially as described, for the purpose set forth.

2. In combination with the arm D, pivot E, and reaching arm F, the cutted spring stud M, pulley N, and strap S, substantially as described.

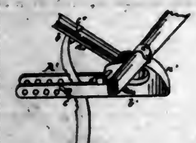
158,608.



158,610.



158,607. DEVICES FOR COUPLING AND UNCOUPLING TRELLS. Frank P. Stone, Chicago, Ill. [Filed June 20, 1874.]



The combination of the lever A, having claws *a*, notches *a'*, and the shank A' having hook *a'* and arms *b'* for attaching or detaching the tongue or shafts of vehicles, substantially as specified.

158,609. MANUFACTURE OF LEATHER. C. J. Tinnerholm, Keokuk, Iowa, assignor to N. Petersen, New York city, and A. Brodin, Eric Hedman, and John Oquist, Keokuk, Iowa. [Filed Sept. 10, 1874.]

Brief.—Liming solution: Lime, brimstone, sal-ammoniac, prussiate potassa, water. Bating solution: Iron filings, brimstone, water. Tanning solution: Terra-japonica, sumach, alum, tartaric acid. Whitening solution: Tartaric acid, muriatic acid, cream-tartar, sulphur, water.

1. The compounds herein described for the several successive processes of liming, bating, tanning, and whitening, as and for the purpose described.

2. As an improvement in the art of manufacturing leather, the treatment of hides or skins with the compounds named in the several successive steps described, substantially as and for the purpose set forth.

158,609. POST-HOLE DIGGERS. William M. Ryan, Macomb, Ill., assignor of one-half his right to W. M. Tipe and J. B. Simpson, same place. [Filed May 21, 1874.]

Brief.—A closed cylinder, sharp at the lower end, and provided with a bifurcated handle, united into a single shaft above the cylinder, constitutes the excavating device. A plunger operated by a lever pivoted to the handle, and connected to said handle by a slotted connecting-rod, provides means for discharging the earth from the interior of the cylinder.

In a post-hole digger, in combination, the cylinder A, handle B, connecting-rods *c c*, plunger *c*, and lever D, all arranged as specified.

158,610. HAND-TRUCKS. H. M. Underwood, Kenosha, Wis. [Filed June 16, 1874.]

Brief.—A cant-hook with chain adjustable on and detachable from hand-trucks in ordinary use.

1. In combination with the hand-truck having the hook B attached, the adjustable and detachable chain C, having the hook D attached to its free end, as set forth.

2. In combination with the chain C, the hook consisting of the flat plate *a*, the wooden handle *c*, and the eyebolt *d*, as set forth.

158,611. LETTER-PRESS MAP-PRINTING. C. H. Waite, Chicago, Ill. [Filed June 5, 1874.]



1. As an improvement in the art of making colored maps, the process of printing the tint-color upon the sheets (in advance of the lettering) by means of plates so engraved as to be adapted to letter-press printing, substantially as specified.

2. The plates herein described for the letter-press printing of colored maps, having the the interior of the geographical or other divisions ruled out, and the borders solid, so as to make tinted colored maps with heavy borders, substantially as described.

158,612. STEAM-HEATER RADIATORS. C. C. Walworth, Boston, Mass. [Filed Dec. 21, 1874.]

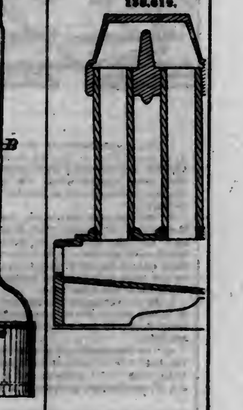
Brief.—The parts being first carefully fitted, the return head is forced into position by powerful pressure.

The improved heat-radiator, having its return-bends and heat-radiating pipes formed and connected as described and shown, so as to produce a steam-tight connection, as set forth.

158,609.

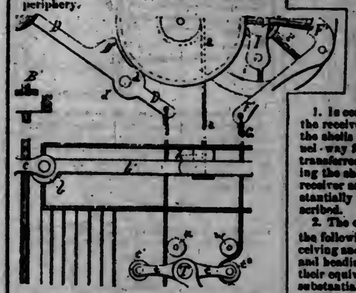


158,613.



158,613. ELEVATORS. Lewis L. Whitlock, Brooklyn, N. Y. [Filed Dec. 27, 1873.]

Brief.—In addition to a rope wound on a drum, there are two others, tightened and slackened simultaneously—one to throw into gear with the drum a shaft having on it a set of friction-wheels, the other slackened to release a weighted brake-lever. In the reverse action the shaft drops by gravity over a central support, and the brake operates. Should this rope sever, the weight at the other end of the lever brings a cam to bear on the drum's periphery.



1. The combination of the friction lifting-wheel A with the driving friction-wheel E, the latter poised upon a rocker-frame, I, and arranged to be disengaged at pleasure by mechanism situated in the car X, substantially as described and shown.

2. The double-grooved conical friction-pinions E E', of different diameters, keyed to the stationary shaft *f*, and sliding loosely longitudinally thereon, so that either the pinion E or E' may be brought into gear with the V-grooved lifting-wheel A by being slid backward or forward on the shaft, for the purpose of giving different velocities to said wheel A, substantially as and for the purposes set forth.

3. In combination with the friction lifting-wheel A and drum A', the lever D, said lever provided with a friction-brake, D', and adjustable weight D'', and an eccentric stop, *d*, whereby the speed of the wheel A may be gradually stopped by the friction-brake, or, in case of accident, the wheel may be instantly checked by the stop, substantially as described.

4. The combination of the friction-pulley E, rocker-box I, link F, lever F', line G, stationary friction-pulleys *u w*, and movable friction-pulleys *t' t''*, substantially as and for the purposes shown.

5. In combination with the lines G G', the horizontal bar *t*, adapted to be oscillated from side to side, so as to operate on either or neither of the lines G G', substantially as and for the purposes described.

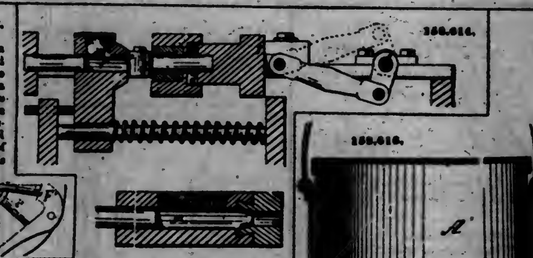
6. The combination of the lines G G', lever S T, bar *t*, provided with the friction-rollers *t' t''* at its ends, stationary friction-rollers *u w*, pinion *r*, disk R, and handle D', all constructed, arranged, and adapted to operate substantially as and for the purposes described.

7. In combination with the car X, weighted eccentrics *b b'*, links *c*, and idle-pulleys *c' c''*, the stationary rods B B', said rods passing between the idle-rollers *c' c''* and the eccentrics *b b'*, and forming guides and stops for the car, as described.

158,614. MACHINES FOR HEADING METALLIC CARTRIDGE-SHELLS. S. W. Wood, Cornwall, N. Y. [Filed June 1, 1874.]

Brief.—A reciprocating plunger is attached to the sliding cross-head, and acts to push the shell from the receiver through the guide-channel *a*, and upon the end of the mandrel. The cross-head, upon its forward movement, abuts against the receiver, and the two then move forward together. The front face of the guide-channel and the face of the plunger are flush at the termination of their forward movement, and act to head the shell, which has been carried into the die by the mandrel. Two spring-lips are, when the shell is forced into the die, pushed apart by the nose of the guide-way, and tend, when said way retracts, to spring in back of the flange on the shell, and strip it from the mandrel when it moves back.

158,614.



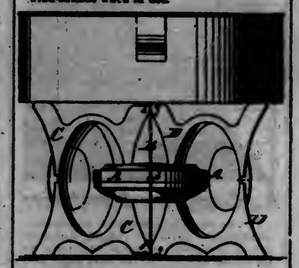
1. In combination with the die and mandrel, the receiver, with its aperture for receiving the shells to be headed one by one, and channel-way for guiding each shell when being transferred, and the reciprocating tool for moving the shell through the channel-way of the receiver and transferring it into the die, substantially as and for the purpose herein described.

2. The combination, as herein described, of the following devices, viz., the receiver for receiving and guiding the shells, the transferring and heading tool, the mandrel and the die, or their equivalents, having a mode of operation substantially such as described.

3. In combination with the receiver, the transferring and heading tool, mandrel and die, substantially as described, the mechanism for imparting to the mandrel two reciprocating motions toward and from the transferring and heading tool to one reciprocating motion of the transferring and heading tool toward and from the mandrel.

158,615. TRAVELERS' LAMPS. Thomas R. Almond, Pittsburg, Mass. [Filed Nov. 23, 1874.]

Brief.—A lamp hung between folding plates, adapted to close about the lamp in transportation, or open around it for supports and wind-shields when in use.



1. The combination of the lamp A with the two plates C D, between which it is supported, said plates converging at a point outside of the lamp to constitute wind-shields, substantially as specified.

2. The converging plates C D, provided with recesses, into which the lamp A may be folded, to constitute a receptacle for said lamp during transportation, and vertical wind-shields, while the lamp hangs horizontally between them when in use, substantially as specified.

3. The perforated middle plate B combined with the plates C D of a lamp-support, and with the lamp A, as set forth.

4. The portable lamp A, when in combination with the folding stand C D, and provided with the gauze *c*, and with the asbestus spread over the screen lying directly beneath the gauze, substantially as specified.

158,616. SECTIONAL DINNER-PAILS. Chas. H. Ames, Columbus, Ohio. [Filed Sept. 26, 1874.]

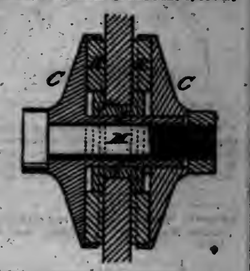
Brief.—The pail is composed of several pan-sections, each having an independent bottom, which may be fitted one within the other, and then, together with the spring-bail, all packed within the top section.

158,616.



The combination of the detachable pan-sections A A'' A''' A', the lower section, A', provided with eyes *d d*, and the upper section, A, having pins *c c*, the detachable hooked and perforated strips C C, and the spring-bail B, substantially as and for the purpose set forth.

158,617. ELASTIC CLAMPS FOR POLISHING AND GRINDING WHEELS. Bert Bannister, John C. Perkins, and Wm. H. Stoddard, Kalamazoo, Mich. [Filed June 6, 1874.]

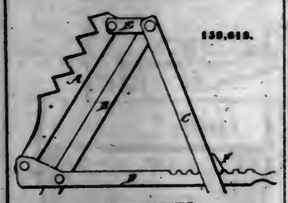


The clamping-collar C, formed entire with the sleeve *i*, and receiving through it the mandrel M, in combination with the elastic eye J, elastic rings K K, loose collar O, and clamping-nut N, and with the grinding-wheel A, substantially as described.

158,618. LISTING-JACKS. J. Bruen, Darke County, Ohio. [Filed Nov. 28, 1874.]

Brief.—On the front and longer end of a pivoted pair of legs the bearing-piece, with a series of shoulders thereon, works with a parallel motion by a link at the top, and a pivot on the end of a lever beneath, which is pivoted to the leg. This lever has notches, which, by means of a catch, render the device adjustable.

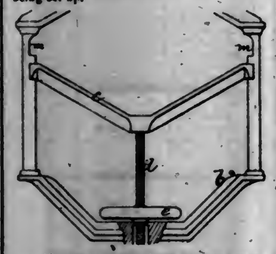
A carriage-jack formed of the notched bar A, the legs B and C, the bar E, the notched lever D, and the catch F, constructed and combined substantially as herein shown and described.



158,619.

158,619. CLOCK-MOVEMENT HOLDERS. W. H. Brickett, Boston, Mass. [Filed Sept. 15, 1874.]

Brief.—For holding clock movements while being set up.



1. The improved device for holding clock-movements described, the same consisting of the foot-piece *a*, hollow standard *x*, frame *b*, screw *d*, and nut *e*, combined to operate substantially as specified.

2. In the improved device for holding clock movements described, the notches *n n*, as and for the purpose set forth and described.

158,620. SPONGE-CUPS. Bloomfield Brower, New York, N. Y. [Filed Oct. 1, 1874.]



As a new article of manufacture, a sponge-cup, A, having an internal lip or projection, C, around its upper part, and a cap or cover, B, open on the front, all made in one piece, substantially as and for the purpose set forth.

158,621. SPRING-BOLSTERS FOR VEHICLES. Henry Beck, Polo, Ill. [Filed Nov. 14, 1874.]



1. The combination, with the detachable bar C and the bolster B of the curved metallic springs S, substantially as specified.

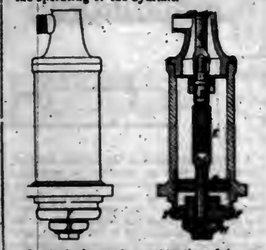
2. The combination, with the bolster B, of the detachable bar C, having springs S, with short re-enforcing arms *e* and primary arms *f'*, rigidly secured into the recesses *d* of the said bar, substantially as and for the purpose set forth.

3. The combination of the bar C, having recessed springs S of the bolster B, having plates *p*, substantially as specified.

4. The combination with the bar C, having notches *c* and curved springs S, of the guiding-standards *b* of bolster B, substantially as specified.

158,622. HYDRANTS. Marshall Burnett, Hyde Park, Mass. [Filed Dec. 9, 1874.]

Brief.—An auxiliary valve applies to the under side of the main valve, to close and open perforations in the latter, by which means water may be admitted above it, and the pressure upon it relieved, so facilitating the operating of the hydrant.



In the hydrant, the combination of the auxiliary valve H with the valve-stem E and with the main valve F, provided with one or more openings, *s*, and arranged to slide on the said valve-stem from the auxiliary valve to a shoulder or cross head, *a*, in the stem, all being substantially as specified.

158,623. FLY-TRAPS. Jacob H. Bustin, El Paso, Ill. [Filed June 20, 1874.]

Brief.—The circular feed-board has hooked arms to receive the inner cage, and the outer cage overlaps the rim of the inner cage.



In a fly-trap, the combination of a circular feed-board, A, having the radial hooked arms *b*, bent inward and upward to form a seat for the conical cage B', and the outer cage F having the annular base *e* overlapping the base B, substantially as shown and for the purpose set forth.

158,624. SHIRT AND COLLAR BUTTONS. J. B. Carter, Hartsville, Ind. [Filed Dec. 16, 1874.]

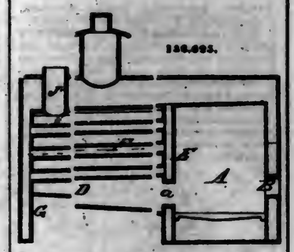
Brief.—The button is secured in a correspondingly-shaped button-hole, which is of smaller size than the largest diameter of the button.



A button constructed, as herein described, with a doubly-conical head, *a b*, and wings *c* projecting radially therefrom, and some or all of them extending to the flange, as shown.

158,625. FURNACES FOR STEAM-BOILERS. Edmund P. Chancellor, Parkersburg, W. Va. [Filed Nov. 26, 1874.]

Brief.—The front ends of the tubes are protected from the intense heat by a water partition, the products of combustion having free access around the tubes to the uptake.



158,625.

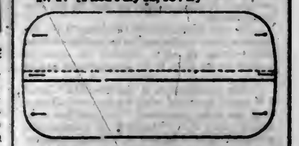
In a horizontal boiler, the furnace A, provided with the opening *a*, in combination with the chamber D, surrounding water-tubes, horizontal tubes F, communicating with the water-back E and water-leg G, and smoke-pipe J', all constructed and arranged substantially as specified.

158,626. FLOUR-BOLTS. David T. Chase, Cedar Falls, Iowa. [Filed Dec. 10, 1874.]



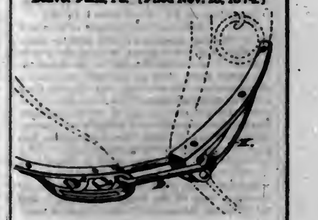
The combination, with a revolving flour-bolt, of the air tube or trunk C, having adjustable aperture *a*, and adjustable upon the girders G G, the flexible pipe D, and fan E, all substantially as and for the purposes herein set forth.

158,627. CUFFS. J. W. Alfred Chastk, Troy, N. Y. [Filed July 13, 1874.]



As a new article of manufacture, a detachable cuff made with a back having two sections, each section having a folded edge between which the cuff is turned right-side out, and the two sections then stitched or otherwise connected together at their folded edges, making the closing seam, substantially as described.

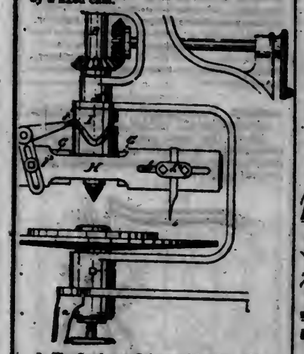
158,628. HAME-FASTENERS. C. M. Coburn, Beaver Falls, Pa. [Filed Nov. 13, 1874.]



The link D and the gnarled hooks *a* in combination with the cam-lever H, substantially as set forth.

158,629. MACHINES FOR TURNING IRREGULAR FORMS. Benjamin H. Connor, Cincinnati, Ohio. [Filed June 16, 1874.]

Brief.—The material is placed upon a table under a revolving bar, which carries the cutter, the latter being guided in its movements by a fixed cam.



1. The fixed cam I, in combination with a rotating head, G, carrying the angle-lever J and slide H, all constructed and operating substantially as described.

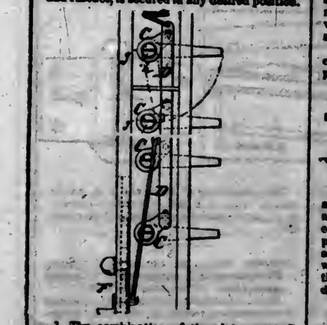
2. A cam, I', made in sections *i i*, interchangeable with each other and mounted in the grooved rings *r r*, in the manner substantially as and for the purpose set forth.

3. The guide-stand *s* and vertically-moving slide *t*, in combination with the cam I' and slide H, as and for the purposes specified.

4. The detachable rims *i' i'*, fastened to the frame and holding the sections composing cam I' in position, as above described.

158,630. BLIND-STOPS. James Dougherty, New York, N. Y. [Filed Sept. 18, 1874.]

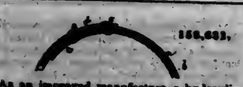
Brief.—A crank is placed upon the prolonged tenon of a blind-slat. One end of this crank is connected with an upright, which operates all the slats, and, by means of a pawl and ratchet, is secured in any desired position.



1. The combination of the slat-cranks C with the rod D, spring E, sliding rack F, pawl *e*, and buttons *d* and *f*, all being concealed within the frame of the blind, excepting the buttons *d* and *f*, for operation substantially as described.

2. The crank C, made with the inwardly-projecting tooth *g*, combined with the prolonged tenon of a blind-slat, substantially as and for the purpose specified.

158,631. HYDRAULIC HOSE. Leverett H. Downing, North Andover, Mass. [Filed June 10, 1874.]

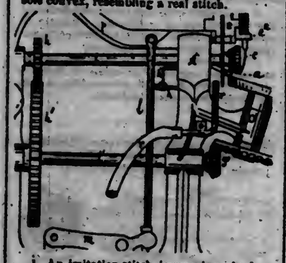


158,631.

As an improved manufacture, a hydraulic hose, or suction thereof, formed of a single sheet of canvas or cloth, covered on both sides with a vulcanizable water-proof composition, and wound twice or more times upon itself, and fastened at its laps by nails, and subsequently vulcanized, all being substantially as described and represented.

158,632. STITCH-IMITATION AND STITCH-DIVIDING MECHANISMS. Charles S. Dunbrack, Swampscott, Mass., assignor to T. Corey, trustee. [Filed Feb. 26, 1874.]

Brief.—The boot or shoe sole, resting upon a rotary disk, is fed underneath the marking-wheel, which has a toothed periphery, the teeth being convex upon their outer edges, and the hollows or furrows between the teeth concave, making the impressions upon the sole convex, resembling a real stitch.



1. An imitation-stitch impressing-wheel, *a*, having concave furrows, for the purpose shown and described.

2. The combination of the imitation-stitch impressing-wheel *a* and the collar *b*, having concave furrows, for the purpose shown and described.

3. The combination of the imitation-stitch wheel *a*, the collar *b*, and the circular guard *c*, for the purpose shown and described.

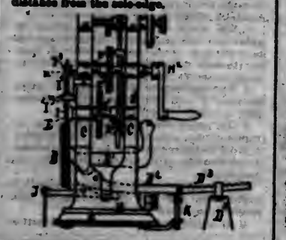
4. The combination of the imitation-stitch impressing-wheel *a*, the collar *b*, the circular guard *c*, the gage *f*, and the disk *e*, all operating together substantially as and for the purpose shown and described.

5. The stitch-divider *d* upon the head-piece *a*, in combination with the movable jaw *p*, the rod *i*, and pedal *n n'*, all operating together with the disk *e* and the gage *f*, for the purpose shown and described.

6. The combination of the screw K, the clamp K', and the movable jaw *p*, for the purpose shown and described.

158,633. MACHINERY FOR FORMING AN IMITATION-STITCH UPON THE SOLES OF A BOOT OR SHOE. Charles S. Dunbrack, Swampscott, and Wm. B. Veasey, Milford, Mass., assignors to T. Corey, trustee. [Filed July 3, 1874.]

Brief.—The sole is fed forward by means of a serrated wheel, its edge brought underneath an imitation-stitch device attached to the outer end of a revolving shaft. A guide-disk depending from overhanging adjustable arms serves to press the sole down upon the feed-wheel; also, to present it in position to receive the imitating stitch impression at a uniform distance from the sole-edge.



1. An imitation-stitch device, substantially as described, consisting of the marking-wheel *a*, the collar *b*, and the guide-disk *e*, combined with the adjustable arms *g g'*, the pivoted arm *h*, and the rod *i*, substantially as described.

2. The combination of the marking-wheel *a*, the collar *b*, the guide-disk *e*, the adjustable arms *g g'*, the pivoted arm *h*, the rod *i*, and the pedal *n n'*, substantially as described.

3. The combination of the marking-wheel *a*, the collar *b*, the guide-disk *e*, the adjustable arms *g g'*, the pivoted arm *h*, the rod *i*, the pedal *n n'*, and the gage *f*, substantially as described.

4. The combination of the marking-wheel *a*, the collar *b*, the guide-disk *e*, the adjustable arms *g g'*, the pivoted arm *h*, the rod *i*, the pedal *n n'*, the gage *f*, and the stitch-divider *d*, substantially as described.

5. The combination of the clamp K', the movable jaw *p*, the adjustable arms *g g'*, the pivoted arm *h*, the rod *i*, the pedal *n n'*, the gage *f*, and the stitch-divider *d*, substantially as described.

6. The combination of the screw K, the clamp K', the movable jaw *p*, the adjustable arms *g g'*, the pivoted arm *h*, the rod *i*, the pedal *n n'*, the gage *f*, and the stitch-divider *d*, substantially as described.

1. In an imitation fair stitch machine, the combination of the marking device F and the feed-wheel D, revolving upon a movable lever, D^1, substantially as shown, and for the purpose described.

2. The combination of the ratchets E^2 and F^1, the pawls F and F^2, the levers F^3 and D^2, springs *n* and *n'*, rod F^4, and the eccentric G, to produce forward and backward and continuous movement, substantially as shown, and for the purpose described.

3. The combination of the levers D^1 D^2 D^3, and weight D^4, for the purpose shown and described.

4. The combination of the levers D^3, D^2, and J, for the purpose shown and described.

5. The combination of the adjustable guard I, the guard-holder I^1, having movable arms *s s*, the spring I^2, and nuts I^3 and I^4, for the purpose shown and described.

158,634. BLIND-STOPS. Alfred T. Elford, Oakland, Cal. [Filed July 21, 1874.]

Brief.—Consists in attaching blind-slats by means of long tenons, secured by the ordinary blind-staple to an operating-rod, which works entirely within a recess or side groove, and is controlled and adjusted by a lock-knob or set-screw, the construction dispensing with all outside attachment except the operating-knob, and enabling the slats to be readily adjusted and held at any desired angle of inclination.



The slats B, having long tenons C, in combination with the side grooves G and sockets H, when the same are operated by means of the rod D, to which rod the tenons are attached by blind-staples, and by the lock-knob E, or its equivalent, all constructed, arranged, and operating substantially as described and shown, for the purposes set forth.

158,635. HAND-PIECES FOR DENTAL INSTRUMENTS. Jno. W. Gilbert, Philadelphia, Pa., assignor to Samuel S. White, same place. [Filed Dec. 29, 1874.]

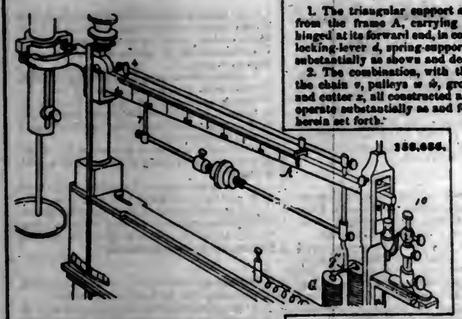
Brief.—The hand-piece of a dental engine carries a revolving mandrel, a cone-pulley revolving freely about it, and a cone-sleeve revolving with it, and moving freely endwise thereon. By a thumb-lever the operator moves the sleeve away from or into contact with the cone-pulley, and thus retains or stops the tool, which is connected in any known way to the said mandrel.



In a dental instrument, the combination of a revolving mandrel, a driven cone-pulley revolving freely thereon, a cone-sleeve revolving with the mandrel and moving freely endwise thereon, and mechanism controlled by the operator for stopping and starting the mandrel, all the mechanism being mounted upon the instrument itself, substantially as specified.

158,636. ELECTRICAL PROPULSION.—BALANCES. Wm. W. Goodwin, Camden, N. J. [Filed Aug. 21, 1874.]

Brief.—Sliding pan S set at 0, and candle balanced by moving weight F. *i* is then slid on arm A to number indicating grains to be consumed, the candle holding down the balance-arm against F and S till the amount is consumed, when they pull down the balance-arm, which completes at 10 and H an electrical circuit to C, which, attracting its armature, holds the balance secure against any vibrations, and maintains the circuit-connection for any other desired operations.



1. The combination, in a balance for photometers, substantially as described, of the micrometrical adjusting-weight F and the bar 6 with the power-arm of the lever A.

2. The electro-magnet G and the armature-bar g', in combination with the power-arm of the lever A, arranged as described, for the purpose of holding down the lever A, with its platinum stem 10 in contact with the mercury in the cup H, as set forth.

158,637. FOOT-REST FOR CHAIRS. Thos. Mead, Lowell, Mass. [Filed June 27, 1873.]

Brief.—A foot-rest is hinged to the front of the chair, and is provided with an actuating-spring having an arm working in a gaige on the foot-rest, so as to automatically turn the rest under the seat. The back of the chair is recessed to receive the legs of the foot-rest when it is turned under the seat. A button is attached to the under side of the front rail of the chair, to hold the rest in an extended position against the action of the spring.



1. The hinged foot-rest, provided with an actuating-spring, *c*, having an arm, *d*, working in a guide, *g*, as described, to automatically turn or fold the rest beneath the seat of the chair.

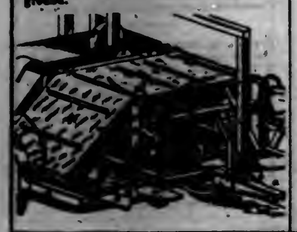
2. The button E, in combination with the spring-actuated and folding foot-rest, for the purpose and in the manner set forth.

3. A hinged and spring-actuated automatically-folding foot-rest, in combination with, and folding under, a chair, as set forth.

4. A hinged and automatically-folding foot-rest, in combination with a chair constructed with a recess in its back to receive the inverted legs C of the rest, as described.

158,638. BROOM-CORN HARVESTERS AND THRASHERS. Robert C. Minton, Clinton, Mo. [Filed May 26, 1874.]

Brief.—The corn is elevated by an endless apron to a table, where the tops are cut off and delivered to a thrashing-cylinder, while the stalks are carried to the opposite side of the machine and deposited in pivoted arms, from which they are discharged in sheaths upon the ground.



3. In a broom-corn harvester and thrasher, the combination of a thrashing-cylinder, T, wheel P, and catch *x*, with the carrier N, substantially as shown and described.

4. The hooks A' and B', arranged as described, and operated by means of their respective levers D' and E', substantially as and for the purposes herein set forth.

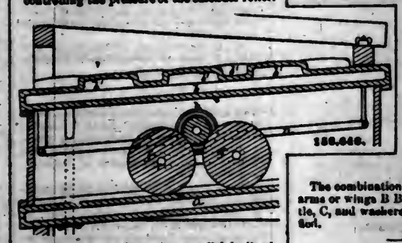
158,639. MEANS OF ATTACHING HUBS TO AXLES. Benj. B. Howard, West Bridgewater, Mass. [Filed Nov. 4, 1874.]



The hub A and the axle B, provided with the grooves *a* and *a*, in combination with the shoe D, fixed to the axle, and the removable coupling-cap E, provided with the flanges *e f* to enter said grooves, and the latches *g g* to connect it with the shoe, all as and for the purpose set forth.

158,640. APPARATUS FOR DRYING PAPER CYLINDERS. J. F. Jones, Marcellus Falls, N. Y. [Filed Nov. 20, 1874.]

Brief.—Two parallel inclined steam-heaters with guiding-rails, a pair of paper-molds with a calender-roller, and supplemental rolls for controlling the pressure of the calender-roller.



1. In a steam-drier, the parallel inclined steam-heaters *a b*, guiding-rails, and rail *n* for passing the molds and calender-rollers through the drying apparatus, combined substantially as and for the purposes set forth.

2. The molds or cylinders *f f*, linked together and held at a proper distance apart to be acted upon by the calender-roller in passing through the drying apparatus, substantially as and for the purposes specified.

3. The combination of the weighted calender-roller *h* with the paper-molds, substantially as herein described.

4. The adjustable rolls or bearings *n*, for regulating the pressure of the calender-roller *s* at the commencement of the drying process, in combination with the calender-roller and paper-molds.

5. The molds *f* and calendering-roller *h*, in combination with the drying-chamber, substantially as above described.

6. In a drying apparatus, the combination of the forms *b'* for drying the barrel-heads on with the upper surface of the heater *b*, as specified.

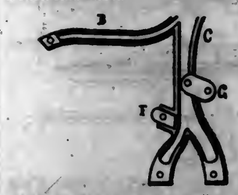
158,641. MANUFACTURE OF PAPER-PULP. J. F. Jones, Marcellus Falls, N. Y. [Filed Nov. 20, 1874.]

1. The process of making paper or board direct from the grasses, weeds, and the like, by grinding in the stock-grinder, and running the stock into paper direct, without boiling or chemical disintegration, as herein specified.

2. The pulp or stock for the manufacture of paper, &c., composed of grasses, weeds, and the like, ground fine in the stock-grinder, without boiling or other chemical process in its preparation.

158,642. PLOW-BEAMS. Cornelius Kingsley, Chicago, Ill. [Filed Apr. 14, 1874.]

Brief.—The cast-metal plow-beam is strengthened by flanged edges, and the several attachments and supports for other parts are cast solid with it.

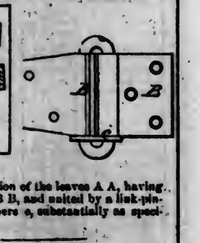


1. The combinations of the beam A and extensions B and C with the bracket G, all cast in one piece, substantially as and for the purposes specified.

2. The combination of the beam A, extensions B and C, brackets F and G, and clevis H, substantially as and for the purposes specified.

158,643. HINGES. David W. Long, Parkersburg, W. Va., assignor of one-half his right to W. N. Chancellor, same place. [Filed Oct. 17, 1874.]

Brief.—The hinge is of sheet metal, and the two leaves are connected together by a link-pintle. The metal of the leaf, after forming the pintle-eye, is turned at right angle to the same, thus affording an additional attachment upon the edge of the door or gate. A washer is used on the head of the link at each end.



The combination of the leaves A A, having arms or wings B B, and united by a link-pintle, C, and washers *c*, substantially as specified.

158,644. SPOOL-MACHINES. G. H. Lyman, Providence, R. I., assignor to D. T. Lyman, same place. [Filed Aug. 20, 1872.]

Brief.—The blanks to form spools are placed in a conducting-trough, by which they are presented to the different tools consecutively, for the purpose of performing the various operations necessary to complete the spools.

1. The block-holder H, with clutch *h*, constructed and operated substantially as described.

2. In combination with lever P and clutch *h*, the spring *o*, substantially as and for the purposes herein shown and set forth.

3. In combination with the reciprocating stamping cross-pieces *t*, provided with centers and dies, and arranged one on each side of the conductor, as specified, the levers *v v' v''*, toggle-joint *e*, arm *a*, and cam C, substantially as shown and set forth.

4. In combination with the bent lever F for operating the knife-carriage, jointed at its bend or elbow as described, the spring *o* applied to said lever at said jointed bend or elbow, substantially as and for the purposes set forth.

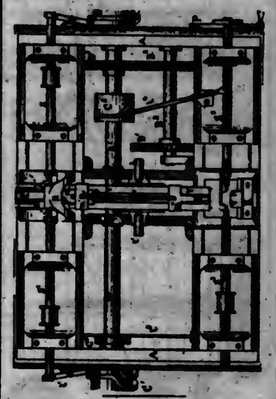
5. The combination of a spindle, S', having center *i*, lever *h*, cam C', spindle S'', provided with center *r* and ball *a*, with carriage K, cam *s'*, lever P, and spring S', substantially as and for the purposes described.

6. The conductor Y, substantially as described, for the purposes set forth.

7. The combination of sleeves *m*, fingers *f*, rod *r* provided with shoulders, carriage *v*, sliding pawls *p*, stationary pawls *n*, and springs *s*, substantially as described, and for the purposes specified.

8. In combination with the conductor, the carriage *p*, railway *y*, and inclined planes *x*, substantially as described, and for the purposes specified.

9. A conductor or trough, Y, extending in a right line or continuously from end to end of the machine, in combination with the mechanism for boring and beveling and for turning the blanks contained in and passing through said conductor, substantially as herein shown and set forth.



158,645. RAILWAY-RAIL-JOINT FASTENINGS. P. McCarty, Fairfield, Iowa. [Filed Nov. 2, 1874.]

A railway-rail-joint coupling, consisting of the combined chair and fish-bar B, constructed in one piece, as described, and recessed at *f*, elastic cushion *g*, washer *h*, and fish-bar *l*, arranged to operate as and for the purposes specified.



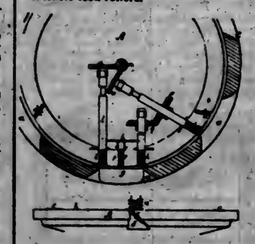
158,646. WATER-CLOSET VALVES. Edwin Mills, Somerville, Mass. [Filed Aug. 17, 1874.]

Brief.—A valve made with a hollow projection to receive an air-pipe that extends above the water-level in the main tank, and admits air into the supplementary tank beneath the main tank, thereby causing the water to flow into the closet-bowl.

In a water-closet valve, the hollow boss or projection B, with the tank opening upward to receive the air-pipe, substantially as described.

158,647. MACHINES FOR MAKING EXCELSIOR. Jas. G. Moore, Lisbon, N. H. [Filed Oct. 14, 1874.]

Brief.—A slide is arranged radially in the wheel, and provided with a series of vertical cutters, and moved lengthwise while passing between two guide-cams, causing the cutters to cut in lines parallel to the block of wood, which is held in one of a series of recesses in a circular frame, and fed to the cutters by suitable feed-rollers.



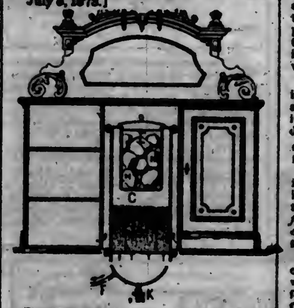
1. In the excelsior-machine, the guide-cams *g h*, applied to the stationary frame C, as described, and to operate, as set forth, with one or more slides, *s*, provided with scoring-cutters, and applied to a rotary wheel, A, carrying a set of plane-irons, the frame O having feed-rollers, and all being to operate as explained.

2. In the excelsior-machine, the combination of the shafts *l m*, bevel-gears *p q*, spur-gears *n o*, and screw *n'* with shaft B and feed-rollers *f k l*, all being arranged as shown and described.

158,648. COMPOUNDS FOR UNHAIRING HIDES AND SKINS. Henry Mower, Canton, assignor of one-half his right to M. Blodgett, of Sandy Creek, N. Y. [Filed Apr. 17, 1874.]

The combination of lye from wood-ashes or potash and lime which has been treated by the gas generated by sulphuric acid, sulphuret of iron, and water, substantially in the manner and for the purposes herein set forth.

158,649. WATER COOLERS AND FILTERS. A. M. Peterson, Philadelphia, Pa. [Filed July 8, 1873.]



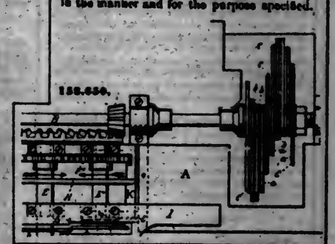
The filter and cooler A, composed of the chambers G D, the sieve E, and the ice-vessel H, substantially as and for the purpose shown and described.

158,650. MACHINES FOR COMBING AND CUTTING GRASS AND BRISTLES. Joseph Pickering, Philadelphia, Pa., assignor of one-half his right to Jos. M. Pickering, same place. [Filed June 4, 1874.]

Brief.—The pickers and combers are arranged spirally upon their shaft, and their edges and points are beveled, so that the bristles, in being combed, are automatically fed to the centers, which cover the tines to graduate it as to length.

1. The teeth *c*, having bevels *e* on their front ends and corresponding bevels *d'* on their front edges, in combination with the shaft H, on which they are spirally arranged for the double purpose of combing the grass or bristles and feeding it forward toward the cutters D and D', substantially in the manner, and for the purpose above described.

2. The slotted hinged guard I in combination with the cutters D and D', substantially in the manner and for the purpose specified.



158,651. WATER-PROOF PADS FOR COPYING-PRESSES. Chas. Rowland, New York, N. Y., and Jos. G. Rowland, Quincy, Ill. [Filed Nov. 24, 1874.]



As a new article of manufacture, a letter-press sheet, coated on both sides with asphalt varnish, and finished with shellac, substantially as specified and shown.

158,652. VOTING APPARATUS. Henry W. Spratt, 4 Lee Road, Blackheath, England. [Filed Aug. 10, 1874.]

Brief.—The apparatus is arranged within and opposite to the entrance of a chamber, in which is a turnstile. The voting-knobs are in recesses covered by doors sliding in a frame, which is only long enough to allow access to one knob at a time. The drawing of a knob locks all the other knobs, registers a vote for the candidate to whom the particular knob is assigned, indicates to the voter that his vote or votes are registered, registers the vote or votes on a public index, rings a bell, and actuates the entire locking apparatus, which may be set to lock for a single vote, or for any given number of votes. The turning of the stile by the exit of the voter, through a projection upon the top of the stile, lifts a bar to unlock the whole mechanism, and puts it in a condition to register the votes of the next voter.

1. The arrangement, in connection with the indicators or recording-instruments *d*, of the sliding bars *b*, with their knobs or handles *b'* in recesses provided with sliding doors *c'*, as described, so as to prevent access to more than one handle or knob at a time, as herein set forth.

2. The sliding bars *b*, formed or provided with inclines *b''*, stops or projections *b'*, and projecting parts *b''*, carrying-fingers *b'*, in combination with the locking-pieces *e*, tumbler-levers *f*, and their springs *f'*, the whole arranged and operating together substantially as described, for the purposes specified.

3. The combination, with the sliding bars *b*, of the sliding frame *g* and its anti-friction wheels *g'*, raised, by the inclines *b''*, during the forward movements of the bars *b*, the said frame being arranged, in combination with the other parts, as described, so as by its upward and return movements to actuate the public index or recording-machine *r*, ring the bell *u'*, and return the bar *b*, by which it has been raised, to its normal position, as herein set forth.

4. The combination, with the sliding bars *b*, of the vertical sliding bar *i*, provided with catches *i'*, and the sliding bar *g*, whereby when one bar is drawn out all the others are locked until the bar drawn out is released, whereupon the unlocking is effected, during its return, by the action upon the lever *h* of the pin *g''* of the sliding frame *g*, as above described.

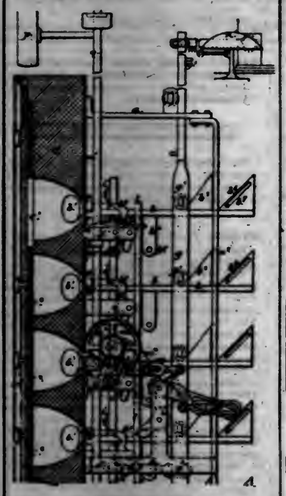
5. The combination, with the tumbler-levers *f*, locking-pieces *e'* and sliding bars *b*, of the locking-bar *l*, arranged to be moved by the crank-pin *f''*, actuated as hereinbefore described.

scribed, for locking the whole of the sliding bars *b* when the voter has given the number of votes to which he is entitled.

6. In combination with the sliding frame *g* and locking-bar *h*, the slotted arm *k*, stud *j*, slotted lever *j'*, spindle *j*, pawl *j*, ratchet *j*, toothed wheel *j*, pinion *j'*, spindle *j'*, crank or cam *j*, and pin *j*, all arranged and operating together substantially as and for the purposes herein described and set forth.

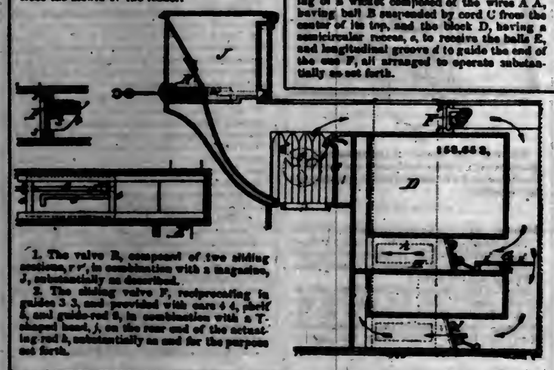
7. The combination, with the sliding bars *b* and sliding frame *g*, of the slotted arm *m*, pin *m'*, arm *m*, pawl *m'*, ratchet *m'*, and index-wheel *m'*, arranged to indicate to the voter the number of votes he has given, and also of suitable connections, (not shown,) actuated by the projections on the turnstiles, which will allow the wheel *m'* to return to zero as he leaves the voting-chamber, all substantially as herein described.

8. The combination, with the locking-pieces *r* and sliding bars *b*, of the unlocking-bar *q*, arranged to be actuated by an arm or connective (not shown) carried by, or connected with, the turnstile, so as to unlock the sliding bars *b* as the voter leaves the voting-chamber, substantially as described.



156,652. MAGAZINE COOKING-STOVES. W. B. Treadwell, Albany, N. Y. [Filed Nov. 21, 1874.]

Brief.—The damper in the magazine is extensible, and may wholly or only partially close the mouth of the feeder.



1. The valve B, composed of two sliding sections, *r r'*, in combination with a magazine, J, substantially as described.

2. The sliding valve F, reciprocating in guides 3 3, and provided with cam 4 4, plate 5, and guide-rod 6, in combination with a T-shaped head, *j*, on the rear end of the actuating-rod *h*, substantially as and for the purpose set forth.

3. In combination with the ovens D *D'* and the flues *b P P*, and the descending flue *d*, the L-shaped partitions and valves *l l* and passages *h h'*, leading into the outlet-flue, all arranged in the manner described.

4. In combination with the flues *b P P d*, surrounding the ovens D *D'*, the pivoted valve G, operating in the manner as and for the purpose set forth.

156,654. BURIAL-CASES. G. Van Winkle, Kalamazoo, Mich. [Filed Dec. 5, 1874.]

Brief.—The rotating lid has large circular openings at each end, which turn upon cylindrical pivots rigidly secured to the inside of the outer case. A strip of flexible rubber is secured to the inner receptacle near its upper edge, and prevents escape of gases.

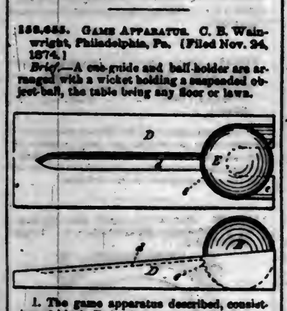


1. In a burial-case, the combination, with the outer case, A, and the inner receptacle, C, rigidly connected by means of screws *s* and cylindrical blocks *b*, of the lid B, rotating on the said blocks, substantially as specified.

2. The combination, with the rotating hollow lid B, of the rubber strip *e*, held in position upon the upper edges of case C by clamp-strips *d*, substantially as specified, and for the purpose set forth.

156,655. GAME APPARATUS. C. B. Wainwright, Philadelphia, Pa. [Filed Nov. 24, 1874.]

Brief.—A cob-guide and ball-holder are arranged with a wicket holding a suspended object-ball, the table being any floor or lawn.

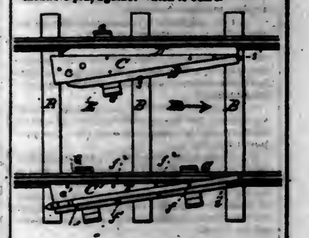


1. The game apparatus described, consisting of block D, having a semicircular recess, *c*, for holding a ball, and longitudinal groove *d* for guiding the cue F, and the ball B, suspended by means of the cord C, attached to any convenient device, substantially in the manner and for the purpose above specified.

2. The game apparatus described, consisting of a wicket composed of the wires A A, having ball B suspended by cord C from the center of its top, and the block D, having a semicircular recess, *c*, to receive the balls E, and longitudinal groove *d* to guide the end of the cue F, all arranged to operate substantially as set forth.

156,656. CAR-REPLACERS. R. D. Watson, Findlay, Ohio. [Filed Oct. 24, 1874.]

Brief.—The inner and outer inclined blocks are provided with rigid steadying-plates on the under side, which have upturned ends. The outer block has an adjustable rail, the lower end of which is provided with a hinged dog. Said rail moves on a pivot in the block, and is secured at the desired angle by a detachable pin, against which it bears.



1. The combination, with the detachable block C', of the hinged dog I and rail F, substantially as specified.

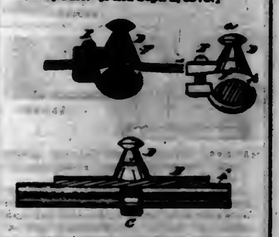
2. The combination, with the pivoted rail F, of block C', the studs *f' f'*, and the detachable pin *i*, substantially as and for the purpose set forth.

3. The hooked plates E G, rigidly secured to the under side of the block C, (said block having track-flanges D D,) and the block C', in combination with the rails A A, as and for the purpose set forth.

156,657. ROLLS FOR WELDING FLUE-IRONS. Wm. M. Watson, Tonica, Ill. [Filed Apr. 12, 1873.]

The roll C, provided with the eccentric groove A and collar *g*, in combination with the plain roll E, for the purpose of welding a double skin on the mold-board or share, substantially as set forth.

156,658. CURTAIN-FASTENINGS. John B. Weller, Bellbrook, and Finley G. Hopkins, Xenia, Ohio. [Filed Sept. 2, 1873.]



A carriage-curtain and roll clamp, consisting of the plate B, having an outer button, *c*, and a concave inner surface, and the plate C, having a concave inner surface and a shouldered connection, all combined substantially as and for the purpose specified.

156,639. QUILTING-FRAMES. Thomas N. Wheeler, Blue Earth City, Minn. [Filed June 2, 1874.]

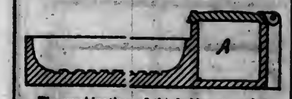
Brief.—The quilting-frame is convertible into a clothes-frame.



The combination, with the frame A B C D, of the rollers E, tension-bar G, cords *f*, pulleys *e*, and pins A, all substantially as and for the purposes herein set forth.

156,640. DEVICES FOR HOLDING AND MIXING STOVE-POLISH. Joseph C. Wightman, Boston, Mass. [Filed Oct. 26, 1874.]

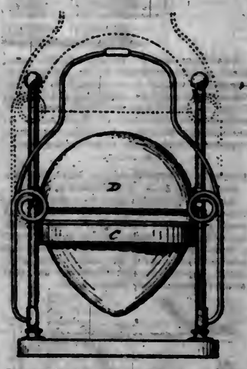
Brief.—The blacking, when not in use, is kept in a box or holder, to which is fastened permanently a mixing-dish having the interior roughened for grating the blacking.



The combination of the holder A and the mixing-dish B, the latter having an interior roughened surface, substantially as herein described.

156,641. COVERED TABLE-WARES. Horace C. Wilcox, West Meriden, Conn., assignor to the Meriden Britannia Company, same place. [Filed Aug. 28, 1874.]

Brief.—The dish is provided with vertical guides, and the cover with corresponding frictional slides, whereby the cover may be held suspended at any point of elevation desired.



In combination with a dish, C, provided with one or more vertical guides, the cover D, provided with corresponding frictional slide, whereby the said cover may be held at any point of elevation between its two extremes, substantially as described.

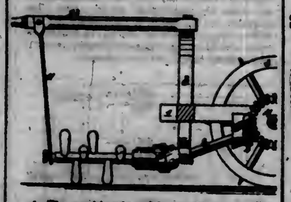
156,609.



The dogs *b b*, pivoted or hinged in the upper end of the slots in the sides of the bar-head, each of which has an angularly-slotted extension, *c*, in combination with the lever E, having its fulcrum between the extended ends of said dogs, and the pins *a a*, to operate in the angular slot *a*, substantially as and for the purpose described.

156,643. REVOLVING CULTIVATORS. N. S. Wood, Boone County, Mo. [Filed July 16, 1874.]

Brief.—The rotating shafts carrying the hoes are driven by the bearing-wheels through connecting-shafts having universal joints. A single handle, pivoted to an arched part of the frame, serves to move the rotating shafts freely by means of adjustable rods.



1. The combination of frames I I, connected by yoke 2, shafts 3 3, universally-jointed bee-shafts 9 9, pivoted lever or handle 13, and adjustable rods 11 11, as and for the purpose described.

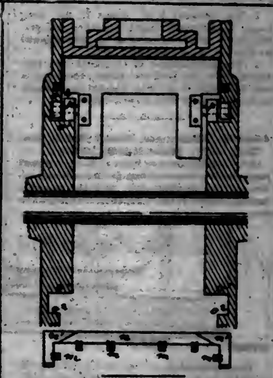
2. In combination with the driving-wheels, frames, and arched connecting-bar, the geared shafts 3 3, universally jointed to the rotary shafts 5 5, as and for the purpose described.

156,644. ROTARY ENGINES. Orwin Adams, Battle Creek, Mich. [Filed June 11, 1874.]

Brief.—The outer roller bears on the outer cam, the inside roller on the inside cam, which allows each roller to continue rotating in one direction.

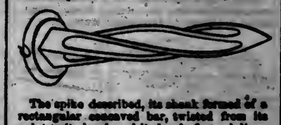
1. The stationary cams *o'* and *o*, the surface of *o'* projecting beyond the surface of *o*, in combination with the rollers *p* and *q*, turning on the same pin, substantially as specified.

2. The movable packing of a rectangular piston, consisting of the combination of the packing-pieces *o o' o'*, the adjoining ends of each piece being beveled to form close contact, and the springs *n*, substantially as and for the purpose specified.



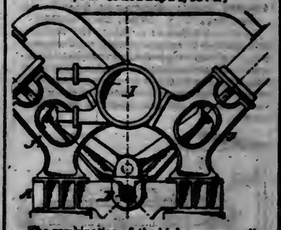
156,645. SPIKES. Joseph J. Adgate, Steubenville, N. Y., assignee of three-fourths his right to J. Maitland, J. H. Shoenberger, and C. Wheeler, Reading, Pa. [Filed Dec. 12, 1874.]

Brief.—Spike is formed from a rectangular bar of iron, and is twisted throughout its length. It is concave on all four sides to within a short distance of the head, where it is plain. Head is beveled, so that a claw can be readily inserted underneath it.



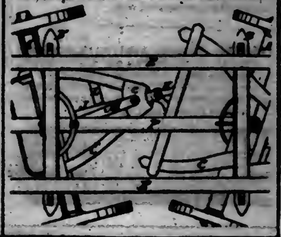
The spike described, its shank formed of a rectangular concaved bar, twisted from its point to its head, and its head of equal diameter centrally in axial line with the shank, and beveled from top to bottom, all substantially as and for the purposes herein set forth.

156,646. COMPOUND ENGINES. S. Archbold, Chester, Pa. [Filed Sept. 1, 1874.]



The combination of the high-pressure cylinder G and its frames J, the low-pressure cylinder H and its frames J', and the condenser I, secured to the said frames, with the beam A and propeller-shaft D, all being arranged as set forth.

156,647. BOTTOM-CHAIRS. Jacob Reuter, Jr., Seymour, Ind. [Filed Dec. 7, 1874.]



1. The bolsters B B', frame E, and long reach F, connected rigidly together and pivoted to the front and rear axles, all combined as and for the purpose described.

2. The combination of the front and rear bevels with the long and sliding reaches F J and the strap M, to limit the curve on which the vehicle may turn, as set forth.

156,669. WRENCHES. Otis T. Bedell, New York, N. Y. [Filed May 20, 1874.]

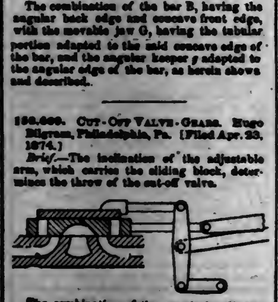
Brief.—The concave front of the bar allows space for the free working of the tubular portion of the movable jaw, and the opposite bearing-edges present reduced frictional surfaces.



The combination of the bar B, having the angular back edge and concave front edge, with the movable jaw C, having the tubular portion adapted to the said concave edge of the bar, and the angular keeper g adapted to the angular edge of the bar, as herein shown and described.

156,670. CUT-OFF VALVE-GEARS. Hugo Bilgram, Philadelphia, Pa. [Filed Apr. 23, 1874.]

Brief.—The inclination of the adjustable arm, which carries the sliding block, determines the throw of the cut-off valve.



The combination of the angularly-adjustable slide and rod E, slide S, and link L, operated by an eccentric, with a rod conveying motion to the cut-off valve of a steam-engine, substantially as shown.

156,671. BUREAU-BEDSTEADS. Chas. Broda, New York, N. Y. [Filed Apr. 10, 1874.]

Brief.—A bedstead in which the bed-bottom consists of canvas resting on transverse slats, which are supported by springs on transverse rods connecting flexible side supports or rails, and the whole is so arranged that the entire bed-bottom can be wound upon a shaft in a case, and the case closed to resemble a bureau.



The axle F, flexible supports I I, cross-bars O O, springs P P, slats Q, and canvas R S, in combination with the slats R R, head-rest U, Ed D E, and foot-rest L, substantially as and for the purpose set forth.

156,672. FIRE-ROLLERS FOR PLANING-MACHINES. C. N. Brown and H. W. Meyer, Dayton, Ohio. [Filed Nov. 30, 1874.]

Brief.—A series of disks of elastic material are firmly placed upon a shaft, and covered by a series of metallic rings.



The combination of the shaft A, elastic packing-disks B, and outer metallic covering-rings C, substantially as herein shown and described, for the purpose specified.

156,673. ELECTRIC FUSES. C. A. Browne and Isaac S. Browne, North Adams, Mass. [Filed Aug. 22, 1874.]

Brief.—Furnished ready to receive priming when about to be used.



156,673.

The tube A, having wires a a in a packing, C, and provided with open-ended chamber D for the priming.

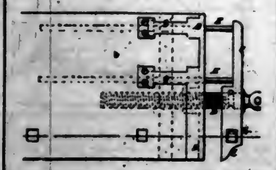
156,674. TOOTH-BRUSHES. Chas. Bulkley, Philadelphia, Pa. [Filed Sept. 3, 1874.]

Brief.—The handle of a tooth-brush is provided with a tooth-pick, which can be forced out of its shield when desired. Above this device is a hinged arm that holds a thread taut, so that it can be used to remove substances from between the teeth.

An improved tooth-brush with its metallic attachments a b d e f and the cord t, substantially as set forth, in the manner above described.

156,675. BENCH-VISES. C. Burton, New Baltimore, Ohio. [Filed Oct. 28, 1874.]

Brief.—The movable jaw of the vise is provided with two arms, which pass through the stationary jaw, and eyebolts attached to arms upon the rear of said jaw, for maintaining at all times the parallelism of the jaws. The movable jaw is slotted for the reception of a spring-dog, by means of which, in connection with a similar dog in the work-bench, work of any desired length may be clamped.

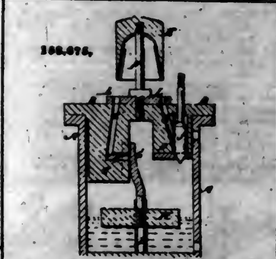


The angle-plate or stationary jaw B, provided with arms b and eyebolts F, the horizontal movable jaw C, carrying the adjustable dog G, and provided with a swiveled screw, D, and the guide-rods E, arranged parallel to the screw, all constructed, combined, and operating in connection with a bench, as shown and described.

156,676. WATER AND STEAM INDICATORS FOR BOILERS. William L. Carman, Belvidere, Neb. [Filed July 20, 1874.]

Brief.—Upon the rising of water in the chamber, the float rises, carrying with it the vertically-sliding valve, and closing the whistle-port. A weighted valve is also employed to let off undue pressure of steam. A perforated washer registers with the ports of the steam and low-water alarm whistle, the perforations being of different sizes, to indicate by a different note undue pressure of steam and low water.

156,676.



1. The combination of the cylinder or case A, the cover B, having a projection, C, formed upon its lower part, and provided with a port, c', the slide O, and the float H, working vertically on guide-pins I, substantially as herein shown and described.

2. The combination of the thick washer L, having different-sized holes formed through it, with the cover B, the ports c' d', and the whistle E, substantially as herein shown and described.

156,676. APPARATUS FOR RAISING WATER BY PNEUMATIC PRESSURE. Robt. A. Cheesbrough, New York, N. Y. [Filed Nov. 10, 1874.]

Brief.—One or more stationary water-receivers are placed in the well, and connected by pipe with a compressed-air reservoir, which is kept filled with compressed air by means of the air-compression pump driven by the windwheel, and an air cock or valve is used for alternately admitting and shutting off the compressed air to and from said receiver, for the discharge and replenishment of water.

In an apparatus for raising water by pneumatic pressure obtained by an air pump or compressor worked by a windmill, the combination of the valve for supplying and shutting off the air to and from the water receiver or receivers with the shaft of the windmill by connecting mechanism, the whole constructed to operate substantially as herein described.

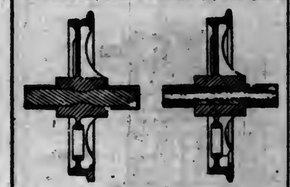
156,677. WATER-CLOSETS. Robt. C. Clark, New York, N. Y. [Filed Dec. 5, 1874.]

Brief.—The combination with the seat of a water-closet of a spring-catch, which is actuated by the door of the closet; said seat being hinged and subjected to the action of a spring or weight in such a manner that whenever the door of the closet is opened or closed, the spring-catch releases the seat, which is immediately thrown open.



The combination of a spring-catch, a, with the hinged seat C of a water-closet, subjected to the action of a weight or spring, and with a tappet, d, secured to the door F of the closet, and serving to actuate the spring-catch whenever the door is opened or closed, substantially in the manner herein shown and described.

156,678. CAR-WHEELS. Wm. J. Cochran, Baltimore, Md. [Filed Dec. 12, 1874.]



A car-wheel having a journal at each side covered with sleeves of anti-friction or hard metal, substantially as described.

156,679. MACHINES FOR ROUNDING AND BACKING BOOKS. John E. Coffin, Portland, Me. [Filed Oct. 24, 1874.]

Brief.—Books received on a falling shelf in front jaw, and rounded and delivered from same aperture automatically.

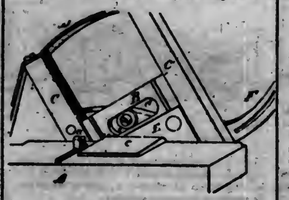
156,680. BANDAGE-WINDERS. Alfred M. Cone, Corry, Pa., assignor to himself and L. D. Parsons, same place. [Filed Dec. 12, 1874.]

Brief.—A small rod is secured parallel to a lower arm of the roller, and, with said roller, serves to feed the cloth uniformly as well as smoothly.

A machine for winding bandages, constructed substantially as shown and described—that is, having a spindle, G, arm B, rod I, screw C, and crank H, in combination with a suitable frame, as specified.

156,681. MACHINES FOR TAPERING SPOKES. Phillip Coon, Canton, N. Y. [Filed Dec. 10, 1874.]

Brief.—The spokes are placed upon a stationary bed, and retained in the desired position by suitable stops, while the superfluous material is removed by a reciprocating cutter.



In a machine for tapering or finishing the ends of spokes, the combination of the bed or table A with the inclined guide-arms C C', slotted cams or gate H carrying knife E, roller d, and hand-lever F, the whole constructed to operate as and for the purpose set forth.

156,682. LASTING BOOTS AND SHOES. Geo. W. Copeland, Malden, Mass. [Filed Jan. 6, 1875.]

Brief.—The lasting-tacks are clinched or upset within the body of the sole by means of a metal plate inserted between the outer and inner surfaces.



1. The improvement in the manufacture of boots and shoes, consisting in clinching the ends of the lasting-tacks within the body of the inner sole in an incision formed from, and open at the lower side or edge of, the same, substantially as and for the purpose specified.

2. As a means for puncturing the sole and clinching the lasting-tack within the body of the sole, a combined cutter and anvil, operating substantially as and for the purpose shown.

3. The method of securing together the welt or upper, or the welt and upper and inner sole, by tacks clinched within the body of said sole upon a metal tool or anvil inserted from the outer surface of said sole beneath each tack before the same is driven, substantially as and for the purpose set forth.

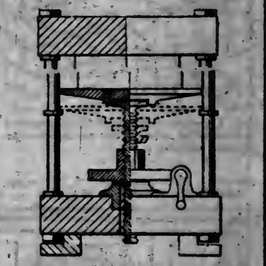
156,683. BALE-TIES. Marcus D. Copeland, Providence, R. I., assignor to Mrs. Susan A. Copeland, same place. [Filed Dec. 4, 1874.]

1. The combination of the bale-band, having elliptic slots at the ends, with the bolt, as and for the purpose set forth.

2. A tie-bolt with neck under the head, for the purpose fully specified.

156,684. SCREW-PRESSES. J. J. Crawford, Nashua, N. H. [Filed July 15, 1874.]

Brief.—The collars secured to the guide-posts are to arrest the platen on its downward movement, and automatically release the platen, if the turning of the screw-nut be continued.

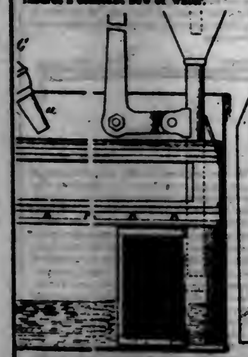


1. The screw-shaft D and movable platen B of a screw-press, connected together and constructed substantially as set forth, so that the screw-shaft will be automatically released and cease to operate the platen, as set forth.

2. The combination of the platen, having the parallel ribs on its under side, with the screw-shaft having a square head adapted to fit between said parallel ribs, substantially as described, whereby the said screw-shaft, in its downward movement, is automatically released from the platen, as and for the purpose described.

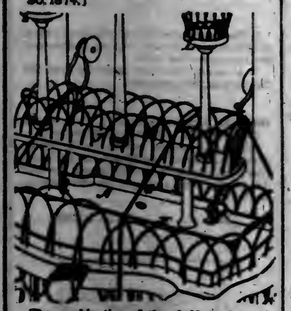
158,646. DISH-WASHERS. W. N. Cosgrove, Faribault, Minn. (Filed Oct. 10, 1874.)

Brief.—The water, thrown upon the dishes by means of a force-pump and flexible hose, is drawn again from the dish-holding tank; a wire screen, with coiled board bottom, protecting the pump and preventing sediment from clogging up the same, whereby the same water may be used over and over again free from all impurities, while the bulbous reservoir between the pump and discharge-pipe insures a constant flow of water.



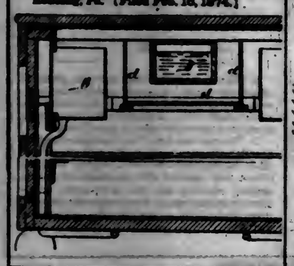
A dish-washer, constructed as described, and consisting essentially of the tank A, a force-pump provided with the bulb or reservoir F, the strainer I, having the solid board J, and the pipe B with its handle G and nozzle c, substantially as herein set forth.

158,666. WINDOW-CONSERVATORIES. John T. Crawford, Pontiac, Mich. (Filed Apr. 30, 1874.)



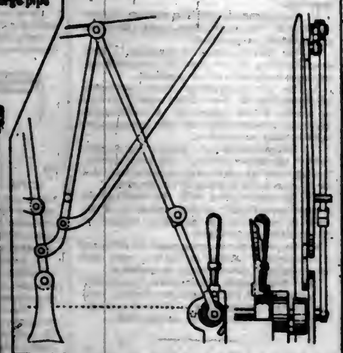
The combination of the shelf A, elevated shelf J, baskets I, and cord N, all arranged and operating substantially as and for the purposes described.

158,667. REFRIGERATORS. S. H. Crump, Reading, Pa. (Filed Feb. 16, 1874.)



The partitions *d*, arranged between the ice-boxes B B and the water-cooler D, and below the hinged top E of the refrigerator, as specified.

158,668. TOP-JOINTS FOR VEHICLES. Thos. F. Darcy, New York, N. Y. (Filed Dec. 5, 1874.)



1. The braces of a vehicle-top to fold toward the bow-pivots, and mounted at the lower end on a revolving shaft, having a spring or springs set so as to raise the top, and a lever-handle and stop-catch for lowering and fastening the top, all combined substantially as specified.

2. The combination of stud I on one of the bows with a brace, A', to fold as set forth.

158,669. IRON COLUMNS. Garret B. Davids, Baltimore, Md., assignor to himself and T. Desmond, same place. (Filed Feb. 16, 1872.)



1. A channel-bar, having the straight central portion and inclined pocket with the thickened edges formed entirely by rolling, substantially as shown and described.

2. A column formed of two of the herein-described rolled channel-bars, joined back to back by a single line of rivets or bolts, as herein shown and described.

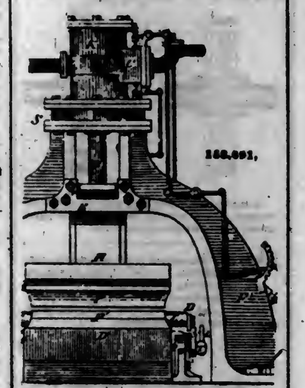
158,670. PITMAN-CONNECTIONS. Lewis H. Davis, West Chester, Pa. (Filed Jan. 2, 1875.)

Brief.—The turn-bolt has a cam-head located in an eye formed in an extension of the bearing-block, so that by turning the bolt the cam thereon will press the box against the wrist-pin, thereby maintaining the parts in proper relation. The bolt is made adjustable to any desired position by the engagement of its handle by the ratchet-surface on plate L.

1. The combination of the turn-bolt H, having an eccentric or cam, I, with the adjustable bearing-block D, pitman A, and a wrist-pin, B, substantially as described.

2. The combination of the turn-bolt H, provided with an eccentric or cam, I, and handle or arm K, with the bearing-block D, plate E, with its ratchet or locking-surface L, the pitman A, and a wrist-pin, B, substantially as described.

3. The adjustable bearing-block D, having a slot, *a*, and flange F, in combination with the turn-bolt H, provided with an eccentric or cam, I, pitman A, and wrist-pin B, substantially as described.



158,671.

158,672. STONE-CUTTING MACHINES. Louis Deterre, San Francisco, Cal. (Filed Sept. 7, 1874.)

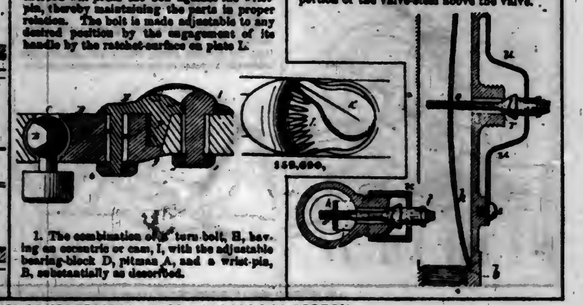
Brief.—A steam-hammer, of oblong form, has, detachable along it beneath, a chisel-formed tool, which falls in the same plane with an inverted similar tool on an anvil. A table with rollers on it, and a cam-lever for raising one end, the other end being hinged, is adapted to adjust the stone between the tools.

1. The adjustable table B B, provided with rollers r r r, dependent in its movements on the eccentrics N F', socked and lever-arm attachments T L, respectively, and ratchet-wheel *t* with catch *p*, in combination with the hammer S, fitted with the knives P P', substantially as and for the purposes herein set forth and specified.

2. The combination of the knives P P', fitted, respectively, to the hammer and anvil blocks H and D, with the adjustable table B B, and attachments thereto, herein described, substantially as and for the purposes herein set forth and specified.

158,673. AUTOMATIC VALVES FOR STEAM-RADIATORS. John Elder, Jr., New York, N. Y. (Filed May 6, 1874.)

Brief.—The spring is held in the tube by a block at one end thereof, and a groove cut on the interior at its other end. The valve, resting externally, is held between said spring, to which it is attached by a prolongation of its stem, and an external guard surrounding the portion of the valve-stem above the valve.



158,674. TOY WIND-WHEELS. William G. Fischer, Brooklyn, assignor to A. Weidmann & Co., New York, N. Y. (Filed Aug. 12, 1874.)

Brief.—Like the wheels of artificial fire-works, but arranged to move oppositely by wind-power.



The chromatic toy herein described, composed of the colored feather-wheel C and the perforated feather-wheel D, both hung on the same spindle, and arranged to turn simultaneously in opposite directions, substantially as specified.

158,675. BIRD-CAGE ATTACHMENTS. Geo. Fliedner, Portland, Oreg. (Filed Oct. 3, 1874.)

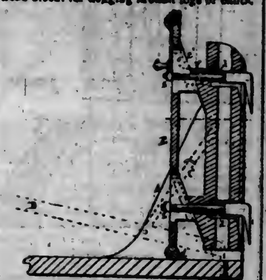
Brief.—A receptacle attached to the outside of the cage, for holding cake, sugar, &c.

1. The tube *a*, made with the inward shoulder *b*, near one end, and the block *c*, having a recess at one side and secured by the cap *f*, in combination with the spring *h*, supported by such shoulder *b* and recess, and the air-valve having a screw-stem that is introduced from outside the tube *a*, and passes through the spring, as and for the purposes set forth.

2. The guard *e*, surrounding the stem of the valve, and made with an opening of less diameter than the valve, in combination with the tube *a*, adjustable air-valve *i*, and spring *h*, as and for the purposes set forth.

158,676. SAW-MILL DOGS. Wm. M. Ferry, Grand Haven, Mich. (Filed June 17, 1874.)

Brief.—The dogs are restricted and secured at different distances from the faces of a head-block, for dogging around logs or masts.



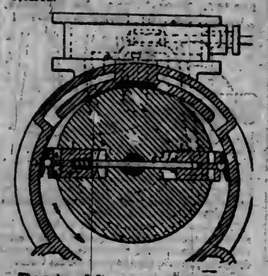
1. The dog-bar B, dogs G, springs *f*, roller *d*, plate E, and a lever, D, when the parts are constructed and combined to operate substantially as shown and described.

2. In combination with the plate E and dogs G the pendulum-stop *g*, substantially as and for the purposes set forth.

3. The slotted plate E and its diagonally-grooved blocks E' in combination with the cheek-pieces F, dog-bar B, dogs G, spring *f*, roller *d*, stop *g*, and a lever, D, constructed and operating substantially as herein shown and described.

158,677. ROTARY ENGINES. Ernest Frank, Baltimore, Md. (Filed Mar. 6, 1874.)

Brief.—Segmental blocks coincide with the faces of the cylinder, and are attached to the piston-heads, which are mounted on variable rods, and adjusted by springs, whereby an even bearing on all parts of the cylinder is secured.

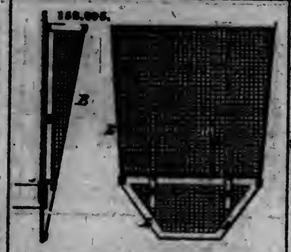


The valves I I', constructed with their respective parts, as described, and mounted upon a common rod, *d*, of variable length, in combination with the adjustable faces *k*, having area coincident with the interior of the cylinder, substantially as specified.

158,678. CLEANERS FOR DRAWING-ROLLS. Benj. F. Gambrill and James L. Sheridan, Baltimore, Md. (Filed Nov. 21, 1874.)

Brief.—The cleaner is a bar with wbeveled cloth-covered edge, inserted through a slot in the cover or top board, and resting by gravity upon and between two of the rolls of the frame.

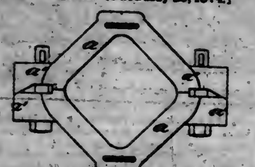
The self-adjusting clearing-board G, having beveled edges or projections *b*, in combination with the rollers C C and the slotted cover D, all substantially as and for the purposes herein set forth.



158,679.

The receptacle B, constructed of the frame E and wire body, and open at the side adjoining the cage and secured thereto, substantially as described.

158,680. MOLDS FOR CASTING INGOTS. David Foster and William Lockwood, Sheffield, England. (Filed May 20, 1874.)



In an open-topped mold divided longitudinally for casting steel ingots, and having lugs *a'* *a'*, the combination of the bolts *b* and the spring *c* arranged upon the bolts, for permitting the lateral expansion of the mold-sections, substantially as and for the purpose described.

158,681. SAWING-MACHINES. John Gerhardt, Montreal, Canada, assignor to himself and James Rutchinson, same place. (Filed Sept. 15, 1874.)

Brief.—The lumber to be sawn is fed to the saws by vertical feed-rolls and prevented from pinching the saws by a series of wedge-shaped disks.

1. The laterally and vertically adjustable hook-plates E E', and hooked check-plates C', combined with the saws and the saw-frame, substantially as specified.

2. The adjusting-screw G', and straining-peg F', combined with the hooked plates E and E', substantially as specified.

3. The combination of saw-guide V and guide W with the same vertically-adjustable beam *x*, having the eccentric pin *y*, and the superposed spring *y'*, as and for the purpose set forth.

4. The spreading-disks A arranged to slide on their shafts between an adjustable collar, K, and a spring, *i*, and the shafts arranged to slide laterally against a spring, *w*, arranged, in the relation described, to the collar K, substantially as specified.

5. The upper spreading-disks A arranged on a vertically-adjustable shaft, substantially as specified.

6. The lower guide *p*, spreading-disks *i*, and the slip rollers arranged adjustably to the saws on the shifting-frame *r*, substantially as described.

158,682. LAMP-BURNERS. John Gleason, Brooklyn, N. Y. (Filed Dec. 29, 1874.)

Brief.—A double-walled body, outer wall finely perforated, inner wall having one perforation, and a collar at either end, to be interposed between the burner and the collar of the lamp.

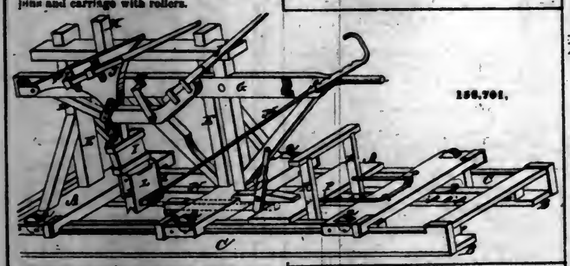
1. The safety extension-collar, formed of the double-walled body A, having its outer wall finely perforated and a single hole in its inner wall, and provided at its ends with collars *a'* *a'* to adapt it to be interposed between the burner and collar of a lamp, substantially as herein shown and described.



2. The combination of an intermediate collar, C, with the lower end of the extension-collar A a^1 a^2, substantially as herein shown and described.

156,701. DITCHING-MACHINES. H. H. Gray, Middleville, Minn. [Filed Dec. 16, 1874.]

Brief.—A ditching-machine, with a spade having a toothed edge longer in center than at sides, is operated by a swing-derrick, having vertical beam, toggle-joint, and levers. A grappler is hinged to rear side of the spade, and operated by a notched rod, a follower, and lever. The machine slides on a track with pins and carriage with rollers.



156,701.

1. The spade K, having its lower edge toothed and made longer in the center than at the sides, substantially as and for the purposes herein set forth.

2. The combination of the toothed spade K, provided with side flanges *d d*, and the grappler L, hinged between the upper ends of said flanges, substantially as and for the purposes herein set forth.

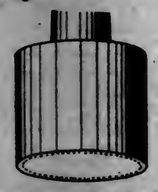
3. The combination of the swinging derrick G with vertical beam H, sliding head I with spade K, toggle-joints *b b*, and levers J J', all constructed and arranged to operate substantially as and for the purposes herein set forth.

4. The combination of the track B C D with pins *i i*, carriage A with wheels or rollers *a a*, lever-frame E, and bail F, all as and for the purposes herein set forth.

5. The follower N and lever O, in combination with the hinged grappler L on the flanged spade K, for the purposes herein set forth.

156,702. SHOES AND DIES FOR STAMPING-MILLS. Wm. Hainsworth, Pittsburg, Pa., assignor to Pittsburg Steel-Casting Company, same place. [Filed Dec. 19, 1874.]

Brief.—The core of the hammer-head is made of cast-steel or other hard metal. Its outer head is of wrought-iron, or other tough metal. The head may be shrunk about the core, or the core may be cast inside the head. Object: To prevent the head from breaking or splintering.



In the manufacture of shoes and dies for stamping-mills, the combination of a wrought-iron or other tough fibrous shell with a hard-metal body, substantially as set forth.

156,703. SAW-MILLS. Herman D. Hall, Denver, Colo. [Filed Dec. 19, 1874.]

Brief.—The shaft which moves the cog-carriage is provided with a number of friction-wheels of different sizes, and over this shaft, but placed at an angle thereto, is a short shaft carrying a corresponding set of friction-wheels. A horizontal movement of either of the shafts will bring two of these friction-wheels into contact, but only two can be in contact at the same time.

1. In a mechanism for feeding the log-carriage for saw-mills, the combination of the driving-shaft A and the movable shaft E, arranged in different vertical planes, and each provided with a series of wheels of different diameters, substantially as and for the purposes herein set forth.

2. The combination of the driving-shaft A, with wheels C^1 C^2 C^3 C^4, rubber springs *d*, and the shaft E, with wheels D^1 D^2 D^3 D^4, pivoted box *f*, and sliding box *h*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

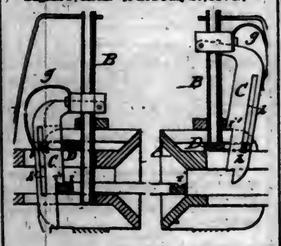
156,704. ROCK-DRILLS. Jos. Hanrahan, Ottawa, Canada. [Filed Dec. 18, 1874.]



1. A rock-drill having a cruciform bit, and either or both of the radial wings C and D beveled unequally on opposite sides, as shown, to throw the two cutting-edges out of a radial line, substantially as set forth.

2. A rock-drill having either or both of its radial wings beveled unequally on opposite sides, and its through cutting-edge A recessed centrally, as and for the purpose set forth.

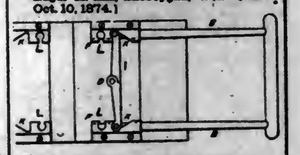
156,705. CAR-COUPLINGS. J. Hardey, East Saginaw, Mich. [Filed July 26, 1874.]



1. The draw-head A, coupling-pin B, pivoted elbow-lever C, carried by said pin and having a vertical slot, *h'*, and spring *g*, to operate with the pin-supporting plate D, pin *h*, and coupling-link E, all combined as and for the purpose herein set forth.

2. The coupling-link E, having end notches *i*, in combination with projecting front shoulder *i'* of lever C, for holding link in horizontal position for coupling with adjoining draw-head, as set forth.

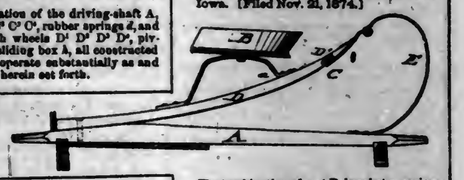
156,706. HANDLES FOR CHILDREN'S CARRIAGES AND SLEIGHS. Geo. B. Hawks and Edgar A. Hill, Sheboygan, Wis. [Filed Oct. 10, 1874.]



1. The handle X of a child's carriage, consisting of the side pieces B B, suitably connected at their front ends, and connected at a short distance from their rear ends by means of the jointed rod D, all combined substantially as and for the purposes described.

2. The combination of the handle X, legs F F or G G, and body of the carriage or sleigh, substantially as and for the purposes set forth.

156,707. SPRING-SEAT SUPPORTS. Frank A. Hawley and Amos Pearsall, McGregor, Iowa. [Filed Nov. 21, 1874.]

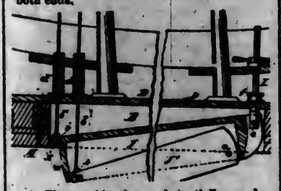


156,707.

The combination of seat B, bracket *a*, spring C D, and C-spring E with the perch A, as and for the purpose specified.

156,708. CENTER-BOARD WHERRIES. Charles Hemje, New York, N. Y. [Filed Nov. 30, 1874.]

Brief.—Keel, keelson, and ribs or frame-timbers bolted together; center-board well entirely within keel and keelson, closed at top by a rider, into which masts may be stepped, and which binds the parts; also, center-board composed of a plurality of parts pivoted together, adapted to be operated from either or both ends.

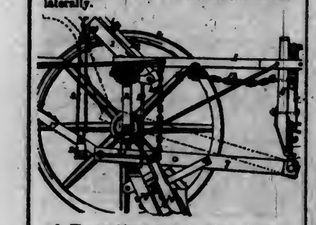


1. The combination, substantially as described, of the frames G G and rider D, with the combined keel and keelson A B, whereby great strength is preserved, while a full-sized center-board may be used without interfering with the position of the masts, and whereby the ordinary floor-boards are dispensed with, substantially as and for the purpose specified.

2. In combination with a center-board, composed of two or more sections, J J', pivoted together at or near their front ends, the rigid forward hoisting device and independent after hoisting cords or chains *b b'*, substantially as and for the purpose described.

156,709. CULTIVATORS. R. S. Higgins, Fairfield, Ill. [Filed Aug. 19, 1874.]

Brief.—The plow-beams are attached to swinging standards, having pivoted center-braces and equalizing draft, which allow independent forward and back movement to the plows. Pivoted handles allow this movement when the plows are hung up. Bars adjustable in width, with elbow-levers and stirrups, provide for moving the plow-beams laterally.



1. The combination of the pivoted oblique braces 12, pendants 6, main frame 1, beams 7, and single-trees 11, substantially as and for the purposes set forth.

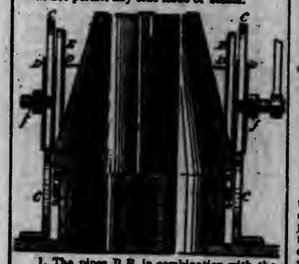
2. The L-shaped bars 27, constructed and operating as described, in combination with the plow-beams 7, loops 31, transverse bar 24, and nuts 25 26, substantially as and for the purposes set forth.

3. The nuts 25 26 and screw-protecting sleeves 28, in combination with the L-shaped bars 27 and transverse bar 24, for adjusting the plow-beams as to their distance asunder.

4. The combination of the hooks 18 and pivoted bails 19 with the pivoted handles 17, beams 7, and draft apparatus 6 13, by means of which the plow-beams are supported while out of use, without affecting the application of the draft to the main frame.

156,710. VARIABLE EXHAUSTS FOR LOCOMOTIVE AND OTHER ENGINES. Edwin A. Hill, East Cambridge, Mass. [Filed Jan. 4, 1875.]

Brief.—On the outer sides of the nozzles are placed expansible plates, to admit of expansion when said nozzles become heated. The working sections are provided with cutting-edges, which work against the fixed sections, for the purpose of removing any gummy substance which may accumulate. The side sections are provided with flanges, so that when the nozzles are expanded the column of escaping steam will be kept unbroken, and will not permit any side issue of steam.



1. The pipes B B, in combination with the sections A A of the nozzles, and the expansible sections A" A" and center section, A', substantially as and for the purpose specified.

2. The combination of the base-pipe B with section A, having cutting-edges *a'''*, and fixed sections A' A", substantially as and for the purpose specified.

3. The sectional exhaust-nozzles A A, in combination with the center section, A', and end sections, A" A", provided with flanges or overhanging edges *a' a''*, substantially as and for the purpose specified.

4. The combination of the sections A A of the nozzles, having projecting studs *e e*, with the vertically-sliding cross-heads D D, provided with oblique converging grooves *d d*, and having arm F, slotted at *f'*, and secured by bolt *f*, substantially as and for the purpose specified.

5. The sections A A and pipes B B, combined to operate with and upon each other by means of cutting-edges *a'* and *b*, substantially as and for the purposes set forth.

156,711. CORN-SHELLERS. Lora B. Holt, Worcester, Mass. [Filed July 24, 1874.]

Brief.—The stationary shelling-disk has a peculiar arrangement of ribs and corrugations.



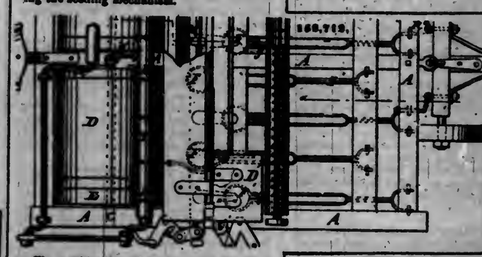
1. In a disk corn-sheller, the presser-plate provided with the curvilinear projection *w*, commencing at a point on the right side of the hub of the shaft and extending to a point situated at or about one-third of the distance from the shaft to the extreme left of the casing.

2. In a disk corn-sheller, the presser-plate provided with the projections *w* and *x*, as and for the purposes described, whereby the corn is caused to pass around the casing at a greater radial distance and the end of the ear is ground.

3. In a disk corn-sheller, the presser-plate provided with corrugations *z*, arranged between the projections *w* and *x*, as and for the purposes described.

156,712. COMBINED LAND-ROLLERS AND SEEDING-MACHINES. James H. Holland, Aurora, Mo. [Filed July 3, 1874.]

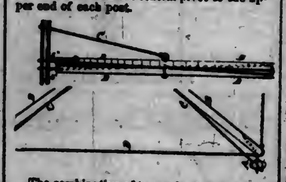
Brief.—To the outside of the roller are removably attached skeleton-wheels, and secured upon the same axle, so that when they rotate they carry the axle with them, operating the seeding mechanism.



The combination of the detachable wheels E and roller D with the shaft C and frame A, in the manner set forth.

156,713. MOSQUITO-BAR FRAMES. Wm. F. Howe, Galveston, Tex. [Filed Sept. 26, 1874.]

Brief.—The canopy-frame is composed of the bars, pivoted together and crossing each other diagonally, and a cord passing around the notched ends of the bars. It is connected to the supporting-posts by pins, and a brace-cord extends from the central pivot to the upper end of each post.



The combination of two rods, A A, two centrally-pivoted diagonal bars, B B, a circumjacent cord, D, and cords C C, extending from central pivot to the rods, as and for the purpose described.

156,714. PACKING CIGARS. S. Jacoby, New York, N. Y. [Filed Dec. 17, 1874.]

Brief.—The tips are made to point in alternate opposite directions, and back of the line of the butt-ends, whereby the evaporation of the moisture of the cigars is uniform.



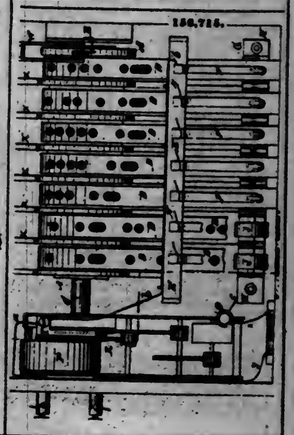
A package of cigars having the cigars arranged so that their tips alternately point in opposite directions, and recede from the line of the butts, in the manner and for the object herein specified.

156,715. TELEGRAPHIC SIGNAL APPARATUS. Joseph W. Eaton, Richmond, Va. [Filed Sept. 28, 1874.]

1. The combination of the perforated non-conducting tapes D, with a grooved drum, A, placed upon one and the same shaft with the mainspring of a clock-gearing, so constructed and arranged that the withdrawal of the tapes winds up the spring, and the reaction of the spring, when the tapes are released, winds up to turn the tapes for the transmission of the signals, substantially as described.

2. The perforated non-conducting tapes D, in combination with the insulated spring-seated wheels G, the insulated wheels J, and the wires N, connecting the wheels J of one tape with the contact-wheels G of the next, substantially as and for the purpose described.

3. The combination, with the stud *d*, of the loose wheel E, the spring-seated insulated catch S, and the wire *c*, for the purpose of opposing the motion of the clock-gearing when the spring is wound up, and shunting the circuit from the operating parts until the tape, which has been drawn out, is released, substantially as described.



156,715.

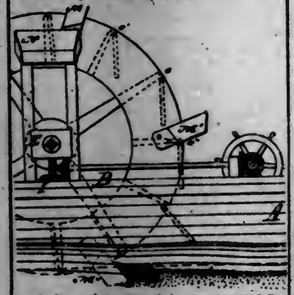
156,716. GRAIN-DRILLS. Jacob King, Indianapolis, Ind., assignor of one-half his right to Jos. K. English and Ewald Over, same place. [Filed Apr. 20, 1874.]



The case B, provided with a detachable top flange, consisting of the sections C *c* and C *c'*, adapted to interlock with the top of the case, substantially as and for the purpose specified.

156,717. DREDGING. Geo. Kuhn, St. Louis, Mo. [Filed Oct. 24, 1874.]

Brief.—A current-wheel provided with feathering-buckets and elevators, arranged adjustably on standards, to discharge the sand, &c., into a barge, to which the wheel is attached by suitable frame-work.

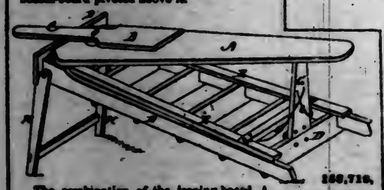


1. The combination of the current-wheel C, provided with the feathering-buckets *a a'*, &c., and the elevators M M', &c., arranged as described, the barge A, and the frame B, substantially as shown and described.

2. The combination of the wheel C, provided with the feathering-buckets *a a'*, &c., and the elevators M M', &c., the standards F F', upon B, barge A, and frame B, substantially as described and shown.

156,718. CORRUGATED IRONING-BOARDS AND STEP-LADDERS. Israel L. Landis, Lancaster, Pa. [Filed Dec. 19, 1874.]

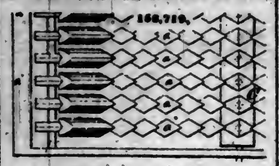
Brief.—To a frame containing a step-ladder are pivoted legs and braces, which support a detachable ironing-board, which has a bosom-board pivoted above it.



The combination of the ironing-board A, provided with the pivoted bosom and sleeve board B C, and pieces *d*, with pins *i*, the ladder D, hook frame E, legs H H, brace G, and castings I with arm *m*, all constructed and substantially as and for the purposes herein set forth.

156,719. GRATES. John B. Lardin, Pittsburg, Pa. [Filed Dec. 8, 1874.]

Brief.—The short bars serve as continuations of the main bars, preventing coal from falling into the space below.



156,719.

1. In combination with the grate-frame A and the longitudinally-reciprocating grate-bars *a*, the supplementary transverse bars or bridges B supporting the bars *a* at their ends, said grate-bars and bridges being correspondingly grooved, or recessed and ridged, substantially as and for the purpose described.

2. In combination with the longitudinally-vibrating grate-bars *a*, the simple lever C connected to each separately, and having an independent fulcrum, *d*, below, substantially as shown and described.

156,720. MANUFACTURE OF SOAP. Charles Lehmann, New York, N. Y. [Filed Nov. 28, 1874.]

The within-described process of manufacturing soap by melting the fat in a separate vessel, then heating a strong lye of from 30° to 36° Baumé to the boiling-point in another vessel, and mixing the molten fat and the boiling lye in a third vessel, whereby a perfect saponification is effected without any waste of lye, substantially in the manner set forth.

156,721. OIL-CANS. Ferdinand Lehr, New York, N. Y. [Filed Dec. 9, 1874.]

Brief.—Pressure on the elastic bottom of the chamber causes an adjustable spring-valve to close the communication between the air in the chamber and the drip-pipe. The discharge-tube within the pipe has its ejected volume of oil contracted by a contained wire looped on its outer end.



156,721.

1. The valve *d*, provided with a stem, which bears on the elastic bottom of an oiler, A, in combination with the vent-hole and discharge-pipe B, constructed and operating substantially as shown and described.

2. In combination with an oiler having an elastic bottom, a drip-pipe, C, and vent-opening *c*, valve *d*, adjusting-screw *f*, and discharge-pipe B, constructed to operate substantially as described.

3. A wire or rod, *g*, constructed with an enlarged or looped end, and of a length about equal to the discharge-pipe, and arranged within such pipe, for reducing the size of the discharge-passage, in combination with each other and with an oiler having an elastic wall, for ejecting oil through the discharge-pipe by compression of air within the oiler, substantially as herein shown and described.

156,722. BAG-FASTENERS. Jas. Marshall, Laporte City, Iowa. [Filed Dec. 12, 1874.]



A bag-fastening composed of a fastening-string attached to the bag, provided with a rigid or elastic disk, C, and metal or other button D, as described, the string being applied around the bag and secured between the disk and button, substantially in the manner and for the purpose described.

156,723. HORSE HAY-RAKES. Peter Mast, Waterville, Ohio. [Filed Nov. 7, 1874.]

Brief.—An independent dumping-lever is interposed between the setting-lever and rake-head.

The combination of the setting-lever C, notched arc C', and arms *b a* with the shifting-lever D D' and connecting-bar *d*, substantially as and for the purpose specified.

156,724. CAR-COUPLINGS. David McCurdy, Ottawa, Ohio. [Filed Oct. 1, 1874.]

1. In combination with the draw-bar of a railway-car, the grooved stud B, substantially as and for the purposes set forth.

2. In combination with a draw-head having the mouth *b*, the false mouth-piece C, having the flaring mouth *m*, and pivoted within the draw-bar by the pin *k*, for the purpose set forth.

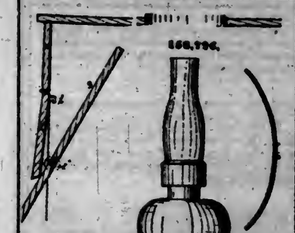
156,725. METAL PLOW-BEAMS. Malcolm McDowell, Ravenswood, Ill. [Filed Oct. 1, 1874.]

Brief.—A metal plow-beam of form fully described in the claim.

A metal beam for plows of the cross-section of an inverted T, tapering toward the clevis end of the beam, both in the base and web, and also tapering toward the land-side or rear end, the base diminishing and the web increasing in width until they form a plate of uniform thickness, with dimensions of area equal to that of the mid cross-section, substantially as shown and described.

156,726. REFLECTORS AND SHADE-PROTECTORS. Marmaduke H. Mendenhall, Wabash, Ind. [Filed Aug. 4, 1874.]

Brief.—The pivoted deflector is adjustable vertically, to vary the field of reflected light, and it also revolves partially on a horizontal axis to vary the angle of reflection.



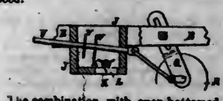
156,726.

1. The box A, open or cut away at one side, and the deflector *g*, pivoted in notches thereof and adapted to be clamped in any adjustment by means of screws *h*, said parts being combined as shown and described.

2. The box A, provided with two sets of notches, *i* and *i'*, and the hinged piece *l*, and the deflector *g*, combined as shown and described.

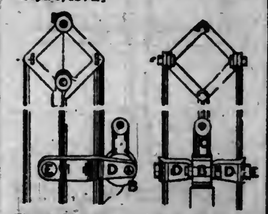
156,727. COTTON-SEED PLANTERS. Benj. F. Miller and Wm. J. Reeves, Gatesville, Tex., assignors of one-half their right to James M. Morris and Edward A. Jones. [Filed Jan. 5, 1874.]

Brief.—Within an opening in the bottom of the hopper rotates a distributer, above which is reciprocated an agitator for stirring up the seed.



The combination, with open-bottomed hopper J, of the sliding stirrer U V, and rotary distributer K L, as and for the purpose specified.

156,728. INGOT-MOLDS. Thomas P. Moorwood, Sheffield, Great Britain. [Filed Sept. 3, 1874.]



The combination, in a mold for casting ingots, of two sections hinged together, and separable at the corners, a strap, D, hinged to projections F E on one of the sections, and an eccentric, B, carried by the strap, and arranged to bear against the corner of the other section, all as set forth.

156,729. HAND FIRE-ENGINES. Henry Neumeyer, Millerstown, Pa. [Filed June 27, 1874.]

Brief.—Within a tank, and hinged to its bottom, are two or more vibrating force-pumps, whose discharge-pipes connect with a single hose. The discharge-valves are in chambers within the cylinders, the inclined sides of which form the valve-seats, the valves falling by their own gravity. The bar for the foot-rest slides under the tank, and is locked in place by cam-levers.

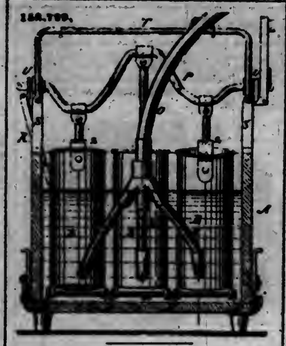
1. An engine for extinguishing fires and for other purposes, composed of the tank A, vibrating cylinder-pumps B, crank-shaft P, pipes N, hose O, and driving-cranks R, combined and arranged substantially as described.

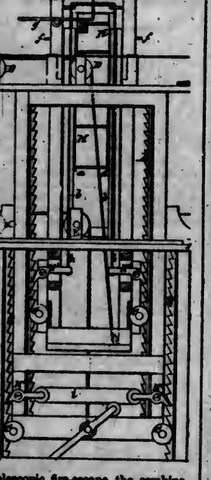
2. The foot-piece, composed of the slides V V, connecting-bar V', and cam-levers *s s*, in combination with a fire-engine, substantially as and for the purposes described.

3. The chambers J, in combination with the cylinders B, as and for the purposes described.

156,730. FIRE-ESCAPE LADDERS. Abraham Oberndorf, Jr., and Ernest Frank, Baltimore, Md. [Filed May 2, 1874.]

Brief.—A telescopic fire-escape in which each section is raised by an independent rope and drum, the drums being attached to the same shaft, and thrown in and out of gear by levers. The sections are retained at any desired height by pawls, which engage with ratchet-bars.





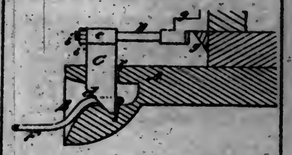
1. In a telescopic fire-escape, the combination of the friction-wheels, ratchet-tramways, and guide-blocks with the corner posts of the stories, for reducing the friction, substantially as described.

2. In a telescopic fire-escape, the combination of the horizontal swinging bars *i i* and the vertical rods *h h* with the detents H', for withdrawing the same from the ratchet-tramways, substantially as described.

3. In combination with the pulleys D and E and the ropes D' and E', a windlass consisting of separate independent barrels, corresponding in number to the number of movable stories, which rest upon a central core or shaft, or revolve with the same by means of a clutch-wheel and spline, as may be desired.

156,734.

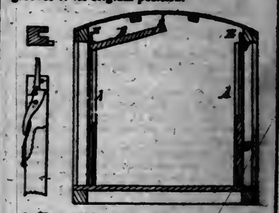
156,731. CAR-COUPLINGS. Geo. T. Perkins, St. Elmo, Ill. [Filed Dec. 14, 1874.]



The combination of the bevel adjustable gravity-pin C, having the eye *c*, the horizontal threaded rod D, passing through said eye, and holding the nut *d'*, and the uncoupling-rod E, all constructed to operate as described.

156,732. FREIGHT-CAR DOORS. G. W. Phelon, Chicago, Ill. [Filed Dec. 15, 1874.]

Brief.—Vertically-sliding door provided with transoms, which rest in spring-catches at top of groove, permitting door to be swung to under side of roof and there fastened. By removing the hook and pressing on the spring-catch, the door is permitted to descend in the grooves to its original position.

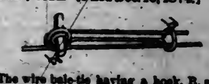


1. The combination, in a freight-car, of the grooved metallic pieces A and pivoted dogs E, as and for the purpose set forth.

2. The door B, provided with the metallic end pieces C, and pins or transoms D, as and for the purpose set forth.

3. The combination, in a freight-car, of the sliding door B, provided with end pieces and transoms, with the grooved metallic pieces A, substantially as and for the purpose specified.

156,733. BALE-TIES. John W. Pillo, Humboldt, Tenn. [Filed Dec. 10, 1874.]



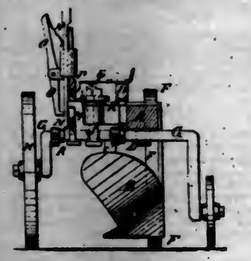
The wire bale-tie having a hook, B, and a single or double coil, C, formed upon the same strand, in combination with the tie end, passed round the base of the coil, and a clamping locking-pin, E, driven through said coil above the bent tie end, substantially as and for the purpose set forth.

156,734. SCREW-PROPELLERS. R. B. Porter, Havana, Cuba. [Filed Oct. 31, 1874.]

A screw-propeller constructed of three or more curved and twisted blades attached at one or both ends to the shaft, and provided with projecting interior and exterior auxiliary blades or wings, substantially in the manner and for the purpose set forth.

168,725. WHEEL-PLOWS. Peterson Prawl and Francis H. Wemple, Waverly, Ill. [Filed Oct. 31, 1874.]

Brief.—From a horizontal arm, rigid upon the plow-beam, a vertical swiveled arm descends to and is pivoted on the arched axle, having a lifting-wheel upon its long crank. A lever rigid upon the axle turns down the small wheel and raises the plow. The same lever has also a device for raising the other wheel to run on level land. Both bearing wheels run in furrows.



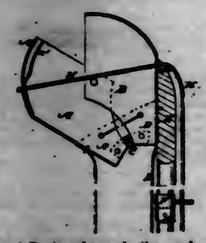
1. The loose arm J, pivoted on axle G, and swiveled to rigid arm K, as and for the purpose described.

2. The combination of the arm M, lever N, lever-socket O, lever-pawl P, and notched bar Q, with the axle G, the arms J K, and the plow-beam A, substantially as herein shown and described.

3. The arrangement of the transporting-wheels F H, in connection with the plow-beam A and plow B, to enable both of said wheels to run in furrows, substantially as herein shown and described.

168,726. FRUIT-PICKERS. Benj. F. Price, Mount Sterling, Ill., assignor to himself and A. A. Hill, same place. [Filed Dec. 12, 1874.]

Brief.—The jaws are mounted upon the end of a staff. The edges are concave. One is single and the other double, the single blade, in cutting off the fruit, passing between the double blades, which are worked by a cord and pulley, the cord extending to the lower end of the staff. A flexible tube conveys the fruit to the ground.



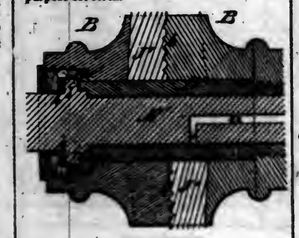
The jaws A B, pivotal to each other, made the one with a double concave edge and the other with a single concave edge, and provided with rubber springs C, in combination with the flexible tube D, the staff E, and cord H, substantially as herein shown and described.

168,727. NUTS FOR VEHICLE-WHEELS. A. N. Price, Jamestown, N. Y. [Filed Oct. 24, 1874.]

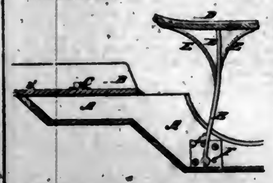
1. The journal A, having the oil-passages *a a'*, and collar *f*, in combination with the nut G, pipe-box D, cap C, and screw-plug *g*, substantially as and for the purpose set forth.

2. The pipe-box D, having an annular flange, *a*, on its lower end, provided with notches *c*, in combination with the bolt-sections B B', pins *i i*, nut G, and cap C, substantially as and for the purpose set forth.

3. The hub-section E, provided with the tenons *n* and mortises *n'*, having projections *b* A, in combination with the similarly-formed hub-section B', the tenons of which break joints with those in the opposite hub-section E, and spokes J, substantially as and for the purpose set forth.



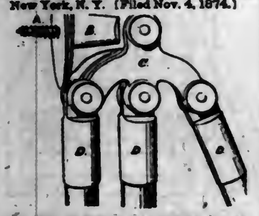
168,728. SEATS FOR EXTENSION-CARRIAGES. James V. Randall, Newtown, Pa. [Filed Nov. 30, 1874.]



1. The combination, with the carriage-body A, of the seat B, having slots *b'* and the stationary clamping-bolts C, whereby said seat may be held and adjusted over the rear of the body, as shown and described.

2. The elastic seat D, the elastic branched standards E, provided with gudgeons *e'* at their lower ends, and the sockets F, provided with stops *f'*, in combination with a carriage-body, A, provided with an adjustable seat, B, substantially as shown and described.

168,729. TOWEL-RACKS. Jos. A. Reynolds, New York, N. Y. [Filed Nov. 4, 1874.]



A towel-rack consisting of the screw-bracket A B, the plates C, and the sockets D, the latter being jointed on the plates, while the plates are jointed to the bracket, in the manner and for the uses set forth.

168,730. GRAIN-SCOURERS. D. M. Richardson, Detroit, Mich. [Filed Dec. 11, 1874.]





1. In a vault-cleaning apparatus, the combination of the vessel D, flexible pipes from the vault to the upper part of the tank, and from the upper part of the tank to the air-pump, and an air-pump, whereby vessel and pump are independently movable about the vault.

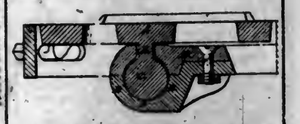
2. The tank D, the air-pump, and the odorizer H, the several parts being connected by the flexible pipes F, G, and G', whereby the noisome air is drawn from the tank, passed through the air-pump, and deodorized, substantially as described and shown.

3. The process described, wherein the noisome air drawn from a vault, in the act of cleaning it, is taken into a tank, thence into an air-pump, and discharged through a deodorizer containing chlorine or chlorides, substantially as described.

The spider A, provided with the ratchet-faced segments *a* and the V-shaped and ratchet-faced spars *a'*, arranged as described, and for the purposes set forth.

168,731. GRATES. A. Richmond, Brooklyn, Conn. [Filed Dec. 23, 1874.]

Brief.—The securing cap-piece prevents displacement of the grate. The openings in the socket and securing cap-piece allow the passage of the stem of the ball attachment when the grate is tilted.

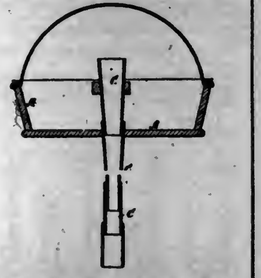


1. A ball-and-socket joint for the grate of any range, furnace, or stove, formed by a ball attachment upon the under side of the grate, and a resting-socket on the arms, permanently attached to the stove in any suitable manner, and a securing cap-piece or cover, all as and for the purposes shown.

2. In a ball-and-socket-joint grate-support, the combination of the socket provided with opening *d*, and the securing-cap provided with corresponding opening *e*, all as and for the purposes set forth.

168,732. HAND POTATO-PLANTERS. J. Sawyer, Tremont, Ill. [Filed May 23, 1874.]

Brief.—Passing into the hopper from the under side is a sectional seed-tube, decreasing in size from top to bottom, to allow the hopper to be lowered thereon for filling.



A hand potato-planter having the holder A, provided with tube C C, made in two sections, and jointed at the bottom of said holder, as and for the purpose described.

168,733. MACHINES FOR CLEANING PRIVY-VAULTS. Samuel R. Schorf, Jersey City, N. J. [Filed Nov. 26, 1874.]

Brief.—The contents of the vault are drawn into the vacuum caused in the tank by the pump. The foul vapors pass from the tank into the pump, by which they are expelled into the deodorizer. All the parts are independently movable, and are separably attached by flexible pipes.

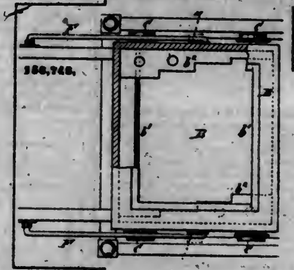
168,734.



The combination of the spindle B, for traversing the slide-rest of the lathe, the bearing D of the spindle, and the hand-wheel E, secured to the spindle B, with a nut, G, adapted to the said bearing and to the hub of the wheel, all substantially as set forth.

168,735. WASHING-MACHINES. John B. Shrawder, Fairview Village, Pa. [Filed Nov. 12, 1874.]

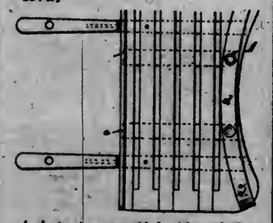




The slotted presser-foot bar A, provided with the spring-lever C and key *c*, in combination with the presser-foot B, having the small bar *a*, substantially as and for the purpose set forth.

A reciprocating wash-box, E E', having end ribs *b' b'* and side rubbers *b' b'*, the latter reversely notched, and all rigidly attached to the box, as and for the purpose described.

168,736. STREET-CAR PLATFORMS. John B. Slawson, New York, N. Y. [Filed Dec. 16, 1874.]



1. A street-car, provided with a platform for the exit and entrance of passengers, in which the rear side is carved toward the entrance-door, in the manner and for the purposes set forth.

2. In combination with the entrance-platform of a street-car, a protecting-rail, *d*, carved inwardly toward the entrance-door, substantially as and for the purpose set forth.

168,737. LOCKING DEVICES FOR SLIDE-RESTS. Milton J. Skinner, Camden, N. J. [Filed Nov. 11, 1874.]

Brief.—The nut G is provided with conical recesses at each end, adapted to a cone on the bearing, and one on the hub of the hand-wheel, for traversing the slide-rest. When screwed against the hub of the hand-wheel it locks it, and holds the slide-rest in position. When turned in an opposite direction and against the bearing, it is prevented from interfering with the action of the hand-wheel.

168,738. BOOK-RACKS. David J. Stein, New York, N. Y. [Filed Oct. 1, 1874.]

Brief.—The two heads are provided with extension-slides, acted on by a spring in such a manner that the slides may be made to move beyond the shelf, so as to lengthen the same.

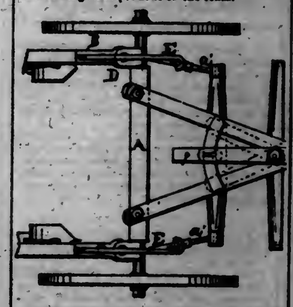
An extensible book-shelf, constructed as herein shown and described, consisting of the frame A, heads or clamps B, slides C, and spring D, said heads and slides being adapted to be moved outwardly beyond the shelf to lengthen the same, substantially as and for the purposes specified.

168,739.



168,740. WHEEL-CULTIVATORS. Joseph Stofford, Galesburg, Ill. [Filed Aug. 21, 1874.]

Brief.—A walking-cultivator with elevated axle and pivoted tongue, enabling the operator to change the course of the plows and the carriage independent of the team.

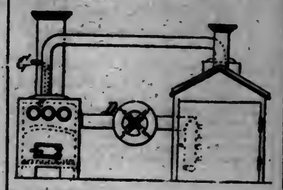


1. In a walking straddle-row cultivator, the combination of the pivoted pole C, rigid axle A, wheels B, and plow-beams D D, so that the operator may control the direction of the machine by the plow-handles, and permit of the tongue vibrating freely, substantially as and for the purpose specified.

2. The suspending-rods E E, secured to the forward ends of the plow-beams, and projecting forward of the axle, and operating in combination with the brace-rods *a' a'*, substantially as and for the purpose specified.

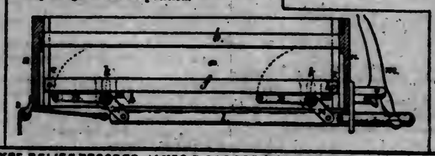
168,741. LUMBER-DRIERS. H. S. Taylor, Wilmington, Del. [Filed July 20, 1874.]

Brief.—Steam may be introduced from any convenient source.



168,742. GRATES. Jos. D. Slichter, Reading, Pa., assignor of one-half his right to Louisa Bradford, same place. [Filed Oct. 3, 1874.]

Brief.—The arms are operated, to raise and lower movable grate-bars, by rotating the sleeves, to which they are attached, and which fit loosely on the shaft that carries them. The sleeves are moved by means of the projections. Two latches bear against the projections to keep the grate-bars in position.



168,743. GRAIN-CRADLES. John W. Settle, Glasgow, Ky. [Filed Oct. 3, 1874.]

Brief.—The socket for the fingers is provided with an eye for the brace, and a rivet-pin for the cross-bar, all made in one piece.



The means for holding together in relative position the fingers A, cross-bar E, and braces F, consisting of the finger-socket D, having the projecting soft-metal nipple *d* and perforated lug *d'*, as shown and described.

168,744. DEVICES FOR ATTACHING PRESSER-FEET TO THEIR BARS. John J. Schneider, Taylor County, Iowa. [Filed Dec. 15, 1874.]

Brief.—The small bar is the presser-foot is inserted in the slot in the bar, and the key on the spring-lever catches over the under side of the shank of the foot, and holds it in place.

168,745. GRAIN-CRADLES. John W. Settle, Glasgow, Ky. [Filed Oct. 3, 1874.]

Brief.—The socket for the fingers is provided with an eye for the brace, and a rivet-pin for the cross-bar, all made in one piece.

The means for holding together in relative position the fingers A, cross-bar E, and braces F, consisting of the finger-socket D, having the projecting soft-metal nipple *d* and perforated lug *d'*, as shown and described.

168,746. COMPOUND FABRICS. G. V. Shepard, Troy, N. Y. [Filed Jan. 2, 1875.]

Brief.—The woven backing prevents the knit fabric stretching out of shape, and adapts it to various uses.



A knitted fabric, A, in combination with, and fastened to, a woven, felted, or other backing, B, as described, and for the purpose set forth.

168,747.

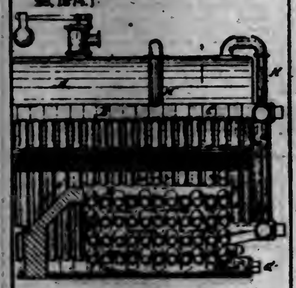
The combination of the spindle B, for traversing the slide-rest of the lathe, the bearing D of the spindle, and the hand-wheel E, secured to the spindle B, with a nut, G, adapted to the said bearing and to the hub of the wheel, all substantially as set forth.

168,748.

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The combination of the hot-air chamber C, arranged directly above the furnace, the pipe G, communicating with said chamber and with a steam-generator, and the pipe D, provided with a fan-blower, and connected with a receiver or separate drying-chamber, for conveying the commingled and intermixed hot air and steam into the latter, substantially as and for the purpose described.

158,754. SECTIONAL STEAM-BOILERS. John F. Taylor, Charleston, S. C. [Filed Oct. 28, 1874.]

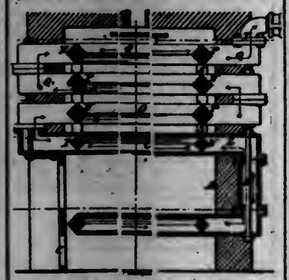


1. The combination, with a cylinder and sectional boiler, of the pipes H, which feed the water from the top of the sectional boiler to the bottom of the cylinder-boiler through the steam-space, and the pipes K, having downwardly-opening valves I, substantially as and for the purpose described.

2. The cylinder-boiler A, in combination with the pipes H and K, the valves I, and the sectional cast-iron boiler B, constructed, as described, of the tubes C, arranged as shown, the rods C', and the diaphragms D, substantially as and for the purpose described.

158,755. BOILERS FOR WATER-HEATERS. Wm. Taylor, St. Louis, Mo. [Filed Nov. 16, 1874.]

Brief.—The larger pipes are contracted horizontally, to allow the more ready passage of smoke and ashes. The transverse pipes extend into and rest in the masonry, and support the sections.



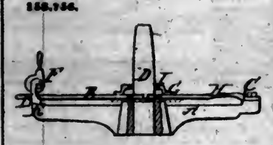
In a boiler, the combination of sections composed each of longitudinal pipes O, having smaller horizontal than vertical diameter, and transverse supporting-pipes N P of angular cross-section, with alternate rear and front connection between contiguous sections, substantially as and for the purpose set forth.

158,756. SAW-GUMMERS. S. Lee Tibbals, Conkin, Miss. [Filed Oct. 3, 1874.]

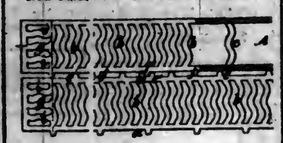
Brief.—A clamping-bar, B, provided with a guide, I, for the punch D, for clamping the saw down upon the die, whereon it is released by means of the spring portion H of said bar.

The presser-bar B, having guide I and elastic portion H, combined with bed A, having die and punch D, as and for the purpose specified.

158,756.



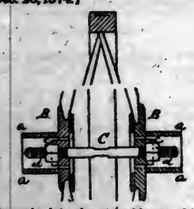
158,757. FURNACE GRATE-BARS. C. Toope, New York, N. Y. [Filed Dec. 17, 1874.]



1. The combination, in a grate-bar for furnaces, of the side flanges, *a a*, the upper series of corrugated traverses, *b b*, and the lower series of corrugated traverses, *c d*, for steadying and strengthening the side flanges, substantially as described, and for the purpose specified.

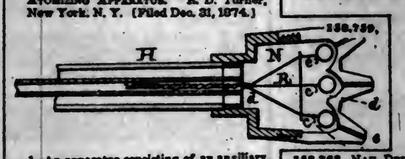
2. The combination, in a furnace grate-bar of the side flanges, *a a*, corrugated traverses *b b*, and the inclined front end, *g*, connected with the first traverse *b* by means of the longitudinal ribs *f*, substantially as described, and for the purpose specified.

158,758. WHEELS FOR HARVESTERS, &c. Benj. G. Turner, Fremont, Nebr. [Filed Dec. 26, 1874.]



In a wheel having a double set of inclined spokes and double hubs, the central screw-rod C, in combination with the inner rings or bearings, *e e*, and screw-nuts *d d*, to draw in each set of spokes of the wheel equally and simultaneously toward the middle of its axis, substantially as and for the purpose set forth.

158,759. HYDROCARBON-FURNACES AND ATOMIZING APPARATUS. R. D. Turner, New York, N. Y. [Filed Dec. 31, 1874.]



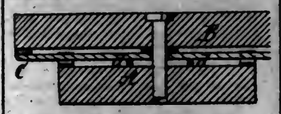
1. An apparatus consisting of an auxiliary device, E, having stem S and branches *c'*, in combination with tubes *c* H, perforated core *d*, and head M, having cavity N, recesses *n'*, and ejecting-openings *o'*, for the purpose of atomizing petroleum and other liquid hydrocarbons, and in atomic conditions mixing them and their vapors with steam before and at the point of combustion, substantially as described and shown.

2. The perforated core *d*, in combination with tubes *c* H and head M, substantially as described.

3. In combination with a boiler, A, cylinder and shell D D', pipes G G' K L, with their steam-jackets, the atomizing apparatus, consisting of tubes *c* E, core *d*, head M, and auxiliary device E, substantially as and for purposes described and shown.

158,760. RAILWAY-CAR TRUCKS. J. Turner, Grosse Isle, Mich. [Filed Oct. 21, 1874.]

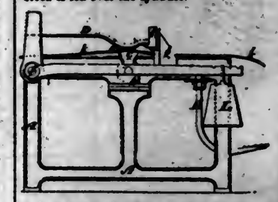
Brief.—A lever extending from the center to the extremities of the transom, and resting upon a fulcrum upon each side of the king-bolt.



The combination of the lever C and fulcrums *d* with the bolster A and transom B of a railway-car, substantially as and for the purpose set forth.

158,761. LEATHER-DRESSING MACHINES. John K. Tullis, Glasgow, North Britain. [Filed Jan. 2, 1874.]

Brief.—The hide or sheet of leather is pressed down upon the scraping-cylinder by a series of independent springs, which readily yield for any inequality of thickness as the stock is fed over the cylinder.



1. A leather-dressing machine in which are combined a cutting or scraping cylinder, C, and a series of independent springs, D, arranged to bear directly upon the hide, substantially as and for the purpose specified.

2. The combination, substantially as described, of cushions *m* with the springs D and cylinder.

3. The combination of the guide-bars *n*, the cylinder, and the springs D.

4. The combination of the adjustable bar O with the springs D and cylinder, for the purpose specified.

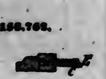
158,762. WEATHER-STRIPS. Wm. T. Valentine, Albany, N. Y. [Filed Dec. 24, 1874.]

Brief.—The weather-strip is composed of felt, overlaid on one side with cambric or muslin, and having the outer edge beveled.

1. A packing for weather-strips, composed of felt C, combined with a cambric or muslin covering, substantially as described.

2. The beveled edge E on the packing C of weather-strips, substantially as described.

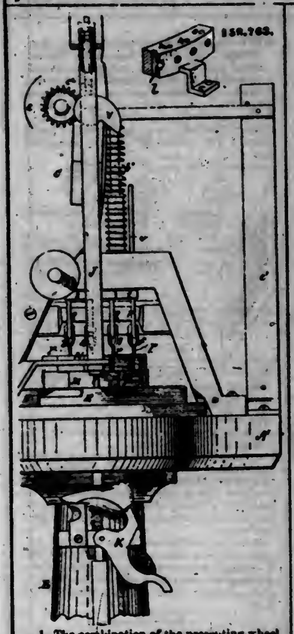
158,763.



158,764. NAIL-DRIVING MACHINES. Walter S. Watson, Boston, Mass. [Filed Jan. 7, 1875.]

Brief.—Mechanism to receive nails of different sizes, and to select from the nails so received those of a required size, and present them to drivers, which drive them into the sole of a jacked boot or shoe. There is a receiving and presenting wheel having two sets of nail-pockets to receive two sizes of nails, and operated by independent feed mechanisms, to bring either set of pockets under the plungers that drive the nails. The plungers are of different lengths to correspond with the two sizes of nails, and the proper plunger is brought into play by the same lever that operates the feed, to bring under said plunger those pockets containing nails of the size for which the plunger is adapted.

158,763.



1. The combination of the presenting-wheel F and two or more guides or chutes, for directing two loose nails at a time to such wheel.

2. The combination, in a machine for presenting and dividing two sizes of loose or separate nails, of a wheel or its equivalent for receiving and presenting nails, one or more pairs or sets of guides or tubes to direct such nails to the wheel, and a driver to drive the nails from the wheel into the sole of a boot or shoe, all being arranged and operating substantially as set forth.

3. The combination of the wheel F or its substitute, one or more pairs or sets of guide tubes or chutes, A, and the ratchet-wheels M N, and dogs O P or their mechanical equivalents, operated by the yoke U or other proper agent, the whole being arranged so as to instantly throw one set of plungers out of action, and bring into action the opposite, whereby the size of nail is changed, substantially as shown and set forth.

4. The combination of the pocketed wheel F, driver I, and dually-arranged nail-guides and plungers with a jack for supporting a boot or shoe, substantially as set forth.

5. The combination, with the rotating pocketed wheel F and dually-arranged nail-guides and plungers, of a driver actuated in such manner as to execute two descents to one descent of the plungers, substantially as set forth.

6. The combination, with the wheel F, of the two ratchets M and N and the dogs O P, the latter operating alternately upon the wheels, and being actuated or shifted by the arm *p'* and intermediate mechanism, or the substantial equivalent thereof, essentially as and for the purpose described.

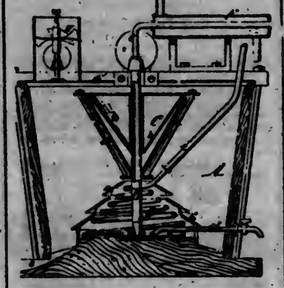
7. The detailed mechanism herein explained for shifting the position of the arm *h'*, consisting of the forestel wedge *l'*, bent lever *n'*, and arm *p'*, the two latter being carried by the shaft *o'*, and the whole operating substantially as set forth.

8. The combination of one or more pairs of guide tubes or chutes with a series of nail-receiving pockets in a presenting-wheel, under such an arrangement that two pockets are provided for each pair of guide-tubes, substantially as set forth.

9. The combination of a nail receiving and presenting wheel, provided with two series of receiving and presenting receptacles, with feed mechanisms for presenting the nails of either series, substantially as set forth.

158,764. CENTRIFUGAL EVAPORATORS. C. Wendel and W. Florich, New York, N. Y. [Filed Dec. 5, 1874.]

Brief.—The fluid is introduced into the drum through a hollow shaft, and is sprayed through the perforated felt-lined wall, falling down upon protectors, which shield it from contact with the heating-coil. By a perforated exhaust-pipe, which sprays steam against the drum, evaporation is accelerated. The same pipe conveys steam to heat the liquor in its induction-pipe. The fan-blower exhausts the air from the inclosing-vessel, promoting rarefaction.



1. The conical drum C, mounted on a hollow shaft, B, in combination with the vessel A and coil D, substantially as set forth.

2. The combination of the heater F with the conical drum C, hollow shaft B, vessel A, coil D, and pipe *e*, substantially as shown and described.

3. The perforated tail-pipe *e* of the coil D, in combination with the conical drum C, vessel A, and coil D, substantially as described.

4. The protector E, in combination with the conical drum C, vessel A, and coil D, substantially as described.

5. The exhaust-fan H, in combination with the closed vessel A, drum C, and steam-coil D, substantially as set forth.

158,765. LUBRICATING-BOXES. Joseph Whitaker, Woonsocket, R. I. [Filed Nov. 27, 1874.]

Brief.—A recess is formed in the concave face of the movable tube, by which the draft is increased and the oil delivered freely therefrom.



1. The recess *e*, arranged in the concave head of the independent oil-elevating tube, substantially as and for the purposes described.

2. An independent oil-elevating tube having a recess or recesses, *e*, in combination with the spring and oil-reservoir, substantially as and for the purposes described.

3. The journal-box having the orifices O at or near its ends, substantially as described, for the purposes set forth.

4. The independent journal-box B, contained within the outside case, and provided with the beveled edges *n n*, substantially as and for the purposes set forth.

158,766. WAGON-BOLSTERS. L. F. Whitman, Macomb, Ill. [Filed May 18, 1874.]

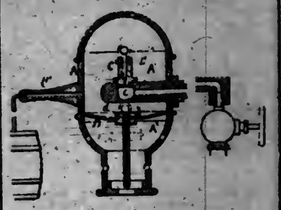


1. The bolster A, having tapering ends, the forked pivoted stakes B, and the pivoted braces C, having notched feet *d*, and the bolts *d'*, all combined substantially as specified.

2. The combination, with the bolster and pivoted bed stake B, of the brace C, pivoted to move at right angles with the plane of rotation of the end stake, the pivot-pins of the end stake and brace being at right angles with each other, substantially as specified.

158,767. GAS-REGULATORS. Frederic W. Wiesebrock, Brooklyn, N. Y., assignor to Henry W. Shepard and Robert Seaman, New York city. [Filed Oct. 15, 1874.]

Brief.—For charging beer or other liquid with carbonic-acid gas.

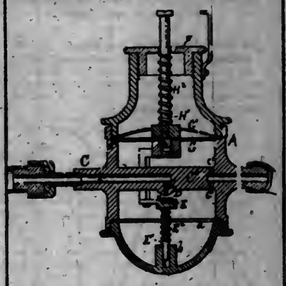


1. A shell or case, A, provided with air-openings, diaphragm D, valve E, and pipe C, having an opening or valve-seat, *c*, the same being combined and arranged as shown, whereby the valve is automatically opened and closed by the adverse pressure of the atmosphere and gas acting directly on the diaphragm, and entirely irrespective of the varying degree of pressure which the gas-supply vessel may contain, substantially as described.

2. In combination with a suitable shell or case having air-openings and lateral openings for the inlet and egress of gas, an elastic diaphragm, D, valve-rod F, yoke E', and valve E, the latter being arranged as shown, whereby the discharge-opening *c* of the inlet-pipe shall be automatically opened and closed by said valve through the adverse pressure of the atmosphere and gas acting on the elastic diaphragm, substantially as described.

158,768. GAS-GOVERNORS. Frederic W. Wiesebrock, Brooklyn, N. Y., assignor to Henry W. Shepard and Robert Seaman, New York city. [Filed Dec. 28, 1874.]

Brief.—Gas is fed to the shell when a partial vacuum is produced, whatever be the amount of pressure in the gas-containing vessel. The diaphragm is adjusted by means of the screw-cap.

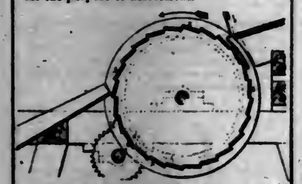


1. In connection with a suitable shell, the pipe O and cone-shaped nozzle D, the channels *o' d*, each of which being connected as shown, in combination with the valve E, washer 4, stem E', and spring E'.

2. The plunger H, having a rod H', spring F', screw-cap F, diaphragm C, and valve F, the latter being connected to the plunger by any suitable gearing, the whole being combined and arranged to operate substantially as described.

166,769. FEEDING COAL, &c., FROM A HOPPER. John B. Wilford, Reading, Pa., assignor to Hezekiah Bradford, same place. [Filed Nov. 16, 1874.]

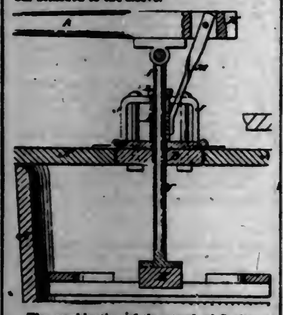
Brief.—Under the outlet of a hopper revolves, by a pinion, a hollow cylindrical bucket-wheel, which, according to its position with the hopper, receives from it an adjustable amount of material, and drops it into a trough for the purpose of assortment.



The apparatus for feeding coal or other material from a hopper or receptacle, consisting of a cylinder with plates or buckets for lifting the material over the top of such cylinder near the mouth of the hopper, substantially as set forth.

166,770. WASHING-MACHINES. Horace G. Williams, Hamilton, Iowa. [Filed June 13, 1874.]

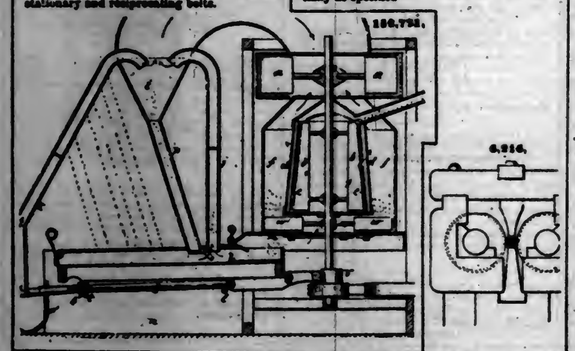
Brief.—The shaft of the presser slides in a sleeve fixed in a standard, and is operated by a lever attached to the shaft, and a fulcrum-bar attached to the sleeve.



The combination of the standard J, sleeve L, guide-arm I, and fulcrum-bar M with the lever K and vertical shaft H, attached to the presser, all constructed and arranged substantially as and for the purpose described.

166,771. MIDDLINGS-PURIFIERS. Jos. W. Wilson, Warsaw, Ill. [Filed June 6, 1874.]

Brief.—Devices, as claimed, for separating and removing the light impurities from the middlings while passing through the vertical stationary and reciprocating bolts.



166,772.

1. The combination of suction-fan a, fan b having brushes c, stationary bottomless bolt d, and circumjacent chamber f, all constructed and arranged to operate substantially in the manner described.

2. The air-trunks h f and spout p, in combination with chambers i g S, suction-fan a, and horizontal bolt A, as and for the purpose specified.

3. The combination of horizontal bolt A, rods l, eccentric U, springs o', loops t, and check-nuts b', substantially as and for the purpose specified.

REISSUES.

4,915. MACHINE-CLUTCHES. Albt. B. Benn, New Haven, Conn. Patent No. 149,166, dated Mar. 3, 1874. [Filed Dec. 26, 1874.]

Brief.—By the rotation of the bar in one direction it engages the pulley, and by the rotation of the bar in the opposite direction it disengages the pulley and frees it from the shaft.



1. In combination with a shaft and pulley loose thereon, and the sleeve D, in connection with said shaft so as to revolve therewith, but free for longitudinal movement, the bolt or bar I, in connection with the pulley and with the sleeve, so that a longitudinal movement of said sleeve will impart a rotative movement to said bolt or bar, and thereby cause the said bolt to engage the pulley with, or disengage it from, the shaft, according to the direction of the movement of said sleeve, substantially as described.

2. A clutch-pulley constructed with a T-shaped groove or flange, L, combined with a bolt, I, and a nut, d', in said groove, and means, substantially such as described for imparting a rotative movement to said bolt, to engage or disengage said pulley.

4,916. MACHINE FOR ROLLING METAL. Leopold Thomas, Hoboken, N. J., assignor to the American Hot-Rolled-Shafting Company, New York city. Patent No. 120,626, dated Nov. 14, 1871. [Filed Nov. 19, 1874.]

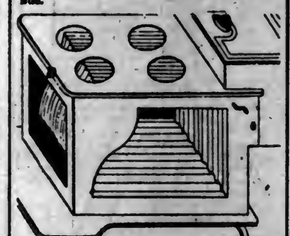
An improvement in a rolling-mill for rolling bars, shafts, or other articles lying parallel to the axes of the rolls, comprising a pair of rolls rotating in the same direction and a guide for confining the article to be rolled in proper position, the flattened or recessed surfaces on one or both rolls to facilitate the introduction of the article to be rolled, substantially as specified.

166,772.

4,916.

4,917. RESERVOIR COOKING-STOVES. G. G. Wolfe, Troy, N. Y. Patent No. 76,292, dated Mar. 31, 1868; reissue No. 5,442, dated June 10, 1873. [Filed Jan. 28, 1874.]

Brief.—The reservoir is cut away in such manner as to fit over a portion of the top of the stove, covering the rear flues, and is provided with a short pipe, which, when in place, forms a continuation of the rear ascending flue.



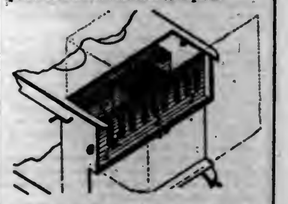
1. A water-reservoir, constructed to embrace the rear end and upper side of a cooking-stove, substantially as and for the purpose specified.

2. In combination with the rear end and upper side of a cooking-stove, a water-reservoir, constructed to embrace the same, and provided with a pipe or flue, which inclosee the upper end, and forms a continuation of the exit-flue, substantially as and for the purpose shown.

3. In combination with the rear end and upper side of a cooking-stove, a water-reservoir, which embraces the same, and forms a covering for the upper ends of the vertical flues, substantially as and for the purpose set forth.

4,918. RESERVOIR COOKING-STOVES. G. G. Wolfe, Troy, N. Y. Patent No. 76,292, dated Mar. 31, 1868; reissue No. 5,442, dated June 10, 1873. [Filed Jan. 28, 1874.]

Brief.—Dampered apertures through the back plate of the stove permit the products of combustion from each rear flue to strike against the side of the reservoir, which is placed in contact with said back plate.



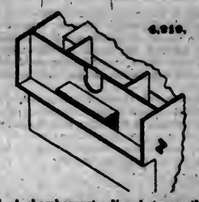
1. In combination with a cooking-stove having rear vertical flues, and with a water-reservoir located in rear of the same, dampered openings formed in and through the back plate of said stove by means of which, when desired, communication for the heated escaping products of combustion is effected between the descending flue or flues and said reservoir.

2. In combination with a cooking-stove having rear descending and ascending flues, and with a water-reservoir located in rear of the same, dampered openings is and through the rear wall of said flues by means of which communication for the heated gases of combustion can be opened and closed between the said descending and ascending flues and the said reservoir.

4,919. RESERVOIR COOKING-STOVES. G. G. Wolfe, Troy, N. Y. Patent No. 76,292, dated Mar. 31, 1868; reissue No. 5,442, dated June 10, 1873. [Filed Jan. 28, 1874.]

Brief.—A chamber between the back plate of the stove and the front side of the reservoir receives the products of combustion from the rear ascending flue, and returns them to the same flue when the damper is properly manipulated.

4,919.



1. A chamber extending between the rear casing of the ascending flue of a cooking-stove and the front side of a water-reservoir attached thereto, and communicating at its lower side with said ascending flue, and its upper side with the exit-flue, in combination with a damper by means of which the upper part of the said ascending flue may be caused to communicate directly with or be separated from said exit-flue, substantially as and for the purpose specified.

2. A chamber situated between the rear side of the descending and ascending flues of a cooking-stove and the front side of a water-reservoir attached thereto, partially divided by a central horizontal flue-strip, and communicating at its lower side with the ascending flue, and at its upper side with the exit-flue, substantially as and for the purpose shown.

3. In combination with a chamber situated between the rear side of the vertical flues of a cooking-stove and the front side of a water-reservoir attached thereto, partially divided by a horizontal flue-strip, and communicating through a suitable opening at its lower side with the center or ascending flue, and through a similar opening at its upper side with the exit-flue, a damper for closing the upper portion of said ascending flue, substantially as and for the purpose set forth.

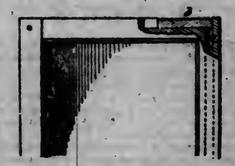
4,920. MANUFACTURE OF LIQUID CARBONIC ACID. H. Beine, Groningen, Netherlands. Patent No. 152,960, dated June 23, 1874. [Filed Nov. 16, 1874.]

Brief.—Distills the carbonic acid from bicarbonate of soda, &c., in a retort at about 400° centigrade, and conducts the gas into a receiver kept at about 0° centigrade. The gas liquefies by its own pressure. Describes apparatus for the purpose, and suggests the various uses to which the acid may be applied. Describes a mode of making bicarbonate of soda by mixing ammonia, common salt, and excess of CO_2, and heating in a retort. Result is sodic bicarbonate and ammonium chloride.

The within-described process for manufacturing carbonic-acid gas and liquefied carbonic-acid gas of any desired tension and temperature, by heating bicarbonate of soda or other bicarbonates in a closed vessel or retort, and conducting the escaping gases through a pipe into a refrigerated reservoir, substantially as hereinbefore described.

4,921. SLATE-FRAMES. Saml. B. Bushfield, Baltimore, Md. Patent No. 99,641, dated Feb. 15, 1870. [Filed Dec. 10, 1874.]

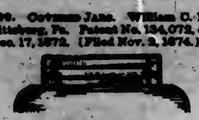
Brief.—A slide-bar in one of the frame-pieces is arranged to close the pencil-chamber in the adjoining frame-piece. The bar is also roughened to form a sharpener.



1. In a slate-frame, a sliding bar in combination with and arranged at right angles to the recess e, substantially as set forth.

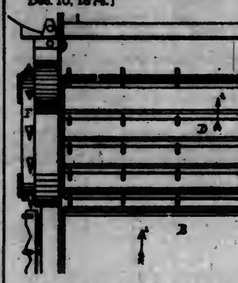
2. The corrugated pencil-sharpening slide-bar b, in combination with a slate-frame, as set forth.

4,922. GUTTERS FOR EAVES. William C. King, Pittsburg, Pa. Patent No. 134,072, dated Dec. 17, 1872. [Filed Nov. 2, 1874.]



A vessel having a flanged cover, and provided with a pliant and yielding band, which is much wider than it is thick, and arranged between the vessel and flange of the cover, the greater portion of the width of the band projecting outward and beyond the outer wall of the vessel, and bearing elastically with its edge against the flange of the cover, said projecting portion readily yielding downwardly and upwardly to the pressure and pull of the hand upon the cover, all for the purpose of forming an easy separating-joint, and at the same time excluding dust and destructive agents without the necessity of hermetically sealing the vessel, substantially as described.

4,923. HARVESTERS. Chas. W. Marsh and William W. Marsh, Sycamore, Ill. Patent No. 41,060, dated Jan. 5, 1864. [Filed Dec. 10, 1874.]



1. The combination of the sickle C, provided with the rivs or projections b, with the endless band B and toothed apron D, substantially as and for the purpose specified.

2. The toothed belt F, in combination with the toothed apron D and endless band B, as and for the purpose specified.

3. A grain-elevating mechanism having its front part arranged to operate on or near to the cutting line, substantially as and for the purpose specified.

4,924. HARVESTERS. Chas. W. Marsh and William W. Marsh, Sycamore, Ill. Patent No. 41,060, dated Jan. 5, 1864. [Filed Dec. 10, 1874.]



1. The folding binders' table or tables, constructed and operating substantially as indicated, so as temporarily to diminish the width of the machine, for the purpose set forth.

2. In combination with an elevated binders' table or tables, the folding or removable binders' stand, constructed and operating substantially as indicated, to vary the width of the machine, for the purpose set forth.

4,925. BALANCED SLIDE-VALVES. Washington Obenchain, Logansport, Ind. Patent No. 146,701, dated Jan. 20, 1874. [Filed Oct. 26, 1874.]

4,926.



1. A valve for steam and other engines, the exhaust aperture of which is contracted as specified, whereby it is made of a width equal to or less than that of the exhaust-port in its seat, for the purpose set forth.

2. The partially-balanced valve D, having outwardly-projecting lips or surfaces of such length as to cause them to cut off the steam at the desired points, and inwardly-projecting lips or surfaces of such length as to cause the distance between their inner edges to be less than the width of the exhaust-port in the valve-seat, in order that they may retain the steam in the cylinder until the piston has reached a point where it is desirable to allow it to be exhausted therefrom, the construction of the valve being substantially such as is herein described.

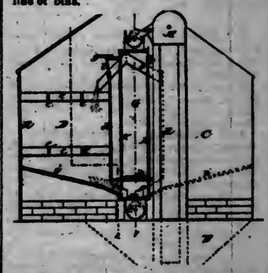
3. The combination, with a steam-valve and valve-chest, of the balance-cylinder E, closed at top, the balance-ring F, the flange f, forming a part of said balance-ring, and the air recess or groove f' on the inner edge of said ring, communicating with the balance-chamber f', between the balance-cylinder and the valve-chest wall, substantially as specified.

4,926. TREATMENT OF GRAIN FOR THE MANUFACTURE OF STARCH, SPIRITS, &c. Wm. Adamson and C. F. A. Simcain, Philadelphia, Pa., assignors to William Adamson. Patent No. 147,353, dated Feb. 10, 1874. [Filed Aug. 26, 1874.]

The mode described of preparing farinaceous substances for conversion into starch or alcohol, namely, subjecting said substances, prior to such conversion, to the action of heated hydrocarbon, as set forth.

4,927. GRAIN-ELEVATORS. Henry I. Chase, Philander F. Chase, and Edwin D. Chase, Peoria, Ill. Patent No. 136,604, dated May 20, 1873. [Filed Jan. 6, 1875.]

Brief.—The grain-bins extend beyond the elevating-house, and are arranged in rows and low, in order to avoid the enormous pressure of accumulated grain. Between the grain-bins is an open passage, within which the conveyers have independent foundations, and extend from the elevator to the rear of the line of bins.



1. The system described of receiving, conveying, storing, and shipping grain in rows of bins C D, of one story in height, arranged on either side of an upper and lower line of conveyers, E' E', one line for receiving and distributing grain, the other for discharging the same, constructed to operate substantially as and for the purposes set forth.

2. The system described of a combination of elevator-houses, G G, in one line, of not more than two stories in height, from each of which runs back at a right angle a double line of store-bins, having an upper and lower line of conveyers E' E' built on independent foundations, substantially as and for the purposes set forth.

3. The construction and combination of the bins C D, walls d d, stays e e e, floor f, spouts f f, passages g g, conveyers E' E', posts h h, spout h, platforms g h, and elevator A, substantially as set forth.

6,908. GRAIN-ELEVATORS. Henry L. Chase, Philander F. Chase, and Edwin D. Chase, Peoria, Ill. Patent No. 160,894, dated May 20, 1875. [Filed Jan. 6, 1875.]

Brief.—The continuous spiral grain-conveyor has its journals arranged within journal-boxes suspended from the upper part of the conveyor. Said boxes are adjustable.



1. The continuous spiral grain conveyor, having the journals of its shaft arranged in journal-boxes suspended from the top of a conveyor-trough by means of brace-rods, so as to allow a free passage of the grain along the bottom of the trough, substantially as set forth.

2. The combination of the adjustable keys D D, journal-boxes B B, and spiral grain-conveyor shaft, substantially as and for the purpose set forth.

3. The combination of the cross-braces C C, adjustable suspension-rod b b, journal-boxes B B, screw-nuts c c, adjustable keys D D, journals a a of conveyor-shaft, and conveyor-trough, substantially as set forth.

4. The conveyor-trough having a polished sheet-metal lining, and provided with the door E, in combination with the continuous spiral grain-conveyor A, substantially as set forth.

6,909. CARRIAGE-STEPS. Geo. A. Keene, Lynn, Mass., assignor, by mesne assignments, to the Rubber-Step Manufacturing Company. Patent No. 66,764, dated June 11, 1867. [Filed Nov. 27, 1874.]



1. A plating of india-rubber, in combination with and firmly attached to the step of a carriage, substantially as and for the purpose described.

2. In combination with a bracket or arm projecting from the carriage, a metallic plate, pivoted on its upper surface with india-rubber, substantially as described.

3. In combination with a plate, firmly attached to the step-bracket or arm of a carriage, an upwardly-presenting resilient rubber plating, firmly attached to said plate, substantially as described.

4. In combination with a plate, firmly attached to the step-bracket or arm of a carriage, a wearing-surface of upwardly-presenting resilient projections, firmly attached to said plate, substantially as described.

5. In combination with a metallic plate, a rubber surface, firmly affixed thereto, to be applied to a step, substantially as and for the purpose described.

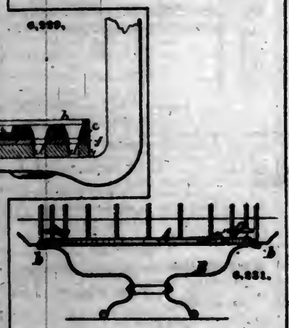
6. A plating of resilient material, with alternating elevations and depressions, attached to and forming the wearing-part of a carriage-step, substantially as described.

7. As a tread for steps, a plating of resilient material, vulcanized to a plate, and covering the upper surface of the same, substantially as described.

8. The combination of a series of upwardly-presenting resilient projections, forming a wearing-surface, a metallic plate, the upper surface of which is below the upper surface of said projections, and a step to which said plate is firmly affixed, substantially as and for the purpose described.

9. In combination with a step, a series of upwardly-presenting vulcanized india-rubber projections, firmly affixed thereto by a metallic plate, substantially as described.

6,909.



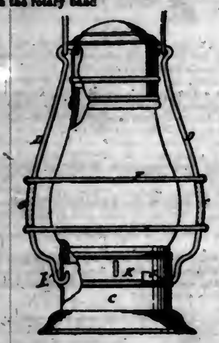
6,931.

1. The combination, with the circular dome of a bird cage and its detachable circular stand, of a circular metallic mat, said mat serving to collect impurities, and to cover the central depression in the stand created by its pedestal, substantially as described.

2. As a new article of manufacture, a cage-mat constructed of sheet metal, with a raised rim and a laterally-projecting flange, substantially as described, for the purpose specified.

6,929. LANTERNS. Jos. Klotz, West Meriden, Conn., assignor to himself and F. J. Clark. Patent No. 146,079, dated Dec. 30, 1873. [Filed Aug. 15, 1874.]

Brief.—The stamps or guards are adjusted within the slots in the base by the inclines upon the rotary band



The combination, with base C, having vertical slot l, of the rotary band K, having inclines J, for the purpose of locking and unlocking clamp D, in the manner described.

6,931. METALLIC MATS FOR BIRD-CAGES. O. Lindemann, Edgewater, N. Y. Patent No. 122,472, dated Jan. 2, 1872. [Filed Oct. 7, 1874.]

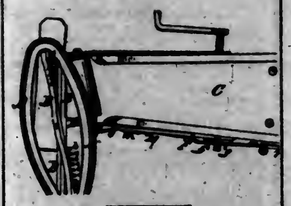
6,930. STRAW-CUTTERS. John K. O'Neil, Canton, Ohio. Patent No. 120,314, dated Oct. 24, 1871. [Filed Oct. 24, 1874.]

Brief.—The cutter-wheel and the adjacent end of the feed-box are correspondingly inclined, both vertically and laterally, to the end of the main portion of the feed-box, to cut the stalks in a double oblique direction. Chisel-edged commiuuting-cutters are located upon a cross-arm in advance of the knife, and shred the ends of the stalks as they are presented by the feeding mechanism.

1. The severing-knives B B, arranged in a doubly-oblique position, substantially as specified, in combination with the feeding-box C, for the purpose of cutting the stalks and straw in doubly-oblique directions, substantially as herein specified.

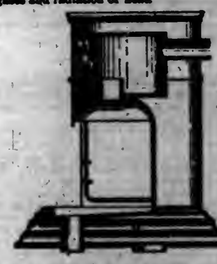
2. The chisel-edged commiuutting cutters b attached, substantially as described, to the lower side of the cutter-wheel A, in combination with the severing-knives B B, for the purpose of cutting the straw or stalks transversely previous to their being operated upon by the severing-knives, substantially as herein specified.

3. The pin-disk D, reciprocating ratch-bars F H, ratchet-wheels G I, and retracting-springs, constructed and operating substantially as described, in combination with severing-knives B B and commiuutting cutters b b, in the manner and for the purpose specified.



6,932. FIRE-PLACE HEATERS. William L. Phillips, Normal, Ill. Patent No. 146,472, dated Jan. 13, 1874. [Filed Jan. 28, 1874.]

Brief.—The smoke entering the drum is mingled with air drawn from the room through the open front, so as to moderate its heat, and obviate excessive heating of the drum, and prevent "burning" of the air in the air-chamber thereby. The drum is enlarged for the same object, and to allow full expansion of gases and radiation of heat.



An open front fire-box, in combination with a reverberatory chamber situated above the dome of the said fire-box and a jacket inclosing both of said instrumentalities, substantially as and for the purpose described.

6,934. MANUFACTURE OF ARTIFICIAL STONE. Jos L. Rowland, New York, N. Y. Patent No. 137,322, dated Apr. 1, 1873. [Filed Jan. 8, 1875.]



1. The apparatus, substantially as described, for mingling carbonic-acid gas with vapors of fluids in a chamber containing the material to be indurated, as set forth.

2. The combination, with an indurating or curing chamber, G, of a carbonic-acid-gas generator and a vapor or steam generator, substantially as described.

3. The combination of a gas and vapor mixing pipe or passage, gas-generator, vapor-generator, and indurating or curing chamber, substantially as described.

4. Introducing into the curing-chamber steam and carbonic acid gas, the latter being subjected to a cooling process during its passage from the furnace to the curing-chamber, substantially as described.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 3. TUESDAY, JANUARY 19, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, DISTRICT OF MASSACHUSETTS.

WILLIAM B. LAWRENCE, COMPLAINANT, *vs.* RICHARD H. DANA, JR., *et al.*, RESPONDENTS.

[*In equity.—May term*, 1869—*to wit, September* 20, 1869.]

The owner of the copyright of a book having agreed with the author of certain notes and additions to the same, embraced in two editions of the same prepared by him, that she would make no use of such notes and additions in subsequent editions of the work, but the author might use the same as he pleased; it was thereupon decreed that he should have the exclusive benefit of the copyright for the same.

Where the editor of subsequent editions makes notes and additions which can be clearly separated and distinguished from the notes and additions in the previous ones, he is entitled to use them and have a monopoly of them.

But if they cannot be thus separated and distinguished from the former notes, he cannot use them without violating the copyright for the former notes.

The editor of a subsequent edition cannot borrow from citations introduced into the previous ones by another editor without infringing the copyright for them, though they are not accompanied by the extracts previously presented with the citations; nor can he borrow citations of authorities, although without remarks or comments, even when prefixed or appended to notes not otherwise objectionable.

Equity suits on copyrights are usually referred to a master to examine into the charge of infringement, and upon the nature and extent of it.

Even when the infringement has been established on the principal hearing, it will still be referred to a master for the same purposes.

An injunction will be ordered in the latter case only when the infringements are few and their nature can be conveniently ascertained.

Where notes are partly original and partly copied, the latter may be published if they can be distinguished and separated, otherwise the publication must be restrained.

OPINION OF THE COURT.

CLIFFORD and LOWELL, *Judges:*

CLIFFORD, *J.:*

Complainant alleges in substance and effect that Catharine Wheaton, deceased, widow of the late Henry Wheaton, in the year 1853, then in full life, requested him to prepare a new edition of Wheaton's Elements of International Law, and that he, in pursuance of that request, prepared such notes for that purpose as seemed to him fit, and also an appendix and introductory remarks, with a full and careful memoir of the life of the deceased author; that, so far as the edition contained matters not previously published in this country, it was duly copyrighted by the said Catharine as proprietor thereof; that the same was subsequently published by the firm of Little, Brown & Co., and that all the profits arising out of the contract with the publishers were enjoyed by the said Catharine as the complainant intended they should be when he undertook to prepare the edition; that he afterward, in pursuance of a similar request from the same source, prepared other annotations of the same work, which were also copyrighted by the same person, and that they were published in 1863 by the same publishers; that he is advised and believes that the transactions as recited, in respect to those two editions, operated to convey to the said Catharine no other beneficial interest in the said annotations and additions to the work than the right to use the same in those editions; that in fact it was always understood and agreed by and between them that the beneficial interest in the same, except as aforesaid, belonged to the complainant, and that the copyrights were taken out and held in trust by the said Catharine in accordance with that understanding and agreement. Prior to that period the author, as the complainant alleges, had caused four several editions of the work to be published, two at Philadelphia, one at London, and one in 1848 at Leipzig, in two volumes, by F. A. Brockhaus, in the French language; that in the edition of 1848 the author inserted and published, both in the text and notes, many new matters never before published by him in the English language; that the author died in 1848; that the French edition was reprinted by the said Brockhaus in 1853, and that the complainant in 1860 ascertained that the said Brockhaus had published another edition of the work in French, without the knowledge or consent of the representatives of the author, and that he contemplated publishing further editions of the same without paying anything to those representatives for copyright; that in view of these circumstances, and at the request of the

said Catharine, he commenced negotiations with the said Brockhaus upon the subject; and he alleges that the result was, that the parties came to an agreement that the complainant should revise and translate his annotations and adapt the same for a work to be sold in Europe, making such additions thereto as should render the work as complete as possible down to the time of publication; that the representatives of the deceased author should give up all claim on the said Brockhaus in respect to the editions published and to be published; and that in consideration thereof the said Brockhaus agreed to pay to the said Catharine, if the complainant so directed, the sum of six thousand francs, together with the sum of four hundred and fifty dollars, to be paid to the complainant to defray in part the expenses to be incurred in preparing the translations; that the complainant, before the agreement was completed, stated to the said Catharine or her agent, Martha B. Wheaton, that he would do no more work on any book over which he did not possess exclusive control; that he would only undertake the work required of him in the proposed arrangement on the condition that the entire copyright should be assigned to him; that the said Catharine, manifesting a great desire to retain the legal title to the copyrights of the book, requested him to confer with Professor Parsons in her behalf, in order that some arrangement might be made which should substantially secure to the complainant what he desired, and be at the same time acceptable to the said Catharine; and the complainant alleges that he assented to that proposition, that he had one or more interviews with Mr. Parsons, and made an agreement with him as to the title to the copyrights and other matters, as expressed in the memorandum set forth in the bill of complaint, as follows:

MEMORANDUM.

Mr. Lawrence will write to Mr. Brockhaus in terms to bring to Mrs. Wheaton the right to draw on Mr. Brockhaus at once for 6,000 francs. He will also endeavor to get from Mr. Brockhaus as much as he can toward the actual expense of having the translation into French made here, and so much of that expense as he fails to get from Brockhaus Mrs. Wheaton will pay from the proceeds of the draft on Brockhaus. Mrs. Wheaton will, on the payment of her draft on Brockhaus, agree formally to make no use of Mr. Lawrence's notes in a new edition without his written consent, and Mrs. Wheaton will give to Mr. Lawrence the right to make any use he wishes to of his own notes.

That the said Parsons, for the purpose of being more certain that the memorandum would be approved by the said Catharine, wrote on the same sheet of paper to the respondent, Martha B. Wheaton, that he and the complainant had come to a perfectly amicable result, as expressed generally in the memorandum, and suggested to her that she should make a copy of the same for herself, if the result was satisfactory; and the complainant also alleges that the said Martha afterward, in behalf of her mother and herself, and to signify their approval of the result, signed the said memorandum, and wrote the date, "June 14, 1863," thereon, and caused the same to be delivered to the complainant. Additions were subsequently made to the agreement, and the terms of it were in some respects varied, as appears by the correspondence between the parties; but the complainant alleges that he is advised and believes that the amendments to the same do not vary any such parts of the same as relate to the copyrights in this country; and he also alleges that the consideration of the agreement of the said Brockhaus to pay said amount to the said Catharine was the promise of the complainant to furnish new and additional notes for the future editions of the work, as was well known and understood by the parties; that he, the complainant, wrote to said Brockhaus, as agreed; that the letter was approved by the other parties, and was by the said Martha and Catharine sent to the said Brockhaus, and that the said Catharine, on the 17th of June, 1863, drew a bill of exchange on him for the amount specified in the memorandum; and that the same, in consequence of said letter and of the promises and undertakings of the complainant, was duly honored and paid.

Theory of the complainant is, and he accordingly alleges, that there was not, on the first day of January, 1865, any valid subsisting copyrights of the editions published, respectively, in 1836 and 1846; that the copyrights of the editions published in 1855 and 1863 secured the exclusive right to the same only so far as those editions differed from the aforesaid antecedent editions; that it was a part of the agreement made through the agency of the said Parsons, that the said Catharine should execute and deliver to the complainant a formal instrument, securing to him all his rights in the premises, of such a nature as to admit of being recorded, as required by the acts of Congress relating to copyrights; and he avers that the other respondents had full notice and knowledge of the agreement, and that he, in a court of equity, by virtue of that agreement, is taken and deemed to be the owner and proprietor of the last-mentioned copyrights, in and as to all matters contributed by him as aforesaid; and that, by reason thereof, the respondents are bound not to make any use of any such matters so contributed by him to either of the said editions of the said work. Based upon these and other allegations, as more fully set forth in the record, the claim of the complainant is, that he is in equity the exclusive owner and proprietor of the copyrights for all the matters which he contributed to those two editions; and he charges that the said firm of Little, Brown & Co. procured and induced the said Martha, in her own behalf and that of her mother, to consent and agree that the said publishing firm of Little, Brown & Co. should publish an edition of that work, and procure the same to be edited and notes to be prepared for the same by some person other than the complainant; that thereupon the said firm procured and employed Richard H. Dana, Jr., one of the respondents, to edit the proposed edition, and to prepare the notes as aforesaid; and the complainant further shows that the respondents, without his consent, have caused the proposed edition to be printed, published, and publicly sold. Reference is also made to certain alleged pretences set up by the respondents; and the complainant prays for an account and for an injunction, and that the respondents may be decreed to surrender and deliver up all copies of the book on hand, and to make and deliver to the complainant a good and sufficient deed of the copyrights of 1855 and 1863, in accordance with his equitable title.

Questions of intrinsic importance and of great difficulty are presented for decision in respect to the title of the complainant, and as they are in their nature preliminary, they will be first considered. Briefly stated, his claim of title, considered broadly, is to the additions to and emendations of the text of two editions as published under his supervision, to the memoir of the author as contained in those editions, to the annotations prepared by him and published in those editions, and to the arrangement of the same, and the mode in which they are therein combined and connected with the text, and to the indices as published in those editions. He rests his claim upon the following grounds, as substantially stated in the bill of complaint: First, upon a contract or agreement between Catharine Wheaton and himself, that she should make no use of his notes aforesaid in any new edition of the work without his written consent; and that she would convey to him, by a formal instrument, the right to make any use he might see fit to make of his own notes. Secondly, upon the ground that, in the consideration of a court of equity, he is taken and deemed to be the owner and proprietor of the copyrights in and as to all the matters contributed by him and published in those two editions. Evidently both claims, as presented, have respect to the agreement as expressed in the memorandum of June 14, 1863, and the subsequent correspondence upon that subject, as the first is founded in covenant or contract, and the second in an equitable title to the copyright, as derived from the original arrangement and by virtue of the agreement expressed in that written paper. Confirmation of that proposition is not needed, as the language employed in the stating part of the bill of complaint is too plain for controversy; but if it were not so every vestige of ambiguity is removed by the principal prayers of the bill of complaint, which are for an injunction and an account, and for a good and sufficient deed conveying the legal title to the copyrights.

The respondents contend that the complainant is not entitled to any relief for several reasons.

1. Because the memorandum, as they contend, is not a perfected contract, but merely a note or memorandum of the stipulations of a proposed agreement as to the true understanding and definite terms of which the parties never actually agreed, and on which their minds never in fact met.

2. Because, the parties having failed to agree as to the true understanding of the memorandum and the terms of the formal agreement which it contemplated, the complainant relinquished and abandoned the whole subject-matter of the instrument, and so notified the respondents.

3. They also contend that the agreement cannot be enforced, because the same was procured by fraudulent misrepresentations and concealments of the complainant.

4. That the agreement cannot be enforced because the memorandum is without consideration.

5. Because the basis of the memorandum and the negotiations which led to it were the supposed legal copyrights held by the said Catharine; and they insist that those copyrights are void, and consequently that the agreement is inoperative, inasmuch as the parties entered into the same through mutual mistake.

6. Because the memorandum containing the agreement does not transfer nor assign any copyright to the complainant, or provide for or contemplate any such transfer or assignment.

I. Search is made in vain for any support to the first proposition of the defense, as applied to the terms or execution of the memorandum.

Interviews took place between the complainant and Professor Parsons, and they conferred together upon the subject-matter embraced in that memorandum, as suggested by the said Catharine; and the proofs show that they came to a perfectly amicable result, that the memorandum was drawn by the latter and delivered to the complainant, to be transmitted to the said Martha B. for her examination, and that she afterward, on behalf of her mother and herself, and to signify their approval, signed the memorandum and wrote the date thereon, and caused the same to be delivered to the complainant. Expressed in intelligible terms as the memorandum is, the construction and effect of the language are questions of law which cannot be controlled or influenced by the opinion of any witness, not even by that of the person employed to prepare the draft for the consideration of the parties. He may not at the time have regarded it as a contract, but they were at liberty to adopt it as such; and if they did so, and it was duly and understandingly executed as such, their rights under it must be ascertained from the language employed, as applied, in view of the surrounding circumstances, to the subject-matter of the negotiation.

They subsequently differed, as the correspondence shows, as to the proper terms of the formal agreement for which the memorandum provides; but it was not denied, throughout that period, that the said Catharine had agreed "to make no use of Mr. Lawrence's notes in a new edition without his written consent," nor that she had also agreed to give him "the right to make any use he wishes to of his own notes." Attempt was made, it is true, to ingraft the qualification into the latter branch of the stipulation, that the complainant should not publish in the United States a new edition of the notes and other matter of his own composition, "which he had added to the said two editions of said book, until the last edition is sold;" but it is clear to a demonstration that the agreement, as expressed in the memorandum, contains no such qualification. Properly considered, it is equally clear also that there is nothing in the correspondence to sustain the theory of the respondents as presented in their first proposition. "On reflection," said the complainant in his letter to Mr. Parsons, dated June 14, 1863, "the suggestion you made yesterday offers many advantages over my proposed plan . . . as it settles at once and forever all questions in regard to the book." Influenced by those considerations, as he represents, he wrote a second letter of that date as a substitute, if preferred by the other party, for the one previously prepared to be forwarded to Mr. Brockhaus, and submitted it to the approval of Mr. Parsons, as the friend of the said Catharine; but he expressly stated therein that, in sending it, he did not wish to recede from the former arrangement. On the contrary, he stated in the inclosed letter that, having made an arrangement with the said Catharine, which gave him the entire control over his notes as published in English, and any claim she might have to the editions published by his correspondent, he had advised her to the effect that she might draw for the whole six thousand francs. He proposed in that letter to Mr. Parsons, that the said Catharine might retain the copyright to the text, and to relinquish all claim for the expenses of the stipulated translation; but he did not propose to vary the agreement, as expressed in the memorandum, as to his own notes, and he also made claim to the right, if any, that the said Catharine had to the text and notes of the foreign editions.

Full consultation took place between Mr. Parsons and the said Martha, as the agent of the said Catharine; and Mr. Parsons, under date of June 16, 1863, wrote to the complainant that—

1. Mrs. Wheaton will send your last letter to Mr. Brockhaus, and returns you your former letter. 2. Mrs. Wheaton will draw at once on Mr. Brockhaus, at twenty days, for 6,000 francs. 3. When Mrs. Wheaton learns that the bill is paid, she will execute instruments satisfactory to you, which shall in the first place bind her not to use your notes without your written consent, and in the next place give you all her claims and interests in respect to the whole book, text and notes, for continental Europe in future.

Inadvertently Mr. Parsons omitted to restate the second clause of the agreement as expressed in the memorandum, that Mrs. Wheaton would give to the complainant the right to make any use he wished of his own notes; but, his attention having been called to the omission by the complainant on the following day, he replied, on the 19th of the same month, that the complainant was certainly right in his construction of their arrangement, that the complainant under it could make any use he saw fit of the matter which he had contributed. Appended to that letter is a note in the nature of a postscript, dated four days later, in which the writer suggests that Mrs. Wheaton was bound by her contract with Little, Brown & Co., as the publishers of the then current edition of the work, and that she could not convey to him anything covered by her copyright in any way detrimental to that edition; but he proposed no alterations of the agreement, and confirmed the same by his two letters, and none was made or proposed by the parties. Prior to the 31st of August, 1863, the complainant received intelligence that the bill of exchange drawn by the said Catharine had been duly honored, and on that day he wrote to Mr. Parsons, requesting him to cause the agreement of June 14, 1863, to be carried into effect. Delay ensued before any response was received to that request; but when it came, October 17, 1863, it brought with it a draft for the formal agreement, as stipulated in the memorandum. As originally prepared, the draft contained three several stipulations. First, that the said Catharine should retain unimpaired the full legal exclusive copyright in the text of the book. Second, that she should in all ways respect the rights of the complainant to all the notes and other matter of his own composition which he had added to the book in the same manner and to the same extent as if he had a full legal copyright of the same. Third, that she thereby transferred and assigned to him thereafter the whole title, text and notes, to the editions published in continental Europe.

Besides these several stipulations, there was interlined in pencil at the close of the second stipulation the words following, to wit:

But the said W. B. Lawrence shall not publish a new edition thereof until the last edition is sold.

Beyond doubt the draft was prepared without the words in pencil, and the explanations of Mr. Parsons upon the subject are that he probably exhibited the paper after it was drafted to the said Martha B., or to the respondent, Charles C. Little, and that he made the interpolation at their suggestion. Dissatisfied with the draft as prepared, the complainant returned it to Mr. Parsons. His objections were twofold, as expressed in the letter

returning the paper. First, because it made no reference to the "*Historie du Droit des Gens;*" but, chiefly, on account of the stipulation that he should not publish a new edition until the last edition was sold, which he declared to be wholly inadmissible, as it would lead to new embarrassments. Alterations were subsequently made in the form of the draft, obviating the first objection, and limiting the restriction constituting the second and principal one, so that the complainant might publish a new edition before the last was sold anywhere except in the United States; but he declined to adopt it, insisting that the agreement as expressed in the memorandum contained no such stipulation. Determined not to involve himself in new complications, the complainant returned the last draft as amended to Mr. Parsons, stating to him at the same time that he had concluded, on reflection, to decline accepting any paper from Mrs. Wheaton. He had previously given him to understand that no such arrangement could be accepted, and more than intimated that if Mrs. Wheaton did not accede to his views in that behalf, matters must rest as they were in the original agreement. Contention, however, arose by some means between the parties in respect to what was quite unimportant, and what was not probably thought of by them or by Mr. Parsons when the memorandum was framed and executed.

Stipulations for the protection of the contract with the publishers of the prior editions were unnecessary, as their remaining interests, if any, were vested, and, being antecedent to the negotiations between these parties, could not be impaired by the agreement contained in the memorandum, for the reason, as clearly stated by the complainant, that Mrs. Wheaton could not convey what she did not own.

Viewed in any light, the correspondence shows nothing more than that the parties disagreed as to the extent of the obligation imposed by the memorandum, which is a question of construction; but it was never even suggested that it did not contain a complete valid agreement. Conclusive proof that neither Mr. Parsons nor Mrs. Wheaton entertained any such views during that period is found in the drafts for the formal instrument as prepared by the former, executed by the latter, and forwarded to the complainant for his acceptance. Both were prepared and signed, as therein recited, "*in execution of an agreement heretofore made by and between*" Mrs. Wheaton and the complainant, which is plenary evidence that up to that time the agreement expressed in the memorandum as to the notes was regarded as complete and obligatory.

II. Abandonment is the next defense to be considered; but the proposition must be examined in view of the conclusion announced, that the stipulations contained in the memorandum, as to the notes contributed by the complainant, are a perfected agreement, and not a mere proposal, as suggested by the respondents. Mere proposals may in general be withdrawn at any time before they are accepted by the party to whom they are made; and ordinary contracts, executory on both sides, may in certain cases be regarded as forfeited, as where the reciprocal stipulations are dependent, and where a party seeking to enforce performance has himself omitted to do something which he was required to perform as a condition precedent to his right of action. Cases may arise also where a party is estopped to set up a particular contract, as where he has subsequently agreed in due form of law and for a valuable consideration to relinquish its benefits or not to enforce its provisions, or where he has, by his representations and conduct, designedly caused the other party to believe that the contract had been discharged or that it would not be enforced, and has intentionally induced that party to act on that belief, to his pecuniary prejudice; if the belief so induced is unfounded, the party in fault in such a case is estopped to allege or prove the falsity of his representations as evidenced by his words and conduct. (*Pickard* vs. *Sears*, 6 Ad. and Ell., 474; *Freeman* vs. *Cooke*, 2 Exch., 654; *Van Rensselaer* vs. *Kearney*, 11 How., 326; *Hawes* vs. *Marchant*, 1 Curt., 144; *Moore* vs. *Crofton*, 3 Jones & La T., 446.)

Argument to show that the case is not one of forfeiture is unnecessary, as the proposition finds no support whatever in the evidence. Contracts executed on one side and unperformed on the other stand upon a very different principle from those where nothing has been done by either, so far as respects the party who has fulfilled his obligation and paid the stipulated consideration. Rights and obligations secured or imposed under such circumstances have become vested and absolute; and if the delinquent party seeks to avoid the obligation imposed on him, he must allege and prove a new contract, for a valuable consideration, amounting to a valid release, or that the other party is estopped to enforce the obligation by virtue of some operative binding agreement to relinquish the benefits from the same, or not to enforce the stipulation; or he must allege and prove that he has been deceived and designedly misled by the admissions and representations of the other party, as before explained. (*Foster* vs. *Dawber*, 6 Exch., 854; *Edwards* vs. *Chapman*, 1 Mees. & Wels., 231; *Wildes* vs. *Fessenden*, 4 Met., 12; 1 Smith Lea. Cas., 5th Am. ed., 462; *Bank of Virginia* vs. *Groves*, 12 How., 51.) None of the elements of estoppel exist in this branch of the case, as the complainant did not agree that he would discharge the memorandum or that he would not enforce its provisions. Nothing approximating to such an agreement is exhibited in the record, nor do the respondents in fact set up any such defense. What they do set up is that the complainant relinquished and abandoned any agreement in the premises, and so notified the respondents, by which it is understood they refer to the letter of the complainant, addressed to Mr. Parsons, of the 2d of November, 1863, in which he says—

> On reflection, I have determined to decline accepting any paper whatever from Mrs. Wheaton, and therefore return the inclosed,

meaning the amended draft for the formal agreement. Disconnected from the circumstances and the other correspondence, it might be possible to misunderstand the meaning of the writer of that letter; but it must be construed in view of what preceded it, and of the subject-matter to which it related. Since the 31st of August preceding the date of that letter, the complainant had been more or less engaged in efforts to procure the formal agreement in respect to the notes as stipulated in the memorandum; but all his efforts proved fruitless. Only eight days before, he prepared the draft of the letter exhibited in the record as one intended for the same correspondent, in which he stated to the effect that his sole object in asking for the formal agreement was to prevent any further litigation, saying that he was satisfied that without it he could restrain any attempt to use these notes by Mrs. Wheaton, or any one else, in a future edition, adding, at the same time, that if she "does not sign the paper as now suggested," meaning one of the drafts for the formal agreement, without any restriction as to the use of the notes, then "matters can rest as they are." Although never sent to his correspondent, the exhibit may well be referred to as tending to show the real intent of the complainant at the time it was written.

Weighed in view of the antecedent correspondence and the surrounding circumstances, it certainly would be a perversion of the language of the complainant to regard what he wrote on that occasion either as an agreement to relinquish or not to enforce that stipulation; and, even when separately considered, the language falls far short of what is necessary to justify any such conclusion. He made no admission by that statement inconsistent with the claim he now sets up; nor did he say anything to induce the said Catharine, or any one of the respondents, so to act that either she or they will be injured if the agreement expressed in the memorandum is held valid and enforced. (*Howard* vs. *Hudson*, 2 El. & Bl., 10; *Audenried* vs. *Betteley*, 5 Allen, 385; *Pierrepont* vs. *Barnard*, 2 Seld., 291; *Rich* vs. *Atwater*, 16 Conn., 416; *Plumer* vs. *Lord*, 9 Allen, 458.) Expressions of a doubtful character are not sufficient to support such a defence as against a contract fully executed on the part of the complainant; but the meaning of the language employed must be clearly such that a man of ordinary prudence would take the representation to be true, and believe that it was meant that he should act upon it; and it must also appear

that he did act upon it as true, so that he will be pecuniarily injured if it be allowed to be disproved. (*Rich* vs. *Atwater*, 16 Conn., 415; *Mowry* vs. *Sheldon*, 2 R. I., 379; *Flagg* vs. *Mann*, 2 Sum., 516; *Langdon* vs. *Doud*, 10 Allen, 435; *Moore* vs. *Crofton*, 3 Jones & La T., 446.)

Estoppels are allowed to shut out the truth only when it is necessary to protect a party setting up such a claim or defense against an injury or liability to which he is exposed without his own fault, and by reason of having trusted to the statements designedly made by the other party to expose him to such injury or liability, and which were of such a character that a man of ordinary prudence would take the representations to be true, and believe it was meant that he should act upon them as presenting the true state of the case. They must be proved, and will not be extended by implication beyond the plain import of the deceptive act, admission, agreement, or representation. When the request was made by the complainant for the formal agreement he doubtless expected that it would include the "Histoire," as well as the notes specified in the memorandum, and perhaps the memoir of the author and the indices; but the better opinion is, that, when he wrote the letter of June 14, 1863, he surrendered all claim to everything mentioned in the antecedent negotiations, except the claim to the notes as already secured, including, of course, the arrangement of the same, and the mode in which they are therein combined and connected with the text. All claim to the copyright of the text was abandoned by the complainant at a very early period of the negotiations, and it does not appear that it was ever after renewed.

Abundant evidence exists in the record to show that Mrs. Wheaton, as well as Mr. Parsons and Miss Wheaton, was willing to concede the claim of the complainant as to the history; but inasmuch as it was not included in the memorandum, the conclusion of the court is, that the complainant, when he elected to stand upon the original agreement, relinquished that claim. He had previously described it as a matter of little or no value; and when he gave notice that he had determined not to accept any paper whatever from Mrs. Wheaton, it must be understood that he was content with what was secured to him in the memorandum. His right to the notes is therein plainly expressed, and there is no evidence in the record which shows that Mrs. Wheaton, or any one of the respondents was ever misled by the language of the letter giving that notice. Conclusive evidence to the contrary is found in the several answers of the respondents, and their subsequent conduct confirms that conclusion.

III. Grant that the memorandum was regarded by the parties thereto as a contract, still the respondents contend that it cannot be enforced, because, as they allege, it was procured by the fraudulent misrepresentations and concealments of the complainant. They submit that general proposition, and under it they make the following specific accusations: First, that when the negotiation as to the notes was commenced there was not, in fact, any understanding between the complainant and Mr. Brockhaus that the former should perform for the latter any editorial labor, either of revision or of translation. Second, that the foreign publisher was ready at that time to pay the six thousand francs to Mrs. Wheaton, without requiring any such labor from the complainant. Third, that the said publisher had not then made a final proposal to the complainant to pay anything to any one in that behalf, as appears by his letters addressed to the complainant. Fourth, that the complainant concealed the contents of those letters from Mrs. Wheaton, and those acting in her behalf. Fifth, that he falsely represented to her and those acting for her that the said publisher would not pay the sum specified, except upon his undertaking to revise his annotations, and make such additions to the same as would adapt them to a new addition to be sold in Europe, and the general charge is that she was induced to assent to the memorandum by reason of those false representations.

Accusations of fraud amount to nothing as a defense to a contract otherwise legal and binding, unless they are satisfactorily proved; and the burden of proof to establish such a defense is upon the party who makes such a charge. (*Attwood* vs. *Small*, 6 Cl. and Fin., 447; 1 Story, Eq. Jur., § 200; *Park* vs. *Johnson*, 4 Allen, 266; *Jennings* vs. *Broughton*, 5 De G., M. and G., 132; *Campbell* vs. *Fleming*, 1 Ad. and Ell., 41.) Apart from the inferences attempted to be drawn from the correspondence between the complainant and the foreign publisher, it is scarcely pretended that those accusations find any substantial support in the record; and the court is of the opinion that the several letters, when properly construed and considered in their proper connection, show that every one of the specific suggestions of fraud is unfounded. Correspondence between the complainant and the foreign publisher, in relation to a new edition of the work for the foreign market, commenced more than three years before the date of the memorandum; and in the first letter written by the complainant he stated that he did not expect any compensation for his services, but that he should desire to obtain what he could for the widow of the author; and it is a mistake to suppose that the negotiation as to the notes commenced before there was any understanding upon that subject between those parties. Enough certainly had been learned to satisfy any reasonable person that the arrangement could be made if desired, and that was sufficient to justify the complainant in ascertaining what would be conceded as to the notes. Equally unfounded also is the charge that Mr. Brockhaus was ready at that time, or at any time before or afterward, to pay the six thousand francs without any stipulation from the complainant to revise the notes and superintend their publication. His letter of the 29th of April, 1863, is a complete refutation of both those charges, and shows to a demonstration that the services to be rendered by the complainant really constituted the chief inducement to the arrangement. Convinced that the "rich emendations" made to the work by the complainant would, if adapted to his proposed new edition, be of great value, he was desirous to secure his services to accomplish that object, and, in order to do that, he was willing to pay the described amount. By his letter of June 12, 1860, Mr. Brockhaus called for a definite proposal; and the complainant, in his letter of August 25, 1862, complied with that request, and made the proposal, which, with slight modifications, was subsequently accepted; but, whether before or after the commencement of the negotiations as to the notes, is wholly immaterial. The charge that the letter of the 29th of April, 1863, or any of the others, was concealed from Mrs. Wheaton or those acting in her behalf, is disproved by the correspondence from which the inference is attempted to be drawn. Taken as a whole, the correspondence satisfies the court that the foreign publisher never did agree to pay the six thousand francs, except upon the undertaking of the complainant to revise his annotations, and to adapt the same to the proposed new edition for the foreign market, and that the respondents have failed to prove that the complainant was guilty of any fraudulent misrepresentations or concealment.

IV. Extended argument to show that the fourth proposition of the respondents cannot be sustained, is unnecessary, as it finds no support in the evidence. Founded as the proposition is upon the theory that the foreign publisher was willing to pay the money for antecedent obligations, or as a gratuity to the family of the author, it is sufficient answer to it to refer to what is said in response to the preceding proposition without entering into details.

V. Next proposition of the respondents is that the copyrights of the editions of 1855 and 1863 are void, and consequently that the agreement expressed in the memorandum is inoperative, inasmuch as the parties entered into the same through mutual mistake. They insist that the copyrights are void for several reasons, which will be separately considered: First, because no written assignment of copyright, or of the inchoate right of the complainant thereto, as the author, was ever made to Mrs. Wheaton." Second, because the "notice of copyright inserted in the several copies published of said editions" is defective, "in the omission to give notice in said editions of the copyright secured in the" original edition of the work. Third, because, upon the facts alleged and proved by the complainant, the copy-

rights of the editions in question were not taken out by the proper person, nor in the proper district.

Copyright may be granted under the copyright act to the author of any book falling within the classes described in the first section of the act, if the author is a citizen of the United States or permanently resident therein; and the first section also provides that such author shall have "the sole right and liberty of printing, reprinting, publishing, and vending such book," for the term of twenty-eight years from the time of recording the title of the same as therein required. Executors, administrators, and legal assigns of the author are also included in the purview of the section; but the fourth section provides that no person shall be entitled to the benefit of the act unless he shall, before publication, deposit a printed copy of the title of such book in the clerk's office of the district court of the district where the author or proprietor shall reside; and the provision is that the clerk of such court shall record such printed copy forthwith in a book to be kept for that purpose, and in the form therein prescribed. (4 Stat. at Large, 437.) Where the author continues to be the owner he is entitled to a copy of the title; but if he has parted with the ownership, the requirement is that the clerk of such district shall give a copy of the t tle under the seal of the court to the proprietor. (Ibid., 437.) Proprietors of any such book, though not authors, are also recognized as entitled to the benefits of the act in another provision of the fourth section, in which they are required within three months from the publication of said book to deliver, or cause to be delivered, a copy of the same to the clerk of said district. Legal proprietors, though not authors, may also recover of persons who print or publish any manuscript, the property of which is in them, without their consent, all damages occasioned by such injury. (*Stevens* vs. *Gladding*, 17 How., 447. See also 4 Stat. at Large, 437, 439, §§ 6, 15.)

Left in moderate circumstances, Mrs Wheaton very properly desired to obtain something from the literary publications of her late husband, and with that view she sought the advice of the complainant, as the intimate friend of the author and of his family. Consultations accordingly took place between them upon the subject. Suggestion was first made that his reports of the decisions of the Supreme Court might be republished; but their attention was soon directed to a new edition of the Elements of International Law, as affording more promise of profit beyond mere remuneration. Editorial labors were necessary to such an undertaking, and the complainant tendered his services, and the same were gladly accepted by Mrs. Wheaton and her children.

Pursuant to that arrangement, the complainant edited in succession the two editions in question—that is, he made some additions to and emendations of the text, prepared the notes, composed the memoir, and made the indices. Alterations were made in the arrangement as first concluded; but it is unnecessary to enter into details, as the proofs are clear that the complainant acted throughout that entire period with the distinct understanding that his services in editing those editions were to be gratuitous and without any charge. Speaking of the first annotated edition, the agreement was distinct that the contributions were to be furnished without charge, and the edition of 1863 was prepared with the same explicit understanding between the parties. Although the services were gratuitous, the contributions of the complainant became the property of the proprietor of the book, as the work was done just as effectually as they would if the complainant had been paid daily an agreed price for his labor. He gave the contributions to the proprietor for those two editions of the work, and the title to the same vested in the proprietor, as the work was done, to the extent of the gift, and subject to the trust in favor of the donor, as necessarily implied by the terms of the arrangement. (*Sweet* vs. *Benning*, 16 C. B., 480; *Mayhew* vs. *Maxcell*, 1 Johns. & H., 312.) Delivery was made as the work was done, and the proprietor of the book needed no other muniment of title than what was acquired when the agreement was executed. (*Sweet* vs. *Cater*, 11 Sim., 572; *Simms* vs. *Marryat*, 7 Eng. L. & Eq., 337; *Woods* vs. *Russell*, 5 Barn & Ald., 942; *Atkinson* vs. *Bell*, 8 Barn. & Cress., 277.) Vested as the title and property of the contributions were in Mrs. Wheaton, she would not acquire anything by an assignment from the contributor, as he had neither the immediate title to the contributions nor any inchoate right of copyright in those editions. He could not assign anything, because he owned nothing *in præsenti*, as the title to his contributions and the inchoate right of copyright for those editions had become vested in Mrs. Wheaton as proprietor of the book. (*Clarke* vs. *Spence*, 4 Ad. & Ell., 448; *Laidler* vs. *Burlinson*, 2 Mees. & Wels., 602.) Guided by these views, the court is of the opinion that none of the authorities cited by the respondents to show that a written assignment from the complainant to Mrs. Wheaton was necessary have any proper application to the question under consideration, because the complainant never acquired any right to demand a copyright in his contributions to those two editions, but the contributions as they were made and composed, or put in form, became vested in the proprietor. (*Shepherd* et al. vs. *Conquest*, 17 C. B., 443. 444; Chitty on Con. (10th Am. ed.,) 401; *Tonson* vs. *Walker*, 3 Swanst., 672.) Certain remarks are found in the opinion of the court in the case of *Pierpont* vs. *Fowle*, 2 W. & M. 46, apparently inconsistent with the views here expressed; but the decision of the court in that case is a sufficient answer to those remarks. Contrary views, it is sometimes supposed, are also expressed in the case of *Atwill* vs. *Ferrett*, 2 Blatch., 46; but the learned judge admits that an equitable title may vest in one person to the labors of another where the relations of the parties are such that the former is entitled to an assignment of the production, which is the precise point involved in the case before the court; and many other authorities than those cited in that case sustain the same principle. (*Sweet* vs. *Shaw*, 3 Jurist, 217; *Colburn* vs. *Duncomb*, 9 Sim., 155; *Little* vs. *Gould*, 2 Blatch., 362; *Sweet* vs. *Cater*, 11 Sim., 572; *Mawman* vs. *Tegg*, 2 Russ., 385; *Nicol* vs. *Stockdale*, 3 Swanst., 687; *Cary* vs. *Longman*, 3 Esp., R., 273.)

Second defect in the copyright, as alleged in argument by the respondent, "consists in the omission to give notice in said editions of the copyright secured in the original edition." Persons desirous of securing a copyright must comply with the conditions of the copyright act, and if they fail to do so they are not entitled to the benefit of its provisions. Authorities to support that proposition are not necessary, as those conditions are prescribed by an act of Congress. Deposit must be made before publication, if the subject-matter is a book, of a copy of such book in the clerk's office of the district court, as before explained; and the applicant must give information of copyright being secured, by causing to be inserted, in the several copies of each and every edition published during the term secured, on the title-page or the page succeeding, the following words, viz: "Entered according to act of Congress in the year , by A. B., in the clerk's office of the district court of ," (as the case may be) Beyond doubt, the omission to comply with those requirements renders the copyright invalid, as the act provides that no person shall be entitled to the benefit of the act unless he fulfils those conditions; but the important inquiry arises, what are those conditions? (*Wheaton* vs. *Peters*, 8 Pet., 591; *Ewer* vs. *Coxe*, 4 Wash., 487.) Full compliance with the conditions prescribed in the fourth section of the act is conceded; but the theory of the respondents is that the fifth section of the act requires that the same notice *in totidem verbis* must be inserted in the several copies of each and every edition published during the term secured, so that the second and every subsequent edition shall correctly specify the date of the original entry. They cite no authorities which support the proposition, and they assign no reasons in support of it, except that the act makes no provision for a change of the date in the successive notices to be given, and that the omission to give notice of the original copyright in subsequent editions tends to mislead the public. Acts of Congress are to be construed by the rules of the common law, and the construction should be such as will carry into effect the true intent and meaning of the legislature; but the province of construction can never extend beyond the language employed as applied to the subject-matter and the surrounding circumstances. (*Rice* vs. *Railroad*, 1 Black, 359; *Binney* vs. *Canal Co.*, 8 Pet., 201.) Change of date in the notice required in case of successive editions of the same book, it may be conceded, is not contemplated by the fifth section of the copyright act; but the meaning of the provision is that a new notice in the same prescribed form shall be given in every improved edition published during the term. Compliance with that requirement, when the original edition is published, is a full protection for that edition throughout the term; but it is no protection to a second edition with notes, nor to any succeeding edition with improvements, because the requirement is that the "information of copyright secured" shall be "inserted in the several copies of each and every edition." Neglect to comply with that condition in a second edition will not vitiate the copyright of the original edition if it was regularly secured, nor will a valid copyright of a second edition cure material defects in the copyright of the original edition. Copyrights of the editions of a work other than the original edition are granted for additions to, emendations of, or improvements in the work, and every copyright should bear date of the day when it was secured. Authors or proprietors of a book for which a copyright is secured are required by the second section of the act of the 3d of March, 1865, "within one month of the date of publication" to transmit, free of postage or other expense, a printed copy of the book to the library of Congress at Washington, for the use of said library; and the fourth section provides that, in the construction of that act the word "book" shall be construed to mean every volume and part of a volume, together with all maps, prints, or other engravings belonging thereto, and shall include a copy of any second or subsequent edition which shall be published with any additions; but the proviso enacts that the author or proprietor shall not be required to deliver to the said library any copy of the second or any subsequent edition of any book, unless the same shall contain additions as aforesaid, nor of any book not the subject of copyright. (13 Statutes at Large, 540.) Prior to the passage of that act, the courts had decided that the "information of copyright being secured," if duly entered in the first volume of a work of several volumes, was sufficient; but all the residue of the provision is merely in affirmance of the true intent and meaning of the copyright act. (*Dwight* vs. *Appleton*, 1 N. Y. Leg. Obs., 198.) Subsequent editions without alterations or additions should have the same entry, because they find their only protection in the original copyright; but second or subsequent editions with notes or other improvements are new books within the meaning of the copyright acts, and the authors or proprietors of the same are required to "deposit a printed copy of such book," and "give information of copyright being secured," as if no prior edition of the work had ever been published; and the term of the copyright as to the notes or improvements is computed from the time of recording the title thereof, and not from the time of recording the title of the original work. Copyrights, like letters patent, afford no protection to what was not in existence at the time when they were granted. Improvements in an invention not made when the original letters patent were issued are not protected by the letters patent, nor are the improvements in a book not made or composed when the printed copy of the book was deposited and the title thereof recorded as required in the fourth section of the copyright act. Protection is afforded by virtue of a copyright of a book, if duly granted, to all the matter which the book contained when the printed copy of the same was deposited in the office of the clerk of the district court, as required by the fourth section of the copyright act; but new matter made or composed afterward requires a new copyright, and if none is taken out, the matter becomes public property, just as the original book would have become if a copyright for it had never been secured. Publishers may be in the habit of inserting more than one notice in new editions, but there is no act of Congress prescribing any such condition. Whenever a renewal is obtained under the second section of the copyright act, the requirement is that the title of the work so secured shall be a second time recorded, and that the applicant must comply with all the other regulations in regard to original copyrights; but there is nothing in any act of Congress to show that each successive edition must specify the date of the original copyright, as contended by the respondents. Tendency to mislead the public cannot be successfully predicated of a copyright in due form of law, where it appears that the party who secured it complied with all the conditions prescribed in the copyright act, which is all that need be remarked in reply to the suggestion of the respondents upon that subject.

Special examination of the third objection made by the respondents to the copyrights in question is unnecessary, as it is clear that if the property and title of the matter contributed by the complainant vested in Mrs. Wheaton as the work was done, she was the proper person to take out the copyright; and it is not controverted that, if she was the proper person, she took it out in the proper district.

Based as the objections to the validity of the copyrights are upon an assumed construction of the fifth section of the copyright act, the court thought it right to examine the several questions presented upon their merits; but it would be a sufficient answer to the entire proposition to say that no such defence is set up in the answer. (*Foster* vs. *Goddard*, 1 Black, 518.) Other answers are made by the complainant to the proposition; but the court having come to the conclusion that it is founded in a misconstruction of the copyright act do not find it necessary to give the other suggestions much consideration. Stated in brief words, the conclusions of the court are that the copyrights are valid, and that the agreement set forth in the memorandum is binding.

VI. Unexecuted, however, as the agreement is, it does not transfer nor assign the copyrights in question to the complainant. Both parties agree to that proposition; but the respondents err in supposing that the agreement does not provide for nor contemplate any such transfer or assignment, as is plainly shown by the very terms of the memorandum. Copyright of a book, when taken out in due form, secures to the author or proprietor the sole right and liberty of printing, reprinting, publishing, and vending such book during the term for which it is granted; but it secures nothing more; and the agreement was that Mrs Wheaton, who held the legal title of the copyrights, should make no use of the notes in a new edition without the written consent of the complainant, and that she would give him the right to make any use of the same he might see fit, which was in all respects equivalent to a contract to transfer and assign to him the legal title to the copyrights. Equity would have compelled the execution of the formal instrument therein stipulated if the right to demand it had not been waived by the complainant. His claim as now presented is twofold, and in the judgment of the court it may be sustained upon both grounds. (Curtis on C., 315; *Mawman* vs. *Tegg*, 2 Russ., 385; *Sweet* vs. *Shaw*, 3 Jurist, 217; *Colburn* vs. *Duncombe*, 9 Sim., 155.) The legal title to the copyrights is in Mrs. Wheaton or her legal representative, and the complainant claims in the first place that the same is held in trust for him as the equitable owner of the notes by virtue of the original arrangement under which the same were prepared. Secondly, the complainant claims that the negative as well as the affirmative promise contained in the agreement in regard to the use of the notes was binding upon Mrs. Wheaton, and that both are obligatory upon her legal representative, and all others having notice of the existence of those covenants. (*Barfield* vs. *Kelly*, 4 Russ., 355.)

Two principal objections are taken by the respondents to the claim of the complainant that he is the equitable owner of the notes under the original arrangement. First, they deny that the proofs in the case warrant any such finding, especially as the theory is denied in the answer. Second, they contend that Mrs. Wheaton, if such was the agreement, could not legally copyright the notes, as it would show that she was but a mere licensee, and that the copyrights in that state of the case would be void on that account.

First, conclusive proof to show what was the original

understanding between the parties is found in the correspondence upon the subject. Unaided by any one, the complainant prepared the notes, but with the express understanding that he would do so without any charge, and that the property of the same, so far as respected the new edition, should vest in the proprietor of the book, and that she should take out the copyright and remain, as she was, the sole and exclusive owner of the entire book. Liberal, however, as the agreement was toward the proprietor of the book, yet it did not include anything except that edition; and when the second annotated edition was prepared under a similar arrangement, as conceded by both parties, the agreement was not extended beyond that publication. Confirmation of those propositions is unnecessary, as they are not controverted by the respondents. They deny that it was agreed between the parties that the notes should ever afterward become the property of the complainant, but they do not allege nor offer any proof tending to show that his agreement with Mrs. Wheaton extended beyond the annotated editions. Tested by these indubitable facts, the rights of the parties are plain and easy to be understood. As the proprietor of the book, Mrs. Wheaton, by virtue of that arrangement, became the absolute owner of the notes as they were prepared, so far as respects the editions in question; and she also acquired therewith the right to copyright the same for the protection of the property; but she did not acquire thereby any right or title, legal or equitable, to use the notes in a third edition of the annotated work without the consent of the complainant. Proof to support any such right or title is entirely wanting in the record, and no such right or title is set up in the answer. (*Sweet* vs. *Cater*, 11 Sim., 572.) Such omission confirms the view that no such right or title was intended to be conveyed, and the subsequent conduct of the parties in executing the memorandum tends strongly to the same conclusion.

Second, suppose the facts to be so, then the respondents contend that the copyrights are void, because, as they insist, the applicant for the same was a mere licensee of the author of the notes; but the court is of a different opinion for the reasons already given, as well as for others yet to be mentioned. Literary property, even when secured by copyright, differs in many aspects from property in personal chattles, and the tenure of the property is governed by somewhat different rules; but the difference in the nature and tenure of the property is much greater before copyright is taken out, and while the right to that protection for the same remains entirely inchoate. Title to the notes or improvements prepared for a new edition of a book previously copyrighted may, in certain cases, be acquired by the proprietor of a book from an employee, by virtue of the contract of employment, without any written assignment; and, when so acquired, the tenure of the property depends upon the terms of the contract, but it cannot be held to be a mere license where, as in this case, the contract was that the proprietor of the book should take the exclusive right to the contributions for two successive editions, together with the right to copyright the same for the protection of the property, as the inchoate right of copyright unquestionably passed to the proprietor of the book by the same arrangement (*Agawam Co.* vs. *Jordan*, 7 Wall., 603; *Fletcher* vs. *Morey*, 2 Story, 564.) Such inchoate right is incapable of any other limitation than that prescribed by the copyright act, so that the proprietor of the book necessarily took out the copyright in the usual form. Beyond controversy, she took it out by the consent of the complainant; and it is equally clear, in the judgment of the court, that she took it out for the protection of her own property in the notes, and in trust for the complainant when her property in the notes should cease. (*Maxman* vs. *Tegg*, 2 Russ., 385; *Little* vs. *Gould*, 2 Blatch., 365.) Arrangements of the kind, it is believed, are frequently made between the proprietors of books and editors employed to prepare notes or other improvements to successive editions; and it is not perceived that there is any legal difficulty in upholding such a contract where, as in this case, it violates the rights of no one, and is entirely consistent with the public right. (*Fletcher* et al. vs. *Morey*, 2 Story, 566.) Entered into as it was in good faith, and with a full knowledge of all the facts, it was not void; and neither the representative of the proprietor of the book, nor any other person having notice of the same is at liberty to repudiate it, as it appears that it was knowingly acted upon in a way that the complainant would suffer serious pecuniary injury to allow it to be disproved. (*Farina* vs. *Silverlock*, 39 Eng. L. & Eq., 516; *Ecolt* vs. *Bannister*, 17 C. B. (N. S.) 708; *Sherman* vs. *Champlain Co.*, 31 Vt., 175; *Cairncross* vs. *Lorimer*, 3 Law Times, 130.)

Covenant is the second ground of claim as set forth in the bill of complainant, and it is undoubtedly true, as contended by the respondents, that the theory of the claim as presented in allegation and in proof is that the legal title to the copyrights vested in the proprietor of the book. The respondents in argument deny that proposition, and insist that the copyrights are void; but the objections they make to their validity have already been examined and overruled, and the reasons assigned for the conclusions need not be repeated. Expressed as the promises are, both the negative and affirmative, in plain and unambiguous language, they require neither construction nor explanation; and it is clear that they are binding upon the legal representative of the proprietor of the book, and all others having notice of the rights of the complainant. (*Colby* vs. *Duncombe*, 9 Sim., 155.) Mrs. Wheaton died March 5, 1866, leaving two children; but it is alleged and conceded that the respondent, Martha B. Wheaton, is the administratrix of her estate, and so far as respects the book in question her sole heir. Controlled by these reasons, the court is of the opinion that the complainant, in the view of a court of equity, is the equitable owner of the notes, including the arrangement of the same, and the mode in which they are therein combined and connected with the text, and of the copyrights taken out by the proprietor of the book for the protection of the property, including the equitable ownership of the complainant. (*Fletcher* vs. *Morey*, 2 Story, 564; *Parker* vs. *Muggridge*, 2 Story, 342; *Clark* vs. *Southwick*, 1 Curt., 299; *Rerick* vs. *Kern*, 14 S. & R., 271; *Simms* vs. *Marryat*, 7 Eng. L. & Eq., 337; Curt. on C., 315; *Mayhew* vs. *Maxwell*, 1 Johns. & Heni., 315.)

Brief examination will next be made of the special defence set up by the respondents who published the edition of the work which is the subject of complaint, and also by the respondent who edited the same, that they cannot be adjudged liable to any decree, because they had no notice of the alleged trust or agreement. Plenary proof is exhibited in the record that the senior partner of the publishing firm had full knowledge of all the circumstances attending the preparation of the notes and the publication of the two annotated editions, and also full knowledge of the memorandum at the time it was executed, and of all the subsequent negotiations in respect to the formal agreement. Reference need only be made to the correspondence in the record, and to his own answer and deposition in the case in support of that proposition; and the circumstances as disclosed in the correspondence show to the entire satisfaction of the court that the other members of the firm knew, or might have known, what the claim of the complainant was to the notes long before the contract for publishing the edition in question was executed, and all the facts and circumstances connected with the claim, as fully as they were known to their senior partner. Proof beyond what already appears is certainly unnecessary to show that the proprietor of the book and the respondent, Martha B. Wheaton, were repeatedly apprised of the claim of the complainant in terms which could not be misunderstood. Their friend and legal adviser knew all that had transpired, and, in view of the circumstances, and the acknowledged intimacy of the respondent, who edited the edition, the conclusion of the court is, without hesitation, that he knew enough of the claim of the complainant to put him upon inquiry. His answer tends strongly to support that proposition, and the same inference is fully justified by his deposition. He admits that the proprietor of the book, when the agreement that he should edit the edition in question was made between them, expressed the wish that he should not make any use of the notes prepared by the complainant; and in his cross-

examination he states to the effect that the respondent, Martha B. Wheaton, proposed to read to him all that had passed between her mother and herself, Mr. Parsons, and Mr. Lawrence, but that he declined to hear it, wishing to confine himself as much as possible to the position of an editor. Some of the remarks made by the same respondent, in the interview which took place between him and the complainant, and his conduct in refusing to read the letter of the complainant when it was handed to him for that purpose, tend strongly in the same direction. Nothing is better settled than the rule that whatever puts a party upon inquiry is sufficient notice in equity.

Ordinary prudence is required of every person dealing with trust property, and if he fails to investigate when put upon inquiry he is chargeable with all the knowledge it is reasonable to suppose he would have acquired if he had performed his duty. (*Hill* vs. *Simpson*, 7 Ves. Jr., 170; *Kennedy* vs. *Greene*, 3 Myl. & K., 722; Com. Dig., Chan., 4 C., 2; *Smith* vs. *Low*, 1 Atk., 489; 3 Sug. on V. and P. (10th ed.,) 471; *Jones* vs. *Smith* 1 Hare, 43; *Booth* vs. *Varnum*, 9 Conn., 236; *Pitney* vs. *Leonard*, 1 Paige, Ch. R., 461; *Carr* vs. *Hilton*, 1 Curtis, 390.)

Constructive notice is held sufficient, upon the ground that when a party is about to perform an act by which he has reason to believe that the rights of a third person may be effected, an inquiry as to the facts is a moral duty, and diligence an act of justice. Hence, says Judge Duer, in the case of *Pringle* vs. *Phillips*, 5 Sand., S. C. R., 157, he proceeds at his peril when he omits to inquire, and is then chargeable with all the knowledge of the facts that by a proper inquiry he might have ascertained. (*Hawley* vs. *Cramer*, 4 Cow., 717; *Williamson* vs. *Brown*, 20 Law Rep., 397; *Fulton Bank* vs. *Canal Co*, 4 Paige, Ch. R., 127; *Bank of Alex.* vs. *Seton*, 1 Pet., 309.) Inquiry is a moral duty whenever the circumstances are such that a person of ordinary prudence would refuse to act; but if a party under those circumstances shuts his eyes to the means of knowledge which he knows is at hand, he then forfeits every pretence of defence, as such conduct is equivalent to actual notice of all the facts he might have ascertained by a performance of his duty. (*May* vs. *Chapman*, 16 Mees. & Wels., 355.)

Grant that the several conclusions announced by the court are correct, still the respondents insist that the complainant is not entitled to a decree, because they contend that they have not infringed the equitable right of the complainant to the exclusive use of the notes in question, nor violated the terms of the agreement as expressed in the memorandum.

Before proceeding to examine the question of infringement, it will be necessary to reproduce, as concisely as possible, some of the principal issues upon the subject as presented in the pleadings.

Statement of the complainant is that, prior to the last edition annotated by him, there was no book of international law in which all the authorities bearing upon the different questions discussed or referred to in the original work of the author, or in his antecedent annotations, were collected and presented in a convenient form for reference. Such authorities as he represents consisted of judicial decisions, diplomatic discussions by distinguished diplomatists, and dissertations, treatises, and lectures of learned publicists and writers upon the law of nations; that he undertook to collect and present, and by a considerable amount of labor and intellectual exertion did collect and present, in his notes and in a convenient form, with reference to each question so discussed, the discussions and opinions as aforesaid, translating such as were in any foreign language, and giving them in full where they seemed sufficiently important to be so presented, and in other cases referring to them giving the name of the book and the page where the passage could be found; that many of the authorities so collected, and particularly those relating to diplomatic discussions and negotiations, and those showing the way in which cases involving principles of international law have arisen between different nations and been determined, are to be found in newspapers, gazettes, legislative debates, the series of books such as the Annual Register and others named or referred to in the bill of complaint, not treatises on international law; that there is no book which can serve as an index or digest to assist an author in any material respect in collecting such authorities; that the number of books and papers of that nature examined by him in searching for the authorities and matters cited by him is so great that it is only possible to make such collection by devoting much attention to the subject for many years, and by making and preserving memoranda of such matters bearing upon the subject as from time to time they come to the knowledge of a person giving a large share of his attention to such matters, and reading all such books as relate to the subject, and availing himself of much intercourse with persons conversant with such matters. Corresponding statement of the respondent is that the plan of work he adopted was to take the text of the author of the book with his notes and annotate the same with original notes of his own, in the same manner as if they had never before been annotated; that it was no part of his plan to revise, reduce, or alter the complainant's notes, even in such manner as the law of copyright would have permitted if the complainant had had a copyright therein; but that his course was after reading a topic in the text, if he thought it required annotation, to examine all the works to which he had access bearing upon the topic, and, among others, but not more or differently than others, the contributions of the complainant. When he had made all the examination he thought necessary, the allegation is that he then gave the subject the best reflection he could, and subsequently wrote out a new and original note in every instance, in manuscript throughout, in his own hand or that of an amanuensis, and without other reference to, or assistance from, any notes of the complainant than as above stated.

The complainant also alleges that in preparing the text of his edition he exercised a considerable amount of skill and judgment in the arrangement of his annotations, and in combining and connecting them with the text, and that he prepared a complete index to the same; and he charges that the respondents, in their book, have copied, conformed to, and pirated the said annotated book and the annotations of the same which he prepared; and that they have used and availed themselves of the said book and annotations and the said labors of the complainant. Responsive to the charge that his notes are in a great part taken and copied from those of the complainant, and that he has pirated and unduly used the contributions of the complainant, the respondent totally denies the same and every part thereof. Evidence to show that the notes in the two annotated editions of Wheaton's Elements of International Law, as prepared by the complainant, involved great research and labor beyond what appears in those two works, is unnecessary, especially as the allegations in the bill of complaint to that effect are not directly denied in the answer; and it is equally obvious and clear that the results of the research and labor there exhibited could not well have been accomplished by any person other than one of great learning, reading, and experience in such studies and investigations. Such a comprehensive collection of authorities, explanations, and well-considered suggestions is nowhere, in the judgment of the court, to be found in our language, unless it be in the text and notes of the author of the original work. Uncontradicted as these propositions are, it would be an act of supererogation to add anything further in their support. Much, also, has been accomplished by the last editor of the work in the same direction, and in the collection and presentation of similar matters wholly distinct and separate from what was antecedently collected and presented by the complainant. But the review and comparison of the merits of the respective books are not matters within the province of the court, except so far as the same become necessary in order to decide the issues involved in the pleadings. Stripped of all mere form, the charge against the respondent is that he has infringed the rights of the complainant; and that question is the only one of much importance which remains to be considered. Apart from the testimony of the parties themselves, and the comparison of the books, the evidence in the case consists mainly of the testimony of the two experts, and the result of the respective comparisons made by them, of the notes and citations of authorities contained in one of the books with those of a corresponding character contained in the other, together with the opinion of each expert witness, whether the several notes and citations so examined and compared are or are not of the same character. Though admissible in all such cases, the opinions of experts are nevertheless in their nature secondary evidence; but the comparisons made by them in this case have very much facilitated the investigations made by the court. Considerable aid has been derived from that source, and from the testimony of the parties; but the court has found it necessary to re-examine the comparisons made by the witnesses, and to make others for themselves, in order to come to a satisfactory conclusion. Regarded as a basis to enable the court to compare one book with the other, the results given by the experts as exhibited in their depositions, have proved to be of great service to the court in estimating the weight to be given to their respective opinions. Complicated as the facts are, the examination of the case has imposed much labor upon the judges; but the investigation has been made with care, and continued from time to time until both are satisfied that the court is prepared to render a just decision. Like other controversies of a similar character, the issue upon the merits presents two questions, one of fact and the other of law. Stated in brief terms, the question of fact is, What use did the respondents who edited the edition in question make of the complainant's notes? And the question of law presented, inasmuch as it is conceded that he used the same to some extent, is, Was that use allowable, or was it of a character and to such an extent that it infringed the complainant's rights? Direct evidence upon the subject is unattainable, as the respondent states that he cannot remember nor undertake to give the authors from whom he derived any particular class of citations. Difficult though it be to make proof, still the complainant is not entitled to any decree unless he proves infringement, as alleged, to the satisfaction of the court, as the burden in that issue is always upon the party making the charge. Except that the burden is upon the complainant, the same difficulty is experienced by the respondents in their efforts to prove the affirmative allegations of the answer, and consequently both parties are obliged to rely chiefly upon a comparison of the contents of the respective books, as the best evidence which either party is able to produce. Examination of the notes contained in the respective books will show that the description given of them by one of the respondents' witnesses is quite accurate. He states to the effect that they are either statements of historical events, accounts of legislative debates, narratives of diplomatic discussions, negotiations, or correspondence, abstracts of cases in the courts or judicial tribunals of different countries, or summaries

of other text-writers or essayists on international law, and other kindred topics, accompanied with references to the books and documents where the matters are to be found. Such authorities and references of the kind mentioned are very numerous in the edition containing the notes of the complainant, and he contends that the respondent has made a much larger use of such notes, references, and authorities, including those collected and presented by him to illustrate particular topics of international law, than the law of copyright or the agreement between him and Mrs. Wheaton, as expressed in the memorandum, will permit. Numerous instances are given where the same topics are illustrated in the two works by reference to the same historical facts or diplomatic negotiations, and where the views expressed are supported by the citation of the same books, pamphlets, debates, and newspapers; and the complainant contends that these coincidences occur in instances so numerous that it is past belief that they could be accidental; and he insists that the just inferences to be drawn from these coincidences, when taken in connection with the admission of the respondent that he did make some use of the complainant's book for the purposes of reference, fully sustain the burden of proof on his part, and justify the conclusion that, in each particular instance in which the citations and authorities are the same, they were in fact taken from his book, unless the respondent can explain these coincidences, or show that the citations and authorities were derived from some other quarter. Weighted as required by the rules of circumstantial evidence, the complainant contends that these coincidences of fact, as exhibited in the two books, are not only consistent with the charge of infringement, but that they, taken as a whole, are absolutely inconsistent with any other theory, which is the test usually applied in cases where proof is required beyond any reasonable doubt. Great latitude is justly allowed by the law to the reception of indirect or circumstantial evidence, the aid of which is constantly required in the administration of justice; and whenever the necessity for a resort to such evidence arises either from the nature of the inquiry or the failure of direct proof, objections to testimony on the ground of irrelevancy, even in common-law suits, are not favored, for the reason that the force and effect of circumstantial facts usually and almost necessarily depend upon their connection with each other. Circumstances altogether inconclusive, if separately considered, may, by their number and joint operation, especially if corroborated by moral coincidences, be sufficient to constitute full and conclusive proof. (*Castle et al. vs. Ballard*, 23 How., 167; 1 Stark Ev., 58, 562.)

Instances quite numerous are also given where clerical and typographical errors and peculiarities, including special translations, are reproduced in the edition prepared by the respondent; and the court is reminded in argument that cases have arisen where the strongest proof of copying consisted "in the coincidence of errors." (Jeremy, Eq. Juriad., 322.) Where the question is whether the defendant, in preparing his book, had before him and copied or imitated the book of the plaintiff, it is manifest, says Mr. Curtis, that this kind of evidence is the strongest proof, short of direct evidence, of which the fact is capable. (Curtis on C., 235; *Murray* vs. *Bogue*, 1 Drewry, 367; *Spiers* vs. *Brown*, 6 W. R., 353.) Other authorities may be cited where the presumptions arising from the identity of inaccuracies is carried much further, and where it is held that when a considerable number of passages are proved to have been copied by the copying of the blunders in them, other passages which are the same with passages in the original book must be presumed *prima facie* to be likewise copied, though no blunders occur in them. (*Mawman* vs. *Tegg*, 2 Russ., 394; *Longman* vs. *Winchester*, 16 Ves. Jr., 269.)

Coincidence of citation is also invoked by the complainant as evidence of copying; and the instances given as examples are many where the authorities are cited in the same way—that is, by volume and page, or by chapter and section, as the case may be, and from the same edition of the work, and from the same place.

Identity in the plan and arrangement of the notes, and in the mode of combining and connecting the same with the text, is also invoked by the complainant, as strongly supporting the charge of infringement; and it is quite apparent, on a comparison of the two books, that the instances of identity in that respect are numerous and pervading. Copyright may justly be claimed by an author of a book who has taken existing materials from sources common to all writers, and arranged and combined them in a new form, and given them an application unknown before, for the reason that in so doing he has exercised skill and discretion in making the selections, arrangement, and combination, and having presented something that is new and useful, he is entitled to the exclusive enjoyment of his improvement, as provided in the copyright act. (*Gray* vs. *Russell*, 1 Story, 11; *Lewis* vs. *Fullarton*, 2 Beav., 6; *Greene* vs. *Bishop*, 1 Cliff., 199; *Emerson* vs. *Davies*, 3 Story, 768; *Story* vs. *Holcombe*, 4 McLean, 309.) Books "made and composed" in that manner are the proper subjects of copyright; and the author of such a book has as much right in his plan, arrangement, and combination of the materials collected and presented, as he has in his thoughts, sentiments, reflections, and opinions, or in the modes in which they are therein expressed and illustrated; but he cannot prevent others from using the old material for a different purpose. All he acquires by virtue of the copyright is "the sole right and liberty of printing, reprinting, publishing, and vending such book" for the period prescribed by law. Others may use the old materials for a different purpose, but they cannot copy and use his improvement, which includes his plan, arrangement, and combination of the materials, as well as the materials themselves, of which the book is made and composed. (*Emerson* vs. *Davies*, 3 Story, 768; Curtis on C., 180; *Gray* vs. *Russell*, 1 Story, 17.)

Many other facts and circumstances are adduced by the complainant in support of the charge of infringement; but the classes mentioned will be sufficient for the present investigation, as it is not the purpose of the court to enter into the details of the evidence. Infringement in any and every form, as alleged in the bill of complaint, is denied in the answer; and the respondent, in addition to such denials, has presented in proof and in argument very elaborate and minute explanations of all the principal facts and instances adduced by the complainant in support of the charge of infringement. Separate examinations at this time of each one of the explanations so given would be impracticable, and any partial review of them in the opinion would necessarily be unsatisfactory, as it would afford ground for inference that the residue had been overlooked, or that they had not been duly considered. Suffice it to say, that they have all been read, studied, and made the subject of careful comparison with the facts and circumstances adduced by the complainant; but the conclusion of the court is that they are not of a character, speaking generally, to rebut the particular proofs of the complainant, to which it was intended they should be applied. But the respondent contends that, even if it be true that matters of fact, citations, and authorities have been borrowed to a considerable extent, he had a right to take them, as the use he made of them was substantially new, and different from that made by the complainant in the two prior annotated editions of the work, because they were used by him in illustrations of new and original propositions. Secondly, he contends that the complainant is not entitled to any decree on account of any use he has made of the matters of fact, citations, and authorities exhibited in those editions, because, as he insists, the use he so made amounts to no more than a fair and original abridgment of the former editions. The doctrine of new and different use in the law of copyright applies more particularly to the old materials, and not to the materials of a work like that of the last annotated edition of the complainant, where the materials collected are much abridged, and sometimes paraphrased and newly arranged, and combined with the text of the original work. Beyond all doubt he might take the old materials as found in the sources from which the matters of fact, citations, and authorities of the complainant were drawn, and use them as he pleased in illustration of new and original propositions, or for any other purpose not substantially the same as that to which they are applied in the annotated editions edited by the complainant; but he could not borrow the materials as therein collected and furnished, nor could he rightfully use the plan and arrangement, or the mode by which they are combined with the text, beyond the extent falling within the definition of fair use, which rule is only applicable to the materials, and not to the plan, arrangement, and mode of operation. Proper attention to the nature of the charge in the bill of complaint will show that the doctrine of new and different use is wholly inapplicable to the matter in issue between the parties, because the charge is that the respondent has borrowed the matters of fact, citations, and authorities collected and presented in the notes of the complainant, and not that he has made the same use of the old materials. On the contrary, the charge is that he has not consulted the old materials at all, but that he has borrowed the matters of fact, citations, and authorities exhibited in his book from the matters of fact, citations, and authorities as collected, arranged, and combined with the text in those two annotated editions. Even supposing the rule to be otherwise, and that a second writer may take bodily the matters of fact, citations, and authorities collected, arranged, and combined, as in the two annotated editions before the court, if the use he makes of the materials is substantially new and different, still the concession will not benefit the respondent, as his edition of the work, except the new materials collected and presented, occupies the same field and was designed for the same class of readers, and was "made and composed" for the same general purpose. Unsupported by the evidence, as the theory of fact involved in the proposition is, it is quite clear that it cannot furnish any defence for the respondent, even if the principle is correct. Argument to show that an author may have a copyright in his notes to an older work, though the materials collected are not new, is unnecessary, as the proposition is elementary, if it appear that they have never before been collected and embodied. (*Gray* vs. *Russell*, 1 Story, 11.)

The respondent's second proposition deserves more consideration, as it presents a defense applicable to the main issue involved in the pleadings. Concisely stated, the proposition is that, even conceding that he borrowed materials from the prior annotated editions to a considerable extent, still the quantity so taken and used did not amount to more than a fair and original abridgment of the former annotated editions. Third persons cannot make any use of a patented invention without the consent or license of the patentee, because he acquires, by virtue of his letters patent issued under the patent act, the full and exclusive right and liberty of making and using his invention, as well as of vending it to others to be used, for the term allowed by law; but the right secured to the author or proprietor of a book is only "the sole right and liberty of printing, reprinting, publishing, and vending such book," which, as construed by the courts, means the exclusive right to multiply copies for the benefit of the author or his assigns. (*Stephens* vs. *Cady*, 14 How., 336; *Reade* vs. *Lacy*, 1 Johns. and Hem., 526; *Millar* vs. *Taylor*, 4 Burr., 2311; *Stowe* vs. *Thomas*, 3 Am. L. Reg., 228.) Courts have sometimes supposed that the same rule of decision should be applied to a copyright as to a patent for a machine, and consequently that an abridgment of an original work made and condensed by another person without the consent of the author of the original work ought to be regarded as an infringement; but the language of the respective acts of Congress making provision for the protection of such rights is different; and the opposite doctrine has been too long established to be considered at the present time as open to controversy. (*Story* vs. *Holcombe*, 4 McLean, 309.) Whatever might be thought if the question was an open one, it is too late to agitate it at the present time, as the rule is settled that the publication of an unauthorized but *bona fide* abridgment or digest of a published literary copyright, in a certain class of cases at least, is no infringement on the original. (Phillips on C., 171; Newbery's case, Lloft R., 775; *Dodsley* vs. *Kinnersley*, Ambler, 403; *Whittingham* vs. *Wooler*, 2 Swanst., 428; *Giles* vs. *Wilcox*, 2 Atk., 141.)

Strong doubts are expressed by Mr. Curtis, whether the definition of an allowable abridgment, as given in the earlier classes, can be sustained, except as applied to such works as histories, or works composed of translations, and others of like kind; but it was decided in this court, in the case of *Folsom* vs. *Marsh*, 2 Story, 105, that an abridgment in which there is a substantial condensation of the materials of the original work, and which required intellectual labor and judgment to make the same, does not constitute an infringement of the copyright of the original author; and the court, as now constituted, is inclined to adopt that rule in cases where it also appears that the abridgment was made *bona fide* as such, and that it is not of a character to supersede the copyrighted publication. Unless it be denied that a legal copyright secures to the author "the sole right and liberty of printing, reprinting, publishing, and vending the book" copyrighted, it cannot be held that an abridgement, or digest of any kind, of the contents of the copyrighted publication, which is of a character to supersede the original work, is not an infringement of the franchise secured by the copyright. What constitutes a fair and *bona fide* abridgment in the sense of the law is, or may be, under particular circumstances, one of the most difficult questions which can well arise for judicial consideration; but it is well settled that a mere selection or different arrangement of parts of the original work into a smaller compass will not be held to be such an abridgment. (*Campbell* vs. *Scott*, 11 Sim., 38 and note; *Gyles* vs. *Wilcox*, 2 Atk., 141; *Folsom* vs. *Marsh*, 2 Story, 107.) Substantially the same views are expressed in the case of *Tinsley* vs. *Lacy*, 1 Hem. and Miller, 753; and the vice-chancellor in that case, in speaking of the authorities by which fair abridgments have been sustained, goes on to say that the courts have gone far enough in that direction, and adds that it is difficult to acquiesce in the reason sometimes given, that the compiler of an abridgment is a benefactor to mankind, by assisting in the diffusion of knowledge. Viewed in the light of these principles, it is quite clear that the book of the respondent, even if it could be regarded as an abridgment of the prior editions, must still be held to be an infringement of the same; but the court is of the opinion that it is not an abridgement of those editions, in any sense known to the law of copyright. Instead of being an abridgment of the prior editions, it is precisely what it purports to be, a reprint of the text of the author, with notes by a new editor; and the proofs are full to the point that he was employed to edit a new edition of the work, to supersede the antecedent editions annotated by the complainant. Instructed as he was to make no use of the complainant's notes, his principal defense still is that he complied with those instructions, and that he did not make any use of the notes in his edition beyond what is allowable as fair quotations from the published work of a prior author treating upon the same subject. Copying is not confined to literal repetition, but includes also the various modes in which the matter of any publication may be adopted, imitated, or transferred, with more or less colorable alterations to disguise the source from which the material was derived; nor is it necessary that the whole or even the larger portion of a work should be taken, in order to constitute an invasion of a copyright. Some use may be made by a subsequent writer of the contents of a book or treatise antecedently made, composed, and copyrighted by another person, in making and composing a new book upon the same subject, whether the contents of the antecedent book or treatise were wholly original, or were partly original, and partly made up of selections from other authors. Copyright differs in this respect from patent right, which admits of no use of the patented thing without the consent or license of the patentee. Persons making, using, or vending to others to be used, the patented article are guilty of infringing the letters patent, even though they may have subsequently invented the same thing without any knowledge of the existence of the letters patent; but the recomposition of the same book without copying, though not likely to occur, would not be an infringement. Coincidence, if perfect, is sufficient to prove the infringement of a patent, as the charge is that the defendant, if it be a machine, has made machines in the similitude of the patented machine, and with the same mode of operation. Copying is essential to constitute an infringement of copyright, but identity of contents, arrangement, and combination, is strong evidence that the second book was borrowed from the first, as it is highly improbable that two authors would express their thoughts and sentiments in the same language throughout a book or treatise of any considerable size, or adopt the same arrangement or combination in their publication. (*Reade* vs. *Lacy*, 1 Johns. and Hem., 526.) Great difficulty attends every attempt to define in definite terms the privilege allowed by law to a subsequent writer to use without consent or license the contents of a book or treatise antecedently made, composed, and copyrighted by another author; or to mark the boundaries of the privilege of such subsequent writer to borrow the materials in a book like the annotated editions of the complainant, where the materials have been selected from such a variety of sources, and where the materials so selected are changed and combined with certain chosen passages of the text of the original work, and in a manner showing the exercise of discretion, skill, learning, experience, and judgment. Decided cases are referred to where the principal criterion of determination is held to be the intent with which the person acted who is charged with infringement. Remarks to that effect are to be found in the opinion of the court in the case of *Carey* vs. *Kearsley*, 4 Esp. R., 170, and the decision in the case of *Spiers* vs. *Brown*, 6 W. R., 353, refusing the application for an injunction, turned to some extent upon the same consideration; but the vice-chancellor (now chancellor) refused to apply that doctrine in the subsequent case of *Scott* vs. *Stanford*, Law Rep., 3 Eq., 722, and explained the grounds of his ruling in the former case, which show that he would not sanction that rule in any case unless it appeared that the defendant had bestowed such mental labor upon what he had taken as to produce an original result. Evidence of innocent intention may have a bearing upon the question of "fair use," and where it appeared that the amount taken was small, it would doubtless have some probative force in a court of equity in determining whether an application for an injunction should be granted or refused; but it cannot be admitted that it is a legal defense where it appears that the party setting it up has invaded a copyright. (*Cary* vs. *Faden*, 5 Ves., 23; *Reade* vs. *Lacy*, 1 Johns. and Hem., 526; *Bramwell* vs. *Halcomb*, 3 Myl. and Cr., 738.) Few judges have devised safer rules upon the subject than Judge Story. He held that, to constitute an invasion of copyright, it was not necessary that the whole of a work should be copied, nor even a large portion of it, in form or substance; that if so much is taken that the value of the original is sensibly diminished, or the labors of the original author are substantially to an injurious extent appropriated by another, that is sufficient in point of law to constitute an infringement; that, in deciding questions of this sort, courts must "look to the nature and objects of the selections made, the quantity and value of the materials used, and the degree in which the use may prejudice the sale or diminish the profits, or supersede the objects of the original work." (*Folsom* vs. *Marsh*, 2 Story, 116.) Mere honest intention on the part of the appropriator will not suffice, said Vice-Chancellor Wood, as the court can only look at the result, and not at the intention in the man's mind at the time of doing the act complained of, and he must be presumed to intend all that the publication of his work effects. (*Scott* vs. *Stanford*, Law Rep., 3 Eq., 723; *Hodges* vs. *Welsh*, 2 Irish. Eq. R., 266.) Twenty years before that decision was made Mr. Curtis, in his valuable work on the law of copyright, expressed the same views, and this court entertains no doubt they are correct. (Curtis on C., 240.) Recent decisions afford more ample protection to copyright than those of an earlier date, and they also restrict the privilege of the subsequent writer or compiler in respect to the use of the matter protected by the copyright within narrower limits. Express decision in *Kelley* vs. *Morris*, Law Rep., 1 Eq., 697, is, that in the case of a map, guide-book or directory, or the like, where there are certain common objects of information which must, if described correctly, be described in the same words, a subsequent compiler is bound to do for himself what which was done by the first compiler; that he is not entitled to take one word of the information published without independently working out the matter for himself so as to arrive at the same result from the same common sources of information, and that the only use he can make of a previous publication of that kind is to verify his own calculations and results when obtained. Rights secured by copyright are property within the meaning of the law of copyright, and whoever invades that property beyond the privilege conceded to subsequent authors commits a tort, and is liable to an action. None of these rules of decision are inconsistent with the privilege of a subsequent writer to make what is called a fair use of a prior publication; but their effect undoubtedly is to limit that privilege so that it shall not be exercised to an extent to work substantial injury to the property which is under the legal protection of copyright. Reviewers may make extracts sufficient to show the merits or demerits of the work, but they cannot so exercise the privilege as to supersede the original book. Sufficient may be taken to give a correct view of the whole, but the privilege of making extracts is limited to those objects, and cannot be exercised to such an extent that the review shall become a substitute for the book reviewed. (*Story* vs. *Holcombe*, 4 McLean, 309.) Examined as a question of strict law, apart from exceptional cases, the privilege of fair use accorded to a subsequent writer must be such, and such only, as will not cause substantial injury to the proprietor of the first publication; but cases frequently arise in which, though there is some injury, yet equity will not interpose by injunction to prevent the further use, as where the amount copied is small and of little value, if there is no proof of bad motive, or where there is a well-founded doubt as to the legal title, or where there has been long acquiescence in the infringement, or culpable laches and negligence in seeking redress, especially if it appear that the delay has misled the respondent. (*Sweet* vs. *Cater*, 11 Sim., 580; *Tinsley* vs. *Lacy*, 1 H. and M., 752; *Spiers* vs. *Brown*, 6 W. R., 353; *Strahan* vs. *Graham*, 15 W. R., 487; *Bramwell* vs. *Halcomb*, 3 Myl. and Cr., 738; *Reade* vs. *Lacy*, 1 Johns. and Hem., 527; *Jarrold* vs. *Houlston*, 3 Kay and Johns., 717; *Lewis* vs. *Fullarton*, 2 Beav., 6; *Bell* vs. *Whitehead*, 17 L. T., 141; Curtis on C., 396; *Saunders* vs. *Smith*, 3 Myl. and Cr., 711.)

Guided by the rules of law, as already explained, the court, after having examined the whole case with care, is of the opinion that many of the notes presented in the edition edited by the respondent, whose case is under consideration, do infringe the corresponding notes in the two editions edited and annotated by the complainant, and that the respondent borrowed very largely the arrangement of the antecedent edition, as well as the mode in which the notes in that edition are combined and connected with the text. Judge Story held, in the case of *Emerson* vs. *Davies*, (3 Story, 768) that every author had a copyright in the plan, arrangement, and combination of his materials, and in his mode of illustrating his subject, if it be new and original; and it was also held, in *Greene* vs. *Bishop*, (1 Cliff., 199,) that there may be a valid copyright in the plan of a book, as connected with the arrangement and combination of the materials; and no doubt is entertained that both those decisions were correct; but it is a mistake to suppose that a subsequent writer can be held to have infringed a book where he has not borrowed any of the materials of which the book is composed. New materials are certainly the proper objects of copyright; and old materials, when subsequently collected, arranged, and combined in a new and original form, are equally so; and in either case the plan, arrangement, and combination of the materials are as fully protected by the copyright as the materials embodied in the plan, arrangement, and combination. Damages may be recovered in either of the supposed cases for the infringement of the property protected by the copyright;

but the property in the latter case consists chiefly, if not entirely, in the plan, arrangement, and combination of the materials collected and presented in the book, as any other person may collect from the original sources the same materials, and arrange and combine them in any other manner not substantially the same as that of the antecedent author. (*Barfield* vs. *Nicholson*, 2 Sim. and Stu., 6.)

Detailed specification of the instances of infringement, as shown by a comparison of the two books, would be impracticable, and will not be attempted; as the settled practice in equity is, where the works are voluminous and of a complex character, containing, as in this case, much original matter mixed with common property, the cause will, at some stage of the case, be referred to a master to state the facts, together with his opinion, for the consideration of the court. Much the better course is to make the references before the final hearing; but the parties in this case waived any reference at that stage of the cause, and elected to proceed to final hearing without any such report. Cases arise where the court, under such circumstances, would not order a reference, but would proceed to compare the books and ascertain the details of the infringement; but the case before the court is far too complex to admit of that course of action. (Curtis on C., 325; *Mawman* vs. *Tegg*, 2 Russ., 400; 2 Story Eq. Jurisp., § 941.) Details have been examined, as far as practicable, consistent with the claims of other official duties, but the judges are of the opinion that they should be further examined, and the results classified, before the court proceeds to determine the extent of the infringement, as the danger of injustice cannot well be avoided in any other way. New matter of value has been collected and presented by the respondent, and he has added much that is valuable in his references to events which have occurred since the publication of the last preceding annotated edition. Whatever may have been the rule in the earlier history of equity jurisprudence, it is now settled law in this court that a book may in one part of it infringe the copyright of another, while in other parts it may be entirely original and the proper object of a copyright; and in such a case it was held, in *Greene* vs. *Bishop*, (1 Cliff., 201,) that remedy will not be extended beyond the injury. Preceding that decision, the same rule had been adopted in *Story* vs. *Halcombe*, (4 McLean, 315,) in which the opinion was given by the late Mr. Justice McLean. Modern practice in the chancery courts of England is the same, as appears in the case of *Jarrold* vs. *Houlston*, (3 Kay and Johns., 724,) in which the opinion was given by Vice-Chancellor Wood, since promoted to the office of Chancellor. (*Kelly* vs. *Morris*, Law Rep., 1 Eq., 701; *Carnan* vs. *Bowles*, 2 Bro. Ch. R., 80; Curtis on C., 325.) Suggestion is made that it will be impossible to separate that which is original from that which is borrowed, and to some extent the suggestion may be of weight; but the court is of the opinion that the difficulties in that behalf, when the matters pass under the searching examination of a master, will be much less than is apprehended by the parties. Should the difficulty in any instance or class prove to be insurmountable, then the rule in equity is, that if the parts which have been copied cannot be separated from those which are original without destroying the use of the original matter, he who made the improper use of that which did not belong to him must suffer the consequences of so doing. If a second writer mixes the literary matter of another, which is under the protection of a copyright, with his own, without the license or consent of the proprietor, he must nevertheless be restrained from publishing what does not belong to him; and if the parts of the work cannot be separated, so that the injunction prevents also the publication of his own literary production so mixed with that of another, he has only himself to blame. (*Mawman* vs. *Tegg*, 2 Russ., 390; *Lewis* vs. *Fullarton*, 2 Beav., 11.) Extended application of that rule, it is believed, will not be required, in view of the proofs exhibited in the record, and of the facilities afforded by the comparison of the notes in the respective editions to separate what is original from that which has been copied.

Attention is called by the respondent to the fact that some of the notes in the edition edited by him are entirely original; that in others the material copied is much condensed, or the notes reduced to a mere reproduction of the authorities cited in the prior edition, and that other notes have been enlarged and improved by the addition of new matter, and, in view of those circumstances, he contends that the edition edited by him should be regarded as a new and original work; but the decisive answer to the first and last suggestion is, that no man is entitled to avail himself of the previous labors of another for the purpose of conveying to the public the same information, even though he may append additional information to that already published. (*Scott* vs. *Stanford*, Law Rep., 3 Eq., 734; 2 Story, Eq. Jurisp., § 940; 2 Kent. Com., 380 and 383; *Cary* vs. *Faden*, 5 Ves., 25 and note; *Wheaton* vs. *Peters*, 8 Pet., 591; *Bramwell* vs. *Halcomb*, 3 Myl. and Cr., 737.)

Additional remarks in respect to the alleged fact that the contents of the notes copied were condensed is unnecessary, as it is quite clear, as before explained, that the change made in that behalf is not of a character to afford the respondent any defence.

Supported by these reasons, the conclusions of the court are as follows:

1. That the complainant in a court of equity is the equitable owner of the notes in the two annotated editions described in the pleadings as arranged, and the mode in which they are combined and connected with the text.

2. That the title to the entire text, together with the title to the memoir and indices, is in the proprietor of the book, and not in the complainant, as alleged in the bill of complaint.

3. That there are notes in the edition edited by the respondent of substantial importance in point of number and the value of the materials which do infringe the equitable rights of the complainant, as explained and defined by the court.

4. That all the respondents had notice of the claim of the complainant, as explained and defined by the court.

5. That there are notes in that edition of substantial importance in point of number and the value of the materials which do not infringe any rights of the complainant.

6. That the notes in that edition consisting wholly of citations found in the corresponding notes of the complainant do infringe his rights, as explained and defined by the court, though many of them are unaccompanied by the extracts collected and presented in the next preceding edition.

7. That notes consisting of authorities or collections of authorities, copied in like manner as described in the preceding proposition, and without remarks or comments, do also infringe the complainant's rights, though they are found inserted in, or prefixed or appended to, notes otherwise not objectionable.

8. That notes of which the whole or some substantial and material part is condensed from the corresponding notes in the preceding edition, or from the extracts therein printed and published, without any marks of original labor, or of any such labor except the study of the note copied and adopted, do also infringe the complainant's rights, as explained and defined.

9. That notes wholly original do not infringe.

10. That notes partly original and partly copied from the preceding edition do not infringe, except for the matter copied, if it be practicable to ascertain and define the separate proportions and make the separation of the same; but if not, still the respondent, at the proper stage of the case, must be restrained from using the part copied.

11. That the cause must be referred to a master to examine the pleadings and proofs and report the extent of the infringement as adjudged by the court in this investigation, and also to examine and ascertain what, if any, other instances of the alleged infringements within the principles here explained are proved; and if any, to classify the same, and report the details, together with the reasons for his conclusions, for the consideration of the court.

12. That all other matters in the cause will be reserved until the coming in of the master's report.

13. That the cause is referred to Henry W. Paine as master, for his examination and report in the premises, in conformity to the opinion and directions of the court.

Equity suits for the infringement of a copyright are usually referred to a master before the final hearing, to ascertain whether the charge is proved, and, if so, for a final report as to the nature and extent of the infringement; and in such cases the general rule is, that the complainant, if he prevails in the suit, is entitled, if at all, to an injunction at the time the decretal order is entered, to restrain the respondent from any further violation of his rights, as the whole case is then before the court. Even when the case is heard before any such reference and report, if the charges of infringement are few and of a character that the extent of the infringement can be conveniently determined by the court, without sending the case to a master, the court, if the case be one where an injunction is the proper remedy, will order it at the same time that the decision is announced upon the merits. But where the cause comes to a final hearing without any such report, the court, if the charges of infringement are numerous and of a character to require extended examination before the extent of the infringement can be ascertained, will ordinarily send the case to a master for further examination and report in respect to all matters not previously adjudged by the court; and the general rule in such cases is, that the injunction will not be granted until the nature and extent of the infringement are fully ascertained and determined, as its effects and operation might work great injustice. Obviously the present case falls within the latter rule, and, therefore, an injunction will not be ordered until the court shall have acted finally upon the report of the master.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Any person may oppose either extension.

Hearings upon the respective applications are appointed for the days named in each case.

Arguments must be filed ten days before the day of hearing.

439.—Whole number, **31,443.**—**Folly-Machines.**—Granted to CHARLES H. DENISON, February 19, 1861. Application filed November 19, 1874. Testimony closes January 19, 1875. Hearing February 3, 1875.

441.—Whole number, **31,445.**—**Limekilns.**—Granted to RICHARD DONALDSON, February 19, 1861, and reissued May 19, 1863. Application filed November 18, 1874. Testimony closes January 19, 1875. Hearing February 3, 1875.

498.—Whole number, **31,502.**—**Machines for Breaking Coal.**—Granted to R. A. WILDER, February 19, 1861. Application filed November 18, 1874. Testimony closes January 19, 1875. Hearing February 3, 1875.

507.—Whole number, **31,511.**—**Lamps.**—Granted to CHAS. W. CAHOON, February 19, 1861, and reissued August 9, 1864. Application filed November 14, 1874. Testimony closes January 19, 1875. Hearing February 3, 1875.

521.—Whole number, **31,525.**—**Machines for the Manufacture of Hoe-Blanks.**—Granted to NATHAN BRAND, February 26, 1861, and reissued in two divisions, numbered 1,481 and 1,482, May 26, 1863. Application filed October 3, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

529.—Whole number, **31,533.**—**Weighing Apparatus.**—Granted to AUGUSTUS B. DAVIS, February 26, 1861. Application filed November 27, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

530.—Whole number, **31,534.**—**Scale-Beams.**—Granted to AUGUSTUS B. DAVIS, February 26, 1861. Application filed November 27, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

542.—Whole number, **31,546.**—**Polishing Iron Bars and Rods.**—Granted to BERNARD LAUTH, February 26, 1861. Application filed November 3, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

563.—Whole number, **31,566.**—**Drying Tunnels.**—Granted to FRANCIS H. SMITH, February 26, 1861; reissued June 30, 1868, July 11, 1871, and March 26, 1872. Application filed November 27, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

574.—Whole number, **31,578.**—**Machines for Folding Paper.**—Granted to WILLIAM H. MILLIKEN and JOHN MILLIKEN, February 26, 1861, and reissued in two divisions, numbered 3,785 and 3,786, January 4, 1870. Application filed October 26, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

575.—Whole number, **31,579.**—**Corn-Planters.**—Granted to FRANCIS B. PRESTON, February 26, 1861. Application filed November 27, 1874. Testimony closes January 26, 1875. Hearing February 10, 1875.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date January 19, 1875.]

8,008.—Advertising-Desk.—GARRETT E. CARHART, Washington, D. C. Application filed November 25, 1874. Term of patent 3½ years.

8,009.—Cooking-Ranges.—LUTHER W. HARWOOD, Troy, N. Y., assignor to Fuller, Warren & Co., same place. Application filed January 2, 1875. Term of patent 7 years.

8,010.—Street Lantern and Post.—RICHARD B. HEWITT, Philadelphia, Pa. Application filed December 18, 1874. Term of patent 3½ years.

8,011.—Inkstand-Base.—JAMES H. JOHNSON, Newark, N. J., assignor to JOHNSON MANUFACTURING COMPANY, same place. Application filed December 1, 1874. Term of patent 3½ years.

8,012.—Parlor Cooking-Stoves.—NICHOLAS S. VEDDER and FRANCIS RITCHIE, Troy, N. Y., assignors to NICHOLAS S. VEDDER, same place.—Case A. Application filed December 30, 1874. Term of patent 3½ years.

8,013 to **8,017**, inclusive.—**Center-Piece.**—SAMUEL KELLETT, San Francisco, Cal.—Nos. –, 2, 3, 4, 5. Applications filed January 2, 1875. Term of patents 14 years.

8,018.—Casing of Soda-Water Apparatus.—FRANK H. SHEPHARD and EMIL SCHWAB, Lowell, assignors to JAMES W. TUFTS, Madford, Mass. Application filed January 6, 1875. Term of patent 14 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Certificate bearing date January 19, 1875.]

2,171.—Shirts.—MARKEWITZ & PRICE, New York, N. Y. Application filed December 11, 1874.

"the representation of an oval medallion, and the words 'Columbia Dress Shirt.'"

2,172.—Perfume.—MILLER BROTHERS, New York, N. Y. Application filed December 24, 1874.

"'Amaranth Bouquet.'"

2,173.—Carpet-Warp.—HENRY E. VOGELL, New York, N. Y. Application filed December 30, 1874.

"the figure or design of a four-sided pyramidal-shaped weight. Upon one face or side of the weight is the word 'Standard.'"

2,174.—Coffees.—BARKLEY & HASSON, Baltimore, Md. Application filed January 14, 1875.

"'CAW-PHY.'"

2,175.—Coffees.—BARKLEY & HASSON, Baltimore, Md. Application filed January 14, 1875.

"a picture, in broad oval, of a plantation scene, with negroes gathering and carrying coffee to an open shed above which a palm-tree spreads its leaves, and the words 'Plantation Ground Coffee.'"

2,176.—Pumps.—W. & B. DOUGLAS, Middletown, Conn. Application filed January 12, 1875.

"'THE AQUARIUS.'"

2,177.—Pumps.—W. & B. DOUGLAS, Middletown, Conn. Application filed January 12, 1875.

"'THE PENDULUM.'"

2,178.—Pumps.—W. & B. DOUGLAS, Middletown, Conn. Application filed January 12, 1875.

"'THE SWAN.'"

2,179.—Perfumery, Soap, &c.—EDDY BROTHERS, New York, N. Y. Application filed December 28, 1874.

"'Royal Dagmar.'"

2,180.—Paints.—HAINEMANN & STEINER, New York, N. Y. Application filed November 30, 1874.

"a figure of justice."

2,181.—Fire-Kindlers and Prepared Fuel.—JOSEPH D. HUSBANDS, Jr., St. Louis, Mo. Application filed January 14, 1875.

"'Boss.'"

2,182.—Table-Sauce.—LEWIS & CO., Chicago, Ill. Application filed January 12, 1875.

"'Warwickshire Sauce.'"

2,183.—Cigars.—J. FRANK MILES, Boston, Mass. Application filed January 8, 1875.

"'CHARLES SUMNER.'"

2,184.—Pile-Cure.—MONTGOMERY & CO., Philadelphia, Pa. Application filed January 12, 1874.

"'Spohr's New Pile-Cure.'"

INDEX OF INVENTIONS PATENTED JANUARY 19, 1875.

	Class No.	No. of Patent
Acid, apparatus for concentrating and evaporating sulphuric, Fauré and Kessler	35	158,924
Alarm apparatus, electro-magnetic fire, M. G. Farmer, (reissue)	50	6,244
Alarm, burglar, A. C. Taylor	24	158,813
Alarm, electro-magnetic burglar, R. J. Brittain	50	158,897
Auger, cotton, A. O. Schultz	41	158,905
Auger, earth, Davis and Mills	51	158,919
Baby tender, E. Post	143	158,977
Bag holder, U. E. Lemon	57	158,849
Bale tie, Flinn and Wier	7	158,836
Bales, hay, straw, and other, L. Dodge, (reissue)	7	6,243
Barrel, R. W. Baylor	40	158,777
Barrels, coating for oil, M. W. Quick	40	158,978
Bath attachment, T. D. Woolsey	8	158,877
Bath, electro-therapeutic, Becker and Hoffman	50	158,890
Bedstead, invalid, Cosby and McGovern	62	158,913
Bedstead, toilet stand, Schwarts and Wood	62	158,966

	Class No.	No. of Patent.
Bee hive, A. B. Bowen	9	158,826
Blader, temporary, Guichetean and Perin	15	158,839
Blacking, water proof liquid, E. Clark	92	158 907
Blanket or lap robe, horse, G. V. Shepard	72	158,990
Boiler for heating purposes, E. and W. B. Mayer	147	158,854
Bolt bearing, king, G. J. Orr	31	158 971
Boom, sheer, W. B. Culbertson	13	158,917
Boot and shoe crimping machine, Farnsworth and Barrett	16	158,789
Boot and shoe crimping machinery, L. H. Farnsworth	16	158,788
Boot and shoe heels, machine for forming rands for, T. Bullock	16	158,901
Boot and shoe soles, die for flanging, F. D. Ballou	16	158,882
Boot jack, H. N. Conklin	16	158,911
Boring machine, Z C. Phillips	173	158 809
Bread slicer, W. A. Brown	88	158 827
Brick laying machine, C. Franke	4	158,838
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Buckle, T. L Wiswell	23	158,909
Burner, Argand gas, T. Clough	64	158,832
Butter worker, J. Thompson	45	159,000
Butter worker, Yaw and Mitchell	45	158,820
Calculator, mechanical, H. B. Martin	42	158,853
Calf weaner, W. Sutton	144	158,814
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Car coupling, A. Coulter	122	158,915
Car coupling, W. O Gunckel	122	158,935
Car coupling, J. J. Lahaye	122	158,948
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Carriage jump seat, J. R. Patten	31	158,864
Carriages, axle for children's, H. W. Warner	31	158 815
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Chair, rocking, C. Streit	62	158,869
Chimney cap, A. B. Hussey	4	158,942
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Chopper, meat, D. Peters, (reissue)	25	6 237
Cloth cutting machine, A. Warth, (reissue)	38	6,238
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Coal box, J. Forster	154	158,837
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Comb, M. Dittenhoeffer	161	158 922
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Cutting apparatus, meat, J. A. Morrell	25	158,805
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Dental plugger, pneumatic, G. W. Nichols	46	158,863
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Egg carrier, A. H. Bryant	116	158,928
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Fare box, R. M. Robinson	42	158,982
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Fire arm, breech loading J. Broughton	18	158,899
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Fracture apparatus, arm, D. Bissell	156	158,894
Fracture box for legs, D. Bissell	156	158,967
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Furnace, hydrocarbon, C. M. Gearing	149	158,931
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Game apparatus, F. W. Smith	143	158,991
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Gas lighting apparatus, electro-magnetic, E. E. Bean	64	158,889
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Gridiron, J. H. Mitchell	88	158,838
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Hair cutter's gage, A. G. Wilkins	161	159,004
Hame attachment, Myers and Spicer	72	158 860
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Harvester, G. H. Clark	74	158,908
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Hoisting apparatus, Plantz and Sternberger	79	158,976
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Horse detacher, P. Arnold	31	158,774
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Indicator, station, F. G. Johnson	121	158,798
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Plow, gang, G. Moore	114	158,859
Pocket book, C. Lieb	146	158,955
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Press, cotton, T. J. M. Jewell	7	158,845
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TITLES, DRAWINGS, AND CLAIMS

OF

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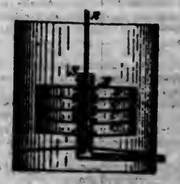
158,772. PREPARATION OF FERTILIZERS. B. Ackerman, New York, N. Y. [Filed Dec. 14, 1874.]



The within-described banded manure, composed of the excrementary matters A and straw or litter D, confined in an approximately-rectangular form by the bands C, so as to prevent the ventilating-grooves a, substantially as and for the purposes herein specified.

158,773. FLUID GAUGE AND MEASURER. G. W. Aldrich, Syracuse, N. Y., assignor of one-half his right to Wm. H. Bond, same place. [Filed June 17, 1874.]

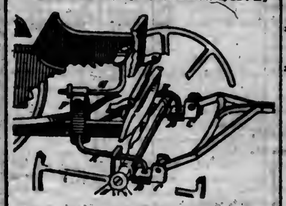
Brief.—A series of measuring-chambers of determinate size are arranged one above the other about a central supply-tube, and have at top and bottom openings into said tube. The chambers being full, a piston fitting the tube is raised, so as to uncover successively the openings, and allow the liquid to flow from one or more of the chambers, according to the height to which the piston is raised. The necessary air-supply is admitted through the hollow piston-rod.



1. The measuring-chambers C C C, when combined with the supply-tube S and the piston-head H, substantially in the manner described.

2. The hollow piston-rod R, when used in combination with the piston-head H, and the measuring-chambers C C C, and the supply-tube S, substantially in the manner set forth.

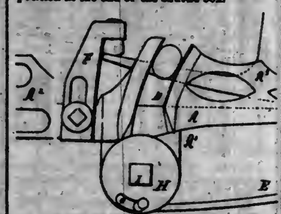
158,774. HORSE-DETACHERS. P. Arnold, Elizabethtown, Ky. [Filed Dec. 4, 1874.]



In a device for detaching horses from vehicles, the combination of the spring-clevis F H, treadle G, and pins E with the couplings C D of the tongue or shafts, substantially as and for the purposes specified.

158,775. PICKING MECHANISMS FOR LOOMS. Benjamin F. Bean and Chas. H. Farnham, Manchester, N. H. [Filed Nov. 16, 1874.]

Brief.—To check the back movement of the picking-stick, the bed on which the rocker rests is provided with an elastic stop, against which the toe of the rocker is arranged to strike, and the bed has side flanges and a curved guiding-way, in which works a projection on the toe. An adjustable spring under the bed, and attached to the rear end of the rocker, serves to return the stick to its position at the end of the shuttle-box.



1. The combination, with the rocker and its bed, of an elastic stop, adapted to operate in connection with the rocker, substantially as and for the purposes set forth.

2. The rocker and its guiding projection located near its forward end, combined with the bed, having a curved guiding-way and side flanges, substantially as described.

3. The combination, with the rocker, constructed as described, its strap, and the frame or bed, having side flanges, of the long adjustable spring E, extending horizontally along under the bed or frame, and terminating at or near the back end of the rocker, as set forth.

4. The combination of the bolt I, square next to its head, the slotted washer, having pins b', the cam C, and the hanger A', provided with projections for adjusting the force of spring E, as set forth.

5. In combination, the flanged bed or frame, having curved guiding-way, the arm F, and check, and the rocker with its guiding projection, all substantially as described.

158,776. SWITCH-SIGNALS. Jas. A. T. Bird, Chicago, Ill. [Filed Apr. 10, 1874.]

The rotary posts I, F, J, and J', each provided with a shouldered collar and with a pulley or rag-wheel, both rigidly attached thereto, the signal-boards mounted on the said posts, and operating in connection with the said shoulders, the ropes or chains arranged over the said pulleys or wheels, and connected to the bell-cranks, and the switch-rails, also

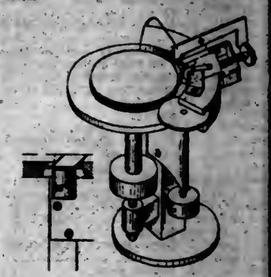


connected to the said bell-cranks, all combined and operating together, in connection with adjustable extensions on the train, substantially as and for the purposes specified.

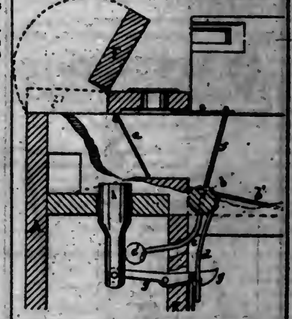
158,777. BUTTER-PATCHING MACHINES. H. Bornhardt, New Haven, Conn. [Filed July 14, 1874.]

1. A barrel-cylinder composed of straight staves A A, said staves being united by metal rings B B, or their equivalents, substantially as described.

2. As a new article of manufacture, a barrel constructed, as described, and provided with a head formed in two sections, D D', and fastened by a key, F, substantially as set forth.



158,778. ANIMAL-TRAPS. Hiram C. Burk, Zoar Station, Ohio. [Filed Sept. 24, 1874.]

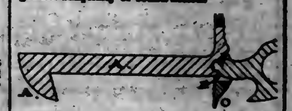


1. The combination, with the loop a, axle b, and weight c', of the arms f and d, trigger g, and actuating-treadle h, as and for the purposes specified.

2. The combination, with the loop a, arms f, and treadle b', of the axle b, arms d, trigger g, and weight g', as and for the purposes specified.

158,779. SHUTTER-FASTENERS. J. Christie, New Orleans, La. [Filed June 6, 1874.]

Brief.—Simple face-plate, fewer pieces, and greater simplicity of construction.



HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

The herein-described blind or shutter fastener, consisting of the single face-plate O, recessed on the outside at C and inside at C', and the catches A B, meeting within the face-plate, when the catch A is formed at its inner end with a half-circular cut or recess, D, and a projection or orifice-closer, E, all substantially as shown, for the purpose set forth.

158,780. FASTENING FOR THE MEETING-RAILS OF SASHES. J. Christie, New Orleans, La. (Filed June 6, 1874.)

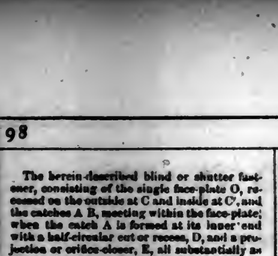
Brief.—A hooked arm having a weighted knob is hinged to fastening-plates, which are attached conversely to the meeting-rail of the upper sash. A slotted clasp is hinged to a screw-shank inserted in the meeting-rail of the lower sash, and with this clasp the hooked arm engages, its weighted knob preventing the striking of the glass, and also serving to hold it on an incline outward, to prevent interference with the free movement of the sashes.



The combination of the weighted hooked arm C, hinged to plates A B, with the slotted clasp E, hinged to screw-shank F, all substantially as described and shown, for the purpose set forth.

158,781. AUTOMATIC TOYS. Robt. J. Clay, Boston, Mass. (Filed June 10, 1874.)

Brief.—Represents a toy figure which appears to drive a sewing-machine, but is driven by mechanism inside the machine instead.



1. The automatic toy, substantially as described, consisting of the seated figure or doll A, the rock-shaft c, and one or more pedals, b b, the sewing-machine frame D, and the vibratory needle-arm or lever E, all applied together and to the table or case B, and provided with mechanism for operating them, essentially as explained.

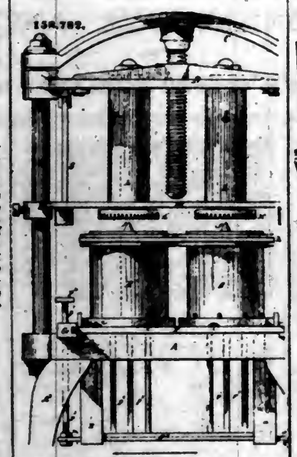
2. The combination of the stop-rod c' and the automatic toy, consisting of the seated doll or figure A, the rock-shaft c, one or more pedals, b b, the sewing-machine frame D, vibratory needle-arm or lever E, and the clock mechanism H, all being arranged and applied substantially as specified.

158,782. MECHANISMS FOR MOLDING PAPER-PULP. Jehiel C. Coburn and Leonard Coburn, Worcester, Mass.; said Jehiel C. Coburn assignor to said Leonard Coburn. (Filed Dec. 10, 1873.)

1. The combination, with the bed A, plates D, matrix-chambers E, and dies K, of the oscillating-plate F', rods F' F', guide-plate M, and spring-latches S, substantially as and for purposes set forth.

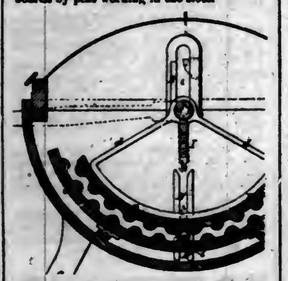
2. The combination, with the internal cylinder I, of the grooved cone J, and conical point or cap f, to end for the purpose stated.

158,782.



158,783. WASHING-MACHINES. Mathias Commeroe, Jersey City, N. J. (Filed Aug. 26, 1874.)

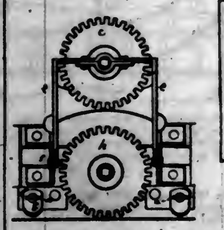
Brief.—The wash-boards are caused to oscillate in opposite directions by means of the slotted levers, which are pivoted on the inner sides of the tub, and connected with the wash-boards by pins working in the slots.



The combination, with the oscillating wash-boards C D, of the pivots c, slotted levers H, pins b b, and springs I, substantially as and for the purpose herein set forth.

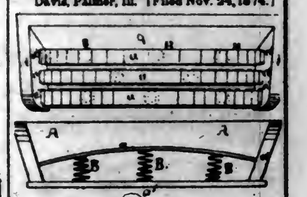
158,784. MOUNTED HORSE-POWERS. Franklin D. Coy, Marseilles, Ill., assignor to H. A. Pitts' Sons Manufacturing Company. (Filed July 2, 1874.)

Brief.—The frame, suspended from the rear, is held in place during the operation of the machine by fastening devices.



In a mounted horse-power, the buttons g g and set-screws c' c', in combination with the hangers p and wheels c and h, all constructed and arranged as and for the purpose set forth.

158,785. VEHICLE-SEATS. Valentine E. Davis, Palmer, Ill. (Filed Nov. 24, 1874.)

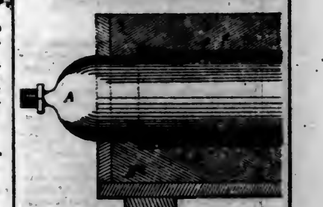


1. Strips a, supported by springs B, and constructed and combined to operate in mortises a', as and for the purpose set forth.

2. Frame A, mortised at a' in combination with strips a, springs B, and bottom A', as and for the purpose set forth.

158,786. LINING PUMP-CYLINDERS. Joseph W. Douglas, Middletown, Conn., assignor to W. and B. Douglas, same place. (Filed July 13, 1874.)

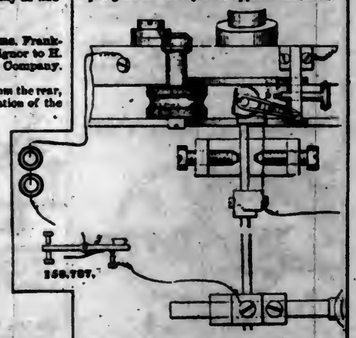
Brief.—A tinned sleeve is placed around the soft-metal lining, to prevent fusing the same when the molten metal is poured.



The combination of the metal sleeve F, the lining-cylinder A, and the iron cylinder, as described.

158,787. TELEGRAPH APPARATUS. Thomas A. Edison, Newark, N. J. (Filed Aug. 13, 1874.)

Brief.—"Electromotograph" in which the mechanical action of an armature is obtained by electro-chemical decomposition. A pivoted stylus, included in a circuit, is carried in one direction by the friction of a moving fillet of chemically-prepared paper. When the current passes the friction is lessened by the decomposition effected thereby, and a retractile spring moves the stylus in opposite direction.



158,787.

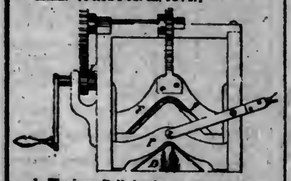
1. A moving surface in contact with a yielding vibrator, through which pulsations of electricity are passed when such surfaces in contact are of such a character that the friction will be varied by the electrical condition, substantially as set forth.

2. A vibrator, in combination with means for adjusting the pressure of the vibrator on the moving surface, and of the yielding force that moves the vibrator in the opposite direction to that derived from the moving surface, substantially as set forth.

3. The combination of a yielding vibrator, operated substantially as set forth, with a secondary circuit actuated by such vibrator, substantially as specified.

4. A telegraph instrument with a vibrator that is controlled by electro-chemical decomposition.

158,788. MACHINERY FOR CRIMPING BOOTS AND SHOES. Luther H. Farnsworth, Hudson, assignor to John S. Folsom, Boston, Mass. (Filed Feb. 12, 1874.)



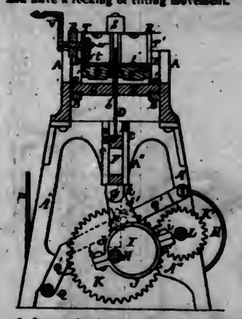
1. The jaws D D, having convex elastic inner faces, in combination with the angular rods b and screws d, substantially as described, for the purpose specified.

2. In a crimping-machine, the vertically-sliding forms P P, located on each side of the presser F, provided with corrugated bottoms, and operated simultaneously by the bifurcated lever R R', substantially as described, for the purpose specified.

3. In a crimping-machine, the combination of the laterally-adjustable jaws D, corrugated forms P P', and presser F, all arranged and operating substantially as described.

158,789. BOOT AND SHOE CRIMPING MACHINES. Luther H. Farnsworth, Hudson, and Thomas Barrett, Boston, assignors to J. S. Folsom, Boston, Mass. (Filed Aug. 22, 1874.)

Brief.—The bed-plate, inclined from the ends inward to an angle, is slotted longitudinally, the leather to be crimped laid upon the plate over the slot, and, by means of a "former" resting upon a vertically-sliding holder, the leather is forced up between jaws or clamps, which are held within an adjustable frame directly above the bed-plate. The jaws or clamps are provided with an elastic binder, and have a rocking or tilting movement.



1. In a crimping-machine, an adjustable bed-plate and frame, the former having a central longitudinal slot, and both inclined from the ends downward to an angle, and having together a lateral and longitudinal or universal rocking or tilting movement, substantially as specified.

2. In a crimping-machine, an adjustable frame having a permanent clamp and jaw, T, and formed to receive and allow the lateral adjustment of a clamp and jaw, T, both the clamp and jaws being inclined from the ends downward to an angle, and formed to hold adjustable rubber or other elastic or yielding binders, substantially as described.

3. The bars or rods G, provided with springs q and nuts S, and supported as shown, so as to be raised and lowered at the ends of a crimping-machine frame, in combination with an adjustable frame, E, having clamps and jaws T T', all constructed and operating substantially as and for the purposes herein set forth.

4. The frame F, provided with an adjustable former, in combination with slotted bed-plate C, clamps and jaws T T', and adjustable frame E, all substantially as and for the purposes described.

5. In combination with a vertical sliding frame, F, adjustable connecting arms or rods J', eccentrics I, and shaft H, all arranged and operating substantially as specified.

6. In a crimping-machine, the segmental face cams K on shaft H, in combination with friction-rollers g, rods or bars G, and frame E, all constructed and operating substantially as and for the purposes described.

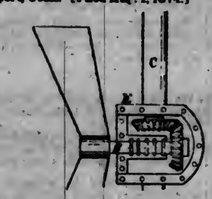
7. In combination with the movable frame E, having clamps and jaws T T', the rods G and foot-treadle Q, all substantially as and for the purpose set forth.

8. In combination, the sliding frame F, connecting arms or rods J', eccentrics I, shaft H, cog-wheels K K', shaft L, wheel M, chuck N, yoke m, rod O, and handle P, all arranged and operating substantially as and for the purposes specified.

158,790. TIN-LINING METALLIC PIPES. Jas. Ferguson, Bridgewater, Mass. (Filed Nov. 21, 1874.)

The process of coating or covering the external portions of metallic pipes, cocks, &c., which are to be tinned or zinced internally by immersing them in a molten bath of tin or zinc, with a mixture of salt and whiting to prevent the molten tin or zinc from adhering to the outer portions of such pipes or other metallic articles, as set forth.

158,791. LUBRICATING DEVICES FOR MARINE PROPELLERS. Frank G. Fowler, Bridgeport, Conn. (Filed Aug. 1, 1874.)



1. The mode of lubricating a submerged propeller-shaft and gearing attached thereto, by providing the same with a close case, and connecting it with a funnel, through which the case is filled with mercury and tar, oil, or similar compounds, which expel the sea-water from the case, and from contact with the gears and bearings, and lubricate the same, substantially as set forth.

2. The mode of expelling sea-water from and around propeller-shafts and gearing attached thereto, by introducing within a case or sleeve that surrounds such parts, mercury, fresh water, and oil, lard, or tar, the latter either separate or combined, substantially as shown.

3. The combination of the step-box H, and shaft G, and sleeve C, attached rigidly to the case E, whereby the friction on engine-shaft is greatly lessened, and the case with which the boat may be turned greatly enhanced, as shown and described.

158,792. PRINTERS' SHOOTING-STICKS. Jas. H. Frey, Cleveland, Ohio, assignor to Allan C. Bakewell & Co., Pittsburg, Pa. (Filed Nov. 3, 1874.)

Brief.—A shooting-stick with sleeve-handle broader than driving end, and a square end between driving-shoulders, to drive down quoins.

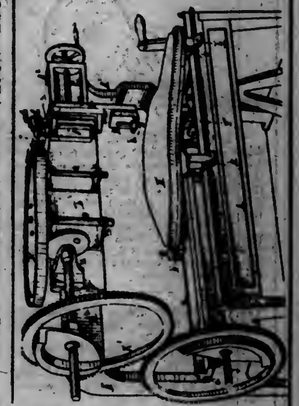


1. In combination with a shooting-stick having a driving head, H, a handle, I', consisting of a sheath or sleeve of a material that will not deface the type, and provided with enlarged portions c' c' and flattened surfaces d', substantially as and for the purpose specified.

2. A shooting-stick tapered from side to side, and having right-angled shoulders upon the opposite sides, having a square-faced projection suitable for driving down quoin or furniture, substantially as specified.

158,793. MACHINES FOR CUTTING IRREGULAR FORMS. Geo A. Haley, Chicago, Ill. (Filed Oct. 2, 1874.)

Brief.—The table which carries the material revolves, and the molding is cut by a tool, which is kept at right angles to its work by a system of irregular gears.



1. The tool-holder M, as described and shown, oscillating on an upright spindle, y, and operated by a grooved cam, P, so as to be always at right angles with the cut, as and for the purpose set forth.

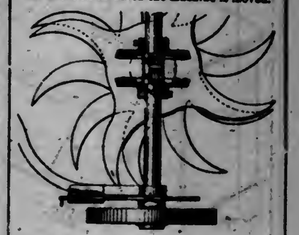
2. The combination of the table E, supporting the cam-plate H, and reciprocating upon the ways a of the guard-wheels b on the corners of said table, and flanges a' of the frame A, as set forth.

3. The combination, with the table E, of the stirrup F, stop c, shaft G, gear I, shafts J J', eccentric oval gears K K', shaft M, and bevel-gears O O', for communicating an irregular rotary movement to the upper cam-plate P, mounted on the cross-head L, substantially as described.

4. The combination, with the adjustable cross-head L and cam-plate P, of the rock-shaft Q, gored segment R, and arm R', the tool-holder M, head M', feed-screw t, shaft f, and pinion l, as and for the purposes set forth.

158,794. LAWN-MOWERS. S. Ashton Head, Philadelphia, Pa. (Filed Nov. 28, 1874.)

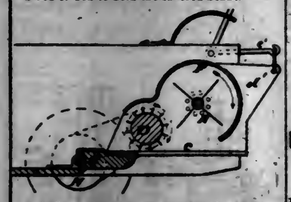
Brief.—Arrangement of devices whereby the cutting mechanism is operated continuously in the same direction, irrespective of the direction in which the machine is moved.



The combination, in a lawn mower, of a driving-axle, bevel-gears loose thereon, and having fair-but-teeth set in respectively reverse directions, spring-pawls to engage with the ratchet-and bevel-gears, a bevel-pinion and rotating cutter, and a stationary cutter, substantially as set forth.

158,795. CLOVER-HARVESTER. Clinton R. Hardy, Lexington, Ind. [Filed July 13, 1874.]

Brief.—A vertically-adjustable cutting or plaiting apparatus, moving concentric with the supporting-axle, is used in connection with a tool or box to hold the severed heads.

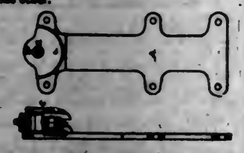


1. In a clover-harvester, the frame composed of the cross-bar C and side frames, *d d'*, for bearing the operative mechanism, consisting of the rod D and teeth *e e*, hinged on a line joining the centers of the ground-wheels B B, and operated by the lever *c c'*, substantially as shown and specified.

2. The fan E and housing F, in combination with the rod D, teeth *e e*, pulleys G H I J, and ground-wheels B B, constructed to operate together substantially as shown, and for the purposes set forth.

158,796. DOOR-HANGERS. John Herald and Edward S. Bunnay, Binghamton, N. Y. [Filed Nov. 7, 1874.]

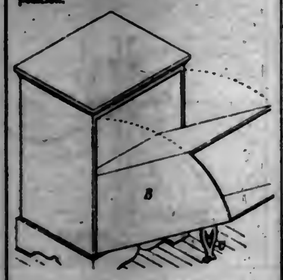
Brief.—Simplicity of construction being attained by casting the two parts complete, a pin on one passing entirely through the roller, and taking its bearing in a hollowed recess of the other.



The hanger-plate A and roller-pin B, of one piece, in combination with the cap-piece C, having a hollowed recess for the end bearing of the pin, and the roller D, constructed substantially as herein described, for the purpose set forth.

158,797. COAL-BOXES. James L. Holliday, Wheeling, W. Va., assignor of one-half his right to J. A. Holliday, same place. [Filed Dec. 24, 1874.]

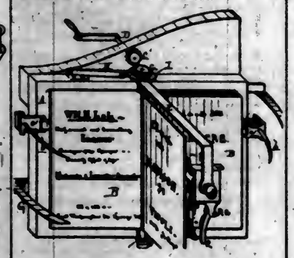
Brief.—When the hinged receptacle is tilted, the supporting-leg drops into a perpendicular position.



The combination of the case A, the coal-compartment B, and the movable leg C with such hinge, and with the hinges D D and the hinge fastening the movable leg to the front of the coal-compartment, substantially as and for the purpose hereinbefore set forth.

158,798. STATION-INDICATORS. F. G. Johnson, Chicago, Ill. [Filed Nov. 10, 1874.]

Brief.—The indicating-leaves are arranged in book form, and each provided with a yield ing tag, which is grasped by the leaf-turning mechanism, pivoted at *d* to the lower end of the vibrating arm. One leaf at a time may be taken off either book, according to the direction in which shaft C is rotated.



1. The combination, with the bracket A, having rods *b*, of the book B, provided with tags *a*, connected to the leaves of the same by rubber straps, each having an eye to slip over said rods, as set forth.

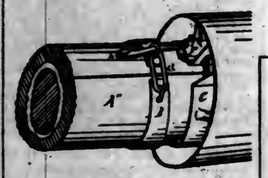
2. The combination, with the bracket A, of the shafts C D, and arm E, adapted to be vibrated as described, and having attached to its extremity a locking and leaf-turning device, substantially as set forth.

3. The combination, with the locking and leaf-turning mechanism fastened to the arm E, vibrated as shown, of the segment G, as and for the purpose set forth.

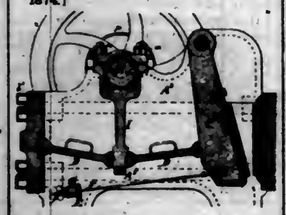
158,799. SAFETY-RODS FOR REVOLVING SHAFTING. Marquis R. Jones, Darien, Wis. [Filed June 26, 1874.]

Brief.—Cylindrical casing is placed around universal joints in revolving shafting, to cover the joint when the shaft runs at any angle.

In combination with the boxing A'', the cylinder B', rim C, arms *c*, flat *a*, pin *b*, and lugs D, substantially as and for the purpose specified and described.



158,800. ORE-CRUSHING MACHINES. S. B. Krom, New York, N. Y. [Filed Mar. 26, 1874.]



1. The hollow washers *b'*, on the tie-bolts B, in combination with the stout framing A A' A^2, and with the parts C D D I H, as specified.

2. The breaking-cups *m*, in combination with the crank H, link I, toggles D D, and crushing-jaw C, as specified.

3. In a crushing-machine having a vibrating jaw, C, and operating shaft H, the fly-wheel P, connected to the said shaft by a friction-coupling, *p*, as and for the purposes specified.

4. The exchangeable toggles D D, having the supporting-heads *d d*, in combination with the crushing-jaw C and link I, as specified.

5. The crushing-machine described, operating by a vibrating jaw, C, crank H, link I, and toggles D, and having the friction-coupling *p* to the fly-wheel P, so combined and arranged that the breaking of either set or the slipping of the friction-coupling will relieve the machine from overstrain, as herein specified.

6. The combination of the sectional framing A^1 A^2 and longitudinal tie-bolts B with the ore-crushing jaw C, when the tie-bolts are arranged parallel to, and directly in the line of, the strain, as herein specified.

158,801. PLATES FOR GUIDING A HAND-KNIFE IN CUTTING CLOTH, &c. Jacob Lachmann, Philadelphia, Pa. [Filed Oct. 16, 1874.]

Brief.—The roughened and hardened edges sharpen the knife as it is drawn over them in cutting.

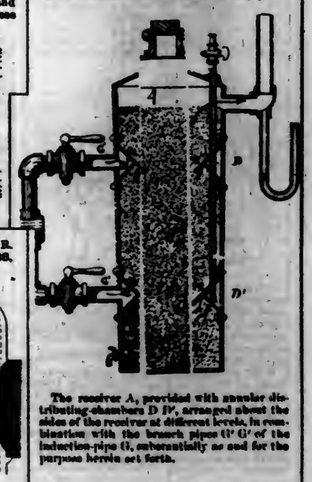


A pattern-plate for guiding a hand-knife in cutting out layers of leather, cloth, or other fabric, when the boundary edges of said plates are of steel roughened and hardened, substantially as and for the purposes set forth

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158,802. GAS-CARBURETING MACHINES. Thos. J. Martin, Philadelphia, Pa., assignor of two-thirds his right to D. W. Stuart, same place, and W. B. Prall, Washington, D. C. [Filed Dec. 4, 1874.]

Brief.—The carbureting-receiver is nearly filled with porous absorbent material, and hydrocarbon fluid is supplied till it rises to the lower end of a vent and indicator pipe.



The receiver A, provided with annular distributing-chambers D D', arranged about the sides of the receiver at different levels, in combination with the branch pipes G' G'' of the induction-pipe G, substantially as and for the purpose herein set forth.

158,803. VEGETABLE-SLICERS. B. Monsees, New York, N. Y. [Filed May 27, 1874.]

Brief.—The machine may be secured to the edge of a table or bench. The vegetable is pressed upon the upper surface of a disk with cutters by a follower within a cylinder. This disk and its operating pinion are held between the points of two antagonizing screw-bolts, and may be adjusted by the movement of a nut above and below them, and the revolution of the screws.



The horizontal revolving cutter-disk contained between the screws *n* and *o*, in combination with the frame *c d*, bent arm 3, and gear-wheels, as set forth.

158,804. MEAT-CUTTING APPARATUS. Jas. A. Morrell, New York, N. Y. [Filed Dec. 26, 1874.]

Brief.—A cogged wheel attached beneath the revolving tub and a horizontal series of inclined circular saws are operated at appropriate speeds by gearings from a single wheel; the inclined position of each circular knife causing it to operate upon a varying line of surface on the block or sub-bottom, an abutment springing from a fixed central shaft serving to arrest the meat and throw it back to the cutters.



1. The circular cutters K, set obliquely on the shaft, substantially as set forth.

2. In combination, the oblique circular cutters K and the revolving bottom C.

3. In combination with the oblique circular cutters K, the revolving bottom C and the stationary guide L, substantially as set forth.

158,805. MEAT-CUTTING APPARATUS. Jas. A. Morrell, New York, N. Y. [Filed Oct. 30, 1874.]

Brief.—Within a tub a fixed perpendicular central shaft, with a cogged wheel at top, even with top of tub; a crank outside of periphery of tub, carrying a shaft connected to a sleeve around the central shaft; also, a system of gearing meshing with the large wheel, and by sleeves upon a descending shaft revolving a series of circular knives on their own axes, close to the inner periphery, while they traverse its whole circle.

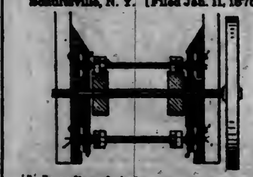
1. In combination with the vertical sides of the tub, the knives K, having a double rotation, revolving on their own vertical axis, and with it around a central vertical axis, substantially as set forth.

2. In combination with the stationary central wheel, D, carrying the intermediate double wheel G G', pinion H, vertical rotating shaft I, and knives K, substantially as set forth.

3. In combination with the crank-arm E, slotted at H', and adjustable knives and shaft swinging in said slot, the spring M, for maintaining the knives in relation to the tub, substantially as set forth.

4. In combination, the crank-arm E, slotted at H', cam F, swinging sleeve F, knife-shaft I, and adjusting set-screw and spring, substantially as set forth.

158,806. HORSE-POWERS. T. G. Palmer, Schuylerville, N. Y. [Filed Jan. 11, 1875.]

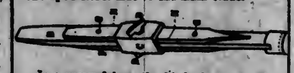


1. In endless-chain horse-powers, two sets of wheels or rollers, *c c'*, operating on each end of spindles or rods for carrying the endless chain, substantially as and for the purpose specified.

2. Spindles attached to the ends of the legs or center of the links for the extra set of wheels, as specified.

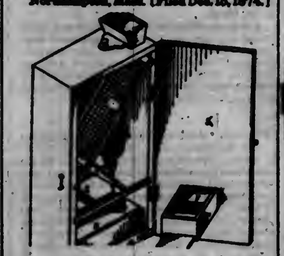
158,807. SCREW-DRIVERS. W. F. Patterson, Boston, Mass. [Filed Nov. 2, 1874.]

Brief.—The blade of a screw-driver is provided with a fixed clamp projecting upon both sides thereof, in which are detachably secured two auxiliary adjustable and reversible blades, one upon either side of the main blade.



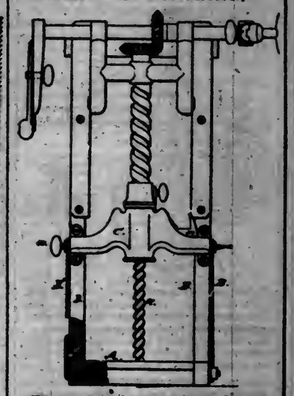
In a screw-driver, the blade B, having the fixed clamp C projecting upon both sides thereof, and provided with the screws D D, in combination with the detachable and reversible blades E F, having the indentations G G and gage-marks H H, constructed to operate substantially as and for the purpose specified.

158,808. COAL-SIFTERS. James S. Pearce, Northampton, Mass. [Filed Dec. 15, 1874.]



In a coal-sifter, constructed substantially as described, the drawer F, combined to operate with the door K, screens D E, and drawer H, substantially in the manner and for the purpose specified.

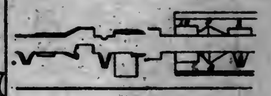
158,809. BORING-MACHINES. T. C. Phillips, Pittsburg, Pa. [Filed June 9, 1873.]



The bearing C, provided with projections T and thumb-screw *w*, in combination with the curved arms B', furnished with notches A on their inner faces, and uprights B, hinged to the base A, substantially as herein described, and for the purpose set forth.

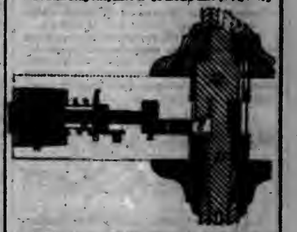
158,810. DIES FOR SWAGING HARVESTER-GUARDS. Jas. H. Solbering, Doylestown, (near Chippewa P. O.) Ohio, assignor to Chas. Solbering & Co., same place. [Filed Mar. 21, 1874.]

Brief.—The bar is submitted to the action of the dies, commencing with groove 1, and passing successively between the others in their order. After the blank is partly formed in die-blocks A B, the end is bent back and the point formed in die-blocks U D, and the guard completed.



The improved series of dies herein described for making harvester-guards, substantially as set forth.

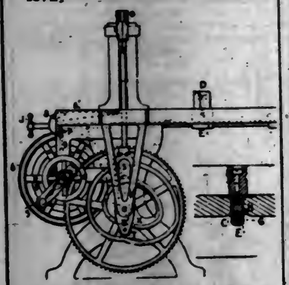
158,811. LOCKING-LATCHES. H. Skinner, Grand Rapids, Mich. [Filed June 1, 1874.]



1. The cams *s s'* upon the hub D, engaging with and operating upon the projections *n* and *n'* on the bar E, for the purpose of withdrawing the bolt A, substantially as described.

2. The slotted sleeve O, having ring R, provided with projecting pegs 1 and 2, in combination with the bolt A, provided with flanges for the purpose of locking the door from the outside, as shown and described.

156,812. PAPER-CUTTING MACHINES. Samuel W. Soule, New York, N. Y. [Filed Mar. 3, 1874.]



1. The combination, with the oval rod H, block E, provided with oval opening G, and gage D, for the rapid adjustment of the gage, substantially as and for the purposes specified.

2. The cams f, shaft 7, and handle 9, in combination with the table 6', as and for the purpose set forth.

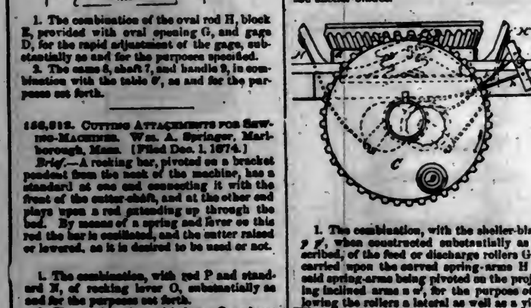
156,813. CUTTING ATTACHMENTS FOR SEWING-MACHINES. Wm. A. Springer, Marlborough, Mass. [Filed Dec. 1, 1874.]

Brief.—A rocking bar, pivoted on a bracket pendent from the neck of the machine, has a standard at one end connecting it with the front of the cutter-shaft, and at the other end plays upon a rod extending up through the bed. By means of a spring and lever on this rod the bar is confined, and the cutter raised or lowered, as it is desired to be used or not.

1. The combination, with rod P and standard N, of rocking lever O, substantially as and for the purposes set forth.

2. The combination, with lever O and rod P, of piece a, lever d, and spring g, substantially as and for the purposes set forth.

3. The combination, with shaft H, rod P, standard N, and nook-piece C, of bearing-pieces L and M, rocking lever O, hinged bearing b, adjustable piece c, lever d, and spring g, substantially as and for the purposes set forth.



156,814. CALF-WEANERS. W. Sexton, Macon County, Ill. [Filed Apr. 11, 1874.]

Brief.—The curved prongs furnish the means of attachment to the animal's nostrils, and by their adjustability adapt the device either to weaning or to preventing cows from sucking themselves, according as their position is advanced or retreating.



1. The curved prongs C C' in combination with frame A, carrying square D B, as and for the purpose set forth.

2. The curved prongs C C' provided with hooks and adjustable in frame A, substantially as described.

156,815. AXLES FOR CHILDREN'S CARRIAGES. Henry W. Warner, Greenfield, Mass. [Filed Dec. 11, 1874.]

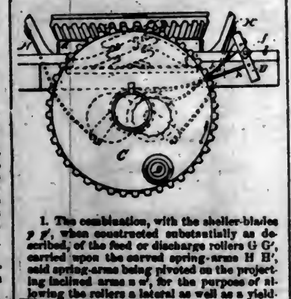


156,815.

The axle for children's carriages, consisting of the rod A and the seat-blocks B, secured thereon, whereby the blocks are secured to the axle without making holes through the latter, substantially as set forth.

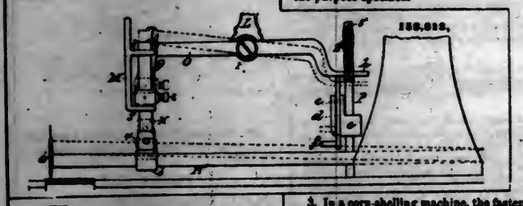
156,816. CORN-SHELLERS. John N. Wolfe, Lancaster, Ohio. [Filed Dec. 12, 1874.]

Brief.—Bearings of withdrawing-rollers for cob carried upon pivoted spring-arms; driving-wheel formed with eccentric on its inner face; a ring playing thereon operates, through an arm, a vibrating lever and a spring-pawl; a ratchet-wheel on the axis of one of the withdrawing-rollers, to secure correspondence between their action and that of wheel carrying the sheller-blades.



1. The combination, with the sheller-blades p p', when constructed substantially as described, of the feed or discharge rollers G G', carried upon the curved spring-arms H H', said spring-arms being pivoted on the projecting inclined arms a a', for the purpose of allowing the rollers a lateral as well as a yielding spring motion, to adjust them to any size of cob, substantially as set forth.

2. In a corn-shelling machine, the driving bevel-gear wheel C, having formed upon its face an eccentric, in combination with the ring f and arm h, vibrating arm or rocking shaft E, pawl j, and ratchet-wheel F, the whole constructed to operate substantially as and for the purpose specified.



156,816.

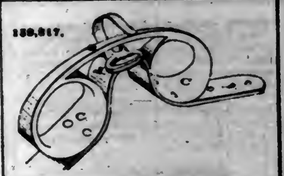
3. In a corn-shelling machine, the fastening-plates b b', formed with the inclined bracket-supports a a' for the spring-arms H H', and bearing-ring e for bevel-wheel B, substantially as set forth.

4. The combination, with the beveled gear-wheel B, carrying the spring-arms e e' and sheller-blades p p', of the driving gear-wheel C, provided with the eccentric c, arm h, rocking shaft E, pawl j, having guide-plates l l', and ratchet-wheel F, and discharge or feed rollers G G', substantially as set forth.

156,817. HARNESS-TREES. W. F. Wolfington, Louisville, Ky. [Filed July 2, 1874.]

Brief.—The terrets are cast with a bridge connecting their tops. Beneath this is another, conforming to the outline of a horse's back, and either cast concurrently, or wrought and riveted to the bottom of the terrets. Projections of wrought metal, forming a continuation of the lower bridge, or separately riveted, are provided for the attachment of the jockey-flaps.

A harness-tree having line-loops C C, connected together by bridges A and B, and provided with projecting pieces D D, substantially as and for the purpose set forth.



156,817.

156,818. CHECK-REIN HOLDERS. John W. Wood and Edward A. Drago, Valparaiso, Ind. [Filed Apr. 4, 1874.]

Brief.—A spring-cylinder with strap attached, the said strap having a hook to receive the check-rein, and a retaining-loop upon the frame of the cylinder, to attach it to the check hook of a harness-saddle.



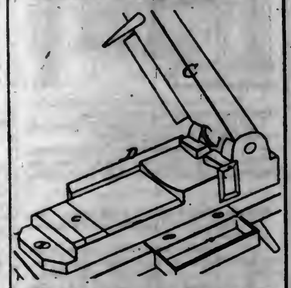
1. The main case A, provided with removable side, in combination with a spring cylinder-case, B, provided with a square-ended post, C, and the rim g coiled round the bolts e for setting the cylinder B, as and for the purpose set forth.

2. The attachment A', consisting of the looped leather J e, loops e f f, and bolt h, in combination with the case A, substantially as described.

3. The hook H, as described, in combination with the strap d, elongated pivot-stop G, and fulcrum F, as and for the purpose set forth.

4. The cylinder B, provided with the loop or bar E and elongated ears D, in combination with the strap d, as described.

156,819. MACHINES FOR MAKING TOE-CALKS. Luther S. Wright, Groton, assignor of one-half his right to Orlando Bentley, Marathon, N. Y. [Filed Mar. 7, 1874.]



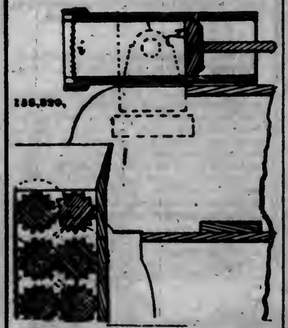
1. The transversely-concave die-bed, and the combination therewith of the gage b, as set forth.

156,820. BUTTER-WORKERS. Benoni Yaw and James J. Mitchell, (administrator of Robert H. Mitchell, deceased,) New Concord, Ohio. [Filed June 22, 1874.]

Brief.—A cylinder, open at one end and having a woven-wire disk fixed in the other, is transiionel centrally. When the open end is upward the butter is put in; when turned to the horizon a piston presses the butter through the interstices of the disking. Falling into a vertical cylinder having fluted rolls revolving in pairs, it is delivered therefrom into any desired receptacle.

1. The combination, in a butter-working machine, of a horizontally-operating plunger, B, and a pivoted box, C, provided with a wire-cloth sleve, f, at one end, through which the butter is pressed by the plunger, substantially as herein set forth.

2. The combination of the frame A B, slide C with plunger D, operated by the rack e and gearing b E c, the pivoted box G with sleve f, and the box H with rollers l, all constructed substantially as and for the purposes herein set forth.



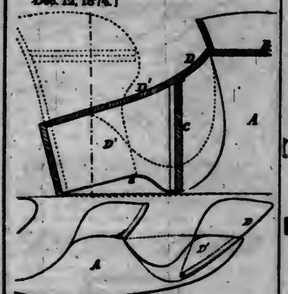
156,820.

156,821. SEWING-MACHINE OPERATING MECHANISMS. Barker C. Young, Boston, Mass. [Filed Sept. 1, 1874.]

Brief.—The operator is enabled to start, vary the speed, or check the driving mechanism of a sewing-machine by means of a treadle connected to a shaft carrying a belt-pulley at one end and a friction-wheel at the other.

The combination of hanger E, attached to the under side of a sewing-machine table, and having ears c c, and shoe E', shaft G', swinging arm G, sleeve-bearing G', shaft b, wheel F, treadle H, rod h, and spring f, substantially as and for the purpose set forth.

156,822. VEHICLE SEATS AND BODIES. B. W. Anderson, Washington, D. C. [Filed Dec. 12, 1874.]



1. A rising and folding seat-back having a rigid extension below the plane of the seat, to operate substantially as set forth.

2. The combination, with a vehicle, of a seat or seat-back to slide and fold by successive movements, and provided with a rigid extension below the plane of the seat and suitable connecting devices, substantially as specified.

3. The combination, with the boot or body of a vehicle, cut away to form entrances through its wall, of a rising and folding seat having side standards, to operate, when folded, to close said entrances, substantially as specified.

4. The combination, with a vehicle boot or extension in rear of the front seat, of a rising and folding seat or seat-back having a back panel extending below the plane of the seat, to operate, when folded, to close said boot or extension and form a covering thereto, substantially as specified.

5. A rising and folding vehicle-seat or seat-back having a stiff extension below the plane of the seat, adapted for sliding connection with a part fixed to the vehicle, and to operate substantially as specified.

156,823. CORNERS FOR SHOW-CASES. M. Anderson, Chicago, Ill. [Filed Nov. 21, 1874.]

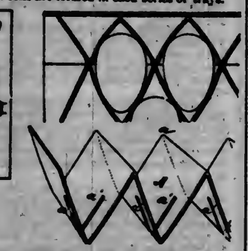
Brief.—The metal corners are provided with side flanges, and the under face of the plate has protuberances for catching and holding the screws.



As a new article of manufacture, a metal corner for show-cases having the side flanges C, and provided upon its under face with the protuberances c, for catching and holding the screws, substantially as and for the purpose set forth.

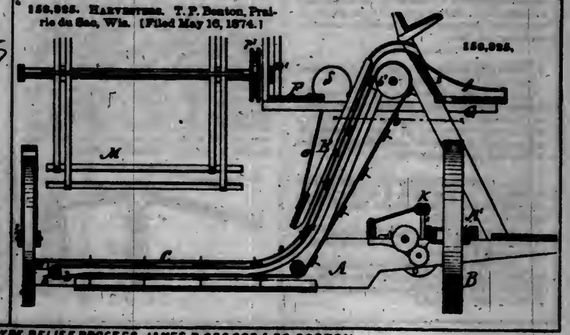
156,824. EGG-CARRIERS. Ephraim Barnett and Wm. H. Garrett, New Concord, Ohio. [Filed Aug. 1, 1874.]

Brief.—The carrier is composed of sheets of corrugated pasteboard, having slots cut through the lower angles of the corrugation half their height, and dividing-strips having angular converging slots, whereby alternate half-cells are formed in each series of trays.



In an egg-carrier, the sheets A, having the slots a' cut through the lower angles of the corrugations to the extent of half the height of the corrugations, in combination with the dividing-strips B, having angular slots b converging toward the top, as described, whereby alternate half-cells are formed, in the manner described and shown.

156,825. HARVESTERS. T. P. Benton, Prairie du Sac, Wis. [Filed May 16, 1874.]



156,825.

156,826. BEE-HIVES. Asto B. Bowen, West Randolph, Vt. [Filed Apr. 13, 1874.]

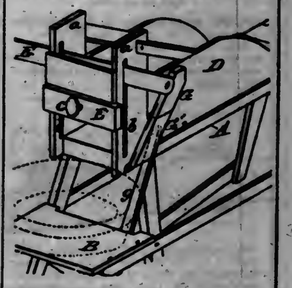
Brief.—A tapering pin or rod passes through the hive, to be withdrawn when air inlets are desired.



The process of forming communicating passages through the combs by means of a removable tapering peg arranged for the reception of the natural deposit of wax around it, substantially as described.

156,827. BREAD-SLICERS. Wm. A. Brown, Eureka, Ill. [Filed Oct. 24, 1874.]

Brief.—The bread, forced along a trough against a gage for regulating the thickness of the slice, is cut by a guided vibrating knife, having its fulcrum in one of two jointed arms, the other jointed arm being connected to the rod of a treadle, so that both foot and hand may be employed in slicing the bread.



1. The hand-trough I, arranged above the delivery end of the elevator, as and for the purpose set forth.

2. The rod M, journaled to the front end of the arms P P, pivoted to the rear end of the machine, in combination with the shaft Q, having pinions p p, racks v, latching-lever Q', and perforated segment R, substantially as and for the purpose set forth.

3. Wheels B B', applied in pivoted frames A' A', in combination with the draft-frame A, the chains i i, pulleys j j, and a winding and unwinding rod, J, arranged as described.

1. In a bread-slicer, the combination, with a trough, D, and a knife, K, of the slotted guides *a a*, gage F, and jointed arms G G', substantially as described.

2. The treadle G' and rod *g*, combined with jointed arms G G', slotted guides *a a*, and a vibrating knife, K, substantially as described.

156,892. EGG-CARRIERS. Abner H. Bryant, Chicago, Ill. (Filed June 21, 1873.)

Brief.—The egg-carrier is composed of strips of pasteboard, provided with alternate slits on opposite sides, interlocking at right angles, forming bottomless rectangular pockets.



The combination of the longitudinal strip A and transverse strip B, constructed of flexible material, each provided with alternate reversed slots, as described, for interweaving said strips together edgewise and forming rectangular bottomless pockets, as set forth.

156,893. FAUCETS. Wm. G. Bussey, San Francisco, Cal. (Filed Dec. 8, 1874.)



The clasp consisting of the curved jaws *a a*, united by the circular spring *f*, said jaws being operated by the screw-rod A and nut I, substantially as and for the purpose described.

156,894. SHOE-KNIVES. A. L. Butterworth, Franklin, N. H. (Filed July 26, 1874.)

Brief.—By means of the nut working in the transverse slot, the blade becomes endwise adjustable, and adapted for the depth of cut required.



The combination, with the threaded knife-shank *b*, of the recessed handle A, having the transverse slot *a*, the ferrule-guard *c*, at the mouth of the blade-recess, and the rotating operating-nut C, seated in said slot, and engaging with said threaded knife-shank, to adjust the protrusion of the blade, substantially as specified.

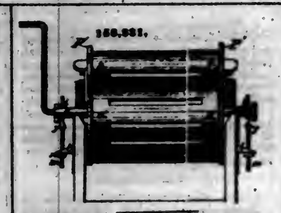
156,895. WASHING-MACHINES. J. C. Chase, Rutland, Ohio. (Filed Nov. 28, 1874.)

Brief.—These rollers, with partially-grooved surfaces, having them smooth at the ends, are journaled in end plates, on which are legs and bottoms connected by elastic bands. A mirror with a set-screw connects the bracket of the end plates to the tub.

1. In a washing-machine, the combination of rollers *a b c*, end plates F F', the legs *p*, and bottoms K K', with elastic bands *o*, substantially as set forth.

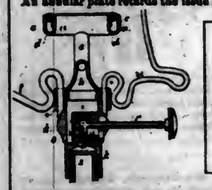
2. The mirror *p*, brace *i*, and nut *n*, in combination with the leg I and projecting arms *f*, substantially as described.

3. The rollers *a b c*, with corrugations extending near to their ends, and terminating in the smooth friction-rings *a'*, substantially as set forth and described.



156,896. ARGAND GAS-BURNERS. Theodore Clough, New York, N. Y., assignor to himself, A. T. Welch, H. Iden, and L. P. Haven, same place. (Filed June 10, 1874.)

Brief.—A ring of aluminum clamped into the burner has rabbets to remove the metal of the burner from the flame. The whole burner proper is detachable from the base. The shade-holders revert against the base. An annular plate retards the issue of the gas.



1. The perforated ring of aluminum *b*, having recessed or flanged edges, over which the edges of the hollow metal ring *a* are turned, as set forth.

2. The argand gas-burner ring *a b*, arms *c*, and cylindrical chamber *h*, in combination with the cylindrical body *k*, into which the chamber *h* is introduced, as and for the purposes set forth.

3. The deflector-plate *o*, in combination with the hollow burner-ring *a*, and leaving an annular opening of uniform width between the plate and burner-ring, through which the gas passes with uniformity up to the flame, as specified.

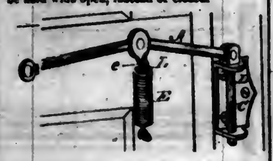
4. The cylindrical valve *s*, with gas-passage ways introduced within the body *r* of the burner and operated by the eccentric *t* within a mortise in the cylinder, and the stem *r* passing through each body and eccentric, in combination with the gas-burner, substantially as set forth.

5. The wire arms *l* or *o* of the shade or chimney-holder, having double or 3 beads at the lower ends, in combination with the flange *q*, having vertical holes for receiving the ends of the wires, and against the outer surfaces of which flange the bent wire presses, as set forth.

6. The cylindrical valve *s*, helical spring *s*, and eccentric *t*, in combination with the body *k* and gas-burner, substantially as specified.

156,897. DOOR-SPRINGS. Jas. B. Cottom, Dayton, Ohio. (Filed Dec. 10, 1874.)

Brief.—The jointed rods, forming a toggle-lever, have at their joint a reversible hook, and are connected at one end direct to the door, and at the other, by means of a reversible pin working in a reversible bracket, to the jamb or door-frame. A spiral spring in vertical position, with looped ends, is hooked into the reversible hook, and catches over studs at suitable distances on the door. A reversible device adapts it to right or left hand door. The tension of the spring is adjustable on the studs. By placing of the spring in opposite positions—that is, above instead of below the toggle-joint—the door may be held wide open, instead of closed.

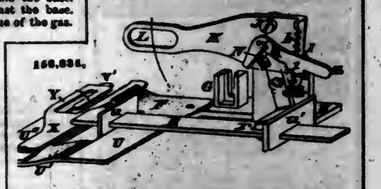


1. The reversible door-spring, consisting of the jointed rods A and B, reversible pin C, and spring E, constructed and operating substantially as described.

2. In combination with the jointed rods A and B, the reversible hook L and reversible pin C, with its bracket D, all constructed to operate as and for the purposes set forth.

156,898. RUFFLERS FOR SEWING-MACHINES. George W. Darby, Hamilton, Ohio. (Filed July 27, 1874.)

Brief.—The bar to which the rufflers-blade is attached slides in slotted guides turned up from the presser-foot frame, and midway between the guides in the leg or casket that receives the presser-bar, and from the end of the frame, and projecting under the ruffler-blade and foot portion, there is a holder. The devices of the second classes move the ruffler-blade, and determine the size of the gather. The holder W is adapted to fold a strip to be ruffled, and attached to an underlying piece.



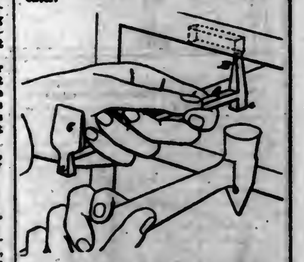
1. The frame consisting of the parts F H U *a*, post I, and central supporting-leg G, when constructed and arranged substantially as described, for the purposes specified.

2. The slotted lever K, having the rack *k* and lever F, provided with its stud, in combination with bent lever Z, arranged and operating conjointly, in the manner as I for the purposes described.

3. The slotted holder-arm U, in combination with the holder W and spring Y, substantially as set forth.

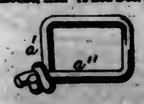
156,899. MORTISING-TOOLS. Gustavo Brin, San Francisco, Cal. (Filed Dec. 10, 1874.)

Brief.—The tool is designed for cutting mortises into which the bolts of drawer-locks enter.



A mortising-tool consisting of the shank A, with its small chisel B and transverse bit or chisel C, with their heads *c*, substantially as and for the purpose above described.

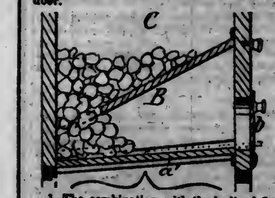
156,900. BALE-TIES. E. Flinn and R. G. Wier, Mobile, Ala. (Filed Dec. 29, 1874.)



The bale-tie link described, the same consisting of a single piece of stiff wire, A, bent into the form of a parallelogram, and the two ends of the wire secured together at one corner by coiling the projecting end of the wire at the shorter side *a'* of the link around the projecting end of the wire at the longer side *a''* of the same, for the purposes specified.

156,837. COAL-BOXES. John Forster, New York, N. Y. (Filed Dec. 26, 1874.)

Brief.—A box divided into two chambers by an inclined diaphragm, having at its lower edge an aperture for the delivery of coal into a passage in the lower chamber leading to the door.

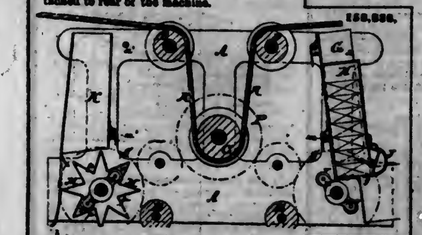


1. The combination, with the inclined floor *a'* of a coal-box, of the walls F and E, forming passage P, substantially as and for the purpose specified.

2. The inclined diaphragm B, having an aperture, *c*, in combination with the sliding door *b* and walls E F, substantially as and for the purpose described.

156,838. BRICK-LAYING MACHINES. Chas. Franks, New York, N. Y. (Filed July 29, 1874.)

Brief.—Boxes for holding the bricks are attached to one end of the machine, said boxes having valved bottoms, which are acted upon by arms attached to the axis of the carriage, which causes the valves to move back and allow the bricks to fall in place. A box containing the mortar is attached to the other end of the machine. The mortar is admitted to the wall by a drum or wheel having V-shaped cavities, and spread by a trowel attached to rear of the machine.



1. A machine for laying bricks, provided with a box at one end containing bricks, acted upon by arms attached to a revolving shaft situated below said box, and a mortar or cement box at its other end, in combination with a wheel arranged with recesses or cavities attached to a revolving shaft situated below said mortar-box, the whole being arranged and operating substantially in the manner and for the purpose hereinbefore described and specified.

2. In brick-laying machines, a box, G, divided by partition-plates *c* into suitable compartments to receive the bricks, and provided, near the bottom, with projecting side flanges *w* and self-acting valves or hinged plates J, the whole being arranged and operating substantially as set forth.

3. In combination with a brick-box, G, arranged in the manner and for the purposes set forth, the self-acting hinged valve J, provided with a projecting piece, *p*, and diagonal plate *z*, operating substantially as described.

4. In combination with a box, G, the movable house H, in the manner and for the purpose substantially as described.

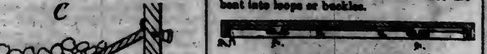
5. The mortar-box K, in combination with a wheel, M, and a plate, I, arranged and operating together substantially as described.

6. In combination with the side frames A of a brick-laying machine, the plates W W, projecting downward and embracing the brick wall, arranged and operating substantially in the manner and for the purpose described.

7. In brick-laying machines, the grooved pulley C and guide-pulleys D D, in combination with a rope, R, attached to both extreme ends of the wall, substantially as and for the purpose specified.

156,839. TEMPORARY BINDERS. Ferdinand Guichoteau and Alex. Paris, New York, N. Y. (Filed Oct. 2, 1874.)

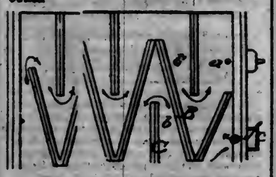
Brief.—A wire swiveled at one end of book-back passes through fold of sheet, and slips under ledge on other end. The wires are bent into loops or buckles.



The rod *b*, having the elastic folds *i i*, substantially as shown and described.

156,840. MILK-COOLERS. Oscar P. Hadcock and Frank W. Pierce, Copenhagen, N. Y. (Filed Dec. 10, 1874.)

Brief.—The milk introduced between and at one end of the pans follows a serpentine passage to the other end, or back again to an outlet.



The continuous zigzag partition B, attached to one end of the pan A, having inlet and outlet passage *c a*, in combination with the partitions C C, attached to the sides of the pan, and extending into the angles in the zigzag partition B, substantially as described, and for the purpose set forth.

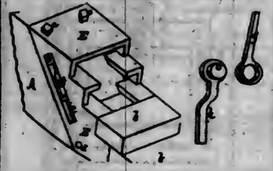
156,841. HAT-BRUSH HOLDERS. Mary B. Hildreth, Mount Pleasant, Iowa. (Filed June 27, 1874.)



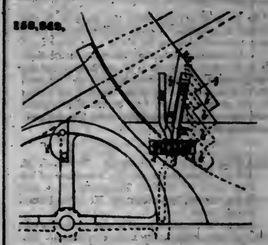
The cylindrical holder-block B, constructed entire, and longitudinally channeled underneath in the form of a groove-recess, having its upper or interior portion *b* enlarged to slip endwise over the enlarged portion of the handle of an ordinary rod-iron, and the lower portion or neck *b'* contracted to allow the passage of the handle-stem *a'*, and to prevent the escape of said enlarged portion of the handle, as specified.

156,842. FULLING-MILLS. Sylvanus Hussey, Gowanda, N. Y. (Filed Aug. 3, 1874.)

Brief.—Provides beater with a metal socket-frame, so that the toes can be removed as they wear away. By means of adjustable catch *f* in slot *a*, dog *g*, and eccentric lever A, (the two latter being hinged to the side frames,) the beater is raised and held in a fixed position while the material operated upon is being removed.



156,843. GAGES. Isaac Lane, Lancaster, Pa. (Filed Sept. 26, 1874.)

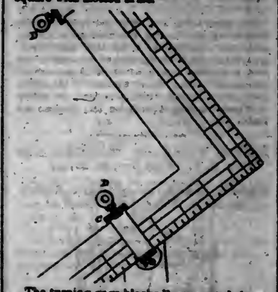


1. The combination of the dog *g*, eccentric lever A, the slot *e* in the side of the casket-face E, and the adjustable catch *f* therein, operating as and for the purpose specified.

2. In a tailing-mill, the metal casket or toe-holder E and toes *b b*, in combination with the beater A, as and for the purpose specified.

156,844. CARPENTERS' SLIDING GAGES AND SQUARES. A. Imhe and J. Baumgartner, Lancaster, Pa. (Filed Sept. 26, 1874.)

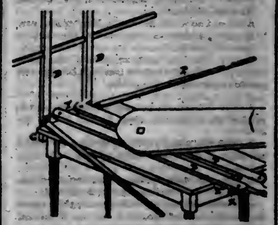
Brief.—For scribing, by the exposed angle of the square, the "tread" and "riser" of a stairway. An improvement on the old form of a continuous slotted straight-edge and try-square with slotted arms.



The turning gage-blocks B, connected, by a pivot, *a*, with a sliding loop, C, having a set or binding screw, D, in combination with an ordinary metallic square, substantially as shown, for the purpose specified.

156,845. IRONING-BOARDS. A. Imhe, Lancaster, Pa. (Filed Apr. 20, 1874.)

Brief.—Between two slides, which are constructed so as to be applied to the top of an ordinary table, is arranged a sliding block, to the top of which is secured a self-board, and adapted to be turned thereon, while to the end of each slides are hinged a number of clothes-racks, in such a manner as to admit of the same being folded down compactly upon the top of the ironing-board.



1. The combination of the foundation-bars B and the end pieces K and F, the latter having catch I, with the adjustable self-board C, having the locking-curve H, the whole being adapted for ready attachment to and removal from any ordinary table, substantially as described.

2. In combination with the bars B B, the board A, adapted to slide longitudinally, and also to revolve upon its pivot h, as described.

3. In combination with the foundation-bars B B, the turning-plate D D, perforated for the reception of rods E, and hinged to the said bars B, together with side driers F on pivots in the cross-piece F, the whole constructed and operated in the manner and for the purpose set forth.

156,846. COTTON-PRESSES. Tryon J. M. Jewell, New York, N. Y., assignor of his right to T. W. Burger, Plainfield, N. J., and R. Gardinier, Brooklyn, N. Y. (Filed June 16, 1874.)

Brief.—An arched head-block carries a vertical screw, actuated by toothed sectors. The toggle-joints are pivoted to the lower corners of the central arch, and arranged to sustain the platen against tilting from unequal pressure.



The combination of the centrally-arched head-block B, carrying the vertical screw D, with the toggle-joints I, having their lower arms made solid, and arranged to sustain the platen against tilting otherwise from uneven resistance during its downward movement, pivoted to the lower corners of the arch in the said head-block, and provided with the sectors which gear into and are worked by the aforesaid screw D, the whole arranged for operation substantially as and for the purpose set forth.

156,847. BALE-BURNING STOVES. Silas H. La Rue, Philadelphia, assignor of one-half his right to C. M. Bunk, J. W. Grubb, and F. A. R. Baldwin, Allentown, Pa. (Filed Nov. 16, 1873.)

Brief.—The elevated deflecting-plate prevents the coal from falling through the annular air-inlet which surrounds the axis of the grate, and air is admitted to the interior of the burning fuel. Clinkers can be pushed through the central opening of the grate.

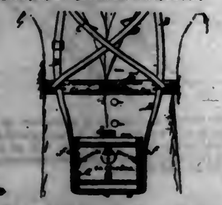
1. The fire-pot H, having projecting lugs b, supported upon the ring K, as herein described.

2. The vibrating grate M, having a central opening, E, in combination with an elevated imperforate deflecting-plate, S, of larger diameter than the said opening, and arranged relatively to each other, as herein described.

3. The deflecting-plate S, covering the opening E, and having the fire-brick cap W, as and for the purpose herein described.

4. The combination of the grate M with the central deflecting-plate S, the ring K, a fire-pot, H, having its discharge-end elevated above the grate, as herein described, and the illuminating-doors O, all operating in conjunction, as herein described.

156,848. FARE-BOXES. Theo. Kozak, New York, N. Y. (Filed Nov. 30, 1874.)



The combination, with the receptacle carried by the conductor for the receipt of fare or fare-checks, of the means by which said receptacle is locked about and inextricably secured to the body of the carrier, substantially in the manner and for the purposes described.

156,849. BALE-BURNING STOVES. Silas H. La Rue, Philadelphia, assignor of one-half his right to C. M. Bunk, J. W. Grubb, and F. A. R. Baldwin, Allentown, Pa. (Filed Nov. 16, 1873.)

Brief.—The elevated deflecting-plate prevents the coal from falling through the annular air-inlet which surrounds the axis of the grate, and air is admitted to the interior of the burning fuel. Clinkers can be pushed through the central opening of the grate.

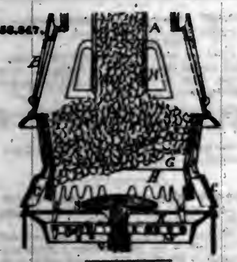
1. The fire-pot H, having projecting lugs b, supported upon the ring K, as herein described.

2. The vibrating grate M, having a central opening, E, in combination with an elevated imperforate deflecting-plate, S, of larger diameter than the said opening, and arranged relatively to each other, as herein described.

3. The deflecting-plate S, covering the opening E, and having the fire-brick cap W, as and for the purpose herein described.

4. The combination of the grate M with the central deflecting-plate S, the ring K, a fire-pot, H, having its discharge-end elevated above the grate, as herein described, and the illuminating-doors O, all operating in conjunction, as herein described.

156,847.



156,848. CAR-WHEELS. Jas. Leland, Cambridgeport, Mass. (Filed Dec. 19, 1874.)



1. A railway-carriage wheel composed of a wrought-iron body, A, and of a cast-steel rim, B, founded upon the periphery of said body, and with flanges *a a* to project and lap on its opposite sides, and extend entirely around such body, all combined substantially as specified and represented.

2. The railway-carriage wheel composed of a wrought-iron body, A, and of a cast-steel rim, B, founded upon the periphery of the said body, and with flanges *a a* to extend around and on opposite sides of the body, and also having the cast-steel of the rim extended from either or both of the flanges into or through the body, all combined substantially as set forth.

156,849. RAG-HOLDERS. Uriah B. Lemon, Franklin, Mich. (Filed Sept. 29, 1874.)

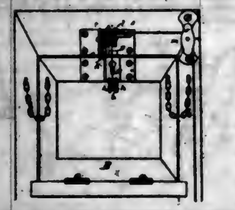
Brief.—The mouth of the bag is placed over the D-shaped iron bar, and held securely thereon by drawing said bar into the grooved semicircular bar.



The D shaped iron bar *b* and grooved semicircular bar *c*, with bar *c*, mortised and grooved standard A, and lever *f*, combined and arranged to operate substantially in the manner as and for the purpose specified.

156,850. SASH OPENING AND CLOSING MECHANISMS. Geo. A. Lincoln, East Somerville, Mass. (Filed Dec. 19, 1874.)

Brief.—The combination with an arm of a series of guide-wheels projected from a door-frame with a bolt, and its case provided with another arm and guide-wheel applied to a sash, all being operated with two cords.



1. The combination of the arm E, its guide-wheels *c*, *d*, *e*, *f*, and *g*, and bolt-catch with the bolt C, and its case *b*, provided with the arm G and guide-wheel *i*, all being substantially as described, and to operate with cords, as and for the purpose set forth.

2. The combination and arrangement of the pair of guide-wheels *n n*, applied to the door-frame, with the arm E and its guide-wheels, and with the bolt and case provided with the wheel and arm, and applied to the sash, all being arranged as specified.

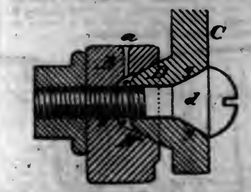
156,851. GUN-CLEANERS. Wm. H. Manstr, Wakefield, Mass. (Filed Dec. 19, 1874.)

Brief.—The arms of the sleeve are spread by forcing down the shank, and the rubber is thereby expanded to fit the bore of the gun. The parts are locked, either before or after expansion, by turning the shank so as to bring a stop or stud thereon into a lateral notch in the end of the slot in the sleeve.



The gun-cleaner, substantially as described, composed of the shank A and its stud *f*, the expansive wiper D, and the sleeve B slotted and provided with the notches, all being combined and arranged in manner, and to operate essentially as set forth.

156,852. PITMAN-CONNECTIONS. Levi Mangus, North Liberty, Ind. (Filed Nov. 20, 1873.)

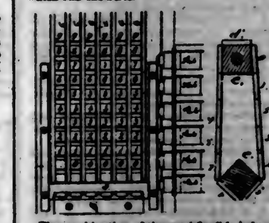


1. The pitman-connection, consisting of the cockle-bar A, having on one end the eye B, with conical recess D' and perforations *a b*, the pitman C, having conical pivot D, and conical recess *g*, and the pivot-screw E, with conical head *d* and nut F, all constructed and arranged as shown and described.

2. The pitman-head C, having on one side the conical projecting bearing D, and centrally opposite the same on the other side, the conical-bearing recess *g* terminating in a perforation through said conical projecting bearing, as specified.

156,853. MECHANICAL CALCULATORS. H. B. Martin, San Francisco, Cal. (Filed June 10, 1873.)

Brief.—The calculations are inscribed upon the semi-flexible belts, and different calculations are brought into view by graduated racks driving pinions fixed to the shafts over which run the belts.



The combination of the semi-flexible belts *d* with the square or angular rollers *e* and the sliding racks *c*, as and for the purposes set forth.

156,854. BOILERS FOR HEATING PURPOSES. Hiram Mayer and William B. Mayer, Freeport, Ill. (Filed Nov. 6, 1874.)

Brief.—The parts forming the lower portion of the flues are connected together, and may be removed bodily from the heater, and the heater itself is removable from the tank.



1. The heater B, placed within and surrounded by the tub or boiler A, and supported above the bottom thereof, as described, in combination with the flue or flues C, passing through the heater, and communicating with the boiler at different points or sides thereof, as set forth.

2. The plates D D', connected to and made removable, together with the rings *d*, in combination with the heater-shell B, and forming, in connection with said shell, the walls of the smoke and air ducts, as described.

156,855. AXLES FOR VEHICLES. John McCurdy, Smicksburg, Pa. (Filed Mar. 19, 1874.)

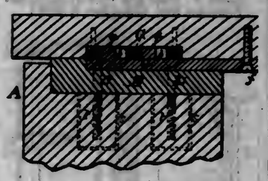
Brief.—The spindles are made easily removable in case of injury.



The combination of the spindle B, provided with the hub-band C and screw D, the axle-tree A, with threaded eave in its end, and the set-screw *a*, all substantially as and for the purposes set forth.

156,856. INSULATORS FOR MUSICAL INSTRUMENTS. William R. Miller, Baltimore, Md. (Filed Dec. 17, 1874.)

Brief.—To prevent dispersion of the sound-waves through the legs of the instrument.



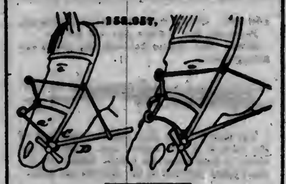
The combination and arrangement of the plate C, insulator B, and leg A, substantially as shown and described, so that the screws D D pass through the plate and insulator and into the leg, thereby relieving the insulator from any strain, as set forth.

156,857. BRIDLES. W. S. Mitchell, Washington, D. C. (Filed Jan. 7, 1875.)

1. The combination, with a bridle-bit, of a stiff bar or lever, having its fulcrum arranged on the animal's nose, for operation in connection with the check-rein F or driving-rein D, substantially as shown and described.

2. The combination of the draw-line *c* and bridge-piece *d* with the reins D and bit C, all arranged for operation substantially as set forth.

156,857.



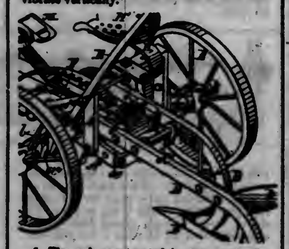
156,858. GRIDIRONS. James H. Mitchell, San Francisco, Cal. (Filed Aug. 7, 1874.)



As a new article of manufacture, a rectangular gridiron constructed as described, having one removable side, and with the opposite sides, *a b*, provided with recesses for holding the bars *c c*, which bars are cut short enough to allow a play or end motion in the recesses, to prevent buckling or warping when heated, as above set forth.

156,859. GANG-PLOWS. Elgin Moore, Moline, Ill. (Filed Oct. 20, 1874.)

Brief.—An arch is made upon each section of the axle, one overlapping the other, and pivoted together near the bottom. One section remains in vertical position, having the seat and rack-bar. The other, by a rigid lever having a brake-arm, is made a crank to raise the plows by the team till released automatically; also, devices to permit the tongue to vibrate vertically.



1. The axle constructed in two parts, the bent or arched inner ends of which overlap and are pivoted to each other, the fixed portion A carrying the ratchet-bar, and the movable portion A' carrying the plow-beams and mechanism for raising, lowering, and adjusting the plows, substantially as and for the purpose set forth.

2. The hand-lever E, constructed as described, with a foot on its lower end, and arranged to operate with the lugs *b* on the hub of the supporting-wheel, and with the ratchet-bar F, sectional axle A A', and plow-beams D D, substantially as described, and for the purpose specified.

3. The rack-bar F, constructed as described, with a diverging arm, *f*, arranged to operate with the hand-lever E, lugs *b*, sectional axle A' A, and plow-beams D D, substantially as and for the purpose specified.

4. The bars G G' G², arranged to operate with the sectional axle A A' and plow-beams D D, substantially as described, and for the purpose specified.

5. The combination of the tongue I, pivoted plate *d*, and fixed plate J, the tongue secured to the plate *d*, so as to oscillate vertically and made adjustable laterally, substantially as and for the purpose set forth.

156,860. HAME ATTACHMENTS. James H. Myers and Saml. Spicer, Goodrich, Mich. (Filed May 20, 1874.)

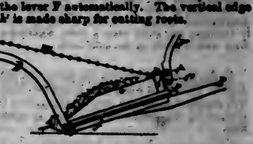


1. The hame-clip D, slotted and perforated, and pivoted to the hame A, substantially as described.

2. A trace-iron, E, curved and adjustably connected to a pivoted clip, D, said clip being provided with the pole-strap loop *c*, all substantially as described, and for the purpose set forth.

156,861. HEAD-SCRAPERS. W. T. Nichols, Chicago, Ill. (Filed Dec. 29, 1874.)

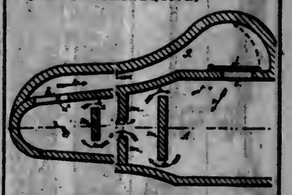
Brief.—The chain which regulates the angle of inclination of the scraper is connected to the latter by a lever, F, which, when depressed, shortens the chain, and causes the scraper-blade to enter the earth, but when thrown up allows the scraper to ride with its blade free. The reversal of the scraper resets the lever F automatically. The vertical edge *h'* is made sharp for cutting roots.



1. The lever F, in combination with the chain *m*, whereby the gathered load of earth may be allowed to depress the rear of the scraper, and throw the working-blade *d* out of the ground, substantially as described.

2. A root-cutter, *h*, in combination with the scraping-blade *d*, substantially as and for the purpose described.

156,862. REVERBERATING FURNACES. John Nicholson, Jr., Pittsburg, Pa., assignor to Ragot De Montbrueux Gun Company, same place. (Filed Mar. 24, 1874.)



A heating or melting furnace, provided with a heating-chamber, having alternate ridges *m*, thereby causing the heat to travel in a zigzag course from either the front or rear end of the working-chamber at the will of the operator, substantially as herein described, and for the purpose set forth.

156,863. PNEUMATIC DENTAL PLUGGERS. Gorton W. Nichols, Chicago, Ill. (Filed Aug. 14, 1874.)

Brief.—The point-receiving shank is made of the same piece as the case itself, within which the double-faced hammer works.

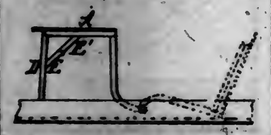


156,863.

The combination of the point-receiving chuck with the hollow instrument-handle *a a a* and double-faced hammer *g*, substantially as and for the purpose set forth.

156,666. JUMP-SEATS FOR CARRIAGES. J. B. Patten, Amesbury, Mass. [Filed Dec. 21, 1874.]

Brief.—Easily folded and turned forward out of the way in getting in.



1. The combination of the front legs pivoted to the carriage-body, the two ends of toggles B B', the seat, and the rear legs, D D', pivoted to the said seat, as set forth.

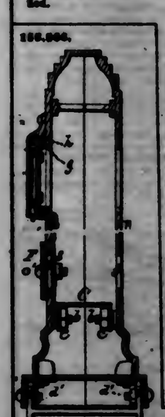
2. The combination of the two ends of toggle B B', bar F, seat A, and the rear legs, D D', pivoted to the seat, substantially as set forth.

156,667. MAKING ARTESIAN AND OTHER WELLS. Charles Paxton, Omaha, Nebr. [Filed Nov. 23, 1874.]

Brief.—Artesian-well lining of hydraulic cement, either throughout the whole extent of the bore, or only in such parts thereof as may by their caving in require it, which, when it becomes set, shall form a tube, whereby a false wall is given to the said bore.

In the boring of wells in the earth, the process of lining the walls with a cement which will readily harden and prevent the caving in thereof, by the means substantially as specified.

156,668.



156,668.



156,668. MOUSETRAPS. M. A. Richardson, Bridgeport, Conn. [Filed Oct. 31, 1874.]

1. In a measurement or tomb-marker, the vertical sectional parts A B, having broad flanges a upon their edges, for the purpose of rendering considerable the discrepancy in size of the two sections, substantially as described, and for the purpose set forth.

2. The combination, with the portrait-frame C, of the fixed wear-head H, having recess *e*, and the hinged lid I, having flange A, substantially as and for the purpose specified.

3. The combination, with the tabled F, of the springs S and screw-bolts *s'*, substantially as specified.

4. The combination, with the sections A B, of the screw-threaded projections *c* and U-shaped link C, substantially as specified.

156,669. SHIRT-BOSOMS. Addison Small, Portland, Me. [Filed Apr. 23, 1874.]

Brief.—The spaces between the plaits are strengthened.

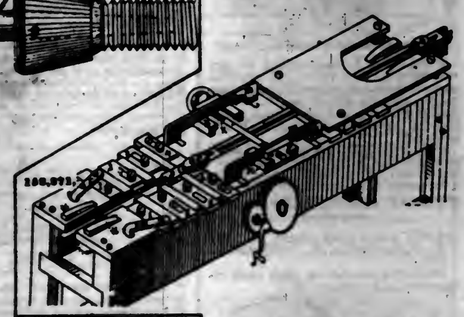


The double-linen shirt-bosom, composed of the parts A B C D, folded and applied, relatively to each other, as herein described, the same being stitched in the manner set forth.

156,670. INSULATING COMPOUNDS. Isaac Smith, New York, N. Y., assignor of one-half his right to George A. Chapman, same place. [Filed Jan. 16, 1874.]



156,671.



The insulating material herein described, the same being a homogeneous mixture of shellac, asbestos, coal-tar, oak-black, and paraffine, in the proportions substantially as set forth.

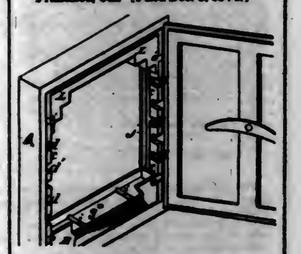
In a horseshoe-bending machine, the adjustable former C, compressing bar S, stationary plates 2 2 3 3 4 4, slides 1 1, levers F F, and slides E, combined and arranged to operate substantially as and for the purpose specified.

156,671. HORSESHOE-MACHINES. Francis Suppin, Boston, Mass., assignor to Jos. F. Suppin and Bernard F. Suppin, same place. [Filed Dec. 16, 1874.]

Brief.—A series of slides provided with friction-rollers, between which the blank is carried by the former, which is adjustably attached to a rock-bar that is operated by a pinion. The forward end of said bar is serrated, and strikes against two slides, E, forces them inward, and causes the heel-bending rollers to be thrown around the former, and complete the bending operation.

The combination, with the smoke-flue B, of the inner wire-cloth cone A, attached by its base to the wall of said flue, point upward, and the close cone-shaped extinguishing-cap A', surmounting the apex of said cone A, as specified.

156,672. PHOTOGRAPHIC-PLATE HOLDERS. Isaiah W. Taber and Thos. H. Boyd, San Francisco, Cal. [Filed Dec. 3, 1874.]



The photographic-plate-holder frame A, provided with notches *d* on the inner edges of its side rails, in combination with the tray or receptacle E, with its lugs O, and connected corner-pieces L, with their lugs O', substantially as and for the purpose above described.

156,673. ROCKING-CHAIRS. Charles Strait, Cincinnati, Ohio. [Filed Sept. 28, 1874.]

Brief.—Hinged leaves upon the ends of the spring swivel upon bolts in the rockers. The spring passes between elastic bearings, and is secured centrally by bolts to the platform.

1. The platform A and rocker-frame B, in combination with the brace or braces C, which are centrally connected to the platform, and hinged leaves *a a*, substantially as specified.

2. The platform A and rocker-frame B, in combination with the elastic bearings D D and brace or braces C, substantially as specified.

156,674. SPARE-ARRESTERS. J. Summers and O. W. Fay, Muncie, Ind. [Filed June 13, 1874.]

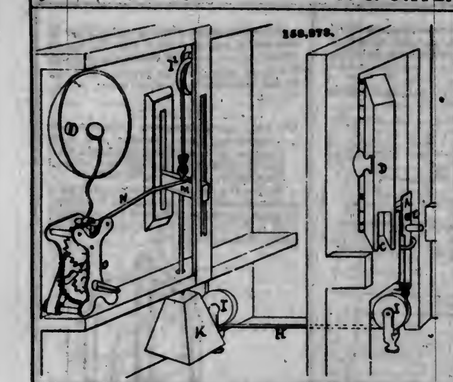
Brief.—A closed cap is placed on the cone to collect carbonic-acid gas, which extinguishes the sparks as they are projected into it.



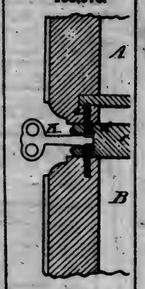
156,675. SURREY-ATTACHMENT. A. C. Taylor, Cutchen, Ohio. [Filed June 20, 1874.]

The combination of the door D, provided with a slot, C, the bolt A, projection E, pattern I I' F, cord H, weight K, cross-bar M, and lever N, all operating together as described.

156,676.



156,676.



156,674. REVOLVING FIRE-ARMS. Daniel B. Wesson, Springfield, Mass. [Filed July 30, 1874.]



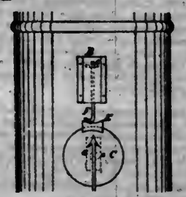
1. The combination of the detent K, held in place by a spring-rod, *n*, spring *o'*, and extractor-stem I, substantially as set forth.

2. A finger-piece, H, pivoted about midway its length, a part of which projects below the surface of that part of the frame to which it is attached, so that it may readily be operated by the pressure of the finger to disengage it from the idler, and also provided with an incline, *f'*, to ride up upon a projection on the lower part of the barrel, in combination with an idler for operating the extractor.

3. The combination of the hollow extractor-stem I, spring-rod *n*, and spring *o'*, substantially as described.

156,675. DAMPERS. H. A. White, Hamilton, Canada. [Filed June 16, 1874.]

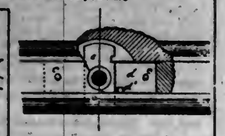
Brief.—The box holds one end of a spring, and protects it against too great heat. To the free end of the spring is attached a saddle, which embraces and bears upon the periphery of the disk rigidly affixed to the damper-spindle. The pressure of the spring upon the disk maintains the damper in any adjusted position.



1. The spring-box B, open or closed, fitted to the stove-pipe A, in combination with the spring F, saddle E, and spindle-plate C, substantially as specified.

2. The circular area-edged disk C, attached to the spindle of the damper, in combination with the saddle E and spring F, all operating substantially as and for the purpose specified.

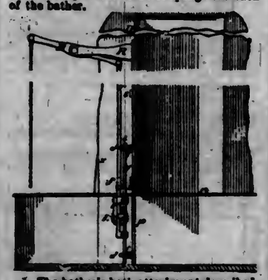
156,676. LOCKS FOR DRAWERS. Reul W. Whitney, Cleveland, Ohio, assignor to Wilcox Sewing-Machine Company, same place. [Filed Nov. 2, 1874.]



The hereinbefore-described lock, consisting of the plate *d*, having the bolt *e* pivoted thereto, as shown, and placed in the cross-bar C, to be turned by a key, K, for locking the drawers A and B, as specified.

156,677. BATH ATTACHMENTS. Thomas D. Woolsey, San Francisco, Cal., assignor of one-half his right to Wm. H. Baxter, same place. [Filed Nov. 2, 1874.]

Brief.—A brush or sponge is fitted to a traveling frame, which, by a system of guide-rods, lever-beam, and springs for its adjustment, is made, by the pulling up and down of a connecting-rod, to scrub or sponge the back of the bather.



1. The bather's bath attachment described, consisting of the sliding frame F, with brush attachment L, guide-rods *g g'*, springs *t t'* on the retaining-pins *d d'*, connecting-rods *r' r*, with lever B on the hinge-bracket E, and slide-plate P, with slide-brackets *s s'* on the shutter D, substantially as and for the purposes herein set forth and specified.

2. The sliding frame F, provided with the brush L, in combination with the guide-rods *g g'*, springs and retaining-pins *t t'* and *d d'*, respectively, substantially as and for the purposes herein set forth and specified.

3. The roller-brush L fitted to the sliding frame F, and provided with the sheave *a*, which is actuated by running on the guide-rod *g*, as described, substantially as and for the purposes herein set forth and specified.

4. The guide-rods *g g'* fitted loosely to the retaining-pins *d d'*, in combination with the slide-frame F, provided with the eye-pieces *s s'* and the springs *t t'*, substantially as and for the purposes herein set forth and specified.

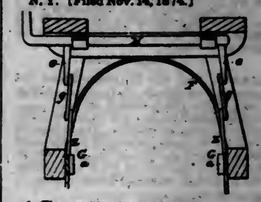
5. The springs *t t'* fitted to the retaining-pins *d d'*, in combination with the eyes *b b'* of the guide-rods *g g'*, and sliding plate P, substantially as and for the purposes herein set forth and specified.

156,678. STOVE-POLISHES. J. Yates and A. P. Yates, Rockford, Ill. [Filed Nov. 21, 1874.]

Brief.—Plumbago, benzine, asphaltam, gasoline, and liquor of iron.

A stove-polish composed of the ingredients herein specified, and in the proportions substantially as set forth.

156,679. SLED-BRAKES. John York, Lacon, N. Y. [Filed Nov. 14, 1874.]

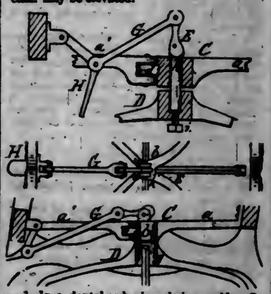


1. The combination, with the lever-brake Z, pivoted to the runners, of the rock-shaft H, having crank-arms *c* and the connecting-links *g*, substantially as specified.

2. The metallic brake guard-strip G, secured to the inside of the runner, and having the brace-arms F extending upward and inward, and secured to the standard and bolsters, all combined substantially as specified.

156,680. DENTISTS' CHAIRS. G. W. Archer, Rochester, N. Y. [Filed Mar. 23, 1874.]

Brief.—The spider is constructed with two stiff arms and two pivoted arms, so that it can be adjusted to different-sized chairs. The chair is provided with an independent support, having an elevating-cam, by which the chair may be elevated.



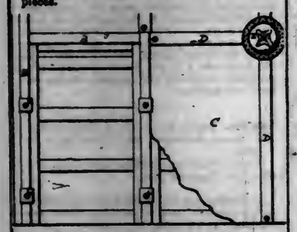
1. In a dental or barber chair, a spider, C, constructed with two stiff arms, *a a*, attached to the rear rail, and two pivoted arms, *a' a'*, connecting with the front rail, the whole combined, as shown, that the spider may be expanded or contracted horizontally to adapt itself to different-sized chairs, as herein shown and described.

2. The combination, with the brace or bottom of a dental or a barber chair, of the independent support D, spider C, and elevating-cam E, by which the chair may be elevated upon the support, and turned upon the same as a pivot, as described.

3. The combination, with the spider C and support D, of the spindle I, cam E, connecting-rod G, and treadle H, operating in the manner and for the purpose specified.

156,861. METALLIC CEILINGS. Henry Adler, Pittsburg, Pa. [Filed May 20, 1874.]

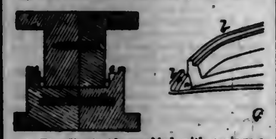
Brief.—A sheet-iron ceiling consisting of panels secured in position by concealed fastenings, cap-pieces, and ornamental corner-pieces.



1. In combination with the panels C, the cap-pieces D, and corner-pieces E, substantially as and for the purpose specified.
2. In combination with the panels C and concealed fastenings b, the cap-pieces D and corner-pieces E, substantially as and for the purpose specified.

156,862. DIES FOR FLANGING SOLES FOR BOOTS AND SHOES. F. D. Ballou, Abington, Mass. [Filed Sept. 4, 1874.]

Brief.—Each die is made up of two longitudinal adjustable sections. The sections of the lower or sole-supporting die are connected by spiral springs, those of the upper die by screws, so that the lower die will yield laterally to allow for soles of varying widths.



1. The die A A^1, provided with springs s for drawing the parts A A^1 toward each other, substantially as and for the purpose described.
2. The combination of the laterally-adjustable die B B^1 with the laterally-yielding die A A^1, substantially as and for the purpose described.
3. The laterally-adjustable die A A^1, formed with the ledge a and rim a, in combination with the laterally-adjustable die B B^1, striking inside the ledge a, substantially as and for the purpose described.
4. In an apparatus for turning a flange upon a line near the edge of a boot and shoe sole, the die B B^1 of the width of the sole between the intended flange, in combination with the die A A^1, having a deep central recess slightly wider than the die B B^1, and the ledge a, within and on which to adjust the sole and present it properly to the stroke of die B B^1, substantially as described.

156,863. WAX-THREAD SEWING-MACHINES. F. D. Ballou, Abington, Mass. [Filed July 31, 1874.]

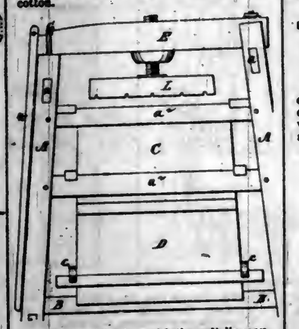
Brief.—A thin roll or flange is formed upon the throat-plate of the machine, around the throat thereof, and serves as an opener for the stitch-channel, and also as a means for guiding the work to the stitching mechanism.



In a wax-thread sewing-machine for sewing the outer seam of boot and shoe soles, an elevated work-support located at or near the edge of the work-plate, and forming a thin wall to the needle-throat higher than the depth of the channel in the sole, and of such size, in plan, that, in the work of the machine, it is lapped to the depth of the channel by the sides of the channel, substantially as and for the purpose described.

156,864. HAY AND COTTON PRESSES. W. C. Banks, Como, Miss., assignor to Mrs. R. Banks, same place. [Filed Nov. 25, 1874.]

Brief.—The lower part of the press is made larger than the top, to relieve the doors of lateral pressure due to the bulging out of the cotton.



1. The combination, with the radially-moving bar E, of the levers M, having perforated ends and pegs d, and the ropes N, substantially as and for the purpose described.
2. In a baling-press, a box having increasing transverse dimensions as it tapers from the mouth to the part where the bale is compressed, substantially as and for the purpose specified.

156,865. WHEEL-SCRAPERS FOR PLANTERS. J. C. Barlow, Quincy, Ill., assignor to Vandiver Corn-Planter Company, same place. [Filed Aug. 22, 1874.]

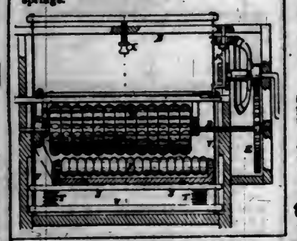
Brief.—To the front of the seat-standard is pivoted an eccentric cam; to which, and extending rearwardly, is connected a rod, which is attached to a projecting piece on a transverse bar, to which is attached end scrapers, which are adjusted in and out of contact with the periphery of the bearing-wheels, or locked against them by means of the cam and rod.



The eccentric cam F, lever G, and rod D, in combination with the bar I, provided with the scrapers P, for the purpose of operating the scrapers and locking them upon the wheels, substantially as shown and described.

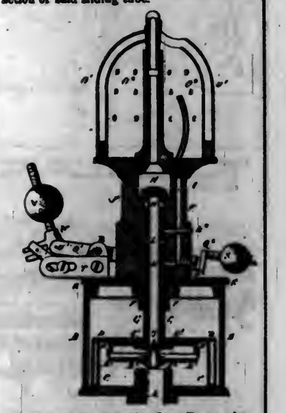
156,866. WASHING-MACHINE. John F. Bennett, Limestone, N. Y. [Filed Sept. 19, 1874.]

Brief.—The lower bed of rollers is adjusted by the screw, the bars, the rods, and the springs.



156,867. APPARATUS FOR LIGHTING, EXTINGUISHING, AND REGULATING GAS-FLAMES. L. Baumeister, Gaggenau, Germany, assignor to himself and Michael Fürstenhaim. [Filed Dec. 28, 1874.]

Brief.—The bell-float is provided with a diaphragm and valve, to regulate the supply of gas to the sliding tube, and has connected with it shifting weights, for controlling the action of said sliding tube.



1. The combination of a float, D, carrying a vertically-sliding tube, G, provided with openings, a canal, I, parallel to the tube G, and communicating with the same by openings; a main burner arranged above the sliding tube, and an auxiliary burner arranged above the canal I, substantially as described, for the object specified.
2. The regulating device for supplying the gas alternately to the main and auxiliary burner, consisting of bell D, sitting in annular chamber C, and provided with diaphragm B^1, in combination with the sliding valve G, moving in guide-piece F, and provided with apertures, as described, for opening communication to the burners, substantially as herein set forth.
3. The combination, with the bell D, of levers Q and U, connected together and with the bell, and provided with shifting or adjustable weights, for regulating the pressure of gas, substantially as described.
4. The combination, with the auxiliary burner, of the double hood or chamber O' O^2 surrounding the said burner, for supplying the same with air and preventing drafts, substantially as described.

156,868. DENTAL PLUGGERS. J. W. Baxter, Vevay, Ind. [Filed Nov. 14, 1874.]

Brief.—A spring-lever, worked by the finger, forces back the spring-mallet through a ratchet upon one side. An incline upon the tubular case throws up the pawl-lever, and the mallet is then free to be forced by its spring against the plugging-point.

1. The combination of ratchet-formed plunger F, relief-incline a^{xx}, rod L l^1 l^2, and finger-presser J, connected and operating substantially as and for the purpose specified.
2. In combination with rod L, finger-presser J, and bearings k k' on standards I l', the springs K and M, connected and operating substantially as specified.



156,868.

The combination of the adjusting-screw X, the bar W, and the rods V with the top bar of the frame B, and with the bars and springs U S T for regulating the pressure upon the clothes, substantially as herein shown and described.

156,867. APPARATUS FOR LIGHTING, EXTINGUISHING, AND REGULATING GAS-FLAMES. L. Baumeister, Gaggenau, Germany, assignor to himself and Michael Fürstenhaim. [Filed Dec. 28, 1874.]

Brief.—The bell-float is provided with a diaphragm and valve, to regulate the supply of gas to the sliding tube, and has connected with it shifting weights, for controlling the action of said sliding tube.

1. The combination of a float, D, carrying a vertically-sliding tube, G, provided with openings, a canal, I, parallel to the tube G, and communicating with the same by openings; a main burner arranged above the sliding tube, and an auxiliary burner arranged above the canal I, substantially as described, for the object specified.
2. The regulating device for supplying the gas alternately to the main and auxiliary burner, consisting of bell D, sitting in annular chamber C, and provided with diaphragm B^1, in combination with the sliding valve G, moving in guide-piece F, and provided with apertures, as described, for opening communication to the burners, substantially as herein set forth.
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156,868. DENTAL PLUGGERS. J. W. Baxter, Vevay, Ind. [Filed Nov. 14, 1874.]

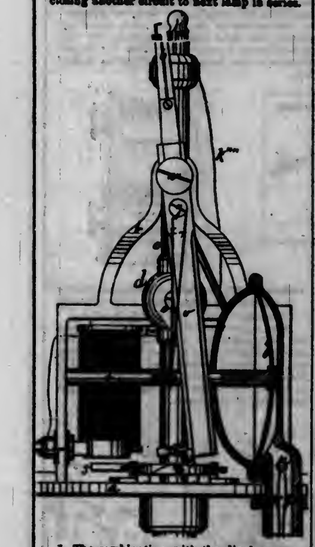
Brief.—A spring-lever, worked by the finger, forces back the spring-mallet through a ratchet upon one side. An incline upon the tubular case throws up the pawl-lever, and the mallet is then free to be forced by its spring against the plugging-point.

1. The combination of ratchet-formed plunger F, relief-incline a^{xx}, rod L l^1 l^2, and finger-presser J, connected and operating substantially as and for the purpose specified.
2. In combination with rod L, finger-presser J, and bearings k k' on standards I l', the springs K and M, connected and operating substantially as specified.

156,868.

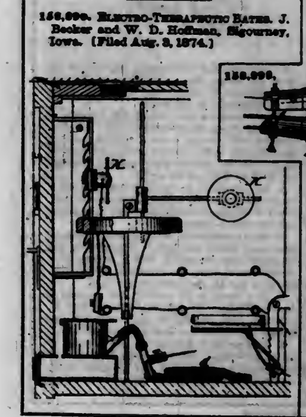
156,869. ELECTRO-MAGNETIC GAS-LIGHTING APPARATUS. E. H. Bean, Boston, Mass. [Filed Aug. 6, 1874.]

Brief.—Pressure of air upon diaphragm moves a rod controlling valve, until the rod is checked by a detent attached to an armature. At the moment of checking a circuit is completed at the burner-tip through a wire attached to a pivoted lever, also moved by the rod impinging on a wire at burner. This causes the magnet to attract its armature, releasing the detent, and allowing the rod attached to diaphragm to continue its movement, completely opening the valve, breaking the circuit at the burner to cause a spark, and closing another circuit to next lamp in series.



1. The combination, with the diaphragm f and rod f, of the rocking-lever e, spring-wire e^2, the circuit-breaking wire 6, and the metallic pole e^1, as and for the purpose herein described.
2. The combination, with the electro-magnets o p, and the armature 5, of the swinging frame 3, having catch or recess 2, lever e, insulated wedge 7, springs r t, and their insulated posts q s, and the wires l l^1 l^{xx} l^{xxx} l^4 F, as and for the purpose herein set forth and described.

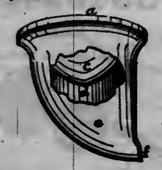
156,870. ELECTRO-THERAPEUTIC BATHS. J. Becker and W. D. Hoffman, Sigourney, Iowa. [Filed Aug. 3, 1874.]



1. The tube G, provided with internal conductor and binding-screw, as and for the purpose specified.
2. The doubly-adjustable electrodes K K in a bathing-closet, as and for the purpose set forth.
3. The evaporating-vessel, arranged within the closet, and provided with hinged top and nozzle for connection with tube, as shown and described, to allow a general or special delivery of vapor.

156,891. UTERINE SUPPORTERS. George Bennett and Foster B. Parsons, St. Louis, Mo. [Filed Dec. 23, 1874.]

Brief.—An elastic-ring pessary with rubber-diaphragm support has combined with it an elastic pouch of soft rubber.



The uterine supporter having elastic ring a, cup c with aperture d, and neck or pouch e with aperture f, all combined and constructed substantially as and for the purpose set forth.

156,892. CAR-COUPLINGS. Chas. Billmeyer, York, Pa. [Filed Nov. 4, 1874.]

The combination of bolt and nut B F and the three springs H D E with the beam I, all substantially as and for the purpose specified.

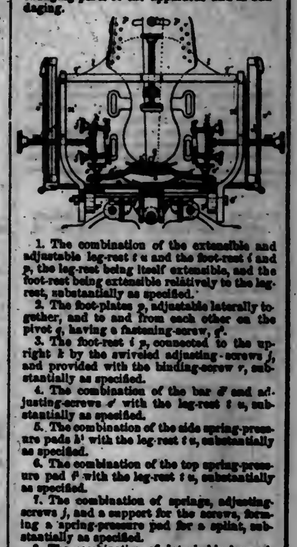
156,893. ARM-FRACTURE APPARATUS. D. Bissell, Detroit, Mich. [Filed Dec. 5, 1874.]

Brief.—The concave-convex metallic splints are made up of compound plates, which adjust upon themselves both laterally and vertically. Clamping-bands with set-screws adjust along jointed rods, which sustain the apparatus. Additional narrow pressure-bars adjust so as to press between the two bones of the lower arm.

1. The combination of extensible concave-convex clamping-plates A or B, curved clamping-bars U, sliding upon jointed rods E, and adjusting-screws C, substantially as specified.
2. The combination of extensible clamping-plates A B, bars C, adjusting-screws G, jointed rods E, and an adjustable fastening, as I J K, substantially as specified.
3. The combination of pressure-springs L and adjusting-screws M, with the clamping-plates of a fracture apparatus, as specified.
4. The said springs, arranged to extend out of the plates along the wrist, for supporting it, substantially as specified.
5. The combination of side facing-plates with the pressure-springs, substantially as specified.

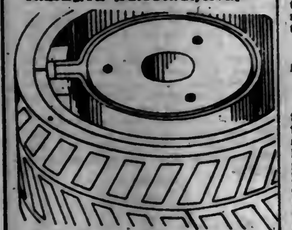
156,894. FRACTURE-BOXES FOR LEGS. D. Bissell, Detroit, Mich. [Filed Dec. 5, 1874.]

Brief.—The bed-plates of this apparatus are adjustable laterally and vertically. The foot-rest also adjusts to the various positions required. Pressure-bars are added, which may be forced against the limb at various points desired. The upper and lower parts of the fracture-box are held at various angles to each other, as required. An extension of one side passes up and rests in the armpit. A peculiarly-constructed bandage secures the foot to its adjustable plate. Hooks connected in pairs hold the bandage when required in changing parts of the apparatus and in bandaging.



1. The combination of the extensible and adjustable leg-rest f e and the foot-rest f and p, the leg-rest being itself extensible, and the foot-rest being extensible relatively to the leg-rest, substantially as specified.
2. The foot-plates p, adjustable laterally together, and to and from each other on the pivot q, having a fastening-screw, q^1.
3. The foot-rest f p, connected to the upright k by the swiveled adjusting-screws j, and provided with the binding-screw r, substantially as specified.
4. The combination of the bar S and adjusting-screws s with the leg-rest f e, substantially as specified.
5. The combination of the side spring-pressure pads h^1 with the leg-rest f e, substantially as specified.
6. The combination of the top spring-pressure pad f^1 with the leg-rest f e, substantially as specified.
7. The combination of springs, adjusting-screws j, and a support for the screws, forming a spring-pressure pad for a splint, substantially as specified.
8. The combination of detachable bars s^1, supporting cross-bars s^2, and screws m^1 r^1, for supporting the spring-pressure pads, substantially as specified.
9. The combination of the detachable bottom and sides with the leg-rest and pressure-pads, substantially as specified.
10. The combination of the leg-rest and pressure-pads, thigh-rest and pressure-pads, and jointed supports R and F, substantially as specified.
11. The combination of supports R F F, rods M, and adjusting-screw T with the leg-rest and thigh-rest and their pads, substantially as specified.
12. The extensible thigh-box composed of bottom plates O O' R R' F, side plates D D^1, adjusting-rods D I, bar R, and screws L, combined and arranged substantially as specified.
13. The combination of adjustable bed-plate F with extensible plates e e^1, substantially as specified.
14. The supporting-bars g, having notches F^1, in combination with the jointed supports R F^1 and the adjusting-screw F, substantially as specified.
15. The combination of a shoulder-extension device, D^1, F^2, T^1, and R^1, with the stand F and the leg and thigh splint, substantially as specified.
16. The combination of thigh-rest A^1 with the leg-rest and its pressure-pads, substantially as specified.
17. The improved strap-fastening, consisting of the staple F^3, holes G^1, and the loop H^1, substantially as specified.
18. The combination of clamping-bars A^1, screws B^1, and attaching-bars D^2 with the side pressure-pads h^1, substantially as specified.
19. The combination of the foot-bandage F^2 and straps D^3 and G^2 with the foot-rest f A, substantially as specified.
20. The combination of hooks s^3 with the pressure-pads, substantially as specified.

156,895. PISTON-PACKINGS. John Bole, Pittsburg, Pa. [Filed Dec. 26, 1874.]

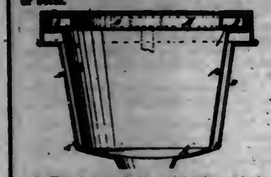


1. In combination with the packing-ring, a band spring, having its ends secured to the ring at or near the joint, so as to exert its force in distending the ring.

2. In combination with the packing-ring of a piston-head, a band free spring, having its ends secured to the ring at or near the joint, and formed or described, so that it may move with the ring around a common center.

156,896. WATER-CLOSETS. H. O. Brinckerhoff, New York, N. Y. [Filed Dec. 12, 1874.]

Brief.—Around the upper edge of the basin is formed a flange, which projects outward and upward to form a seat for the ring-pipe, from which the water is discharged into said basin through numerous small holes formed in the lower side of the said pipe, which pipe should project inward a little beyond the walls of the basin. The cap may be secured in place by straps, the upper ends of which are secured to the outer flange of said cap by pins or bolts.

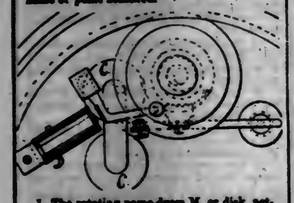


1. The ring-cap C, in combination with the perforated ring-pipe B and the upper edge of a water-closet basin, substantially as herein shown and described.

2. The combination of the straps D and pins or bolts *b b* with the ring-cap C, the perforated ring-pipe B, and the basin A of a water-closet, substantially as herein shown and described.

156,897. ELECTRO-MAGNETIC BURGLAR-ALARMS. Richd. J. Bottcher, Newark, assignor to John Middleton, Newark, and J. J. Thatcher, Caldwell, N. J. [Filed Feb. 27, 1874.]

Brief.—Name-drum, rotated by a spring, and indicating point attached, is held by a drop-pin, H, and detent N. Circuit closed at any point causes armature to release drop-pin, closing circuit to magnet controlling detent and operating alarm, sounding alarm and allowing name-drum to rotate and bring to view name of point attacked.



1. The rotating name-drum M, or disk, actuated by a spiral spring or weight, in combination with a drop-pin, H, and electro-magnets C and D, substantially as named, and for the purposes specified.

2. The combination, with the name-drum and alarm-bell, of a single magnet and armature, operating to simultaneously release the name-drum and sound the alarm-bell, substantially as set forth.

156,898. POTATO-DIGGERS. Leonard A. Brockett, Salisbury, N. Y. [Filed Dec. 1, 1874.]

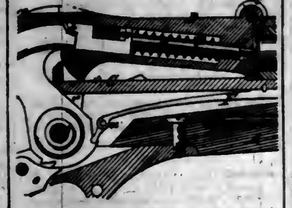
Brief.—A common flat share raises the potatoes from the ground, delivering them with the soil upon a series of spirally-grooved rollers, each of which in the ascending series has a more rapid motion than the roller immediately forward of it. The potatoes are delivered by the rollers upon an obliquely-inclined grating, which completes the separation of the soil, and delivers the potatoes upon the ground in a row at the rear of the machine.



156,898.

The combination of the scraper A, the series of rollers, each of which has an accelerated motion as compared with the one immediately forward of it, and the grating G inclined downward toward the rear, and also toward one side of the machine, substantially as shown and described.

156,899. BREECH-LOADING FIRE-ARMS. J. Broughton, Brooklyn, N. Y. [Filed Feb. 14, 1874.]



1. The firing-pin G, constructed and arranged in relation with the breech-block and its receiver, substantially as described, in combination with the retracting-spring H, whereby said firing-pin in addition to its ordinary function, is made to operate as a lock to the rear end of the breech-block when the latter is closed and the hammer is raised, essentially as specified.

2. The vibrating knob lever or handle K, in combination with the slotted firing-pin G, and the swinging breech-block D, substantially as and for the purpose shown and described.

3. The construction and arrangement of the rear end of the firing-pin and the nose of the hammer relatively with each other, essentially as described, whereby the hammer in its forward motion is made to enter and lock the breech-block before the firing-pin is released from its hold within the receiver, and said firing-pin in its back movement caused to enter the receiver and lock the breech-block before the hammer in moving backward has released it, substantially as specified.

4. In combination with the extractor F, working on the pin *b* of the breech-block hinge, the shoulder *p* on the said pin, for maintaining a proper distance between the extractor of the hinge and the head of the pin, for the free working of the extractor, substantially as herein described.

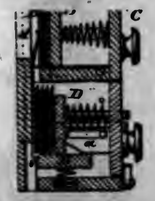
5. In combination with the extractor F, arranged in relation with the hinge of the breech-block, as described, the working point or nose *o* of the extractor, arranged to pass through a lateral slot in the receiver, and supported by means of a shoulder on its extremity, essentially as specified.

156,900. STATION-INDICATORS. John W. Bryan, Watertown, Tenn. [Filed Dec. 19, 1874.]

Brief.—A station-indicator which slides station-cards from a lower into an upper drawer.

1. A station-indicator constructed of a casing, A, with front opening, station-plates H, upper and lower slide-frames C, with spring-follower D, retaining side springs *d*, false spring-bottom E, and sliding rod, frame, or key F F, to be operated substantially in the manner and for the purpose set forth.

2. The lower slide-frame, C, having spring-follower D and guide-strips *a*, with inclined ends, in connection with the spring-acted false bottom E, for carrying up the lower follower to the bottom of the upper slide-frame on opening the lower slide for returning the station-plates in regular order from the upper chamber to the lower, substantially as specified.



156,901. MACHINES FOR FORMING HEELS FOR BOOT AND SHOE HEELS. T. Bullock, Cincinnati, Ohio. [Filed Oct. 7, 1874.]

Brief.—The runner or rand is placed upon the corrugated face of a disk, with its thick or outer edge bearing against a circular guide, and is pressed down upon the disk by a toothed feed-wheel supported upon the end of a driving-shaft, the disk rotating with the movement of the runner.

1. In a machine for turning the runner for boots and shoes, the combination of the disk D, feed-wheel I, pressure-roller J, and guide H, substantially as set forth.

2. In a machine for turning the runners of boots and shoes, the pressure-roller J, in combination with slotted plate *g* and set-screw *h*, whereby the roller may be set at any desired angle with the vertical plane passing through the shaft of the feed-wheel I.

3. In a machine for turning the runners of boots and shoes, the adjustable guide H, provided with guards *n n'* and slotted flange *t*, as and for the purposes specified.

4. In a machine for turning the runner of boots and shoes, the disk D, standard E, and longitudinally-adjustable arm F, arranged to receive and support the standard, all substantially as and for the purposes set forth.

5. In a machine for turning the runners of boots and shoes, the feed-wheel I and shaft N, provided with adjustable collars *y y'* for rendering the feed-wheel and shaft adjustable.

6. In a machine for turning the runners of boots and shoes, the feed-wheel I, shaft *i*, in combination with shaft N and set-screw S, for rendering the feed-wheel adjustable.

156,902. METAL-COATING COMPOSITIONS. Edward J. W. Burrow, Parish of Lambeth, England, assignor of one-half his right to George G. Brower, Baltimore, Md. [Filed Dec. 26, 1874.]

A composition, consisting of chalk, china clay or kaolin, sulphate of iron, copper, or zinc, refuse fat, and linseed-oil or naphtha, substantially as described, for coating various metallic surfaces to prevent oxidation and corrosion, as set forth.

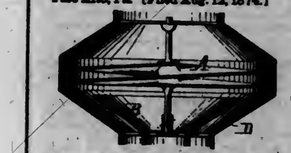
156,903. FOUNTAIN-SPRINKLERS. Cephas A. Buttles, Milwaukee, Wis. [Filed Aug. 1, 1874.]

Brief.—A revolving fountain provided with arms of different curvatures. A rose-head within which a valve is arranged to regulate the flow of water as may be desired.



A revolving fountain with arms D and G, and hub F, and valve K, substantially as specified.

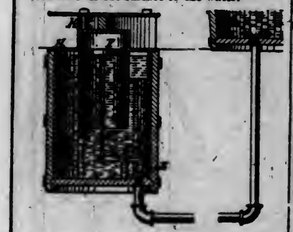
156,904. SPARE-ARRESTERS. John H. Carr, Palo Alto, Pa. [Filed Aug. 12, 1874.]



The combination, in a locomotive smoke-stack, of the central pipe F, deflecting-wheel A, having spiral vanes arranged above the said pipe, the inner casing E, and the guard B, extending from the mouth of the pipe F to or nearly to the outer edge of the wheel, and forming, with the outer casing, an annular chamber, D, for the reception of sparks thrown outward by the rotation of the wheel, all as set forth.

156,905. WATERING-TANKS FOR HOGS. G. A. Carter, Princeton, Ill. [Filed June 6, 1874.]

Brief.—An inverted casing for the float is arranged within the tank to prevent freezing of the water. Partitions between the openings in the cover prevent the circulation of cold air over the surface of the water.



1. The tank C, having the float F, rod *e'*, lever *d*, and valve E, operating in combination with the casing G, substantially as and for the purpose specified.

2. The inverted casing G, combined with the float F and tank C, substantially as described, and for the purpose specified.

3. The wings J, arranged to operate with the tank C and perforated top H, substantially as described, and for the purpose specified.

4. The shield I, in combination with the perforated top H, winged casing G, and tank C, substantially as and for the purpose specified.



156,906. COUPLING-JOINTS FOR CULTIVATOR-TEETH. Edwin Children, Dunleith, Ill. [Filed Oct. 9, 1874.]

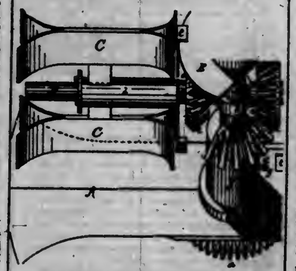
Brief.—A convex shovel-block fitting in a concave standard-plate held by an eyebolt passing through an enlarged opening, and capable of adjustment in all directions.

The coupling-joint herein described, consisting of the casting C, made with the concave cavity D, the casting E, made with the convex projection F, the eyebolt G, passing through the nut *g*, and through or thwart pin H, passing through the eye of said bolt and resting on the notches A A, attached and connecting and in combination with the standard A and shovel B, substantially as specified.

156,907. WATER-PROOF LIQUID BLACKING. Edward Clark, New York, N. Y. [Filed Dec. 12, 1874.]

A water-proof blacking made of gum-shellac, methylic alcohol, gum-camphor, lamp-black, sweet-oil, mutton-tallow, turpentine, and oil of mirbane, in about the manner and proportions specified.

156,908. HARVESTERS. George H. Clark, Lockport, N. Y. [Filed Sept. 26, 1874.]



1. The double fans C C', on sleeves *b b*, and arms D D, with the cogs *c c*, the segmental cogs *d*, fan-guide E, and fan-lugs *e e*, in combination with the cutter-shaft B and cutters A A, all arranged and operating substantially as and for the purpose specified.

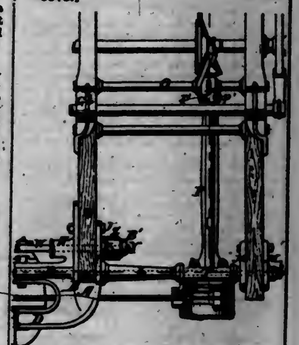
2. The movable collar *h*, carrying the fan-supporting arms D D, in combination with the movable sleeve *f* and segment *d*, for adjusting the fans higher or lower, as hereinbefore set forth.

156,909. HAND-HARVESTERS. William F. Cochrane, La Fayette, Ind. [Filed Oct. 31, 1872.]

1. In a hemp attachment for harvesters, the combination of the vertical divider and curved divider-fingers with the quadrant-shaped platform, substantially as described, for the purposes specified.

2. The elevated guide-finger, supported near the front corner of the main frame, and extending rearward to intersect the divider-fingers, for the purpose of holding the cut stalks in an upright position, substantially as described.

156,910. MOWING-MACHINES. William F. Cochrane, La Fayette, Ind. [Filed Dec. 15, 1873.]



1. The bracket A, cast with the lateral socket H, for the passage of the lifting-hook W, substantially as described.

2. The eyebolt O, extending longitudinally, under the front arm, D, of the bracket, from the frame of the machine to the pivot of said bracket-arm, substantially as described, for the purpose specified.

3. The double lifting-cams and the lifting-hook, in combination with the main frame and inner shoe of the finger-bar, for raising and lowering the outer end of the latter, substantially as described.

4. The lifting-hook W, passing through the bracket and inner side bar of the main frame, to catch over the headed pin X upon the upturned front end of the shoe G, substantially as described, for the purpose specified.

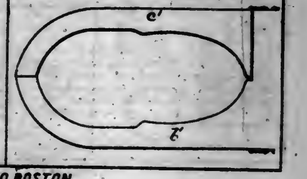
5. The combination of the nut Y and sliding cam B' with the angular shank of the lifting-hook W, for adjusting the cam on the hook, substantially as described, for the purpose specified.

6. The cam-thimble B', cast with an angular recess in its end to receive the nut upon the lifting-hook, and prevent it from casually turning thereon, substantially as described.

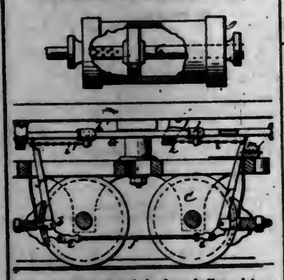
156,911. BOOT-JACKS. Henry N. Conklin, Indianapolis, Ind. [Filed June 27, 1874.]

Brief.—To the base-board a pair of griping-arms are hinged, which close together to hold a boot. Springs are arranged between the base-board and griping-arms.

In a boot-jack, the combination, with the base-board A and the spring S S', of the griping-arms B C, having overlapping shanks *b c*, substantially as specified.



156,912. AIR AND STEAM CAR-BRAKES. James M. Conrad, Newark, Ohio, assignor of one-half his right to R. M. Weaver, Williamsport, Pa. [Filed Jan. 4, 1875.]



1. In a steam or air brake, a hollow piston-rod, which extends under the car-bottom, in combination with one or more pistons and the brake-shoes, to which it is connected, substantially as and for the purposes herein set forth.

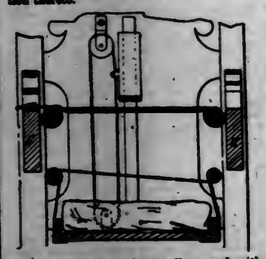
2. The combination, with a hollow piston-rod, G, of the adjustable collars *h h'*, chains *i i'*, and brake-levers, all substantially as set forth.

3. The spring *m*, in combination with the levers, chains, and piston-rod, as and for the purposes herein set forth.

4. The combination of the hollow piston-rod G, closed at both ends, and provided with nozzle *n*, the flexible pipes K, having couplings *p*, with packing *s* and the studs *r*, all substantially as and for the purposes herein set forth.

156,913. INVALID-BEDSTEADS. Oscar U. Conby and Geo. W. McGovern, Richmond, Va. [Filed May 23, 1874.]

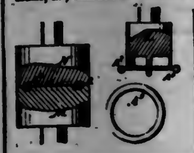
Brief.—An endless cord is attached to the vertically-moving slide, and passes over two pulleys, one above and the other below the slide. In lowering the hinged head-section of the stretcher, the cord gives a positive motion thereto.



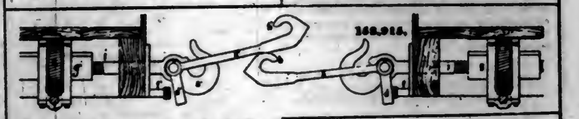
The combination of an endless cord, with mechanism for raising the hinged-head section of the stretcher-frame, consisting of a lever-bracket, a slide, and a band and pulley, substantially as and for the purposes described.

156,914. DIES FOR MAKING HOLLOW RIVETS. Rhubeal Cottle, New York, N. Y., assignor to Mulford, Hale & Cottle, same place. [Filed Oct. 10, 1874.]

Brief.—A number of dies to strike up a planchet, turning the edge until it forms a hollow head; the central flat portion is then cut out by the cutter L, and the ring thus made, A', finished in dies N M.



The combination of the dies, holder, and cutting-tool B C, D E, F, G H, I *J*, I K, L, and M N, constructed as described, and operated successively, and in connection with each other, for forming tubular rings without cross-seams from flat metallic disks, substantially as herein shown and described.



156,915. CAR-COUPLINGS. Andw. Coulter, Riga, Russia. [Filed Dec. 16, 1874.]

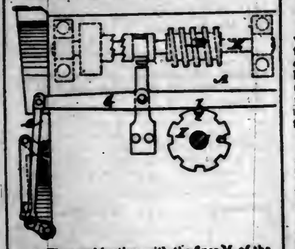
Brief.—To uncouple, the draw-bar is withdrawn under the car, and the arm is drawn against the springs, and the hook is raised out of connection thereby.

1. The combination of the draw-bar *i*, its hook, the coupling-hook *h*, having an opening, *e*, and arm *d*, and the spring *f*, to maintain the hook in an extended position, but capable of yielding and allowing the hook to descend, all as set forth.

2. The screw-coupling *g*, uniting the two ends of the draw-bar and rendering the same adjustable, in combination with the hook *h* and its arms *e* and *d*, and spring or stop *f*, as set forth.

156,916. RETORTS' OVENS. Alex. Crumbie, Nyack, and D. Donald, Brooklyn, N. Y. [Filed July 30, 1874.]

Brief.—The retorts are intended to effect a thorough combustion of the gases in their passage from the furnace to the baking-chamber. The door is made to open when the carriers are brought opposite to it.



1. The combination, with the flues M, of the internally-arranged open-ended retorts N, the lateral openings *l*, the fire-places I, the apertures m, and the baking-chamber A, substantially as and for the purpose herein set forth.

2. The combination, with the stop-lever G, its toe *b*, and the notched disk I, of a door, *j*, and mechanism for automatically opening and closing the charging and discharging apertures *d*, in relation with the traveling bread-holders, essentially as herein set forth.

3. In combination with the traveling bread-holders C and aperture *d*, the door J, hung on an intermediate axis, *k*, and constructed to form, when thrown open, a delivery-board for the baked articles, substantially as shown and described.

156,917. SHEER-BOOMS. W. C. Culbertson, Girard, Pa. [Filed Dec. 16, 1874.]

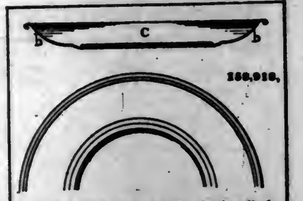
In a sheer-boom, the rudders thereof, several to or controlled by an operating-cord in such manner that they will move to allow the passage of an obstruction, and then resume their normal position, substantially as herein shown and described.



156,918. GAME APPARATUS. David R. De Costa, Philadelphia, Pa., assignor to R. M. De Costa, C. De Costa, and A. De Costa, same place. [Filed Aug. 26, 1874.]

Brief.—Consists of stakes and a dished and quoit-like ring, to be thrown at and encircle the same.

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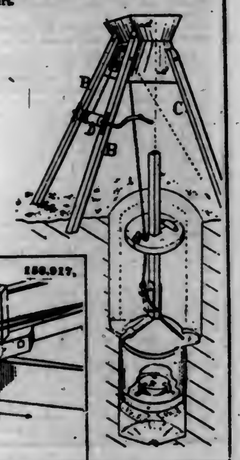


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1. The tubular and flaring derrick-crown A A, substantially as described, and for the purposes specified.

2. The combination of the crown A, rigid legs B B, and folding legs C C, substantially as described, and for the purposes specified.

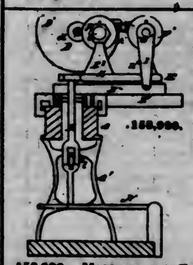
3. The cutters Nos. 1 and 2, having the peculiar upward and inward curves at their upper and outside ends, as described, in combination with the valve *k*, substantially as shown and described, for the purposes of elevating the loose dirt.



4. The movable bottom m, having conical valve *k*, substantially as and for the purposes specified.

5. The movable cylinder or bucket *f f*, in combination with the frame *e e d* and sliding catch *g*, substantially as and for the purposes specified.

6. In a well-auger, the combination of the frame *e e d* carrying cutters Nos. 1 and 2, the movable cylinder *f f* carrying cutters Nos. 3 and 4, and the movable bottom m having valve *k*, substantially as described, and for the purposes specified.



156,920.



156,921.

156,920. MACHINES FOR TRIMMING AND BEARING SHEET METAL. John De Bats, Philadelphia, Pa. [Filed Oct. 3, 1874.]

1. In combination with a machine for trimming metal, the adjustable pressure-shaft D and slide-rest E, movable simultaneously and in conjunction, substantially as and for the purpose specified.

2. The shaft G', moving in the head F', having a cutter, *h'*, and crank-arm I, substantially as described.

3. The combination of the shafts G G', provided with cutters *h' h'*, said shaft G being stationary, while said shaft G' is movable, so as to bring the cutters together, substantially as set forth.

4. In combination with the pressure-shaft D, provided with a head, *d*, the disk D', recessed as described, for the reception of said head.

5. The head O, slotted as described, to receive the end of the standard M', and having an opening for the passage of the pressure-shaft D, substantially as shown and described.

6. The combination of the crank-arm I, pivoted bar K, and lever L with the slotted bar M, substantially as shown and described.

7. The combination of the slotted bar M, pivoted standard M', head O, and pressure-shaft D, substantially as described.

8. The pivoted standard M', head O, and arms P P, in combination with the slide E, substantially as shown and described.

9. The heads *c c'*, provided with cutters *h' h'*, rings *h'*, and groove *b'*, so as to trim and bead at one operation, substantially as described.

10. A lathe for trimming sheet-metal ware, combining the following elements: A revolving chuck, a slide-rest, and a cutter or cutters, constructed in connection with a pressure-shaft and a disk, or a shaft with solid head, as described, the parts being constructed and arranged substantially as described, so that by depressing a connected treadle the pressure-shaft and slide will be moved toward the chuck, and the cutter or cutters made to operate upon the vessel to be trimmed, as set forth.

156,921. HAMESAWS. Henry Disston, Philadelphia, Pa. [Filed May 14, 1874.]

Brief.—The saw-blade is cut away in that part to which the handle is attached, so as to place the hand of the operator nearer to the cutting part of the saw than is the case in handsaws of ordinary construction.



A handsaw in which the butt of the blade has a recess, *a*, coinciding with the front edge of the opening *b* in the handle, and arranged in respect to the gripe B as set forth.

156,922. COMBS. Myer Dittenhoefer, St. Denis, near Paris, France. [Filed Oct. 19, 1874.]

As an improved article of manufacture, a comb made in one piece, of india-rubber or equivalent material, with undulations formed on the back or face of the teeth thereof, substantially as and for the purpose specified.

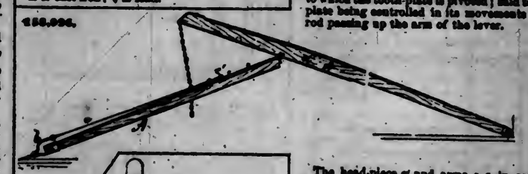
156,923. ROAD-ENGINES. Riley B. Dean, Sacramento, Cal. [Filed Jan. 2, 1875.]

1. The combination of pulley N, having rigid bearings and slotted socket M, with shaft J, ball I, and projections *r r*, substantially as set forth.

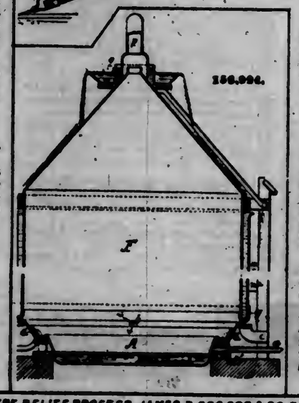
2. A traction-engine, in combination with the four traction and bearing wheels H and I and universal joint, consisting of socket M and ball I, with projections *r r*, so that wheels I can exert their tractive power when turned to an angle with the wheel H, substantially as set forth.

156,924. APPARATUS FOR CONCENTRATING AND EVAPORATING SULPHURIC ACID. M. J. F. B. Pauzet and J. L. Kessler, Clermont-Ferrand, France. [Filed June 20, 1874.]

Brief.—The joint-piece between the bell and pan supports the pan, and is supported on brackets reaching inward from the vertical standards which rise around the bell. The bell rests removably in a groove at the outer edge of the joint-piece. The latter has a space for a continuous current of water. The pan A is of platinum; joint-piece C of lead; *d* is mastic or clay; *g'*, iron covered with lead; E is cast-iron; *g* is lead.



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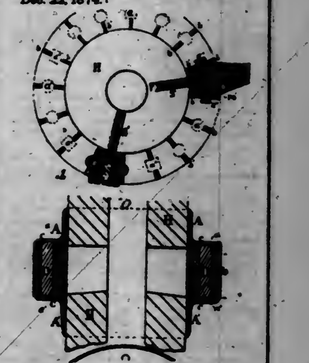
1. The combination, in an evaporating apparatus, of the bell F, pan A, inlet *b*, and outlet *c*, communicating with the pan a short distance above the bottom, as and for the purpose set forth.

2. The combination of the pan A, the gutter G, luted to the pan, and the bell F, resting in a groove at the upper edge of the gutter, as set forth.

3. A cold-water channel, *g*, combined with the joint between the bell F and pan A, substantially as and for the purpose set forth.

4. The combination of the basin A, annular gutter G, standards *k*, and bell F, supported by the standards above the basin, as set forth.

156,925. WHEELS FOR VEHICLES. John B. Fisk, Saegerville, Pa., assignor of one-half his right to Wm. R. Godshall. [Filed Dec. 22, 1874.]



In a carriage-wheel, the combination of a hub, H, socket-ring A A, spokes S, retaining-rings C C, and dowel-pins D, substantially as and for the purpose set forth.

156,926. CARPET-STRETCHERS. G. H. Ford, Jerseyville, Ill. [Filed July 20, 1874.]

Brief.—The head-piece has projecting arms, to which the teeth-plate is pivoted; said teeth-plate being controlled in its movements by a rod passing up the arm of the lever.

156,926.

The head-piece *c* and arms *a a*, in combination with the adjustable teeth-plate *b* and its connecting-rod *e* and lever A, the whole constructed, operated, and arranged in the manner and for the purpose herein set forth.

156,927. AUTOMATIC TELEGRAPHIC APPARATUS. Merritt Gally, Rochester, N. Y. [Filed May 11, 1874.]

1. The combination, with a perforator for preparing message matter for telegraphic transmission, and with a transmitter therefor, of an intermediate device, controlled in certain operations by the paper passing from the perforator to the transmitter, and in turn controlling the transmitter in its action, substantially as and for the purpose specified.

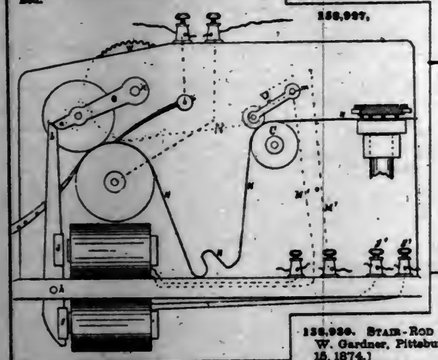
2. The transmitting or receiving mechanism, in combination with the circuit S' S', operated substantially as and for the purpose specified.

3. The combination, with a series of instruments connected to the same or to different circuits, of an electrical or mechanical connection, for controlling any or all the instruments from any one thereof, substantially as specified.

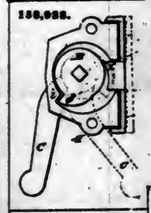
4. The tripping-circuit M' M', with connector E, by means of which the transmitting or receiving movement is interrupted by the tension of the ribbon N, substantially as specified.

5. The combination, with a main-line transmitting wire and instruments therefor, of an additional line-wire, for controlling the instruments of the transmitting-line as to their intervals of transmission, substantially as specified.

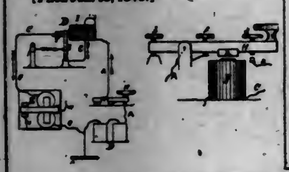
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156,926. TELEGRAPHIC APPARATUS AND CIRCUITS. Merritt Gally, Rochester, N. Y. [Filed Jan. 13, 1875.]



1. The combination, with the telegraphic line A, of the circuit C, with a receiver, a relay, or a repeater, E, and automatic switch for operating the connection between the line A and circuit C, substantially as and for the purpose specified.

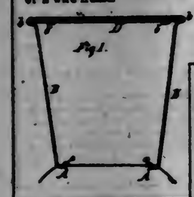
2. The combination of the circuit C and a battery, with and connected to the main line on opposite sides of the magnet I, substantially as and for the purposes specified.

3. The combination of the line A and double sets of station instruments, with circuits crossed from side to side in either or both directions, substantially as and for the purposes specified.

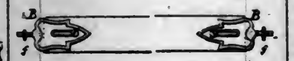
4. The combined manipulating-key, and receiver, relay, or repeater, consisting of a magnet-armature, and key-lever, substantially as specified.

156,929. REFLECTORS. Wm. B. Gardner, New York, N. Y. [Filed Dec. 10, 1874.]

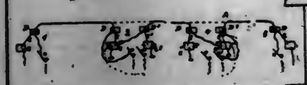
Brief.—A reflector of white glass supported upon and over the globe of a lamp by means of a wire frame.



156,930. STAIR-ROD SECURERS. Thomas W. Gardner, Pittsburg, Pa. [Filed Aug. 15, 1874.]



As a means for adjusting rods to staircases, the slotted and adjustable metallic plate B, provided with the projecting prong D, as shown, in combination with the staple or ring-bolt *f*, attached to the stairs, when arranged and operated substantially as herein described and set forth.



156,931. HYDROCARBON-FURNACES. Chas. M. Gearing, Pittsburg, Pa. [Filed June 17, 1874.]

Brief.—The oil from a tank, in which a perforated basket filled with non-combustible material is placed, percolates to the surface of said material, where a blast of air is supplied. The basket can be easily removed for the purpose of cleaning.



The combination of the outer tank or reservoir a, the inner perforated basket c, supported on the reservoir and filled with fibrous material, and the blast-nozzles *f*, substantially as and for the purpose specified.

156,932. HAND-PIECES OF DENTAL ENGINES. John W. Gilbert, Philadelphia, Pa., assignor to Saml. S. White, same place. [Filed Dec. 22, 1874.]

Brief.—A frame-piece fits over the hand-piece, and carries a tool-holder. The tool-holder is reciprocated by a double traversing screw upon the rotating shaft.

156,933.



1. A wire frame or holder, constructed as described, to form the clamps A A, arms B B, hooks *b b* and *b' b'*, and diagonal brace *c*, substantially as and for the purposes herein set forth.

2. The globe of a lamp and a wire frame or holder, all combined and operating to support the reflector above and over the lamp, substantially as shown at i described, for the purpose set forth.

1. A tool-holder attachment for hand-pieces of dental engines, substantially as hereinbefore set forth, consisting of the combination, of a frame-piece adapted for attachment to the hand-piece, and having a driving-shaft and tool-holder mounted therein.

2. The combination, substantially as hereinbefore set forth, of a hand-piece, a chuck revolving therein, a detachable frame, a tool-holder mounted therein, and a driving-shaft adapted for insertion in the chuck of the hand-piece and actuating the tool-holder.

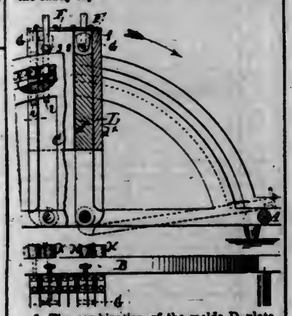
156,934. SASH-HOLDERS. F. R. Glascock, Hillsborough, Ohio. [Filed Dec. 18, 1874.]

Brief.—A flanged bar or shoe-piece, with suitable tongue, is combined with an eccentric within a recessed plate or case, which eccentric is operated by a crank-handle; the construction being such that this novel shoe-piece serves as a friction-slide, to hold the sash in desired position.

The combination of the recessed plate A, having slot *a* and stop *i*, the eccentric B *b*, having bearing *x*, the crank C, and the flanged bar or slide D, having tongue *e*, all substantially as and for the purposes herein set forth.

156,935. MACHINES FOR MAKING TOY CONFECTIONERY. Jas. Goucher, Stroudsburg, Pa. [Filed July 30, 1874.]

Brief.—The molds are arranged in pairs, each half containing half depressions, and are pivoted at their lower ends, and secured to the bottom of a frame consisting of two horizontal side pieces and two slotted semicircular portions, connected at their ends by end pieces. The top of each pair of molds is covered by a hinged metallic plate, perforated to correspond with the openings in the mold for receiving the plastic confectionery. The molds are moved to any position desired by means of blocks or bearings moving in the semicircular slots of the curved frame, and are kept together and clamped by set-screws. The molds are separated by turning the crank-shaft, which operates a cam, thereby forcing the molds apart, and permitting the removal of the candy toys.



1. The combination of the molds D, plate F, and side frame A' B, substantially as shown and described.

2. The cams G, in combination with the molds D, substantially as and for the purpose shown and described.

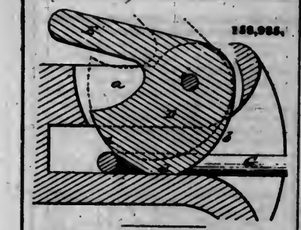
3. The set-screws J K, in combination with the molds D and the side frames provided with the curved slots, substantially as and for the purpose shown and described.

4. The combination of the molds provided with the grooves *l*, the set-screws J K, and the side frames provided with the curved slots, substantially as and for the purpose shown and described.

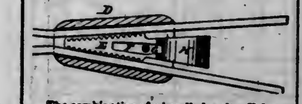
156,936. CAR-COUPLINGS. W. O. Gunckel, Terre Haute, Ind. [Filed Dec. 28, 1874.]

The pivoted tongue or lever D, provided with the handle B, and having its front *b* curved, lower end *d* straight, and rear *c* eccentrically curved, in combination with the draw-head A and coupling-link G, substantially as and for the purposes set forth.

156,937.



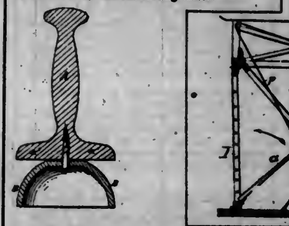
156,938. REIN-HOLDERS. Benj. R. Hamilton, South Deerfield, Mass. [Filed Nov. 30, 1874.]



The combination of a handled wedge, E, having slot F, and the cross-pin G, with the tapered tube D, as shown and described.

156,939. VENT-CLEARERS FOR WASH-BOWLS, &c. John S. Hawley, Stapleton, N. Y. [Filed Dec. 19, 1874.]

Brief.—A rubber cup, attached to a handle by a screw and washer, is effective by letting a small quantity of water flow into the bowl or tub, so as to cover the discharge-orifice, and the handle forced downward suddenly forces the water beneath the cup into the discharge-pipe with a sudden impulse, which dislodges obstructions, and allows them to be carried off by the outflowing water.



As improved vent-clearer, formed by attaching a rubber cup, B, to a handle, A, substantially as herein shown and described.

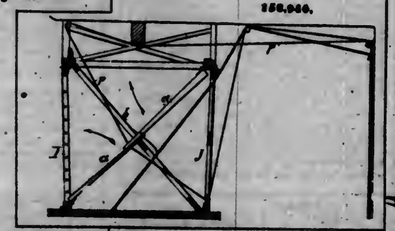
156,940. GUIDES FOR STAGE-SCENERY. Charles Higbee, Philadelphia, Pa. [Filed Nov. 11, 1874.]

Brief.—The grooved bars for guiding the scenery are so constructed that they can be raised out of sight when increased width of stage is required.

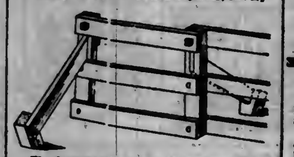
1. The combination of the fixed frame E, the grooved bar G, the frames I and J, hinged to the said bar and to the fixed frame, and the rope *o*, arranged substantially as described, so that the bar is caused to assume either of the positions shown, all as set forth.

2. The combination of the fixed frame E, frames I and J, grooved bar G, brace *b*, arms *a* and *a'*, and the operating rope *p*, attached to the said arms, all as shown and described.

156,940.

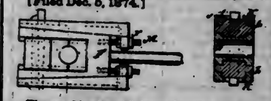


156,941. FARE-FENCES. Lovren H. Hogue, Sandy Lake, Pa. [Filed Sept. 22, 1874.]



The fence resting upon the surface of the ground, its posts grasped by the ends of the adjacent rails and secured between them, said fence being anchored by the inclined braces and ground stakes, substantially as set forth.

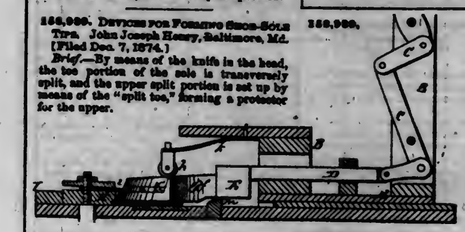
156,942. OSCILLATING ENGINES. Geo. W. Heald, Baldwinsville, N. Y., assignor to himself and Wm. F. Morris, same place. [Filed Dec. 5, 1874.]



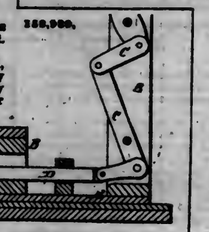
The combination of the wedge-shaped bearings, stud-screws M and adjusting-nuts N, with the cross-head P and the guides I of an oscillating engine, substantially as specified.

156,943. DEVICES FOR FORMING SHOE-SOLE TIPS. John Joseph Henry, Baltimore, Md. [Filed Dec. 7, 1874.]

Brief.—By means of the knife in the head, the toe portion of the sole is transversely split, and the upper split portion is set up by means of the "split toe," forming a protector for the upper.

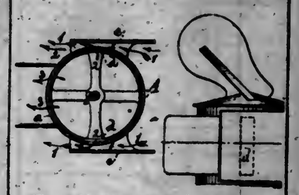


156,943.



156,944. CHIMNEY-CAPS. Albt. B. Hussey, New York, N. Y. [Filed Dec. 29, 1874.]

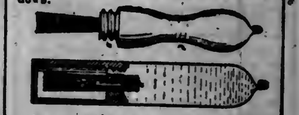
Brief.—The currents through the side passages tend to create a vacuum in the rear of the exit-opening.



The combination, with the revolving vertical chimney-cap A, provided with the open mouth *a* and the side openings, *d d*, of the wings *c c*, attached at their upper and lower ends to the cap to create the air-channels *f f*, which communicate with the side openings, *d*, for producing an upward current, which partially escapes through the side openings, and increases the outward current through the mouth of the cap, substantially as described.

156,945. BRUSHES. Chas. A. Hussey, New York, N. Y. [Filed Sept. 21, 1874.]

Brief.—The reservoir-tube is of thin metal, and the fluid is placed in it through the upper end, which is afterward closed by being turned down.



A reservoir-brush, comprising the metallic tube C, provided at one end with neck B, adapted to receive the shield G, and closed at the opposite end by bending the material of the tube C after the manner of closing tube-points, in combination with brush A and tube D, all as and for the purpose specified.

156,946. THILL-COUPLINGS. N. P. Engelke, St. Paul, Minn. [Filed July 6, 1874.]

Brief.—The safety-strap is held in place, easily detachable, by a key and spring.



1. The combination of the eccentric *b'* and the pin *b* on the coupling-piece B, substantially as and for the purpose described.

2. The combination of the elevated projection *e* and spring *d*, attached to the shaft, and the key E, attached to the safety-strap, substantially as set forth.

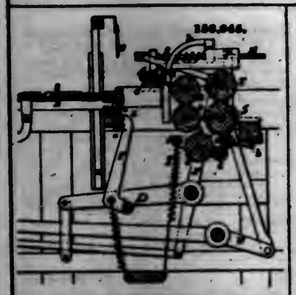
156,947. PAPER-BAG MACHINES. Chas. H. Kellogg, Leverett, Mass. [Filed Nov. 14, 1874.]

Brief.—The invention consists in the construction of the bottom-folder and the guard for opening the bottom and smoothing the folds.

1. A bottom-folder, E, pivoted in the ends of reciprocating and vibrating arms F F, as and for the purpose specified.

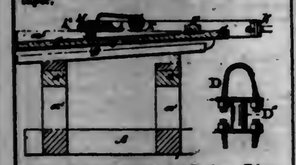
2. The combination, with folders C and carrier-arm K, of arms G G, pivoted together at the end of a movable spring-rod, I, and from the middle connected with said carrier-arm by the links J, as and for the purpose described.

3. A carrier-arm, K, mounted on a sliding and revolving arm, M, in combination with a rest, P, having incline Q, as and for the purpose set forth.



156,946. MACHINES FOR DRESSING SHINGLES. Samuel M. King, Lancaster, Pa. [Filed Jan. 4, 1875.]

Brief.—Two slides carrying cutting-blades move in converging ways, thus giving the shingle, as it passes between them, a proper taper.



The combination, with rest E, clamp F, upper cutter, H A, and inclined track D, of the shingle-support G, provided with a planing-knife, and movable over the bottom of shingle, in the manner and for the purpose described.

156,947. MACHINES FOR GROOVING SEWING-MACHINE NEEDLES. Samuel C. Kingman, Bridgeport, Conn. [Filed Dec. 30, 1874.]

Brief.—A series of circular cutters mounted on a hinged arm or frame, to operate on a series of needles held in a clamp on a slide under the forward end of said frame; said slide being reciprocated automatically, the rear end carrying a former, which, by traveling over an anti-friction roll on the rear end of arm, regulates the length and depth of groove in the needles by elevating and depressing the cutters.



1. The combination, with the die-seat D, series of two or more tapering keys, a a, cross-bar E, connecting-bar Y, lower X, adjustable bed O, and slide B with the series of two or more milling-cutters, f f, revolving upon one arbor, constructed substantially as and for the purpose specified.

2. The combination of the series of two or more milling-cutters, f f, cutter-arbor F, swinging beam G, adjustable slide H, roll r, and former O with the slide B, constructed substantially as and for the purpose specified.

3. The combination of the clamp E, die-seat D, series of two or more keys, a a, cross-bar E, connecting-bar Y, lower X, adjustable bed O, slide B, die-seat lever I, cutter-arbor F, spindle A, center bearing e, swinging beam G, adjustable slide H, roll r, and former O, constructed substantially as and for the purpose specified.

156,948. GAS-COUPLINGS. John J. Lahaye, Reading, Pa. [Filed Nov. 2, 1874.]



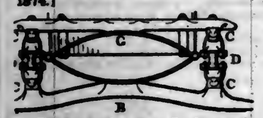
1. A draw-head, having a recess, *d*, and having combined therewith a movable backing in front of the recess to resist the movement of the link until the application of excessive pressure, when it will yield and permit the link to pass into the said recess, all as set forth.

2. The combination, with the movable dog B and its ribs h, of the slots *f* and recesses *i* formed in the coupling-head, all substantially as and for the purpose set forth.

3. The rib *n*, formed directly on the coupling-pin D, and serving to impart the weight of the said pin to the movable dog, as and for the purpose described.

4. The combination, with the coupling-pin D, its slot *n*, and opening *o*, of the sliding bolt *p*, to operate as and for the purpose set forth.

156,949. VEHICLE SIDE SPRINGS. Davis M. Lane, Philadelphia, Pa. [Filed Nov. 16, 1874.]



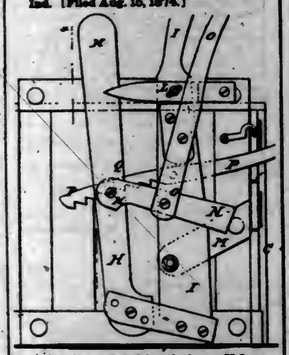
1. The two spring-spars C, of reversely-curved order, in combination with the rigid couplings D, separating said spars, and connecting them at their centers, substantially as and for the purpose set forth.

2. The two spring-spars C, of reversely-curved order, in combination with the coupling-posts D''', interposed between the spars and connecting their centers, substantially as and for the purpose set forth.

3. The two spring-spars C, in combination with the couplings D, constructed of the posts D''' with arms D'', and the clips D', substantially as and for the purpose set forth.

4. The two spring-spars C, in combination with the transverse spring G and cross-bar E, substantially as and for the purpose set forth.

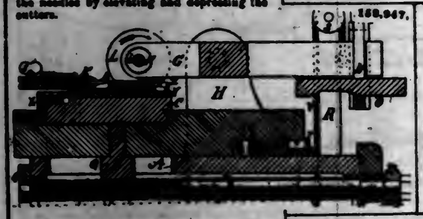
156,950. HOG-TRAPS. Peter Lane, Elwood, Ind. [Filed Aug. 10, 1874.]



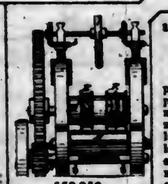
A hog-trap, comprising the levers H I, connected at the bottom, and one of them pivoted to bar M, the lever N O, ratchet-lever P, and staple Q, serving as means of connection and adjustment of the upper portion of said levers, all combined and arranged as shown and described, to operate as specified.

156,951. HYDRAULIC ELEVATORS. Philander P. Lane and Samuel R. Smith, Cincinnati, Ohio, assignors to Lane & Bodley, same place. [Filed Dec. 11, 1874.]

Brief.—Employs two sets of traveling pulleys, one set rigidly connected with the piston-rod, the other set capable of being connected by hooks with the first set, or disconnected from it—in the former case for raising light weights with economy of water, in the latter for raising greater weights by full stroke of piston. In the latter case the journals of the detachable set, the cable, and curved abutments cause to make the detached set stationary, and properly at the beginning of the lift.



156,952.



1. The combination of the die-seat D, series of two or more tapering keys, a a, cross-bar E, connecting-bar Y, lower X, adjustable bed O, and slide B with the series of two or more milling-cutters, f f, revolving upon one arbor, constructed substantially as and for the purpose specified.

2. The combination of the series of two or more milling-cutters, f f, cutter-arbor F, swinging beam G, adjustable slide H, roll r, and former O with the slide B, constructed substantially as and for the purpose specified.

3. The combination of the clamp E, die-seat D, series of two or more keys, a a, cross-bar E, connecting-bar Y, lower X, adjustable bed O, slide B, die-seat lever I, cutter-arbor F, spindle A, center bearing e, swinging beam G, adjustable slide H, roll r, and former O, constructed substantially as and for the purpose specified.

156,953.



1. A hydraulic lift-engine, having two sets of sheaves, one stationary and one traveling, both of them located at one end of the cylinder.

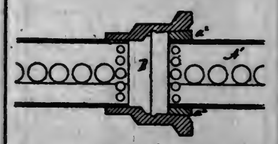
2. The stops or abutting-posts, which bear against the tube or other member of the separable travelers, and which co-act with the hoisting-cable to hold said travelers to their inert position, corresponding with the lowest position of the platform, as and for the purpose explained.

3. The cross-head that carries the set of main traveling sheaves adapted to run up so as to permit an easy engagement or disengagement of the hooks of the separable travelers, in the manner specified.

4. In combination with the hydraulic cylinder, the fixed and traveling sheaves, (one portion of the traveling sheaves being detachable,) and the stop, to arrest the motion of the detachable portion of the sheaves, the whole combined so as to enable the connection and disconnection of the detachable portion of the traveling sheaves when the platform is at or near the bottom of its run, substantially as set forth.

156,954. JOINTS FOR WROUGHT-IRON PIPES. George Lander, Pittsburg, Pa., assignor to himself and Thos. M. Carnegie, same place. [Filed Dec. 8, 1874.]

Brief.—A metal ring is secured to the spigot end of the pipe; said ring being slightly tapered to correspond with a taper formed on the inside of the socket, whereby the close union may be made between the pipe and socket without the usual leading and luting.



A joint for wrought-iron pipes, consisting of the socket B bored, as described, in combination with pipe A', provided with a tapered spigot-ring, *a*', secured to the pipe, substantially as and for the purpose specified.

156,955. POCKET-BOOKS. Charles Lieb, New York, N. Y. [Filed June 24, 1874.]

Brief.—The side flaps or gussets and partitions are connected together by metal clasps struck out from a single blank, and formed up as shown in Fig. 2.



The metallic clasp herein described for connecting together the flaps of pocket-books, the same consisting of the strip or back *b*, formed with the point *c* and cheeks *c c*, at right angles to said back, and the whole adapted to be clinched into position for connecting the flaps of pocket-books, in the manner herein shown and described.

156,956. HOT-AIR FURNACES. Jas. A. Lawson, Troy, N. Y. [Filed Apr. 4, 1874.]

Brief.—On opening the upper feed-door the gases in the upper portion of the magazine are discharged into the cross-pipe which leads to the exit-flue. The staves composing the lower section of the magazine may be separately detached from the central supporting-ring, and removed through the lower feed-opening.

1. The dome D, provided with the long and short discharge-pipes *d* and *d'*, respectively, in combination with the ring E, having the hollow legs E' and E'', and inlet-openings *e* and *e*, substantially as and for the purpose specified.

2. The ring E, provided with the hollow legs E' and E'', inlet-openings *e* and *e*, and discharge-openings *c'*, *c''*, and *c'''*, in combination with the dome D, having the long and the short discharge-pipes *d* and *d'*, respectively, substantially as and for the purpose shown.

3. The ring E, provided with the large discharge-openings *c'* and *c''* within its forward portion, and the smaller discharge-opening *c'''* within its rear side, in combination with the cross-pipe G, substantially as and for the purpose set forth.

4. In combination with the ring E, provided with the discharge-openings *c'*, *c''*, and *c'''*, the cross-pipe G having thimbled inlet-openings which coincide with said discharge-openings, and provided with an exit-flue, G''', substantially as and for the purpose shown and described.

5. In combination with the hinged upward-swinging check-draft door G', provided with the lug *g'*, the ratchet-bar G'' *g''*, pivoted upon the door-frame and engaging with said lug, substantially as and for the purpose shown and described.

6. The combination of the feed-door F', having the locking-arm *f'*, with the check-draft door G', provided with lug *g'*, and with the damper L, having the radial arm *l'*, the bar M, provided with the notch *m* and lug *m'*, by means of which said door and damper are connected, substantially as and for the purpose specified.

7. In combination with the ring H, provided with the flanges A and A', the annular groove A'', and the notches A''', the staves I and I, provided each with the notches *i* and *i*, substantially as and for the purpose shown.

8. The flanged grooved ring H, A, A', A'', and A''', constructed as shown, and combined with the staves I, *i*, and *i*, in the manner and for the purposes substantially as set forth.

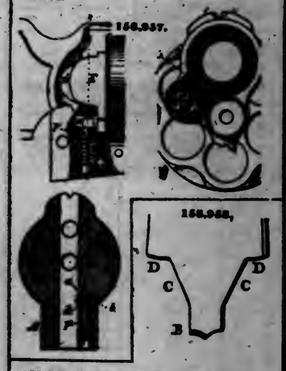
9. In combination with the staves I *i*, the sectional hinged or jointed ring K, substantially as and for the purpose shown and described.

156,957. REVOLVING FIRE-ARMS. William Mason, Hartford, Conn., assignor to Colt's Patent Fire-Arms Manufacturing Company, same place. [Filed Dec. 8, 1874.]

1. The gate E of a revolver, having its trunnion *e* constructed with flat recesses *b d*, and combined with the spring-follower F, substantially as described.

2. In a revolving fire-arm, the boss S on the barrel, and the recess *s* in the frame, combined with the ejector-tube, constructed to enter said recess *s*, and set over the boss S, as a means for securing said tube to the arm, substantially as specified.

3. In a revolver provided with a gate, the rear or recoil portion of the frame, constructed of spherical form, the gate E forming a part of said spherical portion, substantially as described.

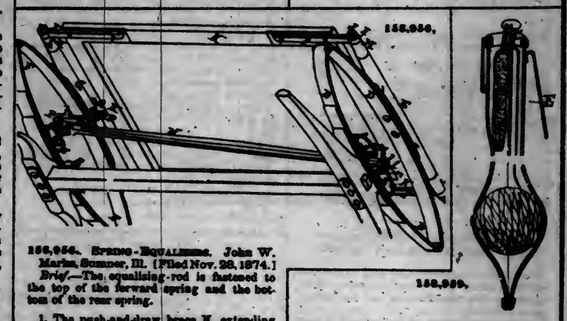


156,958. COMBINED DRILLS, COUNTERSINKS, AND PLANERS. Wm. McCrossen, Philadelphia, Pa., assignor to S. C. Bachman, same place. [Filed Dec. 24, 1874.]

Brief.—A drill-point, B, countersink C, and planing cutter-edges D formed in one piece as a single tool.

The combined drill, countersink, and planer, substantially as and for the purpose set forth.

156,959. KNITTING-SATCHELS. C. McFadden, Oswego, N. Y. [Filed July 10, 1874.]

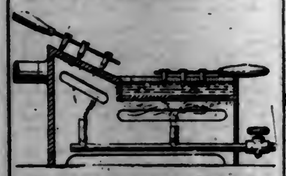


1. A knitting-satchel provided with a longitudinal partition, B, for the purpose specified, in combination with needle-holders D, substantially as described.

2. The needle-holders D, affixed to a knitting-satchel by means of elastic strips C, as and for the purpose specified.

3. The retaining-book E, in combination with a knitting-satchel, constructed substantially as described.

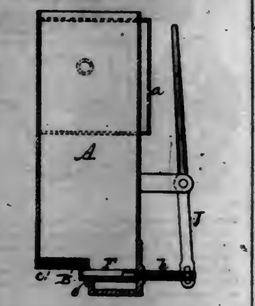
158,960. METHODS OF LUBRICATING CARTRIDGES. Joe V. Meigs, Lowell, Mass. (Filed Dec. 10, 1874.)



The method herein described of lubricating cartridges, and removing the surplus grease therefrom, which consists in dipping the cartridges in the heated lubricant, drying them, and placing them in contact with a heated surface, substantially as set forth.

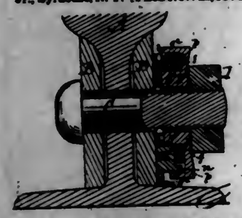
158,961. GLUE-CUPS. Henry Meyer, New York, N. Y. (Filed Nov. 7, 1874.)

Brief.—Slide of bottom of glue-cup carries hot glue across the elastic pad, and on its withdrawal scrapes away all but what is held in cavities in the pad.



In a gluing-hopper, the combination of the open-faced slide F and the pad or cushion B, having cavities *c* in its face, substantially as and for the purpose shown and described.

158,962. NUT-LOCK WASHERS. J. Miller, Jr., Syracuse, N. Y. (Filed Nov. 21, 1874.)



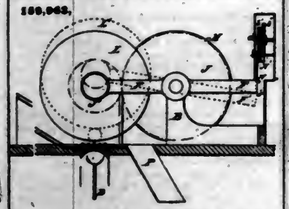
The elastic nut-lock washer made of the two box-like parts E' and E', and interposed elastic piece A, the part E having its outer face constructed with the flat central portion *f* and double inclined planes *p*, substantially as and for the purpose shown and described.

158,963. APPARATUS FOR BRANDING AND COUNTING CORKS. N. W. Mitchell, Southsea, England. (Filed July 13, 1874.)

Brief.—A milled wheel is mounted on one end of an oscillating arm. A cog-wheel mounted at the pivot of the wheel gives motion to the milled wheel. A cork is branded by being passed under the milled wheel, which raises the wheel, thereby lowering the other end of the oscillating arm, which, by means of a pawl and ratchet, actuates the registering mechanism.

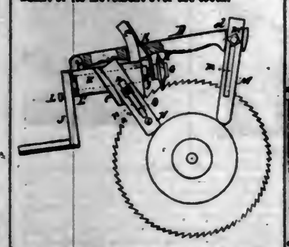
158,964. GIN-SAW SHARPENERS. Josiah Misall and John Bevell, Colerain, N. C. (Filed Oct. 14, 1874.)

Brief.—The file-shaft has end play in the frame, a screw moving over a cam as the shaft rotates, and a spring at the opposite end of the shaft causes the file at each revolution to move forward to a new tooth on the saw. The circular file is cut away at one side, to admit of its movement over the tooth.



1. The combination, with the pulley H, wheel J, pinion J', driving a milled pulley, L, the frame F, oscillating on the standard B, and the support Q, substantially as described and represented.

2. The oscillating frame F F, mounted on the spindle G, and carrying at one end the milled pulley L, in combination with the lever N and its pawl N', operated by the swinging frame, and a counting mechanism, M, substantially as and for the purpose described.



1. The combination, with file-shaft G, having longitudinal play, of the circular file H, cut away at *h*, as shown and described, to allow the file to be drawn back and thrown forward at the times and in the manner specified.

2. The combination, with file-shaft G, having longitudinal play, of the cam L', screw L, and spring K, as and for the purpose specified.

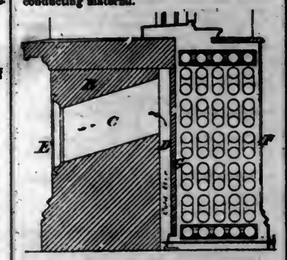
3. The combination, with the bar D, and frame E, having grooved guides, of slotted legs and clamp-screws, to adapt the machine to saws having teeth at greater or less distance from the spacing-blocks.

4. The combination, with bar D, of legs M and N, placed, respectively, upon different sides of saw-shaft, as and for the purpose set forth.

5. The combination, with legs, of spacing-springs O, to bear against the adjacent saws, in the manner specified

158,965. WARMING AND VENTILATING APPARATUS. Alfred B. Mullett, Washington, D. C. (Filed Dec. 16, 1874.)

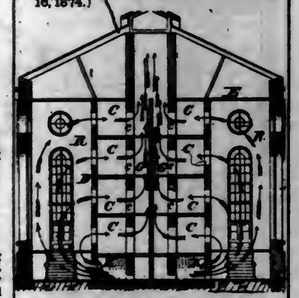
Brief.—The heating-pipes may contain either steam or hot air. The partition G is of non-conducting material.



1. The combination, with the heat-radiator F, of the air-passages C D, formed, as herein described, within the permanent base B of the window, for the purpose set forth.

2. The combination of the non-conducting partition G with the heat-radiator F and the air-passages C D, formed within the permanent base B of the window, as explained.

158,966. CONSTRUCTION OF PRISONS. Alfd. B. Mullett, Washington, D. C. (Filed Dec. 16, 1874.)

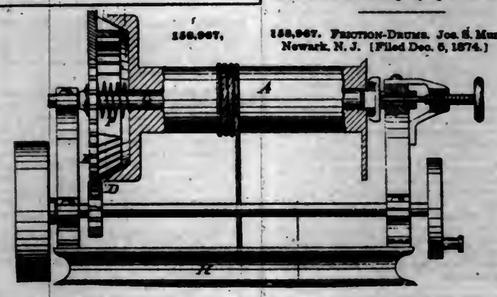


1. The combination of the two ranges of cells with a double corridor occupying the space between the said ranges of cells, and divided by a partition-wall, serving to prevent communication, while permitting the use of grated doors to the cells.

2. The arches or vaults arranged beneath the cells to contain heating apparatus and prevent tunneling.

3. The combination of the air ducts and passages J J L with the guard-rooms E, cells C, corridors G, and ventilating sky-light I, arranged, substantially as herein set forth, to compel the air to traverse the cells in its passage from the ventilating and heating vaults below to the ventilating sky-light above.

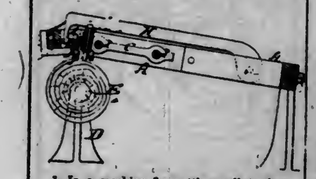
158,967. FRICTION-DRUMS. Jos. H. Mundy, Newark, N. J. (Filed Dec. 6, 1874.)



The combination, with tubular and sliding drum A, loose on a shaft, C, and having friction-cone D, of the fast driven spur-wheel E, having spring I to repel the said cone, and provided with a side flange supporting the cone N, as and for the purpose described.

158,968. MACHINES FOR CUTTING SPLINTS FOR MATCHES. Waldemar Bergin Nielsen, Malmo, Sweden. (Filed Dec. 12, 1874.)

Brief.—The log from which the splints are cut revolves between centers with an intermittent motion, and is operated upon by a reciprocating cutter traveling in a vibrating frame.



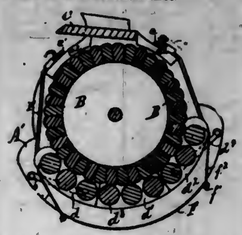
1. In a machine for cutting splints from logs, the combination of a reciprocating plane, C, with the vibrating lever F, which holds the vibrating tool *g*, for locking and unlocking the log, substantially as described.

2. In combination with the vibrating lever F and reciprocating plane C, the hooks H and I, arranged substantially as and for the purpose described.

3. In a machine for cutting splints from logs, the combination of the pivoted frame A, which guides the plane, with the supports D D of the log, all arranged so that the log is free to turn between its supports, while the frame A and its plane follow the log as its size is being reduced, substantially as described.

158,969. WASHING-MACHINES. Henry Niermann and Frederick Schlecter, St. Louis, Mo. (Filed Sept. 5, 1874.)

Brief.—Sectional side frames carrying rollers are held by elastic straps. Hinged guard-plates, and a fixed bottom below these, are attached to the solid side frames.



1. In combination with the sectional frames *d d' d''*, carrying rollers *d''*, an elastic supporting-strap, E, extended beneath the sections, as described, and adapted to yield below any one of them without sensibly affecting the others, as set forth.

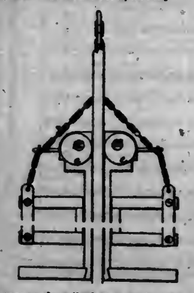
2. The combination of the elastic strap E, having hooks *e'*, with the fixed board *d''*, having the series of holes described, and the sectional frames *d d' d''*, whereby the strap is made adjustable, as described.

3. The combination of the fixed bottom plate, F, the hinged guard plates *f' f''*, and the adjustable roller-frames, as described

4. The combination of the guard-plate *f'*, having projection *f''*, with the adjustable grooved frames *d d'* and the elastic strap E, as described, the strap being adapted to hold the projection securely in the groove, and thus give the guard-plate movement in harmony with that of the sectional frame, as set forth.

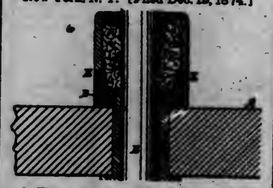
5. The combination of the outer sectional frames, *d d'*, the pivoted bars *d''*, and the side frames, A A', the bar being adapted to unite the sectional frames to the side frames, and retain them in position without interfering with their adjustability, as set forth.

158,970. HOISTING APPARATUS. Henry Opperman and Alexander Black, Steubenville, Ohio. (Filed Dec. 2, 1874.)



The means described for causing the cams *e e* to clamp the guides of frame, consisting of a cage, B, sliding within frame A, the ropes O O' C, and the rock-shafts E E, having arms *e' e'*, as shown and described.

158,971. KING-BOLT BEARINGS. G. J. Ott, New York, N. Y. (Filed Dec. 19, 1874.)

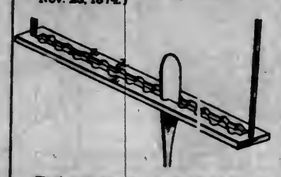


1. The combination of the bush C with the axle and the king-bolt of a truck, substantially as set forth.

2. The combination of the inverted cup E and nut D with the bush C and the king-bolt, substantially as set forth.

3. The combination of the washer F with the cup E and the king-bolt, substantially as set forth.

158,972. RACKS FOR ELECTROPLATING. H. B. Osborn, Wallingford, Conn. (Filed Nov. 23, 1874.)



The bar A, constructed with the longitudinal slot *a*, and with corresponding notches *d* in opposite sides of said slot, combined with suspending-rods B, all substantially as and for the purpose specified.

158,973. CAR-COUPLINGS. Stephen Ott, Newark, Del. (Filed May 27, 1874.)

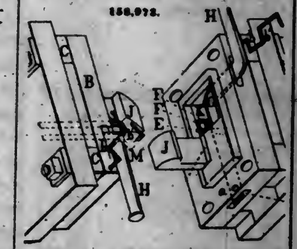
1. The combination, with the transverse locking-bar G, of the pin E connected thereto, and the eyes F F', substantially as and for the purpose set forth.

2. The rotating rod M, with heads *b b'*, in combination with the locking-bar G, substantially as and for the purpose set forth.

3. The combination of the block A, formed with chamber D and opening K, the hook J, the hinged coupling-bar G, extending transversely in the chamber D, and formed with handle H, the pin B secured to the bar G, and the eyes F F' secured to block B, all constructed to operate substantially as and for the purpose set forth.

158,974. HUBS FOR VEHICLE-WHEELS. H. A. Payne, Adams, N. Y. (Filed Jan. 2, 1875.)

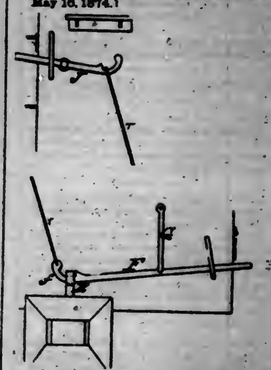
Brief.—The axle-box and inner hub-band are in one piece, and the band is provided with spurs to hold it in place.



1. The band B', formed on the box B, and having a beveled flange, *c*, and spurs *b*, substantially as and for the purpose described.

2. The combination of the cap-band C, having beveled flange *c*, with the band B' and hub-box B, the band having beveled flange *c*, substantially as described.

158,975. CAR-COUPLINGS. Simon B. Petree and Adam C. Hensley, Minier, Ill. (Filed May 10, 1874.)



The combination, with the lower lever, F, its swinging fulcrum G, and curved slide end *f*, of the top-lever J, connecting-link *r*, and vertically-moving coupling-pin B, having a sliding connection with said slide end, as specified.

158,976. HOISTING APPARATUS. Henry Opperman and Alexander Black, Steubenville, Ohio. (Filed Dec. 2, 1874.)

1. The combination of the bush C with the axle and the king-bolt of a truck, substantially as set forth.

2. The combination of the inverted cup E and nut D with the bush C and the king-bolt, substantially as set forth.

3. The combination of the washer F with the cup E and the king-bolt, substantially as set forth.

158,977. CAR-COUPLINGS. Simon B. Petree and Adam C. Hensley, Minier, Ill. (Filed May 10, 1874.)

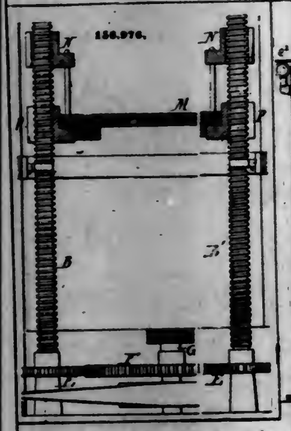
The combination, with the lower lever, F, its swinging fulcrum G, and curved slide end *f*, of the top-lever J, connecting-link *r*, and vertically-moving coupling-pin B, having a sliding connection with said slide end, as specified.

158,978. HOISTING APPARATUS. Daniel M. Pfautz and Leopold Sternberger, Philadelphia, Pa. (Filed Nov. 20, 1874.)

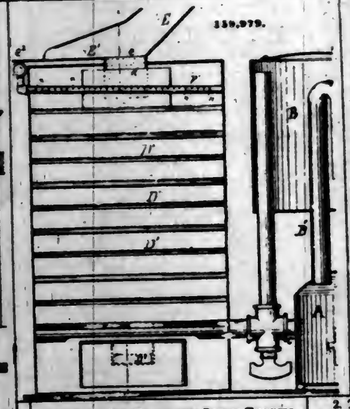
1. The combination of the two screw-shafts, B and B', the upper and lower nuts, N and P, and the platform M, suspended from the upper nuts and adapted to the lower nuts, all as set forth, for the purpose specified.

2. The combination of the upper and lower slotted nuts, N and P, with brackets K, at the junction of the sections of each shaft.

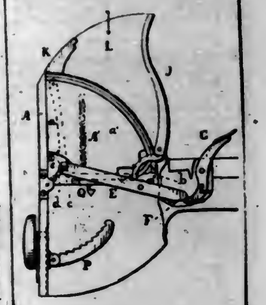
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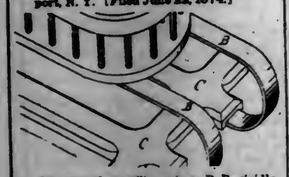
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No. 158,981.



158,977. BAST-TEDDER, Mars Post, Lockport, N. Y. [Filed June 22, 1874.]



The curved metallic springs B B, rigidly connected at one end to the supporting-base C at opposite sides of the same, and extended near their other ends with elongated slots *e e*, in combination with the set-screw *d*, passing through said slots and into the bottom of the cradle, for adjusting and clamping the latter in position, the whole being constructed and arranged as shown and described.

158,978. COATINGS FOR OIL-BARRELS. M. W Quick, Titusville, Pa. [Filed Oct. 26, 1874.]

The process herein described for rendering oil-barrels impervious to hydrocarbons by coating the interior of the barrel with fluid extract of tan-bark, substantially as specified.

158,979. APPARATUS FOR TREATING CANE-JUICE. François Randon, New Orleans, La. [Filed Dec. 11, 1874.]

Brief.—A generator sends sulphurous-acid gas into a receiver, which holds concentrated carbonate of soda and granulated coke. The coke distributes the sulphurous-acid gas to the solution, thus liberating carbonic-acid gas. Both are then passed to the bottom of bleaching-column, which presents the juice over a series of inclined shelves.

1. The vessel B, charged or filled with granulated coke submerged in a concentrated solution of carbonate of soda to a point near that at which the gas is discharged, in combination with a sulphur-burner, A, and a bleaching and drying column, D, whereby the fumes of sulphur, as generated in their passage to the column, are caused to pass through the solution in the vessel B, thus absorbing the sulphuric acid and liberating in its stead carbonic-acid gas, and which, with the sulphurous-acid gas, is conveyed to the column, there to aid in bleaching and drying the saccharine juice, substantially as described.

2. The combination of the trough or chute E E', having an opening, *c*, and an angular inclined sieve, F', and the bleaching and drying column D, arranged to operate substantially as and for the purpose specified.

3. The combination of the injector F and perforated pipe F', and bleaching and drying column D, arranged to operate substantially as and for the purpose specified.

158,980. BED-PLATES FOR STEAM-ENGINES. J. D. Richardson, Houston, Tex. [Filed Oct. 14, 1874.]



A bed-plate for a steam-engine, having base-plate A, cylinder-base D *c*, hollow ridge B, and diagonal fillet *s f*, substantially as and for the purposes specified.

158,981. FARE-BOXES. R. Miles Robinson, Philadelphia, Pa. [Filed Oct. 9, 1874.]

Brief.—The fare being deposited in the opening, the conductor presses the trigger correspending to the character of the fares, which operates the vibrating angular receiving-leaf carrying the pivoted trap leaves, deposits the fare into the chamber below, and operates an alarm and recording mechanism. A serrated hinged dog is provided, which locks the leaf in position in case of the reversal of the box to abstract the fares.

1. In a fare-receiver, the axial leaf B, constructed of two plates, *a b*, and side walls *a'*, in combination with the body A, having curved recesses on its inner face, and receiving the walls *a'* thereon, substantially as and for the purpose set forth.

2. The angular leaf B, in combination with the trap C, jointed to the outer end of the vertical plate *a* of said leaf, and the trap D, jointed to the outer end of the horizontal plate *b* thereof, substantially as and for the purpose set forth.

3. The axial door J, in combination with the axial leaf B, substantially as and for the purpose set forth.

4. The combination, with the receiver A and axial leaf B, of the overhanging piece K, forming part of the hopper L, and the door J, closing against said piece, substantially as and for the purpose set forth.

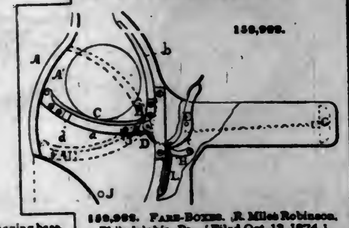
5. The arms or levers E, jointed to the axial portion of the leaf B, and operating in combination with the trigger or triggers G, substantially as and for the purpose set forth.

6. The dog P, in combination with the leaf B and the traps C D of said leaf, substantially as and for the purpose set forth.

7. The dog P, formed with serrations P', in combination with the leaf B, formed with an opening, *f*, and the traps C D, substantially as and for the purpose set forth.

8. The goog R, in combination with the leaf B, and operated thereby after the fare is registered, and discharged by means of the dog Q on the under side of the leaf, substantially as and for the purpose set forth.

158,982.



158,982. FARE-BOXES. R. Miles Robinson, Philadelphia, Pa. [Filed Oct. 13, 1874.]

Brief.—The fare is received in the angular leaf, which is vibrated by a trigger. A trap pivoted to one end of the leaf is operated by a stud on the frame, to sweep the leaf to insure the discharge of the fare into the receptacle below. A dog is provided, which falls into serrations on the trigger, to prevent the operation of the leaf when the box is reversed.

1. The leaf B, constructed of two plates or parts, *a b*, in combination with the trap C, hinged to one of the plates or parts, substantially as and for the purpose set forth.

2. The stud J and part *b*, with slot or groove *d*, in combination with the trap C, substantially as and for the purpose set forth.

3. The closing-spring K and trap C, in combination with the part *b*, with groove *d* and the opening-stud J, substantially as and for the purpose set forth.

4. The combination, with a fare-receiver, of the trigger E, formed with serrations *e*, and the dog H operating therewith, substantially as and for the purpose set forth.

158,983. COMPOUND IRON BEAMS. Wm. S. Sampson, New York, N. Y., assignor of three-fourths of his right to A. L. Munson, same place, and S. Coit, Hartford, Conn. [Filed Dec. 16, 1874.]



1. A compound metal beam composed of a series of one or more central plates, *a*, *b*, *c*, and *d*, the curved or arched plates A, B, C, and D, and the top and bottom flange-plates E and F, bolted and held firmly together by the bolts A' and A' at the center of the beam, and by the bolts or rivets I, I', I², and I³ at the point of junction of the curved plates A, B, C, and D with the flange-plates E and F at the top and bottom of the beam, all substantially as and for the purposes herein shown and described.

2. In combination with a compound metal beam composed of a series of one or more central plates, *a*, *b*, *c*, and *d*, curved or arched plates A, B, C, and D, top and bottom flange-plates E and F, bolted and riveted together, as shown and described, the metal brackets or wedges H, H', H², and H³ inserted in the spandrels between the curved and central plates, substantially as and for the purposes described.

3. In combination with a compound metal beam or girder, composed of a series of one or more central plates, *a*, *b*, *c*, and *d*, curved or arched plates A, B, C, and D, top and bottom flange-plates E and F, all bolted and riveted together, as shown and described, the wood filling L' inserted in the spandrels and between the metal brackets or wedges H, H', H², and H³, access to the same for the purpose of nailing floors or ceilings thereto being had through openings L, which may be punched or drilled at various points in the flange-plates E and F, substantially as and for the purposes herein shown and described.

4. In combination with a compound metal beam, constructed as described, the straight or curved metal block K used as a support or rest for the beam or flooring when the beam is set into position, all substantially as herein shown and described.

158,984. FIRE-ESCAPE LADDERS. D. Sanford, Ashton, Ill. [Filed July 26, 1874.]

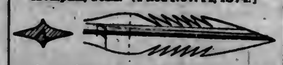
Brief.—The sections are extended by means of ropes and windlasses. A coiled spring on the windlass of the lower movable section is wound up when the section descends, to counteract the weight of all of the movable sections. One side of each section is pivoted at the lower end, so as to swing out against the side of the building, thus forming a ladder. The upper swinging section has a sliding extension, and so connected with cords to the main portion as to cause the extension to slide out. The device is steadied by braces having catch-pawls, which engage with a vertical ratchet.

1. The combination of a coiled spring with the windlass of an extension-ladder, to counterbalance the weight of the ladder, substantially as specified.

2. The swinging ladder S, sliding extension T, and ropes U, combined and arranged with an extension-ladder, substantially as specified.

3. The combination of braces *d*, ratchets *e*, and catch-pawls *f* with the ladder, substantially as specified.

158,985. COTTON-AUGERS. A. O. Schultz, Memphis, Tenn. [Filed Nov. 14, 1874.]

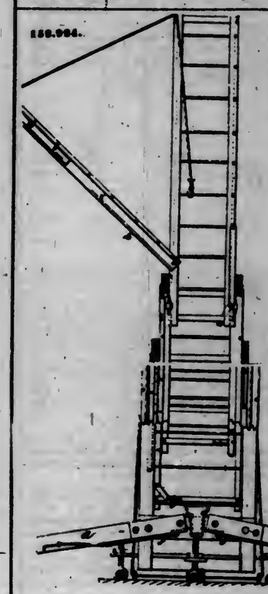


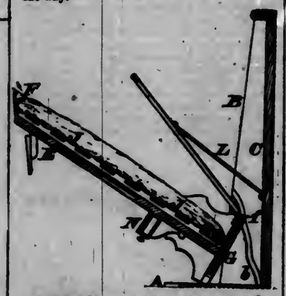
As an improvement in cotton-augers, an auger constructed with symmetrically-fluted cross-sections, extending along blades and teeth from stem to tapering point, substantially in the manner specified and set forth.

158,986. TOILET-STAND BEDSTEADS. Chas. Schwartz and Chas. B. Woods, Henderson, Ky. [Filed May 26, 1874.]

Brief.—A flap is hinged to the head of the bed-frame, and is connected with the back of the case by a strap. When the bed-frame is closed the flap is automatically closed upon the bed-clothing to keep it in proper position, and when the bed-frame is opened or let down the flap is automatically raised out of the way.

No. 158,984.





In combination with the fixed frame A B B', provided with guiding-grooves *b b'* and the movable frame E F F' G, having lugs *f f'*, working in the grooves *b b'*, the flap K, hinged to the head-board G, and connected by a strap, L, to the back C, substantially as and for the purpose set forth.

158,987. HINGES FOR GATES. S. L. Selden, Rochester, N. Y. [Filed June 23, 1874.]

Brief.—One wing has cast upon it a long outwardly-extending arm, which carries a tapering double-end pintle, the ends extending upward and downward from the center. The other wing has a short horizontal arm, which carries the cylinder-shaped eye or pintle-socket.

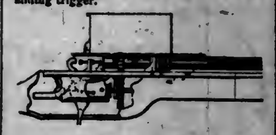
The reversible gate-hinge, herein described, consisting of the parts C, having a long arm, E, and a tapering double-end pintle, F, and the part D, provided with a short arm, D', and pintle-socket G, substantially as shown and described.

158,988.



158,988. FIRE-ARMS. M. Sellen, Brighton, Wis. [Filed Oct. 23, 1874.]

Brief.—A rotary motion is imparted to the projectile by means of a revolving breech, which is rapidly revolved at the instant of discharge through the medium of gearing connected with the frame, and operated by the sliding trigger.



1. The rotary breech *b*, having cogs upon its periphery, in combination with the wheel W and operating mechanism, substantially as set forth.

2. The combination of the movable swinging barrel with a cartridge-carrier that is rigidly attached thereto, substantially as described.

3. The combination of the swinging barrel, having the rammer attached to its side, so as to move with it, a cartridge-carrier, and a separate chambered breech, substantially as set forth.

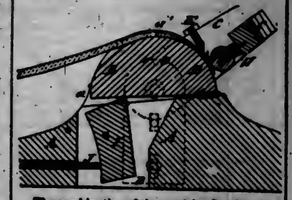
4. The combination of the slide S, rigid trigger or handle, and connecting mechanism, substantially as described, whereby the hammer is tripped and again cocked by the same movement of the slide.

5. The combination of the breech or chamber *b*, and barrel *a*, pivoted near the muzzle, whereby the rear end of the barrel may be moved to one side to open the chamber for loading, substantially as shown.

6. A cartridge-carrier that serves to convey the cartridges to the muzzle of the chambered breech when the barrel is swung laterally to open said breech, and which is adapted to close the bottom of the cartridge box or magazine when the barrel is swung back, substantially as specified.

158,989. MACHINES FOR TAPERING LEATHER. J. Settle and G. W. Settle, Lebanon, Oreg. [Filed Nov. 30, 1874.]

Brief.—The knife is attached transversely to a vertically-adjustable swinging frame, which is provided with a transverse roller turning upon lugs rising above and on each side of an adjustable semi-cylindrical cutting-block.



The combination of the semicircular flanges or lugs *a'*, the semi-cylindrical block B, the pivoted frame C, the knife E, the spring-roller F H, the pivoted block or lever I, the hand-screw J, and the block A, substantially as herein shown and described.

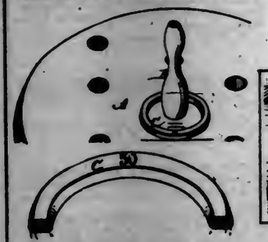
158,999. HORSE-BLANKETS OR LAP-ROBES. G. V. Shepard, Troy, N. Y. [Filed Jan. 14, 1875.]



As a new article of manufacture a horse-blanket or lap-robe, consisting of the knitted fabric-face A, middle piece B of burlap, shoddy, or equivalent material, and lining, C, substantially as described.

159,000. GAME APPARATUS. F. W. Smith, Bridgeport, Conn. [Filed Aug. 6, 1874.]

Brief.—The rings, being of a rubber composed, are substantially noiseless in use, and do not mar furniture accidentally hit thereby.

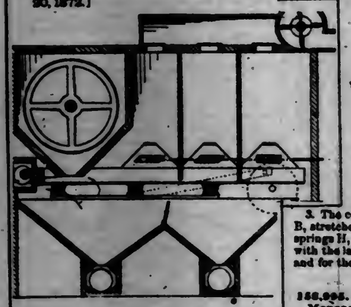


1. The ring C, of hardened rubber, with its upper and lower surfaces made flat, and its outer edge rounded, substantially as and for the purpose set forth.

2. The game apparatus described, consisting of the ring C of hardened rubber, a series of numbered pins, B, and the portable perforated base, A, for the purposes set forth.

3. The game apparatus described, consisting of the hardened rubber ring C, provided with flat faces, rounded edges, and numbered or lettered on one or both its faces, and the numbered or lettered pins on the base A, substantially as and for the purposes set forth.

158,998. MIDDLINGS-PURIFIERS. Geo. T. Smith, Minneapolis, Minn. [Filed May 20, 1872.]



1. Two or more reciprocating bolting surfaces or shakers, through which a current of air passes, separated from each other by longitudinal partitions, the cloth upon one shaker differing in fineness from the cloth on the other shaker or shakers, thereby adapting them for receiving and bolting flour or middlings of different grades of fineness, substantially as set forth.

2. In combination with two or more reciprocating bolting surfaces or shakers, through which a current of air passes, the cloth upon one shaker differing in fineness from that of the other, a preparatory bolt constructed to divide the flour or middlings into different grades of fineness, the finer grade being delivered to the shaker which is clothed with the finer cloth, and a coarser grade to a coarser cloth, substantially as set forth.

158,992. CARRIAGE-AXLES. J. P. Spicer, Millestown, and Thos. Insull, Philadelphia, assignors to themselves and J. F. Dovey, Philadelphia, Pa. [Filed Dec. 14, 1874.]

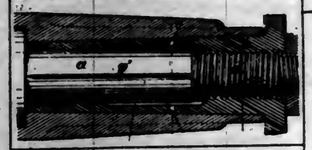
Brief.—The sleeve can be applied or removed while the wheel is in position on the spindle.

1. The removable screw-sleeve D, in combination with a threaded axle-arm, a d, on which it is screwed, and an outwardly-flaring box, B, within which it fits, substantially as set forth.

2. The construction of the removable tapering screw-sleeve D with a collar, E, for retaining the wheel on the axle, as set forth.

3. The combination, with the removable screw-sleeve D, to constitute the bearing-surface of the axle, of the nut E, applied to the axle with a thread in the opposite direction from that of the sleeve D, as set forth.

4. The combination of the broad bearing-collar C with the box B and removable sleeve D, as and for the purposes set forth.

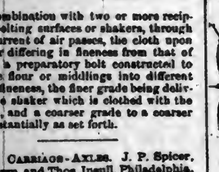


158,994. UMBRELLAS. U. G. Steinmetz, Philadelphia, Pa. [Filed Dec. 3, 1874.]

Brief.—The ribs are in jointed sections, capable of being folded, and when opened are held rigid by the slide F on the end of the brace O.

1. The section *a*, fixed to one end of the stock E, and the section *b*, pivoted to the other end thereof, in combination with the spring-actuated slide F, playing in said stock, and the stretcher G, pivoted thereto, substantially as and for the purpose set forth.

2. The combination, with the sectional ribs B and stretchers C, of the sliding arms G, carrying at their outer ends the locking-slides F, and having their inner ends fixed to the stick A, and the sliding band J, actuating said inner ends, substantially as and for the purpose set forth.

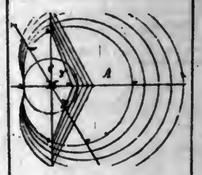


3. The combination, with the sectional ribs B, stretchers C, slides F, and arms G, of the springs H, connected to the stick A and formed with the lateral projections *c*, substantially as and for the purpose set forth.

158,995. LIQUID AND GAS METERS AND MOTORS. J. A. Stenberg, Chicago, Ill. [Filed Aug. 20, 1874.]

Brief.—The outline of the case is composed of segments of three circles, determined by a formula, which enables it to be produced upon a common lathe.

A cylinder or case, A, whose outline is composed of segments of three circles, the centers and radiuses of which are determined by the formula represented in Fig.

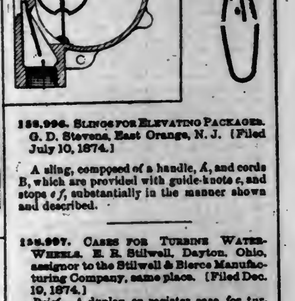


158,996. SLINGS FOR ELEVATING PACKAGES. G. D. Stevens, East Orange, N. J. [Filed July 10, 1874.]

A sling, composed of a handle, A, and cords B, which are provided with guide-knots *e*, and stops *e f*, substantially in the manner shown and described.

158,997. CASES FOR TURBINE WATER-WHEELS. E. E. Stilwell, Dayton, Ohio, assignor to the Stilwell & Bierce Manufacturing Company, same place. [Filed Dec. 19, 1874.]

Brief.—A duplex or register case for turbine water-wheels, and applied to that class in which the inner part of the case is made to revolve to open or close or regulate the width of the chutes which direct the water onto the wheel; and consists in providing a central axial bearing composed of a hub journaling on a sleeve attached to the crown-plate, the hub being connected to the inner or revolving part of the case by arms or other suitable means.



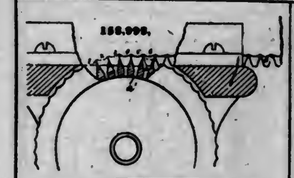
1. A case for water-wheels, with the inner register or chute provided with a central hub and journal-bearing, located under the crown-plate, substantially as set forth.

2. A case for a water-wheel, with an inner revolving chute or register, provided with an outer annular bearing, O, and a central hub and journal-bearing, I, substantially as herein set forth.

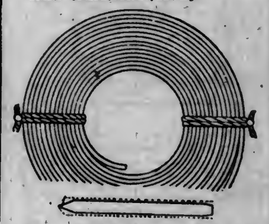
158,998. MECHANISMS FOR COMPRESSING POINTS ON PEGS. B. F. Sturtevant, Boston, Mass. [Filed Dec. 20, 1874.]

1. A rotary peg-point compressor, having a cavity or cavities in which the peg-wood is forced and pointed, substantially as described.

2. The combination with plates, forming a guide or way for the peg-wood, of a rotary point-compressor, for compressing the peg-wood for peg-points, substantially as described.



159,000. FASTENINGS FOR UNITING SOLES TO UPPERS. Benj. F. Sturtevant, Boston, Mass. [Filed Dec. 17, 1874.]



1. A peg, having its head condensed or compacted, substantially as described.

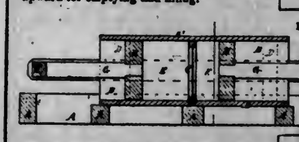
2. A peg-ribbon, having its head-forming edge condensed or consolidated, substantially as described.

3. A peg or peg-ribbon, having its head and point, or head and point forming edges, compressed or consolidated, substantially as described.

4. Jaws for compressing peg-wood, having their opposite sides beveled, substantially as described, to compress head and point forming edges of the peg-wood, as set forth.

159,000. BUTTER-WORKERS. J. Thompson, Albany, Wis. [Filed Sept. 19, 1874.]

Brief.—A horizontal trough with a wire screen at its center. The butter is placed in one end, and a follower forces it through the screen, whence a follower forces it back, one lever moving both. The followers are trunnioned at their rear ends, and may be turned upward for emptying and filling.



The combination of the sliding bars E, the rollers F, the arms G, the followers H, and the grate C, with the box B *b'*, and the base-frame A, substantially as herein shown and described.

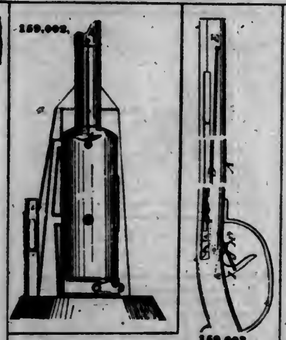
159,001. KINDLING MATERIALS. Wm. C. Tisdale, New York, N. Y., assignor of one-half his right to Wm. Hellins, Jersey City, N. J. [Filed June 9, 1874.]

The improved kindling and self-igniting fuel herein described, consisting of dried condensed peat, covered with an outer coating of rosin and bees-wax in about the proportions herein specified.

159,002. CAR-HEATERS. Thos. W. Tyler, Corry, Pa., assignor of one-half his right to F. M. Lockwood, same place. [Filed Jan. 11, 1875.]

Brief.—The carbonic-acid gas forces the water from the base through the pipes into the fire-chamber on the overturning of the stove.

In combination with a heater having a hollow base or vessel for holding water, the tube *i*, containing a vessel for sulphuric acid or other chemical, whereby carbonic-acid gas is generated upon the upsetting of the stove, substantially as specified.



159,002. TOY GUNS. W. Wiedemann and L. Lindsey, Lawrence, Kans. [Filed July 25, 1874.]

A toy gun constructed as shown and described—that is, having a slit, C, in the barrel, formed of two parts, as described, the spring D, wire cross-head E, catch-block G, tumbler H, trigger I, and spring J, when all said parts are arranged to operate as and for the purposes set forth.

159,004. HAIR-CUTTERS' GAGES. A. G. Wilkins, Meadville, Pa. [Filed Dec. 12, 1874.]

Brief.—The gage is set for cutting hair at any required length, by expanding or contracting the ribs by means of the adjusting-links working in the slotted handle.



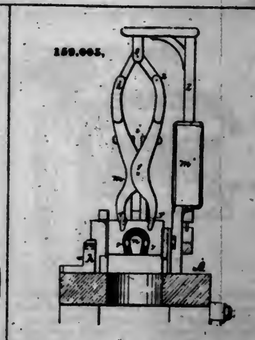
1. The hair-cutter's gage consisting of spring-ribs bent from one piece of sheet metal, to form point, heel, and top parts, being connected at the rear edges by the handle, and adjusting devices, for the purposes of being set and operated in the manner and for the purpose set forth.

2. The spring-ribs of the hair-cutter's gage, bent in inwardly-curved shape between the supporting-heel and point, and with broader top part for holding the hair ready for cutting, substantially as set forth.

3. The combination of the spring-ribs B, adjusting-links *a a*, and handle C, for setting the top of the ribs to greater or lesser height from the base part, and cutting the hair to any required length, substantially as described.

159,005. HORSESHOE-MACHINES. Joseph Williams, Sharpsburg, Pa. [Filed Oct. 26, 1874.]

Brief.—The bar is bent around a projecting former (extending back and forming the inner walls of a die-box) by a pair of levers pivoted together on a slide, and operated, through toggles connecting their upper ends, by a reciprocating bar, the action being to press and bend the metal against the former. Upon the retreat of the bending-levers, a plunger overlapping the former presses the blank into the die-box, from which it is subsequently removed by two rods working through the rear of the box.



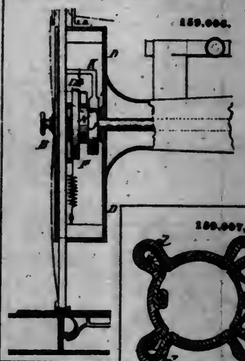
159,005.

The combination of the die *a*, swaging-plunger R, and swage A', clamps *m*, vertical arm I, bell-crank lever *n*, arm *j*, cams C, D, and *w*, delivering-plunger 9, arms 8 and 6, connecting-rod *n'*, and arm *k*, constructed, arranged, and operating with relation to each other, substantially as hereinbefore described, and for the purpose set forth.

159,006. SEWING-MACHINES. D. Williamson, Sunbury, Pa. [Filed Aug. 1, 1874.]

Brief.—The feed-bar, presser-bar, and needle-bar are operated by means of cams relatively arranged upon the main driving-shaft of the machine.

The combination, with a single rotary shaft, I, of the spring-retracted cam Q on a disk, F, that has a crank-pin working in V-shaped slot O, the screw E, spring-cam J, and spring-armed cam N, all arranged as shown and described, whereby the same shaft shall operate the needle-bar, presser-bar, and feed-bar at the times, in the manner, and for the purpose specified.



159,006.

159,007.

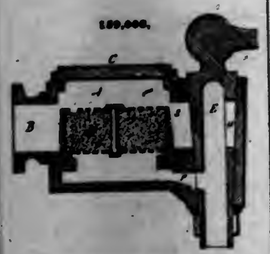
159,007. LIGHTNING-RODS. S. R. Wilmot, Bridgeport, Conn. [Filed Aug. 11, 1874.]

A lightning-rod composed of a locked-seam tube, formed with a series of hollow doubled projecting wings, *d d*, with rounded edges, substantially in the manner and for the purpose specified.

159,008. FILTERING-FAUCETS. G. W. Wilson, West Meriden, Conn., assignor of one-half his right to Wm. and Wm. C. Homan, same place. [Filed Dec. 26, 1874.]

Brief.—When it is desired to draw water without filtering, the spigot is turned to cause the upper orifice therein to register with the corresponding orifice in the filtering-chamber. To filter the water, the lower orifices are caused to register, when the water must pass through the filtering material.

159,008.



The herein-described filtering-faucet, consisting of the chamber A, with its inlet B, two outlets, S and P, intermediate filtering material, and the plug E, with its two openings, *s* and *c*, corresponding to the outlets S and P, all combined substantially as described.

159,009. BUCKLES. T. L. Wiswell, Olathe, Kans. [Filed June 27, 1874.]



As a new article of manufacture, the plate F, provided with the recesses *s s*, shoulders *s' s'*, stud *k*, loops *j j*, and wearing-hook *l*, as and for the purpose set forth.

159,010. WIRE FASTENERS FOR FRUIT-JARS. Caleb Wright, Philadelphia, Pa., assignor to J. H. Rohrman and J. B. Rohrman, same place. [Filed Dec. 7, 1874.]

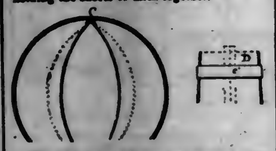
Brief.—The wire was formerly secured by solder. In this improvement the wires are crossed or interlock.



The within-described fastening, composed of one or two pieces of wire, and having lips *a* and *a'*, one or both of which are interlocked, as herein set forth.

159,011. LAMP-CHIMNEYS. R. D. Wright and C. H. Kenney, Springfield, Vt. [Filed Dec. 10, 1874.]

Brief.—V-shaped metallic standards for holding the sheets of mica together.

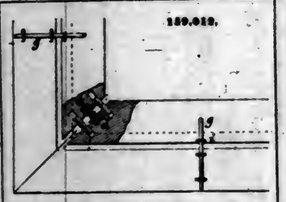


The mica lamp-chimney, constructed with two sheets held by the flanged standards C C, substantially as and for the purpose described.

159,012. CANVAS-STRETCHERS. John P. Wright and D. W. Gardner, Brooklyn, N. Y. [Filed Nov. 7, 1874.]

The combination, with the doweled miter-joints and springs at the corners of the frame, of the extensible pins *g*, having their inner ends bent and inserted into the side pieces of the frame, and the staples I attached to the said pieces for the reception of the said pins, substantially as and for the purpose herein described.

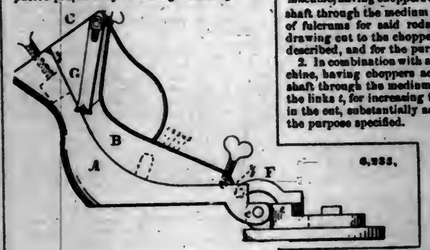
159,013.



REISSUES.

6,926. FORMS FOR FITTING SHOE-UPPERS. W. J. B. Mills, Philadelphia, Pa. Patent No. 156,936, dated Nov. 17, 1874. [Filed Dec. 30, 1874.]

Brief.—The form is made up of adjustable sections, and provided with spring-clamps to hold the parts in place while being fitted and pasted preparatory to sewing or lasting.



1. As an improvement in the art of manufacturing boots and shoes, the process of fitting the parts of uppers over a form, and holding the same thereon while they are being pasted and adjusted, for the purpose set forth.

2. The improvement in the manufacture of boots and shoes, the same consisting in placing the prepared quarters and linings over a form, and adjusting them preparatory to stitching, for the purpose set forth.

3. The improvement in the manufacture of boots and shoes, the same consisting in placing stitched quarters and linings over a form, and adjusting the vamp preparatory to stitching, for the purpose set forth.

4. As a new article of manufacture, apparatus over which boot and shoe uppers are vamped and fitted, the same consisting of a form shaped to the requirements of the boot or shoe, and provided with clasps to assist the operator in holding the parts in place, substantially as set forth.

5. A form for fitting and holding boot and shoe uppers, consisting of the sectional parts A and B, relatively adjustable, and provided with the guide H, substantially as and for the purpose set forth.

6. The removable cap-piece C, provided with clasps G and guide H, in combination with the parts A and B, substantially as and for the purpose set forth.

7. The holder H, in combination with the front piece B of the form, substantially as and for the purpose set forth.

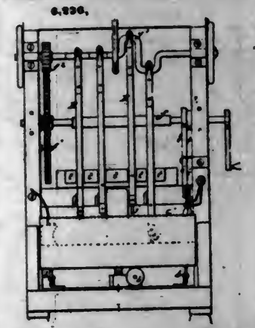
8. The slots clasps G G, in combination with the form A B C, substantially as and for the purpose set forth.

9. The form for fitting and holding shoe-uppers, when provided with cheeks *d d* and screw *f*, substantially as and for the purpose set forth.

6,934. MEAT-CHOPPERS. D. Peters, Burlington, Iowa, assignor, by mesne assignments, to himself and Murray Iron-Works Company. Patent No. 123,725, dated Feb. 13, 1872. [Filed Jan. 2, 1875.]

Brief.—Knives or choppers suspended from rods are moved vertically by donkey-cranks near the knife ends, links serving as fulcrums, causing each blade to make a drawing cut.

6,220.



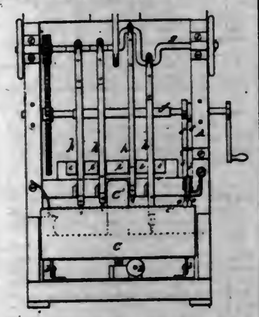
1. The combination, with a meat-chopping machine, having choppers actuated by a crank-shaft through the medium of rods or handles, of fulcrums for said rods, which will give a drawing cut to the choppers, substantially as described, and for the purpose specified.

2. In combination with a meat-chopping machine, having choppers actuated by a crank-shaft through the medium of rods or handles, the links *t*, for increasing the amount of draw in the cut, substantially as described, and for the purpose specified.

6,235.

6,937. MEAT-CHOPPERS. D. Peters, Burlington, Iowa, assignor, by mesne assignments, to himself and Murray Iron-Works Company. Patent No. 123,726, dated Feb. 13, 1872. [Filed Jan. 2, 1875.]

Brief.—The vertical rods or handles of the knives move between guides of comb-like construction, but the whole series hinged to throw in or out of gear, the cross-head on which the tab rests rising or falling as rotated on its ways; combined cams, levers, and pawls serving to rotate the tab.



1. The hinged guide bars or rack *i*, arranged to operate with the choppers h *j*, substantially as described, and for the purpose specified.

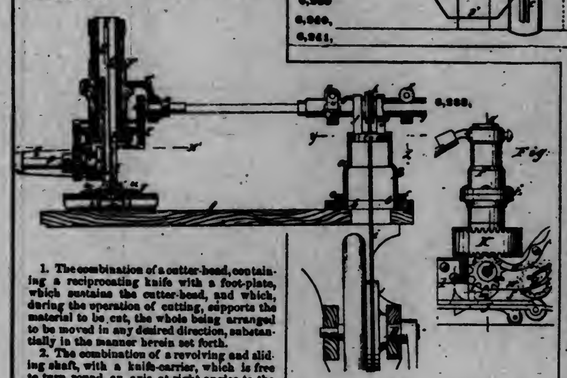
2. The combination of the frame D, adjustable vertically to the manner described, chopping-block C, and choppers h *j*, arranged and operating as set forth.

3. The plow N *n*, constructed and operating as described, in combination with the choppers h *j*, chopping-block C, and post C', arranged and operating substantially as described.

4. The combination of the set of pawls *e e*, rods *e' e'*, on the rim of the cylinder of chopping-block C, eccentrics of shaft *f*, and the choppers h *j*, arranged and operating as described.

6,922. MACHINES FOR CUTTING CLOTH. A. Worth, Stapleton, N. Y. Patent No. 130,243, dated Aug. 6, 1872. [Filed Jan. 2, 1875.]

Brief.—The cutter-head, with its reciprocating knife and certain other devices, is supported on a foot-plate, and the whole is arranged to be moved in any desired direction, motion being transmitted by means of a sliding and revolving shaft arranged within a tubular shaft carrying the actuating-pulley, and supported on a revolving cylinder with a swiveled head.



1. The combination of a cutter-head, containing a reciprocating knife with a foot-plate, which sustains the cutter-head, and which, during the operation of cutting, supports the material to be cut, the whole being arranged to be moved in any desired direction, substantially in the manner herein set forth.

2. The combination of a revolving and sliding shaft, with a knife-carrier, which is free to turn round an axis at right angles to the revolving and sliding shaft, said shaft serving to impart the requisite motion to the knife, substantially in the manner described.

3. The combination, with a cutter-head containing a reciprocating knife, and with a foot-plate which sustains the cutter-head, of a presser-roller, the whole being arranged to move in any desired direction, the presser-roller serving to hold the material down upon the foot-plate, while the same is moved under the material to be cut, substantially as set forth.

4. The combination of a hollow guide-rod, G, with a knife-carrying bar, H, said hollow guide-rod being provided with a handle for moving the cutting mechanism in any desired direction, substantially in the manner described.

5. The combination, with a cutter-head, containing a reciprocating knife, of a foot-plate, arranged to support the cutter-head, and provided with a socket, one or both edges of which form cutting-edges to co-operate with the cutting-edge of the knife, the whole being arranged to move in any desired direction, substantially as set forth.

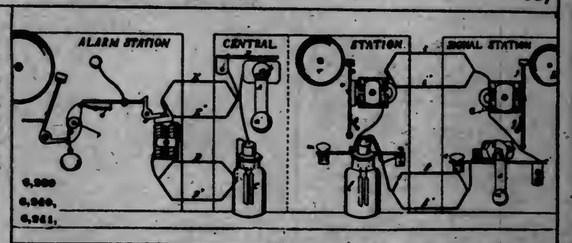
6. The combination, with a cutter-head containing a reciprocating knife, and with a foot-plate supporting the cutter-head, and provided with a socket, one or both edges of which form cutting-edges to co-operate with the cutting-edge of the knife, of a standard which supports the cutter-head, and which is grooved to form a guide for the knife, the whole being arranged to move in any desired direction, substantially as described.

7. The lever *i'*, which is hinged to the standard I, or to any part rigidly connected to said standard, and forms the bearing for a pin supporting the presser-roller *h'*, in combination with a cam which receives motion from a sliding and revolving shaft, and from which motion is transmitted to the presser-roller, substantially as and for the purpose described.

8. The finger or presser *m'*, hinged to the center pin of the presser-roller, arranged to travel in front of the knife, said finger being free to adjust itself to the varying thickness of the material to be cut, substantially as set forth.

9. The combination of a revolving cylinder, B, swivel-head *d*, and a pulley with a sliding and revolving shaft, C, substantially as described.

10. The combination, with a cutter-head containing a reciprocating knife, and with a foot-plate which supports the cutter-head, of one or more rollers connected to the under surface of the foot-plate, and allowing the same to move freely, substantially as described.



6,929.
6,930.
6,931.

1. A signalizing apparatus, consisting of an electric circuit, a sounding or recording mechanism, and several automatic circuit-breakers adapted to give determinate and different signals, substantially as described.

2. A signalizing apparatus, consisting of an electric circuit, a sounding or recording mechanism, and several automatic circuit-breakers adapted to give determinate and different signals, substantially as described, and a device, whereby the several circuit-breakers, after being put in motion to break or close the circuit for signalizing, shall automatically be stopped in position to restore the circuit to its normal condition or to correctly commence a repetition of the signals, as described.

3. A signalizing apparatus, consisting of an electric circuit, a sounding or recording mechanism, and an automatic circuit-breaker adapted to give determinate signals, and a device, whereby said circuit-breaker, after the giving of each a signal, shall automatically be stopped in such a manner that a signal may be repeated by a direct forward movement, as described.

4. An electric circuit and a circuit-breaker, permanently organized with two or more groups of circuit-breaking or circuit-closing points, the several groups being separated by spaces greater than the spaces separating the individual points of the groups, substantially as and for the purpose described.

5. The combination, with the same electric circuit or dependent circuits, of a manual circuit-breaking key for general signalizing, and an automatic circuit-breaker adapted to give determinate signals, substantially as described.

6,929. ELECTRO-MAGNETIC FIRE-ALARM TELEGRAPHS FOR CITIES. W. F. Channing, Providence, R. I., and Moses G. Farmer, Salem, Mass. Patent No. 17,265, dated May 19, 1857; extended seven years. [Filed Dec. 18, 1874.]

1. The signal system herein described, consisting of a series of signal-stations scattered at intervals through a wholecity or town, or any part thereof, and telegraphically connected with a common center or point, or with each other, by one or more signal-circuits, by which means a constant communication may be established and maintained between all parts of a city or town, however extended, and with the center or centers at which the signal circuit or circuits converge or meet, so that the moment a fire occurs its existence and locality may at once be known at the center of the system, and efforts for subduing it be properly directed.

2. The alarm system herein described, consisting of a series of alarm-stations suitably constructed throughout a whole city or town, or any part thereof, and telegraphically connected with a central station by one or more alarm-circuits, by which means a public alarm of the existence and locality of the fire may be given at different points.

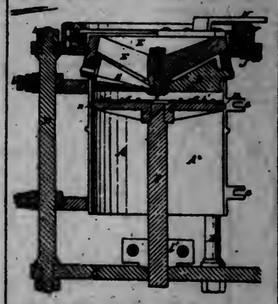
6,930. ELECTRO-MAGNETIC FIRE-ALARM TELEGRAPHS FOR CITIES. W. F. Channing, Providence, R. I., and Moses G. Farmer, Salem, Mass. Patent No. 17,266, dated May 19, 1857; extended seven years. [Filed Dec. 18, 1874.]

The fire-alarm telegraph, embracing in its construction the alarm-systems for striking the number of the district upon the alarm-bells, and the signal system for communicating the number of the station at which the fire occurs, to all the signal-stations, as well as for communicating an alarm to the central station, as described.

6,931. ELECTRO-MAGNETIC FIRE-ALARM TELEGRAPHS FOR CITIES. W. F. Channing, Providence, R. I., and Moses G. Farmer, Salem, Mass. Patent No. 17,266, dated May 19, 1857; extended seven years. [Filed Dec. 18, 1874.]

6,942. BALING-PRESSES. L. Dodge, Watertford, N. Y. Patent No. 120,048, dated Oct. 17, 1871. [Filed Jan. 4, 1875.]

Brief.—The hay or other material is progressively fed and compressed in small quantities at a time in the bale-forming cylinder or case, until the bale has been gradually built up and formed.



1. A machine for baling hay, straw, cotton, and other material, in which the following elements are combined, substantially as herein shown and set forth: First, a case in which the bale is formed as described; second, compressing devices which compress successive portions of the hay or other material in the cylinder or case until the bale is formed as described; third, a platform or support, substantially as described, upon which the bale during the process of its formation, rests, said platform and the compressing devices being

arranged substantially as stated, so that the one may have a motion away from the other in proportion as the bale is built up.

5. The combination, with the cylinder or other case in which the bale is formed, and the devices by means of which successive portions of the material to be baled are compressed in said cylinder or case, of a sliding base or support for the bale, arranged substantially as shown and described, to offer a yielding resistance to the compressing devices, and to move away from the said devices as successive parts of the bale are formed and compressed.

6. The combination of the feed and compressing rollers, and their skeleton supporting-frame, with the ring in which said frame is held and moves, and the devices interposed between the ring and frame for reducing friction, substantially as shown and set forth.

7. In a baling-press, constructed and operating substantially as described, the bale-forming cylinder or case, in combination with devices for its adjustment up and down with relation to the feeding and compressing devices, as shown and set forth.

8. The combination and arrangement of the cylinder, the platform, and the feeding and compressing devices, with the surrounding frame by which they are carried, substantially as herein shown and set forth.

6,945. HAY, STRAW, AND OTHER BALES. L. Dodge, Waterford, N. Y. Patent No. 125,031, dated Mar. 26, 1872. [Filed Jan. 4, 1875.]

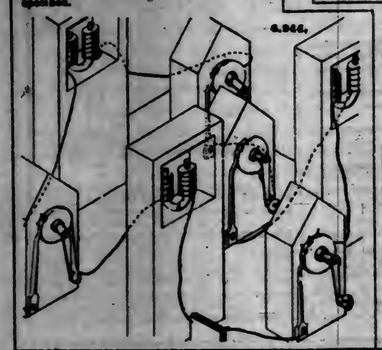


A pressed bale of hay, cotton, straw, or other fibrous material, built up endwise in layers which are transverse to the length of the bale, substantially as set forth.

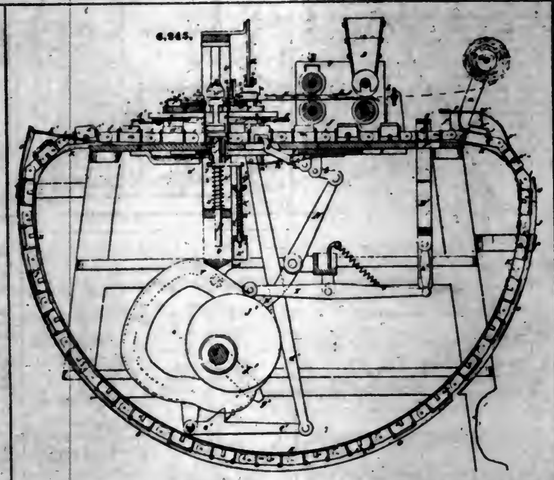
6,946. ELECTRO-MAGNETIC FIRE-ALARM APPARATUS. M. G. Farmer, Salem, Mass. Patent No. 28,000, dated Feb. 22, 1860; extended seven years. [Filed Dec. 10, 1874.]

Brief.—"Village system," wherein signal-boxes and electro-mechanical alarms are in same circuit, dispensing with central station.

The combination, with the same electric circuit, or dependent circuits, of two or more signal-boxes, constructed to operate substantially as described, and one or more electro-mechanical alarm mechanisms, constructed to operate substantially as described, as shown and specified.



6,945.



6,945. PAPER-BOX MACHINE. F. Gates, Frankfort, N. Y., assignor to Wm. Gates, same place. Patent No. 101,455, dated Apr. 5, 1870. [Filed Sept. 10, 1874.]

Brief.—The machine consists of mechanisms for feeding the roll of paper, pasting, cutting, folding, and inserting the box into the drying-receptacles, and discharging it therefrom, all of which operate automatically.

1. The combination, with an inserting-plunger of a box-forming mechanism, of a series of box-receptacles for the reception and retention of the boxes, substantially as described.

2. The combination, with an inserting-plunger of a box-forming mechanism and a series of box-receptacles, of a mechanism for automatically discharging the finished boxes from the box-receptacles, substantially as described.

3. The combination, with the box-receptacles, of folding-plates d^5 d^5 and the inclines E' F', arranged and operating substantially as described.

4. The combination of the reciprocating plunger P and spring-follower Q with the sliding side and end pieces X Y, stationary spring-plates l^2 n', and sliding lap-folders r' r', all arranged and operating substantially as herein shown and described.

5. The spring-supports a^1 a^1, arranged in combination with the nicking-knives E E, substantially as herein shown and described.

6. The side and end pieces X Y of the mold, arranged to slide on the platform T, and pushed in by springs c' c', substantially as herein shown and described, for the purpose of holding the sides and ends of the box firmly and vertically against the plunger.

7. The stationary side and end spring-plates l^2 n', arranged below the slide-plates X Y, for the purpose of forming the lower part of the mold, and for preventing the ascending plunger from elevating the finished box, as specified.

8. The horizontal folders r' r', in combination with spring-plates l^2 l^2 and plunger P, for the purpose of folding the ends of the sides of the box, so that the parts then folded will secure all the parts of the box in the desired position, as set forth.

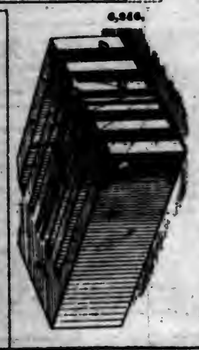
9. The spring-catch n', in combination with the pin n^2, arranged to arrest and disengage the follower, substantially as set forth.

10. The combination of a perforated plunger, P, with a reciprocating follower, Q, recessed upon its face, the latter supporting the blank, and the former bending its sides, while both descend a certain distance together, all as set forth.



6,946.

6,946.



6,946. FIRE-KINDLING. J. D. Husbands, Jr., St. Louis, Mo., assignor to the American Fire-Kindler Company, same place. Patent No. 154,796, dated Sept. 8, 1874. [Filed Jan. 12, 1875.]

Brief.—A block of wood having numerous channels therein is saturated with inflammable material. A wick may be attached to facilitate lighting.

1. A fire-kindler made from a block of wood, constructed with a series of draft-flues created by thin partitions, for admitting the draft into or through the block to intensify the heat, and to obviate smothering of the flame.

2. The combination, in fire-kindlings, of a block possessing a head or body with a series of partitions to form a series of air-passages or draft-flues saturated or impregnated with an inflammable material agent.

3. In a fire-kindler, a block of wood combined with draft-flues or partitions varying in size, for admitting draft into or through the block, to intensify the heat and secure gradual combustion and rapid ignition of the kindler, substantially as described.

4. The combination of an igniting-wick with a fire-kindler constructed of a block of suitable material, having a series of draft-flues for admitting draft into or through the block, substantially as described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 4. TUESDAY, JANUARY 26, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

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ANNUAL REPORT
OF
THE COMMISSIONER OF PATENTS
FOR THE YEAR 1874.

To the Senate and House of Representatives of the United States of America in Congress assembled:

In compliance with section 9 of the patent law, I submit the following report for the year ending December 31, 1874.

1. *Statement of moneys received.*

Amount received on applications for patents, reissues, extensions, caveats, disclaimers, appeals, and trade-marks		$655,625 00
Amount received for copies of specifications, drawings, and other papers		53,914 53
Amount received for recording assignments		18,400 70
Amount received for subscriptions to the Official Gazette		9,011 94
Amount received for registration of labels, (since August 1, 1874,)		1,326 00
Total		738,278 17

2. *Statement of moneys expended.*

Amount paid for salaries		$152,157 89
Amount paid for photolithographing current issues		42,315 15
Amount paid for photolithographing back issues		31,765 05
Amount paid for illustrations for Gazette		29,512 29
Amount paid for tracings of drawings		17,418 40
Amount paid for contingent and miscellaneous expenses, viz:		
Advertising	$2,621 21	
Stationery	13,217 20	
Painting, glazing, varnishing, paper-hanging, etc.	959 33	
Furniture, carpeting, &c.	10,096 86	
Fitting up cases in model-rooms, carpenter's work, and repairing furniture	16,591 68	
Plumbing and gas-fitting	1,203 78	
English patents and foreign periodicals	1,781 21	
Refunding money paid by mistake	550 00	
Hardware	1,497 30	
Pay of temporary employés	17,752 81	
Miscellaneous items, viz: Books for library, ice, subscriptions to journals, freight, washing towels, withdrawals, repairing carriage and harness, keeping horse, etc.	9,788 25	
		76,119 63
Total		679,288 41

3. *Statement of the balance in the Treasury of the United States on account of the patent fund.*

Amount to the credit of the patent fund, January 1, 1874		$806,124 21
Amount of receipts during the year 1874		738,278 17
Total		1,544,402 38
From which deduct expenditures for the year 1874		679,288 41
Balance January 1, 1875		865,113 97

4. *Statement of the business of the Office for the year* 1874.

Number of applications for patents during the year 1874	21,602
Number of patents issued, including reissues and designs	13,509
Number of applications for extension of patents	216
Number of patents extended	199
Number of caveats filed during the year	3,181
Number of patents expired during the year	4,906
Number of patents allowed but not issued for want of final fee	2,561
Number of applications for registering of trade-marks	648
Number of trade-marks registered	559
Number of applications for registering of labels	221
Number of labels registered	151

Of the patents granted there were to—

Citizens of the United States	13,072
Subjects of Great Britain	358
Subjects of France	74
Subjects of other foreign governments	101

5. *Number of patents issued by the United States Patent Office to residents of the different States, Territories, and Foreign Countries from January 1, 1874, to December 31, 1874.*

[The proportion of patents to population is shown in last column.]

States, &c.	No. of patents.	One to every—
Alabama	39	25,564
Arkansas	14	3,485
California	301	1,861
Colorado Territory	22	1,812
Connecticut	668	804
Dakota Territory	4	3,543
Delaware	39	3,205
District of Columbia	145	901
Florida	12	15,645
Georgia	69	17,161
Illinois	944	2,478
Indiana	355	4,702
Iowa	319	3,506
Kansas	74	4,994
Kentucky	125	10,568
Louisiana	76	9,550
Maine	151	4,151
Maryland	218	3,578
Massachusetts	1,506	966
Michigan	380	3,116
Minnesota	110	3,907
Mississippi	56	14,784
Missouri	306	5,625
Montana Territory	1	20,505
Nebraska	29	4,941
Nevada	16	2,685
New Hampshire	127	2,506
New Jersey	616	1,471
New York	2,785	1,581
North Carolina	47	22,811
Ohio	938	2,872
Oregon	30	3,031
Pennsylvania	1,644	2,142
Rhode Island	164	1,325
South Carolina	42	16,600
Tennessee	89	14,027
Texas	113	7,244
Utah Territory	9	9,642
Vermont	126	2,625
Virginia	71	17,235
Washington Territory	4	5,996
West Virginia	38	11,632
Wisconsin	255	4,136
Wyoming Territory	4	2,279
Great Britain	352	.....
France	74	.....
Other countries	101	.....
United States Army	7	.....
United States Navy	1	.....
United States in general		2,256

f. *Comparative statement of the business of the Office from 1837 to 1874, inclusive.*

Year.	Applications.	Caveats filed.	Patents issued.	Cash received.	Cash expended.
1837			435	$29,289 08	$33,506 98
1838			530	42,123 54	37,402 10
1839			425	37,260 00	34,543 51
1840	765	228	473	38,056 51	39,090 67
1841	847	312	495	40,413 01	52,666 87
1842	761	391	517	36,505 68	31,241 48
1843	819	315	531	35,315 81	30,776 96
1844	1,045	380	502	42,509 26	36,244 73
1845	1,246	452	502	51,076 14	39,395 65
1846	1,272	448	619	50,264 16	46,158 71
1847	1,531	553	572	63,111 19	41,878 35
1848	1,628	607	660	67,576 69	58,905 84
1849	1,955	585	1,070	80,752 98	77,716 44
1850	2,193	602	995	86,927 05	80,100 95
1851	2,258	760	869	95,738 61	86,916 93
1852	2,639	996	1,020	112,656 34	95,916 91
1853	2,673	901	958	121,527 45	132,809 83
1854	3,324	868	1,902	163,789 84	167,146 32
1855	4,435	906	2,024	216,459 35	179,540 33
1856	4,960	1,054	2,502	192,588 02	199,931 02
1857	4,771	1,010	2,910	196,132 01	211,582 09
1858	5,364	934	3,710	203,716 16	193,193 74
1859	6,225	1,097	4,538	245,942 15	210,278 41
1860	7,653	1,084	4,819	256,352 50	252,820 80
1861	4,643	700	3,340	137,354 44	221,491 91
1862	5,038	824	3,521	215,754 99	182,810 39
1863	6,014	787	4,170	195,503 20	189,414 14
1864	6,932	1,063	5,020	240,919 98	229,868 00
1865	10,664	1,937	6,616	348,791 84	274,190 34
1866	15,269	2,723	9,450	495,665 38	361,724 28
1867	21,276	3,597	13,015	646,581 99	630,263 32
1868	20,420	3,705	13,378	681,565 86	628,679 77
1869	19,271	3,624	13,986	693,145 81	486,430 78
1870	19,171	3,273	13,321	669,456 76	557,149 19
1871	19,472	3,366	13,033	678,716 46	560,595 08
1872	18,246	3,090	13,500	699,726 39	665,591 36
1873	20,414	3,248	12,864	703,191 77	691,178 98
1874	21,602	3,181	13,599	738,278 17	679,288 41

The business of the office during 1874 presents several interesting features. From the above statement it will be seen that, notwithstanding the general prostration of business, a larger number of applications was received during the year 1874 than in any preceding year; and a larger number of patents was granted than in any year before, with the exception of 1869. It also appears that 2,561 applications were allowed, but patents were not issued, because the final fee was not paid within six months, as the law requires. If this number be added to the number of patents issued it will be seen that, of the 21,602 applications filed during the year, 16,160 were allowed, leaving only a little more than one-fourth of the entire number of applications finally rejected. The fact that nearly three-fourths of the applications were decided favorably to the petitioners is a sufficient answer to the inconsiderate charge sometimes made of illiberality on the part of the officials of the Patent Office.

I desire, also, to call attention to the fact that, notwithstanding the heavy expenditures of the Office, for photolithographing the drawings of current and back issues, and for the publication of the GAZETTE, the excess of receipts over expenditures during the year amounts to $58,989.76, an increase of $46,976.97 over and above the surplus of the year immediately preceding.

EXPENSES OF THE OFFICE.

An examination of "Table 6" will show that for the last eight years the average number of applications for patents has been about 20,000 per annum. It is probable that this may be expected as the average annual business of the Office for years to come, unless some great change should occur affecting directly the operation and influence of our patent system. Should the business keep up to the present standard, however, it will not materially increase the expenses of the Office. The photolithographing of the drawings of current and back issues has so facilitated the labor of making examinations that the same force can do very much more, and much better, work than ten years ago. This is accomplished by putting into each examiner's room a full set of the photolithographs in his class as soon as the work is completed, so that his examinations, to the extent of patents granted in this country, can be made without leaving his room, and yet with a certainty that all the drawings in the class are before him. The full benefit of the reproduction of old drawings cannot be realized, however, until the work is entirely completed. It will be of great advantage, not only to the Patent Office, but also to the public if this can be speedily accomplished. I have recommended, therefore, an increase of the appropriation for this purpose for the next fiscal year. If the amount asked for, one hundred thousand dollars, is appropriated it will enable the Commissioner to complete the work within the year. The sale of copies will be largely increased by having in store photolithographs of the drawings of all patents, thus enlarging the receipts of the Office, while at the same time the facilities for examining applications will be improved to such an extent that, I am confident, the working force of the Office can be decreased by dispensing with one entire grade of the examining corps. A large saving in the annual expenses of the Office will thus be effected, while the increase in appropriation desired is only about one thousand dollars more than the surplus receipts for the last year.

Of course the annual increase of patents granted adds just so much to the labor of examining subsequent applications; but, with the completion of the reproduction of the old drawings, and the improvement in working facilities in other particulars, which may be obtained, it is hoped this increase will not be felt so seriously as heretofore.

APPROPRIATIONS.

Upon the completion of this work the Patent Office will be relieved of one large item of expense, while, as I have shown, the amount required for payment of salaries may probably be diminished. This will result in a much larger surplus of receipts over expenditures. There is yet much to be done before the mass of information stored away in the Patent Office will become easily accessible to the public.

From 1836 to the present time over 158,000 patents have been issued. Since 1866 the specifications have been printed, and copies can be obtained at very small expense. But no information can be gained by the public of patents granted prior to 1866, except from the old and very meager reports, from manuscript copies of the records, and from photolithographs of the drawings of some classes only. When the photolithographing of the drawings of all back issues has been completed I believe that a portion of the surplus receipts of the Office should be devoted from year to year to the printing of the specifications of all patents granted prior to 1866. We shall then have all the American patents, like the English, in symmetrical, easily-examined printed form, with an ample supply, so that libraries in different parts of the country may be provided with the complete record of all patents granted, and full information in relation to old patents may be obtained as cheaply and readily as of the current issues.

As the records of this Government now stand, of part of the patents granted prior to 1866 only one copy of the drawings (excepting that in possession of the patentee) is in existence; of the specifications the office has only one or two manuscript copies; and it is easier for our inventors to gain full information of English patents than of those of their own country, for the reason that some public libraries in the country are provided with complete printed records of English patents. In fact, this Office (by the liberality of the English government) has all these printed records of English patents, but not of its own. But the multiplication of copies in printed form concerns not only the public at large. The records of the Patent Office sustain a relation to the current work differing widely from that of any other bureau under the government. In other government offices the papers in cases once decided are filed away, with little probability of ever being consulted again; but in the Patent Office an application once made and decided upon may become, in turn, a reference for subsequent applications of its class. Hence the files of the Office must be inspected daily in the work of examining pending applications. I therefore respectfully urge that these records, which are truly the only complete history of the progress of invention in the country, the only reliable exponent of the state of the arts, the sole and constant reference both of the Office and inventors, may be multiplied in printed form.

There is also urgent need of complete digests of all the patents in each one of the one hundred and forty-five subdivisions, as inventions have been classified in the office. These would render the work of examining more expeditious and certain. The English government has published such digests. These contain, in greatly-abridged form, properly classified and arranged, all the patents issued by the government, and appear to have met with great favor. There is also a strong demand for the publication of such abridgment of specifications in this country. If the Commissioner should be authorized to publish the volumes as fast as completed, in form something like that of the English abridgments, they would doubtless meet with a ready sale, which would nearly if not quite cover all the expense of publication. So seriously is the want of this abridgment felt by inventors and manufacturers, that every year Examiners in the Patent Office are importuned by persons outside to prepare complete abridgments of patents in their class for publication and sale as a private enterprise; and in some instances large sums have been offered for complete digests of some special classes.

There is no occasion for any reduction of the fees demanded of applicants. They are trifling compared with the expenses attending the grant of a patent in other countries, and there is no complaint that they are exorbitant. I firmly believe that they should be kept at their present rate, and that most of the surplus receipts should be expended in the direction indicated for the benefit of the Office and that large portion of the public vitally interested in patents. Such use of the funds of the Office would meet a continually-increasing demand, and be received with popular approbation. I should be glad if a small appropriation could be made this year for the commencement of digests, and most earnestly recommend a special appropriation for this purpose, even though it may not exceed five or ten thousand dollars.

GENERAL INDEX.

For the purpose of providing for the public some readily-accessible information in regard to patents already granted in this country, the Commissioner has caused to be prepared, within the last two years, a general index of all patents issued from 1790 to 1873, inclusive. This index will be published in two sets of three volumes each—one being an index of subject-matter, and the other of the names of patentees. Of the first, one volume has been published, the second will be out soon, and the third will follow shortly. The first edition has been limited to a thousand copies; but the matter has been stereotyped, so that any future demand can be readily supplied. A small number of copies is required for Office use, the remaining volumes will be sold at $20 per set. The patentees' index is not yet completed. Many orders have been received already for these indexes, and it seems reasonable to expect that the receipts from their sale will ultimately reimburse the Treasury for the expense of their publication.

OFFICIAL GAZETTE.

The Patent Office OFFICIAL GAZETTE, the publication of which was commenced in 1872, has grown in popularity from year to year. The increase in its circulation, however, has not been rapid, owing in great measure to the fact that there is no authority for advertising it. Persons coming to the Office for the transaction of business frequently express surprise on learning of the publication of this journal. If some provision could be made for giving more general information of the publication of the GAZETTE, it is believed there would be large increase in subscriptions. A change has been made in the mode of publication during the last year. Up to the commencement of the current fiscal year the illustrations were produced by photolithography, and each weekly edition numbered ten thousand. This large number was necessary because the edition was not stereotyped, and as the GAZETTE is now the only Patent Office report there will be a steady demand in the future for full sets. More than half the edition was stored for sale, and the pressure for more room in the Office made it desirable that some change should be effected by which less space for storage would be required. Accordingly, in the advertisement for proposals for the year commencing June 1, 1874, bids were asked for plate-illustrations for an edition of five thousand copies only, the plates to become the property of the Office. A proposal for doing this work by the "heliotype" process, submitted by J. R. Osgood & Co., of Boston, Mass., was accepted, and a contract entered into with them by my predecessor for illustrations and plates for an edition of five thousand copies. The plates occupy very little space, and are readily stored in the Office. The letter-press portion of the GAZETTE is stereotyped at the Government Printing Office, so that plates of both letter-press and illustrations are preserved, and a new edition of any number or volume of the GAZETTE can be produced, should a necessity therefor arise.

At the same time, a change was made in the arrange-

ment of the matter. A brief of the invention and the claim of each patent are placed on the same page with the illustrations, the whole page being then reproduced by the heliotype process. On account of these changes, the appearance of the illustrated portion was for a short time quite unsatisfactory, but for the last three months it has been constantly improving, and is now very acceptable.

The GAZETTE is regarded with favor, not only by inventors and manufacturers, but also by gentlemen engaged in patent suits, both lawyers and judges. Since its first appearance it has contained, from time to time, reports of such decisions of the courts in patent cases as the Commissioner has been able to obtain. Under this practice these decisions are published some time before their appearance in any official report; hence the GAZETTE has become valuable as a medium for the prompt publication of judicial decisions. I have perfected an arrangement by which, during the year 1875, all decisions of the United States courts in patent cases will be reported at once in the GAZETTE. This, it is hoped, will enhance its value and increase its circulation.

The subscriptions for the GAZETTE do not cover the expense of publication; but it will be remembered that, in authorizing the work, Congress also provided for a large gratuitous circulation, each Senator and Representative being entitled to one copy for himself and to eight for public libraries designated by him. If the regular subscription price were received for these free copies the cost of publication would be nearly if not quite repaid.

Of the first volume of the GAZETTE an edition of only one thousand was published. This edition was exhausted long since, and there is a constantly-increasing demand for the volume. I respectfully recommend that provision be made for the publication of a new edition of this volume, which covers the first half of the year 1872. An edition of five thousand copies will cost from ten thousand to twelve thousand dollars. If this is authorized, I suggest that the Commissioner be allowed to send an unbound copy, gratuitously, to each person and library that received the second volume free of expense.

REVISION OF THE LAW.

Although a new and revised patent law was enacted in 1870, very little material change was effected, and the law to-day is essentially that of 1836. In the meantime business relating to patents, both inside and outside of the Office, has increased enormously. In the Office the organization is substantially the same as thirty-five years ago, when the number of applications was only a few hundred a year. The annual applications have increased from four hundred and thirty-five to twenty-one thousand six hundred and two, and the corps of Examiners from one to one hundred. These officials make the primary action on all applications received, and if the decision is favorable to the petitioner, it is final.

After an experience in the Patent Office of nearly eleven years in various positions, I have no hesitation in saying that the present organization is not entirely adapted to the large amount of business now transacted. Among so many persons, acting to some extent independently, mistakes will inevitably occur, and they are as likely to be in favor of an applicant as against him. There should be some provision for revising the favorable as well as adverse decisions of Examiners. Other changes are demanded in the law to make the practice of the Office more simple, certain, and satisfactory.

There is also great complaint of the burden of litigation under the present law, which has become a great hardship to patentees under the present practice. A final decision by the United States Supreme Court cannot be expected in any case much short of six or seven years from the commencement of suit. The expense of money attending patent litigation is fully as extravagant as that of time. It must be remembered, too, that all this expenditure of time and money occurs in the determination of rights which have only a limited duration. If seven years of the lifetime of a patent are consumed in litigation the enjoyment of the exclusive privilege intended by the grant is in reality reduced to ten years. The establishment of some more summary and inexpensive method of determining patent suits seems almost imperative.

I have great hesitation, however, in recommending changes in the law, and have hitherto only presented to the Committees on Patents of the two Houses of Congress some few special amendments to overcome difficulties which have occurred in the conduct of business in the Office. What is needed is a careful and thorough revision of the entire law by persons familiar with our patent system, the respective interests of inventors and manufacturers, and the rights of the general public. In order that this may be done for the benefit of all classes interested therein, an examination should be made of the relations between patents and our manufacturers, the general effect of our system, and the practice and wants of the Patent Office. I, therefore, very respectfully and earnestly recommend the appointment of either a special committee or a commission to prepare a new and revised patent law, to be reported at the first session of the next Congress.

OFFICIALS OF THE PATENT OFFICE, CIVIL SERVICE, &C.

The work of the Patent Office calls for the exercise of judgment and intelligence of a high order. A thorough knowledge of the applied sciences and useful arts, especially on the part of those employed in the examining corps, is absolutely necessary. It gives me pleasure to speak in commendatory terms of the persons thus employed.

The operation of the civil service rules has been of great advantage to the Patent Office. The entire force has been improved, but the change in the examining corps is more marked than elsewhere. The examinations for appointment and promotion have been conducted with great fairness and with the single intention of obtaining accurate information of the qualifications and aptness of candidates for the special work of the Patent Office. No system will produce uniformly satisfactory results. The operation of competitive examinations in the Patent Office forms no exception to this rule. But, notwithstanding occasional complaints, the opinion is quite generally expressed among gentlemen who have been acquainted with the Patent Office for twenty or thirty years past that the examining corps is, on the whole, in better condition now than ever before.

It is to be regretted that the most efficient and competent men cannot be retained in the Office. When they become thoroughly familiar with their duties and efficient in the performance of them, their services will command a much more liberal compensation outside than in the Office. The result is that some of the best examiners are led to resign their positions for the purpose of entering more lucrative employment, where their experience in the Patent Office becomes available.

The ready transaction of business in the Office is considerably impeded by the crowded condition of the rooms. I am compelled to reiterate the request for more room, which has been made repeatedly within the last few years. Some relief must be found before long. The model galleries are already filled to repletion, and new models are received at the rate of fifteen to eighteen thousand annually. In the rooms for drawings it is almost impossible to keep the records inside the doors, while in many other rooms the employés are so crowded as to greatly interfere with good health and the convenient transaction of business. It would be a great mistake to dispense with either drawings or models. The former are indispensable for record purposes and as the basis of all illustrations prepared by the Office, while models furnish the best and sometimes the only satisfactory evidence of what an invention really is. A description or drawing may be obscure and liable to misinterpretation—a model never. Additional room is an absolute necessity for the proper preservation of most valuable records, the public exhibition of an increasing number of models, and a prompt and efficient transaction of the very large amount of business now done in the Patent Office.

Respectfully submitted,

J. M. THACHER,
Commissioner of Patents.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date January 26, 1875.]

8,019.—Combined Clock and Mirror-Frame.—HENRY J. DAVIES, Brooklyn, N. Y.—Application filed November 25, 1874. Term of patent 3½ years.

8,020.—Cooking-Stoves.—LUTHER W. HARWOOD and JOHN C. SMITH, Troy, N. Y., assignors to FULLER, WARREN & CO., same place. Application filed January 2, 1875. Term of patent 7 years.

8,021 to 8,024, inclusive.—**Oil-Cloth.**—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Applications filed January 14, 1875. Term of patents 3½ years.

8,025.—Cooking-Ranges.—NICHOLAS S. VEDDER and FRANCIS RITCHIE, Troy, N. Y., assignors to NICHOLAS S. VEDDER, same place.—Case B. Application filed December 30, 1874. Term of patent 3½ years.

8,026.—Cooking-Stove.—NICHOLAS S. VEDDER and FRANCIS RITCHIE, Troy, and TOBIAS S. HEISTER, Lansingburg, assignors to NICHOLAS S. VEDDER, Troy, N. Y.—Case S. Application filed December 30, 1874. Term of patent 3½ years.

8,027 to 8,033, inclusive.—**Carpet.**—JOHN T. WEBSTER, Philadelphia, Pa., assignor to JOHN and JAMES DOBSON, same place. Applications filed January 11, 1874. Term of patents 3½ years.

8,034.—Boas.—GILBERT H. PRINDLE, Philadelphia, Pa.—Case B. Application filed December 12, 1874. Term of patent 7 years.

8,035.—Cooking-Stove.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, N. Y., assignors to FULLER, WARREN, & CO., same place. Application filed January 2, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date January 26, 1875.]

2,185.—Prepared Washing-Soda.—C. H. FISCHER & CO., New York, N. Y. Application filed January 7, 1875.
"'C. H. Fischer & Co.'s Washing-Crystal.'"

2,186.—Drugs.—E. FOUGERA & CO., New York, N. Y. Application filed January 14, 1875.
"'H. & W.' in the center of a circle, which is surrounded by a serpent, and round this serpent extends a zone, which contains the name of our firm."

2,187.—Carpet-Tacks.—FRANK F. MCNAIR, Nunda, New York. Application filed January 9, 1875.
"'Star Brand Carpet-Tacks.'"

2,188.—Cotton Jeans.—NAUMKEAG STEAM COTTON COMPANY, Salem, Mass. Application filed October 29, 1874.
"'Naumkeag Satteen Twills.'"

2,189.—Hams.—CHARLES D. SABIN, New York, N. Y. Application filed December 23, 1874.
"the representation of a crown."

2,190.—Germantown Wool.—JOHN H. SMITH, Philadelphia, Pa. Application filed January 13, 1875.
"'EXCELSIOR.'"

2,191.—Medicinal or Mineral Waters.—HENRY A. BENJAMIN, San Francisco, Cal. Application filed October 24, 1874.
"'P. S. Selter's Water.'"

2,192.—Worsted Braids.—HANDEL N. DAGGETT, Attleborough, Mass., (doing business under the style of THE GOLD MEDAL BRAID COMPANY.) Application filed December 14, 1874.
"a flat gilt band, about half an inch in width, formed in the shape of an oval the oval being about four inches long and two in width, and lengthwise of the oval, and extending about half an inch beyond it; at each end a cross-bar of the same width as the band, and leaving a slight space above and below the bar; all outlined in a narrow black line, and inclosed in an ornamental border."

2,193.—Silks, Velvets, and Dress-Goods.—PASSAVANT & CO., New York, N. Y. Application filed January 18, 1875.
"'Bon Marché.'"

2,194.—Soaps.—STRUNZ & WETZEL, Pittsburg, Pa. Application filed January 2, 1875.
"'Transmission Soap.'"

2,195.—Spring-Beds.—THE TUCKER MANUFACTURING COMPANY, Boston, Mass. Application filed December 12, 1874.
"a perspective representation of the Tucker spring bed."

2,196.—Knitted Goods.—TROY HOSIERY MANUFACTURING COMPANY, Troy, N. Y. Application filed January 18, 1875.
"'Alberine.'"

INDEX OF INVENTIONS PATENTED JANUARY 26, 1875.

	Class No.	No. of Patent.
Air compressor for working engines, atmospheric, Carobbi and Bellini	2	159,075
Aerating and cooling apparatus, G. W. Baird	1	159 142
Axle box and sleeve, J. B. Winchell	31	159,240
Bale tie, J. B. Arrants	7	159 060
Bale tie, A. A. Goldsmith	7	159 069
Baling cotton, device for, W. Iler	7	159,068
Barrel, G. W. Banker	40	159,064
Barrels, machine for cutting heads for, O. Osten	40	159,114
Bed bottom, spring, Fowler and Dewar	62	159,096
Bee hive, J. S. Coe	9	159,081
Boats, towing, G. Burnham	139	159,151
Boiler feeder, &c., automatic, J. W. Hopkins	148	159,095
Boiler, wash, S. M. Marsden	91	159,196
Boilers, low water indicator for steam, O. B. Kendall	148	159,184
Boilers, pipes, &c., covering for, W. O'Hara	149	159,206
Bolt fastening for tongues, whiffletrees, &c., E. H. Pettit	31	159,161

	Class No.	No. of Patent.
Boot, gaiter, B. C. Young	16	159,135
Boots and shoes, manufacture of counter stiffeners for, H. Rogers	16	159,220
Boring machine, G. Dryden	173	159 164
Bottle stopper, C. M. Blydenburgh	1	159,067
Bottles, stopper and discharge for, F. B. Michell	1	159,200
Box, revolving spice, T. W. F. Smitten	88	159,122
Boxes, manufacture of wooden, A. Robinson	30	159,042
Bracelet, E. F. Presbrey	86	159,214
Bridge, iron, E. I. Farnsworth	21	159,084
Bridges, joint for iron truss, E. S. Shaw	21	159,046
Bridges, metallic post or girder for truss, F. C. Lowthorp	21	159,194
Bridle bit, P. Casey	72	159,077
Bristles machine for combing dry, Parks and Lannay	22	159 209
Buildings, movable front for, J. Murphy	4	159,203
Burial casket, W. G. Algeo, Sr. and Jr	39	159,059
Burner, self regulating gas, D. D. McMillan	64	159 108
Burners, lens attachment for gas, M. C. Meigs	64	159 199
Button, sleeve, Mason and Richardson	38	159 106
Car berth, sleeping, C. E. Lucas	121	159,195
Car coupling, A. A. Kellogg	122	159,099
Car coupling, G. W. E. Row	122	159,190
Car coupling, Tuttle and Thompson	122	159,125
Car coupling, L. Vote	122	159,128
Car ventilator, E. Korting	166	159,187
Car wheel and axle, B. A. Berryman	122	159,145
Cars, truck for street railway, H. C. Ball	121	159,070
Carpet fastener, A. Burroughs	62	159,153
Carriage wheel fender, A. Shoeninger	31	159,047
Cartridge loading device, G. W. Ansley	32	159,013
Chain gripe and tightener, J. N. and G. J. Ackerman	79	159,057
Chair, folding, P. W. Nolan	62	159,205
Cheese mill, J. F. Landis	45	159,189
Churns, cream saver for reciprocating, R. Whiting	45	159,237
Cigar mold, N. Dubrul	160	159,165
Cisterns, apparatus for walling, F. Wilford	51	159,239
Clasp for stockings or skirt supporters, G. J. Capewell	38	159,154
Clock frame or case, H. J. Davies	36	159,160
Clothes line, T. S. Cary	91	159,076
Connecting rod, J. F. Haskins, (reissue)	67	6 255
Crop thinning machine, M. Eustace	43	159 169
Croquet mallet, T. H. Logan	143	159 194
Cutter head, G. J. Shimer	174	159 236
Dairies, cooling, J. Wilkinson	45	159 055
Demijohn, C. Newman	68	159 038
Dental engines, apparatus for protecting and moistening the disks of, E. T. Starr	46	159,048
Dental plugger, L. J. P. E. Gaillard	46	159,173
Dental tool, electro magnetic, G. F. Green	46	159,028
Derrick, C. L. Duroy	79	159 024
Ditching machine, T. F. Randolph	51	159,148
Dredging machine, C. J. Sands	82	159,223
Drier for fertilizers, Bowman and Chapman	44	159,147
Drilling machine, rock, E. S. Winchester	124	159,242
Drilling machines, &c., supporting clamp for rock, E. S. Winchester	124	159,241
Egg holder, A. W. Porter	88	159,213
Engine, rotary, J. V. Beekman	150	159,066
Engine, rotary, Deming and Wickes	150	159,021
Engines, adjustable cut off for steam, H. Webster	152	159,130
Engines, atmospheric air compressor for working, Carobbi and Bellini	2	159,075
Fan, E. Schmidt	165	159,224
Feather renovator, Russell and Seamans	62	159,222
Felt, manufacture of vegetable, Sweeney and Beach	76	159 051
Fence, farm, I. L. Landis	52	159,188
Fifth wheel for vehicles, G. F. Putnam	31	159 117
Fire extinguisher, H. S. Parmelee, (reissue)	118	6 257
Flue cover, H. Tongue	154	159 231
Furnace, boiler, W. Allensworth	149	159,134
Furnace doors, device for opening and closing, G. Lees	149	159,190
Furnace grate, C. Knoblauch	149	159,186
Furnace grate, H. Ryder, (reissue)	149	6,259
Furnace metallurgic heating, H. Ragot	99	159,039
Furnace, puddling, H. Ragot	99	159,040
Furnace, smoke consuming, Argerbright and Allensworth	149	159,141
Furnaces, steam distributer for, A. B. Corey	149	159,156
Gas light and pressure indicator, W. W. Goodwin, (reissue)	61	6,254
Gas machine, J. C. Henderson	66	159,179
Gas meters, register for, H. H. Edgerton, (reissue)	64	6 251
Gas regulator, J. Anderson	64	159,139
Gear wheels with their shafts in harvesting machines, &c., connecting, J. M. Rosebrook	71	159,221
Generator, sectional steam, H. Whittingham, (reissue)	148	6,262
Generator, steam, H. C. Bull	148	159 069
Generator, steam, W. E. Haxtun	148	159,178
Glass articles, mold for and process of manufacturing, T. R. Atterbury	68	159,061
Glass mold, B. Bakewell, Jr	68	159,062
Grain binder, J. M. Groover	74	159,176
Grain drier, H. H Beach	48	159,014
Grain, machine for hulling and scouring, L. S. Chichester	57	159,080
Grain preparatory to grinding, moistening, W. M. Kennedy	59	159,100
Harrow and planter, B. Butler	73	159,073
Harrow and roller combined, W. R. Downing	73	159,163
Harvester, cotton, L. K. Miller	41	159,109
Harvesting machines, &c., connecting gear wheels with their shafts in, J. M. Rosebrook	74	159,221
Hat block, F. R. Going	76	159,089
Heater radiator, steam, C. Comstock	147	159,155
Heater, water, S. L. Latta	154	159,103
Hog trap, J. Klar	144	159,185
Hoist or elevator, cellar, C. D. Walters	79	159,233
Horse power, J. M. Albertson, (reissue)	159	6,247
Horseshoe, R. Lee	60	159,191
Hygroscope Seebass and Simon	101	159,043
Inhaler and nasal douche, combined, E. Schofield, (reissue)	156	6,260
Ironing board, S. B. Morrell	91	159,111
Jack, lifting, W. F. Morrow	79	159,202
Jeweler's lathe, N. W. Holt	36	159,180
Kiln, brick, W. Bull	20	159,072
Kiln, brick, W. L. Gregg	20	159,091
Ladder, fire escape, M. Davis	33	159,022
Ladder, step, R. S. Van Zandt	30	159,126
Lamp cap and chain holder, W. R. Park	90	159,208
Lamp wick inserter, W. H. Fitz Patrick	90	159,171
Leather, apparatus for stretching, S. D. Castle, (reissue)	92	6,252
Leather, machinery for finishing, Groff and Marvel	92	159,092
Lens attachment for gas burners, M. C. Meigs	64	159,199
Letter boxes, electrical indicator for, H. R. David	50	159,083
Liquids, apparatus for drawing effervescent, T. Warker	1	159,054
Lock, alarm, J. Walton	93	159,129
Loom temple, E. S. Stimpson	95	159,050
Map exhibitor, S. C. Adams	146	159 058
Metal creasing machine, G. W. and C. P. Howell	136	159 096
Meter, W. R. Baker	42	159,143
Mill, rolling, Chalfant and Hahn	125	159,078
Millstones, dressing, J. Williams	153	159 133
Motor for light machinery, D. Baldwin	67	159,063
Mower, lawn, H. T. West	75	159,131
Music leaf turner, W. H. King	102	159,101
Musical merchandise box, J. Restelli	102	159 218
Nail assorting machine, J. Coyne	103	159,082
Newspapers, device for changing heads in, P. Forsyth	117	159,172
Nursing bottle, J. L. Mason	156	159,197
Nut lock, J. J. Adgate	14	159,136
Ordnance, breech loading, G. H. Felt	105	159,170
Ore concentrator, Moore and Campfield	3	159,110
Ox shoe, R. French	60	159,026
Paddle wheel, feathering, B. Vater	139	159,127
Paper bag, T. W. Grinter	109	159 029
Paper bag machine, T. W. Grinter	109	159,030
Paper ruling machine, T. F. Collins	15	159,018
Pavement, wood, W. Disney	110	159 102
Pawl and ratchet, Tomlinson and Smith	67	159,124
Pawl and ratchet mechanism, J. L. Bond	67	159,016
Photograph burnisher, A. C. Mcatue	111	159,035
Piano lid prop, D. P. Ramadell	112	159,041
Picture exhibitor, C. S. Mills	111	159,201
Picture rod molding, A. C. Funston	54	159,027
Pipe and apparatus for molding the same, clay, W. K. Black	20	159,146
Planter, rice, J. C. Braud	133	159,148
Planter, seed, J. G. Garner	133	159,087
Planters, check row cord for corn, G. D. Haworth	133	159,177
Plow, H. Gale	114	159,174
Pocket tool, F. R Woodward	173	159,134
Printing, preparing gelatine plates for, F. Edwards	54	159,166
Printing, &c., producing photo relief plates for, Levy and Bachrach	111	159,104
Pruning implement, E. E. Stedman, (reissue)	63	6,261
Pulleys flask for casting, W. Hutton	33	159,097
Pump, A. A. Burr	118	159,152
Pump bucket, chain, J. Neil	118	159,037
Quicksilver strainer, H. H. Oakes	3	159,113
Quilting frame clamp, A. P. Grabham	38	159,090
Radiator, steam heater, C. Comstock	147	159,155
Railway crossing, J. Cumming	120	159,158
Sash holder, H. C. Perry	94	159,212
Sash supporter, H. F. Jenks, (reissue)	94	6,256
Saw handle, E. Andrews	29	159,140
Saw mill head block, Whitcomb and Rawson	130	159,236
Scaffold, Lapp and Sweet	30	159,032
Scarf, A. Mueller	38	159,112
Seeding machine, C. E. Patric	133	159,210
Sewing machine, Bartlett and Plant	134	159,065
Sewing machine, E. Kappmeyer	134	159,183
Sewing machine ruffler, E. W. Darby	134	159,020
Sewing machine tables, leaf support for, R. W. Whitney	134	159,235
Sewing machine, wax thread, E. E. Bean	134	159,144
Shaft support J. Nellis	31	159,204
Sheep scratch box, I. B. Dillon	135	159 161
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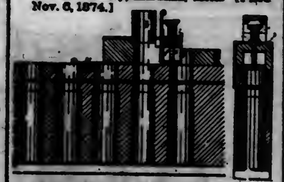
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TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED JANUARY 26, 1875.

159,012. CARTRIDGE-LOADING DEVICES. Geo. W. Ansley, Marshall, Mich. [Filed Nov. 6, 1874.]



1. The shell-holder B B, having the groove y y, when constructed substantially as shown and specified.

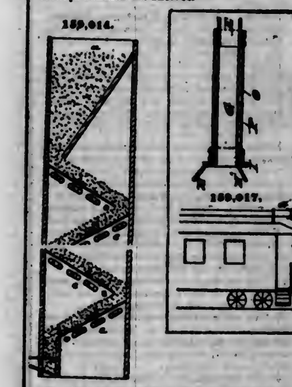
2. The block A A', provided with gage f f and cut-off e, in combination with the shell-holder B, when arranged substantially as and for the purpose shown and specified.

3. The combination of the slides d and e with the block A A' and gage f f, when arranged substantially as and for the purpose shown and specified.

159,013. GRAIN-DRIERS. Henry H. Beach, Rome, N. Y. [Filed Aug. 11, 1874.]

Brief.—The inclination of the perforated shelves is such that the grain will slowly descend by its own gravity. The shelves are arranged within an imperforate casing, and the requisite heat is radiated from steam-pipes located beneath the shelves.

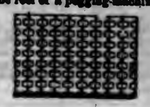
159,013.



In a grain-drier, the combination, with the shaft or case A, having imperforate sides, of the steam-pipes s and the stationary perforated inclined shelves d, arranged and operating together as described, for the purposes set forth.

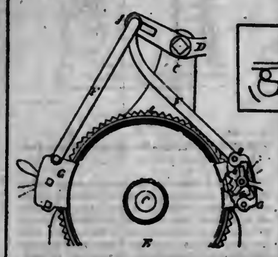
159,014. SHOE-NAIL BLANKS. L. B. Blake, Brooklyn, N. Y., and Gordon MacKay, Cambridge, Mass. [Filed Mar. 11, 1874.]

Brief.—The blanks are joined by a very thin lateral connecting-web, produced in the process of rolling the plate, and which can be readily severed, while thick enough to maintain the integrity of the plate in handling, or upon the reel of a pegging-machine.



A metal nail-plate having one edge beveled, and having a series of nail-blanks joined by the lateral or transverse connecting-webs, substantially as shown and described.

159,015. PAWL-AND-RATCHET MECHANISMS. Joseph L. Bond, Port Huron, Mich. [Filed Dec. 14, 1874.]

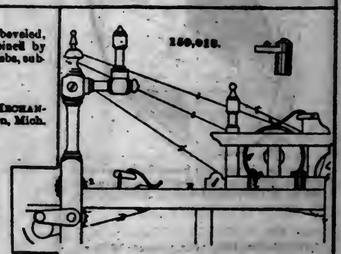


1. The combination of the slotted lever D, working on fulcrum C', the connecting-links F F, pivoted at f to lever D, and movable boxes G, containing pawls H H, with the ratchet-wheel E, constructed and arranged to operate the ratchet-wheel in one direction, substantially as and for the purpose described.

2. The pawl-boxes G, constructed with grooves g', in combination with the flanges e on the sides of the ratchet-wheel E, substantially as and for the purposes described.

3. In a mechanical movement, as above described, the combination of the lever D and the two connecting-links F with movable boxes G, containing reversible pawls H, to revolve the ratchet-wheel continuously in either direction, substantially as described.

159,016.



2. The combination of the posts B and their rotary arms c, with the two separate frames A B, provided with sheet railing and carrying mechanisms, substantially as set forth.

159,017. SPARK-ARRESTERS. Jas. W. Beal, St. Louis, Mo. [Filed Sept. 16, 1874.]

159,017.



1. The combination of the locomotive A, tender M, stack C, sections D E, provided with the extensions G G', consisting of the tube O, spring P, and flange I, provided with an elastic facing and supports, F F, substantially as described and shown.

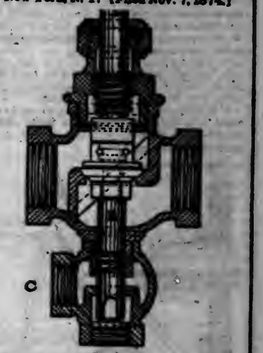
2. The combination of the locomotive A, tender M, stack C, sections D E, provided with the extensions G G', consisting of the tube O, spring P, and flange I, provided with an elastic facing, guides H-H' H'', and supports F F', substantially as described and shown.

159,018. PAPER-RULING MACHINES. Tyrannus F. Collins, Boston, Mass. [Filed Dec. 9, 1874.]

Brief.—The machine may be used as a single or double ruling machine. When used as a single, the upper cylinder and tapes may be raised out of contact with first-ruling devices.

1. In combination with the frame B and the two ruling and sheet-carrying mechanisms, substantially as described, the separate frame A, supporting the upper of said ruling and carrying mechanisms, and arranged with and applied to the frame B, essentially in manner to be operated, as and for the purpose specified.

159,019. STEAM-VALVES. Jas. H. Covey, New York, N. Y. [Filed Nov. 7, 1874.]



The globe-valve for admitting steam or water, in combination with the discharge-valve, provided with inlet C and discharge D, both valves being operated by a single spindle, E, substantially as and for the purpose set forth.

159,020. SUPPLIES FOR SEWING-MACHINES. Geo. W. Darby, Hamilton, Ohio. [Filed June 24, 1874.]

Brief.—The corrugation in the foot affords room for the fullness of the gather made by the ruffling-blade, which is on one end of a straight lever pivoted to the upturned toe of the presser-foot.



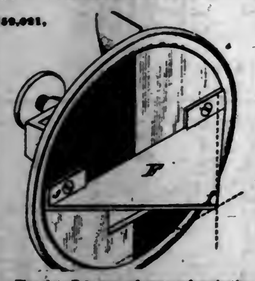
The presser-foot A, provided with the transverse slot or corrugation a in front of the needle-opening, when combined with the holding-blade B, ruffling-blade C, link D, and lever E, substantially as described, for the purpose specified.

159,021. TARGETS FOR SURVEYORS. Thos. Davies, Cincinnati, Ohio. [Filed June 19, 1874.]

Brief.—Indicates inclination of target-staff to or from observer.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

160,021.



The plate F, arranged upon and projecting horizontally from the front of a surveyor's target, in the manner herein described, and for the purpose designated.

160,022. FIRE-ESCAPE LADDERS. M. Davis, Covington, Ind. [Filed Dec. 5, 1874.]

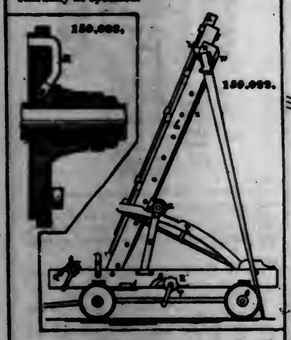
Brief.—The ladder is raised to an inclined position by means of a cogged roller, which engages with an adjustable inclined rack. The sides of the ladder are each composed of two pieces of wood, with a strip of sheet metal interposed between them to give strength.

1. The pinions Z Z and pulley t, with rollers between the pinions Z Z and pulley t, in combination with the ladder G, pulleys W W, wire ropes h h, idle-pulleys h, and windlass a, for the purpose of elevating the ladders, substantially as shown.

2. The pinions Z Z, pulley t, with the rollers between them, in combination with the racks E E, for the purposes specified.

3. The combination of two or more strips of wood with thin iron w between them, when used to form the side rails of a ladder, substantially as specified.

160,023.



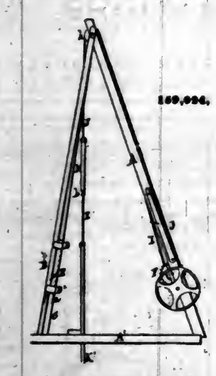
160,023. ROTARY ENGINES. D. A. Deming and Sterling W. Wisbon, Geneva Falls, N. Y., assignors to E. C. Sibley, same place. [Filed June 10, 1873.]

Brief.—A tube inserted in the casing conveys steam from the journal to the exhaust-port, thereby preventing steam from leaking through the packing.

The combination, in rotary steam-engines, of the chamber A and the pipe B, communicating with the exhaust-chamber N, in the manner and for the purposes substantially as specified.

160,024. DERRICKS. Chas. L. Darcy, Pioneer, Ohio. [Filed Dec. 8, 1874.]

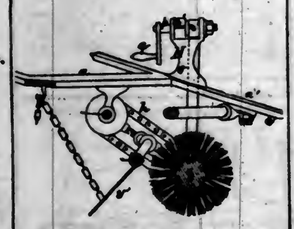
The herein-described derrick, consisting of of the frame A, windlass F, ropes I J, arranged in relation to each other and to the drum of the windlass, as described, braces H, provided with extension pieces or slides C, attached thereto by notches c and loop E, in the manner as and for the purpose specified.



160,024.

160,025. STREET-SWEEPING MACHINES. Jacob Edson, Boston, Mass. [Filed Dec. 9, 1874.]

Brief.—A street-sweeping machine in which the brush is raised by means of a pair of cams, to which are attached straps secured to the outer ends of the brush-shaft, the periphery of said cams passing through the axis, so that the straps draw centrally when at rest. An independently-adjustable dust-guard is used. The brush is rotated from the revolving axle, and is controlled by means of a ratchet-wheel secured on the main axle. The supporting-wheels, revolving freely on the axles, are geared with the same by means of a pawl, which is kept in contact with the ratchet-wheel by a spring, and when it is desired to stop the rotation of the brush the pawl is raised from the ratchet by means of a cam or button.



1. The combination of the frame or shafts *a a'*, with the support *l* and stay or brace *u*, as and for the purpose described.

2. In combination, with the straps or bands *m n*, the cams or eccentrics *m' n'*, as and for the purpose set forth.

3. The cam or eccentric 3, in combination with the pawl 1, spring 2, ratchet-wheel *y*, the shaft *a*, and the driving-wheel *b*, as and for the purpose set forth.

4. In combination with the rotary brush *g* 44 of the independently-adjustable dust-guard *o*, as and for the purpose herein set forth and described.

160,026. OX-SHOES. Raymond French, Seymour, Conn. [Filed Dec. 22, 1874.]



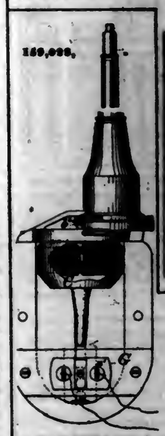
In combination with the pad *d* of an ox-shoe, the flange, rib, or inside calk, *c*, as and for the purpose described and represented.

160,027. PICTURE-ROD MOLDINGS. Abram C. Frankton, Philadelphia, Pa. [Filed Mar. 26, 1874.]

Brief.—A molding formed with a projection, the back part to receive the nails which secure it to the walls, and at the same time are hidden from view. A bead is formed on the front of the molding to receive the hooks which support the pictures.

A molding consisting of the part A to receive the nails, and the bead D, for the purpose specified.

160,028.



160,027.



160,028. ELECTRO-MAGNETIC DENTAL TOOLS. Geo. F. Green, Kalamazoo, Mich., assignor to Saml. S. White, Philadelphia, Pa. [Filed Jan. 13, 1871.]

Brief.—Drill driven through gearing from the spindle of the revolving electro-magnet, which is mounted on the same frame with the drill. Cam-wheel upon drill serves to impart a reciprocating motion to a file, saw, or burnisher, which may be attached to the frame.

1. The combination, substantially as hereinbefore set forth, of an electro-motor and a dental instrument, upon which it is mounted.

2. The combination, substantially as hereinbefore set forth, in a dental implement, of a permanent magnet, a rotating electro-magnet, and gearing actuated by the rotating magnet.

3. The combination, substantially as hereinbefore set forth, of a dental instrument with an electro-motor and a reversing-button mounted thereon, for the purposes described.

4. The combination, substantially as hereinbefore set forth, of the magnets, the socketed spindle *d'*, and the casing.

5. The combination, substantially as hereinbefore set forth, with an electro-motor, its driving-gearing, and casing, all mounted on a common frame, of a detachable tool-holder, for the purposes described.

6. The combination, substantially as hereinbefore set forth, of a dental instrument, an electro-motor mounted thereon, and a reciprocating tool-holder.

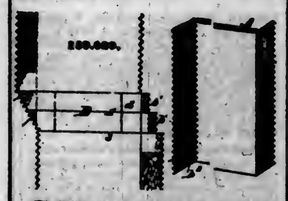
7. The combination, substantially as hereinbefore set forth, of the horseshoe-magnet, the rotating electro-magnet, and the frame B, for the purposes described.

8. The combination, with the frame of a dental instrument, of the electro-motor, the spindle *d'*, the gear-wheel *c*, and the cam-wheel M, for imparting to the tool either a rotary or a reciprocating motion, substantially as set forth.

160,029. PAPER BAGS. Thos. W. Grinter, Cincinnati, Ohio, assignor to himself and Joseph F. Jewett, same place. [Filed Apr. 16, 1874.]

Brief.—A blank cut in form of Fig. 1, and pasted as shown, dart lines indicating the upper and broken lines the under surface, is folded as in Fig. 2, and the side rings secured to the body. The bottom may then be spread open in satchel form.

160,030.



The bellows-fold satchel-bottom paper bag herein described, made from a blank of the form shown, with side seams only, with only a single fold of paper in the overlapping side flaps, and with additional folds of paper in the bottom corners, as set forth.

160,030. PAPER-BAG MACHINES. Thos. W. Grinter, Cincinnati, Ohio, assignor to himself and Jos. F. Jewett, same place. [Filed Sept. 30, 1874.]

Brief.—The web of paper, of a width equal to twice the depth of the bag plus the bottom folds, passes through feed-rolls and between the two stationary serrated cutters, where the reciprocating knife severs the blank, it being held between the creasing-rolls. The first set of tapes then carry the blank under the sheath, which descends upon it, when the angular folding-blades push the middle of the sheet into sheath. The blank is then seized by the rolls and carried to the second set of tapes, which deliver it against the second stop, when the vibrating pasting-knife descends upon the blank, folding the side flap, and forcing it into the bite of the third set of rolls and tapes. These convey it to the third stop, when another vibrating paster descends, folding the other flap, and forcing the bag into the discharge-rolls.

1. The combination of the fixed cutters, between which the web of paper passes, and the double-acting reciprocating cutter vibrating across the edge of the fixed cutters, whereby a blank is severed at each stroke.

2. The combination of the feed-rolls, the fixed cutters, between which the web of paper passes, and the double-acting reciprocating cutter, whereby the paper is alternately fed over and under the movable cutter.

3. The combination of the feed-rolls, the cutters, the creasing-rolls, and the first set of carrying-tapes geared to run faster than the rolls, whereby the creased and severed blank is drawn away from the web.

4. The combination of the supporting-tapes, the folding-sheath, and the folding-blades, whereby the bottom folds of the bag are doubled into, and the sides laid upon, the sheath.

5. The combination of the creasing-rollers, the carrying-tapes, the sheath, and the folders, whereby the blank is creased and folded.

6. The combination of the sheath, the folders, and the compressing-rollers, whereby the bottom folds are formed and compressed.

7. The combination of the waved or indented cutter, the carrying-tapes, the sheath, the folders, the compressing-rollers, the guide-frames, the second set of rollers, the carrying-tapes, and the first pasting-knife, whereby the blank is severed, folded at the bottom, reversed, and presented in proper position to the first pasting-knife.

8. The combination of the first pasting-knife, its compressing-rollers, the third set of carrying-tapes, the second pasting-knife, and its rollers, whereby both edge-flaps of the bag are pasted and folded.

9. The combination of the double-acting cutter, the vibrating arms which actuate it, the endwise-moving rock-shaft, on which the arms are mounted, the roller-arms on the rock-shaft, and the rotating double-faced snail-cam acting alternately on each roller-arm, whereby the knife is alternately and intermittently reciprocated.

160,031.



160,031. WHEELS FOR DRESSING STONE. Peter R. Laird, St. Johnsbury, Vt., assignor to himself and R. R. Laird, same place, and H. Moody, Peacham, Vt. [Filed Oct. 26, 1874.]

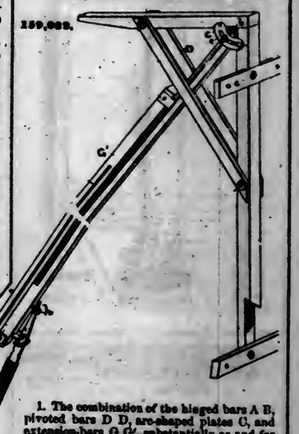
Brief.—A stone-dressing wheel having curved recesses formed in its under surface, to draw in and distribute the supply of abrading material toward the center, instead of having the abrading material supplied through a central eye and distributed outward.

A metallic stone-dressing wheel, having hooked recesses *a*, as described, arranged in or with its lower or reducing surface *b*, substantially in manner and to operate as explained.

160,032. SCAFFOLDS. John Lapp and John M. Sweet, Batavia, N. Y. [Filed July 1, 1874.]

Brief.—The scaffold-bracket is formed so as to fold readily for transportation, and is used in connection with the extensible bars G G', which are supported at the lower extremity by the spear-headed rod H, in connection with staple I and pin *h*.

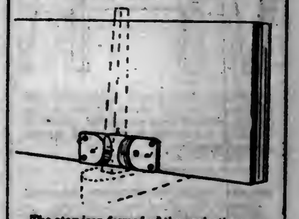
160,032.



1. The combination of the hinged bars A B, pivoted bars D D, arc-shaped plates C, and extension-bars G G', substantially as and for the purpose specified.

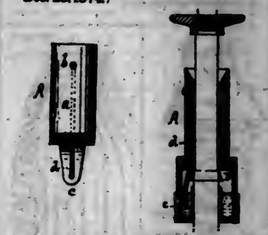
2. The lever H, constructed as described, and arranged to operate with the staple I, pin *h*, and bars G G', substantially as and for the purpose specified.

160,033. STAY-IRONS FOR WAGON-BODIES. Augustus A. Livingston, Wilmington, Ill. [Filed Oct. 20, 1874.]



The stay-iron formed of the projections *e e*, connected by the plate *b*, said projections made curved, and the plate *b* let into the wagon-box, substantially as specified.

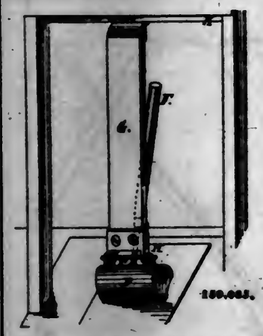
160,034. BOLSTERS FOR SPRINGS-FRAMES. Jas. A. Matteson, Johnston, R. I. [Filed Dec. 28, 1874.]



The bolster A, with its inclosed wick *d* and finger *e*, in combination with the oil-cup B and collar D, substantially as shown and for the purpose specified.

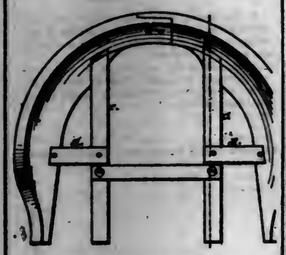
160,035. PHOTOGRAPH-BURNISHERS. A. C. Moulton, Burlington, Wis. [Filed Oct. 2, 1874.]

The burnishing-block D, in combination with the lever F, hinge-joint B H, and pressure-bar G, substantially as and for the purpose described.



159,035.

159,036. SLEIGHS. T. F. Moore, Owego, assignor of two-thirds his right to Luther S. Wright and Robt. B. Linderman, Groton, N. Y. [Filed Dec. 28, 1874.]



The boot pieces *a a'*, in combination with the sills *c c'* and side braces *d d'*, to form the frame, bunk, and arms of the rear portion of the sleigh-box, substantially as and for the purpose described.

159,037. CHAIN-PUMP BUCKETS. John Noll, Chicago, Ill. [Filed Dec. 15, 1874.]

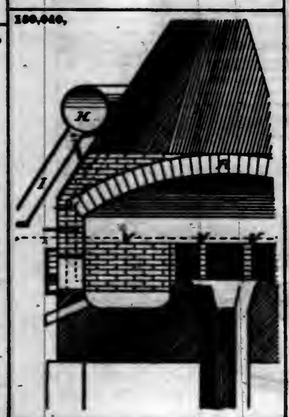
Brief.—The disk is readily applied to the basket-iron and replaced when worn, and at the same time the endless chain of buckets can be disconnected for the purpose of lengthening or shortening, or to replace worn disks.

The combination of the hook A, flange C, and elastic disk D, in a chain-pump bucket, substantially as described.



159,038.

159,039.



159,040.

159,039. METALLURGIC HEATING-FURNACES. H. Bagot, Pittsburg, Pa. [Filed Mar. 4, 1874.]

1. A circular heating-furnace, provided with a partition charging and drawing door and central fire, around which rotates the bottom of said furnace, the travel of said bottom being from the charging-door toward the inlet of flame and drawing-door, the heating-chamber of the furnace communicating with a fire-chamber or gas-generator and with the central stack, substantially as herein described, and for the purpose set forth.

2. A circular heating-furnace, provided with a partition-wall, having the charging-door arranged on one side of said partition and the drawing-door and inlet of the heat or flame on the other side of said partition, substantially as herein described, and for the purpose set forth.

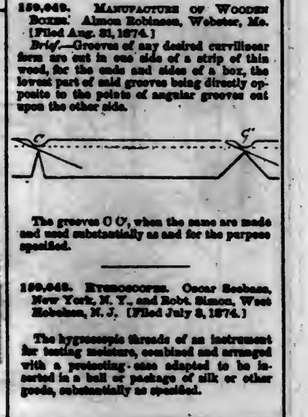
3. A circular heating-furnace, provided with a central fire and rotating bottom, with the opening communicating with said central fire, arranged opposite or nearly opposite the charging-door, substantially as herein described, and for the purpose set forth.

4. A circular heating-furnace with a rotating bottom, provided with a sand-distributing chamber, substantially as herein described, and for the purpose set forth.

5. A circular heating-furnace with a central fire and revolving bottom, having a slag-discharging opening communicating with said fire, substantially as herein described, and for the purpose set forth.

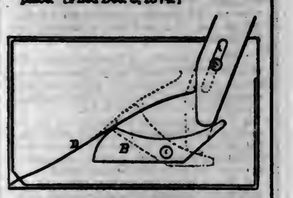
159,040. MANUFACTURE OF WOODEN BOXES. Almon Robinson, Webster, Me. [Filed Aug. 31, 1874.]

Brief.—Grooves of any desired curvilinear form are cut in one side of a strip of thin wood, for the ends and sides of a box, the lowest part of said grooves being directly opposite to the points of angular grooves cut upon the other side.



The grooves C C', when the same are made and used substantially as and for the purpose specified.

159,041. PIANO-LID PROPS. Daniel P. Ramsdell, New Haven, Conn., assignor of one-half his right to T. B. Carpenter, same place. [Filed Dec. 3, 1874.]



1. The prop A, provided with the straight slot *c*, in combination with the stud *a*, lever B, and spring D, as set forth.

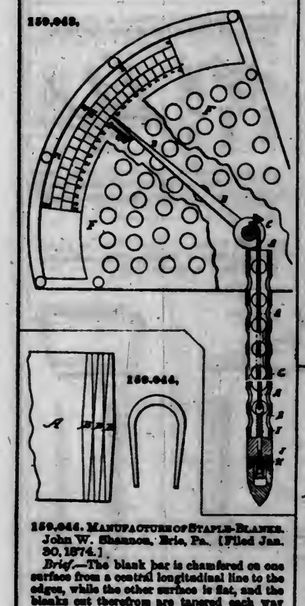
2. In an automatic lid-prop device, the lever B, arranged to operate in connection with the prop A and spring D, in the manner described, substantially as set forth.

3. In an automatic lid-prop device, the prop A, made with the straight slot *c*, as set forth.

159,042. STEREOSCOPES. Oscar Seeban, New York, N. Y., and Robt. Simon, West Hoboken, N. J. [Filed July 8, 1874.]

The hygroscopic threads of an instrument for testing moisture, combined and arranged with a protecting-case adapted to be inserted in a ball or package of silk or other goods, substantially as specified.

159,043.



159,044.

159,044. MANUFACTURE OF STAPLE-BLANKS. John W. Shannon, Erie, Pa. [Filed Jan. 20, 1874.]

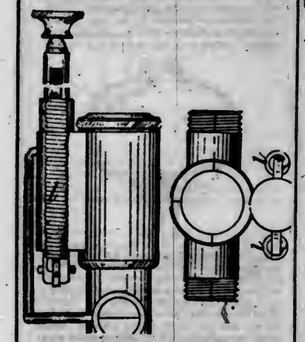
Brief.—The blank bar is chamfered on one surface from a central longitudinal line to the edges, while the other surface is flat, and the blanks cut therefrom are tapered each way from the middle on both cut edges.

1. The staple-blank bar A, having a contour substantially as described, as a new article of manufacture.

2. The staple-blank B, having a contour substantially as described, as a new article of manufacture.

159,045. AUTOMATIC RELIEF-VALVES. L. D. Shaw, Boston, Mass. [Filed Aug. 10, 1874.]

Brief.—Pressure in the hose-pipe, exceeding that for which it is adjusted, raises the valve in the supplemental chamber, and gives access of water to the piston in the main chamber, which is depressed, exposing thereby the port leading to the suction-pipe. On reduction of said pressure the valve is reseated by the pressure of a spring.



The combination, with the cylinders *a a'* and their pistons *b d* and openings *e f*, of the valve-cylinder *g*, its openings *h i*, and double-acting valve *k*, with its openings *r s*, and the return-pipe *t* to the suction-pipe, as and for the purpose set forth and described.

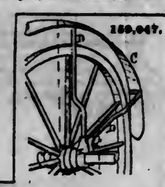
159,046. JOINTS FOR IRON TRUSS-BRIDGES. Edwd. S. Shaw, Cambridge, Mass. [Filed Jan. 6, 1875.]

A joint formed by cutting, stamping, or molding into the surfaces of the parts to be connected concentric annular depressions or grooves, interposing rings or an annulated washer fitted to said depressions or grooves, and confining the surfaces in juxtaposition by a bolt contained in eyes concentric with said depressions or grooves, and provided with suitable nuts or heads and washers, as botanically as and for the purposes described.

159,046.



159,047.



159,047. CARRIAGE-WHEEL FENDERS. A. Shoeninger, Chicago, Ill. [Filed May 5, 1874.]

Brief.—A bent wood fender, easily detachable, and held in place by arms clasped upon the axle.

The wheel-fender C, of bent wood, and the radial braces D D, clamps E E', and screw *e*, all combined substantially as and for the purpose set forth.

159,048. APPARATUS FOR PROTECTING AND MOISTENING THE DISKS OF DENTAL ENGINES. Eli T. Starr, Philadelphia, Pa., assignor to S. S. White, same place. [Filed Jan. 8, 1875.]

Brief.—A sleeve fits over the end of the hand-piece, and carries at its outer end a partial cover for the emery-disk used for separating teeth. A sponge or rubber bulb is used in connection with it, for wetting the disk to prevent its heating.

1. A shield or disk-protector constructed substantially as herein before set forth, and adapted to be applied to the hand-piece of a dental engine.

2. The combination, substantially as herein before set forth, of a disk-protector and a moistening device for dental engines.

3. The combination, substantially as herein before set forth, of a disk-protector, its tubular socket, a hand-piece, a chuck or tool-holder, and a rotating disk mounted on a shank passing through the socket of the disk-protector and into the tool-holder.

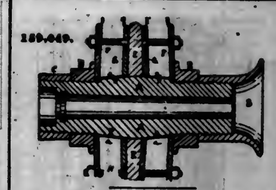
159,049. WHEELS FOR VEHICLES. Jas. M. Stephenson, Pendleton, Ind. [Filed July 30, 1874.]

1. The box A, provided with a screw at each end for the nuts B B, and with the cones P P and bands C D, in combination with spokes H H, substantially as specified.

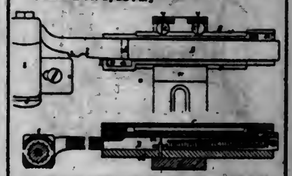
2. The rubber cushion E, in combination with the two hub-sections F F, substantially as specified.

3. The combination of the two hub-sections F F and box A, having cones P P to dish the wheel more or less, and to tighten the fellies, substantially as specified.

159,049.



159,050. TENPLES FOR LOOMS. Edwd. S. Stimpson, Hopedale, Mass., assignor to the Dutcher Temple Company, same place. [Filed Dec. 9, 1874.]



1. The shank-supporting case A, provided with the closed friction-roller chambers *a a*, and their rollers *b b*, in combination, and arranged with the shank or bar B, all substantially as specified.

2. The cap C, provided with the abutment *c* and projection *e*, arranged as described, in combination with the case A, provided at its front end with the friction-roller *b*, and its receiving-chamber *e*, all being substantially as described.

3. The shank B, provided with the recess *l* and shoulder *i*, in combination with the case A, friction-roller *b*, and chamber *e*, all arranged as set forth.

4. The shank B, provided with the chamber *m*, in combination with the spring D and case A, all arranged and operating together as set forth.

159,051. MANUFACTURE OF VEGETABLE FELT. Peter Sweeney, New York, N. Y., and Albert Beach, Jr., of Newark, assignors to Albert Beach, Newark, N. J. [Filed June 22, 1874.]

Brief.—The unpulped seed and down of Typha are incorporated with pulped vegetable fiber to form sheets of felt.

The vegetable felt, substantially as before set forth, consisting of the downy seed-matter of pulu, combined in a sheet by means of vegetable fiber, the same being a new manufacture.

159,052. MAGAZINE-STOVES. John B. Tallmadge, Auburn, N. Y. [Filed June 22, 1874.]

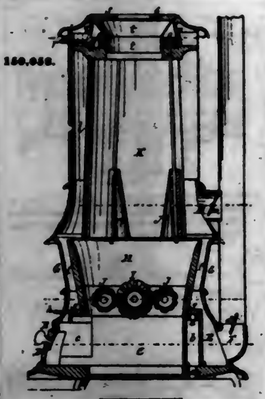
Brief.—The stirrers in the lower part of the magazine are operated by means of pinions on the upper ends of their axial rods. These pinions mesh in internal cogged gear on an annular rim, which is worked by a handle or lever extending through the wall of the stove. The central roller-grate or grate-bar is contracted at its middle part, and the exterior ones are correspondingly enlarged.

1. The combination of the air-passages *a b e f f*, with the fire-box H, ash-chamber U, and its opening *c*, and annular chamber E, for the purpose of introducing and heating the air that is to promote combustion, making a downward draft through the burning coal into the ash-chamber, thence into and through the chamber E to the exit-pipe, as described and represented.

2. In combination with the magazine K, the crushers or stirrers N; as and for the purpose described and represented.

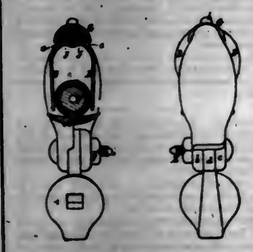
3. In combination with the hollow roller-grates I J, the central grate being concave and the side grates convex, for leaving the draft-openings between and around them of uniform shape and sectional area, the openings *j*, from the exterior of the stove, for taking in cool air, and the exit-openings therefrom, to allow said air, as it becomes heated, to pass out and mingle with the gases to promote their combustion, substantially as described.

159,052.



159,052. BOBBIN-SUPPORTERS FOR SPOOLING-MACHINES. Axel M. Wade, Lawrence, Mass. [Filed Nov. 20, 1874.]

Brief.—The bobbin lies on a curved rest, and is held in position and the necessary tension given by the pressure on the yarn of two gravitating-lips hung loosely on a carrier above. A projection from the lower part of the lips at the end prevents the yarn from passing up and getting caught between the end of the lip and the carrier.



1. The combination of the rest A, with the arm or carrier C, and the gravitating or self-adjusting lips B B, suspended from the latter, all being arranged as specified.

2. The combination of the arched cap G, with the carrier C and its tenons *a*, and with the gravitating or self-adjusting lips B B, provided with slots *f*, to receive such tenons, all being arranged and applied substantially as represented.

3. The gravitating lips B, each provided with the shoulder or projection *i*, arranged as and for the purpose as explained.

159,054.



159,054. APPARATUS FOR DRAWING EFFERVESCENT LIQUIDS. Thomas Warker, New York, N. Y. [Filed June 13, 1874.]

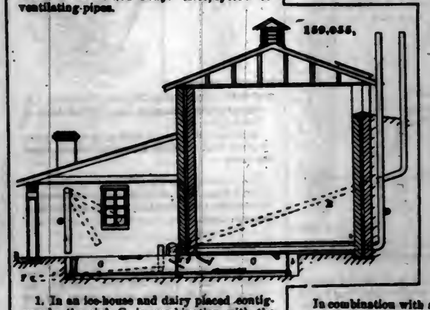
Brief.—The gas-escape valve, connecting with the gas-space of the pressure-relieving chamber, and the liquid-discharge valve, are operated by the same lever, in such a manner that the former is opened first.

The combination of the lever L with the gas-valve E, stop-valve I, and pressure-relieving chamber A, substantially in the manner and for the purpose herein shown and described.

159,055. COOLING-DAIRIES. J. Wilkinson, Baltimore, Md. [Filed Sept. 4, 1874.]

Brief.—Dairy cooled by circulating currents of cold water from ice-house. Valves interrupt current, and prevent air from passing between ice-house and dairy. Also, system of ventilating-pipes.

159,055.



1. In an ice-house and dairy placed contiguously, the sink C, in combination with the valves *e* and *f*, substantially as and for the purposes specified.

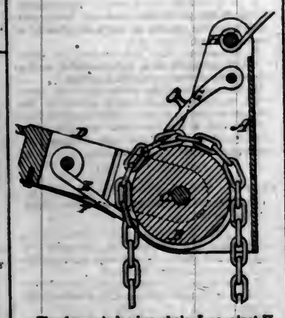
2. The system of air pipes or ducts represented by D E F G, relatively arranged substantially as and for the purposes set forth.

159,056. STOVE-POLISH. Saml. J. Wilson, Farmington, Ill. [Filed Nov. 2, 1874.]

The stove-polish composed of plumbago, vinegar, sugar, dextrine, oil of sassafras, and water, in the mode and quantities substantially as mentioned.

159,057. CHAIN GRIPES AND TIGHTENERS. John N. Ackerman and Geo. J. Ackerman, Hackensack, N. J. [Filed Dec. 10, 1874.]

Brief.—A lever is pivoted on a small strong frame made to abut against the wagon-load. A chain attached to it passes around the load and over a pulley on the lever-fulcrum. A pawl on each piece acts on the chain as on a ratchet.



The frame A, having chain I on pivot H and the pawl G, combined with pulley B and spring-pawled lever D on the same pivot C, as and for the purpose specified.

159,058. MAP-REGISTERS. S. C. Adams, Cincinnati, Ohio. [Filed Sept. 19, 1874.]



The combination, with rollers B, of the frame D E F, having detachably-connected bars E, substantially as and for the purpose specified.

159,059. BURIAL-CASKETS. Wm. G. Algeo, Sr., and Wm. G. Algeo, Jr., Rochester, Pa. [Filed Sept. 11, 1874.]

159,059.



In combination with a wooden coffin, a separate rim-piece, *a*, secured to the coffin-edge, projecting inwardly to afford support for the lining, and having upon its inner edge an upwardly-projecting flange, molded or otherwise ornamented upon its interior, and rabbeted or perpendicular upon its exterior side to hold the cover, substantially as specified.

159,060. BALE-TIES. John B. Arrants, Society Hill, S. C. [Filed Dec. 28, 1874.]



The block or plate A, having grooves D and E, attached to part B of the hoop, in combination with loop F, having part G of the hoop connected to it, all substantially as specified.

159,061. MOLDS FOR AND PROCESSES OF MANUFACTURING GLASS ARTICLES. Thos. B. Atterbury, Pittsburg, Pa., assignor of one-half his right to J. S. Atterbury, same place. [Filed Dec. 10, 1874.]



1. The vertically-movable mold-section C, having its upper end protruded through and extended up above the bottom of the mold-section, which forms a lamp-bowl, a fruit-bowl, or a salver, so that the blower can blow the glass for forming the collar and socket upon the top and periphery of the exposed portion of the movable section C, substantially as described.

2. The process herein described of making the specified blown-glass articles with seamless sockets in their bottoms, said process consisting in inserting a vertically-movable section of mold through the bottom of a mold for a lamp-bowl, a fruit-bowl, or a salver, and bringing the hot glass in globe form upon the protruding end of the movable section of mold, and continuing the blowing operation until the article with a collar upon and a socket in its bottom is formed, and then moving the movable section down out of the socket, substantially as described.

3. A blown lamp-bowl, a fruit-bowl, or a salver of glass or other vitreous material, constructed with a collar upon and a blown seamless socket, B, in its bottom, substantially as described.

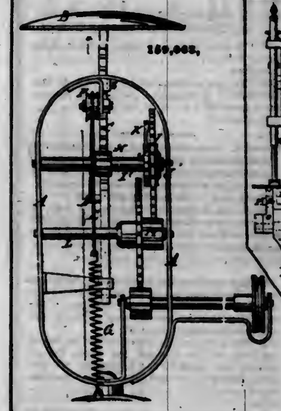
159,062. GLASS-MOLDS. Benj. Bakewell, Jr., Pittsburg, Pa. [Filed Nov. 30, 1874.]



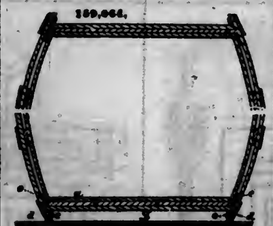
1. The mold and plunger having corrugated faces *a c*, formed so that the convexities of one shall coincide with the concavities of the other, substantially as specified.

2. In combination with the mold and plunger having corrugated faces *a c*, a ring, B, projecting slightly beyond the edge of the concavity of the mold, and having scallops *b'* to accommodate the plunger, substantially as and for the purpose specified.

159,063.



159,064.



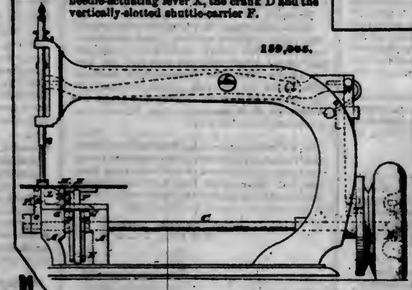
The combination of the plate *a*, locked within the end of the barrel A, the plate *b* resting on the said end, and beveled on the edge to fit the hoop *c*, the plate *g* resting on the plate *b* and hoop *c*, and beveled on its edge to fit the taper of the chime of the barrel B, the hoop *d*, and stay-hoop *e*, all constructed, adapted, and connected as and for the purpose specified.

159,065. SEWING-MACHINES. Joseph W. Bartlett, New York, N. Y., and Frederick Plant, Bricksburg, N. J.; said Plant assignor to said Bartlett. [Filed Mar. 26, 1874.]

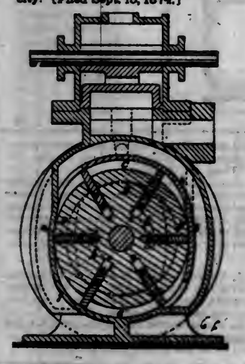
Brief.—The cam that operates the needle-bar, the feed, and the shuttle-carrier are all so arranged on the main shaft as to "time" and to operate in conjunction, the shaft revolving in either direction. The direction of the feed varies with that of the revolution of the main shaft. The shuttle is operated by a crank on the main shaft working in a vertical slot of the shuttle-carrier.

In a machine for sewing under either direction of revolution of the main shaft, in combination with the shaft C, cam T, rod V, and needle-actuating lever X, the crank D and the vertically-slotted shuttle-carrier F.

159,065.



159,066. ROTARY ENGINES. John V. Beakman, Brooklyn, N. Y., assignor to Lidgerwood Manufacturing Company, New York city. [Filed Sept. 10, 1874.]



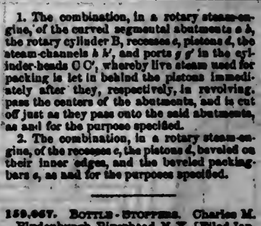
159,066.

159,066. MOTORS FOR LIGHT MACHINERY. David Baldwin, Midland Park, N. J. [Filed Oct. 24, 1874.]

Brief.—The machine is actuated by means of the weight of the operator applied by means of the seat.

The combination with shaft I', having loose spur-wheel I, spring-held side pawl K, fast ratchet J, spring J', and pinion H, of the seat rack-bar C, pulley F, cord E, and spring G, all arranged in connection with frame A, as shown and described, for the purpose of operating the drive mechanism of the sewing-machine.

159,067.



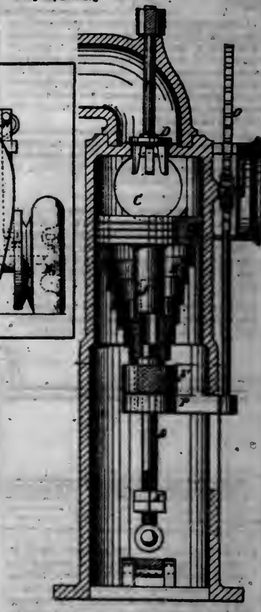
159,067. BOTTLE-STOPPERS. Charles M. Hydenburgh, Riverhead, N. Y. [Filed Jan. 6, 1875.]

Brief.—An ordinary bottle-stopper of cork, the lower end of which is hollowed to receive a piece of sponge or other suitable porous material.



A bottle-stopper provided with a swab, B, of sponge or other suitable material at its lower or inner end, substantially as herein set forth.

159,068. SAFETY-VALVES. H. C. Bull, New York, N. Y., assignor to himself and M. A. Southworth, New Orleans, La. [Filed July 11, 1874.]



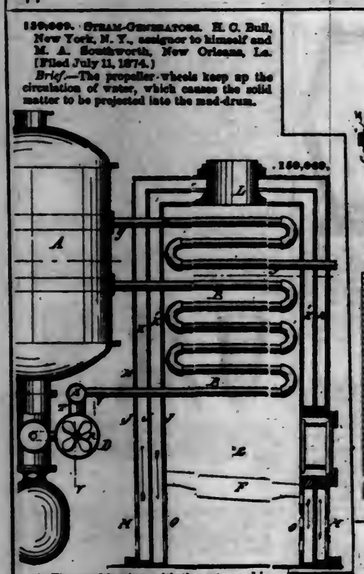
1. The piston A and spring E, connected to the safety-valve by rods G and cross-heads F H, so as to hold the valve shut until the pressure reaches the blow-off point, and combined with rods J L and treadles N, so as to counteract the spring and open the valve at the blow-off pressure, substantially in the manner described.

2. The combination of an adjusting-collar, K, with rods L and J, as described, for varying the set point, substantially as specified.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

159,069. STEAM-GENERATOR. H. C. Bull, New York, N. Y., assignor to himself and M. A. Southworth, New Orleans, La. (Filed July 11, 1874.)

Brief.—The propeller-wheels keep up the circulation of water, which causes the solid matter to be projected into the mud-drum.



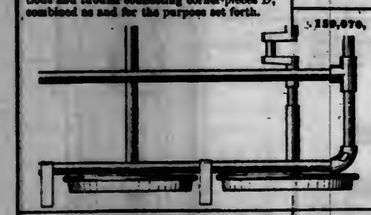
1. The combination, with the outer and inner shells J J, having, respectively, openings M and O, of the central partition J, having openings N, the said parts being arranged with the spaces K K' between them, all as shown and described, whereby air to support combustion is caused to take the course indicated and discharge beneath the grate or into the fire, as set forth.

2. The combination, with the drop-tube and generating-tube B, of the drum D, lateral pipes V, central tube T, and the propeller-wheels, operating in opposite directions, as and for the purpose specified.

159,070. TRUCKS FOR STREET-RAILWAY CARS. H. C. Bull, New York, N. Y., assignor to himself and M. A. Southworth, New Orleans, La. (Filed July 11, 1874.)

Brief.—Truck-frame made of tubular iron with tubular joints, to provide a receptacle for water for steam-power.

The car-truck frame formed of tubular sections and tubular connecting corner-pieces D, combined as and for the purpose set forth.

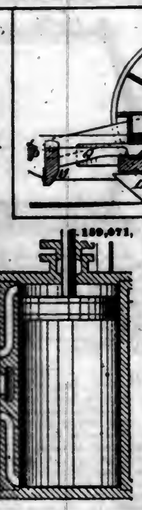


159,071. ADJUSTING APPARATUS FOR CUT-OFF VALVES. H. C. Bull, New York, N. Y., assignor to himself and M. A. Southworth, New Orleans, La. (Filed July 11, 1874.)

Brief.—The threaded heads of the rods are attached to an adjusting-nut, which is swiveled to the eccentric-rod.

1. The combination of the cut-off valves A B within the steam-chest, connecting-rods C D, having threaded heads, right and left threaded adjusting-nut G, the swiveled sleeve, and the eccentric, substantially as shown and described, to operate as specified.

2. The combination of valve-rod D, tubular valve-rod C, stuffing-box E, and sleeve G, substantially as shown and described.



159,072. BRICK-KILNS. Wm. Bull, Ewell, England. (Filed Dec. 5, 1874.)

Brief.—In putting in the brick to be burned, longitudinal spaces are left, which communicate with the firing-flues, and constitute lengthened combustion-chambers. As the top of the brick are progressively covered with refuse, the movable chimney is placed as the further edge of this cover, and the draft is thus led by successive stages through the whole length of the kiln.

In a kiln-oven, the walls, intermediate floor, interwalled ash-flues carried through said floor, superposed firing-flues, brick-receiving fire-bars, and green brick inside walls, all combined and covered with ashes or soil, except at intervals, as shown and described.



159,073. HARROWS AND PLANTERS. Beauman Butler, St. Johnsbury Centre, Vt. (Filed Oct. 31, 1874.)

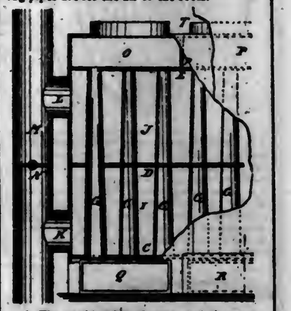
Brief.—To the under side of the seeding-machine frame is removably attached a frame provided with opening, pulverizing, planting, and covering teeth, for pulverizing the soil and planting. The main frame is provided with pivoted scrapers at the front for leveling the soil.

1. The combination, in a seeder, of the teeth K, spacers L, scraper-bars M N, and tongue-roller O, arranged, as shown and described, to bring the hand into good tilth.

2. A seed-harrow, having the teeth K L and the reversely-obliqued covering-scrapers U, arranged as and for the purposes specified.

159,074. VENTILATING AND WARMING DRUMS. Peter H. Carmen, Brooklyn, N. Y. (Filed Dec. 12, 1874.)

Brief.—The chambers Q O and their connecting-pipes are for fresh air from outside, while the chambers R P and their connecting-pipes are for the air of the room.



1. The combination of connected chambers Q O P R with tubes G, as and for the purpose described.

2. The combination, with tubes G, of the chambers I J, connected by tubes L K with the dampered pipe M N, as and for the purpose specified.

159,075. ATMOSPHERIC-AIR COMPRESSORS FOR WORKING ENGINES. Cesare Carobbi and Giuseppe Bellini, Pistoja, assignors of one-third their rights to John Reynolds, Prato, Italy. (Filed May 26, 1874.)

Brief.—A fulminate is introduced from a charger into a space between the pistons, and is ignited by an electrical spark. The pistons are driven forward to compress the air into a tank, from which it is used as desired.

1. The combination, substantially as before set forth, of the charger for the explosive material, the piston for receiving the force of the explosion, and the air-compressing piston and cylinder for compressing air.

2. The combination, substantially as before set forth, of the charger, the piston for receiving the force of the explosion, the air-compressing piston and cylinder, and the electric apparatus for igniting the explosive material.

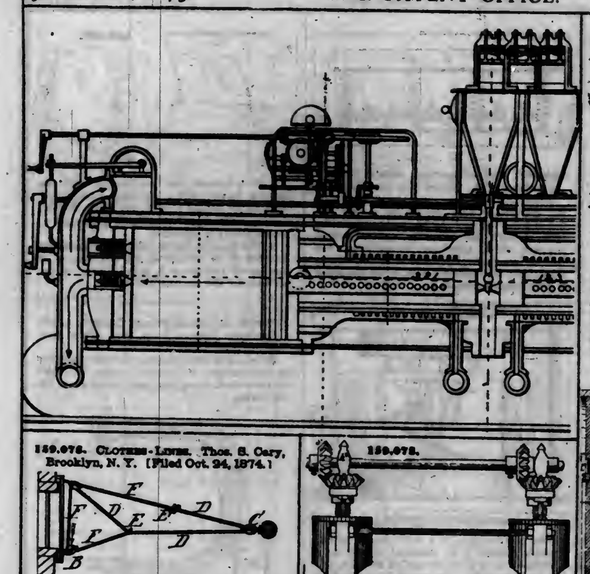
3. The combination, substantially as before set forth, of the charger, the piston for receiving the force of the explosion, the air-compressing piston and cylinder, the electric apparatus, and the compressed-air tank.

4. The combination, substantially as before set forth, of the charger, the piston for receiving the force of the explosion, the grooved cylinder thereof, and the air-compressing cylinder and piston.

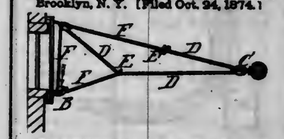
5. The combination, substantially as before set forth, of the charger for the explosive material and the explosion-pistons, arranged to move in opposite directions.

6. The combination, substantially as before set forth, of the two explosion-pistons and their cylinders, and of the two air-compressing pistons and their cylinders, all in the same line.

7. The combination, substantially as before set forth, of the charger, the piston for receiving the force of the explosion, the air-compressing piston and cylinder, and the spring for effecting the return movement of the said two pistons.

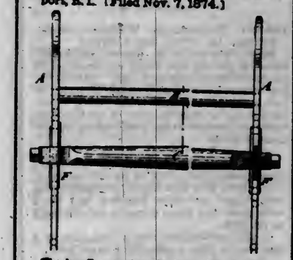


159,076. CLOTHES-LINES. Thos. S. Cary, Brooklyn, N. Y. (Filed Oct. 24, 1874.)



The combination of the double pulley-block A, single pulley-blocks B C, and ropes D and F, connected together at the points E and E', as and for the purpose specified.

159,077. BRIDLE-BITS. Peter Casey, Newport, R. I. (Filed Nov. 7, 1874.)

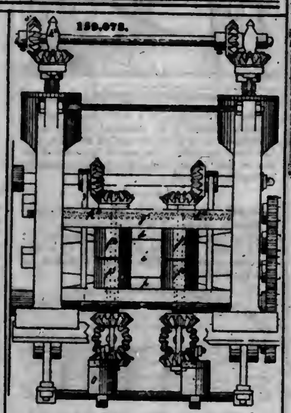


The bar C, carrying the loops F and adjustable to any fixed point upon the side bars A, in combination with said side bars A and rigidly-connecting bar B, as and for the purpose specified.

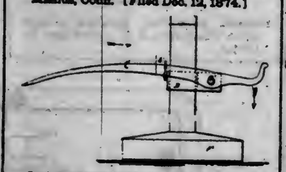
159,078. ROLLING-MILLS. George A. Chalfant, Etna, and Ignatius Hahn, Pittsburg, Pa. (Filed Oct. 6, 1874.)

Brief.—A set of three-high rolls and four pairs of vertical rolls, of which two pair are placed on the one side, and two pair on the other side, of the three-high rolls. Then, to each pass there is a pair of feed-rolls and a pair of delivering-rolls, and each pair is driven by the system of gearing described, positively and irreversibly, in a direction appropriate to the pass to which it belongs.

The combination of the following parts: first, the non-reversing power-driven horizontal rolls *d*, *f*, and *p*, forming a direct and a return pass; second, the non-reversing vertical rolls arranged in pairs on both sides of the horizontal rolls, in the plane of each pass, and turning in the direction of the pass in whose plane they stand; and, third, devices for turning the vertical rolls by power from the power-shaft, for the purposes described.



159,079. WAGON-JACKS. Samuel Chard, Mianus, Conn. (Filed Dec. 12, 1874.)



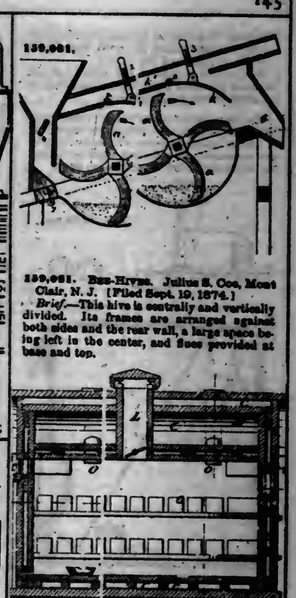
1. A cramping-band of a hoisting-jack, with the holding-hook arranged as shown and described.

2. The combination of the band B, lever C, fulcrum-pin *c'*, and hook *b'*, with the stand A, for the purposes described.

159,080. MACHINES FOR HULLING AND SCOURING GRAIN. Lewis G. Chichester, New York, N. Y., assignor to J. J. Tyler, same place. (Filed Dec. 12, 1874.)

1. The revolving hands or rubbers *a a*, in combination with the adjustable deflectors *b* and trash *b'*, substantially as set forth.

2. The hands or rubbers made sectionally of a V shape, and curved forward at their ends, and revolved in pairs within the grain-receptacle to loosen and separate the hulls by the rubbing motion specified.



159,081. BEE-HIVES. Julius S. Cox, Mont Clair, N. J. (Filed Sept. 10, 1874.)

Brief.—This hive is centrally and vertically divided. Its frames are arranged against both sides and the rear wall, a large space being left in the center, and flues provided at base and top.

The combination, with a bisected close bee-house, of side shelves arranged around an open space in tiers, the air-inlet pipes O, and the air-discharge flue L, as shown and described.

159,082. NAIL-ASSORTING MACHINES. John Coyne, Pittsburg, assignor to himself and Robert Chessman, Etna, Pa. (Filed Mar. 20, 1873.)

Brief.—An arm rigidly attached to crossbar of the nail-machine frame projects forward, and, by its bent extremity, protects the assorter from accidents. The assorter is supported wholly through the medium of the bracket by the rod, which, at its forward end, is clamped to the bar, and its other extremity extends within a fork on a spring-rod that is vibrated by the beater of the nail-machine. The hood attached to the assorter gathers in the nails a, they fall from the cutters.



1. A nail-assorting spout having both of its inclined side plates adjustable upon their braces, as and for the purpose described.

2. The longitudinal brace *e*, having a turned-up end, *e'*, and guard *h*, in combination with the brace *e'*, to protect the assorter, as described.

3. The rod *d*, in combination with the fork *n* and assorter *a*, as and for the purpose described.

4. The spring *m*, fork *n*, and branch *p*, in combination with the heading-lever *g* of the nail-machine, substantially as and for the purpose described.

5. The combination of the assorter *a* and rod *d* with the heading-lever of the nail-machine, and devices for jarring or striking the rod *d* at a point in the rear of the reed-ring-pan, and directly under the heading-lever, to produce a tremulous vibration of the assorter, for the purpose stated.

6. In combination with a nail-assorter, a receiver interposed between the nail-machine and assorter, for the purpose stated.

159,065. ELECTRICAL INDICATORS FOR LETTER-BOXES. Henry R. David, New York, N. Y. (Filed Sept. 23, 1874.)

Brief.—The weight of the letter tips the balanced platform, thus closing the circuit to a distant electro-magnetic alarm.

The letter receptacle or box provided with a balanced platform that is moved by the weight of a letter, in combination with a circuit-closer and connections to a distant alarm or indicating apparatus, substantially as set forth.

159,065.



159,066. IRON BRIDGES. H. I. Farnsworth, Leavenworth, Kans. (Filed Jan. 4, 1875.)

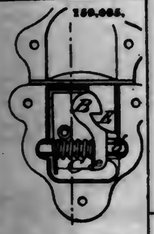
Brief.—A bridge-arch consisting of two channel or I-beams, a top plate, transverse plates, and diagonal intermediate braces.

The combination, in an arch for bridges, of channel or I-beams A, top plate B, transverse plates C, and diagonal intermediate braces D, substantially as specified.

159,066.



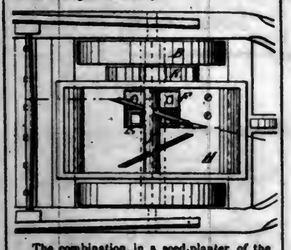
159,068.



159,067. SEED-PLANTERS. John G. Garner, Pittsburg, Tex. (Filed Nov. 14, 1874.)

Brief.—Upon one axle are placed two laterally-adjustable seed-wheels for sowing different kinds of seed, to be used at the same time, or singly, in connection with removable hoppers, one of which has an opening in the bottom large enough to receive the two wheels for sowing seed and fertilizer, while the other is for a single wheel only.

159,067.



The combination, in a seed-planter, of the dropping-disks E F, mounted loosely on a driving-axle, so as to be shifted thereon, and the interchangeable hoppers H M, adapted for one or both disks, respectively, substantially as herein specified.

159,068. HAT-BLOCKS. Francis R. Going, Boston, Mass. (Filed Dec. 2, 1874.)

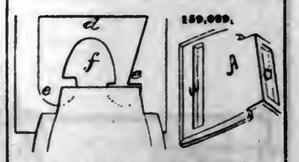
Brief.—A block formed of a paper or felt shell, whose open end is sustained by a base or head piece, in which is held a socket for the machine-spindle.



A hollow hat-block formed of a felt or paper shell and a suitable supporting-base, substantially as described.

159,069. BALE-TIES. Abraham A. Goldsmith, Charleston, S. C. (Filed Dec. 19, 1874.)

159,069.

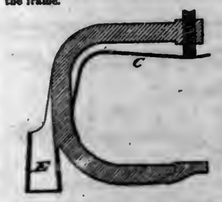


1. In a bale-tie, the combination, with the plate A, having slot *a*, and slotted projecting ug *b*, of the slotted plate B, having the double-barbed catch *f*, and shouldered projection *e*, substantially as specified.

2. The plate A, having slot *a* to receive the free end of the bale-strap, and the slot *c* in its downward projection *b*, substantially as described, for the purpose specified.

159,070. QUILTING-FRAME CLAMPS. A. P. Grabham, Mineral Point, Wis. (Filed Apr. 25, 1874.)

Brief.—The clamp secures the bars together at the corners of quilting-frames, and the socket is for holding standards or supports for the frame.



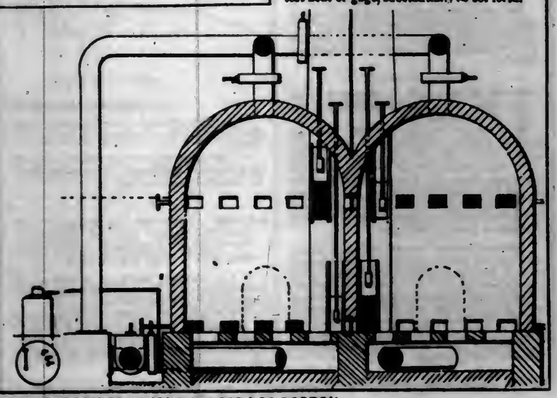
A clamp for quilting-frames, consisting of the U-shaped device, as shown in Fig. 1 of the accompanying drawing, provided with the thumb-screw B, guard-spring C, and the standard-socket attachment E, all combined to operate substantially as and for the purpose set forth.

159,071. BRICK-KILNS. William L. Gregg, Chicago, Ill. (Filed Dec. 4, 1874.)

Brief.—The gas to be burned may be admitted at the top, and drawn downward or at the bottom with an upward draft. The shrinking of the brick in the process of drying is indicated by the descent of the index, which extends up through the cover of the kiln, and below is attached to the float resting on the mass of brick.

1. The combination of a gas-producer, gas-conduits, and valves for upward or downward draft, and kiln having compartments, with upper and lower dampers, and stack with upper and lower dampers, substantially as set forth.

2. The combination, with a brick-kiln, of a test float or gage, substantially as set forth.



159,064.

159,065.

159,064. TRUNK-FASTENERS. A. Frankel, Newark, N. J., assignor to J. Legowitz, same place. (Filed Dec. 28, 1874.)

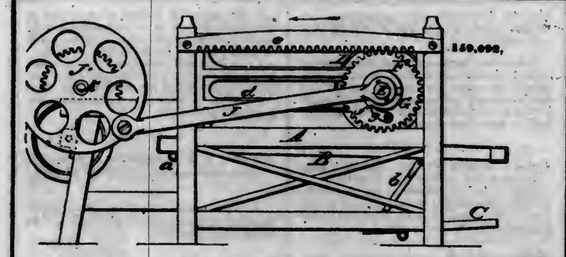
The hooked catch B, formed on the oscillating and longitudinally-movable stem *b*, and the spring C, coiled around the stem *b*, and acting on the staple *a*, the whole being applied in a case, A, and combined with the catch E, in the manner and for the purpose set forth.

159,072. SPRING BED-BOTTOMS. Joseph Fowler, New York, N. Y., and J. R. Dewar, Bergen, N. J. (Filed Sept. 29, 1874.)

Brief.—The slats are arranged in sections, each section consisting of two slats connected at their ends by short transverse bars, the ends of which are attached. The several sections rest on long transverse bars, suspended from the head and foot boards by springs, and the notched ends of the short bars embrace the springs to prevent longitudinal and lateral displacement of the several sections.

The bars F F, having notched ends *a*, and the slats E E, in combination with the springs C and suspended bars D, as shown and described, to operate as specified.

159,073.



159,073. MACHINERY FOR FINISHING LEATHER. A. M. L. Groff and John A. Marvel, Wilmington, Del. (Filed Nov. 7, 1874.)

1. In a machine for pebbling, graining, and softening leather, the semi-cylindrical rotary rubber, D, having an oscillating rectilinear and reciprocating motion, in combination with an adjustable table, B, which is arranged beneath said rubber, substantially as and for the purpose set forth.

2. The semi-cylindrical rubber D, the axis of which is provided with cog-wheels F F and notched cams G G, in combination with the racks *e e*, pawls *g g*, wheels J' J', and pitman J J, substantially as and for the purpose set forth.

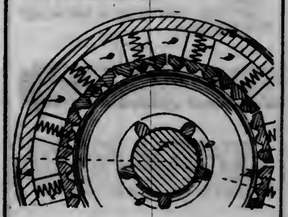
159,074. PROCESSES OF MANUFACTURING TILES. Edwin L. Hall, Zanesville, Ohio. (Filed Oct. 8, 1874.)

1. The process herein described of manufacturing tiles, consisting of taking clay crude from the bank, and when dry subjecting it directly to suitable pressure in proper molds or forms, and afterward baking the same, substantially as described.

2. The process herein described of manufacturing figured or vari-colored tiles by pressing dry clay, impregnated with the desired pigments, into molds, wherein the desired figure is marked out and defined by a thin partition, whereby the mold is sub-divided into compartments, into which vari-colored clays are introduced, after which the figured partition is withdrawn before the dry and vari-colored clays are pressed into a solid mass and afterward baked.

159,075. WASHING-MACHINES. Silas W. Holbrook, Catskill, N. Y. (Filed Nov. 21, 1874.)

Brief.—In a cylindrical tub are arranged vertical ribbed rubbers, attached by springs to the tub, and yield between division-blocks on the sides of the tub.



The combination of the vertical ribbed plates E, guide-blocks D, and springs C, said plates being arranged to form the inner wall or side of the ends-box, and to yield or move outward at either end, as shown and described.

159,076. AUTOMATIC BOILER-FEEDERS, &c. Jos. W. Hopkins, New York, N. Y. (Filed Dec. 26, 1874.)

Brief.—The float in the water-receptacle operates upon a piston-valve, that allows steam from the boiler to move the steam and water valves, that admit steam and water alternately to said receptacle.

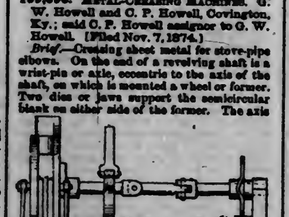
159,074.

159,077. METAL-CREASING MACHINES. G. W. Howell and C. P. Howell, Covington, Ky.; said C. P. Howell assignor to G. W. Howell. (Filed Nov. 7, 1874.)

Brief.—Creasing sheet metal for stove-pipe elbows. On the end of a revolving shaft is a wrist-pin or axle, eccentric to the axis of the shaft, on which is mounted a wheel or former. Two dies or jaws support the semicircular blank on either side of the former. The axis of the revolving shaft, which carries the former, is eccentric to the axis of the semicircular blank, so that a crease or fold is formed in the blank at each revolution of the shaft and former, of slight depth at one edge of the blank, and gradually increasing in depth to the other edge thereof. After the formation of one crease, the jaws recede and the blank is fed forward for a successive operation.

159,075.

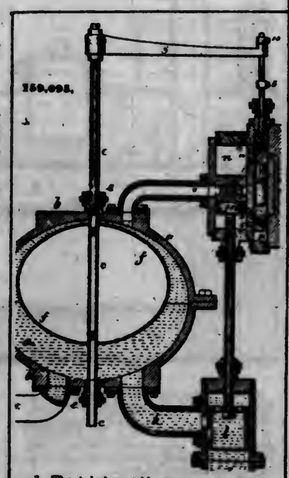
159,076.



1. The tubular guide-stem *e*, open to the atmosphere at the lower end, and passing through a packing, *c*, into the otherwise closed float *f* of a boiler-feeder or water-raising apparatus, for the purposes set forth.

2. The auxiliary piston-valve *o*, actuated by tappets and an arm from the float *f* in the vessel *a*, in combination with the main steam-valve *m* and water-valve *l*, connected together and operating as set forth.

159,077.



1. The former *d*, having an axle-bearing on the end of the driving-shaft D, with which it revolves concentrically, while both revolve eccentrically to the metal blank, in combination with suitable mechanism for holding semicircular sheets of metal while the same are being creased, substantially as described.

2. The linked jaws *g g'*, arranged to move on two centers, substantially as and for the purpose described, in combination with suitable mechanism for creasing semicircular sheets of metal between their surfaces.

3. The combination of plates E E', jaws *g g'*, and former *d*, adapted to form curves and creases in sheet metal for pipe-elbows, all substantially as herein set forth.

4. Jaws *g g'*, in combination with the pulleys and levers described, for operating the same automatically, substantially as herein set forth.

5. Plates E E', in combination with the pulleys, crank, and rods described, for automatically operating the same, as specified.

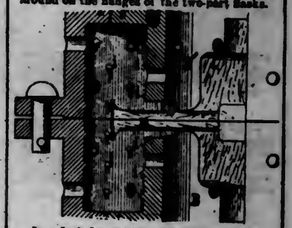
6. The noned cam J, in combination with carriage K, pawl *h*, and ratchet H, substantially as described, and for the purpose specified.

7. In a pipe-elbow metal-creasing machine, the yoke G, having two hinged semicircular leaves, *b b'*, adapted to embrace the metal blank on its inner and outer peripheries, and thereby preserve its circularity while feeding it into the machine, substantially as shown and described.

159,078. FLASKS FOR CASTING PULLEYS. William Hutton, Philadelphia, Pa. (Filed Aug. 11, ..74.)

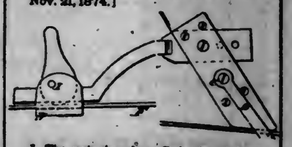
Brief.—The matrix for the rim of the pulley is formed by sweeps adapted to be moved around on the flanges of the two-part flasks.

159,078.



In a flask for making pulleys, the combination of an outer flask, consisting of the bottom A and cope A', provided with the flanges *a a'*, and an inner flask, consisting of the bottom B and cope B', provided with the flanges *b* and *b'*, and adapted to have the molds formed therein by means of the sweeps C and D, substantially as described.

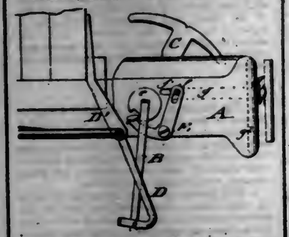
159,079. DEVICES FOR BALING COTTON. William Iler, Shreveport, La., assignor to himself and J. W. Iler, same place. (Filed Nov. 21, 1874.)



1. The swinging clamp B, having right-angled arm D, and pivoted to one side of a lever, A, having an oblique-edged lower end, as and for the purpose described.

2. The combination, with bar G, of the lower lip J and superposed cam I, as and for the purpose specified.

159,099. CAR-COUPLINGS. A. A. Kellogg, Montgomery, Mich., assignor to himself and M. B. Cartwright, same place. [Filed Dec. 28, 1874.]



1. In automatic car-couplings, the combination of draw-head A, having longitudinal top slot, *a*, and bottom perforation, *b*, with swinging and spring-acted coupling-hook B, for locking securely to draw-head and retaining the coupling-link, substantially as set forth.

2. The lateral hook-shaft B, pivoted to rear part of draw-head A, and having rectangular cross-section at the part of the cavity of the draw-head, in combination with recessed end of shank of coupling-hook, for attaching the same securely but detachably thereto, for the purpose specified.

3. The pivoted lever-frame B, having extension-arms, in connection with pivoted nuts *b'* of a spring-acted lever-frame, D, for yielding to the concussion of the draw-head without breaking lever-frame, as set forth.

4. The combination of spring-acted lever-frame D and pivoted lateral shaft B, having notched disk *c*, with pivoted dog E, having end hook, *e'*, for locking shaft B and coupling-hook in raised position, or swinging down lever-frame, substantially as specified.

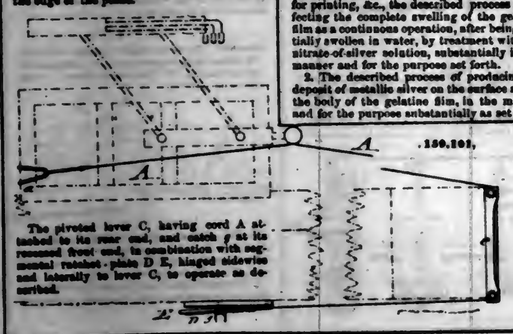
5. The combination of lever-frame D and shaft B, having notched disk *c*, with pivoted elbow-dog E and sliding spring-acted rod *g*, having projecting front piece, *g'*, for releasing shaft B and lever-frame D on concussion of draw-heads, and carrying coupling-hook down for locking link to draw-head, substantially as and for the purpose set forth.

159,100. PROCESSES OF MOISTENING GRAIN PREPARATORY TO GRINDING. William M. Kennedy, Pittsburg, Pa. [Filed Oct. 17, 1874.]

As an improvement in the method of dampening or moistening cereals, subjecting them while in motion to the simultaneous action of separate and independent steam and air currents, so as to condense the steam upon the grain, substantially as specified.

159,101. MUSIC-LEAF TURNERS. William H. King, Petersburg, Ind., assignor to himself and Jerome Borer, same place. [Filed Apr. 13, 1874.]

Brief.—Worked by a knee-plate just under the edge of the piece.



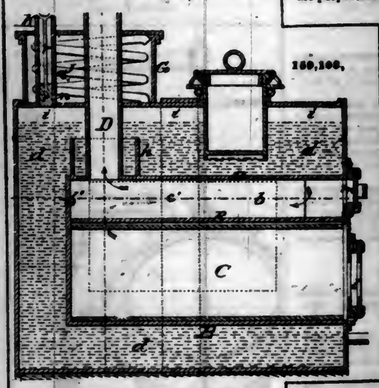
The pivoted lever C, having cord A attached to its rear end, and catch *g* at its recessed front end, in combination with segmental ratchet-plate D E, hinged sideways and laterally to lever C, to operate as described.

159,102. PROCESSES OF COLORING TOBACCO. Oscar Knab, Newark, N. J. [Filed Dec. 12, 1874.]

The process herein described of treating tobacco-leaves for imparting or restoring a dark color of the same, consisting in passing the leaves, in a soft and moistened state, through a solution of sesquichloride of iron, substantially as herein set forth.

159,103. WATER-HEATERS. Saml. L. Latta, Ligonier, Ind. [Filed Nov. 7, 1874.]

Brief.—The water-vessel at the base of the exit-flue is designed to protect the pipe at that point. When desired, water may be admitted from the coil-reservoir by lifting the valve.



1. The combination of the smoke-pipe D, fire-chamber C, and smoke-flues *c c'*, nearly surrounded by water, the latter being arranged as described, so as to cause the products of combustion to pass forward and then backward before escaping through the pipe D, as and for the purpose set forth.

2. The cup A, surrounding the base of the smoke-pipe D, arranged in water-space *c*, and combined with the flues *c c'* and fire-chamber C, substantially as described.

3. The reservoir G, coil-pipe J, and smoke-pipe D, in combination with the feed-pipe K, perforated at *n*, and the valve *r*, substantially as described.

159,104. PROCESSES OF PRODUCING PHOTO-RELIEF PLATES FOR PRINTING, &c. Louis B. Levy and David Bachrach, Jr., Baltimore, Md. [Filed Jan. 4, 1875.]

Brief.—Electrotype casts from bichromated gelatine films are prepared in the manner claimed.

1. In the preparation of photo-relief plates for printing, &c., the described process of effecting the complete swelling of the gelatine film as a continuous operation, after being partially swollen in water, by treatment with the nitrate-of-silver solution, substantially in the manner and for the purpose set forth.

2. The described process of producing the deposit of metallic silver on the surface and in the body of the gelatine film, in the manner and for the purpose substantially as set forth.

3. The described method of producing an electrolytic deposit of sulphuret of silver by means of sulphuret of potassium, as substantially in the manner and for the purpose set forth.

4. The described process of producing relief-plates for printing and other purposes, consisting essentially of the several steps above described, in the order of their succession, substantially as set forth.

159,105. WHIP-TIP FERRULES. Edward B. Light, Denver, Colo. [Filed Oct. 17, 1874.]

As a new article of manufacture, a tube, D, provided with opposite screws E E, as and for the purpose described.



159,106.



159,107. TOY CARTRIDGE-EXPLODERS. J. B. McHarg, Rome, N. Y. [Filed Oct. 28, 1874.]

Brief.—For sport merely, or may be used as danger-signals



As an attachment for canes, arrows, and similar articles, a blank-cartridge exploder composed of the cylinder H, having a lateral aperture, F, and the cap C, combined to operate as and for the purpose described.

159,108. SELF-REGULATING GAS-BURNERS. Duncan D. McMillan, La Crosse, Wis. [Filed Nov. 21, 1874.]

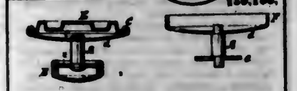
Brief.—The diaphragm is held between the two sections, in the lower of which is a circumferential annular chamber, and in the upper converging channels.

The combination of the lower section or shell A, provided with a circumferential annular chamber, *a*, having bottom openings *a'*, the top section having upwardly-converging channels *b*, and the flexible diaphragm C and valve D, secured between the two sections, and located inside the annular gas-chamber, as herein shown and described.

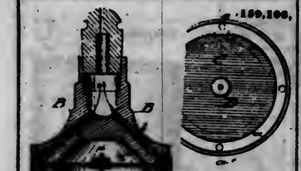
159,101.

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159,109.



1. The inclined table A, provided with the clamping-bars *a* in combination with the rotating frame F, drums H, and blanket J, substantially as and for the purpose set forth.

2. The rotating frame F, drum H, blanket J, and trough M, in combination with the table A, and washing-tank K, substantially as and for the purpose set forth.

159,111. IRONING-BOARDS. S. B. Morrell, Racine, Wis. [Filed Aug. 20, 1874.]

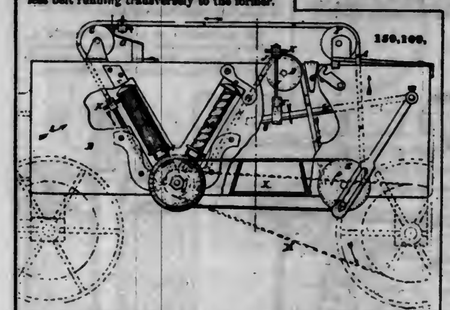
159,111.



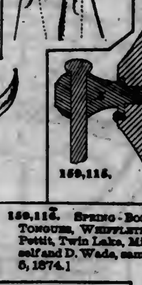
The serpentine hinged spring-brackets, as described, in combination with the board A and the stretching and clamping strip C, substantially as and for the purpose described.

159,112. SCARFS. Andrew Mueller Boston, Mass. [Filed Nov. 26, 1874.]

159,108.



159,112.



1. A scarf having a sliding front piece, held by suitable springs, and covering a photograph or other similar object, and adapted to be depressed by the wearer, so as to expose the photograph to view, substantially as shown and described.

2. A scarf provided with a back piece, B, adapted to hold a photograph or other like object, the sliding piece F, the springs G, and cord H, all combined and arranged to operate substantially as and for the purpose set forth.

159,109. COTTON-HARVESTERS. La Fayette K. Miller, Austin, Tex. [Filed Aug. 10, 1874.]

Brief.—An endless belt carries whirling pickers, which are made to revolve, when entering the cotton, by contact with another endless belt running transversely to the former.

159,109.

159,110.



1. The combination, in a cotton-harvester, of rotary or whirling pickers I and a carrier, A, substantially as herein described, for the purpose set forth.

2. The combination, in a cotton-harvester, of an endless cross-belt, N, and traveling revolving or whirling pickers I, provided with pinions or serrated disks K, substantially as herein described.

3. The combination of pickers I, pivoted supporting-bar J, endless carriers A, and stationary cams O Q, substantially as specified.

4. The strippers R, tube S, stripping-bar T, and levers U, combined with the pickers, substantially as specified.

5. The strippers arranged in grooves in the revolving pickers, and the tube S, swiveled to the stripping-bar, substantially as specified.

6. The inclined drums M for endless belts L, having a spiral rib for keeping up the said belts, substantially as specified.

159,116. CORE-CONCENTRATORS. Calvin Moore and Chas. H. Campfield, San Francisco, Cal. [Filed Nov. 21, 1874.]

Brief.—Side rails, adjustable toward each other, swing over inwardly onto the table, are hooked together, and clamp the blanket. One blanket, having been charged, is rolled up, the lid *c* thrown upward and backward, the frame revolved, the fresh blanket spread on the table, and the charged blanket washed in the tank, all for use in a tailings-sluice.



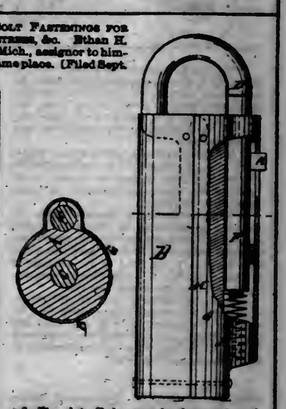
159,110.

159,116.



159,113. SPRING-BOLT FASTENINGS FOR TONGUES, WHIFFLETREES, &c. Ethan H. Pettit, Twin Lake, Mich., assignor to himself and D. Wade, same place. [Filed Sept. 5, 1874.]

159,113.



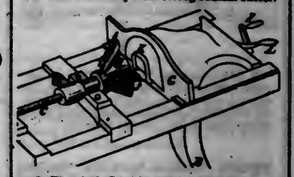
1. The plate B, having circular portions G and I to receive a tongue-yoke, in the manner described.

2. A tongue-yoke consisting of the hook part C and spring-held straight part F combined, and their ends meeting, so as to form a flush-joint, as shown and described.

The tub A, provided with the false bottom F and orifice C, in combination with the spout E and alternating rifles or partitions *d e*, substantially as and for the purpose set forth.

159,114. MACHINES FOR CUTTING HEADS FOR BARRELS. Otto Cotton, North Bend, Oreg. [Filed Nov. 18, 1874.]

Brief.—The material from which the head is to be made is secured in a clamp, and cut to the desired form by a revolving conical cutter.



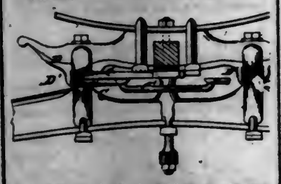
1. The shaft C, with its hollow conical head *d*, said head being provided with adjustable cutting-bits *f*, in combination with the sliding head G, operated by the screw *h* and crank I, substantially as and for the purpose above described.

2. The clamping-bar K, operated by lever L, in combination with the sliding head G and rotating cutter *f*, substantially as and for the purpose described.

159,115. VISES. Edwd. Parker, Plymouth, assignor to Elmore Penfield, Middletown, Conn. [Filed Nov. 16, 1874.]

The solid body or standard A, having a cylindrical bearing for the stem of each of the rotating jaws D C, as shown, in combination with the nut F, screw E, and locking-bolt G, constructed and arranged as described.

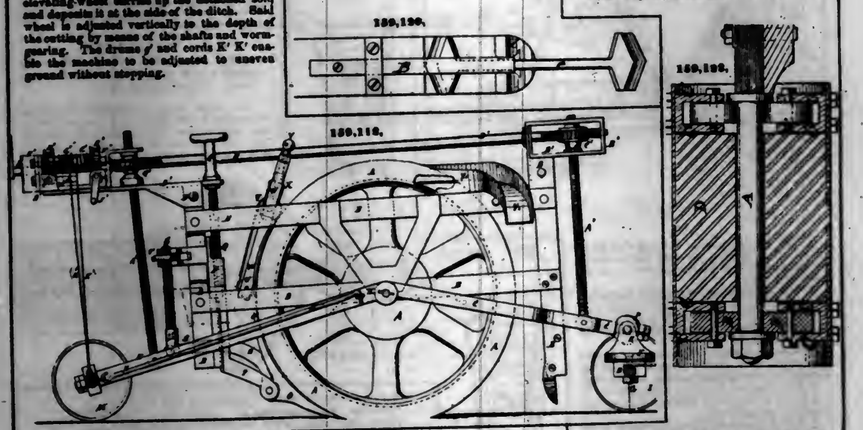
159,117. FIFTH-WHEELS FOR VEHICLES. Geo. F. Putman, Fonda, N. Y. [Filed Nov. 7, 1874.]



In fifth-wheels, the head-block or axle, provided with guard-plates D' at both sides and opposite points of the fifth-wheel, for protecting king-bolt and wheel, substantially in the manner and for the purpose set forth.

159,118. DITCHING-MACHINES. Theodore F. Randolph, Morristown, N. J. [Filed Dec. 12, 1874.]

Brief.—The elevating-wheel is made with sharp edges, to divide the soil by its weight, the sides of soil being further separated by the shoe O, pivoted near its middle, and made adjustable vertically and longitudinally. The elevating-wheel carries up the detached soil, and deposits it at the side of the ditch. Said wheel is adjusted vertically to the depth of the cutting by means of the shafts and worm-gearing. The drums *f* and cords K' K' enable the machine to be adjusted to uneven ground without stopping.



1. The combination of the sliding block P, screws Q S, arm R, and shoe O, the latter being pivoted between its extremities, and near the middle thereof, to the sliding block, and rigidly secured to or formed in one piece with the arm R, substantially as and for the purpose specified.

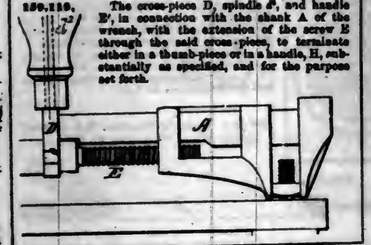
2. The ball-bearing D, pivots E, and lugged plate F, in combination with the king-bolt G, the forward axle, H, and the forward draft-bar O of the ditcher, substantially as herein shown and described.

3. The combination of the two drums, G', the two screw-wheels, H', the two swiveled screws, F' J', and the two cords or chains, K', with the frame-work B' B of the ditcher, and with the axle I, swiveled to the rear end of the rear draft-bar, K, of the ditcher, substantially as herein shown and described.

4. The combination of the swiveled screw-rod D', the two swiveled screw-wheel nuts, O', and the two screws, A', with the front and rear draft-bars, O K, and with the frame-work B' B, and ditching-wheel A, substantially as herein shown and described.

159,119. WRENCHES. Sylvanus R. Robinson, Mansfield, Wis. [Filed Dec. 5, 1874.]

Brief.—In addition to the handle, which is parallel with the bars on which the jaws slide, there is an additional handle attached at a right angle thereto, forming a crank to facilitate the operation of the instrument in loosening or tightening a nut.



The cross-piece D, spindle *S*, and handle E', in connection with the shank A of the wrench, with the extension of the screw E through the said cross-piece, to terminate either in a thumb-piece or in a handle, H, substantially as specified, and for the purpose set forth.

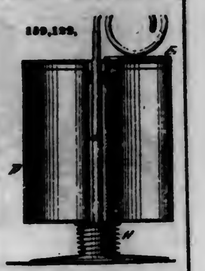
159,120. CAR-COUPLINGS. G. W. R. Row, Steele's Tavern, Va. [Filed Nov. 21, 1874.]

The combination, with a draw-bar, in the front of which is the inclined head *d*, having an outwardly-tapered longitudinal recess, of the horizontal plate-spring B, made fast in the rear, and having its front end resting over said recess, as and for the purpose specified.

159,121. REVOLVING SPICE-BOXES. Thos. W. F. Smitten, New York, N. Y. [Filed Dec. 3, 1874.]

Brief.—The spice-boxes are pivoted on and revolve around a vertical spindle, which is provided with imperforate covers for all the boxes, save one, so that whichever spice-box is open, the others will be closed.

The combination, on a vertical spindle, A, of two or more upright horizontally-revolving cases, C D, and a stationary cover, E, with or without a spring, substantially as specified.



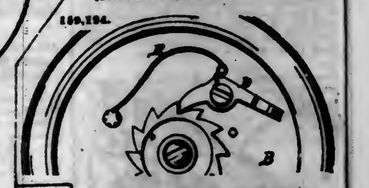
159,122.

159,123. HUBS FOR VEHICLE-WHEELS. William Teegarden, Higginsport, Ohio, assignor of one-half his right to Geo. Teegarden, same place. [Filed July 11, 1874.]

A wooden hub, in combination with lugs C C and friction-rollers B B, substantially as shown and described.

159,124. PAWLS AND RATCHETS. Ralph Tomlinson and Jos. Smith, Boston, Mass. [Filed Dec. 19, 1874.]

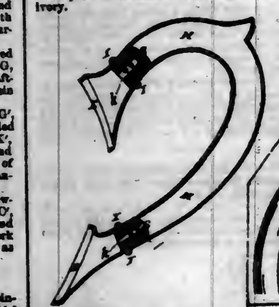
159,124.



The combination, with loose pulley B and shaft A, having end ratchet, of the pawl D and spring E, the former having the projection F, as shown and described, whereby said spring may hold the pawl either in contact with or away from the ratchet.

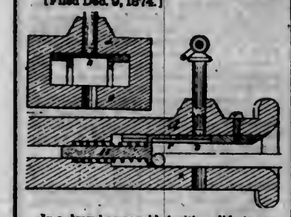
159,125. TEA-POT HANDLES. Thos. Shaw, Providence, R. I. [Filed Oct. 26, 1874.]

Brief.—The insulator is preferably made of ivory.



The insulator composed of a collar, I, shank S, and hollow cavity or socket N, in combination with a metallic shank, *h*, and handle ends of the handle H, in the manner specified, so that the whole may be connected in the manner substantially as described.

159,126. CAR-COUPLINGS. Geo. A. Tuttle and Henry B. Thompson, Lawrence, Mass. [Filed Dec. 9, 1874.]



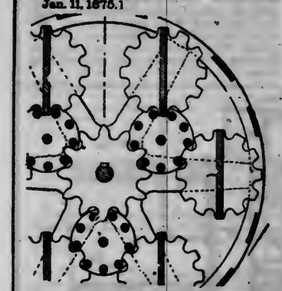
In a draw-bar, provided with a slide to support the link-pin, and to be moved from under it by the link, the combination of rabbeted guides C C and the movable stop D, with the draw-bar, and the slide-plate B and its spindle and spring, all as specified.

159,126. STEP-LADDERS. R. S. Van Zandt, Williamsburg, N. Y. [Filed Dec. 12, 1874.]



The combination of the long slotted keepers D, the sliding bolts E, and the long keepers F with the parts A B of the ladder, substantially as herein shown and described.

159,127. FEATHERING PADDLE-WHEELS. Bernhard Veter, New York, N. Y. [Filed Jan. 11, 1875.]



A paddle-wheel for vessels, composed of a central stationary cog-wheel, intermediate revolving pinions, and outer vertical paddles with cog-wheels gearing therewith, mounted on a supporting wheel-frame, for producing by the rotation of the frame the vertical position and passage of the paddles through the water, substantially as shown and described.

159,128. CAR-COUPLINGS. Lewis Vote, Pittsburg, Pa. [Filed Jan. 2, 1875.]

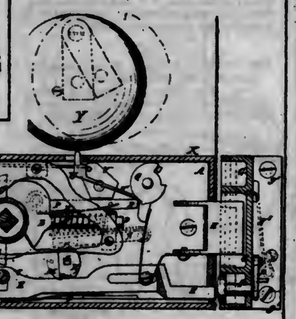
1. In combination with the draw-head and the sliding trigger to move upon an inclined key, the coupling-pin provided with a collar, *a*, substantially as and for the purpose specified.

159,128.



2. In combination with a draw-head having a coupling-pin, the collar of which is of greater diameter than the hole in the draw-head through which it works, the key-piece, and sliding face-plate, substantially as and for the purpose specified.

159,129. ALARM-LOCKS. Jonathan Walton, Brooklyn, N. Y. [Filed July 3, 1874.]



1. The combination of the pin I and button J with the hinged catch G *g' g''* and a sliding bolt, E, operated by the knob-spindle B, substantially as herein shown and described.

2. The combination of the spring F, the block K, the post L, the plate M, the stop-pins *m' m''*, the pivoted bar N, and the spring O, and stop *o'*, with the sliding bolt E, to enable the said bolt E to be thrown into and out of gear with the knob-spindle by a key, substantially as herein shown and described.

3. The gong X, constructed, substantially as herein shown and described, to adapt it to serve also as a cap to the lock mechanism, as set forth.

159,130. ADJUSTABLE CUT-OFFS FOR STEAM-ENGINES. Henry Webster, Janesville, Wis. [Filed Oct. 24, 1874.]



The oscillating toe-piece B, having shoulders *b b*, and the rock-shafts having pawls *d d* and arms *d' d''*, combined with the slide C D, having top rail *h*, as and for the purpose specified.

159,131. LAWN-MOWERS. Henry T. West, Philadelphia, Pa. [Filed Aug. 21, 1874.]



The arrangement, substantially as shown, of the frame B B F, constructed as described, the standards G H, the gear J, supported on the axle, the pinion L, crown-wheel M, pinion N, and crank-wheel O.

159,132. WASHING COMPOUNDS OR FLUIDS. William S. Williams, Middletown, Del. [Filed May 2, 1874.]

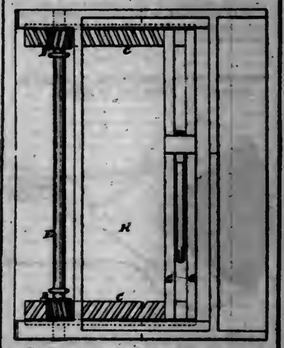
Brief.—Soda, lime, spirits of turpentine, alcohol, and water. To this compound add soap made by adding grease to the compound fluid. These are all boiled and stirred together until they reach the proper consistency.

1. The compound fluid made by employing the materials in the quantities substantially as described.

2. The combination of the fluid with the soap, both made of the materials in the quantities substantially as described.

159,133. DRESSING MILLSTONES. John Williams, Dresden, assignor to himself and Geo. J. Stonebreaker, Fayetteville, Tenn. [Filed Oct. 31, 1874.]

Brief.—A longitudinal slide, in which a pivoted tool is worked by hand, guided and worked laterally by a worm and rack gearing at each end of a bed-plate.



The combination of the stationary base-frame A, the horizontal driving-shaft E, carrying pinions D D and hand-wheel F, the sliding rack-bars C C, the connecting-bars G G, and the dressing-tool I K, all constructed and arranged as herein shown and described.

159,134. POCKET-TOOLS. Frank R. Woodward, Hill, N. H. [Filed Aug. 26, 1874.]

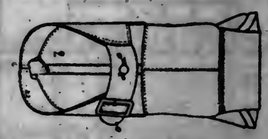
Brief.—A glass-cutter, tweezer, and screw-driver are united in one stock, having a measure or rule on the side.



As a new and improved article of manufacture, a pocket-tool, constructed substantially as and embracing the features described and specified.

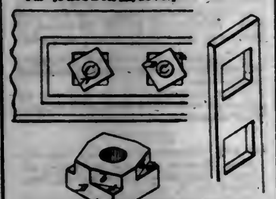
159,135. GAITER-BOOTS. Barker C. Young, Boston, Mass. [Filed Dec. 19, 1874.]

Brief.—A button on the back part of the shoe secures the strap independently of the buckle, and also prevents it from slipping up and down.



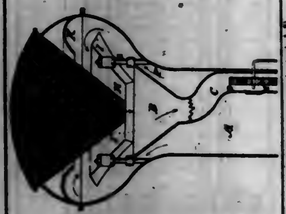
In combination with the gaiter-boot A, provided with the two leg-flaps *a b*, and the strap *c*, and its buckle *f*, arranged as described, the button *d*, fixed to the middle of the back-flap, and the button-hole *e* made in the strap, all substantially as specified.

159,136. NUT-LOCKS. Joseph J. Adgate, Stevensville, N. Y., assignor of three-fourths his right to John Maitland, J. H. Sternbergh, and Caleb Wheeler, Reading, Pa. [Filed Dec. 12, 1874.]



In combination, with the locking-plate G, the nut D, having the diagonal cuts or chambers *b d* arranged so that the nut can only be turned backward, to secure the plated nut after the locking-plate is placed over the nut, as set forth.

159,137. SPARK-ARRESTERS. D. Allard, St. Albans, Vt. [Filed Jan. 19, 1875.]



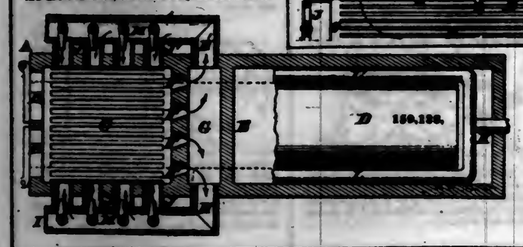
1. The adjustable pipe C, terminating in a funnel-shaped mouth, B, in combination with the smoke-stack A, the spirally-grooved plate H, and the annular cap K, substantially as and for the purpose described.

2. The combination, with the smoke-stack A, of the adjustable pipe C, having funnel-shaped mouth B, the spirally-grooved plate H, the annular cap K, and the inverted conical cage L, having its lower end open, substantially as and for the purpose described.

159,138. BOILER-FURNACES. Wm. Allenworth, Troy, Ohio. [Filed Oct. 12, 1874.]

Brief.—The smoke and gases arising from the combustion of coal pass into a chamber in the rear of the furnace; from thence they pass through side pipes, and are injected into the furnace by means of superheated exhaust steam.

As an improvement in steam-boiler furnaces, the steam-bored bridge-wall G, having front perforations F, and communicating, by end passages H H', side pipes I I', and branch pipes J J', with both flanks of the fire-chamber, in combination with pipe K, connected by branches L L', traversing the heart of the furnace, with nozzles M placed within the branch pipes J, for conducting superheated exhaust steam, as and for the purpose set forth, the whole arranged to operate within the fire-chamber, substantially as described.



159,139. GAS-REGULATORS. J. Anderson, New York, N. Y. [Filed Jan. 14, 1875.]

Brief.—The upper gravitating valve is lifted by a certain pressure to allow flow of gas. The lower valve operates under an increased pressure.



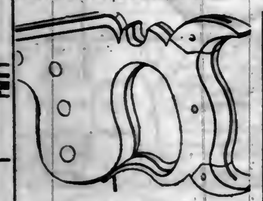
1. The combination of two or more gravitating valves, E F, of different diameter in a gas-regulator, substantially as herein described.

2. The combination, in a gas-regulator, of one or more perforated valves, F, with a solid valve, E, substantially as described.

3. The combination, in a gas-regulator, of two or more valves, E F, and a tubular stem, D, having discharge-holes *c*, substantially as described, for the object specified.

159,140. SAW-HANDLES. B. Andrews, Williamsport, Pa. [Filed May 4, 1874.]

Brief.—The handle is stiffened by having the saw-blade cut to the form of the handle, and inserted between its two sides.

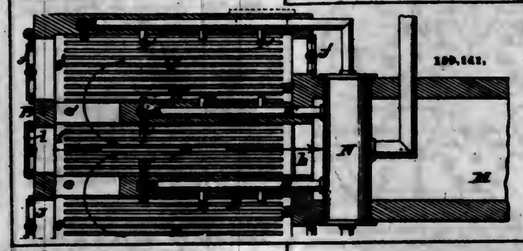


1. In combination with a hand-saw handle, the saw-blade, extended centrally through the same, and conforming to the outlines thereof, substantially as described and shown.

2. In a hand saw handle, the tips or horns D, substantially as described and shown.

159,141. SMOKE-CONSUMING FURNACES. Daniel Argerbright and Wm. Allensworth, Troy, Ohio. [Filed Jan. 2, 1875.]

Brief.—Three furnaces are arranged side by side, the center one being supplied with incandescent fuel. The smoke and gases arising from the side furnaces pass over and through the center furnace, and are therein consumed. Heated air is supplied to all the furnaces from a drum in the rear of the bridge-wall.

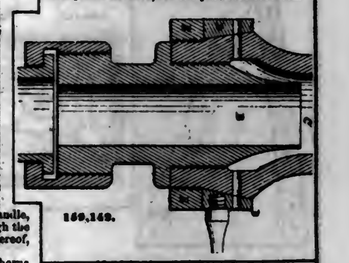


1. The combination, with a measuring-cylinder, of forked pipes at its ends, constituting inlet and outlet pipes, two-way valves working in said pipes, and the connected valve-cranks, substantially as and for the purpose set forth.

2. The combination of the casing, the cylinder, the piston, the piston-rod, the inlet-pipes, the outlet-pipes, their valves, the valve-connecting guideway, and the oscillating lever working in the guideway to shift the valves, these members being constructed and operating substantially as set forth.

1. A smoke-consuming apparatus, consisting, essentially, of a furnace composed of three distinct chambers, F G G', whose division-walls E E' are provided with openings *a a'*, and whose bridge has a single exit, I, when employed in conjunction with the embedded pipes R R' S S' and nozzles *r r' s s'* T T', for introducing a blast of heated air into said chambers, substantially as herein described, and for the purpose set forth.

2. In combination with the blast-pipes R R' S S', applied to a furnace, as described, the exposed drum or cylinder N, arranged athwart the flue M, in rear of bridge-wall H, for the purpose set forth, and herein described.



159,142. AERATING AND COOLING APPARATUS. Geo. W. Baird, U. S. N. [Filed Jan. 5, 1875.]

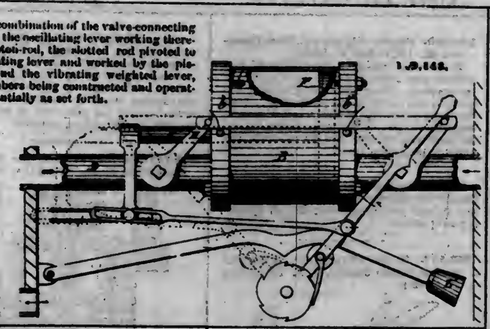
Brief.—Steam being admitted into the nozzle through a pipe connected with a boiler is conducted, through another pipe attached to the nozzle-plug, to the distilling apparatus. When condensation takes place in the distiller, the ring upon the plug is turned until the holes register; then the air enters and the aeration and refrigeration of the liquid products of distillation are simultaneously effected.

The combination of the plug B, the nozzle C, and the ring D, all constructed substantially as described, for the purposes set forth.

159,143. MITTENS. William B. Baker, Chicago, Ill. [Filed Dec. 14, 1874.]

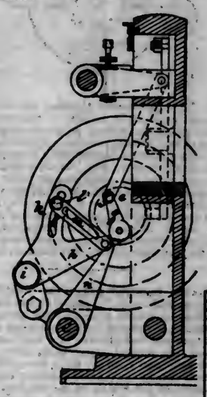
Brief.—A cylinder, piston, and rod—a radial arm upon the latter. An inlet and an outlet converge into one pipe at each end of the cylinder—a double cock in each pair before their convergence. Cocks are operated simultaneously by a slotted connecting-rod and a lever, which oscillates in the slot of the rod. The lever is operated from the radial arm. Promptness of valve-motion is secured by a weighted camming-lever operating upon the oscillating lever.

3. The combination of the valve-connecting guideway, the oscillating lever working therein, the piston-rod, the slotted rod pivoted to the oscillating lever and worked by the piston-rod, and the vibrating weighted lever, these members being constructed and operating substantially as set forth.



159,144. WAX-THREAD SEWING-MACHINES. Edwin R. Bean, Boston, Mass., assignor to the Consolidated Wax-Thread Sewing-Machine Company, same place. [Filed Aug. 3, 1874.]

Brief.—Improvement on Patent No. 137,528, and consists in the link introduced between the crank-pin and the arm connected with the rock-shaft.



In combination with the driving-shaft *e* and the crank-pin *f*, the link-connection *g* and the intermediate connecting mechanism to the rock-shaft *A*, substantially as herein shown and described.

159,145. CAR WHEELS AND AXLES. B. A. Berryman, St. Louis, Mo., assignor of one-half his right to G. W. Shaw, same place. [Filed Sept. 22, 1874.]

Brief.—Easily-detachable lubricators. Wheels and axles readily connected and disconnected, and provided with receptacles for excess of oil.

1. The combination of the axle, with fixed collar H and removable collar I, and the hub F, with inward extension G, having an interior flange, G', held between the collars H I, all substantially as set forth.

2. In combination with the hub F and the oil-reservoir M, the right and left hand threaded pipe *m*, to draw and hold the receptacle or reservoir in position between the spokes.

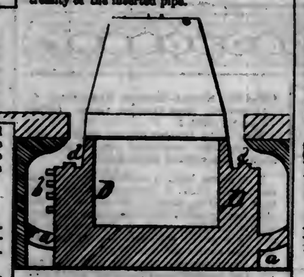
3. The hub F, provided with annular receptacle N, substantially as and for the purpose set forth.

4. The car-wheel E, hub F, extension G G', and oil-chambers M N, in combination with the axle A, collars H I, and cap K, substantially as set forth.

5. The removable oil-receptacle M, communicating with the car-axle by pipe provided with right and left hand screw-threads, and

159,146. CLAY PIPES AND APPARATUS FOR MOLDING THE SAME. William K. Black, Philadelphia, Pa., assignor to Jos. Hawey and Wm. Adamson, same place. [Filed Dec. 21, 1874.]

Brief.—Placed under the clay-box, and coinciding with its outlet, is the socket-former, which descends when filled, while continued pressure on the clay forms the attaching-pipe. The socket-former has projecting pins, which, by a partial revolution, form inside the article annular slots. There is also formed another slot for the reception of a flange on the extremity of the inserted pipe.



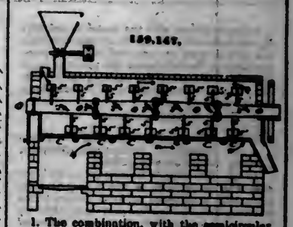
1. The combination, in a clay-pipe molding-machine, of the former D, with three or more sets of pins, A, arranged and operating substantially in the manner and for the purpose described.

2. The combination, substantially as described, of the projection *d* and the slotted and curved flange *a*, with the former D, for the purpose set forth.

3. As a new article of manufacture a clay pipe, the socket of which has rounded ends *g*, internal grooves *b'*, and an annular groove, *d'*, in the shoulder, against which the end of the adjoining pipe bears, all as set forth.

159,147. DRESSES FOR PERIPHERIES. Joseph Bowman, Weymouth, and Alex. Chapman, Lowell, Mass. [Filed Dec. 19, 1874.]

Brief.—The cast-iron plates, sliding loosely in the grooves, may be readily removed when injured or destroyed by the action of the fire.



1. The combination, with the semicircular sectional cast-iron plates *c*, of the grooves *c'*, substantially as and for the purposes herein specified.

2. The combination, with the hollow sectional tapering shaft *c*, of the arms *s* and shoes or pastiles *c'*, substantially as and for the purpose above set forth.

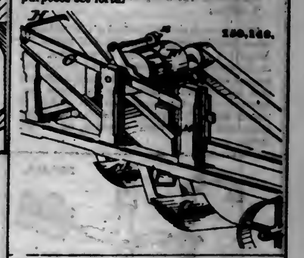
159,148. SEED-PLANTERS. Jos. C. Broad, Thibodeaux, La. [Filed Oct. 16, 1874.]

Brief.—Upon a frame are placed uprights, which form journals for the horizontal shaft, carrying a seed-cylinder composed of two sections, working one partly within the other, one of which is rigidly secured to the shaft; the other, being smaller, is adjusted thereon. In the periphery of the adjustable half are made longitudinal slots of different lengths, to regulate the flow of seed successively. Each half of the cylinder is provided with arms, through which pass rods having coil-spring thereon, and nuts for holding the adjusted half at any desired position; or it is entirely closed and held rigidly by a longitudinal bar. Beneath the cylinder, and to the handles, is secured a chute for conveying the seed to the open furrow between the two plows.

1. The hand-lever G, fulcrum-post 14, and notched cross-bar H, between the handles, in combination with the rotary seed-cylinder or hopper F, having a sliding section with discharge-apertures therein for closing the latter and locking the cylinder in closed condition, to prevent waste of seed, in the manner herein set forth.

2. The combination of the closing-lever G, locking-bar H, opening-springs 12, and adjusting-nuts 13 with the rotary seed-cylinder F, constructed as described, for the purpose specified.

3. The combination of the plower-shares O O', arranged diagonally beneath the planter, with mold-boards on one and the same side, and the seed-chute I, arranged to receive the seed from the discharge-apertures and to deliver the same beneath the mold-board of the front plow, the rear plow serving to cover the seed, as herein shown and described, for the purposes set forth.



159,149. SPOKE-SOCKETS AND FELLY-PLATES. H. T. Briggs, Buchanan, Mich. [Filed Oct. 27, 1874.]

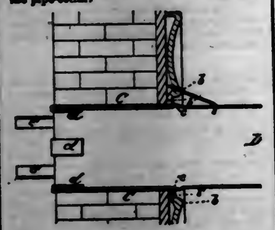
Brief.—To clamp the tire and firmly secure together the tire, felloe, and spokes.



In combination with the spoke A and felly B, the ferrule C and cap D, extended beyond the felly to hold the tire, and the pin *d* passing through the felly under the tire, and bearing upon the head of the screw *a*, which holds the union C D to the spoke, all substantially as set forth.

160,150. STOVE-PIPE COLLARS AND THIMBLES. George F. Brinkerhoff, Bucyrus, Ohio. [Filed July 18, 1874.]

Brief.—The thimble is provided on its inner end with strips, part of which may be bent outwardly to embrace the inner surface of the chimney-flue, and another part bent in the opposite direction to limit the inward thrust of the pipe. It has at its outer end a flange, which engages with a corresponding flange on the pipe-collar.



1. The combination of the collar B, having a flange, *b*, and a bead, *b*, the thimble C, having a flange, *c*, and fastening-strips *c' d*, and the pipe-section D, substantially as specified.
2. The thimble C, having upon one end a flange, *c*, and upon its other end fastening-strips *c' d*, substantially as specified.

160,151. PUMPS. Algernon A. Burt, Campton, Ill. [Filed Oct. 17, 1874.]

Brief.—The plunger is firmly secured to a vertical post attached to the lower surface of the platform. The cylinder being forced downward by the action of the pump-stock allows the water to enter the cylinder, and, by a backward movement of the lever, forces the water from the cylinder into the chamber, and through the pump-stock.

The combination of post B, plunger G, piston-rod D, cylinder E, chamber F, valves *f* and K, and gravitating-lever M, all operating as specified.

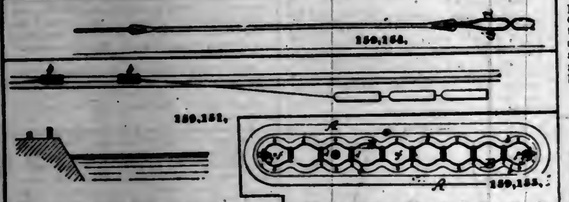
160,152. CARPET-FASTENERS. Alma Burroughs, Numda Station, N. Y. [Filed Oct. 23, 1874.]



The carpet-fastener consisting of the body having one end widened, flattened, and brought to an edge, and the opposite end reduced in width and provided with a single point to enter the floor, and an upright point to receive the carpet, the device being made in one piece.

160,153. CLASPS FOR STOCKING OR SKIRT SUPPORTERS. Geo. J. Capewell, Cheshire, Conn. [Filed Nov. 17, 1874.]

A clasp for stocking and skirt supporters, composed of two pieces of metal, *c d*, riveted together at their loop end, and one passing through a slot in the other, and operating substantially in the manner and for the purpose specified.



160,154.

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160,154. STEAM-HEATER RADIATORS. C. Comstock, New Canaan, Conn. [Filed Dec. 10, 1874.]

Brief.—The sinuous groove, packing, and fastening-plate correspond with the corrugations of the walls of the radiator.

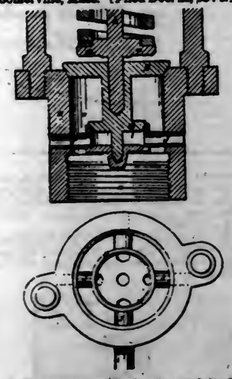
1. A steam heating-radiator composed of the bottom plate, A, corrugated sheet-metal body B, and top plate, C, the bottom and top plate having each a continuous sinuous groove for the reception of the corrugated body B, and all connected and combined substantially as herein shown and described.
2. The sinuous continuous packing *e* and the sinuous continuous fastening-plate *h*, combined with the grooved end plate, A, and the corrugated sheet-metal body B, of the heat-radiator, substantially as specified.
3. The combination of the V-shaped bar *g*, packing *h*, and outer wedge-plate, *i*, with the corrugated sheet-metal body B of the heat-radiator, substantially as and for the purpose described.

160,155. STEAM-DISTRIBUTERS FOR FURNACES. Alfred B. Corey, Providence, R. I. [Filed July 18, 1874.]



The combination, with the grate-bars of a furnace, of the spheroidal or partially spheroidal distributer C, having the perforations *b* and supply-pipe D, the whole constructed to operate substantially as herein described, for distributing steam in the form of spray directly beneath the grate-bars of an ordinary furnace, for the purpose specified.

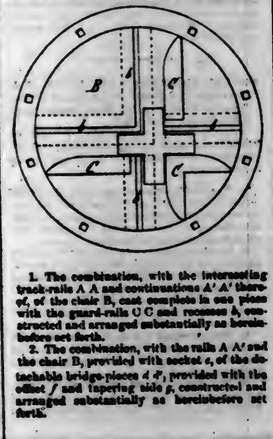
160,156. SAFETY-VALVES. Geo. H. Crosby, Somerville, Mass. [Filed Dec. 21, 1874.]



1. The supplemental chamber and its discharge-passages or outlets, in combination with stop-cocks or other regulator at one or more of said outlets, to regulate the discharge of steam therefrom, substantially as set forth.
2. In combination with the valve-shell and primary valve, the supplemental valve and chamber within the steam-space of the shell, the discharge-passages or outlets leading from said chamber through and out from the shell, and means, substantially as described, for regulating the escape of steam from said outlets for joint operation, as shown and set forth.

160,157. RAILWAY-CROSSINGS. Jas. Cumming, Buffalo, N. Y. [Filed Jan. 9, 1875.]

Brief.—A frog or crossing-plate for the intersection of crossing tracks, cast in one piece, and provided with grooves, into which are inserted the several track-rails; also, with guard-rails and recessed seats, in which rest inclined flange-bearers, for preventing the dropping of the wheels at the cut portion of the rails. The flange-bearers are in two pieces, dovetailed together.



1. The combination, with the intersecting track-rails A A and continuations A' A' thereof, of the chair B, cast complete in one piece with the guard-rails C C and recesses *b*, constructed and arranged substantially as herein-before set forth.
2. The combination, with the rails A A' and the chair B, provided with sockets *c*, of the detachable bridge-pieces *d d'*, provided with the offset *f* and tapering side *g*, constructed and arranged substantially as hereinbefore set forth.

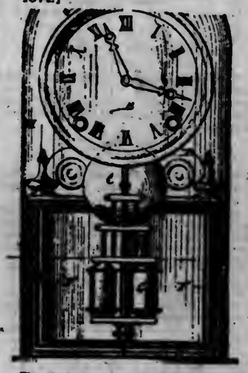
160,159. SHOE-HORNS. Alvin M. Cushing, Lynn, Mass. [Filed Jan. 7, 1875.]

Brief.—The inner surface of one or both jaws is provided with a projection of rubber or other elastic material.



A compound shoe-horn, the griping-jaws of which are one or both plated or provided with an elastic or adhesive substance, substantially as and for purposes stated.

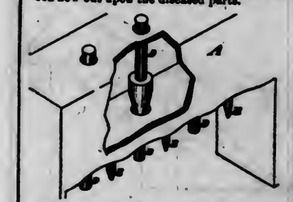
160,160. CLOCK FRAMES OR CASES. Henry J. Davies, Brooklyn, N. Y. [Filed Nov. 25, 1874.]



The clock-frame or standard composed of the angular portions or frames E E, adapted to receive mirrors or other ornamental surfaces, and the portion D supported thereon, and serving as a base for the clock-works, all substantially as herein set forth.

160,161. SHEEP SCRATCH-BOXES. Ira Benton Dillon, Visalia, Cal. [Filed Dec. 28, 1874.]

Brief.—An elevated box contains medicaments for treating diseases of sheep. Valves are operated by spikes protruding outwardly from the bottom of the box. While the animal scratches its back against the spikes, it opens the valves and lets the contents of the box flow out upon the diseased parts.



The device consisting of the box A, with its spikes E, valves C, and guides D, for the purpose substantially as herein described.

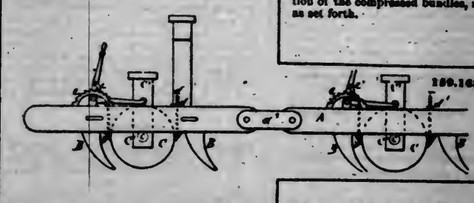
160,162. WOOD PAVEMENTS. Wm. Disney, Cincinnati, Ohio. [Filed Apr. 7, 1874.]



The improved wood pavement herein described, the ranks or rows of which transverse of the street are each composed of two or more sections of blocks, having upper rear cleats, B, and lower front cleats, C, arranged and applied so as to unite the blocks in the preliminary sections, and to unite the sections in each row by breaking joints, and to interlock the several rows, and to form the footholds, substantially as specified.

160,163. COMBINED HARROWS AND ROLLERS. Wm. R. Downing, Murfreesborough, Tenn. [Filed Nov. 21, 1874.]

Brief.—The roller and harrow is made in two sections, each of which has a roller and harrow in front. These sections can be used singly or in pairs, side by side, or end to end. In one section the roller is vertically adjustable, so that the teeth of one section can be raised above the ground.



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1. A combined harrow and roller, made in sections, provided with detachable hinges at both the sides and ends of the frame, whereby one section may be arranged in front of the other or by the side thereof, substantially as set forth.
2. In a combined harrow and roller, composed of two sections provided with detachable hinges or connections, substantially as set forth, the vertically-adjustable rollers, substantially as specified.
3. The combination of the bent levers E, pawls *e'*, and ratchets *e*, with the hanger C, roller C, teeth B, and the supporting-frame, substantially as set forth.

160,164. CIGAR-MOLDS. Napoleon DuBrul, Cincinnati, Ohio. [Filed Oct. 26, 1874.]

Brief.—The halved matrix closes by the descent of the upper section into the lower, guided by a vertical wall on one side, the opposite wall being inclined.



A cigar-mold, the walls on one side of whose matrices are made perpendicular to the plane of parting, and whose matrix-walls on the other side have sufficient draft for the extrication of the compressed bundles, substantially as set forth.

160,165. PROCESSES OF PREPARING GELATINE-PLATES FOR PRINTING. Ernest Edwards, Boston, Mass., assignor to Jas. R. Osgood, same place. [Filed Apr. 27, 1874.]

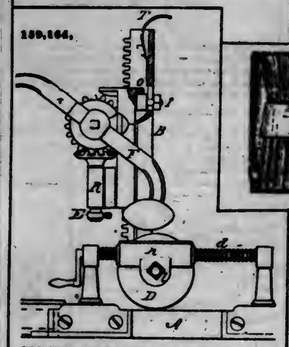
The described process of printing from plates of gelatine, gum, albumen, and other analogous bodies which are absorbent of water, with soluble colors known as dyes, in contradistinction to those known as printing-inks, the parts not required to produce an impression having been previously rendered non-absorbent of water (and hence incapable of printing) either by exposure to light, the application of a coagulating substance, as copaiva varnish or mast, or other suitable means, substantially as specified, and for the purposes set forth.

160,166. BORING-MACHINES. Geo. Dryden, Worcester, Mass. [Filed May 31, 1872.]

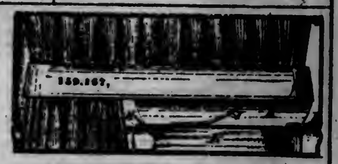
Brief.—The boring-tool is adjusted and held at any desired angle by improved method of adjustment in the conical plates D and the screw-rod *d*, for movement laterally.

1. A boring-machine having its standard B provided with the conical journals C, in combination with the conical boxes D, and bolt *l*, substantially as described.
2. The sleeves *a*, secured to the boxes D, mounted on the rods *b d*, one of which has a screw-thread on it for the purpose of adjusting the operating-mechanism of the bit back and forth, as described.
3. The standard B, provided with the adjustable stop I and spring-catch T, in combination with the sliding frame R, provided with the projection *o*, all constructed to operate as set forth.

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160,167. SHOE-BLACKING CASES. Chas. F. Ellis, Parker City, Pa. [Filed Oct. 1, 1874.]

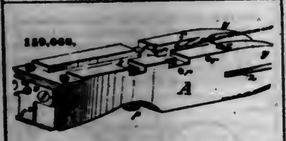
Brief.—The receptacle for the blacking-box is on the inside of the case, and has a hinged cover held in place by a catch. The box is held in its position by three side springs, that press upon the edges of the box. A spring on the hinged cover serves to hold a blacking-brush in place by pressing upon it.

1. The springs D D D, constructed and applied substantially as herein described, to adapt them to receive and hold boxes of various sizes, in combination with the hinged flap F and catch H, as set forth.
2. The combination of the base B, springs D D D, hinged flap F, catch H, back-spring I, and cover C, substantially as and for the purposes set forth.

160,168. TWINE-CUTTERS. Chas. F. Ellis Parker City, Pa. [Filed Nov. 16, 1874.]

Brief.—A tension-spring is arranged within a groove, in which the twine passes, and holds the twine therein with an adjustable pressure. This spring has a thumb-piece for applying pressure, and a lifter for instantaneously removing the spring from contact with the thread. The entire fixture is held in the hand while the twine is passed around the package, and when not in use remains suspended to the twine.

159,068.



1. The attached twine-cutter herein specified, having a solid stock, A, constructed with knife-guards *y y* at one end, and a longitudinal groove in one side or face to constitute the twine-passage, substantially as herein shown and described, for the purpose specified.

2. The combination of the entrance-aperture or eye *v*, the longitudinal groove *w*, and the tension-spring *t*, arranged within the latter, for guiding and holding the twine, in the manner set forth.

3. The tension-spring *t*, having a thumb-piece, *q*, by which to apply additional pressure, in combination with the stock A, having a knife or knives, *z*, in one end, substantially as shown and described.

4. The elevation or projection *s*, in combination with the longitudinal twine-groove *w* tension-spring *t*, and knife or knives *z*, arranged as herein described, for the purpose set forth.

5. The lifter *p*, arranged transversely of the stock, and operating to release the twine at will, in combination with the longitudinal tension-spring *t*, applied externally, as herein specified.

159,069. MACHINES FOR THINNING CROPS. Marcus Bustace, Highfield, Drumcondra, assignor to J. Kennan and Thos. Kennan, Dublin, Ireland. [Filed Dec. 6, 1873.]

Brief.—A series of frames of double-runner form, each carrying a hoe, and designed to be drawn across the rows. The shape of the runners permits the hoes to strike the top of the ridges, and raises them over the furrows.

1. The machine herein described for thinning or spacing root and other crops, consisting of a series of hoe-blades F, arranged and operating in combination with guides A^1 A^2, substantially as hereinbefore set forth.

2. In machines for thinning or spacing root and other crops, the frames A, consisting of the trough-shaped guides A^1 A^2, connecting-bar A^3, and hoe-blade F, coupled together in an adjustable manner by means of the transverse rods B B' and collars H, substantially as herein before described with reference to the accompanying drawings.

1. The spindle G, with piston-head H and nut L, in combination with the rubber cylinder or cylinders I', all combined with the spindle B, rubber cylinder or cylinders O, nut E, and piston-head H, to be constructed and operated together, with and in the bore of a cannon, substantially as represented in the drawings, for the purposes hereinbefore described.

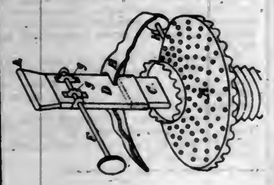
2. The combination of the spindle G, rings I and K, screw-plug M, and rubber cylinder P, to be made and operated together, with and in the rear end of a cannon having an enlarged bore from the shoulder J backward, substantially as and for the purposes herein described.

3. A cannon made with corrugated surface for contact with the rubber plug, or any portion thereof, to aid in holding the same in the bore, substantially as shown in Fig. 3.

4. The combination, arrangement, and adaptation of cylindrical rings, made of vulcanized rubber or other similar material, of any number and length required, divided by cylindrical metallic rings, combined with metal appliances for screwing up and compressing the rubber rings in separate sections, to hold the compound plug thus made and adjusted to the bore in the breech of a cannon from being blown out of the bore when a charge of powder is exploded therein, substantially as herein shown and described.

159,171. WICK-INSERTERS FOR LAMPS. W. H. Fitz Patrick, Boston, assignor of one-half his right to Albt. W. Daniels, Allston, Mass. [Filed Dec. 4, 1874.]

Brief.—To facilitate the insertion of the wick. Has ratchet-wheels like the ordinary wick-tube, and a flaring mouth-piece.



The improved wick-inserter described, the same consisting of the tube D, having the flaring mouth-piece E, and provided with the wheels *g g* and shaft F, substantially as and for the purpose specified.

159,172. DENTAL PLUGGERS. L. Jean Paul Eugene Gaillard, Paris, France. [Filed Jan. 2, 1875.]

Brief.—The filling is crowded down by inserting between the tooth operated upon and the one opposite to the other jaw a plugging-pin inserted in a disk padded upon one side with rubber.

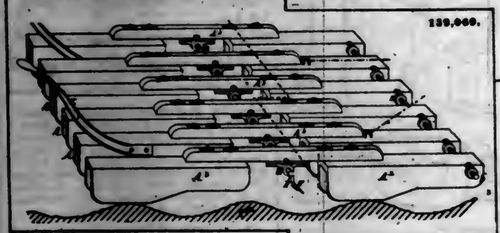


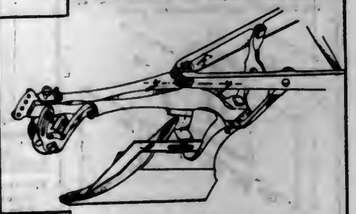
The within-described instrument for plugging teeth, constructed of the handle *a* and the disk *b*, provided with a pad, *d*, and a plugging-pin, *c*, the whole being combined substantially as and for the purpose described.

159,174. PLOWS. Horatio Gale, Albion, Mich. [Filed Dec. 11, 1874.]

Brief.—A pivoted block allowing the handles lateral adjustment, and a serrated and grooved block to adjust and secure the colter on the standard.

159,069.

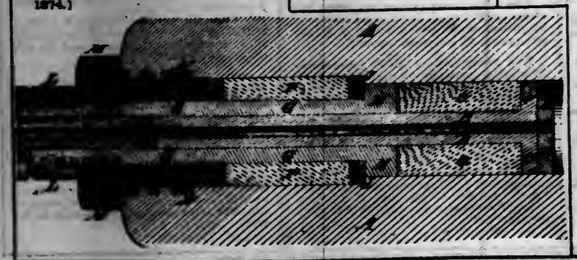




1. The horizontally-recessed and serrated colter-block C, in combination with a serrated plow-standard, substantially as described.

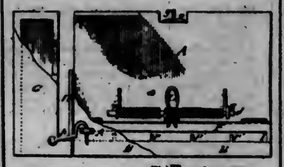
2. The triangular washer E, combined with the standard-shank and handles of a plow, substantially as and for the purpose set forth.

159,170. BREECH-LOADING ORDNANCE. G. M. Felt, New York, N. Y. [Filed June 26, 1874.]

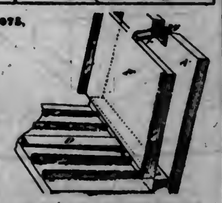


159,175. ANIMAL-TRAPS. Levi F. George, San Francisco, Cal. [Filed July 31, 1874.]

Brief.—Has a removable attachment which fits a rat-hole in floor or side wall, thus leading directly into the trap-passage. The pan-lever is also flush with the top of the corrugations or ribs, making it more inviting for the foot-hold which springs it.



159,073.



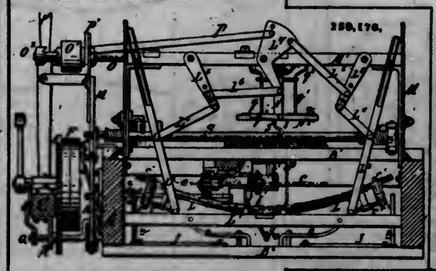
1. The combination of the platform D, ring wire catches *w y*, loop L, flap F, and spring S with the bottom strip, B B, provided with partitions *p p' p''*, substantially as and for the purposes herein set forth and specified.

2. The adjustable box C, provided with bottom and side openings K K, respectively, in combination with the trap, fitted with lid T, as herein described, substantially as and for the purposes herein set forth.

159,176. GRAIN-BINDERS. Jos. M. Groover, Oxford, Mich., assignor of one-fourth his right to Jas. A. Brooks, same place. [Filed Oct. 21, 1874.]

Brief.—A band is made from the cut grain, with which the sheaf is bound.

159,176.



1. The driving-shaft D, pulley F, crank-pin *a*, pitman *b*, cross-head *c*, link *d*, lever *e*, link *f*, block G, ways H, shaft *g*, hooked sector *h*, flanges *i*, racks I I', gears *j j' j''*, shaft *k*, gripping-plate k^1, spring-bail k^2, hook k^3, rail *l*, parting-post l^1, frame *m* m^1, and spring m^2, constructed and combined with the sills A A', table B^1, bottom board, B^2, platform B^3, and adapted to be driven by the mechanism of a reaper for forming a straw band, substantially as described.

2. The combination, with the lever *q*, of the levers J^1 J^2 J^3 J^4 J J, rods *n n*, and guides *o o*, for carrying the ends of the band to the carriers L L, substantially as described.

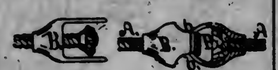
3. The combination of the jointed carriers L L, each provided with a bell-crank, *r*, clamp-plate r^1, and spring r^2, the levers L^1 L^2 L^3 L^4, bell-crank L^5, and rod L^6, with the frame P^1 and lever P^2, for wrapping the band around the bundle, substantially as described.

4. The combination of the shaft O, clutch-pulley O^1, clutch-box O^2, vertical shaft N, gears N^1 N^2, slotted arms N^3, hooks *q*, shafts q^1, studs q^2, and springs q^3, with the pulley F, for twisting the ends of the band, substantially as described.

5. The shaft S, hook S^1, bearings *s s'*, springs *v v'*, segment T, cam *u*, treadle Q', lever R, crooked shaft Q, and pinion R^1, combined with the spur-wheel H and standards M M, for tucking the ends of the band under itself, substantially as described.

159,177. CHECK-ROW CORDS FOR CORN-PLANTERS. George D. Haworth, Decatur, Ill. [Filed June 13, 1874.]

Brief.—Cords for check-row planters are cut in sections, to the ends of which are secured annular pieces of metal made concave with tapering projections. The cord is secured in the concavity (after being passed through) by a knot and a metal strip secured in rear of the knot. The sections are fastened by binding the metal connections together, as shown.



1. The flexible stop B B *b b b b* on a check-row cord, substantially as and for the purpose set forth.

2. The combination, in a check-row planter, of stop B B *b b b b* with swivel D and cord A, as and for the purpose set forth.

3. The combination, in a check-row planter, of stop B B *b b b b*, swivel D, connecting-ring C, and cord A, all constructed to operate in the manner and for the purpose set forth.

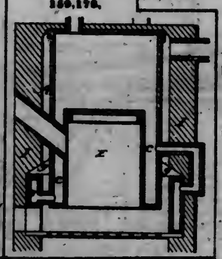
159,178. STEAM-GENERATORS. W. B. Hanton, Kewanee, Ill. [Filed Sept. 7, 1874.]

1. The boiler A and lugs *g*, in combination with the boiler B, forming the space *c*, and furnishing a support for the boiler, substantially as and for the purpose specified.

2. The combination of the single upright boiler A, water jacket or boiler B, and horizontal boiler C, all constructed and operating substantially as and for the purposes specified.

159,178.

159,179.



1. The driving-shaft D, pulley F, crank-pin *a*, pitman *b*, cross-head *c*, link *d*, lever *e*, link *f*, block G, ways H, shaft *g*, hooked sector *h*, flanges *i*, racks I I', gears *j j' j''*, shaft *k*, gripping-plate k^1, spring-bail k^2, hook k^3, rail *l*, parting-post l^1, frame *m* m^1, and spring m^2, constructed and combined with the sills A A', table B^1, bottom board, B^2, platform B^3, and adapted to be driven by the mechanism of a reaper for forming a straw band, substantially as described.

2. The combination, with the lever *q*, of the levers J^1 J^2 J^3 J^4 J J, rods *n n*, and guides *o o*, for carrying the ends of the band to the carriers L L, substantially as described.

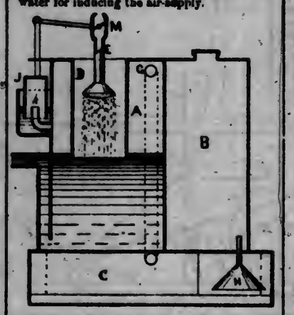
3. The combination of the jointed carriers L L, each provided with a bell-crank, *r*, clamp-plate r^1, and spring r^2, the levers L^1 L^2 L^3 L^4, bell-crank L^5, and rod L^6, with the frame P^1 and lever P^2, for wrapping the band around the bundle, substantially as described.

4. The combination of the shaft O, clutch-pulley O^1, clutch-box O^2, vertical shaft N, gears N^1 N^2, slotted arms N^3, hooks *q*, shafts q^1, studs q^2, and springs q^3, with the pulley F, for twisting the ends of the band, substantially as described.

5. The shaft S, hook S^1, bearings *s s'*, springs *v v'*, segment T, cam *u*, treadle Q', lever R, crooked shaft Q, and pinion R^1, combined with the spur-wheel H and standards M M, for tucking the ends of the band under itself, substantially as described.

159,179. GAS-MACHINES. J. C. Henderson, San Francisco, Cal. [Filed Oct. 13, 1874.]

Brief.—Air is supplied to the carburetor by means of a stream of water from a small pipe placed within a larger pipe, the lower end of which is sealed by water to prevent back flow. The water-seal is kept at a constant height by an overflow-pipe. A float and valve automatically regulate the current of water for inducing the air-supply.



In a gas-machine, the large pipe D and the small interior pipe E, provided in its upper

1. The combination of the tripod B, rack S, and pinion C, threaded standard A, nut E, collars F and H, head-stock G, collar-spring O, locking-device Q P, and holes U U U, spindles J X Y Z, each provided with a pulley actuated by a friction driving-pulley, T, attached to the standard A, and the adjustable pitman K L M, all constructed and arranged as and for the purpose set forth.

159,180. JEWELERS' LATHES. N. W. Holt, Bennington, Vt. [Filed Sept. 29, 1874.]

Brief.—A rotatable head-stock, carrying a number of different tools, is arranged around the upper portion of the post A. The head-stock, when the pulley of the tool desired is brought over the frictional driving-wheel, is locked in position by the pin P. The pressure of the frictional driving-wheel upon the pulleys is regulated by a nut, R, which, when moved upward, raises the head-stock, thus decreasing the pressure, and vice versa.

as shown in Figs. 1, 2, and 3, and operating substantially as described.

2. The threaded standard A, nut E, rotary head-stock G, collar-spring O, collars F and H, radial spindles N X Y Z, and driving-wheel T, attached to the standard A, as shown and described.

3. The within-described means of regulating the degree of friction necessary to operate and bring into adjustment the several spindles attached to the head G, when the same are provided with pulleys of different diameters to obtain different velocities, and consisting of the threaded standard A, nut E, collar H, spring O, and head-stock G, conjointly operating and constructed as shown.

4. The vertically-adjustable standard A, driving-wheel T, and adjustable socket-pitman K L M, combined and operating as described.

159,180.



159,181. MACHINERY FOR FORMING SHOE-TIPS. John H. Hussey, Baltimore, Md., assignor of one-half his right to Adler, Clement & Weil, same place. [Filed Jan. 12, 1875.]

Brief.—The sole, channeled around the toe upon its upper surface, is held between clamps, when the cone or opening device, attached to a vertically-yielding shaft, enters the channel, and turns the lip up against the concave beveled jaw, leaving it in the form required for a toe-tip.



1. The combination of the cone *d* and concave beveled jaw J, for raising and forming tips on soles, substantially as herein set forth.

2. The combination of the shaft *a* with cone *d*, spring *e*, regulating-screw G, and jam-nut E, for the purposes herein set forth.

3. The combination of the clamp I J, plunger A, and spring *i*, as and for the purposes herein set forth.

4. The jaw J, provided with concave bevel-edge, and flange *p*, in combination with the plate or jaw I and lever K, all substantially as and for the purposes herein set forth.

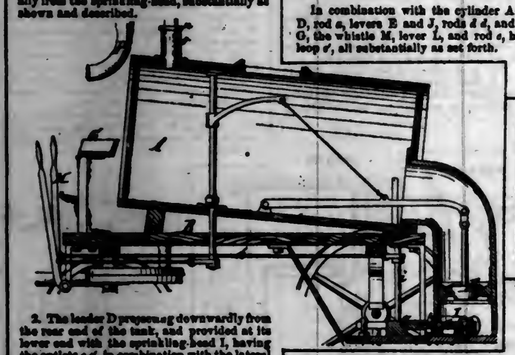
5. The combination, with the shaft *a* and plunger *h*, of the levers E L and treadle-rod *f*, with the adjustable collar *o*, substantially as and for the purposes herein set forth.

6. The combination of the shaft *a*, arm *p*, swivel-joint *q*, lever *w*, and knife *s*, for the purposes herein set forth.

159,182. SPRINKLING-MACHINES. George A. Jerrish, New York, N. Y. (Filed Dec. 17, 1874.)

Brief.—The sprinkling-head is provided with jets in front, and with lateral branches having jets in their front sides and in their ends, and with this sprinkling-head is combined a cut-off valve, for shutting off the water from either of the side branches, so that when the sprinkler is driven close to the sidewalk the discharge of water on that side can be stopped.

1. The combination, in a street-sprinkler, of the tank A, leader D, sprinkling-head I, having the outlets *o o'* and the sprinkling-tubes K K' communicating with and projecting laterally from the sprinkling-head, substantially as shown and described.



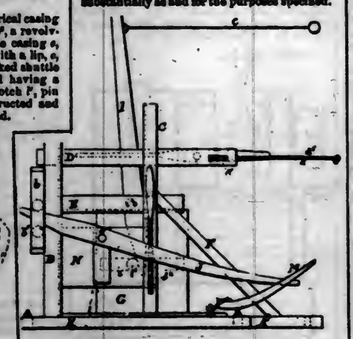
2. The leader D projecting downwardly from the rear end of the tank, and provided at its lower end with the sprinkling-head I, having the outlets *o o'*, in combination with the lateral tubes K K' and the valve L, arranged to move within the sprinkling-head, substantially as described, for the object specified.

3. The combination of a cut-off valve, L, with the sprinkling-head I, side tubes K K', tank A, and lever M, substantially as and for the purpose set forth.

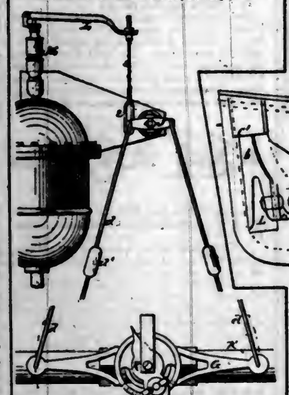
159,183. SEWING-MACHINES. Edwd. Kappmeyer, Hamburg, Germany. (Filed May 18, 1874.)

The combination, with the cylindrical casing *c*, provided with a hinged portion, *d*, a revolving disk, *b*, forming one side of the casing *c*, and a loop-protector, *a*, provided with a lip, *q*, and pin *d*, as described, of the hooked shuttle F, constructed of plates *f' f''*, and having a hook piece, *g*, nose *f*, projection *l*, notch *l'*, pin *f'''*, and turning piece *m*, all constructed and operating substantially as described.





159,184. LOW-WATER INDICATORS FOR STEAM-BOILERS. Orson B. Kendall, Buffalo, N. Y. (Filed Dec. 16, 1874.)



In combination with the cylinder A, float D, rod *a*, levers E and J, rods *d d*, and lever G, the whistle M, lever L, and rod *s*, having loop *s'*, all substantially as set forth.

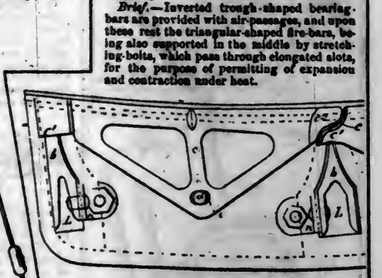
159,185. HOG-TRAPS. Joseph Klar, Shelbyville, Ill. (Filed June 26, 1874.)

Brief.—A pen is formed with a gate converging from the top and from one side, so as to secure the animal by the neck, when it may be thrown upon its side. The platform upon which it falls is then drawn laterally with the animal upon it.

The slides H and G and moving platform L, with their several arms, levers, and ratchets, substantially as and for the purposes specified.

159,186. FURNACE-GRATES. Chas. Knoblauch, Munich, Bavaria. (Filed June 16, 1874.)

Brief.—Inverted trough-shaped bearing-bars are provided with air-passages, and upon these rest the triangular-shaped fire-bars, being also supported in the middle by stretching-bolts, which pass through elongated slots, for the purpose of permitting of expansion and contraction under heat.

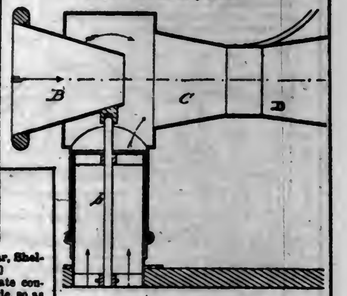


1. The combination, with the side frames *a*, stretching-bolts *d*, and bearing-bars *b*, of a series of fire-bars, *c*, adapted to rest on the bearing-bars *b*, and in the center on the bolt *d*, substantially as described.

2. In a furnace-grate, a series of fire-bars, *c*, of open triangular form, having seatings at their ends *c'*, adapted to rest in seatings *c''* in adjoining bars, and supported at their ends *c'* on bearing-bars *b*, and in the center on stretching-bolts *d*, passing through slots *e*, substantially as described.

159,187. CAR-VENTILATORS. B. Korting, Hanover, Germany. (Filed Dec. 3, 1874.)

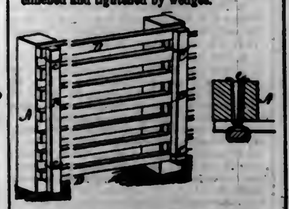
Brief.—Constructed upon the plan of the "Giffard injector," and is applicable to the ordinary uses of chimney-cowls.



The car-ventilator consisting of the flaring mouth or nozzle B, the pipe A, the mixing-nozzle C, and the diverging tube D, constructed and combined substantially as shown.

159,188. FARM-FENCES. Israel L. Landis, Lancaster, Pa. (Filed Dec. 16, 1874.)

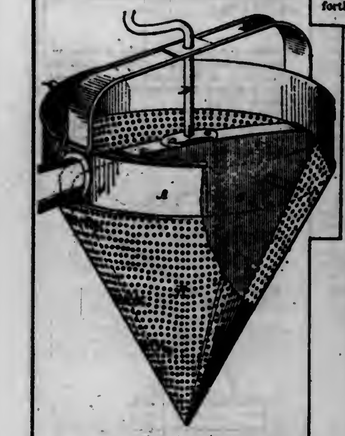
Brief.—The plates which clamp the ends of the overlapping loose rails are secured in position by staples, which encircle said plates, and, after passing through the fixed parts, are clinched and tightened by wedges.



The combination of the wires *a a*, constructed as described, and pins *c c*, with the perforated post A, plates B B, and rails D, all substantially as set forth.

159,189. CHEESE-MILLS. Jacob F. Landis, Harrisburg, Pa. (Filed Dec. 19, 1874.)

Brief.—An inverted hollow cone, perforated; a triangular blade revolving loosely within it, pendent from a shaft centered in a cross-head above, and operated by a crank; a handle at right angle to the top rim of the cone.



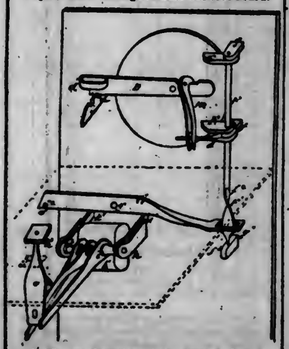
1. In a cheese-mill, a conical perforated reservoir containing a rotary removable agitator or grinder, substantially as described.

2. A cheese-mill consisting of a conical perforated reservoir, removable agitator, lugs L, and handle H, substantially as described.

3. A perforated conical cheese-mill, provided with a graduated scale to indicate the amount of material granulated, substantially as described.

159,190. DEVICES FOR OPENING AND CLOSING FURNACE-DOORS. George Lees, Philadelphia, Pa. (Filed Dec. 5, 1874.)

Brief.—Furnace-doors are opened and closed by means of a treadle, connected by levers to a spiral shaft arranged under the foot-board.



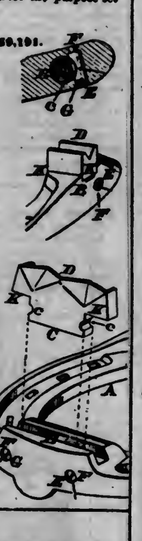
1. The combination of the furnace-door C, latch D, pintle-post F, having the screw or twist F', lever G, arm *d*, and dog *m*, substantially as shown and described.

2. The combination, with lever G, of the arms H, I, and K, and treadle A', constructed and operating in conjunction with the tripper L and arms *i* and *k*, substantially as shown and described.

3. The pintle-post F, having a twist or screw, F', and a flattened part, *f'* or *f''*, for preventing the accidental rotation of said post when the furnace-door is opened or closed, substantially as shown and described.

159,191. HORSESHOES. Robert Lee, Cincinnati, Ohio. (Filed Dec. 19, 1874.)

The sunken and riveted rotatable plug F, having nicked heads G and flattened depressions *f*, in combination with a horseshoe, A, having sockets B, and calks D, having coved shanks C *c*, as and for the purpose set forth.



159,192. HYPODERMIC SYRINGES. J. Leiter, Vienna, Austria. (Filed Jan. 12, 1875.)

Brief.—A spring-hammer running in a guide-tube forces the piston of the syringe down, and also forces the body of the syringe forward, so that the hollow acupuncture-needle enters the flesh. A nut adjusts length of piston to determine the quantity of fluid to be injected.

1. The combination of a regulating-sleeve, *f*, with a syringe, *c*, provided with a lancet-shaped spout, *g*, substantially as described.

2. The regulating-screw *m*, in combination with the syringe *c*, tube *d*, and regulating-sleeve *f*, substantially as set forth.

3. The combination of a head or hammer, *e*, and trigger *k* with a syringe, *c*, and guide-tube *d*, substantially as described.

159,193. CROQUET-MALLETS. T. H. Logan, U. S. A. (Filed Sept. 10, 1874.)

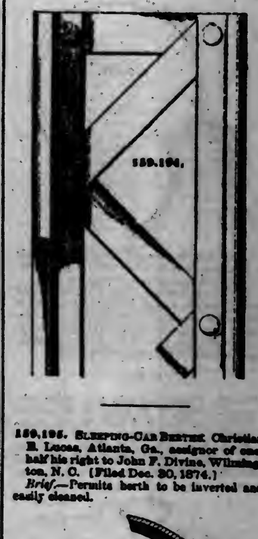
Brief.—The head is of metal, in sections, and adapted to receive detachable faces of wood, leather, rubber, &c., and when screwed together firmly secures the handle.



A croquet-mallet stock made in two sections, O O, having recesses to receive handle and elastic heads, and held by detachable clamp-screws, as shown and described.

159,194. METALLIC POSTS OR GIRDERS FOR TRUSS-BRIDGES. Francis O. Lowthorp, Chambersburg, N. J. (Filed Dec. 21, 1874.)

A post or compression member composed of the within-described angle-bars, combined with connecting bars or plates *a*, as specified.



159,195. SLEEPING-CAR BERTHS. Christian B. Lucas, Atlanta, Ga., assignor of one-half his right to John F. Divine, Wilmington, N. C. (Filed Dec. 30, 1874.)

Brief.—Permits berth to be inverted and easily cleaned.

1. A sleeping-car berth, provided on its rear side with eyes *g*, in combination with spring or snap hooks J attached to the side of the car, substantially as and for the purpose set forth.

2. In a sleeping-car, a berth detachably connected at its rear side to the car, and supported at its front side, substantially as and for the purpose set forth.

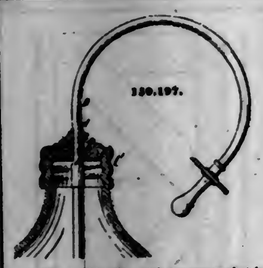
159,196. WASH-BOILERS. S. M. Marsden, Wilkesbarre, Pa. (Filed Mar. 20, 1874.)

Brief.—The water is introduced and filtered above the clothes. A capped tube communicates with the lower chamber for the introduction of soap.

The water-chamber B, steam-chamber B', movable bottom A'', tube F'', in combination with valve B'', as constructed, substantially as and for the purpose set forth.

159,197. NURSING-BOTTLES. J. L. Mason, New Brunswick, N. J. (Filed May 1, 1872.)

Brief.—The stopper is of glass, held in place by a metallic screw-ring.



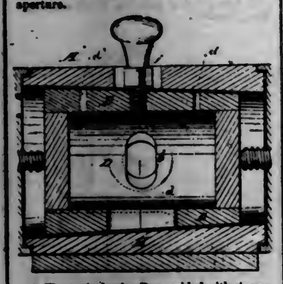
No. 159,197.

1. The combination, with the nursery-bottle A, of the stopper B, constructed of glass, substantially as and for the purpose set forth.

2. The combination, with a threaded-neck nursery-bottle, A, and metal screw-cap C, of the stopper B, constructed of glass, and having an opening, *c*, for the pipe D, and a flange overlapping the top of the bottle, substantially as and for the purpose set forth.

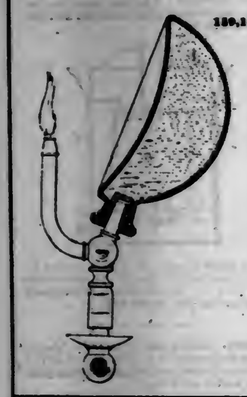
159,198. STEAM-VALVES. Geo. McNaughton, Brooklyn, N. Y., assignor of one-half his right to Gustav H. Roth, Boston, Mass. [Filed Dec. 12, 1874.]

Brief.—Exhaust steam passes through ports in its lower surface to the large end of the valve-chest, from which it escapes through an aperture.



1. The conical valve D, provided with steam-inlet *b*, outlet *d*, balancing-openings *b' d'*, and exhaust-grooves *i i*, all constructed and arranged substantially as and for the purposes herein set forth.

2. The conical valve D, with steam-inlet *b*, outlet *d*, openings *b' d'*, and grooves *i i*, in combination with cylinder A B and screws and seats *c' d'*, all as and for the purpose herein set forth.



No. 159,199.

159,199. LENS ATTACHMENTS FOR GAS-BURNERS. Montgomery C. Meigs, Washington, D. C. [Filed Mar. 11, 1873.]

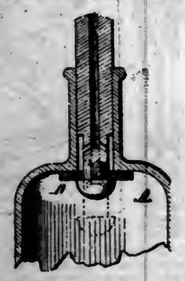
Brief.—A bracket adapted to fit upon a common burner, with a lens and burner thereon, adjustable independently of each other horizontally or vertically.

1. The combination of a supplementary bracket, adapted to be mounted on an ordinary gas-burner, a hollow glass lens mounted on the supplementary bracket, and adapted to contain transparent liquid, and a burner also mounted on said bracket, these members being constructed and operating substantially as set forth.

2. The supplementary bracket, provided with a socket adapted to fit on an ordinary gas-burner, a support for a dioptric lens, and a burner adjustable both vertically and horizontally, substantially as and for the purpose set forth.

159,200. STOPPERS AND DISCHARGES FOR BOTTLES. Frederick Baron Micheli, Truro, England. [Filed Dec. 17, 1874.]

Brief.—The cork or stopple, which is provided with a discharge-opening, is kept in place by the pressure of the gas from the liquid within the bottle upon a stationary gasket.



In combination with the cork or stopper, having the discharge, as herein described, the stationary gasket D, through which the cork passes, whereby the gas from the contained liquid of the bottle, by its upward pressure upon said stationary gasket D and discharge device, serves to close and keep closed the vessel or bottle A, substantially as and for the purpose herein described.

159,201. PICTURE-EXHIBITORS. C. S. Mills, Sterling, assignor of one-half his right to L. B. Starkweather, Chicago, Ill. [Filed May 20, 1874.]

Brief.—The pictures are placed on the inner surface of the cylinders, being slid into grooved ribs, and are viewed through apertures covered with glass.

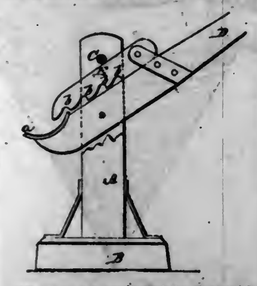


1. The cylindrical tubes A A A, provided with internal longitudinal grooved ribs, caps B, gears C, and cords D, combined and arranged substantially as described and shown, and for the purpose set forth.

2. The cylindrical tubes A A A, grooved ribs, caps B, gears C, cords D, supporting-plates *e e*, and operating-screw *b*, all combined and arranged, substantially as and for the purpose set forth.

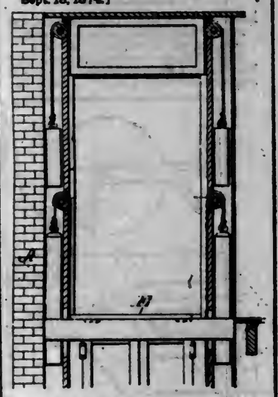
159,202. LIFTING-JACKS. Wm. F. Morrow, Newville, Pa., assignor of two-thirds his right to W. A. Middleton, same place, and Jas. M. Mance, Washington, D. C. [Filed Jan. 9, 1875.]

Brief.—The notched bar is hinged or pivoted to the lever, so that it will fall upon the lever and under the bar, thereby dispensing with an assistant to release the rack-bar.



The combination, with the bifurcated standard A, having bolt or bar C, of the pivoted lever D and the notched bar E, hinged or pivoted to the lever so that it will fall upon the lever and under the bar C, substantially as set forth.

159,203. MOVABLE FRONTS FOR BUILDINGS. John Murphy, Fond du Lac, Wis. [Filed Sept. 18, 1874.]



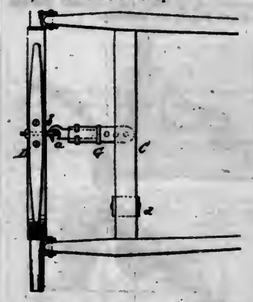
1. A door or window frame having its door or sash mounted therein as usual, arranged in vertical guides, substantially as shown and described, so that it can slide downward and carry its door or sash below the floor, as set forth.

2. A store-front consisting of upright pillars and intermediate sliding frames, containing the doors and windows, and arranged to slide downward below the floor, in order to leave the front open and unobstructed save by the pillars.

3. In combination with the sliding frame C, having the doors mounted therein, the foot-plate E, arranged to fit within the frame below the doors, as shown.

159,204. SHAFT-SUPPORTS. Jas. Nellis, Ypsilanti, Mich., assignor to himself and Charles McIntosh, same place. [Filed Dec. 8, 1874.]

Brief.—A strap secured to the cross-piece of the shaft hooks onto a staple in the spring-bar, and holds the shafts up.

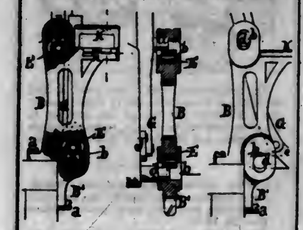


1. The combination, with the spring-bar D and cross-bar C, of the strap G, hook *a*, and eye *b*, for the purposes set forth.

2. The loop *d*, attached to the cross-bar C, in combination with the strap G and hook *a*, for the purposes set forth.

159,205. FOLDING CHAIRS. P. W. Nolan, New York, N. Y. [Filed June 10, 1874.]

Brief.—Cushions of elastic material are combined with the bearings of the chair, so as to reduce the noise in folding or unfolding. Brackets for supporting the seat and back of the chair are provided with angular or stepped base-pieces, fitting upon a corresponding support, so as to effect a saving in material. An hinge-joint is combined with the side straps, for connecting the seat and back, so as to exclude the play of said seat and back in the act of folding and unfolding. The leaves of the folding arms are hinged to the arm portion of the brackets, and are subjected to the action of a spring to keep them in a folded condition.



1. The supporting-brackets B, having recesses *h*, terminating in oval sockets *f*, in combination with the elastic cushions E, studs *d*, seat H, and back I, all constructed substantially as herein shown and described.

2. The hinge-joints J J, in combination with the side straps G G, for connecting the seat and back, substantially as hereinbefore set forth.

3. The seat and back supporting brackets B, formed with angular bases, as described, for connecting with a supporting-base, substantially as described.

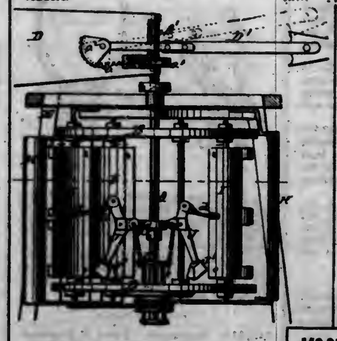
4. The sections K K, hinged at *g* to the arm portions of the bracket B, in combination with a spring for retaining the sections in folded condition, substantially as set forth.

159,206. COVERINGS FOR BOILERS, PIPES, &c. Walter O'Hare, Fall River, Mass. [Filed Dec. 5, 1874.]

A non-conducting covering for boilers and steam-pipe, consisting of a layer of plastic compound—of ashes and silicate of soda—spread upon canvas or other suitable fabric, which has previously been treated with silicate of soda or water-glass, substantially as herein set forth.

159,207. WINDMILLS. Warren D. Parson, Denver, Colo. [Filed Aug. 10, 1874.]

Brief.—The fenders or guards prevent the wind from striking the wheel in such a direction as to run it backward, and they also convey wind into the wheel. The vane and weighted lever, with their connections, cause the fender to recede in heavy winds, and the weighted lever brings them back in place after the wind has subsided. The shafts are independently connected to the frame, but in combination with the vane, lever, weight, and fenders.



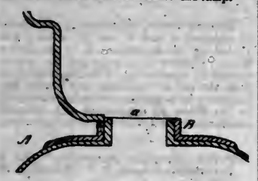
1. The fenders or guards H H', constructed as described, and operated by means of the lever D^1, substantially as and for the purposes herein set forth.

2. The combination of the vane D, grooved segments *d' d'*, chain *a*, and lever D^1, all constructed substantially as and for the purposes herein set forth.

3. The shafts A A', independently connected to the frame, in combination with vane D, lever D^1, weight D^2, and fenders or guards, substantially as and for the purpose specified.

159,208. LAMP-CAPS AND SHADE-HOLDERS. William R. Park, Philadelphia, Pa. [Filed Dec. 19, 1874.]

Brief.—The plate rests upon the bowl, while the collar embraces the neck of the lamp.



As a new article of manufacture, the cast-metal lamp-cap consisting of the plate A, adapted to rest upon the bowl and the collar B, to embrace the neck of the lamp, substantially as shown and described.

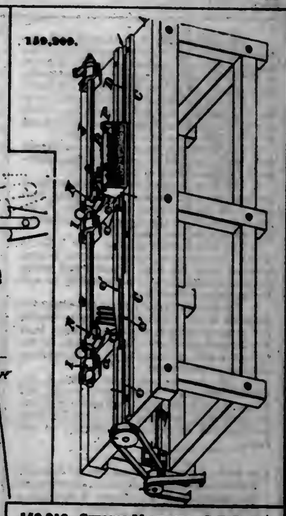
159,209. MACHINES FOR COMBING DRY BRISTLES. W. F. Parks and L. F. Lannay, Cincinnati, Ohio. [Filed Sept. 22, 1874.]

Brief.—The comb has several arms, each of different lengths, and are T-shaped at their ends, so that they comb the bristles in both their upward and downward movements as they are oscillated vertically through the same. The bristles are held and carried horizontally forward and backward in front of the comb in a clamp.

1. The double-acting comb having the series of double-pointed blades O of unequal lengths, substantially as and for the purpose set forth.

2. The combination of comb N O, housing P Q, carrying the armed and padded clamp-jaws S S', and eccentric R.

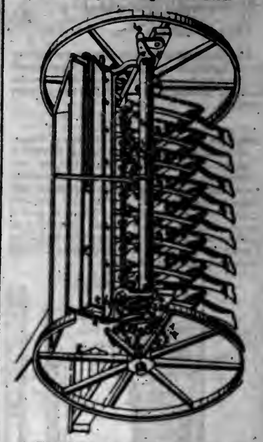
3. The described combination of double-acting comb N O, traveling clamps P Q, flanged and slotted way C *c c'*, and screw D.



No. 159,209.

159,210. SEEDING-MACHINES. C. E. Fabric, Springfield, Ohio. [Filed Oct. 17, 1874.]

Brief.—Eccentric lifting-roller lever having trip-foot, latch, and pawl, and provided with projection at one end, working in curved arm, for throwing seeding devices out of gear simultaneously with adjustment of drill-teeth. Forked lever for operating slide of adjustable grass-seed hopper. Pivoted bars for adjusting drag-bars, having plates and hooks for holding them in position. Mitrers made staple form for agitating seed. Slide having a series of holes for graduating flow of seed. Pivoted plates to seed-channels of distributing-wheels for graduating flow of seed.



1. The lifting-roller lever F, provided with the tripper-foot, in combination with the latch or pawl *d'*, arranged and operating substantially as described.

2. The eccentric lifting-roller arm *e*, in combination with the pivoted cam-hook *g*, for throwing the distributer-wheel shaft into and out of action, substantially as and for the purpose set forth.

3. The pivoted cam-hook *g* and link h^1, in combination with the lever h^2, to which the intermediate transmitting gear-wheel H^1 is secured, arranged and operating substantially as described.

4. The lifting-roller E, connected with the eccentric-arms *e e'*, in advance of their pivotal center, whereby a backward thrust is given to the lifting-lever in raising the drill-teeth, substantially as and for the purpose set forth.

5. The forked lever O, in combination with the changeable grass-seed hopper, for actuating the grass-seed-agitator slide either in front or rear of the grain-box, as described.

6. The stirrers *r*, made in staple or stirrup form, and combined in pairs with the reciprocating agitator-slide, as described.

7. The slide S, provided with the series of perforations *s* for discharging the grass-seed, and with the indicator-perforations *s'*, arranged outside of the hopper, in the manner and for the purpose described.

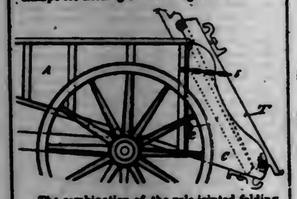
8. The eccentrically-pivoted bars L *L'*, to which the drag-bars D are connected, in combination with the hook-braces *l* and perforated retaining-plate *l'*, substantially as and for the purpose described.

9. The pivoted plates I, arranged within the channels of the vertical distributing-wheels, and made adjustable toward and away from the flanged periphery of said wheels, for varying the size and capacity of the measuring-channels, as described.

10. The several adjusting-plates I, arranged within the measuring-channels, and connected with the single rock-shaft by means of crank-arms, as described, whereby their simultaneous adjustment is effected, as set forth.

150,211. DUMPING-WAGONS. William F. Patton and Chas. D. Walters, Harrisburg, Pa., assignors to Sby Byers & Son, same place. [Filed Dec. 26, 1874.]

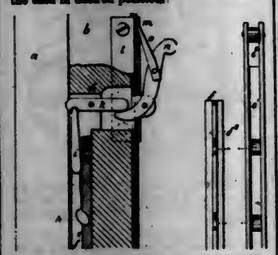
Brief.—A long tapering rule-jointed folding chute attached to a wagon, and provided with clamps for holding sections together.



The combination of the rule-jointed folding chute T with the locking-clamp *c*, fixed apron C, swinging doors *e e*, and inclined-bottom cart-body A, substantially as and for the purpose set forth.

150,212. HARE-HOLDERS. Henry C. Petty, Williamsburg, Pa. [Filed Dec. 2, 1874.]

Brief.—A friction or pressure bar, let vertically into a groove of the sash, is actuated by suitable connecting-levers, pitman, and cams, forcing it with the desired pressure against the window-frame. There is also a supplementary locking device, consisting of pawl-and-ratchet attachment, which locks the handle of the projecting lever, thus holding the sash in desired position.



1. The combination of the lever a with the presser-bar *f* by means of the pivoted lever *k* and pitman *i*, substantially as and for the purpose shown.

2. The sash-holder consisting of the presser-bar *f*, cams A, pitman *i*, levers *k* and a, pawl *o*, and ratchet *m*, when arranged to operate substantially as and for the purpose specified.

150,213. EGG-HOLDERS. Ansell W. Porter, Syracuse, N. Y. [Filed Jan. 13, 1875.]

Brief.—The removable egg-holder is provided with spring-arms extending both ways, the upper series for grasping the egg, and the lower series for securing the holder within the hollow shank of the standard, while an elastic ping serves to wedge the lower arm within the shank, and also forms a cushion for the egg to rest on.



1. The clamp or holder consisting of the part B, arms C C, with jaws *a a*, and arms D D, and the ring *d*, surrounding and fastened to the part B, substantially as and for the purpose herein set forth.

2. The combination of the hollow stand A, clamp or holder B C D, with exterior ring *d*, and the elastic ping G, all substantially as and for the purposes herein set forth.

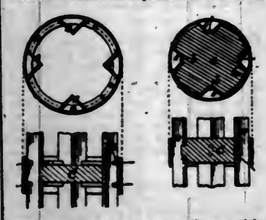
150,214. BRACELETS. Edwd. F. Prentrey Providence, R. I. [Filed July 30, 1874.]



The combination, with a bracelet constructed of segments A and B, and the slides C and D, having the depressions K of the hollow frame F, having at its inner end the spring-catches H, constructed of tongues bent over from the end of the frame, and having projections J for engagement with depressions K in the slides, all constructed and arranged substantially as herein shown and described.

150,215. METALLIC TELEGRAPH-POLES. R. D. Radcliffe, Albany, N. Y. [Filed Jan. 19, 1875.]

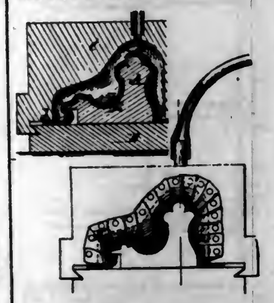
Brief.—The angle or T bars, cores, and the exterior bands are interlocked without riveting or bolting, so that they can have no longitudinal movement independent of each other.



A metallic skeleton post or pole, comprising the combination of central core-pieces, external bands, and intermediate longitudinal angle or T bars, interlocked or positively connected with the same, by the means described, at required points in the length of the post or pole to prevent independent longitudinal movement of the bars, as set forth.

150,216. MACHINES FOR POLISHING WOOD. Silas G. Randall, Providence, R. I., assignor to Amelia A. Randall, same place. [Filed July 9, 1874.]

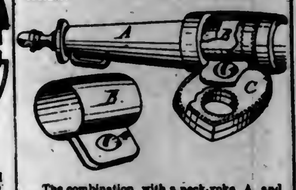
Brief.—The block is lined with an air-cushion, so that, under pressure from the tube G, the polishing material can be forced into the recesses, &c., of the molding.



The polishing block, form, or base, in combination with its attached lining, and air, under pressure, or its equivalent, applied to said lining, essentially as and for the purpose herein set forth.

150,217. NECK-YOKES. Jerome B. Relyea, Hicksville, Ohio. [Filed Nov. 7, 1874.]

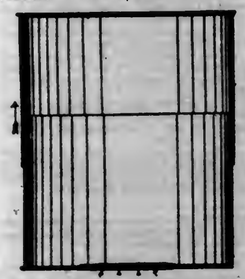
Brief.—A metallic clip next to the wood covered with leather prevents the wear of the leather.



The combination, with a neck-yoke, A, and leather C, of the metallic clip B, placed around the yoke under said leather, and fastened to the same by a bolt or rivet, *e*, passing through the leather and the ears of said clip, as set forth.

150,218. MUSICAL MERCHANDISE-BOXES. John Eastein, Philadelphia, Pa., assignor to Eastein Brothers, same place. [Filed Nov. 10, 1874.]

Brief.—For paper collars and other merchandise.



A collar or other box, provided with a closely-fitting cover, made to slide telescopically therewith, and having a reed or whistle arranged to be sounded by opening or closing the box, substantially as and for the purpose specified.

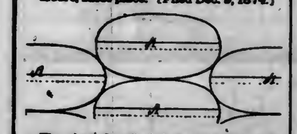
150,219. TIRE-TIGHTENERS. H. B. Robbins, Tekonsha, Mich. [Filed Dec. 26, 1874.]

Brief.—To tighten the tire by expanding the felly.



A metallic bolt, composed of the sides A B, stationary end C, and sliding end D, in combination with the adjustable wedge F, tap-bolt *g*, provided with the rim *i* and plate *h*, to operate in the manner and for the purpose herein described and set forth.

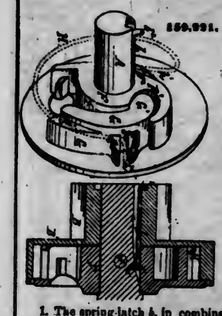
150,220. MANUFACTURE OF COUNTER-STIFFENINGS FOR BOOTS AND SHOES. H. Rogers, Sudbury, Mass., assignor to himself and S. Moore, same place. [Filed Dec. 9, 1874.]



The above-described improved method of forming counters or heel-stiffeners, it consisting in first separating the sheet of stock into ellipses or duplex forms A, and next splitting each of them obliquely through its longer axis or medial line, all substantially as shown and explained.

150,221. MEANS FOR CONNECTING GEAR-WHEELS WITH THEIR SHAFTS FOR USE IN HARVESTING-MACHINES, &c. J. M. Rosebrook, Hoosick Falls, N. Y., assignor to Walter A. Wood Mowing and Reaping Machine Company, same place. [Filed Nov. 26, 1874.]

Brief.—The cylindrical ratchet-case, having a pinion cast or otherwise secured thereto, is retained loosely on its shaft, so as to leave it free to rotate relatively thereto by means of a spring-latch; and it is also provided with a bent friction-rod or spring, which holds the pawl engaged with the ratchet in the forward movement, and disengaged and away from the ratchet, while at the same time obviating clicking due to the backing of the machine.

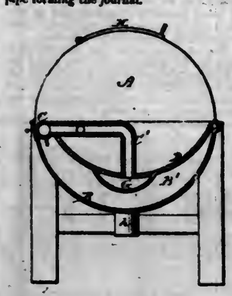


1. The spring-latch *b*, in combination with the shaft and pinion for retaining the latter in position on the shaft, as described.

2. The pawl G, connected with its shaft A by means of the recessed hub F, and provided with the spurs *g*, in combination with the friction-rod H and ratchet-rim B', rigidly connected with the pinion B, all constructed, arranged, and operating as described.

150,222. FEATHER-RENOVATORS. Charles Russell, Appleton, Wis., and Charles W. Seamans, Aurora, Ill.; said Russell assignor to John L. Hopkins, Oswego, Ill. [Filed Dec. 16, 1874.]

Brief.—Two semicircular parts hinged together and pivoted upon a frame, so that the lower part may be let fall, the main steam-pipe forming the journal.



1. The combination of the two semicircular parts A B, hinged together, the curved and perforated false bottom D, the trough C, chamber B', pipe *b*, and the pipe *f*, leading into pipe *b*, all substantially as set forth.

2. The combination, with the frame E, of the two semi-cylindrical parts A B, hinged together, the perforated steam-pipe C at the back edge of the part B, and forming journals for the cylinder, and the pins *b b* at the front of the cylinder *a e*, substantially as set forth.

3. The combination of the steam-pipe C, with stop-cock *d*, and forming journals for the cylinder-pipe C', with stop-cock *d'*, bottom D, with perforations *a a*, trough C, cylinder A B, and outlet-pipes *f b*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

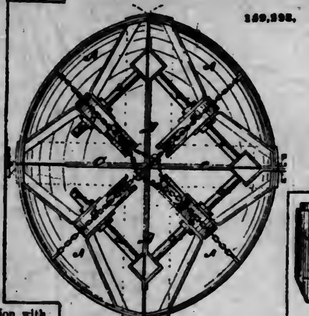
150,223. DREDGING-BUCKETS. C. J. Sands, Brooklyn, N. Y. [Filed Aug. 11, 1874.]

Brief.—A dredging-bucket constructed in four sections, supported by a frame-work consisting of cross-bars combined with brace-rods, tie-rods, and grooved blocks, over which the chains pass.

A dredging-bucket, substantially such as herein described, constructed with cross-bars C and D, combined with brace-bars *c*, blocks *b*, and tie-rods *a*, as shown, for the purpose of sustaining the sections.

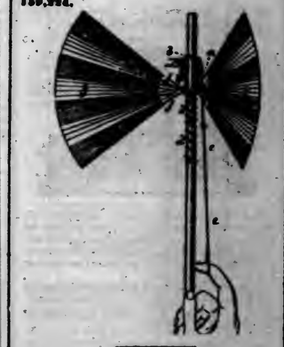
150,221.

150,223.



150,224. FANS. Ernst Schmidt, New York, N. Y. [Filed Nov. 17, 1874.]

The combination of the rod A, carrying the spring *d*, with the collar B, pin *c*, groove *b*, and with the string *e* and fan-blades *a*, all combined and arranged as described, so that the alternate motion of the string and spring will impart rectilinear reciprocating motion to the sleeve and fan, the groove *b* causing the sleeve to turn during said motion, as set forth.



150,225. COOKING-STOVES. M. D. Seward, Normal, Ill. [Filed Dec. 10, 1874.]

Brief.—The reservoir may be removed, and its chamber used as a warming-closet or oven.

1. The combination of a removable water-reservoir, *l*, arranged outside of and at the rear of the stove within an inclosing-box, *f*, and a removable bottom, *n*, arranged to open and close the communication of said box *f* with a cross-heating flue, *c*, substantially as herein set forth.

2. The combination, with the removable water-reservoir *l* and the box-chamber *f*, of a removable bottom plate, *n*, and the central cross and sheet flues *c d* of said box-chamber, substantially as herein set forth.

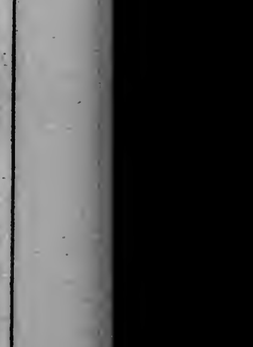
3. The combination, in a cooking-stove, of the removable water-reservoir *l*, the box-chamber *f*, its removable bottom plate, *n*, the sheet and cross-flues *d c*, and the removable open-top flanged frame *o* for said reservoir, substantially as and for the purpose herein set forth.

4. The combination, in a cook-stove having a removable reservoir inclosed within a box-chamber, and a removable open-top flanged frame, *o*, for said reservoir, as described, of a removable cover or reservoir-top, *s*, substantially as herein set forth.

5. The combination, with the heating and draft-flues *c d e*, and the damper *k*, and the removable bottom *n* of a cook-stove, of a convertible receptacle, *f*, for the water-reservoir, and a cooking and warming oven, substantially as herein set forth.

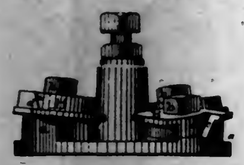
6. The combination, in a cook-stove, of the reservoir-inclosing box-chamber *f*, having a removable bottom plate, *n*, the sheet diving-flue *d* in front of said box-chamber, the flue-strips *i i* below said sheet-flue, and the rolling damper *k*, for the central ascending flue, *k*, with the bottom central cross-flue, *c*, of said box-chamber, substantially as and for the purpose set forth.

7. The combination, with the divided laterally-sliding feed-doors *v*, of the front-projecting plate, *x*, provided with an upper front bearing, *w*, for said doors, substantially as and to obtain the advantages stated.



8. The combination, with the divided laterally-sliding feed-doors *v*, provided with the guide-slips *z z* at their outer edges, of inner and outer bearings *w y* for said doors, arranged in front of and near the top of the stove, whereby the outer holding guide-bearings are carried away from the fire chamber, for the purpose herein set forth.

159,226. CUTTER-HEADS. Geo. J. Shimer, Milton, Pa. [Filed Oct. 24, 1874.]

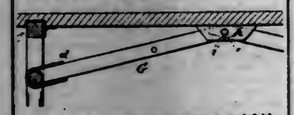


1. A revolving cutter-head, A, provided with hubs or seats *a*, having their faces oblique to the plane of rotation, and alternately inclined inward and outward, so as to cause the bits secured against said faces to cut to the right or left hand, as set forth.

2. A circular cutter or bit, B, constructed as set forth, combined with a revolving cutter-head, A, provided with seats *a*, having inclined faces, as described.

159,227. FOLDING TABLES. Homan R. Sinclair, Chicago, Ill. [Filed Oct. 21, 1874.]

Brief.—The legs are held open by hinged braces engaging with a cleat upon the table. When folded they are secured in a similar manner, the pin passing through perforations in the middle of the brace.

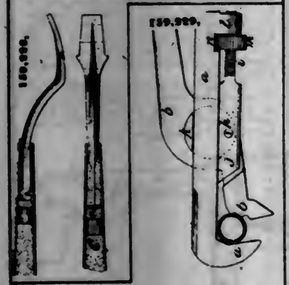


The combination, with the top A and folding legs E, of the rounds D, the braces G, connected to the rounds by strap-hinges *d*, and provided with perforations *x*, the perforated cleats k, attached to the under side of the table-top, and pin *i*, all substantially as and for the purposes herein set forth.

159,228. STOVE-LID LIFTERS. G. Sprague, Lockport, N. Y. [Filed Nov. 21, 1874.]

Brief.—Block or disk of cork interposed between the end of the lifter and the head of the handle.

The combination, with a stove-cover lifter having a handle filled with a plastic non-conducting material, in which the tang of the lifter is held, of the block or disk of cork interposed between the end of the lever and the head of the handle, substantially as and for the purpose herein set forth.



159,229.

159,230. PIPE-WRENCHES. H. C. Stouffer, Canfield, Ohio, assignor of one-half his right to John Childs, Smith's Ferry, Pa. [Filed Aug. 31, 1874.]

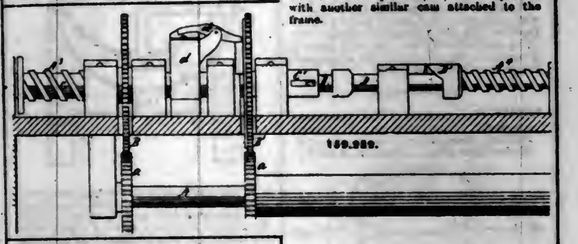
Brief.—The adjustable jaw swings on a plug of a diameter larger than the width of the slotted bar in which it slides; the projecting edge on the front of the bar being attached to an adjusting device, and the edge projecting from the rear of the bar being furnished with side lugs, to bear upon the bar and clamping thereon, to take principally the strain in the operation of the tool.

1. The pipe-tongs having the toothed jaw *b*, adjustable by means of a ping bearing, *f*, secured to the forked block *j*, the latter being provided with an adjusting device, and the plug being guided in its adjustment by projections *k k*, formed upon it, and by the block *j*, substantially as shown and described.

2. The combination of the outside plug-projections *k k* with the jaw-bar *a* and the movable jaw *b*, whereby the gripe of the latter is supported by a clamping action of said projections upon the back of the said jaw-bar *a*, substantially as set forth.

159,231. MACHINES FOR FORMING SPIRAL WASHERS. Samuel Truthewey, Pittsburg, Pa., assignor to Metcalf, Paul & Co., same place. [Filed Dec. 8, 1874.]

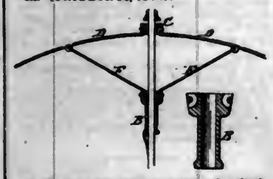
Brief.—Two hollow shafts, C C', with spirally-cut extremities, that meet within an opening, equal to them in diameter, made in an upright or block, grasp the end of the bar thrust through a lateral hole in the wall of said opening, by virtue of a spring, A', coiled around the one, and a spring, A', coiled around a mandrel, D, which latter passes through the one shaft into the other, and is withdrawable from the latter by a cam, D', that co-operates with another similar cam attached to the frame.



159,232.

The combination of the hollow griping-dies having inclined faces, the reciprocating central mandrel, and suitable mechanism for preventing the blank from revolving with the die, substantially as and for the purpose specified.

159,233. UMBRELLAS. Wm. Tetley, Pana, Ill. [Filed Dec. 14, 1874.]



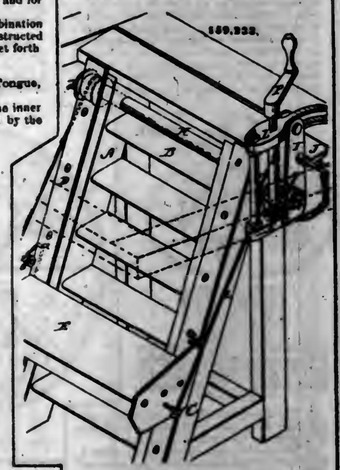
1. The runner and crown-piece of umbrellas or parasols, having the rim which receives the ends of the ribs and stretchers made solid, and provided with curved grooves and stationary pins or lugs, substantially as and for the purpose set forth.

2. The hooked braces F F, in combination with the slide B and ribs D D, all constructed substantially as and for the purpose set forth

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159,234. CELLAR-DOORS OR ELEVATORS. Chas. D. Walters Harrisburg, Pa., assignor to W. A. Middleton and H. L. Bowers, same place. [Filed Jan. 9, 1875.]

Brief.—A platform is slid up cellar-steps by a rope at each side, wound around drums on a shaft at top, operated by worm-gearing in a frame adapted, when not in use, to swing out of the way, on a pin being withdrawn.



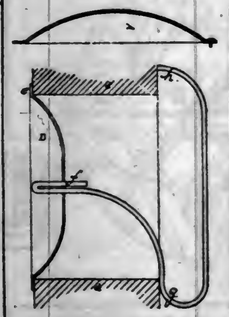
159,235.

1. The crank-shaft I with worm *i* arranged in the frame L L', and said frame adjustably secured to the frame I, in combination with the shaft H and pinion *f*, substantially as and for the purposes herein set forth.

2. The combination, with the stairs, of the platform E, chains or ropes *c*, drums *d d*, shaft H, pinion *f*, pivoted frame I, shaft L, worm *i*, casing J, and pin *h*, all constructed substantially as and for the purposes set forth.

159,236. STOVE-PIPE-COVERS. Henry Tongue, Chicago, Ill. [Filed Dec. 5, 1874.]

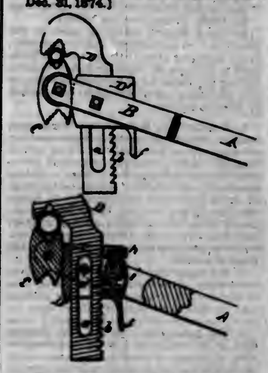
Brief.—The split wedge clamps the inner section of the cover, and is concealed by the outer section.



1. The combination, with a cover or stopper of a stove-pipe opening, of a retaining-spring arm, adjustably connected to the cover or stopper, whereby it may be adjusted to compensate for any loss of elasticity, substantially as described.

2. The combination of the inner and outer pivoted sections, A B, the retaining-spring arm *c*, and the wedge *b*, substantially as and for the purpose described.

159,224. PIPE-WRENCHES. Jas. B. Westwick, Galena, Ill., assignor of one-half his right to R. J. Edwards, same place. [Filed Dec. 31, 1874.]

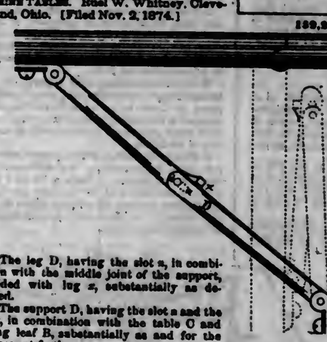


1. The reversible jaw C, pivoted between the arms B B of the handle A, and operating in combination with the sliding jaw D, substantially as and for the purposes herein set forth.

2. The combination of the sliding jaw D, provided with slot *a* and ratchet-teeth *b*, the box or frame D', pivot *d*, pawl h, lever *f*, and spring *i*, all substantially as and for the purposes herein set forth.

3. The combination of the handle A with parallel arms B B, reversible jaw C, the slotted toothed sliding jaw D, box or frame D', and pawl h, operated by the lever *f* and spring *i*, substantially as and for the purposes herein set forth.

159,225. LEAF-SUPPORTS FOR SEWING-MACHINE TABLES. Read W. Whitney, Cleveland, Ohio. [Filed Nov. 2, 1874.]



159,237.



1. The leg D, having the slot *a*, in combination with the middle joint of the support, provided with lug *x*, substantially as described.

2. The support D, having the slot *a* and the lug *x*, in combination with the table C and folding leaf B, substantially as and for the purpose set forth.

159,226. HEAD-BLOCKS FOR SAW-MILLS. Francis N. Whitcomb, Belmont, N. Y., for himself and W. Hilary Davis and Mary J. Rawson, administrators of David Rawson, deceased. [Filed Dec. 7, 1874.]

Brief.—The ratchet-wheels by which the setting-jacks are moved forward are inclosed in a shell, which protects them from injury, and at the same time serves as a lever, to which the operating-pawls are attached.

1. The combination of the ratchet-wheels D D on shaft *f*, shells C C, pawls A A, springs *i i*, links *p p*, collars G G, and shaft E, all constructed and arranged to operate substantially as and for the purposes herein set forth.

2. The combination of the shells C C, having spring-pawls and arms *h* cast in one piece, and the shaft *u*, having notches *y y* and lever *v*, all substantially as set forth.

159,238. DEVICES FOR MAKING WATCH-CASE BEZELS. Fritz H. Wilby, Philadelphia, Pa. [Filed Dec. 4, 1874.]

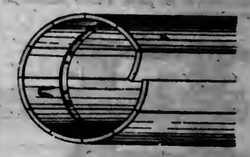
Brief.—The blank is clamped to the chuck by the screw-rim E, and is then spun over the ridge *f*.



The chuck A, in combination with the clamping-ring E, for making the bezel B, substantially as set forth.

159,239. APPARATUS FOR WALLING OUT TERMS. Frederick Willard, Regis, Wis. [Filed Dec. 7, 1874.]

Brief.—A well-curbing consisting of a cylinder composed of slats of boards, connected to and forced out by spring-steel ribs, operated by jointed braces through a platform above, by means of a connecting-rod and ring.



1. A hollow cylinder supported by spring-steel ribs in the main part, which, in connection with movable or swing staves in place, forms a complete cylinder, the diameter of which can easily and evenly be reduced, and which is constructed and operated substantially as herein described and set forth.

2. The platform used on the top of the cylinder, supporting and aiding the operator in his work, constructed and operated substantially as hereinbefore described and set forth.

159,240.



159,240. AXLE-BOXES AND SLEEVES. Jas. B. Winchell, Boston Harbor, Mich. [Filed Sept. 16, 1874.]

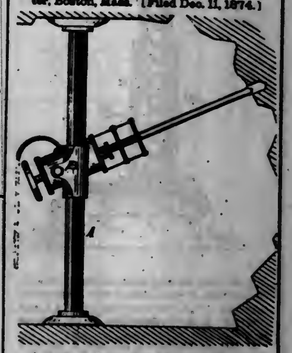
Brief.—To exclude mud and dirt from the axle-box.

1. The box *g*, having its inner end projecting beyond the flange *d*, in combination with the rim *f* and scraper *e* on the thimble, substantially as set forth.

2. The scraper *e*, in combination with the box *g*, having its inner and projecting over the flange *d* to form a guard, substantially as specified.

3. The scraper *e* on the under side of thimble *a*, substantially as and for the purpose described.

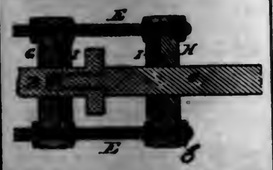
159,241. SUPPORTING-CLAMPS FOR ROCK-DRILLING MACHINES, &c. H. S. Winchester, Boston, Mass. [Filed Dec. 11, 1874.]



A support for rock-drilling machines and similar devices, consisting of a standard, A, a bead, B, encircling the standard, and provided with arms *c*, and a frame, C, provided with a trunnion passing through the arms of the clamp, and provided with a nut, *f*, or equivalent tightening device, substantially as shown and described, whereby tightening the single nut serves to clamp all the parts rigidly in position.

180,949. ROCK-DRILLING MACHINES. R. S. Winchester, Boston, Mass. (Filed Jan. 2, 1874.)

Brief.—Four rods extending forward are secured to the end of the cylinder. Upon these rods are mounted two pistons, into which are secured rubber cushions, which, as the piston moves to and fro, come in contact with one cushion and then the other, thus checking the movement of the piston without material jar or concussion.



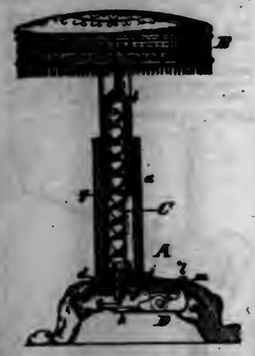
1. In combination with the cylinder and piston of a rock-drilling machine one or more cushions, arranged outside of the cylinder to check the movement of the piston, substantially as shown and described.

2. In combination, the cylinder and piston of a rock-drilling machine, a cushion or cushions, supported by the cylinder and arranged to check the movement of the piston-rod, substantially as shown.

3. The combination of the cylinder A, piston-rod B, rods E, piston G H, nuts *f* or equivalent fastening devices, and the cushions I, constructed and arranged substantially as described.

180,948. SUPPORTS FOR STOOLS. Chas. J. Woodward, Brooklyn, N. Y. (Filed July 26, 1875.)

Brief.—A quick or long-pitch screw, loose in its bearings, is arranged in the standard of a stool, and is provided with a collar and a projecting point at its lower end. The collar rests on a friction-brake arranged in the lower part of the standard. A lifting-treadle is arranged in the leg frame, which bears against the pivoted end of the screw, and lifts it from the friction-brake, when the screw is free to revolve, and allows the seat to drop by means of the fixed nut in the lower part of the seat-standard.



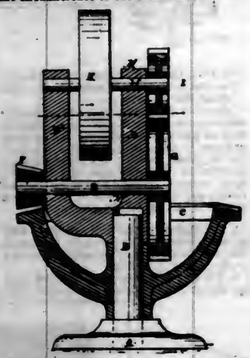
1. A quick or long-pitch screw, C, loose in its bearings, in combination with a non-rotary traveling nut, *g*, and a locking-brake, *h i*, substantially as herein described, for the purposes set forth.

2. The combination of the base A, having a square standard, *a*; the seat B, having a square stem, *b*, adapted to slide within the standard *a*, and constructed with a nut-section, *g*, in its lower end; the quick or long-pitch screw C, having the step-spindle *e e* and brake-disk *h*; the cushion *i*, and the treadle-lever D, having the step-disk *k* and projecting end *l*, substantially as specified, to constitute an improved adjustable stool.

REISSUES.

6,947. HORSE-POWERS. Jas. M. Albertson, New London, Conn. Patent No. 89,235, dated May 4, 1869. (Filed Nov. 27, 1874.)

Brief.—The machine is placed upon the ground-floor of the building, in the center of the horse-path. Power is transmitted to machinery placed upon the floor above by means of belts carried by pulleys mounted within the circumference of the main wheel.



1. The arrangement of the gear-wheel C, pinion F, shaft E, and wheel G, to allow the revolution of the wheel G within the wheel C, and to bring the shaft E at such height as to engage the pinion F.

2. In combination with above arrangement, the frame D D', consisting of two arms provided with journals for the shaft E, the whole attached to the upper end of shaft B, substantially as herein described.

3. The central shaft or spindle, B D, having its lower portion, B, surrounded by the master-wheel C, and its upper portion, D, provided with bearings M N and arm D' for the support of counter-shafts E and H, the shaft E carrying the pinion F, gearing with wheel C, and operating with reference to each other, substantially as described.

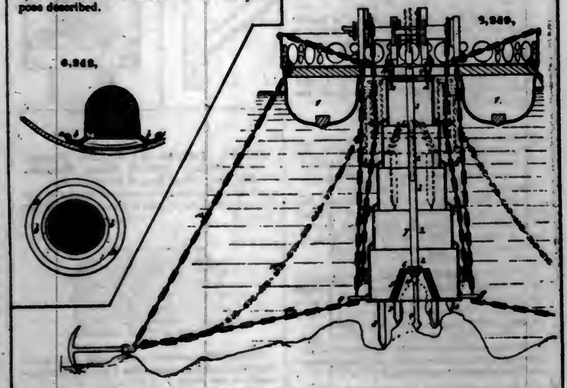
6,946. CONSTRUCTION OF STRAINERS. R. J. P. Goodwin, Manchester, N. H., assignor to R. P. Woods, Danl. Sherwood, and C. H. Latham, Lowell, Mass. Patent No. 63,879, dated Apr. 16, 1867. (Filed Nov. 26, 1873.)

1. The wire-cloth strainer A, the rim of which is at, or nearly at, right angles with the sides of the body, and secured between annular plates *a* and *b* by a hem on plate *a*, substantially as described.

2. In a strainer for liquids, the annular plate *a*, constructed in the manner and for the purpose described.

6,948.

3,949.



6,949. APPARATUS FOR REMOVING OBSTRUCTIONS UNDER WATER. Saml. Lewis, Williamsburg, N. Y., assignor, by mesne assignments, of one-half interest to Wm. H. Cammeyer. Patent No. 80,402, dated July 28, 1868. (Filed July 20, 1874.)

Brief.—A floating platform, open in the center, carries a telescopic dam or inclosure, firmly anchored at the bottom, which adjusts itself to changes of water-level, and inclosses drilling apparatus for subaqueous drilling, so that operations can be carried on undisturbed by tides or currents.

1. A submarine inclosure or breakwater, made in sections, one entering within another, substantially as described—that is to say, so that, by a sliding edgewise or vertical movement as contradistinguished from a folding movement, the height of the entire inclosure or breakwater may be increased or diminished by the diminution or increase of the entrance of one section within another, to adapt said inclosure to the different depths of water, or to facilitate its transportation from one place to another.

2. The combination, with a portable dam, breakwater, or inclosure, of the sliding bars or anchors 3 3, whereby said bars or anchors may be allowed to descend into or upon inequalities in the surface to be operated upon.

3. The arrangement of the open floating deck 14 in relation to a portable submarine dam, inclosure, or breakwater, substantially as described—that is to say, with the opening in the deck over the space inclosed or protected by the said submarine dam, inclosure, or breakwater, by which arrangement operations necessary within the said dam, inclosure, or breakwater may be carried on through the opening in said deck, substantially as hereinbefore set forth.

4. The combination, with a portable dam, breakwater, or inclosure, of a drill support or frame attached to said dam, inclosure, or breakwater.

5. The arrangement, in the lower portion or section of a submarine dam, breakwater, or inclosure, of a drill support or frame attached thereto.

6. The combination, with a floating deck or floor supported above the water, of a submerged drill-frame, arranged directly under said deck or floor, or under an opening through it, substantially as hereinbefore set forth.

7. The combination, with a portable submarine dam, breakwater, or inclosure, of boats, supports, or floats, and a set or series of anchors to hold said boats, supports, or floats in position in a tideway or current, substantially as hereinbefore set forth.

8. The combination, with a portable dam, breakwater, or inclosure, and with the boats, supports, or floats to be used therewith, of the chains 10, for raising the lower portion of the dam when necessary, substantially as hereinbefore set forth.

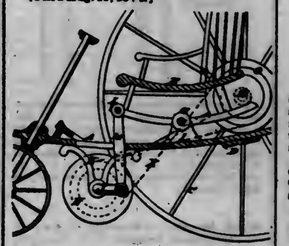
9. The combination, with a portable submarine dam, breakwater, or inclosure, and with the boats, supports, or floats to be used therewith, of the chains 11, for holding the bottom of the dam against the current while it is being lowered, or afterward, substantially as hereinbefore set forth.

10. The combination, with a submarine dam, inclosure, or breakwater for breaking the force of the current, and with a drill-frame attached to the lower portion or section thereof, of a drill-frame arranged above said lower drill-frame, substantially as hereinbefore set forth.

11. The combination, with a floating deck or flooring supported above the water, and with a drill-frame arranged in the lower portion of the stream, to guide the drills in proximity to the rock to be drilled, of a drill-frame placed above said lower drill-frame, all being arranged in the same vertical plane, substantially as hereinbefore set forth.

12. The attachment of the upper section of a submarine sectional dam, inclosure, or breakwater to a floating support, and the connection of the lower sections of the said dam, inclosure, or breakwater to the said upper section, substantially as described, whereby the said floating support is made to keep the said dam, inclosure, or breakwater extended to the proper height to adapt it, in that respect, to any change (within certain limits) of the depth of the water, substantially as hereinbefore set forth.

6,950. VELOCIPEDES. J. A. Vander Waag, Brooklyn, N. Y., assignor, by mesne assignments, to A. Cooke, Cincinnati, Ohio. Patent No. 88,347, dated Mar. 30, 1869. (Filed Aug. 19, 1874.)



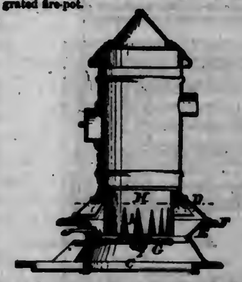
1. The combination of seat or chair E, fitted with rockers and crank J, joined by a connecting-rod to said seat, as and for the purposes described.

2. The combination of oscillating seat E, connecting-rod M, and crank J, as and for the purposes described.

3. The combination of rocking seat E, crank J, connected directly to rocking seat E by connecting-rod M, belt X, pulleys N and O, and driving-wheels C C, as and for the purposes specified.

6,951. HEATING-STOVES. N. A. Boynton, New York, N. Y. Patent No. 116,674, dated July 4, 1871. (Filed May 7, 1874.)

Brief.—The entire draft is upward through the grated fire-pot. The lower slanting plate of the shell inclosing the fire-pot radiates heat downwardly. The upper plate contains illuminating-windows, which receive light from the grated fire-pot.



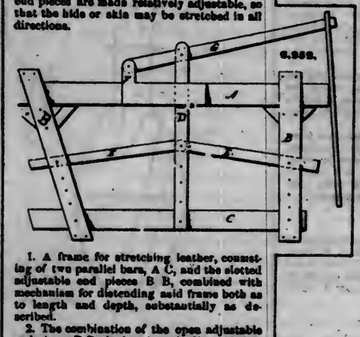
1. The slanting plate D, provided with illuminating-windows *d*, in combination with a vertical grated fire-pot, H A, disconnected from the horizontal grate G.

2. The lower slanting plate, E, in combination with a vertical grated fire-pot, H A, constructed and applied as herein set forth, so that the entire draft of the stove is carried upward within the said fire-pot.

3. The outer shell or casing, consisting of the converging or oppositely-slanting plates D E, united at their common periphery, and surrounding the vertical grated fire-pot H A, said shell inclosing a dead-air or heat chamber without flue-connections, and radiating the heat upward and downward, as explained.

6,952. APPARATUS FOR STRETCHING LEATHER. Samuel D. Castle, Bridgeport, Conn. Patent No. 129,979 dated Feb. 27, 1872. (Filed Nov. 14, 1874.)

Brief.—The longitudinal bars and vertical end pieces are made relatively adjustable, so that the hide or skin may be stretched in all directions.



1. A frame for stretching leather, consisting of two parallel bars, A C, and the slotted adjustable end pieces B B, combined with mechanism for distending said frame both as to length and depth, substantially as described.

2. The combination of the open adjustable end pieces B B, the bar A, and adjustable bar C with the rods D, rods E, and a lever, all substantially as and for the purpose described.

6,953. REGISTERS FOR GAS-METERS. H. H. Edgerton, Fort Wayne, Ind. Patent No. 116,221, dated Aug. 22, 1871. (Filed Dec. 24, 1874.)

1. A value-register for gas-meters, comprising a series of dollar or value registering dials and indexes, in combination with a proving hand or index, which is at once the unit of value and the unit of measure, substantially as herein shown and set forth.

2. In a gas-meter registering the value of the gas consumed in dollars and cents, the combination, with the registering-train proper and the wheel on the spindle receiving motion from the diaphragms, of means, substantially as herein shown and described, whereby registrations varying according to different values may be obtained without change or alteration in the registering-train.

6,953.



6,955.

6,955. CONNECTING-RODS. J. F. Hankins, Fitchburg, Mass. Patent No. 134,276, dated Dec. 24, 1872. (Filed Jan. 10, 1873.)

Brief.—Adjusting the box of a connecting-rod by a wedge, which is movable to and fro by means of two screws passing from opposite sides of the box in contact with said wedge.

1. The combination of a solid connecting-rod, *c*, with the two boxes *d e*, having the flanges *f h* formed upon their ends, and a wedge operated by a screw or screws to tighten or loosen them upon the crank, substantially as set forth.

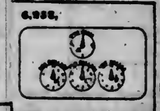
2. The rod *c* and boxes *d e*, having the flanges *f h* upon their ends, in combination with the wedge *j* and screws *l m*, substantially as shown and described.

6,956. SASH-SUPPORTERS. Henry F. Jenks, Pawtucket, assignor, by mesne assignments, of one-half interest to Danl. H. Arnold, Lincoln, R. I. Patent No. 46,472, dated Feb. 21, 1865. (Filed June 15, 1874.)

Brief.—A spring which acts upon a frictional cam is secured in a metal frame, to be inserted in the sash. The cam is operated by a thumb-lever.

The window-sash supporter, composed of the frame C, the spring D, and the finger-lever E, in combination, as substantially as described, for the purposes specified.

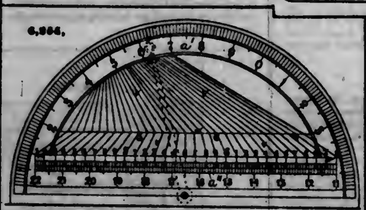
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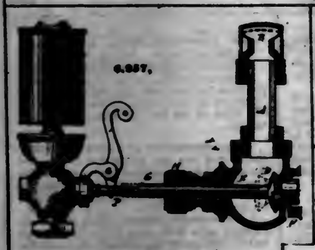


6,954. GAS LIGHT AND PRESSURE INDICATORS. W. W. Goodwin, Philadelphia, Pa. Patent No. 138,016, dated Apr. 22, 1873. (Filed Nov. 18, 1874.)

The combination, with a jet-photometer, provided with an indicator of the variable pressure on the gas, of a candle-power scale, whereby the number indicating the candle-power of the gas burning under the pressure, shown at the time by the said pressure-indicator, will be pointed out on the candle-scale by the index bar or pointer, substantially as and for the purpose hereinbefore set forth.

6,957. FIRE-EXTINGUISHERS. Henry S. Parmelee, New Haven, Conn. Patent No. 156,374, dated Oct. 27, 1874. (Filed Dec. 31, 1874.)

Brief.—The cap fits roughly the base of the distributer, to which its edge is attached by some easily-fusible material. A projection upon the under side of the valve loosely fills the aperture in the valve-seat, and requires a greater movement of the valve before the water is let on. Said movement of the valve sounds an alarm.



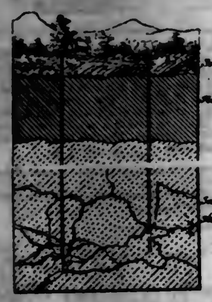
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1. A perforated distributor with a base below its periphery, combined with a hard-metal cap set over and closely fitting the periphery of said distributor, and extending down to the said base, to which it is secured by a low flexible material, substantially as and for the purpose specified.

2. In combination with the distributor B, constructed with the neck *a* and base *b*, the cap C, attached to the said base by a flexible material, substantially as and for the purpose set forth.

3. In combination with an alarm, an elongated valve, I, in connection with said alarm, and extending through the valve-opening, whereby the passage closed by said valve is not opened until the valve shall have been moved its length, and the alarm sounded.

6,958. METHODS OF INCREASING THE CAPACITY OF OIL-WELLS. Edwd. A. L. Roberts, Titusville, Pa. Patent No. 50,993, dated Nov. 28, 1865; extended May 20, 1873; reissue No. 5,494, dated June 3, 1873. [Filed Jan. 23, 1874.]



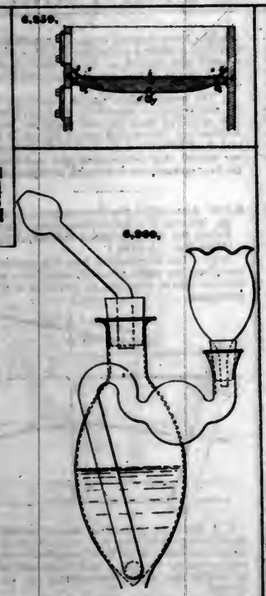
The method or process of increasing or restoring the productiveness of oil-wells by causing an explosion of gunpowder, or its equivalent, at or near the oil-bearing point, in connection with superincumbent field tamping, substantially as set forth.

6,959. GRATES FOR FURNACES. H. Ryder, Somerville, assignor, by mesne assignments, to Jos. J. Walworth, trustee, Newton, Mass. Patent No. 150,973, dated Mar. 11, 1873. [Filed Sept. 19, 1874.]

1. In the grate provided with two series of grate-bars, *a b*, the bars of one set arranged with their upper edges extended somewhat above those of the bars of the other set, such being substantially as and for the purpose specified.

2. In combination with the two series of grate-bars, *a b*, arranged as set forth, and provided with mechanism for moving those of one series reciprocately, as described, the guards B B, applied to the bars and formed substantially in manner and to operate therewith as specified, they being inclined downward and resting against the walls of the furnace and abutments on the supporting grate-bars, so as to move with the said bars during their expansion or contraction, all as set forth.

6,960.



6,960. CONDENSED INHALERS AND NASAL DOUCHES. Edwin Schofield, Worcester, Mass. Patent No. 156,272, dated Jan. 26, 1873. [Filed Dec. 27, 1873.]

Brief.—The acid is held in the lower part of a bulb blown in the inlet-tube. The air is thus carried over, but not through, the acid, as in ordinary inhalers. A nasal plug is inserted in the cork of the containing-vessel, and the apparatus made to serve as a nasal douche.

1. The combination, in an inhaling apparatus, of a main reservoir for containing ammoniated liquid, provided with a draft-tube, a single inlet-passage, and an outlet-tube, when said parts are arranged for operation so that all air passing through the apparatus first becomes impregnated with acid fumes, and is thereafter delivered in contact with or through the ammoniated liquid contained in said main reservoir, for the purpose set forth.

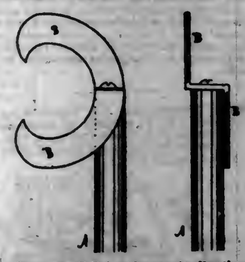
2. An outlet-tube having a continuous inlet and outlet passage above the surface-level of an acid contained therein, in combination with the inlet-passage of an inhaling apparatus, for the purpose set forth.

3. In combination with the main receptacle of an inhaling apparatus, an inlet-tube constructed with a bend, D, and bulb E between said bend and the mouth of the tube, substantially as set forth.

4. The inhaling and nasal-douche apparatus, consisting of the receptacle A, bulbed inlet-tube C E, and draft-tube E, furnished with the nasal plug H, as herein shown, and for the purpose set forth.

6,961. PRUNING IMPLEMENTS. E. E. Stedman, Havanna, Ohio. Patent No. 156,267, dated Sept. 22, 1874. [Filed Nov. 20, 1874.]

Brief.—Two curved blades are bent in different directions from a piece of metal, the center of which is secured upon the end of the single handle. The blades are parallel to each other and to the sides of the handle.



The cutters B B, bent in opposite directions, one upward and the other downward, so that their edges are toward each other, with their blades in different planes but parallel, or nearly parallel, to each other and to the sides of the pole A, at the top of which they are secured, substantially as and for the purpose herein set forth.

6,962. SECTIONAL STEAM-GENERATORS. H. Whittingham, Brooklyn, N. Y. Patent No. 91,300, dated June 15, 1869. [Filed Dec. 23, 1874.]

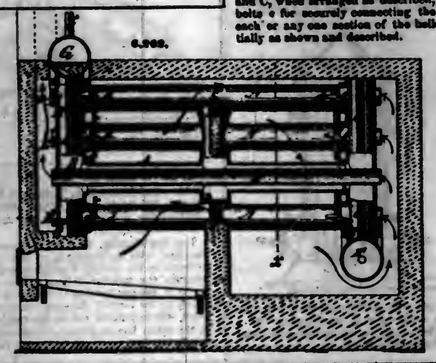
Brief.—The sections are secured by bolts passed through ears cast upon each section. The products of combustion pass through the horizontal and vertical tubes on their way to the uptake.

1. The combination, in each boiler-section, of front and rear upright or end tubes, a series of longitudinal or connecting tubes, and apertures passed both through the longitudinal and end tubes, substantially as specified.

2. A sectional steam-generator, in which each section is composed of front and rear upright or end tubes, one or more intermediate upright tubes, a series of longitudinal or connecting tubes, and smoke-flues fitted to pass both through the longitudinal and upright tubes, essentially as shown and described.

3. The ears *d d*, formed on the tubes A, B, and C, when arranged as described, to admit bolts *e* for securely connecting the tubes of each or any one section of the boiler, essentially as shown and described.

6,962.



HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 5. TUESDAY, FEBRUARY 2, 1875. PRICE { $5,00 per year—single. $4,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D.C.

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COMMISSIONER'S DECISIONS.

ROUSE AND STODDARD.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of George L. Rouse and M. W. Stoddard, for a patent for an alleged* "IMPROVEMENT IN WHEELS," *filed May* 18, 1874.—*Decided January* 28, 1875.]

The decisions, rulings, and practice of the Patent Office will be made conformable to the decisions of the courts.

A rejected application will no longer be considered, therefore, a bar to a new application for a patent for the same invention.

The Office, however, will ascertain, if practicable, whether the invention had been before in public use; and if so will take affidavits to that effect, *ex parte*, if necessary.

Brown vs. *Guild*, OFFICIAL GAZETTE, Vol. 6, page 392, cited and commented on.

THACHER, *Commissioner:*

Two claims are left in the application which the examiner rejects for want of novelty, citing as references the patent of P. Murphy, August 12, 1873, and the application of Charles Spofford, filed August 2, 1871, and rejected the 8th day of the same month. The Examiners-in Chief have affirmed the decision of the examiner below, on the ground that the patent of Murphy is a good and sufficient answer to the claims of applicants. They have not discussed the pertinency of the rejected application of Spofford, as a reference.

After a careful examination I have come to the conclusion that the Murphy patent is not a sufficient answer to the claims of Rouse and Stoddard, which are limited to the special construction shown and described by them. It is admitted, however, that the construction of wheel hubs shown and described in the application of Spofford is almost identically the same as that of appellants. More than two years having elapsed since the final rejection of Spofford's claim, his application is regarded as abandoned under the 32d section of the Patent Act.

It is insisted on the part of applicants, that, in view of recent decisions of the courts, a rejected and abandoned application does not constitute a bar to the grant of the patent sought by them. It becomes necessary, therefore, to examine this question and determine the practice of the office in view of the decisions referred to.

Within a few years, several decisions have been rendered in the United States Circuit Courts, in which the effect on patents of prior rejected applications has been discussed; but the question did not receive the attention of the Supreme Court until the case of *Brown* vs. *Guild* came up on appeal during the October term of 1873. One of the defenses set up against the Brown patent was an old application, filed by Remy and Kelly in June, 1850, which was rejected and withdrawn the August following. The evidence showed that only one machine was ever made by them, and this, merely for experiment, in the year 1849. In discussing the effect of this application on the validity of Brown's patent, the court uses the following language:

> The experiment made in 1849, when Remy worked it by hand, was a mere experiment, which was never repeated. It may have presented one or two ideas in advance of other machines, but it can hardly be said to anticipate the machine which we have described as Brown's. Were it not for the application for a patent it would justly be regarded as an abandoned experiment, incapable of being set up against any other claim. Can the fact that such an application was made, and afterward voluntarily withdrawn and never renewed, make any difference? We think not. Had a patent been actually granted to Remy and Kelly it would have been different. The case would then have come directly within the seventh section of the act of 1836, which makes a "patent," or a description in a printed publication of the invention claimed, a bar to a further patent therefor. But a mere application for a patent is not mentioned as such a bar. It can only have a bearing on the question of prior invention or discovery. If, upon the whole of the evidence, it appears that the alleged prior invention or discovery was only an experiment, and was never perfected or brought into actual use, but was abandoned and never revived by the alleged inventor, the mere fact of having unsuccessfully applied for a patent therefor cannot take the case out of the category of unsuccessful experiments. (*Brown vs. Guild*, 6 OFFICIAL GAZETTE, 392.

There can be no mistake as to the meaning of this language; the doctrine is distinctly announced that a *mere application* is not a legal bar to the grant of a pat-

ent to a subsequent applicant. This decision must be heeded by the Commissioner of Patents, and govern him in regulating the practice of the Office. I have had frequent occasion to state my views on the necessity of harmony between the practice of the Patent Office and rulings of the courts. There can be no question about the propriety of this course. The Commissioner ought not either to issue patents which the courts will declare invalid, or to refuse the grant on grounds which have already been considered judicially and declared insufficient. But it will be noticed that the Supreme Court does not entirely ignore abandoned applications, for it is stated that they have a bearing on the "question of prior invention or discovery," and the effect of the application is made to depend on the question of actual use of the invention described therein.

It has been urged in argument that, if no objection appears to the grant sought by Rouse and Stoddard except the abandoned application of Spofford, the Commissioner should issue the patent and allow the question of public use to be determined hereafter in the courts. The suggestion must have its origin in a misconception of the duty of the Commissioner of Patents. The law makes him something more than a mere ministerial officer, whose function is to issue letters patent simply for the asking. The Commissioner is made the guardian not only of the rights of inventors, but also of the interests of the public. It is just as solemnly his duty to refuse to issue a patent which clearly ought not to be granted, as to grant the issue when the applicant shows an unimpeached right to the invention.

In this case, if, without further inquiry, the Commissioner should issue a patent to Rouse and Stoddard, and it should afterward appear that the invention of Spofford was put into public use, it would be invalid, as I understand the decision which has been quoted. It is his duty, therefore, to inform himself on this question, if possible, and the application of Spofford indicates the direction in which inquiry may be made. The only question in my mind is how to prosecute the investigation. The law restricts interferences to unexpired patents and pending applications. An interference, therefore, cannot be declared with an abandoned application. I have no doubt, however, that the Commissioner of Patents has ample authority to institute an *ex-parte* inquiry at any time, for the purpose of determining whether or not a statutory bar exists to the grant of a patent for which application is pending. This is necessary to enable him to comply with the statute. Unsatisfactory as *ex-parte* evidence may be, it appears to be the only source of information open to the Commissioner in cases like the present, without further legislation; and I do not believe that in a single instance a patent should issue for an invention shown in a prior abandoned application without an attempt, at least, to settle the question of public use.

The decision of the Examiners-in-Chief, affirming the examiner on reference to the patent of Murphy, is reversed. The application of Rouse and Stoddard is remanded to the examiner, who is instructed to forthwith dispatch letters of inquiry to the applicant, Spofford, and to his attorney of record, for the purpose of ascertaining whether the invention of the former has been brought into actual use. At the same time they will be informed that an application is now pending for the same invention, and that the inquiry is made for the purpose of determining the right of subsequent applicants to a patent therefor. Information furnished by them should be in the form of affidavits, clearly and fully setting forth the facts in the case. Counter affidavits will also be received from applicants, if they so desire. The issue of a patent will be determined by the information thus received.

Until otherwise ordered, this will be the rule and practice in the Patent Office in like cases.

DAVID HAMMOND *vs.* WILLIAM R. LAIRD.—*Appeal; Interference.*

[*Appeal from the decision of the Examiners-in-Chief in the matter of the interference between the application of David Hammond and the patent of William R. Laird, for* "IMPROVEMENT IN ARCH-GIRDER BRIDGES."—*Decided December* 31, 1874.]

In order to defeat a patent the courts require it to be shown that another not only conceived the invention in dispute before the patentee, but was also the first to perfect and adapt the same to practical use, or was using reasonable diligence for that purpose.

In accordance with this the Office uniformly requires an applicant to adduce the same evidence when he attempts to obtain a patent for an invention for which another has already obtained one in good faith.

Embodying an invention in a model is not a reduction of it to practice.

Where, after making a model, the inventor took no further steps for five years, although able to apply for a patent, and another in the meantime obtained a patent, the first party must be held to have been wanting in diligence; and it is no excuse for his delay that his employers declined to adopt his improvement and put it in practice.

THACHER, *Commissioner:*

This interference arises between the application of David Hammond, filed February 6, 1874, and the patent of William R. Laird, issued January 27, 1874, the application for which was filed May 11, 1871.

The subject-matter relates to an improvement in arch-girder bridges, and consists of "the combination of two rolled segments and two channel-bars connected by bolts through their flanges to form a tubular metallic girder or column."

Ordinarily when the controversy arises between an applicant and a patentee, the burden of proof is upon the former, to show that he was not only the first to conceive the invention in dispute, but that he was also first to perfect and adapt the same to practical use, or was using reasonable diligence to secure this result.

This is the character of the proof that the courts recognize as alone sufficient to defeat a patent on the ground of priority; and this Office has of late years uniformly required the same degree of evidence to be adduced on the part of an applicant before granting to him a patent, when another acting in good faith had already obtained a patent for the same invention.

The reason of this rule is apparent; it is a fatal objection to an application for letters patent that the specification does not describe a complete and practical apparatus; and when a patent is duly granted it is presumptive evidence that the requisite facts existed upon which the issuing of it was conditioned. (*Potter* vs. *Holland*, 1 Fish., 382; *Cahoon* vs. *Ring*, id., 397.) It therefore follows that if any one undertakes to defeat a patent on the ground of a want of novelty he must sustain the charge by evidence of equal weight and significance—viz., proof of actual prior knowledge of substantially the same invention in completed form and ready for actual use. (*Crouch* vs. *Speer et al.*, 6 OFFICIAL GAZETTE, 187.)

The reason that the Office has adopted this rule of the courts for its guidance is also very clear; the United States courts are the authoritative expositors of the patent law; and it is therefore the manifest duty of the Commissioner of Patents to refuse a patent which he is clearly convinced the courts would declare invalid if granted.

In the present case, neither party having embodied the invention in a completed form ready for actual use, the testimony must be considered with reference to which of the contestants has shown greatest diligence in efforts to attain that end, and which was first to introduce the invention to the knowledge of the public by applying for and obtaining letters patent.

Hammond substantially alleges in his preliminary statement that he conceived the invention in dispute in the latter part of June, 1869, and that he embodied the same in a model about the first of the following month. The testimony in his behalf supports these allegations and is uncontradicted. The model referred to is introduced in evidence, and it as correctly represents the invention as the models accompanying the respective applications. It appears, however, that after making the model, Hammond did nothing more in prosecuting his invention until the time of filing his application, nearly five years afterward, except from time to time to urge the members of the company, in which he was a stockholder and by which he was employed, to adopt and introduce his improvement.

In the meantime, in February and March, 1871, Laird made drawings and models of the invention, and at once proceeded, in the following month, to file his application for a patent. The application was pending nearly three years, without any apparent fault of his, however, and letters patent were finally issued to him before Hammond appeared at the Office.

The weight attached by the courts to the construction of a model alone is indicated by the following language, in the case of *Johnson* vs. *McCullough*, (4 Fish., 170:)

> I have also examined all the testimony relating to the Shaw model, and find it does not show more than the making of a model, and not of any practical working machine, which *is necessary to overthrow a patent.*

It would seem, therefore, that in a contest between an applicant and a patentee, neither having embodied the invention in a practical working machine, that the superior right to the invention is in the patentee, although he may have been second to originate, unless his opponent has used due diligence in applying for a patent. It becomes necessary, therefore, to inquire to what extent Hammond used diligence in this direction. As already stated, nearly five years intervened between the construction of Hammond's model and the filing of his application for patent. During this period there is no evidence of activity on his part, except efforts to induce the members of his company to adopt the improvement in question. They excused themselves by saying that the column, and column and arch-bridges, which they had introduced and were manufacturing, were good enough without the improvement. Hammond sought aid nowhere else—in fact, it does not appear that aid was necessary for the purpose of obtaining a patent, as he appears to have been abundantly supplied with means for this object, although it may not have been in his power to construct a bridge. The evidence shows that within these five years he made applications and obtained patents for several other inventions. It is true these were adopted, wholly or in part, by the company, and for this reason there was a stronger inducement for making and prosecuting these applications.

It does not appear, however, that either poverty, sickness, or any similar uncontrollable cause intervened to prevent an application for patent for the invention in controversy. The disinclination of the company, to which the applicant belongs, to adopt his device is the sole excuse relied upon for his inactivity. This, in my opinion, is entirely insufficient under the circumstances. If it were a question of reduction to practice it would perhaps have greater weight; but when, as in this case, the question becomes one of diligence in applying for a patent, such an excuse as is here made is of little importance.

If Hammond deliberately laid aside his invention for years and took no steps whatever to protect his rights therein, he did so at his peril, and must take the consequences. As an inventor he must be regarded as one who, by voluntary neglect to prosecute his claims, has forfeited his rights in favor of one more diligent.

The decision of the Examiners-in-Chief is affirmed.

F. G. AND W. F. NIEDRINGHAUS.—*Appeal.—Design.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the application of Frederick G. Niedringhaus and William F. Niedringhaus, for patent for* DESIGN FOR ORNAMENTING ENAMELED IRON WARE.—*Decided December* 26, 1874.]

An application for a design-patent should not be entertained by the Examiner if the specification and claim are wholly wanting in clearness, exactness, and particularity.

Such an application will not be allowed.

Although the applicant may have discovered how to give his design a peculiar shade when worked into the surface of articles of enameled iron ware, that does not give him any better title to a patent for a design.

THACHER, *Commissioner:*

The claim of the applicants is as follows:

> The design for enameled iron ware, substantially as shown and described.

The lack of particularity in the claim is not supplied by the specification. The applicants therein assert that they have—

> invented and produced a new and original design of ornament or pattern, to be printed, painted, or otherwise placed on or worked into the various articles of enameled iron ware made and sold by us.

They then refer to an accompanying photograph as distinctly showing—

> the nature and characteristics *as to outline*

of the design, at the same time admitting that the illustration fails to exhibit the chief merit of their device, viz.:

A beautifully-mottled appearance resembling granite in color.

Even this characteristic is not relied upon as constituting the sole merit of the design, but that only on which the applicants place the most importance. No other characteristics are, however, alluded to. Such a specification and claim, so clearly deficient in the requirements of the law respecting clearness, exactness, and particularity, ought not to have been entertained by the Examiner. Compliance with these requirements is especially necessary in an application for patent for a design, which must of necessity be something fixed and determined and capable of specific description, either in words or by illustration. This defect is, in my opinion, a fatal objection to the favorable consideration of the application in its present form. But, in addition to this, I concur in the opinion of the Examiners-in-Chief so far as want of patentability in the general subject-matter embraced by the application is concerned. The so called design is effected by printing, painting, or in any other way placing upon iron ware a peculiarly-mixed color. The enameling of iron ware in various colors is an art well known. If applicant has achieved anything new, it is to be found in the mixing of colors, by which he produces a mottled appearance, having the effect of granite coloring. If he has, in this way, obtained a new paint, it may or may not be patentable; but the application of such paint, in an ordinary way, does not constitute the subject-matter of a design-patent, even under the most liberal construction of the statute.

The decision of the Examiners-in-Chief is affirmed.

DECISIONS OF THE COURTS.

SUPREME COURT OF THE UNITED STATES.

THE RUBBER-TIP PENCIL COMPANY, *Appellant*, *vs.* SAMUEL E. HOWARD, HENRY SANGER, MICHAEL SNOW, AND RICHARD BUTLER.

[*Appeal from the circuit court of the United States for the southern district of New York.—October term*, 1874.]

The idea that if a pencil is inserted into a cavity in a piece of rubber smaller than itself the rubber will attach itself to the pencil, and, when so attached, become convenient for use as an eraser, is not of itself patentable; but a new device by which this idea may be made practically useful is.

Blair's patent of July 23, 1867, is for a rubber head for lead-pencils—not for the combination of the head with the pencil.

As the rubber head described in the patent may be of any convenient external form, and is not limited as to either the form or the longitudinal extent of its socket, it is not new; and, as it was previously well known that if a solid substance was inserted into a cavity in a piece of rubber smaller than itself the rubber would cling to it, the size of the socket in the head, as compared with that of the pencil, does not add to the patentable character of the invention.

[*John S. Washburn*, for appellant.
F. H. Betts and *S. W. Kellogg*, for appellees.]

Mr. Chief Justice WAITE delivered the opinion of the court.

On the 23d of July, 1867, James B. Blair, claiming to be the original and first inventor or discoverer of "a new and useful rubber head for lead-pencils," received a patent for his invention. He claimed "as a new article of manufacture an elastic erasible pencil-head made substantially in manner as described." In his specifications he stated that he had "invented a new and useful cap or rubber head, to be applied to lead-pencils, &c., for the purpose of rubbing out pencil-marks." The "nature of his invention," he said, was "to be found in a new and useful or improved rubber or erasive head for lead-pencils, &c., and consists in making the said head of any convenient external form, and forming a socket longitudinally in the same to receive one end of a lead-pencil or a tenon extending from it." "The said head," he goes on to say, "may have a flat top surface, or its top may be of a semicircular or conical shape or any other that may be desirable. Within one end of the said head I form a cylindrical or other proper shaped cavity. This socket I usually make about two-thirds through the head, and axially thereof; but, if desirable, the socket or bore may extend entirely through the said head. The diameter of the socket should be a very little smaller than that of the pencil to be inserted in it. The elastic erasive head, so made, is to fit upon a lead-pencil at or near one end thereof, and to be so made as to surround the part on which it is to be placed, and be held thereon by the inherent elasticity of the material of which the head may be composed. The said head is to be composed of india-rubber, or india-rubber and some other material which will increase the erasive properties of the head." Drawings were attached to his specification, which, as was said, exhibited "the elastic head so made as to cover the end as well as to extend around the cylindric sides of the pencil; but," it was added, "it is evident that the contour of the said head may be varied to suit the fancy or taste of an artist or other person, and I do not limit my invention to the precise forms shown in the drawings, as it may have such or any other convenient for the purpose, so long as it is made so as to encompass the pencil and present an erasive surface about the sides of the same. A head made in my improved manner, and applied to a pencil, as above set forth, is of great practical utility to book-keepers, accountants, and various other persons. The pointed form of the head will be very useful to draftsmen in erasing lines from their drawings, when it may be desirable not to erase other lines in close proximity to that which it is desirable to erase. The elastic or rubber pencil head, made as above set forth, may be applied not only to lead-pencils, but to ink-erasers and other articles of like character."

The first question which naturally presents itself for consideration at the outset of this inquiry is, whether the new article of manufacture, claimed as an invention, was patentable as such. If not, there is an end of the case, and we need not go further.

A patent may be obtained for a new and useful art, machine, manufacture, or composition of matter, or any new and useful improvement thereof. In this case, as has been seen, Blair's patent was for "a new manufacture," being a new and useful rubber head for lead-pencils. It was not for the combination of the head with the pencil, but for a head to be attached to a pencil or something else of like character. It becomes necessary, therefore, to examine the description which the patentee has given of his new article of manufacture, and determine what it is, and whether it was properly the subject of a patent.

It is to be made of rubber or rubber and some other material which will increase its erasive properties. This part of the invention alone could not have been patented. Rubber had long been known, and so had rubber combined with other substances to increase its naturally erasive qualities.

It is to be of any convenient external form. It may have a flat top surface, or its top may be of a semicircular or conical shape, or any other that may be desirable. This would seem to indicate clearly that the external form was not a part of the invention. It was, however, urged upon the argument that the invention did consist in the projecting surfaces extending out from the head, and which appear, as is claimed, in the drawings attached to the specifications. It is true that in two out of the three drawings projecting surfaces are indicated, but such is not beyond question the case with the third. The shape there shown is conical, extending to a point, and evidently intended to represent the form mentioned as specially adapted to the use of draftsmen in erasing lines from their drawings. It was the end of such a pencil, not the sides, that was to furnish the particular advantage of form. But although drawings do accompany the specification and are referred to, it is evident that this reference is for the purpose of illustration only, because the patentee is careful to say that "he does not limit his invention to the precise forms shown, as it may have such or any other convenient for the purpose, so long as it is made so as to encompass the pencil and present an erasive surface upon the sides of the same." Certainly words could hardly have been chosen to indicate more clearly that a patent was not asked for the external form, and it is very evident that the essential element of the invention, as understood by the patentee, was the facility provided for attaching the head to the pencil. The prominent idea in the mind of the inventor clearly was the form of the attachment, not of the head. If additional proof of this is required, it may be found in the further statement in the specifications, which locates the head for use at *or near* the end of the pencil, and so made as to surround the part on which it is to be placed and be held thereon by the inherent elasticity of the material of which it is to be composed. If intended for use at any other place than on the end of the pencil, the projections could not be essential, as any form that would surround the part would present the requisite erasive surface.

Again, the head is to have in it, longitudinally, a socket to receive one end of a lead-pencil or a tenon extending from it. This socket is to be cylindrical or of any other proper shape. Usually, the inventor says, he made it so as to extend part way through the head, but, if desirable, it might be extended entirely through. It must be within one end, but any particular location at the end is not made essential. This clearly is no more than providing that the piece of rubber to be used must have an opening leading from one end into or through it. This opening may be of any form and of any extent longitudinally. The form, therefore, of the inside cavity is no more the subject of the patent than the external shape. Any piece of rubber with a hole in it is all that is required thus far to meet the calls of the specifications, and thus far there is nothing new, therefore, in the invention. Both the outside and inside may be made of any form which will accommodate the parties desiring the use.

But the cavity must be made smaller than the pencil, and so constructed as to encompass its sides and be held thereon by the inherent elasticity of the rubber. This adds nothing to the patentable character of the invention. Everybody knew, when the patent was applied for, that if a solid substance was inserted into a cavity in a piece of rubber smaller than itself the rubber would cling to it. The small opening in the piece of rubber not limited in form or shape was not patentable, neither was the elasticity of the rubber. What, therefore, is left for this patentee but the idea that if a pencil is inserted into a cavity in a piece of rubber smaller than itself the rubber will attach itself to the pencil, and, when so attached, become convenient for use as an eraser.

An idea of itself is not patentable, but a new device by which it may be made practically useful is. The idea of this patentee was a good one, but his device to give it effect, though useful, was not new. Consequently he took nothing by his patent.

The decree of the circuit court is affirmed.

U. S. CIRCUIT COURT, NORTHERN DISTRICT OF ILLINOIS.

JOHN M. TURNBULL *et al. vs.* THE WEIR PLOW COMPANY.

[*In equity.—Before* DRUMMOND, *J.*]

The object of the statute requiring assignments of interests in patents to be recorded within three months from their dates is for the protection of *bona fide* purchasers, without notice of previous assignments; therefore, an assignment by the patentee of a right under the patent would be valid as between the parties thereto without being recorded.

Where there is a residuary interest left in the assignor under a patent within the territory mentioned, the words "*all the right, title, and interest*" of the patentee, in the conveying clause of an assignment, must be construed as only conveying such residuary interest.

This rule would hold even though the prior deed of assignment, by which the patentee had alienated a part of his original interest in the territory specified, had not been recorded when the later assignment was made.

McQuiston having in the year 1860 assigned away the exclusive right under his patent in and for the counties of Warren and Henderson, in the State of Illinois, and having, on the 18th day of November, 1870, and prior to the recording of such first deed, executed a second assignment, conveying to another party "all my [his] right, title, and interest in and to the said letters patent in the following described territory," (in which was included the State of Illinois,) * * * * "as fully and entirely as the same would have been held and enjoyed by me [him] if this assignment had not been made:" *Held*, That, as there was an interest left in the patentee's hands upon which the second assignment could fairly be said to operate independently of that embraced in the first deed, this last assignment was valid. *Held*, also, that the first assignment was operative, and that a plea to the bill, setting up the second assignment in bar of complainants' right of action, they claiming by virtue of the earlier assignment, must be overruled.

The provisions of the 36th section of the Patent Act of 1870, with regard to the recording of assignments of patents, are substantially the same as those of the 11th section of the act of 1836, as construed by the courts.

[This was a bill for an injunction to restrain the alleged infringement of letters patent for an Improvement in Cultivators, granted to Thomas McQuiston, October 18, 1859, and reissued May 16, 1871, and for an account.

Defendant filed a plea to a portion of the bill and an

answer to the residue; and the case came on for hearing upon the plea. The contents of the bill, and of the plea, are sufficiently stated in the opinion.]

The points urged by the counsel for the respective parties were as follows:

I.—In Support of the Plea.

1. The assignments made in 1860, under which the complainants claim, were not recorded within three months, as required by section 11, act of 1836, and hence are void as against Weir and his assigns, he being a subsequent *bona fide* purchaser, and having duly recorded his assignment. The courts have held that, under said section, the assignment "must be recorded within the three months to defeat the right of a subsequent purchaser without notice, and for a valuable consideration. In order to guard against an outstanding title of over three months' duration, the purchaser need only look to the records of the Patent Office." (*Gibson* vs. *Cook*, 2 Blatchford, 144; *Brooks* vs. *Byam*, 2 Robb, 161; *Pitts* vs. *Whitman*, 2 Robb, 189)

2. The common law distinctions made between warrantee and quitclaim deeds of real estate ought not to be applied to the construction of assignments of patents, because they have not been made under the common law, but under acts of Congress. (See sec. 11, act of 1836; sec. 36, act of 1870.) The act of 1836 provided that patents "shall be assignable by any instrument in writing." That of 1870 says, "by an instrument in writing." These acts make no distinction between different kinds of assignments, and do away with every formality. They must be in writing, and that is the only condition imposed.

3. The words "grant and convey," found in Weir's assignment, are not the usual words used in quitclaim deeds; they import more than mere words of quitclaim.

4. Under registry acts, quitclaim deeds have been held effectual to convey lands, as against a prior unrecorded deed.

5. Contemporary exposition and long-established usage under the statute should be considered. Assignments the same in form as that to Weir have been in general use for more than twenty years. (See forms furnished by the Patent Office, under the authority of Congress, as early as 1852, in use from that time to the present.)

6. The effect of holding that assignments like this one to Weir only operate as a quitclaim to convey the actual residuary interest of the assignor should be considered. Interests of great magnitude will be in jeopardy, and a door will be opened for great frauds.

7. Under the acts of Congress, the decisions cited, and the general practice, this assignment to Weir ought to be held to convey not simply the actual residuary interest of the patentee without regard to the records, but all the right, title, and interest which he had, *as shown by the records*.

8. The act of July, 1870, sec. 36, expressly provides that assignments of patents shall be void as against a subsequent purchaser without notice, unless recorded within three months from the date thereof. This act applies to all assignments, whether executed before or after its passage. (See 3 Peters, 289.) Weir's assignment was given and recorded after the passage of this act, and several months before complainants' assignments were recorded.

II.—In Behalf of the Complainants.

1. The true construction of the 11th section of the act of 1836, requiring assignments of patents to be recorded within three months, is that the statute is not mandatory, but merely directory, and for the protection of innocent purchasers without notice. (*Pitts* vs. *Whitman*, 2 Story, 609; *Brooks* vs. *Byam*, Ib., 542; *Continental Windmill Co.* vs. *Empire Windmill Co.*, 4 Fish., 432.) If, therefore, the assignment to the subsequent purchaser purports to convey only a limited or special interest in the patent, as the assignment to Weir in this case, being in the nature of a quitclaim, it is itself notice to the assignee of all previous grants, against which he cannot protect himself by a prior record of his assignment. In other words, the patentee, by his second grant, conveys only the residuum of title, or residuary interest, remaining in him after his prior grant, and the first assignment, though not recorded, will prevail as against the second. (*Ashcroft* vs. *Walworth*, 5 Fish., 528.) The assignee of a patent can claim no more title than his assignor could lawfully grant, and takes subject to the legal consequences of the patentee's previous acts. (*Pierson* vs. *Eagle Screw Co.*, 3 Story, 403; *McClurg* vs. *Kingsland*, 1 How., 246.)

2. The same principle is to be applied here which governs in conveyances of real estate. The doctrine is well established that a subsequent conveyance of real estate which does not purport to pass the entire fee, being limited in terms to such interest as grantor then has, operates only on his residuary title after having given the former conveyance, even though the first conveyance be not recorded until after the second. (*Brown* vs. *Jackson*, 3 Wheat., 449; *Hope* vs. *Stone*, 10 Minn., 141; *Marshall* vs. *Roberts*, 18 Minn., 405; *McNear* vs. *McComber*, 18 Iowa, 12; *McConnel* vs. *Reid*, 4 Scam., 122; *Butterfield* vs. *Smith*, 11 Ill., 485; *Hamilton* vs. *Doolittle*, 37 Ill., 482.) A purchaser of real estate by quitclaim is not a *bona fide* purchaser without notice. (*May* vs. *LeClaire*, 11 Wall., 222.)

3. The act of 1870 can have no application, since complainants' rights were acquired long before its passage. That act, not being retrospective in its terms, cannot affect conveyances of patents made before its passage.

[*William Marshall, James L. High*, and *R. Mason*, for complainants. *West and Bond*, for defendant.]

The opinion of the court was as follows:

DRUMMOND, *J.*:

The question in this case arises upon the plea of the defendant, from which, and from the bill of complaint, the following facts appear: A patent was issued to one McQuinston on the 18th of October, 1859, for an improvement in cultivators, and a reissue on the 16th of May, 1871. Both parties claim under this patent. The defendant claims under a conveyance from William S. Weir, who purchased from the patentee on the 18th of November, 1870, and the assignment of purchase was recorded on the 5th of December, 1870. The terms of this assignment were that the patentee granted and conveyed to William S. Weir, through whom the defendant claims, "all my right, title, and interest in and

to the said letters patent in the following described territory," (within which, we may concede for the purposes of the case, was included the State of Illinois,) "* * * as fully and entirely as the same would have been held and enjoyed by me if this assignment had not been made."

On the 17th and 26th of April, 1860, the patentee assigned, to the parties through whom the plaintiffs claim, the exclusive right to make and to sell all machines and rights under the patent, in the territory comprising the counties of Warren and Henderson, in Illinois. These assignments were not recorded in the Patent Office at the time that Weir's assignment was recorded; and the question presented by defendant's plea is as to the effect of the assignment to Weir, recorded in December, 1870, as against the assignments through which plaintiffs claim, and which were not then recorded.

I think there can be no question but that, under the 11th section of the act of Congress of 1836, as between the parties, the assignment by the patentee of the right under the patent would be valid without recording. In other words, the recording did not give it effect as between them. The only object, I think, of the law in requiring the assignment to be recorded was to protect *bona-fide* purchasers, without notice of a prior assignment of a right under the patent. It is contended on the part of the defendant that, as it has been the practice for many years for rights under a patent to be conveyed by an assignment, the language of which is "all the right, title, and interest" of the patentee in the patent, it substantially amounts to a warranty on the part of the patentee that he conveys by such language all the right which he ever had under the patent, and therefore that when this language was used in the assignment to Weir in November, 1870, it meant all the interest which the patent originally conveyed to the patentee within the territory named. Of course the controversy turns upon what is the true construction of this assignment. Without deciding what might be the effect of an assignment of all the right, title, and interest of the patentee in a particular county, where there was no residuary interest left in the patentee, I am of the opinion, notwithstanding this alleged uniform practice as to assignments, that the true construction of such an assignment is that where there is a residuary interest left in the assignor under the patent, within the territory mentioned, it must be construed as only conveying that residuary interest. I mean, of course, where he has previously parted with some interest under the patent in a portion of the territory. For example, in this case, so far as we know from the history of the case and what is before us in the pleadings, the patentee had conveyed all his interest in the patent in Henderson and Warren counties in 1860; but he had left, and had a right to convey all his remaining interest in the State of Illinois. And when he stated that he conveyed all the interest which he had under the patent in the State of Illinois, and that the assignment was to vest in the assignee all his right under the patent in the State of Illinois, as fully and entirely as the same would have been held and enjoyed by him if the assignment had not been made, we must construe it as not indicating on his part an intention to convey what he had previously conveyed to other parties—viz., his rights under the patent in the counties of Warren and Henderson. Otherwise we must infer that he was perpetrating a fraud on the assignee by the assignment of 1870.

The question is, What is the legal effect of the language used, or what did he mean? Recollect we have nothing to guide us except the language in the contract. Did he intend, and is it necessarily the legal construction of that contract from the language used, that he intended to convey in November, 1870, what he had previously conveyed in April, 1860? If, as I have already intimated, there was nothing on which the conveyance of 1870 could operate, then a different question would arise. But the whole State of Illinois, except the counties of Henderson and Warren, was left, upon which the conveyance could take effect. And I think that, looking simply to the contract, notwithstanding the practice which is said to have grown up under the law as to the form of these assignments, we must hold that where there was anything upon which the assignment could be said fairly to operate, then we cannot construe it as showing an intention on the part of the assignor to convey what he had previously conveyed. In other words, we will not infer from language such as this, and in the absence of any proof upon the subject, that the patentee intended a fraud upon his assignee.

This is the general rule as applicable to conveyances of real estate. The question always is, Did he intend to convey, and is that the true meaning of the language used in the instrument, the same property and the same rights that he had previously conveyed to other parties? If he did, and if that is the necessary construction of the language, then it may be fairly said that the recording law should operate upon it, as well in the case of the conveyance of lands as the assignments of rights under a patent. But I think the result of the authorities as to the conveyance of real estate is, that where there has been a conveyance of property which is unrecorded, and there is a conveyance afterward of property which is recorded, and there is anything upon which the second conveyance can operate, where it purports to transfer simply his right and title, it does not cut off the prior unrecorded deed. Perhaps the authorities go further and hold, in the case of real estate—at least such seems to be the intimation of the Supreme Court of the United States—that a mere quitclaim of the right and title of the grantor, will not, *per se*, operate as against a prior unrecorded deed, which purports to convey the property.

The act of 1836 declared that a patent should be assignable, either as to the whole interest or any undivided part thereof, by any instrument in writing; and that this assignment should be recorded in the Patent Office within three months from the execution thereof. Now the language of the 11th section of the act of 1836, as construed by the courts, is not essentially different from the language of the 36th section of the act of 1870. The courts have construed the assignment, where it was not recorded, to be void as against parties who held by the subsequent assignment purporting to transfer, recorded and taken in good faith, and without notice of the prior assignment or conveyance. The language of the 36th section of the act of 1870 is, that "said assignment, grant, or conveyance shall be void

as against any subsequent purchaser or mortgagee for a valuable consideration, without notice unless it is recorded in the Patent Office within three months from the date thereof." I do not understand that this language is substantially different from that of the 11th section of 1836, as construed by the courts; so that I hold that we cannot construe the language of the assignment made in November, 1870, to Weir, under whom the defendant claims, as intending to convey the right and title under the patent within the counties of Warren and Henderson, which the patentee in 1860 had conveyed to another party, through whom the plaintiffs claim. So that the result is that the assignment in 1860 is operative.

The plea of defendant is, therefore, overruled.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

CHARLES N. BLACK, AS ADMINISTRATOR, &c., *et al. vs.* SAMUEL THORNE *et al.*

[*In equity.—Before* BLATCHFORD, *J.—April*, 1874.]

In taking an account of profit in this suit, under the decree therein, (10 Blatch., 66,) the master proceeded on the principle of charging to the defendants as profits the cost or value of all the wood which, but for the use of the patented improvements, they would have burned in their furnaces; and he made a report accordingly. On the accounting, the defendants inquired of one of their witnesses whether he had examined and worked any furnaces substantially differing from the plaintiffs' furnace and worked substantially different from the plaintiffs' process, which existed at the time the defendants constructed their furnaces, and, if he had, what was the economical working of such furnaces as compared with the plaintiffs' furnace and process. The master, on the plaintiffs' objection, excluded the evidence as incompetent. The defendants excepted to the ruling, and afterward excepted to the report on the ground of the exclusion of such evidence:

Held, 1. That the ascertainment of the profits made by the use of the patented improvements to produce heat, by the burning of wet fuel, necessarily presented as the question to be determined, What advantage did the defendants derive, in producing heat, from burning wet tan by the employment of the patented improvements, over what would have resulted to them from the use, to produce equally beneficial results in the way of heat, of other methods of producing such equally beneficial results, open to the public and to them to be used at the time they used the patented improvements?

2. As the solution of this question involved the twofold inquiry whether there was any other open method whereby equally beneficial results in the way of heat could have been obtained, and, if so, what it was; and what would have been the expense of such method, in construction, operation, and fuel, as compared with the expense of the use of plaintiffs' improvements, in construction, operation, and fuel; the evidence excluded was competent and relevant, and ought to have been received.

The report set aside, and the case remanded to the master.

[*Dorman B. Eaton* and *Andrew J. Todd*, for defendants.
Charles N. Black, for complainants.]

BLATCHFORD, *J.*:

The master was ordered by the decree to take an account of the profits derived by the defendants from their infringement of the plaintiffs' two patents. (10 Blatch., 66.) The infringement proved was by the use, in burning wet tan to make heat employed in and about the tanning of hides, of furnaces containing and employing in their use the improvements covered by the plaintiffs' patents. The defendants used the infringing furnaces to produce heat. They burned wet tan in such furnaces to produce heat. The claims of the plaintiffs' patents are confined to the use of the improvements claimed only to produce heat by the burning of wet fuel. The ascertainment of the profits made by the use of the patented improvements to produce heat by the burning of wet fuel, necessarily presents, as the question to be determined, What advantage did the defendants derive, in producing heat, from burning wet tan by the employment of the patented improvements, over what would have resulted to them from the use, to produce equally beneficial results in the way of heat, of other methods for producing such equally beneficial results, open to the public and to them to be used at the time they used the patented improvements? This requires that the inquiry should be limited to the production of heat, and to the production of equally beneficial results in the way of heat, but it does not require that the heat should be that capable of being produced by burning wet tan alone. It extends to any fuel.

The master, in taking the account of profits, has proceeded on the principle of charging to the defendants, as profits, the cost or value of all the wood which, but for the use of the patented improvements, they would have burned in their tanneries. The view is that the cost of the wood was saved, because the wet tan burned cost nothing as fuel, and would otherwise have been useless. This principle is correct, if, to obtain equally beneficial results in the way of heat, by other open methods, would have required the use of wood to the given amount or value. The solution of the question, therefore, involves these inquiries, first, whether there was any other open method whereby equally beneficial results in the way of heat could have been obtained, and, if so, what it was; second, what would have been the expense of such method, in construction, operation, and fuel, as compared with the expense of the use of the plaintiffs' improvements, in construction, operation, and fuel. If the first inquiry should require, on evidence, the answer that it was a method which, to produce the equally beneficial results in the way of heat, would require a certain quantity of wood or other article, as fuel, then the saving in expense, in fuel, would be the cost of the wood or other fuel.

Now, I understand the above inquiries to involve an investigation into the matters inquired about in a question put, on the reference before the master, by the counsel for the defendants, to the defendants' witness, Du Faur. The question was whether he had examined and worked any furnaces substantially differing from the plaintiffs' furnace, and worked substantially different from the plaintiffs' process, which existed at the time the defendants constructed their furnaces, and, if he had, what was the economical working of such furnaces, as compared with the plaintiffs' furnace and process. This question was objected to on the part of the plaintiffs, as being incompetent, and as having been already asked. The master sustained the objection, and the defendants took, on the record, an exception to the ruling. The defendants have also filed an exception to the master's report, (exception 10,) on the ground that he erred in excluding proof of the economy of furnaces used in the combustion of wet spent tan, substantially different from the plaintiffs' furnace, and worked substantially different from the plaintiffs' process, as compared with the plaintiffs' furnace and process, and which furnaces were existing and in use at the time the defendants constructed their furnaces which are complained of. The evidence so excluded ought to have been received. It was competent and relevant. It could not be told, *a priori*, that the answer to it would introduce nothing which had not already been given in evidence in the case. It does not appear whether the master sustained the objection to the question on the ground that it was incompetent, or on the ground that it had been already asked, or on both grounds. Where and when the question had been already asked of the witness is not stated in the objection, or pointed out in the record. There may have been general evidence given by the witness, in the proofs for final hearing, as to the working of furnaces substantially differing from the plaintiffs' furnace, and worked substantially different from the plaintiffs' process, which existed at the time the defendants constructed their furnaces, and which were open to them to be used, and as to the general economical working of such furnaces, as compared with the plaintiffs' furnace and process; but the inquiry before the master involved the details of such economical working, with a view to arriving at the saving in money effected by the use of the plaintiffs' patented improvements.

It is no answer to these views to say that the court has held, in this case, that the patentee was the first to discover and put in practice the true method of economically burning wet fuels, and obtaining from them better results than from equal quantities of dry fuels. That is true; but still the difference in economy which the defendants have derived from using the patented improvements is now the subject of inquiry. It may be that equally beneficial results in the way of heat could not have been obtained by the use of any number of furnaces burning any quantity of fuel, wet or dry, or both. It may be that, to produce equally beneficial results in the way of heat, would have required a certain number of furnaces, involving a certain expense for construction and working, and a certain quantity of a given kind of fuel, costing a certain sum. It may be that the result of all these inquiries will be to show that, after all, the defendants have saved the expense of all the wood it would have taken to produce heat enough for use in tanning the same number of hides which they have tanned by the use of the heat produced by the infringing furnaces; and that, with that saving, they have still had a surplus of unused heat. If so, the proper inquiry will have been made, and the result arrived at will have been reached on a presentation of all the evidence properly bearing on it.

As these views require the report to be set aside, and the case to be sent back for the taking of further evidence, in conformity with this opinion, an order will be entered to that effect.

U. S. CIRCUIT COURT, DISTRICT OF CONNECTICUT.

SAMUEL G. MONCE AND ROLLIN J. IVES *vs.* BENJAMIN F. ADAMS.

[*In equity.—Before* SHIPMAN, *J.; April*, 1874.]

The invention covered by letters patent to Samuel G. Monce, June 8, 1869, for an "improved tool for cutting glass," consists, so far as the revolving steel cutter is concerned, in the fact that the sides, which are parallel at the axis, are beveled toward each other, at the perimeter, at an angle of about forty-five degrees to the axis, thus meeting about midway and forming a cutting-edge, which is approximately a right angle.

Such an instrument embodies the conditions that give efficiency to the glazier's diamond, viz.: the cutting-edge is *curvilinear*; it is formed by two surfaces meeting at *right angles*; these surfaces are *equally inclined* to the axis of the cutter; and when the cutter is properly mounted in its frame the inclination of the cut will naturally be at *right angles to the surface of the glass*.

It is a fact worthy of mention that this small and inexpensive tool has proved to be of great utility and has achieved success, having confessedly superseded all other inventions as a substitute for the glazier's diamond.

Monce's invention is not anticipated by revolving cutters designed and used for other purposes, (as for dressing the surface of grindstones, the cutting of gas-pipes, or the cutting of paper or of pasteboard, or of leather,) in which the distinctive feature of the invention—the double bevel forming the right-angled edge—is present, if at all, by accident, and which, although capable in exceptional cases of being used to cut glass, will not practically perform the office of a successful glass-cutter for glaziers' purposes.

The cutter of the patent, which makes a cut at right angles to the surface of the glass, is not anticipated by the Pike cutter, which bears upon the glass in a slanting direction.

The patentee having disclaimed a revolving cutter, his claim to "The cutter A, constructed substantially as shown and described, and for the purposes set forth," is a claim to the particular form, shape, and angles of the cutter, which adapted it to the purposes of a glass-cutter, and is as exact and accurate as the nature of the subject will permit.

The patent is not void for ambiguity because the specification merely says that the cutter is to be "hardened" without specifying what degree of hardness is to be given to it.

[*Charles E. Mitchell*, for complainants,
W. Edgar Simonds, for defendant.]

SHIPMAN, *J.*:

The complainants are the owners of a patent for an alleged new and useful "improved tool for cutting glass," and have brought their bill against the defendant, alleging an infringement by the latter, and praying for an injunction and an account. The patent was granted to Samuel G. Monce, one of the complainants, on the 8th of June, 1869. The defense contained in the answer, and chiefly relied upon, is a denial that said Monce was the first inventor of the patented article. It is also alleged that the description of the invention set forth in the specification is incomplete and ambiguous.

The patented article was designed to be an economical and effective substitute for a glazier's diamond in the cutting of glass. The alleged invention is thus described in the specification:

My invention consists in the use or employment of a revolving steel roller, the periphery of which roller is beveled on both sides, so as to form a cutting-edge, and is fitted to revolve in a suitable frame, and attached to a handle for operating the same. The cutter is made from steel, and is turned smooth and round, and afterward hardened. The sides are parallel, or nearly so, for a short distance and then beveled toward each other, so as to meet about midway between the same, thus forming the point or cutting-edge. The beveled portions of the sides should be at an angle of about forty-five degrees to the axis of the cutter, and, consequently, will be at near right angles to each other. It is not necessary that the angles of the beveled sides should be at exactly right angles to each other, but, near that angle, or a very little more obtuse, the cutter is found to operate to the best advantage. The cutter can be fitted to revolve upon a pin, or on solid journals at each end, which latter mode I prefer, and show the same in drawings. The frame, near one end, is provided with bearings for the journals, which journals should be a little shorter than the thickness of the sides of the frame, in order that, when the sides are placed against a straight-edge or other gage, the end of the journal shall not come in contact with such gage. The handle C can be of any desired form, and secured to the frame in any proper manner. I construct said handle like the handle ordinarily used for a diamond tool. * * * By my invention I produce a tool for cutting glass, which is equally convenient in use as an

ordinary diamond, and can be sold at a large profit, for one-tenth of the usual cost of a diamond.

The claim is as follows:

I do not claim simply a revolving cutter, but what I claim as new, and desire to secure by letters patent, is—
1. The cutter A, constructed substantially as shown and described, and for the purposes set forth.
2. The combination of the cutter A, frame B, and handle C, substantially as and for the purposes described.

The drawings attached to the specification show that the instrument is a tiny steel revolving cutter or wheel, made as described in the specification, attached to a frame and handle, the whole resembling very much the glazier's diamond ordinarily in use. It is clearly proved that this instrument is exceedingly well adapted to the purpose for which it was designed; that very large quantities have been sold at a cheap rate; that it has superseded the use of all other steel glass-cutters; and that it is an efficient and useful tool, while previous inventions have been failures. A glazier's diamond is sold at from $3.50 to $5, while this article is sold at fifty cents or less. The use of a tool for glass-cutting is thus brought within the reach of every householder. It is admitted that the invention does not consist of a revolving cutter; and it is obvious that it does not consist in a revolving cutter of a high degree of hardness, for "hardened" steel cutters had been known previously to the date of the patent. The invention, then, so far as the cutter is concerned, must consist in its form—in the fact that the sides are made parallel, and then beveled toward each other at an angle of about forty-five degrees to the axis of the cutter, so as to meet about midway between the same, in a cutting edge. The sides, at the cutting-edge, will, consequently, if they are at an angle of forty-five degrees to the axis of rotation, be at right angles to each other. As has been said, the object of the patentee was to make an economical substitute for the glazier's diamond, which should, if possible, possess the requisites which experience had shown were best adapted to successful glass-cutting.

In order to determine whether the utility and success of this invention depend upon any peculiarity in the form of the cutter, it is desirable to ascertain upon what depends the efficiency of the diamond. While almost any diamond will scratch or tear the surface of glass, it is a fact that the value and efficiency of a diamond to be used for the cutting or severing of glass depends not merely on the hardness, but upon the form, of the cutting-surface. Other gems than the diamond will successfully cut glass, provided they can be shaped into forms similar to those of the diamonds used for this purpose. Dr. Wollaston, in the Philosophical Transactions for 1816, thus explains the peculiarities required for the glazier's diamond: "In the natural diamond there is this peculiarity, in those modifications of the crystals that are chosen for this purpose, that the surfaces are, in general, all curved, and, consequently, the meeting of any two of them presents a curvilinear edge. If the diamond is so placed that the line of the intended cut is a tangent to this edge, near to its extremity, and if the two surfaces of the diamond laterally adjacent be equally inclined to the surface of the glass, then the conditions necessary for effecting a cut are complied with. The curvature is not considerable, and, consequently, the limits of inclination are very confined. If the handle be too much or too little elevated, the one extremity of the curve will be made to bear irregularly upon the glass, and will plow a ragged groove, by pressure of point. But, on the contrary, when the contact is duly formed, a simple fissure is effected, as if by lateral pressure of the adjacent surfaces of the diamond, diverted equally to each side. The effects of inequality in the lateral inclination of the faces of the diamond to the surface of the glass are different according to the degree of inequality. If the difference be very small, the cut may still be clean, but, as the fissure is then not at right angles to the surface, the subsequent fracture is found inclined accordingly. When an attempt is made to cut with an inclination that deviates still more from the perpendicular, the glass is found superficially flawed out on that side to which the greater pressure was diverted, and the cut completely fails."

Again, from the testimony given in this case it appears that it is necessary, for practical use as a glass-cutter, that the sides of the instrument should be beveled toward each other at about a right angle, for two reasons: First, a more acute angle would not be sufficiently durable; second, experience has shown that, in order to cut glass successfully, the cutting-edges of the tool, whether of a diamond or of any other cutter, must be at a right angle to each other. This fact is also asserted by the authorities upon the subject. The reason why such an angle is necessary does not seem to be clearly explained. Hence the requisites of the form of a tool best adapted to glass-cutting are three-fold: First, the cutting-edge should be curvilinear; second, the cutting-edges should be at right angles to each other; third, the two surfaces of the diamond which are adjacent to the cutting-edge should be equally inclined to the surface of the glass. The cutter should also be so placed in its frame as most easily to bring the cut which is to be made at right angles with the surface of the glass.

Recurring, now, to the alleged invention, the sides of the cutter are made parallel and then beveled toward each other at an angle of about forty-five degrees to the axis of the cutter, so as to meet about midway in a cutting-edge. The conditions necessary to form a glazier's diamond are thus complied with; for, by making the two sides of the cutter parallel for a short distance, and then beveling them toward each other at an angle of forty-five degrees to the axis of rotation, till they meet, "the two surfaces" of the cutting instrument, "laterally adjacent, are equally inclined to the surface of the glass." The frame being attached to the cutter in the precise way in which the handle is attached to the diamond, the inclination of the cut will naturally be at right angles to the surface of the glass, and the lateral pressure of the adjacent surface of the cutter is "diverted equally to each side." Furthermore, the sides at the cutting-edge, being at or near an angle of forty-five degrees to the axis of rotation, will be at or near an angle of ninety degrees to each other.

Having thus ascertained wherein the peculiarity of the cutter consists, is this form a new invention of the patentee, or has it been anticipated by others? The respondent claims that this alleged invention is an instance of double use—the mere application of an old device to a new purpose. He introduces the patents of Charles Wilson, of March 13, 1847, and April 10, 1849, of Joseph E. Stanwood, of April 26, 1859, and of A. H. Hook, of September 13, 1864, to show, not only that the use of steel cutters for cutting hard substances was well known, but that the cutter in each of these patents was of a similar form with the one in the Monce patent.

The first patent to Charles Wilson was for a mode of cutting stone or other like material, by means of a revolving cutter, operating in a described manner, and was particularly designed for the smoothing and finishing of grindstones. Whether the knives in Wilson's machine are able to cut glass or not is unknown. In either event the particular form or shape of the knives or cutters was not a part of Wilson's machine, and, whether they were or were not accidentally beveled at an angle of forty-five degrees, was an unrecognized circumstance of no value or importance to his discovery.

The second patent of Wilson is entirely immaterial to the present case.

The patent of Stanwood was for a revolving cutter, so operating upon gas or iron pipe, secured in place by a clamp or jaw, as to cut the pipe. Sometimes one of the cutters, detached from the heavy frame in which it is placed, will cut or tear glass. Ordinarily, however, an instrument intended for cutting pipe cannot be successfully used upon glass. The requisites for successful pipe cutting are very different from those for successful glass-cutting, and, consequently, it is only in exceptional cases that a gas-pipe cutter can be used upon glass. Such a cutter could never be made a practical substitute for a diamond. But in this, as in the first Wilson patent, the invention which is the distinctive feature of the Monce patent is unknown and unrecognized. In the Stanwood device the sides of the cutter may or may not be beveled toward each other at a particular angle. The angles vary in different specimens of the article, sometimes exceeding and sometimes being under forty-five degrees.

The Hook patent is for a paper-cutter. It is sufficient to say that one of its sides is at right angles to the axis of rotation.

The respondent also introduced the cutter attached to a book-binder's machine for cutting pasteboard, and claims that it has long been in use, and will cut glass. The pasteboard cutters exhibited upon the trial did not cut glass readily or easily. The truth probably is that such a cutter of unusual hardness will also sever glass, but those ordinarily and usually made will not answer this purpose. The sides of the pasteboard cutter are, apparently, but slightly inclined toward each other.

Thus far the well-known principle relied upon by the respondent is inapplicable to the present case, inasmuch as it is untrue that the distinctive feature of the patented article was used as a part of the cutters previously existing. The alleged invention of Monce was neither a part of the invention of previous patentees nor was it a part of their machines, unless by accident, and, lastly, the cutters in their machines will not practically perform the office of this cutter, to wit: the cutting of glass for glaziers' purposes. The peculiarity in the form of this cutter has accomplished an effect not before produced—that is, has made a successful glass-cutter.

The respondent also claims that the alleged invention had been previously anticipated, in every particular, by the patent of O. M. Pike, of December 29, 1868, and by the harness-leather cutter used and produced by the witness Septimus C. Stokes.

Pike's patent was for a glass-cutter. His cutter was a small rod of hardened steel, turning, near one end, upon two friction-wheels, and, at the other end, in a hardened steel socket in a thumb-screw. The object of the thumb screw, the friction-wheels, and the steel socket was to make the friction on the cutter as little as possible. When the instrument is used, the end of the cutter is placed upon the surface of the glass and the side of the frame drawn along the straight edge or pattern. The instrument is so made that, in order to bring the point of the cutter in contact with the surface of the glass so as to cut, the cutter must be placed upon the glass at an angle of forty-five degrees. This article has not proved practically a success, and, by recurring to the quotation heretofore made from Dr. Wollaston, it is not difficult to understand the cause of the failure. The fissure should be made at right angles with the surface; otherwise, if the cut deviates much from the perpendicular, "the glass is found superficially flawed out on that side to which the greater pressure was diverted, and the cut completely fails." As the Pike tool must be held at an angle of forty-five degrees to the glass, the cut is made at an angle of forty-five degrees, instead of being at right angles, to the surface. The cut becomes a sidewise or slanting cut, and, the greater pressure being constantly directed upon one side, the instrument is unevenly worn, and, in a short time, loses its cutting power. The defect in the Pike instrument is remedied in the Monce patent by making the cutter a wheel instead of a revolving rod. The wheel can then be placed upon the end of the handle, like the handle of an ordinary diamond, instead of at the side of a frame, and can be placed upon the glass so that the lateral pressure of the two sides of the cutter upon the surface will be equal, and, consequently, the cut will be at right angles, and not slanting, to the surface.

The Stokes cutter was originally for cutting leather. It was purchased in 1861 by the owner, who was then a saloon-keeper, and used, at first, for cutting newspapers into cigar-lighters. Stokes discovered that it would cut glass, and has occasionally used it for that purpose since, for his own convenience or amusement. The wheel was evidently, at one time, much larger than it is now, and has been worn to the present edge by use. The wheel is of great hardness, and will, when ground to a sharp edge, cut glass. That it can be uniformly used for a glass-cutter is not claimed. That such an instrument could not be made practically available in the market and by householders, as a glass-cutter, is obvious.

The result is, that the respondent has, in my judgment, failed to show that the alleged invention has been anticipated either by a prior patent or by prior use.

There is another fact in this case not unworthy of mention. The small and inexpensive tool which is the subject of controversy has proved to be of great utility, and has achieved success. The energy and research of the respondent and of his counsel has not discovered a successful substitute for the glazier's diamond, other than the patented article. It has con-

fatally superseded all prior inventions. Under these circumstances, the language of the court in *Stanley Works* vs. *Sargent* (8 Blatchf. C. C. R., 344) is not inappropriate.

Utility is not an infallible test of originality. To be new, in the sense of the act, it must be produced of original thought or inventive skill, and not a mere formal and mechanical change of what was old and well known. But the effect produced by a change is often an appropriate, though not a controlling, consideration in determining the character of the change itself.

The respondent also insists that the patent is void for ambiguity, both in the specification and in the claims; First, because the specification does not state what degree of hardness is to be given to the cutter. It simply says "hardened." As has been before remarked, the patent was not for a hardened revolving cutter. That was a well-known invention. As the term "hardened," among mechanics, implies that it shall be made as hard as can ordinarily be done, and not tempered, it was not necessary for the patentee to set forth in his specification more particularly the degree of hardness to be given to the cutting instrument. Second, it is claimed that the specification is ambiguous, in that it does not point out what is old, and specify what is new, in the alleged invention. In the claim the patentee expressly disclaims a revolving cutter, but does claim a cutter constructed substantially as shown and described, and for the purposes set forth. This claim has reference to the shape, form, and angles of the cutter—to the particular construction and peculiar shape of his cutter, which adapted it to the purposes of a glass cutter. He did not intend to claim, and did not, in my judgment, claim, a hardened roller, or a cutter brought to any particular degree of hardness.

I see no force in the other criticisms upon the ambiguity of the specification, which seems to me to be as exact and accurate as the nature of the subject will permit.

No question is made in regard to the fact of infringement by the respondent. He has made and sold an exact imitation of the plaintiffs' invention.

An injunction must, therefore, issue, and a reference be made to a master to take and state an account.

EXTENSIONS GRANTED.

31,030.—Improved Sausage-Stuffer.—Granted to AUGUST NITTINGER, dated January 1, 1861.

Claim.—1. The cylinder J, with its projection *m*, in combination with the spring-latch *i*, the latter being so constructed and so arranged in respect to the said projection that the cylinder is rendered self-locking, as herein set forth.

2. The hinged table L, and its oblong stop *p*, when arranged on the frame in respect to the cylinder J and its tube K, as and for the purpose herein set forth.

31,082.—Improved Machine for Mixing Dough.—Granted to WILLIAM HOFINE, dated January 8, 1861.

Claim.—I claim the combination and arrangements of the feeding devices in hoppers A B C, the face-plate I, the mixing devices and packer L in the trough G, substantially as and for the purpose specified.

31,094.—Improved Machine for Creasing and Finishing Leather Straps.—Granted to WILLIAM MCK. THORNTON, dated January 8, 1861.

Claim.—I claim the combination of the unequal rollers F and J, operated in the manner and for the purposes set forth.

31,102.—Improvement in Springs for Railroad-Cars.—Granted to TIMOTHY F. ALLYN, January 15, 1861; reissue No. 4,959, dated July 2, 1872.

Claim.—1. A car-spring composed of plates or equivalent forms, held apart by the described arrangement of fulcrums, when the parts are constructed to hold each other in place without bolts, substantially as set forth.

2. I claim, in combination with metallic spring-plates, the central cross-bar or bearing and its India-rubber or elastic packing, substantially as described.

31,128.—Improvement in Hoisting Apparatus.—Granted to ELISHA G. OTIS, January 15, 1861; reissue No. 4,269, (Division A,) dated February 21, 1871, (Benjamin T. Babbitt, administrator.)

Claim.—1. The pawls *f f* and the teeth of the racks C C, constructed of hook form, essentially as shown and described, for the purpose set forth.

2. The arrangement of the ropes T, U, and V, combined and operating substantially as and for the purpose set forth.

3. The arrangement of the slide or belt shipper S, in connection with the shoe or brake Z and rope T, substantially as shown, to admit of the simultaneous application of the brake and the shifting of the belts O P, on the idle-pulleys J K, as set forth.

31,128.—Improvement in Hoisting Apparatus.—Granted to ELISHA G. OTIS, January 15, 1861; reissue No. 4,270, (Division B,) dated February 21, 1871, (Benjamin T. Babbitt, administrator.)

Claim.—The counterpoise combined with the platform or cab of the hoisting apparatus through the intervention of the hoisting-drum, substantially as herein set forth.

31,128.—Improvement in Hoisting Apparatus.—Granted to ELISHA G. OTIS, January 15, 1861; reissue No. 4,271, (Division C,) dated February 21, 1871, (Benjamin T. Babbitt, administrator.)

Claim.—The counterpoise combined with the safety-stop mechanism of the platform or cab through the intervention of the hoisting-drum, substantially as and for the purpose herein set forth.

31,133.—Improvement in Cultivators.—Granted to DANIEL S. STAFFORD, January 15, 1861; reissue No. 5,827, dated April 7, 1874, (Eliza T. Conklin, executrix.)

Claim.—1. The combination, in a straddle-row cultivator, of frame A, wheels B, series of plows G, arranged in two gangs, with a central space between the gangs, and elevated or bent axle C, constructed substantially as combined, to permit the corn to pass under it, and to raise or lower the plow-frame, as set forth.

2. The elevated pole D, segmental slides *c* and *d*, and stirrups *e*, in combination with frame A *a*, as and for the purpose set forth.

3. With the foregoing devices of second claim, the axle C and driver's seat E, in combination, for the purposes set forth.

4. The combination, in a straddle-row cultivator, of the two wheels B, axle C, frame A, series of plows G, and supplementary wheels J, all operating in combination, for the purpose set forth.

5. In a straddle-row cultivator, the share-blades H, constructed as described, in combination with frame A, bent axle C, and wheels B, substantially as and for the purpose set forth.

Disclaimer filed January 14, 1875.

Disclaims the first, fourth, and fifth clauses of claim, as above set forth.

DISCLAIMERS FILED.

129.—Whole number **31,133.—Improvement in Cultivators.**—ELIZA T. CONKLIN, executrix of DANIEL S. STAFFORD, deceased, Decatur, Ill.—Patented January 15, 1861; reissue No. 5,827, dated April 7, 1874. Disclaimer filed January 14, 1875. Disclaims:

"The first, fourth, and fifth clauses of claim, which are in the following words, to wit: (See Extensions Granted.)

"'1. The combination, in a straddle-row cultivator, of frame A, wheels B, series of plows, G, arranged in two gangs, with a central space between the gangs, and elevated or bent axle C, constructed substantially as described, to permit the corn to pass under it, and to raise or lower the plow-frame, as set forth.

"'4. The combination, in a straddle-row cultivator, of the two wheels B, axle C, frame A, series of plows G, and supplementary wheels J, all operating in combination, for the purpose set forth.

"'5. In a straddle-row cultivator, the share-blades H, constructed as described, in combination with frame A, bent axle C, and wheels B, substantially as and for the purpose above set forth.'"

37,991.—Improvement in Machines for Rolling Leather.—JOEL WHITNEY, Winchester, Mass.—Patented March 24, 1863; reissue No. 4,122, dated September 13, 1870; reissue No. 4,562, dated September 19, 1871. Disclaimer filed December 11, 1874. Disclaims:

"The words 'either direct or,' and the words 'when the adjusting device is combined with the treadle action,' in the paragraph beginning 'This invention relates to improvements in rolling-machines;' and also the words beginning 'The combination or arrangement of the general adjustment' and ending 'may be employed when no general adjustment of the rolls is used;' and that the first and second claims of said reissued letters patent are too broad, and when considered in connection with these words in the specification, including the combinations therein respectively mentioned, when used 'in conjunction with an adjusting device by which the rolls are arranged in relation to each other as the varying thickness of the leather may require,' or otherwise.

"Your petitioner, therefore, disclaims:

"'1. The arrangement of levers *f f* transversely of the treadle J and parallel with the axes of the rolls B and B', substantially as described and shown.

"'2. The combination and arrangement of treadle J, rolls B B', and levers *f f*, or equivalent intermediate devices between the treadle and rolls, whereby the action of the treadle serves to move one roll in a direct line toward the other, substantially as described and shown.'"

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date February 2, 1875.]

8,036.—Thumb-Screw Heads.—JAMES S. RAY, East Haddam, Conn. Application filed January, 12, 1875. Term of patent 7 years.

8,037 and **8,038.—Coffin-Screw Heads.**—RUSSELL H. BURR, West Meriden, Conn., assignor to C. ROGERS & BROS., same place.—Cases A and B. Applications filed January 22, 1875. Term of patents 7 years.

8,039.—Coffin-Handle Sockets.—RUSSELL H. BURR, West Meriden, Conn., assignor to C. ROGERS & BROS., same place. Case C. Application filed January 22, 1875. Term of patent 7 years.

8,040.—Grave-Coverings.—ISAAC G. LUNDAY and CALTON G. ANGLIN, Hickory Flat, Ala. Application filed December 31, 1874. Term of patent 7 years.

8,041.—Lamp-Bracket.—FREDERICK R. SEIDENSTICKER, West Meriden, Conn., assignor to BRADLEY & HUBBARD, same place. Case C. Application filed June 3, 1874. Term of patent 7 years.

8,042 and **8,043.—Chandeliers.**—FREDERICK R. SEIDENSTICKER, West Meriden, Conn., assignor to BRADLEY & HUBBARD, same place.—Cases C and D. Applications filed June 3, 1874. Term of patents 7 years.

8,044.—Cooking-Stove.—GEORGE A. WELLS, Troy, N. Y., assignor to FULLER, WARREN & Co., same place. Application filed January 2, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Certificate bearing date February 2, 1875.]

2,197.—Cigars.—CH. H. BRENAMAN & Co., Baltimore, Md. Application filed December 18, 1874.

"'Solon Shingle,' and the monogram 'C. H. B. & Co.'"

2,198.—Tea.—ROBERT CUNNINGHAM, San Francisco, Cal. Application filed October 12, 1874.

"The words 'Fine Foochow Oolong' are written above the figure of a bell, on which is written the word 'Tong-Mow.'"

2,199.—Cigars.—FELDMAN & SCHNURMAN, Allentown, Pa. Application filed January 18, 1875.

"'Rifle Club.'"

2,200.—Whiskies.—OSWALD JACKSON & BROTHER, New York, N. Y. Application filed August 26, 1873.

"'Old Club House Whiskey,' in combination with an ornamental arbitrary character, somewhat resembling the letter A, and the whole inclosed in a plain circular border."

2,201.—Cigars.—M. STACHELBERG & Co., New York, N. Y. Application filed January 21, 1875.

"the representation of a shield, which is divided into four sections or fields. One field contains the representation of the Cuban flag; the second field contains the representation of a tobacco-plant in blossom; the third field contains the representation of a spread eagle and fasces, and the fourth field contains the representation of the United States flag."

2,202.—Teas.—WILLIAMS, BLANCHARD & Co., San Francisco, Cal.—Case A. Application filed January 18, 1875.

"'Golden Pheasant Chop.'"

2,203.—Teas.—WILLIAMS, BLANCHARD & Co., San Francisco, Cal.—Case B. Application filed January 18, 1875.

"'Camella.'"

2,204.—Cotton Cassimeres.—BLISS & ALLEN, New York, N. Y. Application filed January 23, 1875.

"'Farmers' & Miners' Cassimeres.'"

2,205.—Cigars.—FREDERICK DITTMER, Detroit, Mich. Application filed January 22, 1875.

"'The Spear.'"

2,206.—Starch.—COLGATE GILBERT, Buffalo, N. Y. Application filed January 11, 1875.

"the picture of an American bison or buffalo."

2,207.—Bitters.—SCHMIDLAPP & Co., Cincinnati, Ohio. Application filed January 25, 1875.

"'Night Cap Bitters.'"

2,208.—Cigars.—SEIDENBERG & Co., Key West, Fla. Application filed January 22, 1875.

"the representation of a rose, together with the words 'Key West.'"

2,209.—Cigars and Tobacco.—THE CONSOLIDATED TOBACCO COMPANY, Gilroy, Cal. Application filed July 27, 1874.

"'Monterey, California,' arbitrarily arranged with the arms or seal of the State of California."

2,210.—Silver-Plated Goods.—JAMES W. TUFTS, Medford, Mass. Application filed January 25, 1875.

"two diamond-shaped figures intersecting each other at right angles, and inclosing at the center the letter 'T.'"

2,211.—Wire Goods.—J. H. & N. A. WILLIAMS, Utica, N. Y. Application filed January 25, 1875.

"the figure of a wire heddle."

2,212.—Medicine.—JAMES E. WOODWARD, Boston, Mass. Application filed January 22, 1875.

"'The Castilian Acidulæ.'"

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TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED FEBRUARY 2, 1875.

159,244. CALCULATING-MACHINES. Frank S. Baldwin, St. Louis, Mo. [Filed Sept. 8, 1873.]

Brief.—Revolving cylinder with sets of adjustable teeth, nine to each set. Sets of teeth correspond to units, tens, hundreds, &c. Any number of the teeth of each set may be adjusted into position, so as, by the revolution of the cylinder, to act upon toothed type or register wheels through intermediate toothed wheels. Carrying effected by a sliding horizontal bar with a beveled head, which at every whole revolution of a register-wheel is slid forward by a projection upon said wheel, so that its head is brought into the path of a sliding tooth upon the cylinder, which tooth is thus deflected, so as to turn the wheel of the next higher denomination. For multiplication and division, cylinder adjustable in the direction of its axis, so that its teeth may act upon the wheels of higher or lower denomination. Minor details indicated by claims.

1. A calculating-machine in which a series of toothed type-wheels are combined with a cylinder carrying teeth, which admit of being adjusted to revolve, or partly revolve, any one or more of said wheels, substantially as set forth.

2. In a calculating-machine, the combination, with a series of toothed type-wheels, of a toothed cylinder, E, capable of being rotated in either direction, and of being adjusted longitudinally in respect to the said type-wheels, as specified.

3. The cylinder F, provided with advancing and retracting bolts, and with adjusting mechanism for the same, controlled by knobs *p*, and having graduated slots *r*, so arranged that the positions of the said knobs in the same will indicate the number of teeth advanced, all substantially as specified.

4. The combination, with the teeth *h*, of springs for adjusting the same in one direction, and of cam-like segments F, for adjusting them in the opposite direction, and for retaining them after adjustment, as specified, Fig. 3.

5. The carrying teeth *i*, hung to and arranged to be adjusted laterally on the cylinder, substantially as and for the purpose set forth.

6. The combination of the cylinder-shaft D, its cog or ratchet wheel *c*, and notched disk *d* with the anchor-lever *d*, acted on by a spring, all substantially as and for the purpose specified. (See Fig. 6.)

7. The combination of the cylinder, screw-shaft D, nut *s*, and a locking device, whereby the cylinder and nut may be rotated with the shaft, or retained while the shaft rotates, all as and for the purpose set forth.

8. The combination, substantially as described, of the toothed cylinder E, the series of intermediate toothed wheels G, and the series of toothed type-wheels J.

9. The combination, substantially as described, of the cylinder E, its eccentric Q, and lever Q with the series of toothed type-wheels N, Fig. 7.

10. The disks J, having a frictional attachment to the shaft, in combination with arms or stops, adjustable, so as to arrest the movement of one or more wheels while the shaft is turning, all as set forth.

11. The combination of the cylinder, series of carrying-teeth *i*, and arms M, operated by type-wheels J, and adjusting the said carriers, as set forth.

12. The rods M, adapted to and arranged to slide in slots formed for their reception in the fixed shaft H, between the wheels G.

13. The combination of the said rods M and their double inclined heads *p* with the laterally adjustable teeth *i* and *i'* of the cylinder.

14. The combination, substantially as described, of the said rods M with the double-inclined projections *j* of the cylinder.

15. The combination of the said sliding rods M with the projections *m* of the type-wheels J.

16. The wheels J, provided with triangular projections *m*, in combination with the stop *s* and arms M, substantially as and for the purpose set forth.

17. The type-wheels J and N, hung loosely to their shafts, and provided with springs arranged to bear against the recessed edges of disks keyed to the said shafts, all substantially as and for the purpose specified.

18. The combination of the shaft U and its arms *n* with the projections *m* of the type-wheels J.

19. The combination of the shaft U and its arms *n'* with the projections *m'* of the type-wheels N.

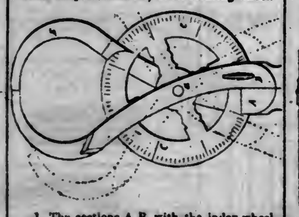
159,245. SHOES AND GAITERS. G. Bryant, San Francisco, Cal. [Filed Nov. 6, 1874.]



In a shoe, the tongue A, consisting of the exterior parts of cloth and the intermediate water-proof material, and stitched to the quarters to a point above the ankle, substantially as described.

159,246. COMBINED CALIPERS, DIVIDERS, &c. Chas. Caton, Coshocton, Ohio. [Filed Oct. 13, 1874.]

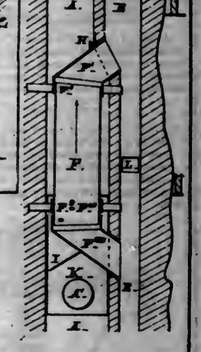
Brief.—The scale-plate is in the form of a wheel, to the center of which both arms of the instrument are pivoted, thus making a combined calipers, dividers, and measuring-wheel.



1. The sections A B, with the index-wheel C pivoted between said sections, and all upon a common axis, *a*, so as to admit of independent movement of said parts, substantially as and for the purpose set forth.

2. The index-wheel C and axis *a*, in combination with the set-screws *f* and sections A B, pivoted to said axis on each side of the wheel C, and the limbs of the sections extending beyond the periphery of the wheel, all substantially as and for the purpose set forth.

159,247. HOUSE-BUILDING. Jas. N. Cherry, Keokuk, Iowa. [Filed Mar. 17, 1874.]



Brief.—The chimney is made with two flues, and these are connected by a pipe leading from one through the other, and returning into the first. The products of combustion warm the air in the adjacent flue by means of this pipe. The deflector protects the pipe from condensed vapor running down the wall of the smoke-flue.

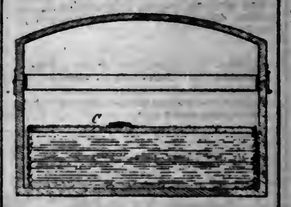
1. The combination of smoke-flue A, the ventilating flue E, and air-pipe F, passing through flue A, to be heated, and connecting with flue E, to cause movement of air in it, as set forth.

2. The combination of the flues A E, the inclosed pipe F, and the door with shutter K, substantially as set forth.

3. In a chimney, the combination of two flues with a pipe, F, passing through, and closed as to one, and opening into the other, to cause action of ventilation, substantially as set forth.

4. The combination of pipe F with parts F' F'' F''', supports F'' F''', and deflector I, as set forth.

159,248. TRAVELING-TRUNKS. W. D. Colt, New York, N. Y. [Filed Jan. 18, 1873.]

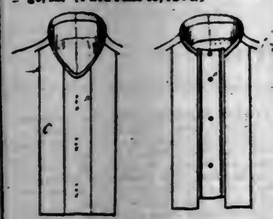


1. A traveling-trunk having straps A A secured to the bottom thereof, in combination with partitions C, substantially as and for the purpose shown and described.

2. A traveling-trunk having straps A A secured to the bottom thereof, in combination with detachable compartments composed of the partitions C and D and straps E E, substantially as shown and described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

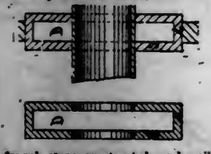
159,849. SHIRTS. Charles J. Coyle, Chicago, Ill. [Filed June 15, 1874.]



In combination with a shirt-bosom, having suitable eyelets or fastenings to regulate the size of the collar-band, an adjustable reversible center plait, substantially as described and shown, and for the purposes set forth.

159,850. STOVE-PIPE THIMBLES. J. S. Elliott, Chelsea, Mass. [Filed July 17, 1874.]

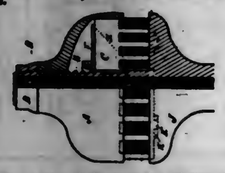
Brief.—The funnel stone or thimble has a chambered recess, which surrounds the pipe and lessens the conduction of heat. There are no openings in the end of the thimble except for the passage of the pipe.



A funnel-stone constructed, as described, with a chambered recess, D, closed at both ends, in combination with and opening into the hole made to receive the stove-pipe, as described, and for the purpose specified.

159,851. WHEELS FOR VEHICLES. Francis W. R. Emery, Taunton, Mass., assignor of one-half his right to Danl. M. Ferren, same place. [Filed Dec. 29, 1874.]

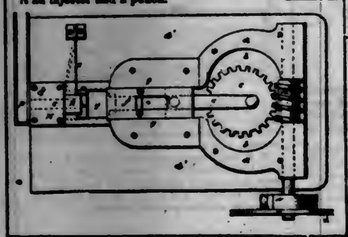
Brief.—Spokes can easily be taken out and replaced, and the felly made tight in the tire.



The carriage-hub, consisting of the main portion J, cone F, and disk A, in combination with the quadrantal spoke-holders C, provided with the sockets D and studs E, to operate substantially as and for the purpose set forth.

159,852. NUT-MACHINES. Peter L. Fitzer, Reading, Pa. [Filed Dec. 19, 1874.]

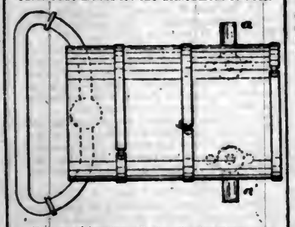
Brief.—A moving plunger operated by the crank on worm-wheel C, and carrying within it an injector and a punch.



The combination of the wheel *c*, screw *d*, crank *e*, connecting-rod *e*, plunger *f*, ejector *i*, punch *k*, and stop *m*, substantially as shown.

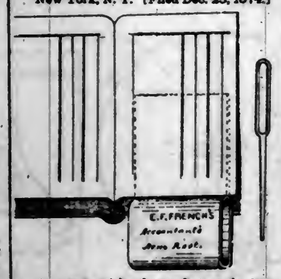
159,853. STREET-SPRINKLERS. E. H. Frank, Cincinnati, Ohio. [Filed May 2, 1873.]

Brief.—The inlet-pipes of the tank have on their inner ends check-valves, and on their outer ends means for the attachment of hose.



The combination of the check-valves *a a* with the feed-pipes and water-tank, as set forth.

159,854. HAND-RESTS. Evelyn F. French, New York, N. Y. [Filed Dec. 23, 1874.]



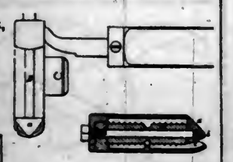
As a new article of manufacture the herein-described hand-rest, consisting of a tongue and hollow base, substantially as and for the purposes set forth.

159,855. LOOM-TEMPLES. Albt. D. Fuller, Chicopee, assignor to the Dutcher Temple Company, Hopedale, Mass. [Filed Dec. 19, 1874.]

1. In the loom-temple the trough-cap D, provided with the shuttle-deflector *a* and the cloth-guide *c*, arranged therein and with respect to each other, substantially as specified and represented.

2. The trough-cap, provided with the shuttle-deflector *a*, arranged as shown and described.

159,855.



159,856. EJECTORS. Louis B. Fulton and Julius Proeger, Pittsburg, Pa. [Filed Aug. 11, 1874.]

Brief.—The steam is admitted partly through a central apertnre in the spirally-fluted nozzle, and partly through spiral grooves in small streams, each having a whirling motion imparted to it as it enters the shell.

The stationary spirally-fluted hollow plug or nozzle I, and thimble K, arranged wholly outside of the water-space, and combined with the oviform shell C, in the manner shown, for the purposes set forth.

159,857. LOCKING KNOB-LATCHES. Saml. H. Gilman, New Orleans, La. [Filed July 11, 1874.]

1. The endless groove F' around the key-shaft F, deviating from a right line in one-half of its circumference sufficient to throw the hub D the distance of its entire lateral movement, and deviating back to its starting-point on the other half of its circumference, the two lateral extremes of the groove being similar or precisely the same, all for the purpose of rendering it impossible to turn the key in either direction without obtaining the desired result, substantially as described, and for the purpose set forth.

2. The hub D, constructed with two arms, A', toothed on the whole circumference of one side of its circular portion to match the clutch-wheel H, and an interior groove, I, all being loose on the spindle *e*, on which it has a circular and a lateral movement, moving with the spindle when attached to it by the clutch H, and, when moved laterally out of the clutch H, held fast by the locking-legs U, and the spindle left free to revolve in it, substantially as described, and for the purpose set forth.

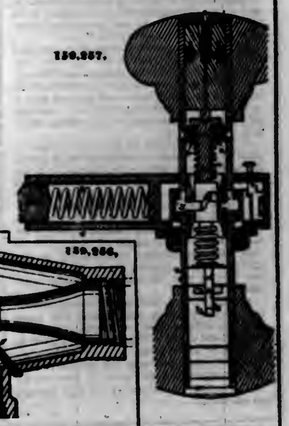
3. The clutch H, fastened on spindle *e*, with a groove around its circumference and collar, forming one side of the groove, both groove and collar fitting the interior of the cap V, for the purpose of holding the revolving hollow spindle *e* in its proper lateral position, substantially as and for the purpose described.

4. The two lips at the mouth of the key-hole, facing each other, and having their outer edges circular, in combination with the spindle of the knobs, the said lips being held together by two spring-tongues extending into the key-guide, and fastened to it at their inner ends, so as to press the lips constantly together, and against each other, and against the side of the key when it is pushed in between them, as shown and described.

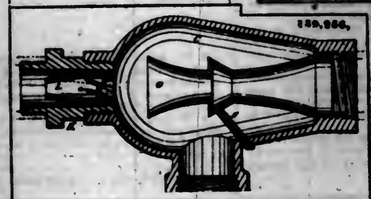
5. The double-headed key-shaft F, with slots in the sides of its heads for locking it, and with the irregular groove around its central part, all substantially as described, and for the purpose set forth.

6. The traveler E, sliding on the central part of the key-shaft F, and carrying the two cogs G and G', for the purpose of holding in position and moving the hub D, all substantially as described, and for the purpose set forth.

159,857.



159,856.



7. The dogs M, with their teeth N at each end, for locking the shaft F and key-guide R, substantially as described, and for the purpose set forth.

8. The combination of the key-guide R and key-guards B with the key-shaft F and dogs M, substantially as described, and for the purpose set forth.

9. The combination of the key-shaft F with the traveler E and hub D, and clutch H, substantially as described, and for the purpose set forth.

159,858. BALE-TIES. Saml. H. Gilman, New Orleans, La. [Filed July 31, 1874.]



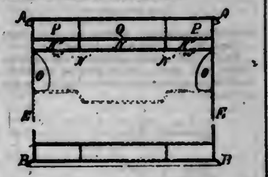
1. The combination of a hoop having a solid end with a tie made in the form of a flattened tube, both edges of which taper from top to bottom, and with one side flat, while the opposite side is convex on a line tapering from top to bottom, all substantially as and for the purpose described.

2. A hoop for baling purposes, with the extreme head of the wedge on its end wider than any other part, substantially as described, and for the purposes set forth.

3. A tie for uniting the two ends of bale-hoops, constructed in the form of a section of a flattened tapering tube, tapering in its tube on straight lines from one end to the other on its two edges and on its bottom side, and concave on a corresponding taper line on the upper or top side, all substantially as described, and for the purpose set forth.

159,859. RESERVOIR COOKING-STOVES. J. H. Goodfellow, Troy, N. Y. [Filed Dec. 30, 1874.]

Brief.—Heated air is conducted to chambers at the ends of the reservoir.



1. In combination with the inclosed water-reservoir L, attached to or upon the rear end of a cooking-stove, the flue N, N', and O, which communicates at one end with the outer air, and at its opposite end with the reservoir-casing, and permits air to become heated and brought into direct contact with the ends of said reservoir, substantially as and for the purpose specified.

2. In combination with the oven H, the flues N and N', which communicate with the outer air and with the upper portion of said oven, and the flue O, which extends between the rear part of said oven and the chamber K of the reservoir-casing, said parts being arranged to operate in the manner and for the purpose substantially as shown.

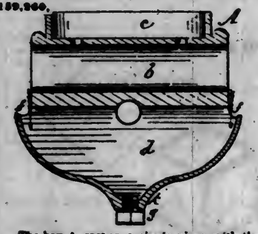
3. In combination with the oven H, and with the reservoir chamber K, the flues O and O, which extend between the same, and permit heated air from said oven to be brought into direct contact with the ends of the reservoir L, substantially as and for the purpose set forth.

4. In combination with the inclosed water-reservoir L, arranged upon the rear end of a cooking-stove, and with a flue for heating and conveying external air to the casing of said reservoir, the opening g, formed in and through the rear plate of the stove, and affording communication between said reservoir-casing and the exit-flue Q, substantially as and for the purpose shown and described.

159,860. JOURNAL-BOXES FOR SHAFT-HANGERS. John Greenwood, Rochester, N. Y. [Filed Oct. 24, 1874.]

Brief.—The journal-box is cast in one piece, and constructed with lips at the ends, for catching the drippings from the ends of the box, and with a closed chamber beneath, for holding the drippings.

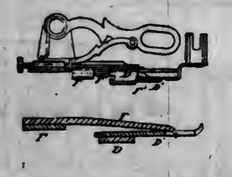
159,860.



The box A, cast in a single piece, with the oil-cup *c*, bearing *b*, and oil-chamber *d* arranged below said bearing, and constructed with the lips A, projecting beyond the ends of the bearing, and with the opening *f* and the nipple *k*, for receiving the plug *g*, and otherwise constructed as herein shown and described, for the object specified.

159,861. RUFFLING AND GATHERING ATTACHMENTS FOR SEWING-MACHINES. John M. Griest, Chicago, Ill. [Filed Nov. 16, 1874.]

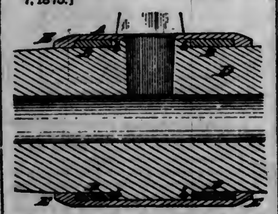
Brief.—Notches extend rearwardly between the usual teeth of the blade and shield, and the teeth of the ruffling-blade projecting through the cloth enter the notches of the shield, and are prevented from being dulled by contact with the metallic surface.



1. A sewing-machine ruffler or gatherer wherein the free end of a flexible and sliding ruffling-blade is toothed and supported on a notched or grooved fixed part arranged for contact with that part of the cloth operated upon by the said blade, the said grooves or notches being arranged to receive the said teeth, and being deep enough to keep their points from contact with the fixed part, for the purpose of thereby allowing the teeth to project through the cloth, substantially as specified.

2. The ruffling-blade F', having the downwardly-bent teeth in its free and yielding edge, and also the notches sunken therein rearwardly from the base of the said teeth, in combination with the fixed shield D' arranged below the said shield, and having therein the upwardly-turned teeth arranged to enter the notches in the shield, and also having the deep notches arranged to receive the teeth of the ruffling-blade, all substantially as and for the purposes specified.

159,862. HUBS FOR VEHICLE-WHEELS. C. H. Guard, Tippecanoe, Ohio. [Filed Jan. 7, 1870.]



The combination of a wooden hub, made with projections *b b* on either side of the spoke-tenons, metallic rings B B, and shell A, formed with projections E E outside the bands, substantially as and for the purposes set forth.

159,863. TOY MONEY-BOXES. John Hall, Watertown, Mass. [Filed July 17, 1874.]

Brief.—Inserting a small coin in the open mouth of the dog figure causes the partial rotation of the cleverly-pivoted head, and the deposit of the coin in a slot for the purpose. The descent of the money tips the inner arm of a rock-lever shaft, the outer arm being the tail of the dog, which wags mechanical thanks therefor.

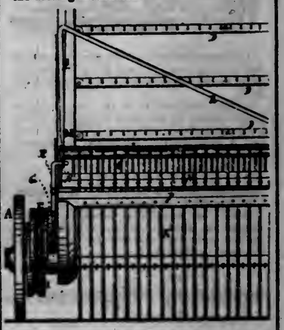


1. In combination with a toy money-box, the mechanical figure of a dog, B, provided with the pivoted head and the tail-rod *n c*, constructed and arranged to operate substantially as shown and described.

2. In combination with a toy money-box, the removable plate C, for removing the money, as shown by Figs. 3 and 4, when said parts *c*, *g*, and *k* are arranged to operate substantially as described.

159,864. HAY-LOADERS. Homer V. Hawkins, Amboy, Ill. [Filed Dec. 5, 1874.]

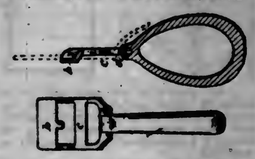
Brief.—Devices for simultaneously raising and lowering the rake, and throwing the endless elevating-apron into and out of gear with the driving mechanism.



1. The rake K, having its head, consisting of the bars L N and sides N', pivoted in the stays M M, so that the rake may vibrate therein, in combination with the rotating levers F F', arms Q E, and lever S, substantially in the manner as described, and for the purpose specified.

2. The combination of the rake K and elevator, consisting of the sides B, screw C, having bars D, provided with studs *a*, teeth O, pulleys E I, and wheels A, as and for the purposes specified.

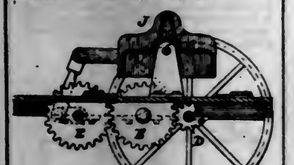
159,865. GAG-RUNNERS. John P. Hisley, Syracuse, N. Y. [Filed Nov. 18, 1874.]



The combined gag-runner and buckle, consisting of the bar *b*, having the downward-projecting tongue S, bridge *c*, and bar *d*, with its mouse and the attached runner, all substantially as herein shown and described.

159,266. HAND-CARS. Lewis C. Hopkins and Augustus Cooke, Cincinnati, Ohio. [Filed July 29, 1874.]

Brief.—A car for tram or rail ways in which the power is applied through the medium of a double seat vibrating on a pivot.



The combination of double seat J, connecting-rod H, and the system of cog-wheels E, F, and D, for actuating driving-wheels, substantially as set forth.

159,267. PLOWS. John A. Johnson, St. Paul, Minn. [Filed Dec. 18, 1874.]

Brief.—An adjustable horizontal cutter attached to the land-side of a plow, to cut under the unplowed land.



1. The combination of the laterally-projecting blade B, upright C, and flange D, substantially as and for the purpose hereinbefore set forth.

2. The combination of the cutter attachment, formed by the blade B, upright C, and flange D, with the bolt *a*, wedge E, and landside A, substantially as and for the purpose hereinbefore set forth.

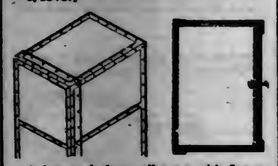
159,268. COTTON-BALE TIES. H. R. Jones, Burton, Tex. [Filed Aug. 20, 1874.]

Brief.—In using, the thumb is pressed against the rear end of the base-block, raising the point and allowing the loose end of the band to slip over it.



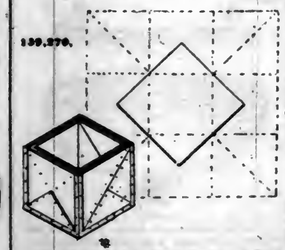
As a new article of manufacture; the detachable cleat-tie herein described, consisting of the base-block C, having the shoulders *c c*, cleat D, and segmental cleat E F, substantially as and for the purpose specified.

159,269. PAPER BOXES. John Franklin Jones, Marcellus Falls, N. Y. [Filed Jan. 6, 1875.]



A box made from roll-paper, with flanges around its bottom, stayed with hoop-iron, and provided with a bottom of several thicknesses, each sheet thereof being supported by the flanges of a separate course, substantially as described.

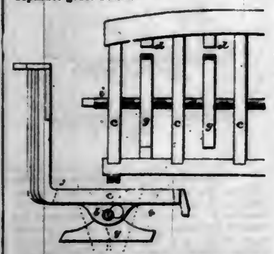
159,270. PAPER BOXES. John Franklin Jones, Marcellus Falls, N. Y. [Filed Jan. 6, 1875.]



A box cut and folded out of pasteboard, so that its rectangular body is strengthened by lapping and riveting upon its sides triangular corner portions, and provided with an extra bottom placed diagonally upon the box, folded and riveted thereon, so that the triangular cut portions of the extra bottom will complete the box, making its entire sides of double thickness.

159,271. GRATES. Solomon Kepner, Pottstown, Pa., assignor of one-half his right to J. B. Parker, same place. [Filed Jan. 11, 1875.]

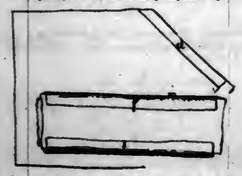
Brief.—The top of the supplemental is even with that of the main grate at rest, but, when made to turn half-way upon its axis, forms a separate grate below.



1. The combination of a grate with the swinging bars *g*, the bars being adapted to be dropped below the level of the grate, whereby a supplemental grate is formed, substantially as set forth.

2. The bars *g*, formed upon the top of the rod *f*, in combination with a grate, the rod being pivoted below the level of the bars *e*, whereby the bars *g* are adapted to be used as a shaking device, and to form a double or supplemental grate below the bars *e*, substantially as shown and described.

159,272. NECK-TIES. Otto Kaeppers, Philadelphia, Pa. [Filed May 21, 1874.]



1. A neck-tie the points of which have their edges fastened by a lining composed of a textile fabric or netting and gutta-percha paper, said lining being applied to the edges of the points by pressure with a heated flat-iron or equivalent device, substantially as described.

2. A neck-tie the loops and cross-piece of which are provided with a lining of a textile fabric or netting and gutta-percha paper, the edges of said loops and cross-piece being secured to the lining by pressure with a heated flat-iron or equivalent device, substantially as set forth.

159,273. ICE-PICKS. Saml. Lindley, Green Bay, Wis. [Filed Aug. 17, 1874.]

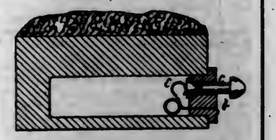
Brief.—Divides ice into pieces of equal size and thickness.



An ice-pick formed of the plates A B C, bolts A and *l*, and tubes *k k*, for cutting ice into pieces of uniform size and shape, all arranged and combined as and for the purpose described and shown.

159,274. SLATE-WASHERS. Levi L. Lyman and Edward A. Boell, San Francisco, Cal. [Filed Oct. 16, 1874.]

Brief.—The water-receptacle is in the same block with the rubber, but can be used independently thereof.



1. The slate-washer herein described, provided with independent water-chamber, the independent rubbing-surface, and the stopper *b*, provided with a spring-valve, as set forth.

2. The stopper *b*, having the valves *c d f* and spring *e*, arranged as and for the purpose described.

159,275. HOOKS. Morris Matteon, New York, N. Y. [Filed Jan. 14, 1875.]

Brief.—The barb is secured to the plate by means of a spring, and it may be closed inward against the plate, out of the way, when not in use.



1. The plate *a*, having hook *c*, hole or ring *d*, and barb *e*, substantially as described.

2. The plate *a*, recessed to receive the shank of the barb *e*, and the flat spring *f*, the parts being combined for operation, substantially as set forth.

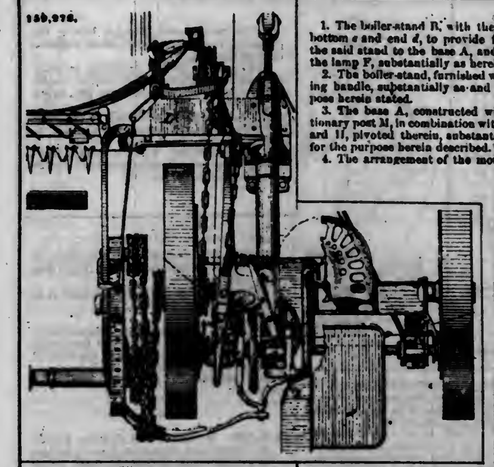
159,276. HARVESTER-RAKES. Dayton S. Morgan and Thos. Motley, Brockport, N. Y., assignors to Dayton S. Morgan, same place. [Filed Aug. 24, 1874.]

1. The combination of the main frame, the coupling-sleeve, the finger-beam, the drag-bar attached to the finger-beam at one end, and pivoted on the coupling-sleeve at the other, the reel-post pivoted thereon, and the supplementary brace J', these members being constructed and operating substantially as set forth, whereby the reel-post is firmly braced, while free to rise and fall with the drag-bar and cutting apparatus, and to vibrate back and forth on its pivot, substantially as set forth.

2. The combination of the two main wheels, the main frame, the coupling-sleeve, the caster-wheel supporting the coupling-sleeve, the finger beam pivoted on said sleeve, the rake post mounted on the finger-beam, the slotted rake-stale support mounted on inwardly-projecting bracket-arms on the rake-post, and the rake-arm, these members being constructed and operating in combination substantially as set forth.

3. The combination of the hinged finger-beam, the vibrating sweep-rake mounted thereon, the hinged drag-bar, and the reel mounted on said drag-bar, and vibrating in unison with the rake, substantially as set forth.

159,276.



1. The boiler-stand B, with the head *b* and bottom *c* and end *d*, to provide for securing the said stand to the base A, and to support the lamp F, substantially as herein stated.

2. The boiler-stand, furnished with the folding handle, substantially as and for the purpose herein stated.

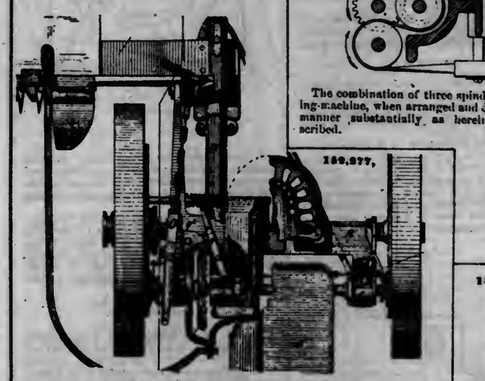
3. The base A, constructed with the stationary post M, in combination with the standard H, pivoted thereon, substantially as and for the purpose herein described.

4. The arrangement of the mouth-piece C, it aperture F, and the cup Q with the atomizing-tubes D and medicine-cup E, to operate substantially in the manner and for the purpose herein mentioned and shown.

159,277. MOWING-MACHINES. Dayton S. Morgan and Thos. Motley, Brockport, N. Y., assignors to Dayton S. Morgan, same place. [Filed Dec. 19, 1874.]

1. The combination of the skeleton main frame, the counter-shaft mounted in pipe-box bearings therein, the forked coupling sleeve pivoted on the pipe-boxes, and the similarly-pivoted brace-bar, these members being constructed and operating in combination, substantially as set forth.

2. The combination of the skeleton main frame, the counter-shaft mounted in pipe-box bearings therein, the forked coupling-sleeve pivoted on the pipe-boxes, the finger-beam hinged to the coupling-sleeve, and the drag-bar secured to the finger-beam in rear and pivoted on the coupling-sleeve in front, these members being constructed and operating in combination, substantially as set forth.

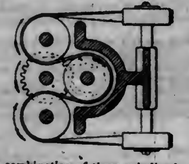


159,278. ATOMIZERS. Chas. Rembof, Brooklyn, E. D., N. Y. [Filed Sept. 5, 1874.]

Brief.—The boiler-stand is of sheet-iron, and has a bead around its lower part. This lower part is held in the opening in a cast base-plate by means of the inserted bottom. The usual mouth-piece is placed upon the top of a pivoted post, which is arranged to swing forward and backward, and be held by a set-screw at any desired angle. The mouth-piece carries at its lower edge a cup to catch the condensed vapor, which can at will be poured into the medicine-cup. The handle folds when not in use.

159,279. BORING-MACHINES. J. Richards, Philadelphia, Pa., and G. Richards, Gothenburg, Sweden. [Filed Dec. 30, 1874.]

Brief.—The spindles which carry the boring-tools are attached to weighted levers, which keep them above the material, unless forced down by the operator, and they are driven by a system of gearing, which communicates motion to them all simultaneously.



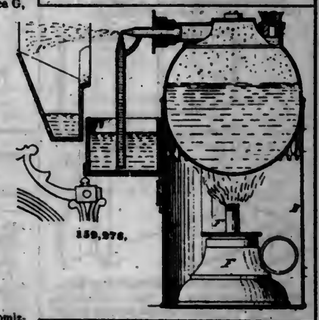
The combination of three spindles in a boring-machine, when arranged and driven in the manner substantially as hereinbefore described.

159,277.

159,280. CANAL-LOCKS. Thos. S. Bonner, Minneapolis, Minn. [Filed Jan. 20, 1875.]

The combined lock herein described, consisting of the large lock B, with its large gate F, which, with the upper gate, *h*, of the lock A, forms the combined lock A B, which will enable a train of several boats to pass altogether from one level to another, as specified, without impairing the efficiency of the old lock for passing single boats.

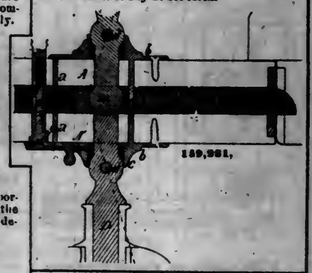
159,276.



159,281. DOOR-LATCHES. Oscar F. Buss, Albany, N. Y. [Filed Dec. 12, 1874.]

Brief.—A divided case provided with slots for receiving and guiding the rear end of a spring latch-bolt, and with brackets for supporting the bolt-operating levers.

In a door-lock the sectional body A A', each section consisting of the slotted case *a e e'*, rose-plate *b*, and bracket *c*, in combination with the spring-bolt B and one or more levers, D D', substantially as set forth.

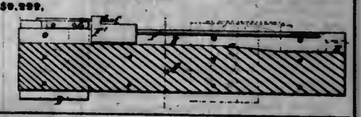


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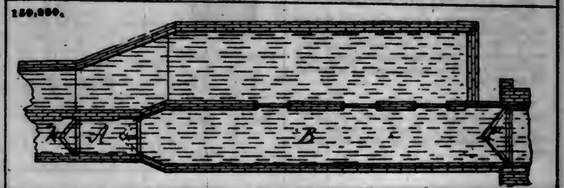
159,282. LOOMS FOR WEAVING PILE FABRICS. Stephen Sanford, Amsterdam, N. Y. [Filed Jan. 12, 1875.]

Brief.—The wire-trough is so formed that the wire-head, in the inward movement of the wire into the shed, passes from a higher to a lower plane, by which means it is disengaged from the catch.

159,282.



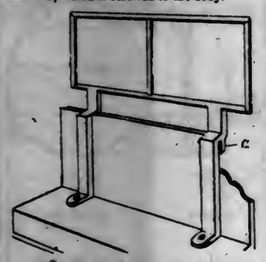
159,280.



The grooved bar, into which the wires are withdrawn from the fabric, having a form substantially as described, which allows the respective wires to adjust themselves to a position which clears them from the withdrawing device on their movement into the open shed, as specified.

159,283. ATTACHING DASH-BOARDS. GOTTF. Schaffner, Troy, N. Y. [Filed Aug. 1, 1874.]

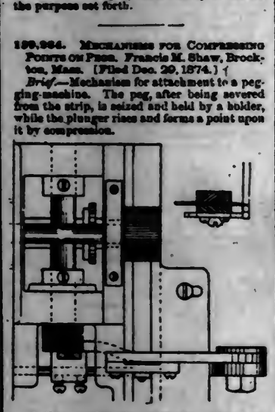
Brief.—The dash-board is held by a clip and arm, which is screwed to the body.



The clip C at the lower part of a dash-board, in combination with the dash-board and the front end of a wagon, substantially as and for the purpose set forth.

159,284. MECHANISMS FOR COMPRESSING POINTS ON PEGS. Francis M. Shaw, Brockton, Mass. [Filed Dec. 29, 1874.]

Brief.—Mechanism for attachment to a pegging-machine. The peg, after being severed from the strip, is seized and held by a holder, while the plunger rises and forms a point upon it by compression.



1. The combination, with the cutter-carrying arm, of the holder and cutter, the holder acting to hold a peg being pointed, while the cutter separates another peg from the ribbon of pegwood or strip, substantially as described.

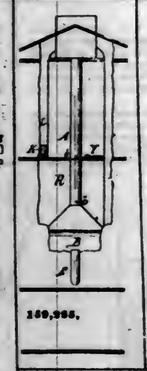
2. The combination, with the plunger, of a holder for holding the peg, substantially as described.

3. In combination, mechanism for feeding or moving the peg strip, a cutter for cutting a peg from such strip, a holder for holding the peg, and mechanism for forming a point on the peg by compression of its point, substantially as described.

159,285. CORRUGATED CHIMNEYS AND VENTILATORS. Lovern B. Silver, Cleveland, Ohio. [Filed Dec. 14, 1874.]

Brief.—By means of the valve the heated air surrounding the smoke-pipe may be admitted into a section of the main hot-air flue, communicating with an upper room. The pipes admit air to be heated in the flue around the smoke-pipe.

The combination, with a grate or stove, of the flue E, smoke-pipe A, cold-air pipes F W, valve Y, and registers G, all constructed substantially as and for the purposes herein set forth.





159,286.

159,287. REVOLVING POCKET-KNIVES. W. Staniforth, Sheffield, England, assignor to William H. Smith and Wm. G. Hall, same place. [Filed Dec. 26, 1874.]

Brief.—The handle proper, containing the blades, rotates in an exterior tubular metal case, which is slotted at one side to allow the blades to be opened when in proper position. When not in use the opening in the handle is rotated away from the slot in the exterior tube or case, and dirt is thus prevented from accumulating around the blades.



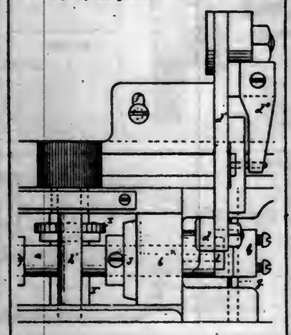
1. The blade B and handle revolving in an outer case, for the purposes described and set forth.

2. The spring a, with the bolt b and projection c, in combination with the slit c', or their equivalents, substantially as and for the purposes set forth.

3. The slots i and i', in combination with the spring a and bolt b, or their equivalents, substantially as and for the purposes set forth.

159,287. MACHINES FOR FORMING POINTS ON PEGS. Benj. F. Sturtevant, Boston, and Francis M. Shaw, Brockton, assignor to B. F. Sturtevant, Boston, Mass. [Filed Dec. 18, 1874.]

Brief.—The mechanism is designed as an attachment to a pegging-machine. The peg, after being severed from the strip, is grasped and held by a yielding holder, while the plunger rises and forms a pyramidal point upon it by compression, a point of such shape permitting the fibers of a square peg to be more equally compacted.



1. The reciprocating plunger having the pyramidal point-forming depression, substantially as set forth.

2. A yielding holder, operating substantially as described, to hold the peg, in combination with a plunger to point the peg, as set forth.

3. The combination, with the yielding holder and cutter, of the plunger, substantially as and for the purpose set forth.

4. The combination, with the yielding holder and cutter and the plunger, of the intermittent feed-wheels, as described.

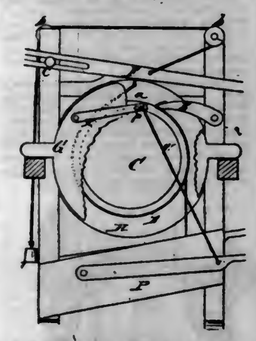
159,288. BUTTON-HOLE GUIDE-CLAMPS. E. Thompson, Bridgeport, Conn. [Filed Dec. 14, 1874.]

Brief.—The edge of the button-hole to be worked is clamped between.

In a button-hole guide-clamp, the combination of the U-shaped wire A and the double swinging jaw B, secured to one of the arms of the wire in the manner described, both constructed substantially as and for the purpose specified.

159,289. MACHINES FOR COILING HOOPS. Jas. Tomlinson, Goderich, Canada, assignor to himself and Harriett M. Gage. [Filed July 17, 1874.]

Brief.—The invention consists of certain devices, arranged as shown in the drawing, by which wooden hoops are coiled into compact masses for transportation.



1. In a machine for coiling hoops, the combination of a forming-wheel, C, encircling band or strap D, pivoted arm E, and the weighted lever F, arranged and operating substantially as set forth.

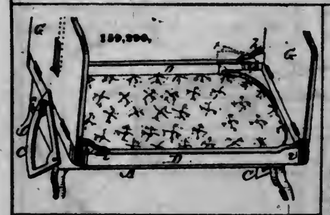
2. In a machine for coiling hoops, the movable face-plate G, pivoted clamp Q, lever R, and pin p, in combination with the forming-wheel C, encircling band or strap D, pivoted slotted arm E, and weighted lever F, all arranged and operating substantially as described.

159,290. SOFA-BEDSTEADS. J. K. Underhill, Turlock, Cal. [Filed Oct. 23, 1873.]

Brief.—The back is turned down onto the base to form a bed, and is held in such position by hooks on the base-frame engaging with pins on the back frame. The hinged boards are held in their vertical positions by buttons, which are turned within the back frame when the end boards are folded down.

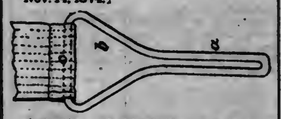
1. The combination of the seat-frame A, pivoted segmental braces C C, pivoted back D, pins a, and hooks b, all substantially as and for the purposes herein set forth.

2. The combination, with the pivoted sofa-back D, of the hinged end boards G and the hinged and pivoted buttons h, provided with vertical offsets f, all substantially as and for the purposes herein set forth.



159,290.

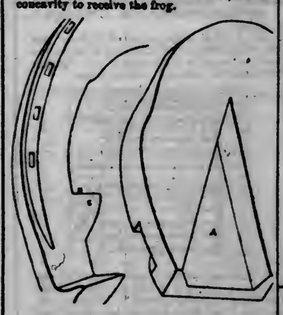
159,291. STOCKING AND SKIRT HOLDERS. Andrew Warren, Waltham, Mass. [Filed Nov. 14, 1874.]



A stocking and skirt holder made in one piece, and comprising the clasp a, which, by compression alone, holds the garment, the loop b, and the bends c c.

159,292. ELASTIC PADS FOR HORSESHOES. John B. Wood, Poultney, Vt. [Filed Apr. 6, 1872.]

Brief.—An elastic pad provided with flanges to secure it between the foot and shoe, and a concavity to receive the frog.



A horseshoe provided with the flanges B C C, in combination with the elastic pad provided with the concavity A, for the purpose set forth.

159,293. TICKET-PRINTING MACHINES. Jas. Anderson, New York, N. Y. [Filed Dec. 6, 1874.]

Brief.—A portable box containing cylinder, which prints tickets, severs them from the web, and registers their numbers.



1. The combination, with spring-pressed cutter F, of push-pin J and lever K L, as and for the purpose specified.

2. The frame a and arms b, combined with the printing-roll, as and for the purpose described.

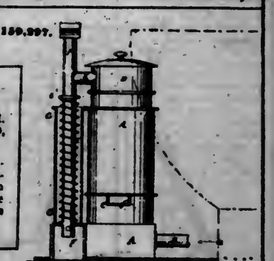
159,294.



159,294. RULERS. Henry Belcher and T. H. Belcher, Irvington, N. J. [Filed Nov. 30, 1874.]

A combination ruler and paper-cutter, constructed with the sharpened metal paper-cutter set at an angle into wooden center, and so arranged that its edge rests upon the same plane as the corresponding flat surface of its wooden center, as herein described.

159,297.



159,295. BOOT-LEG-TURNING MACHINES. David Bissell, Detroit, Mich. [Filed Dec. 5, 1874.]

Brief.—The pushing and pulling bars—one operating inside, the other outside, of the leg-holding cylinder—are actuated by an intermediate mechanism, so that they move simultaneously in opposite directions, and are reversed at a given point. The tapering cylinder is adapted to varying sizes.

1. The combination, with the driving-crank shaft and the pulling and pushing bars, of an intermediate gear, to reverse the motion of the crank relatively to the machine and the operator, substantially as specified.

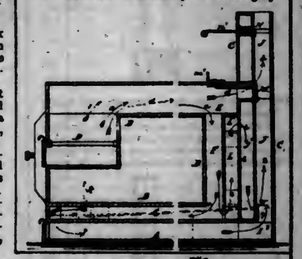
2. The combination, with the driving-shaft I, having a half-clutch pinion, G, and toothed bars A C, of the crank K, provided with a half-clutch, and arranged to slide on said shaft, as shown and described.

3. An interchangeable driving-shaft, I, driving-pulley O, sliding clutch P, slider Q, and vertical housing-extensions R, combined, as herein described.

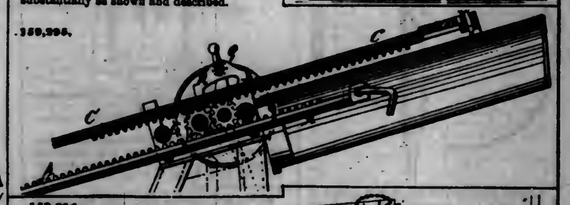
4. In a boot-leg-turning machine, the reducing-tube formed of a tapering base-section, T, adapted for attachment to the machine, and a section, U, of uniform diameter, substantially as shown and described.

159,296. RANGES. Edwin O. Brinckerhoff, New York, N. Y. [Filed Jan. 11, 1875.]

Brief.—The draft may be direct and through the upper flue only, or through the rear flues in contact with the back, bottom, and sides of the oven, to heat it uniformly and thoroughly.



159,296.



159,296.



159,296. MINING APPARATUS. Josiah Bloss and Elisher J. White, Wilkesbarre, Pa. [Filed Dec. 12, 1874.]

1. A tubular drill-frame, B, provided with tapering external screw at its lower end, as and for the purpose described.

2. The combination of the two-part nut-bar C D, having detachable pins c' d' and staple d', with drill-bit H and screw E, having corresponding shank and socket, as and for the purpose specified.

159,297. WATER-CLOSET VALVES. Edwin O. Brinckerhoff, New York, N. Y. [Filed Jan. 11, 1875.]

Brief.—When the rods are pressed down they carry with them the valves, the apertures in which then register with the open ends of the pipe which connects the two sockets. The elasticity of the springs raises the valves when the weight is removed.

The combination of the two sockets A, provided with the pipes B and the connecting-pipe C, the two caps or valves D, the connecting-arms E, the rods F, the springs H, and the sockets G, with each other, to adapt them for use in connection with a water-closet bowl or basin and seat, substantially as herein shown and described.

1. The combination of the flues F G H I with each other and with the cases or shells A B of a range, and the chimney-flue J, substantially in the manner herein shown and described.

2. The combination of the damper K with the set of flues F G H I, the set of flues F L J', and the rear chimney-flue J, substantially as herein shown and described.

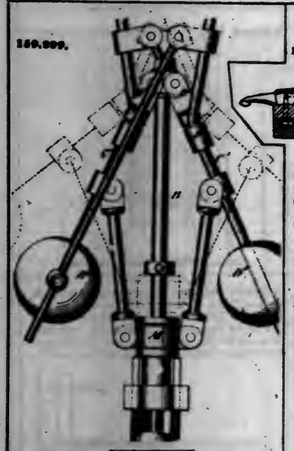
3. The combination of the damper M with the rear chimney-flue J, the set of flues F G H I, the set of flues F L J', and the opening leading into the space between the top plates of the cases A B of the range, substantially as herein shown and described.

159,298. STEAM-ENGINE GOVERNORS. F. M. Brown, Warren, R. I. [Filed Dec. 19, 1874.]

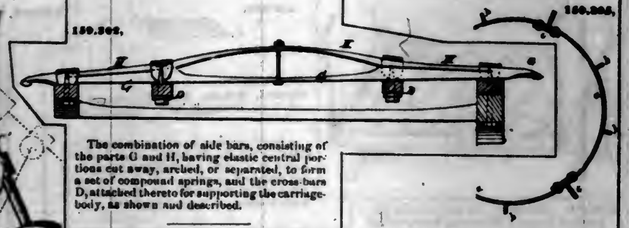
Brief.—The bent arms are connected each to the ball opposite, and as they incline by the rise of the balls, each ball is forced a greater distance from its center of rotation.

The combination, with arms C C, pivoted to the stationary spindle B, of crooked levers C'' C'' and sliding balls D'' D'', connected by pivoted rods D' D', as and for the purpose specified.

160,899.



160,902.

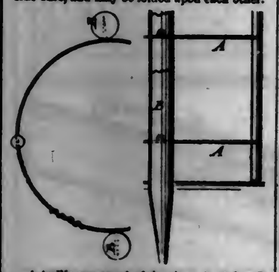


160,906.



160,899. TRELLISES. Timothy L. Buell, Marietta, Ohio. [Filed Dec. 23, 1874.]

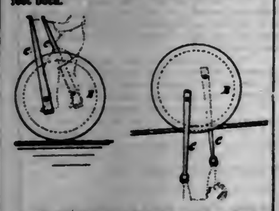
Brief.—Two posts that are designed to enter the ground have hoops swiveled upon them at equal distances, which are pivoted also to side bars, and may be folded upon each other.



A trellis composed of the rings A, stakes B B, and posts C C, arranged substantially as shown and described, and for the purposes set forth.

160,901. GYMNASTIC APPARATUS. Horace S. Carley, New York, N. Y. [Filed June 27, 1874.]

Brief.—For exercise either on the tight-rope by hand, or on the ground by hands and feet both.



1. The combination, in an exercising apparatus, of grooved wheel B, separately pendent handles C, and stretched rod or cord A, as shown and described.

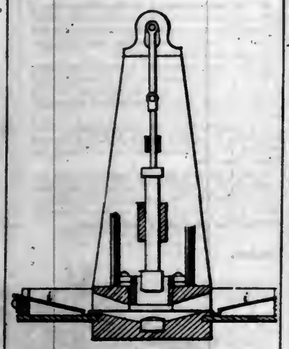
2. The foot-pieces or stirrups D, in combination with handles C and wheel B, when the handles are pivoted eccentrically to the wheel, substantially as specified.

160,902. SIDE RAIL FOR VEHICLES. John W. Coe and Daniel Merritt, Williamsburg, N. Y. [Filed Oct. 27, 1874.]

The combination of side bars, consisting of the parts G and H, having elastic central portions cut away, arched, or separated, to form a set of compound springs, and the cross-bars D, attached thereto for supporting the carriage-body, as shown and described.

160,903. STAMPING-MILLS. H. W. Colver, Waukesha, Wis. [Filed Dec. 9, 1874.]

Brief.—The ore passes through the guides r, adjustable box or frame E, and is stamped. It then passes over the inclined copper plates t, which can be inclined at a greater or less angle, as desired, to retain the pulp and make it pass several times out and back over them, so as to insure complete amalgamation. The grooves t' contain mercury.



1. The combination, with the bed and stamp-blocks, of an ore-receiving box, supported above the face of the bed, leaving a space between such frame and bed, as and for the purpose set forth.

2. The combination, with a bed and stamp-blocks, of the inclined and grooved plates t, arranged and operating in connection with such bed, substantially as and for the purpose set forth.

3. In combination, the stamp, constructed as described, the bed, the frame E supported above the bed, and the adjustable plates t, as and for the purposes set forth.

160,904. CAST HOOKS. John C. Coonley, Chicago, Ill. [Filed Dec. 16, 1874.]



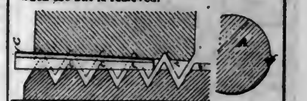
The malleable hook A, cast with the pin C and hole D, so as to enable the eye B to be closed when cold and the pin headed, substantially as specified.

160,905. WROUGHT-IRON COLUMNS. John R. Cornell, New York, N. Y. [Filed Dec. 26, 1874.]

The improved strut or chord herein described, formed of the segmental ribbed plates a b and the T-shaped joint-bars c, the said parts being riveted together in the manner specified.

160,906. NUT-LOCKS. Chas. J. Cummings, Preble, N. Y. [Filed Oct. 10, 1874.]

Brief.—The key is composed of soft metal, the edges of the shallow grooves cutting through the thin V-shaped edges of the key when the nut is removed.



The bolt A and nut B, having angular grooves across the threads, above the bottoms thereof, for the reception of a rectangular tapering key, C, as set forth.

160,907. ROLLING SHUTTERS. Hector J. DeGrenne, Green Bay, Wis. [Filed Sept. 5, 1874.]

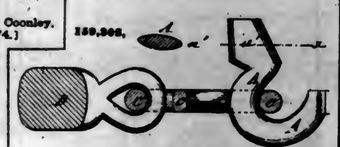
Brief.—The slats are linked together, and are wound upon rollers operated by an endless cord concealed in the casing, except a portion by which the curtain is manipulated.



1. The combination of endless cord C, pulley J, and pulleys K M with the blind-operating roller F, pulley J being in chamber I at the side of the window-frame, and the pulleys K M being in the casing L, all substantially as specified.

2. The slats connected together by wire links O, arranged in transverse grooves in the slats, and covered by straps K, substantially as specified.

160,908.



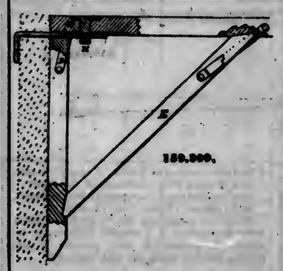
160,908. HITCH-HOOKS FOR STREET-CARS. David Demarest, New York, N. Y. [Filed Jan. 18, 1875.]

In hitch-hooks for street-cars, the bill or head a', formed upon the point of the hitch-hook A, substantially as shown and described, and for the purpose set forth.

160,909. SCAFFOLD-BRACKETS. Saml. N. Fisher, Milford, Mass. [Filed Nov. 14, 1874.]

Brief.—A scaffold-bracket in which the supporting hook is made adjustable, and in which the upright post, plank-supporting piece, and brace are connected together by metallic straps, to enable the bracket to be folded up.

160,909.



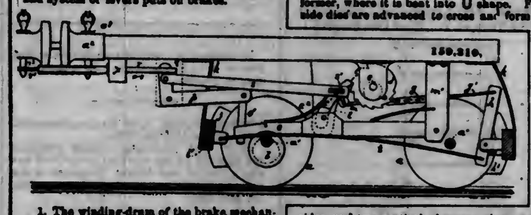
1. The adjustable hook G and nut-piece H, in combination with a scaffold-bracket, for the purposes described.

2. The straps D and F, in combination with the parts of a scaffold-bracket, as and for the purposes described.

160,910. CAR-BRAKES. Carl Fogelberg, Cambridgeport, Mass. [Filed Dec. 2, 1874.]

Brief.—Separation of cars by sliding rod, and system of levers pats on brakes.

160,910.



1. The winding-drum of the brake mechanism and its actuating-ratchet, combined with a pawl, pawl supporting and connecting devices, and cam f, all substantially as and for the purpose set forth.

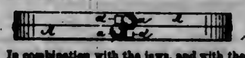
2. The combination, with the shaft a', of eccentric or cam b, radius-bar c, pawl d', ratchet d, and winding-cylinder, as and for the purpose set forth.

3. In combination, the rod r, lever g, link o', bar c, and pawl d', and ratchet and winding-cylinder, as and for the purpose set forth.

4. The rod r and lever p, in combination with the links s s' and pawls d' l, as and for the purposes set forth.

5. The slide-rod e and pawl-lifting device m, as and for the purpose set forth.

160,911. BAG OR BOX FASTENINGS. Carl Fogelberg, Cambridgeport, Mass. [Filed Nov. 22, 1874.]



In combination with the jaws, and with the knobs, the springs d d, on which the knobs are respectively mounted, as and for the purpose described.

160,912. SOLE AND HEEL SHAVER FOR BOOTS AND SHOES. Perry M. Foster, Leicester, Mass., executrix of G. P. Foster, deceased. [Filed Nov. 30, 1874.]

Brief.—The removable knife is held in place by a device adjusted by means of a set-screw.



1. In combination with a removable knife or cutter, for shaving the heels and soles of boots and shoes, the lever C, substantially as and for the purposes described.

2. The screw F, in combination with the lever C and knife H, for the purposes described.

160,913. MACHINES FOR FORMING SNAP-HOOKS. John T. Foster, Jersey City, N. J., assignor to Francis C. Nye, New York city. [Filed July 31, 1874.]



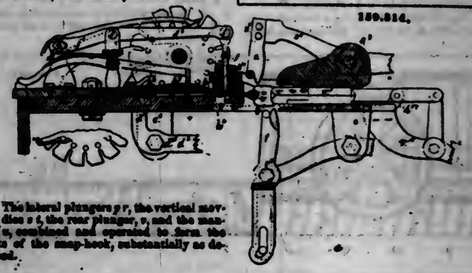
1. The combination of the loop and swell of a snap-hook with the arms crossed between them, substantially as described.

2. The improved snap-hook, constructed with loop, swell, and eye, and having the arms crossed on both sides of the swell, substantially as described.

160,914. MACHINES FOR FORMING SNAP-HOOKS. John T. Foster, Jersey City, N. J., assignor to Francis C. Nye, New York city. [Filed Dec. 24, 1873.]

Brief.—A sliding frame and pawl feeds the wire into radial notches in an intermittently-revolving roulette, which, after the wire is cut off, carries it between guides to center it, and then under a griper, that holds it while the milling mechanism rounds the points. At the next movement of the roulette a plunger carries the wire out, and presses it against a former, where it is bent into U shape. Four side dies are advanced to cross and form the sides, and two vertical plungers give a semi-circular bend to the ends in reverse directions. Upon the withdrawal of these plungers, a mandrel is inserted into the loop, and a rear plunger advances and bends down the ends, so that they overlap and form a circle. The dies are withdrawn and a pusher removes the finished article.

160,914.



1. The improved machine herein described, for making snap-hooks, consisting of the mechanism for feeding, cutting, and milling the ends of the piece of wire or other suitable material, and bending and forming the same into a snap-hook, substantially as described.

2. The combination of the former k, front plunger, h, lateral plungers a o p r, vertical plungers e f, rear plunger, n, and abutments k^{11} p^{11} r^{11}, arranged and operating substantially as described.

3. The combination of the former k, front plunger, h, the lateral plungers a o, and the lateral plungers p r, arranged and operating to make the loop and the inward and outward bends successively in the arms of a piece of wire or other suitable material, substantially as described.

4. The lateral plungers p r, constructed with the projecting ends p^1 r^1, combined with their respective abutments k^{11} p^{11} a^4 r^{11} and former k, and operated to cross the respective arms of the snap-hook, substantially as described.

5. The lateral plungers p r, the vertical movable dies e f, the rear plunger, n, and the mandrel o, combined and operated to form the hooks of the snap-hook, substantially as described.

6. The combination of the lateral plungers p r and the vertical movable dies or plungers e f, and former k, arranged and operated to make the partially-formed hooks w^{10} w^{10} in the two arms of a piece of wire or other suitable material, substantially as described.

7. The combination of the movable dies e f, the plunger n, and the mandrel o, arranged and operating substantially as described.

8. The movable die or plunger e, constructed with two long dies, e^1 e^1, and two short dies, e^2 e^2, at its inner end, but in reverse positions on each side of the end of the plunger, in combination with the mandrel o, and operating to complete the bending and forming of the snap-hook, substantially as described.

9. The movable dies or plungers e and f, combined together, and arranged so that their ends act upon each other, substantially as described.

10. The plunger t, bearing at its lower end the pin t^5, and connected to and operated by the lever t^6, as described, in combination with the slotted standard t^{10}, as and for the purpose specified.

11. The movable dies a e p r, constructed with loose joints, and moving in seats formed in the recesses in the bed, in combination with the plates having beveled edges, and set in the recesses, so as to allow the dies to rise and fall in the course of their forward and backward motions, substantially as and for the purpose described.

12. The movable die k^1, in combination with the roulettes e e^1 and griper g, operated by the movable die k^1, and arranged substantially as described.

13. The movable die k^1, roulettes e e^1, and the griper g, in combination with the milling mechanism, substantially as described.

14. The movable die or plunger k k^1, constructed in two parts, united by a loose joint, and having the forward part, k^1, depressed to the bed a at its inner end, k^2, with the open recess between the bed and the forward part, k^1, in combination with the bed, upon which the plunger moves, and the notches e^3 of the roulettes, which hold the wire, so as to allow the wire to be advanced on the bed in the recess beneath the forward part, k^1, of the plunger, and to be further advanced on the bed toward the former k by the depressed end of the plunger, which rides over the wire in its backward movement, substantially as described.

15. The movable die k k^1, in combination with the stud of the standard k^{10}, secured to the said movable die, and the notch e^{10} and pins e^9 of the roulette e, for rotating the roulettes e e^1 at the same time with the return movement of the said movable die, substantially as and for the purposes described.

16. The combination of the pusher f, working through the former k, with the stud k^{10}, moving in a slot in the lever of the pusher, and secured to the movable die k k^1, substantially as described.

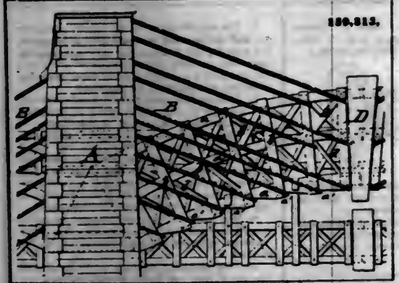
160,915. BRIDGES. Peter M. Fulton, Rhinebeck, N. Y. [Filed Oct. 17, 1874.]

Brief.—Towers support arch-sections by means of a series of stretched cables. A tapering perforated key is inserted between the arch-sections, into which the ends of the sections fit.

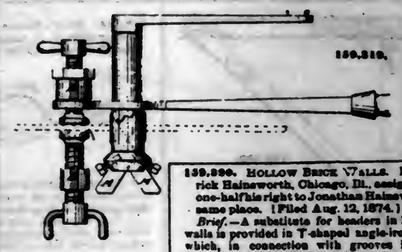
1. The combination of the supporting-towers A with the arch-sections C and the series of stretched cables, for serving as arch-abutments and cable-bearings, as specified.

2. The perforated key-piece D, in combination with the grooved and tapering ends of the arc-heads e, for forming the joint of the arches, as set forth.

160,915.



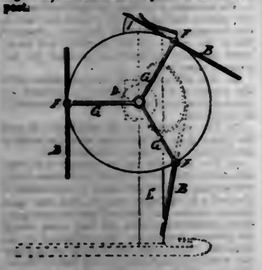
No. 159,315.



No. 159,319.

159,316. HARVESTER-RAKES. David S. Fulton, Paris, Pa. [Filed Oct. 3, 1874.]

Brief.—The beaters are pivoted in a revolving head, and controlled by cams on the rear post.



The wheel A, provided with arms B pivoted thereto, and having the beat sections J H K L, in combination with the stationary cams I M, as and for the purpose specified.

159,317. SEWING-MACHINES FOR SEWING BAGS, &c. E. P. Garland and A. J. Gove, San Francisco, Cal. [Filed Nov. 19, 1874.]

Brief.—The bed-plate of the machine is provided with a circular groove, which extends the entire length of the same, and has arranged in its one end a slotted cylindrical case, that carries within itself a spiral needle having an eye formed in one side, with a groove for carrying the thread, and a shoulder for casting off the same at the proper time, while across the other end of such groove is placed a series of diagonal bars, for drawing the needle out from the case when revolved, and for supporting the cloth while being stitched; the edge of the cloth being held thereon by means of a screw-clamp, which is adapted to be slid over such groove, or back from the same, as may be desired.

1. The combination of the spiral needle having a feathered stem, *b*, with the slotted case adapted to revolve substantially as described.

2. The combination of a spiral needle having a groove around its periphery or spirals, and arranged to operate in a case, B, with the rods *a a*, substantially in the manner and for the purpose set forth and specified.

3. The spiral needle, having a retaining-eye, *c*, and offset *d'*, as and for the purpose specified.

159,318. SAW-GUMMERS. G. W. Griswold, Pottersville, N. Y. [Filed Nov. 30, 1874.]

Brief.—The cutters are adjusted diagonally through the cylinder, and held in place by the set-screws.

The combination of the cutters M M and cylinder J, constructed and arranged substantially as shown and described, for the purposes set forth.

159,319. STEP-LADDERS. Geo. Grunewald, New York, N. Y. [Filed Dec. 21, 1874.]



The combination of the main ladder A and the diverging side pieces *a a* with the grooved wedge-shaped attachments *d d*, the concealed rods *f f*, screws *e e*, and parallel ladder B, all arranged substantially as herein shown and described.

159,320. HOLLOW BRICK WALLS. Frederick Hainsworth, Chicago, Ill., assignor of one-half his right to Jonathan Hainsworth, same place. [Filed Aug. 12, 1874.]

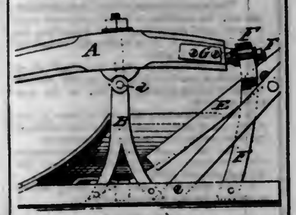
Brief.—A substitute for headers in hollow walls is provided in T-shaped angle-irons, by which, in connection with grooves in the bricks, the two shells are tied together.



In combination with the angle-iron C, the grooved brick B, adapted to receive the angle-iron, as specified.

159,321. PLOWS. Albt. Hampe, Staunton, Ill. [Filed July 20, 1874.]

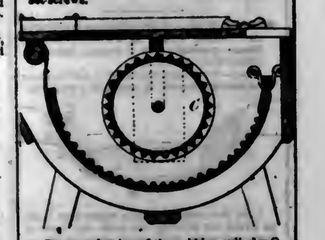
Brief.—The plow-beam swings vertically and laterally on the standard proper, and has also a vertical and lateral movement at the rear end upon a vertical standard rising from the land-side.



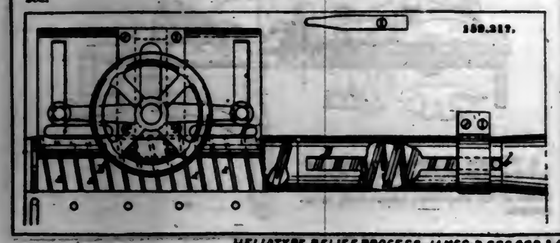
The plow beam A, pivoted to swing horizontally on a bolt, C, and vertically on a bolt, *d*, in combination with the slotted rear standard, F, screw-bolt F', and clevis G, to admit of the two adjustments, as set forth.

159,322. WASHING-MACHINES. Samuel Hawkins, Metamora, Ind. [Filed Dec. 17, 1874.]

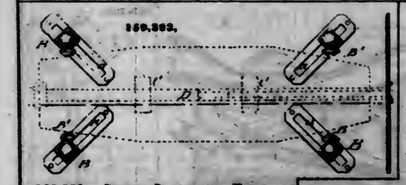
Brief.—The rubbing-cylinder is adjustable by means of sliding blocks, bridge-pieces, and set-screws.



The combination of the rubbing-cylinder C, bearing-blocks G *g*, fixed bridge-pieces I, and set-screws K, substantially as and for the purpose specified.



No. 159,317.



No. 159,323.



No. 159,326.

159,323. COFFIN-CLAMPS FOR HEARSES. Wm. H. Roucek and John B. Fox, Quincy, Ill. [Filed Jan. 11, 1875.]

1. The improved coffin-clamping device for hearses, consisting of movable clamping-standards, which are guided in slots of the hearse-body and operated in connection with traveling nuts moving on a right and left screw-threaded crank-shaft, capable of admitting the simultaneous adjustment of all the standards, or of the front pair separately, substantially in the manner and for the purpose set forth.

2. The standard-moving nuts C, on right and left screw-threaded crank-shaft D composed of front part D^1, with extension-shaft and sleeve-shaped rear part D^2, to turn thereon by means of the elbow-shaped crank, either separately or jointly, all combined substantially as set forth.

3. The standards B, provided with oscillating clamping-pads B', to conform to the shape of the coffin, substantially as described.

159,324. CAR-LAMPS. James B. Hoyt, Chicago, Ill. [Filed July 27, 1874.]

Brief.—The lamp and globe may be pressed downward away from the globe-cap, and swung horizontally from beneath that cap, in order to remove the globe.



1. In a loose-globe car-lamp, having an immovable globe-cap, the combination of the candle-holder, having the hoop *e*, with a bracket, whereby the candle-holder has a downward, vertical, and a horizontal swinging movement, substantially as described.

2. In a loose-globe car-lamp, having an immovable globe-cap, the combination of the adjustable hoop *e*, socket *j*, arm *d*, set-screw *i*, and bracket, substantially as and for the purpose specified.

159,325. TOY DANCERS. Wm. L. Hubbell, New York, N. Y., assignor to E. Jenkins, same place. [Filed Nov. 24, 1874.]

Brief.—The stopper *g* in the top of the head, being of cork or other soft material, serves to hold the tack or pin securing a hat or cap in place.



1. The composition doll-head with the tapering hole passing entirely through the same for receiving the neck *e* and stopper *g*, substantially as and for the purpose set forth.

2. The toy figure made with feet, in each of which there is a mortise at the ankle, receiving the eye at the lower end of the leg, said leg being stiff at the knee, and jointed at the hip to the body, all substantially as and for the purposes set forth.

159,326. PACKINGS FOR PISTONS OF HYDRAULIC ENGINES. Samuel Hughes and Michael Kelly, Charleston, S. C. [Filed May 1, 1874.]

Brief.—A packing consisting of a ring of woven fibrous material and rubber, having a V-shaped groove lined with rubber.

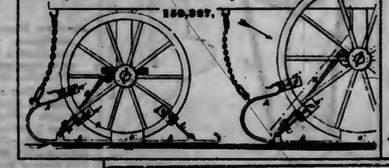
A packing for hydraulic engines consisting of a ring of woven fibrous material and rubber, having in its side a V-shaped groove lined with rubber, which forms of said rim a thick and thin lip, the groove being so placed as to make the thick lip on the wearing side, and thinner at its edge than at its base, substantially as set forth.

159,327. RUNNER ATTACHMENTS FOR VEHICLES. John A. Hyde, Englewood, N. J. [Filed Dec. 10, 1874.]

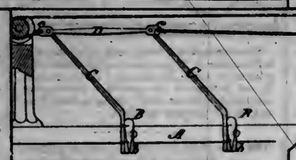
Brief.—By arms and clasps the runner is secured to the wheel.

1. The clamps D, with one hinged jaw, and provided with a hand-screw, *d'*, in combination with the runners A and arms C, to enable said runners to be secured to the wheels of a wagon, substantially as shown and described.

2. The hinged arms C, in combination with the runners A and clamps D, substantially as shown and described.



No. 159,327.



No. 159,328.

159,328. SEWER-BOOMS. Thomas Irvine, Muscatine, Iowa. [Filed Jan. 9, 1875.]

To Letters Patent, to—

1. In a device for arresting and storing floating logs, the combination, with the sheer-boom A, of the revolving rudder-fins B, substantially as specified.

2. The combination, with the levers C, actuating-fins B, of the connecting-rod D, substantially as and for the purpose specified.

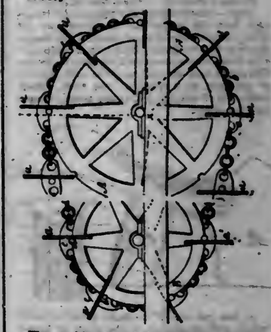
3. The combination, with the vertically-vibrating levers U of fins B, of the cable E, pulley F, and winding-drum H, substantially as specified.

4. The fins B, adapted to revolve on their long axes, for the purpose of exposing their flat surfaces or their edges to the current, as and for the purpose specified.

159,329. COMPOSITION TILES FOR ROOFING AND PAVING. John P. Jeffries, Wooster, Ohio. [Filed Nov. 21, 1874.]

The combination of the silica, sulphate of lime, hydraulic lime, oxide of magnesia, sulphate of potassa, alum, borax, sulphuric acid, and carbonic acid or carbonic anhydride, in the proportions and for the purpose in the foregoing specification set forth.

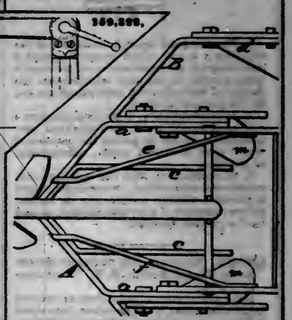
159,330. CHAIN-PROPELLERS. De Witt C. Johnson, Redding, Cal. [Filed Jan. 12, 1875.]



The combination of the two chain-carrying wheels A B, of different diameters, but having their axes in the same horizontal plane, each wheel provided with groove and roughness in its perimeter, the endless chains provided with the link-plates *c*, and the slotted buckets or paddles a centrally attached thereto, as and for the purpose described and represented.

159,331. CULTIVATORS. Moses Johnson, Three Rivers, Mich. [Filed Jan. 6, 1875.]

Brief.—A cultivator-tooth is cut from a metal plate, and shaped to present a mold-board form with a cutting or coiter edge. The main frame, made of a single metal bar, has removable wings, the front of the whole being of diamond shape.



1. A cultivator-tooth, having the inclined colter *a*, the concave mold-board *c*, with its oblique cutting-edge, and the sloping rear edges *p p'*, forming the acute angle or notch X, substantially as described.

2. The draft-frame A, made of one piece of metal, consisting of the parallel bars *a a*, meeting in front and doubled to form the draft-beam *b*, in combination with the detachable wings B and inner bars *c c*, substantially as and for the purpose set forth.

159,332.

159,332. HOES. Moses Johnson, Three Rivers, Mich., assignor to the Union Manufacturing Company. [Filed Dec. 5, 1874.]

Brief.—The blades of the hoe and the straps that form the socket for the handle are cut from a single piece of sheet metal. The straps forming the socket are bent inward into parallel lines, and secured to the handle by rivets. The space between the straps is made convex or concave, to strengthen the parts, which concavity or convexity extends some distance into the blade.



A hoe cut out of a single piece of sheet metal, and consisting of the blade or blades A B, having a convexity or concavity, *a*, between them, and projections C C, bent to form a socket for the handle, substantially as set forth.

159,333. ELONGATED SPOOLS FOR HOLDING BRAID, THREAD, &c. Friedrich Koch and Robert Beuss, Williamsburg, N. Y. [Filed Dec. 23, 1874.]

Brief.—Two pasteboard spools are connected by a band parallel with their axes, and between the flanges of the spools, the object being that the thread or braid wound thereon may be the more readily examined by hand or sight. From the two cylinders or spools are also projections in shape of telescopic tubing, to admit of additional spools being placed thereon. Through the center of the band is an incision to enable the spool to be placed on a pivot.



1. The elongated spool A, composed of the cylinders *a a*, and of the connecting-band *b* and flanges *d*, the cross-section of the band *b* being parallel to the axes and between the flanges of said cylinders, substantially as and for the purpose specified.

2. In combination with the two cylinders *a a* of an elongated spool, the cylindrical projections *c c*, applied to permit the junction of two or more elongated spools, substantially as specified.

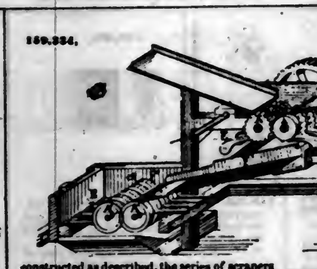
3. In combination with the cylinders *a a*, constructed as described, the connecting-band *b*, provided with the incision *g* in its center, for the reception of a suitable support, as and for the purpose specified.

159,334. MACHINES FOR CRUSHING BONES. Adam Kumpf, Buffalo, N. Y. [Filed June 27, 1874.]

Brief.—The material is fed from an inclined board to the upper crushing-rollers, from which it falls upon an inclined reciprocating screen, and the coarser particles pass onto the lower crushing-rollers. The crushed material is taken from the receiver below the lower crushing-rollers by an elevator, and reconveyed to the upper rollers, and the operation is repeated.

1. In a bone-crushing mill, the combination of a pair of rollers composed of a series of sheaves, C, arranged and held upon revolving shafts by means of retaining-nuts D, each of the sheaves C composing the rollers being formed with a belt of V-shaped teeth, C², and a smooth surface, C³, the belt of teeth C² of one roller operating with the smooth surface C³ of the other, in the manner and for the purpose substantially as set forth.

2. In combination with a set of rollers, A,



constructed as described, the series of scrapers E, each engaging with a blank space between the rows of V-shaped teeth, substantially as described, and for the purpose set forth.

3. The combination, with the upper rolls A, composed of a series of sheaves, C, provided with teeth C², and surfaces C³, as described, of the inclined table H, vibrating sifters F F', rolls A' A', scrapers E, receiver L, and elevator K, all when arranged and operating substantially as and for the purpose described.

159,335. MAP-EXHIBITORS. John Lichtenberger, Fort Wayne, Ind. [Filed July 25, 1874.]

The combination, with rack A, of the slotted cylinder F H, provided on the inside with a series of rollers, E, arranged about its shaft G, and having on the outside a drive-pulley connected with an idler, K, by a belt, I, as and for the purpose specified.

159,336. GAGES FOR FITTING WATCH-CRYSTALS. Benjamin B. Loar, Granville, Ohio. [Filed Oct. 17, 1873.]

The plate A having the point D, in combination with the sliding-piece B having point D', and the bar C sliding in a direction at right angles to the line of motion of the piece B, in combination with standard measures for the purposes herein substantially set forth.

159,337. BUILDERS' TRESTLES. Marion M. Lecky, Indianapolis, Ind., assignor of one-third his right to Hezekiah Hutchins, same place. [Filed Jan. 9, 1875.]

In a trestle, a clamp for attaching the leg or legs to the back, consisting of the plate *f*, provided with the flanges *h i j*, loop *k*, and wedge *n*, substantially as and for the purpose set forth.



159,338. PLOWS. Thomas S. Macomber, Hamilton, N. Y. [Filed Dec. 26, 1874.]

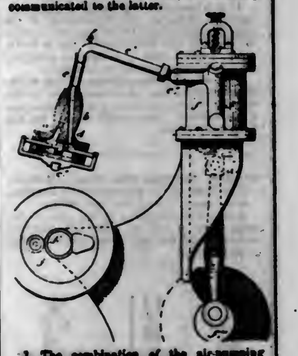
Brief.—Two opposite mold-boards are connected by bent arms pivoted upon the plow-standard. When one plow is down at work the opposite one is raised to a horizontal position.



The combination of the eyes F and their pivot, the bent bar G, and its pivot-eyes H, the double hook J, the eyes or sockets I, the rod K, and lever L, with the two mold-boards and shares D E, and the land-side A, substantially as herein shown and described.

159,339. MACHINES FOR BURNISHING BOOTS AND SHOES. Gordon McKay, Cambridge, and Hadley P. Fairfield, Boston, Mass.; said Fairfield assignor to said McKay. [Filed Dec. 22, 1874.]

Brief.—The air within the actuating and burnishing cylinders, and the pipes connecting their corresponding ends, is kept compressed to several atmospheres, forming two flexible and unbroken columns extending from each side of the actuating-piston to the relative sides of the burnishing-piston, so that a movement of the former may be instantly communicated to the latter.



1. The combination of the air-pumping mechanism, consisting of the cylinder *g'* and its plunger *g*, and the valves *g'* and *h* or their equivalents, with the actuating cylinder *f* and its piston *f'*, or their equivalents.

2. The combination of the air-pump with the air-passages *h²* and *h'*, and the adjusting-cock *h''* and valve *i*, or their equivalents, acting substantially in the manner described, to create and maintain within the cylinders and passages of the machine a pressure greater than the ordinary atmospheric pressure, as and for the purposes described.

3. The combination of the actuating cylinder, the burnishing-cylinder, and the jack.

4. The triangular-shaped air-apertures *d d*, in combination with the piston *c'*, when so constructed and operating as to cushion the piston without entirely closing the apertures.

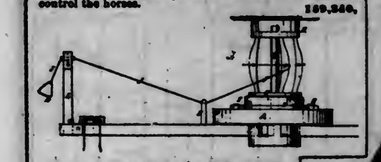
5. The combination of the burnishing-cylinder, the flexible pipes, and the spring or counterpoise for supporting the burnishing-cylinder.

6. In a machine in which an actuating piston gives motion to another piston, substantially in the manner described, the combination, with each pistons, of columns of compressed air concurrently employed on both sides thereof, as and for the purposes set forth.

7. The combination of the springs on the burnisher piston-rod with the piston *c'*, and the actuating cylinder.

159,340. HORSE-POWER ATTACHMENTS. J. G. Merchen, Lowden, Iowa. [Filed Dec. 10, 1874.]

Brief.—In case of accident the driver, by turning the drum, draws all the reins taut at the same time, and is thus enabled readily to control the horses.



The combination of the detachable base D, the spindle G, the skeleton-drum H, the cords J, and the studs K L, with the platform and sweeps of a horse-power, substantially as herein shown and described.

159,341. SAFETY-PINS. Samuel F. Merritt, Springfield, Mass. [Filed Nov. 2, 1874.]

Brief.—The pin enters the slotted sleeve-nut, and is secured therein by the screw-socket being passed over it.



In combination with the pin A, the slotted sleeve-nut *b* and screw-socket *c*, substantially as and for the purpose set forth.

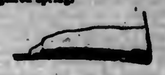
159,342. PIANO-INSULATORS. W. R. Miller, Baltimore, Md. [Filed Dec. 4, 1874.]



An insulator made of glass or equivalent non-conductor of sound, consisting of a disk provided with a central opening for the passage of the holding-screw of a piano-leg, when interposed between the top of the leg and bottom of a piano, and arranged substantially as described, for the purpose set forth.

159,343. SEATS FOR THE BOTTOMS OF PANTALOONS. Stephen D. Mills, Kingston, N. Y. [Filed Aug. 25, 1874.]

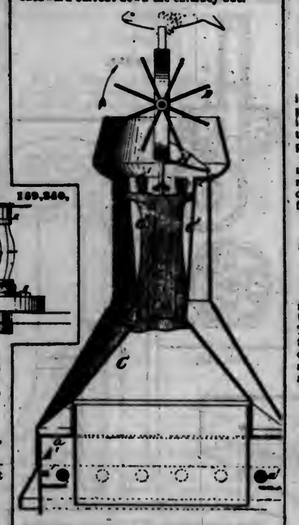
Brief.—A stay for the bottoms of pantaloons, made water-proof, and shaped to have the required spring.



As an improved article of manufacture, the strip B, for application as a stay for the bottoms of pantaloon-legs, the same being formed wholly or in part of rubber, as shown and described.

159,344. CHIMNEY-TOPS. C. W. Munger, Peru, Ill. [Filed July 27, 1874.]

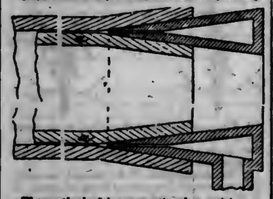
Brief.—The shield is intended to prevent a backward current down the chimney-flue.



1. The chimney-cap, constructed to protect the top of a chimney on all sides, and having the overhanging hood A' and holes *a* and *a'*, in combination with the pipe B and pipe C, with flange *c*, and having flues C', substantially as specified.

2. The pipes B and C, with air-flues between them, in combination with the revolving suction-ventilator D and shield H, substantially as specified.

159,345. PROCESSES OF INTRODUCING ANTISEPTICS INTO RUBBER HOSE. John Murphy, New York, N. Y. [Filed Nov. 4, 1874.]



The method of impregnating hose with antiseptic substances consisting in the forcible introduction of antiseptic material in solution between the separate tubes which compose the hose.

159,346. PORTABLE COVERS FOR PLANTS. Wm. Musgrove, New York, N. Y. [Filed Sept. 1, 1874.]

Brief.—The frame is constructed of metal and glass, with spirit-lamp and heating-pipes, with ventilating-valves at the top. Different sections are so constructed as to be readily joined end to end by a metallic clip, when it is desirable to enlarge the area of the cover.

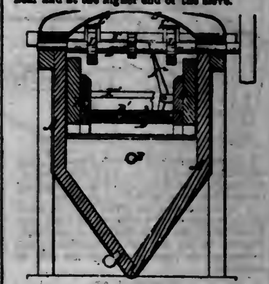


1. The ventilator-plate *a*, made with openings and sliding longitudinally upon the ridge-plate *c*, to open or close the apertures thereon, in combination with the ⊐-shaped bars containing glass and forming a portable cover for plants, substantially as set forth.

2. The portable covers for plants, made with metal frames containing glass, and with the returned strips *i* at the edges receiving the dovetailed strips *l*, for uniting the separate frames together, as set forth.

159,347. ORE-SEPARATORS. David Nevin, Georgetown, Colo., assignor to himself, R. Nevin, and J. Oscar Stewart, same place. [Filed Nov. 30, 1874.]

Brief.—The reciprocating motions of the sieve, both vertical and horizontal, are caused by the action of cams and reacting springs. The sieve has dampered openings in its bottom, through which the heavier particles of ore are discharged, while the lighter particles are sorted and discharged into receptacles near and at the higher end of the sieve.



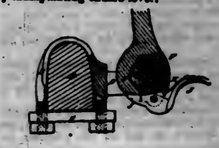
1. The combination of the springs J J', slide-bar F, cams L L and M, tappets L' L' and M', with the ore-separating sieve and tank, the whole operating to produce an up-and-down and back-and-forward vibration of the sieve within the tank, substantially as and for the purpose described.

2. The relief-passages *m m* in the wire sieve bottom D, in combination with the valves K and levers U² for opening and closing the valves, substantially in the manner shown and described.

3. The bar F, having the cams M' and L' L' applied to it, attached to the sieve-frame D, and hung loosely upon the tank, and combined with the tappets and tappet-shaft, substantially in the manner shown and described.

159,348. TRUSS-COUPLINGS. Axel Olsson, Williamsburg, N. Y., assignor to himself, J. W. Coz, and D. Merritt, same place. [Filed Jan. 4, 1875.]

Brief.—Pressure of bolt into eye locks the parts. Unlocked either by depressing thill or by manipulating thumb-lever.



1. The combination of pivoted and concave cross-head lever G H I, open and grooved eye F, thill-iron E, and coupling-bolt L, substantially as set forth.

2. The combination of pivoted thumb-lever J, spring K, pivoted cross-head lever G H I, notched open eye F, and thill-iron E, substantially as set forth.

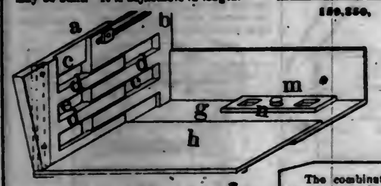
180,849. HORSE HAY-RAKES. Benj. Owen, Dayton, Ohio. [Filed Nov. 21, 1874.]



The hand-lever M, having two arms joined at their outer ends, the upper of which serves as a bearing for the projecting end of the foot-lever G, and the lower comes in contact with the bar K of the shafts, to arrest the downward movement of the teeth when they are held by the foot-lever, as described.

180,850. ATTACHMENTS FOR COOK-STOVES. Edwin B. Patten, Bangor, Me. [Filed Aug. 22, 1874.]

Brief.—The device is used to divide an ordinary fire-box into two parts, in one of which the draft is stopped, and in the other a fire may be built. It is adjustable in length.

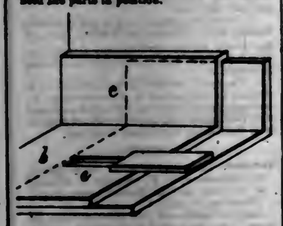


1. In an attachment for cook-stoves, having the sliding plates *g h*, forming a draft-stopper, the combination of the end plates *b c*, forming the partition, substantially as specified.

2. In combination, an attachment for cook-stoves, consisting of a dividing-partition and draft-stopper, the check-draft *m n* in said draft-stopper, for the purpose of diminishing the volume of air passing through the fire, as specified.

180,851. COOK-STOVE ATTACHMENTS. E. B. Patten, Bangor, Me. [Filed July 17, 1874.]

Brief.—The draft-stopper is extensible lengthwise of the fire-box. The lip and slot hold the parts in position.



1. An attachment for cook-stoves, consisting of a partition, *a*, and draft-stopper *b*, cast together or rigidly secured to each other, to form a right angle, or nearly a right angle, with each other, as and for the purposes set forth.

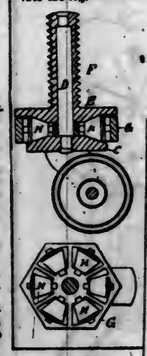
2. In combination with partition *a* and draft-stopper *b*, constructed as described, the slot *c*, supplemental draft-stopper *b'*, and lip *f*, arranged and operating as set forth.

3. In combination with partition *a* and draft-stopper *b*, constructed as herein set forth, the side flange *e*, as and for the purposes described.

180,852. CASTERS FOR FURNITURE. Wm. A. Perkins, Salem, Mass. [Filed Apr. 24, 1874.]

Brief.—The guard-plate, which carries conical rollers, is vertically grooved for the journals of the same, and placed between an upper beveled plate, which carries a hollow screw-shank, and a lower one, which carries the wheel. The upper plate is hexagonal to receive a key-wrench to turn its screw-shank into the leg.

180,853.



The combination of a loosely-revolving guard-frame, G, provided with vertical grooves *a* from top to bottom, so as to hold the journals of friction-rollers, with the beveled polygonal plate E and its screw F, the beveled wheel-supporting plate C, and its pin D, and with the conical friction-rollers H, substantially as described.

180,854. SETTLIGHT-BARS. Andrew J. Post, Jersey City, N. J. [Filed Jan. 8, 1875.]

Brief.—The gutters for conveying the water, and the folds for holding the glass and putty down on the bar, are made of one piece of sheet metal, which is saddled on a metallic bar. Angle-irons are then bolted to each side of the bar, on which the glass is supported.



1. The combination of the folded sheet metal E' E' with the bar A, glass D, supporting-bars B, and cement or putty C, as and for the purposes specified.

2. The drip-gutters E' E', formed, as specified, in a single continuous sheet of metal, E E' E', and arranged to serve, in combination with the main bar A, glass-supports B, rivets *b*, glass D, and putty C, as and for the purposes herein specified.

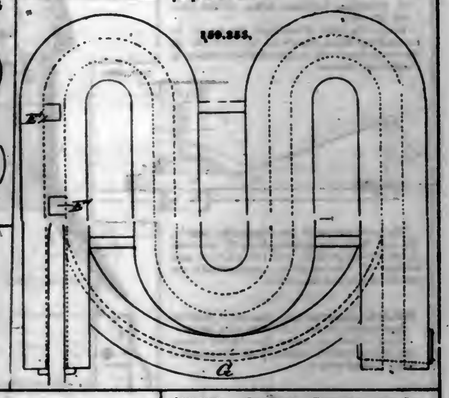
180,855. AIR-GUN DARTS. H. M. Quackenbush, Herkimer, N. Y. [Filed Nov. 11, 1874.]

Brief.—The cross-bar is not driven through perforations in the shell, but forced in transversely behind the feather or fibers of the dart.



An air-gun dart provided with a tuft secured in the tube at the rear end of the dart by a plug or core driven in said tube, as shown and set forth.

180,855.



180,856. COMBINED FLUTING AND SAD IRONS. Chas. Raymond Rand, San Francisco, Cal. [Filed Dec. 5, 1874.]

Brief.—A sad-iron having three faces, two with sharp edges, and one with curved edges, for polishing purposes, and with triangular-shaped burner, and front and rear air-holes. The rear part is locked by legs and spring-latch to the sides, the whole capable of turning on the fluid-conveying pipe. The fluting-irons are attached, by means of rear legs, pivoted front wire, and spring hooking device, into a side recess at each corner of the sad-iron.

1. The combination of revolving three-faced sad-iron with detachable rear or end part, handle-stock, oil-receptacle, communicating oil-supply pipe, with distributing burner and flat fluting-irons, attached by suitable spring locking devices, all being arranged and applied substantially in the manner and for the purposes set forth.

2. The triangular sad-iron, provided with front and corner air-holes *f*, in combination with the perforated rear or end plate for admitting air-supply to heating-flame, as described.

3. The triangular sad-iron A, having projecting legs or shoulders *b'* at one side and a shoulder, *c'*, at opposite sides, in combination with end plate B, locking thereon by corresponding hooks *b* and pivoted spring-latch *c*, substantially as set forth.

4. The end plate B, having recesses *g'* and turning on connecting supply-pipe C, in combination with spring-latch *g* of the handle-stock, for being locked thereto, and admitting consecutive use of each side, as specified.

5. The handle D', having pivoted supplementary latch *h*, in combination with corner recesses *h'* of sad-iron A, for forming additional steadying locking device of sad-iron to handle-stock, substantially as set forth.

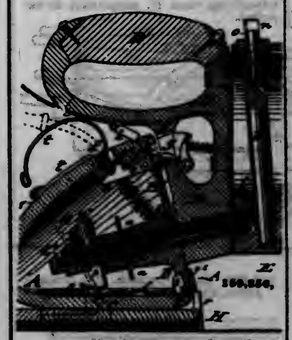
6. The faucet F, having oil-admitting hole *n* and vent-hole *o'*, in combination with closing-stopper *o*, provided with vent-groove *o*, substantially for the purposes set forth.

7. The combination of oil-supply pipe C, provided with pivoted perforated cap or end pipe C' in the interior of sad iron, with flame-distributing burner G, substantially as described.

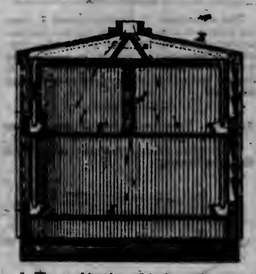
2. The combination of the flame-distributing burner G, having curved side flanges and partly-open shorter corner flanges for throwing flame to inner surface of sad iron, as shown and described.

3. The combination, with the side air-holes *f* of the sad-iron, of fluting iron H, provided with rear and side legs *r r'* and pivoted spring-wire *s* and spring hooking device *t*, for applying fluting-irons to each heated side of sad iron, substantially in the manner specified.

180,856.



180,857. STOCK-CARS. Saml. W. Bonsor, Salem, Mass. [Filed Dec. 9, 1874.]

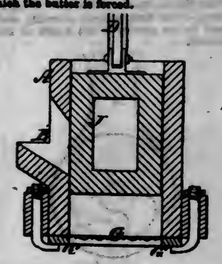


1. The combination, with the roof or side of a stock-car, provided with openings, of an inclined way or inclined ways, for scattering feed on the floor of the car, as set forth.

2. The combination, with the roof of the stock-car, provided with openings D, of the inclined pipes, for scattering feed on the lower floor, as set forth.

180,858. BUTTER-WORKERS. J. C. Rorick, Wauseon, Ohio. [Filed Sept. 19, 1874.]

Brief.—A hollow follower worked vertically by a lever in a box, the bottom of said follower ascending above an inclined side feeder. A woven-wire bottom to side box, through which the butter is forced.



In combination with the box A, having a feed-opening, B, in its side, and a vertically-movable plunger, J, the horizontal screen O, confined by hooks *c' c'*, and the long supporting-bars F F, as described and shown.

180,859. LEVELS. Christian C. Schwarzer, Winterset, Iowa. [Filed Dec. 12, 1874.]



The combination, with pendulum C and longitudinally-slotted pointer E, of the pins G H and set-screw I, as and for the purpose specified.

180,860. GRATES FOR STOVES. J. D. Stichter, Reading, Pa. [Filed Dec. 16, 1873.]

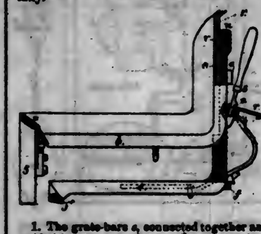
Brief.—The hooks on the rear ends of the movable grate-bars rest upon the rounded cross-bar that unites the rear ends of the stationary grate-bars.



The bar *f*, uniting the back ends of the grate-bars *a*, and nearly round, in combination with the intermediate bars *e*, that are made with hooks *a'* at their back ends, passing over the bars *f*, as and for the purposes set forth.

180,861. GRATES. J. D. Stichter, Reading, Pa. [Filed Oct. 3, 1874.]

Brief.—The alternate bars can be raised vertically, and the whole grate shaken horizontally.



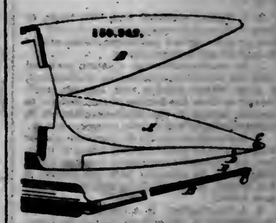
1. The grate-bars *a*, connected together and guided by the vertical bars *d* in the bearings *e*, in combination with the shaft *h* and arms *i*, substantially as set forth.

2. The bars *a*, actuated by the arms *i* and shaft *h*, in combination with the bars *b*, plate *r*, and supports *o w* and *o*, substantially as specified, whereby the entire grate can be moved endwise or the bars *a* lowered, for the purposes and as set forth.

180,862. SHEEP-SHEARS. James L. Smith, Tuscola, Ill. [Filed Jan. 4, 1875.]

Brief.—An ordinary pair of sheep-shears are provided with a guard or bridle in the shape of a small knob or bolt, riveted on the inside of one blade near the extreme point. The other blade is shortened a little, and extra rivet-holes provided for adjustable plaque of piece of the latter when the blades become worn, the construction serving to shield the skin of the animal, and to guide the shears in sheep-shearing.

180,863.



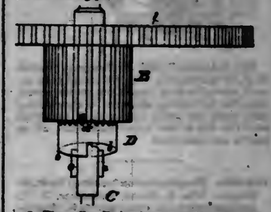
1. A guard near the point of one of the blades of shears for shearing animals, substantially as seen at C, for the purposes specified.

2. One or more holes, D, in one of the blades of the shears above described, for the purposes set forth.

3. In combination with the guard C, the short blade B, as and for the purposes described.

180,864. CENTER-WHEELS FOR WAGONS. Martin C. Smith, Rantville, Ill. [Filed Dec. 27, 1873.]

Brief.—In a safety-wheel a collar having on one end serrations to mesh with serrated pinion, and on the other end double-inclined planes, acting in combination with feathers formed on the axling-post.



1. The collar D, having serrations *d'* on its upper end, and double inclined planes *b b* on the lower end, in combination with the center-pinion E, provided with radial serrations *e*, and the feathers *a a* of post C, substantially as shown and described.

2. The post C, having diametrically opposite each other the feathers *a*, and their upper ends beveled to correspond to the inclined planes *b*, as specified.

180,865. CISTERNS. John S. Snider, Lancaster, Ohio. [Filed Aug. 3, 1874.]

Brief.—A cistern composed of two or more separate and independent compartments, the partition-walls of which are provided with adjustable openings, placed in such a relation to filtering material that water, in passing through one chamber into another, shall be acted upon by said filtering substance.



1. A cistern composed of two, three, or more separate and independent compartments or chambers, provided in their partition-walls with adjustable openings or connections, placed in such a relation to filtering material that water or other fluid passing through one chamber into the other through said opening or connection between them shall be acted upon by said filtering substance, substantially as and for the purposes set forth.

2. A cistern provided with two, three, or more independent compartments, divided by one or more arched partitions, substantially as and for the purpose shown.

3. In combination with a cistern provided with two or more compartments, as described, a filter whose outside wall extends sufficiently up from the bottom of said cistern to provide around it the sediment-chamber B, substantially as and for the purpose shown.

4. In combination with the partition wall or walls of two or more compartments of a cistern, an adjustable connection between them, adapted to be operated from the outside of the cistern, substantially as and for the purpose shown.

5. A combination, in a cistern or filter, of the reservoir A, two or more independent compartments, B and C, and filters B' and C', said filters connected by an adjustable opening, substantially as and for the purpose shown.

160,265. FASTENINGS FOR MORTISE-RAILS OF SASHES. Chester Jos. Shoup, San Francisco, Cal. [Filed July 17, 1874.]

Brief.—The bed-plate, secured upon one of the meeting-rails of the sash, has divergent locking-grooves, in which corresponding projections upon the under side of the turn-button register. A coil-spring upon the pivotal bearing forces the projections into the grooves, and secures the button against being turned by burglars from the outside.



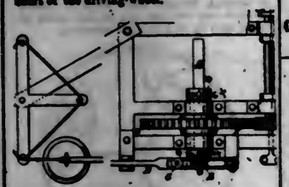
The bed-plate C, with its divergent grooves H H, in combination with the turn-button A, with corresponding projections on the under side, the coil-spring arranged in a projecting tube upon the same, and the lip *l*, that slips into the slot of the upper sash-plate, all as shown and described.

160,266. PROCESSES FOR TANNING PICKLED SKINS. Wm. R. Stace, Rochester, N. Y., assignor of one-half his right to N. Wilkinson, same place. [Filed July 17, 1874.]

The process herein described for tanning pickled skins by the use of liquid hydrocarbons or their alcohols, in conjunction with the hydrates of alkalies.

160,267. MACHINES FOR COILING METAL RODS. Philander H. Standish, Jefferson City, Mo. [Filed Sept. 26, 1874.]

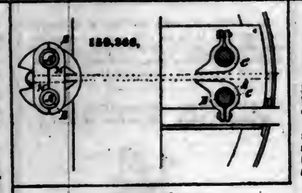
Brief.—An adjustable guide and a detachable bending-roll are placed in the slotted end of a lever, which is weighted for the purpose of pressing the grooved bending-roll down upon the rod being coiled. The mandrel is a plain flat bar of steel formed with a tapering point, and is fixed adjustably in the hollow shaft of the driving-wheel.



The combination, substantially as herein shown and described, of the slotted lever D, adjustable guide C, bending-roll B, tapered mandrel A, wheel F, and collars G G, provided with set-screws H H.

160,268. MOTOR-BOXES. Peter Stephen and Wm. G. Stephen, New Brunswick, N. J. [Filed June 27, 1874.]

Brief.—The saw is adjusted to the work by means of adjustable cams, carrying guides, a clamp, a spring-pressure, and an adjustable stop. The box is also provided with adjustable holders for exerting spring-pressure.

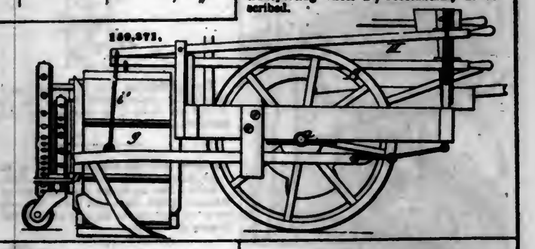


160,269.

1. In a road ditching and grading machine, the combination of a plow, which is suspended as described, with the elevator *g* and carrier *F*, substantially as specified.

2. In combination with a plow which is suspended by means of links *i i*, the lever H, and the elevator *g*, and carrier *F*, substantially as described.

3. The carrier F and elevator *g*, movable about the driving-shaft C, in combination with a plow, a draft-frame, and the driving and transporting wheel B', substantially as described.



160,271.

1. A pair of stationary posts, A, with guide-tubes B, having saw-guides D C, and a clamp, H, combined to form the guide-post of a mitering machine, substantially as specified.

2. The combination of an adjustable pressure-spring, E, and collar F, with a tube, B, and post A, substantially as specified.

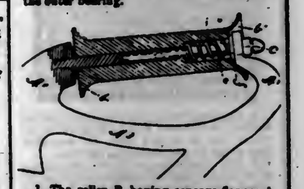
160,272. CAR-COUPLINGS. J. B. Winters, Adrian, Mich. [Filed Dec. 10, 1874.]



The elbow-lever I, platform-stand K, having holes J L to receive a locking-pin, the connecting-rod H and the lever F, extending horizontally beneath the platform, in combination with the pivoted link A, having the stud G and the spring D, all constructed as shown and described.

160,273. VEHICLE CHAFING-IRONS. Arthur Wright, Bath, Me. [Filed Dec. 10, 1874.]

Brief.—The roller is recessed and protects the outer bearing.



1. The roller *B*, having concave flanges *b*, cavity *b'*, and enlarged bore *b''*, as and for the purpose described and shown.

2. The frame A, roller B, bolt C, screw *d*, spring *e*, and washer *f*, all combined to operate substantially as and for the purpose specified.

160,274. HOOKS. Andrew H. Alverson, New Haven, Conn. [Filed Dec. 26, 1874.]

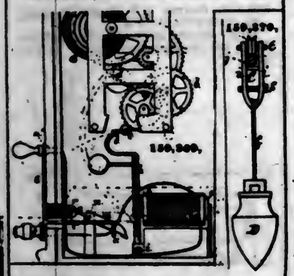
Brief.—The hook is open normally, and is closed by the gravity of the article or thing attached.



160,269. LEVEL AND SLOPE INDICATORS. Ogden S. Wiley, Keokuk, Iowa. [Filed Nov. 23, 1874.]

Brief.—The clamp and screw to hold the plumb-line, and allow of its adjustment, are suspended on a friction-roller.

In a level and slope indicator, the graduated arc *b* and inwardly-curved overhanging arm *c*, provided at its outer end with the aperture *c'*, in combination with the suspended plumb-weight D, anti-friction wheel *d*, and clamp *e*, having set-screw *e'*, substantially as and for the purpose set forth.



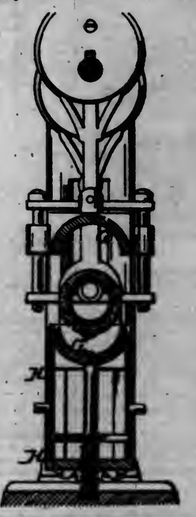
160,270.

160,271. DITCHING-MACHINES. Jacob F. Williamson and James H. Savoy, Harlem Township, Clay County, Ill. [Filed Dec. 26, 1874.]

Brief.—The earth excavated by the plow is raised by a short inclined endless elevator, and carried away laterally by an endless conveyor. Both are adjustable to inequalities of surface.

The body A, having the hook C and eye B as a part thereof, combined with the eccentric disk E, pivoted thereto, and constructed with the recess F and opening *f*, substantially as described.

160,276. GORE-FORMING MACHINES. Wm. C. Amish, Hainesport, N. J. [Filed Nov. 9, 1874.]



1. The formers G and G', one or both of which have sharp edges, in combination with the box H', containing the lower former, and having a movement independent of the said lower former, all as set forth.

2. The combination of the two formers G G' with movable pins *m m'*, for supporting the core when the said formers are caused to recede from each other.

3. The combination of the plate H, spring-catches *i*, and box H' with springs adapted to the catches, as described.

160,278. ROCK-DRILLING MACHINES. Geo. Atkinson, San Francisco, Cal. [Filed Nov. 10, 1874.]

Brief.—A pinion-shaft, worked by a crank, has on it two cams, one raising, the other rotating, the drill, which is limited in its vertical motion by a sleeve with an arm attached, adjusted by a set-screw.

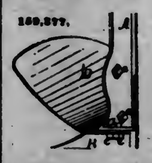
1. The drill B, lifting and guiding arm Q, and rotating ratchet-plate S, in combination with the cams C and D upon the shaft E, substantially as and for the purpose herein described.

2. The frame A, provided with the movable adjustable cross-beams H and G with their clamping-levers I and K, latches J and L, and guide O, substantially as and for the purpose herein described.

160,277. PLOWS. Silas S. Anghe, Dayton, Ohio. [Filed Dec. 2, 1874.]

Brief.—The share and land-side made in one piece, the mold-board bolted to a hollow standard, and the whole connected by inside bolts.

160,277.

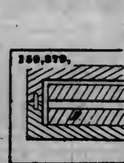


The combination of the standard A *a*, share B *b*, and mold-board D by means of the bolts E and F passing horizontally through said standard and mold-board, and the bolts C and C passing vertically through said standard and share, substantially as and for the purpose specified.

160,279. METHODS OF FASTENING COTTON-BALES. Augustine Baldwin, New York, N. Y., assignor to Compressing Company, same place. [Filed July 22, 1874.]

Brief.—The platens of a press are provided with blocks, outwardly inclined from the bottom upward, having beveled corners at the point of union with the platen, and laterally and longitudinally adjustable, to apply the fastening devices to the bale while under compression.

160,279.



1. The described method of applying the fastening devices to cotton or other bales, consisting, broadly, in the employment of the power used to compress the bale to apply the covering parts of the fastening devices thereto, substantially as described.

2. A press-platen adapted for operation as a die, substantially as described, for the purpose of shaping the fastening devices to the bale, and holding the same in proper position to be secured.

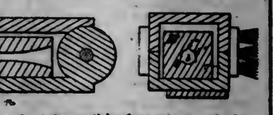
3. The platens described, provided with beveled or rounded edged blocks or bars *a a*, as described.

4. The combination of the smooth-faced platens with the bars or blocks *a a*, and means for adjusting them, substantially as described.

160,280. HAT-IRONS. Chas. H. Bell, Philadelphia, Pa. [Filed Sept. 15, 1874.]

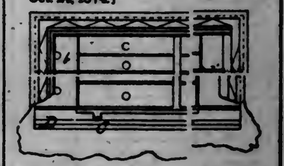
Brief.—Is made in two sections, hinged together at one end, and centrally curved out to receive a heater-bar. Three sides form, respectively, an iron, brush, and smoother. The side to which the brush is attached and the opposite one, being covered with wood, form suitable grasping-surfaces during manipulation.

160,280.



As a new article of manufacture the hat-iron and smoother herein described consisting of a hinged metallic case, having wood on two sides, and iron and velvet respectively on the other two sides, and holding a gas-heating core, substantially as and for the purpose described.

160,282. MOVABLE CABINETS FOR SAFES. William J. Barnes, Pittsburg, Pa. [Filed Oct. 24, 1874.]



1. In combination with a safe having a door in front, a cabinet constructed and adapted to move laterally in a right line, substantially as and for the purpose described.

2. The combination, with movable safe-cabinets, of drop-shelves arranged at the sides or middle, substantially as shown and described.

3. The novel arrangement, for safes, of movable cabinet B, drop-shelves *b' b'*, and railway D, all as shown, and for the purposes set forth.

160,281. LAMPS. Andrew M. Blake, Canton, Ohio. [Filed Jan. 16, 1875.]

Brief.—The lamp is designed for burning crude oil. Only that small portion of oil in the wick-chamber is affected by the heat of the flame. The reservoir is turned down on its hinge and filled through the opening in the side, the lower wick-chamber, when two are used, being tightly closed by a cap. For burning animal oils the wick-chamber is lowered, so that the connecting-tube from the reservoir enters at a point near the flame.

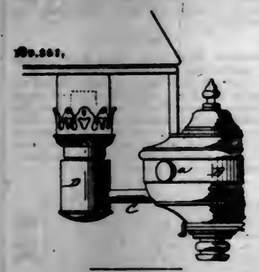
1. A lamp-reservoir closed at its top, having a wick-chamber connected to but removed therefrom, and having a side opening for filling independent of the opening in the wick-chamber, and hinged to a standard, for the purposes set forth.

2. In combination with the reservoir B and pipe C, a removable and adjustable wick-chamber, D, substantially as and for the purposes herein set forth.

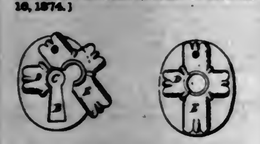
3. In combination with the reservoir B, hinged to the standard, and having an opening, *a*, on its side, and two or more wick-chambers, D, the closed cap E upon the wick-chamber, substantially as and for the purposes herein set forth.

4. The combination of the standard A, the reservoir B, hinged to the standard, and having an opening, *a*, in its side, one or more pipes, C, and one or more wick-chambers, D, all substantially as and for the purposes herein set forth.

No. 160,881.



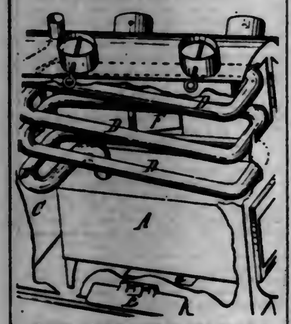
160,882. KEY-HOLE ESCUTCHEONS. Henry T. Blake, New Haven, Conn. [Filed Dec. 16, 1874.]



A key-escutcheon the cover of which is perforated to correspond with the key-spindle, and divided at said perforation, making two parts, D E, the one part, D, permanent on the escutcheon, the other part, E, pivoted to the escutcheon, substantially as described.

160,883. HOT-AIR FURNACES. Baldwin L. Bradley, Woodstock, Canada, assignor to himself and J. H. Fletcher, Alpena, Mich. [Filed Oct. 21, 1874.]

Brief.—Cold air is admitted through the opening in the bottom of the casing, and the several doors or dampers in the sides of the casing regulate the draft of air entering the hot-air pipes.

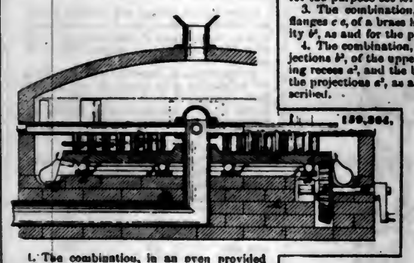


In a hot-air furnace, the combination, with the shell C, of the stove A, coil of pipe D, opening *a*, doors, dampers, or registers E F, and hot-air pipes G, all as and for the purpose set forth.

160,884. DESULPHURIZING-OVENS. John C. Brewster, New York, N. Y. [Filed Jan. 2, 1875.]

Brief.—An immovable central air-tube has radial horizontal arms, from which depend branches, which act as air-conveyers to and agitators of the ore, and conveyers of the ore off from the revolving hearth.

No. 160,884.



1. The combination, in an oven provided with a revolving table, of an air-pipe extending up through the center of the table, and supporting and communicating with a series of stationary radiating tubular arms, which have their ends embedded in the walls of the oven, and communicating with the external air, substantially as described.

2. The combination, with an oven containing a revolving table, of one or more air-pipes situated above said table, and provided with tubular fingers or nipples extending close down to the surface of the table, substantially as and for the purpose set forth.

3. The series of fixed radiating tubular arms, supported at their inner ends by the central air-pipe, and at their outer ends by the walls of the oven, in combination with the flat agitators and depending nipples, and the revolving table, substantially as described.

1. The combination, with a brass or bearing, B, having recesses b^1 b^1, of the two part box A A^1, the upper part having lugs a^1 a^1, as and for the purpose described.

2. The combination, with an axle-box having central opening *a*, of the centrally-perforated brass B and the superposed truck-bar D, having detachably-capped hole *d*, as and for the purpose set forth.

3. The combination, with the journal end flanges *c c*, of a brass having the circular cavity b^2, as and for the purpose specified.

4. The combination, with the brass end projections b^2, of the upper body section A, having recess a^2, and the box ends A^2 A^2, having the projections a^2, as and for the purpose described.

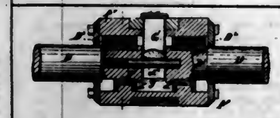
5. The hollow cotton-filled plug F, having side apertures *f*, and applied as a spacer and lubricator for two journals, in the manner set forth.

6. The combination, with bottom brasses B^2 B^2 and the plug F, of the hollow uprights A^2 A^2 on the bottom and inside of axle, as shown and described.

160,887. HARVESTER-RAKES. J. R. Buckwater, near Buyerstown, Pa. [Filed July 3, 1874.]

Brief.—A projection on the rake-arms moves the star-wheel, which once in its revolution strikes a switch to open it, so as to cause one beater to act as a rake to sweep the platform.

No. 160,885.



160,885. CAR-TRUCKS. John M. Brosius, Richmond, Va. [Filed July 1, 1874.]

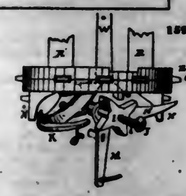
Brief.—To adapt the truck to tracks of different gage.

1. The plates H, having prongs A A and shoulder A^1, combined with axles D D and car-wheels B, to adapt them to minimum gages of road.

2. The combination, with middle box, F, and end-recessed journals, of the diametrically-perforated vertical plug G, and horizontal pin passing therethrough, as and for the purpose specified.

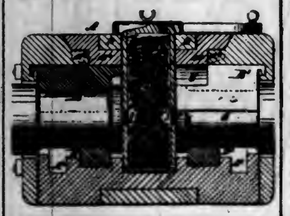
3. The combination, with the subjacently-grooved middle box or bearing, F, of the extended longitudinal bars I I^1 K K^1 L L^1 and the cross-bars J J^1, all bolted together, as and for the purpose set forth.

No. 160,887.



160,886. RAILWAY-CAR AXLE-BOXES. John M. Brosius, Richmond, Va. [Filed Sept. 16, 1874.]

Brief.—A central axle-box for changeable-gage trucks.



1. The combined conic-hubbed chain-wheel E F G, provided at two points with open slots, the rake-holders R, having elbowed heads M, with a projection, *o*, mounted on a standard, D D^1 D^2, with its cams P H K, all arranged and operated substantially in the manner and for the purpose specified.

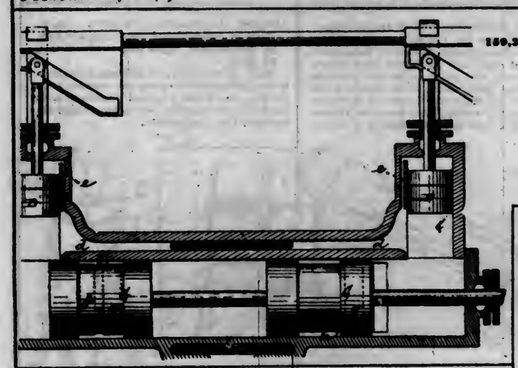
2. In combination with the vibrating cam K and projection *o* on the heads M, the star-wheel I, lever M, and spring *i*, all arranged substantially, and operated in the manner and for the purpose set forth.

160,888. VALVES FOR ENGINES. Jas. Balcer, Jr., Williamsburg, Brooklyn, N. Y. [Filed Dec. 30, 1874.]

Brief.—The quantity of steam admitted to the steam-chest is governed by the piston-valves, which control the ports leading thereto.

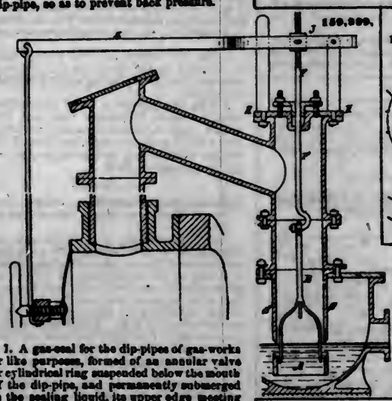
The combination, with the double-piston main valve G G, of the regulating piston-valves D D and the steam-passages *d d*, with their branches *e e*, all for operation, in relation with each other and with the parts controlled by the main valves, substantially as shown and described.

No. 160,886.



160,889. APPARATUS FOR SEALING AND UNSEALING DIP-PIPES IN GAS HYDRAULIC MAINS. Robt. M. Caffall and Albt. Thomas, London, England. [Filed June 24, 1874.]

Brief.—The rod passing through the dip-pipe has attached to its lower end the annular seal-valve, and its upper end has a screw-thread cut upon it where it passes through a pivoted nut. The weighted end of the lever, upon falling, draws up the annular seal-valve into conjunction with the lower end of the dip-pipe, so as to prevent back pressure.

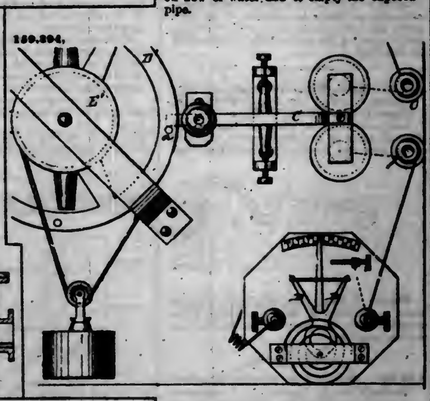


1. A gas-seal for the dip-pipes of gas-works or like purposes, formed of an annular valve or cylindrical ring suspended below the mouth of the dip-pipe, and permanently submerged in the sealing liquid, its upper edge meeting with the edge of the dip-pipe to effect the sealing thereof, substantially as herein shown and described.

2. In a gas-seal, in combination with the valve A, dip-pipe J S, and weighted lever K, the threaded operating rod B F, and pivoted nut J, substantially as set forth.

The ornamental removable shield-plate b, having a central opening for a fastening-screw, *d*, in combination with a bolt, D, having a central opening in its head E, to receive the fastening-screw *d*, and socket-holes *a* to receive a spanner-wrench, substantially as described, for holding the side rail of a billiard-table to its bed, as set forth.

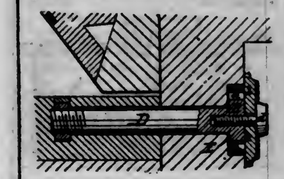
No. 160,890.



1. In a gas-seal, in combination with the valve A, dip-pipe J S, and weighted lever K, the threaded operating rod B F, and pivoted nut J, substantially as set forth.

160,890. BOLTS FOR BILLIARD-TABLES. J. B. Came, Boston, Mass. [Filed Sept. 14, 1874.]

Brief.—Two holes, to receive a spanner-wrench, are sunk in the bolt-head, which is also formed with a tapped central opening for the screw that fastens the ornamental shield-plate.



160,891. HEMMERS FOR SEWING-MACHINES. Asa F. Colby, Bath, Me., assignor to the Colby Adjustable Hemmer Company, same place. [Filed Jan. 22, 1875.]

Brief.—The lower portion of the adjustable folding-plate presses the fabric against the smooth bearing-plate, producing the requisite amount of friction to enable the hem to be turned smoothly and fed evenly.

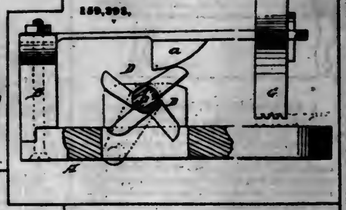


1. In combination with the adjustable folding-plates and main supporting-arm, the bearing-plate J, substantially as described.

2. The bearing-plate J, in combination with the open scroll B, main arm A, and adjustable spring folding plates, substantially as described, for the purpose specified.

160,892. MEAT-TENDERERS. J. A. Cornish, Marshfield, Mo. [Filed Dec. 21, 1874.]

No. 160,894.



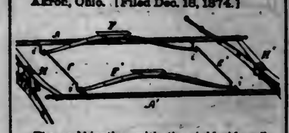
160,894. APPARATUS FOR CONTROLLING WAY-COCKS OF WATER-PIPES BY ELECTRICITY. W. A. Crawford, Terre Haute, Ind. [Filed May 6, 1874.]

Brief.—Fall in temperature to freezing-point causes thermostat to close circuit to electro-magnet, controlling devices acting both to cut off flow of water and to empty the exposed pipe.

No. 160,894.

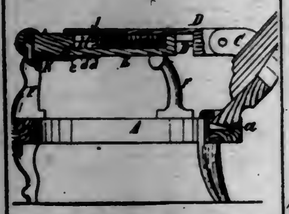
The combination, with the plug of a way-cock, and means for rotating the same, of a metallic thermometer, a galvanic battery, an electro-magnet, wheel, lever, and stops, all constructed and arranged to operate substantially as and for the purpose set forth.

160,895. SIDE-BAR WAGONS. C. A. Collins, Akron, Ohio. [Filed Dec. 16, 1874.]



The combination, with the rigid side rails A A', connected at their ends to the end springs H H', carried by the axles of the transverse rods U U', having the cranks *i i*, and journaled in the side rails for connecting the latter together, and the side springs F F', connected at each end to the cranks *i* of the connecting-rods, all substantially as shown and described.

159,394. RECLINING-CHAIRS. John Damm, New York, N. Y. [Filed Nov. 13, 1874.]



1. The elbow-lever K, having its short arm provided with a sliding exterior push-button, *k*, and its long arm with pin *c c*, in combination with the perforated strap or sleeve G, recessed guide-piece E, arm-piece D, having an abutment, J, fitting within in the recess in the guide-piece, and a coiled spring arranged within the latter, substantially as herein described.

2. The combination, with the arm-piece D, recessed guide-piece E, and coiled spring I, of the strap or sleeve G, secured to the arm-piece, and embracing the guide-piece, and provided with a series of openings, *d*, for the reception of a locking-pin, substantially as described, for the object specified.

3. The guide-piece E, having at one end a cavity, L, provided with an elbow-lever, K, carrying an exterior push-button, M, in combination with the arm-piece D, coiled spring I, and strap or sleeve G, secured to the arm-piece, and having a series of perforations, *d*, and embracing the guide-piece, substantially as described.

159,395. DROP-WIRES FOR STOPPING MECHANISM. Lemira Dimock, Northampton, Mass. [Filed Dec. 20, 1874.]

Brief.—The eye is made as shown and claimed, so as to be durable, easily attached to the wire, and readily detached when worn out.

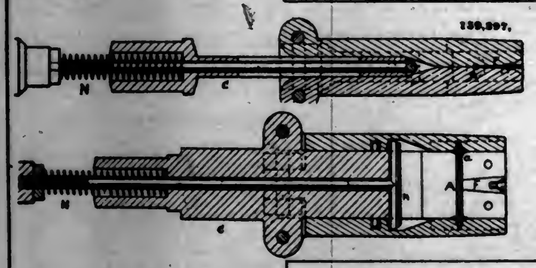


The eye B, constructed of a single piece of sheet metal, with the barrel or socket *b'* for attachment to the drop-wire, substantially as herein described

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159,397. MOLDS FOR CASTING BOBBINS. Martial Dimock, Newark, N. J., assignor to the Clark Thread Company, same place. [Filed Aug. 18, 1873.]

Brief.—The hinged sections are separated by the spring-rod acting on their inner inclined surfaces.

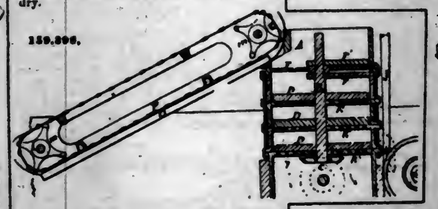


In combination with a mold, as described, a handle, D, cam K, spring E, and spring N, as and for the purposes set forth.

159,396. PEAT-MACHINES. Franklin Dodge, Union Grove, Ill. [Filed Dec. 14, 1874.]

Brief.—The cylinder has within its interior a series of graduated perforated diaphragms, knives, bars, and grinders, for the purpose of grinding peat, which, upon reaching the bottom of the reservoir, is agitated in water, converted into a semi-plastic mass, and thence pumped out into troughs, where it is left to dry.

159,398.



1. The process of treating peat herein described, consisting, first, in grinding it by passing it through a series of graduated perforated disks, and kneading the peat in the peculiar manner described, then mixing the peat thus ground with water until it is taken up by the water, and then pumping the mixture away to the drying-grounds, where it is allowed to settle and condense, drawing off the water, and hardening the peat, as described, and finally storing in curing-cribs to finish the process.

2. The revolving grinders D, in combination with the graduated perforated diaphragms E, E', &c., substantially as described, and for the purposes specified.

3. The employment of a pump and conductor, in combination with the reservoir I, in which the peat is liquefied and mixed, for conveying the liquid compound automatically to the drying-grounds, as specified.

4. The combination, substantially as before set forth, of the hopper A, revolving knives F, and bars F', grinders D, perforated diaphragm E, gearing *g*, feed-water pipe H, reservoir I, and pump J, for the purposes specified.

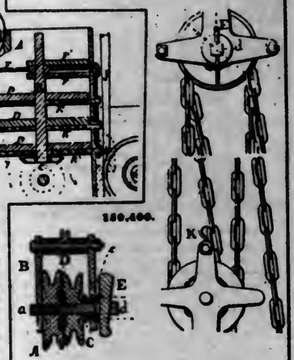
159,399. CAR-COUPLINGS. V. Erbeck, Ryde Park, Pa. [Filed Sept. 8, 1874.]



The draw-head A, having the slots B, B' and grooves *g g'*, in combination with the curved hook C and securing-pin *p*, substantially as and for the purpose set forth.

159,400. DIFFERENTIAL PULLEYS. Jos. T. Fowkes, Philadelphia, Pa., assignor to J. H. Armbruster, same place. [Filed Oct. 31, 1874.]

Brief.—Two pulleys of different diameters, with a spring between them, are mounted upon a frame, which has a lateral projection holding a key, by means of which the pulleys are connected or disconnected.



1. The combination, with the two pulleys A C, of the rising-and-falling locking-piece E, fitted to the extension-piece *d* of the frame B, substantially as and for the purpose set forth.

2. The two pulleys A C and sliding head F, mounted on the same axis *a*, in combination with the lock E, having a rising-and-falling motion.

3. The two pulleys A C, in combination with the spring D between them, and with sliding head F, having laterally-extending pins *a*, which project through the frame B, for contact with the lock E, substantially as and for the purpose set forth.

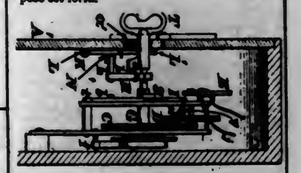
159,401. FIRE-ALARM SIGNAL-BOXES. Geo. Floyd, Cincinnati, Ohio. [Filed Nov. 21, 1874.]

Brief.—A swinging guard-plate upon the inside of the cover is normally held away from the key-hole by a pin projecting from an arm attached to the winding-arbor. When the arbor is turned the pin is withdrawn from contact with the guard-plate, and the withdrawal of the key allows the guard-plate to swing and cover the key-hole. Key cannot be again inserted until the signal has been sent, and the arm and pin return to their normal position, thus pushing away the guard-plate.

1. The combination of master-wheel C, stop-wheel D *d'*, arbor G *g*, arm H *h'*, brake I *i* V, spring *k*, and any suitable clock-work and circuit-wheel, when adapted to be set in motion with a key, T, or its equivalent device applied through an opening, *a'*, in the cap, cover, or door of the box, substantially as herein explained.

2. The guard-plate L', pivoted to the inner side of the door or lid of a fire-alarm signal-box, and adapted to close the key-hole of the box, being operated and to uncloss the same by the return of the mechanism to its normal position, substantially as herein explained and illustrated.

3. The combination of arm H *h*, attached to arbor G of the signaling mechanism, projection K, and bell-crank L L', pivoted to the inner side of the box-door A', for the purpose set forth.



159,402. CONVERTING IRON INTO STEEL. Mark S. Foote and Greenbury R. Henry, Burlington, Iowa. [Filed Nov. 7, 1874.]

Brief.—Melts the flux patented November 10, 1873, No. 145,536, with scrap iron or steel, and the resulting bath is used to immerse iron articles in, which becomes thereby superficially converted into steel.

The within-described solution or bath, composed of the above-named flux, made by heat alone, and composed of iron ore, coke, limestone, and fire-clay or broken crockery, wrought-iron, cast-iron, and scrap-steel, in the proportions substantially as described, and for the purposes specified.

159,403. SNAP-HOOKS. John T. Foster, Jersey City, N. J., assignor to F. C. Nye, New York city. [Filed July 31, 1874.]



1. The swell in the sides of a snap-hook, in combination with the loop in a different plane, substantially as described.

2. The improved snap-hook composed of the loop and eye in one piece, and the swell standing out of said plane, and having the arms locked together on both sides of the swell, substantially as described.

159,404. CARTRIDGE FEED-CASES FOR MACHINE-GUNS. William B. Franklin, Hartford, Conn., assignor to Colt's Patent Fire-Arms Manufacturing Company, same place. [Filed Sept. 16, 1874.]



In combination with the feed-case A of a machine-gun the spring G and head H, extending over the mouth or open end of the case, substantially as described, and for the purpose of supporting the cartridges directly thereon.

159,405. COFFEE-ROASTERS. Michael W. Fry, Guyandotte, W. Va. [Filed Jan. 4, 1875.]

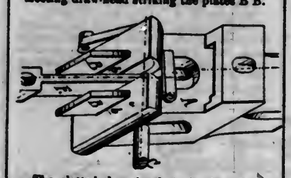
Brief.—The projecting air-chamber is interposed between the coffee and that portion of the cylinder immediately over the fire, to prevent excessive burning. The ledges and extension-plate on each side arrest the revolution of the cylinder midway, and the coffee is thereby impelled up the inclined sides of the air-chamber.

159,406.



159,407. CAR-COUPLINGS. James Graham, Detroit, Mich. [Filed Aug. 24, 1874.]

Brief.—When the link is raised ready for coupling, it rests in the slot against the top of the draw-head, and is thrown down by the meeting draw-head striking the plates B B.



The slotted draw-head A, having the recesses *b b*, slots *c c*, bumper-plates B B, rock-shaft C, and link E, all combined substantially as and for the purpose set forth.

159,408. BEDSTEAD-FASTENINGS. Alexander Grillet, Philadelphia, Pa. [Filed June 18, 1874.]

Brief.—A bedstead-fastening consisting of a plate having inclined bearings pivoted in a recess in the post, and a plate fitted in a recess in the end of the rail, and secured therein by transverse pins, and provided with inclined projections, which rest upon the bearings of the plate in the post. One of the parts has a limited play to insure a close joint between the rail and post, and all are locked in position by a cam attached to the post and bearing on the top of the rail.

159,409.



159,410.



1. The projecting air-chamber F, in combination with a rotary coffee-roaster, substantially as and for the purpose described.

2. The combination of the projecting air-chamber F, the extension-plate G, and the ledges or flanges *b b*, substantially as and for the purpose described.

159,406. ASH-SIFTERS FOR STOVES. John H. Goodfellow, Troy, N. Y. [Filed Dec. 30, 1874.]

Brief.—The fingers in the end walls prevent the contents from falling off the sifting-bottom at that point.

159,406.



1. The grate E, composed of parallel corrugated bars divided by longitudinal spaces, in combination with, and adapted to reciprocate between and beyond, the lower edges of the end walls of the grate-chamber, whereby the coals resting upon the grate are, by the corrugations thereon, caused to lift and fall during the reciprocation thereof, substantially as and for the purpose described.

2. In combination with the end walls C C', the corrugated sliding or reciprocating sifting-grate E and clearing-fingers *e*, substantially as and for the purpose set forth.

159,409.



A broom made from broom-corn, colored by dyeing, as set forth.

159,410. MANUFACTURE OF HORSESHOE-NAIL PLATES. Daniel J. Harrington, Cork, Ireland, assignor to Jos. M. Laughlin, Boston, Mass. [Filed Apr. 7, 1874.]

Brief.—The plate should be of a width equal to the length of two nails, and have thickened edges for the heads, while the intervening portion from the edge to the middle of the plate has the varying thickness of the body of the nail proper, and along this middle line is made the groove by cold-rolling.

As an improvement in the art of making ribbed plates from which to cut horseshoe-nails, subjecting the plate when cold to the action of rolls that shall produce upon it, midway between the two ribs, a groove of such shape as will secure to the points of the nails that may be cut therefrom the necessary and usual bevel, as set forth.

159,411. CALL-BELLS. Westel B. Hawkins and Gurdon W. Hull, Wallingford, Conn. [Filed Jan. 7, 1875.]

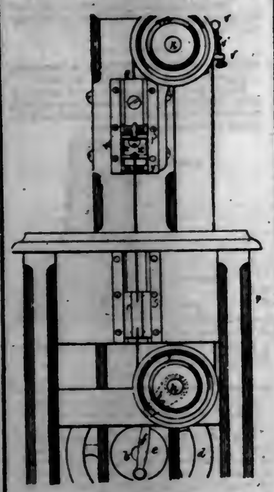


1. The combination, with a fixed bell, of one or more hammers, C, arranged to swing in a plane substantially at right angles with the plane of the rim of the bell, a lever, D, the the axis of which is substantially parallel to the axis of the hammer, and in connection with the hub of the hammer, and an arm of said lever below the bell turned to one side of the axial line of said lever, these elements operating substantially as described.

2. The combination of a fixed bell, one or more hammers, C, the lever D, in connection with the hub of the hammer, substantially as described, and a stop to arrest the turning of the hub of the hammer before the hammer strikes the bell, substantially as described.

159,412. JIG-SAWS. Charles M. Hayden, Hanover, Mass. [Filed Aug. 29, 1874.]

Brief.—The saw receives its reciprocating motion through two straps attached to pulleys, which have a partial rotation upon their axis.

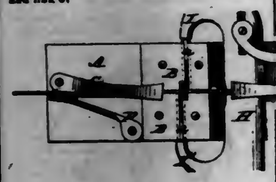


1. The combination, with the saw and the slide-head *p*, of the sliding frame *w* and cam-lever *s*, substantially as and for the purpose set forth.

2. Also, in combination with the saw and with the rocking wheels *j m* and strap-connections, the adjusting-clamp *o o' o²*, substantially as and for the purpose set forth.

159,413. SAW-SETS. Hermann Heinicke, Newark, N. J. [Filed July 29, 1874.]

Brief.—The pivoted lever H operates the dies *c c*, which set adjoining teeth to opposite sides, the saw being fed forward, two teeth at a time, by means of the pawl L, lever K, and link J.



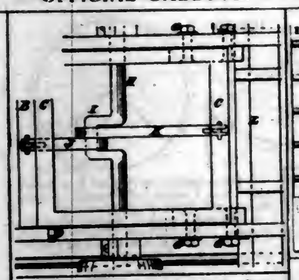
1. In combination with the bed A, provided with suitable adjusting-screws and supports, the guides B, spring-dogs *a a*, and lever H, substantially as and for the purpose set forth.

2. In combination with a suitable bed or support and the lever H, the pitman J and pawl L for producing the feed, substantially as described.

3. The combination and arrangement, with the guide-block B and bed A, of the set-screws D D, post E, and springs G F, for holding the blade in the proper position while being operated upon, as set forth.

159,414. GRAIN-SEPARATORS. T. J. Hubbell, Troutsville, Col., assignor to J. Bateman and T. J. Hubbell. [Filed Sept. 15, 1874.]

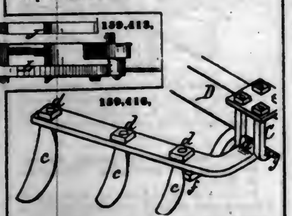
The combination of the riddle-frames B and C, the intermediate pitmen J K, operated by the same crank I in such manner as to move the screens in the same direction simultaneously.



The combination of the frame A, sections *d* and *c*, and spring *h*, as and for the purpose set forth.

159,415. HARROW ATTACHMENTS FOR PLOWS. P. Jacobus and D. R. Ambrose, Romulus, N. Y. [Filed Nov. 2, 1874.]

Brief.—The bar carrying the harrow-teeth is attached to the handle, and hinged or pivoted. The pivot-bolt has a square shoulder in the clamp to prevent its turning, and an arm extended at a right angle as a rest or stop for the bar.

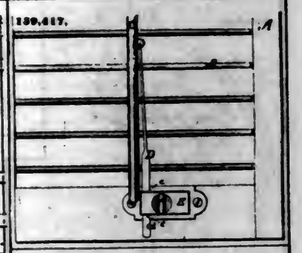


The harrow attachment to a plow, consisting of the backwardly-curved hinged bar A and key-stop B, in combination with the clamp C and handle D, all constructed as herein shown and described.

159,417. BLIND-STOPS. John D. Jones, Omaha, Nebr. [Filed Jan. 4, 1875.]

Brief.—An incased spring-bolt, with projecting thumb-piece, engages with the notched end of a metal rod, which is pivoted to the connecting-bar of the slats, and passes down through slots in the box or case, the bolt or catch thus locking the device in desired position.

The box E, having slots *a a*, and provided with a spring-catch, F, having thumb-piece *f*, in combination with a rod, D, pivoted to a slat-bar, C, and having notches *d*, as and for the purpose specified.



159,418. METHODS OF ORNAMENTING GLASS. Thos. Jones, New York, N. Y. [Filed Dec. 3, 1874.]

1. The described process of ornamenting glass plates, dishes, and other glass articles, consisting essentially of first obtaining or producing a deadened surface to render them non-transparent, then cutting or otherwise engraving any desired design upon the previously ground or roughened surfaces thereof, then polishing the depressed or sunken portions produced by such engraving, and, finally, silvering or gilding all over the roughened and engraved surfaces, substantially as and for the purpose set forth.

2. A glass panel, having its under or inner side roughened, cut, polished, and silvered, substantially as described and shown.

159,419. WATER-METERS. Nathaniel W. Knowlton, Nevada City, Cal. [Filed Nov. 6, 1874.]

Brief.—When the water is flowing, the carrot upward lifts the cylinder until a cross-bar on the inner end of the valve-spindle strikes the lower end of the discharge-pipe and forces the valve open; the cylinder then settles down and fills, to be forced upward again. In settling down the cylinder strikes the arm of registering mechanism.

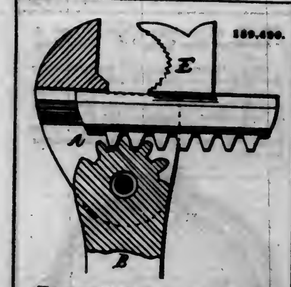


The upright case A, with its water-pipes *b a*, having the pipe *b* passing through its upper end, and terminating near its middle, in combination with the cylinder F, with its valve H, said valve having the spindle *i* and cross-bar *j*, the whole combined and arranged to operate in connection with a register, L, substantially as and for the purpose above described.

159,420. PIPE AND NUT WRENCHES. Friedrich, Kohler, Allegheny, Pa., assignor of one-half his right to Henry Zimmerman, same place. [Filed Aug. 6, 1874.]

Brief.—The movable jaw is formed with a double face, and may be removed and reversed, for use as a pipe or nut wrench.

159,420.



The reversible sliding nut and pipe wrench E, when combined with the head A and segment-handle B, the whole constructed and arranged as herein described.

159,421. CLASPS FOR SCARF-SLIDES. Albt. Kompp, New York, N. Y. [Filed Dec. 17, 1874.]



A clasp constructed of an elastic central blade, *a*, and of two elastic blades, *c c*, connected to the central blade, *a*, substantially as shown, while the outer ends of said side blades form spring-catches *d d*, all constructed and operating substantially in the manner herein shown and described.

159,422. NECK-TIE SHIELDS. O. Kueppers, Philadelphia, Pa. [Filed Dec. 16, 1874.]



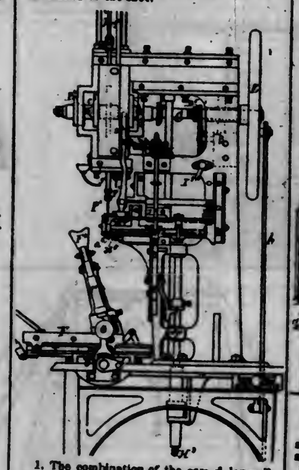
1. In a neck-tie shield, the covering and back plate clamped to each other, substantially as and for the purpose set forth.

2. A neck-tie shield the body or frame of which is formed of a flanged metallic shell, B, substantially as and for the purpose set forth.

3. The neck-tie shield consisting of a covering, A, back plate C, and an interposed shell, B, clamping the edges of said covering and back plate, substantially as and for the purpose set forth.

159,423. PEGGING-MACHINES. Henry Kuhlmann, Hamburg, Germany. [Filed Dec. 23, 1874.]

Brief.—Improvement on Patent No. 130,301, of August 6, 1872. The awl and driving rod, moving independent of each other, are actuated by a double-armed cam. By means of a reciprocating sole-guide two rows of pegs are inserted by a single set of devices, without changing the feed mechanism, and with one revolution of the shoe.



1. The combination of the cam c^3, lever d^3, nut f^3, and rod H^2, substantially as and for the purposes shown and described.

2. The combination, with the frame E^2 and rod J^3, of mechanism whereby said frame E^2 is raised to allow the work to be moved forward without obstruction, substantially as shown and described.

3. The combination of the slide C^2 and rod J^3 and attached mechanism for feeding the wood-strip, substantially as shown and described.

4. The combination of the slide C^2, lever I^2, and lever a^4, for operating the knife, substantially as shown and described.

5. In combination with the awl-rod I^1 and hammer-rod I^2, moving independently of each other, the double-armed cam or lifter Q, arranged to operate alternately on said awl-rod and hammer-rod, substantially as shown and described.

6. The combination of the wheel B^2 on the shaft C, the wheel C^2 having the cam-surface c^3, the lever F^2, slide G^2, and sole-guide H^2, whereby the pegs may be placed in the sole in a zigzag or double row, substantially as shown and described.

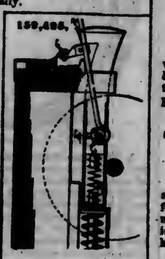
159,424. CURTAIN-FIXTURES. E. B. Lake, Tom's River, N. J. [Filed June 15, 1874.]

Brief.—A dog or catch is combined with the operating-cord, so as to engage with a notched disk on the end of the roller-shaft, thereby holding the curtain-roller at any desired position vertically.

159,424.



159,425.



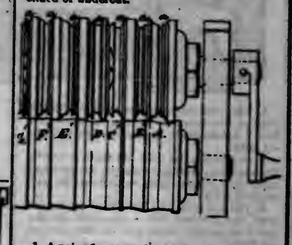
The combination, with the adjustable roller B and notched plate D, of the pivoted dog F and drawing-cord E, said cord and dog being connected together and relatively arranged substantially as described, to serve the double purpose of controlling the dog and raising the curtain, as set forth.

159,426. CAR-COUPLINGS. A. Longuellier, Concord, N. H. [Filed Apr. 3, 1874.]

The sliding block C, in combination with the pin B, spiral spring D, and link A, to operate as and for the purposes set forth.

159,427. ROLLS FOR ROLLING HORSESHOE-BLANK BARS. William W. Lewis, Cincinnati, Ohio. [Filed July 31, 1874.]

Brief.—The bottoms of the grooves in the lower roll are inclined upward toward the creasers in the grooves of the upper roll, so that the crease formed in the bar will be inclined or undercut.



1. A pair of improved rolls for rolling horse-shoe-blanks, of which one is grooved, and has a creaser in the groove, and the other has an inclined face opposite the creaser in the groove of the first, for producing a blank with an undercut crease, &c., as described.

2. A pair of improved rolls for rolling horse-shoe-blanks, of which one has a groove in it, with a beveled or rounded side and a creaser in the groove, and next to the beveled or rounded side, for producing a horseshoe with a beveled or rounded edge, so that the horse will not cut himself when he lots. firm.

159,427. PORTABLE STEAM-OVENS. James H. Lockwood, Chillicothe, Mo. [Filed July 13, 1874.]

Brief.—An outer and an inner vessel are combined, the outer having an annular reservoir near its upper edge, with holes for the admission of steam therein, and external tubes to conduct the water of condensation back.



In a portable steam-oven, the vessel A, provided with the reservoir *a*, the steam-holes *b*, and the return-tubes *c*, in combination with the vessel B, substantially as and for the purpose specified.

159,428. SLEEPING-CARS. Christian E. Lucas, Atlanta, Ga., assignor of one-half his right to John F. Devine, Wilmington, N. C. [Filed Dec. 11, 1874.]

Brief.—Every second seat is adjustable along the side of the car, so as to leave room for a mattress, which is stiffened by longitudinal slats. There is also a locker sunk partly in the floor under each stationary seat, for holding various articles.

No. 159,426.



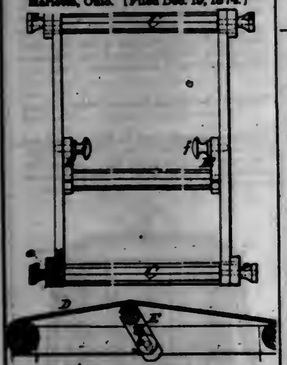
1. The combination of the seats C with the parallel link-hinges c, catch b, staples c, and bolt e, substantially as and for the purpose set forth.

2. In combination with the seats B and C, the mattress, provided with the longitudinal supports f, substantially as and for the purpose set forth.

3. The recess E, extending through the car floor, and provided with a removable galvanized-iron bottom, G, as and for the purpose set forth.

4. In a railway-car, a car-seat attached to the side of the car by means of parallel link-hinges, as and for the purpose set forth.

159,429. QUILTING-FRAMES. T. C. Marin, Marietta, Ohio. [Filed Dec. 19, 1874.]

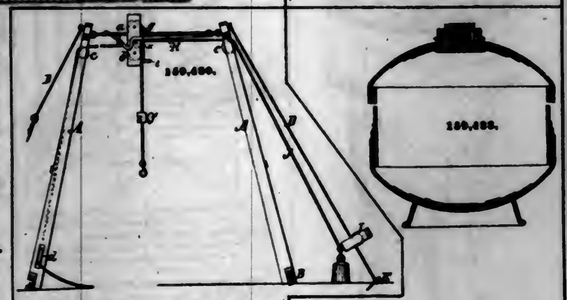


1. The combination, with a quilting-frame, of the tension-roller F, vertically adjustable by means of slotted arms E and set-screws f, substantially as specified.

2. The combination, with a vertically adjustable tension-roller, F, of the winding and unwinding rollers C, prevented from rotation by clamping set-screws c, substantially as specified.

159,430. HAY-ELEVATORS. Geo. W. Martin and Jas. C. Moor, Brookston, Ind. [Filed Dec. 7, 1874.]

Brief.—A rope stretched over triangular frames and pinned to the ground has suspended from and rolling on it a carriage, through which the hauling-rope is passed. The load, at its proper height, strikes and releases a catch, and is then drawn along over the desired place. A weighted sheave on a line carries the haul-rope back.



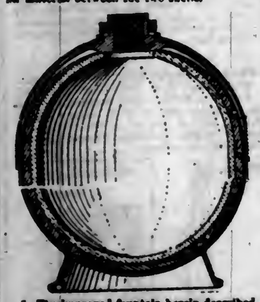
No. 159,430.

1. The combination of the catch H with the wire-cable, and the frame F, having sheaves a and b, and the pins c, substantially as and for the purpose described.

2. The combination, with the guy-rope D, of the weighted pulley I and rope J, attached to frame F, substantially as and for the purpose described.

159,431. SODA-FOUNTAINS. J. Matthews, New York, N. Y. [Filed Aug. 7, 1874.]

Brief.—The outer shell is of steel, the inner shell of glass, with a packing of cork or similar material between the two shells.



1. The improved fountain herein described, for containing aerated beverages, consisting of shell of steel or other strong metal and an inner vessel of glass, with a packing, substantially such as herein described, between all, as and for the purpose set forth.

2. The washers or extra thickness at the bung, in combination with the shell, so as to strengthen and support the shell, as set forth.

159,432. FOUNTAINS FOR SODA-WATER. J. Matthews, New York, N. Y. [Filed Aug. 7, 1874.]

Brief.—The outer shell is of steel, the inner shell of glass, covered with a sheet-metal envelope. Between the glass vessel and the steel shell an elastic non-compressible filling, such as india-rubber, is arranged, the filling serving to transmit the pressure of the gas to the metal shell, and thus prevent the bursting of the glass.



A reservoir or fountain for aerated liquids, composed of a steel or other strong metallic shell, a glass vessel with a sheet-metal envelope, and an elastic non-compressible filling or packing between, substantially as described.

No. 159,433.

159,434. VESSELS FOR CONTAINING GASES AND LIQUIDS UNDER PRESSURE. J. Matthews, New York, N. Y. [Filed Aug. 7, 1874.]

Brief.—Strong vessels to contain liquefied carbonic acid, nitrous oxide, and similar gases which require great pressure, are made with the walls two, three, or more thicknesses of steel plates, thinned and united together.

1. The method herein described for forming strong vessels to contain gases and liquids under high pressure, consisting in coating a sheet of steel or other tough metal with tin or other soldering-metal, coiling into a volute or spiral, and then swedging the parts together, substantially as set forth.

2. The method of forming caps or ends for strong vessels, consisting in sweating together a number of steel or other tough-metal caps coated with a soldering-metal, as set forth.

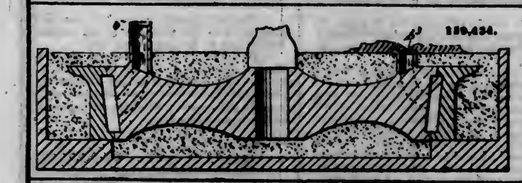
3. A lamellar vessel for containing liquids and gases under great pressure, having the several plies united by tin or soldering-metal, as described.

4. A lamellar cap or end for strong vessels, composed of a number of caps united by soldering-metal, as set forth.

5. The combination of the re-enforcing washers d with the end or body of the vessel, so as to re-enforce the parts weakened by apertures, as set forth.

159,435. CASTING CAR-WHEELS. W. A. Miles, Cayuga Iron-Works, N. Y. [Filed Sept. 16, 1874.]

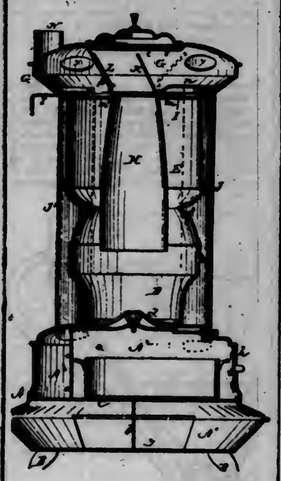
The described process of constructing car-wheels consisting, essentially, first, in making the tire and central portions separately; second, heating those parts; third, introducing between them a stream of molten metal; fourth, causing the same to flow continuously until the adjacent parts are fused, substantially as described.



No. 159,434.

159,435. BROOMS. Geo. C. Milgate, Council Bluffs, Iowa, assignor to himself, Calvin A. Beebe, and Lawrence Kinahan, same place. [Filed Dec. 7, 1874.]

Brief.—The smoke may be made to pass directly through the rear fire-columns, or up through the cylinder which incloses the magazine, down through the front columns and base, and up the rear columns, or up through the cylinder at the front of the magazine, and back across its upper surface through the partition to the exit.



1. The stove-base A, divided by partitions into a lower chamber, A^1, an ash-chamber, A^2, and a chamber, A^3, surrounding the ash-chamber, the chambers A^1 and A^3 being divided into front and back compartments, all substantially as herein set forth.

2. The combination of the stove-base A, having chambers A^1 A^2 A^3, as described, the fire-pot D, drum E, cap G, magazine H, and front and rear columns J J and J' J', all constructed substantially as and for the purposes herein set forth.

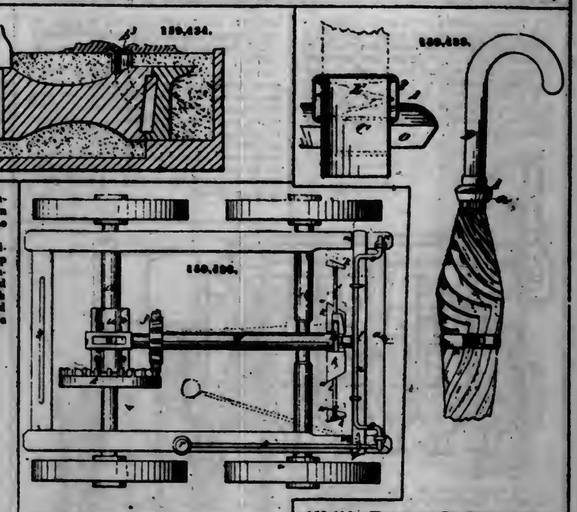
3. The combination, in a magazine-stove, of the cylinder E, magazine H, front and rear openings m m', the double damper I, and cap G, having a partition therein, all substantially as set forth.

4. In combination with the magazine H, cap G, and the front columns, J J, the hinged magazine-cover K and column-checkers, arranged upon a single rod and operating together, all substantially as set forth.

5. The combination, with the cap G and the front and rear columns J J and J' J', of the partition p with damper L, substantially as and for the purposes herein set forth.

159,436. COTTON-CHOPPERS. J. D. Mitchell, Dry Creek, Ala. [Filed Aug. 12, 1874.]

Brief.—The front end of the chopper-shaft rests in a sliding bar operated by a lever and crank, which gives vertical and lateral adjustment to the hoes. The rear boxes of the two shafts are pivoted crosswise to each, which allows the described movement.



No. 159,436.

159,437. DOLLS. Ansil W. Monroe, Rahway, N. J. [Filed Nov. 9, 1874.]



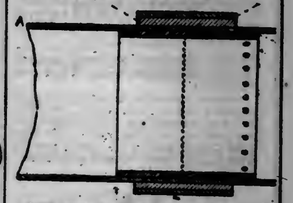
A doll's head of hard rubber or other material, provided with the rounded neck portion and secured to the trunk by the elastic band B, button C, and pin D, substantially as described and shown.

159,438. UMBRELLA-TIP RETAINERS. V. Montalbetti, Milan, Italy, assignor to L. G. Marini, Washington, D. C. [Filed Nov. 20, 1874.]

An umbrella-tip retainer consisting of a beveled cap, A a, and flanged thimble B, constructed in one piece, the spring E, and flanged thimble C, all constructed and arranged as and for the purpose specified.

159,439. JOINTS FOR SHEET-METAL PIPES. Joseph Moore, San Francisco, Cal. [Filed July 8, 1874.]

Brief.—A strengthening-ring is secured by rivets to the inner side of one section of sheet-metal pipe, and then passed into the adjoining section, a band or hoop having first been slipped over the end of the pipe. Lead packing is then tamped into the space between the band and the adjoining ends of the pipes, thereby forming a water-tight joint.



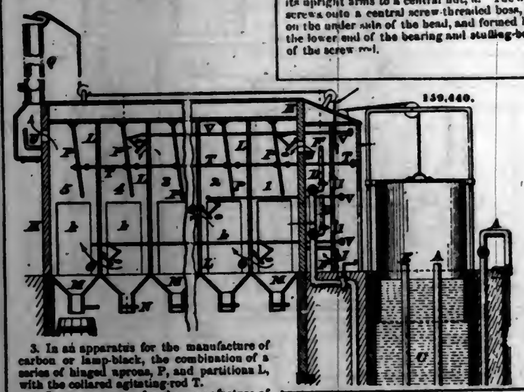
In a sheet-iron water-pipe, the internal strengthening ring or flange C, secured to one of the two sections of pipe A B, and combined with the opposite section, the outer band, E, and the packing D of lead, the latter being tamped firmly into the space between the parts A, B, and E, so as to afford a continuous lead covering over the joint and to some distance on each side, strengthened by an iron hoop outside, substantially as and for the purpose set forth.

159,440. APPARATUS FOR THE MANUFACTURE OF CARBON OR LAMP-BLACK. Peter Neff, Gambier, and Lovi S. Fales, Cincinnati, Ohio, assignors to the Kokosing Oil Company of Ohio. [Filed Jan. 6, 1875.]

Brief.—A rod provided with collars passes through the partitions of the rooms, and through the swinging aprons, for the purpose of shaking down the carbon or lamp-black into the hopper-shaped bottoms of the rooms. Valves in the different rooms and in the smoke-stack regulate the draft.

1. In an apparatus for the manufacture of carbon or lamp-black, the series of rooms 1 2 3 5, communicating by openings or flues O, alternately in or near the top and bottom of partition-walls K, and finally with smoke-stack or chimney Q.

2. In an apparatus for the manufacture of carbon or lamp-black, the suspended hinged apron or aprons P, for intercepting and collecting the soot.



3. In an apparatus for the manufacture of carbon or lamp-black, the combination of a series of hinged aprons, P, and partitions L, with the collared agitating-rod T.

4. In an apparatus for the manufacture of carbon or lamp-black, the combination of a series of partitions, L, with the collared agitating-rod T.

5. In an apparatus for the manufacture of carbon or lamp-black, the combination of a series of hinged aprons, P, with the collared agitating-rod T.

6. In an apparatus for the manufacture of carbon or lamp-black, a series of rooms provided with partitions, and having the hopper-formed bottoms M, with traps or doors N.

7. In an apparatus for the manufacture of carbon or lamp-black, the combination, substantially as described, of oven F, in which a smoldering combustion takes place from a series of burners, D, and from which the smoke passes by a devious course through rooms 1 2 3 5 into the smoke-stack, with said rooms 1 2 3 5, in the manner substantially as set forth.

8. In an apparatus for the manufacture of carbon or lamp black, the smoke-stack Q, having one or more dampers, E 5, and a grate or fire-place, U, for the purposes designated.

159,441. MOSQUITO-CANOPIES. Isaac E. Palmer, Middletown, Conn. [Filed Aug. 15, 1874.]

Brief.—A frame with the net secured at its top, with a hook for its suspension, over which the net is extended and held in place by a hoop with an adjusting-clamp. The hoop passes through loops in the band or heading woven in it, by which it is held in position.



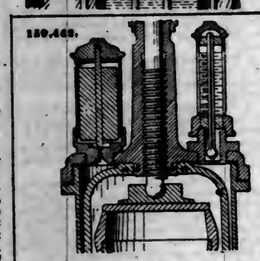
1. The combination, with the head-sustaining hoop of a mosquito-canopy, of a screw-clamp adapted to embrace both ends of the hoop, whereby the said hoop may be adjusted to compensate for the shrinkage of the net, as herein described.

2. A mosquito-canopy provided with a pocket or series of pockets woven in the heading, which serves as a trimming at the junction of the head and the skirt, in combination with a hoop passing through said woven pocket or pockets, in the manner and for the purpose described.

159,442. DENTAL FLASKS FOR RUBBER. S. D. Palmer, Toledo, Ohio, assignor to John R. B. Ransom, same place. [Filed Jan. 12, 1875.]

Brief.—The mold-closing clamp E passes down through a central bearing, F, on the boiler-head B. Fixed to and suspended from the under side of this boiler-head B is the stirrup or mold-carrying frame G. This frame is attached to the boiler-head by connecting its upright arms to a central nut, *a*. The nut screws onto a central screw-threaded boss, *b*, on the under side of the head, and formed by the lower end of the bearing and stuffing-box of the screw-rod.

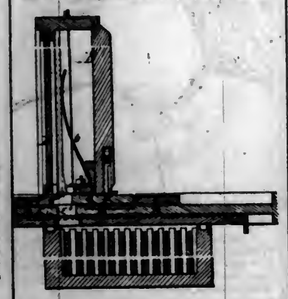
159,443.



In a flask or boiler for making dental plates, the combination, with the boiler-head and mold-closing clamp working through the same, of a mold-carrying stirrup or frame, fixed to the under side of said boiler-head at or near the point where the mold-closing clamp takes its bearing in the same, and raised above and out of contact with the bottom of the boiler, substantially as and for the purposes shown and set forth.

159,445. CAMERA ATTACHMENTS. George W. Parker, Bainbridge, N. Y. [Filed June 17, 1874.]

Brief.—Relates to cameras for outdoor work, and consists essentially in providing a receptacle for a large number of prepared plates.



1. The transferring device C G', provided with plate G', all arranged in the manner shown, and for the purpose set forth.

2. In a photographic camera, the combination of plate-holder B, slide D, aperture *a'*, slide *a*, and spring *b*, with the transferring devices G G', constructed as described, aperture E', and grooved plate G', all combined and arranged as set forth.

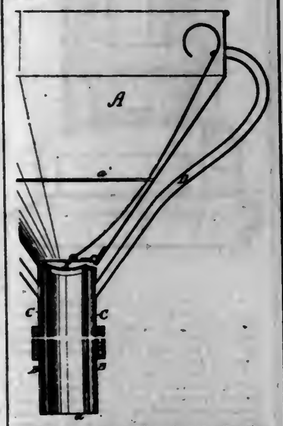
159,446. CAR-COUPLINGS. Manasseh Pettengill, Minneapolis, Minn., assignor of one-half his right to W. A. Merriam, same place. [Filed Aug. 12, 1874.]



The head *b*, having the vertical concavity in its face, and the series of horizontal semi-circular grooves *d*, with beveled intermediate ribs, as shown and described.

159,447. FUNNELS. August Pfort, Baltimore, Md. [Filed Jan. 4, 1875.]

Brief.—The lower end of the nozzle has a jacket that is laterally apertured and forms a chamber, and connects the tubes at the upper part of the funnel, thereby causing the liquid to rise and indicate to the operator that no more liquid is needed. The hanged valve is interposed between the filter and discharge-nozzle.



The combination of funnel A *a*, having filter, and the chamber C, having tubes D D, with a hanged valve, E *e*, situated between the filter and discharge *a*, as and for the purpose specified.

159,448. MANUFACTURING MILK OF MAGNESIA. Chas. H. Phillips, New York, N. Y. [Filed Aug. 21, 1874.]

Brief.—Precipitates hydrate of magnesia from a solution of any soluble salt of the same by ammonia-water, draws off the ammoniacal salt, and washes the precipitate.

The process herein described of preparing the hydrate of magnesia, termed milk of magnesia, to wit, by subjecting a soluble salt of magnesia to the action of ammonia, in the manner substantially as set forth.

159,447. ICE-CREEPERS. Saml. R. Phillips, Philadelphia, Pa., assignor to himself, C. L. Phillips, and A. J. R. Phillips, same place. [Filed Jan. 30, 1875.]

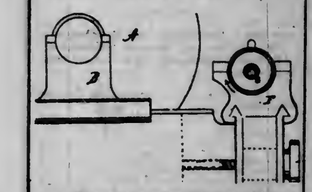
159,449.



1. The plate A, having a series of spurs, B, connected thereto, in combination with the retaining straps C D, secured thereto by means of said spurs B, substantially as and for the purpose set forth.

2. The extended straps D, projecting from the plate A in the longitudinal direction thereof, and of sufficient length to pass along the sides of the feet to the rear of the ankle and around the same, substantially as and for the purpose set forth.

159,448. MACHINES FOR CUTTING OFF BARS, TUBES, CYLINDERS, &c. Jacob Rosse, Pittsburg, Pa. [Filed Aug. 7, 1874.]



1. The rotating cutting-disk A of mild steel or iron, having a smooth periphery and mounted in bearings B, moving in guides, in combination with the hollow mandrels H, provided with chucks, and mounted in bearings F, moving in guides at right angles to the guides of the cutting-disk, substantially as and for the purpose specified.

2. As an improvement in the art of cutting off metallic bars, tubes, cylinders, &c., that are herein described, namely, subjecting the metal to be cut to the action of a rotating disk of mild steel or iron, said disk having a smooth periphery, the metal to be cut being caused, by suitable mechanism, to revolve at a lower rate of speed than the cutting-disk, substantially as specified.

159,449. BALE-TIES. John L. Reese, Galveston, Tex. [Filed Jan. 23, 1875.]



1. The bale-tie *a*, having a broadened end, *b*, slot *c*, and slit *d*, forming strip *f*, whether the same be used as shown on Fig. 1, or folded as shown in Figs. 3 and 4, substantially as specified.

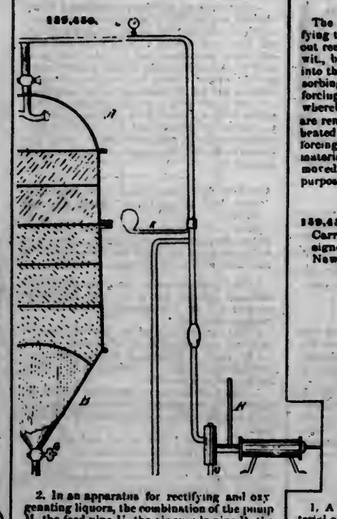
2. In a bale-tie, the loop *e*, formed on one end of a binder, the open-ended slot *c*, and strip *f* on the broadened end of the binder, substantially as specified.

159,450. RECTIFYING AND OXYGENATING APPARATUS. Jos. W. Reford, New York, N. Y., assignor of one-half his right to Jas. T. Waters, same place. [Filed Oct. 1, 1874.]

Brief.—Forces air and liquor conjointly through a revolving sprayer into a cylinder containing, in separate compartments, first, charcoal or other clarifier; second, peroxide of manganese and chloride of lime, or other oxygenators; third, marble-dust or other clarifier.

1. The process of filtering and oxygenating liquors, by forcing them, in combination with atmospheric air under pressure, through purifying and oxygenating substances, as and for the purpose described.

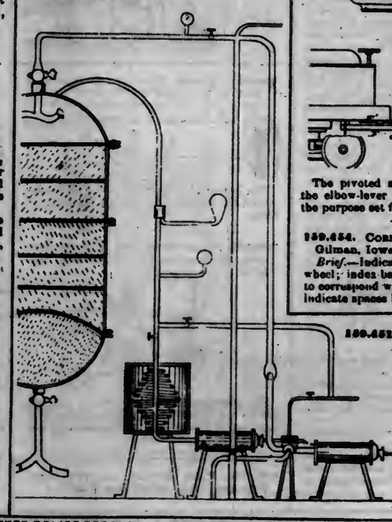
159,450.



2. In an apparatus for rectifying and oxygenating liquors, the combination of the pump M, the feed-pipe U, the air-supply pipe R, the pipes H and E, provided with pressure-gage and safety-valve, and the cylinder A, having partitions or screens *a b c d e f*, whereby liquor and air are separately drawn into the air-cylinder of the pump, and are together forced through the filtering-vessel, substantially as described, for the purpose specified.

3. In a liquor rectifying and oxygenating apparatus, the centrifugal distributer F, combined with the cylinder A, containing the horizontal screens, substantially as described, for the purpose specified.

159,451. PURIFICATION OF FILTERING AND OXYGENATING SUBSTANCES WHILE WITHIN THE RECTIFYING-CYLINDER. Joseph W. Reford, New York, N. Y., assignor of one-half his right to Wm. Watt, Jr., same place. [Filed Sept. 25, 1874.]



The improved process of renewing or purifying the packing or absorbing material without removing the same from the cylinder, to wit, by first introducing suitable chemicals into the cylinder A, upon the packing or absorbing material that is to be renewed, and forcing the same through by steam pressure, whereby the grosser and valuable deposits are removed, and by them introducing superheated steam into the top of the cylinder, and forcing it through the packing or absorbing material, whereby the finer impurities are removed, substantially as described, and for the purpose specified.

159,452. NON-CONDUCTING COVERINGS. Carroll L. Riker, Rochelle Park, N. J., assignor to the Vegetable Felting Company, New York city. [Filed May 29, 1874.]

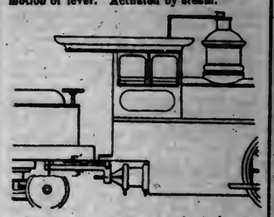


1. A felting or non-conducting covering material or lining for excluding or retaining heat or cold, made from the head of the cat-tail or reed-mace, substantially as and for the purposes specified.

2. In combination with a felting or non-conducting covering made from the head of the cat-tail or reed-mace, hair or such similar material, for sustaining in felting or otherwise, as specified.

159,453. DEVICES FOR INCREASING TRACTION OF LOCOMOTIVES. Lewis A. Sites, Grey Court, N. Y. [Filed Nov. 23, 1874.]

Brief.—Weight of tender thrown on traction-wheels by elbow-lever pivoted to a plate connecting the two trucks, permitting lateral motion of lever. Actuated by steam.

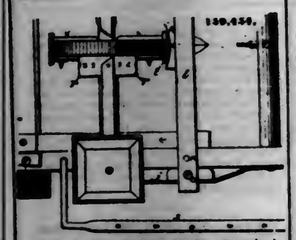


The pivoted arm F', in combination with the elbow-lever F, substantially as and for the purpose set forth.

159,454. CORN-PLANTERS. Amos Roark, Gilman, Iowa. [Filed June 30, 1874.]

Brief.—Indicator-wheel on side of dropping-wheel; index bar with numbers on upper side to correspond with numbers on wheel, and to indicate spaces between hills.

159,451.



159,434.

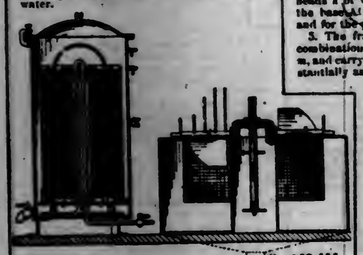
1. In combination with the dropping-wheel of a planter, an index-wheel, *r*, and bar *o*, substantially as and for the purpose set forth.

2. The bars *j*, rods *o*, bar *l*, and guides *n*, in combination with the inner frame *c*, substantially as shown and described

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159,435. PROCESSES AND APPARATUS FOR SEPARATING AND COLLECTING TUFTED FIBER FROM COTTON-SEED HULLS. Adolphe Rock, New Orleans, La. [Filed Jan. 4, 1875.]

Brief.—Tufted fiber is separated and collected from cotton-coated hulls by means of heat and steam, alkali and steam, and a subsequent washing, by slowly-moving agitators, of the decomposed hulls and fiber in a perforated receptacle, which is submerged in water.



159,435.

1. The process herein described of separating the fibers in tufts from cotton-coated fragments of seed-hulls, which consists of the following operations, to wit: the digesting of said coated fragments of hulls while immovably confined in a suitable receptacle, by means of water applied in a percolating apparatus and steam under pressure; a continuance of the same digesting operation, in a similar receptacle and under like conditions, by means of water and an alkali, also applied in the percolating apparatus, and the subsequent washing of said tufts in water, which is agitated sufficiently to enable it to hold said tufts of fiber and the lighter particles of hull in suspension, substantially as described, whereby the original tufted characteristics of the fiber on the hull are retained, and the separation of the hull effected without injury to the fiber, as set forth.

2. The digester, composed of a steam-tight tank, a vomiting-tube, and a movable basket surrounding the tube for containing the matter to be digested, in combination, substantially as described, whereby said basket may may be readily removed from the tank and discharged or filled, as set forth.

3. The combination, with the digesting-tank of the vomiting-tube and the central steam-pipe, which is located within the tube and discharges steam at the bottom of the tank, substantially as described, whereby the fluid in the vomiting-tube is maintained at a high degree of temperature, and a rapid and voluminous discharge effected, as set forth.

4. The combination, with a steam-tight tank, a perforated false bottom, a vomiting-tube, a central steam-pipe within said tube, and a detachable basket, of one or more free vertical water-spaces communicating with the water-space beneath the false bottom, substantially as described, whereby an upward current is induced in the vomiting-tube and free downward currents induced in said water spaces or spaces, as set forth.

5. The washing apparatus, composed of an exterior water tank, a stationary interior receiver surrounded by an open water-space in the tank, and having its side walls and bottom finely perforated, and provided with paddles which mechanically induce a continuous gentle current within the receiver, substantially as and for the purposes herein described.

6. As a new article of manufacture, tufted cotton fiber detached from fragments of cotton-coated seed-hulls, and having the tufted characteristics it possessed before being detached from said fragments, substantially as described

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159,436. MORTISING-MACHINES. Sven Rydbeck, Red Wing, Minn. [Filed Aug. 26, 1874.]

Brief.—A hollow chisel of the same section as the proposed mortise contains an auger, which removes the wood from the interior of the chisel as it is forced into the timber.

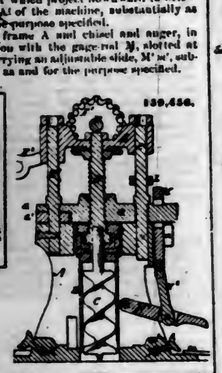
1. The combination of the screw-spindle D, sectional pivoted nut G G', and adjustable yoke H A A B', substantially as and for the purpose specified.

2. The combination of the screw-spindle D, sectional pivoted nut G G', adjustable yoke H A A B', shaft F, gearing F' D', spur-wheel I', and adjustable rack I, substantially as and for the purpose specified.

3. The combination of the screw-spindle D, auger C, rigidly secured thereto, chisel D, and parts *b* and *b'*, all united substantially as specified.

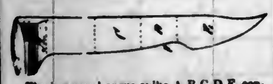
4. The frame A and chisel and auger, in combination with the gage-rods K *k k'*, the heads *k* of which project above and rest below the base A of the machine, substantially as and for the purpose specified.

5. The frame A and chisel and auger, in combination with the gage-rod M, slotted at *m*, and carrying an adjustable slide, M' *m'*, substantially as and for the purpose specified.



159,436.

159,437. SPIKES. George N. Sanders, New York, N. Y. [Filed May 12, 1874.]



The improved screw spike A B C D E, constructed as shown, as and for the purposes set forth.

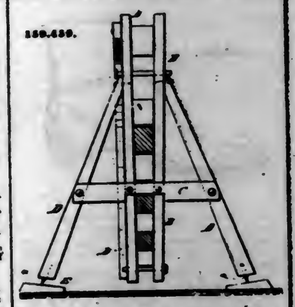
159,438. STRAW-STACKERS. Gerome Sanders, Martinsville, Ill. [Filed Aug. 28, 1874.]



159,438.

The combination of the poles A A, with pulleys *a a*, ground pulleys *b b'*, endless rope B, and rake C, all substantially as and for the purposes herein set forth.

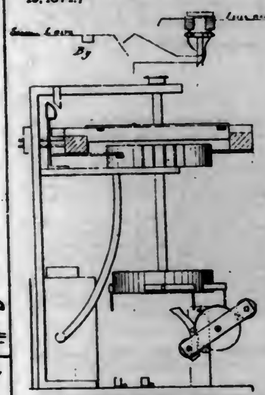
159,439. FARM-FENCES. David Sattler, Napoleon, Ohio. [Filed Dec. 7, 1874.]



159,439.

The vertical bars B B B' B', secured together by pins near their top and bottom, to form a wedge-shaped space for the overlapping base rails, in combination with the cross-bars C C and the inclined braces D D, having metal pins *a a*, resting on inclined ground-posts E E, all constructed as and for the purpose set forth.

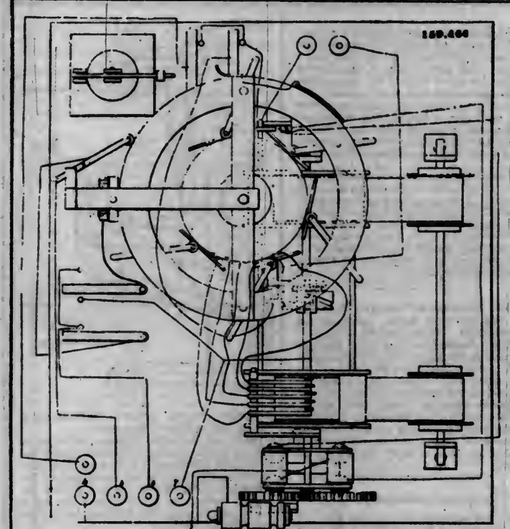
159,440. AUTOMATIC AND AUTOGRAPHIC TELEGRAPHS AND CIRCUITS. William E. Sawyer, Washington, D. C. [Filed Oct. 19, 1874.]



1. The combination, with a main line, of a series of transmitting-styles, a commutator, by which the transmitting-styles are brought into circuit *serially*, and one recording-style, substantially as set forth.

2. The combination of a main line, a series of transmitting-styles, a commutator, and one recording-style.

2½. In a chemical telegraph, the combination, with transmitting apparatus, comprising a series of transmitting-styles and a commutator, of a receiving apparatus having but one recording-style, which distributes the impulses gathered into circuit by the commutator.



159,466

2½. The method of signaling and recording signals, consisting of concentrating into the line at the transmitting end, by means of a commutator, the impulses proceeding through a series of transmitting-styles, points, or rollers in certain relative positions, and distributing said impulses at the receiving end by relatively changing the positions of the receiving or marking style or styles during the passage of said impulses, so as to deposit an impulse at the same relative point upon the receiving-paper as the transmitting-style from which such impulse proceeded occupied upon the message transmitted, by which means the commutator and recording-styles at the receiving end corresponding to the transmitting commutator and styles are avoided.

3. The combination of a main line, a series of transmitting-styles, a commutator consisting of a series of contact pieces or rollers in groups or divisions, a function of which series, groups, or divisions is to place the transmitting-styles in circuit *serially*, and one recording-style for each such series, group, or division, substantially as shown and described.

4. The combination, with a line of a receiving apparatus in which the recording style or stylus pass across the sheet, strip, or roll of receiving-paper, each style moving in one direction, instead of vibrating back and forth, thus drawing actual or imaginary lines across the sheet, strip, or roll of paper, instead of lengthwise of it, substantially as set forth.

5. The combination, in a receiving apparatus with one or more recording-styles, of mechanism for giving the style or styles a continuous motion, or a motion in one direction transversely of the paper upon which the message is recorded, substantially as set forth.

6. The combination, with mechanism for imparting motion to transmitting or receiving apparatus, of an air-receptacle and valvular passages for the purpose, first, of driving the mechanism, and then of checking or bringing it to a stop, substantially as shown and described.

7. The combination, with the metallic drums and their shaft, of a cam for producing a longitudinal reciprocation of the drums, as set forth.

8. The combination, with the metallic drums, of the rocking frame, the electro-magnets, and circuit-connections, for giving a reciprocating rotary motion to the drums, as set forth.

9. The combination, with the metallic drums and their shaft, of the rocking frame, the electro-magnets, and circuit-connections, and a cam for giving a simultaneously longitudinal reciprocating and reciprocating rotary movement to the drums.

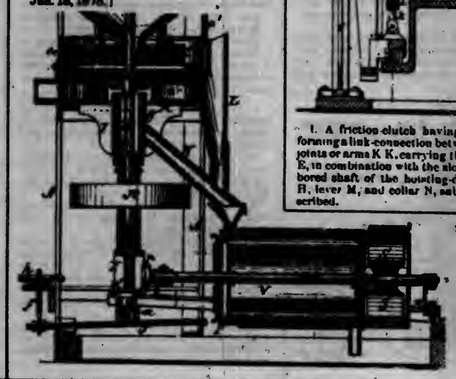
10. The combination, with a main line and its battery, of an induction or an electro-magneto electric apparatus, the current induced by which serves to electrically bridge a break or lessen a resistance in the circuit in which it flows, as set forth.

11. In a chemical or copying telegraph, the method of obtaining an insulating writing-surface upon a metallic surface, consisting of transferring the lines of writing first formed in a prepared ink upon paper to a metallic surface lithographically, or by fixing the paper to the metallic surface, and washing off from the metallic surface either that portion of the message-paper which is blank, or that portion which is covered by the lines of writing, as set forth.

12. The method of treating the received message, consisting of subjecting the paper to a bath, and thus removing any discoloration excepting the electrolytic discolorations, as set forth.

13. The combination of a line with an induction coil or coils and a mechanical circuit-changer, for the purpose of clearing a line of tailings independently of the transmitting apparatus or process, substantially as shown and described.

159,461. MACHINES FOR HULLING GRAIN. Charles Schaschne, Rondout, N. Y. [Filed Jan. 12, 1875.]



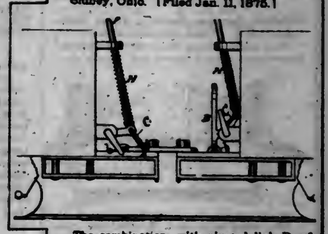
159,461.

1. The combination of the shaft E, stone D, case H, curb C, and vertically sliding frame I, operated by means of the lever J, screw-rod *f*, and hand wheel A, substantially as and for the purposes herein set forth.

2. The combination, with stones C D, wings *e*, curb C, and case H, of the conductor L, tube N, jacket O, polisher consisting of cylinder P V, and fan S, all as and for the purposes set forth.

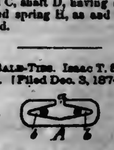
3. The combination of the adjustable cylinder P, with screen-roof *i*, shaft *m*, interior wire screen *k*, fan S, and cylinder V, with ribs or wings *p*, all substantially as and for the purpose herein set forth.

159,462. CAR-COUPLINGS. Benj. Skinner, Sidney, Ohio. [Filed Jan. 11, 1875.]



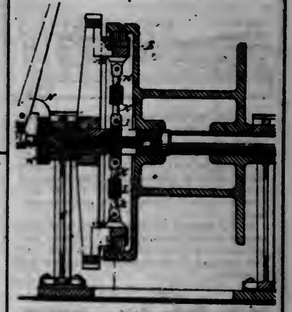
The combination, with pivoted link B, of the bent rod C, shaft D, having arm *d*, vertical rod F, and spring H, as and for the purpose specified.

159,463. BALE-TIES. Isaac T. Smith, Richmond, Va. [Filed Dec. 3, 1874.]



The double-hook tie A, having central top opening, *a*, and V-shaped recesses *b b*, substantially as and for the purposes herein set forth.

159,464. FRICTION-CLUTCHES. G. H. Sterbuck, Troy, N. Y. [Filed Jan. 18, 1875.]



1. A friction-clutch having a cross-key, I, forming a link-connection between the knuckle-joints or arms K K, carrying the friction blocks E, in combination with the slotted and axially-bored shaft of the hoisting-drum, sliding rod H, lever M, and collar N, substantially as described.

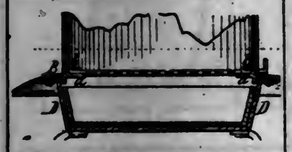
2. The hoisting drum C, having friction rim D and a slotted and axially-bored shaft, in combination with a gear-wheel, B, having the guided G, and with friction-blocks E, sliding rod, and a lever connected therewith, substantially as described.

3. The driving-wheel constructed with guides G and stops X, for guiding and limiting the motion of the clutch and friction blocks as the clutch mechanism is brought in and out of gear, substantially as described.

4. In combination with the hoisting-drum and slotted and axially-bored shaft, the lever M, pivoted upon the divided collar through its yoke, and connected with the end of the sliding rod, for operating the arms carrying the friction-blocks, substantially as described.

159,465. STOVES. David L. Stiles, Rochester, N. Y. (Filed June 20, 1874.)

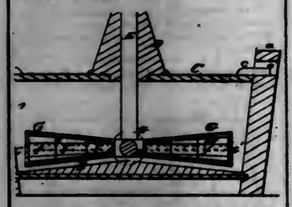
Brief.—The flanged base-ring is interposed between the fire-pot section and the ash-pit.



The combination, in a stove, of the base-ring B, having the inwardly-projecting flange a, with lugs b thereon, to secure the journals of the grate, and vertically-projecting flanges to secure the casing A and base D, as and for the purpose described.

159,466. WASHING-MACHINES. Abraham Stout and David Stevenson, Philadelphia, Pa. (Filed Oct. 10, 1874.)

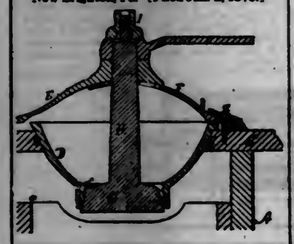
Brief.—Radial conical rollers in sections, operated by a vertical shaft and handle over a conical ridged bottom.



1. The improved washing-machine consisting of the tub A, conical bottom B, made in ridged sections, as shown, lid C, pedestal D, rotary shaft E, adjustable collars H I, spring K, conical rollers G, and band G', said rollers being made in independent frustum-shaped sections, fluted and recessed at g g', all combined to operate as and for the purpose specified.

2. The conical fluted rollers G, consisting each of several frustum-shaped sections journaled upon a single shaft radiating from a rotary upright, E, substantially as shown and described.

159,467. COFFEE-MILLS. T. Strobridge, New Brighton, Pa. (Filed Jan. 2, 1875.)



1. The hopper and grinding-shell D, provided with points or projections c on its outer surface, in combination with cover E, projecting so as to rest upon the top of the box and bind upon the upper edge of the hopper, substantially as and for the purpose specified.

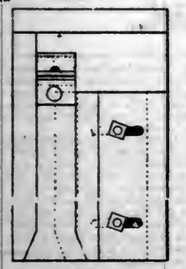
2. In coffee or spice mills, the combination of box A, having a top, C, with the hopper D, suspended within the box by means of lugs or projections, which rest upon or take into top C and a cover, substantially as specified.

3. The combination of the hopper and grinding-shell D, grinding-nut G, having shank H, and cover E, having a sliding gate or door, F, substantially as and for the purpose specified.

4. The combination of cover E and grinding-shell or hopper D, the latter provided with lugs or a flange, so that two parts may be secured to the box by a single set of screws, substantially as specified.

159,468. DEVICES FOR WELDING TOGETHER THE FAG-ENDS OF BARS. Jacob Sutter, Pittsburg, Pa. (Filed Aug. 10, 1874.)

Brief.—A rectangular bed-plate having a permanent raised flange at one end and side. On the plate is fastened adjustably a slide, which, in conjunction with the fixed side, forms the groove for the reception of the heated fag-end, against which the heated bar is struck. One of the limbs of an adjustable L-shaped plate situated in the end of the groove serves to preserve the guide notch or cut formed in the end of nut-bars, as a gage for cutting the next nut.



1. As an improvement in the method of preparing the fag-ends of bar-iron, for use in the arts, bringing said fag-ends to a welding-heat, and welding them together, end to end, or to the end of a similarly-heated bar, by successively forcing one against the other while confined in a straight groove, substantially as described.

2. The combination of the bed-plate, the fixed and movable sides, and the adjustable knife or gage, substantially as and for the purpose specified.

159,469. MACHINES FOR BURNISHING BOOT AND SHOE HEELS. Alexander Swallow, Beloit, Wis. (Filed Dec. 31, 1874.)

Brief.—The burnisher is loosely pivoted to a horizontal arm held in a slotted plate, which is hinged to a vertically-adjustable lever, providing vertical, horizontal, and lateral movement to the burnishing-tool.

1. The combination of the burnisher I., adjustable holder K, and the slotted plate J, hinged to the lever H, substantially as and for the purposes herein set forth.

2. The rod h, spiral spring i, and thumb-nut k, in combination with the lever H, carrying the burnishing-tool, substantially as and for the purposes herein set forth.

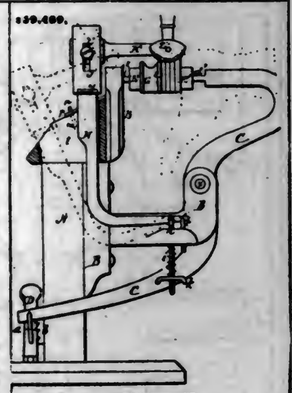
3. The heel-rest G, constructed as described, with a deep groove to form a lip, e, for the purposes herein set forth.

4. The combination of the stud d with the swiveled plate E, and the hinged lever C with the stud d' and swiveled plate E', the lever being operated by means of the rod or strap a, treadle D, and ratchet-bar b, all constructed substantially as and for the purposes herein set forth.

5. In combination with the lever H the pivoted hook F, with spring m and thumb-lever e, substantially as and for the purposes herein set forth.

159,470. PUMPS. Cyrus O. Sylvester, Attica, Ind. (Filed July 3, 1874.)

Brief.—A perforated disk on the bottom of the valve gives it additional strength and durability, and affords an even bearing all around for it to strike against the lower part of the valve-seat. Packing is inserted around the piston, between an upper flanged disk and a lower one, bolts passing between the flanges to hold it in place.



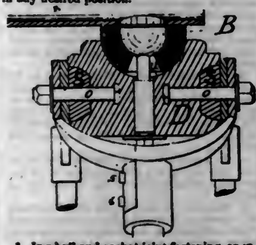


1. The plunger herein described, consisting of the cup J', having flange s, with slots r r, the cup J with flange r', the packing p between the cups, and the short bolts t t, which unite the parts, all constructed substantially as shown and described, for the purposes set forth.

2. The rib-valve D, provided with the bottom perforated flange c, top metal washer i, rubber or leather washer f, outer plate h, and bolt k, all substantially as and for the purposes herein set forth.

159,471. BALL-AND-SOCKET-JOINT FASTENINGS. Wm. F. Tallman, Mineville, N. Y., and Jas. H. Mandeville, Washington, D. C. (Filed Jan. 23, 1875.)

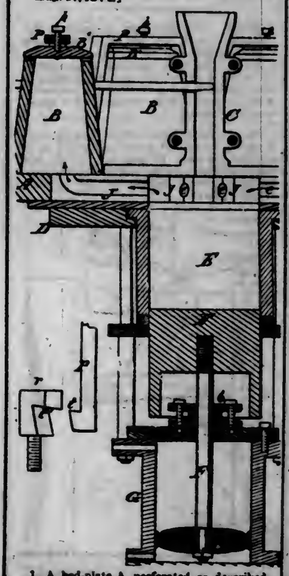
Brief.—The semi-spherical cup, forming part of the universal joint, rests within a correspondingly-shaped socket held together by a bolt passing through both. The cup has several slits thereon, by the adjustment of which the object connected therewith is held rigidly in any desired position.



1. In a ball-and-socket-joint fastening, an interposed cup made with slits upon its bowl or bottom, for the purpose of gaining an increased binding power by the yielding and wedging of the cup into the socket when the ball is bound upon it.

2. The combination of the ball C and nut m, with the yielding and wedging cup, and the socket d, when constructed substantially as herein shown and described.

159,472. APPARATUS FOR CASTING INGOTS. John Blake Tarr, Fairhaven, Mass. (Filed Aug. 17, 1874.)

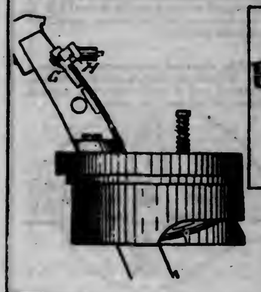


1. A bed-plate A, perforated as described, for a cluster of mold boxes, B, a pouring-sprue, c, provided with gate N, a surplus metal chamber, E, arranged beneath the plate A, communicating with the mold boxes and a pressing-head, F, a piston, G, arranged beneath the pressing-head F, all combined and constructed in the manner and for the purpose described.

2. The bails P, hooked as described, and provided with the set-screws p, in combination with the hooks r, rigidly secured to the bed A, and the mold-boxes B B', substantially as described.

159,473. TACK-DRIVING MACHINES FOR BOOTS AND SHOES. Henry G. Thompson and Charles Luke, Milford, Conn.; said Luke assignee to said Thompson. (Filed Jan. 16, 1875.)

Brief.—The roadway does which the tack slides is covered to prevent their displacement, and is provided with a trap or receiver, to arrest their downward movement, from which they are taken singly by a laterally-reciprocating slide-bar, and carried to the delivery chute.



1. In a tack-driving machine, a vibrating inclined roadway or passage provided with a guard or cover outside of the cylinder, substantially as shown, and for the purpose described.

2. A diaphragm, in combination with the stationary head of a revolving feeding-cylinder, for the purposes herein set forth.

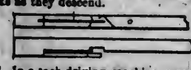
3. A diaphragm, fastened to the inside of a stationary head of a revolving feed-cylinder, and provided with a bearer and a spring, by means of which the diaphragm may be given a reciprocating movement, substantially as shown and described.

4. In a tack-driving machine, a roadway provided with a trap or receiver forming a curve or segment of a circle, for the purpose described.

5. The receiver or trap G in the roadway of a tack driving machine, in combination with the slide-bar H having an opening or trap beneath, for the purposes set forth.

159,474. TACK-DRIVING MACHINES FOR BOOTS AND SHOES. Henry G. Thompson and Charles Luke, Milford, Conn.; said Luke assignor to said Thompson. (Filed Jan. 16, 1875.)

Brief.—The tack-roadway, having a continuous tapering longitudinal slot, extends up through the stationary head of a revolving cylinder, and is provided with a guard within the cylinder, to regulate the passage of the tacks as they descend.



1. In a tack-driving machine, a continuous straight roadway extending through the head of the cylinder, provided with a push-bar and separator, all arranged to arrest the downward movement of tacks and separate them, so that each may be moved forward singly.

2. A guard attached to the inside of the stationary cylinder-head immediately above the roadway, as shown, for the purposes herein set forth.

3. The roadway e, extending through the stationary cylinder-head, provided with a continuous longitudinal slot, wider below than at the top, and closed at the bottom, substantially as and for the purpose described.

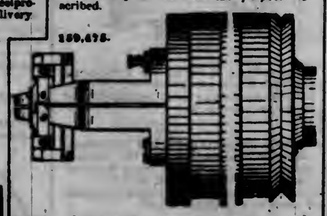
159,475. TACK-DRIVING MACHINES FOR BOOTS AND SHOES. Henry G. Thompson and Charles Luke, Milford, Conn.; said Luke assignor to said Thompson. (Filed Jan. 19, 1875.)

Brief.—The roadway is provided with a removable trap, through which a sliding push-bar laterally vibrates. The push-bar is covered to prevent displacement of tacks as they are carried singly forward to the delivery chute or passage.

1. In a tack-driving machine, a roadway provided with a push-bar, constructed substantially as shown and described, for acting upon the tail or side of each tack singly, substantially as set forth.

2. In a tack-driving machine the push-bar, with its operating-lever and spring, in combination with a roadway extending through the stationary head of a revolving cylinder, substantially as and for the purpose described.

159,476.



3. A push-bar, constructed with a guard to cover the head of each tack when taken from the roadway or trap, as set forth.

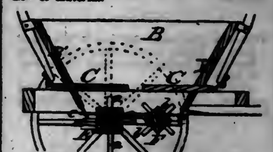
4. A push-bar, constructed with an opening at the bottom to receive the tail of each successive tack, in combination with the trap, substantially as and for the purposes set forth.

5. A push-bar, constructed to receive simultaneously upon one tack at a time, provided with a guard above and an opening at the bottom, substantially as and for the purposes herein set forth.

6. A push-bar acting upon each successive tack separately, provided with a guard above and an opening beneath, in combination with the vibrating inclined roadway of a tack-driving machine, substantially as and for the purposes herein set forth.

159,476. MANURE-DISTRIBUTERS. N. Tomlinson, Clinton, Ill. (Filed Oct. 10, 1874.)

Brief.—At the bottom of a hopper whose sides are inclined are journaled two spurred shafts, revolving in opposite directions, and through projections on the bottom of the sides. The hopper-bottom is made in two parts, which are adjustable to graduate the flow of material.

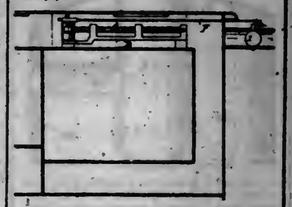


1. The inclined hopper sides B' B', provided with projections c at their lower ends, in combination with the spurred shafts E and F, revolving in opposite directions, substantially as and for the purpose set forth.

2. The inclined hopper sides B' B', provided with spurs c at their lower ends, in combination with the sliding bottom-boards C C, levers G G, axle E, provided with spurs a, and shaft E, provided with spurs b, substantially as and for the purpose set forth.

159,477. AUTOMATIC DAMPER-REGULATORS. Ralph Tomlinson, Boston, and Jos. Smith, Somerville, Mass. (Filed Sept. 14, 1874.)

Brief.—The damper is automatically opened and closed by the expansion and contraction of the metallic rod A. The frame which carries the expanding rod is arranged within the top sheet-flue of the stove, and the damper conveniently located within the horizontal exit-pipe.



The combination, with the metallic bar A, supported within the frame B, of the crank-arm C and the pitman-rod F, attached at one end to the crank-arm, and at its other end to the crank G, connected with the damper, the whole being constructed and arranged for operation as herein shown and described

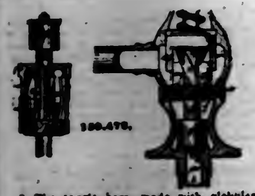
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159,478. SELF-CLOSING FAUCETS. John W. Trafton, Springfield, Mass. (Filed Mar 27, 1874.)

Brief.—Upon turning the valve-stem, the toggle-bars are raised in a vertical position between the fixed bearing and the disk upon the stem, thereby raising the valve against the stress of the spring.

1. The toggle-bars placed within the barrel of the cock or faucet between the valve and the gland g, so as to be lubricated by the liquid flowing through the cock, and acting between a fixed abutment or toggle-base and a bearing or disk upon the valve-stem, in combination with the valve-spring and valve-seat, substantially as set forth.

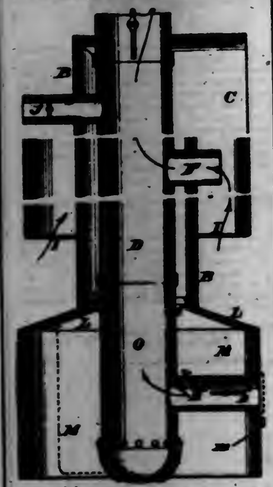
2. The projections m and m' upon the toggle-base f and disk k, respectively, in combination with the toggle-bars and valve, substantially as set forth.



3. The toggle-bars, made with globular ends and entering recesses in the toggle-base and disk on the valve-stem, so as to allow the toggle-bars to turn in their bearings as the valve-stem is partially rotated in combination with the valve stem and spring, as specified.

160,479. HEATING. Sterling D. Tuttle and Benj. F. Lorah, Baton, Ohio, assignors to Sterling D. Tuttle, same place. [Filed Jan 6, 1875.]

Brief.—Smoke circulates through the dome and pipe. Air to be heated circulates through the interior pipe and exterior drum.

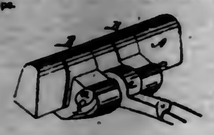


1. In combination with a heating stove, the central air-heating chamber, D, within the smoke-pipe B, having one or more tubular supports, F, forming communication with a drum, G, surrounding the smoke-pipe, said chamber and drum having suitable inlets and outlets, as and for the purpose set forth.

2. The dome I, i, having supporting-flange m, and forming chamber M, and supplemental pipe O, having inlet H' h', in combination with chamber D, stove-pipe B, supporting-tubes F, and drum G, for attachment to a heating stove, as and for the purpose specified.

160,480. THILL-COUPLINGS. Hiram Tyler, Geneseo, N. Y., assignor of one-half his right to Phil Teed, same place. [Filed June 16, 1874.]

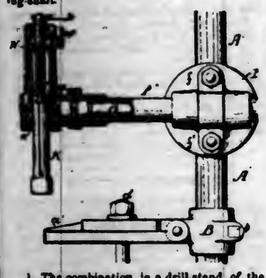
Brief.—The shaft-iron is provided with an enlargement, with an arm on either side, which fits neatly between the hooked portions of the clips.



The combination of the two hooked portions C C of the clips with the shaft-iron D, having central enlargement *c* and side arms, *a a*, with longitudinal grooves *x x*, all substantially as set forth.

160,481. METAL-DRILLING MACHINES. C. Van Haagen, Philadelphia, Pa., assignor to himself and Anthony Van Haagen, same place. [Filed June 1, 1874.]

Brief.—A split collar provided with a slotted clamping plate embraces the tubular post, which is formed with a slotted foot or base. A disk provided with an undercut groove is secured to the post, and to said disk is attached, by T bolts, another disk, provided on its face with a split collar, which receives the tubular rod that incloses the drill spindle. The upper portion of the shaft N serves as a nut for the feed screw, while the lower end is formed with teeth adapted to a worm on a spindle that derives its motion from the driving-shaft.



1. The combination, in a drill-stand, of the post A, its foot *a*, and a clamping-plate, *a'*, hinged to an adjustable collar, B, on the post, all substantially as set forth.

2. The combination of the post A and its clamping-disk D with the tubular drill-carrying bar F, and its clamping-disk E, the two disks being secured and otherwise adapted to each other, substantially as and for the purpose set forth.

3. The combination of the movable clamping-disk E, the tubular bar F, and its casing H, the driving-shaft G, and drill-spindle K, operated from the said shaft, all substantially as specified.

4. The combination, substantially as described, of the disk D, its undercut groove *g*, and flanged plug *e*, with the disk E, and headed bolts *f* and *f'*.

160,482. LAMP-BURNERS. A. C. Vaughan, Rainsburg, Pa. [Filed Dec. 26, 1874.]

Brief.—The supplemental piece is provided with projections and a slot coinciding with that in the deflector.



The deflector B, having top slot *b*, oval side holes *b'*, and pieces *b*, having the opposite blunt projecting ends *c c*, combined as and for the purpose described.

160,483. RELIEF-VALVES FOR CYLINDERS. Edmund Walters, Tamaqua, Pa., assignor of one-half his right to Henry Walters, same place. [Filed Jan. 6, 1875.]

Brief.—The valve is forced against pressure of steam by a regulating-screw.



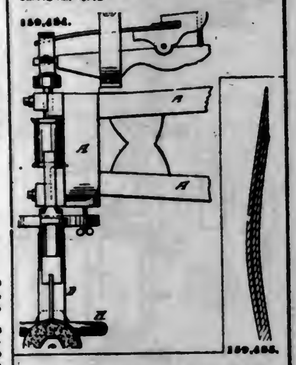
1. The combination of the shell *a*, valve-stem *c d e*, collar *g*, spring *i*, cap *p*, and regulating-screw *o*, substantially as shown.

2. The screw *o*, in combination with the valve-stem, whereby the valve can be kept open for the steam to blow through, substantially as described.

160,484. CUTTING AND POLISHING MACHINES. A. S. Walters and C. Saunders, Philadelphia, Pa. [Filed Jan. 2, 1875.]

Brief.—The tool is mounted in an adjustable bracket on the end of a swinging arm. The tool-shaft, being horizontal, is connected with the driving-shaft by means of a bevel-wheel connection.

The adjustable bracket D, carrying the shaft *b*, provided with the tool I and pulley *d*, in combination with the arm A, shaft B, and wheel H, all constructed and arranged to operate substantially as and for the purposes herein set forth.



160,485. SHAFT-STIFFENERS FOR BOOTS, &c. Jeremiah M. Watson, Sharon, Mass. [Filed Dec. 30, 1874.]

An improved shank-stiffener for boots or shoes, composed of two or more layers or springs of wood, combined with an intermediate integral layer or spring of metal, as shown, for the purpose specified.

160,486. DOOR-KNOB FASTENINGS. Jerome B. Wells, Rochester, N. Y. [Filed Nov. 26, 1874.]



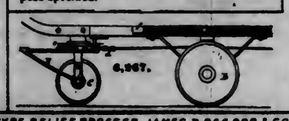
The combination, with the lock-case E and cam F, of the slide H, resting in the groove *a* of the knob-shank C, and provided with a bit, *c*, which strikes into a slot, *f*, formed half in the lock-case and half in the cam, as and for the purpose specified.

160,487. BEATERS FOR COTTON-OPENERS, &c. William B. Whitehead, Mills Plattin, England, and Abel T. Atherton, Lowell, Mass. [Filed July 23, 1873.]



1. The combination, in a pressure-regulator, of a flexible diaphragm, E, a balanced valve, D, and a lever, O, constructed and operating substantially as described.

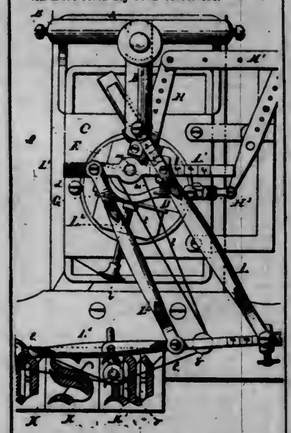
2. In a steam-pressure regulator which is constructed of a flexible diaphragm, E, a balanced valve, D, and a lever, O, in combination with the guide 5 and stem *d* of the valve D, constructed and applied in the water-well *f*, substantially as described, and all for the purpose specified.



in a machine for opening and cleaning cotton and other fibrous material, whippers I I, having extended surfaces or edges parallel, or nearly parallel, with the feed-rolls C C, and swinging freely in circles at sufficient distances from one another, and from the shaft of the revolving reels or spiders B B, on which they are mounted, to be severally independent and unobstructed in their swinging motions, and to yield within the full pathway of their revolution when an unusual or matted quantity of cotton is fed to them, substantially as herein specified.

160,488. ENGRAVING-MACHINES. Wm. S. Wight, Chardon, Ohio. [Filed June 30, 1874.]

Brief.—The novelty involved in this invention relates to the special construction of the operative parts, and sufficiently indicated in the claim, whereby the process of engraving is simplified, and the desired results attained with more certainty than heretofore.



1. The vertically-adjustable slide B', to which the pantograph is connected, adjusted by means of screw *k*, and held in position by set-screw *k'*, as specified.

2. In combination with a pantograph, the mortised revolving shafts N N, in which the arms of the pantograph are adjustable, as shown and specified.

3. The graver-stock *m*, having its lower end bent on an incline to allow the attachment of the graver in an inclined position, as specified.

4. The rotary plate E, carrying the clamps G G, and arranged on the table D, in combination with the set-screws *d d*, as specified.

5. The combination, with the rotary table E and pantograph, of the arm H, bar H', lever H', bar H', and arm H', all as shown and specified.

6. The adjustable block *f*, in combination with one of the jaws of the clamp G, for the purposes herein set forth.

7. The combination, with the base A, bed C, and tracing-table J J', of the pivoted lever I and knob I', as specified.

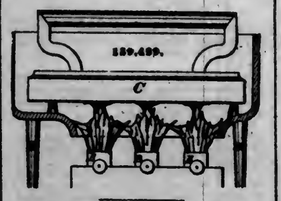
8. The plates K K', bearing the tracing-letters, provided with vertical central flanges *i*, as shown and specified.

9. The pulley S, provided with extended socket S', in combination with the spring S', tracing-bar M, and its bearings formed on the pantograph-arm L', as shown and specified.

160,489. FLAT-IRON HEATERS. B. Willmot, Dallas, Tex. [Filed July 23, 1874.]

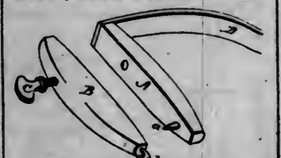
Brief.—The air is admitted freely from below to the burners, which heat directly nearly the whole face of the iron.

The metallic case D, having wide bottom opening, legs E, projections F, and burners B, combined and constructed substantially as and for the purpose set forth.



160,490. COW-TAIL HOLDERS. James M. Worden, East Randolph, N. Y. [Filed Nov. 21, 1874.]

Brief.—A strap surrounding the animal's thigh sustains a clamp, which holds the tail of the cow by means of a set-screw.

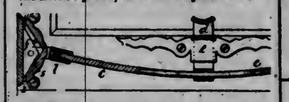


The combination of the clamp A B, thumb-screw C, strap D, and hook *b*, constructed and used substantially as and for the purposes herein set forth.

REISSUES.

6,963. SASH-HOLDERS. Loring J. Baker, Boston, Mass., assignor to H. Bradford. Patent No. 151,529, dated June 2, 1874. [Filed Nov. 3, 1874.]

Brief.—A single spring-rod extends across the lower part of the sash, and is connected at each end by screw-shackles and link-joints to friction-plates. These plates have double inclines, extending backward into a case with corresponding recesses. The spring-rod is depressed at its center by a thumb-slide, in order to relieve the sash from the pressure of the friction-plates, so that it may be raised.



1. The spring *e* and shackle *l*, united by a joint to the friction-clamp *f*, in combination with the slide *d* and lifter *c*, substantially as set forth.

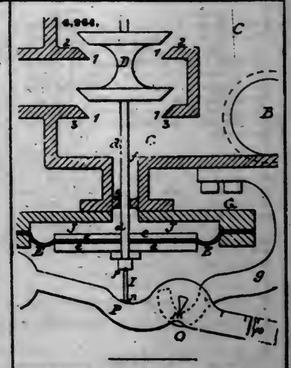
2. The combination of the slide *d*, lifter *c*, curved rod *e*, double inclined friction-clamp *f*, and case, substantially as set forth.

6,964. SELF-REGULATING PRESSURE-VALVES. Augustine Campbell, Metuchen, N. J., assignor to N. C. Locke, Salem, Mass. Patent No. 43,823, dated Aug. 16, 1864; antedated Sept. 22, 1862. [Filed Dec. 9, 1874.]

Brief.—A flexible diaphragm secured to the lower part of steam-chamber serves to confine the steam within its chest, and also support the valve-rod in position.

1. The combination, in a pressure-regulator, of a flexible diaphragm, E, a balanced valve, D, and a lever, O, constructed and operating substantially as described.

2. In a steam-pressure regulator which is constructed of a flexible diaphragm, E, a balanced valve, D, and a lever, O, in combination with the guide 5 and stem *d* of the valve D, constructed and applied in the water-well *f*, substantially as described, and all for the purpose specified.

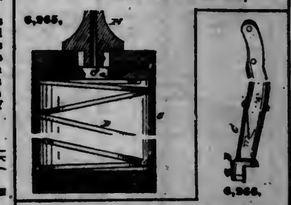


6,965. INJECTORS FOR INSECT-POWDER. Charles Chinnock, Brooklyn, N. Y., assignor, by mesne assignments, to Charles N. Crittenton, New York city. Patent No. 93,597, dated Aug. 10, 1869. [Filed Dec. 29, 1874.]

Brief.—The flexible portion of the bellows is distended by the spiral spring, which keeps the end disks of the bellows apart.

1. In a powder-injector, the combination of a flexible covering, C, with a distending-spring, D, substantially as and for the purpose described.

2. As a new article of manufacture, a powder-injector consisting of the combination of a removable nozzle, E, the air-passages *b*, flexible covering C, and spring D, substantially as and for the purposes described.



6,966. SPADING AND OTHER FORKS. Elon O. Denio and Geo. K. Babcock, New Hartford, N. Y. Patent No. 92,709, dated July 20, 1869. [Filed Jan. 12, 1875.]

Brief.—A supplemental ferrule on the end of the main ferrule. A raised projection upon the back or resisting part of the fork.

1. The handle A and tool B, in combination with the ferrule C, extending entirely around the handle, and the supplemental ferrule D, substantially as and for the purpose set forth.

2. The raised projection upon the back or resisting part of a fork or other tool, substantially as and for the purpose specified.

3. The combination of the handle A, ferrule C, supplemental ferrule D, with projection *a*, and the tool-head with projection *b*, all substantially as and for the purposes herein set forth.

6,967. HAND-TRUCKS. Leonard Gilson, Boston, Mass. Patent No. 134,537, dated Jan. 7, 1873. [Filed Dec. 9, 1874.]

1. In a hand-truck, the combination, with central primary wheels, of end wheels, adjustable in altitude with respect to one another and the floor or platform of the truck, substantially as and for the purposes set forth.

2. In combination with the central primary wheels of a hand-truck, end wheels adjustable vertically and swiveled to turn on a vertical axis, substantially as and for the purposes set forth.

3. In a hand-truck, the combination, with a primary or main wheel or wheels, of a swiveled end wheel or wheels, substantially as and for the purposes set forth.

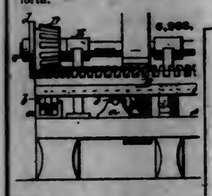
6,969. Hoses-Powers. John S. Schofield, Macon, Ga., assignor of one-half interest to J. R. Schofield. Patent No. 150,111, dated Sept. 15, 1874. [Filed Jan. 20, 1875.]

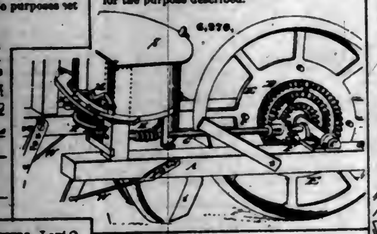
Brief.—An armless wheel having a circular groove upon its bottom, and revolving upon friction-rollers, has a central shaft provided with a pinion upon each end—one being loose, the other fast. The central shaft carries the band-wheel.

1. The combination of the master-wheel B, the single central shaft C, with a pinion, D, secured on one end thereof, and a pinion, D', placed loosely upon the other end, and said pinions provided with flanges *d d*, all substantially as and for the purposes herein set forth.

2. The combination of the master-wheel B, the flanges *d d*, cast with the pinions D D', and the friction guide-rollers *i i*, secured to the adjustable bearings mounted upon the base A, all as and for the purposes set forth.

3. The combination of the base A, the rollers *h* and *i*, the grooved master-wheel B, the shaft C, and the pinions D D', with flanges *d d*, all substantially as and for the purposes set forth.





6,970. Seed-Planters. James Campbell, for himself and Jas. A. Campbell, (administrator of William Campbell, deceased, assignee of one-half interest,) Harrison, Ohio. Patent No. 96,546, dated Nov. 9, 1869. [Filed July 16, 1874.]

Brief.—The frame is rectangular, the forward end of which is supported upon a single pilot-wheel, the rim of which is V-shaped. A set of concentric cog-gear, removable at pleasure, occupies the central portion of the wheel, and from which motion is given to the feeding devices. An opener, seed-spout, and coverers complete the planting devices. Handles like those of a plow or cultivator project in the rear, by which the machine is governed.

1. A seed tooth corn-drill, mounted upon a single front driving and pilot wheel, its flange or rim being V-shaped, so as to act as a cutter guide and marker, substantially as herein set forth.

2. In a corn-drill, in combination with the front ground driving wheel, the curved fender T, arranged between the grain-spout R, and tread E of the drive wheel.

3. The gear-disk D, forming the center or hub of the ground or drive wheel, and separable therefrom, as shown and described, for the purpose set forth.

4. The rearward extension *s* of the lid or top S of the seed-hopper, for the purpose of protecting certain operative parts of the seeding mechanism, and the upper end of the seed-spout, as set forth.

5. The pivoted gravitating forwarder or drop-finger M *m m' m'' m'''*, constructed and having its pivot arranged relatively to the seed-slide, as represented and described, for the purpose set forth.

6. The reversible gage-plate K *k k'*, as and for the purpose described.

6,971. Drawing-Books. Arthur Forbriger, Cincinnati, Ohio. Patent No. 151,905, dated June 16, 1874. [Filed Oct. 14, 1874.]



1. As a new article of manufacture, a drawing book or tablet, composed of layers or sheets, having progressive studies for copy upon them, all pasted or secured on two or more sides at the edges in any manner, so that no study except the one in use can be seen by the pupil, as set forth.

2. A drawing book or tablet, composed, respectively, of blank sheets and sheets with subjects for copy upon them, each copy-sheet being arranged to alternate with one or more blank sheets, and the whole book or tablet pasted or otherwise secured together at two or more of its edges, substantially as and for the purpose specified.

6,972. Sewing-Machine Casters. Levi O. Allen, Gardiner, Me., assignor to James P. Almy and Jefferson B. Brackett, Salem, Mass. Patent No. 81,454, dated Aug. 25, 1868. (Filed Apr. 10, 1874.)

Brief.—The casters are attached to the ends of S-shaped levers, which are pivoted to the frame, and worked at their inner ends by means of an axial pin passing through slots in both the levers. The axial pin is rigidly attached at right angles to a link, which is pivoted to that part of the treadle-lever which embraces the cross-shaft. The outer part of the treadle, when pressed down, rotates this cross-shaft, and through its connection operates the four casters.



1. The combination, with the frame, of the casters E and levers A, pivoted to the frame, said levers being guided at their inner ends by a common axis and moved by a lever, and arranged together as described, so that the pivots B form the only connection between the casters and the frame.

2. The combination, with the frame, the casters E, and the levers A, pivoted to the frame, of the connections F G and cross-shaft H, all arranged together substantially as described, so that the whole set of casters is operated by moving the single treadle-lever, as specified.

3. The combination of the treadle-lever D G, pin B', and frame, when arranged together substantially as described, so that the treadle-lever may be held or released, when depressed, by moving it laterally, as specified.

6,973. Repairing Pavements. H. W. Gould, Cleveland, Ohio. Patent No. 146,447, dated Jan. 13, 1874. [Filed Jan. 15, 1873.]

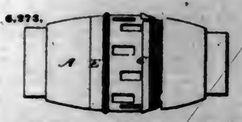
Brief.—Repairs the uneven surface of a wood pavement by placing thereon a coating of concrete, or asphaltum, sand, gravel, hydraulic cement, &c., with or without strips of wood secured in the deep ruts to hold the coating.



1. In combination with the worn-out or uneven superstructure A of a wood pavement, the coating C, substantially as and for the purpose described.

2. In combination with the worn-out or uneven pavement A and superstructure C, the strips D E, substantially as and for the purpose described.

6,974. Hubs for Vehicle-Wheels. C. H. Guard, Tippecanoe City, Ohio, assignor of one-half interest to J. W. Ford, same place. Patent No. 146,260, dated Jan. 6, 1874. [Filed May 21, 1874.]



1. The combination of wooden hub A, having grooves B near the point where the spokes enter the hub, with wire D, wound in the grooves and soldered together, so as to form a solid mass, as described.

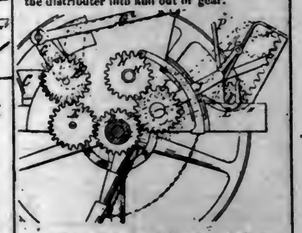
2. The wooden hub A, with one or more annular grooves, B, near the point where the spokes enter, in combination with plate-bands C and wire D, filling said grooves, substantially as described.

3. The combination of a metallic band composed of wire and solder with a wooden hub containing annular grooves, as shown and described.

4. The combination of a grooved wooden hub and a metallic band, when said band is wholly or partially held in place, and finished by the application of melted metal, as set forth.

6,975. Grain-Drills. C. B. Fabris, Springfield, Ohio. Patent No. 95,472, dated Dec. 29, 1868. [Filed Jan. 9, 1875.]

Brief.—A grass-seed hopper reversible to front or rear of main hopper. Grain-spouts adjustable to different ranks of drill teeth. A traveling roller for raising the drag-bars. An adjusting device for the lever which throws the distributer into and out of gear.



1. The combination of the lever which supports the intermediate gear-wheel, through which motion is communicated to the distributer-wheels, with the lifting-roller, which raises the drill-teeth, substantially as described, whereby the distributer-wheels are thrown out of action in advance of the raising of the drill-teeth out of the ground.

2. The combination, in a seeding-machine, of the drill-teeth and the devices controlling the delivery of the seed with a traveling lifting-roller, substantially as described.

3. The slipping arm or lever which supports the intermediate gear-wheel, made adjustable for permitting a change of gears, in combination with the lifting-roller, substantially as described, whereby, under any adjustment of speed of the distributers, said distributers will be thrown out of action when the drill-teeth are raised, and into action whenever the said teeth are lowered into operative position.

4. The traveling roller, in combination with a chain or cord, O, arranged and operating substantially as described.

5. The combination, with a grain-drill or seeding-machine, of a removable grass-seed hopper, adapted to be applied either in front or in rear of the main hopper or grain-box, for discharging the grass-seed in front or in rear thereof, as described.

6. A reversible grass-seed hopper, or one adapted to be applied either in front or in rear of the main hopper or grain-box, in combination with mechanism for operating the grass-seed agitator under either arrangement, substantially as described.

7. The combination, with a grain-drill or seeding-machine, of adjustable grain-spouts, constructed substantially as described, and adapted to deliver the grain to the drill-teeth, arranged either in the same transverse line, or each alternate one in rear of the others, as set forth.

8. The eccentric rotating bearings G, in combination with the arm G^1, shaft F, and shaft G^2, for throwing the pinion E into and out of gear.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 6. TUESDAY, FEBRUARY 9, 1875. PRICE { $5,00 per year—single. / $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

CRANE *vs.* WHITEHEAD AND ATHERTON.—*Interference.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the applications for patent of John E. Crane, filed November 6, 1873, and Whitehead and Atherton, filed July 23, 1873, for* "IMPROVEMENT IN COTTON-OPENERS."—*Decided January 25, 1875.*]

The parties who first embodied an invention in a machine which they kept in operation afterward for actual use, besides manufacturing and selling other machines, are *prima facie* entitled to the patent.

In order to overcome their title their competitor must show that he had not only conceived the invention before them, but had exercised reasonable diligence in perfecting it, and had continued to do so until he had reduced the invention to practice.

The mere filing in the Patent Office of an application for a patent describing the invention, will not be considered a reduction of it to practice for that purpose, nor, it seems, for any other.

THACHER, *Commissioner:*

The facts in this case are not disputed. Whitehead and Atherton had some conversation respecting the invention the last of July or the first of August, 1871. On the 13th of September following they consulted further, and Whitehead drew a sketch of the device which is filed as an exhibit. No further steps were taken until March, 1873, when they commenced the model accompanying their application. About the same time they began the construction of a full-sized machine embodying the invention, which was completed in June, 1873, was put into operation immediately, and has been running ever since. Up to the time of the taking of their testimony thirty additional machines had been built and put into operation. They filed their application for patent July 23, 1873.

The idea of the invention appears to have originated with Crane in 1862. But all that he has done toward the practical development of the idea is to be found in four models filed as exhibits A, B, C, and D, and the model accompanying his application for patent. Exhibits B and D are simply short round pieces of wood, with one or more small swinging beaters attached; those on exhibit D, however, differ from the construction of the beater in controversy. Exhibit C is simply one of the old beater-blades which has been broken. Exhibit A is the only exhibit-model showing any attempt to illustrate a working machine. With these so-called models Crane made some few experiments, but they were of the crudest nature possible, and entirely insufficient to demonstrate the practical utility of the invention. His first attempts consisted in nothing more than putting the bits of wood already mentioned in a foot-lathe, and while operating the lathe feeding a little cotton with the hand over a bar to the revolving beaters. Exhibit A was tried in 1863; it was not in its present condition, however, and consisted simply of a short shaft with four beaters attached. At subsequent periods some additions were made to this model; but it was not until 1873 that it assumed its present form. Experiments were also made with this model by feeding a little cotton to the revolving beaters, but, according to Crane's own statement, with no practical and definite result. The latter part of October, 1873, the model filed with his application for patent was completed, and on the 6th of November following was received in the Patent Office. This is all that Crane has done up to date. Since 1862, when the invention was conceived by him, all that has been accomplished is the production of models more or less complete. The so-called experiments during this period have been very justly characterized by the Examiners-in-Chief as nothing more than laborious trifling.

Now, the law, as construed by the courts, gives the right to an invention to him who first reduces it to practical form by embodying it in a machine in use, or at least ready for use, unless a prior inventor is at the time using due diligence in adapting and perfecting the same invention. (*Russell & Erwin Manufacturing Company* vs. *Mallory*, 2 OFFICIAL GAZETTE, 495; *Coffin* vs. *Ogden*, 5 OFFICIAL GAZETTE, 270.) But before this prior inventor can have any standing in court, he must be able to show that he has also perfected the inven-

tion and made it ready for use; until he has done this he cannot successfully challenge the right of his competitor to the invention which the latter has embodied in operative machinery.

Under the most liberal construction, nothing done by Crane prior to the filing of his application in the Patent Office can seriously be regarded as "reduction to practice." All his models and crude tests may be summarily dismissed as trifling experiments. The only question demanding examination is whether the filing of an application for patent constitutes "reduction to practice?" I am aware that the theory has obtained in the Patent Office that the filing of a complete application for patent is evidence of "reduction to practice," and the Office practice has conformed thereto. I am satisfied, however, that this practice must be modified to accord with the recent decision of the United States Supreme Court in *Brown* vs. *Guild*, (6 OFFICIAL GAZETTE, 392.) In the decision of that case, the court distinctly asserts that a mere application is not a bar to the grant of a patent. It must follow, then, as a logical sequence, that a mere application for patent is not a "reduction to practice;" otherwise it must of necessity bar the grant of a patent to a subsequent applicant. That this is the opinion of the court must be evident from the fact that evidence of actual use of the invention described in an application is demanded to defeat the right of a subsequent inventor who has put the invention into use.

As I understand the decision cited, Crane has not even yet reduced his invention to practice. The condition of the model filed with his application is an indication of the correctness of this view. It has the appearance of being an experimental model only; some dozen or more beaters are shown upon the same shaft, differing materially in construction, so that the best model this applicant has ever made furnishes proof that he has not yet determined what is the proper construction of a beater for actual use—in other words, that the invention, so far as he is concerned, is still in the region of theory.

It is not necessary to examine the question of Crane's diligence, for, as already intimated, that question cannot become material until he has reduced the invention to practice, and in this respect stands upon an equal footing with his competitor. There may be rare instances in which this ruling should be relaxed—for instance, when the nature of the invention is such that the inventor cannot possibly make a practical test of it himself. There is an attempt to show that, in the present instance, it was impossible for Crane to embody his invention in a working machine.

The main plea is poverty; and the force of the argument depends upon the assertion that it would cost not less than $5,000 to make the experiment. On the contrary, it is proved beyond question by Whitehead and Atherton that the test could be and was actually made by them at an expense not exceeding $25, the substitution of the swinging beater for those in common use on the shafts of well-known cotton-openers being all that was required for a practical experiment. There is no doubt that Crane could have found an opportunity to make such an experiment without much difficulty, for he was acquainted with both makers and users of this kind of machine, and he was never so poor as to be unable to make this cheap test. It does not appear, therefore, that this is an exceptional case.

In my opinion, Whitehead and Atherton have the superior right to the invention, and are entitled to a patent therefor.

The decision of the Examiners-in-Chief is reversed.

ROTHSCHILD.—*Appeal; trade-mark.*

[*Appeal from the Principal Examiner in the matter of the application of John W. Rothschild, for registration of a trade-mark.—Decided February* 13, 1875.]

The expressions in the statute "intend to adopt" and "intended to be applied and used," held to authorize the registration of a trade-mark which has been devised and is intended to be used. The right under the statute to adopt and register—distinguished from the common-law right acquired by use.

SPEAR, *Acting Commissioner:*

This is an appeal from the refusal of the Examiner to register a trade-mark. The Examiner refuses this registration by reason of applicant's representation that he has not used, but only intends to use, the trade-mark described in the application. The statute prescribes—

that any person or firm domiciled in the United States and any corporation created by the authority of the United States, or of any State or Territory thereof, and any person, firm, or corporation resident of or located in any foreign country which, by treaty or convention, affords similar privileges to citizens of the United States, and who are entitled to the exclusive use of any lawful trade-mark, or who intend to adopt and use any trade-mark for exclusive use within the United States, may obtain protection, &c.

Further, among the requirements, compliance with which is made necessary to the registration, are—

a description of the trade-mark itself, with fac-similes thereof, and the mode in which it has been or is intended to be applied and used.

Also—

the length of time, *if any*, during which the trade-mark has been used.

This application is made in the precise words of the statute. Applicant does not place himself in the class of those who are entitled to the exclusive use of a trade-mark under the common law, but among those who "intend to adopt and use." The language of the statute is made so plain that it would seem impossible for any one to err therein. Yet this plain language the Examiner assumes to criticise as loose, and interprets it exactly contrary to the obvious meaning by an altogether unnecessary inference drawn from the seventh clause of the section, which requires a declaration under oath "to the effect that the party claiming protection for the trade-mark has a right to the use of the same."

Nothing can be clearer, in my judgment, than that the purpose of the law is to give the protection of registration not only to those who are entitled to the exclusive use of any lawful trade-mark—that is, to those who have acquired title by use under the common law—but also to those who have devised a mark which they may lawfully use, and to which they may acquire the right of exclusive use.

The Examiner confounds the right to adopt and register with the right acquired by use. The right to registration is founded on the adoption of a proper trade-mark, not the property of another party, and the declared intention to use such trade-mark. It was undoubtedly an inadvertence on the part of the Examiner to advise applicant to change his sworn statement from "intends to use" to "commenced to use." It must be presumed that the statement was deliberately made in accordance with the facts; the change, therefore, which the Examiner suggests would have been simply a misstatement.

I see no reason whatever to support the Examiner's decision, and must therefore reverse it.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, DISTRICT OF MASSACHUSETTS.

UNION PAPER-COLLAR COMPANY *vs.* EMERSON LELAND.

[*In equity.—Before* CLIFFORD *and* LOWELL, *Judges.—October*, 1874.]

Where the original patent related to *ornamented* paper collars and cuffs, but the description pointed out that the *surface* of the linen or other textile fabric would be imitated as well as the ornaments—

Held, that the patent was lawfully reissued so as to claim the imitated *surface* as well as the imitated *ornaments*.

Collars and cuffs made of paper being known, and paper embossed in various modes, some of which were imitations of the surface of textile fabrics, being known, there existed no patentable novelty in the application of paper embossed in imitation of linen to the making of collars and cuffs.

The reissued patent of W. E. Lockwood, January 28, 1873, (original dated April 26, 1859,) for ladies' cuffs and collars, the claim of which is for "a collar having a paper surface imitative of the textile face and fiber of a dressed-linen collar, as set forth," held, in view of the state of the art, not to cover patentable subject-matter.

[*W. G. Russell*, for complainant.
A. J. Robinson, for defendant.]

LOWELL, *J.*:

This suit is brought to restrain the infringement of the second reissue of W. E. Lockwood's patent of 1859, the reissue being granted in 1873.

The specification declares the invention to consist of a collar or cuff having a paper surface imitative of the textile surface of a collar or cuff of textile fabric; that in carrying out his invention Lockwood uses a fabric composed of paper and muslin, or equivalent fabric, having a smooth white, polished, or enameled paper surface to represent that of starched linen. It then describes one mode of making the imitation of a linen or muslin surface, by dies, but does not claim nor limit the invention to any particular appliances or machinery for embossing the fabric. The claim is for a collar having a paper surface imitative of the textile face and fiber of a dressed-linen collar, as set forth.

1. The first objection taken is that the reissue is for a different invention from that described in the original patent. The patent appears to have been intended to apply to ornamented collars and cuffs, especially those for ladies' use; but the description of the mode of obtaining the result points out that the surface of the linen or other textile fabric will be imitated as well as the ornaments, and we see no reason why the patent might not lawfully be reissued so as to claim, as it now does, the imitated surface instead of the imitated ornaments, and collars generally as well as those to be worn by ladies. There is no repugnancy nor any introduction of a new invention.

2. The case turns on the question of novelty. It appears by the case brought by this plaintiff against Van Deuzen (reported in 4 Fisher, 597, and 10 Blatchf., 109) that the claim of the first reissue of this patent was for an embossed collar or cuff made of a fabric composed of paper and muslin, or an equivalent fabric. This was held to be no patentable novelty. Judge Blatchford says—

But, as like embossing had been done on starched linen, the result of producing such embossing on a smooth white, polished, or enameled surface representing that of starched linen, cannot be patented as an invention when nothing is claimed as new in the appliance, machinery, or process for producing the embossing. A starched-lined collar with its surface embossed existed before. There was nothing of patentable novelty in the idea that the imitative surface being provided, it would be well to emboss it. The patent does not claim the invention of the imitative surface, or of any means of producing it.

It will be seen that the present form of the patent follows the suggestion, if it be one, of the court, and does lay claim to the imitative surface itself, as used for making collars, and thus avoids, as is contended, the reasoning of that case. But the evidence in the case at bar discloses that paper as well as linen was embossed in various modes, and for many uses, before the date of Lockwood's patent. There is the English patent of De La Rue, taken out in 1834, for embossing paper in parallel lines; and one granted to John Evans, in 1854, for ornamenting paper with an imitation of the patterns of textile fabrics. It may be doubted whether Evans produced upon his paper the surface as well as the ornaments of textile fabrics; but there is proof that paper made in imitation of such fabrics, including linen, was well known and in use for paper-hangings and some other purposes. Samples are produced from papers actually made before 1859, which are of this character. It is said that these imitations are not very well done; but they appear to have been accepted as good enough for the purposes for which they were used, and the patent is not for any improvement in the imitation or in the mode of producing it.

Collars and similar articles made of paper were patented to Walter Hunt in 1854 as a new manufacture; and Lockwood was the owner of this patent when he made the improvement now in controversy.

In this state of the art, collars and cuffs made of paper being known, and paper embossed in various modes, some of which were imitations of the surface of textile fabrics, being known, we are of opinion that there was in 1859 no patentable novelty in the application of paper embossed in imitation of linen to the making of collars and cuffs. (*Hotchkiss* vs. *Greenwood*, 11 How., 248.)

The evidence in the record goes even beyond what we have already mentioned, and renders it probable that paper embossed in imitation of a linen surface was used for collars and cuffs long before the date of the alleged invention, and that such articles were offered for sale in New York and known to several persons. It is true that they were not found to be acceptable to the trade, and they had very probably been forgotten; but they were imitations of linen, and the reasons which operated to prevent their general use were of a commercial and economical character.

Bill dismissed with costs.

EXTENSIONS GRANTED.

31,147.—Improvement in Steamboat-Staging.—Granted to A. JOHN BELL, January 22, 1861.

Claim.—The arrangement of staging C, power-windlass E F G H I, and supporting apparatus J K L, the whole being constructed and operating together, substantially as and for the objects set forth.

31,152.—Improvement in Evaporator for Hot-Air Pipes.—Granted to GEO. F. J. COLBURN, January 22, 1861; reissue No. 1 165, dated April 2, 1861.

Claim.—1. The arrangement of the reflector C, in combination with the evaporating-vessel A and hot-air pipe B, as described, for the purpose of facilitating the evaporation, and to prevent the dust rising into the apartment.

2. Making the evaporating-vessel A, or a portion of the same, of unglazed earthenware, or some other porous material, substantially as and for the purpose specified.

3. Constructing the vessel A of two parts, *a* and *b*, the part *a* to be made of porous material, and the part *b* to contain a lamp-wick or its equivalent, substantially as and for the purpose set forth.

31,153.—Improvement in Needles.—Granted to GEORGE COOPER, January 22, 1861; reissue No. 4, 884, dated April 30, 1872.

Claim.—1. A sewing-needle having the contour or outline of the common sewing-needle, but with a passage extending diagonally toward the needle-point through the metal on one side of the eye to admit the thread into the eye, substantially as described.

2. A sewing-needle having the contour or outline of the common sewing-needle, but formed with a spring lap-joint in the side of the eye to admit a thread past the edge into the eye of the needle, when the spring part of the needle presses by its elasticity up against the under side of the standing part to close and keep closed the eye after the thread has been inserted, substantially as described.

3. A sewing-needle having the longitudinal axis of the eye on one side of the longitudinal axis of the needle, and with a passage extending diagonally through the metal on one side of the eye to admit the thread into the eye, substantially as described.

4. A sewing-needle having the longitudinal axis of the eye on one side of the longitudinal axis of the needle, and with a spring-joint in the side of the eye, so that the thread may be inserted by depressing the spring part of the needle, the elasticity of which part causes it to close up the joint after the thread has passed into the eye, substantially as described.

Disclaimer filed January 16, 1875.

Disclaims the first and third clauses of claim, as above set forth.

31,168.—Improvement in Gas-Regulators.—Granted to C. L. HERRING, January 22, 1861.

Claim.—The application of the curved plates *a a* to the flexible diaphragm C, substantially as described, for the purpose specified.

31,179.—Improvement in Plows.—Granted to WILLIAM JARRALL, January 22, 1861.

Claim.—The combination of the land-side B, sockets *d* and *f*, bolt *e*, and nut *g*, constructed, arranged, and operating in the manner and for the purposes set forth.

31,182.—Improvement in Wood-Bending Machine.—Granted to HIRAM MCDONALD, January 22, 1861; reissue No. 4,548, dated September 12, 1871; reissue No. 4,614; dated October 31, 1871.

Claim.—1. The eccentrics *l m*, sliding plates *o p*, slides *t u*, and keys *r s*, arranged at the outer parts of the lever-beds, as described, to form an improved mode of upsetting the ends of the stripe when under the bending operation.

2. A rigid and non-elastic bed-lever, F, holding the blank straight at every point not intended to be bent, connected by strap J with the former C, and provided with free ends that shift the fulcrum of the lever at every point of its movement, as shown and described, and for the purpose specified.

3. A pivoted clamp, E, with friction-roll *f* between the forks thereof, combined, as described, with a rigid bed-lever, F, as and for the purpose specified.

4. The former-plates D, having hooked and slotted ears *b b'*, and the lever-plates *g g*, having hooks *h* on the lower end, combined with straps J, having a transverse eye for a removable key at each end thereof, for the purpose of fastening said straps in the manner as shown and described.

31,211.—Improvement in Sewing-Machines.—Granted to LEANDER W. LANGDON, January 22, 1861.

Claim.—I claim the combination of the ribbed or corrugated back with the air-chamber and registers, as shown in the accompanying drawings, substantially as described, and for the purposes set forth.

31,214.—Improvement in Sewing-Machines.—Granted to QUARTUS RICE, January 22, 1861; reissue No. No. 5,045, dated August 27, 1872.

Claim.—The combination, substantially as described, of a stitch-forming mechanism, a feed mechanism, and a guide mechanism, relatively arranged, and operating to continuously form, from a flat strip, a tube with edges united by a row or rows of stitches.

34,203.—Improvement in Mechanism for Boot and Shoe Sewing-Machine.—Granted to FRANCIS D. BALLOU, January 22, 1861; reissue No. 2,906, dated March 31, 1868.

Claim.—1. The foot-piece C, when constructed and arranged and used as a guard, or guard and gage, substantially as and for the purposes described.

2. The lip or standard *c*, when constructed, arranged, and used as a guard or gage or support for the shoe, substantially as described.

3. The combination of a guide or guard, substantially as described, with an opener for opening the channel for the action of the needle, substantially as set forth.

4. The presser D, in combination with the adjustable foot-pieces C and C', substantially as described.

5. The bearing-plate B and lip or standard *c*, in combination with the presser-bar, substantially as described.

6. The projecting perpendicular plate B with standard *c*, substantially as and for the purposes described.

7. The combination of the bearing-plate or table E with the lip or standard *c*, substantially as described.

8. The combination of the standard *c* with the foot-piece C, arranged substantially as described, and for the purposes set forth.

9. The supporting, guarding or guiding, and channel-opening mechanism, when combined and arranged, in relation to each other, substantially as and for the purposes set forth.

10. The projecting horizontal table-plate A, provided at its outer edge with a projecting standard, *c*, and arranged so that an opening is formed between the two for the needle, substantially as and for the purposes described.

Disclaimer filed January 12, 1875.

Disclaims the fourth, seventh, and ninth clauses of claim, as above set forth.

39,199.—Improvement in Curry-Combs.—Granted to SARAH JANE WHEELER, January 22, 1861.

Claim.—I claim the combination of single sheet-metal bars, of curry-combs, having concave back edges of a sufficient degree of curvature to give the necessary firmness and strength without the assistance of side projections or supports, but having rivet projections thereon, with a back of corresponding curvature, so as to fit the concave back edges of said bars, and either made of a single piece, so as to be close, or of separate pieces, so as to be open and unobstructed between all the bars, substantially in the manner and for the purposes herein specified.

DISCLAIMERS FILED.

31,172.—Improvement in Needles.—GEORGE COOPER, Thompsonville, Conn.—Patented January 22, 1861; No. 4,884, dated April 30, 1872.—Disclaimer filed January 16, 1875.—Disclaims:

"The first and third clauses of the claim, in the following words, to wit:

"'1. A sewing-needle having the contour or outline of the common sewing-needle, but with a passage extending diagonally toward the needle-point through the metal on one side of the eye to admit the thread into the eye, substantially as described.

3. A sewing-needle having the longitudinal axis of the eye on one side of the longitudinal axis of the needle, and with a passage extending diagonally through the metal on one side of the eye to admit the thread into the eye, substantially as described.'"

34,203.—Improvement in Mechanism for Boot and Shoe Sewing-Machines.—FRANCIS D. BALLOU, Abington, Mass.—Patented January 22, 1861; reissue No. 2,906, dated March 31, 1868.—Disclaimer filed January 12, 1875.—Disclaims:

"The fourth, seventh, and ninth clauses of claim, in the following words, to wit:

"'4. The presser D, in combination with the adjustable foot-pieces C and C', substantially as described.

7. The combination of the bearing plate or table E, with the lip or standard *c*, substantially as described.

9. The supporting, guarding or guiding, and channel-opening mechanism, when combined and arranged in relation to each other, substantially as and for the purposes set forth.'"

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date February 9, 1875.]

8,045 and 8,046.—Carpets.—ROBERT ALLAN, Yonkers, N. Y., assignor to ALEXANDER SMITH & SONS CARPET COMPANY, same place. Applications filed January 29, 1875. Term of patents 3½ years.

8,047.—Agricultural Boiler.—WILLIAM C. DAVIS, Cincinnati, Ohio, assignor to himself, WILLIAM K. BOAL, and SAMUEL P. CHESELDINE. Application filed January 21, 1875. Term of patent 7 years.

8,048.—Carburetors for Gas-Burners.—MICHAEL B. DYOTT, Philadelphia, Pa. Application filed December 16, 1874. Term of patent 7 years.

8,049.—Pocket-Book Frame.—JOSEPH C. HACKER, Brooklyn, N. Y. Application filed January 20, 1875. Term of patent 3½ years.

8,050.—Oil-Cloth.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Application filed January 22, 1875. Term of patent 3½ years.

8,051.—Glove-Boxes.—MICHAEL D. MURRAY, ZALMON GILBERT, and LOT OSTROM, Johnstown, N. Y.; said OSTROM assignor to said MURRAY and GILBERT.—Case A. Application filed December 11, 1874. Term of patent 3½ years.

8,052.—Fancy Cassimeres.—FREDERICK S. BOSWORTH, Providence, R. I., assignor to THE WESTBOSSET MILLS, same place. Application filed January 18, 1875. Term of patent 3½ years.

8,053.—Bracket-Cup for Chandeliers.—JOSEPH KINTZ, West Meriden, Conn., assignor to himself and P. J. CLARK, same place. Application filed January 4, 1875. Term of patent 14 years.

8,054 and 8,055.—Lounge.—JOHN B. ROHRER, Philadelphia, Pa., assignor to SAMUEL COOPER, JOHN HALL, and JOSEPH B. COOPER, same place.—Cases C and D. Applications filed November 2, 1874. Term of patents 3½ years.

8,056.—Coffin-Plate.—WILLIAM M. SMITH, West Meriden, Conn., assignor to MERIDEN BRITANNIA COMPANY, same place. Application filed January 18, 1875. Term of patent 14 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date February 9, 1875.]

,213.—Spool-Cotton.—J. & P. COATS, Paisley, Scotland. Application filed January 25, 1875.

"a central label of paper formed of concentric circles of black on a light ground, containing on one of the light bands the words 'J. & P. Coats' 'Best six cord,' and on the central black circle the figures and letters '200 yds.,' and a numeral."

2,214.—Kid Gloves.—HARRIS BROTHERS, New York, N. Y. Application filed January 25, 1875.

"a stamp, brand, or design composed of two elliptical lines, one within the other, between which, on each end of the transverse axis, is a small star; between the inner and outer lines, and upon the upper side, the words and letters 'Gant Josephine Bte. S. G. O. G.,' and between the same, on the lower side, the words 'Medailles-Paris-Londres,' and within the inner line the word or name 'Rouillon.' Beneath the whole, and within a line following the line of the lower circle, the words 'or Harris' Seamless,' with a small star at each end."

2,215.—Stoves and Ranges.—MARCH, BROWNBACK & CO., Limerick Station, Pa. Application filed January 26, 1875.

"76."

2,216.—Textile Fabrics.—E. R. MUDGE, SAWYER & CO., Boston, Mass., and New York, N. Y. Application filed January 30, 1875.

"two human figures, one male and the other female, arranged upon a pedestal within a Gothic arch supported upon pillars."

2,217.—Cigars.—GEORGE WIENER, Philadelphia, Pa. Application filed January 25, 1875.

"'J. L. S.'"

2,218.—Hard-Rubber-Coated Mountings for Harness and Carriages.—ANDREW ALBRIGHT, Newark, N. J. Application filed January 8, 1875.

"'Hard-Rubber Coated Mountings.'"

2,219.—Stove-Polish.—C. H. FISCHER & CO., New York, N. Y. Application filed January 7, 1875.

"'C. H. Fischer & Co.,' in an oval border, which embraces the representation of a factory building."

2,220.—Refrigerators.—J. HYDE FISHER, Chicago, Ill. Application filed January 29, 1875.

"'The Fisher Refrigerator,' when the word 'Fisher' is formed by prints of several fishes, arranged so as to represent the several letters of which the word 'Fisher' is composed."

2,221.—Fancy and other Dry Goods.—EDOUARD FLAXLAND & CO., Paris, France.—Case A. Application filed February 2, 1875.

"'IMPERIAL CASHMERE.'"

2,222.—Fancy and other Dry Goods.—EDOUARD FLAXLAND & CO., Paris, France.—Case B. Application filed February 2, 1875.

"'ROYAL ZEPHYR.'"

2,223.—Whisky.—JENKINS, CAPERS & CO., Richmond, Va. Application filed February 1, 1875.

"'Summerdean.'"

2,224.—Dress Silks, Satins, &c.—JAMES MCCREERY & CO., New York, N. Y. Application filed January 30, 1875.

"'De Novi.'"

2,225.—Paints, Composition Coatings, and Wood-Fillings.—THORNHILL & CO., New York, N. Y. Application filed January 30, 1875.

"the monogram (composed of the letter 'T' with a small '&' and 'Co.') inscribed within a double diamond, or rather one diamond inscribed within another diamond."

2,226.—Perfumery and Toilet Articles.—SAMUEL C. UPHAM, Philadelphia, Pa. Application filed January 15, 1875.

"the words and figures, 'Proclaim Liberty Throughout all the Land. 1776. Exposition, 1876,' and being composed of raised letters and figures blown in the glass of the bottle."

2,227.—Cigars.—WHITE & MECRACKEN, Des Moines, Iowa. Application filed January 2, 1875.

"'Long Tom.'"

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TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED FEBRUARY 9, 1875.

159,491. NUT OR COLLAR LOCKS. Edward Barrowclough, Chester, Pa. [Filed Jan. 8, 1875.]



The split nut or collar consisting of two parts recessed on their opposite exterior edges, in combination with the clamp *f* or side bolts, the strap or straps *g*, and the devices for fastening each strap or straps, substantially as set forth.

159,492. FIFTH-WHEELS FOR VEHICLES. La Fayette Blair, Painesville, Ohio. [Filed Oct. 30, 1874.]

Brief.—The upper segment is secured to the reach and the head-block, and the lower segment to the axle. The lower segment is provided with a slot, through which the king-bolt passes, permitting side movement. The whole forms a spherical joint.

1. The plate or bearing C, provided with inner and outer spherical surfaces and means for attachment to the axle, substantially as and for the purposes described.

2. The combination, with the plate C, of the king-bolt K and the elongated slot *i*, substantially as and for the purposes described.

3. The combination, with the plate C, of the box A, substantially as and for the purposes described.

4. The combination, with the plate C and box A, of the plate C' and clips *b*, substantially as and for the purposes described.

5. The combination, with a hollow spherical bearing-plate, C, of the spherical cap-plate B and king-bolt K, the said king-bolt starting from the under side of the plate C, substantially as and for the purposes described.

6. The combination, with the spherical cap B, of the reach box G, substantially as and for the purposes described.

7. The combination, with the plate C' and the reach-box G, of the brace H, attached rigidly to the said plate and hinged to the reach-box, substantially as and for the purposes set forth.

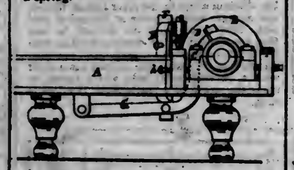
8. The combination, with the plates C and B and king-bolt K, of the head-block D and shoulder *h*, substantially as and for the purpose described.

9. The combination, with the plates C and B, head-block D, and spring E, of the king-bolt K, starting from the under side of the plate B, and the nut *c*, as set forth.

10. The combination of box A, plates C and B, reach-box G, head-block D, king-bolt K, and elongated slot *i*, substantially as and for the purposes described.

159,493. MACHINES FOR CUTTING SHINGLE-BANDS. Jos. W. Britton and Franklin L. Chamberlin, Cleveland, Ohio. [Filed Nov. 10, 1874.]

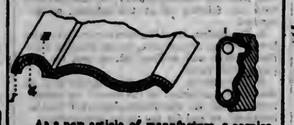
Brief.—The revolving cutter D projects spirally from the roll B. The punches are carried by a cross-bar of a gig, C, hinged to the frame at E, which is alternately depressed by pins *d* in the ends of the roll, and elevated by a spring.



1. The gig-frame F, arms G G, spring C, punches *a*, punch-plate *c*, and table A, in combination with the roller B and pins *d*, substantially in the manner as described, and for the purpose specified.

2. The adjustable roller B and blade D, in combination with the edge *e* of the table A, frame F, arms G, spring C, punches *a*, and the table A, substantially in the manner as described, and for the purpose set forth.

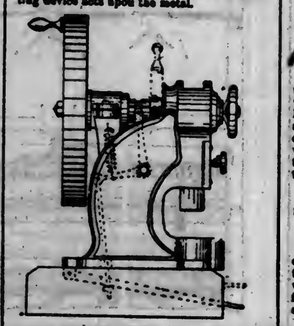
159,494. MANUFACTURE OF CORNICES. S. O. Brock, Watertown, Mass. [Filed Jan. 5, 1875.]



As a new article of manufacture, a cornice composed of the veneer H, paper I, and veneer G, the grains of the veneers being arranged in opposite directions, and cemented to the paper, and the whole molded or formed in a heated matrix, substantially as and for the purpose specified.

159,495. PUNCHING-PRESSES. William B. Brooks, Trenton, N. J. [Filed Feb. 20, 1874.]

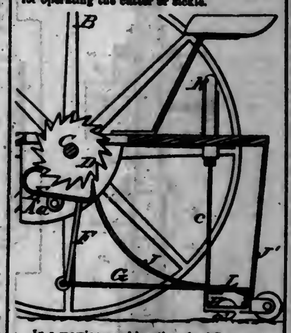
Brief.—The bottom line of the thread is at right angles to the axis of the bolt, its side vertical, and its upper part inclined inward; the thread of the nut being similarly formed to coincide therewith. The improved construction gives a broader and stronger base to the thread of both nut and screw, to meet the great resistance at the time when the cutting device acts upon the metal.



The construction of these parts, and the arrangement of them in relation to each other, as hereinbefore described and shown, the stock being an integral solid block of metal, having a rectangular mortise entirely through it, and the nut and its screw connection having threads of the form shown and described, and the nut fitting closely between the upper and lower walls of the mortise.

159,496. MOWING-MACHINES. Penrose W. Brownback, Limerick, Pa. [Filed Sept. 12, 1874.]

Brief.—Arrangement of devices as claimed for operating the cutter or sickle.



In a mowing-machine, the wheel D on axle C, in combination with lever E, rods F G, lever L, rod *r*, and sickle H, substantially as described.

159,497. HOODS. John Brugger and Sebastian Christophe, Manchester, N. H. [Filed Dec. 5, 1874.]



As a new and improved article of manufacture, a knit hood composed of woolen yarn, worsted, &c., constructed with the sections C D, for covering the face, and the sections E and F, for protecting the neck, shoulders, and chest, the article being open in front, and provided with means for keeping it closed over the face, neck, and chest when worn, substantially as described and specified.

159,498. STREET-SPRINKLERS. James N. Buchanan, Chicago, Ill. [Filed Nov. 9, 1874.]

Brief.—The sprinkler-head is divided into compartments by means of horizontal partition-plates. Water-supply pipes communicate with each compartment. The water issues from one or more compartments, as may be desired.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

160,499.



A street-sprinkler divided into two or more compartments formed by horizontal plates or partitions, in combination with a sufficient number of supply-pipes, wherein one or more of the compartments may be used as described, and for the purpose specified.

160,499. APPARATUS FOR OILING SPINDLES. Charles C. Batcrick and Timothy B. Flanders, Holyoke, Mass. [Filed Oct. 9, 1874.]

Brief.—The oil supplied at a point above descends through ducts provided for the purpose, to lubricate successively the bolster, whirl, cap, and step, and be received in a reservoir beneath.



1. The combination, with the live spindle of a spinning-frame, of the bolster B, whirl W, sleeve F, cap C, step A, bearing G, and reservoir E, all constructed, arranged, and operating substantially in the manner described.

2. The bolster B, having an oil cup or chamber in its upper end, communicating by a suitable orifice with its bore, the bolster being so prolonged as to extend down through the bolster-rail into the top of the whirl, as specified.

3. In combination with the cap C, the sleeve F, provided with a cup at its upper end, and with the holes a a at its lower end, for the purpose of conducting the oil from the whirl to the cup, as described.

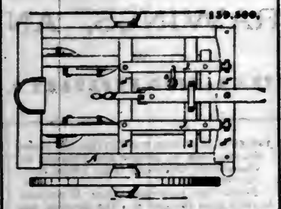
4. The cap or lower bearing G, constructed as described, and provided with the wings w, holes c, and notched bottom disk, as and for the purpose set forth.

160,500. CULTIVATORS. Edwin Childress, Dunleith, Ill. [Filed Oct. 9, 1874.]

Brief.—The tongue is pivoted near its center, and, together with the front end of the plow-beams, attached to a laterally-vibrating frame operated by a lever.

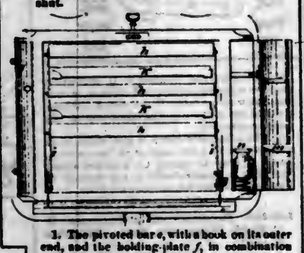
The combination of the pivoted draft-pole C and lever E with the swing-arms J J, provided at their forward ends with rollers i i, resting upon the front timber S' of the cultivator-frame, the said swing-arms being pivoted at the center beam S and to the plow-beams, supporting sway-beam H, and connected by a link, c, to the draft-pole, substantially as specified.

160,500.



160,501. CABINETS FOR DENTISTS' USE. T. Cogswell, Boston, Mass. [Filed Oct. 10, 1874.]

Brief.—The hook on the end of the pivoted bar slides in a slot in the inner face of the lid and engages with the plate at the end of said slot. Shelves or trays are pivoted to bars that are pivoted to the cabinet, so that such trays can be kept in a horizontal position. The door at the end of the cabinet has a shelf with a beveled under side, which serves to cover the mouth of a bottle when the door is shut.



1. The pivoted bar e, with a hook on its outer end, and the holding-plate f, in combination with the folding lid of the cabinet, as described.

2. The shelves h and the bars i, pivoted to the lower part of the cabinet, in combination with the cabinet and folding lid, as and for the purpose set forth.

3. The shelf m, beveled on its under side, as shown, and attached to the door l, in combination with an elastically-supported bottle-inkstand, as and for the purpose described.

4. A cabinet or case constructed with the movable shelves h and bars i, the shelves h, and the folding lid d, all as and for the purpose set forth.

160,502. TOY GUNS. Baltis De Long, Washington, D. C. [Filed Feb. 5, 1874.]

Brief.—Avoids the use of a barrel, which, with different-sized missiles, carries variably, by a sliding carrier that rides on a guide-piece, and is propelled by a spring.

160,502.



1. In a toy gun, the combination of the sliding carrier and the ball or missile holder, removable therefrom, substantially as described.

2. In a toy gun provided with a guide and carrier sliding thereon, a whistle attached to or forming a part of said carrier, for the purpose set forth.

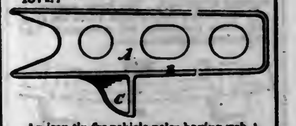
3. The combination, in a toy gun, of a missile-carrier, holder, and guide, the carrier embracing the guide, and having the holder secured to said carrier, substantially as described.

4. The combination, in a toy gun, of a guide and missile-carrier, the carrier embracing and sliding upon the guide, when propelled by spring-power arranged to limit the forward movement of the carrier, substantially as described.

5. In combination with a toy gun, the removable guide B, substantially as described.

6. In a toy gun, the grooved rammer K, substantially as described.

160,503. IRON TIPS FOR VEHICLE-POLES. J. Alder Ellis, Chicago, Ill. [Filed Dec. 24, 1874.]



An iron tip for vehicle-poles having web A, flange B, and projection C, substantially as and for the purposes specified.

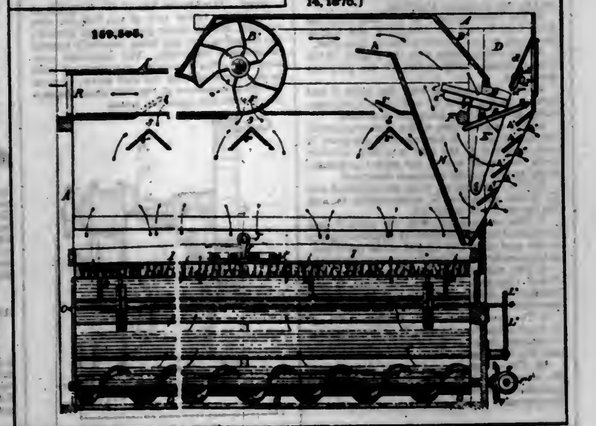
160,504. SEED COMPOUNDS. Thomas Rado, New York, N. Y. [Filed Dec. 15, 1874.]

Brief.—Irish moss dissolved in water and boiled. Solution of gum-arabic, solution of chloride of potash, and carbolic acid are then added and thoroughly mixed while warm; then strain to remove impurities.

A size composed of Irish moss, gum-arabic, chlorate of potash, and carbolic acid, substantially as described.

160,505. MISCELLANEOUS PURPOSES. William J. Fender, Minneapolis, Minn. [Filed Jan. 14, 1875.]

160,505.



1. The feeding-device composed of the vibrating bottom E, pivoted arms E', arms e', adjustable connection e'', and distributer G, in combination with the devices that actuate them, substantially as described.

2. The inclined gathering-strips h' and openings h'' between them, to admit air that is made to impinge upon the meal and separate the light particles from the middlings before the middlings fall into the shaker, in combination with the distributer G, substantially as described.

3. The combination, with the eccentric b', of the yoke b'', the yielding connecting-rod f'', and rod J, rigidly connected to yoke b'', whereby motion is given to a vibrating feed device and a reciprocating shaker from the same shaft, substantially as described.

4. The combination of the rock-shaft J', arm j', and adjustable lugs j'' j'', with the shaker I, constructed and operating substantially as described.

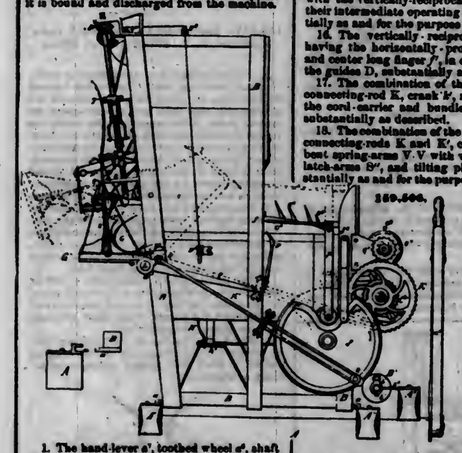
5. The combination of the revolving worm-gear wheel c''', toothed wheel K, connecting-rod L, segmental gear L', pinion L'', shaft O, pulleys O', band o', and guides p' with the brush P, substantially as described.

6. The projections p p on the under side of the shaker-frame I, in combination with the reciprocating brush P for cleaning it, substantially as described.

7. In a machine for purifying middlings, the transversely-reciprocating brush P, arranged to be carried across the entire width of the bolt-cloth of the shaker, and returning its movement off of the cloth, and returning in the opposite direction in the same plane, substantially as and for the purpose described.

160,506. GRAIN-BINDERS. Marquis L. Gorham, Rockford, Ill. [Filed Sept. 12, 1874.]

Brief.—The cut grain is delivered into the receiver, and is carried from there by vibrating segments to the binding-receptacle, where it is bound and discharged from the machine.



1. The hand-lever a', toothed wheel a'', shaft a''', gear-wheel a'', and rack a''', in combination with the frame B of a grain-binder, constructed substantially as and for the purpose described.

2. The revolving crank-shaft O', having cranks o o, in combination with the segments C', having the feed-teeth c'' and their intermediate operating parts, substantially as described.

3. The reciprocating segments C', having the feed-teeth c', in combination with the guides D, as and for the purpose specified.

4. The curved guides c' on either side of the feeding-teeth c'', and parallel with their motion, in combination with the center guide, c', reciprocating segment C', feed-teeth c', and binding-receptacle G, as and for the purpose specified.

5. The revolving tension and take-up arm c' having eye c'', through which the binding-cord passes, in combination with a non-revolving curl-spool, c''', that contains the binding-cord, constructed substantially as and for the purpose described.

6. The combination of the cord-spool c''', revolving arm c', having eye c'', and guide-arm c'' with the curved and grooved cord carrier L', substantially as and for the purpose described.

7. The curved and slit cord-carrier L', and grooved on its outer edge, having eye l' transversely through the outer end, where the cord is delivered onto the knot-tying hook and cord holding device O, substantially as and for the purposes described.

8. The cord-carrier and bundle-compressor L', in combination with the curved holder G' and cord-holding device O, constructed and arranged to produce sufficient slack in the cord for tying the knot, substantially as described.

9. The shields S attached to frame M, and S' to guide D, constructed and arranged with relation to each other and the knot-tying device, and for the purpose described.

10. The flexible strap g, arranged in receptacle G to operate trip-lever H, in the manner substantially as and for the purposes described.

11. The combination of the binding strap and cord g with the bundle-receptacle G and tooth-feeding segments C', substantially as and for the purposes described.

12. The combination of the trip-lever H, horizontal lever I, shaft O', and gear-wheel U and their intermediate devices, constructed substantially as and for the purpose described.

13. The combination of the cam j on lever I, cam on arm j', sliding sleeve i' with arms j'', dogs j'' and j''', and slotted arm j'' with the ratchet-teeth j' on wheel C, substantially as described.

14. The arms j', with dogs j'' and j''', to form a clutch-connection with the ratchet-teeth on wheel C, substantially as described.

15. The revolving cams J J, in combination with the vertically-reciprocating rack F' and their intermediate operating devices, substantially as and for the purpose described.

16. The vertically-reciprocating rack F', having the horizontally-projecting fingers f and center long finger f', in combination with the guides D, substantially as described.

17. The combination of the cam J, slotted connecting-rod K, crank k', rock-shaft L with the cord-carrier and bundle-compressor L', substantially as described.

18. The combination of the cams J J, slotted connecting-rods K and K', cranks k' and k'', bent spring-arms V V with vertical levers T, latch-arms S'', and tilting platform G'', substantially as and for the purposes described.

160,506.

19. The combination of the segmental gear-teeth k' on cam J, train of gear, and their shafts k', k'', k', k', k'', and k' with the knot-tying shaft K'', substantially as described.

20. The combination of shafts k' k'' and knot-tying shaft K'', and their driving-gears, with crank 1, spring-arm 2, and stop 3, as and for the purpose described.

21. The combination of the sliding sleeve N, having pendent arms n n sliding in slotted arm n', grasping-jaws n'', and spring n''', and actuating devices, with the reciprocating cord-hook spindle n', that slides in the knot-tying shaft K'', as described.

22. The yielding and bent cord latch-arm P with latch p'', and bent in the form substantially as and for the purposes described.

23. The combination of the arm Q on shaft K'' with the arm p' on latch-arm P, substantially as and for the purpose described.

24. The combination of the arm Q on shaft K'' with arm k' and bent arm R' on rock-shaft R, and carrying the cord-cutting knife r', substantially as described.

25. The combination of arm Q on shaft K'' with arm R' and bent arm R'' on rock-shaft R, and carrying the projecting cord-arm r''', to force the cord from the knot-tying device, substantially as described.

26. The combination of arm Q on shaft K'' with arm R' and bent arm R'' on rock-shaft R, carrying the knife r' for cutting the cord, and arm r''' for forcing the cord off the hook, substantially as described.

27. The combination, with the tilting platform G'', of the discharging-hooks U U, as and for the purpose described.

28. The combination of the grooved elastic-faced wheel o'' on fixed axle with the toothed disk wheel o', between which the binding-cord is held, substantially as described.

29. The combination of the cord-carrier and bundle-compressor L' with the tilting device O', having pivoted pawl o', feed o'', ratchet-wheel o', and cord-carrying wheel o', substantially as and for the purpose described.

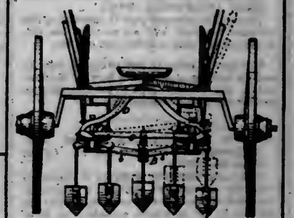
30. The upwardly-projecting hook z, having groove z' therein, in combination with the cord-hook on spindle n', substantially as and for the purpose described.

31. The combination of the falling rack F' with the inclined recesses in cam J, for the purpose of continuing the rotation of shaft to replace the lever I in position with lever H to make a succeeding operation, substantially as described.

32. The vertically-rising holding-rack F' and its dividing-finger f'', so arranged, with relation to the feed-dogs c', as to part the unbound grain and make an open space, through which the cord-carrier L' passes, substantially as and for the purpose described.

160,507. CULTIVATORS. Marquis L. Gorham, Rockford, Ill. [Filed Sept. 21, 1874.]

Brief.—A removable center-beam is hinged loosely to a cross supporting-bar, which is hung loosely to the two drag-bars. An arched sway-bar connects the drag-bars by means of peculiarly-shaped sockets.



1. The removable center-beam B, with its plow b, hinged to yoke C by the swivel-joint formed by eyebolts c and c', and attached loosely to drag-bars A by the yoke C and eyebolts c, combined and operating substantially as and for the purposes described.

2. The free sway-bar D, with its terminal ends d, in combination with the sockets d' d'', constructed as described, and adjustable on drag-bars A of a cultivator, substantially as and for the purposes described.

160,508.



160,508. NUT-LOCKS. John Joseph Gray, Baltimore, Md., assignor of one-half his right to Geo. S. Norris, same place. [Filed Jan. 16, 1875.]

Brief.—The spring locking-ring is provided with teeth that engage with the bolt.

The toothed open-ring check-piece A, having the teeth b and c, and applied to a bolt, substantially as shown and described.

160,509. DOOR-KNOBS. John W. Haines, Cambridge, assignor of one-half his right to Charles S. Chaffee, Somerville, Mass. [Filed Jan. 6, 1875.]



The improved door-knob described, the same consisting of the shank H, provided with the projection G, the plate B, or medallion D, provided with lugs *a a*, and the porcelain or vitreous body A, provided with the cavity F and recess *c c*, the whole being united by cement, substantially in the manner and for the purpose specified.

160,510. TANNING APPARATUS. Ernest C. Hesserick, Maynard, assignor of one-half his right to George W. Williams, Boston, Mass. [Filed Feb. 2, 1874.]

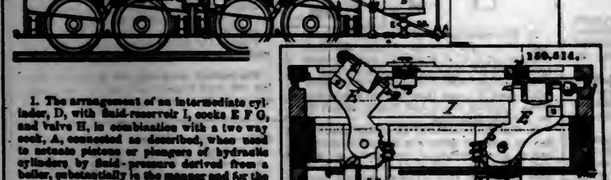


Brief.—The pressure-pipe D, connecting the elevated reservoir with an air-tight tan-vat, is surrounded with a steam pipe or case.

The combination of the auxiliary pipe D and its heating pipe or case E, with the tan-vat A and pressure-pipe B, substantially as and for the purpose herein specified.

160,511. HYDRAULIC CAR-BRAKES. Wm. M. Henderson, Philadelphia, Pa. [Filed Sept. 22, 1873.]

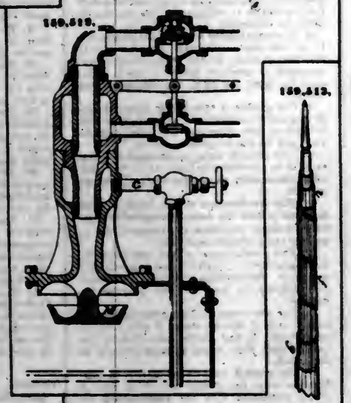
Brief.—A hydraulic cylinder is combined with an intermediate cylinder, a fluid reservoir, and a two-way cock, so as to actuate the pistons of the hydraulic cylinders by fluid-pressure derived from the boiler. The fluid, after having performed its duty, returns to the intermediate cylinder. An air-vessel is arranged close to the brake-cylinder, which forms a cushion of air to relieve concussion.



1. The arrangement of an intermediate cylinder, D, with fluid-reservoir I, cocks E F G, and valve H, in combination with a two-way cock, A, connected as described, when used to actuate pistons or plungers of hydraulic cylinders by fluid-pressure derived from a boiler, substantially in the manner and for the purpose shown and described.

2. The combination of the two-way cock A, the hydraulic-pressure cylinder B, with the air-vessel E, in the manner and for the purpose set forth and described.

160,512. PEN AND PENCIL CASES. John Holland, Cincinnati, Ohio. [Filed Nov. 21, 1874.]



In a pen and pencil case, the combination of the externally-fluted and spirally-slotted tube *f*, fluted collar *g*, attached to handle B, tubes *h* and *j*, the latter having pin *k* attached thereto, and collars *i* and *l*, for protruding and retracting the pencil-tip, substantially as shown and described.

160,513. WOOD-MOLDING MACHINES. H. A. Holt, Wilton, N. H. [Filed Aug. 20, 1874.]

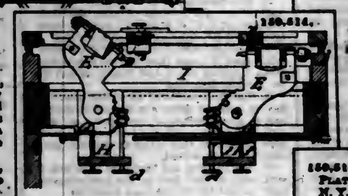
Brief.—The cutter-heads are made independently adjustable by means of worm-gears acting upon their supporting-frames.

1. The combination of the arbor-blocks E E, bearings G G, carriers H H, and girders or cross-ways I I, all constructed and operated substantially as and for the purpose herein specified.

2. In combination with the arbor-blocks E E, bearings G G, carriers H H, and girders I I, constructed and operated as described, the carriage provided with the laterally-movable bar r, arranged substantially as and for the purpose herein specified.

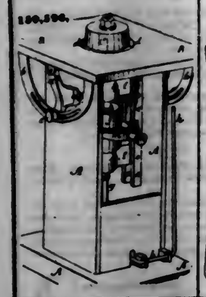
3. In combination with the laterally-movable bar r and arbor-blocks, the sliding rest p, arranged substantially as and for the purpose herein specified.

160,514. STEAM AND AIR BRAKES. Wm. M. Henderson, Philadelphia, Pa. [Filed Dec. 7, 1874.]



1. The combination of the vertical cylinder A, the piston B, the valve-chamber C, the valve D, the pipes E and F, the valve-chamber G, the valve H, the pipe I, the valve-chamber J, the valve K, the pipe L, the valve-chamber M, the valve N, the pipe O, the valve-chamber P, the valve Q, the pipe R, the valve-chamber S, the valve T, the pipe U, the valve-chamber V, the valve W, the pipe X, the valve-chamber Y, the valve Z, the pipe a, the valve-chamber b, the valve c, the pipe d, the valve-chamber e, the valve f, the pipe g, the valve-chamber h, the valve i, the pipe j, the valve-chamber k, the valve l, the pipe m, the valve-chamber n, the valve o, the pipe p, the valve-chamber q, the valve r, the pipe s, the valve-chamber t, the valve u, the pipe v, the valve-chamber w, the valve x, the pipe y, the valve-chamber z, the valve A', the pipe B', the valve-chamber C', the valve D', the pipe E', the valve-chamber F', the valve G', the pipe H', the valve-chamber I', the valve J', the pipe K', the valve-chamber L', the valve M', the pipe N', the valve-chamber O', the valve P', the pipe Q', the valve-chamber R', the valve S', the pipe T', the valve-chamber U', the valve V', the pipe W', the valve-chamber X', the valve Y', the pipe Z', the valve-chamber a', the valve b', the pipe c', the valve-chamber d', the valve e', the pipe f', the valve-chamber g', the valve h', the pipe i', the valve-chamber j', the valve k', the pipe l', the valve-chamber m', the valve n', the pipe o', the valve-chamber p', the valve q', the pipe r', the valve-chamber s', the valve t', the pipe u', the valve-chamber v', the valve w', the pipe x', the valve-chamber y', the valve z', the pipe A'', the valve-chamber B'', the valve C'', the pipe D'', the valve-chamber E'', the valve F'', the pipe G'', the valve-chamber H'', the valve I'', the pipe J'', the valve-chamber K'', the valve L'', the pipe M'', the valve-chamber N'', the valve O'', the pipe P'', the valve-chamber Q'', the valve R'', the pipe S'', the valve-chamber T'', the valve U'', the pipe V'', the valve-chamber W'', the valve X'', the pipe Y'', the valve-chamber Z'', the valve a'', the pipe b'', the valve-chamber c'', the valve d'', the pipe e'', the valve-chamber f'', the valve g'', the pipe h'', the valve-chamber i'', the valve j'', the pipe k'', the valve-chamber l'', the valve m'', the pipe n'', the valve-chamber o'', the valve p'', the pipe q'', the valve-chamber r'', the valve s'', the pipe t'', the valve-chamber u'', the valve v'', the pipe w'', the valve-chamber x'', the valve y'', the pipe z'', the valve-chamber A''', the valve B''', the pipe C''', the valve-chamber D''', the valve E''', the pipe F''', the valve-chamber G''', the valve H''', the pipe I''', the valve-chamber J''', the valve K''', the pipe L''', the valve-chamber M''', the valve N''', the pipe O''', the valve-chamber P''', the valve Q''', the pipe R''', the valve-chamber S''', the valve T''', the pipe U''', the valve-chamber V''', the valve W''', the 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V''''', the valve-chamber W''''', the valve X''''', the pipe Y''''', the valve-chamber Z''''', the valve a''''', the pipe b''''', the valve-chamber c''''', the valve d''''', the pipe e''''', the valve-chamber f''''', the valve g''''', the pipe h''''', the valve-chamber i''''', the valve j''''', the pipe k''''', the valve-chamber l''''', the valve m''''', the pipe n''''', the valve-chamber o''''', the valve p''''', the pipe q''''', the valve-chamber r''''', the valve s''''', the pipe t''''', the valve-chamber u''''', the valve v''''', the pipe w''''', the valve-chamber x''''', the valve y''''', the pipe z''''', the valve-chamber A''''', the valve B''''', the pipe C''''', the valve-chamber D''''', the valve E''''', the pipe F''''', the valve-chamber G''''', the valve H''''', the pipe I''''', the valve-chamber J''''', the valve K''''', the pipe L''''', the valve-chamber M''''', the valve N''''', the pipe O''''', the valve-chamber P''''', the valve Q''''', the pipe R''''', the 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160,526.



160,531.



159,530. CAR-WHEELS. John B. Tarr, Fairhaven, Mass. (Filed Aug. 10, 1873.)

Brief.—The wheel can be bored out for the axle readily, and the bushing remain firmly in place.

A car-wheel, having a hard metal rim, web, and hub in one piece, with a comparatively soft metal bush, combined therewith by projections and recesses *a* and *b*, substantially as described, and for the purpose set forth.

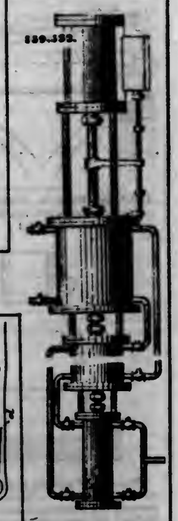
160,531. COTTON-BALE TIES. J. Thayer, New Orleans, La. (Filed July 2, 1874.)

The bale-tie consisting of the band A, having the L-shaped and outward-bulging lips B punched into each end thereof, and adapted to be locked together, substantially as specified.

160,534.



160,535.



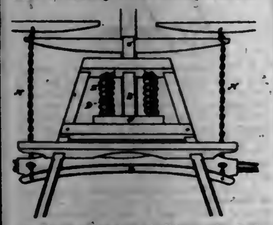
160,527. BRIDLE-BITS. Nathan F. Stevens, Hopkinton, N. H. (Filed Oct. 14, 1874.)



In the jawed bit, the tubular cushions D D, combined and arranged with the prongs C C' of the hinged bars A A', all as shown and described.

160,528. RUNNING-GEAR FOR VEHICLES. Jacob Stirk, Lancaster Township, (City P. O.,) Lancaster County, Pa. (Filed Nov. 13, 1874.)

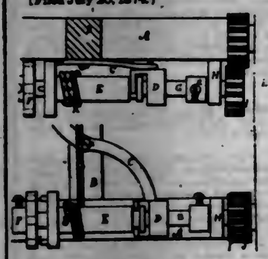
Brief.—Spring draft-connection to lessen shock on starting or encountering obstacles.



1. The combination of sliding yoke B C, springs E, and guide-rods D, substantially as and for the purpose set forth.

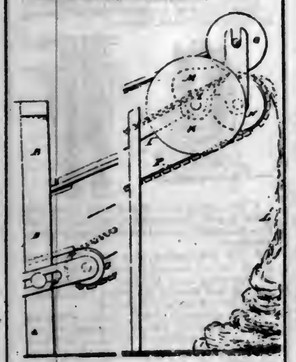
2. The combination of sliding yoke B C, springs E, guide-rods D, semi-elliptical spring L, stay-chains N, and double-tree F, substantially as and for the purpose set forth.

160,529. HORSE-CHECKS. John Sugden and James P. Gaffney, Lawrence, Mass. (Filed July 20, 1874.)



The combination of foot-lever C, clutch-block D, drum E, flange-head and pins F, hangers H H, shaft G, gears I and J, and wheel L, as and for the purpose specified.

159,532. COTTON-CONDENSERS FOR COTTON-GINS. Edward Van Winkle, Atlanta, Ga. (Filed Sept. 15, 1874.)



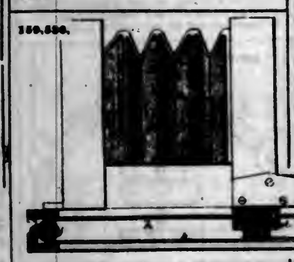
The cotton-gin condenser herein described, consisting of the positively moving endless and adjustable slatted apron or carrier H F, arranged in connection with the lint-box E, for detachable connection with cotton-gin, as set forth.

160,533. PNEUMATIC PUMPS. Geo. Westinghouse, Jr., Pittsburg, Pa. (Filed Oct. 20, 1874.)

Brief.—A series of double-acting compressing air-pumps communicating one with another, fitted with pistons of different areas, and each pistons arranged to receive a simultaneous motion in either direction, substantially as set forth.

A series of double-acting compressing air-pumps, communicating one with another, fitted with pistons of different areas, and each pistons arranged to receive a simultaneous motion in either direction, substantially as set forth.

160,536.



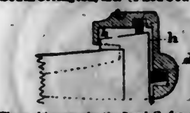
160,534. TUG-BUCKLES. John Weston, Sulphur Springs, Ohio, assignor of one-half his right to A. Fry & Co., same place. (Filed Jan. 5, 1875.)

Brief.—The buckle consists of two parts or loops, both of which are pivoted to the tug, and which interlock on the outside of the trace.

Having described my invention, I claim—

A buckle consisting of the pivoted frame A, having the loop *d e f* and tongue *g*, in combination with the pivoted loop B, substantially as and for the purpose set forth.

160,536. FENDERS FOR VESSELS. Fraser Wood, Bangor, and Chas. H. Wentworth, South Orrington, Me. (Filed Oct. 2, 1874.)



The rubber or elastic hood C, formed with cavities *h h h*, adapting it to fit loosely on the stem of the boat, and provided with recesses and spiral springs within such recesses, substantially as and for the purpose set forth.

160,537. CAMERAS. Stewart L. Bergstresser, Lauralton, assignor to J. B. Bergstresser, Renovo, and R. L. Bergstresser, Hublersburg, Pa. (Filed Sept. 19, 1874.)

Brief.—An endless belt and rollers take the place of the ordinary screw and rack and pinion, for adjusting the movable part of the camera-box.

1. In a camera, the combination of the movable part *b*, base *c*, rollers *f*, and belts *h*, whereby the camera is opened and closed, substantially as set forth.

2. The movable part of the camera *b* and frame *c*, in combination with the clamping-block or brace and set-screw, whereby the part *b* is held in any desired position, and the central strip or guide dispensed with, substantially as shown.

160,538.

160,539. PHOTOGRAPHIC-PLATE HOLDERS. Stewart L. Bergstresser, Lauralton, assignor to J. B. Bergstresser, Renovo, and R. L. Bergstresser, Hublersburg, Pa. (Filed Aug. 3, 1874.)



1. A plate-holder having a rim or flange formed around its edges, so as to catch over the rear end of the camera, and prevent the admission of light to the plate, substantially as specified.

2. A plate-holder provided with a flexible screen, substantially as shown and described.

3. A plate-holder closed on all sides except the one where the picture is inserted, substantially as set forth.

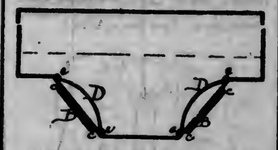
4. A plate-holder closed upon all sides except one, and provided with a flexible screen, substantially as described.

5. A zinc box for holding the silver-box, the said zinc box being made adjustable up and down, substantially as specified.

6. A plate-holder provided with a flexible screen and rollers, around which the screen passes, substantially as set forth.

7. The spring absorbent pad 9, substantially as specified.

160,540. CANISTERS. Theodore W. Burgw and J. A. Graff, New York, N. Y. (Filed Apr. 20, 1874.)



A tea-canister, provided on the interior with the concavo-convex guards D, fitted under flanges *c*, in combination with the mirrors B, placed directly upon the canister-body, and secured thereon by the surrounding beads *e*, as herein shown and described, for the purpose specified.

160,541. DEVICES FOR WARMING AND VENTILATING RAILROAD-CARS. Franklin Chalfant, Lancaster, Pa., and J. Chalfant, Kingsmeadow, Ill. (Filed Aug. 18, 1874.)

Brief.—By means of the valve in the air inlet pipe, the blast can be discharged in the open air when not required in the cars. The combination of the ventilating and the hot-air pipes afford means of controlling the relative amount of cool and warm air admitted to cars.



1. The combination of the said conducting-pipe C and appliances V R S W, with a fan or blower, A, said fan being provided with axle pipes or cars B, the whole constructed substantially as and for the purpose set forth.

2. In combination with a fan or blower, A, placed on top of the boiler, and the connecting pipes C H, the intermediate valve-chamber D, with its appliances V, R, S, and W, constructed and operated substantially as and for the purpose mentioned.

3. In combination with a main conducting-pipe, H', along the top of a passenger-car, the diverging branch pipes K, united to and opening into a vertical pipe, L, connected with a horizontal pipe, M, the latter being independent in its action, and the hot-air pipes, the whole arranged substantially in the manner and for the purpose set forth.

160,542. SOLDERING-MACHINES. George W. Fisher, Baltimore, Md. (Filed Nov. 11, 1874.)

1. The adjustable sliding device for holding the soldering copper F, consisting of the frame A, supported on the piston-rod *c*, the slide *g*, set-screw *f*, adjusting-screw *h*, and projecting stud *f'*, for holding the gas-burner *e* in position for the flame to impinge against the copper F, for heating the same, substantially as herein set forth.

2. The steam-chamber C, pipe P, stop-cock *n*, and drain-pipe *s*, in combination with the flexible pipe *r* and burner *e*, as and for the purpose herein specified.

3. The combination of the steam-cylinder B and piston *a* with the soldering mechanism, operating as described, for the purpose of lifting and supporting said mechanism while the cans are being adjusted in and removed from the machine.

4. The vertical tube *j*, terminating in the cap-holder J, and connected by tubes *w s m* with the chamber C, and provided with valve R, for the purpose of causing a jet of steam to impinge on the seam to chill the solder, substantially as described.

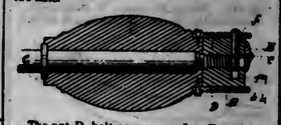
160,543. BRAKES FOR VEHICLES. William Fletcher, Boston, Mass. (Filed Nov. 20, 1874.)



The dog C, in combination with body A, eye-bolts B, cord *d*, hook F, sheave E, and guides *e e*, substantially as and for the purpose set forth.

160,544. WHEELS FOR VEHICLES. Saml. R. Fuller, Irving, Mass. (Filed Dec. 4, 1874.)

Brief.—For securely fastening the wheel to the axle.



The nut D, bolt *g*, screw *c*, plate E, and the band B, provided with the apertures *f*, constructed and combined with axle C, to operate substantially as and for the purpose specified.

160,545. COMBINED ICE PICKS AND STRAINERS. Thomas Hagerty, New York, N. Y. (Filed Nov. 26, 1874.)



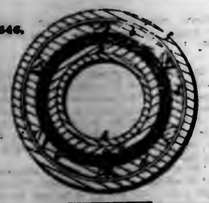
As an improved article of manufacture, the device herein described, consisting of a handle, B, spoon-shaped dish A, with perforations *a*, and picks D, substantially as and for the purpose set forth.

160,546. BOILER-COVERINGS. J. W. Hammore, Newburg, N. Y. (Filed Jan. 5, 1875.)

Brief.—By means of the dovetail strips the plastic material is prevented from being displaced circumferentially.

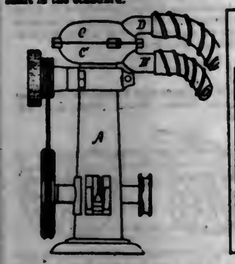
In a non-conducting covering for boilers, pipes, &c., the plastic material B, fibrous coating C, strips D, netting E, and outer coating F, all combined and arranged for the purpose and in the manner substantially as herein set forth.

160,546.



160,547. ANIMAL-SHEARING MACHINE. Wm. C. Harlow, Medford, Mass. [Filed Dec. 7, 1874.]

Brief.—A diaphragm-pump is situated horizontally upon a standard, and forces air through flexible tubes, to operate a pair of shears. The piston is operated by a crank shaft in the standard.



In an animal-shearing machine, the combination of the standard A, having at its upper end the chamber C C', outlets D D', diaphragm L, and rod M, all constructed and arranged substantially as described.

160,548. SHOE-SHAVE. T. Harrington, Southbridge, Mass. [Filed Jan. 5, 1875.]



The shoe-shave described, consisting of the haft and handles A, slotted nearly throughout their entire length, knife E, and set-screws O C, for drawing together the sides of the haft, substantially as and for the purpose set forth.

160,549. CLEVISES. Ethel G. Harvey, Lebec, Me. [Filed Jan. 18, 1875.]

Brief.—The front end of the plow-beam has a series of deep vertical notches, into which fits a notched oval bar or bolt pivoted in the clevis. The bolt-hole is extended to the rear in a narrower slot, and grooves cut in the bolt allow, when properly turned, the clevis to slide forward, releasing the pivoted bar, and allowing both adjustments to be made. The draft is secured by pushing back the clevis and turning the bolt.



The clevis D, provided with the hole E, slot *a*, and pivoted oval notched bolt G, in combination with the bolt F, provided with the slots *s s*, constructed and arranged to operate in combination with the beam A, provided with the apertures *d d*, substantially as and for the purpose specified.

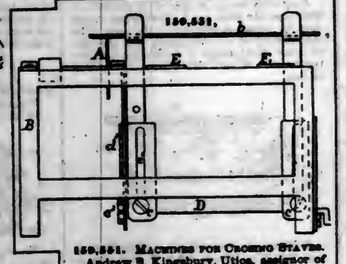
160,550. STREET-SIGNS. George B. King, Lawrence, Mass., assignor of one-half his right to Wm. J. Derrington, same place. [Filed Jan. 18, 1875.]



The signs F G, having the indexes *m m*, and provided with the clamp collet C, substantially as and for the purpose specified.

160,551. MACHINES FOR CROZING STAVES. Andrew B. Kingsbury, Utica, assignor of two-thirds his right to W. Dent, Mohawk, and Edwin L. Kingsbury, Hamilton, N. Y. [Filed Dec. 19, 1874.]

Brief.—The stave is placed upon an oscillating holder, by which it is carried over the revolving crozing-tool.



1. In combination with a crozing-saw, the adjustable arms C C' C², arranged to oscillate on a central adjustable shaft or bar, substantially as and for the purposes described.

2. The combination of arms C C', movable holder *b'*, and spring *d* on holder *d'*, substantially as and for the purpose described.

3. In combination with arms C C' C², the adjustable bar D, shaft F, pinions *c' c²*, toothed plates *d'*, *d²*, and G, substantially as and for the purposes described.

4. In combination with arms C C' C², the adjustable plates E E, having slots *e e*, substantially as and for the purpose described.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

160,552. MITERING-MACHINES. Charles P. Poinier, Boston, Mass., assignor to F. A. Howard and H. M. A. Poor, Belfast, Me. [Filed June 10, 1874.]

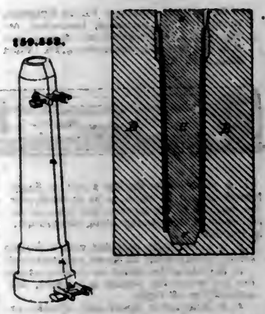
Brief.—The fences *a a* can be adjusted in different holes to support the work of various thicknesses.



The combination of the adjustable rest *a*, provided with stems *b b*, with the uprights *c c*, having a series of holes, and the set-screws *d d*, substantially as and for the purpose described.

160,553. CASTING TUBULAR ARTICLES. L. P. Rider, Pittsburg, Pa. [Filed July 14, 1874.]

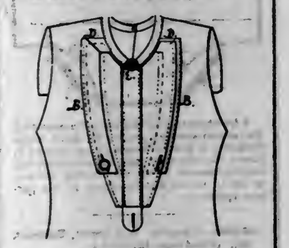
Brief.—The core is formed with an enlarged portion or cap, to close the upper part of the mold and center the core. The pouring-gates are formed in the cap. The core-box is formed in one piece, with a longitudinal opening, which allows the box to spring open sufficiently to release the core.



1. The cope or base of the core formed in one piece with the core, to facilitate centering the same, and having the pouring-gates formed therein, so that the pouring may be done through the cope without disturbing the relative position of the core and mold, substantially as specified.

2. A metal core-flask or core box tapered to form the core-prints, cut longitudinally, and provided with devices for springing the box to release the core, substantially as specified.

160,554. SHIRTS. Carlyle E. Sutphen, Newark, N. J., assignor to Johnston & Sutphen, same place. [Filed Dec. 8, 1874.]



The dress shirt constructed with the welts or stripe B D, arranged to confine and hold in place a separate and removable bosom, substantially as and for the purposes specified.

160,555. COMPOUNDS FOR PICTURE-FRAMES. Charles D. Wilcox and Edson Getty, Elmwood, Ill. [Filed Nov. 24, 1874.]



The compound described for frames, moldings, &c., consisting of straw pulp mixed with gum-shellac, alcohol, glue, molasses, glycerine, and a solution of copper in about the proportions substantially as and for the purpose specified.

160,556. BATH-TUB ATTACHMENTS. Thos. D. Woolsey, San Francisco, Cal., assignor of one-half his right to William H. Baxter, same place. [Filed Nov. 2, 1874.]

Brief.—This bath-tub attachment is so arranged that the bather may readily scrub the back or other portions of the body by means of a brush, which is operated by an upright frame provided with lever-beam and connecting-rods, for actuating vertically up and down a spring brush-carrier within grooved recesses or dovetailed slides.

160,556.



1. The brush-carrier C, consisting of the beveled sliding piece N, curved piece *i*, hinged thereto by a hinge, *e*, and resting on the spring *t*, with the india-rubber spring *o*, secured by the brush-holder D *d b*, in combination with the slide-bars *s s'*, or their equivalents, rods *r r'*, and lever E, fitted to the bracket B of the upright frame F F, substantially as and for the purposes herein set forth and specified.

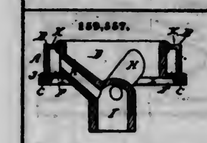
2. The india-rubber ring-spring *o*, fitted between the disk D (which holds the brush G by the catches *j j*) and the curved hinged piece *i* A, forming part of the brush-carrier C, substantially as and for the purposes herein set forth and specified.

3. The frame F F, hinged by parallel bent rods L L' to the wall K K, and provided with the bracket B, dovetailed slide-bars *s s'*, adjustable brush-carrier C, and mechanism for actuating the same, viz., the rods *r r'* and lever E, in combination with the bath-tub T, substantially as and for the purposes herein set forth and specified.

4. The parallel bent rod-hinges L L', fitted to open *s s'* in the wall K K, and the frame F F, for adjusting this frame, with its attachments, to the bath-tub T, as described, substantially as and for the purposes herein set forth and specified.

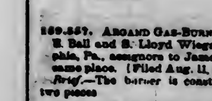
The combination of the rod E, collars F F and M, tongue D, evener G, lever I, chain K, and whiffletrees H H and P, substantially as and for the purposes described.

160,557.



160,557. ARGAND GAS-BURNERS. Charles H. Ball and S. Lloyd Wiegand, Philadelphia, Pa., assignors to James W. Carson, same place. [Filed Aug. 11, 1874.]

Brief.—The burner is constructed of but two pieces.



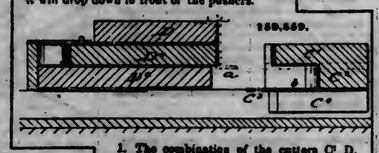
Ball's Argand burner formed of an external wrought-metal shell, A, and a metal body, D, cast in one piece with the branched tubes H and pillar I, a lower conical flange, C, formed on the shell A, locked to the groove G, turned in the flange F by the flange J, compressed against the flange C.

160,558. DRAFT-EQUALIZERS. R. A. Beers, De Kalb, Ill. [Filed Dec. 28, 1874.]



160,559. DIES FOR FORMING SPRING-SHANKS FOR SHOES. Emil Brisor, New York, N. Y. [Filed Dec. 12, 1874.]

Brief.—The stationary die consists of an upper plate or shear, D, a spring presser or ejector, D^1, and a male bending-die, D^2. The movable die consists of a slightly-concave setter, C^1, opposite ejector D^1, a female die, C^2, and two bars, C', that push the finished shanks out under the stationary die in regular order as they are formed and drop from the die. There are also provided guide and gage plates *a* at each end, upon which the plate rests, and a plate, *b*, under the forming-die, provided with a curved slot, so situated relative to the die that the springing back of the shank, after being pressed, will bring it over the slot, and it will drop down in front of the pushers.

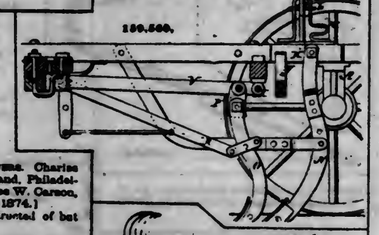


1. The combination of the cutters C^1 D, spring-follower D^1, supports *a*, and shaping-dies C^2 D^2, in the manner and for the purpose specified.

2. The combination, with plunger C, of the subjacent pushers C^2 C^3 and casing A, having passage below the die D^2, as and for the purpose set forth.

160,560. WHEEL-CULTIVATORS. George S. Brower, G. W. Brower, and E. A. Brower, Crawfordsville, Ind. [Filed Nov. 14, 1874.]

Brief.—The draft and cultivating devices are attached to an independent frame, pivoted to the front end of the carriage-frame. The latter may be slid back upon the axles to equalize the driver's weight. The inner aborels are attached to a pivoted frame oscillated laterally by crooked foot-levers.



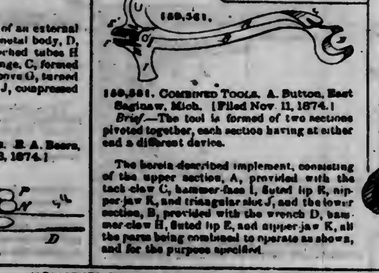
1. The slotted frame-pieces B, having curved rear sockets, E, in combination with the seat-bar F, short axles A, and bolts C, as and for the purpose specified.

2. The combination of yokes I M with the cross-bar J and pins L L, arranged as and for the purpose specified.

3. The combination of braces R, stay-rods T, and hangers U with rod Q, to support the plow-standards, as set forth.

160,561. COMBINED TOOLS. A. Button, East Saginaw, Mich. [Filed Nov. 11, 1874.]

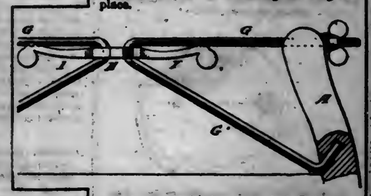
Brief.—The tool is formed of two sections pivoted together, each section having at either end a different device.



The herein-described implement, consisting of the upper section, A, provided with the tack-claw C, hammer-face I, fluted lip E, upper jaw K, and triangular slot J, and the lower section, B, provided with the wrench D, hammer-claw H, fluted lip E, and upper jaw K, all the parts being combined to operate as shown, and for the purpose specified.

160,562. SAW-FRAMES. William Clemens, Middletown, N. Y. [Filed Jan. 16, 1875.]

Brief.—The saw is strained by means of two horizontal rods bent to form inclined braces, which are secured in position by an oval ring having two arms, each of which is provided upon its upper side, near the outer end, with a groove for locking the ring in place.



A saw-frame, having parts A A C, in combination with rods and braces G G', and the tightening and locking lever, consisting of oval ring H, provided with arms I I, arranged to bind on rods G, substantially as and for the purpose herein specified.

160,563. BED-GATE FASTENINGS. John W. Collins, Chicago, Ill. [Filed Nov. 9, 1873.]

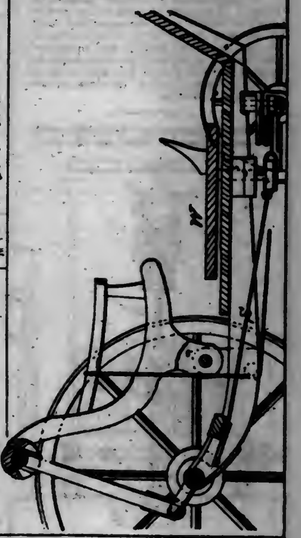
Brief.—The movement of the lever from right to left fastens the gate, and vice versa, the eccentric being thrown beyond the center, and there held by the strain.



1. The combination of the eccentric C, the lever E, and the clevis *d d*, substantially as and for the purpose set forth.

2. Hooks or knobs with notched or corrugated surfaces, in combination with staples notched or corrugated in a similar manner, as and for the purpose set forth.

160,564. VELOCIPEDES. Edwin Crother and Michel Bergeron, Hackensack, N. J. [Filed Dec. 19, 1874.]



The combination of foot-board W, foot-pieces X X, cross-bar U, connections a a, rods S S, bell-cranks Q Q, springs O O, and connections P P, substantially as and for the purposes described.

160,565. SAFES. Geo. De ..en, Brooklyn, N. Y. [Filed Jan. 18, 1875.]



1. In safe or vaults, a safe-section with pigeon-holes arranged equidistant from each other, and in a circle from a central spindle, in connection with a revolving closing face-plate or disk with one or more corresponding apertures, being adjustable to the pigeon-holes for giving access to the same, substantially as shown, and for the purposes set forth.

2. In a safe or vault, a pigeon-hole section, having pigeon-holes arranged at intervices somewhat larger than their diameter, and in a circle around a common center, substantially as shown and described.

3. The combination of the revolving face-disk, having rear holes or recesses, with a spring-bolt or other locking device, arranged in such a manner that it locks the disk rigidly until withdrawn, and causes the automatic locking when turning the disk, substantially as described.

1. The combination, with the runner E, of the adjustable suspension-rod E, the swivel-connection f^1 f^2, the intermediate shaft D', having forked lower end, the recessed sleeve d, cross-pin d^2, and the spindle D, as and for the purpose specified.

2. The swivel-joint, for connecting the rotary intermediate shaft D' with the adjustable suspension-rod E, composed of inner cup f, bent to pivoted cross-rod h, and outer cup f^1, for lubricating the washer g, constructed substantially as described.

3. The combination of forked end of shaft D' with recessed sleeve d, cross-pin d^2, and stone-spindle B, for transferring weight of stone from spindle and wheel-shaft to top suspension-rod, as set forth

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160,566. COMPOSITIONS FOR FILLING TEETH. Erwin Erlenmeyer, Houston, Tex. [Filed Dec. 19, 1874.]

Brief.—The following composition is pulverized and made into a ball for the cavity of a tooth: phosphoric acid, 26.35 parts; lime, 13.72 parts; magnesia, 5.00 parts; fluoride of calcium, 6.00 parts; potash, 8.33 parts; silica, 5.00 parts; oxide of zinc, 34.00 parts.

The above composition for filling teeth, substantially as set forth

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160,567. FANNING-MILLS. Asa Y. Felton, Plain View, Minn. [Filed July 11, 1874.]

1. The sieve A, having all its holes of the same size but cut farthest apart on the upper portion and gradually coming nearer together as they approach the lower end, as and for the purpose described.

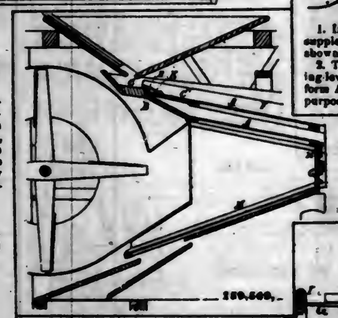
2. The sieve-supports F, jointed to the head-board at B, the vertically-adjustable board G, with the fastening-bolts K and the shaker, combined and arranged substantially as specified.



160,568.

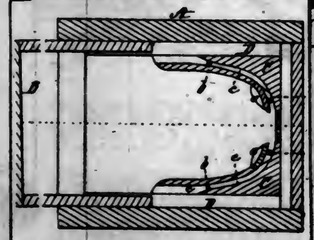
160,569. APPARATUS FOR TRANSFERRING GOODS IN BULK. L. Dubbs, Paris, France. [Filed Oct. 6, 1874.]

The combination of elevated transferring-wharf C, broad-gage car-track A, and narrow-gage car-track B, each bearing railway-tracks of the same gage with the wheeled crates X, for the purpose of running such crates from the rails on the broad-gage track, across the transferring-wharf, upon the rails carried by the narrow-gage track, or vice versa, all substantially as set forth.



160,569.

160,570. DRAWERS FOR FURNITURE. Jno. J. Fox, Boston, Mass. [Filed Dec. 21, 1874.]

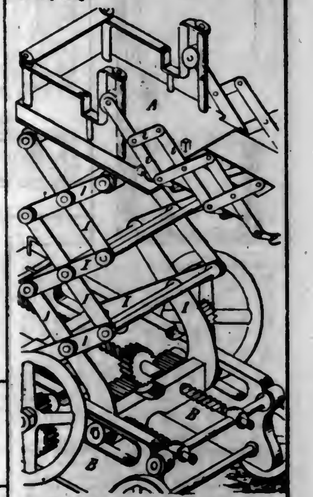


1. The flaps a a, pivoted to the rear end of a drawer, and provided with pins b b moving in grooves c c, in combination with suitable stops for limiting the motion of the drawer, operating substantially in the manner set forth.

2. The spring-latch e, in combination with the grooved block C, substantially as and for the purpose described.

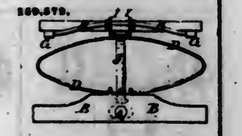
160,571. FIRE-ESCAPES. C. A. Fuchstocher and F. A. Schmid, Erie, Pa. [Filed Sept. 14, 1874.]

Brief.—The escape is provided on top with an extensible platform, operated by a system of lazy-tongs.



1. In combination with the platform A, the supplemental platforms A' and levers i i, as shown, and for the purpose set forth.

2. The combination of the trunk H, elevating-levers I, platform A, supplemental platform A', and levers i i, as shown, and for the purposes mentioned.



160,572.

160,573. SPRING-BALANCES. Thomas L. Guest, Pottstown, Pa. [Filed Dec. 28, 1874.]

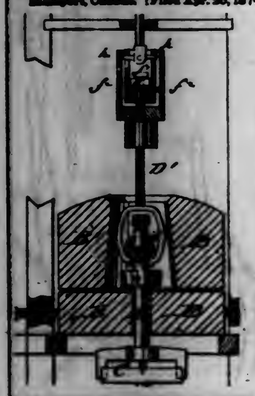
The combination of the cross-bars H, the bearings I, the side bars G, and the pivoted stay-rod J with the springs D E, the carriage-body, and the axle, as and for the purpose described.

160,574. MITRE-BOXES. Herman Kempel, Syracuse, N. Y. [Filed June 27, 1874.]

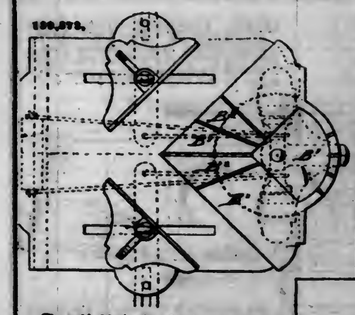
Brief.—The rotary block B has its front edge at right angles with slits for the saw, and the curved back with corresponding slits to guide the saw.

160,574.

160,567. MILL-STONES. Wm. Elliot, Williamsport, Canada. [Filed Apr. 26, 1874.]



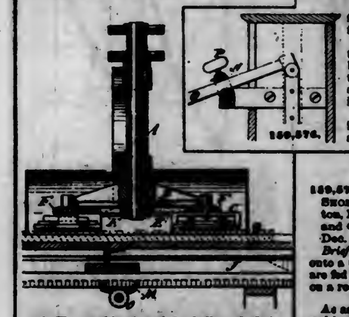
160,575.



The guide-block of a miter-box, constructed with a rotary base-plate, B', and sectional blocks B^2, made right-angled in front and formed circular in the rear, as and for the purpose specified.

160,576. SANDPAPERING-MACHINES. V. Hopp, Chicago, Ill. [Filed Dec. 12, 1874.]

Brief.—The disks which carry the sand-paper rotate upon their own axis while revolving around a common center.



1. The main shaft carries a double cam, which, through spring-pieces, actuates the feeding-feet vertically, and also the cam, which in turn moves the feet laterally

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160,577. PUMPS. G. W. Hooper, Greene, Me. [Filed Nov. 14, 1874.]

Brief.—The piston-rod is packed by a metal thimble, supported with some freedom to move by a flexible diaphragm. The valves are secured to their seats by passing the flexible end of the elastic face of the valve through a slot in the casting, and fastening it by a pin or rod. The lever is adjustable to the depth of the well or strength of the operator by adjustment to or fro in a pivoted block.



1. The packing-thimble E, supported by a flexible diaphragm, G, substantially as specified.

2. The herein-described means for fastening the valves to the seats, consisting of the flexible facing a, of leather, in combination with the slotted end pieces, S, and a pin or other suitable devices for fastening the same therein, substantially as described.

3. The pump-handle O, arranged adjustably in the pivot N, and provided with a binding-screw, substantially as specified.

160,576.

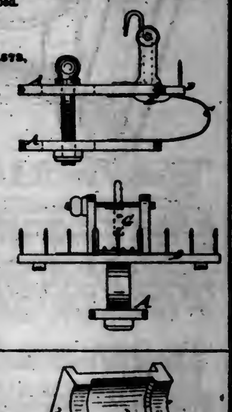
160,578. HAIR-HOLDERS. Edwin J. Beasly, New York, N. Y. [Filed Nov. 20, 1874.]

Brief.—The jaws are clamped upon the edge of a bureau-top or other convenient place, and the end of a hair-switch held under the swing-gate, and a friseur held upon the pins while being combed and dressed.

1. In a hair-holder, the adjustable clamping-jaws A A, in combination with the swing-gate C, constructed to operate substantially as and for the purpose described.

2. The adjustable clamping-jaws A A, in combination with the pin-plate D, constructed to operate substantially as and for the purpose described.

160,578.



160,579. JOURNAL-BOXES. Lewis J. Ives and J. Leary, Medina, N. Y. [Filed May 26, 1874.]

Brief.—The bearing has end flanges to secure it on a supporting-box. It contains the shaft at its ends only, the portion between being sunk for the reception of oil.

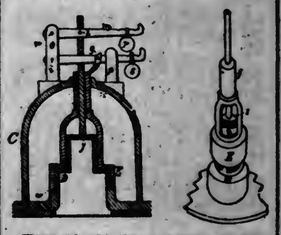
The combination, with the interior box or casing A having the notched seats a a, of the bearing C adapted to said seats, and constructed with the end flanges b b, overlapping the seats a, and with the depressed oil-chamber d formed in the bottom of the bearing, all substantially as herein shown and described.



160,579.

160,580. SAFETY-VALVES FOR STEAM-BOILERS. Alex. M. Johnston and S. Gieringer, Pittsburg, Pa. [Filed Aug. 17, 1874.]

Brief.—Surplus of steam raises the smaller valve from its seat, allowing the escape thereof. When said smaller valve is inadequate for this purpose, the larger valve is raised, and the steam escapes freely.

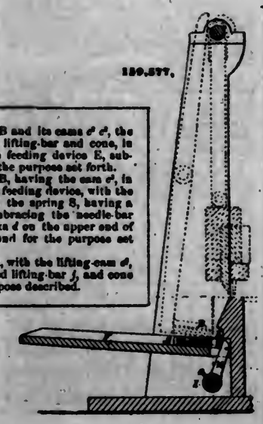


The combination of the double seat D, valves E and f, levers h m, weights r and s, standard o, and dome C, constructed, arranged, and operating, with relation to each other substantially as herein described, and for the purpose set forth.

160,581. MACHINES FOR MAKING METAL SHOE-SHANKS. John Hyslop, Jr., Abington, Mass., assignor to Hiram H. Jenkins and Geo. O. Jenkins, same place. [Filed Dec. 19, 1874.]

Brief.—The blanks, as they are pressed, drop onto a table provided with raised sides, and are fed forward in regular order by two arms on a rock-shaft.

As an improvement in machines for cutting and bending metallic shoe-shanks, the combination, with the forming-die E, of flanged table F and vibrating arms H, fastened to a shaft, I, oscillated by mechanism, substantially as described, as and for the purpose set forth.



160,577.

160,575. SEWING-MACHINES. Wm. Hirons and Jas. D. Moore, Grinnell, Iowa. [Filed June 27, 1874.]

Brief.—The main shaft carries a double cam, which, through spring-pieces, actuates the feeding-feet vertically, and also the cam, which in turn moves the feet laterally



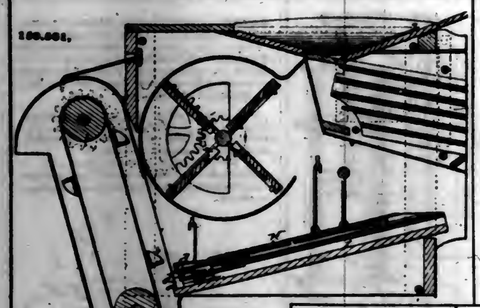
160,575.

1. The main shaft B and its cams c^1 c^2, the spring S a, and the lifting-bar and cone, in combination with the feeding device E, substantially as and for the purpose set forth.

2. The main shaft B, having the cam c^2, in combination with the feeding device, with the forked portion d, and the spring S, having a forked portion, s, embracing the needle-bar between the two forks d on the upper end of the feed-bar E, as and for the purpose set forth.

3. The combination, with the lifting-cam c^2, of the spring s, slotted lifting-bar j, and cone F, as and for the purpose described.

160,681.



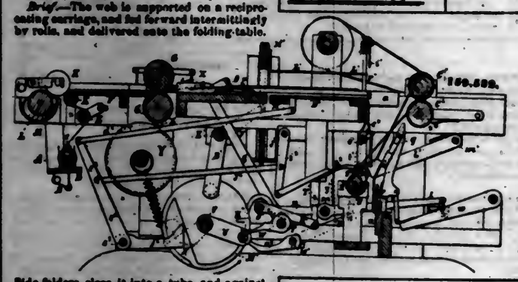
160,681. GRAIN-SEPARATORS. M. D. Judkins, Glenwood, Minn. [Filed Jan. 15, 1875.]

Brief.—Endless-belt bucket-elevator in compartments to receive and deliver separately the discharge from the several screens and chute-board of the lower shoe of a fanning-mill.

In a fanning-mill, the combination of two or more sieves, H H, having separate discharge-spouts *d d d*, and an elevator having separate deliveries for each sieve, substantially as and for the purpose specified.

160,682. PAPER-BAG MACHINES. Charles M. Kellogg, East Leverett, Mass. [Filed May 9, 1874.]

Brief.—The web is supported on a reciprocating carriage, and fed forward intermittingly by rolls, and delivered onto the folding-table.



160,682.

Side-folders close it into a tube, and against the ends of these side-folders the end is formed into a square bottom.

1. The combination of the feed-rolls G, carrier O P, and the folding-table, substantially as specified.

2. The combination of belts X, pulleys Z, ratchets O' B', pulleys Y, and spring A' with the feed-rolls and the carrier, substantially as specified.

3. The combination of the body-folders I, bottom spreaders *e*, and bottom folders C' with the folding table, substantially as specified.

4. The bottom spreaders *e*, having a springhinge, the slides *d*, and their rigid projecting arms *c*, in combination with the fixed studs *f*, as shown and described.

5. The upper folder C', jointed to the crosshead and provided with a spring, *g'*, and the projections *f'*, in combination with studs *h'* on the folders I, to swing it outward in the manner described, to prevent cutting the paper.

6. The pusher *q* pivoted on a vertical slide, *n*, and operating in the manner described, in combination with the folding-table and bottom folders, substantially as specified.

160,683. FOLDING STORE-SHELVES. Minter P. Kay, Waxahachie, Tex. [Filed Oct. 21, 1874.]

Brief.—The sections of shelves are made in three parts, hinged together, arranged one above another, and adapted to fold together.

1. Sections of shelving made in three parts, A B C, hinged to each other, substantially as herein shown and described, to adapt them to fold together without changing the lower and upper parts from their ordinary vertical position, as set forth.

2. In a store-shelving, the combination, with parts B C, of the counter-board S, hinged to the front edge of the counter, the rabbeted front edge of the part C folding against the corresponding portion of board B, while the counter-board S lies in a vertical position against the front of shelving when folded, as shown and described.

3. The middle part, B, provided with the inclosed recesses H to receive the wheels G of the upper part, U, when the section of shelving A B C is unfolded for use, and to protect the goods from said wheels, substantially as herein shown and described.

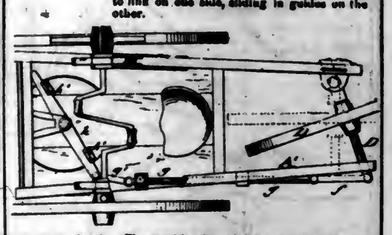
4. The hinged counter-board S, and the hinged cornice-board U, provided with hinged end boards V, in combination with the hinged parts A B C of a section of shelving, substantially as herein shown and described.

5. The combination of the staples I, hooks J, sliding bar K, pivoted lever L, beveled projection M, and spring N with the drawers D and the lower and middle parts, A B, of the section A B C of shelving, substantially as herein shown and described.

6. The combination of the catches O and the spring-lever latches P Q with the parts A B U of the section of shelving, substantially as herein shown and described.

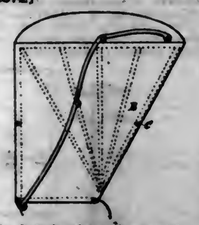
160,684. VELOCIPEDES. Walter Knight, San Andreas, Cal. [Filed Oct. 17, 1874.]

Brief.—Guided by foot operating through links and levers; rear wheel on axle, pivoted to link on one side, sliding in guides on the other.



The combination of foot-lever *b b'*, links *f* and *f'*, sliding rod *g*, pivoted and guided axle *D'*, and rear steering-wheel D, substantially as set forth.

160,685. CARRIAGE-CURTAIN FASTENERS. Carl Kurz, New York, N. Y. [Filed Dec. 28, 1874.]



1. The fastening for carriage curtains and aprons, consisting of T-headed buttons A, in combination with the curtain or apron, and slotted and outwardly-swelled plates D, and the bows, substantially as specified.

2. The button-hole plate for the top of the curtain, having the slot for the button widened at the upper end, and also having the locking-tongue H, in combination with the beat T-headed button A, substantially as specified.

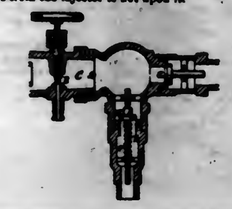
160,686. AWNING-HOOKS. Lemas M. Lane, Rockland, Mass. [Filed Dec. 26, 1874.]



The combination, with the awning-hook, of the hook-closing rod or bar, substantially as and for the purpose set forth.

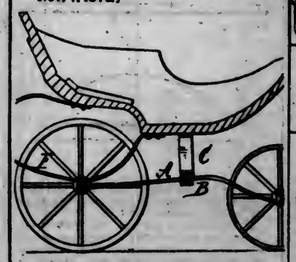
160,687. ATTACHMENTS FOR INJECTORS. David Lees, Birmingham, assignor to himself and S. O. Stewart, Tyrone Forges, Pa. [Filed Oct. 10, 1874.]

Brief.—Between the nozzle and the boiler check-valve of an injector is interposed an overflow-chamber, from the lowest point of which the water drains off through a valve kept always open by a spring when the pressure from the injector is not upon it.



In an overflow and delivery attachment for injectors, the inwardly-opening spring-pressed valve E, in combination with the outwardly-opening valve C, as and for the purpose specified.

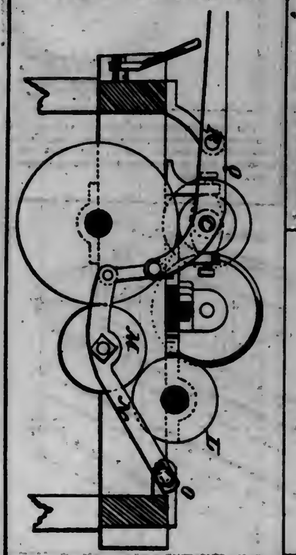
160,688. CHILDREN'S CARRIAGES. J. Manvill Lewis, North Springfield, Vt. [Filed Nov. 7, 1874.]



1. A reach for a child's carriage, composed of one or more bars, A, of malleable iron, and a spring, C, near the middle thereof, for supporting the front portion of the body, in combination with springs F, connecting the body to the hind axle, substantially as specified.

2. The combination of the diagonal reach-bars A, crossing each other, a spring-seat, E, at the junction of the bars, and a spring, C, for supporting the body attached to the seat, all substantially as specified.

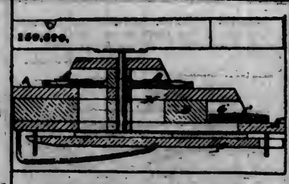
160,689. SAW-MILLS. Charles Lindner, Rockdale, Tex. [Filed Sept. 19, 1874.]



The combination, with a wheel, M, that gears with a wheel, L, on the saw-shaft, of the lever E, slotted and pivoted on fixed pin O, and the link-connected lever Q that forms a bearing for the shaft G, and is pivoted at E, all substantially as and for the purpose specified.

160,690. ORGAN REED-BOARDS. John B. Lomas, New Haven, Conn., assignor to B. Shoninger, same place. [Filed Nov. 30, 1874.]

160,690.



The combination, with a double reed-board mounted upon the sounding-board A, of the partial set of reeds C, inserted below said sounding-board, all constructed and arranged as and for the purpose specified.

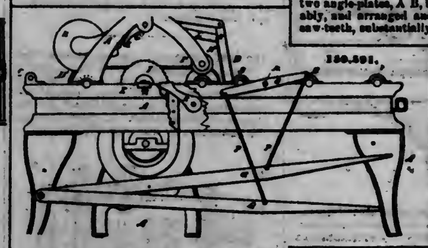
160,691. LATH-BOLTING MACHINES. John C. Mackey, Chicago, Ill. [Filed Nov. 16, 1874.]

Brief.—The slabs from which the belts are cut are retained in their proper position upon the bed of the machine by means of self-adjusting rolls, which conform to the uneven surface of the slab.

1. The combination, in a bolting-machine, of the independently-yielding rollers or belt-pressers H H, the rocking or tilting piece I, and the treadle mechanism, substantially as and for the purposes specified.

2. The adjustable tilting-piece or steady-block K, set to receive the several saws of a gang of bolting-saws, and mounted on the frame, substantially as and for the purposes specified.

3. In combination, the treadles Q Q, connecting-rods P P, crank-shaft O M M', connecting-arms N F, crank-shafts G G', roller F, piece I, and rollers H H, all substantially as and for the purposes specified.

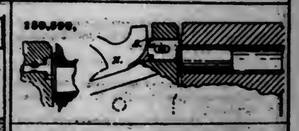


160,691.

160,692. SAW-SETTING TOOLS. Franklin J. Martin, Williamsport, Pa. [Filed Dec. 12, 1874.]

Brief.—The saw-blade is held perpendicularly between the angle-pieces A B, properly adjusted, and the tool lightly struck with a hammer, thus burring the points of the teeth.

The improved saw-burring tool, consisting of two angle-plates, A B, bolted together adjustably, and arranged and adapted for burring saw-teeth, substantially as specified.



160,692.



160,693.

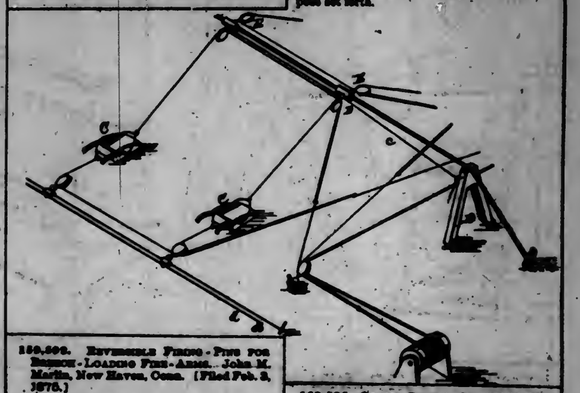
160,694. GRADING APPARATUS. John McGavin, New York, N. Y. [Filed Dec. 16, 1874.]

Brief.—A series of scrapers operated by ropes, pulley-blocks, and a windlass. The pulley-blocks are attached to thimbles, which slide upon a central main rope secured at each end to stakes, and supported by standards.

1. The combination of the thimbles D D, pulley-blocks E E, ropes *a a*, pulley-block F, rope A, derricks B B, and scrapers C, as herein shown and described, for the purpose set forth.

2. The combination of thimbles I I, pulley-blocks H H and F, ropes *b b* and J, and scrapers C, as herein shown and described, for the purpose set forth.

3. The combination and arrangement, herein shown and described, of the thimbles D D and I I, and adjusting-ropes *c* and *d*, for the purpose set forth.

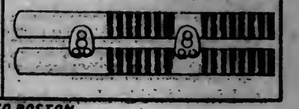


160,693. REVERSIBLE FIRING-PINS FOR BREECH-LOADING FIRE-ARMS. John M. Marlin, New Haven, Conn. [Filed Feb. 3, 1875.]

1. A breech-loading fire-arm, provided with a reversible firing-pin, substantially as and for the purpose set forth.

2. The breech-block A, provided with the slot B and screw G, in combination with the reversible firing-pin D, having the slot E and point F, substantially as and for the purpose set forth.

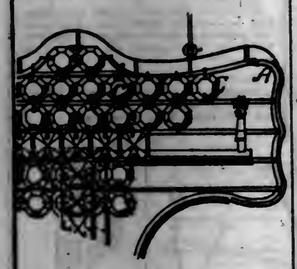
160,694. CORSET-STEELS. Geo. W. McGill, New York, N. Y. [Filed Dec. 2, 1874.]



A corset-steel or busk corrugated or grooved transversely, as herein shown and described, for the purposes specified.

159,596. ILLUMINATED SIGNS. Frederick McLewee, New York, N. Y. [Filed Jan. 27, 1875.]

Brief.—Letters have gas-burners inside for illumination at night.



An illuminated letter, composed of the wire-frame A, plate D, gate or gates *b*, and translucent crystals or pieces C C, substantially as herein shown and specified.

159,597. WEATHER-BOARD GAGES. David M. Medford, Toledo, Ohio, assignor to the American Invention Company. [Filed Jan. 20, 1875.]

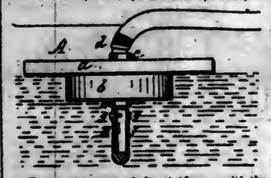
Brief.—A weather-board gage is provided with a graduated slotted spring, for holding the gage firmly to its place, and adjusting the blocks, which form the body of the gage.

The graduated spring A, in combination with block, spur, and thumb-screw, substantially as herein before specified.

159,598. COMBINED OYSTER KNIVES AND NIPPERS. Robt. F. Magee, Washington, D. C., assignor of one-half his right to A. May, New York city. [Filed Dec. 23, 1874.]

In a combined oyster knife and nippers, an open slot in the lower jaw of the nippers, into which the upper jaw will close down, said slot being large enough to let the chips fall through without weighing or clogging, substantially as shown and described.

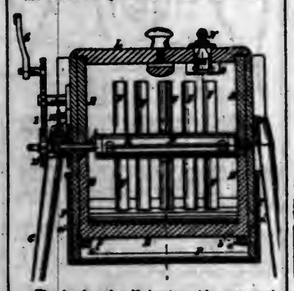
159,599. FLOATS FOR SUCTION-PIPES OF PUMPS. Chas. Meitzler and G. H. Hamm, Rochester, N. Y. [Filed Oct. 9, 1874.]



The combination of the platform *a* with the floating block *b* and nozzle B, for the purpose of supporting the flexible pipe above water, as herein described.

159,600. CHURNS. August Meyer, Port Washington, Wis. [Filed Oct. 10, 1874.]

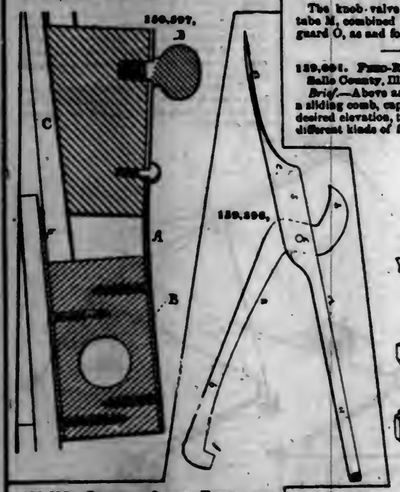
Brief.—To ventilate the churn raise the knob-valve, and air will enter through side openings near the upper end of the tube, which is open at its lower end. A guard prevents the milk from spattering through the vent.



The knob-valve N, having side apertures M, combined with a churn-cover having guard O, as and for the purpose set forth.

159,601. FEED-RACKS. A. V. Mitchell, La Salle County, Ill. [Filed Dec. 19, 1874.]

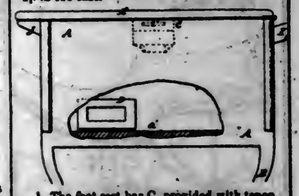
Brief.—Above an elevated exterior table is a sliding comb, capable of adjustment at any desired elevation, to regulate the flow of the different kinds of food from the rack.



A feed rack for cattle and horses, constructed as described, and consisting essentially of the exterior table C, in combination with the inclined rack, provided with the spring-catches *f f*, and the comb E, having the notches *g g*, substantially as described.

159,602. SHOE-BLACKING CASES. William H. Morse, East New York, N. Y. [Filed Nov. 14, 1874.]

Brief.—The support for the foot can be attached to the edge of the box by the particular tenon, and hold the blacking-box holder upon the ledge of the box at the opposite side. These parts are removable, and can be shut up in the case.

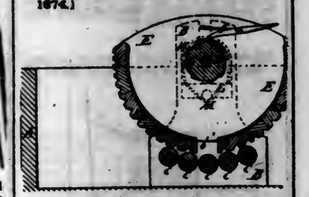


1. The foot-rest bar C, provided with tenon C', and ends fitting into recesses of box A, as and for the purpose described.

2. The holder D, having transverse recess E near one end to receive the edge of box A, and a longitudinal aperture leading into said recess to receive one end of bar C, as and for the purpose specified.

3. The case A, provided with cleat I, to serve as handle to box and support to cover, as and for the purpose specified.

159,603. WASHING-MACHINES. Francis M. Myers, Windsor, Mo. [Filed Nov. 30, 1874.]



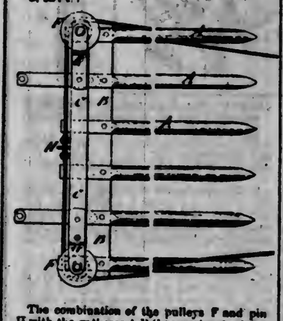
The combination, with the roller-bed C, of the semi-cylindrical rubber E, having slot *b*, the crank-roller G, loop J, and pawl and ratchet I H, as shown and described, to operate as specified.

159,604. HARVESTERS. Charles K. Myers, Pekin, Ill. [Filed Oct. 24, 1874.]

1. The revolvible boxes J J seated in standard flanges *h'*, as and for the purpose specified.

2. The combination, with lever O, pivoted to arm R on the front bar of main frame, of the vertical pivoted bars N N and T, the former supported on tongue-bar M and the latter on the pivoted tongue itself, as and for the purpose described.

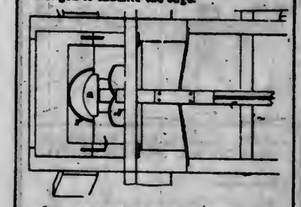
159,605. HAT-GATHERERS. Chesley Theo. Neell, Clarksville, Mo., assignor to himself and Uriel Griffith, same place. [Filed Dec. 5, 1874.]



The combination of the pulleys F and pin H with the gatherer A B C to receive the drag-ropes, substantially as herein shown and described.

159,606. MACHINES FOR SEWING COUNTER-STIFFENERS FOR BOOTS AND SHOES. Chas. H. Orcutt, Leominster, assignor to Jos. A. Harwood, Littleton, and Nahum Harwood, Leominster, Mass. [Filed Jan. 23, 1875.]

Brief.—The counter-blank pressed into a former by a die-plate is brought under a knife arranged to chamfer the edge.



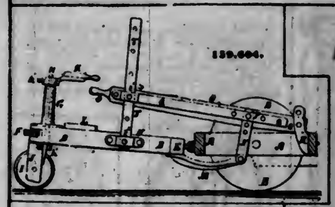
In a machine for forming and skiving boot-stiffeners or counters for boots or shoes, the concave former F, counter-die G, and knife M, in combination with mechanism for depressing the counter-die into the former, and for moving both die and former underneath the knife, or the latter over both former and counter-die, substantially as and for the purpose described.

159,607. AXLE-LUBRICATORS. Christopher C. Parker and John Elvett, Sullivan, Ind. [Filed July 6, 1874.]

Brief.—The cone is embedded in the hub. The lubricant is supplied through the tube on lifting the valve-stem, which is held in place, when not in use, by springs.

1. The case A, having the discharge-tube *a* filled by the valve B, the stem of which extends up through the disk C, against the lower side of which bears a spring, D, attached to the said stem, all combined substantially as and for the purposes set forth.

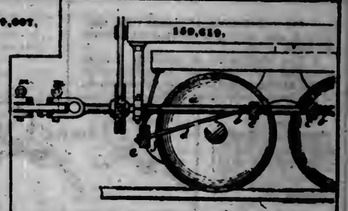
2. The spring E, lodged in the cover F of the case A, and pressing against the valve-stem, for assisting in retaining the valve B in its seat, all combined substantially as and for the purpose specified.



159,608.



159,609.



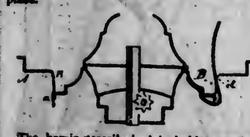
159,610. CAR-BRAKES. Jas. C. Scott, St. Thomas, Canada. [Filed July 13, 1874.]

1. A brake composed of shaft *a c*, provided with right and left screw-threads *b b*, in boxes *c c*, in combination with arms *d d* and cross-pieces *e e*, to act as friction-blocks *f f*, all constructed to operate substantially as and for the purpose set forth.

2. The shaft *a c*, provided at one or both ends with the double-joint coupling apparatus *m*, constructed to operate substantially as and for the purpose set forth.

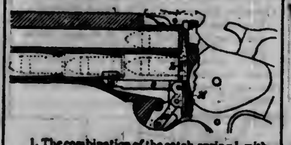
159,611. GLOBE-HOLDERS FOR LAMPS. R. E. Perkins, Meriden, Conn., assignor to E. Miller & Co., same place. [Filed Dec. 10, 1874.]

Brief.—The inner ring is provided with notches, to enable the spring to come in contact with the chimney to hold the same in place.



The herein-described globe-holder, consisting of the outer ring or globe-rest, A, and the inner ring, B, provided with the tongues *a* upon its lower edge, and the notches *d* upon its upper edge, substantially as specified.

159,612. MAGAZINE FIRE-ARMS. Edwin A. Prescott, Hatfield, Mass., assignor to Prescott Pistol Company, same place. [Filed Mar. 28, 1874.]



1. The combination of the catch-spring L with the groove in the stock for the head of the cartridge, to hold it until raised into the grooves E, substantially as specified.

2. The combination of arm I, connecting-rod M, and slide H, as described, whereby the slide is moved accurately, made cheaply, and worked without play or lost motion.

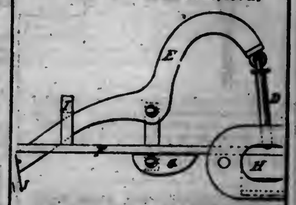
3. The rod O, jointed to the slide H, as described, and provided with the cam or point N, substantially as specified.

159,613. MANUFACTURE OF WIRE. Wm. L. Reynolds, St. Louis, Mo., assignor of two-thirds his right to C. Haskell and Wm. B. Dean, same place. [Filed Nov. 21, 1874.]

Brief.—Wet clay is used as a lubricant to facilitate the passage of the wire through the drawing-dies.

The use of clay in the manufacture of wire as a coating during the process of drawing, substantially as set forth.

159,614. CAR-COUPLINGS. E. J. Simmons, Blackshear, Ga. [Filed Dec. 26, 1874.]



1. The pivoted horizontal lever F, having grooved plate H, in combination with the link C, provided with a projection, *c'*, as and for the purpose described.

2. The combination of the pivoted lever F, the pivoting-block O, the plate H, and the catch-arm I with the lever E and the coupling-pin D, substantially as shown and described.

3. The combination of the notched hanging bar J with the levers E F and the grooved plate H, substantially as shown and described.

159,615. TELL-TALE COUPLINGS. H. Sayer, Brooklyn, N. Y. [Filed Dec. 28, 1874.]

Brief.—Parts locked by cam-lever held in locking position by strap detachably connected to axle.

159,616. WASHING-MACHINES. Simon W. Stanley, Benton Harbor, Mich. [Filed Dec. 28, 1874.]

Brief.—A roller with spurs drives an endless band, with hinged cleats on the surface, under a frame of rollers attached by springs to the lower frame.



1. The combination of the vertically-movable roller-frame J K and springs L, connected thereto at both sides, with the standards C and apron C F, as and for the purpose described.

2. The combination of the slats G, the flexible connecting-bands F, the spurred roller D, and wheels H, with the frame B C and roller-frame J K, as and for the purpose described.

1. The combination of clamps C D, can-lever E, and strap I, as and for the purpose set forth.

2. The combination of conically headed screw-bolt F M, conical nut N, grooved cush hion G, having collars O O, and the ears L L, as and for the purpose set forth.

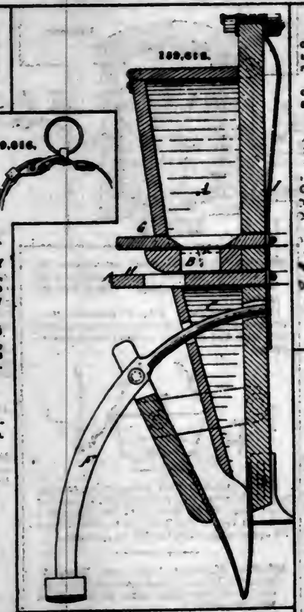


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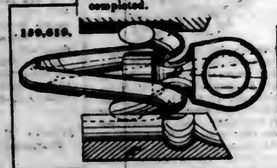
160,617.



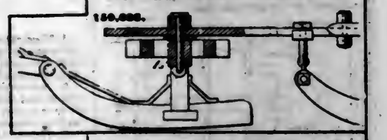
160,618.



160,619.



160,620.



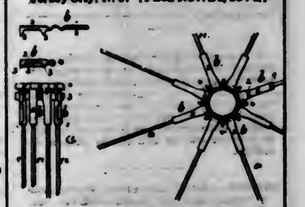
160,621.



160,622.



160,623.



160,624.

160,616. SHAWL-STRAP BAR. R. Speer, Newark, N. J. (Filed May 10, 1874.)

Brief.—The bar is formed of one piece of metal, slotted at each end to admit the strap, and so as to leave the cross-pieces and bridges of a buckle, to which a tongue is properly fitted.

A shawl-strap bar, in which the part *d* forms the pivot for the tongue *c*, and the middle rib, *f*, serves for the front of the buckle, which is formed in the bar A, substantially as herein-before described and set forth.

160,617. PORTABLE HORSE-FEEDING SUPPORTS. Albert H. Spencer, Boston, Mass. (Filed Jan. 11, 1875.)

1. A feed-basket adapted to be superseded from the animal's neck, and transioned near its upper part to a bifurcated support, substantially as and for the purpose described.

2. The detachable support C *e e*, constructed as and for the purpose specified.

160,618. COMB-PLASTERS. Abram Staley, Morris, Mich., assignor to himself and J. L. Staley, same place. (Filed Dec. 12, 1874.)

Brief.—To the pivoted blade is fastened a curved leg, the upper end of which passes through the seed-chamber, and rests against a pivoted retracting spring, to which one end of the clamping and curved slides are respectively attached. When the blades of the planter are placed in the earth and rocked, the spring is forced back by the leg, carrying with it the slides.

The combination of the spring I, slides G H, and leg F with the seed-holder A C, as shown and described, so that the spring and slides will all be simultaneously operated by the same leg, while the slides, together with the leg, will all be simultaneously retracted by the same spring.

160,619. DIES FOR MAKING CHAIN-SWIVELS. Philander H. Standish, Jefferson City, Mo., assignor to himself and J. H. Bodine, same place. (Filed Oct. 10, 1874.)

Brief.—The neck of the eye D is placed between the overlapping ends of the link-blank, the upper die brought down, and the welding completed.

The corresponding dies E F, having circular cavity *a* and straight one *b*, the two cavities crossing each other, as and for the purpose specified.

160,620. BLIND-STOPS. Charles E. Stoller, Milwaukee, Wis. (Filed Dec. 12, 1874.)

Brief.—A cam-bottom, shouldered corner-plate, and extension upon it are arranged to operate the slats, and to hold them at any required angle.

A blind-stop consisting of the cam-bottom i A and corner-plate *j*, having shoulder *k* and extension *l*, applied in connection with frame *a*, bar *b*, and slats *c*, as shown and described.

160,621. LAMP-EXTINGUISHERS. Augustus Umbdstn, Tremont, Pa. (Filed Jan. 16, 1875.)

Brief.—The extinguisher has a frictional connection with the stem of the wick-raiser, and is operated thereby. The slots in the extinguisher-plate allow access of air to the flame when the plate is withdrawn.

1. The combination, with the wick-stem D, of the extinguisher F, the same being connected by arm G, as shown and described, to admit of simultaneous operation.

2. The extinguisher F G, provided with openings or slots *f* in the flanged top portion, as and for the purpose specified.

160,622. CAR-AXLE BOXES. Benjamin K. Verbryck and Thos. Newberry, Chicago, Ill. (Filed Jan. 19, 1875.)

Brief.—On closing cover the latch is thrown into engagement and slightly catches. It is then turned by hand, so as to lock tightly.

1. The combination of hinged lid B, having side groove *a*, and cam *b*, axle-box and pivoted latch piece B', having on its recessed lower side *b* shaft-cam for locking the lid, substantially in the manner and for the purpose set forth.

2. The segment cam-piece *b* of the lid, having its lower corner obliquely cut away, in combination with the radial cam end *d* of the latch, for causing the same to lock on closing the lid, substantially as set forth.

160,623. BOB-SLEDS. John Wannamaker, Shakopee, Minn. (Filed Dec. 10, 1874.)

1. The tongue-roller pivots B, combined with and to vibrate in the ends of the tongue-roller, as and for the purpose specified.

2. The bounds L and connecting-bars M, in combination with the bind beam and the reach, substantially as specified.

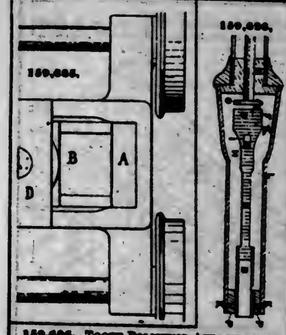
160,624. UMBRELLA-RIBS. Henry Winter, Jersey City, N. J. (Filed Nov. 24, 1874.)

The clip at the end of the umbrella or parasol rib, made of a strip of sheet metal folded to form the eye, and bent to conform to the shape of the rib and soldered thereto, as set forth.

160,625. CAR-TRUCKS. Benson C. Wright, Philadelphia, Pa. (Filed Dec. 9, 1874.)

Brief.—Permits lateral motion of car-body, following curve of groove, but causes friction equal on both sections of latter.

The combination of the grooved block A and bridge B, substantially as and for the purpose set forth.



160,626.

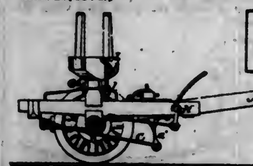
160,626.

The metallic covers *a*, in combination with a glass dish, having a pressed-glass partition and handle, said handle and partition being formed with pivots or pintles so that the metallic covers may be hinged directly thereto, substantially as and for the purpose specified.

160,627. COMPOUNDS FOR THE MANUFACTURE OF PICTURE AND SIMILAR FRAMES. Alex. N. Atwood, Philadelphia, Pa. (Filed Apr. 28, 1874.)

The described composition for the manufacture of picture and similar ornamental frames and mouldings, consisting, essentially, of asbestos, silica, soapstone, and asphaltum, combined in the manner and in about the proportions set forth.

160,628. RUNNING-GEARS FOR VEHICLES. Jacob Becker, Jr., Seymour, Ind. (Filed Nov. 27, 1874.)



1. The combination, with tongue A, pivoted at *a*, and having arms *a'*, connected by pin *a''*, of the rod C, connecting with brake-bar, as and for the purpose specified.

2. The combination, with pivoted tongue A, of bars F F and sliding bar E, as and for the purpose described.

3. The combination of plate K and the double-tree J, pivoted over hounds, as and for the purpose set forth.

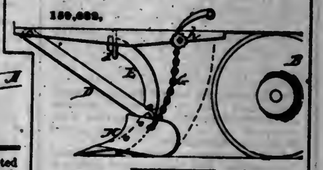
4. The loops *f* and plate M, combined with a king-bolt, reach, sand-board, bolster, and front axle, as and for the purpose specified.

5. The combination of a bolster, L, to turn on a pivot, L', of the hook N, to work in a circular iron, O, as and for the purpose described.

160,629. SAW-FILING MACHINES. Fred. W. Benjamin, Jefferson, assignor of one-half his right to Abram Shearo, Sheffield, Ohio. (Filed July 30, 1874.)

Brief.—Within the arch of the carriage is suspended a yoke, capable of horizontal adjustment, and provided with a rear arm. Within the yoke is a guide for the file-carrier, and from the end of the arm is suspended an adjustable hanger. The former is for adjusting the pitch of the teeth, the latter for the relative length of them.

160,630. GUARDS FOR PLOW-POINTS. Nicholas H. Borgfeld, New York, N. Y. (Filed Oct. 9, 1874.)



A pulley, formed in sections, the rims of which are composed of layers of wood placed one upon the other, and bent to the required shape, in combination with a dimetrical brace made in sections, and adapted to be fastened together, substantially as described.

160,631. BRICK-MACHINES. Geo. C. Bovey, Chillicothe, Ohio. (Filed Jan. 6, 1875.)

Brief.—A mold-slide reciprocated by a pitman carries a rack to rotate the spindles in a hopper above it. The bricks are ejected at each end, and their removal effected by lateral guards, operated by a peculiar cam-disk.

1. A brick-machine consisting essentially of the frame A A', hopper B, slotted plate D 1 2 2 3 3', reciprocating two-mold carriage E *e e'*, plungers I I F F', and reciprocating rotary press-wheel J K K', motion being communicated from said carriage to the press-wheel by the racks *f f'* and spur-wheels *f g*, or their equivalents, substantially as described.

2. The slotted plate D 1 2 2 3 3', located beneath the reciprocating carriage E, for operating the plungers I I F F', and provided with rollers L, for supporting the flanges F F of said carriage, substantially as explained.

3. The guard S, pivoted timber-lever T t U u, and eccentric V W X *s* Y *y*, as and for the purpose set forth.

160,632. LADDERS. Daniel Argerbright, Troy, Ohio. (Filed Aug. 12, 1874.)



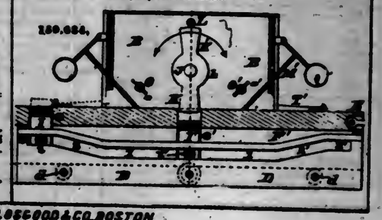
In a ladder, the combination of the stiles A A', steps B B' B'', clip-castings C H, cut-side clips H', and tie-rod E, all constructed and arranged as herein set forth, for the purpose specified.

160,633. COVERED GLASSWARE. Thomas B. Atterbury, Pittsburg, Pa. (Filed Sept. 1, 1874.)

Brief.—The metallic covers are hinged directly to the pressed-glass septum of the glass dish.

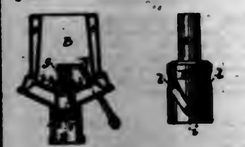


160,634.



160,635. ARGAND-BURNERS. J. A. Bowler, New York, N. Y. [Filed Jan. 12, 1875.]

Brief.—A hollow valve-plug with apertures and spiral grooves communicating with the tubular arms, said apertures and the mouth of the valve-plug being guarded by wire-gauze.

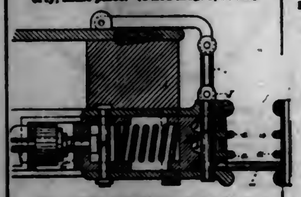


1. The combination, with an ordinary argand-burner, constructed with tubular arms, and an annular chamber, *c*, of the hollow valve-plug E, constructed with the grooves *i*, running in opposite directions from the transverse passage *i* in the valve, and each communicating with one of the arms *b*, substantially as and for the purpose described.

2. The combination, with an ordinary argand-burner, constructed with tubular arms *b b* and annular chamber *c*, of the hollow valve-plug E, having the vertical stem *e*, grooves *i*, and opening *i*, and the lever-arm H, attached to the stem of the valve, and projecting to the exterior of the burner, substantially as and for the purpose described.

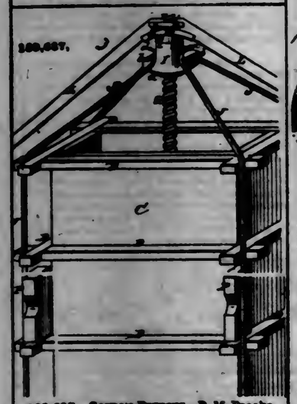
3. The combination, with hollow plug-valve E, constructed with the transverse opening or passage *i* and grooves *i* in the outer surface of the valve, communicating with said passage, of the wire-gauze screen J, arranged upon the inner periphery of the hollow valve, and covering the transverse opening *i*, substantially as and for the purpose described.

160,636. CAR-COUPLINGS. Wm. A. Boyden, Harrisburg, Pa., assignor to W. R. Dougherty, same place. [Filed Aug. 5, 1874.]



The combination of the angle-iron E, pin F, draw-head B, follower G, and the spring-rod I, for holding the draw-head in its forward position, substantially as described.

160,637. COTTON-PLANTERS. R. M. Brooks, J. M. Brooks, and J. S. Lavender, Barnesville, Ga. [Filed Oct. 27, 1874.]



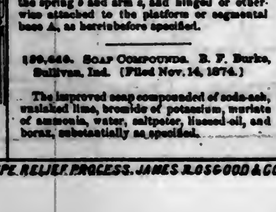
1. The metallic head-block I, surrounding the nut H and screw G, and provided with upward-projecting flanges *b b*, into which are looped the continuous rods J J, substantially as and for the purposes herein set forth.

2. The nut H, provided with circumferential flange *a* at its base, in combination with the flanged head-block I, as and for the purposes herein set forth.

3. The combination of the elongated nut H, flanged driver K, fastened thereto by pins *c c*, and the levers L L, provided with pins *i i*, and connected by links *k k*, all substantially as and for the purposes herein set forth.

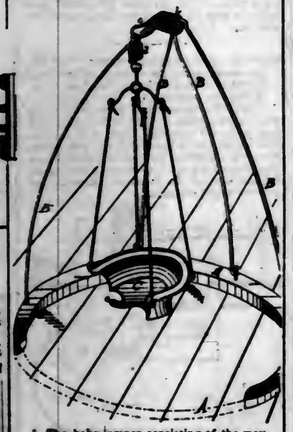
160,638. GRAIN-DRILLS. William Brown, La Fayette, Ill. [Filed Feb. 9, 1874.]

Brief.—The tube is provided at the front with a plate, having two sets of holes for attaching the drag-bar. The rear end of the drag-bar is vertically adjustable in the rear set of holes, while the front set is to gage the depth to which the point shall enter the ground.



A grain-drill shoe, A, having a plate, B, with the two series of holes *b* and *b'*, arranged as described, for vertical and angular adjustment of the shoe, as set forth.

160,639. BABY-JUMPERS. D. F. Burgess, Lockport, N. Y. [Filed Nov. 21, 1874.]



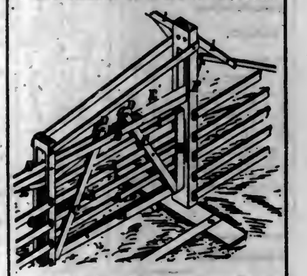
1. The baby-jumper consisting of the movable base A, supports B B, with spring *b* and arm *c*, side braces B' B', and suspended chair C, all constructed and arranged substantially as hereinbefore specified.

2. In combination with the suspended chair C, the supports B B, formed at the top into the spring *b* and arm *c*, and hinged or otherwise attached to the platform or segmental base A, as hereinbefore specified.

160,640. SOAP COMPOUNDS. B. F. Burke, Sullivan, Ind. [Filed Nov. 14, 1874.]

The improved soap compounded of soda-ash, vaslaked lime, bromide of potassium, muriate of ammonia, water, saltpeter, linseed-oil, and borax, substantially as specified.

160,641. AUTOMATIC GATES. H. N. Burnham, Bushnell, Ill. [Filed Nov. 18, 1874.]



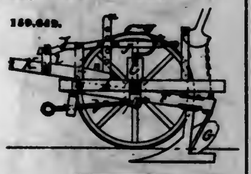
In combination with the gate A, A, B, and B, provided with the hangers C, C, D, and D, the pivoted oscillating beam E, E, and E', the inner rail of which, E', is at its upper edge formed upon a double incline that is lowest at its center and curved at its ends, and furnishes a bearing for said hangers, substantially as and for the purpose specified.

160,642. SULEY-PLOWS. James C. Cress, Millbrook, Ill. [Filed Jan. 12, 1875.]

Brief.—The plow-beam has an enlarged broad front, which is pivoted between the bars of the frame, and is raised and lowered in the arch of the axle between guides. The tongue passes between posts on the beam, and is loosely pivoted to its center. A lever is attached to the tongue and fulcrumed on the plow-beam, which raises or lowers the front of the plow-beam, moving with it the frame and axle. Another lever raises the rear end of the plow-beam independently.

The combination, with the frame A, arched axle B, plow-beam F, and pole K, constructed as described, of the lever J, catch m, perforated guide n, and lever Q, all constructed and operating as shown and described.

160,643.



160,644. ROLLING-PINS. Peter Cavalier, Yankton, Dak. [Filed July 29, 1874.]



As an article of manufacture, a hollow rolling-pin, formed of a single piece of glass, with its two ends open, and contracted to form handles B B, as and for the purposes set forth.

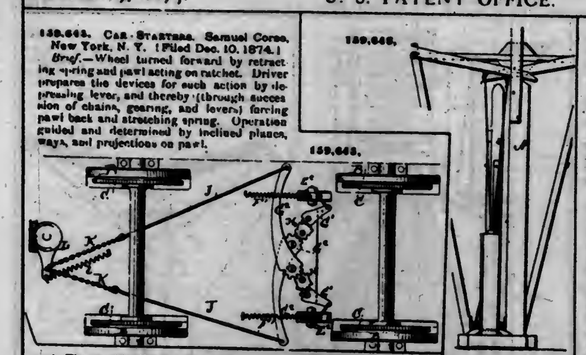
160,645. CAR-WHEELS. Wm. J. Cochran, Baltimore, Md. [Filed Jan. 9, 1875.]



A car-wheel having the chilled bearing-bosses D D projecting from each side, cell-cavity C, and perforation, in combination with the chilled bearing F, substantially as and for the purpose described.

160,646. CAR-STARTERS. Samuel Corse, New York, N. Y. [Filed Dec. 10, 1874.]

Brief.—Wheel turned forward by retracting spring and pawl acting on ratchet. Driver prepares the devices for each action by depressing lever, and thereby (through succession of chains, gearing, and levers) forcing pawl back and stretching spring. Operation guided and determined by inclined planes, ways, and projections on pawl.



1. The combination of the ratchets C, attached to the wheels B, and the pawls D, connected with the levers E', provided with the springs F', for imparting the forward motion to the wheels, as shown and described.

2. The combination of the inclined-edged plates N and the ways or guides *e e* with the pawls D, provided with the lateral projections *d d*, as shown and described.

3. The combination, with the pawls D, of the levers E' F' and springs F' F', as shown and described.

4. The combination, with the levers E', of the levers G' G' and toothed double sectors H, as shown and described.

5. The combination of the levers G', rods J, chains K, and arm L, as shown and described.

6. The combination of the arm L, toothed lever M, and foot lever P, as and for the purpose specified.

7. In combination with the pawls D, the cranks R, to operate as and for the purpose specified.

160,647. EXTRACTING GOLD. Frederick William Dahne, Swansea, Great Britain. [Filed Nov. 27, 1874.]

Brief.—Dissolves the gold in the form of chloride by treating the ore, regulus, &c., by hypochlorite of lime and hydrochloric acid. After removing the excess of chlorine by steam, the gold is precipitated by sulphurous acid.

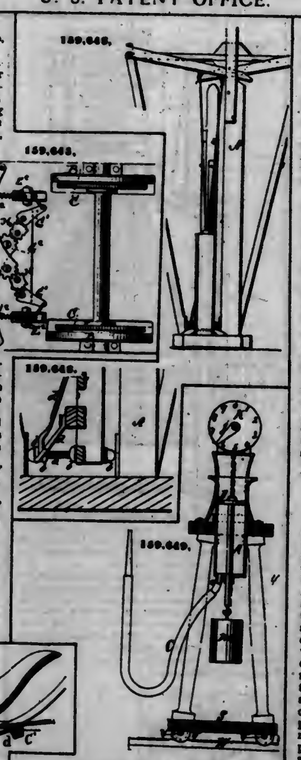
The described process of extracting gold, consisting essentially in the treatment of auriferous material with an aqueous solution of chloride of lime and hydrochloric acid, and precipitating the gold from the solution thus obtained by sulphurous acid, substantially as described.

160,648. FARM-GATES. Stephen S. Davis, Chicago, Ill., assignor to Pollock Barbour, Louisville, Ky. [Filed July 23, 1874.]

Brief.—Improvement on Patent No. 83,046. The bolt on which the gate tilts is threaded, and provided with nuts for adjusting the gate when it sags.

The gate pivotal on the screw-rod *a*, between the post and brace A C, in combination with the adjusting-nuts *b b* and braces *d d*, all substantially as set forth.

160,649.



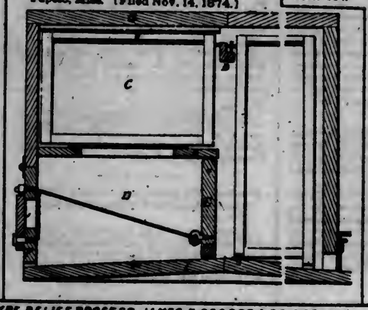
160,649. APPARATUS FOR FEEDING FOWLS. Alfred de Caris, New York, N. Y. [Filed Oct. 20, 1874.]

Brief.—A cylinder vertically suspended in a frame; a discharge-tube and hose proceeding laterally from its base; a follower having a descending rod passing centrally through the bottom cylinder-head and weighted below; an ascending chain passing around a cylinder carrying a registering-disk at its end, and operated by a crank to lift the follower out.

1. The cylinder A, weighted and suspended piston B, and tube C, arranged substantially as and for the purpose set forth.

2. The cylinder A, piston B, tube C, and registering device K, as and for the purpose set forth.

160,650. BEE-HIVES. Joseph R. Dickson, Tupelo, Miss. [Filed Nov. 14, 1874.]



Brief.—Two equal parallel divisions, the right end of one swinging outward upon hinges, so as to close against the left, which is stationary, and each frame within this brood-chamber swinging in the same direction; the left division having a horizontal woven-wire partition, above which are the honey-frames, and beneath a chamber useful as an offal-receptacle, a moth-trap, and a poison, into which to drive the entire family for temporary purposes, the lower central wall being movable by means of a cord passing to the outside.

1. The horizontal hive herein described, having in one end the brood-chamber A and its frames, and in the other end the honey-box C and secluding-chamber D, arranged the one over the other, and divided by an open partition covered with wire-cloth, substantially as specified.

2. The secluding-chamber D, herein described, arranged under the honey-box, and at the side of the brood-chamber, and provided with the horizontally-hinged inner and outer doors E F, the latter having a light-opening and a perforation for the operating-cord attached to the former, substantially as specified.

3. The combination, with the horizontal hive, having the brood-chamber and the honey-box arranged side by side, of the transverse partition-beam B, supporting the inner ends of the frames of each chamber, and the sectional covers G, divided above said beam, as specified.

160,651. MACHINES FOR PRINTING SPOOLS. Ira Dimock, Boston, and George Dimock, Leeds, Mass. [Filed May 14, 1872.]

Brief.—The spools are agitated by reciprocating rods, and guided through conduit into a race, from which the forward one is discharged, by a flexibly-driven plunger, into one of duplicate receivers, in which it is held by a reciprocating holder. During this movement the duplicate printing-dies, having been inked while at rest, move forward, are tipped into horizontal position by cams, and, moving against the spool, print its opposite ends in different colors, and, retreating, are raised into vertical position to be inked, while the rear spool-holder, rising, liberates its spool, and the receivers, making half a revolution, discharge the rear spool by its contact with a discharge-arm, and move into position to receive another spool, when the former operation is repeated, and the printed spool carried to the rear and the new one received are again printed, the former receiving a new impression in a contrasting color.

1. The reciprocating filler G, in combination with the hopper B and tubular duct C, substantially as specified.

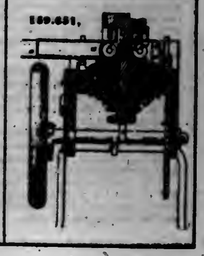
2. The reciprocating agitator H, in combination with the reciprocating filler G, the hopper B, and the duct C.

3. The combination, with the spool tube or duct C, of the shuttle-race D and the shuttle E, when arranged in relation with each other substantially as and for the purpose herein set forth.

4. The combination of a yielding shuttle-driver with the shuttle E, the shuttle-race D, and the spool-duct C, essentially as specified.

5. The combination of the shuttle E with the intermittently-revolving compound spool-receiver F F', in which the spools lie parallel, or thereabout, with the planes of revolution, substantially as and for the purpose herein described.

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6. The combination of the intermittently revolving compound spool-receiver F F', in which the spools lie parallel, or thereabout, with the planes of revolution and the printing-slides M M' or stampers, the whole arranged substantially as herein described, whereby the ends of the spools are alternately presented in one direction to receive the impression.

7. The combination of the rising and falling spool-holders E E', and intermittently revolving compound spool-receiver F F', substantially as herein described.

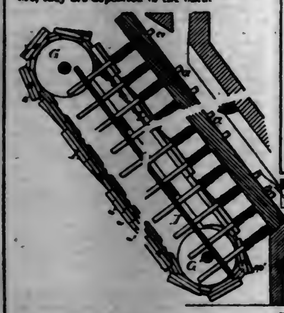
8. The clearer U, in combination with the rising and falling spool-holders E E' and intermittently revolving compound spool-receiver F F', substantially as specified.

9. The turning stampers N N' b' N', in combination with the spring followers O' O' and the slides M M', essentially as described.

10. The combination of the shafts w w' of the spool-holders E E' and sleeve L of the compound spool-receiver F F', when arranged in relation with each other as described.

159,653. TEMPERING STEEL PLATES. Henry Disston and Chas. T. Shoemaker, Philadelphia, Pa., assignors to Henry Disston, H. Disston, and A. E. Disston, same place. [Filed Dec. 30, 1874.]

Brief.—The plates are placed in a flue between the chimney and fire-bed, and are suffered to slide step by step by the withdrawal of pins actuated by springs and beviled joints of an endless chain, until, having reached the fire, they are deposited in the bath.



1. The flue B, communicating at one end with a chimney and at the other end with a furnace, in combination with retaining and releasing rods a a, caused to project into and to recede from the flue, all substantially as set forth.

2. The combination of the inclined flue B, the spring-rods a, and the endless chain with its ribbed plates m and e.

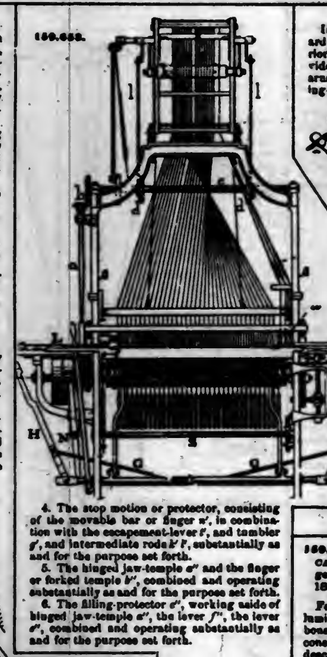
159,654. LOOMS. John Dornan, Philadelphia, Pa. [Filed Jan. 27, 1875.]

Brief.—The weft is laid by a carrier and brush, which meet at the center of the shed, and it is knit in at the selvage by a latch needle. A forked temple is combined with the jaw-temple, and a finger extending over the lay holds the several weft-threads in position. The lay operates the let-off and take-up, and the connection with the lay is controlled by a pivoted piece. The jacquard has a counterpoise motion, having one top board and two trap-boards. The journals are operated by hooked bars placed in and out of gear with the slides which support the trap boards.

1. The lever N, the swivel-rod I, the oscillating lever F, the connecting-rods G, and the picking-sticks H, in combination with the carrier K and receiving-hook L, substantially for the purpose set forth.

2. The bar b', with semicircular device c''', and latch-needle x'', in combination with the lever c' and sliding bar d', substantially as and for the purpose set forth.

3. The combination, with the needle-bar b' and sliding bar d', of the lever c', formed of parts jointed to each other, substantially as and for the purpose set forth.



4. The stop motion or protector, consisting of the movable bar or finger n', in combination with the escapement-lever f', and tambler g', and intermediate rods h' F, substantially as and for the purpose set forth.

5. The hinged jaw-temple o'' and the finger or forked temple b'', combined and operating substantially as and for the purpose set forth.

6. The filling-protector c'', working aside of hinged jaw-temple o'', the lever f''', the lever c''', combined and operating substantially as and for the purpose set forth.



7. The spring connection r' between the mails and jacquard, substantially as and for the purpose set forth.

8. The mail or filling guides u, with pins y', the box x', and the friction device s', combined and operating substantially for the purpose set forth.

9. The combination, with the lathe, of the rod Z, connecting the let-off and take-up, and having a hinged pin, o', and operating substantially as set forth.

10. The combination, with the top board, t t, and lifting-boards S' S''', of the series of treadles n n'' n''', and connecting-rods l l m, and with the same d q, substantially as and for the purpose set forth.

11. In combination with the pattern-cylinder, the journal-needle r with the pins D' D'' D''' D''', substantially as and for the purpose set forth.

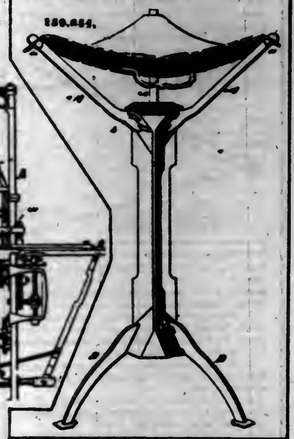
12. The sliding journal-bars A' A'' A''' A''', with hooks B' B'' B''' B''' jointed thereto, in combination with the springs E' E'' E''' E''', bearing against the hooks and attached to the bars, substantially as and for the purpose set forth.

13. The trap-board slides s s''', with one or more pins, in combination with the journal-bars A' A'' A''' A''', hooks B' B'' B''' B''', and springs E' E'' E''' E''', substantially as and for the purpose set forth.

159,656. FOLDING CAMP-STOOLS. Edward Dunbar, Springfield, Mass. [Filed Sept. 10, 1874.]

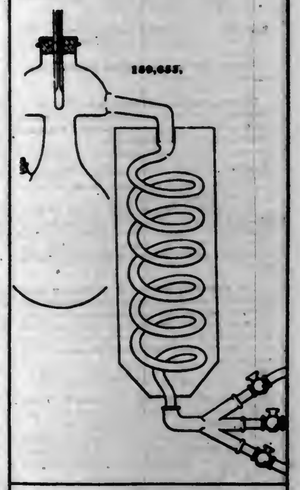
Brief.—The ends of the metallic standard are formed with lugs and openings, to afford exterior and interior bearing-surfaces to the arms and legs, which are provided with locking buttons and shoulders.

In combination with the cast-metallic standard B, having the ends formed to afford interior and exterior bearing-surfaces, and provided with the lugs A A A, and openings a, the arms A A A, and legs D D D, with their locking-buttons d and shoulders, as set forth.

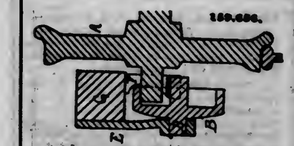


159,655. PROCESSES OF TREATING HYDROCARBONS FOR MAKING GAS. Henry H. Edgerton, Fort Wayne, Ind. [Filed Jan. 14, 1875.]

For use in the process of manufacturing illuminating-gas from gas-producing hydrocarbons by presenting hydrocarbons of the same constitution in the retort at the same time, as described, the method of preparing said hydrocarbons, by separating the same into liquid subdivisions whose respective constituents have substantially identical decomposing points, as set forth, whereby any one of said subdivisions is available in liquid form for gas-making purposes, independently of the others.



159,657. ANTI-FRICTION DEVICES FOR CAR-WHEELS. Chas. B. Emery, Boston, Mass., and F. W. Emery, Portland, Me. [Filed Dec. 11, 1874.]



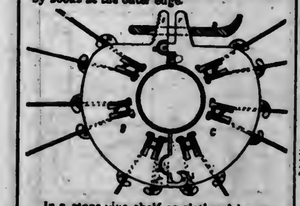
1. The combination of the truck-frame C, bearings and stays E and F, axle D, secondary wheel, B, axle C, and supporting-wheel A, substantially as and for the purpose set forth.

2. The wheel B, to revolve upon an independent axle, D, said axle being supported by suitable pedestals to a frame, G, combined with axle C and supporting-wheel A, substantially as and for the purpose set forth.

3. The combination of the journal of the supporting-wheel A with hollow friction-wheel B, the spindles of which are vertically below the said journal of the supporting-wheel, the pedestal E F, and truck-frame G, the flange of wheel B resting on the journal of wheel A, substantially as and for the purpose set forth.

159,647. STOVE-PIPE SHELVES. John Emmert, Lanark, Ill., assignor of one-half his right to A. B. Thayer, same place. [Filed July 22, 1873.]

Brief.—Two semicircular cast-iron plates to fit around a stove-pipe have legs and clamps to hold them in position. Forked rods pass through openings in the plates, and are held by hooks at the outer edge.



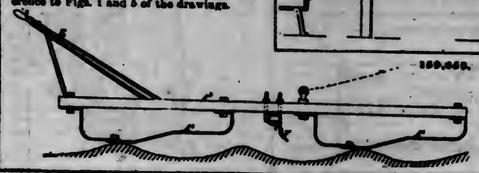
In a stove-pipe shelf or clothes-drier, constructed of the two parts B C, hinged together by the hooks I J, and being provided with the forked rods P, arranged in connection with the slots O and hooks M, as described, the combination, with the notched projections E F, of the clamp D, as and for the purposes specified.

159,648. MACHINES FOR TRIMMING OR PEELING CROPS. M. Bustace, Highfield, Drumcondra, and Jas. Keenan and T. Keenan, Dublin, Ireland. [Filed Dec. 6, 1873.]

Brief.—A series of longitudinal slotted bars carrying a runner or guide at each end, and a box with side cutters in the center. Two cross-bars adjustably connect the whole, being fastened firmly to two, and loosely to the others. The machine is driven across the rows, and the curved guides allow the bars to strike the ridge of plants, and then raise them to deposit the earth and plants in the furrow. The guides may be adjusted as to length and the bars as to height.

1. The combination of two guide-frames, II and IV, fixed to transverse bars B B, with other frames, I, III, and V, connected to the transverse bars by guides I and springs, chains, or links K, so as to be capable of independent vertical motion, substantially as herein described in reference to Figs. 5, 6, and 7 of the drawings.

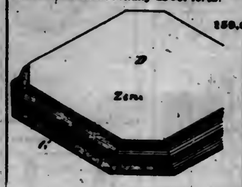
2. The guides A^1 A^2, formed of metal bars, and secured so that they can be adjusted in length and position to suit drills of different widths, substantially as described with reference to Figs. 1 and 5 of the drawings.



159,649. STOVE-PLATFORMS. Wm. Evans, Chicago, Ill. [Filed Jan. 20, 1875.]

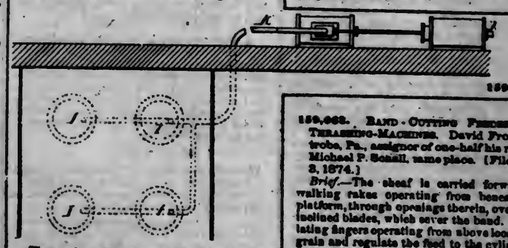
Brief.—The outer wooden molding conceals any sharp and ragged edges on the down-turned portion of the zinc.

The combination, of the wood platform and frame A B with understays C C, the zinc covering D, with its edges bent downward, and the wooden molding G, secured by nails or screws c, which pass through the wooden molding, bent edges of the zinc, and into the part B, all substantially as set forth.



159,650. MODES OF OBTAINING MOTIVE POWER. Charles Faivre, Paris, France. [Filed Nov. 24, 1874.]

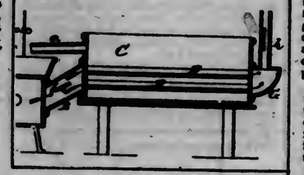
Brief.—To the under side of a yielding platform pistons are attached, which work in air-cylinders with suitable valves. The passing of vehicles, &c., over the platform depresses it, working the air-pumps, which are connected by pipes to a reservoir or engines.



The combination of the yielding platform F, cylinders I, and pipe K, communicating with the cylinders and with an engine or reservoir, as set forth.

159,651. EVAPORATING-PANS. J. F. Ferguson, Essex, Vt. [Filed Jan. 9, 1875.]

Brief.—An open multi-tubular boiler is connected to a fire-box by a movable flue. A "sirening-off" pan situated on the fire-box receives the juice from the multi-tubular boiler, to complete the process of evaporation. By means of the movable flue the parts are detachable.



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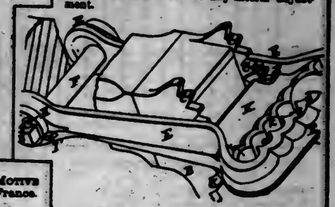
1. The inclined movable flue E, connecting the fire-box A with the pan C, substantially as and for the purposes herein set forth.

2. The combination of the fire-box A, pan B, pan C, with flues D, and the movable inclined flue E, substantially as and for the purposes herein set forth.

3. The combination of the fire-box A, pan B, inclined flue E, with damper b, pan C, with pipe a and flues D, fire-box G, and smoke-pipe h, all constructed substantially as and for the purposes set forth.

159,660. CLEVISES. Chas. H. Foss, Orange, Ill. [Filed Jan. 16, 1875.]

Brief.—The clevis-bolt has eccentric bearings in the clevis-iron. It is provided with a handle to turn the bolt which slides the clevis forward, releasing it from the notched plates, or backward, securing it rigidly at any vertical adjustment. A notched pivoted drop-plate retains the draft-link at any lateral adjustment.



1. The combination of clevis-iron E, lugs D, notched jaws C, and cam-bolt F, all substantially as set forth.

2. In combination with the clevis-iron E, the drop-plate K, substantially as and for the purpose set forth.

159,662. BAND-CUTTING FEEDERS FOR THRASHING-MACHINES. David Frost, Latrobe, Pa., assignor of one-half his right to Michael P. Scanil, same place. [Filed Dec. 3, 1874.]

Brief.—The sheaf is carried forward by walking rakes operating from beneath the platform, through openings therein, over fixed inclined blades, which sever the band. Oscillating fingers operating from above loosen the grain and regulate the feed to the cylinder.

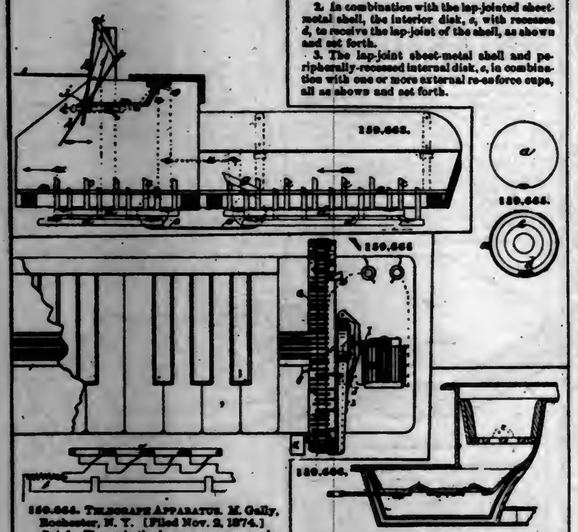
1. The combination, with the longitudinally-reciprocating rising and falling teeth e of a platform grain-feeder, of the fixed blades p, arranged between the feeding-teeth openings, to cut the sheaf-band, substantially as herein set forth.

2. The combination, with the longitudinally-reciprocating raising and falling teeth e of a platform grain-feeder, of fingers h, having rising, falling, and vibrating movements, in order to dive down, enter the grain, and retard, and thereby regulate, its feed to the cylinder.

3. The combination, in a feeder for thrashing-machines having a slotted platform and longitudinally-reciprocating rising and falling teeth e, of the regulating-fingers h, and their guide-bar k, with the operating double crank-shaft i, whereby the fingers are operated in sets, in connection with the feeding movement of the teeth, substantially as and for the purpose herein set forth.

4. The combination, with the regulating-fingers h, their operating crank-shaft i, and their guide-bar k, of the slotted link q, and crank-rod o, connecting with the guide-bar k, for effecting the adjustment of the latter to increase or diminish the retarding action of the fingers upon the grain.

5. The within-described grain-feeder, made in sections A B, having separate operating shafts s s, and provided with socket-supports t, securing-hooks u, and connecting-hooks x, whereby the receiving-section A of the platform may be held in normal position, or separated and suspended to and beneath the section carried by the thrasher, to render the machine more compact and convenient.



2. In combination with the lap-jointed sheet-metal shell, the interior disk, *c*, with recesses *d*, to receive the lap-joint of the shell, as shown and set forth.

3. The lap-joint sheet-metal shell and peripherally-recessed internal disk, *c*, in combination with one or more external re-enforce cups, all as shown and set forth.

160,664. TELEGRAPH APPARATUS. M. Gally, Rochester, N. Y. [Filed Nov. 2, 1874.]

Brief.—Through the keys messages can be set up on the wheel G ready for transmission.

1. In a telegraphic instrument, a number of electrical conductors or contact-points, adjustably attached to a suitable revolving or otherwise moving base, and capable of being arranged and rearranged to represent different letters, words, or collections of words for automatic transmission, in combination with a circuit closing or breaking device, substantially as and for the purpose specified.

2. The combination, with the adjustable conductors G, of manipulating-keys, each key making by its action an arrangement of a sufficient number of the conductors to produce the letter represented by each key.

3. An accumulation of arranged conductors, representing an accumulation of message matter to be thereafter transmitted, the same conductors consisting of a rearrangement for other message matter, substantially as specified.

4. The combination, with the adjustable conductors G, of the stop C, to prevent the wheel M from turning, except at such times as the conductors are moved out of contact, substantially as specified.

5. The wheel M, provided with adjustable conductors, in combination with propelling-weight K, substantially as and for the purpose specified.

6. The connector F, having a detent, J, in combination with magnet H, operated by means of a reversed current, causing the movement of the connector at any desired time after message matter is accumulated by the arrangement of the conductors upon which it is to act, substantially as specified.

7. The connector F, constructed with connecting-faces of different dimensions, for producing a variety of signals, when connecting with conducting-points arranged in different positions in its track, substantially as specified.

160,665. METALLIC CARTRIDGES. Marc M. E. Gastbey, Paris, France. [Filed Oct. 19, 1874.]

1. A metallic cartridge the shell of which consists of a sheet of brass of the thickness required for the walls of the shell, formed into a cylinder or case by a lap-joint extending longitudinally of the cartridge, as shown and set forth.

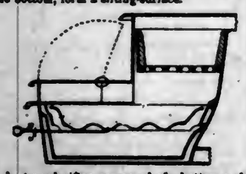
160,666. ASH-SIFTERS. J. H. Goodfellow, Troy, N. Y. [Filed Dec. 20, 1874.]

Brief.—The obtuse or knuckle-shaped agitators impart a vertical as well as a lateral motion to the contents of the sifter.

A sifter and agitator adapted to be located beneath a grate, and composed of a suitable frame provided with longitudinal obtuse-angular bars extending between and above the top surface of the grate, whereby the coals, &c., resting thereon are agitated, and the spaces between are cleared by the vibration of the sifter-frame, substantially as hereinbefore set forth.

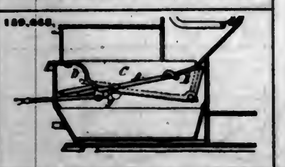
160,667. ASH-SIFTING DEVICES. J. H. Goodfellow, Troy, N. Y. [Filed Jan. 6, 1875.]

Brief.—The open swinging ends, as well as the bottom, form a sifting-surface.



1. An ash-sifter, composed of a bottom and two ends hinged together and adapted to be hung or pivoted within the chamber of a stove or pan, substantially as described, so that when vibrated the ends shall alternately form an extension of the bottom and induce to the agitation or tumbling of the body of coal, &c., resting thereon, substantially as herein before set forth.

2. In combination, with an ash-sifter hung as described, so that its bottom shall swing upon pivoted end walls, the handle D, provided with a lug, *v*, for holding the sifter in an elevated position, substantially as described.



160,668. ASH-SIFTING DEVICES. J. H. Goodfellow, Troy, N. Y. [Filed Dec. 20, 1874.]

Brief.—The sifting-grate has at the rear a swinging support from above, while at the front it rests on a fixed support.

1. The reciprocating sifting-grate A, suspended to the swinging back-piece B, and supported at the front, as described, so that when reciprocated the front and rear ends thereof are alternately elevated and depressed, substantially as and for the purpose herein before described and set forth.

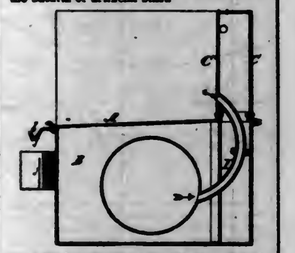
2. The swinging back-piece B, to support the rear of a swinging and sliding grate, and in combination therewith, substantially as herein before described and set forth.

3. The plate D, forming the front of the cinder-pan or hearth-pit, having the fingers *r* projecting between the bars *s* of the swinging and sliding grate A, to clear the same of cinders, &c., in combination with the grate A, substantially as herein before described and set forth.

4. A cinder-pan or hearth-pit, provided with the stationary side walls, C, and front wall, D, the swinging back-piece B, and swinging and sliding grate A, in combination with the fire-chamber and ash-pit, substantially as herein before described and set forth.

160,669. FURNACES FOR SMELTING LEAD ORES. Jos. A. Hamilton, Joplin City, Mo., assignor of one-half his right to D. K. Worcrich, same place. [Filed Dec. 26, 1874.]

Brief.—The hearth, back, and sides are protected by water, which, when heated, heats the natural or artificial blast.

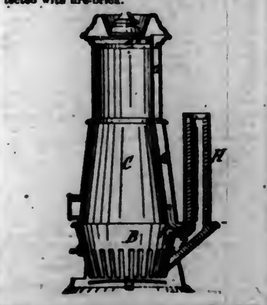


1. The hearth A upon which to smelt lead ore and from which to discharge the same as fast as melted, in combination with the water-chamber B below the hearth, and the hollow back and side water-circulating walls C C above the hearth, substantially as and for the purpose described.

2. A hot-air drum having pipes leading to the lead-ore-smelting hearth A, in combination with the water-chamber B, the top of which is formed by the hearth, substantially as and for the purpose described.

160,670. HEATING-STOVES. G. W. Herrick, Detroit, Mich., assignor to the Detroit Stove-Works, same place. [Filed Oct. 1, 1874.]

Brief.—The gas-flue conducts gases from the upper section of the stove to the exit-flue, where they are burned. The exit-flue is protected with fire-brick.



1. The combination, with the conical magazine C and fire-pot B, of the gas-flue G extending downward from the top of the magazine to or near the opening *e* into the flue F, and apertures *d*, for the purpose set forth.

2. The continuous conical magazine C and fire-pot B, in combination with bricked flue F, gas-flue G, and bricked pipe-section H, substantially as and for the purpose set forth.

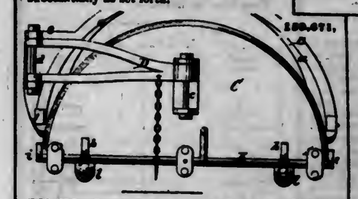
160,671. LINE FOR REPORTS. Ignatz Herzog and Richd. Kook, New York, N. Y. [Filed Oct. 26, 1874.]

Brief.—The rock-shaft secured to the lid, when rotated in one direction, forces the edge of said lid into the groove on the retort, and when rotated in the opposite direction releases it, so that it may be swung back on its hinge.

1. The rock-shaft E, provided with lifting-toes *h*, in combination with the lid C of a retort, and with the groove *c* and arms *i* on the said retort, substantially as set forth.

2. The combination of the swinging lever D, sliding pin *c*, lid C, retort A, grooved frame B, rock-shaft E, lifting-toes *h*, and arms *i*, all constructed and operating substantially as shown and described.

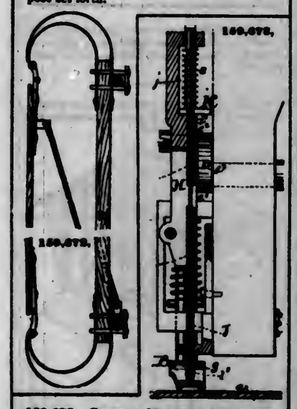
3. The combination of the rock-shaft E and arms *i i* with the lid C, groove *c*, and lugs *j j*, substantially as set forth.



160,672. GARTER-SPRINGS. Wm. S. Higgins, Oroville, Cal. [Filed Nov. 10, 1874.]

Brief.—To secure strength and even elastic motion.

The compound C-springs, composed of two flat pieces of metal bent in different curves, secured to and in combination with the body and side bars, substantially as and for the purpose set forth.



160,673. SEWING-MACHINES. H. S. Hill, Waterbury, Conn. [Filed Nov. 2, 1874.]

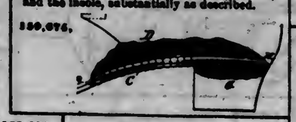
Brief.—The barbed needle descends through the cloth, and takes the thread from the thread-guide beneath. On its ascent it passes in the needle clasp the barb just before it reaches the cloth, and holds the thread till the needle again enters the cloth on its downward movement. The needle-bar is placed eccentrically on the cam on the main shaft, and receives, besides its usual motion, an oscillatory movement that feeds the cloth. The piston is operated by the cam and a spring on its upper end.

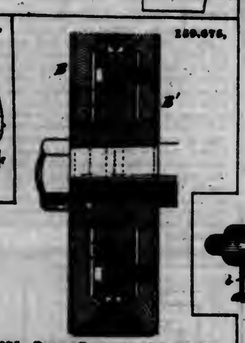
The vibrating needle-bar H, pivoted directly to the face of the cam D, and provided with a tubular needle, G, and upper and lower guides, *f f*, in combination with the barb-closer *j*, provided with the saddle K, and passing through the tubular needle, and the spring *g*, arranged between the saddle and the upper guide of the needle-bar, all substantially as herein described.

160,674. SOCCER. Geo. D. Hill, Baltimore, Md., assignor to himself and Chas. F. Hill, same place. [Filed Jan. 27, 1874.]

Brief.—The nails used in lasting cannot penetrate the insole to injure the foot or soil the stocking.

A boot or shoe having its soles united by a line or lines of stitches passing, at the heel portion, through outer and middle soles only, and from the breast of the heel around the toe, passing through the outer, the middle, and the insole, substantially as described.





160,675. PISTON-PACKINGS. John W. Hill, Dayton, Ohio, assignor of one-half his right to Herrman & Herchelrode Manufacturing Company, same place. [Filed Jan. 6, 1875.]

Brief.—The packing is adjusted automatically by pressure of steam upon the outer surface of the follower, which work loosely upon the bolts by which they are secured to the core.

A piston composed of a core, A, automatically-wedging followers B and B', and split rings C and D, substantially as and for the purpose specified.

160,676. FLORAL STANDS FOR WINDOWS. Geo. Hills, Plainville, Conn. [Filed Jan. 7, 1875.]

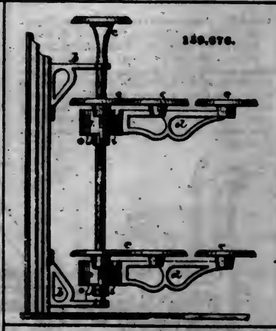
Brief.—Two brackets, one above the other, are secured to the window-casing, and support a round standard or rod, upon which are placed adjustable hubs, fitted with flanges and slots for the reception of arms that support the flower-pots. These arms can be adjusted vertically or swung around upon their vertical axis.

1. The combination of the brackets *b*, standard A, vertically-adjustable rotating collars *g*, rings *i a*, arms *d*, and pans *e*, substantially as shown and described.

2. The collar *g*, provided with the horizontal flange 1, under which the end of the arm catch, and the notched flange 2 6, substantially as shown and described.

3. The arms *d*, provided with sockets for receiving the pans, and having the shoulders 4, for catching behind the flange 2 on the collar, substantially as specified.

4. The combination of the arms *d*, having sockets to receive the pans, and the shoulders 4, in combination with the collar *g*, having the two flanges 1 2, placed at right angles to each other, the flange 2 having the notches 6, substantially as set forth.



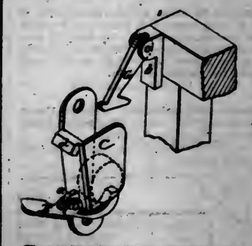
1. The combination of the lever E, slide D, wick-tube C, lever G, and diaphragm F, substantially as shown and described.

2. The combination of the lever G, diaphragm F, and elastic tube *l*, substantially as shown and described.

3. The combination of the clock I, rim *g*, spring A, wire *i*, and elastic tube *l*, as above set forth.

160,678. SASH-FASTENERS. William Horbert, Madison, Wis., assignor of one-third his right to J. R. G. Barnhisel, same place. [Filed Dec. 31, 1874.]

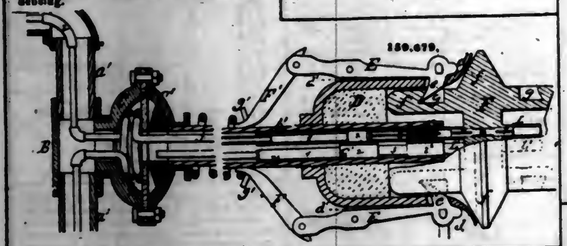
Brief.—A tapering box or case, carrying the ordinary friction-ball, has at its upper edge a projecting flange, and is provided near the bottom with a pivoted lever to lift the ball. There is also a pivoted hook or grapple secured to the edge of the meeting-rail, which, when projecting downward, engages with the flange of the box, and locks the device.



The combination of the inclined box C, having flange *d*, and containing the ball D, with the pivoted lever E, and the pivoted hook G, all constructed substantially as set forth.

159,679. COMBINED CAR-COUPLING, HEATER-JOINTS, AND BRAKE-PIPES. F. R. Hunt, Leavenworth, Kans. [Filed Jan. 19, 1875.]

Brief.—Within a tubular draw-head and pipes leading to a heating-furnace are arranged pipes for operating steam-brakes, the draw-head being adapted to engage automatically with similar pipes similarly arranged within the draw-bar and pipes of another car. The steam is thereby prevented from condensing.



159,679.

1. In a car coupler, the combination, with a tubular draw-head and the pipes leading to a hot-air furnace, of the steam-brake pipes, arranged within the same, substantially as specified.

2. The combination, with the cup-shaped draw-heads D, having levers E with hooks e, of the tubular cylindrical coupling devices F, having flange f and notches g, substantially as specified.

3. The combination, with pipes 3 of draw-heads D, of the pipes L L' of couplings F, substantially as specified.

4. The combination, with pipes 3, having valve O with valve-stem i, of the pipes L L', having detaching-slides r, substantially as specified.

5. The combination, with hooked levers E and rods F', having pins g' of the spring S, substantially as specified.

6. The combination, with the coils of steam-brake pipes I, of the cushions k k', substantially as specified.

7. The combination, with the ball b of ball-and-socket joint U C' b, of the steel tubular coils of pipes I, substantially as specified.

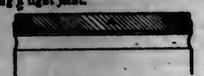
8. The ball-and-socket joint C C' b, in combination with a tubular draw-head and pipes leading to hot-air furnace, substantially as specified.

9. The combination, with the valves O of steam-pipes 3, of the detaching devices r of pipes L L', substantially as specified.

10. The combination, with the hooked vibrating levers E, of the curved rods h h' and actuating-lever J, substantially as specified.

159,680. PACKAGES FOR PAINT. J. T. Hunt, Cleveland, Ohio. [Filed Aug. 28, 1874.]

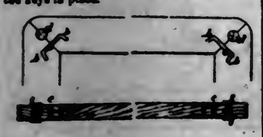
Brief.—The edges of the sheet-metal body are forced into grooves in the wooden heads, forming a tight joint.



In cans for paint, &c., the combination of the grooved heads A B, the tongue or tenon d of the can, shoulder c, and body C, constructed and arranged in relation to each other in the manner substantially as described, and for the purpose set forth.

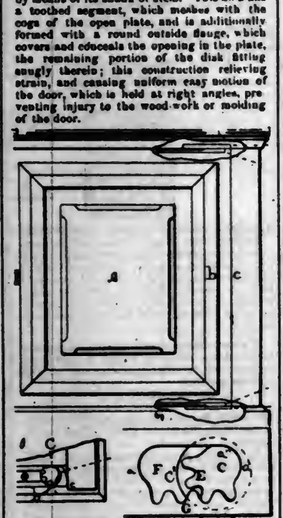
159,681. SLATE-FRAMES. John W. Hyatt, Newark, N. J., and C. M. Hyatt, Albany, N. Y. [Filed Dec. 9, 1874.]

Brief.—The elastic filling combines to keep the keys in place.



159,682. HINGES. Joseph Kauffman, Philadelphia, Pa. [Filed Jan. 8, 1875.]

Brief.—Secured to the top and bottom of the frame or casing of a warehouse door, as hinged connections, there are arranged open plates, having at one side of the opening a series of cogged teeth, and to the top and bottom of the door a peculiar disk is attached by means of its shank or stem. This disk has a toothed segment, which meshes with the cogs of the open plate, and is additionally formed with a round outside flange, which covers and edocesals the opening in the plate, the remaining portion of the disk fitting snugly thereis; this construction relieving strain, and causing uniform easy motion of the door, which is held at right angles, preventing injury to the wood-work or molding of the door.

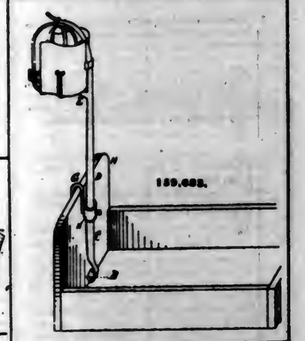


1. The plate D with opening F, rack G, and swells a a', in combination with the disk C, having segment e'', and toothed segment E, substantially as and for the purpose set forth.

2. The disk C, having flange C', shank or stem C'', and toothed segment E, in combination with the open plate D having rack G, substantially as and for the purpose set forth.

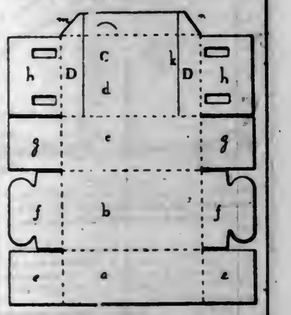
159,683. LAMP-SUPPORTS. L. M. Kent, St. Johnsbury, Vt. [Filed Dec. 4, 1874.]

The lamp attachment, consisting of the step B, upright C, sleeve H, bent arm G, and standard D, provided with a lamp-rest and reflector at its upper end, all constructed to operate substantially as and for the purpose specified.



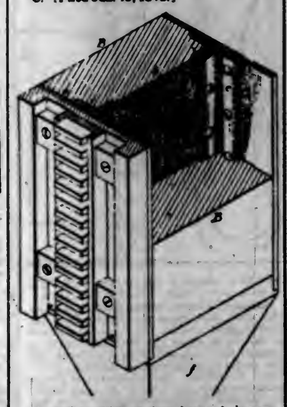
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159,684. PAPER BOXES. Louis A. Kettle, Philadelphia, Pa., assignor of one-half his right to Rupert Kettle, Merridale, England. [Filed Nov. 16, 1874.]



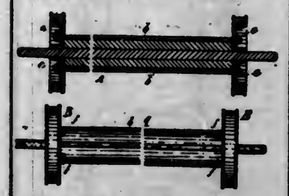
The paper box constructed of the folds a b c, end flaps e g f h, the lid-fold d C, and side strips D, substantially as and for the purpose set forth.

159,685. STUDS FOR DRESSING-MACHINES. Edmund Frederick Kittoe, Charleston, S. C. [Filed Jan. 19, 1875.]



A stud in which an iron beam, A, is combined with wooden pieces B B, and with a pointed shoe, f, as set forth.

159,686. YARN-BEAMS FOR LOOMS. Lucius J. Knowles, Worcester, Mass. [Filed Jan. 26, 1870.]



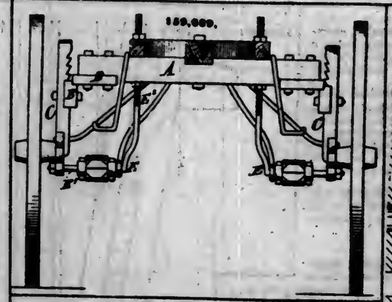
The combination, with the body part A and heads B, of the longitudinal head-holding and yarn-supporting rods b, head-holding and yarn-supporting projections f, and holding and tightening nuts e, substantially as and for the purposes set forth.

159,687. DENTAL PLATES. Danl. M. Lamb, London, Canada. [Filed Nov. 17, 1874.]

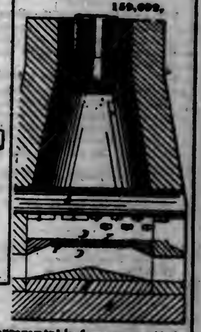


A dental plate constructed of the inspissated juice of milkweed, vulcanized either alone or in combination with india-rubber or other vulcanizable gum.

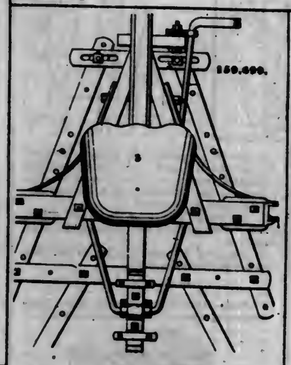
159,688. IRONING-TABLES. Albt. Larkin, Almond, N. Y. [Filed July 10, 1874.]

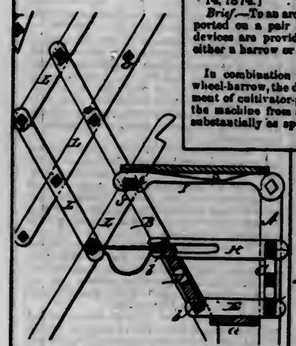


159,688.



159,689.





The combination of the legs A B, front C, back D, cross-bars E, bottom G, arms H I, and the system of arms L, and bars J, and with or without the table K to form the various articles, substantially as shown and described.

159,690. WIRE-CULTIVATORS. Edwin R. Leach, Cedar Rapids, Iowa. [Filed Oct. 17, 1874.]

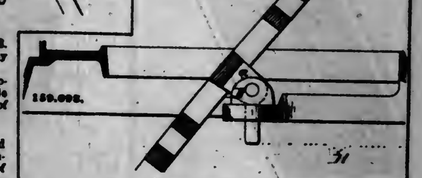
Brief.—The plow-beams in fixed relation to the wheels in height from the ground, whether the axle and frame be raised or lowered.

The combination of the elevated vertically-adjustable part A of the axle-tree, standards C, and combined supporting or draft bars and braces E E' E'', substantially as and for the purpose specified.

159,691. REDING-HARROWS. Edwin R. Leach, Cedar Rapids, Iowa. [Filed July 14, 1874.]

Brief.—To an arched or raised axle-tree, supported on a pair of wheels, interchangeable devices are provided for the attachment of either a harrow or cultivators.

In combination with the herein-described wheel-barrow, the draft-bars h h, for the attachment of cultivator-plows, to the conversion of the machine from a barrow into a cultivator, substantially as specified.



159,691.

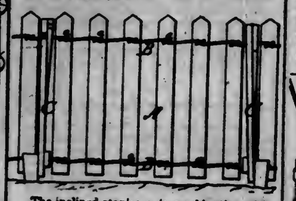
159,692. GRATES FOR HEATING-STOVES. Charles G. Marshall, Philadelphia, Pa., assignor to Chas. Noble, M. D., Chas. Noble, and F. P. Nicholson, same place. [Filed Oct. 7, 1874.]

Brief.—The means of support allow rotation in a horizontal plane, and also of tilting.

The combination of the grate B, its stem a, and pendent lugs c, and the pivot D, hinged to the said lugs, and turning in a projection, H, on the ring A, all as set forth.

159,693. WIRE FENCES. Jas. A. Little, Cartersburg, Ind. [Filed July 13, 1874.]

Brief.—By inclining the staples through which the horizontal tie-wires pass, depressions are formed in said wires, when they are drawn taut, and thereby hold the pickets in their proper places.



The inclined staples a, in combination with the pickets A and wire stringers B, as and for the purpose specified.

159,694. QUICKSILVER-FURNACES. Conrad A. Luckhardt, San Francisco, Cal. [Filed Aug. 6, 1874.]

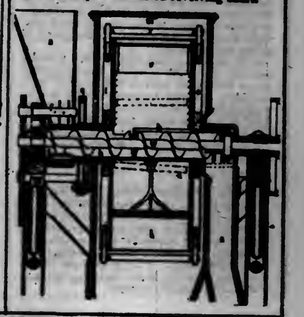
Brief.—The ore is fed into cylinder K and P. On pulling up P, the ore is discharged toward the sides of the furnace by the conical bowl H, and is continuously roasted and distilled by the central fire.

1. As an improvement in furnaces provided with a centrally-arranged fire-place, for the extraction of mercury from its ores by a continuous operation, end supports, b, as a means of keeping the fire-bars F out of contact with the furnace-walls, to avoid heating the latter, substantially as set forth.

2. In combination with the fire-place D of a quicksilver-furnace, the flue G, open to the air at both ends, for the purpose set forth.

159,695. PLOUR-DRESSING MACHINES. M. Martin, Bitterfeld, Prussia. [Filed Dec. 16, 1874.]

Brief.—Bolting-cloth stretched taut by the stays and adjustable disk. Devices as claimed for feeding the material to the dressing-cylinder. Bran removed from dressing-cylinder by revolving sweep or shovel, which delivers it into revolving tube, and is removed therefrom by the worm on revolving shaft.



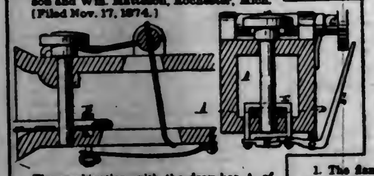
1. The combination of the disks *a l*, carrying the dressing-cloth and adjusting-stays *r r*, each having a right-hand thread on one end, and a left-hand thread on the other, all as set forth.

2. The rakes or stirrers *i*, inclined alternately right and left, and revolving within, and in close proximity to, the cylindrical dressing-cylinder, as and for the purpose set forth.

3. The combination of the hollow perforated tube *b* and the scoop or shovel *c*, extending radially from the shaft, as and for the purpose set forth.

4. The combination of the revolving tube *b*, and the worm on the shaft *w*, with the dressing-cylinder, as and for the purpose described.

159,696. CAR-COUPLINGS. Leland Matteson and Wm. Matteson, Rochester, Mich. [Filed Nov. 17, 1874.]



The combination, with the draw-bar A, of the stirrup B, spring F, and bell-crank G, as and for the purpose set forth.

159,697. STEREOTYPE-MATRICES. Thos. J. Mayall and Richard W. Hartnett, Boston, Mass., assignors to Mayall Power Printing-Press Company, New York city. [Filed Nov. 23, 1874.]

Brief.—To spread and hold a paper matrix while drying.



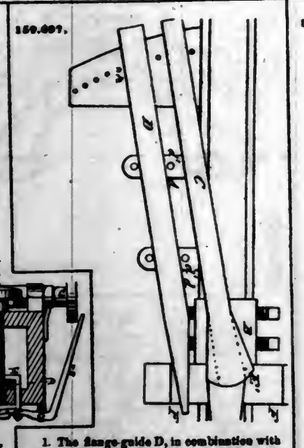
1. In stretchers for the matrices of stereotype-plates, the combination of a metallic skeleton frame or margin, which registers with the unimpressed margin of the matrix, and a wire-gauze or net sheet, which is set back from the plane of said frame or margin a distance to correspond with the increased thickness of the raised or type-impressed part of the matrix, and constitutes the surface against which said type-impressed part rests, substantially as shown and set forth.

2. A stretcher, composed of two metallic skeleton frames or margins, with wire-gauze or net fillings, set back of the plane of their respective margins to accommodate the increased thickness of the raised or type-impressed portions of the matrix, as described, said frames being hinged, and provided with a device for clamping them together when closed, as shown and set forth.

159,698. CAR-REPLACERS. W. H. McLean, Moberly, Mo. [Filed Jan. 11, 1875.]

Brief.—A car-replacer in which the bridge-clamp is provided with lateral projections, which serve as supports for the vibrating guard-rail. The clamp is also provided with inner angle-brace. A flange-guide for wheels is arranged parallel to the replacing-rail, and is adjustable relative thereto.

159,699.



1. The flange-guide D, in combination with the switch-rail C, said guide being adjustable in relation to said switch-rail, and the latter pivoted to the rail-bridge of a car-replacer, substantially as described.

2. The bridge B, having the lateral extensions F and angle-braces *f*, substantially as described.

3. The ties *d d*, connecting the switch-rails and flange-guides, as shown.

159,699. BAG-TIES. John O. Milne, Minneapolis, Minn. [Filed Dec. 14, 1874.]



The tie *k*, made of a single piece of wire bent to form the hoop *c*, loop *d*, and tongue *h* extending over the hook, in combination with the cord A, substantially as and for the purpose herein set forth.

159,699. WOOD PAVEMENTS. Charles H. Miller, Buffalo, N. Y., assignor of one-half his right to Wm. Manning and B. Haight, same place. [Filed Dec. 31, 1874.]

Brief.—The blocks are grooved centrally on the under side to receive the supporting-sleepers. The latter extend a little below the bottom of the blocks, affording a recess into which the packing may be consolidated to form a key.

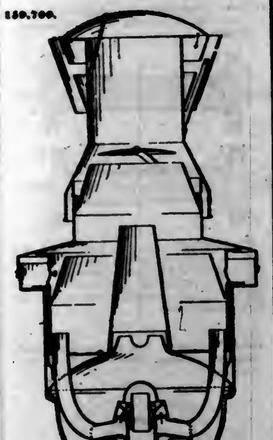


A wooden pavement consisting of blocks A, recessed at their lower end centrally, in combination with supporting sleepers or rails *b*, extending below the plane of the bottom of the block, whereby the filling of the spaces forms a key, substantially as and for the purpose set forth.

159,700. LAMPS. H. G. Moehring, Philadelphia, Pa., assignor of one-half his right to R. S. Merrill, W. B. Merrill, and J. Merrill, Boston, Mass. [Filed Dec. 16, 1874.]

Brief.—A lamp for railway cars or other apartments, having three independent air-chambers—an air-supply chamber, a chamber in which the lamp is suspended, and the air-chamber proper of the lamp, the last communicating with the first through ducts for supplying air to the burner and flame.

159,700.



1. A lamp having a surrounding air-chamber and air-ducts conveying air to the burner and flame from an upper and independent air chamber or reservoir located within the body of the lamp-structure, substantially as shown and described.

2. The combination of a lamp surrounding air-chamber composed of an upper reflector and a lower transparent shade with air-supply tubes arranged to convey air to the lamp, for the combustion of the oil, from without the said air-chamber, substantially as shown and described.

3. The combination, with an oil-lamp of otherwise ordinary or suitable construction, of a double or divided air-chamber and air-ducts, conveying the air from one through the other, and into a third separate and distinct air-chamber, whence the air is discharged against the flame under the deflector or chimney, substantially as shown and described.

4. The combination, with the air-supply chamber and the air-chamber proper of the lamp, of an intermediate air-chamber, under the arrangement and for operation as shown and described, so that while the air for the combustion of the lamp is supplied from without the lamp burns in a perfectly still and undisturbed atmospheric medium, substantially as set forth.

5. In a railroad-car lamp or lamp intended to be used by being inserted through an opening in the roof or ceiling of a room or compartment, the air-supply chamber, constructed as a superstructure, and provided with internal air-deflecting flanges or surfaces overhanging the tubes conveying the air to the burner, substantially as set forth.

6. The combination, with a lamp suspended within a transparent shade, and provided with a reflector, of a partition dividing the air-chamber into two separate air-chambers and air-ducts passing through said partition, substantially as shown and described.

7. The combination, with a lamp suspended within a transparent shade, of a reflector which divides the air-chamber into two separate air-chambers, as described, and air-ducts passing through said reflector, substantially as set forth.

8. The combination, with a lamp suspended within a transparent shade, and partition dividing the air-chamber, as described, of a flange constituting a chimney cowl or gallery and a removable chimney, substantially as specified.

9. The combination, with a lamp suspended within a transparent shade, of the three air-chambers, specified air-ducts, and a lamp-chimney, all substantially as shown and set forth.

159,701. LAMP-BURNERS. H. G. Moehring, Philadelphia, Pa., assignor of one-half his right to R. S. Merrill, W. B. Merrill, and J. Merrill, Boston, Mass. [Filed Dec. 16, 1874.]

Brief.—A stiffened tip resting upon the stop, taking oil from the feed-wick.

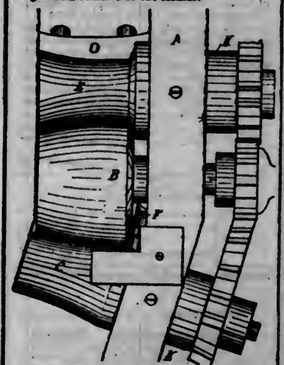
159,701.



In lamp-burners for use in connection with wicks, as described, a stop in the wick-tube, which prevents the ascent of the one wick and the descent of the other, and insures contact of the two wicks at a fixed point in the wick-tube, substantially as set forth.

159,702. MACHINES FOR MAKING COUNTERS FOR BOOTS AND SHOES. John R. Moffitt, Chelsea, Mass. [Filed Jan. 28, 1875.]

Brief.—The revolving "former" is located between two pressure-rolls—one above, the other below, with a third roll directly in the rear—so that the counter-blank is closely pressed around the former. The heel-seat is formed by means of a roll held in bearings at nearly right angles to the axis of the former, which serves as a guide, also, to flange the counter-blank. The pressure-rolls are supported in eccentric sleeves, rendering them adjustable relative to the former.



1. In combination with the former-roller, a flanging-roller, F, located, substantially as shown and described, relatively to the former, and serving to guide and turn the edge of the blank against the end of the former.

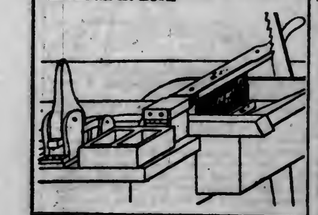
2. In combination, the former-roller, the rollers D E, and concave guides M, substantially as and for the purpose described.

3. In combination with the forming-roller and with a receiving-roller, a guide plate, bar, or pawl, H, substantially as and for the purpose described.

4. In combination with the shafts of the rollers C, D, or E, the adjustable sleeves K, supported in the frame and having eccentric bearings for the shafts, substantially as and for the purpose described.

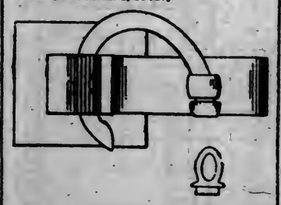
159,703. MACHINES FOR PAINTING BALE-TIES. A. J. Nellis, Pittsburg, Pa. [Filed Jan. 22, 1875.]

Brief.—A paint-trough, having one end inclined upward, has double-hinged brushes at the head of the inclines between which brushes the bale-ties are drawn.



The table A, having a central trough, B, provided with the inclines *b* and wipers *b' b'*, substantially as and for the purpose specified.

159,704. BALE-TIES. A. J. Nellis, Pittsburg, Pa. [Filed Jan. 4, 1875.]



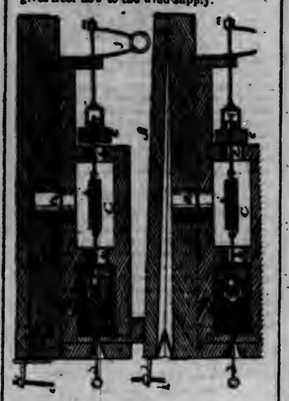
1. In combination with a bale-band and slotted buckle, an eye-headed rivet and U or similar shaped locking device, substantially as specified.

2. In combination with a bale-band and slotted buckle, an eye-headed rivet, said eye or slot being elongated, and a U or similar shaped locking device, one end of which is of an oval or similar form having different diameters, one of which exceeds the smaller diameter of the rivet-eye, substantially as set forth.

3. In combination with a bale-band and its slotted buckle, an eye-headed rivet and a U or similar shaped locking device, said locking device being provided with a shoulder or projection upon the end which engages the band-loop.

159,705. ORGAN PNEUMATIC ACTIONS. R. Nicholls, Philadelphia, Pa. [Filed Aug. 24, 1874.]

Brief.—Between the outer and inner passages of the wind duct or chest, immediately communicating with the pneumatic bellows, an interposed helical spring gives elasticity to the key-touch, and with increased pressure gives freer flow to the wind-supply.



1. The combination, with the pneumatic A and wind-chest B, of the wind-chest C, provided with the holes *b c*, and the pallets *d e*, coupled together, so as to simultaneously open one of said holes and close the other by a single movement.

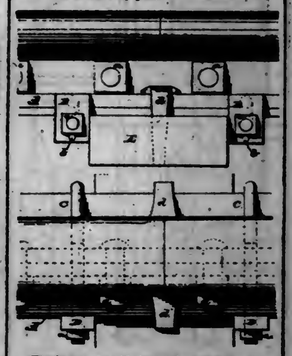
2. In combination with the wind-chest B, the wind-chest C, provided with holes *b c*, and the pallets *d e*, located outside of said wind-chest C, and coupled together, as set forth.

3. In combination with the pallets *d e* and the tension-spring *f*, the differential spring *i*, for the purpose set forth.

4. The combination, with the pallets *d e* and springs *f i*, of the trackway, whereby motion is transmitted from the key-action, substantially as set forth.

159,706. NUT-LOCKS. Burnett J. Noonan, Charleston, Mo. [Filed July 15, 1874.]

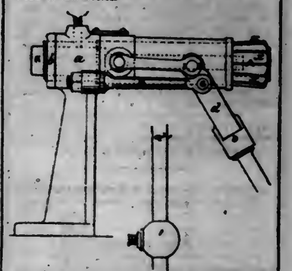
Brief.—The locking-bar is provided with lugs, projecting downward by the side of a sleeper, and perforated to receive cross-bolts having hooked heads, engaging the flange of the rail. The supplementary nuts on the cross-bolts are secured by pins.



The bar A, provided with lugs D D, having holes to receive keys *b b*, and constructed so as to project down on the sides of the sleeper E, in combination with screw-nuts *a' a'* and screw-bolts C C, having hooked heads *c c*, substantially as and for the purpose set forth.

159,707. MACHINES FOR CAPSULING BOTTLES. James Paterson, Leyfenstone, England. [Filed Sept. 23, 1874.]

Brief.—A tube slightly flared near its outer end is slotted to form a series of elastic arms, within which is arranged an elastic tube. A bottle with a capsule over its mouth is inserted within the elastic, and a sleeve moved forward until its end passes over and compresses the elastic arms and tube, thereby pressing the capsule tightly to the mouth and neck of the bottle.



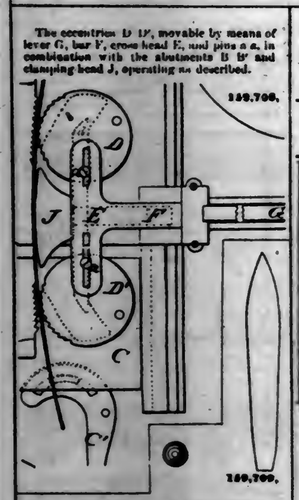
1. In a machine for capsuling bottles the combination, substantially as described, of inclined elastic arms *s s*, an elastic tube, M, within the arms, and a movable sleeve, *e*, by which the said arms may be forced against and caused to contract the said elastic tube, all as set forth.

2. The combination of the inclined elastic arms *s s*, elastic tube M, and sleeve *e*, with the adjustable stop K.

159,708. TIRE-UPSETTERS. Christian J. Reimold and Nolton Stoddard, Saginaw, Mich. [Filed Jan. 2, 1875.]

Brief.—A toothed segmental lever, working in a rack on the bed, operates the slotted cross-head, which is connected to the serrated eccentric clamps. Cam-grooves are cut in the bottom surfaces of these clamps. A plate for clamping the tire (to prevent buckling) is rigidly attached to a bar, which, in virtue of its ends entering the grooves, reciprocates conjointly with the clamps toward or from the tire.

The eccentrics D D', movable by means of lever G, bar F, cross-head E, and pins a a, in combination with the abutments B B' and clamping-head J, operating as described.



159,708.

159,709.

159,709. SELF-LIGHTING CIGARS. Charles L. Ridgway, Boston, assignor of one-half his right to Jos. H. Hatch, Melrose, Mass. [Filed Jan. 16, 1875.]

A cigar the end of which is covered with charcoal, held by any suitable adhesive material, and an igniting material exterior thereto, substantially as and for the purposes set forth.

159,710. PAINT-OIL COMPOUNDS AND PROCESSES OF PREPARING THE SAME. Darius S. Robinson, Cleveland, Ohio. [Filed Nov. 10, 1874.]

1. The described process of making an oil compound for paints, by first combining cotton and linseed oils with the oxide of manganese, sugar of lead, soda-ash, and borax, by heating the mass, and next mixing said compound with cotton-seed oil, flaxseed meal, and water, in a retort, subject to the action of steam heat, and then expressing the oil from the mass, substantially as and for the purpose set forth.

2. The paint-oil compound composed of cotton and linseed oils, black oxide of manganese, sugar of lead, soda-ash, and borax, substantially as and for the purpose set forth.

159,711. ADJUSTABLE HOLDBACKS. S. R. Rood, Montello, Wis. [Filed Dec. 8, 1874.]

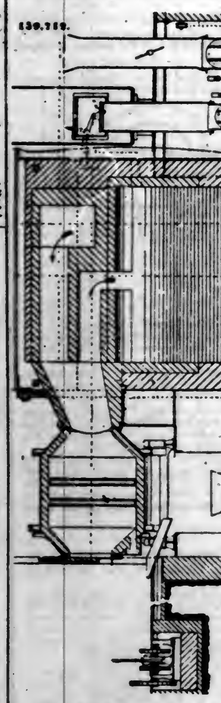


The combination of the pole provided with a series of slots and the adjustable holdback, consisting of the under block C, top piece D, catch-piece E, and spring K, as and for the purposes described.

159,712. MANUFACTURE OF IRON AND STEEL. Chas. Wm. Siemens, Westminster, England. [Filed May 27, 1873.]

Brief.—The ore to be treated is crushed, mixed with lime, manganese, &c., introduced into the rotary furnace, and heated nearly to the fusing-point, whereupon a quantity of reducing agent, such as coal or coke, is added, and when the resulting reactions are complete the furnace is stopped and the scoria tapped off. The furnace is rotated more rapidly, so as to ball the iron, which is then taken to the squeezers.

159,712.



1. The method of effecting the separation of metallic iron from heated ore mingled with fluxing materials, by causing carbonaceous matter to be mixed therewith by means of the slow rotation of a rotative furnace, and forming the separated metal, by means of a quicker rotation, into balls, for the production of wrought-iron or puddled steel, or for the production of cast-steel by the employment of a separate furnace, substantially as herein described.

2. The method of separating metallic iron from ore, in the manner and by the means above referred to, and converting the separated metal into cast-iron or cast-steel, in one and the same rotative furnace, by the further addition of solid carbonaceous matter, cast-iron, spiegeleisen, or ferro-manganese, substantially as herein described.

3. A rotative regenerating gas-furnace for the manufacture of iron and steel, wherein the heated air and gas are admitted, and the products of combustion are emitted, at the one end or throat of the rotative furnace, and a working-door is provided at the other end, substantially as hereinbefore described with reference to the accompanying drawings.

159,713. HAY-PRESSES. Henry B. Skillin, Pownal, Me., assignor to Charles A. Shaw, Boston, Mass. [Filed Jan. 18, 1875.]

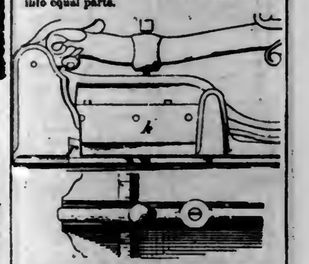
1. In a hay-press substantially such as shown, the door H, provided with the hook L, in combination with a follower provided with the catch M, arranged to operate substantially as and for the purpose specified.

2. In a hay-press substantially such as shown, the curved lever K, in combination with the door H and lever b, as and for the purpose set forth.

3. In a hay-press constructed and operating substantially as shown, the lever K and hook L, made of one piece, in combination with the catch M, door H, and lever b, as and for the purpose described.

159,714. TOBACCO-CUTTERS. W. Smith, Forestville, Ind. [Filed June 8, 1874.]

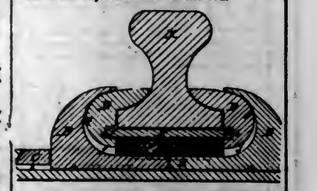
Brief.—Arranged at right angles to the knife, and extending laterally therefrom upon each side, is a graduated scale that reads outwardly from the knife upon each side thereof, so that the center of a plug of tobacco can be easily ascertained, as it is laid against the scale and under the knife, and hence severed into equal parts.



The graduated scale or measuring-rule e, arranged at right angles to the knife k, and reading outward therefrom on both sides, to provide for dividing and subdividing a plug of tobacco into equal pieces, in the manner herein set forth.

159,715. RAILWAY-RAIL CHAIRS. John L. Stewart, Ellicott City, Md. [Filed Dec. 17, 1874.]

Brief.—A clamping-chair for railway-rails, consisting of a grooved base-plate, into which are secured by wedges metal boxes embracing clamping-hooks, which compress the base of the rail by pressure, the rail resting upon the under ledges of the clamping-hooks, either directly or through an intervening plate, under which is placed a rubber cushion.



1. The combination of the hooks D, the boxes B, the keys C, and the base-plate A, substantially as and for the purpose described.

2. The combination of the grooved base-plate, the sliding boxes, the pivoted hooks, the bearing-plate, and the elastic cushion, substantially as and for the purpose described.

159,716. BREWING BEER. Johannes Stuber and Jacob Stuber, Astoria, N. Y. [Filed Jan. 14, 1875.]

1. In the process of brewing beer, boiling the first wort in a separate kettle, and the second wort, together with the hops, in another kettle, and mixing the two liquids in about equal proportions.

2. The process of fining beer by adding to the beer while in the resting-tanks, one or more times, a quantity of fresh beer, substantially as set forth.

3. The process of fining beer by the action of a mixture of fresh beer with exhausted hops, substantially as described.

159,717. CARRIAGE-FLAP FASTENERS. C. Thomas and W. K. Parker, Boston, Mass., assignors to C. Thomas, D. P. Nichols, and L. B. Nichols, same place. [Filed Dec. 22, 1874.]

Brief.—Improvement on Patent No. 147,861. The improvement consists in the use of a spring, which holds the eccentric lever in place, and keeps it from rattling.



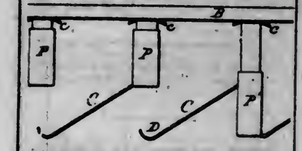
1. The eccentric lever or turning latch, its supporting-plate, and spring-plate, combined substantially as and for the purpose set forth.

2. The supporting-plate c, the spring-plate d, the washer e, and the lever-latch, all combined and operating substantially as described.

3. The combination, with the eccentric lever or turning latch, its supporting-plate, and spring-plate, of the open-eyed loop, all substantially as described.

159,718. REFRIGERATOR-FLOORS. J. Tiffany, Chicago, Ill. [Filed Dec. 5, 1874.]

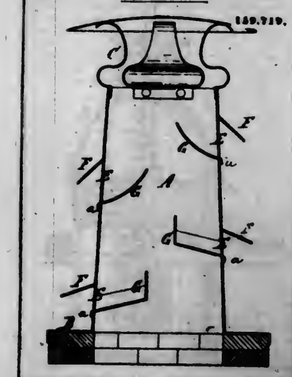
Brief.—The metallic floor is provided with inclines and gutters, for the purpose of carrying off the water of condensation and the drip. In order to control the temperature of the room, cut-offs P are attached to the joists, so as to slide up or down.



1. The ice-floor A', in combination with the inclined plates C and stops or cut-offs P, operating substantially as and for the purpose set forth.

2. The stops or cut-offs P P', in combination with the inclined plates C and the joists A, as and for the purpose specified.

159,719.

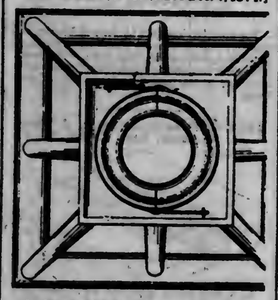


159,719. CHIMNEY-COWLS. J. Tomlinson, Mount Vernon, N. Y. [Filed Jan. 2, 1875.]

Brief.—Air admitted through the openings is deflected upward.

The combination, in a chimney cap or cowl having the external deflectors, F, of a width equal to the width of the air-openings, of the inwardly-projecting deflectors G, constructed to connect with the edge of the air-openings alternately with each other, as and for the purpose specified.

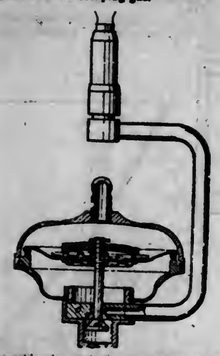
159,720. BABY-WALKERS. L. Tommasi, New Rochelle, N. Y. [Filed Dec. 7, 1874.]



An improved baby-walking assistant, having the table portion thereof with an opening of sufficient size to admit of the vertical introduction of the child, and provided with an independent surrounding cushion hinged to the table, and locked in place to support the child, substantially in the manner, and for the purposes herein described.

159,721. GAS-LIGHT GOVERNORS. N. Tufts, Boston, Mass. [Filed June 20, 1874.]

Brief.—The regulator being in close proximity to the burner, and gas liable to escape through the air-opening, the supplementary burner is provided to prevent damage in case of ignition of the escaping gas.



In combination with the exterior casing of a gas-regulator, a supplementary gas-burner arranged in the ordinary air passage of said burner, substantially as described, for the purpose of spreading the flame should gas escape and ignite.

159,722. CANISTERS. R. D. Van de Carr, Rochester, N. Y. [Filed Jan. 30, 1875.]

A case or canister for holding teas, spices, and other merchantable material or articles, having its front panel or door-plate constructed with a seat or socket for receiving and supporting a clock or its representative, substantially as and for the purpose specified.

159,723.



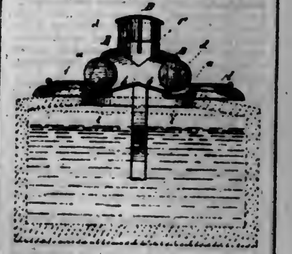
1. The combination, in a grinding apparatus, substantially as described, of a grindstone with a spindle arranged to revolve in fixed bearings, with a combined trough and shield made adjustable in respect to the said spindle.

2. The combination of the shaft B carrying the grinding-disk, the adjustable casing F, and its elongated opening h, with the plate G, made self-adjusting during the adjustment of the casing, as specified.

3. The combination of the frame A, carrying the shaft of the grinding-disk, with the guides e e on the casing, and the bolt D.

159,724. INKSTAND-COVERS. J. N. Wallis, Auburn, N. Y., and F. M. Herbach, Wilkesbarre, Pa., assignors of one-third their right to W. E. Barnham. [Filed Dec. 8, 1874.]

Brief.—Cover has a hood containing balls, which are pushed back to give access to ink.



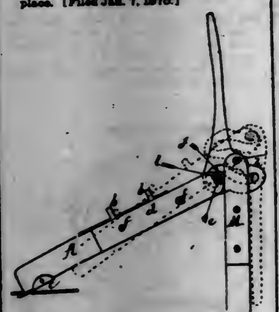
The combination of the cover A, with openings e and inclined planes b, the hood B, with branch C, having cap D, and the balls d, all substantially as and for the purposes herein set forth.

169,725. STENCIL-PLATES. G. B. Warren, Walcott, Vt. [Filed July 27, 1874.]



The combination of the frame A B, provided with opening *a*, and grooved as described, with the clamp, composed of plates D D', bolt *e*, and thumb-screw *d*, all constructed and arranged to hold the letters in place in the manner set forth.

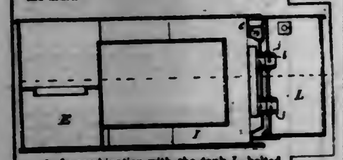
169,726. WAGON-JACKS. J. B. Webster, Genoa, N. Y., assignor of two-thirds his right to M. D. King and L. B. King, same place. [Filed Jan. 7, 1875.]



The lever G, provided with the head h, into which are cut two slots, *i* and *j*, in combination with part A, with guards *b*, and with, part M, all arranged and operating as described.

169,727. COOKING-STOVES. Jas. H. Wentworth, Boston, Mass. [Filed Oct. 3, 1874.]

Brief.—There is a continuous circulation through the chamber and reservoir. The chamber is located in a recess, so as not to obstruct the draft.



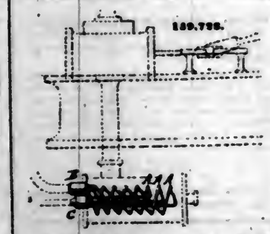
1. In combination with the tank I, bolted to or suspended upon the rear wall of the stove, as set forth, the hollow heating-chamber *g*, constructed as specified, located in an enlargement of the draft-flue at the end of the stove opposite the fire-box, and communicating with the interior of the tank I, by means of the pipes *h h* and *i i*, or their equivalents, substantially as described.

2. In combination with the drop or descending flue H, and the heating-chamber, constructed as set forth, the recessed enlargement *f* of said flue to receive the heater, substantially as described.

169,728. FEED-WATER HEATERS. Robert Wetherill, Chester, Pa., assignor to Robert Wetherill & Co., same place. [Filed Jan. 12, 1875.]

Brief.—The feed-water is divided into two or more streams, running through as many pipes, forming alternate coils, and supplied from a common inlet-head, the ends of the pipes being brought down through the coil, and terminating in a like head. Said coils are placed within a case, into which the steam from the engine is exhausted, then heating the water.

169,729.



The combination, in a feed-water heater, of the pipe B, two or more pipes, A, extending therefrom, and formed into coils, with their ends brought down through the coils, and terminating in the pipe C, substantially as set forth.

169,730. SLIDE-VALVE SEATS. J. Wheelock, Worcester, Mass. [Filed Dec. 17, 1874.]



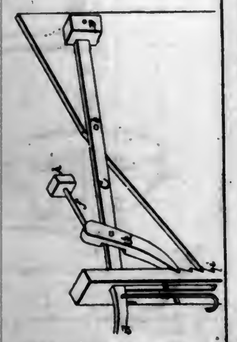
1. A detachable cast-iron valve-seat provided with strengthening-splices of wrought metal, filling grooves on the bars between the ports, substantially as described, whereby the seat is practically prevented from cracking, as set forth.

2. A detachable valve-seat provided with projecting splices on its lower surface between the ports, substantially as described, whereby the seat and cylinder may be connected and a steam-tight joint effected, as set forth.

3. A detachable valve-seat composed of cast-iron, having a chilled valve-surface and strengthening bars of wrought metal, substantially as described.

169,731. HARNESS-HANGING FRAMES. Kury Whiting, Trenton, Wis. [Filed Nov. 12, 1874.]

Brief.—A pivoted lever; hangings, rack, and weighted pawl at one end; counterpoise at the other.



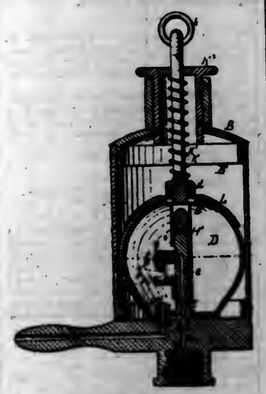
1. The pivoted lever C, having a hook, *d*, formed or attached at one end, and provided at said end with a rod, strap, or wire, *e*, and at the other end with counterbalancing-weight D, substantially as and for the purposes herein set forth.

2. The pivoted lever C, provided with hook *d*, and rod, strap, or wire *e*, in combination with the rack-bar *i* and the pawl G, having arm *f*, with weight h, substantially as and for the purposes herein set forth.

3. The combination of the slotted post B, with rack-bar *i*, pivoted lever C, with hook *d*, rod, strap, or wire *e*, and weight D, and the pawl G, with arm *f* and weight *h*, all substantially as and for the purposes herein set forth.

169,732. GAS-REGULATORS. Frederick W. Wiesebrock, New York, N. Y., assignor to Henry W. Shepard and Robert Seaman. [Filed Jan. 14, 1875.]

Brief.—The valve is connected to and moves with the elastic gas-reception chamber, and is combined with a stationary seat.

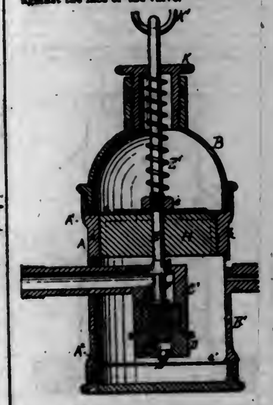


1. The elastic chamber D, inclosed in a suitable outer shell or casing, and having a supply and discharge pipe leading therefrom, in combination with a valve, H, and a valve-seat, G, whose orifice is connected with the channel of the supply-pipe, the whole being combined and arranged to operate as and for the purpose specified.

2. In combination with an elastic chamber, D, and a valve, H, the rod K, spring K', and screw-cap K², the whole being constructed and arranged to operate substantially as described

169,733. GAS-REGULATORS. Frederick W. Wiesebrock, New York, N. Y., assignor to Henry W. Shepard and Robert Seaman. [Filed Jan. 14, 1875.]

Brief.—A plunger attached to the valve-stem serves to counteract the pressure of gas against the face of the valve.

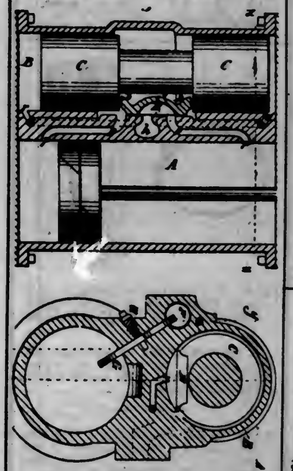


1. In combination with a shell or case, A, the inlet-pipe C, valve F, and plunger F', arranged as shown, whereby while the pressure of the gas in the supply-vessel acts with a tendency to close said valve, the same shall, in a great degree, be neutralized, substantially as described.

2. The valve F, plungers F' H, provided with ground or elastic joints, and connected to the rod E in the manner shown, in combination with the supply-pipe C and opening or valve-seat *c*, the whole being constructed and arranged to operate substantially as described.

3. In a pressure-regulator, a suitable shell or case, having a supply-pipe, C, and discharge-pipe C', stem E, valve F, plungers F' H, provided with ground or elastic joints, spring E', and screw-cap E², the whole being combined and arranged to operate substantially as described.

169,735. STEAM-ENGINES. W. C. Wilcox, San Francisco, Cal. [Filed June 1, 1874.]

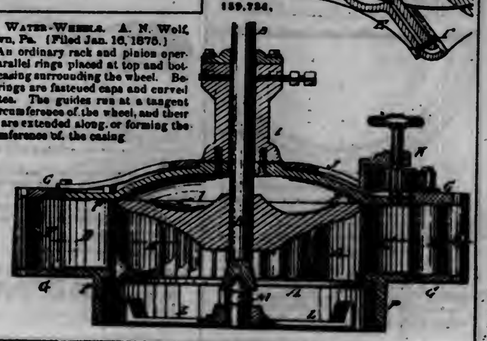


1. The ports *r r*, opening into the ends of the supplemental piston-chamber, and leading to the main valve-face, in combination with the main valve, with its port-S, for the purpose of admitting steam to cushion the supplemental pistos, substantially as herein described.

2. The valve F F', with its central enlargement *f*, in combination with the single supply-port *e*, for admitting steam to the center of the valve, and the steam-ports *i*, exhaust-ports *j*, and the operating-levers G, substantially as and for the purpose herein described.

169,734. WATER-WHEELS. A. N. Wolf, Allentown, Pa. [Filed Jan. 16, 1875.]

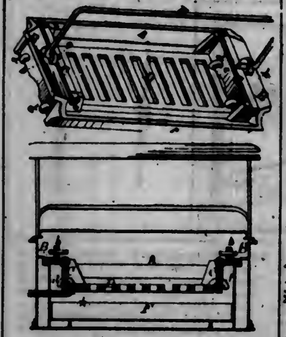
Brief.—An ordinary rack and pinion operates two parallel rings placed at top and bottom of the casing surrounding the wheel. Between the rings are fastened caps and curved register-gates. The guides run at a tangent with the circumference of the wheel, and their outer ends are extended along, or forming the outer circumference of, the casing



1. The register-gates E, gates D, and caps F, arranged together, in combination with the rings C C, substantially as and for the purposes herein set forth.

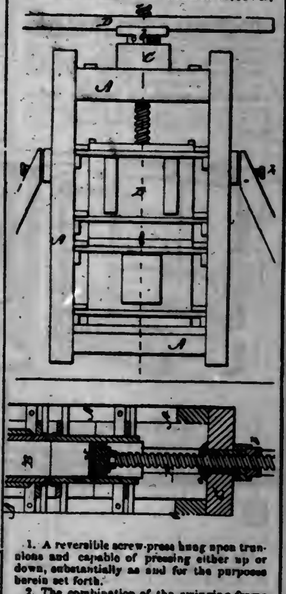
2. The combination of the casing F, water-guides C, gates D, register-gates E, and caps F, all constructed and arranged to operate substantially as and for the purposes herein set forth.

169,736. ASH-SIFTERS FOR STOVES. C. G. Wolfe, Troy, N. Y. [Filed Aug. 1, 1873.]



An ash-sifter having stationary side walls and pivoted swinging end walls, to or from which latter a grated bottom is suspended, and with which said bottom oscillates, substantially as and for the purpose specified.

169,737. HAY AND COTTON PRESSES. W. A. Wright, Griffin, Ga. [Filed Dec. 10, 1874.]

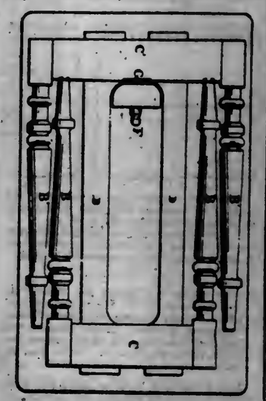


1. A reversible screw-press hung upon trunnions and capable of pressing either up or down, substantially as and for the purposes herein set forth.

2. The combination of the swinging frame A, bale-box B having its sides made in two sections hinged together, screw K, sectional follower G H, trunnions *k k*, braces I I, and bed J, all constructed substantially as and for the purposes herein set forth.

169,738. FOLDING TABLES. Henry York, Philadelphia, Pa. [Filed Oct. 31, 1874.]

Brief.—When the table is folded the inner pair of legs is held by the strip connecting the outer pair of legs, and a spring-latch attached to the under side engages with said strip

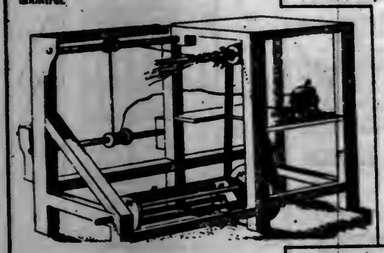


The legs B B', strips C C', and hinged stretcher D, in combination with the latch F, the stretcher D folding under the strips C C', and the legs B folding under the strip C', substantially as and for the purpose set forth.

REISSUES.

6,276. BROOM ALIKERS. Henry Anderson, San Francisco, and Jas. F. Houghton, Sacramento, Cal., assignors, by mesne assignments, to Henry Anderson and J. B. Robinson. Patent No. 150,669, dated May 12, 1874. [Filed Aug. 31, 1874.]

Brief.—The mandrel is provided with a longitudinal groove, in which slides the clamp that holds the tapered broom-socket to the mandrel.

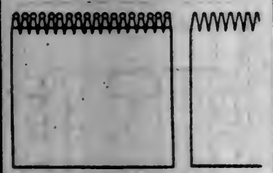




The grooved mandrel F *d*, provided with the spring *g*, having an outwardly-projecting pin, *m*, and knob *k*, substantially as and for the purposes herein specified.

6,276. MANUFACTURE OF MATCHES. Emery Andrews and William Tucker, Pinkedale, Mass., assignors, by mesne assignments, to A. Spring, Saml. H. Spring, and Jas. C. Jordan, Portland, Me. Patent No. 60,197, dated Mar. 26, 1867. [Filed Oct. 1, 1874.]

Brief.—The card from which the matches are made is prepared of the desired width and length, one edge of which is scalloped or notched, so as to form a series of points for dipping in the explosive compound before the matches are cut from the card.

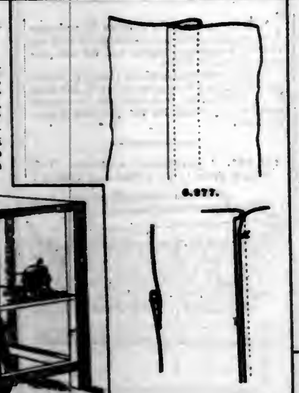


1. In the manufacture of matches, the notched or scalloped and waxed match-card, as herein described, and shown in Fig. 1.

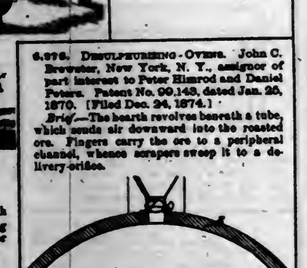
2. Notching and dipping the cards preparatory to cutting the matches therefrom, substantially as and for the purposes specified.

6,277. SEAMS FOR BOOTS, &c. Samuel A. Brockett and W. W. Whitcomb, Boston, Mass., assignors to the Union Patent Seam Company, Hartford, Conn. Patent No. 152,652, dated Dec. 10, 1873; reissue No. 6,251, dated May 6, 1873. [Filed Dec. 21, 1874.]

In the uppers of boots or shoes, the seam formed by stitching together from the outside the two parts to be joined, and then turning the edge of the one part over and stitching it down beyond the edge, and to the main body of the other part, substantially as and for the purposes hereinbefore described.

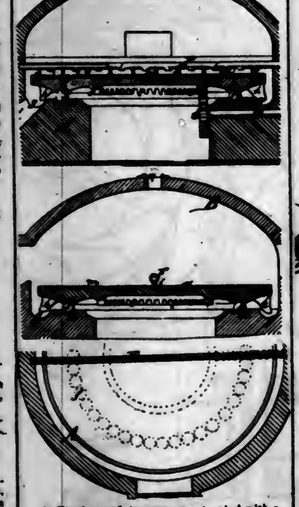


6,277.



6,278. DEVULPEURISING-OVENS. John C. Brewster, New York, N. Y., assignor of part interest to Peter Elmrod and Daniel Peters. Patent No. 99,143, dated Jan. 25, 1870. [Filed Dec. 24, 1874.]

Brief.—The hearth revolves beneath a tube, which sends air downward into the roasted ore. Fingers carry the ore to a peripheral channel, whence scrapers sweep it to a delivery-orifice.



1. The base of the oven, constructed with a groove for receiving friction-balls, and a seat for the shaft *c*, carrying the pinion *b*, in combination with the rotary table, having the groove *a*, gearing *c*, and a stationary air-pipe having jet-openings, substantially as described.

2. The combination, with the revolving table in a furnace, of a receiving channel or trough, and of wipers, for the purpose of automatically removing the ore from the furnace, substantially as shown and described.

6,279. RUBBER-COATED BUCKLES AND RINGS. Ralph C. Dunham, New Britain, Conn., assignor, by mesne assignments, to Andrew Albright, Newark, N. J. Patent No. 56,619, dated Oct. 9, 1866; reissue No. 5,172, dated Dec. 3, 1872. [Filed Dec. 12, 1874.]

1. A buckle or ring composed of a metal core and a coating of rubber or other gum, the said coating being provided with a projecting rib suitable for receiving imitation stitching, substantially as set forth.

2. A buckle or ring composed of a metal core and a coating of composition, provided with a projecting rib suitable for receiving imitation stitching, substantially as set forth.



6,279.

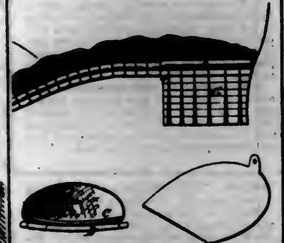
6,280. PANTS AND OTHER GARMENTS. G. B. Eager, Boston, Mass. Patent No. 127,760, dated June 11, 1872. [Filed Nov. 18, 1874.]

A hollow waistband for pantaloons and other garments, when provided with a strap and buckle arranged in the manner and for the purpose set forth.

6,280.



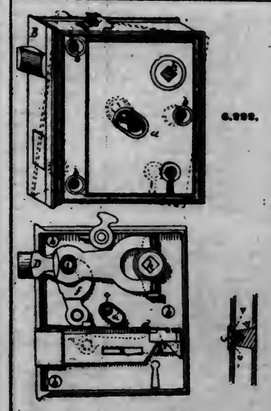
6,281. SHOES. Charles F. Hill, Baltimore, Md., assignor to himself and Geo. D. Hill, same place. Patent No. 156,270, dated Dec. 29, 1874. [Filed Jan. 20, 1875.]



1. A shoe in which a middle sole receiving the lasting-nails is covered by an insole, and the whole united by a line of stitching passing through the outer sole, the upper, the middle, and the insole, substantially as and for the purpose described.

2. The herein-described mode of clinching the heel-nails in the lasting-sole by a removable metallic plate interposed between the lasting-sole and the loose heel part of the stitched insole, substantially as and for the purpose described.

6,282. CARDS FOR REVERSIBLE LATCHES AND LOCKS. J. Elsner, Pittsburg, Pa. Patent No. 123,667, dated Feb. 13, 1872. [Filed Jan. 14, 1875.]



6,283.

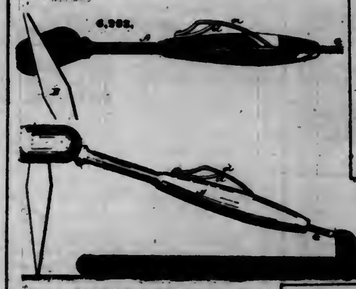
1. A sliding T-joint, in combination with a lock-case, having a removable face-plate and a reversible latch-bolt, whereby the face-plate may be attached and detached, and also held in place without the necessary use of other fastening, substantially as set forth.

2. A head, *c*, vertically adjustable, in combination with the removable face-plate of a lock-case and the engaging edges or lips *c c*, between which the shank or stem of the head *c* slides in attaching and detaching, substantially as set forth.

3. A slot or opening, *a*, widened at one end, in combination with the headed rivet or screw *c* and hub *b*, when arranged so that the case-plate turns on the hub as a bearing while it is being fastened or removed, substantially as set forth.

6,283. TOOLS FOR DRESSING MILLSTONES. James Norman, North Springfield, Mo. Patent No. 154,614, dated Aug. 26, 1874. [Filed Jan. 22, 1875.]

Brief.—Along two sides of a steadying bed-plate are arms pivoted near the front, and attached to a back piece having a series of holes to rest the end of the mill-pick handle when in operation, said handle being made longitudinally adjustable by pawl-and-ratchet mechanism.



6,283.

1. In tools for dressing millstones, a ratchet extension-bar for moving the pick-handle out from any given point on guide-bar D, substantially as set forth.

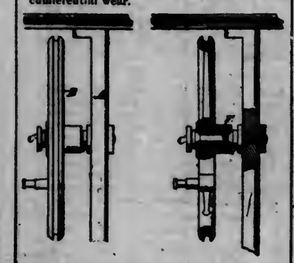
2. The combination of the ratchet extension-bar G and thumb-spring *d*, substantially as shown.

3. The combination of the ratchet extension-bar G, thumb-spring *d*, and spring *b*, substantially as described.

4. The bed-plate C, with the adjustable guide-bar D, said guide-bar being provided with depressions or holes *a a*, for bar G to rest in when in operation, substantially as and for the purposes set forth.

6,284. ANTI-RATTLING JOURNALS FOR BALANCE-WHEELS OF SEWING-MACHINES. P. L. Reese, Mount Sterling, Ky., assignor to the Victor Sewing-Machine Company, Middletown, Conn. Patent No. 124,160, dated Feb. 27, 1872. [Filed Jan. 9, 1875.]

Brief.—The exterior of the journal is screw-threaded. It is provided at its extremity with a conical bearing, and upon its threaded part with a correspondingly-threaded nut. Both the journal and the nut are adjustable in reverse direction, so as to approach each other, whereby the wheel can be adjusted to any position on the line of the journal, and be always kept in line with the band-wheel of the machine, and be compensated both for lateral and circumferential wear.



7. A journal-bearing for balance-wheels of a sewing-machine, provided with a compensating screw-threaded follower or nut, having conical bearing-faces adapted to fit into conical seats in the hub of the wheel, said follower constructed to be advanced along the threaded journal to compensate for lateral and circumferential wear, substantially as described.

2. A screw-threaded journal for the balance-wheels of sewing-machines, provided with followers having conical bearing-faces, either of which may be made to advance along said journal for the purpose of compensating for wear of said wheel upon the bearings, substantially as described.

3. A journal-bearing for the balance wheels of sewing-machines, provided with followers having conical-bearing faces, either of said followers constructed to approach the other, and fit in a conical seat formed in the hub of the wheel for compensating for wear, substantially as described.

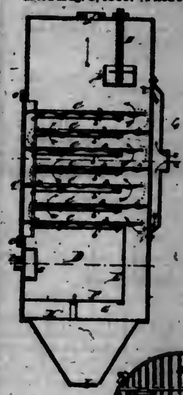
6,285. WATER-HEATING DEVICES. R. R. Stilwell, Dayton, Ohio, assignor, by mesne assignments, to Stilwell & Bierce Manufacturing Company. Patent No. 93,244, dated Aug. 3, 1869. [Filed Jan. 23, 1875.]

1. The wheel A, constructed with buckets concave at the bottom, both longitudinally and transversely, and terminating at the top with the quadrant curve A', substantially as set forth.

2. In combination with the wheel having its buckets terminating above in a quadrant curve, as shown at A', a dome-formed casing, B, having a quadrant concavity, B', adapted to the form of the wheel, substantially as set forth.

3. In combination with the dome-formed casing B, a correspondingly-formed register-gate, having its bearings on flanges or seats formed on the dome B, substantially as shown.

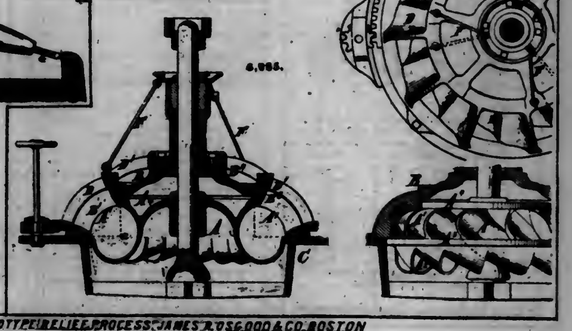
4. The register-gate ring D, in combination with the rods F and stationary collar G, so arranged that when the former is turned, it shall be raised from its seat, substantially as set forth.



6,285.

6,285. WATER-WHEELS. John W. Ross, Delphos, Ohio, assignor of one-half interest to Jos. W. Hunt, same place. Patent No. 152,616, dated June 30, 1874. [Filed Jan. 12, 1875.]

Brief.—The buckets are concave at the bottom, both longitudinally and transversely, terminating at the top with a quadrant curve, so as to receive the water as it enters between the guides, and diverting it, so that, bearing against the faces of the buckets, it emerges through the issues and escapes vertically through the tube. The gate is connected by rods to a collar, so that when it is turned it is raised from its seat, and thus relieved of friction.



6,286.

1. A heater and feed-water purifier, composed substantially of a series of heating and depositing shelves, a sediment-collecting chamber, and a filter-chamber, arranged in such relation to each other that the water is first passed in thin streams over the shelves for heating by steam for the deposit of crystallizable salts, thence into a sediment-chamber, where the heavier elements settle, and from which it passes through filtering material in a filter-chamber, where the lighter and remaining separable impurities are removed, substantially as herein set forth.

2. The sediment-chamber or mud-receptacle G, in combination with a series of shelves, C, and the upward filter-chamber D, substantially as herein set forth.

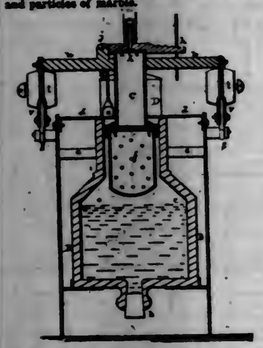
3. In combination with a feed-water heater and purifier, which contains a series of shelves, a sediment-chamber, located in the order of operation between the shelves and a filter-chamber, the filter-chamber so constructed that the water must flow upwardly through the filtering material, substantially as herein described.

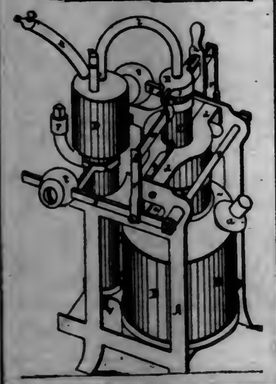
4. In combination with case A the shelves C, constructed and arranged in sections substantially as and for the purpose specified.

5. The door A' applied to shell A by means of the adjustable bars *c e* and bolts and nuts, substantially as described.

6,927. CARBONIC-ACID-GAS GENERATORS. Otto Zwietusch, Milwaukee, Wis. Patent No. 145,774, dated Dec. 23, 1873. [Filed Dec. 9, 1874.]

Brief.—The neck of the jar is used as a cylinder. The flange upon the edge of the basket and that upon the hollow piston clamp a self-acting packing. Pressure downward is brought upon the piston by levers and weights, and upward by the gas. The gas is drawn off through the marble suspended in the basket above the acid, and through the hollow piston, thus arresting the passage of foam and particles of marble.





1. Generating-jar B, having a narrow cylinder extending at the top, with an inlet at the side and an outlet at the bottom, as specified.

2. A carbonic-acid-gas generator, from which the gas passes off through a piston, substantially as described.

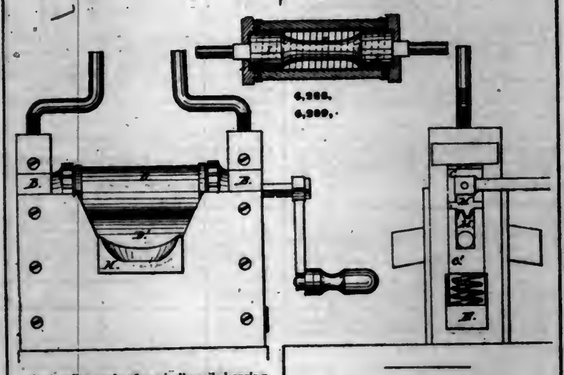
3. Generator B, in combination with the basket *f*, piston C, packing *o o*, packing *x x*, cover E, cleris *h*, cross-bar *u*, and levers *r s*, weights *t t*, and connections *v v*, substantially as described.

4. Cross-bar *c*, cover *d*, and generator B, all in combination with latch *g*, substantially as described.

5. The combination of safety-valve *m*, washer D, and generator B, substantially as set forth.

6. A self-regulating carbonic-acid-gas generator, constructed with a piston and with a basket or bag attached thereto, whereby the alkali is raised out of the acid by means of the piston, substantially as set forth.

6,928. WRINGING-MACHINES. Bailey Washing and Wringing Machine Company, Woonsocket, R. I., assignee, by mesne assignments, of Thomas Allender, (executor of John Allender, deceased.) Patent No. 22,539, dated Jan. 11, 1859; reissue No. 1,709, dated June 26, 1864; reissue No. 1,807, dated Nov. 8, 1864; reissue No. 1,934, dated Apr. 18, 1865; extended seven years. [Filed Dec. 23, 1874.]



1. A roller made of a spirally-coiled spring, arranged on a shaft or roller made smaller at the center than at the ends, as and for the purposes specified.

2. A roller yielding more at its center than at or near its ends, covered with vulcanized rubber, or any other elastic compounds impervious to water.

3. Cog-wheels, in combination with rollers of vulcanized rubber, or any other elastic substance or compound impervious to water, for the purpose set forth.

4. Rollers made of or covered with vulcanized rubber, or any other elastic substance or compound impervious to water, in combination with cog-wheels and a spring or springs around the shaft of the roller, for the purpose set forth.

5. Rollers for washing or wringing machines, made of or covered with vulcanized rubber, or any other elastic substance or compound impervious to water, in combination with adjusting spring or springs.

6. Rollers for washing or wringing machines, made of or covered with vulcanized rubber, or any other elastic substance or compound impervious to water, in combination with adjusting spring or springs and screw or screws, to adjust the pressure to the springs and rollers.

7. The guide or guides, in combination with the squeezing-rollers, made of or covered with vulcanized rubber, or other elastic material impervious to water.

8. Rollers made of or covered with vulcanized rubber, or other elastic material impervious to water, in combination with cog-wheels and a guide or guides, substantially as described.

6,929. WRINGING-MACHINES. Bailey Washing and Wringing Machine Company, Woonsocket, R. I., assignee, by mesne assignments, of Thomas Allender, (executor of John Allender, deceased.) Patent No. 22,539, dated Jan. 11, 1859; reissue No. 1,709, dated June 26, 1864; reissue No. 1,807, dated Nov. 8, 1864; reissue No. 1,934, dated Apr. 18, 1865; extended seven years. [Filed Dec. 23, 1874.]

A portable stand or bench provided with upright standards, in combination with elastic squeezing-rollers impervious to water, substantially as described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 7. TUESDAY, FEBRUARY 16, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

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DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date February 16, 1875.]

8,057.—Window-Bracket.—NATHANIEL L. BRADLEY, West Meriden, Conn., assignor to BRADLEY & HUBBARD, same place. Application filed December 5, 1874. Term of patent 7 years.

8,058 to 8,061, inclusive.—Aquariums.—JOSEPH W. FISKE, New York N. Y.—Cases A, B, C, and D. Applications filed January 18, 1875. Term of patents 7 years.

8,062.—Carpets.—ALFRED REUFERN, Philadelphia, Pa., assignor to SAMSON MCDOWELL, same place. Application filed February 4, 1875. Term of patent 3½ years.

8,063.—Spice-Can.—ZACHARIAH R. TRAVER, Detroit, Mich. Application filed December 11, 1874. Term of patent 7 years.

8,064.—Bottles.—FRANK S. UPTON, Rochester, N. Y. Application filed February 3, 1875. Term of patent 3½ years.

8,065.—Gas Fire-Log.—THOMAS N. DIXON, Philadelphia, Pa., assignor to himself, GEORGE B. DIXON, and HENRY P. DIXON, same place. Application filed February 10, 1875. Term of patent 14 years.

8,066.—Alto-Relievo.—WILLIAM B. GLEASON, Boston, Mass. Application filed December 19, 1874. Term of patent 7 years.

8,067.—Coffin-Handle Sockets.—JOHN R. MACKAY, West Meriden, Conn., assignor to O. ROGERS & BROS., same place. Application filed February 5, 1875. Term of patent 7 years.

8,068.—Cigar-Box.—MAX MOLL, New York, N. Y. Application filed February 5, 1875. Term of patent 7 years.

8,069.—Fork and Spoon Handles.—CHARLES OSBORNE, North Attleborough, Mass., assignor to the WHITING MANUFACTURING COMPANY, New York city.—Case B. Application filed February 9, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date February 16, 1875.]

2,228.—Cigars.—F. DE BARY & Co., New York, N. Y. Application filed February 1, 1875.

"'Key West Branch' of 'the El Principe de Gales Factory, Havana,' combined with the name and fac-simile signature of the proprietors 'V. Martinez Ybor & Co.'"

2,229.—Salves.—CHARLES HEINRICH, Plainfield, N. J. Application filed February 18, 1875. "'The Good Samaritan.'"

2,230.—Mustards.—JEWETT, SHERMAN & Co., Milwaukee, Wis. Application filed February 3, 1875.

"the representation of a coat-of-arms."

2,231.—Medicine.—JULIUS KAISER, Pittsburg, Pa. Application filed February 4, 1875.

"'Kaiser's Extra Fine Bitters, Elixir of Life.'"

2,232 to 2,236 inclusive.—Clocks.—FLORENCE KROEBER, Hoboken, N. J.—Case A, "'Albatross.'" Case B, "'Oneida.'" Case C, "'Niagara.'" Case D, "'Kansas.'" Case E, "'Polaris.'" Applications filed February 5, 1875.

2,237.—Cigars.—LICHTENSTEIN BROS. & Co., New York, N. Y. Application filed January 25, 1875.

"the representation of an eagle alighting with spread wings on the top of a rocky promontory, beyond which the sun is rising above the horizon of the sea."

2,238.—Medicine.—EPHRAIM G. LEWIS, Pittsylvania county, Va. Application filed February 5, 1875. "'Reboro.'"

2,239.—Packing for Stuffing-Boxes, &c.—WILLIAM HARTLEY MILLER, Philadelphia, Pa. Application filed February 9, 1875.

"a flat pasteboard core for packing for stuffing-boxes, engines, pumps, &c."

2,240.—Cigars and Cigarettes.—GUSTAV SALOMON, New York, N. Y. Application filed February 1, 1875.

"'The Centennials de G. S. Fabrica de Tobacos, Habana.'"

2,241.—Cigars.—JAMES M. SEIP, Allentown, Pa. Application filed December 29, 1874. "'Three Brothers.'"

2,242.—Fertilizers.—WALTON, WHANN & Co., Wilmington, Del. Application filed November 1, 1871.

"'Bahama Soluble Guano.'"

2,243.—Compound for Destroying Rats, Mice, Roaches, &c.—EBHRAIM S. WELLS, Jersey City, N. J. Application filed February 3, 1875. "'Rough on Rats.'"

2,244.—Refined Sugars.—WOODS, WEEKS & Co., Baltimore, Md. Application filed September 29, 1874. "'Cosmopolitan.'"

2,245.—Sewing-Silk.—BRAINERD, ARMSTRONG & Co., New York, N. Y., and Philadelphia, Pa. Application filed December 26, 1874. "'Centennial.'"

2,246.—Bathing-Powders.—FREDERICK RAUCHFUSS, New York, N. Y. Application filed February 12, 1875.

"the figure of an oak tree, surrounded by the arbitrary word-symbol 'TANCATHOLICON.'"

INDEX OF INVENTIONS PATENTED FEB. 16, 1875.

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Ballantine, A. T., Door spring	159,785
Barker, J., Doffing mechanism for carding machines	159,742
Barker, J. M., assignee	159,965
Barker, V., Green corn cutter	159,741
Barnes, E. L., Spirit level	159,882
Batchelder, H. J., Horseshoe machine	159,743
Bayliss, T. R., Manufacture of metallic cartridge cases	159,883
Beanland, J. E., Quadrant for opening, shutting, and fastening windows	159,744
Beck, A., Quilting machine	159,884
Becker, A., Wash boiler	159,745
Beckett, W. H., Stop cock	159,746
Bell, H. P., Rock drill	159,885
Bell, J. W., Compound engine	159,786
Bertolette and Crossley	159,907
Best, C. V., Bracket lamp	159,747
Bilbrough, J., assignee	159,974
Bingham, W. E., Hog ringing nippers	159,886
Bird, C., and W. H. Sallenberger, Car pusher	159,787
Blakely, J., assignee	159,951
Bloede, V. G., Treating oil	159,887
Blossom and Gardner	159,810
Boehmer, W., Stove drum	159,888
Borchardt, H., Bullet patching machine	159,748
Boyd, D., Hot air furnace, (reissue)	6,290
Bramble, J., Jr., Burnishing plate for photographic burnishers	159,889
Brinckerhoff, E. O., Cooking stove	159,788
Brooks, F. W., Ballot box	159,890
Broyles, W. S., Corn sheller	159,789
Bruce, N. H., Knitted garment	159,891
Bruen, W., and D. Gridley, Shawl strap handle	159,892
Bullock, J., Bee hive	159,893
Bullough, J., Loom stopping mechanism	159,983
Bullough, J., Loom stopping mechanism	159,984
Bullough, J., Loom stopping mechanism	159,985
Bullough, J., Loom stopping mechanism	159,986
Bunnel, J. H., Telegraph sounder	159,894
Burger, T. W., Register pepper box	159,895
Burgher, P. D., Shingle planing machine	159,790
Burkhard, T., assignee	159,899
Bush, R. T., Nozzle for cans	159,896
Butler, W. H., Bolt work for safe doors, &c	159,791
Butler, W. H., Safe deposit box	159,897
Byram, F. A., Combined camp stool and cane	159,898
Cairns, W., Apparatus for sugar coating confectionery, pills, &c	159,899
Camp, O. S., Pail	159,792
Carruthers, H., Self-closing hopper cock	159,900
Carter, F. S., and C. B. Hewett, Electric annunciator	159,901
Chafee, N. M., Molder's flask	159,793
Champion, H. E., Steam boiler furnace	159,902
Chinnock, G. H., Machine for soldering sheet metal lids	159,903
Church, D. M., and W. F. Gilbert, Sharpening attachment to forks	159,794
Clark, W. J., Manufacture of bolts, (reissue)	6,291
Clarke, A., Vehicle umbrella support	159,795
Clough, W. R., Bill file	159,796
Coleman, M. J., Bolt and Nut Company, assignee	159,922
Comstock, L. R., Stove	159,797
Conboy, D., Carriage seat	159,798
Conigisky, L., Bustle	159,799
Converse, B. C., assignee	159,996
Coombe, J., Eyeleting machine	159,904
Cornell, S., assignee	159,951
Couch, S. W., Window ventilator	159,800
Cowell, J. J., assignee	159,880
Cox, C. G., Plow	159,905
Crocker, S. L., Refining copper, &c	159,801
Crompton, G., assignee	159,963, 159,964, 159,985, 159,986
Cross, C. G., Wood boring machine	159,749
Crossley, T., and L. A. Bertolette, Unloading attachment for carts, &c	159,907
Crow, W. J., Water closet	159,906
Culbertson, A. J., Car spring	159,802
Cummins and Hartin	159,922
Curtis, H. W., Wardrobe bedstead	159,908
Curtiss, E. P., Knitting machine	159,750
Davis and Trible	159,980
De Quillfeldt, C., Window shade fixture	159,803
Devinney, C. D., assignee	159,783
Dewers, E. C., Mowing machine	159,804
Dierker, D., Shaft hanger	159,909
Doan, W. H., assignee	159,961
Dobbs, W. T., Tubing wells	159,805
Domestic Sewing Machine Company, assignee	159,963
Doremus, W. T., Chair	159,806
Dryfoos, L., assignee	159,884
Duncan, J., Lap table for milliners, &c	159,910
Dunham, H., Jr., Boot and shoe sewing machine, (reissue)	6,295
Durant, E. G., Stand for flower pots and vases	159,911
Earle, O. T., Burning hydrocarbons	159,751
Earp, W., assignee	159,950
Edson, N. T., Band saw frame	159,807
Edwards, G. K., Ironing table	159,752
Eggo, F., assignee	159,928
Eickemeyer, R., Machine for pouncing hats	159,912
Entrekin, W. G., assignee	159,889
Fanning, D. H., Corset	159,753
Fargo, C. H., & Co., assignees	159,991
Farmer, M. G., Sending and receiving messages simultaneously over the same telegraph wires, (reissue)	6,296
Felt, V. H., Harvester rake	159,103
Ferguson, S. T., Plow adjuster	159,913
Flummerfeldt, D. A., Washing machine	159,914
Foote, T. C., assignee	159,750
Ford, J. B., assignee	159,795
Foster, H., Carriage curtain fastening	159,809
Fuller, T. D., assignee	159,958
Furbish, M. A. and C. A., assignee	159,742
Gardner, W., Drag	159,811
Gardner, W. R., and C. C. Blossom, Pin	159,810
Garland, H. P., Sewing machine for stitching socks	159,812
Garrett, W., assignee	159,814
Garvey, W. J., Holder for ornaments, &c	159,813
Gee, W., Soda water draft apparatus	159,915
Geerhart, N. A., assignee	159,982
Gerry, E., Anti-friction roller	159,754
Gibson, H. B., assignee	159,766
Gilbert and Church	159,794
Gillespie, J., Binder for roll couplings	159,814
Girbardt, L., Reversible hat	159,916
Givens and Shirran	159,972
Glassbrook, M., Vehicle wheel spoke socket	159,917
Gleason, E., and R. Hamilton, Machine for sharpening horseshoe calks	159,918
Goldsmith, A. A., Bale tie	159,815
Goodwin, W. W., Gas retort	159,816
Goodwyn, S. T., Steam culinary vessel	159,755
Gowan and Heale	159,924
Gram, E. W., and J. Nelson, Stove	159,919
Gray, H., Tea kettle	159,817
Gridley and Bruen	159,892
Grim, D., Vehicle wheel	159,818
Gump, W. E., Printing press	159,819
Hale, H. S., J. W., and W., assignees	159,908
Hamblin, S. and S. M., File cutting machine	159,756
Hamilton and Gleason	159,918
Hamilton, I. S., Gage cock	159,920
Harris, J., Jr., Device for heating tires	159,830
Harris, S. J., assignee	159 952
Hart, A. W., Camp stool	159,757
Hart, W. H., Jr., Neck tie	159,921
Hartnett and Mayall	159,946, 159,947
Hartin, P., and W. Cummins, Tool for pointing bolts	159,922
Harwood, G. S., Feeding mechanism for carding machines	159,923
Heale, H. W., and E. D. Gowan, Cock or valve	159,924
Heath, R. F. S., Canopy frame	159,925
Heath, R. F. S., Binding and wiring hat frames	159,926
Hedge, F. B., Garden rake	159,821
Herrington, E. F., Journal bearing for harvesters	159,758
Hewitt and Carter	159,901

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Hinckley, L., Amalgamator	159,759
Hogue, C. C., Stump puller	159,760
Hoover, G. W., Harness	159,927
Hotchkiss, A. E., Toy	159,928
Howard, A. G., Leather strap skiving machine	159,822
Howes, C., Clothes drier	159,823
Hughes, F. L., Child's carriage	159,761
Hussey, C. A., Car axle box	159,824
Ingersoll Rock Drill Company, assignee, (reissue)	6,292, 6,293
Ingersoll, S., Rock drilling machine, (reissue)	6,292
Ingersoll, S., Rock drill, (reissue)	6,293
Jackson, C. H., assignee	159,787
Jackson, P. H., Steering apparatus	159,826
Jacoby, S., Cigar box	159,825
Jacoby, S., Cigar packing implement	159,929
James, J. W., and J. Streit, Washing machine	159,827
Johnson, D. A., Device for attaching hubs to axles	159,762
Jones, J. A., Spring bed bottom	159,930
Joyce, T. T., Brick machine	159,931
Judd, L. S., assignee	159,756
Keith, D. W., Nail plate feeder	159,932
Kenny, F. J., Ship's lantern	159,933
Kerper, J. N., Machine for dusting bricks	159,934
Kilburn, A. and C., assignees	159,908
Kilpatrick, J., assignee	159,943
Kinne, C. W., Wagon body	159,828
Kirtley, S. C. D., Metallic tip for wooden pails, &c	159,935
Kirton, J. H., Harvester rake	159,936
Klobasse, V., Game apparatus	159,937
La Bay, E. A., Bird house	159,938
Lamborn, W. L., Railroad frog	159,763
Lawrence, L. L., and G. S. Thomas, Corn planter	159,939
Lear, P., Loom shuttle	159,764
Le Van, W. B., Hydraulic elevator	159,829
Leverich, G., Vehicle wheel	159,940
Lilliendahl and Wolfe	159,995
Lo Forte, R., Winter rail for high stoops	159,830
Love, J. C., Drop light	159,941
Love, J. C., Lamp holder	159,942
Lyons, P., assignee	159,914
Macdonald, J. A., assignee	159,906
Mackay, P. N., Flux for treating ore	159,831
Manny, A. M., Corn planter	159,832
Masterson, L. J., Conductor's alarm and registering hand stamp	159,765
Masterson, L. J., Ticket reel	159,943
Mathers, G. C., Curtain fixture	159,944
Maxwell, S. F., Manufacture of nail kegs	159,945
Mayall Power Printing Press Company, assignee	159,946, 159,947
Mayall, T. J., and R. W. Hartnett, Machine for shaving curved stereotype plate backs	159,946
Mayall, T. J., and R. W. Hartnett, Delivering apparatus for printing presses	159,947
McCoy, J., assignee	159,844
McCrosson, W., Bit for boring metals	159,948
McDermott, C., Iron wedge	159,949
McKay, G., assignee, (reissue)	6,295
McKenzie, A., Manufacturing carriage shackles	159,950
McLean, J., assignee	159,979
McNabb, J., Mechanism for trimming ships	159,951
McQuary, T., Portable fence	159,952
Mead, C. V., Bank check	159,833
Merrill, H. W., Sandpapering machine	159,933
Merick, E. J., Broom head	159,934
Millot, T. and J., Flower maker's grass cutting machine, (reissue)	6,297
Moffatt, R. R., Construction of ordnance	159,834
Mollitt, J. R., Apparatus for shaping boot and shoe counter stiffeners	159,835
Monitor Plow Works, assignee	159,913
Moore, J. C., Car starter	159,766
Muchin, M., Steam governor	159,955
Mullett, A. B., and F. Schumann, Construction of jetties for improving river channels	159,956
Mundell, J. & Co., assignees	159,991
Murphy, J. H., Can opener	159,767
National Ballot Box Company, assignee	159,890
Nelson and Gram	159,919
Oliver, W. L., Governor for wind mills	159,768
Olsen, T., Casting scale levers	159,957
O'Neil, J., Sewing machine	159,958
Osborn, F. M., Dental reflector	159 836
Osborne, D. M., & Co., assignees	159,808
Parker, H. G., Flume for conveying timber	159,959
Parkhurst, J. P., assignee	159,917
Parsons and Twitchell	159,866
Parts, A. F. W., Drier for refined sugar	159,769
Patent Grape Sugar Company, Limited, assignee	159,837
Patrick, Bunnell & Co., assignees	159,894, 159,901
Payne, B. N. and D. W., assignees	159,920
Pearse, E. E., Manufacture of grape sugar	159,837
Pfund, A., Faucet	159,960
Phelps, M. D., Lightning rod	159,961
Polster, F., Repeating action for pianos	159,838
Porter, N. A., Slate frame	159,839
Potter, E. M., Seed planter	159,840
Powell, E., Ruffler	159,963
Powell, J., Steam engine lubricator	159,962
Powleson, W. L., Smoke consuming furnace	159,964
Prescott, S. A., Lamp shade support	159,965
Price, E. L., Compound implement	159,841
Prondfoot, F., Heading drum	159,966
Putnam, E., assignee	159,889
Quinn, W., Velocipede	159,770
Rice, J. H., Cultivator	159,842
Richardson, L., assignee	159,903
Ridgway, J. H., Refrigerator	159,843
Rigby, A., Plow	159,967
Roberts, M. H., Heater	159,844
Robinson, A., Package for prints of butter	159,845
Robinson, J. H., Heating stove	159,968
Rosenthal, G., Reflector	159,969
Rosenthal, H. A., Pigeon starter	159 846
Rowland, C. and J. G., Peg or sole fastening, (reissue)	6,298
Rowland, C. and J. G., Machine for making compressed peg strips, (reissue)	6,299
Sallsday, L., assignee	159,811
Sammis, J. B., assignee	159,940
Sanford, S., Loom for weaving piled fabrics	159,847
Sawyer, W. H., Telegraphic signal box	159,771
Schade, J., Padlock, &c	159,772
Schumann and Mullett	159,956
Schwaner, C. C., Dash board	159,848
Sellers, W., and G. H., Revolving puddler	159,849
Shellaberger, M. M., Sickle head for harvesters	159,970
Sheffy, B. B., Car coupling	159,850
Shipley, P. A., and A. Wheeler, Washing machine	159,971
Shirran, A., and W. J. Givens, Hoof trimmer	159,972
Small, H. M., Deodorizer for bed vessels	159,773
Smith, A. A., Wire way	159,973
Smith, F. W., assignee	159,938
Smith, G. J., Whiffletree hook	159,851
Soule, L., Machine for making shoe nails	159,852
Sowle, J., Window curtain cornice	159 774
Spencer, C. A., assignee	159,995
Stamour, J. B., Car coupling	159,974
Staniford, D. T., Cranberry separator	159,853
Starr, W. F., Car coupling	159,975
Steinbach, G. P., Child's walking chair	159,976
Stickles, O. J., Milk cooling apparatus	159,854
Streit and James	159,827
Stumm, T., Washing machine	159,855
Sturtevant, B. F., assignee, (reissue)	6,296, 6,299
Sturtevant, B. F., Blank for shoe pegs, (reissue)	6,300
Sturtevant, B. F., Pegging machine	159,775
Sturtevant, B. F., Pegging machine	159,776
Sturtevant, B. F., Sole fastening	159,777
Sturtevant, B. F., Peg or ribbon peg wood	159,778
Sturtevant, B. F., Pegging machine	159,856
Sturtevant, B. F., Pegging machine	159,857
Sturtevant, B. F., Pegging machine	159,858
Sturtevant, B. F., Machine for compressing sole fastenings	159,859
Sturtevant, B. F., Ribbon peg wood	159,860
Sturtevant, B. F., Peg or sole fastening	159,977
Sullenberger and Bird	159,787
Swift, A., and J. E. York, Roll for rolling angle iron	159,978
Swingle, G. R., Broom	159,861
Thomas and Lawrence	159,939
Thomas, C., assignee	159,931
Thompson, G. M., Car coupling	159,862
Thompson, R., Machine for making cutters for grooving needles	159,863
Titus, J. B., Saw set	159,979
Topliff, C. L., Barrel roller	159,864
Traut, J. A., Block plane	159,865
Trible, H., and N. A. Davis, Propelling device for street cars, &c	159,980
Tully, T., Faucet	159 981
Twitchell, H., and G. E. Parsons, Snow plow	159,866
Tyler, H., Explosive shell	159,982
Van Winkle, G., Sulky attachment to plows	159,779
Varian, S. T., Weather strip for windows	159,867
Very, T. S., assignee	159,743
Viele, P. B., Folding bedstead	159,780
Virgo, J. R., Sheep holder for shearing	159,868
Vuillier, A., Vegetable slicer	159,869
Ware, J. A., administrator	159,983, 159,984, 159,985, 159,986
Warren, B. F., Differential pulley block	159,987
Warren, J., assignee	159,982
Warth, A., Machine for piling textile materials	159,988
Wayne Agricultural Company, assignee	159,939
Webb, J. B., Drawing board	159,870
Webber, T. E., Shaft tug for harness	159,781
Weightman, J. C., Grate	159,871
Weldon, J. G., Hot air furnace, (reissue)	6,294
Wenzel, H., Parlor fountain	159,872
Werden, C. A., Fruit gatherer	159,873
West, W. N., Corn harvester	159,990
Westcott, J. H., Scroll chuck	159,989
Westerfield, W., Street sprinkler	159,874
Westinghouse, G., Jr., Steam engine valve gear	159,782
Westwood, J. T., Cut nail machine	159,783
Wheeler and Shipley	159,971
Wheeler and Wilson Manufacturing Company, assignee	159,863
Wheeler, C., Jr., Harvester dropper	159,875
White, H., Shoe tip	159,991
Whittingham, H., Joint for steam generators	159,992
Wilby, F. H., Form for forming watch case backs	159,993
Wilder, A., Apparatus for drying oil cloth, &c	159,876
Williams, W., Land roller	159,784
Williamson, D., Mechanical movement	159,877
Wilson, J. L., Churn	159,878
Winsor, A., assignee	159,756
Withers, J. N., Sash fastener	159,994
Wolfe, D. J., and G. A. Lilliendahl, Torpedo filling machine	159,995
Wolleton, P. N., Clothes wringer	159,996
Wood, J., assignee	159,956
Wood, W. A., Harvester	159,879
Woolfolk, L. B., Process and apparatus for cooling liquids	159,997
York and Swift	159,978

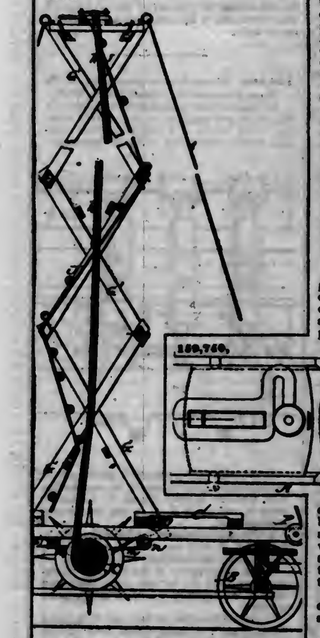
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED FEBRUARY 16, 1875.

159,739. FIRE-ESCAPES. Juan Arnao, José Francisco Arnao, and Juan Arnao, Jr., Brooklyn, N. Y. (Filed Nov. 19, 1874.)

Brief.—A long-range fire-escape, in which the hose-reel is fitted loosely on the elevating-shaft.



1. The central shaft, *f*, provided with hose *h*, windlass I, and ratchets K, in combination with ropes *n*, pulleys *o n*, and bars G, all substantially as and for the purposes set forth.

2. The ways CC, pawls (, shafts E E, flanged wheels D D, in combination with ropes *m*, pulleys *o n*, loose reel K, hose *h*, and windlass I, all constructed and arranged as and for the purpose specified.

159,759. FIRE-REGULATOR. A. A. Athine, St. Petersburg, Pa. (Filed July 15, 1874.)

Brief.—An oil-tube provided with apertures, and operated so as to graduate the flow of oil.



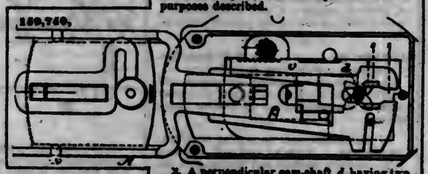
1. The oil-tube B, provided with apertures *b*, in combination with the tube B', constructed and operating as an to allow the graduation and regulation of the flow, as shown and specified.

2. The oil-tube B, having apertures *b*, in combination with the casing A A', and oil-tube B', constructed and operating as and for the purposes herein described and shown.

159,760. BUTTON-HOLING ATTACHMENTS FOR SEWING-MACHINES. Samuel J. Baird, Richmond, Va. (Filed Oct. 23, 1874.)

Brief.—A cam operating in the end of the lever which carries the cloth-clamp vibrates the button-hole while being stitched. The two parts of this lever slide one within the other, and their surfaces are so formed with respect to the longitudinal center line of said lever that when said parts are drawn out or closed together, they swing the lever around on its pivot, carrying with it the clamp, thus bringing the button-hole in position for stitching its opposite sides. The requisite reciprocating feed is communicated to the cloth-clamp by a double internal rack, so arranged that either of its halves may be brought in contact with an intermittently-revolving pinion, receiving motion from the operating parts of a sewing-machine through a reciprocating rod acting in a spiral groove in a shaft carrying a pawl, which actuates a ratchet formed on the lower end of said pinion. The cam which vibrates the lever carrying the cloth-clamp is operated by a gear on the spirally-grooved shaft acting upon a rack which carries arms that move a four-toothed ratchet formed on the cam-shaft.

1. An extension-lever, consisting of the two pieces A and B, the latter having a slot diagonal to the line of its movement upon A and of unequal diameter, with lips or projections at the wider part, substantially as and for the purpose described.



2. A perpendicular cam-shaft, *d*, having two cams of different diameter and throw, in combination with the slot and its projecting lips, substantially as and for the purposes described, whereby the proper vibration and adjustment are accomplished for the successive forming of the sides and baring of the ends of the button-hole.

3. The double rack G and rack-guide F, in combination with the adjustment-cam *h*, substantially as and for the purposes described.

4. A reciprocating driving-shaft and twist-shaft, in combination with the automatic pawl *s* and ratchet-wheel D, substantially as and for the purposes described.

5. The driving-shaft and twist-shaft, in combination with a segment gear, rack, and sliding bars, substantially as and for the purposes described.

6. A four-toothed ratchet, having the two opposite teeth in one plane, and the alternate teeth in another plane, and reciprocating bars, one of which moves in the plane of each pair of teeth, in combination with the cam-shaft and excentric-lever, substantially as and for the purposes described.

7. The feed-bar I, in combination with the pin or cam on the end of a revolving shaft, *r*, to act upon the thread under the cloth, substantially as and for the purposes described.

159,761.



1. The pivoted spring-arms *h*, having the flanges *g*, and the knives *l*, as herein described.

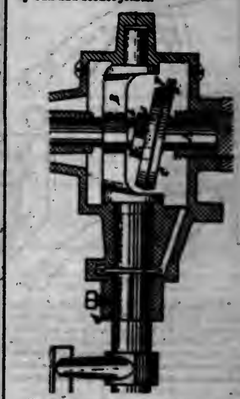
2. The combination, with the trough *c*, slotted for the passage of the rock-bar, of the rod *d* and cutters *l*, all arranged, combined, and operating as herein set forth.

3. The perforated back plate, *i*, provided with the pivoted spring-arms *h*, the knives *l*, and springs *j*, carrying the scrapers *m*, all combined and arranged to operate as herein set forth.

4. The combination of the rod *d*, the adjustable flanges *g* on the pivoted spring-arms, the cutters *l*, and scrapers *m*, as and for the purposes herein set forth.

159,762. DOFFING MECHANISMS FOR CARDING-MACHINES. Jas. Barker, Philadelphia, Pa., assignor to Merrill A. Furbush and C. A. Furbush, same place. (Filed Nov. 9, 1874.)

Brief.—Rotary motion imparted to the vertical shaft and its inclined disk imparts, through the washer, an oscillating motion to the yoke, the horizontal shaft, and the comb, the yoke extending on both sides of the vertical shaft, and being connected to the washer by ball-and-socket joints.



The shaft A, angular disk C, washer F, and yoke B, having ball-and-socket joints *a a' b b*, in combination with the shaft D, and comb E, for the purpose of doffing the silver from a carding-machine, as described.

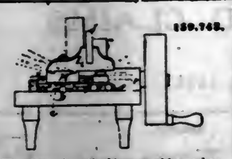
159,763. HOUSEHOLD-MACHINES. Hiram J. Batchelder, Fitchburg, assignor to T. S. Very, Boston, Mass. (Filed Sept. 24, 1874.)

Brief.—Arranged in transverse grooves in the top surface of the crosser-carrier are two friction-rollers, one of which (the inner) is slightly larger in diameter than the other. The object of these rollers is to keep the crosser in a parallel position with the shoe during the crossing operation. The shoe, after having been crossed, is removed from the former and placed upon the "seating-jig," where it is pressed to its ultimate shape by the presser portion of the head-block.

159,764. GUNNY-COAM CUTTERS. Volney Barker, Otisfield, Me. (Filed Nov. 16, 1874.)

Brief.—The trough in which the car rides is slotted at the bottom to allow the passage of the rock-bar which actuates the pushing-rod. The spring-arms which carry the adjustable guides and cutters are hinged and may be turned backward. These arms, together with scrapers, are arranged around a cylindrical plate, having a short tube joining an opening in its center.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON



No. 159,745.

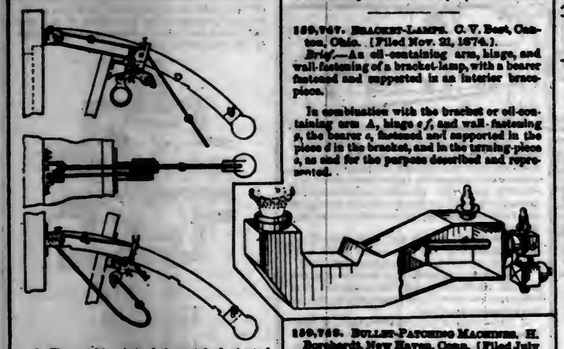
1. The above-described improved horseshoe-machine, consisting of the blank-bending mechanism, the crossing mechanism, and the shaping and cooling mechanism, when all are constructed, combined, and arranged together as shown and described, and provided with mechanism for operating them, as set forth.

2. In a horseshoe-machine, the combination, substantially as described, of the reciprocating head-block L, former D, swinging die 'F', and the crosser-carrier M, provided with crossers *e e*, as set forth.

3. In a horseshoe-machine, substantially as described, the crosser-carrier M, loosely pivoted to the head-block L, and provided with guides and friction-rolls *g g*, as and for the purpose set forth.

159,746. QUADRANTS FOR OPENING, SHUTTING, AND FASTENING WINDOWS. John R. Beanland, Bradford, England. [Filed Dec. 12, 1874.]

Brief.—On the window is fixed a guide, in which the quadrant works. The bottom part of this guide acts as a stop for the catches formed in the quadrant. On this guide is fitted a lifting-lever, so constructed that the lifting part releases the quadrant from the stop of the guide when pulled by means of a rod placed in an arm formed on the lifting-lever, or by a rope fastened to the arm passing over friction-pulleys.



1. The combination of the notched pivoted quadrant, the swing-latch, and the guide-stop J, substantially as, and operating as, set forth.

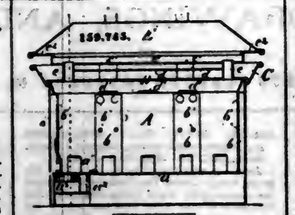
2. In combination with the notched pivoted quadrant, and with the swing-latch and guide-stop J, the cords and pulleys, applied as shown and described, and the whole operating as set forth.

159,747. WASH-BOILERS. ANY Besbier, Chicago, Ill. [Filed Nov. 18, 1874.]

Brief.—The cover has a condensing-chamber formed by a plate hinged on its under side, to the under side of which plate is attached a secondary plate, with a space between, in which a caged valve operates, the objects of which parts are to regulate, condense, and return the steam and vapor. There is also a false bottom, which permits the descent of water to boiling-chamber only through perforations in a hinged part thereof.

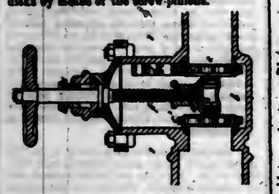
1. The combination of the hinged door *a*, having cages *a'* and floats *a²*, with false bottom *d*, made water-tight, in a boiler, A, as and for the purposes set forth.

2. The combination and arrangement of the top chamber E, having outlets *e' e'*, the tubes *e*, cover D, its movable plate *d*, bottom strips *d'*, with boiler A, having rim C, substantially as shown and set forth.



159,748. STOP-COCKS. Wm. H. Beckett, Chelmsford, England. [Filed July 7, 1874.]

Brief.—The toothed rairo-disks are provided with screw-cut pivots, which take into threaded recesses in the socket. Upon raising said socket the teeth upon the disks take into teeth in the rack, thereby expanding the disks by means of the screw-pinions.



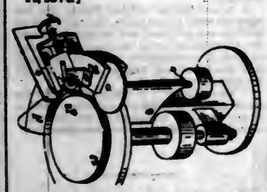
The combination of the toothed rairos *c c'*, racks *d*, socket *e e'*, and screw-spindle *f*, substantially as and for the purpose set forth.

159,749. BRACKET-LAMPS. C. V. Best, Canton, Ohio. [Filed Nov. 21, 1874.]

Brief.—An oil-containing arm, hinge, and wall-fastening of a bracket-lamp, with a bearer fastened and supported in an interior brace-piece.

In combination with the bracket or oil-containing arm A, hinge *e f*, and wall-fastening *g*, the bearer *e*, fastened and supported in the piece *d* in the bracket, and in the turning-piece *c*, as and for the purpose described and represented.

159,750. BULLET-PATCHING MACHINES. H. Borchardt, New Haven, Conn. [Filed July 14, 1874.]



1. The combination, in a bullet-patching machine, of the stationary rail *d*, the patch-magazine *f*, and the rolling disk *F* with a feeding device for presenting a series of bullets successively in prescribed position, substantially as set forth.

2. In combination with a magazine for holding slips of paper or patches, substantially in the manner and relation described, a rolling disk having an elastic periphery or face for the purpose of administering an elastic pressure to a bullet while causing it to roll across the exterior of the package of slips, substantially as set forth.

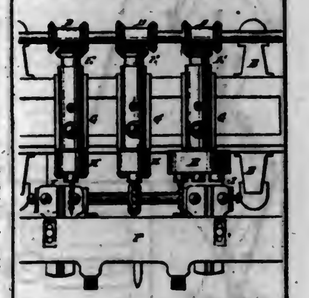
3. In combination with a rolling disk and a stationary rail, substantially such as described, a stationary guide between the rolling disk and the stationary rail, for the purpose of guiding or folding the edge of a patch inward upon the base of a bullet, substantially as set forth.

4. The combination of a magazine for holding bullet-patches, substantially in the manner and relation described, with a device for moistening and fastening the package of slips contained in the magazine, substantially as set forth.

5. In combination with a magazine for holding bullet-patches, substantially in the manner and relation described, an automatic follower for regulating the position of the package of slips contained in the magazine, substantially as set forth.

159,749. WOOD-BORING MACHINES. C. G. Orcutt, Chicago, Ill. [Filed Dec. 8, 1874.]

Brief.—The boring-tools are held in adjustable heads, and operated by a system of gearing which admits of a change in their position without interfering with their rotation.



1. The main driving-shaft C, provided with the adjustable gear-wheels D, in combination with reversible spindle-frames G, frames A, gears E, and heads H, all as and for the purpose specified.

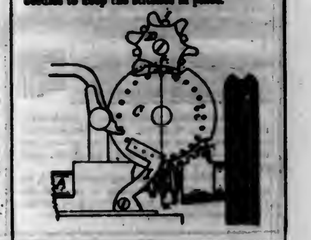
2. The combination of the frame G, shaft F, and head H with one or more bit-stocks, substantially as described.

3. The combination of the brackets *f*, supporting-collars K, vertical screw-shaft, and shaft E, substantially as and for the purpose specified.

4. The combination of the arms O, hangers V, segments T S, racks R, and lever Q with the feed-bed P, substantially as and for the purpose specified.

159,750. KNITTING-MACHINES. Edward P. Curtiss, Cleveland, Ohio, assignee of one-half his right to T. G. Foot. [Filed July 27, 1874.]

Brief.—An improvement on Patent No. 150,223. The cam-wheel is provided with a circular row of pins, which are slid forward, so as to project beyond the face of the wheel, and trip the reversing-lever, by coming in contact with beveled teeth on the adjuster, the latter being driven through a pair of gear-wheels by a worm on the driving-shaft. Curved guard-plates are placed between the needles to keep the stitches in place.

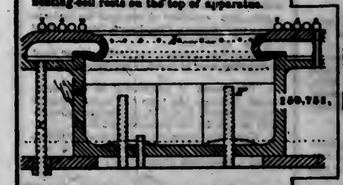


1. In a knitting-machine, the combination of a cam, C, having adjustable stops, with an automatic adjuster, D, and arm L, substantially as described, for the purpose of actuating the reversing-lever.

2. In a knitting-machine, guards K, in combination with the needles, substantially as and for the purpose specified.

159,751. BURNING HYDROCARBONS. Oscar T. Earle, New York, N. Y. [Filed Aug. 8, 1874.]

Brief.—The oil floats on water in a tank surrounded by a water-chamber, which will not feed water or generate steam. A superheating-coil rests on the top of apparatus.



No. 159,751.

1. Surrounding the chamber in which hydrocarbons are burned by water, so as to keep the walls thereof cool, and prevent their being burned or melted, as described.

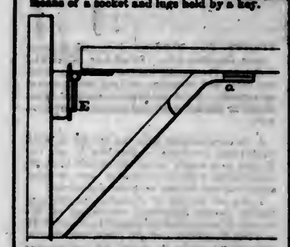
2. The chamber E, with inlet-pipe I, outlet-pipe M, and partition K, to hold the water for cooling and protecting the walls of the burning chamber from being burned or melted, and also to serve as a feed-water heater when used in connection with a boiler, as set forth.

3. The chamber E, with pipes L and N, and coil of pipe *l l*, so as to keep the walls of the burning chamber cool, and to produce superheated steam, to be combined with the burning hydrocarbon vapors, as set forth.

4. The combination of a chamber for burning hydrocarbons, a feed-water heater, or superheated-steam producer, and a heater for an air or steam blast, as described.

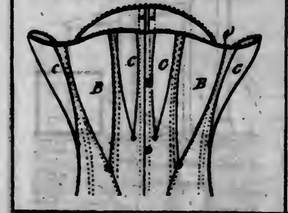
159,752. ROUND-TABLES. G. K. Edwards, Philadelphia, Pa. [Filed Dec. 17, 1874.]

Brief.—The table is secured to a wall by means of a socket and lugs held by a key.



The socket E, with lug F projecting horizontally into the space thereof, the sliding plate C, with horizontally extending notch G, and the key H, entering the socket at one side of the plate C, the socket thus receiving the lug, plate, and key, and all parts constructed, arranged, and operated substantially as set forth.

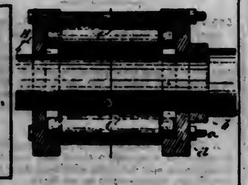
159,753. CORSETS. D. H. Fanning, Worcester, Mass. [Filed Jan. 4, 1875.]



A corset having in each front at the bust two side gores, C C, and a middle gore, B, the latter extending to and intersecting the seam *a*, substantially as and for the purposes herein set forth.

159,754. ANTI-FRICTION ROLLERS. Edson Gerry, Garden City, Minn. [Filed Feb. 4, 1875.]

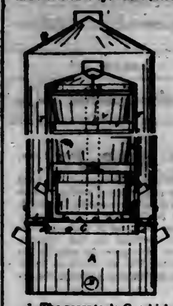
Brief.—The disks are connected by means of bolts. The inner side of each rim has circular recess, open toward the journal, concentric with the rim, in which are inserted the journals of the rollers, freely revolving therein.



The combination, with a shaft or journal, A, of the rims B B, provided with the circular recess *b b*, open toward the journal and connected by means of bolts *a a*, and the rollers C C, provided with journals *d d*, placed in the recesses *b b*, the rollers revolving on their axis and moving with the journal A, substantially as and for the purposes herein set forth.

159,755. STEAM CULINARY VESSELS. S. T. Goodwyn, New Orleans, La., assignor to V. H. Goodwyn. [Filed July 1, 1874.]

Brief.—A receptacle having tubular openings for the passage of steam, and resting upon an inner flange of the boiler near its top, forms a base for the support of the cooker and rack. An additional cylinder inclosing the cooker.



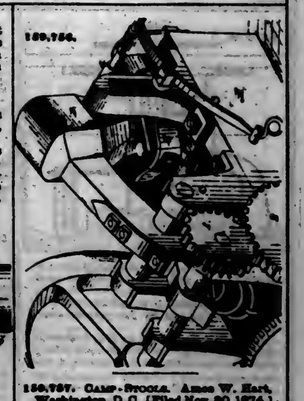
1. The receptacle C, which has a projecting edge, *d*, and tubular openings *e e e*, in combination with the cooker F, as and for the purpose described.

2. The boiler A, receptacle C, cooker F, having rack G and cylinder K, all constructed, arranged, and combined substantially as and for the purpose described.

159,756. FILE-CUTTING MACHINES. Silvanus Hamblin and Stephen M. Hamblin, Pawtucket, R. I., assignors of two-thirds their right to L. S. Judd and A. Wheary, Fairhaven, Mass. [Filed Aug. 14, 1874.]

Brief.—The feed-screw is the shaft of the gear-wheel, the feed being continuous. The cross-head swings on and is adjusted by screws, and carries the cutting-chisel, which, at each stroke, is pressed against the work by the spring on the helve before the hammer strikes. The file is held down to the bed by the spring and binder.

The combination, substantially as herein shown and described, of the feed-screw I, and gear-wheels 1, 2, and 3, hammer B, provided with spring Z, cross-head F, for carrying or supporting the chisel, binder O, and shoe H, as and for the purpose set forth.



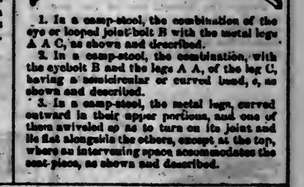
159,756.

1. In a camp-stool, the combination of the eye or looped joint-bolt B with the metal legs A A C, as shown and described.

2. In a camp-stool, the combination, with the eye-bolt B and the legs A A, of the leg C, having a semicircular or curved head, *c*, as shown and described.

3. In a camp-stool, the metal legs, curved outward in their upper portions, and one of them articulated so as to turn on its joint and lie flat alongside the others, except at the top, where an intervening space accommodates the cent-piece, as shown and described.

159,757. CAMP-STOOLS. Amos W. Hart, Washington, D. C. [Filed Nov. 30, 1874.]



1. In a camp-stool, the combination of the eye or looped joint-bolt B with the metal legs A A C, as shown and described.

2. In a camp-stool, the combination, with the eye-bolt B and the legs A A, of the leg C, having a semicircular or curved head, *c*, as shown and described.

3. In a camp-stool, the metal legs, curved outward in their upper portions, and one of them articulated so as to turn on its joint and lie flat alongside the others, except at the top, where an intervening space accommodates the cent-piece, as shown and described.

159,758. JOURNAL-BEARINGS FOR HARVESTERS. Ephraim F. Herrington, West Hoosick, N. Y. [Filed Aug. 15, 1874.]



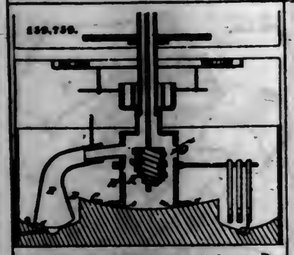
Brief.—When the journal-bearing is in its proper position in the frame, it is secured by pouring in fusible soft metal between the bearing and the frame.

The method herein set forth of securing the journal-boxes of harvesters in their frames, which consists in adjusting the position of the box by means of the gears and shafts, and then casting readily-fusible metal or an alloy between the box and frame.

159,759. AMALGAMATORS. L. Hinckley, Virginia City, Nev. [Filed Nov. 10, 1874.]

Brief.—A hollow cylinder rests loosely on an elevated central amalgamated tray. It revolves horizontally, carrying a scraper of the tray and stirrers of the ore-pulp, and when desired is born for scooping up the ore-pulp, and contains a screw, which also revolves, but in a reverse direction. The ore-pulp fed downward through this hollow cylinder comes outward under its bottom onto the tray; thence is passed into the concave bed, and by the screw is carried back into the hollow cylinder in a continual circuit. A pin rising from an attachment of the cylinder hits cams on each revolution a cap hung from the drip-board, thus feeding from it quicksilver to the ore-pulp.

159,760.



1. The vessel A, having the raised center B, forming a trap, with centrally-inclined annular-grooved sides C, in combination with the chamber H, having holes O O, and the screw K, substantially as and for the purpose above described.

2. The vessel A, having its raised center B, and having the concave circular track with its gradually-descending central groove, *d*, and discharge-opening *a*, whereby the material being annularly-grooved is held in contact with the scrapers, substantially as and for the purpose described.

3. In combination with the chamber H and screw K, the loosely-attached hollow horn-shaped scraper E, substantially as and for the purpose above described.

4. The saw U, loosely secured at one end to the lower edge of the rotating chamber H, in combination with the tray B, substantially as and for the purpose described.

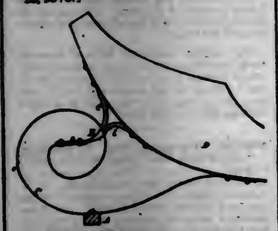
159,760. STUMP-PULLERS. C. C. Hogue, Brush Creek, Iowa. [Filed Oct. 16, 1874.]

Brief.—The fulcrum end of the lever is slotted and passed over a double-edged ratchet-bar. Each edge receives alternately a hooked link attached to the lever, one being advanced while the other is used as a fulcrum.



The combination, in a double-acting stump or tree puller, substantially as described, of a slotted lever, A, double ratchet-bar B B, with stirrups C C, closed by spring E.

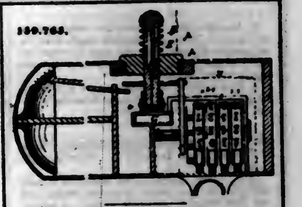
159,761. CHILDREN'S CARRIAGES. Francis L. Hughes, Rochester, N. Y. [Filed Jan. 13, 1875.]



In a child's carriage or perambulator, the metal spring C, having one end hung to the body D, and the other to the offset body-loop B, attached to the body D, and the said spring C being fixed intermediately to the axle A, combined as and for the purpose set forth.

159,762. DEVICES FOR ATTACHING HUBS TO AXLES. Danl. A. Johnson, Boston, Mass. [Filed Jan. 16, 1875.]

159,763.



159,764.



The sponge *e f*, placed at the outer end of the axle A, one on each side of the nut C secured thereto, in combination with the screw-cap D and axle-box B, to operate substantially as and for the purpose set forth.

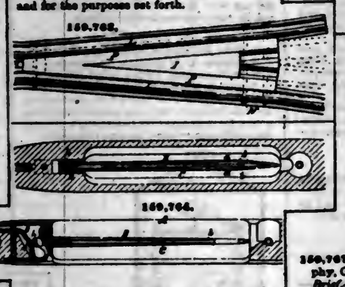
159,765. RAILROAD-FROGS. WM. L. Lamborn, Steel Works, Pa. [Filed Oct. 30, 1874.]

Brief.—A railroad-frog having flange-bearer and point of one solid piece, the heel of which is grooved to receive the main-track rails, which are secured in position by bolts passing through reversible guard-rails, heel of frogs, and main rails.

1. The solid frog-piece I P, extending from wing-rail to wing-rail, without any separate filling-piece, and provided with heel slots and punchings, substantially as set forth.

2. The reversible wing-rails, in combination with the solid piece I P and the bolts N, passing through the heel of said solid frog-piece, the usual punchings of the track-rails, and also through the wing-rails, thus binding all firmly together, substantially in the manner and for the purposes set forth.

159,766.



159,766. LOOM-SHUTTLES. Peter Lord, Medford, Mass. [Filed Jan. 22, 1875.]

Brief.—The split spindle is expanded to hold the cop by means of a sliding wedge, which is operated as the spindle is raised or lowered, and also held in position, by a forked cam-piece, in which the rear end of the expander works. The cam inclines on the spindle. Bows are so placed as to give the spindle but one taper when expanded, by which an equal pressure is given to the cop through its entire length.

1. In the shuttle, the forked back-stop or holder D, as described, in combination or for use with the expander C, provided with a head, *h*, and arranged with the split spindle B and its cams *b b*, as set forth.

2. The spindle-bow cams *a a*, arranged substantially as described, to cause the spindle, when, by them and the expander, it may be expanded within a cop, to have but one taper therein, all being as and for the purpose specified.

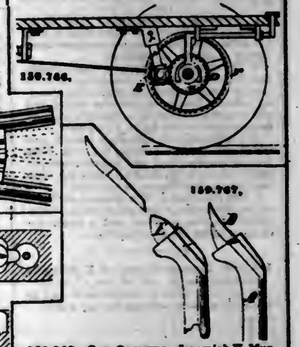
159,768. CONDUCTORS' ALARM AND REGISTERING HAND-STAMPS. Levi J. Masterson, Philadelphia, Pa., assignor of one-third his right to John R. Ford, Washington, D. C. [Filed Jan. 23, 1875.]

Brief.—The self-inking hand-stamp is constructed with valve in ink-chamber, which is actuated at every operation of the stamp, thus allowing the ink to flow upon the die.

1. The conductors' hand-stamp herein shown, consisting of the self-inking die and an alarm and a registering device, substantially as shown and described.

2. The combination of case A, plunger E, having ink-chamber E', pin *p*, having valve-head *p'*, ribbon C, and ticket-guide bed G, substantially as described.

159,769.



159,767. CAR-OPENERS. Jeremiah H. Murphy, Opelika, Ala. [Filed Apr. 20, 1874.]

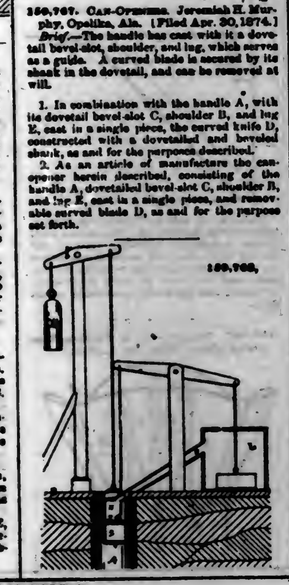
Brief.—The handle has cast with it a dovetail bevel-slot, shoulder, and lug, which serves as a guide. A curved blade is secured by its shank in the dovetail, and can be removed at will.

1. In combination with the handle A, with its dovetail bevel-slot C, shoulder B, and lug E, cast in a single piece, the curved knife D, constructed with a dovetailed and beveled shank, as and for the purposes described.

2. As an article of manufacture the can-opener herein described, consisting of the handle A, dovetailed bevel-slot C, shoulder B, and lug E, cast in a single piece, and removable curved blade D, as and for the purpose set forth.

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159,769.



159,770. GOVERNORS FOR WINDMILLS. W. L. Oliver, Rantoul, Ill. [Filed Jan. 4, 1875.]

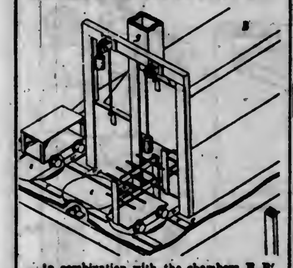
Brief.—A governor for windmills used in raising water, and so constructed that the wings of the mill are thrown into the wind when more water is wanted, and thrown out of the wind when a sufficient quantity has been pumped into the tank.

1. The double bucket R R, with a large opening in the partition between them, and under the valve T, to allow the water to rush rapidly through into the lower chamber, S, when the valve T is opened, and the small hole V in the bottom of the bucket, for the purpose of allowing the water to gradually leak out, all in combination with the trough N, substantially as specified.

2. The combination of the closed float-chamber L of the tank, trough N, and closed well A, for the purpose of conducting warm air from the well into the float-chamber, substantially as specified.

159,769. DRYERS FOR REFINED SUGAR. A. F. W. Parts, Oakland, Cal. [Filed Aug. 6, 1874.]

Brief.—The sugar-frames are suspended by their handles on the cross-bars of the cars.



In combination with the chambers B B', through which sugar is passed on cars to be dried, and passed in an opposite direction to the current of heated air, the inner and outer tracks *v w* and *r r'*, and the turn-tables *t t*, the hot-air pipe *p*, with its branches *q q'*, and the exhaust-pipe *p*, all constructed and arranged substantially as and for the purpose set forth.

159,770. VELOCIPEDES. William Quinn, Philadelphia, Pa. [Filed June 16, 1874.]



1. The combination of the frame E, seat F, and spring H, as and for the purpose set forth.

2. The combination of the frame E, vertically-adjustable slide K, and rod L, as set forth.

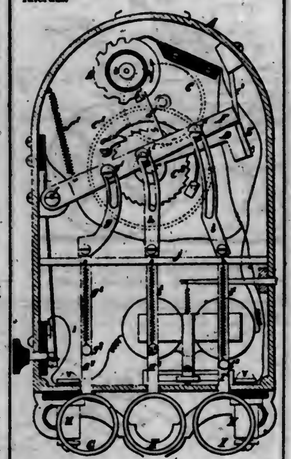
3. The crank-shaft C, formed of the two tubular crank-shafts provided with capped flanges, and united by the bolt R, holding them in position on the wheel-hub F, all combined as set forth.

4. The bearings for the front axle, formed of the straps T, blocks U, and wedges V, and bolts W, all combined as and for the purpose set forth.

5. The whistle formed of the casting 1 and tube 5, formed and combined with the cross-bar of the frame O, as and for the purpose set forth.

159,771. TELEGRAPHIC SIGNAL-BOXES. W. H. Sawyer, New York, N. Y. [Filed Dec. 4, 1874.]

Brief.—Through the intervention of rods G' H' I', motion is communicated to a winding-arm, D, which in turn operates a coiled mainspring. The play of the lever is limited by stops placed at different distances from its fulcrum.



1. The combination of the winding-arm D, train of wheel-work C C' C', transmitting-wheel E, and lever F, substantially as herein specified.

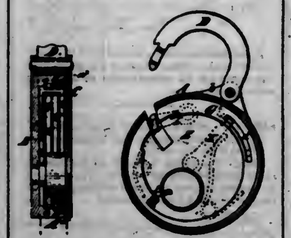
2. The combination of motor-train and circuit-breaking or transmitting wheel with lever F, rods G' H' I', and links *g h i*, substantially as and for the purpose specified.

3. The combination of the dog E with the lever F, the former so arranged with reference to the latter and with the winding-arm D as to permit the former to engage with the latter after a complete signal has been transmitted, but at no other time.

4. The dog E, in combination with the stationary spring *g'* and stop *i'*, substantially as herein described.

5. The arms *g'* H' F, in combination with the lever F and links *g h i*, substantially as herein specified.

159,772. FASTENERS, &c. John Schade, Stamford, Conn. [Filed Sept. 29, 1874.]



1. The combination, with the inclosing-case of a padlock, of a series of inwardly-projecting steps or ledges, so arranged as to constitute independent seats for a corresponding number of annular tumblers of decreasing external diameters, substantially as and for the purpose herein specified.

2. The combination of the case A B C, hasp D, plate E, ledges *a a' a''*, tumblers G G' G'', actuator K, and spring-tongue L, substantially as and for the purpose herein set forth.

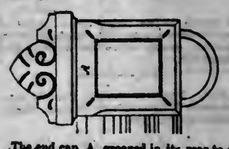
159,773. DEODORIZERS FOR BED-VESSELS. Herbert M. Small, Waltham, Mass. [Filed Oct. 1, 1874.]

Brief.—A deflecting and distributing strainer; an annular flange; a reservoir provided with discharge-opening, in connection with slide-valve and handle.



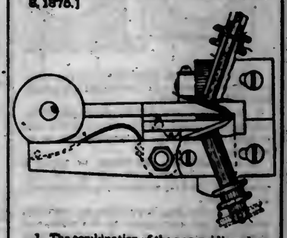
In the improved deodorizer, as described, the combination of the deflecting and distributing strainer *f* and the annular flange *h* with the reservoir B, provided with the discharge-opening *c*, slide-valve *d*, and its bar *e*, all arranged and to operate substantially as specified.

159,774. WINDOW-CURTAIN CORNICES. J. Bewis, Boston, Mass. [Filed Apr. 22, 1874.]



The end cap, A, grooved in its rear to correspond with and receive the molding of the connecting-piece B, and lapped on said piece, as and for the purpose set forth.

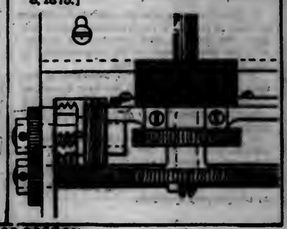
159,775. PEGGING-MACHINES. Benjamin F. Sturtevant, Boston, Mass. [Filed Feb. 8, 1875.]



1. The combination of the peg-guiding channel or way of a pegging-machine with disk-cutters placed at or inclined to and projecting across the bottom of the channel or way, to cut or point separated pegs, substantially as described.

2. In combination, the disk, its shaft and bearing, and nut *n*, to adjust the disk-cutter with relation to the channel or way, substantially as and for the purpose set forth.

159,776. PEGGING-MACHINES. Benjamin F. Sturtevant, Boston, Mass. [Filed Feb. 8, 1875.]



1. The combination, with the peg-guiding channel or way of a pegging-machine, of rotating, compressing, and severing dies, having cavities to receive and mold or compress and sever pegs, substantially as described.

2. The combination of a cross-pointing mechanism with compressing dies, substantially as described, to compress the body of the peg and complete the formation of the point, as set forth.

3. The combination of a peg-guiding channel or way with rotating dies, for compressing the body and point of the peg and severing the peg from the strip, and with a peg-driver operating to drive the pegs from the channel or way, substantially as described.

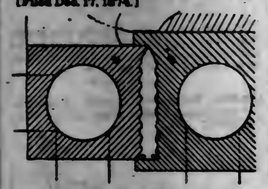
4. The improvement in the art or process of forming pegs consisting of first forming a wedge-shaped point, or nearly so, by cutting and then completing the point as formed by compressing the wood in opposition to the direction of the edge of the partially-cut point, between dies, substantially as described.

160,777. SOLE-FASTENINGS. Benjamin F. Sturtevant, Boston, Mass. (Filed Feb. 6, 1875.)



A ribbon of sole-fastenings, composed of separate fastenings, united by means of fibrous or metallic strands interwoven, substantially as described.

160,778. PEGS OR RIBBON PEG-WOOD. Benjamin F. Sturtevant, Boston, Mass. (Filed Dec. 17, 1874.)



1. A wooden peg, peg-ribbon, or peg-strip having compressed and corrugated sides, substantially as set forth.

2. A wooden peg, peg-ribbon, or peg-strip having compressed corrugated sides and a head or head forming edge, /, substantially as described.

3. A wooden peg, peg-ribbon, or peg-strip having an enlarged head left by the compressing of the body of the wood, substantially as described.

4. A wooden peg, peg-ribbon, or peg-strip, condensed and corrugated at the sides, and condensed at points or on the point-forming edge, substantially as described.

5. The compressers or jaws, provided with the longitudinal corrugations, substantially as described, and for the purpose set forth.

160,779. SOLEY ATTACHMENTS TO PLOWS. Garrett Van Winkle, Avoca, Ill. (Filed July 29, 1874.)

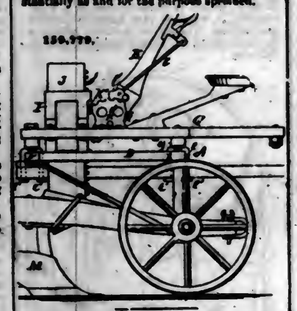
Brief.—A frame carrying the driver's seat and the vertically-adjustable plow is pivoted to the main frame. The tongue is reversible, and the machine may be used as a plow or a straddle-row cultivator.

1. The frame C, constructed as described, pivoted to the bar D, and laterally adjustable upon the axle A, and arranged to operate with the plow M and bar E, substantially as and for the purpose specified.

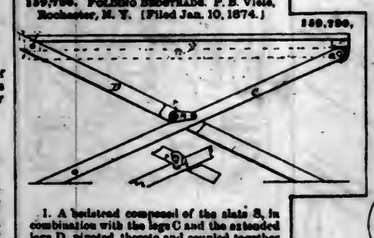
2. The bars B, adjustably attached to the bars c, and combined with the axle A and bar D, for adjusting the plow-frame and attaching cultivators, substantially as described, and for the purpose specified.

3. The draft-pole E, removably and rotatably attached to the bar D and axle A, and arranged to operate with the said parts, and with the cultivator-plows F and frame G, interchangeably, substantially as described, and for the purpose specified.

4. The hand-lever K, rocks j, K', and k', bar J, sleeve I, and plow M, in combination with the pivoted frame G, axle A, and bar D', substantially as and for the purpose specified.



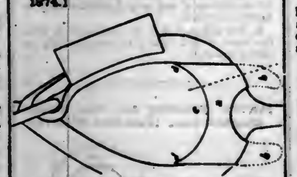
160,780. FOLDING BEDSTEADS. P. B. Viele, Rochester, N. Y. (Filed Jan. 10, 1874.)



1. A bedstead composed of the slats S, in combination with the legs C and the extended legs D, pivoted thereto and coupled together by means of the rod or rest r, pivotal links a, and the locking-hooks h, all operating substantially in the manner shown, and for the purpose set forth.

2. In combination with the slats S, legs C, connecting-links a, locking-hooks h, and extended legs D, the elevated or inclined headrest e, for the purposes set forth.

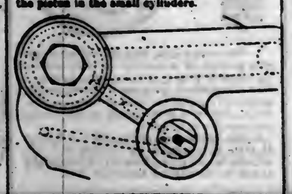
160,781. SHAFT-TUGS FOR HARNESS. Thos. R. Webber, Pittston, Mo. (Filed Nov. 23, 1874.)



A harness-leg lining, formed with the body a, shaft-rest c, protecting ears d d, and clinching-points b b, all substantially as described and shown.

160,782. STEAM-ENGINE VALVE-GEARS. George Westinghouse, Jr., Pittsburg, Pa. (Filed Sept. 15, 1874.)

Brief.—The steam between the differential valve-pistons forces them down. The opposite movement is given by steam entering back of the pistons in the small cylinders.

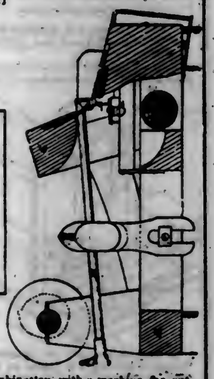


1. A pair of piston-valves, a a', of different areas, subject to steam pressure, so as to be operated in one direction by a preponderance of pressure, in combination with a third piston, m, of still greater area, arranged to give the piston-valves a reverse stroke, substantially in the manner set forth.

2. The combination of piston-valves, pistons, and slide-valve, the piston-valves and piston having different areas, and the slide-valve being arranged to govern the supply and exhaust to and from the piston, substantially as set forth.

3. Ports s, s', s', and s, in combination with slide-valve a' and piston m, substantially as set forth.

160,783. CUT-NAIL MACHINES. J. T. Westwood, Wheeling, W. Va., assignor to himself and Caleb D. Devinney. (Filed Nov. 19, 1874.)



The combination, with a machine for cutting nails from a heated plate and heading the same, the blast-tube M, used to direct the blast of cold air upon the dies, in order to prevent the same from becoming heated and to remove the scales, substantially as set forth.

160,784. LAND-ROLLERS. Wm. Williams, New Berlin, Ill. (Filed Jan. 2, 1875.)

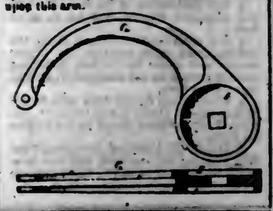
Brief.—The roller is made of cast-iron, hollow, with an annular flange upon the inside at each end, to which a wooden journal-box, consisting of a plank, is bolted. Two rollers are mounted in a double rectangular frame.



The wooden journal-blocks D, in combination with the hollow cast-metal rollers U and annular flanges c, substantially as and for the purpose specified.

160,785. DOOR-SPRINGS. A. T. Mellinthin, Titusville, Pa. (Filed May 13, 1873.)

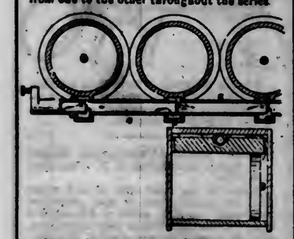
Brief.—A reversible vibrating lever-arm has socket-bearings, which take over the end of the drum, which incases a coiled spring. The chain, which is attached to the door and operates the spring, is wound automatically upon this arm.



The reversible vibrating arm O, having bearings I I, and carrying the chain K, in combination with the drum A, slotted spring B, arbor D, with its pin c, projecting shanks L L, and cap-plate E, all constructed and arranged for operation as herein shown and described.

160,788. COMPOUND ENGINES. J. W. Bell, McKinney, Tex. (Filed July 3, 1874.)

Brief.—A series of engines are connected by a revolving tube, through which steam is admitted to one, and exhausted successively from one to the other throughout the series.



The series of engines A, having their pistons A' connected, by rods B', with the same crank-shaft B, in combination with the rocking tube C, having passage c, steam-inlets a', and outlets a', as and for the purpose specified.

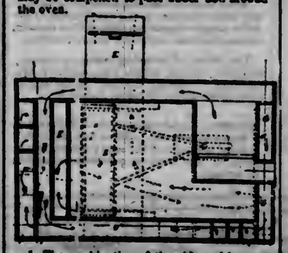
160,787. CAR-PUSHERS. Chas. Bird, Lower Merion Township, Montgomery County, and William H. Sullenberger, Harrisburg, assignors to themselves and C. H. Jackson, Harrisburg, Pa. (Filed May 27, 1873.)



The lever A, having the upper edge of its short arm made in the segment of a circle of the same or about the same diameter as the wheel to be operated on, in combination with the shoe B, to which the lever is hung, and which is adapted to the rail, all as set forth.

160,788. COOKING-STOVES. R. O. Brinckerhoff, New York, N. Y. (Filed Jan. 30, 1875.)

Brief.—The smoke, after passing over the oven, may be allowed to pass into a flue-space communicating directly with the exit, or it may be compelled to pass under and around the oven.

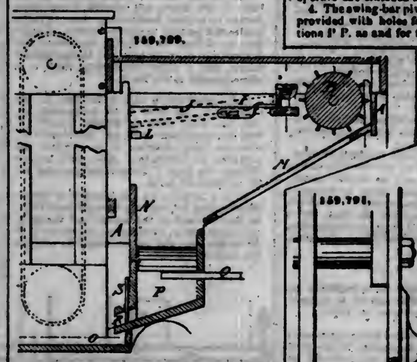


1. The combination of the side and bottom flues F, the side flue-space G, the front flue-space H, the inner side flue-space I, the inner rear flue-space J, and the outer rear flue-space K with each other, with the outer and inner cases A B, and the chimney-flue E, in substantially the manner herein shown and described.

2. The combination of the outer side flues M with the vertical side flues F, the outer rear flue-space K, and the chimney-flue E, in substantially the manner herein shown and described.

3. The combination of the sliding damper L with the set of flues F G H I J K, the set of flues F M K, and the chimney-flue E, substantially as herein shown and described.

160,789. CORN-SHELLERS. W. S. Broyles, Nola Chucky, Tenn. (Filed Oct 17, 1874.)



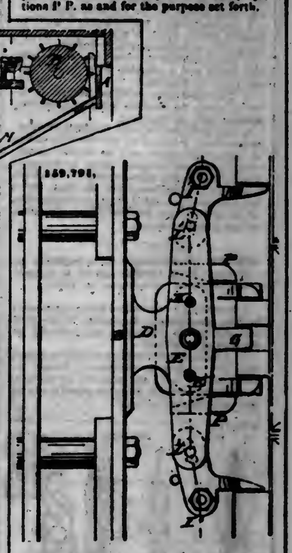
1. The measuring-pit P, provided with spout R and slides Q S, the said pit receiving grain from cylinder, as shown and described.

2. The combination of hinged cut-off N with receiver O and pit P, as and for the purpose specified.

160,790. SHINGLE-PLANING MACHINES. P. D. Burgher, Deep Creek, Va. (Filed Aug. 20, 1874.)

Brief.—The shingles are carried forward by an endless chain put in motion by suitable gearing, and are planed by rotating planing-cylinders, upon both sides, while passing through the machine.

160,791. PAILS. Orrin S. Camp, Grand Rapids, Mich. (Filed Nov. 14, 1874.)



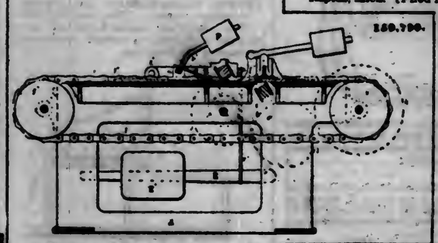
1. The right cylindrical hoop C, recessed into the upper edge of the tin-lined case A, and secured thereto by means of rivets r, driven through the said hoop and clinched upon the inside of the case, substantially as specified.

2. The combination, with the rim C, of the ears F, rigidly soldered to the said rim over the heads of the rivets r, substantially as specified.

160,792. MOLDERS' FLASKS. N. M. Chaffee, Providence, R. I. (Filed Jan. 25, 1875.)

Brief.—A flask composed of three parts—bowel, cope, and movable side pieces or cheeks—for casting columns having sunken panels, or other articles with undercut parts. Sand is packed on the cheeks, which are mounted upon ways, and capable of being withdrawn to relieve the patterns.

160,793. BOLT-WORKS FOR SAFE-DOORS, &c. William E. Butler, Brooklyn, N. Y. (Filed July 20, 1874.)



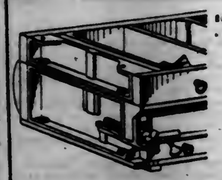
1. The combination of three or more locks in a safe or other door with the train-bolts, relatively arranged as described, so as to require the unlocking of at least two locks, but not of the whole number of locks, to release the train-bolts, as set forth.

2. The combination of the swing-bar E, with projection G and clutches I' and I', with bracket D, and bar B, so as to permit the withdrawal of the train-bolts by the unlocking of two or more of the locks.

3. The swing-bar E, pivoted upon the bracket D and provided with pins L' and L', so as to operate the clutches I' and I', as set forth.

4. The swing-bar pivoted to the bracket, and provided with holes for pins K K and projections F F, as and for the purpose set forth.

160,795.



1. The combination, in a molder's flask, of a movable exterior cheek, and a movable interior cheek mounted on said exterior cheek, substantially as and for the purposes specified.

2. In combination with a molder's flask, an interior cheek which is mounted on supporting-guides, substantially as described.

3. The combination, in a flask, of the interior cheek and a movable back board, substantially as described.

4. The combination, with the flask, of an exterior cheek mounted on supporting-guides, substantially as described.

5. The combination, with the flask, of an exterior cheek, mounted on the novel by means of supporting-guides, and an interior cheek, mounted on the exterior cheek by means of supporting-guides, substantially as described.

6. The combination, with the flask and a movable cheek mounted on supporting-guides, of the draft-screws, substantially as described, for the purposes specified.

160,794. SHARPENING ATTACHMENTS TO FORKS. D. M. Church and W. F. Gilbert, Derby, Conn. [Filed Dec. 28, 1874.]

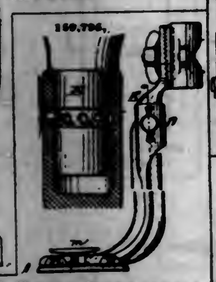
1. A carving-fork provided with a roughened-surface honing-steel A, applied to the fork and carving as the guard, substantially as shown and described.

2. A carving-fork having a guard furnished with two converging sharpening-blades, located near its joint, and adapted for use as a knife-sharpener, both when the guard is carving open and when it is closed.

160,795.



160,796.



160,795. UMBRELLA-SUPPORTS FOR VEHICLES. Almon Clarke, Sheboygan, Wis., assignor to himself and Chas. A. Spencer. [Filed Jan. 12, 1875.]

1. The combination of the sleeve D, having the threaded boss d, the cheek E, having recesses e e, the loose pin b, and cover-cap H, all constructed to operate substantially as and for the purposes set forth.

2. The combination of the bed-plate A, provided with lugs b and inclined plane c, the foot C, and screw a, combined substantially as and for the purposes set forth.

160,796. BELL-PULLS. William R. Clough, Newark, N. J. [Filed Jan. 23, 1875.]

The combination of a spring-clamp and a lever-clamp, having a shoulder or shoulders, and made to pass between the arms of the spring-clamp, and both constructed to be raised together and locked in an elevated position by the shoulder on the lever-clamp, substantially as described.

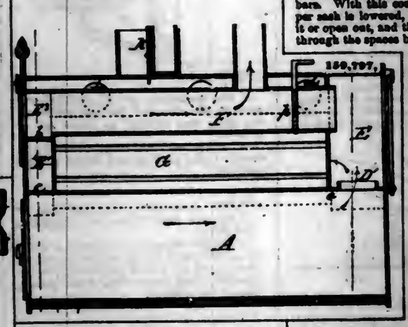
160,797. STOVES. Levi R. Comstock, Richmond, Va. [Filed Oct. 10, 1874.]

Brief.—The vertical plates extend to the back of the stove, and chambers are there formed by a plate intersecting them at right angles and parallel to the back plate. Chambers are formed in a similar manner at the front of the stove by means of the horizontal plates, and a plate intersecting them in a plane parallel to the front.

1. In combination with a furnace, A, and chamber E, the flues G G, communicating with the front chamber E', the flues G' G', with the rear chamber F', and the flues G² G², with the front chamber E', from which the products of combustion enter and escape through the pipe F, substantially as and for the purpose set forth.

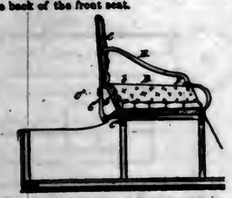
2. In a furnace, the combination of the division-plates b c, forming the chambers E' F', at the front end of the heater, and the division-plates a' c', forming the chambers E F' F' at the rear end, substantially as and for the purpose set forth.

160,797.



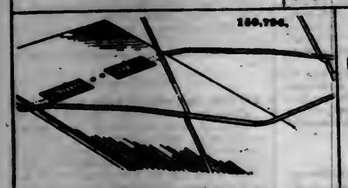
160,798. CARRIAGE-SEATS. Daniel Conboy, Uxbridge, Canada. [Filed Jan. 18, 1875.]

Brief.—Back seat may be folded over so as to make its bottom an upward extension of the back of the front seat.



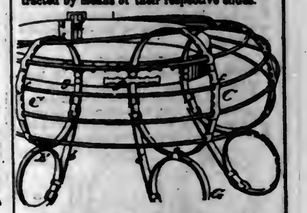
The combination of seat B, bars C' C', seat C, pivoted back D, legs D', side-stays E, and hinge C' and F, substantially as and for the purpose set forth.

160,798.



160,799. BUSTLES. Louis Consigny, Peoria, Ill. [Filed Oct. 24, 1874.]

Brief.—The hoops are expanded or contracted by means of their respective slides.



A bustle composed of bows B, in combination with adjustable hoops C and adjustable supporting-hoops G, substantially as described, and for the purposes specified.

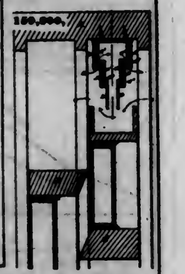
160,800. WINDOW-VENTILATORS. Samuel W. Couch, Cold Spring, N. Y. [Filed Dec. 19, 1874.]

Brief.—To the inner side of each upper plate are attached two or more transverse bars, which are made round or dovetailed in form. To the outer side of each lower plate, near its upper edge, are attached lugs having notches formed in their outer edges of such a shape as to receive and fit upon the bars. With this construction, when the upper sash is lowered, the plates descend with it or open out, and the air passes in and out through the spaces between the plates.

1. The improved ventilator, formed of the two sets of plates, D, provided with the cross-bars d^2 and the notched legs d^3, to adapt them to be applied to a window, substantially as herein shown and described.

2. The combination of the extension-plates E with the end parts of the plates D, substantially as herein shown and described.

160,800.



160,801. EMPLOYING COPPER, &c. S. L. Crocker, Taunton, Mass. [Filed Oct. 12, 1874.]

Brief.—Adds a small quantity of spelter in any form to copper ores, or partly-refined metallic copper containing antimony or arsenic, to remove these impurities during smelting.

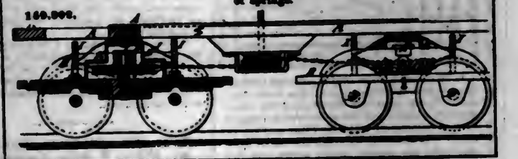
The process of removing arsenic, antimony, and other volatile metals from copper in the smelting or refining furnaces by the aid of zinc, substantially as herein described.

160,802. CAR-SPRINGS. A. J. Culbertson, San Andreas, Cal. [Filed Nov. 7, 1874.]

Brief.—Weight of car rests on plates, which press on bars hung on quadrilateral system of springs.

160,796.

160,802.



The combination, with frame A, of the plates E, bolt F, blocks G, rods H, and springs I J, to support the load, all as set forth.

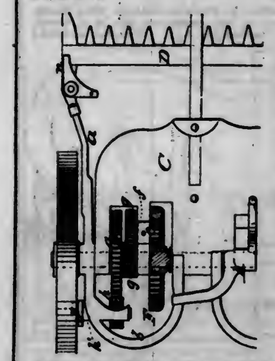
160,803. WINDOW-SHADE FIXTURES. C. de Guilfeldt, New York, N. Y. [Filed Oct. 24, 1874.]



The combination, in a spring shade-roller, of the cam or brake E', the inclosing-cap E, the recessed hub D, and the pivoted disks D', as and for the purpose specified.

160,804. MOWING-MACHINES. E. C. Dewey, Towanda, Pa. [Filed Feb. 23, 1874.]

Brief.—The two side pieces supporting the cutting apparatus are pivoted on the main axle independent of each other and of the tongue-frame.



1. The combination of the spur-wheels F G, having their bearings on the axle B, and the spur-wheels e f, having their bearings on a platform, C, which articulates on this axle, and with a pinion, h, which has its bearings in rear of said axle on an independent frame, E, substantially as described.

2. The lifting-lever K, having its bearing on the axle B, in combination with the frames E and platform C, substantially as described.

160,805. METHODS OF TUBING WELLS. W. T. Dobbs, Pana, Ill. [Filed Nov. 22, 1873.]

Brief.—Plastic tubing formed of cements, to shut off obstructions and formations of the earth that give way and slip down in the well, causing a break in the walls, is crammed in its soft state into the cavity, where it soon undergoes a chemical change, and hardens under water, thereby binding and securing all fragments and loose particles, so that being subsequently drilled through it will not cave, but leave a solid and strong wall.

1. The method of stopping or cramming caves or cavities in the bore of a well, consisting in obstructing said bore below the caves or cavities, and lowering and depositing cement in suitable quantity, as herein shown and described.

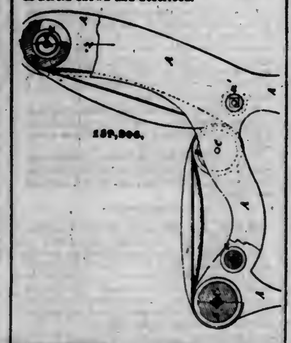
2. The process of cramming, shutting off, and tubing caves, &c., in wells, by cement let down in bags and discharged, or left in the bags and packed in the caves, substantially as specified.

160,806. CHAIRS. William T. Doremus, New York, N. Y. [Filed Nov. 21, 1874.]

1. The combination of one or more torsion-rods, C, secured at one end and free at the other, and one or more rollers, B, secured at one end to the torsion-rods and free at the other, with a frame, A, and the upholstering or cover D, substantially as herein shown and described.

2. The combination of the rod G, secured at both ends, the perforated or hollow roller F, and one or more coiled springs, H, with the frame A and the upholstering E, substantially as herein shown and described.

160,806.



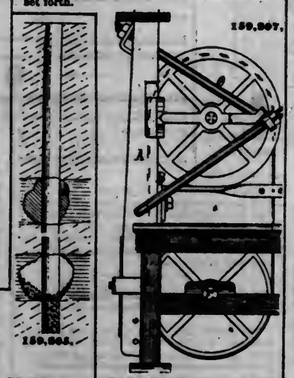
160,807. BAND-SAW FRAMES. N. T. Edson, New Orleans, La. [Filed Apr. 7, 1874.]

Brief.—The post carrying the journals of the upper band-pulley is made vertically adjustable by means of clamps and wedges.

1. The combination of posts A and B, when made and operated substantially as hereinbefore set forth.

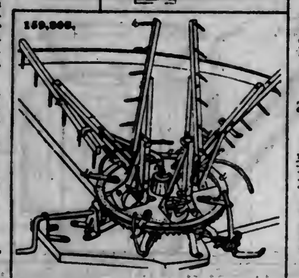
2. The combination of post A, plate Q, and wedge R, substantially as and for the purposes set forth.

160,807.



160,805.

160,808.



160,808. HARVESTER-RAKES. Vanderlyn Howard Felt, Kendall, assignor of one-half his right to D. M. Osborne & Co., Auburn, N. Y. [Filed June 16, 1874.]

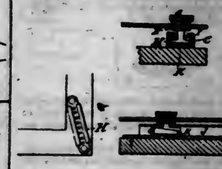
Brief.—The rake-arms are changed to rakes or beaters at pleasure by crooked rods and projections upon the reel-head.

1. In combination with the rake-carrying and driving wheel C, and its projections d, the rocking cross-shafts p q, and their respective arms, for the purpose of setting or converting the rake from a beater to a rake, or vice versa, as and for the purpose described and represented.

2. In combination with the wheel C, and the rakes pivoted thereto, the lever latches, and the rocking cross-shafts and their arms, for the purpose of holding the rake from rising when it is to sweep the platform, and so unlock it when it is to rise to pass above the platform, substantially as described.

3. The combination of the tail-pieces 2 of the rake-arms with the spring and bolding plates o n for easing the rakes when raised, and holding them up as they pass the driver's seat, as described.

160,809. CARRIAGE-CURTAIN FASTENINGS. Henry Foster, Westerly, R. I. [Filed Jan. 18, 1875.]



1. The wedge-shaped slide C, having a pin, K, on its under side, in combination with the plate B, having a series of slots or holes, J, constructed and applied in the manner and for the purposes substantially as set forth.

2. Slotted plate or plates L, combined with carriage-curtains as a means of allowing for the shrinkage of the curtains, substantially as set forth.

160,810. PIPES. Wm. R. Gardner and Chas. C. Blossom, New York, N. Y. [Filed Dec. 22, 1874.]



As a new article of manufacture, a pipe consisting of two pin-pointed stocks, S S, connected by the double spring-loop and tongue R H, combined and arranged substantially as shown and described.

160,811. DRAGS. W. Gardner, Wheelersburg, Ohio, assignor to himself and L. Halladay, same place. [Filed Nov. 30, 1874.]

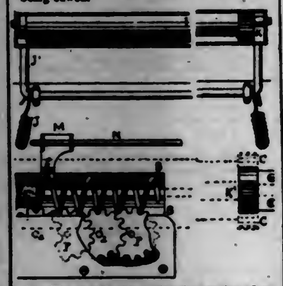
Brief.—A series of angular crushers are secured to side pieces, and at the rear end of the series, upon the under side, is secured a pair of markers, by means of which the ground is laid off ready for planting.



The pulverizers A and furrowers C, connected with the same carriers B, substantially as shown and described, so that ground may be laid off in rows for planting as fast as it is brought into fine filth, and by the same operation.

159,813. SEWING-MACHINES FOR STITCHING SACKS, &c. Howard Pratt Garland, San Francisco, Cal. [Filed Jan. 4, 1875.]

Brief.—The needle, having its exterior surface corrugated, is mounted upon two elastic rollers, from which it receives its motion, being held down in contact with them by means of a third roller, journaled in a swinging frame above. The guide for the thread is arranged upon a rod that is parallel to the axis of the needle, and has a V-shaped notch in its end, the sides of which embrace the sides of the needle, by means of which it is moved along its supporting-rod to supply thread to the needle while on the opposite side are notched disks, which are revolved by the needle, and serve as rests to support the material while being sewed.



1. The combination, with the roughened or notched edges of the spirals of the needle, of the rollers B B I, substantially as herein set forth and specified.

2. The notched disks F, in combination with the spiral needle, substantially as and for the purpose specified.

3. The oblong cam H and friction-roller I, in combination with the spiral needle, the rollers B B, and springs J, substantially in the manner as herein set forth and specified.

4. The movable thread-guide, provided with the forked end and hole or opening b, in combination with the spiral needle, substantially as herein specified and set forth.

5. The stationary slotted guide E, provided with the collar E', in combination with the spiral needle, as specified and set forth.

159,814. HOLDERS FOR ORNAMENTS, &c. Walter J. Garvey, St. Louis, Mo. [Filed Dec. 6, 1874.]

Brief.—The device is intended for holding the ornaments which are applied to the ceiling of a room in position while they are being permanently secured.

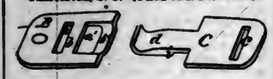
A spring-holder for ornaments, made adjustable as to length, capped with rubber or other soft material, and with a spring at the other end, substantially as described, and for the purpose set forth.

159,814. RESERVE FOR ROLL-COUPLINGS. James Gillespie, Cleveland, Ohio, assignor to himself and Wm. Garrett, same place. [Filed Oct. 21, 1874.]

Brief.—A binder to hold in place the stretchers of roll-couplings, made of wire, coiled at a to give elasticity, and having parts b for convenience of handling, and hook and eye c d for fastening.

The wire binder C, provided with coiled portion a, handles b b, and hook and eye c d, substantially as and for the purpose set forth.

159,815. BALE-TIES. A. A. Goldsmith, Charleston, S. C. [Filed Jan. 23, 1875.]



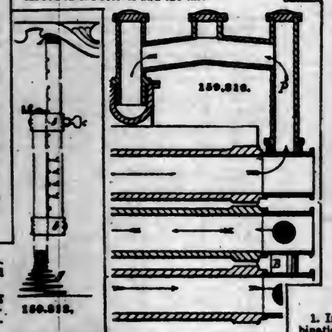
1. In a bale-tie, the combination, with plate B, rigidly secured upon one end of a binder, A, having rectangular slots a a', and a bar, b', struck down below the level of its plate, of the plate C, adjustably applied upon the other end of the said binder, and having slot e, tongue d, with upturned hook e, and stop f, substantially as specified.

2. The plate C, having slot e and tongue d, with upturned hook e and stop or shoulder f, when adapted for use substantially as specified.

3. The plate B, having slots a a', separated by bar b, and a front bar, b', struck down below its level, as specified, and for the purpose set forth.

159,816. GAS-RETORTS. W. W. Goodwin, Camden, N. J. [Filed Apr. 10, 1874.]

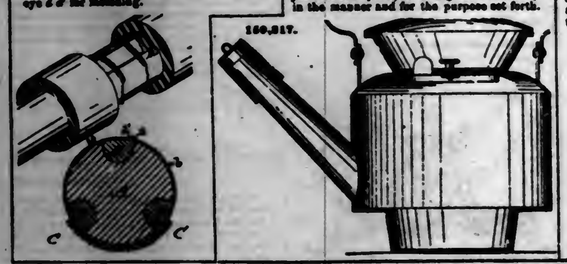
Brief.—Three retorts, arranged as shown, one above the other, with alternate connecting-pipes, are filled with coal, and, after the heat, discharged simultaneously. The gas produced in the lower passes through all three, and is enriched with saving and utilizing of carbon in the retorts and the tar.



The combination of the retorts A, C, and E with the connections D and B and the standpipe F, substantially as described, whereby the gas passing through the highly-heated coal in the retorts prevents the deposition of carbon and tar, and is thereby carbided and increased in volume.

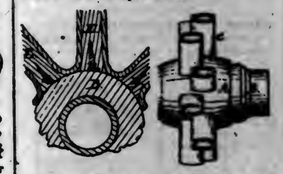
159,817. TEA-KETTLES. Harriet Gray, Marquette, Mich. [Filed Sept. 12, 1874.]

The combination, with a tea-kettle having a funnel-shaped top rim provided with a cover, of an interior perforated cover with adjustable slide-plate, all arranged substantially in the manner and for the purpose set forth.



159,818. WHEELS FOR VEHICLES. David Grim, Pittsburg, Pa. [Filed July 6, 1871.]

Brief.—The spokes are spread within the sockets, and rest upon the hub.

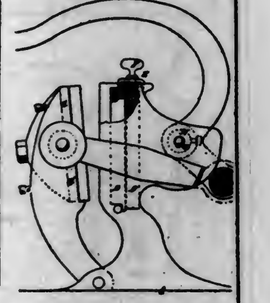


1. A metallic band, A, provided with radial sockets C, each furnished with a wooden spoke, E, and combined with an anmorticed wooden hub, B, so that the inner ends of the spokes will extend through the sockets and rest directly upon the surface of the wooden hub, as set forth.

2. A wooden hub, B, in combination with a metallic band, A, provided with radial sockets C enlarged at their inner ends, as set forth.

3. A wooden hub, B, provided with a metallic band, A, having radial sockets C, in combination with the spokes E, spread within the sockets by means of a wedge, a, as set forth.

159,819. PRINTING-PRESSES. W. B. Gump, New York, assignor to Mrs. M. L. Gump, Garden City, N. Y. [Filed Oct. 31, 1874.]



1. In an oscillating printing-press, the combination of the lower platen G having a recessed front face, with the upper platen H, provided with ribs h', fitting into said recess, as and for the purpose specified.

2. The combination of the plate B, rod C, flanged chase D, double clip or clamp E, and screw F, as herein shown and described, for the purpose set forth.

159,820. DEVICES FOR HEATING IRONS. J. Harris, Jr., Boston, Mass. [Filed Jan. 19, 1875.]

Brief.—A trough, a a, for containing petroleum or other fuel; a flange, B, to act as a conductor of heat from the flame to the fuel; a body, E E, and a top, H K, provided with a deflector, J, for interrupting the escape of the products of combustion.



1. The tire-heating apparatus described, the same consisting of the body E E, trough a a, and top H K, combined and arranged to operate substantially as and for the purpose specified.

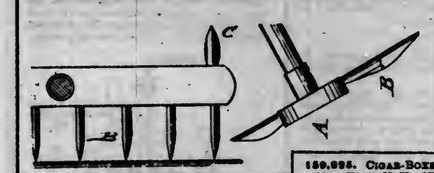
2. In a tire-heating apparatus, the trough a a, provided with the vertical flange B, substantially as and for the purpose specified.

3. In a tire heating apparatus, the deflector J, substantially as and for the purpose set forth.

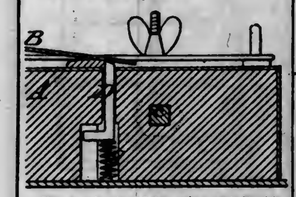
159,821. GARDEN-RAKES. F. B. Hodge, Greenport, N. Y. [Filed Sept. 26, 1874.]

Brief.—The head of the rake is made of thin metal plates. The teeth are also formed of metal plate and U-shaped in cross-section. Upon the opposite side of the head are placed two wider teeth at or near each end, of the same form, which are used for making furrows in which to sow small seeds.

The garden-rake and furrowing implement herein described, consisting of the bandled head A, the series of concave and end-sharpened rake-teeth B, and the larger furrowing-teeth, C, all constructed and arranged as herein shown and described.



159,822. LEATHER-STRAP-SKIVING MACHINES. Albert G. Howard, Farmington, Me. [Filed Jan. 23, 1875.]

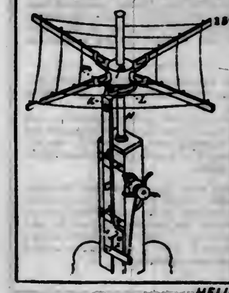


The combination of the spring guide D with the knife B and pressure-spring C, substantially as described.

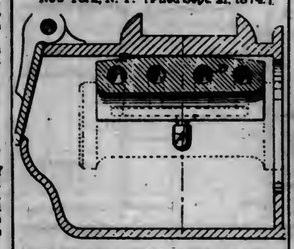
159,823. CLOTHES-DRIERS. Chas. Howes, Hudson, Mass. [Filed Dec. 4, 1874.]

Brief.—The drier may be elevated and lowered by a rod and bracket, and revolves on a rod and sleeve, the sleeve being held by a slot and stud.

In a clothes-drier, constructed substantially as described, the bracket K, provided with the stud r, and the conical sleeve L, provided with the aperture P, combined and arranged to operate with the rods C N, and hub M, substantially as and for the purpose specified.

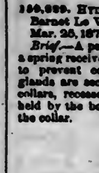


159,824. CAR-AXLE BOXES. C. A. Hussey, New York, N. Y. [Filed Sept. 21, 1874.]



The flexible pipes F F, to lead to a superposed reservoir, the bearing D having cavities I, not opening into the axle-box, but connected with said pipes by the tubes E H, all combined as and for the purpose specified.

159,825.

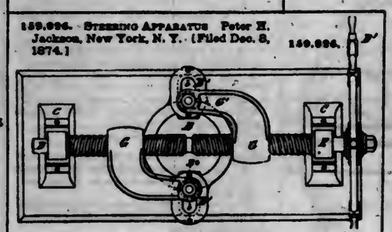


159,826. CIGAR-BOXES. Sigmund Jacoby, New York, N. Y. [Filed Feb. 2, 1875.]

Brief.—In a metal cigar-box a branding-surface is provided by leaving a slot, within which such branding-surface is exposed.

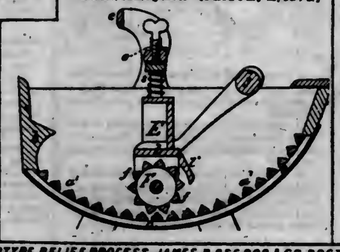
A cigar-box made entirely of metal, and provided with a hole, a, against the inside of which is placed a branding-surface, C, substantially as and for the purpose shown and described.

159,826. STEERING APPARATUS. Peter H. Jackson, New York, N. Y. [Filed Dec. 8, 1874.]



The nut G, with the arm G' rigidly joined or in one therewith, in combination with the screw D, and so connected to the arm B' on the rudder B that it is directly confined thereto to allow the device to resist the twisting effect of the shaft without the necessity for a guide-rod, all substantially as herein specified.

159,827. WASHING-MACHINES. John W. James and Josiah Streit, Centre Town, Mo., assignor to Josiah Streit and James Streit, same place. [Filed July 11, 1874.]



The rubber F, rotating in bearings in the oscillating hangers E, in combination with the strips f f and check-rib b, substantially as described, and for the purpose set forth.

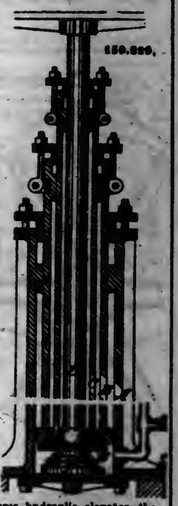
159,828. WAGON-BODIES. Chas. W. Kerr, Cortland, N. Y. [Filed Aug. 27, 1873.]



The combination of the bent plies A A B B and the correspondingly-bent rail D, forming the sides and ends of a wagon body, substantially as and for the purpose set forth.

159,829. HYDRAULIC ELEVATORS. William Barnet Le Van, Philadelphia, Pa. [Filed Mar. 26, 1874.]

Brief.—A perforated plate supported upon a spring receives the rams upon their descent, to prevent concussion. The stuffing-box glands are secured to the frame by sectional collars, recessed into them, and by eyebolts held by the bolts that unite the sections of the collar.

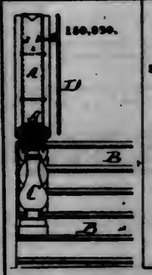


1. In a telescopic hydraulic elevator, the combination of a hollow column or ram, recessed at or near its upper end, so as to be of substantially uniform thickness, with a clamp-collar composed of two or more segments, resting in the recess of the ram, and united by bolts, which carry the bolts or studs of the gland or follower, substantially as set forth.

2. The combination, in a telescopic hydraulic elevator, of an outer casing, A, a series of columns or rams, and a perforated plate, B, and spring F, substantially as set forth.

159,830. WINTER-RAILS FOR HIGH STOOPS. Remigio Lo Forte, New York, N. Y. [Filed Dec. 11, 1874.]

Brief.—A detachable hand-rail to be attached in winter to the large stone rails of outside steps, thus forming a convenient safety-rail for grasping when the steps are slippery from rain or ice.



159,830.

An improved winter-rail for high stoops, provided with projecting arms a a and rods b b, for convenient application to and removal from the broad main rail A of a high stoop, substantially as specified.

159,831. FLUXES FOR TREATING ORES. P. N. Mackay, San Francisco, Cal. [Filed Dec. 31, 1874.]

A flux or refining compound of borax or any of the borates, or crude borax, with silica in the form of infusorial earth or siliceous diatoma, cryolite, and chloride of sodium, substantially as herein set forth.

159,832. CORN-PLANTERS. A. M. Manny, Rockford, Ill. [Filed May 14, 1874.]

Brief.—"Check-row" planter. A rope is stretched across the field, and operates the dropping mechanism, producing uniformity in the cross-rows.

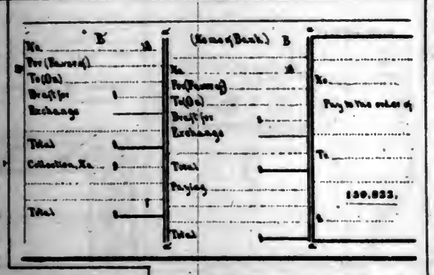


1. The combination, in a check-row corn-planter, of the main frame, the tongue, the friction-wheel, having its axis in the vertical plane of the tongue, the guides over the tongue, the rope, and the seed-slide; these members being constructed and operating in combination, substantially as hereinbefore set forth.

2. The combination of the main frame, the hoppers, the seed-slide, the friction-wheel, the endwise-moving sliding shaft, connecting the wheel and slide, and the shipping-lever, these members being constructed and operating in combination, substantially as set forth.

3. The combination of the friction-wheel and a single reversible carrier-arm, pivoted in the same vertical plane as the tongue and the axis of the friction-wheel, these members being constructed and operating in combination, substantially as and for the purposes specified.

4. The combination of the main frame, the stationary frame, the guides therein, the horizontal friction-wheel, and the single reversible arm pivoted in the vertical plane of the tongue, substantially as set forth.



159,833.

159,833. BANK-CHECKS. Chas. V. Mead, Chillicothe, Mo. [Filed July 23, 1874.]

A bank-check consisting, essentially, of a main part or body, A, printed in the usual form with blanks for dates, amounts, &c., and provided with duplicate detachable stubs B B', printed or otherwise impressed in correspondence with the body A, substantially as and for the purposes specified.

159,834. CONSTRUCTION OF ORDNANCE. R. R. Moffatt, Brooklyn, N. Y. [Filed Feb. 4, 1875.]

Brief.—Construction and combination, whereby the inequalities of radial expansion of an inner tube and the gun is compensated, and provision made to allow of longitudinal expansion of such inner tube without undue transverse strain being made upon the main gun.

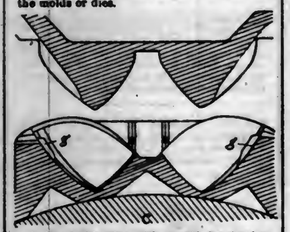


1. The tapered cylinder B, in combination with the gun A, arranged so that its longitudinal expansion will relieve the pressure on the gun A caused by the radial expansion of the cylinder B, substantially as described.

2. The combination, in a gun, of a lining tube or cylinder, B, and breech-plug D, when arranged so that there is a space between the rear end of the tube and the breech-plug, as and for the purpose specified.

159,835. APPARATUS FOR SHAPING COUNTER-STIFFENERS FOR BOOTS AND SHOES. J. R. Moffitt, Chelsea, Mass. [Filed Jan. 13, 1875.]

Brief.—The molding or forming mechanism is combined with a steam-chest for heating the molds or dies.



1. In combination with a mold for shaping heel counters or stiffeners from blanks, a guard, *a*, substantially as and for the purpose set forth.

2. A mold for shaping heel counters or stiffeners from blanks, provided with the spurs or stops *g g*, substantially as and for the purpose set forth.

3. A mold for shaping heel counters or stiffeners from blanks, provided with external projections *i i*, in combination with strips or bars on the steam-chest or heater-floor, substantially as and for the purpose set forth.

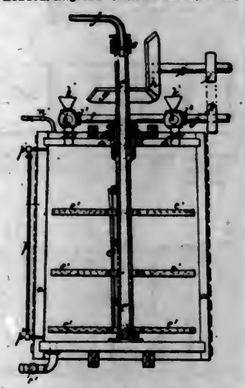
159,836. DENTAL REFLECTORS. Francis M. Osborn, Port Chester, N. Y. [Filed Aug. 1, 1874.]

Brief.—A small mirror is arranged upon a ball-and-socket-jointed arm, which arm is sprung by its forked end over a rubber-dam clamp. It serves to show the cavity during the operation of excavating or filling.



The disk A, provided with a reflecting-surface upon its front side, and a ball-stem, *c*, upon its rear side, and the arm B, provided with a spherical socket, *b*, upon one end, and spring-clasps *b'* upon its other end, in combination with each other, substantially as herein shown and described, to adapt them for use, as set forth.

159,837. MANUFACTURE OF GRAPE-SUGAR. Edwin E. Pearce, New Wandsworth, assignor to the Patent Grape-Sugar Company, Limited, Rupert Street, Whitechapel, London, England. [Filed Feb. 20, 1874.]



1. The described process of producing saccharine liquid by one operation, in the manufacture of glucose or grape-sugar from whole grain, by feeding such whole grain into a vessel containing sulphuric acid, in successive and regulated quantities, such vessel being supplied with steam by hollow stirrers, performing the double function of stirring and of conveying and distributing the steam.

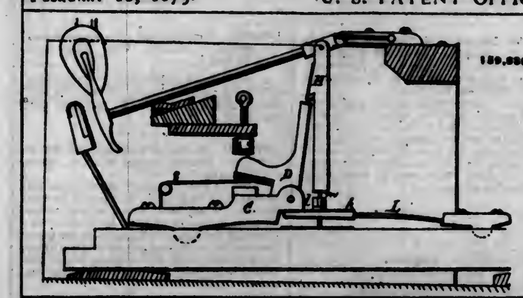
2. The combination of the vessel *a*, the hollow shaft *a'*, for the passage, supply, and distribution of the steam, and the feeding devices *h h i i*, as shown and described.

3. In combination with an apparatus for producing saccharine liquid from whole grain, the grain-feeding devices described, consisting of the supply reservoir or hopper and the automatic revolving cylinder I, supplied from the hopper, and provided with a circular series of pockets, and operating to feed intermittently and regularly, in the manner described

159,838. REPEATING ACTIONS FOR PIANOS. Ferdinand Polster, Baltimore, Md. [Filed Oct. 28, 1874.]

Brief.—A resilient spring attached to the upper surface of the key-lever supports the hammer-standard, and coacts with the fly-lever, acted on by a spring, to produce the repeating action.

L, provided with the tongue *h* and the regulating tenon rocker-butt *g*, in combination with the key-lever B, the buffer-block *l*, on the set-screw *m* of the hammer-standard H, and the fly-lever butt C, with its resilient spring *s* acting on the fly-lever D, substantially as and for the purposes specified.



159,886.

159,886. SLATE-FRAMES. Nancy A. Porter, Warren, Ohio. [Filed Jan. 14, 1875.]

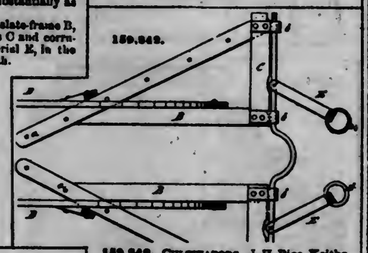
1. The slate-frame B, provided with perforations C and corrugations D, substantially as and for the purpose described.

2. The combination, with the slate-frame B, provided with the perforations C and corrugations D, of the muffling material E, in the manner substantially as set forth.

As a new article of manufacture, the within-described compound implement, consisting of the punch, eraser, and paper-cutter, being provided with an eye, for the purposes herein described.



159,839.



159,842.

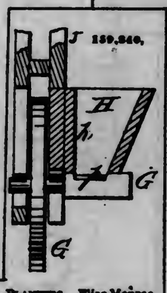
159,840. SEED-PLANTERS. Elias Monroe Potter, Rutherford Depot, Tenn. [Filed Oct. 10, 1874.]

Brief.—In vertically-slotted standards is journaled the axle of the bearing-wheel. One end of the axle is made large, and has a pocket. This axle also forms the bottom of the adjustable hopper.

Wheel G on an axle, G', having a pocket, p, in it, in combination with the seed-hopper H and its slide h, the whole being applied to standards J for the purpose of accommodating themselves to the inequalities of the ground.

159,841. COMPOUND IMPLEMENTS. Edwd. Livingston Price, Newark, N. J. [Filed Dec. 28, 1874.]





159,840.

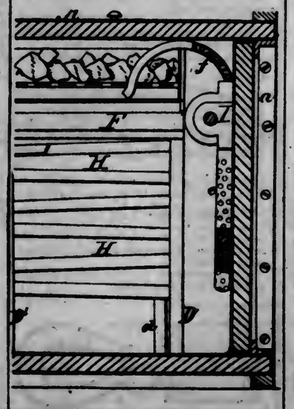
159,842. CULTIVATORS. J. H. Rice, Keithsburg, Ill. [Filed Dec. 29, 1874.]

Brief.—A pair of triangular cultivator-frames coupled, the broad end forward, by an arched rod, upon which the frames are pivoted, and the draft-devices.

The angular frames A B C, carrying handles D, in combination with the arched rod *d*, having two bearings, *b*, upon each frame, and the pivoted bars E and draft device, all constructed as and for the purpose herein specified.

159,843. REFRIGERATORS. J. H. Ridgway, Philadelphia, Pa. [Filed Sept. 11, 1874.]

Brief.—A refrigerator formed of packed boxes banded together. Each drip-trough catches the moisture condensed on the outsides of the trough above it. Fan sucks air in through absorbents, and drives it out through absorbents into the drip-pan.

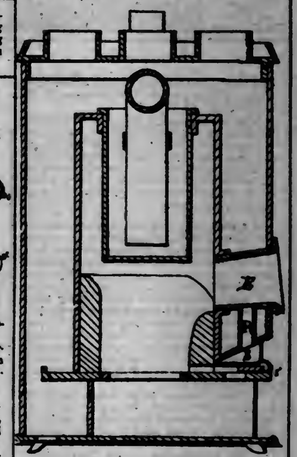


1. The combination of the ice-box of a refrigerator with a series of V shaped troughs, arranged one above the other, inclined alternately in contrary directions, and serving to conduct the drip-water from the ice-box, as set forth.

2. The combination, in a refrigerator, of a fan-blower, I, with the perforated suction-pipe *e*, containing absorbent material, and the outlet-pipe *f*, also containing absorbent material, and discharging the air into the drip-catcher below the ice-box, all substantially as and for the purpose set forth.

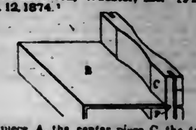
159,844. HEATERS. Matthew H. Roberts, Philadelphia, Pa., assignor of one-half his right to John McCoy, same place. [Filed Dec. 7, 1874.]

Brief.—A dust-flue connecting the feeder-neck and poke-hole, poke-hole mouth-piece, and a damper.



The combination of the feeder-neck F, poke-hole mouth-piece S, the connecting dust-flue R, and the damper *s'*, connecting the mouth-piece S with the ash-pit, substantially as herein described.

159,845. PACKAGES FOR PRINTS OF BUTTER. Alpson Robinson, Webster, Ma. [Filed Nov. 12, 1874.]



The piece A, the center piece C, the two pieces B B', and the fastening-wires D D', combined substantially as and for the purpose described.

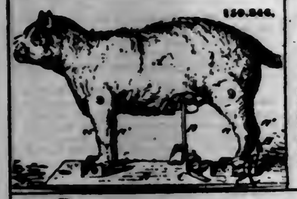
159,846. PIGEON-STARTERS. H. A. Rosenthal, Brooklyn, N. Y. [Filed Jan. 25, 1875.]

Brief.—If necessary, to insure the flight and spring into the air of the pigeon when the trap is opened, an artificial animal is made to jump toward the bird from a crouching position.

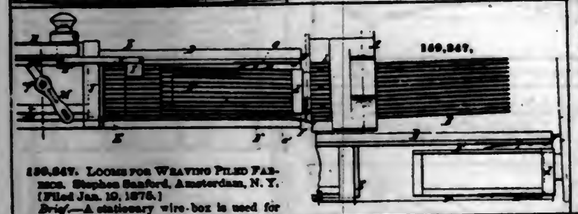
1. An improved pigeon-starter, formed by the combination of the body A, the rigid pivoted legs *a'*, the spring C, lever D, spring-catch E F, and trip-cord G with each other and a base-board, B, substantially as herein shown and described.

2. A pigeon-starter consisting of a figure made to represent the body of an animal, and provided with suitable mechanism to enable it to be set in a crouching position, and to be sprung into an erect position, substantially as herein shown and described.

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150,847. LOOMS FOR WEAVING PILED FABRICS. Stephen Sanford, Amsterdam, N. Y. [Filed Jan. 19, 1874.]

Brief.—A stationary wire-box is used for withdrawing and inserting the wires, in place of the ordinary vibrating or oscillating trough, and by means of a series of wires arranged in the box each wire, as it is withdrawn, so moves the series of wires as to bring a wire on the opposite side into position to be inserted by the pusher.

1. A stationary wire-box, D, in combination with a series of wires arranged side by side therein, as described, whereby each wire, as it is withdrawn from the woven fabric, places a wire in position for insertion into the open shed, as specified.

2. The combination of the following parts in a wire-motion of a loom for weaving pile fabrics, viz., the stationary wire-box D, supplied with wires B', a stationary box, A, which supports the heads of the wires in the fabric woven, a withdrawing-hook, I, and a wire-pusher, J, substantially as and for the purpose described.

3. The stationary receiver and holder D, constructed with one or more grooves, D^1 D^2, and a bed for wires, B', operating as set forth, substantially in the manner and for the purpose described.

4. The combination of the holding-down ledge d and spring g with wire-box D, substantially as described.

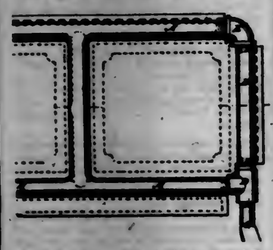
5. The combination of the spring g with wire-box D, provided with the groove D^2, substantially as described.

6. The combination of the device G for directing the end of the wire toward the open shed with the wire-box D, substantially as and for the purpose set forth.

7. The rib or tongue on the head of the box D, in combination with the wires B B', having the notches in their heads, substantially as and for the purpose described.

8. In combination with a main pusher, J, the auxiliary pusher L for starting the wire, the two operating together, substantially as described.

150,848. DAM-BOARDS. C. C. Schwaner, Winterset, Iowa. [Filed Jan. 4, 1875.]



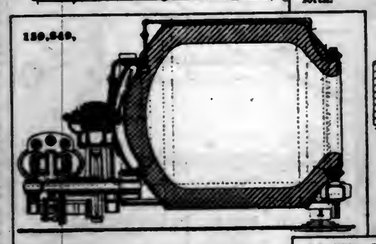
The dash-frame, formed of bars A and B, and the screw-couplings, combined as and for the purpose specified.

150,849. REVOLVING PUDDLERS. Wm. Sellers, Philadelphia, Pa., and G. H. Sellers, Wilmington, Del.; said G. H. Sellers assignor to John Sellers, Jr., Philadelphia, Pa. [Filed Dec. 7, 1874.]

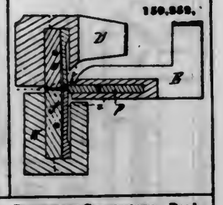
Brief.—Water enters the hollow pins, seated at both ends in the hollow journal at f, passes thence through pipe h to the open end of the puddler, and returns through pipe i to the water-back, and out through the plug, and a pipe leading from the chamber at the outer end of the latter. The system of water-pipes revolves with the puddler.

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1. The combination, with the rotary puddling-vessel open at one end only, of a water-circulation pipe within the rotary vessel at the open end, substantially as and for the purposes set forth.

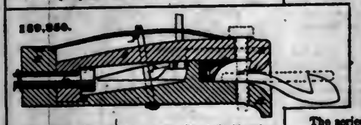
2. A rotary puddling-vessel open at one end only, and having a water circulation within the rotating vessel at both the open and closed ends, substantially as and for the purposes set forth.

3. The combination of a circulation-pipe at the open end of a rotary puddling-vessel with the hollow journal at the closed end of the vessel, substantially as and for the purposes set forth.

4. The combination of a circulation-pipe at the open end of a rotary puddling-vessel with the hollow journal and water-back at the closed end of the vessel, substantially as and for the purposes set forth.

5. The combination, with the hollow journal of the double-seated plug, substantially as and for the purposes described.

150,850.



150,850. CAR-COUPLINGS. Benj. B. Sherfy, Knoxville, Tenn. [Filed Jan. 11, 1875.]

1. The clamping-jaw B and buffer A, in combination with the coiled spring B and bolt C, passing through the head of both the buffer and the jaw, substantially as and for the purposes set forth.

2. In combination with the jaw B, the slide V, for the purpose set forth.

150,851.



150,851. WHIFFLETREE-HOOKS. Othniel J. Smith, Wauwatosa, Wis. [Filed Dec. 19, 1874.]

A whiffletree-hook, formed of the pivoted overlapping part C, combined with the stationary part B, having lug B', as shown and described.

150,852. MACHINES FOR MAKING SHOE-NAILS. Leander Soule, Taunton, Mass. [Filed Aug. 7, 1874.]

Brief.—A pair of narrow spring-dies, situated one at the side of both the griping-dies, leaving a space between, act in conjunction with the gripers to compress the metal blank, forming a shoulder or enlargement in the space between the spring-dies and the gripers, which is increased and finished by the action of the header in pressing the spring-dies toward the gripers.

1. The auxiliary spring-dies i i, diverging from and in combination with the main dies s f, and constructed substantially as and for the purpose described.

2. In combination with the dies s f i i, having a space between them, the compressor p, for forcing one pair of dies laterally toward the other pair while the nail is griped between them, substantially as and for the purpose set forth.

150,852.

150,852. CRANBERRY-SEPARATORS. Danl. T. Staniford, New Egypt, N. J. [Filed Jan. 4, 1875.]

Brief.—The berries are caused to fall from a hopper upon a series of inclined planes. The sound berries rebound and alight upon a higher plane, and are conveyed to a receptacle. The soft berries pass on over a series of inclined planes, and are finally received with the refuse berries. In their descent the sound berries, one after another, rebound, and are thus separated from those that are soft.

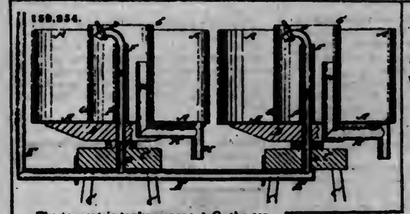


The series of lower inclines C, the series of upper inclines D, the series of steps B, the corrugated feed-board G, and the series of flexible aprons F, in combination with each other and with the box A, substantially as herein shown and described.

150,854. MILK-COOLING APPARATUS. Orrin J. Stickles, Canton, N. Y. [Filed Jan. 18, 1875.]

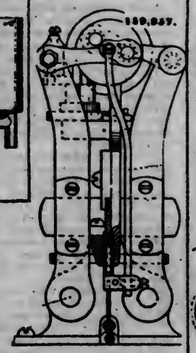
Brief.—An outer tank contains milk, which is cooled by contact with an inner one filled with water. A waste-pipe prevents an overflow of water, and secures a constant flow through the vessel. The milk-tank is provided with a waste-pipe to draw off its contents, also to be used in cleansing. The apparatus is supported upon a bench by means of the pivoting inlet-pipe.

150,854.



The concentric tanks or pans A C, the central tube F, the waste-pipe H, the discharge-pipe I, the pivoted base B, and the pivoting-pipe D, in combination with each other, and with the water-pipe E and the bench or support C, substantially as herein shown and described.

150,857.



150,857. PEGGING-MACHINES. Benjamin F. Sturtevant, Boston, Mass. [Filed Feb. 8, 1875.]

1. The combination, of a peg-guiding channel or way, with feeding mechanism constructed substantially as described, and adapted to move the strip in opposite directions, as and for the purpose set forth.

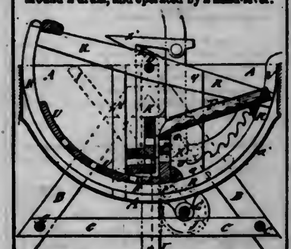
2. The combination, with a peg-guiding channel or way, of severing-cutters operating against the peg-strips from opposite sides, and arranged so that the path of each shall lap across that of the other, substantially as described.

3. The combination of the peg-guiding channel or way with the reciprocating plunger and the clearing-rod, substantially as set forth.

4. The combination of the peg-guiding channel or way with the pivoted holder connected with a stationary part of the frame, substantially as described.

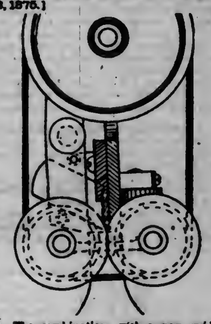
5. In the art or process of compressing points on pegs, moving the strips and pegs, substantially as described, so as to leave a space each side of the peg being pointed when the point-forming device acts thereon, substantially as and for the purpose described.

150,855.



The combination of the cords F I, the pulleys or drums G, the connecting-shaft H, and the lever J with the vertically-adjustable movable bars D and the oscillating presser or beater frame P, as and for the purpose described.

150,856. PEGGING-MACHINES. Benjamin F. Sturtevant, Boston, Mass. [Filed Feb. 3, 1875.]

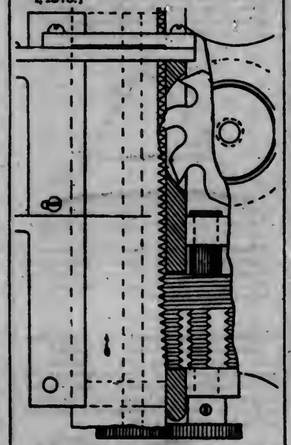


1. The combination, with a peg-guiding channel or way, of one or more rotary point-cutting devices, substantially as described, acting against the ends of the pegs to form peg-points, substantially as set forth.

2. The combination of a peg-wood guiding channel or way with a peg-severing cutter, and one or more rotating peg-pointing cutters acting against the pegs after they are cut from the peg-wood, substantially as described.

3. The combination of a peg-guiding channel or way with a feeding mechanism for feeding the peg-wood, and with rotating peg-point cutting mechanism moving within the lower portion of the channel and acting against the ends of the pegs, substantially as described.

150,858. PEGGING-MACHINES. Benjamin F. Sturtevant, Boston, Mass. [Filed Feb. 1, 1875.]

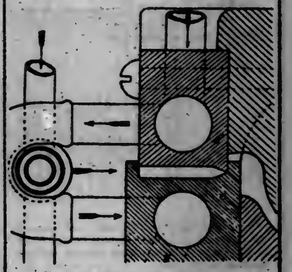


1. The combination, with a channel or way for guiding a peg-strip or peg, of a rotating cross-pointing mechanism, operating on the peg or peg-strip to form wedge-like bevel cross-points, substantially as described.

2. The combination, with a peg-guiding channel or way, of a cross-pointing and side-pointing mechanism adapted to point a peg or peg-strip, substantially as described.

3. The combination of a peg-guiding channel or way with a rotating toothed side pointing mechanism, substantially as described.

150,859. MACHINES FOR COMPRESSING SOLE-FASTENINGS. Benjamin F. Sturtevant, Boston, Mass. [Filed Dec. 17, 1874.]



1. The combination, with compressors for compressing ribbon peg-wood or a peg-strip, of apparatus for directing a flame in contact with the material forming the compressors, substantially as described.

2. In combination, compressors for compressing peg-wood, heating apparatus for heating such compressors, and mechanism for presenting the material to such compressing mechanism, substantially as described.

3. The combination, with compressors for consolidating peg wood, of rotary presenting mechanism, for presenting such peg-wood to the jaws, substantially as described.

4. The combination, with compressors for consolidating peg-wood, of mechanism to take the peg-strip from the compressors, substantially as described.

5. The combination, with compressors for consolidating peg-strips, of mechanism to present the strip to and take it from the compressors, substantially as set forth.

6. The feeding-rollers to present the peg-strip to the compressors, when provided with flanges to receive and guide such strips, substantially as described.

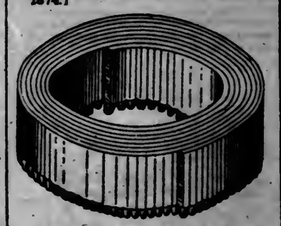
7. The combination, with compressors for consolidating peg-wood, of mechanism for moving the peg-strip and for winding it, substantially as set forth.

8. The compressors for consolidating the peg-strip, having their faces inclined with reference to each other in the direction of their length, substantially as set forth.

9. The compressors for consolidating the peg strip or ribbon, having their faces inclined with reference to their length, and beveled and provided with ledges, substantially as described.

10. The combination, with compressors for compressing the peg-ribbon, of means, substantially as described, for heating the strip previous to compression.

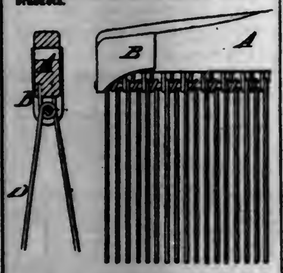
150,860. RIBBON PEG-WOOD. Benjamin F. Sturtevant, Boston, Mass. [Filed Dec. 29, 1874.]



A ribbon of peg-wood having plain sides and on one edge a series of compressed conical projections formed by compressing the wood in the direction of the length of its grain, substantially as described.

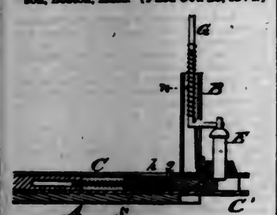
160,861. BROOMS. Geo. R. Swingle, Fredericktown, Ohio. (Filed Jan. 9, 1875.)

Brief.—The wires are wound on a rod, the short end projecting into the head, and the long end forming the broom proper. The rod is held to the hand at each end by suitable brackets.



The spring-wire teeth D, coiled and inserted into the head A, in combination with the rod C and caps B, substantially as and for the purpose described.

160,862. CAR-COUPLINGS. Geo. M. Thompson, Boston, Mass. (Filed Oct. 26, 1874.)



The vertical pull-rod G, working in guides on the dash-fender B, and held down by a spring, s, the flaring coupling-head O of the coupling-pin E, the sliding block D, pin p, slot h, and spring S, in combination with the draft-pole of a horse-car, substantially as described.

160,863. MACHINES FOR MAKING CUTTERS FOR GROOVING NEEDLES. E. Thompson, Bridgeport, Conn., assignor to Wheeler & Wilson Manufacturing Company, same place. (Filed Jan. 31, 1870.)

Brief.—Improvement on his Letters Patent No. 153,173, dated September 22, 1874; the improvement being the provision of automatic mechanism for the execution of several steps which, in the former machine, were performed by hand—viz imparting to the cutting-blank arbor a reciprocating semi-circular movement, to present the blank properly to the tool, and a vertical reciprocating movement, for releasing the blank from contact with the tool on the return movement, imparting, at the end of each cut, an intermittent rotary motion to the cutter-blank arbor, to present a new surface for the next tooth, and stopping the machine when a blank has been cut.

1. In combination with the cutter-blank arbor E and the herein-before-described mechanism to which the same is attached, the pulley N, elastic bands *p p'*, segmental lever L, connecting-bar M, lever G, horizontal lever J, spring *r*, cam H, cam K, shaft *d*, spur-gear V, pinion W, splined shaft *c*, shipper Y, and driving-pulley X, all constructed, arranged, and operated for the purpose of imparting a semicircular oscillating motion to said cutter-blank arbor and mechanism, substantially as and in the manner and for the object set forth.

2. In combination with the cutter-blank arbor R, oscillating mechanism connected therewith, and vertical sliding bearing I, to which said mechanism is attached, the horizontal lever J, adjustable spring *r*, and cam K, secured to the revolving shaft *d*, all constructed, arranged, and operated for the purpose of imparting a reciprocating motion to said arbor, oscillating mechanism, and sliding bearing, substantially as and in the manner and for the object set forth.

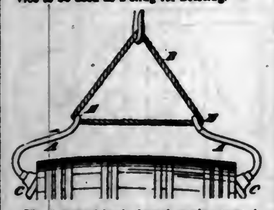
3. In combination with the oscillating cutter-blank arbor R and index S, the adjustable bar T and pawl U, constructed and arranged for the purpose of intermittently revolving said arbor and index, substantially as, and at the time, and in the manner, and for the object, set forth.

4. In combination with the oscillating cutter-blank arbor R and index S, the stud *n*, pivoted plate *o*, sliding rod *j*, catch *k*, vertical bearing F, latch *m*, shipper-lever Z, shipper Y, revolving shaft *c*, and driving-pulley X, all constructed, arranged, and operated for the purpose of stopping the movement of said oscillating cutter-blank arbor and index, substantially as, and at the time, and in the manner, and for the object, set forth.

5. The combination of the cutter-blank arbor R, bearing Q, index S, adjustable slide P, bearing O, protractor *w*, pointer *x*, vertical sliding bearing I, pulley N, elastic bands *p p'*, segmental lever L, connecting-bar M, lever G, horizontal lever J, spring *r*, cam H, cam K, shaft *d*, spur-gear V, pinion W, splined shaft *c*, shipper Y, driving-pulley X, shipper-lever Z, latch *m*, catch *k*, sliding rod *j*, pivoted plate *o*, stud *n*, adjustable bar T, and pawl U with the horizontally and vertically adjustable bearing D and milling-cutter spindle and cutter, all constructed, arranged, and operated substantially as and for the purpose specified.

160,864. RAISIN-ROLLERS. C. L. Topliff, Brooklyn, N. Y. (Filed Oct. 1, 1874.)

Brief.—Hook-shaped griping-arms having rollers at the ends, which rest under the chines of barrels, and serve as guides. At the other ends of the arms are eyes, through which passes the flexible loop which adapts the device to be used as a sling for hoisting.



The detached hook-shaped griping-arms A, constructed as described, with rollers U at one end and eyes at the other, in combination with a flexible loop, B, substantially as and for the purpose specified.

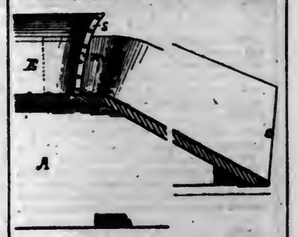
160,865. BLOCK-PLANES. J. A. Trant, New Britain, Conn. (Filed Nov. 13, 1874.)

Brief.—The cutting-iron is adjusted by means of an elongated perforated sliding plate and fastening-pin, operated by a screw-thumbnut at the rear end of the stock. The iron is secured in position by means of a pad-lever and intermediate set-screw.



In a plane, substantially as herein described, the cutting-iron having a fixed fastening-pin, and the perforated sliding plate, with the thumb-screw and bar, by which the iron may be adjusted, and the thumb-screw and pad, by which it may be fastened in position, all combined and constructed to operate as set forth.

160,866. SNOW-PLOWS. Henry Twitchell and Geo. B. Parsons, Pulaski, N. Y. (Filed Mar. 12, 1873.)



The combination, in a snow-plow, of the inclined plane C, mold-boards E E, having dividing-cutter *e*, and vertical sides D D, provided with continuous inclined surfaces *m*, made in one piece, and vertical sides D D, and cutters *o o*, substantially as and for the purposes set forth.

160,867. WEATHER-STRIPS FOR WINDOWS. Samuel T. Varian, Plainfield, N. J. (Filed Jan. 23, 1875.)



The combined weather strip and slide for a sashing-frame or window-screen, made with the strip of india-rubber *b*, and the slide *a*, as set forth.

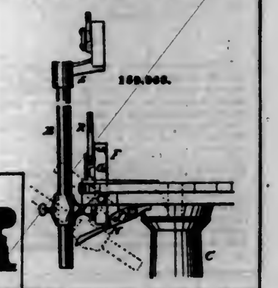
160,868. SHEEP-HOLDERS FOR SHEARING. Jos. B. Virgo, Texas Township, Kalamazoo County, Mich. (Filed Nov. 21, 1874.)

Brief.—A sheep is placed upon a revolving table. Its hind legs are thrust through openings in a perpendicular frame at the edge, its face outward, and by a single lever these openings are narrowed. Its fore-legs are in like manner placed in a lifting-block held by a staff, which, upon being inclined outwardly, brings both blocks to an inclined position.

1. A sheep-holder constructed substantially as described—that is, having a revolving table, A, holding-plates F F', and adjustable stand E, for the purposes set forth.

2. The holding-plates F F', with their sliding blocks P, V-shaped springs Q, and bent levers R, for the purposes described.

3. The combination of the shaft K, spring L, and locking-arm J, with the adjustable stand E and pivoted plate G, substantially as herein set forth, for the object stated.



160,869. VEGETABLE-SLICERS. A. Veillier, Newark, N. J. (Filed Oct. 17, 1874.)

Brief.—The central screw point feeds the vegetables forward through the material in a rotary manner. These wings, as they advance, cut out two spiral pieces of the material operated upon.



The rod B, having, at the lower end, a double-twist bit, D, provided with two spiral concavities, each leading to one of the ring-cutters E E, as and for the purpose specified.

160,870. DRAWING-BOARDS. J. B. Webb, Urbana, Ill. (Filed June 23, 1874.)

Brief.—L-shaped grooves in connection with cramping-pieces serve to hold the paper securely at the edges. Allowance is also made for shrinkage to prevent warping.



1. A drawing-board, provided upon its face with undercut grooves E, and with fastening-strips fitting therein, for securing the paper, substantially as described.

2. A drawing-board having supporting or strengthening cleats secured thereto by screws, and enlarged holes arranged in said cleats, in the manner and for the purpose specified.

160,871. GRATES. James C. Weightman, Malden, Mass. (Filed Dec. 12, 1874.)

Brief.—The fixed and movable rings are in different horizontal planes, to obviate the tendency of the latter to move the whole body of coal in the direction of their rotation. When the removable nut is in place it locks the grate, so that it cannot be tilted.



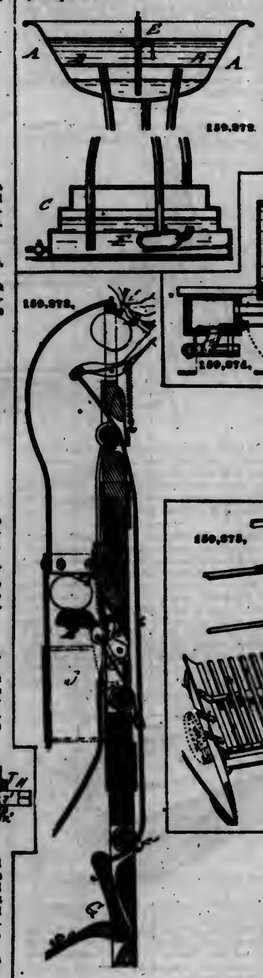
1. The combination of the rings D E, held rigidly in place by the engagement of the axis or shaft C in the bifurcation *b'* of arm B, and the movable rings F, G, and G', held against downward displacement relative to the fixed rings by bearers *a*, and guided in their vibration by means of the lugs *d d* resting upon the lugs *f f*, substantially as specified.

2. The combination of the stationary rings D and E and the movable rings F G G', all being serrated or saw-toothed, and the serrations of the latter above the horizontal plane of the former, substantially as specified.

3. The combination, with the slot *a*, of the bent A of a stationary furnace, and with the shaking and dumping rod H vibrating therein, of the detachable locking-nut J, having a rectangular end, *a*, substantially as and for the purpose set forth.

160,872. PUMPS. Charles A. Warden, Washington, Ill., assignor to himself and Wm. B. Warden, same place. (Filed Oct. 21, 1874.)

Brief.—A flexible tube extends from the jaws of the pitcher along the pole. A contained valve is placed within the tube to check the descent of the fruit. To prevent "begging" of the tube by the rising of the valve, a metallic or inflexible section is introduced around the valve.



The combination, with the vertically-vibrating valve E and the flexible conducting-tube D, of the protecting shield or sleeve J, substantially as and for the purpose specified.

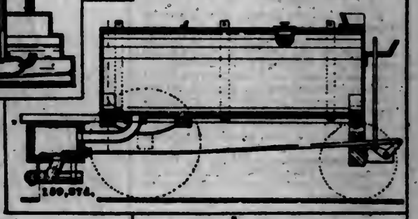
A pump, F, arranged in the base-chamber C, and connected by pipe D' with the lower chamber of the fountain A B, the latter being provided with the usual waste-pipe D, air-pipe D', and ejecting-nozzle E, as and for the purpose specified.

160,873. STREET-SPRINKLERS. Wm Westerfield, New York, N. Y. (Filed Nov. 14, 1874.)

Brief.—The valves are contained in a tank independent of the main tank, so as to afford convenient access to the valves. The valves being much nearer the sprinkling tubes than when placed in the main tank, the operator is enabled to stop and start the flow quicker.

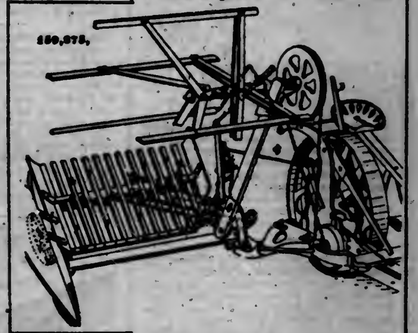
1. The combination of a valve-tank, B, containing the valves, with the principal tank A of a water-sprinkler, substantially as specified.

2. A water-sprinkler having a valve-tank independent of the main tank, and provided with sprinklers, as and for the purpose specified.



160,874. HARVESTER-DROPPERS. Cyprian Wheeler, Jr., Auburn, N. Y. (Filed May 8, 1869.)

Brief.—The swinging platform is supported upon parallel arms pivoted to the inner shoe, and by a single lever it is swung to the rear of the machine, dumped, and returned to receive the cut grain.



1. In combination with one of the pair of moving parallel bars and the dropper, a sliding or moving link and stop, or their mechanical equivalents, for tipping or dumping the dropper when it has arrived at the place where the grain is to be deposited, substantially as described.

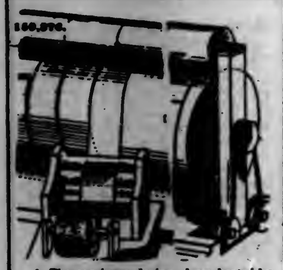
2. In combination with a swinging and hinged dropper, a bench, ledge, or support under its outer end, to prevent it from tipping forward while receiving its charge, substantially as described.

3. In combination with the hinged swinging and dumping dropper G, that carries around and delivers the grain in rear of the machine, as described, the single lever B, in close proximity to the driver's seat, which lever, by two motions—viz., a backward and forward one—through the bevels described, connections, will impart to the dropper four motions—viz., a rearward, a dumping, a righting-up, and a forward one—substantially as and for the purpose described.

160,875. APPARATUS FOR DRYING OIL-CLOTH, &c. Amos Wilder, Augusta, Me. (Filed Feb. 9, 1875.)

Brief.—The traveling carriage has a motion about its vertical axis, that the cloth may be properly delivered to the heating-roller.

160,876.



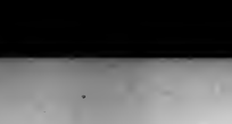
1. The revolving drying-drum heated by steam, in combination with a movable carriage or roll for delivering the fabric or cloth upon the drum for the purpose of wrapping the same thereon, substantially as described.

2. The drying-drum, in combination with a traveling carriage carrying the cloth roll and coating apparatus, and adapted to traverse in front of the drum at any desired angle therein, in order to wrap the fabric spirally or circularly around the same, substantially as described.

3. In combination with a drum for drying oil-cloth and other material, the rollers for smoothing and pressing the material upon the drum as the same is rotated, substantially as described.

160,877. MECHANICAL MOVEMENTS. David Williamson, Jr., Sewaville, N. J. [Filed Feb. 3, 1875.]

Brief.—The disk upon the shaft has one end of the link loosely outside of the center attached thereto. To the other end are pivoted two pitmen, so that power may be applied from opposite sides of the disk.

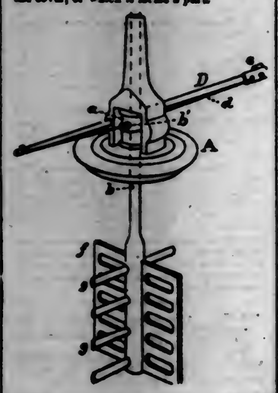


1. The disk upon shaft *a*, having a loose link, *d*, with one end attached loosely outside of the center of the shaft, and the pitmen B B applied to the opposite end of the loose link, combined substantially as and for the purpose herein set forth.

2. The pitmen B B, loose link *d*, pin *b*, and disk A, in combination with shaft *a*, substantially as and for the purpose specified.

160,878. CHURNS. James L. Wilson, Calhoun, Ga. [Filed Oct. 5, 1874.]

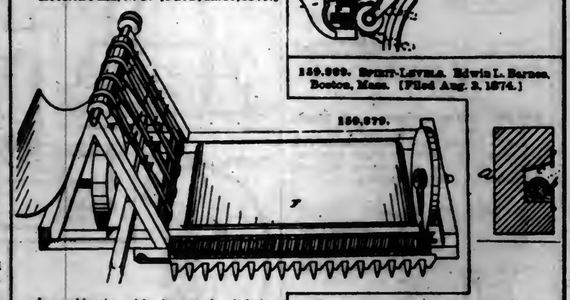
Brief.—A dasher adjustably suspended from its handle, and reciprocally rotated by a bow, the handle narrowing in its ascent from the cover, of which it forms a part.



1. The lid A, surmounted by the standard B, forming the handle, as shown, and perforated for the reception of the pulley *a*, in combination with the dasher and spindle *f g* C, pulley *a*, vertically adjustable by means of the holes *b* and screw *b'*, bow D, passing through the standard, and thong *d*, all constructed and operating substantially as described.

2. The combination of the perforated plate *f*, rounds *g*, spindle C, having the adjusting-holes *b*, pulley *a*, and screw *b'*, all constructed and operating together substantially as specified, the dasher being thus adjustable to the desired depth in the tub, as set forth.

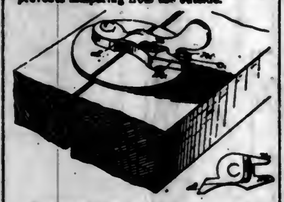
160,879. HARVESTERS. Walter A. Wood, Hoosick Falls, N. Y. [Filed Jan. 16, 1875.]



In combination with the carrying belts or aprons F, the screw-shaft I, for the double purpose of moving the cut grain backward onto the apron, and laterally in the direction in which the apron travels, substantially as described and represented.

160,880. FASTENERS FOR MEETING-RAILS OF SASHES. Geo. R. Adams, Newark, N. J., assignor of one-half his right to E. Putnam and J. J. Colwell. [Filed Dec. 11, 1874.]

Brief.—A safety-arm, having two prongs or actuating-arms, is pivoted by a single screw passing through the attaching-plate, in such relative position to a lever with downward-projecting catch that the safety-arm is thrown across the opening between the sash in the act of closing the lever, the catch engaging between the prongs to lock the device, while the projecting end of the safety-arm prevents tampering from the outside.

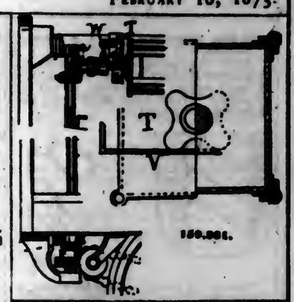


The pivoted safety-arm A, having prongs or actuating-arms *a a* and *a*, in combination with the lever L, having catch *c*, all constructed, arranged, and operating substantially as described and shown, for the purpose set forth.

160,881. ADVERTISING APPARATUS. T. B. Allison, Philadelphia, Pa. [Filed Apr. 11, 1874.]

Brief.—The cylinder receives an intermittent motion through the medium of a mutilated pinion mounted upon a shaft indirectly connected with the axle of the car. Its rotation may be caused to cease, while the car is in motion, by unscrewing either jam-nuts W.

The horizontal advertising-frame N, carrying the toothed disk T and the spring V, attached to the side of the car, in combination with the shafts K M, with screw-threads *c*, loose wheels *e*, with counterdisks *b*, and with the friction-sleeves W, having conical sides *b'*, internal threads *c'*, and holding-screws *d*, substantially as and for the purposes set forth.



160,881.

160,882. SPIRIT-LEVELS. Edwin L. Barnes, Boston, Mass. [Filed Aug. 3, 1874.]

The combination, with the level A, of the mirror *c*, both set into an opening in the piece *a* in the relative positions described above, and constructed and arranged substantially as herein specified, for the purpose of exhibiting the air-bubble or its reflection when the instrument is held above the head of the person using it.

160,883. MANUFACTURE OF METALLIC CARTRIDGE-CASES. Thos. H. Bayliss, Birmingham, England. [Filed Oct. 24, 1874.]



The method of thickening and strengthening the closed ends or heads of solid-head metallic cartridge-cases, by forcing the case mouth forward through a cylindrical die, by which the metal is forced or drawn to the closed end or head of the case, substantially as set forth.

160,884. QUILTING-MACHINES. A. Beck, New York, N. Y., assignor to L. Dryfoos, same place. [Filed Jan. 12, 1875.]

Brief.—The feed and tension rollers are hung in a frame which is capable of an adjustment on a vertical axis, whereby the rollers may be arranged any desired angle with respect to the stitching devices, which are mounted in a frame having a laterally-reciprocating motion. A mechanism on the feed-rollers automatically holds the same out of gear, at a state of rest, while the stitching devices traverse in one direction, but allows them to remain in gear and receive when such stitching devices move in the opposite direction.

1. The laterally-reciprocating sewing-frame, carrying the stitch-forming mechanisms, in combination with an automatic independent feed, which operates when said frame moves in one direction, and is at rest when said frame moves in the opposite direction, substantially as set forth.

2. The combination, with the series of stitch-forming mechanisms, of feed-rolls not obliquely to the same, and operating to feed the cloth through the machine obliquely to the line of stitch-forming mechanisms, substantially as set forth.

3. The laterally-reciprocating sewing-frame in combination with an independent feed, placed at an angle oblique to the line of traverse of said frame, operating to feed the cloth when the frame moves in one direction, and remaining at rest when the frame moves in the opposite direction, substantially as set forth.

4. The combination of the laterally-to-and-fro moving sewing-frame, carrying the stitch-forming mechanisms, and the feed mechanism, adjustable to an angle more or less oblique to the line of traverse of the sewing-frame, substantially as shown and set forth.

5. The feed-rolls and tension-rolls, in combination with a supporting-frame adjustable upon a vertical axis to vary the angle of obliquity of said rolls, relatively to the sewing mechanism, substantially as set forth.

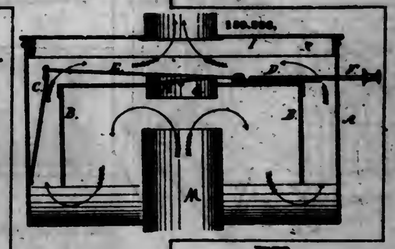
160,885. STOVE-DRUMS. Wm. Boehmer, Madison, Wis. [Filed Oct. 30, 1874.]

Brief.—The draft can be entirely cut off or allowed to pass directly or indirectly.

The combination, with the drum A having pipes E M, of the L-shaped partition B, having central open-end tube G with damper H, the hinged flap C, slide D with handle F, and the connecting-rod E, all constructed substantially as set forth.

160,886. BALLOT-BOXES. P. W. Bramhe, New York, N. Y., assignor to the National Ballot-Box Company, same place. [Filed Jan. 9, 1875.]

Brief.—A slide, at top of transparent hopper is drawn back to allow the deposit of ballot. This slide must be closed before the lower slide can open to drop the ballot into box. A ball ensues when either slide is opened, and both slides can be secured, so that neither can be opened without first opening the box.



160,886.

160,887. ROCK-DRILLS. Henry F. Bell, Philadelphia, Pa. [Filed May 26, 1873.]



160,887.

The rock-drill with the straight cutting-edge *b c c d* and the twisted cheeks B B, which are arranged diagonally on opposite faces, and terminate in said cutting-edge, substantially as and for the purpose set forth.

160,888. MOC-MEKING NIPPERS. William H. Bingham, Decatur, Ill. [Filed Jan. 26, 1875.]



160,888.

In combination with the jaw A, having side flanges *b b* and grooved lip *d*, the jaw B, made shorter than the jaw A, and having the upward-projecting points *f f*, formed with the jaw, and at the extreme end thereof, all substantially as set forth.

160,889. SUBSTRUCTURE PLATES FOR PHOTOGRAPHIC SUBSTRUCTURES. Jas. Bramble, Jr., Philadelphia, Pa., assignor to Wm. G. Bartram, same place. [Filed Feb. 3, 1874.]

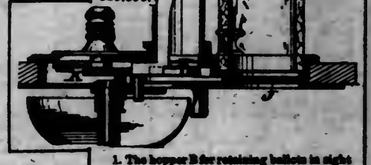
Brief.—A hinged plate is provided with a transverse slot for the reception of a removable burnishing-tool.



160,889.

The plate A, provided with a recess, in combination with the removable burnisher *a*, substantially as described.

160,890. BALLOT-BOXES. P. W. Bramhe, New York, N. Y., assignor to the National Ballot-Box Company, same place. [Filed Jan. 9, 1875.]



160,890.

1. The hopper B for retaining ballots in sight until dropped, in combination with the slides H and J and locked locking-plate, constructed and arranged substantially as herein set forth, to prevent a simultaneous retraction of the said slides.

2. The combination, with the slides H and J, of the alarm-bell and hammer and the complate P, constructed and operating substantially as set forth, to sound an alarm prior to the opening of either slides protected by the said slides.

3. The spring-bolt U, catch V, and retracting-knobs *a a*, arranged and operating as herein set forth, to lock the hopper slide or slides at will, and prevent the unlocking thereof until the box has been opened.

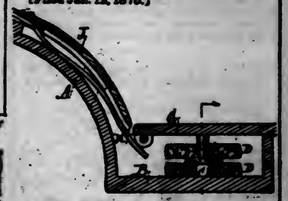
160,891. KNITTED GARMENTS. N. H. Bruce, Clinton, Mass. [Filed Feb. 10, 1875.]



160,891.

A knitted shirt or other garment, the edges of which are united by means of a quadruple-edged tape, substantially as described and shown.

160,892. SHAWL-STRAP HANDLES. Wm. Bruen and Dwight Gridley, Newark, N. J. [Filed Jan. 12, 1875.]



160,892.

1. The combination, with the boxes B and straps D, of the studs C, having the flanges *c* and inclined upper portions or hooks *c'*, substantially as and for the purposes shown and described.

2. The combination, with the handle A and boxes M, of the lids or covers G and springs H, substantially as shown and described.

3. The cups J, in combination with the springs H and handle A, substantially as and for the purposes shown and described.

160,893. TREATING OILS. V. G. Blondo, Parkersburg, W. Va. [Filed Dec. 26, 1874.]

The process for reducing, distilling, or concentrating crude oils consisting of heating the oil from 212° to 800° Fahrenheit temperature, thoroughly agitating the same at such temperature, and injecting air or dry steam over the surface of the oil, substantially as set forth.



160,893.

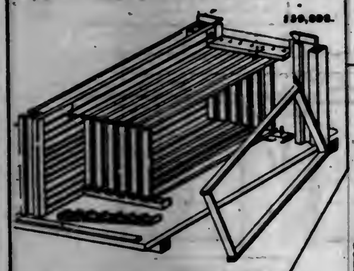


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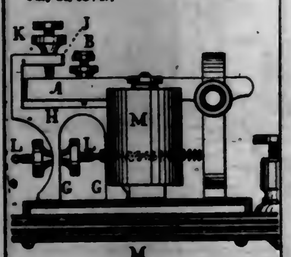
159,893. BEE-HIVES. John Sullock, Deep River, Mich. [Filed Apr 14, 1874.]

A bee-hive, one of the walls of which is secured to its floor, and the other three walls and the roof held in position by connection with the first, and separably removable, the two end-frames being held in position by attachment at one end to the fixed wall, the other end resting in notches or grooves in a transverse sill, as shown and described.

159,894.



159,895. TELEGRAPH-SOUNDERS. Jesse H. Bunnell, Philadelphia, Pa., assignor to Patrick, Bunnell & Co., same place. [Filed July 31, 1874.]



M

1. In combination with an armature-lever, a strobe-screw, located midway, or near midway, between the end thereof and the armature, substantially as and for the purpose set forth.

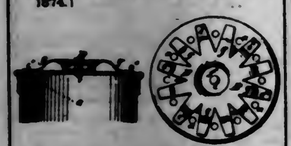
2. In a telegraph sounding apparatus, the arch located underneath the lever in the line of the direction of the swing of the lever, substantially as and for the purpose set forth.

3. The combination, with the sounder-lever A, of the arch O H, substantially as and for the purpose set forth.

4. The lever A, strobe-screw B, and arch G H, combined and operating substantially as and for the purpose set forth.

5. The lever A, carrying the strobe-screw B, the arch G G H, and below base C, constructed, combined, and operating substantially as and for the purpose set forth.

159,896. REGISTER PAPER-BOXES. T. W. Burger, Plainfield, N. J. [Filed Dec. 4, 1874.]



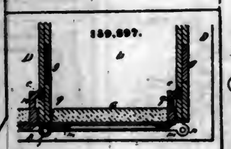
The centrally-pivoted crown-cap, and movable plate H, constructed with the radial strips g, having recesses or notches g' between, in combination with the top of a paper box formed with the annular series of perforations a, substantially as and for the purpose herein set forth.

159,897. NOZZLES FOR CANS. R. T. Bush, New York, N. Y. [Filed Jan. 22, 1875.]

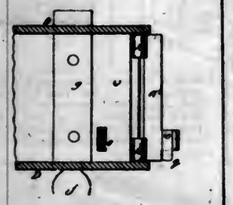
The combination, with a screw-nozzle having an outwardly projecting flange, of a cap or plate provided with an annular shoulder and an outwardly-projecting flange, whereby the two are held together and simultaneously soldered to the can, substantially as set forth.



159,898.



159,899.



159,897. SAFE-DEPOSIT BOXES. Wm. H. Butler, Brooklyn, N. Y. [Filed July 28, 1874.]

1. In safe-deposit boxes, the combination of the horizontal plates with the vertical partitions, when held together by means of tie-bars fitted flush with the surface of the partition and passing through the horizontal plates, substantially as set forth.

2. In safe-deposit boxes, the combination of the horizontal plates with the vertical partitions, when held together by means of the double-headed tie-bars fitted flush with the surface of the partitions, substantially as described.

3. In safe-deposit boxes, the construction and arrangement of the hinges and stop of each door, as described, whereby the door in closing is stopped by the vertical partition, the stop striking the partition between or outside the hinges of the adjoining door, and making a flush with them, as set forth.

4. A door for a safe-deposit box, consisting of the frame m, hinges l, dog n, and stop s, cast in one piece, and combined with the plate O, substantially as described.

5. A door for a safe-deposit box, provided with the dog a and spring g, the latter arranged in a recess in the former and not projecting beyond the side of the partition when the door is open, substantially as described.

6. In safe-deposit boxes, a partition provided with two mortises, the one above the other, and on opposite sides of the partition, for the reception of the dog and lock-bolt, substantially as described.

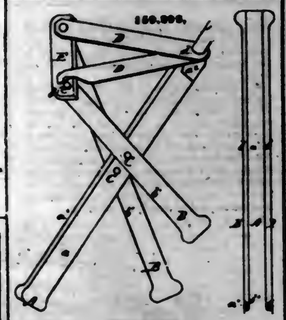
159,898. COMBINED CAMP-STOOLS AND CANES. Frank A. Byram, Philadelphia, Pa. [Filed Dec. 19, 1874.]

1. A combined camp-stool and cane, composed of the three legs A B B, pivoted together at C C, the leg A having the extension A', and being wedge-shaped in cross-section, so as to lie between and separate the legs B B when all three are folded to form a cane, as shown and described.

2. The removable folding seat, composed of the flexible parts D D and stiff piece E, substantially as shown and set forth.

3. The combination of the folding legs A B B, and the seat composed of the stiff front E and flexible side pieces, substantially as shown and described.

159,899.



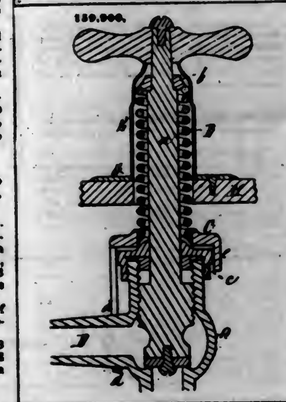
159,899. APPARATUS FOR SUGAR-COATING CONFECTIONERY, PILLS, &c. Wm. Cairns, Jersey City, N. J., assignor to himself and Thos. Burkhard, New York, N. Y. [Filed Dec. 30, 1874.]

Brief.—A pan is arranged to swivel, by means of a pivot upon an upright, back and forth above a fixed furnace, thus securing a varying temperature to the contents. The pan is rotated in all its positions by means of crank-shaft, universal joint, and suitable gear-wheel and pinion.



The combination, with the gears F G, of the operating-shaft I, the universal joint or coupling H, the swinging or swiveling rotating pan A, and the fixed or stationary furnace B, substantially as shown and described.

159,900.



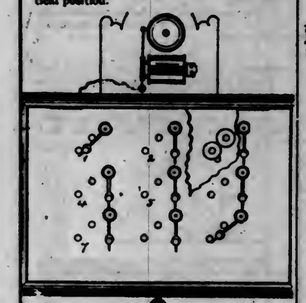
159,900. SELF-CLOSING HOPPER-COCKS. Henry Carruthers, Boston, Mass. [Filed Jan. 22, 1875.]

Brief.—The foot-piece in which the spring terminates surrounds the screw-cap, and is secured to the discharge-nozzle by an arm, thus preventing the cap from turning when the spring is wound to open the valve.

The foot-piece C, secured to the spring B, and provided with a hook, *d*, in combination with the spindle *a* and screw-cap *c* of an ordinary hopper-cock, A, substantially as described, for the purpose set forth.

159,901. ELECTRIC ANNUNCIATORS. F. S. Carter and Chas. S. Hewitt, Burlington, N. J., assignors, by mesne assignments, to Patrick, Bunnell & Co., Philadelphia, Pa. [Filed July 31, 1874.]

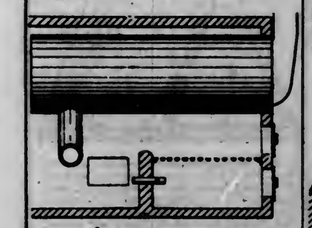
Brief.—The various indicating-hands are pivoted to hang loosely on a hinged frame or door, through openings in which the poles of electro-magnets are arranged to project on one side of each of the pendent hands. Whenever either of the magnets is excited by the electric current, the corresponding hand or index is attracted thereto, and remains deflected until, by raising the hinged frame, the hand is released, dropping to its original vertical position.



1. The dial, with perforations, and the magnets with cores projecting through said perforations on the face thereof, in combination with pointer-needles, whose pivots are directly on the dial, forming together an improvement in electric annunciators, as set forth.

2. The tripping mechanism, consisting of the movable magnets or movable dial, operating to release the needle, substantially in the manner and for the purpose described.

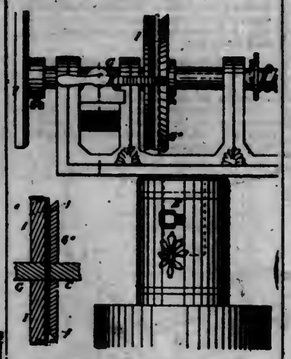
159,902. STEAM-BOILER FURNACES. H. R. Champion, Detroit, Mich. [Filed Feb. 16, 1874.]



In a steam-boiler furnace, the combination of a perforated grate, a tight ash-pit, a steam-pipe leading into the ash-pit, and a blower having a branch pipe leading into the ash-pit, and a branch pipe leading into the combustion-chamber back of the bridge-wall, all arranged and adapted to receive a continuous air-blast and an intermittent steam-blast in the closed ash-pit, and a second air-blast in the combustion-chamber back of the bridge-wall, substantially as and for the purpose set forth.

159,903. MACHINES FOR SOLDERING SHEET-METAL LIDS. Geo. E. Chinnock, Brooklyn, N. Y., assignor to Leonard Richardson, same place. [Filed Nov. 6, 1874.]

Brief.—The machine is designed for soldering a metal strip upon a flanged cover, by means of which the cover and body of the can are secured together. A spring is arranged to hold the strip in proper position while soldering it upon the flange of the lid, the lid being carried around by the revolving disks.



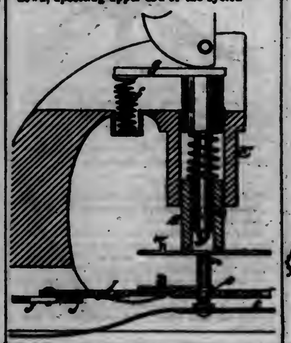
1. The combination of the disks G° I, arranged to clamp the flanged lid between them and the presser-spring K, arranged to press the strip upon or against the flange of the lid clamped as set forth during the rotation of the same and during the operation of soldering, substantially as and for the purpose specified.

2. The peripherical groove *e*, formed in the disk I, arranged to act in conjunction with the disk G° and presser-spring K, the whole combined for operation, substantially as and for the purpose set forth.

3. The groove *f*, arranged in the face of the disk G°, acting in conjunction with the disk I, the whole combined for operation, substantially as and for the purpose set forth.

159,904. EYELETING-MACHINES. John Coombs, San José, Cal. [Filed Sept. 16, 1874.]

Brief.—The eyelet is placed upon a stud rising from the lower horizontally-sliding plate. The article to receive the eyelet is placed upon an upper vertically-adjustable slotted plate, directly under the punch. After the hole is formed the punch is raised, when the sliding plate is brought forward by means of a lever, until the stud presents the eyelet underneath the hole, when the punch is again brought down, upsetting upper end of the eyelet.



1. The cam-lever C, spring-punch *c*, adjustable presser-barrel H, in combination with the spring-plate I, and sliding die-plate I, with its hole *e* and spring-stud *p*, all constructed and operated as set forth.

2. In combination with the punch *c*, having the locking-barrel H attached to its lower end by means of a pin and slot, the horizontal spring-plate L and sliding die-plate I, substantially as and for the purpose described.

3. The sliding plate I, with its die-hole *e* and spring-stud or pin *p*, operated by a lever, J, in combination with the punch *c*, substantially as and for the purpose described.

4. The slotted horizontal plate I, with its stops W W, and having its supporting-rods *s* attached to the opposite ends of a cross-bar, *r*, below the beam *a*, the cross-bar and plate L operated by a spring, *s*, in combination with the cylinder H, with its flanges *d*, and the punch *c*, substantially as and for the purpose above described.

159,905. PLOWS. Cumberius G. Coz, Richmond, Va. [Filed Dec. 7, 1874.]

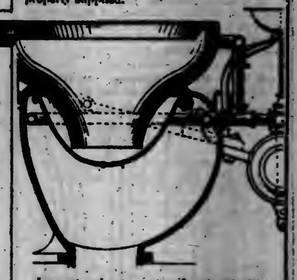
Brief.—Two series of holes in the upper branches of the land-side plate allow the beam to be raised or lowered.



The land-side plow-plate A, provided with the arm B and stem D, and having a series of holes, *x* and *y*, made parallel with each other, in combination with the plow-beam C and bolts *a b*, arranged to allow the vertical adjustment of the plow-beam, as set forth.

159,906. WATER-CLOSETS. Wm. J. Crow, New York, N. Y., assignor of one-half his right to Joseph A. Macdonald, same place. [Filed Nov. 10, 1874.]

Brief.—A pipe is arranged under the bowl and around the exterior of the pan, for the purpose of washing the interior of the receiver and the exterior of the pan and bowl, and at the same time keeping the lower trap properly supplied.



In a water-closet, a water-pipe placed within the receiver and outside of the pan, substantially as and for the purpose shown and described.

159,907. UNLOADING ATTACHMENTS FOR CARTS, &c. Thomas Crossley and Levi A. Bertolette, Wilmington, Del. [Filed Jan. 20, 1875.]

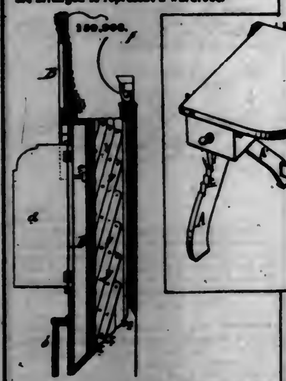


1. A cart or wagon having a bed that is narrower at its bottom than its top, in combination with an endless belt, D, that passes through the whole length of the bed, substantially as set forth.

2. The combination of the bed A, having sloping sides, so as to be narrower at the bottom than the top, with the endless belt D, rollers *e f*, chute *d*, and wheels *g f*, substantially as specified.

160,909. WARDROBE-BEDSTEAD. H. W. Curtis, Philadelphia, Pa., assignor to H. S. Hale, A. Kilburn, J. W. Hale, H. W. Curtis, C. Kilburn, and W. Hale, same place. [Filed Sept. 11, 1874.]

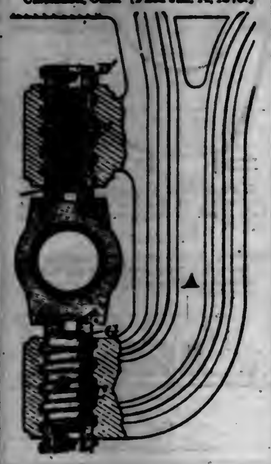
Brief.—The bed-frame is hinged to the stationary head-board in such manner that it can be placed in a vertical or horizontal position, and the foot-board is also hinged to the bed-frame, and forms an ornamental cap, and the slatted sides fold, as shown, when the parts are arranged to represent a wardrobe.



1. The combination of the frame and the adjustable head and foot boards of a wardrobe-crib, and slats consisting of ajoints jointed to each other and to the frame, all as set forth.

2. The combination, with a hinged bed-frame, D, of sides, composed of longitudinal slats and cross-bars, and a rail, *m*, arranged for attachment to the foot and head boards of the crib, as specified.

160,910. SHAFT-HANGERS. D. Dierker, Cincinnati, Ohio. [Filed Jan. 14, 1875.]



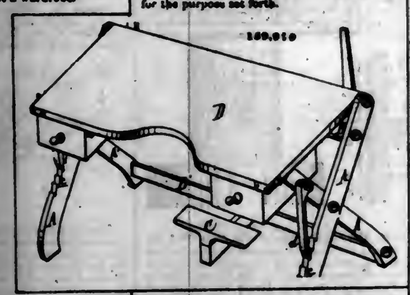
The combination of bracket A, having cast nuts, B B' C C', cast screws D D', having chambers G G' and sockets H H', as and for the purposes set forth.

160,911. LAP-TABLES FOR MILLINERS, &c. Jos. Dunean, Buchanan, Mich. [Filed Oct. 21, 1874.]

Brief.—The table-top is supported on two pairs of crossed legs. One of each pair slides under the table-top. The height of the top is adjusted by means of a pawl on the sliding leg engaging with a ratchet on the pivoted leg. A bracket foot-rest is attached to the back lower girt.

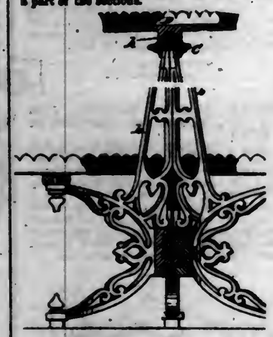
1. The combination, with the table D, adapted to be supported at any desired elevation, of the girt B', having the bracket foot-rest C, as and for the purpose set forth.

2. A lap-table composed of the table D, supported by the legs A A', ratchet *e*, pawl *d*, girts B B', and bracket foot-rest C, all as and for the purpose set forth.



160,912. STANDS FOR FLOWER-POTS AND VASES. Edwd. C. Durant, Kenosha, Wis. [Filed May 6, 1874.]

Brief.—The frame consists of three parts, cast thin, and held together by a central pin, the top being secured by a socket-cap. Circular disks are placed upon arms composing a part of the sections.

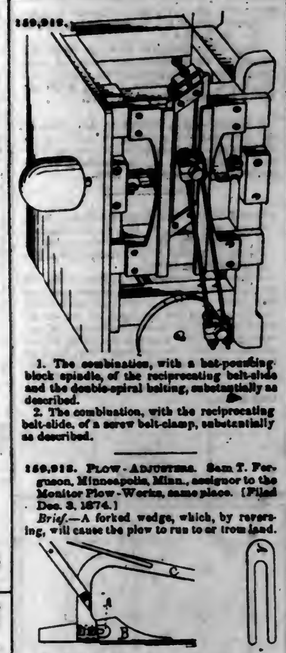


1. A stand for flower-pots, having its frame composed of a series of flat cast-iron sections or legs, A, having their inner edges provided with lugs, and all united rigidly by a central pin or its equivalent.

2. In combination with the sections A, having the upright arms *b*, the cap C.

160,913. MACHINES FOR POUNCING HATS. Rudolf Hahnemeyer, Yonkers, N. Y. [Filed Jan. 14, 1875.]

Brief.—The spindle upon which the hat-block is mounted has imparted to it a rotary reciprocating motion by means of a reciprocating slide, operated by a rotary crank-shaft and connecting-rod, and a belt attached to each end of said slide, passing beneath and spirally around the spindle in an opposite direction to each other, and attached to the spindle.



1. The combination, with a hat-pouncing block spindle, of the reciprocating belt-slide and the double-spiral belting, substantially as described.

2. The combination, with the reciprocating belt-slide, of a screw belt-clamp, substantially as described.

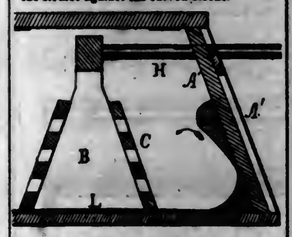
160,915. PLOW-ADJUSTERS. Sam T. Ferguson, Minneapolis, Minn., assignor to the Monitor Plow-Works, same place. [Filed Dec. 3, 1874.]

Brief.—A forked wedge, which, by reversing, will cause the plow to run to or from land.

The beam-adjuster A, in combination with land-side B and upright or metallic beam C, substantially as described, and for the purpose specified.

160,914. WASHING-MACHINES. Daniel A. Plummerfelt, Delaware Station, N. J., assignor to P. Lyons. [Filed Apr. 6, 1874.]

Brief.—Within the inclined ends of the suds-box are curved blocks. The double-inclined perforated beater slides on a flat metal spring in the bottom of the box, and forces the clothes against the curved blocks.

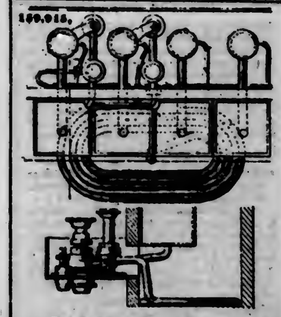


In a washing-machine provided with a reciprocating beater, the combination, with the sub A and beater B, of the spring L, interposed between the beater and the bottom of the tub, whereby the binding of the rods H and clogging between the beater and bottom of the tub are prevented, as set forth.

160,915. SODA-WATER DRAFT APPARATUS. Wm. Gee, New York, N. Y. [Filed Dec. 30, 1874.]

Brief.—A combined soda-water and syrup cock, which draws at one operation both soda-water and syrup, whereby soda-water syruped with any one of various kinds of syrups from different syrup-vessels may be drawn from a single fountain by the operation of a single cock.

160,916.



1. The combination of a single soda-water draft-pipe, two or more syrup-reservoirs, a corresponding number of combined soda-water and syrup cocks, and a corresponding number of branch pipes leading from the said draft-pipe to the said cocks, substantially as herein described, whereby soda-water syruped with either one of various syrups may be drawn from one fountain without a separate syruping operation.

2. The arrangement of the cut-off valve or cock, the combined soda-water and syrup cocks, and the plain-soda draft-cock, and the pipe leading from the fountain, whereby soda and syrup may be drawn separately when necessary, substantially as shown and described.

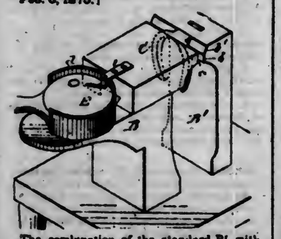
160,917. SPOKE-SOCKETS FOR VEHICLE-WHEELS. Myron Glassbrook, Batchellerville, N. Y., assignor of one-half his right to Jas. P. Parkhurst, same place. [Filed Jan. 28, 1875.]



1. The socket A, provided with the openings *a* and the wedge *c*, combined substantially as and for the purpose described.

2. The spoke-socket A, provided with openings *a*, base B, projecting lips *b*, dowel-pin *d*, combined with the wedge *c*, as specified.

160,918. MACHINES FOR SHARPENING HORSESHOE-CALKS. Brastus Gleason and Robt. Hamilton, Greenwich, N. Y. [Filed Feb. 6, 1875.]

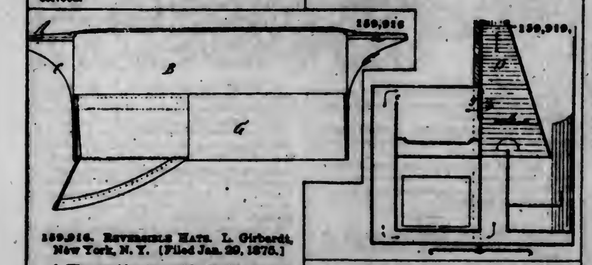


The combination of the standard B', with bevel *b'* and face *b*, standard B, sliding die C, cam E, having flange or groove *d* and handle E', and the strap *e*, all constructed substantially as and for the purposes herein set forth.

160,919. STOVES. Ernst W. Gram and J. Nelson, Jonestown, Miss. [Filed Jan. 13, 1875.]

Brief.—The draft may pass directly to the exit, or be sent around the oven and over the supplementary grate under the boiler-holes.

The heater A and cook-stove B, having a common exit-pipe, D, and adapted to be used separately or together, substantially as herein described.



160,920. GAME-COCKS. Ira S. Hamilton, Ossian, N. Y., assignor of one-half his right to Benj. M. Payne and D. W. Payne, same place. [Filed Dec. 1, 1874.]

Brief.—The notch on the back of the cam may be brought in line with the slide-bolt, when the latter may be drawn outward until it engages with the notch, to admit of removing the packing.



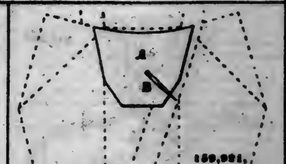
The lever E, constructed with the cam *e* and notch or depression *i*, in combination with the slide-bolt J, having the spur *i* and movable valve *g*, substantially as and for the purpose described.

160,921. NECK-TIES. William H. Hart, Jr., Philadelphia, Pa. [Filed Oct. 17, 1874.]

Brief.—The pin which secures the neck-band of the scarf is clinched to the shield by metal prongs struck up from the pin.

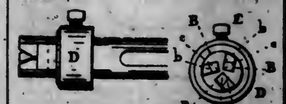
1. The pin B and neck-tie shield A, in combination with the metallic fastening C, substantially as and for the purpose set forth.

2. The pin B, formed with the punched-out fastening C, in combination with the neck-tie shield A, substantially as and for the purpose set forth.



160,922. TOOLS FOR POINTING BOLTS. P. Hartis and Wm. Cummins, Philadelphia, Pa., assignors to the M. J. Coleman Bolt and Nut Company, same place. [Filed Oct. 13, 1874.]

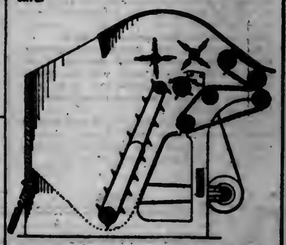
Brief.—Removable bits or cutters having chamfered ends and cutting edges, secured in grooves in a stock by means of a collar and set-screw.



The improved pointing-tool, herein described, consisting of the removable bits B, grooved stock A, sleeve D, and screw F, combined and operating substantially as and for the purpose set forth.

160,923. FEEDING MECHANISMS FOR CARDING-MACHINES. Geo. S. Harwood, Boston, Mass. [Filed Dec. 26, 1874.]

Brief.—Improvement upon the Estette patent, No. 43,959. The dust and foreign substances fall through the gauze bottom of the receiving-box, and can be removed through the open door. The slotted shield clears the teeth of the worker, and prevents short fibers falling down between the two aprons, and the size of the packing-chamber is adjustable, to regulate the quantity of material fed to the card.



1. The receiving-box, having a wire-gauze or other perforate bottom, in combination with the case and door in the same, substantially as and for the purposes set forth.

2. In machinery of the kind herein referred to, the combination of a spiked worker and a slotted shield applied to said worker, in the position and to operate substantially as shown and described.

3. The packing-chamber, having its top and bottom formed of moving surfaces, which are adjustable to regulate the size of chamber, substantially as set forth.

160,924. COCKS OR VALVES. Henry W. Henle and Emilius D. Gowan, Holloway, England. [Filed Nov. 7, 1874.]

Brief.—On the spindle is formed a screw-recess, and a corresponding recess is formed in the bush, in which is inserted a key, which protrudes into the recess in the spindle. The bush is prevented from revolving by keying it to the barrel.

In cocks or valves for retaining steam, gas, or fluids under pressure, the combination of the valve-spindle *d*, provided with a screw-recess, *f*, with the bush *e*, having a corresponding screw-recess, and actuating the shut-off, the key-piece *g*, and the key *q*, arranged and operating substantially as described.



189,924.

189,925. CANOPY-FRAMES. R. F. S. Heath, Philadelphia, Pa. (Filed Apr. 11, 1874.)



1. The cast metallic bracket, consisting of the body C, with ears B B, constructed in pairs, with supporting-bars D, and independent of each other, in combination with the upwardly-folding arms G jointed to the ears B, with pivots F, independent of each other, all constructed, arranged, and operating substantially as herein set forth.

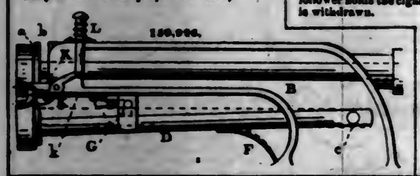
2. The cast metallic body C, having ears B with supporting-bars D at their forward lower ends, in combination with the upwardly-folding arms G, pivoted to the ears and having vertical pins J behind the pivots F of the arms, all constructed, arranged, and operating, substantially as and for the purposes set forth.

189,926. BINDING AND WIRING HAT-FRAMES. R. F. S. Heath, Camden, N. J. (Filed Jan. 6, 1875.)

1. The operating-arm G and elevating-spring F, in combination with the non-rotating arm D, having an axis, *c*, journaled roller E, rotary shaft B, and the roller C, substantially as and for the purposes set forth.

2. The roller C with flange *b* and groove *c*, rotary shaft B, roller E with shoulder *f*, and axial arm D, in combination with the elevating-spring F and depressing-arm G, all constructed, arranged, and operating substantially as set forth.

3. The cutting-blades J K, in combination with the pressing-rollers C E, and binding-guide H, arranged and operating substantially as and for the purposes set forth.



189,927. HARROWS. George W. Hoover, Kutztown, Pa. (Filed Jan. 20, 1875.)

1. The spring-cushion A A, in combination with the bars G G and cords *c c*, substantially as described.

2. The combination, with the bars G G, of the spring buckles A A, cords *c c*, and buckle-straps H H, substantially as described.

3. The unhitching-strap F and spring buckle B of the draft-strap, in combination with the bars G G, substantially as described.

4. In combination with the bars G G, the unhitching-strap F and spring buckle C of the girt, substantially as described.

5. The combination, with the bars G G and unhitching-straps E F, of the flanges H and rings I, substantially as described.

6. In combination with the spring buckles A, bars G G, and check-reins L, a saddle having the top part arranged to be displaced by the lines, substantially as described.

189,928. TOYS. A. E. Hotchkiss, Cheshire, assignor to Friend W. Smith and F. Eggo, Bridgeport, Conn. (Filed Dec. 28, 1874.)

Brief.—Slight pressure upon the outside of the case causes the mouse to leap out and run a distance over the floor.

189,928.



1. In the artificial mouse *c*, the tail A and spring *f*, as described.

2. The tail A and spring *f*, in combination with the axle-trees *d* and *e*, with wheels, substantially as described.

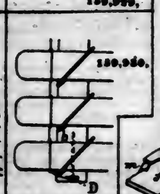
3. The tail A, spring *f*, axle-trees *d* and *e*, with wheels, and notch *k*, in combination with box *b* and trigger *l*, substantially as described and set forth herein.

189,929. CIGAR-PACKING IMPLEMENTS. S. Jacoby, New York, N. Y. (Filed Dec. 17, 1874.)

Brief.—The cigars are packed in a frame resting on a table, so that they will not fall out. The frame passes into the cigar-box. A follower holds the cigars down while the frame is withdrawn.



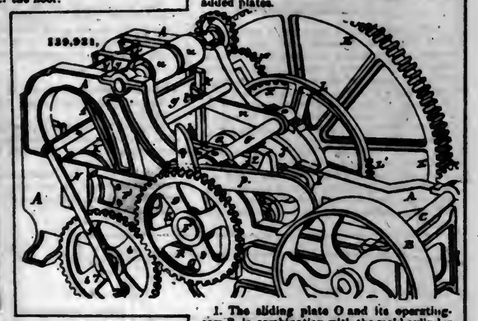
189,929.



189,930.

The implement described for packing cigars in boxes, the same consisting of a rectangular frame constructed to fit within a cigar-box, said frame, being open at top and bottom, whereby the cigars may be introduced at the top and compressed in place, preferably by a follower, within the cigar-box, substantially as described, for the purposes specified.

189,931.



1. The sliding plate O and its operating-cam S, in combination with the mold-cylinder K, having a square portion, N, to receive the impact of the plate, substantially as set forth.

2. The reciprocating plunger or feeder I, with its operating crank-disk and wheel S and S, in combination with the hopper *p*, mold K, and mold-plunger, substantially as set forth.

3. The plunger I, when provided with skid flanges 2, for attachment of re-enforce plates, in combination with the clay-hopper *p*, substantially as set forth.

4. The plunger I and vertically-adjustable plate *p'*, in combination with the taxel part of the clay-hopper *p*, substantially as set forth.

5. The knife A, cam-arm *a p*, and cams *q r*, in combination with the mold-plunger, substantially as set forth.

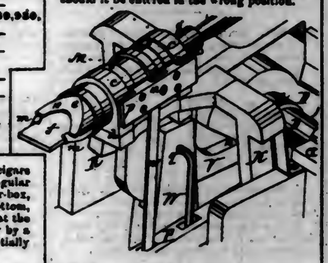
6. The knife-frame T and operating-cams Z Z', lever *a a' c*, and pitmen *d d*, combined with the molds K', substantially as set forth.

7. The knife-frame T U, having brick-apertures T, to raise the bricks above the level of the table, substantially as and for the purpose set forth.

189,932. NAIL-PLATE FEEDERS. David W. Keith, West Wareham, Mass. (Filed Sept. 1, 1874.)

Brief.—A lever actuated by two cam-pins operates against the jaw N, closing it on the rod while the rod is fed forward as the proper time by the jaws N N', operated by the cam D and its counterpart E. The nose-piece has interior inclined shoulders, to guide the plate should it be entered in the wrong position.

189,933.



1. The jaws N N', for seizing the sleeve *s*, surrounding the rod h, in combination with the lever *s*, cams H I, shaft B, and cams D E, substantially as and for the purpose set forth.

2. The nose-piece *s* with its shoulder or shoulders 14, inclined at *w*, in combination with the spring-guides *m*, substantially as described, for the purpose set forth.

189,934. SHIPS' LANTERNS. F. J. Kenny, Boston, Mass. (Filed Jan. 30, 1874.)

Brief.—The lens is packed in the frame by a rubber or elastic strip, and the door secured in place by wedging projections upon the bolt, which moves in a socket attached to the lantern.

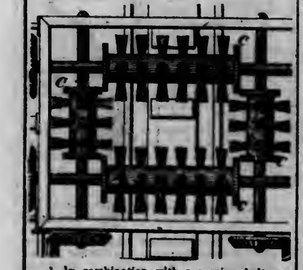


1. The combination of the segmental lens A with the recess, having beveled sides E, and with the curved rods *c* and nuts *d*, as and for the purposes set forth.

2. In a lantern, the combination of the door *f*, the staples *n*, and the bolt, with hook *n* and bolt *n'*, bent at an angle, to constantly draw, wedge, and hold the door, when shut into the staples *n*, for the purpose set forth, substantially as described.

189,934. MACHINES FOR DUSTING BRICKS. J. N. Kerper, Washington, D. C. (Filed Jan. 7, 1875.)

Brief.—A reciprocating screen under a hopper agitates the sand, which, falling on revolving brushes, is thrown on all the exposed surface of the bricks that are being drawn through on an endless belt



1. In combination with a moving belt or carrier, B, one or more revolving brushes, C, for throwing or depositing dust upon subarat bricks, substantially as and for the purpose described.

2. The combination of the moving or endless belt B, one or more brushes, C, and hopper D, for feeding dust and sand to said brushes C.

3. The combination of the frame A, belt B, one or more brushes, C, hopper D, shaking or reciprocating screen E, and sieve F, with suitable gearing for operating, substantially as and for the purposes set forth

189,935. METALLIC LIPS FOR WOODEN PAILS, &c. St. Clair D. Kirtley, Philadelphia, Pa. (Filed May 1, 1874.)

Brief.—The metal lip is formed with a downward-projecting flange, for attachment to the bucket, and side flange and central channel projecting above the bucket, for guiding the fluid in its discharge.

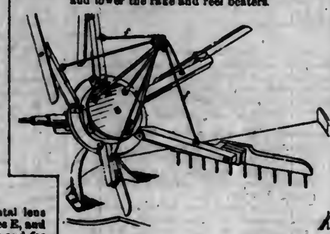
189,935.



The lip A, bent to form the horizontal portion a, flanges *b b*, and central channel *d*, as set forth

189,936. HARVESTER-RAKES. J. H. Kirton, Rockford, Ill. (Filed July 9, 1874.)

Brief.—A pivoted rocking plate above the rake and reel carrying head serves to raise and lower the rake and reel beaters.



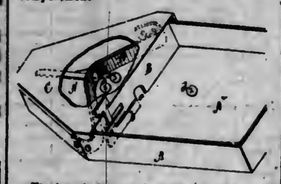
1. The pivoted rocking plate or disk E, in combination with the pivoted rake and reel arms, whereby the rising and falling movements are imparted to said arms, substantially as described.

2. The combination of the bevel-wheel C, pivoted disk or table E, standard E', rotating disk F, and pivoted links *f* with the arms of the reel and rake, substantially as and for the purpose set forth.

3. The plates connecting the reel-beaters and rake-head with their carrying-arms, made one concave the other convex on their adjacent faces for permitting the adjustment of the beaters and rake-head, as described.

189,937. GAME APPARATUS. V. Klobasse, Washington, D. C. (Filed Feb. 4, 1875.)

Brief.—A box having two compartments, from the inner one of which balls are propelled by a spring-plunger (through a hole in the dividing-partition) into view in the outer compartment.



The box A, having the interior partition B, with one or more openings, *a*, the cover C, spring D, and operating device E, to be used with balls *d*, or their equivalents, substantially as and for the purposes herein set forth.

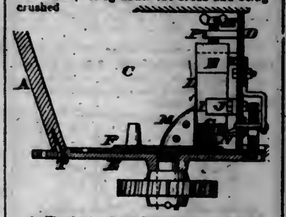
189,938. BIRD HOUSES. E. A. La Bar, Philadelphia, Pa. (Filed Jan 8, 1875.)



As a new article of manufacture, the metallic frames C, herein set forth, the same constructed to surround and finish the entrance-openings of a bird-house, substantially as and for the purpose described

189,939. CORN-PLANTERS. L. L. Lawrence and G. S. Thomas, Dublin, Ind assignors to Wayne Agricultural Company, same place. (Filed Jan. 2, 1875.)

Brief.—In one corner of the seed-box is removably secured a square cut-off brush, with one half resting on the revolving cell plate, while the other half rests on the hopper-bottom The brush is secured in an upright position by a vertical bolt and an adjustable side clamp. In contact with the two exposed sides are placed a fender and an ear, to prevent the seed from passing under the brush and being crushed



1. The fender M, in combination with the revolving cell-plate F and square cut-off brush G H.

2. In the described combination with cut-off brush G H and set-screw P, the revolving cell-plate F and the hopper-bottom E, each occupying half the area of the brush point, as and for the purpose set forth.

3. The combination, with cut-off brush G H, of clamp I J K, fender M, and ear N, substantially as set forth.

189,940. WHEELS FOR VEHICLES. Gabriel Leverich, Brooklyn, assignor to John B. Sammis, New York, N. Y. (Filed Jan. 16, 1875.)

1. The recessed or slotted annulus C' and the radial spur *c* of the box or bearing D, in combination with the hub A and a cushion or cushions, the whole to operate substantially as and for the purpose set forth.

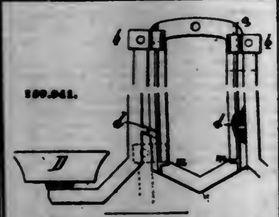
2. In an elastic hub, the combination of the lateral sleeve G, to permit radial play of the box or bearing D, with the said bearing, and one or more elastic cushions, B or C, the said sleeve to close the inner ends of the spoke-mortises, all substantially as and for the purpose set forth.

3. The elastic hub comprising the box or bearing D, with one or more circumferential shoulders, provided with the nut F at its outer end, and having the radial spur *b*, one or more elastic cushions, B C, the annuline C', and the sleeve G, to permit radial play of the box D, all combined for operation substantially as and for the purpose set forth

189,941. DROP-LIGHTS. John C. Love, Philadelphia, Pa. (Filed Dec. 26, 1874.)

Brief.—A lamp-supporting arm hinged to a slide adapted to the guide upon the fixed frame, and having a pin to fit into a notch upon said frame for holding the arm in place.

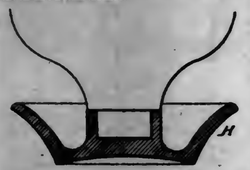
A lamp-chandelier in which are combined a fixed frame having a guide or guides with one or more lamp-supporting arms, each hinged to a slide adapted to the guide, and having a retaining-pin adapted to a notch or notches on the said fixed frame, all substantially as set forth, for the purpose specified



150,941.

150,941. LAMP-HOLDERS. John C. Love, Philadelphia, Pa. [Filed Jan. 4, 1875.]

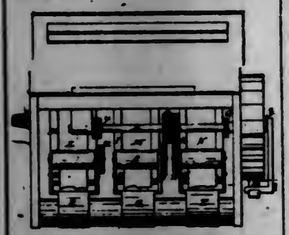
Brief.—The metal base receives drip, and it fits in the metal holder.



The combination of the cup-shaped metal base H of the lamp, with a metal holder, B, of a form adapted to the said base and carried by the arm of a chandelier or bracket, all as set forth.

150,942. TICKET-REELS. Levi J. Masterson, Philadelphia, Pa., assignor of one-third his right to J. Kilpatrick, same place. [Filed Dec. 29, 1874.]

Brief.—By decreasing springs which carry the feeding-cylinders, these latter are geared with a revolving segment, which gives an intermitting feed to strips of paper wound upon the spools.



1. The springs R S T, provided with their rollers and pinions, in combination with the shaft X and its pinions, and the segment-gear Y, for unrolling the coils of paper L M N, substantially as set forth.

2. The shaft H, having ratchet-wheel R and its pawl D, and segment-gear F, in combination with the shaft X and its attachments, to give an intermitting feed to the strips of paper or tickets on spools H I K, substantially as set forth.

150,943. CURTAIN-FIXTURES. G. C. Mathews, Louisville, Ky. [Filed Dec. 10, 1874.]

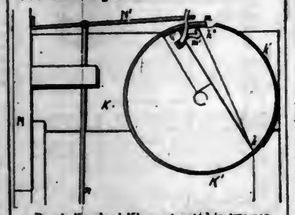
The combination, with a notched disk journaled in a slotted bearing, of a stationary detent, an oscillous cord, I, and the friction-wheels H H, the said wheels being arranged to one side of the disk, and the said cord passing around the same in such a manner as to form a laterally-drawing loop, which, when a traction is exerted upon the cord, brings the disk away from the detent, and the journal of the disk in a portion of the slotted bearing when it is free to revolve, substantially as described.



150,944.

150,944. MANUFACTURE OF NAIL-RODS. Saml. P. Maxwell, Clifton, W. Va. [Filed Jan. 16, 1875.]

Brief.—The material is coiled around a divided former, and the two ends held in position while being nailed.

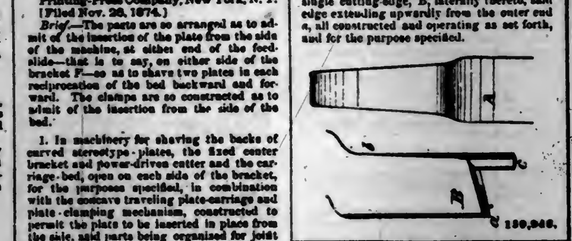


Bench K, wheel K', constructed in two sections, as described, eccentric m^1, crank-arm m^2, spring-arm N^1, rod a, and treadle N^2, the whole constructed and arranged to operate substantially as described.

150,946. MACHINES FOR SHAVING THE BACKS OF CURVED STEREOTYPE-PLATES. Thos. J. Mayall and Richard W. Hartnett, Boston, Mass., assignors to Mayall Power Printing-Press Company, New York, N. Y. [Filed Nov. 23, 1874.]

Brief.—The parts are so arranged as to admit of the insertion of the plate from the side of the machine, at either end of the feed-slide—that is to say, on either side of the bracket F—so as to shave two plates in each reciprocation of the bed backward and forward. The clamps are so constructed as to admit of the insertion from the side of the bed.

1. In machinery for shaving the backs of curved stereotype-plates, the fixed center bracket and power-driven cutter and the carriage-bed, open on each side of the bracket, for the purposes specified, in combination with the concave traveling plate-carriage and plate-clamping mechanism, constructed to permit the plate to be inserted in place from the side, said parts being organized for joint operation, as shown and set forth, so that the plate may be placed in the carriage on either side of the center bracket, and from the side of the machine.

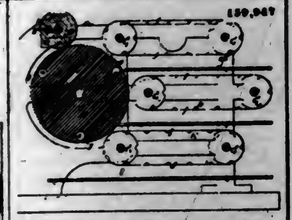


150,946.

2. In combination with the concave stereotype-plate carriage, provided on one side with a shoulder or projection, up against which one of the edges of the plate bears, the clamps, having a combined up-and-down and to-and-fro horizontal motion, substantially as shown and set forth.

150,947. DELIVERING APPARATUS FOR PRINTING-PRESSES. Thos. J. Mayall and Richard W. Hartnett, Boston, Mass., assignors to the Mayall Power Printing-Press Company, New York, N. Y. [Filed Dec. 12, 1874.]

Brief.—The female cylinder, in rear of the slot for the knife, has a series of pins, on which the end of the web is pressed. Endless delivery-bands carry a rock-shaft, on which are mounted sharp hooks, which penetrate the paper held on the pins on the cylinder and draw it off, carrying the severed sheet over the delivery-board, when a weighted arm on the hook-shaft meets a projection on the frame, by which the shaft is rocked and the hooks withdrawn from the sheet.



150,947.

In combination with the female cylinder, provided with pins, or the equivalents specified, arranged to operate, as described, one or more deliveries, armed with stripping-hooks, for operation in connection with said pins, substantially in the manner and for the purposes set forth

150,948. BITS FOR BORING METALS. Wm. McCrosson, Philadelphia, Pa., assignor to S. C. Beckman, same place. [Filed Dec. 24, 1874.]

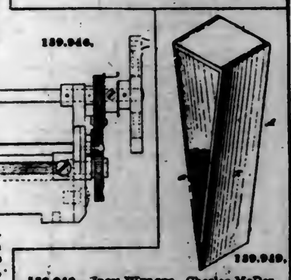
The improved drilling-tool herein described, the same consisting of the body A, with lateral extension *b*, the guiding-point C at one side of the lower portion of the body, and a single cutting-edge, B, laterally thereto, said edge extending upwardly from the outer end *a*, all constructed and operating as set forth, and for the purpose specified.

150,948.

150,949. IRON WEDGES. Charles McDermott, Oakland Station, Ark. [Filed Jan. 6, 1875.]

Brief.—The head and inclined sides of the wedge are made from a single plate of iron, which is welded to the triangular side plates, forming a closed chamber.

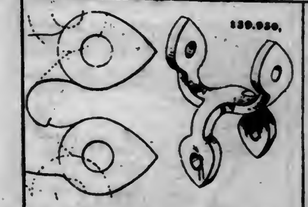
As a new article of manufacture, the wedge formed of plates *b c*, welded together at their contiguous or meeting edges, thus forming a closed chamber, *a*, as shown and described.



150,949.

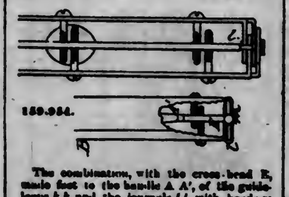
150,950. METHODS OF MANUFACTURING CARRIAGE-SHACKLES. Alex. McKee, Philadelphia, Pa., assignor of one-half his right to W. Barp, same place. [Filed Oct. 19, 1874.]

As an improvement in the manufacture of carriage-shackles, the mode herein described of first stamping the plain bar to the form shown in Fig. 3 of the drawing by means of dies, then removing the burrs, then bending the arms to form a cross, and finally bending the said arms to form the shackle, all as set forth.



150,950.

150,951. MECHANISMS FOR TRIMMING SHIPS. Jas. McNabb, Widder Station, Canada, assignor to himself, J. Blakeley, and S. Corsell, same place. [Filed May 22, 1874.]

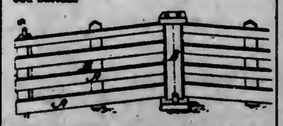


150,951.

In devices for trimming ships, the combination of the weighted pendulum I, the overhang H, frame G, and the bell-crank F, for the purpose of controlling the movements of a longitudinal shaft, A, substantially as described and shown.

150,952. PORTABLE FENCES. Thomas McQuary, Daviess County, Ky., assignor of one-half his right to S. J. Harris. [Filed Nov. 6, 1874.]

Brief.—The beveled ends of the adjacent panels are clamped together by removable cap and sill pieces, which receive the ends of the end battens



The combination of the horizontal boards A A, end posts B B, beveled as described, and provided with tenons *a a*, foot-pieces *c c*, and top caps D D, all substantially as and for the purposes herein set forth.

150,953. SANDPAPERING-MACHINES. E. W. Merrill, Lynn, Mass. [Filed Jan. 30, 1875.]

Brief.—The sand-paper rollers are first covered with a layer of felt, outside of which is secured an abrading covering, thus forming an elastic surface.



1. The spring D, constructed as and for the purposes specified.

2. The clamp *b*, provided at one end with jaws for clamping the material, as described, and at the other with the spring *d*, all as and for the purposes set forth.

3. The hinged plates E, in combination with the roll A and elastic covering B, substantially as and for the purposes specified.

4. The abrading-rolls, constructed as herein described and shown, and for the purposes set forth.

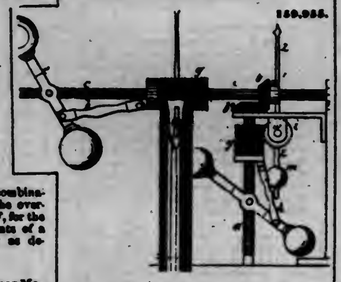
150,954. BROOM-HEADS. E. J. Merrick, Rochester, N. Y. [Filed June 30, 1874.]

Brief.—The sides are hinged to the main head, and are, by means of the loops, limited in their outer movements. The central partition serves to hold the sides in place.

150,954.

The combination, with the cross-head E, cam-le feet to the handle A A', of the guide-loops *b b* and the journals *l l*, with heads *n n*, arranged to operate in connection with the jaws B B, in the manner and for the purpose specified.

150,955. STEAM-GOVERNORS. M. Muchin, Riga, Russia. [Filed Dec. 24, 1874.]



150,955.

In a governor for steam-engines, the combination of the shaft *a*, toothed sleeve *g*, mounted on said shaft *a*, with capability of sliding to and fro, the lever *h*, and the lever *e*, provided with a ball at both ends, with the toothed segment *i*, shaft *w*, index-hand *z*, the weight *u*, and a valve, substantially as and for the purposes shown and described.

150,956. CONSTRUCTION OF JETTIES FOR IMPROVING RIVER-CHANNELS. Alfred B. Mullett and Frank Schumann, Washington, D. C. [Filed Jan. 6, 1875.]

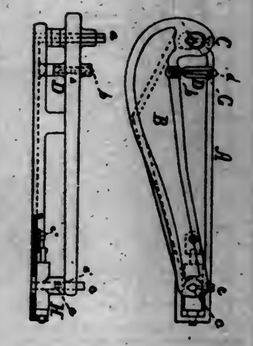
Brief.—Jetties for deepening the channels of rivers are formed of buoyant metallic caissons floated to place and linked together, after which they are sunk by the admission of water, and braced and held in position by a series of piles, vertical or inclined.



The process and apparatus herein described for forming bars or jetties in rivers and other running water by the submersion of connected buoyant caissons A, constructed as specified, and sustained by struts or supports I I', all as herein described.

150,957. CASTING SCALE-LEVERS. Titus Olmes, Philadelphia, Pa. [Filed Mar. 28, 1874.]

Brief.—In order to unite steel knife-edges with cast scale-beams, the steels are held in proper position by a frame placed in the mold; the supports for the steels being arranged on the frame, so as to yield and compensate the shrinkage of the metal on cooling.

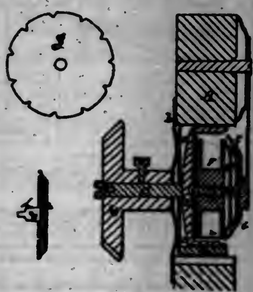


1. The stand D, projecting right-angularly from the board A, in combination with the wire G and set-screw *d*, substantially as and for the purpose set forth.

2. The combination, with the board A, of the block H, with opening *c'* and set-screw *c*, and with the rod H', car J', removable car J, and set-screw *c''*, substantially as and for the purpose set forth.

150,958. SEWING-MACHINES. John O'Neil, New York, N. Y., assignor of one-half his right to Theron D. Fuller and Julius Wood, same place. [Filed Sept. 15, 1874.]

Brief.—The pivot on which the bobbin revolves is a screw connecting two disks on either side of the bobbin. The lower disk is notched. A finger on the upper one fits into the notches, and the tension is regulated by turning the lower disk. A spring-catch fits into the slotted head of the screw, and prevents its revolving with the shuttle, and the thread is prevented from twisting as the bobbin is stationary with respect to the motion of the shuttle. The catch yields to allow the thread to pass over the bobbin.



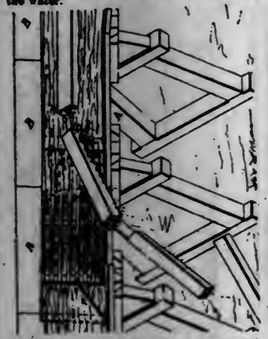
1. The combination of the revolving shuttle E, the bobbin F, provided with a slotted-headed screw and a catch, *i*, whereby the bobbin is prevented from revolving with the shuttle, substantially as described.

2. The combination of the bobbin F, the screw *j*, and the notched disk *g* and plate *h*, having on its edge the finger *h'*, as and for the purposes specified.

3. The combination of the bobbin F, the finger *h'* and the disk *a*, having on its edge the groove *r*, as and for the purposes specified.

159,959. FLUMES FOR CONVEYING TIMBER. H. G. Parker, Carson City, Nev. [Filed Jan. 30, 1875.]

Brief.—The V-shaped chutes, through which timber is conveyed to the valleys, are provided with removable side boards, and in connection with these a reversible inclined shoe is placed in the chute, to deflect the logs out of the same at the desired point. The shoe is a skeleton frame, to permit the free passage of the water.



1. The reversible incline-shoe C, constructed substantially as herein shown and described, and for the purpose set forth.

2. The flume A, provided with sectional side-boards B, as and for the purpose specified.

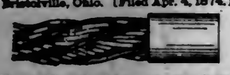
3. The incline-shoe C, in combination with the flume A, provided with the shifting side-boards B, as and for the purpose set forth.

159,960. FAUCETS. Anthony Pfund, New York, N. Y. [Filed Apr. 22, 1874.]



A faucet provided with two channels, *a b*, both extending parallel with each other through the spout B, the plug C, and body A, substantially as herein shown, for the purpose specified.

159,961. LIGHTNING-RODS. M. D. Phelps, Bristolville, Ohio. [Filed Apr. 4, 1874.]



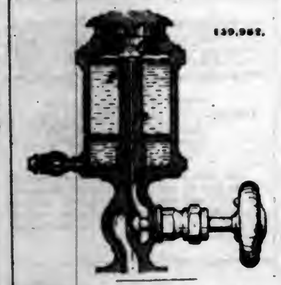
The combination of three or more clusters of wires, each cluster composed of a copper center, *a*, covered with wires *b b*, and the clusters thus formed twisted together, and the wires *d d* twisted around between the clusters on the exterior, all substantially as set forth.

159,962. LUBRICATORS FOR STEAM-ENGINES. James Purcell, Cincinnati, Ohio. [Filed Oct. 21, 1874.]

Brief.—The discharge-tube is countersunk and flaring on its upper end, and has thereon a sleeve-valve, upon the top and outer edge of which are openings, to permit the oil to pass through, and down the tube when the valve is raised.

1. The retaining-ring C, in combination with a screw-cap, for oil-cups or other purposes, substantially as herein described.

2. The combination of the discharge-tube *c*, constructed with a countersunk or flaring upper end, forming the valve-seat at its outer edge, and the regulating-valve F, forming a sleeve, and constructed with lateral perforations at its upper end for the admission of steam to the cistern, and for the escape of the lubricant as floated up by the water of condensation, substantially as herein shown and described, for the purposes set forth.



159,962.

159,963. RUFFLERS. Edward Powell, New York, N. Y., assignor to Domestic Sewing-Machine Company. [Filed Dec. 23, 1874.]

Brief.—The upper ruffling-blade is attached to a rocking arm on the blade-carrier. The adjusting-screw on the operative lever, striking this arm, tilts it as it moves it backward, causing the blade to rise and pass freely over the cloth. The curved heel of the lever which moves the carrier forward tilts the arm back, causing the blade to close on the cloth and carry it forward. The operative lever is fastened to the needle-arm by hinged jaws that wedge between the screw-head and needle-arm, obviating the necessity of removing the screw.



1. In a ruffling attachment, the combination, with the socket A, of the base-plate B, lever D, the centrally-pivoted lever F, and nippers G and H, substantially as and for the purposes set forth.

2. The automatic grasping and carrying nippers G and H, in combination with frame H' and levers D and F, substantially as and for the purposes set forth.

3. The combination of the socket A, with its base-plate B, projection or post C, lever D, with its curved arm D', rocking lever F, and frame H', for operating and carrying the nippers, substantially as and for the purposes set forth.

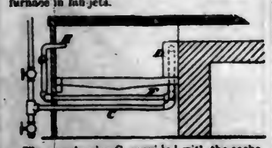
4. In a ruffling or gathering attachment, the hinged locking device, consisting of jaws *a a'*, for connecting the lever D with the needle-bar of a sewing-machine, substantially as set forth.

5. In a ruffling attachment, the combination of lever D, with its curved heel D', adjusting-screw K, rocking lever F, and nippers G H, substantially as and for the purposes set forth.

6. In a ruffling attachment for sewing-machines, the combination of the socket A, lever D, provided with a curved heel-carrying frame, H', cap M, and nippers G H, substantially as and for the purposes set forth.

159,964. SMOKE-CONSUMING FURNACES. William L. Powlesson, San Francisco, Cal. [Filed July 27, 1874.]

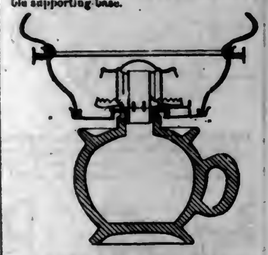
Brief.—A superheater forms a front lining for the bridge-wall, in which the steam is superheated before being introduced to the furnace in fan-jets.



The supply-pipe C, provided with the cocks I and I', in combination with the superheating-pipe *c*, embedded in the superheater D, forming a lining for the bridge-wall, the conducting-pipes F and G, and the fan-jet nozzles H, all these devices being arranged in relation to each other, with the fire-chamber, and combined to operate substantially as and for the purposes set forth.

159,965. SHADE-SUPPORTS FOR LAMPS. S. A. Prescott, Sutton, assignor to himself and J. M. Barker, Worcester, Mass. [Filed Jan. 4, 1875.]

Brief.—The shade and shade holder proper are made easily removable from the detachable supporting-base.

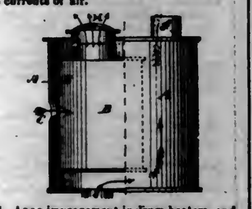


1. In combination with the shade-supporting base, adapted to be attached to the lamp, the removable ring resting on said base, the elevated shade-holder proper, and the arms or supports intermediate between and connecting said removable ring and shade-holder, substantially as set forth.

2. The combination, with the shade-holder, of one or more supporting spring-hooks, which bear outwardly against the inner side or face of the shade, as and for the purposes set forth.

159,966. HEATING-DRUMS. F. Proudfoot, Toronto, Canada. [Filed Dec. 18, 1874.]

Brief.—The inner drum is made tight at the bottom, to contain water for moistening the currents of air.



1. As an improvement in drum-heaters, and in combination with a smoke-pipe, F, the outer drum A and inner drum B, having perforations C at the rear and front sides of said drums for the passage of air wholly through, the inner drum B, said drum B having a water-tight bottom for the reception of water, and attached contiguously to opposite sides of the outer drum A, the smoke-space of the outer drum extending over the ends of the inner drum, as and for the purpose set forth.

2. In combination with smoke-pipe F, and outer drum A, and inner drum B, having water-tight bottom and perforations C, the perforated capped passage H, extending upwardly from the inner drum through the outer drum, for the passage of air solely within the inner drum, as and for the purpose set forth.

159,967. PLOWS. Artemas Rigby, Upper Stillwater, Mo. [Filed Dec. 21, 1874.]

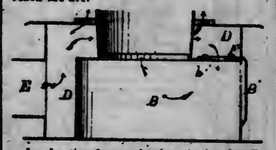
Brief.—A low share having its outer edge provided with a sole running parallel with the land-side, and with cutters projecting from its top



The swivel-plow having the standard C, land-side E, and share G, the share having cutters *d d*, with a shoe, *f'*, upon its outer side, parallel with and upon the same plane as the land-side, substantially as and for the purpose set forth.

159,968. HEATING-STOVES. J. H. Robinson, Washington, D. C. [Filed Oct. 31, 1874.]

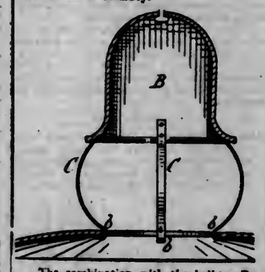
Brief.—The draft being sufficiently strong, a portion of the air will be drawn through the openings *b* to the ash-pit, and will then reach the fire.



In a heating-furnace having air-chamber D, surrounding the fire-pot and furnace proper, the combination of the air-tight door, B', a single cold-air duct, E, and a perforated ash-pit, B, with damper F, all substantially as set forth.

159,969. REFLECTORS. Gustav Rosenthal, Rochester, N. Y. [Filed Jan. 26, 1875.]

Brief.—The springs can be compressed and the reflector removed without removal of the smoke-bell or chimney.



The combination, with the bell-top B and reflector A, of the spring-arms C C, fastened at one end to the bell-top, and provided at the other end with the hooks *b b*, which enter the central opening *c* of the reflector, as and for the purpose specified.

159,970. WASHING-MACHINES. Peter A. Shipley and Abraham Wheeler, Woodberry, Md. [Filed Oct. 9, 1874.]

Brief.—The roller is formed of strips of wool, the ends being secured between rings and projections on metal disks at the two ends.

The strip *c*, in combination with the toothed disks *f* and the plain rings *d*, forming a support for said strips, and triangular projections *c'*, the whole forming the roller D, substantially as specified.



159,971.



159,972. HOOF-TRIMMERS. Andrew Shirran and William J. Givens, Pacheco, Cal. [Filed Apr. 11, 1874.]

Brief.—The body of the instrument bears against the outside of the hoof. The knife is attached to a sliding handle, and is operated by a disk-lever and flexible band.

A machine for trimming hoofs, constructed substantially as shown and described—that is, having a working lever, A, and disk B, (connected with the knife-handle by a flexible connection,) knife K, handle E, and bar F, arranged as and for the purpose described.

159,973. SICKLE-HEADS FOR HARVESTERS. Michael M. Shelleberger, Hamilton, Mo. [Filed Nov. 19, 1874.]

Brief.—Adjustable guides upon the shoe support the sickle-head.



1. The adjustable lower race B, in combination with the coupling-shoe A, as shown and described, for the purpose specified.

2. The combination of the shoe A, the separately-adjustable lower and upper races B and H, and the yoke F, substantially as and for the purpose shown and described.

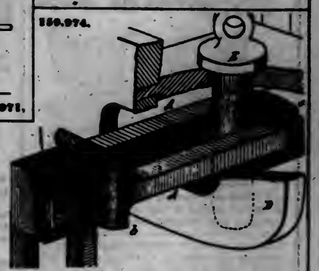
3. The combination, with the cutter-bar Q, formed with the screw-threaded shank *q*, of the nut R and the yoke P, having the tubular elongation *p*, substantially as and for the purpose shown and described.

4. The combination of the yoke P, the boring Y' Y', and journal *r*, the nut R, the screw-thread *s* on the exterior of the nut R, and screw-threaded shank *q*, substantially as and for the purpose shown and described.

5. The combination of the shoe A, bolts *b*, brackets *m*, set-screws *n*, and upper race H, substantially as and for the purpose shown and described.

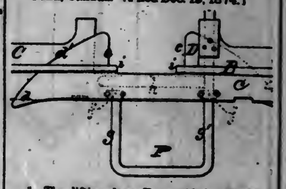
159,974. CAR-COUPLINGS. J. B. Stanwood, Philadelphia, Pa., assignor of one-half his right to J. Bilbrough, same place. [Filed Jan. 26, 1875.]

The combination of the link-retaining bar A, having a box or eye-shaped prolongation, B, and top and bottom stops *a b*, with the loose coupling-link C, substantially as set forth.



159,974.

159,975. CAR-COUPLINGS. W. F. Starr, St. John, Canada. [Filed Dec. 19, 1874.]



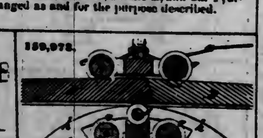
1. The lifting-loop F, provided with the cross-bar *h*, and operating in guides *f*, all combined substantially as and for the purpose specified.

2. In a car-coupler, the vertically-vibrating coupling-link B, and the rigid barbed and notched coupling-arms C, in combination with the lifting-loop F, provided with cross-bars *h*, so that both links may be uncoupled at one and the same operation, substantially as described.

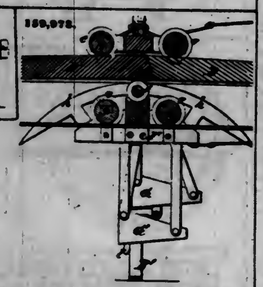
159,976. CHILDREN'S WALKING-CHAIRS. Geo. P. Steinbeck, Baltimore, Md. [Filed Dec. 31, 1874.]



159,977.



159,978.



159,978. WIREWAYS. A. A. Smith, Georgetown, Colo. [Filed Dec. 30, 1874.]

Brief.—A is elevated wire cable, over which two cars travel in opposite directions at the same time without interference, by means of a hinged riding-track located at center of length of cable. One car rides upon said track, while the other remains upon the cable while passing each other. The cable is secured in sections by means of serrated clamps on top of supporting-posts. The cars are propelled by an endless rope in the usual manner.

1. A combined child's walking, playing, and commode chair, provided with the height-adjusting, locking, and traveling devices *b*, *b'*, and *c*, substantially as herein specified.

2. In a child's chair, the combination of the body A, seat C, having grooved ways, removable vessel *d*, and lid *g*, substantially as and for the purposes herein set forth.

3. The sliding piece *e*, fitted with the belt *a*, in combination with the slotted body A, provided with the toothed rack *f*, substantially as and for the purpose specified.

160,977. PEGS OR SOLE-FASTENINGS. B. F. Sturtevant, Boston, Mass. [Filed Dec. 17, 1874.]



1. That improvement in the art or process of manufacturing a peg or peg-ribbon consisting in first bringing the part intended to form the point to a blunt medium edge by cutting, and then, by compression, forming an acute bevel, including a portion of the body of the blank, and the point of which is the point of the previously-cut edge, substantially as described.

2. A compressed wooden peg-strip, the point of which has the characteristics essentially as set forth.

160,978. ROLLS FOR ROLLING ANGLE-IRON. A. Swift, Cincinnati, Ohio, and J. B. York, Newport, Ky. [Filed Jan. 13, 1875.]



A pair of rolls for making angle-iron, whose several grooves are so formed as to successively impart to the pile or bar the forms, first, of an obtuse or flattened V, having rounded apex; second, the same, with outerward offset; and, third, provision for excess of metal at the corners of the curves, as shown in fourth, fifth, and sixth passes, the passes being alternately inverted and consecutively less obtuse, terminating with the finishing-pass 7, substantially as and for the purpose set forth.

160,979. SAW-SETS. Josiah B. Titus, New York, N. Y., assignor to himself and J. McLean, same place. [Filed Jan. 18, 1875.]

The combination, with the plate or frame A, having interior openings B D E, lateral opening F, and bridge C, of the slide F, having jaw K and the screw I, all constructed substantially as and for the purpose set forth.

160,980. PROPELLING DEVICES FOR STREET-CARS AND THE LIKE. H. Tribble and N. A. Davis, Rusk, Tex. [Filed July 10, 1874.]

Brief.—For propelling street-cars and the like.



160,980.

In combination with the truck A, having bearings *b*, the drums C C and slatted belt D, substantially as and for the purpose set forth.

160,981. FAUCETS. Thomas Tully, Springfield, Ill., assignor of one-half his right to W. H. Doan, Cleveland, Ohio. [Filed Jan. 9, 1875.]

1. A valve formed by casting it into its valve-seat, substantially as and for the purpose described.

2. The combination, with a regular or irregular valve-seat, of a valve of soft metal, formed by casting it into the said valve-seat, substantially as and for the purpose described.

3. The combination, with a valve, formed by casting it into its valve-seat, of a suitable guide, consisting of the flattened top end *c* of the valve-stem and square hole *c'* in the top of the faucet A, whereby the said valve is made always to take the same seat, substantially as and for the purposes described.

4. The combination, with the valve-stem C, of a valve of soft fusible metal E, formed by casting the said valve over a head or crossbar, C', substantially as and for the purpose described.

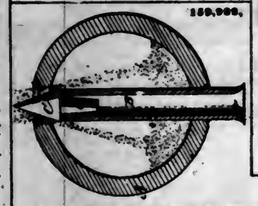
5. The combination, with the valve-seat B and the valve E cast therein, of the flattened stem C and a corresponding square orifice in top of the faucet A, whereby the valve is guided always to the same seat, substantially as and for the purpose described.

6. The combination of the valve-seat B, the valve E cast therein, the flattened stem C, and nut *c*, substantially as and for the purpose described.

7. The combination, with a faucet, of a valve-seat, B, and valve E cast therein, stem C, spiral spring D, and nut *c*, substantially as and for the purpose described.



160,982.

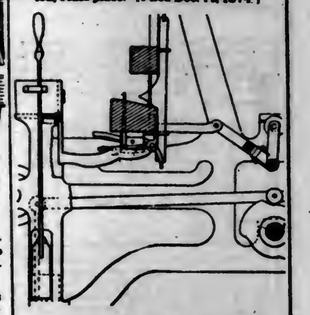


160,982. EXPLOSIVE SHELLS. Hiram Tyler Gemmeo, N. Y., assignor of two-thirds his right to J. Warren and N. H. Goerhart, same place. [Filed Feb. 8, 1875.]

1. A shell consisting of the soft-metal tube B, provided with a rest, and the outer shell A, these parts being connected together and combined for operation substantially as and for the purposes herein set forth.

2. The method of loading the shell A by first inserting the central soft-metal tube B into the case, and, by means of the cone C, causing the distribution of the charge, after which the tube is fully inserted and upset, substantially as herein set forth.

160,983. STOPPING MECHANISMS FOR LOOMS. J. A. Ware, Worcester, Mass., administrator of Jas. Bullough, deceased; said administrator assignor to G. Crompton, same place. [Filed Dec. 14, 1874.]

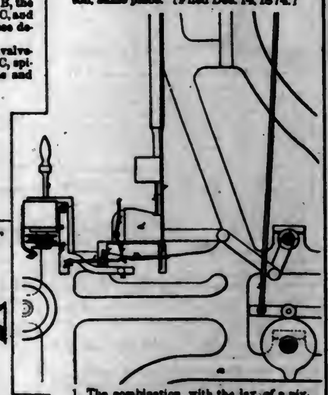


1. The combination, with the lay, of movable pins attached thereto, and adapted to be projected within the shed, and to retain or place the weft in the path of the weft-feeler, substantially as described.

2. The combination, with the lay and movable pins adapted to be projected within the shed and above the race of the lay, of a weft-feeler, substantially as described.

3. In combination, the lay, an arm or lever attached thereto, a pin or slide adapted to be moved above the race bottom and within the shed, and a projection attached to a stationary part of the loom, for operating the arm or lever, and pin or slide, substantially as described.

160,984. STOPPING MECHANISMS FOR LOOMS. J. A. Ware, Worcester, Mass., administrator of Jas. Bullough, deceased; said administrator assignor to G. Crompton, same place. [Filed Dec. 14, 1874.]



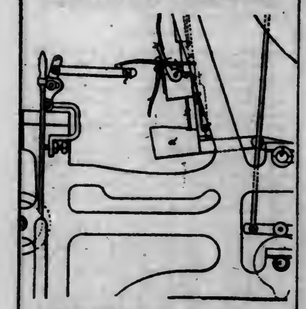
1. The combination, with the lay, of a pivoted lever or pin, projecting therefrom above the race-board, and adapted or arranged to be turned by the weft to prevent the stopping of the loom, substantially as described.

2. The combination, with the lay and its attached lever for actuating the shipping or stopping mechanism, of a rest and lever to move such lever for actuating the shipping mechanism, substantially as described.

3. The combination, with the lay and its attached lever *i*, adapted to be tilted by the weft, of a lever pivoted to the lay, and adapted to operate the belt-shipping mechanism when the weft fails, substantially as described.

4. In combination, the lever *p*, chains or cords *q*, pulley *r*, lever *r'*, and setting-on rod *s*, substantially as described.

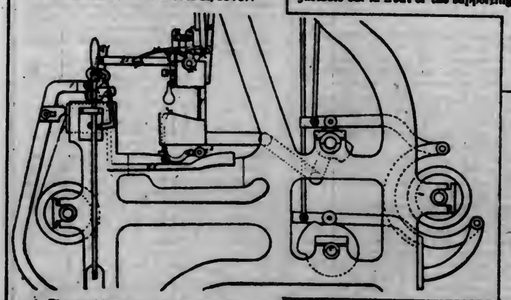
160,985. STOPPING MECHANISMS FOR LOOMS. J. A. Ware, Worcester, Mass., administrator of Jas. Bullough, deceased; said administrator assignor to G. Crompton, same place. [Filed Jan. 11, 1875.]



1. The combination, with the movable bracket *a'*, of a pivoted fork or prong, which is raised or lowered to meet the weft and prevent the stopping of the loom, substantially as described.

2. The combination, with a pivoted weft-fork or prong arranged upon the lay and operated by the weft, of a lever, also on the lay, operated by the weft fork, and adapted to engage and actuate the shipping mechanism when the weft is absent or broken, substantially as described.

160,986. STOPPING MECHANISMS FOR LOOMS. J. A. Ware, Worcester, Mass., administrator of Jas. Bullough, deceased; said administrator assignor to G. Crompton, same place. [Filed Jan. 11, 1875.]



1. The combination, with the lay, of a weft-feeling device composed of two movable parts adapted to operate within the shed, one part serving to place or hold the weft in position while the other part feels for the weft, substantially as described.

2. A weft-feeling device composed of two movable parts, and working within the shed between the selvages, combined with mechanism to withdraw the feelers from the shed when the lay beats up, substantially as described.

3. The combination, with the lay, of a weft-supporting fork, adapted to be projected above the lay and among the warps, and to support the weft, against the action of a feeler, adapted to feel for the weft, substantially as described.

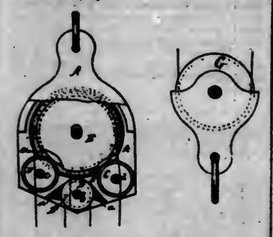
4. The combination, with the lay, of weft-feeling devices, adapted to be projected into the shed and bear on opposite sides of the weft, substantially as described.

5. The combination, with the lay, of the movable weft-forks, pivoted and adapted to be projected within the shed and to support the weft, substantially as described.

6. In combination, the lay, the two movable weft-feeling devices, adapted to be projected within the shed, and a lever for moving the shipping mechanism to stop the loom, the arm being moved by the weft-feeler when the weft is absent, substantially as described.

160,987. DIFFERENTIAL PULLEY-BLOCKS. Benj. F. Warren, Fishkill, N. Y., assignor of one-half his right to Danl. W. Warren, Newark, N. J. [Filed Aug. 4, 1874.]

Brief.—A double-grooved sheave is supported by two friction-pulleys. Between the latter there are two guiding-sheaves for the rope, all in a case, wherein is a vertical slot for the center-pin of the main sheave, to prevent lateral play.

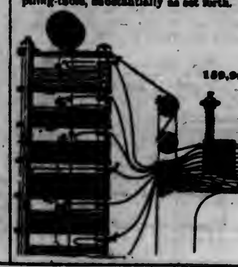


In combination with the sheaves or wheels C D, case A, and guiding sheaves or wheels B and B', the loose sheave or pulley E, with grooves *e e'*, substantially as and for the purposes set forth and described.

160,988. MACHINES FOR FILING TEXTILE MATERIALS. Alma Warth, Stapleton, N. Y. [Filed Jan. 20, 1875.]

Brief.—To facilitate the piling of cloth upon a table preparatory to marking and cutting, the packages are placed in a vertical frame provided with shelves or with bearings, and the several ends of the layers or pieces being placed in a clamp, they are drawn upon the table by a windlass. To guide and smooth the fabrics they are passed through a series of separating-plates arranged upon an adjustable bar in front of the supporting-frame.

1. The combination, with a piling-table, of a package-supporting frame containing two or more supports for packages, and with guide rods or rollers for guiding the layers to the piling-table, substantially as set forth.



160,988.

2. The combination, with a piling-table, of a package-supporting frame containing two or more supports for packages, and with guide rods or rollers for guiding the layers to the piling-table, substantially as set forth.

3. In combination with a series of shelves for supporting the packages of the material to be piled, the rods *b*, extending through the shelves on one side, and the cords *c*, rising from each shelf on the opposite side, substantially as and for the purpose set forth.

4. In combination with the package-supporting frame and with the piling-table, two or more separators, extending across the piling-table for guiding the layers and removing the wrinkles, substantially as shown and described.

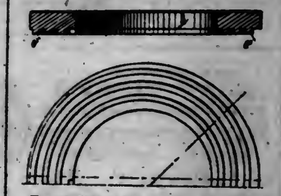
5. In combination with the separators, a supporting-bar which swings on a pivot fastened to the side of the piling-table, and which allows of adjusting the separators in the required position, substantially as set forth.

6. In combination with the piling-table and the separators, the clamp D, which serves to draw the layers through the separators, substantially as shown and described.

7. In combination with the package-supporting frame, the piling table, the separators, and the clamp for drawing the layers through the separators, a windlass for drawing the clamp over the piling-table, substantially as set forth.

160,989. SCROLL-CHUCKS. J. E. WARREN, Oneida, N. Y. [Filed Dec. 10, 1874.]

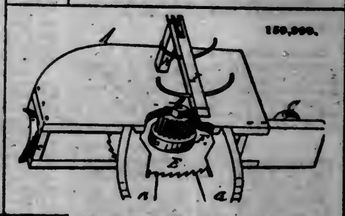
Brief.—The ends of the threads of the scroll-plate are cut square, or at right angles across. The first and last threads of the dogs are similarly formed, and tend, by reason of such formation, to push the dirt in front of them, and thereby prevent clogging.



The scroll or face-plate A, and boxes B, each having their threads *a* and *b'* *b'* constructed with their ends square, or at right angles to the length of the thread, as herein shown and described.

160,990. CORN-HARVESTERS. W. N. West, Milford, Mich. [Filed Dec. 11, 1874.]

Brief.—The corn that is cut by the saw falls upon arms in a bar which is pivoted, so as to be turned for the purpose of delivering the sheaf after being bound.



160,990.

1. The combination of the revolving post H and bar I, provided with curved fingers, with the frame A, when the parts are arranged to operate substantially as and for the purpose described.

2. The combination, with the frame A, of the arbor D, saw E, guides G, revolving post H, bar I, provided with curved fingers, and wheel R, all constructed and arranged substantially as described and shown, for the purpose set forth.

169,991. SHOE-TIPS. Hugh White, Chicago, Ill., assignor of two-thirds his right to C. H. Fargo & Co., same place, and John Mundell & Co., Philadelphia, Pa. (Filed Sept. 19, 1874.)

Brief.—The wings of the blank are turned over to form the tip, and thus dispense with the usual seam across the toe of the shoe.

The leather-blank having tip-forming prolongations *a* and wings *b* in one piece therewith, substantially as and for the purpose specified.



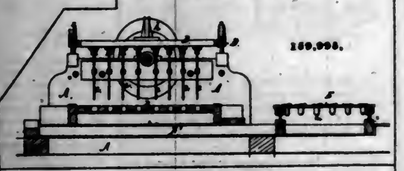
169,992.



1. The combination of the plate D and its square projection *a* with the arm H, having a hub with a square recess adapted to the said square projection, and with the set-screw *d* and spring, all substantially as set forth.

2. The combination of the plate D, its square projection, and stop *e* with the arm H, its square recess, and stops *f f*.

169,993. TORPEDO-FILLING MACHINES. D. J. Wolfe and G. A. Lillendahl, Jersey City, N. J. (Filed Aug. 19, 1874.)



169,994.



169,995.

169,992. JOINTS FOR STEAM-GENERATORS. H. Whittingham, Brooklyn, N. Y. (Filed Dec. 23, 1874.)

Brief.—Tapering tube ends fit into corresponding sockets, and are secured together by tapering nuts screwed on the ends of the smoke-tube, thus allowing for contraction and expansion.

The combination of the return-line C, having screw-threads at its ends, exterior water-tube B, having plain tapering ends, the heads A A, having plain tapering seats *c*, and the tapering nuts D and E, applied to the screw-threaded ends of the return-line for clamping the parts in place, substantially as described.

169,993. FORMER FOR FORMING WATCH-CASE BACKS. Fritz H. Wilby, Philadelphia, Pa. (Filed Jan. 6, 1875.)

Brief.—The back C is clamped upon the form by the nut B. Then a burnisher is used for pressing down the back until it fits the form.



The chuck A, in combination with the clamping-ring B, for making the finished back, substantially as described.

169,994. FASTENERS FOR THE MUSTING-BALLS OF SAMPLES. Jos. M. Withers, Philadelphia, Pa. (Filed Sept. 3, 1874.)

Brief.—The novelty consists in a square projection on the plate, or on an upwardly-projecting tube, and a square recess within the lower part of the bolt, so arranged that by the action of a spring and set-screw from either top, the swinging arm, when in position over both sockets, is depressed or lowered till it receives and fits over the square projection of the plate, thus firmly locking the device, an opposite movement of the set-screw being necessary to release it.

1. The priming-rod C, provided with a notch at or near its lower end, for the purpose of holding or carrying the proper quantity or charge of detonating compound, substantially as and for the purpose herein set forth.

2. The safety fulminate-tray D, having small chambers or compartments, the bottom of which are made of thin paper-cloth or other suitable material, substantially as and for the purposes herein specified.

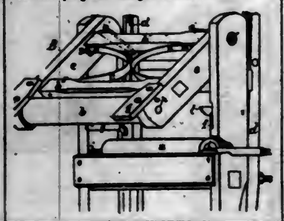
3. The plate E having rollers or wheels, in combination with the trim-way *c* and the sliding frame F, substantially as and for the purpose herein specified.

4. In combination with a machine for priming torpedoes, the sliding frame F, arranged so as to carry the fulminate-tray D into the machine when the plate E is withdrawn from the machine, and to carry out from the machine the tray D when the plate E is inserted, substantially as and for the purpose set forth.

5. The spurs *i* and *f* on the cam A, in combination with the frame F, arranged and operating substantially as and for the purpose herein specified.

169,996. CLOTHES-WRINGERS. Philip N. Wolfston, Springfield, Ohio, assignor of one-half his right to B. C. Converse. (Filed Oct. 21, 1874.)

Brief.—Two frames are pivoted together at their upper ends, a roller being journaled in each of these frames, which are held in contact by latches. Another frame is connected for clamping the wringer to a tub

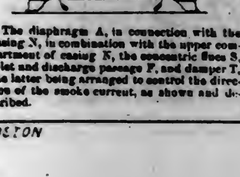


1. In a clothes-wringer, the frame B, having the springs *c*, the roll *b*, guards *g*, latch *l*, pin *p*, and the arms *c'*, in combination with the uprights *d'* and roll *a*, as described.

2. The uprights *d*, in combination with the uprights *d'* and screw-bolts *c''*, and arms *c'*, substantially as described.

169,997. PROCESSES AND APPARATUS FOR COOLING LIQUIDS. Lucien B. Woolfolk, Lexington, Ky. (Filed Nov. 7, 1874.)

Brief.—The refrigerator proper has two compartments bounded by a perforated partition—one to hold ice, the other salt. Surrounding this refrigerator is a jacket holding water. Outside thereof is another receptacle holding water, surrounding the pipes containing the liquid to be cooled. Thus salt is kept in contact with upper portion of the ice, and the severest cold being confined within the jacket next to the refrigerator, the liquid in the pipes is cooled, but not frozen.



1. The process of cooling liquids by the use of ice and salt placed in separate receptacles in a refrigerating-vessel, and imparting their cooling effect through the medium of water in contact with pipes or vessels containing the liquid to be cooled.

2. The combination, with the pipe D, of the refrigerator E, the salt-receptacle *a*, the ice-compartment *b*, the waste-pipe G, and the casing-vessel F, in the manner and for the purpose set forth.

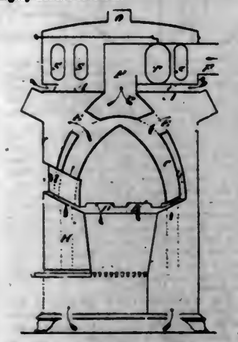
3. In combination with the refrigerating-vessel E, the salt-receptacle *a*, for the purpose of causing the salt to remain in contact with the top of the brine, and keep it so far saturated as to melt ice at a very low temperature, substantially as described.

4. In combination with the refrigerating-vessel E and the cooling-pipe D, the casing-vessel F, for the purpose mentioned.

REISSUES.

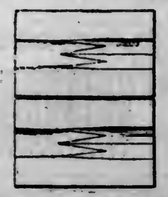
6,990. HOT-AIR FURNACES. David Boyd, New York, N. Y. Patent No. 153,926, dated Aug. 11, 1874. (Filed Jan. 26, 1875.)

Brief.—The air entering the bottom of the furnace is discharged below the diaphragm. The fresh air, entering just above the diaphragm, does not come in contact with very highly-heated surfaces.



The diaphragm A, in connection with the casing N, in combination with the upper compartment of casing N, the eccentric flues S, inlet and discharge passage F, and damper T, the latter being arranged to control the direction of the smoke current, as shown and described.

6,991. MANUFACTURE OF BOLTS. Wm. J. Clark, Milldale, Conn. Patent No. 43,669, dated Aug. 2, 1864; antedated Feb. 2, 1864; reissue No. 1,016, dated Mar. 26, 1866. (Filed Oct. 31, 1873.)



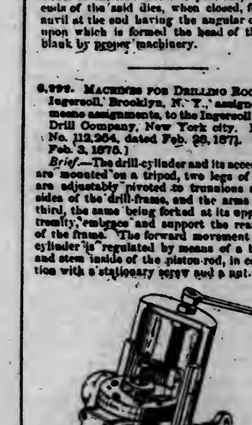
1. The process, substantially as hereinbefore set forth, of forming, from a round piece of metal, a headed bolt-blank, having an angular neck and a round stem, which process consists in subjecting a portion of the length of the round piece of metal to lateral swaging or compression on all sides simultaneously to form the angular neck, and, while the piece is firmly held with the neck portion inclosed at all sides, upsetting the projecting end of the swaged piece of metal to form the head of the bolt-blank.

2. The process, substantially as hereinbefore set forth, of forming the angular neck and protuberant head of a bolt, which consists in subjecting a round piece of metal to lateral swaging between angular-grooved dies, the end surfaces of which dies, when closed, form the anvil against which the projecting end of the swaged piece of metal is upset and formed into a head by proper machinery.

3. The swaging-dies, made substantially as hereinbefore set forth, so that one portion of the cavity inclosed by them is round, and another portion of said cavity is angular, and the said two portions are connected by an interrening portion of less transverse area than either of the said first two portions, and the ends of the said dies, when closed, form an anvil at the end having the angular opening upon which is formed the head of the bolt-blank by proper machinery.

6,992. ROCK-DRILLS. S. Ingersoll, Brooklyn, N. Y., assignor, by mesne assignments, to the Ingersoll Rock-Drill Company, New York city. Patent No. 115,476, dated May 30, 1871. (Filed Feb. 3, 1875.)

In organized machinery for drilling rock, &c., the combination, with the steam-cylinder, steam-valve, and valve-operating tappets projecting laterally into the interior of the cylinder, of the steam-piston, arranged to operate said tappets, and to continue its stroke without being restrained by the same, the drill-carrying rod fixed to said piston and working through one head of the cylinder, and mechanism arranged to rotate said piston and drill-carrying rod within the cylinder, substantially as shown and set forth.



6,993. MACHINES FOR DRILLING ROCK. S. Ingersoll, Brooklyn, N. Y., assignor, by mesne assignments, to the Ingersoll Rock-Drill Company, New York city. Patent No. 112,204, dated Feb. 28, 1871. (Filed Feb. 3, 1875.)

Brief.—The drill-cylinder and its accessories are mounted on a tripod, two legs of which are adjustably pivoted to trunnions at the sides of the drill-frame, and the arms of the third, the same being forked at its upper extremity, embrace and support the rear part of the frame. The forward movement of the cylinder is regulated by means of a button and stem inside of the piston-rod, in connection with a stationary screw and a nut.

1. A tripod composed of two ordinary legs and one forked leg, substantially as described, whereon a drill may be mounted and tilted, as specified.

2. A tripod with telescopic legs having adjustable bearings at their upper ends, one of said legs being forked, substantially as specified, whereby greater facility is afforded in tilting a drill and supporting the same on uneven ground.

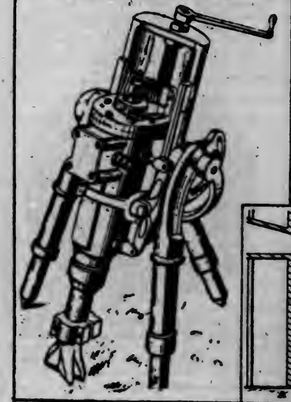
3. A tripod with telescopic legs, substantially such as are described, said legs having slots of varying depth formed in them in the manner and for the purpose specified.

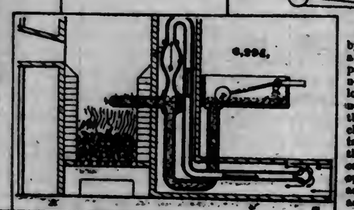
4. A tripod composed of two ordinary legs and one forked leg, a slotted sector making part of each of the ordinary legs, as described, in combination with a drill-frame and its trunnions and clamp-screws, whereby the drill-frame can be held firmly tilted, if required, and held in any desired position when tilted, the combination being substantially such as specified.

5. A button and its stem arranged inside of the piston-rod, in combination with a screw and nut, whereby the cylinder is permitted to move forward, substantially in the manner and for the purpose specified.

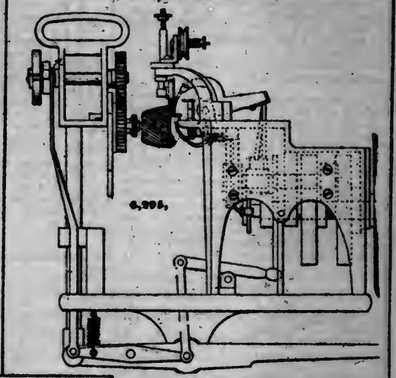


6,993.





6,994.



6,995.

6,994. HOT-AIR FURNACES. J. C. Weldon, Pittsburg, Pa. Patent No. 119,965, dated Oct. 17, 1870. (Filed Nov. 30, 1874.)

Brief.—Designed to thoroughly moisten the whole body of air which is to be conducted to the apartments.

The method of generating steam and introducing it into the air-passages of an air-heating apparatus, by passing the water for the production of such steam into a hollow arm, F, so extending through the walls of the furnace and into the fire-box, as to be acted upon by direct heat, and conveying the steam so generated, by means of suitable pipes H, into the air-passages E, leading to and around the outside of said furnace, in the manner shown and set forth.

2. The combination, with a hot-air furnace having a steam-generator, of an ejection-pipe leading downward from said generator, and having open communication with the air-inlet of the air-heating chamber, substantially as shown and described, so as to moisten the whole body of incoming air.

6,995. MACHINES FOR SEWING BOOTS AND SHOES. Henry Dunham, Jr., Abington, assignor, by mesne assignments, to Gordon McKay, trustee of the McKay Sewing-Machine Association, Boston, Mass. Patent No. 26,396, dated Sept. 9, 1859; reissue No. 1,363, dated Dec. 16, 1862; reissue No. 3,366, dated Apr. 20, 1869; reissue No. 6,061, dated Oct. 13, 1874. (Filed Feb. 6, 1875.)

Brief.—Adapted to sew shoes known as "turns." The upper and sole, wrong side out, are supported on a carrier, so moved as to present the edges of the shoe to the action of the needle, the latter entering the channeled portion of the sole near its edge, but on the same side or face, and then through the upper. In this position the needle is supplied with thread by means of a thread-carrier, and the thread is drawn through the upper and sole, and enchained in the manner of the common chain-stitch. One guide enters the channel portion of the sole, and the other bears on the upper, the latter resting about the edge of the sole. The last has a ridge near its edge, and forms a support for the sole between the channel and the edge of the sole, and through the action of the guides and ridge the sole-edge is bent so as to determine the depth of the stitch in the body of the sole, and the exit of needle with reference to the edge of the sole.

1. In a machine for sewing soles to uppers by a line of stitches, one face of which lies in a channel cut in the sole, and which stitches pass into, but not entirely through the thickness of the sole, the combination of the following instrumentalities, viz., a guide or channel-opener adapted to enter and bear against the two inner faces or the inner angle of the channel, a guide or guiding or resisting surface, against which the upper at the edge of the last rests, or is borne, and a movable lock or last-carrier for supporting the shoe, all operating to hold and present the shoe to the action of the sewing mechanism, substantially as shown and described.

2. In a machine for sewing boots and shoes known as turns, and operating to connect a sole and upper, mounted on a last, a guide, or channel-opener, (that enters the channel in and bears against the inner face of the sole or channel,) combined with a guide or surface against which the upper at the edge of the sole rests, and with a needle and thread-guide operating to connect such sole and upper by stitches which pass into the sole.

3. In a machine for sewing turned shoes, the combination with the guide made to enter in and bear against the inner face of the sole or channel, of the guide or surface constructed to hold and bear the outer edge of the sole toward the face of the last, whereby the needle may enter and pass from the same side of the sole.

4. The last, having the ledge or edge *a*, adapted to bear on the sole between the channel and edge of the sole, in combination with guides or gages H and I, the combination operating to bend the sole about such ledge or ridge for the passage of the needle.

5. In combination with a last-carrier, supported substantially as described, whereby its distance from the sewing mechanism may be varied, a feed-movement, acting through the said last-carrier, as set forth.

6. The combination of the guides or gages H and I bearing against the same side or face of the work, for the purpose of regulating the entrance and exit of the needle or other piercing instrument and the distance of the stitches from the edge of the sole.

7. The guide or bearing H, constructed with two bearing faces or surfaces adapted to bear on or hold the upper around the edge of the sole, substantially as described.

8. The guide I, combined with the needle, and rendered adjustable with reference to the path in which the needle moves, as and for the purpose set forth.

9. The curved needle N, when constructed with a hook upon its side or flank, substantially as described.

10. The combination of the curved needle N and the awl-tip P, constructed and operating substantially as and for the purposes stated.

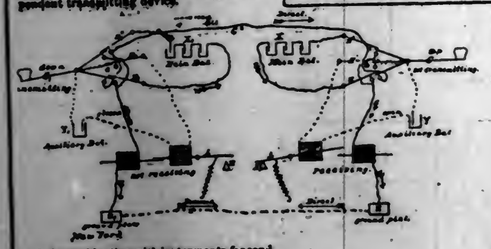
11. The combination of the curved awl O and curved hooked needle N, substantially as described.

6,296. METHODS OF SENDING AND RECEIVING MESSAGES SIMULTANEOUSLY OVER THE SAME TELEGRAPH-WIRE. M. G. FARMER, Salem, Mass. Patent No. 21,326, dated Aug. 31, 1858; extended seven years. [Filed Feb. 19, 1873.]

Brief.—Combines with duplex telegraph a continuity-preserving key.

1. The combination, with a double transmitter, of a device which shall preserve the continuity of the main circuit, by closing one branch or path thereof, which was previously open, at the same time or slightly before that it opens another branch or path that was previously closed.

2. The combination of such a continuity-preserving device with an equating circuit which shall hinder the armature relay or other receiving-instrument from responding to the action of this transmitting key or device, unless assisted by the action of some other independent transmitting device.



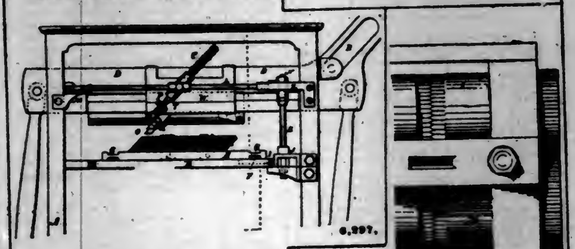
6,296.

3. In combination with instruments for sending and receiving messages simultaneously upon one wire, a key or device, arranged to transmit signals by reversing the direction of the main battery current, without interrupting the continuity of the main circuit.

4. The combination of a continuity-preserving key with a battery for transmitting signals to a distant station, and a relay or receiving instrument for receiving signals at the same time, from a distant station.

5. In instruments for the simultaneous transmission and reception of messages over one wire, the combination, at each station, of an accessory magnet or coil, an accessory battery, the accessory main-circuit magnets, and batteries with the means of reversing the direction of the current of each of the main batteries, substantially as set forth.

6,297. FLOWER-MAKERS' GRASS-CUTTING MACHINES. T. Millot and James Millot, New York, N. Y. Patent No. 144,016, dated Nov. 25, 1873. [Filed Jan. 26, 1874.]



6,297.

1. The combination of a cutting-board, E, and a clamp for holding the pack of material to be cut on said board, with a paper-cutting machine, the said board being arranged on a feed-guide having adjustability laterally to the feed, for shifting the pack to the position for cutting the slits, and also to the position for cutting off the bunches, substantially as specified.

2. The cutter C, made with the beveled end and a lower cutting-edge, in combination with the mechanism for clamping and moving the pack of sheets in cutting the slits of artificial grasses, as set forth, so that the material at the end of the slit is not injured, as specified.

3. The combination of a point-cutter, Q, with the cutter C and cutting-board, substantially as specified.

4. The said point-cutter connected with the shifting cutter-board guide H, to be shifted with the board, substantially as specified.

5. The cutter Q, arranged on a movable support, in combination with an incline on the cutter C, that moves it out of the way of said cutter C when the latter descends, substantially as specified.

6. The combination of the paper or cloth guide b with the cutting-board, substantially as specified.

7. The arrangement of shifting angle-bar H, standard K, swinging rod L, adjustable cutter-supports O, and spring Z with the cutter C and table B, substantially as specified.

8. The point-cutter Q, arranged to work in an inclined plane coinciding with the shearing inclination of the cutter C, substantially as specified.

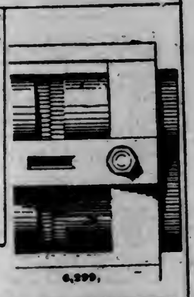
6,298. PEGS OR SOLE-FASTENINGS. Chas. Rowland and J. G. Rowland, Quincy, Ill., assignors, by mesne assignments, to Benj. F. Sturtevant, Boston, Mass. Patent No. 68,006, dated Aug. 20, 1867. [Filed Feb. 10, 1875.]

A strip of sole-fastenings united together by thin films of the substance forming the substances of the fastenings, substantially as described.

6,298.



6,299. MACHINES FOR MAKING COMPRESSED PEG-STRIPS. Charles Rowland and Jos. G. Rowland, Quincy, Ill., assignors, by mesne assignments, to Benj. F. Sturtevant, Boston, Mass. Patent No. 68,006, dated Aug. 20, 1867. [Filed Feb. 10, 1875.]



6,299.

1. Compressors for compressing a peg-strip, having recesses or dies, and adapted to compress or consolidate the peg-strip, substantially as described.

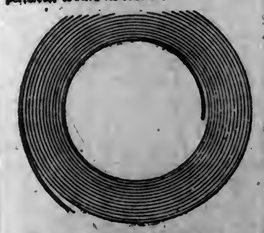
2. That improvement in the art or process of manufacturing pegs or ribbon peg-strips consisting of compressing the peg-strip between heated compressors, thereby condensing the pegs or peg-strip, substantially as described.

3. As a new article of manufacture, a compressed ribbon peg-strip, of leather or its described equivalent.

4. Grooved heated compressors, combined and acting to compress a peg or peg-strip, substantially as described.

6,300. BLANKS FOR SHOE-PEGS. Benjamin F. Sturtevant, Boston, Mass. Patent No. 25,149, dated Aug. 16, 1859; reissue No. 2,366, dated June 12, 1866; extended seven years. [Filed Feb. 8, 1875.]

Brief.—The peg blank or ribbon is unwound or produced from a log or cylindrical block of wood by a prolonged spiral cut, tending constantly, by the desired thickness of the ribbon for each revolution of the block, from its perimeter toward its center.



1. A peg-blank consisting of a ribbon of wood made and constituted substantially as described.

2. The described ribbon peg-blank, having one of its edges sharpened, substantially as and for the purpose set forth.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 8. TUESDAY, FEBRUARY 23, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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FOREIGN PATENT LAW.

JAPAN.

TRANSLATION OF THE LAW OF MAY 25, 1871, REGULATING GRANTS OF EXCLUSIVE PRIVILEGES TO INVENTORS.

May 25, 1871.

Henceforward exclusive permission to trade in newly-invented articles of all kinds whatsoever will be granted to the inventors; in consequence whereof, should any person residing in any part of the country be desirous of obtaining such exclusive permission, the application shall for the present be made to the Home Office in accordance with the regulations which follow.

Patents shall be granted for a term of years to all persons who increase the conveniences of life, who newly invent any chemical apparatus, machinery, utensile, or furniture, weapons, woven fabrics, &c., or who improve existing furniture or utensils.

The term of years shall be fifteen years, ten years, or seven years, according to the value of the invention.

Any person desirous of obtaining a patent shall send in his application to the local authorities of the district in which he resides, accompanied by a description, drawings, &c., which shall be forwarded to the Home Office, and the Home Office shall issue the patent.

The objects of the invention or the improvement shall be carefully drawn in cross-section and plan, and in the case of machinery the parts must be numbered or lettered in accordance with the description, so that everything may be clearly comprehensible at a single glance; and the seals of the inventor and of his surety must be attached to the drawings. Models may be furnished of articles of which drawings cannot easily be made.

When the document containing the patent is issued by the Home Office the local authorities shall deliver it after having obtained a receipt from the inventor and his surety.

A duty of five riô (1*l.* 1*s.* 3*d.*) shall be paid annually in advance during the period for which the patent is granted into the hands of the local authorities.

The duty may be increased or diminished, according to the nature of the invention. The amount shall be forwarded to the Home Department as soon as it is collected.

No duty shall be paid until six months have elapsed from the granting of the patent, that period being allowed for the inventor to try whether the sale be remunerative, and when he has ascertained that it is remunerative he will pay in one year's duty to the local authorities.

If, from the trial made during the first six months the sale turns out to be unremunerative, the application may be withdrawn at the option of the patentee; but in case such application be made after the expiration of the six months, the duty for one year already paid in advance will not be returned.

The applications sent into the Home Office will receive consideration according to priority of arrival.

Where the invention of another has simply been improved, the application must distinctly state the name of the original inventor, and the nature of the improvement. Where the invention in respect of which an application is made resembles a prior invention by another individual, but actually differs in construction or use, the points of difference must be clearly laid down in the application.

No patent will be granted for articles of general convenience, though the inventor be known beyond the possibility of mistake, and be yet alive, if the invention has been in general use for several years previous to the application.

Separate patents will not be given to each individual who may have combined with others to produce an invention, but a single patent will be issued in the name of all the partners of the company.

The owner of a patent may freely dispose of it for such sum as seems fit, during the period for which it has been granted; and both parties shall make application to have the fact endorsed upon the patent.

The patentee is at liberty to establish branch shops in his own name, or to teach others how to make the articles patented by him.

Should the patentee die before the patent expires, he may leave the patent to a relation; but application must be made to have the transfer endorsed thereon.

The Home Office shall publicly notify in each case that a patent has been granted to such and such a person, of such and such a place, giving also the names of the department, province, and the seat of the local authority, in consequence of his having invented such and such an article.

Should the patentee incur such losses during the term of years as he is unable to make good, if the article after due inquiry is found to be of indispensable public necessity, an extension may be granted.

Each separate article must bear the words "by Government sanction," together with the name of the inventor.

Fines shall be imposed on persons who fraudulently make use of a patentee's name, or who, not being in the enjoyment of a patent, make use of the term "by Government sanction."

COMMISSIONER'S DECISIONS.

MCBRIDE *vs.* HENDERSON.—*Appeal.—Interference.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the applications of Thomas McBride and William M. Henderson, for letters patent for an* "IMPROVEMENT IN HYDRAULIC CAR-BRAKES."—*Decided January* 25, 1875.]

THACHER, *Commissioner:*

This case is a continuation of a bitter contest between parties who mutually charge each other with theft and perjury.

On April 4, 1873, Henderson filed an application for a patent for a car-brake controlled from the engine, and operated by hydraulic pressure, the first claim of which was for—

A three-branched cock or valve combined with a water-tank, a steam-boiler, and hydraulic brake-operating cylinders, so that in one adjustment of the cock the brake-cylinders may fill or empty from the tank, and in the other adjustment of said cock the pressure within the boiler is transmitted to the fluid operating the brake-pistons, substantially in the manner set forth and described.

The patent was granted on the 12th of the following August.

Previous to the granting of this patent, however, and on July 1, McBride had filed an application embracing the same subject-matter as above set forth in Henderson's patent, and, in addition thereto, an arrangement of devices for the employment of glycerine, or other non-freezing liquid, during cold weather.

On September 16 an interference was declared between McBride and Henderson in the matter of the first claim of Henderson, above granted.

September 22, 1873, Henderson also filed an application for a patent embracing an arrangement of devices for the employment of glycerine in a car-brake, which arrangement constitutes the subject-matter of the present interference.

October 13, 1873, McBride withdrew from his original application all matter in reference to the glycerine attachment therein described, and made it the subject of a new application, which was filed on the same day.

October 24, a second interference was declared between this last application of McBride for the glycerine device and the application of Henderson filed September 22.

McBride, in his applications of July 1 and October 13, 1873, described and claimed an arrangement for the employment of glycerine, or other non-freezing liquid, with water, by the use of a tank containing the liquid from which the conveying-tube was supplied, in combination with a check-valve controlling the supply, and a three-way cock controlling the communication between the boiler and the said conveying-tube.

Upon a disclaimer by Henderson of the above combination of a glycerine-tank, and tubes leading to the boiler, whereby the two fluids could be commingled, accompanied by a motion on his part to dissolve the interference, the interference was finally dissolved by the primary examiner, and McBride's device allowed to go to patent.

On January 23, 1874, however, McBride returned to the Office with another application, covering, unmistakably, the devices of Henderson as set forth in his application of September 22, 1873, and on February 18, 1874, the present interference was declared.

The claims of McBride comprehend the particular devices now in dispute, and are as follows:

The cylinder G, containing the diaphragm *g*, in combination with the pipes E E', leading from the boiler to the brake-cylinders, the pipe H, provided with the check-valve h, pipes I K, cock *c'*, and a cock or cocks for regulating the boiler pressure and relieving the brakes, substantially as described.

In combination with the cylinders G and pipes E, E', I, and K, the stop-cocks *c'*, *i'*, and *k*, and a cock or cocks for regulating the boiler pressure and relieving the brakes, arranged, as described, for the purpose set forth.

This arrangement of devices for the employment of non-freezing liquids is widely different from that set forth by McBride in his first application of July 1, 1873. The latter application, it is alleged, was made for the ostensible purpose of protecting his rights to the invention of which he claims Henderson had in the previous spring attempted to defraud him. It is therefore very natural to suppose that he would have included therein the particular devices which he felt he was in danger of losing, especially as McBride knew, as the testimony on both sides now shows, that several months before he filed his July application, Henderson had made a drawing of a glycerine attachment, which he claimed in public and in private, and before McBride, as his own invention. Notwithstanding this fact, McBride proceeded to set forth in his application a very different arrangement.

In this state of the case, the inference would at once arise that the device for the employment of glycerine described by McBride in his July application was the precise and only invention of the kind which he had then made. This inference has become an established conviction in my mind, after a careful consideration of all the testimony adduced in both the former and the present interference. In the former case, although the glycerine attachment was not a part of the subject-matter in dispute, Henderson asserted his claim to the particular device now in controversy, in connection with the idea of the brake, yet McBride neither in his preliminary statement nor in his deposition alluded to the matter, nor did he attempt by way of rebuttal to correct the statements of Henderson and his witnesses. Douglass, the only witness on the part of McBride in that interference whose character for veracity was not sought to be impeached, testified that when McBride

described to him, some time before Christmas, 1872, his proposed brake apparatus he also understood him to say that he had a *small tank* for the use of glycerine, which, as the witness testifies further, McBride intended to employ in the particular arrangement of pipes, &c., constituting his brake apparatus. Three other witnesses of McBride testified that, as early at least as November, 1872, he informed them of his idea of using glycerine with his brake. They gave no description of any arrangement proposed by McBride for that purpose, but convey the impression, by their statements, that the glycerine was to be used in the particular brake apparatus then in dispute.

Thomas, a witness on the part of Henderson, and to whom Henderson showed the drawing of the device now in dispute, in the presence of McBride, testified that at that interview McBride only claimed that he *suggested* the application of glycerine to prevent freezing, and that he urged his claim to co-ownership with Henderson to the brake and glycerine attachment on the strength of having made that suggestion.

Jenks, another witness on the part of Henderson, and who witnessed, by his signature, Henderson's drawing of the brake with the present glycerine arrangement attached, in the presence of McBride, testified that McBride then gave him to distinctly understand that Henderson was the inventor of the entire device. Thomas and Jenks appear to be entirely disinterested witnesses.

So far, then, as the testimony in the former interference relates to the *devices* for the employment of non-freezing liquids, it clearly indicates that, whatever else McBride may have originated in that direction, the arrangement now in controversy was not among his plans.

Adhering to the plan set forth by him in his first and a subsequent application, and ignoring the arrangement claimed by Henderson, it was not until he found, by the action of the Patent Office, that his claims would not cover those of Henderson that he incorporated Henderson's invention in an application of his own.

In this interference McBride adds to his previous charges the accusation that Henderson has attempted to defraud him of this invention also.

This is a grave charge, and, as the presumption of law is in favor of Henderson's innocence, the charge, to stand, should be supported by clear, consistent, and abundant proof. In my opinion, the proof advanced lacks all of these qualities.

McBride, in his deposition, sets forth that he conceived the invention in dispute in December, 1872, or January, 1873, and at that time communicated the same to Henderson by means of rough sketches, and urged Henderson to make a drawing of it. This device, he says, was his *first* idea, and he insists that he "*subsequently discovered that he could do without a cylinder in which was the piston, and use simply the supply tank.*"

As has already been stated, the witness Douglass, on whom the most reliance was placed in the former interference, then testified to the effect that McBride communicated to him the idea of "simply the supply-tank" some time, he positively asserts, before Christmas, 1872.

McBride relies now for support chiefly upon the testimony of a Mr. Harwood, in whose presence, he alleges, he made his rough sketches and explained them to Henderson. Harwood testified in the former interference, but at that time made no allusion to a glycerine arrangement as the invention of McBride. He now admits that his conclusion, that the invention which McBride described to Henderson in his presence, as above set forth, was the precise one now in controversy, has been arrived at from *having seen Henderson's preliminary statement*, filed in this case, in which Henderson clearly describes the invention, and illustrates it by a drawing. Harwood's testimony, perused in the light of Henderson's preliminary statement, to which he appears so much indebted, affords very meager support to McBride's claims.

Harlan, the next witness, testifies that McBride described to him this invention about the middle of January, 1873, but all that he can remember about it now is that McBride told him "that he used a cylinder or tank, or something of the kind, I think a cylinder. I think he said he had a piston he put on top of the glycerine, and put the pressure of the water on this piston, which forced the glycerine through the pipes."

In view of the fact that Harlan was a witness for McBride in the former interference, and was fully conversant with all the matters in dispute between the parties from the beginning, his vague and uncertain testimony creates no impression, except that of suspicion as to its truthfulness.

Grady, an attorney for McBride, has a long story to tell, some of which would have been relevant in the former interference, but not one word of which is pertinent to the present issue.

Young, who in the previous interference simply testified that in November, 1872, McBride had consulted him in regard to the qualities of glycerine, and in February, 1873, described to him a hydraulic car-brake, now alleges that, in that same interview in February, 1873, McBride described several ways of connecting a tank of glycerine with the brake, one of which arrangements, from Young's description, possessed some features in common with the device in controversy. His description, however, is very brief and imperfect. He is not corroborated, as to the interview he describes, by Henderson, or any one else, and his statements are inconsistent with the general history of the case, and the balance of the testimony adduced.

Tufts, the only remaining witness in behalf of McBride, except Cramer, whose testimony is irrelevant to this issue, testifies that McBride showed him a drawing, in November or December, 1872, of a hydraulic brake, and explained to him how it was proposed to apply water from a tank to the pipes by means of pressure from the boiler, and that he offered no explanation about the use of glycerine, except to say "*that he applied it with water* to keep it from freezing." In the fall of 1873 he heard Henderson describe a brake to a meeting of engineers, which he thought was the same thing McBride had described to him in the previous fall.

Leaving out of the case the *idea* of using glycerine, and confining the issue to the precise devices set forth in the conflicting claims of the respective parties, the testimony in behalf of McBride relating thereto, outside of his own deposition, is comprised in a very few sentences. Even this slender supply of evidence consists entirely of fragments of conversation had with McBride, and is not the result of inspection of anything which he had produced.

The evidence in behalf of Henderson is to the effect,

substantially, that he conceived this invention, and made the drawing of it, which accompanied his application for a patent, in March or April, 1873; that on the first day of May following this drawing was witnessed by B. H. Jenks and F. J. Lovegrove, who now affirm that fact; and that on the same day he made oath to his application. The first-named witness, Jenks, reiterates the statement made in the former interference, and which McBride has not denied, that McBride gave him to understand distinctly that the *devices* represented by the above-mentioned drawing were the invention of Wm. M. Henderson. This certainly is the conclusion at which I have arrived.

The decision of the Examiners-in-Chief is affirmed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, DISTRICT OF MASSACHUSETTS.

THOMAS E. MURPHY *et al. vs.* LAURENT KISSLING *et al.*

[*In equity.—Before* SHEPLEY, *J.—October*, 1874.]

The invention of Francis McLaughlin, of a brush-head, provided with an angular groove and a rubber ring fitted therein, (patented January 11, 1870,) is not anticipated by a door stop provided with a rubber fitted in an angular groove.

The device adopted by defendants is none the less an infringement, because of the added feature of a flange, which extends in between the two parts of the brush-head and serves to pack the joint.

[*J. L. Newton*, for complainants.
J. T. Wilson, for defendants.]

[This was a suit under letters patent for an improved brush, granted to Francis McLaughlin January 11, 1870, being the same patent that was involved in the suit of *Murphy* et al. vs. *Eastham* et al., reported in OFFICIAL GAZETTE, vol. II, p. 61. The object of the McLaughlin invention was to obviate the danger of breaking glass and injuring the surface of wood or other substances to be washed or dusted by contact with the brush-head. To this end the patentee proposed to form a groove in the brush-head or stock near the bristles, and in this groove to insert a rubber band, one edge or angle of which should project outward and prevent injurious contact between the brush-head and the surface to be cleaned. The novelty of the invention and the scope of the patent were fully discussed in the case above referred to.]

SHEPLEY, *J.*:

This bill in equity is brought for an alleged infringement of the letters patent granted for the invention, by Francis McLaughlin, of an improved brush. So far as the defense set up, of want of novelty in the invention, relates to the evidence introduced by defendants of the Monzani patent and the rejected applications of Williams and Crittenden, it has been fully considered in the case of these same complainants against Eastham *et al.*, Massachusetts district, May term, 1871.

The defendants also set up, as anticipating the invention of McLaughlin, a door-stop made and used and sold by D. C. Smart. Smart's door-stop had an angular groove in it, with a rubber fitting therein, in the same manner as in the brush-head in the McLaughlin invention. It was not new, at the date of the McLaughlin invention, to put a rubber ring into an angular groove. What was new was his combination of a brush-head with an angular groove and a rubber ring fitting therein, whereby the elements of the combination operated together and jointly in the function of the brush.

The infringement in this case is clear—defendants use a rubber ring fitting into an angular groove in the brush-head in the same manner as in the McLaughlin patent. They claim that their rubber ring performs another function also—that, as they extend their rubber ring by a flange between the two surfaces of the two parts of the brush-head where they unite at the bottom of the groove as their brush is constructed, the rubber forms a packing, which makes the joint tight. This would be only an improvement, at best, upon the McLaughlin invention. But if the groove in the McLaughlin brush be made square, and an elastic band be used fitting this square groove, it would act in the same way as a packing to exclude the water from the joint, if the joint were at the bottom of the groove. This is one of the forms of McLaughlin's invention, and it is shown in Exhibit G.

This is a clear case of an attempt to evade infringement by a change of form merely.

Decree for injunction and account as prayed for in the bill.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date February 23, 1875.]

8,070 and 8,071.—Writing-Paper.—HENRY D. CONE, Stockbridge, Mass.—Cases A and B. Applications filed February 5, 1875. Term of patents 14 years.

8,072.—Carpet.—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed February 15, 1875. Term of patent 3½ years.

8,073 to 8,106, inclusive.—Carpets.—OTTO HEINICKE, New Utrecht, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Applications filed February 9, 1875. Term of patents 3½ years.

8,107 to 8,125, inclusive.—Carpets.—HENRY HORAN, East Orange, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Applications filed February 9, 1875. Term of patents 3½ years.

8,126 to 8,131, inclusive.—Carpets.—LEVI G. MALKIN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Applications filed February 9, 1875. Term of patents 3½ years.

8,132 to 8,151, inclusive.—Carpets.—ELMER J. NEY, Dracut, Mass., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Applications filed February 9, 1875. Term of patents 3½ years.

8,152 to 8,159, inclusive.—Carpets.—HENRY NORDMANN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Applications filed February 9, 1875. Term of patents 3½ years.

8,160.—Carpets.—GEORGE W. PIGGOTT, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed February 9, 1875. Term of patent 3½ years.

8,161.—Work-Stand.—MATTHEW S. DUNN, Rochester, N. Y. Application filed January 25, 1875. Term of patent 7 years.

8,162.—Carpets.—HEINRICH F. GOETZE, Boston, Mass., assignor to THE ROXBURY CARPET COMPANY, same place. Application filed February 10, 1875. Term of patent 3½ years.

8,163.—Rocking-Chair.—GROVE M. HARWOOD, Troy, and ROBERT WOOD, West Troy, N. Y. Application filed October 15, 1874. Term of patent 14 years.

8,164 and 8,165.—Glass Dishes.—GEORGE W. LOWNY, East Cambridge, Mass.—Cases B and A. Applications filed December 21, 1874. Term of patents 3½ years.

8,166.—Fork and Spoon Handles.—CHARLES OSBORNE, North Attleborough, Mass., assignor to THE WHITING MANUFACTURING COMPANY, New York city.—Case C. Application filed February 9, 1875. Term of patent 7 years.

8,167 to 8,171, inclusive.—Carpet.—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Applications filed February 15, 1875. Term of patents 3½ years.

8,172.—Carpets.—FREDERICK W. GREEN, Orange, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed February 9, 1875. Term of patent 3½ years.

8,173 to 8,176, inclusive.—Carpet.—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Applications filed February 15, 1875. Term of patents 3½ years.

8,177 to 8,179, inclusive.—Carpet.—WILLIAM H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Applications filed February 15, 1875. Term of patents 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date February 23, 1875.]

2,247.—Silver-Polish.—WILLIAM E. DURHAM, Fall River, Mass. Application filed January 14, 1875.

"'W. E. D.,' made in a monogram, with the word 'Trade' above and 'Mark' below, the whole inclosed by lines in the form of a shield."

2,248.—Shafts, Spokes, &c., for Vehicles.—JACOB A. LEIPPE, Lancaster, Pa. Application filed January 27, 1875.

"a plain anchor with the word 'Trade-Mark.'"

2,249.—Cigars.—S. LOWENTHAL & Co., Cincinnati, Ohio. Application filed February 8, 1875.

"'PEDRO,' and the representation of six playing-cards."

2,250.—Washing-Blue.—SIMON S. MYERS, Philadelphia, Pa. Application filed February 9, 1875.

"the representation of a bottle having its mouth stopped by a cork having a tube with its closed end projecting above said cork on a blue ground surrounded by the words 'Manufactured and put up only by S. S. Myers, Philad'a,' and the said words and bottle inclosed by a flat ring or circular band, having upon its face the words, 'Myers' Sprinkling Washing-Blue.'"

2,251.—Baking-Powder.—E. PLUMB SONS & Co., Grand Rapids, Mich. Application filed November 20, 1875.

"'Triumph' before the words 'Baking-Powder.'"

2,252.—Knitted Hosiery.—WILLIAM F. SALMON, Lowell, Mass. Application filed December 11, 1874.

"the representation of the banner suspended from a cross-bar, and this connected to a staff having cords to hold the cross-bar and the connected banner in position, with the words 'Trade Mark' above or below the banner."

2,253.—Teas.—WILLIAMS, BLANCHARD & Co., San Francisco, Cal. Application filed February 10, 1875.

"'Japan Tea,' 'Buddha Chop,' arranged above and below a figure representing Buddha—a heathen divinity—in the posture in which he is generally shown by them.

2,254.—Cosmetic.—ANNIE DELAND, New York, N. Y. Application filed February 13, 1875.

"'Eau Merveilleuse.'"

2,255.—Cigars.—ARTHUR W. FOOTE, Brooklyn, N. Y. Application filed February 5, 1875.

"'La Doncella de Orleans.'"

2,256.—Tooth-Paste.—FORSTER & STOWALL, Philadelphia, Pa. Application filed February 6, 1875.

"'Sphynx.'"

2,257.—Cigars.—GOLDSMITH & NEWBURGH, Cincinnati, Ohio. Application filed February 18, 1875.

"'EXPOSITION.'"

2,258.—Pocket Spirit-Stoves.—GEORGE P. HOUSTON, Washington, D. C. Application filed February 16, 1875.

"two cannons crossed, an anchor placed thereon in a central vertical position, and the whole inclosed by a single coil of rope, the ends of which are passed through and held by the cable-ring of the anchor."

2,259.—Steam-Engines and Machinery Relating to the Treatment of Paper.—VICTOR E. MAUGER, New York, N. Y. Application filed February 13, 1875.

"the representation of an arrow."

2,260.—Cotton-Presses.—Mrs. THOMAS C. NISBET, Macon, Ga. Application filed February 15, 1875.

"the representation of the nut or trap used in screw cotton-presses, and the words 'T. C. Nisbet. Cotton-Press.'"

2,261.—Paint or Cement.—EWING W. TIBBELS, Chester, Pa. Application filed December 2, 1874.

"'Tibbel's Indestructible Compound and Super-Marine Cement,' surrounding a representation of a ship at sea."

EXTENSIONS GRANTED.

31,252.—Improvement in Iron Ties for Cotton-Bales. Granted to J. J. MCCOMB, January 29, 1861.

Claim.—Forming the link or tie with an oblong aperture, one end of which is arrow shaped, or, rather, presents two sides of an equilateral triangle—the design of this arrow-shaped end being not only to force the hoop or bend of the hoop over the slot, which it does with unerring precision when the bale expands after being released from the press, but also to secure an equal bearing upon the separate parts of the slotted side of the tie.

31,315.—Improvement in Machinery for Grinding the Card-Teeth of Carding-Cylinders.—Granted to CHARLES HARDY, February 5, 1861.

Claim.—Extending and adjusting the shafts G and E in the manner represented, whereby I am enabled to cause the grinder D to traverse and retraverse all of the teeth of the cards with its entire breadth, substantially as specified.

31,324.—Improvement in Looms.—Granted to JNO. DAVIS, administrator of WM. MURKLAND, deceased, February 5, 1861.

Claim.—1. The combination of the reverse shuttle-boxes with the active shuttle-boxes, by attaching and detaching the several reverse shuttle-boxes to and from the active shuttle-boxes, under a construction and mode of operation substantially as set forth.

2. I also claim the adjustment of the reverse shuttle-boxes with the active shuttle-boxes so as to allow the use of one or more of the active series, substantially as described.

3. I also claim the construction and use of the annular disk, for the purpose of keeping the shuttles in place, and for passing the ends of the yarns around the axis of the polygonal shuttle-box frame.

4. I also claim the manner of holding the boxes of the polygonal frame in their position, by means of a segment of a circle or its equivalent.

31,330.—Improved Collar for Ornamental Carriage Work.—Granted to MOSES SEWARD, February 5, 1861.

Claim.—As an article of manufacture, an upset planished collar for ornamental carriage work formed without welding or turning.

INDEX OF INVENTIONS PATENTED FEBRUARY 23, 1875.

Animal hopple, J. D. Wilson	144	160,134
Battery, earth, J. C. Bryan	50	160,152
Battery for boilers, anti incrustation, J. F. Donoghue	50	160,009
Bed bottom, H. S. Hale	62	160,185
Bells to shafts, device for attaching, A. A. Bevin	14	160,146
Blanket and pantaloons combined, horse, C. Franke	144	160,012
Blind stop, W. A. Clark	24	160,051
Boiler, wash, J. B. Camyre	91	160,158
Boilers, anti-incrustation battery for, J. F. Donoghue	50	160,009
Boilers, compound for the prevention of scales in steam, J. H. Pitts	148	160,030
Book holder, A. L. Wilson	146	160,044
Boom, sheer, H. Anderson	13	160,070
Boot and shoe sole, H. E. Van Benshoten	16	160,042
Box machine and box, J. W. and C. M. Hyatt	30	160,199
Box, spice, J. E. Camp	88	160,157
Braiding machine, F. W. Huppelsberg	17	160,198
Brake machinery, C. Kahler	117	160,242
Breweries, cooling floor for, A. Brandt	58	160,077
Brush attachment, fly, G. S. Beekman	165	160,141
Brush for grain cleaners, G. E. Throop	57	160,243
Brush, shoe, I. and J. A. Joseph	22	160,104
Bustle, R. Biering	80	160,048
Butter worker, J. L. Englehart	45	160,089
Buttons, &c., setting instrument for attaching, D. Heaton	23	160,056
Caoutchouc, mold for the manufacture of screws from hard, G. H. Roberts	84	160,235
Car axle, railway, S. L. Harrison	122	160,095
Car brake, C. C. Clark	122	160,063
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Car coupling, J. M. Clem	122	160,164
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Carriages, jump seat for, N. Starkey	31	160,036
Cartridge loading implement, B. Burton	55	160,049
Casting bobbins, machine for, M. Dimock	31	160,008
Chain link and chain, S. D. Locke	60	160,107
Chair, tilting, D. E. Teal, (reissue)	62	6,309
Chimney top, H. Becker	4	160,014
Churn, D. C. Bailey	45	160,139
Clock operated horse crib, automatic, Gribbin and McMillan	36	160,092
Clothes frame, P. Cameron	91	160,156
Clothes frame, J. H. Chadwick	91	160,160
Clothes frame, A. Wright	91	160,246
Coal hod, G. Seyfang	154	160,035
Coat shaper, E. B. Viets	38	160,246
Cooking vessels, portable stirrer for, F. M. Roush	154	160,033
Cores, clamp for anchoring, L. E. Roberts	33	160,062

	Class No.	No. of Patent.
Corn cutter, green, W. J. Potter	88	160,119
Corn sheller, T. J. Hoover	59	160,193
Corpse preserving casket, B. Hartwell	39	160,186
Cotton scraper and chopper, W. H. McClaugherty	43	160,111
Cultivator, J. Bebel	43	160,142
Cultivator, Lawrence and Thomas	43	160,210
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Dish drainer, J. A. Fox	68	160,176
Elevator, C. H. Gulles	79	160,183
Elevator, ice, X. Wittmer	79	160,250
Elevators, dumping cage for, J. McCulloch	79	160,112
Embroidery patterns, apparatus for stamping, J. McGavin	38	160,113
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Engines, frame for portable steam, J. W. Hill	150	160,189
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Faucet, measuring, L. L. Dennick	132	160,085
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Fire kindler, B. S. Harrington	154	160,054
Flat iron heater, E. D. Dudley	91	160,011
Floors for the passage of pipes, construction of, W. H. Gedney	30	160 014
Floral decorations, body for, C. A. Warren	63	160,247
Flue cleaner or scraper, Kees and Schmid	148	160,203
Fuel, compound for gas, C. Jenty	66	160,201
Funnel, measuring, I. W. Hoagland	112	160,017
Furnace, hydrocarbon, H. Napier	149	160,027
Furnace, metallurgic, B. Bayliss	99	160,140
Furnaces, fire chamber for puddling and other, H. H. Gilmore	85	160 180
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Garden sprinkler, P. Muller	63	160,220
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Gas meter, J. Radston	64	160,031
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Generator for cooking, &c., steam, W. Cooper	148	160,165
Grain cleaners, brush for, G. E. Throop	57	160,243
Grain drier, J. B. Wheeler, (reissue)	48	6,307
Gun carriage, N. E. Johnsen	105	160 100
Gunpowder, manufacture of, E. Greene	71	160 053
Harvester reel, G. G. Read	74	160,061
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Heater, feed water, H. S. Maxim	148	160,215
Hoist, hydraulic, H. Richmann	79	160 232
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Horse blanket and pantaloons, combined, C. Franke	144	160,012
Horse crib, automatic clock operated, Gribbin and McMillan	36	160,092
Horse power, E. J. and J. W. Hoyle	150	160,098
Horses, device for hitching, E. Obin	144	160,223
Horses, interfering boot for, A. D. Westbrook	144	160,248
Horseshoe, S. B. Henry	60	160,188
Horseshoe magneta, machine for bending, J. C. Bryan	125	160,153
Horseshoes, die for making, W. Horsfall	60	160,195
Hose, engine, T. L. Pierce	81	160 226
Hubs to axles, device for attaching, D. Dalzell	31	160,007
Indexing books, machine for, F. R. Alderman	15	160,137
Inkstand, S. Darling	146	160,171
Kiln and furnace, drying, Cawthon and Conner	48	160,004
Ladder, firemen's, P. P. Carnes	30	160 081
Lamp, A. Albertson	90	160 069
Lamp, car, Hicks and Smith	90	160,097
Lamp extinguisher, J. W. Waterman	90	160,067
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Leather straps, machine for creasing and finishing, S. B. Randall	93	160,231
Lightning rod, J. C. Bryan	50	160,151
Lightning rod, J. C. Bryan	50	160,154
Loom, Davis and Stone	95	160,084
Loom, W. V. Gee, (reissue)	95	6,301
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Lounge, adjustable reclining, E. Bartels	62	160,073
Lumber carrier, Pinney and Hasty	130	160,092
Magnet, electro, M. A. Rice	50	160,120
Magneta, machine for bending horseshoe, J. C. Bryan	125	160,153
Main springs to arbors, attachment of, W. C. Maynard	36	160,109
Meat and vegetable slicer, J. W. Murkland	59	160,221
Meat chopper, J. Perkins	25	160 225
Metal plates, apparatus for pickling, Gething, Jenkins, and Gardner	113	160,178
Metal, turning tool for, W. Clay	100	160,161
Milk safe, J. F. Pool	45	160,227
Miter machine, D. A. Fisher	29	160 090
Molding machine, A. Miller	173	160,114
Mower, lawn, E. G. Passmore, (reissue)	75	6,305
Musical instruments, mouth piece for, C. G. Conn	102	160,164
Musical instruments, string for, Farmer and Baillie	142	160,173
Neck tie shield, R. R. Parker	38	160,117
Needle blanks, device for turning machine, E. Sauter	104	160,238
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Planters, check rower for corn, G. D. Haworth	133	160,035
Plow, Dugdale and Breed	114	160 086
Plow, A. Hampe	114	160,094
Plow carriage, D. W. Ralston	114	160,230
Plow, gang, J. B. Hunter	114	160,099
Pocket book, G. Strauss	146	160 126
Poker and tongs, combined, I. J. Conklin	154	160,006
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Press, T. J. Jenne	7	160,200
Press, horizontal hay and cotton, Bennett and Rancier	7	160,143
Press, lever, W. O. Watson	7	160,131
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Propellers, blade for screw, J. H. Loftus	139	160 212
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Pruning shears, W. H. Johnson	63	160,102
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Pump, force, L. J. Knowles	118	160,207
Pump sucker, J. M. Springer	118	160,065
Pumps, &c., air chamber for steam, L. J. Knowles	118	160,206
Pumps, bucket for chain, D. F. Stow	118	160,125
Purifier, flour and middlings, G. W. Brown	57	160,080
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Railway, elevated, F. A. Williams	150	160,249
Railway rail joint, R. Pickel	120	160,118
Railway rail joint, D. K. Reeder	120	160 032
Railway switch, P. C. Bragg	120	160,076
Railway switch, C. D. Tisdale	120	160,040
Railway switch, G. J. Woodruff	120	160,135
Railway tracks, repairing, J. Houston	120	160,197
Rake, horse hay, B. Owen, (reissue)	77	6,304
Refrigerator, J. C. Clark	58	160,050
Rein holder, C. Osgood	31	160 028
Relishing machine, W. G. Caldwell	173	160,003
Roll for straightening and finishing tubes, G. Matheson	125	160,024
Roller, land, P. Bilyen, Sr	73	160,147
Roof, slate, L. Brandt	126	160,078
Roving frame, T. Mayor, (reissue)	142	6,302
Ruffles, apparatus for making fluted, T. Robjohn, (reissue)	38	6,308
Sad iron, J. M. Whiting	91	160,068
Saddle tree, P. B. Horton	72	160,196
Safes, fire escape for, Hackett and Crounse	128	160 184
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Sash holder, F. A. Battey	24	160,047
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Separator, grain, J. H. Locke	159	160,022
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Shirt, J. Twamley	38	160,245
Shoe brush, I. and J. A. Joseph	22	160,104
Shovel, P. B. Cunningham	141	160,170
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Table, ironing, E. B. Lake	91	160,308
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Toy trundle, W. E. Leonard	143	160,021
Toy wind wheel, J. Jamouneau	143	160,019
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Transplanting box, P. Eby	63	160,088
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Trap, fly, J. C. Sellers	143	160,034
Tubes, roll for straightening and finishing, G. Matheson	125	160,024
Umbrella, H. Martin	165	160,214
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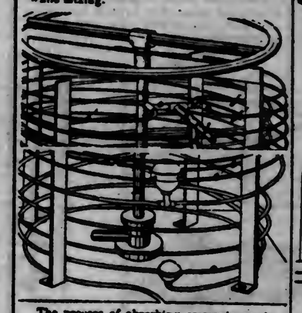
TITLES. DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED FEBRUARY 23, 1875.

159,998. ABSORBING AMMONIA GAS IN WATER. John M. Booth, San Francisco, Cal. [Filed Apr. 21, 1874.]

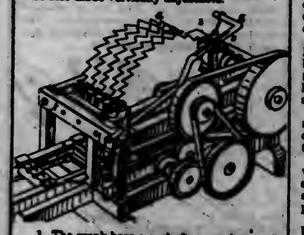
Brief.—Mixer while in motion, and maintains uniformity of temperature and pressure while mixing.



The process of absorbing ammonia gas in water by mingling them in due proportions while in transit, and then passing the mixture in streams through conduits exposed to a cooling agent, substantially as specified.

159,999. SAW-MILLS. George F. Bellows, Menomonee, Wis. [Filed Jan. 7, 1875.]

Brief.—The log carriage is provided with spurs, upon which the log rests while passing the gang of circular saws, which convert it into lumber. The guides and spreading-disks are also made vertically adjustable.



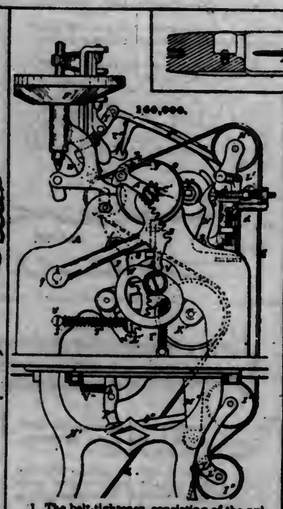
1. The crank-bars *a c*, shaft *g*, crank *g'*, and cams *g' g''*, in combination with the carriage of a saw-mill, substantially as and for the purpose set forth.

2. The guides T, in combination with the swinging frame *t* and the saws G, substantially as and for the purpose set forth.

3. The pinion E, in combination with the side arms *r r*, the arms *s s*, and lever S, substantially as and for the purpose set forth.

160,000. MACHINES FOR SHAPING, NICKING, AND REMOVING WOOD-SCREW BLANKS. Jason A. Metcalf and Joseph M. B. Fogwill, Cleveland, Ohio, assignors to the Union Steel-Screw Company, same place. [Filed Nov. 28, 1874.]

Brief.—The oscillating cradle, by which the lowest blank in the conductor V' is carried under the nicking-fingers, has a notched wheel, that is turned one notch at each oscillation, to remove any imperfect blank that the fingers fail to seize. There are two mandrels, carried in a yoke that is intermittingly rotated on a central axis, so that the blank is seen in acted upon by the shaving-tool while the other is being nicked. The several separate improvements enumerated in the claims apply to separate parts of the same machine.



160,000.

1. The belt-tightener, consisting of the pulleys I'' I'', as arranged in relation to each other in the arms of the vibratory frame I', and spring G'', in combination with the belt G, drums J'' and K'', pulley H'', and yoke, consisting of the shaft C, arms D D, and clamps E E, substantially in the manner as described, and for the purpose set forth.

2. The arm I, lever M, rod N, and springs L and L', as arranged to co-operate, in combination with the flange H of the clamps E of the yoke, consisting of the shaft C and arms D D, substantially in the manner as described, and for the purpose set forth.

3. The brake F', spring *r''*, and pin *r'''*, arranged to operate, in combination with the clamps E, in the manner as described, and for the purpose set forth.

4. The shaft *a*, notched wheel *c'*, ratchet-wheel *d'*, pawl *f'*, and vibrating cradle W, in combination with the stationary conductor V', substantially as described, and for the purpose specified.

5. The improved fork A', consisting of bars F' F'' and adjusting-ties S', as arranged that said bars may be adapted to different sizes of screw-blanks, in combination with the adjustable conductor V' and revolving hopper F'', substantially as and for the purpose set forth.

6. The segment-gear E, cam V, lever R, spring T, and rod S', in combination with the pin P for operating the cams, in the manner as described, and for the purpose specified.

7. The cam W and segment-gear S', in combination with the pinion O', pawl *f*, wheels X O, and yoke, consisting of the shaft C, arms D D, and spindles or clamps E E, substantially in the manner as described, and for the purpose set forth.

160,001. LOOM-SHUTTLES. Francis Blanding, Canton, Mass., assignor to himself and Thos. B. Wattles, same place. [Filed Nov. 26, 1874.]

Brief.—The spindle is recessed to receive a rotating tongue or shaft, supported in bearings on the spindle, and provided with eccentric bearings, and an arm arranged to come in contact with a fixed stud on the spindle is turned down into the shuttle. By this means the spindle presses on the interior of the cop and holds it in place.



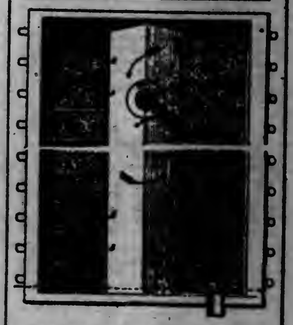
160,001.

In a loom-shuttle, the rotary tongue B, its eccentric journals *d d*, and arm *c*, in combination with and applied to the recessed spindle A, in manner as described, so as to operate, as explained, with a stud or projection, *g*, extended from the shuttle-body, all being essentially and for the purpose as specified

160,002. APPARATUS FOR PISCICULTURE. Amos Bond, Vernon, Conn. [Filed May 26, 1874.]

Brief.—The exit-pipe is placed centrally to give, in connection with the shelving centerpiece, a gentle and equable flow to the water, and thus fertilize the spawn placed thereon. A frame is substituted for the hatching-boxes when the tank is to be flushed. The exit-pipe is adjustable as to height to regulate the flow and pressure.





1. In combination with sieves *b*, the receptacles B, formed substantially as shown and described, to collect and hold together the salt and spawn, for the purposes set forth.

2. In a fish tank or vat, provided with the spawn-receptacles B *b*, the tubes E, combined and arranged substantially as and for the purpose set forth.

3. In combination with a fish-vat, the overflow-pipe C, made adjustable as to height, to regulate the level of the water within the vat, substantially as shown and described.

4. In combination with a fish-vat, constructed substantially as described, the adjustable overflow-pipe C, arranged at or near the center thereof, for the purpose set forth.

5. In combination with a fish-vat, provided with the gravel-sieves *b b*, the removable shed, substantially as shown, and for the purpose described.

6. A fish-vat, provided with the zinc or other metal lining, which is covered with gun-tar, substantially in the manner and for the purpose shown and described.

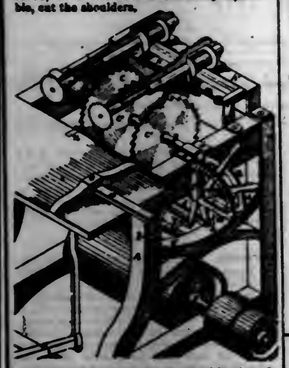
7. In combination with a fish-vat, the series of partitions *f f f* &c., constructed and arranged substantially as shown and described.

8. In combination with the series of partitions *f f f*, &c., the flow W, with its gate *p* and part *w'*, in the manner and for the purpose shown and described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

160,003. RELISHING-MACHINES. Wm. O. Caldwell, Three Rivers, Mich. (Filed May 6, 1874.)

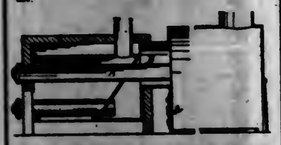
Brief.—A series of circular saws, adjustable upon their arbor, cut the sides of the tenon, while a second series, similarly adjustable, cut the shoulders.



In a relishing-machine, the combination of the mandrel B, saw C, sliding collar *c'*, arm D, with sleeve *k*, rod *d*, connecting-rod *f*, lever E, and measuring device G *h i*, substantially as shown and described, for the purpose specified.

160,004. DRYING-KILNS AND FURNACES. Benj. F. Cawthon, Jefferson County, and Andrew J. Conner, Louisville, Ky. (Filed Dec. 15, 1874.)

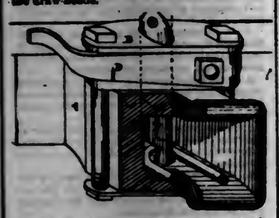
Brief.—Hot air is supplied to the drying-chamber from space inclosed by the two side walls of the furnace, and also by pipe passing through combustion-chamber. The several registers afford means of regulating supply of air.



In a drying apparatus consisting of a furnace and kiln, the combination of one or more calidncts passing from said furnace through the drum B with a kiln having registers *e e'*, substantially as described.

160,005. CAR-COUPLINGS. Wm. Cline, Jr., Clayton, Ind., assignor to H. A. Marley, same place. (Filed Nov. 27, 1874.)

Brief.—The pin is supported when raised by the bar D, and released by the meeting of the draw-heads.



1. In combination with the coupling-pin F, the yielding pressure or spring plate D, substantially as described.

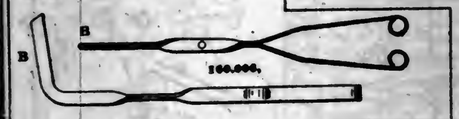
2. The cross piece or plate B, and guide-bar G, in combination with the yielding pressure or spring plate D and coupling-link F, as set forth.

3. The cross piece or plate B, guide-bar G, yielding pressure or spring plate D, bolt M, and spring E, bolts I I, clamping-plate J, and coupling pin F, all combined to operate as specified.

160,006. COMBINED POKER AND TONGS. Ira J Conklin, Philadelphia, Pa., assignor to Wm. B. Kinsey, same place. (Filed Jan. 5, 1875.)

Brief.—Tongs with elastic handles and turned-up ends, which, closed, form a poker.

The combination of two pokers jointed to each other, each having a turned-up end, B, and an elastic handle, C, the two ends, when the pokers are folded, coming together and forming a single prong, the handles coming together closely after closing of the ends B, and two complete long jaws being provided when the pokers are opened, all as set forth and shown.



160,006.



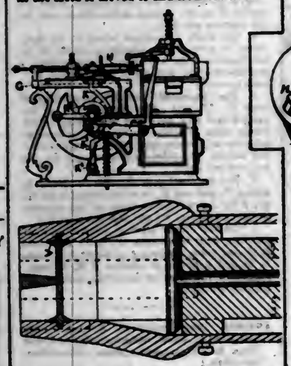
160,007.

160,007. DEVICES FOR ATTACHING HUBS TO AXLES. David Dalzell, South Egremont, Mass. (Filed Nov. 30, 1874.)

In combination with a carriage-axle and axle-box, of a suitable elastic washer and a spring or pressure washer, D, substantially as and for the purpose set forth.

160,008. MACHINES FOR CASTING BOBBINS. Martial Dimock, Newark, N. J., assignor to the Clark Thread Company, same place. (Filed Nov. 26, 1873.)

Brief.—The mold is constructed of four pivoted parts, and attached to a cross-head, and moved to and from the tank by means of a lever and cam. The mold-sections are held together by entering a socket attached to the tank. The lower section of the mold is opened and closed by means of a lever and incline as the mold is moved to and from the tank.



1. The frame G, provided with the horizontal mold H, constructed of four pivoted parts, as described, the shank of which is fitted into a socket in the cross-head I, in combination with the reciprocating lever K and the cam K² on the main shaft for moving the mold from and toward the tank, substantially as and for the purposes described.

2. In combination with the mold H, tank B, and injector C, the socket N, attached to the tank for receiving and holding the four parts of the mold together while the mold is being filled, substantially as and for the purposes described.

3. The combination, with the mold H, arranged in the frame G, of the stop or check lever U and incline U', constructed to lift the lower member of the mold, as and for the purposes described.

160,009. ANTI-INCRUSTATION BATTERIES FOR BOILERS. John F. Donoghue, Springfield, Mass. (Filed July 6, 1874.)

The battery for use in boilers, consisting of a spiral of copper wire partially incased or embedded longitudinally in a base of zinc, substantially as and for the purpose shown and described.



160,009.

160,010. WOOD-FILLING COMPOUNDS. E. L. Derr, Dayton, and Henry Seyfert, Cincinnati, Ohio. (Filed Jan. 18, 1875.)

The compound herein described, consisting of collodion, gum-sholine, and gum-sandarach, for the purpose herein set forth.

160,011. FLAT-IRON HEATERS. E. D. Dudley, Galesburg, Ill. (Filed Jan. 2, 1875.)

Brief.—The gravitating-slide automatically closes the slot, in the lower end of which is the front arm of the flat-iron handle. The compartment in the lid may be filled with water or non-conducting substances.



1. The lids D D', having recesses *c c'* and lips *a a*, hinged to the pan A, and arranged to operate in combination therewith, and with the iron G and handle B, substantially as described, and for the purpose specified.

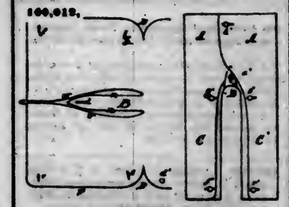
2. The lids D D, provided with non-conductor-of heat compartment, and arranged to operate in combination with the pan A and iron G, substantially as and for the purpose specified.

3. The gravitating slide H, arranged to operate in combination with the iron G and pan A, substantially as described, and for the purpose specified.

160,012. HORSE BLANKETS AND PANTALOONS COMBINED. Charles Franke, New York, N. Y. (Filed Jan. 15, 1875.)

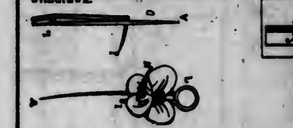
As a new article of manufacture, a horse-blanket consisting of the blanket A, cut open at one end and with a tongue, B, in combination with yokes C C', attached to the same, in the manner described, and provided with suitable fastenings, arranged substantially as and for the purpose herein specified.

160,013.



160,013. SAFETY-PINS. Nathaniel H. Furness, Tarrytown, and Sigourney Wales, New York, N. Y. (Filed Apr. 20, 1874.)

Brief.—The two pins, being at right angles to each other, are prevented from being easily withdrawn.



1. A safety-pin composed of two pointed arms, one of which is bent at right angles at or near the center thereof, substantially as and for the purpose hereinbefore set forth.

2. The combination of the hinged ornament, or its equivalent N, with the arms A and I, and with or without the coil L, substantially as and for the purpose hereinbefore set forth.

3. The combination of the coil L, with the arm I, having a right-angle bend at or near its center, and the arm A, substantially as and for the purpose hereinbefore set forth.

160,014. CONSTRUCTION OF FLOORS FOR THE PASSAGE OF PIPES. Wm. H. Gedney, New York, N. Y. (Filed Oct. 2, 1874.)

Brief.—The joists are cut on the upper side for the passage of gas or water pipes, and a metallic key is fitted tightly into the opening, so as to cover and protect the pipe, and be flush with the upper surface of the beam. The beam is not weakened by this arrangement.

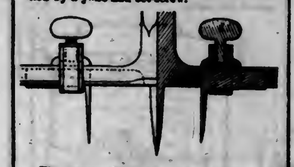


1. The beam-key D, having slightly-inclined faces D' D', and a hollowed body, adapted to serve as and for the purposes herein specified.

2. The combination of the beam A, notched as shown, and having plates abutting from A' A', with the inclined pipe or crossing-piece B and beam-key D D' D', as herein specified.

160,015. DEVICES FOR CUTTING OUT SHEET-METAL WASHERS. Daniel Goodnow, Jr., Boston, Mass. (Filed Jan. 26, 1875.)

Brief.—The manner of attaching the cutter to the stock constitutes the invention. The body of the cutter from which the cutting-blade projects at right angles is of triangular section, and rests in a V-groove in the arm of the stock, and is clamped in position by a yoke and set-screw.

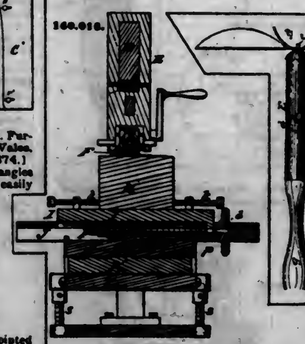


The cutters with wedge-shaped shanks, and the beam formed with corresponding gly-shaped grooves to receive said shanks, in combination with the encompassing clamping-yokes, substantially as and for the purposes shown and set forth.

160,016. PAPER-PERFORATING MACHINES. Robt. Hemingray, Covington, Ky. (Filed Aug. 28, 1874.)

Brief.—An ornamental perforating or cutting cylinder moves over a level bed, which carries the paper.

160,016.



1. The combination of roller F, sliding carriage E, roller *t*, bar B, ratchet-shaft G, and pinion *g*, substantially as set forth.

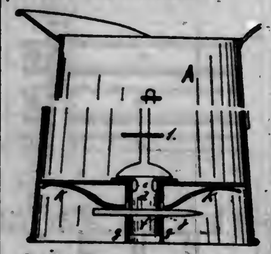
2. The combination of the block H and roller F, sliding carriage E, roller *t*, bar B, ratchet-shaft G, and pinion *g*, substantially as and for the purposes set forth.

3. The device for supporting, holding, and adjusting the block H, consisting of the jack-screws *s*, table I, table K, table J, table I, screws *p*, and set-screws *k*, substantially as set forth.

4. The combination of roller F, sliding carriage E, bar B, ratchet-shaft G, and pinion *g*, substantially as set forth.

160,017. MEASURING-FUNNELS. Isaac W. Hoagland, Newark, N. J. (Filed Jan. 27, 1875.)

Brief.—The neck of a bottle being inserted in the outer tube presses against the inner tube, thereby raising the valve and allowing the liquid to escape into the bottle.



In a liquid-measure, the combination of the post A, having the gage-strips 1, the pipe *d*, having the perforations *e* and *f*, and the slotted pipe *g*, when operating substantially as and for the purposes set forth and shown.

160,018. PROCESSES FOR REMOVING TIN FROM TIN-SCRAP. John Holliday and H. M. Baker, Brooklyn, N. Y. (Filed Aug. 11, 1874.)

Brief.—Dips the scrap into a bath of fused alkaline nitrate; then plunges them, after draining, into water in a suitable tank. The tin separates and collects at the bottom. Any residual tin is removed by heating the plates, and fusing the alkaline nitrate upon them, forming stannate of soda, which is utilized.

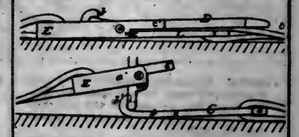
The process of separating the metallic tin from the iron of tin-scrap by heating the said scrap in a bath of fused alkaline nitrate, and then plunging it into water, substantially as described.

160,019. TOY WIND-WHEELS. Joshua Jamouneau, Newark, N. J. (Filed Sept. 15, 1874.)

A toy composed of the wheel A, journal *c*, bearings *d*, pipe E, and handle *g*, when constructed and arranged to operate substantially as and for the purposes set forth.

160,019.

160,020. DASHER-FLAP FASTENERS. John A. Kincaid, Boston, Mass. (Filed Mar. 28, 1874.)



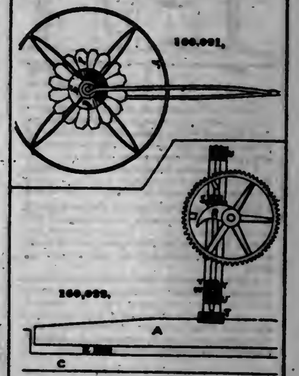
The lever-buckle consisting of the U-shaped bar K, its offsets *c'*, the hook-plate C, its tongue *b*, and lateral shoulders *a*, the open loop-lever D, its guard-lugs *m*, shoulders *n*, and the pivots *o*, substantially as specified.

160,021. TOY TRUMBLES. Wm. H. Leonard, Chelsea, Mass., assignor of one-half his right to William Leonard, same place. (Filed Nov. 2, 1874.)

Brief.—Within the frame of the treadle is arranged a vaned wind-wheel, the vanes being colored, if desired.

The toy wheel described, the same consisting of the wheel A, having the elliptical braces *c c* and handle B, and provided with the central fan-wheel E, constructed and arranged to operate substantially in the manner and for the purpose specified.

160,021.



160,022. GRAIN-SEPARATORS. J. H. Loehr, San Francisco, Cal. (Filed Dec. 20, 1874.)

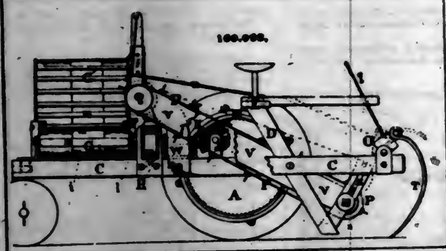
1. The loose screen-frame A, resting on the rubber springs B B within the outer frame C, in combination with the drop-shaft N, substantially as and for the purpose herein before set forth.

2. The rubber springs W W, supporting the strip of wood Y, in combination with the collar on the drop-shaft, substantially as and for the purpose herein before set forth.

160,023. HAY-LOADERS. Frank Marion, Tremont, Ill. (Filed Aug. 24, 1874.)

The construction and arrangement of the frame C C, draper and adjustable elevator or loader G G, draper-supports W W, spindle *a*, rollers Q Q, side pieces V V, draper F F' F', rollers *y y*, adjustable nut *x* for raising or lowering the draper at this end within the segmental guides Z Z, guides *s s*, bars D D, and rake O P, as described.

160,023.



160,023.



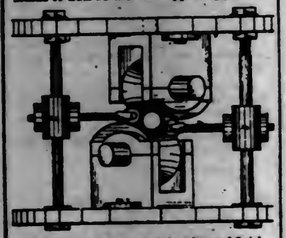
160,023. REIN-HOLDER. Carmi Osgood, East Hardwick, Vt. [Filed Dec. 31, 1874.]

1. The rein-holder, consisting of a case or frame, *r c*, with its stationary inclines *h h'*, the openings *i i'*, and the tips or projections *k k'*, all combined as and for the purpose set forth.

2. In combination with the case or frame *r c*, the movable wedges or rods *g g'*, as and for the purpose set forth.

160,024. ROLLS FOR STRAIGHTENING AND FINISHING TUBES. George Matheson, McKeesport, Pa., assignor to the National Tube-Works Company, same place. [Filed Jan. 28, 1875.]

Brief.—The rolls have a bearing upon the article throughout their whole length in virtue of their concave surfaces, and the relative angular positions of their axes. The bearings of each roll are adjustable about a central pivot, and their distance apart can be changed by raising or lowering the plate to which the bearings of the upper roll are fastened by means of nuts on the four supporting-pillars.

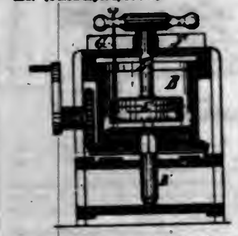


1. In a machine for straightening and finishing pipe or other cylindrical articles, a pair of rolls, the rolling-surfaces of which are concave, having their axes arranged at different angles and upon different planes and in pivoted adjustable bearings, substantially as herein described, and for the purpose set forth.

2. In a machine for straightening and finishing pipe or other cylindrical articles, a pair of rolls, the rolling-surfaces of which are concave, having their axes arranged at different angles and upon different planes, in combination with the guide-arms *n*, having friction-rollers *o*, supported in adjustable bearings *m*, substantially as herein described, and for the purpose set forth.

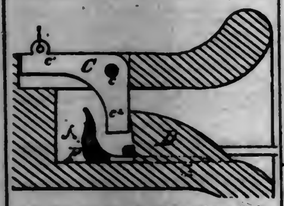
3. In a machine for straightening and finishing pipe and other cylindrical articles, a pair of rolls, the rolling-surfaces of which are concave, having their axes arranged at different angles and upon different planes, in combination with the adjustable plate D, substantially as herein described, and for the purpose set forth.

160,025. WASHING-MACHINE. Damian Minderle and Geo. Maschmeyer, St. Louis, Mo. [Filed Apr. 1, 1874.]



The combination, with tab B, adapted to be oscillated as described, of the pressure-head E, provided with the shaft and handle E' and the rod C, whereby the said tab and pressure-head may be operated simultaneously in opposite directions, or the head locked in a stationary position while the tab is being oscillated, as and for the purpose specified.

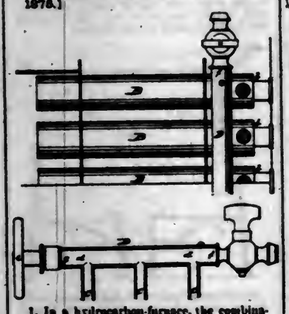
160,026. CAR-COUPLINGS. Horace Meriam, Berlin, Wis. [Filed Aug. 26, 1874.]



1. The elbow F, with bifurcated arm G, in combination with lever C and link H, as shown and specified.

2. The combination of the lever C, elbow F, having bifurcated arm G, link H, and plate D, as shown and specified.

160,027. HYDROCARBON-FURNACES. Henry Napier, New York, N. Y., assignor to Jas. Napier, East Orange, N. J. [Filed Jan. 12, 1875.]

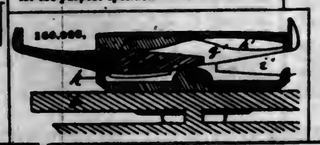


1. In a hydrocarbon-furnace, the combination of the tubes A, having spiral flanges *a*, with the tubes B, substantially as and for the purpose set forth.

2. The combination of the tube D, having its regulating-tube *d*, with tubes C and B, the tube C forming a steam and oil tight connection between tubes D and B, substantially as shown and described.

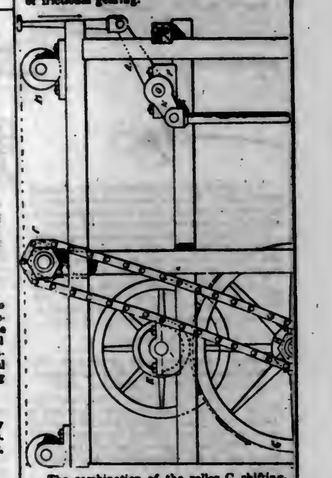
3. The combination of the tube B with tubes C, E, and A, the latter provided with spiral flanges *a* and damper F, substantially as and for the purpose specified.

160,028.



160,029. LUMBER-CARRIERS. F. L. Pinney and R. H. Hasty, Anoka, assignors of one-third their right to C. F. Washburn, Minneapolis, Minn. [Filed Sept. 12, 1874.]

Brief.—Fluted carrying-rolls are made vertically adjustable, and are driven by a system of frictional gearing.



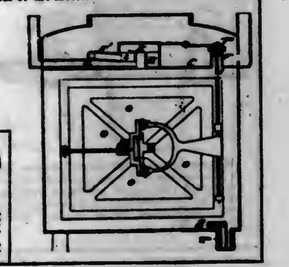
The combination of the roller C, shifting-frame E, driving-wheel G, and friction-wheel K, arranged to operate as herein described.

160,030. COMPOUNDS FOR THE PREVENTION OF SCALES IN STEAM-BOILERS. J. H. Pitts, Oakland, Cal. [Filed Apr. 26, 1874.]

The compound described, consisting of a solution formed by the boiling together of leather scraps, caustic soda or hydrated oxide of sodium, gelatine, and water, in or about the proportions named, substantially as and for the purposes herein set forth and specified.

160,031. GAS-METERS. Jacob Badstue, San Francisco, Cal. [Filed July 10, 1874.]

Brief.—To avoid making separate holes for the shafts, they are passed through the pipes, which are provided with extensions at the top for the stuffing-boxes. To draw off the liquid which accumulates in gas-meters, the feet are made hollow and are divided into two chambers, one of which communicates with the exterior and the other with the interior chamber of the meter.



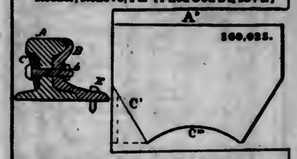
1. The pipes F F, provided with the extension-pipes F'', the ends closed with stuffing-boxes, in combination with the internally-arranged shafts L and diaphragms O, for operating the valves, as set forth.

2. The loops P, adjustably secured in the holders *r*, in combination with the diaphragms O, links N, yokes M, and operating-levers, substantially as and for the purpose herein described.

3. The divided foot T, having one half connecting with the chamber exterior to the diaphragm, and the other half connected with the interior chamber by the pipe S, the foot being provided with a screw-cap, Z, the whole operating substantially as and for the purpose herein described.

160,032. RAILWAY-RAIL JOINTS. Daniel K. Reeder, Renovo, Pa. [Filed Oct. 24, 1874.]

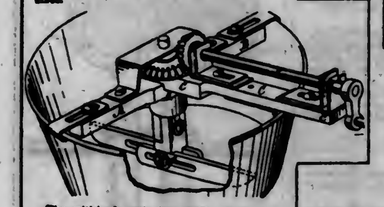
160,032.



The combination of the stay-plate B, made to conform to the outside of the rail and embrace the same closely, with the spring-plate C on the inside of the rail, its lower edge resting against the lower flange and web of the rail, and its upper edge extending away from the web and resting against the edge of the upper flange, in order to support the same, as and for the purposes herein set forth.

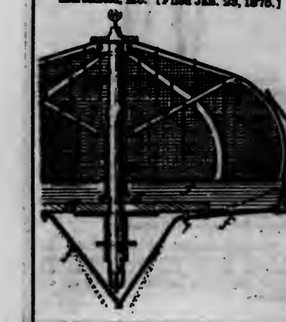
160,033. PORTABLE STIRRERS FOR COOKING-VESSELS. Francis M. Roush, Massillon, Ohio. [Filed Feb. 2, 1875.]

Brief.—Adaptable to vessels of various sizes.



The within-described portable stirring apparatus, consisting of the combination of the radial arms A B C, having adjustable holders *a e*, the stirrer-shaft and stirrers adjustable to and on said shaft, and the driving mechanism, all supported and sustained on said radial arms, as and for the purpose described and represented.

160,034. FLY-TRAPS. Jacob C. Sellers, Marshfield, Mo. [Filed Jan. 28, 1875.]



1. A fly-trap consisting of an umbrella-shaped frame covered with netting, and an adjustable apron attached around the same to the ends of the ribs, as herein set forth.

2. The combination, with an umbrella-shaped frame covered with netting, of the apron J, elastic springs or bands A, draw-strings *f*, and bait-board O, substantially as and for the purposes herein set forth.

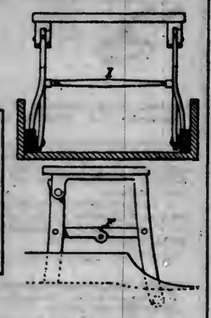
160,035. COAL-HODS. George Seyfang, Buffalo, N. Y. [Filed Jan. 9, 1875.]

Brief.—The apron of a hod made of one piece with little waste of metal.



The blank A, consisting of a single piece of metal, and having the linear front A'', right-angled corners B' B'', converging sides C' C'', and curved back C''', adapted to form the funnel or front part of a coal-hod, substantially in the manner shown, and for the purpose set forth.

160,036. JUMP-SEATS FOR CARRIAGES. N. Starkey, Amesbury, Mass. [Filed Jan. 12, 1875.]



1. In combination with the movable seat of a carriage, a leg hinged to the hind part of the seat, to operate substantially as described.

2. In combination with a fixed forward leg and a jointed hind leg, a jointed or stiff brace to connect the front and hind leg, substantially as described.

3. In combination with the braces F, which support the hind legs, the rod I, to support the braces when the seat is put forward or back, as set forth.

160,037. SURGICAL INSTRUMENTS. Herbert L. Stillman, Richmond, R. I. [Filed June 10, 1874.]

Brief.—An elastic cup is connected at one end with an air-pump. Dilators are arranged along its shank and the lower end of the barrel of the air-pump. In difficult parturition the cup embraces the head of the child, and when a vacuum is produced in it the head may be drawn down by applying force to the barrel of the pump.

The compound instrument composed of the oval elastic cup, communicating with the air-pump, and of the side dilators, all arranged in the manner and for the purposes shown.

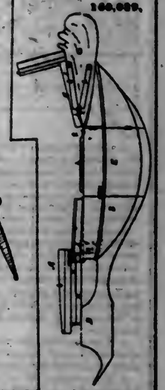
160,038. GLOBE COMPOUNDS FOR PAINTS. James B. Tarbett, Chicago, Ill. [Filed Dec. 30, 1874.]

A glass or enamel for paint, composed of resin, sugar of lead, and drying-oil, combined substantially in the manner as described.

160,039.



160,039.



160,039. LANDAUS. Chauncey Thomas, Boston, Mass. [Filed Nov. 4, 1874.]

1. The combination of the counter-balance, consisting of the spring C, the connections *d d*, and the arms *e e*, with the body B and the front head A, as described.

2. The post H, separate from the door E, and grooved and hinged to the head G, in combination with the window F, provided with the headed stud *i*, to operate in the groove of the post, all as set forth.

3. The combination of the ledge *h* with the rabbet *g* of the door and the grooved post H and stud *i*, applied to the window and back hood, as specified.

4. The combination of the mortised plate *p* and the tenon *q* with the door and the grooved post H, separate from each door and hinged to the back hood G, all substantially as set forth.

5. The combination of the spring-stop *a o* with the grooved post H, hinged to the back hood, and the window provided with the headed stud *i*, all to operate as set forth.

160,040. RAILWAY-SWITCHES. Charles D. Tisdale, Boston, Mass. [Filed Dec. 10, 1874.]

Brief.—A railroad-switch in which a stationary grooved plate is employed in combination with a movable grooved point-rail, which is held clear of the main line by a weighted lever; said groove in movable point permitting the passage of a train from the siding onto the main line when the latter is open.



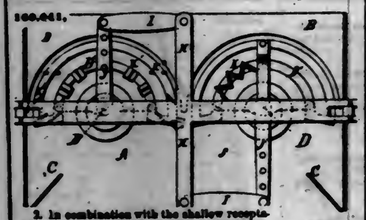
In combination with the grooved guide-plate C and the frog D, arranged, as described, at the junction of a main track and siding or turn-out track, mechanism, substantially as explained, for operating the frog after closing of it by an attendant, such mechanism consisting of the elbow-lever *g* and its weight *i*, applied to said frog as set forth.

160,041. CAR-SEPARATORS. Bryan Tyree, Washington, D. C. [Filed Nov. 20, 1874.]

Brief.—A plate just above the agitators; feeders projecting from the inside of the box; circular agitators mounted on posts rising above the box, and operated reciprocally by a sliding bar and pivoted levers. The ores and kept from splashing over or gathering at the sides of the box, the posts of the vertical axles cannot be clogged with seed.

1. The shallow receptacle or receiving-box A, constructed with the plate B and feeders C C, in combination with the rotary oscillating or reciprocating agitating arms or wheels D E, as and for the purposes described.

160,041.



2. In combination with the shallow receptacle or receiving-box A, constructed with the plate B and fenders C, the shafts D D, stepped in posts E secured in the box A, and extending above the agitators, said shaft carrying the arms or circular frames D' and agitators K, as and for the purposes described.

3. In combination with the box A, constructed with the plate B and fenders C, the agitators D' K, placed in the box in front of and below the plate B secured to the shaft D that is supported or stepped in a post, E, which extends above the plate B, said agitators receiving, through said shaft D, a rotary oscillating or reciprocating motion, as and for the purposes described.

4. The combination of the sliding bar F, crown-bar H, and connecting-rods I, substantially as and for the purposes set forth.

5. The combination and arrangement, in an ore separator or washer, of the shallow box A B C, posts E, and agitating devices D D' K, said agitators receiving, through a sliding bar, F, crown-bar H, and connecting-arms I J, a rotary oscillating or reciprocating agitation or motion, as and for the purposes described.

160,042. SOLES FOR BOOTS AND SHOES. H. B. Van Benschoten, Ghent, N. Y. (Filed June 10, 1872.)



Soles of boots and shoes armed with the metal wear plates or protectors B B, inserted in countersunk depressions, so as to be flush with the outer surface of the sole, such plates or protectors being provided with and attached by means of the sharpened shanks or prongs C D, of sufficient length to penetrate and bind together the pieces composing the bottom, substantially as and for the purposes described.

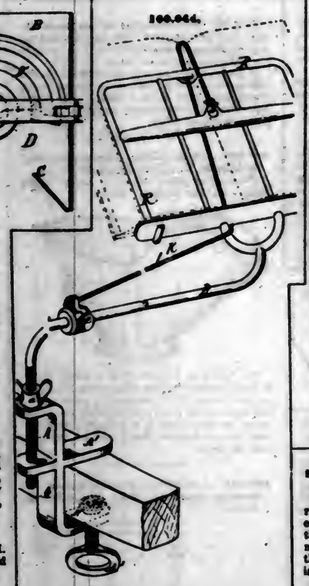
160,043. JIG-SAWS. Edwin J. Wescott, Hyde Park, assignor to F. B. Tripp, Boston, Mass. (Filed Sept. 9, 1874.)

Brief.—The saw is secured to the arch-heads of two levers by metallic bands, and is retained in the proper position while at work by means of flanges upon the arch-heads and a supporting-roll.



The guide-rings or arms a a' on the arms of the levers, combined with the bands a a' on the springs, and with the guide-roller o for the back edge of the saw, substantially as shown and described.

160,044.



160,044. BOOT-HOLDERS. A. L. Wilson, Broadway, N. J. (Filed Oct. 12, 1874.)

1. The combination of the boot-rack R, supported upon the arm B, with the adjustable copy-guide V, cord K, guiding-collar m, and nut-screw *n*, substantially as and for the purpose described.

2. The combination of the adjustable swinging arm B, threaded on the lower end, jam-nut *o'*, and clamp A A', substantially as and for the purpose described.

160,045. MACHINES FOR PACKING TOBACCO. H. Winterwerber, Offenbach, Germany. (Filed Mar. 20, 1873.)

Brief.—The molds turn horizontally in succession under a hinged hopper, which, as it is raised and made to enter the usual funnel, throws the packing devices in and out of gear. The funnel is automatically taken from the molds after the packer has operated, and swung to one side. The completed packet is finally raised from the mold by an ascending plunger, and thrown from the machine by a vibrating lever.

1. The combination of the hopper S, arm U rod R, lever V, disengaging-bar T, and weighted arm K, arranged and operating in the manner and for the purpose substantially as set forth.

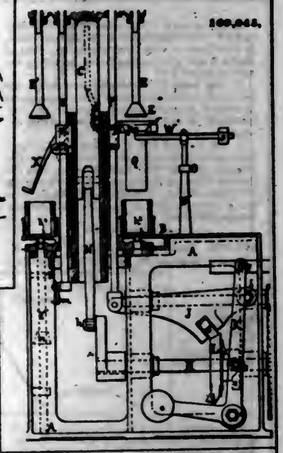
2. The sliding rod C, with groove r in its surface, in combination with the sleeve F, with internal projecting pin q, the spring-hook *d*, fast to the lower part of the sleeve F, and the projections a a a a, fast to the table B, arranged and operating together substantially in the manner described.

3. The combination of the lever W, with counter-weight 3 at one end and hook p at its other end, the inclined supporting-pin *s*, and the filling-tube Q, rod P, and arm I, substantially as and for the purpose described.

4. The combination of the sliding rod O, with hook m, the rod Y, with projection a, the bottom plates 4, and the projection 13, fast to the frame, arranged and operating together substantially in the manner and for the purpose described.

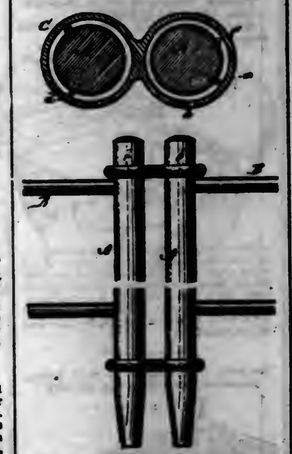
5. The combination of the lever X, roller *o'*, and sliding rod O, arranged and operating in the manner and for the purpose substantially as specified.

160,046.



160,046. CLOTHES-FRAMES. Allen Wright, Westfield, N. Y. (Filed July 6, 1874.)

Brief.—A clothes-frame constructed in upright sections, held together by double rings constructed with an inner groove, having through the rings an opening, by which a pin may be introduced into the upright within the groove, which serves as a guide for opening and closing the sections.



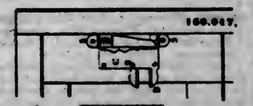
The rigid rings C C, constructed with interior circumferential grooves a a, extending but partially through the rings, and with openings b, in combination with pins *d* and posts A A, all as and for the purpose specified.

160,047. SASH-HOLDERS. Frederick A. Batley, Chicago, Ill. (Filed Oct. 20, 1874.)

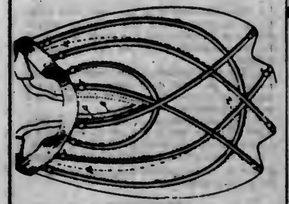
Brief.—The claim clearly sets forth the device, the introduction of the spring into the wedge-shaped bar being the element of novelty in the improved combination.

The wedge-shaped bar F, provided with legs b a, and tapered lever arm in combination with the roller F, spring E, lever E, and case C, C', and C'', as and for the purposes described.

160,047.



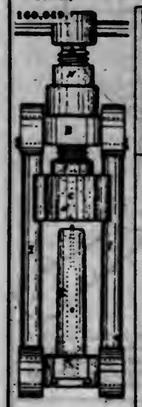
160,048. BUSTLES. Robert Bierng, New York, N. Y. (Filed Oct. 9, 1874.)



1. A bustle constructed of a layer of cloth, to which springs are secured, and formed into the desired shape by a double gore, *c c*, substantially as set forth.

2. In a bustle the web of cloth *a*, stretched across the inner or concave side of the bustle, and secured thereto at its side and bottom edges, its upper edge being left free, substantially as and for the purposes herein set forth.

160,049. CARTRIDGE-LOADING IMPLEMENTS. B. Burton, Brooklyn, N. Y. (Filed Sept. 4, 1874.)



1. In a cartridge-loading implement, the rotating head and spindle D E, substantially as described.

2. The sliding crimper C and punch F, operated by a screw or press, guided in a direct line with the cartridge by means of the slings or ways I.

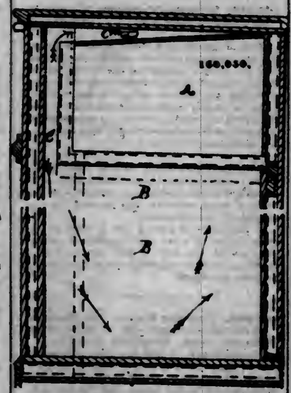
3. The combination of the revolving head, crimper, punch, screw, and frame, constituting a machine or tool, substantially as set forth and described.

160,050. REFRIGERATORS. Jas. C. Clark, South Bend, Ind. (Filed Dec. 14, 1874.)

Brief.—The warm air passes up in the rear flue, over and not entering the ice-box, onto a condenser affixed to the cover of the refrigerator. The bottom of the ice-box rises from the sides toward the center, and in grooves from the front center to the rear center.

The ice-box A, having its bottom arranged in inclined planes, and provided with a condenser, c, and flues D, in combination with the preserving-chambers B and warm-air flue C, as shown and described, for the purposes specified.

160,051.

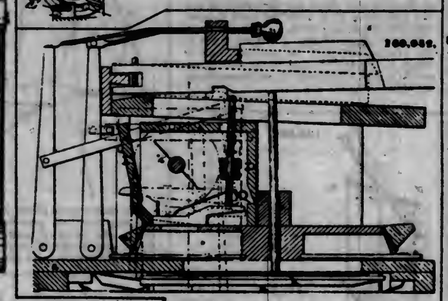


160,051. BLIND-STOPS. William A. Clark, New Haven, Conn. (Filed Jan. 4, 1875.)

Brief.—A segmental friction-plate is secured in slightly-inclined position to the inner face of the lower slat of the blind. A spring-bolt is so arranged as to press laterally on the surface of the plate, the weight of the bar on connecting-rod tending to make the slats turn automatically, while the inclined position of the plate tends to crowd back the bolt, thereby increasing the friction. There is also in the plate, near its lower edge, a hole, with which the bolt engages to lock the device.

A blind-stop, consisting of the inclined friction-plate D and the spring-bolt E, both constructed and arranged to operate substantially as shown and described.

160,052.

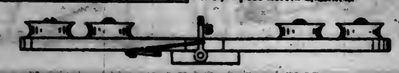


160,052. REED-ORGANS. Levi K. Fuller, Brattleborough, Vt., assignor to J. Estey & Co., same place. (Filed Dec. 15, 1874.)

Brief.—An inclosed tremolo-face is arranged above and in connection with supplemental valves, one for each reed-cell. These valves are operated by further depression of their respective keys than is necessary to sound the usual valves, so that sole effects in tremolo, which do not affect the harmonic accompaniment, are readily attainable.

1. A tremolo attachment for reed-organs, consisting of a rotating fan, h, inclosed within a box or casing, D, distinct from the casing of the instrument itself, said box being located over the reed-cells and outside of the air-chamber, and provided with a damper or valve, E, operated by a step or lever, when all arranged substantially in the manner shown, and for the purposes set forth.

160,053.



2. In a reed instrument, in combination with a tremolo-fan, a series of air-orifices arranged in proximity thereto, communicating with the reed-cells, and controlled by valves, each governed by a separate key, which acts upon the valve only when fully or nearly fully depressed, so that the tremolo effect may be confined to any particular note or notes desired, substantially as herein set forth.

3. In a reed instrument, the combination of the supplementary valves A, arranged on the top of the reed-board, the reed-cells *r r* having orifices B B in their roofs, and the supplementary tracker-pins C C, which act upon the said valves only when the keys are partially or fully depressed, (the pins not being in contact with the keys when the latter are at rest,) substantially in the manner and for the purposes set forth.

4. In combination with the pins C C, and valves A A, the rock-shaft F, connected with the bar *u*, substantially as and for the purposes set forth.

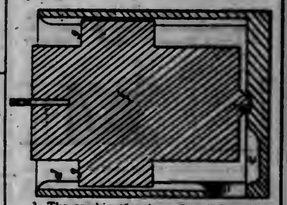
5. In a reed instrument, the combination of the pins C C, and valves A A, with the box D, and fan *h*, as shown and described.

160,054. MANUFACTURE OF GUNPOWDER. Edward Greene, New York, N. Y. (Filed Jan. 25, 1875.)

In the manufacture of gunpowder, the process herein described of incorporating together the ingredients, consisting in dissolving the saltpeter or nitrate of soda in hot water, and mixing the other ingredients with the heated solution, the heat being maintained during the operation in a complete or partial vacuum, substantially as and for the purpose set forth.

160,055. FIRE-KINDLERS. B. S. Harrington, China, Me. (Filed Jan. 18, 1875.)

Brief.—The bucket being placed beneath the grate, a match is applied at the draft-opening.



1. The combination, in a fire-kindler, of a bucket-shaped receptacle having a draft-opening and a drip-cup, and a removable porous absorbent core, substantially as described.

2. The combination, in a fire-kindler, of a bucket-shaped receptacle, *a*, having the draft-opening *b*, drip-cup *c*, and grooves *d*, and a removable porous absorbent core, *f*, having the flanges *g* and point *h*, substantially as described.

3. Igniting coal and other fuel from below the grate by means of a fire-kindler, consisting of a bucket-shaped receptacle provided with a draft-opening, and carrying within it a porous absorbent core, substantially as herein described.

160,056. CHECK-ROWERS FOR CORN-PLANTERS. Geo. D. Haworth, Decatur, Ill. (Filed Oct. 17, 1874.)

Brief.—Upon a beam for transverse attachment to the planter-frame is pivoted a series of pulleys for the reception of the knotted cord, which passes through the double-slotted rock-plate, pivoted about midway of the beam, for communicating motion to the seed-slide through the medium of the connecting-rod and elbow-lever.

1. A vibrating tappet, B, pivoted on a check-row bar, or otherwise attached to a corn-planter, and provided with two crotches, arranged as described, so that the check-row cord, in passing through a slit crotches, will produce a reciprocating motion, substantially as and for the purpose herein specified.

2. Pulleys *a a a' a'*, arranged as described, so that a check row cord will be received by an outside pulley, *a*, and discharged by an inside pulley, *a'*, and when the planter is reversed will be in a correct position to receive the cord on the opposite side of the planter, substantially as and for the purpose herein specified.

3. Cord D, arranged as described, with pulleys *a a a' a'*, so that every stop will operate rocker-plate B in either slot alternately, thereby producing a reciprocating motion by the use of one rocker-plate, substantially as and for the purpose set forth.

4. Pulleys *a a a' a'*, rocker-plate B, lever C, rod *b*, and cord D, all constructed and arranged to operate as a check-rower, substantially in the manner and for the purpose set forth.

160,056. SETTING-INSTRUMENTS FOR ATTACHING BUTTONS, &c. David Heston, Providence, R. I. [Filed Dec. 10, 1874.]

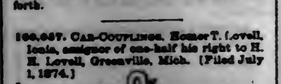
Brief.—The ends of the fastening-prongs are curved and concealed within the fabric by means of cavities and grooves in the lower jaw of the instrument.



1. The die B, constructed with circular cavities *d' d'* and concave grooves *f' f' f'* in the face of the jaw, constituting the clinching mechanism, substantially as specified.

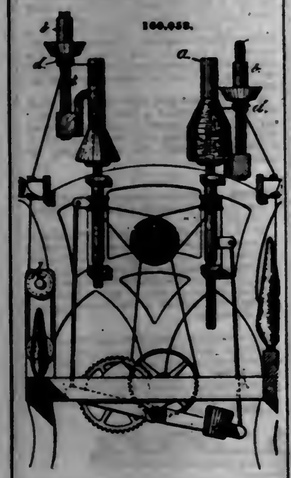
2. The combination of the die B, constructed as described, with the platform-spring *n* and jaw A, provided with the arched groove or slot R, all substantially as and for the purpose set forth.

160,057. CAR-COUPLINGS. Homer T. Lovell, Lonia, assignor of one-half his right to H. H. Lovell, Greenville, Mich. [Filed July 1, 1874.]



The combination of the head *a*, having an opening through its top, and hole *b*, the plate *c*, having weight *d* and projections *e*, pin *f*, and the guides *g*, substantially as set forth.

160,058.



160,059. SPOOLING-MACHINES. Thomas A. Matherson, Pawtucket, R. I. [Filed Nov. 11, 1874.]

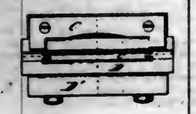
Brief.—The threads of the screw that carries the cone are of saw-toothed section, so that the cone, if placed too low on the screw, will be caused to slide readily upward when it strikes the bobbin being wound, and assume its proper position automatically. On the sleeve that carries the cone is a loose guide or carrier, that travels vertically with the cone, but does not revolve with it.

1. In combination with the cone C and sleeve *b*, the thread-carrier *d*, supported loosely upon the sleeve *b*, for guiding the thread onto the vertical spool, substantially as and for the purpose herein described.

2. The screw S, having the threads on the same formed of a saw tooth section, in combination with the cone C and carrier *d*, in a spooling-machine, substantially as and for the purpose described.

160,060. DIES FOR MAKING THE HANDLES OF POCKET-CUTLERY. W. H. Miller, West Meriden, Conn. [Filed Oct. 27, 1874.]

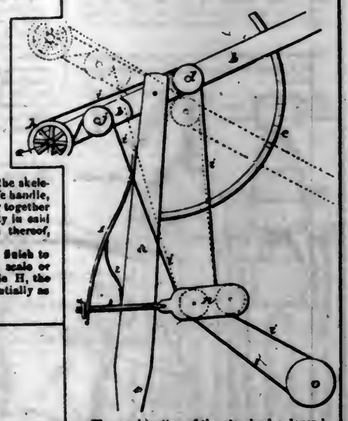
Brief.—Blank is first cut from a sheet of metal; then by a series of dies is roughly formed into the scales and back; a former is then inserted in the blank, and the two subjected to the action of the finishing-dies, whereby the blank is completed and its corners left sharp and angular.



1. As a means of giving form to the skeleton scale or frame B of a pocket-knife handle, the die D and the punch F, operating together to force the said blank into the cavity in said die, and cause it to take the form thereof, substantially as described.

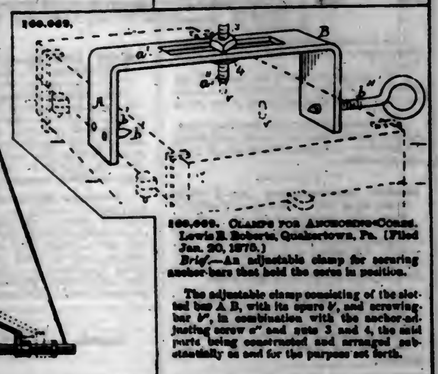
2. As a means of giving a sharp finish to the exterior angles of the skeleton scale or frame B, the combination of the die H, the punch *k*, and the former L, substantially as set forth.

160,061. HARVESTER-RIBBLE. Geo. G. Read, Russellville, Ky. [Filed Dec. 2, 1874.]



The combination of the standard *a*, lever *b*, carrying the three pulleys *h i l*, and holding device, the pulleys *j l* being arranged on different sides of the fulcrum of the lever, substantially as shown and described.

160,062.

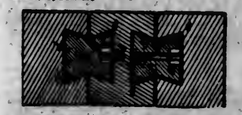


160,063. CLAMPS FOR ANCHORING-CORDS. Lewis H. Roberts, Quakertown, Pa. [Filed Jan. 20, 1875.]

Brief.—An adjustable clamp for securing anchor-bars that hold the cords in position.

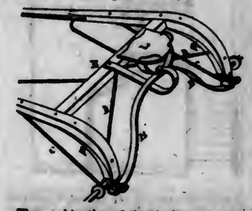
The adjustable clamp consisting of the slotted bar A B, with its spurs *b'*, and screwing-bar *b''*, in combination with the anchor-adjusting screw *a''* and nuts 3 and 4, the said parts being constructed and arranged substantially as and for the purpose set forth.

160,063. EXTENSION-TABLE SLIDES. De Witt Clinton Silver, Greenfield, Ind. [Filed Nov. 4, 1874.]



The double-dovetailed groove-tongue B, provided with grooves *d* upon opposite sides and at opposite ends, in combination with the double-dovetailed grooved slides A, provided with the pins or stops *b*, all constructed as and for the purpose herein specified.

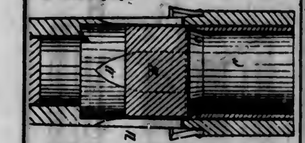
160,064. SULKIES. Peter Soule, Colesville, N. Y. [Filed Aug. 18, 1873.]



The combination of the shafts A A, bar E, braces C C and D D, pivots B B, spring H, and seat L, substantially as and for the purpose set forth.

160,065. PUMP-SUCKERS. J. M. Springer, Indianapolis, Ind. [Filed Jan. 18, 1875.]

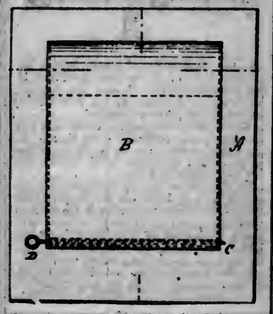
Brief.—The valve is a block of wood made in the form of a solid cylinder of size sufficient to nearly fill the bore of the cylinder in which it plays.



A pump sucker or plunger consisting of the cylinder A; provided with suitable openings D, the valve-seat C, and valve E, substantially as described.

160,066. VENTILATORS FOR WINDOWS. Geo. Wagner, Washington, D. C. [Filed Feb. 6, 1875.]

Brief.—A pane of glass is provided with a transparent box-flue on its inside. The box-flue communicates with the outside of the window, and has a damper arranged in it at its lower end.

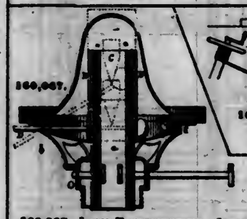


1. A ventilator for windows, consisting of the pane of glass A, having on its outside the transparent box-flue B, provided with the damper C D, substantially as and for the purpose set forth.

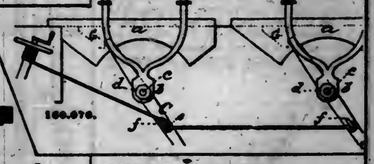
2. A ventilator for windows, consisting of the transparent box-flue F, provided with the damper G, and forming a part of the pane E, substantially as and for the purposes set forth.

3. A window provided with the ventilating-pane A, having the box-flue B, controlled by the damper C, and the pane E, having the box-flue F, controlled by the damper G, substantially as and for the purposes set forth.

160,067.



160,068.



160,067. LAMP-EXTINGUISHERS. Jonathan Wesley Waterman, Oregon, Wis. [Filed Sept. 21, 1874.]

Brief.—The inclined side of the wedge-shaped projection upon the sliding tube limits the upward motion of the weighted levers.

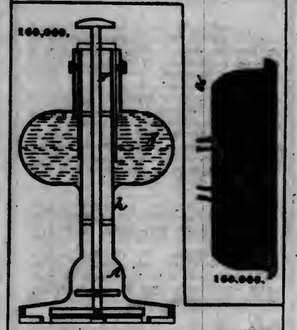
In a lamp-burner, O, the combination of the sliding sleeve B with the weighting wedge-shaped legs C, having their projecting edges, *e*, inclining each toward a downward point, *d*, and the bent, twisted, forked, and bevel-weighted lever D, substantially as and for the purposes specified.

160,068. SAD-IRONS. James M. Whiting, Providence, R. I., assignor of one-half his right to Walter Taber, Acushnet, Mass. [Filed Dec. 4, 1874.]

Brief.—The iron to be heated is made in two parts, with a spring-handle that clamps the center-piece of a detachable shoe.

The iron *a a*, divided in two parts horizontally, from heel to point, the steel springs *b b b b*, and the handle *c*, the horizontal center-piece D, formed on the shoe E, combined substantially as and for the purposes described.

160,069.



160,069. LAMPS. Albert Albertson, Jersey City, N. J., assignor to P. Corrigan, New York city. [Filed Feb. 8, 1875.]

Brief.—A hollow tube surmounted by cap and having lateral arms, all filled with mercury or other desirable fluid, for conducting heat to the lamp-bottom to induce circulation of air.

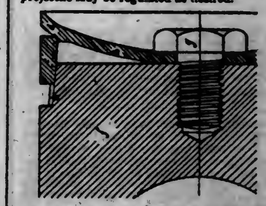
The hollow tube F with hollow cap G and branches I, in combination with a lamp with cylindrical wick-tube and cylinder *h*, substantially as described, and for the purpose set forth.

160,070. SHEER-BOOMS. Hector Anderson, Durand, Wis. [Filed Jan. 9, 1875.]

The fin C, pivoted near its center to the brace B, in combination with the sheer-boom A and stop G, substantially as and for the purpose set forth.

160,071. PROJECTILES FOR ORDNANCE. C. Arrick, Washington, D. C. [Filed Jan. 13, 1875.]

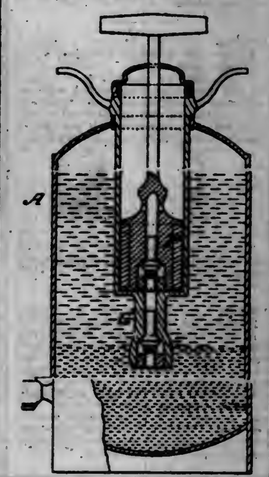
Brief.—The construction of parts is such that the escape of air between the sabot and projectile may be regulated as desired.



The projectile provided with a tapering groove, *h*, and sabot or cup *b*, provided with tapering block *c'*, when combined and adapted for operation as shown and described.

160,072. FIRE-EXTINGUISHERS. George H. Barker, Waverly, N. Y., assignor of one-half his right to L. D. Stone, same place. [Filed Jan. 21, 1874.]

Brief.—An air-forcing pump is so arranged within a reservoir for containing a fire-extinguishing mixture that the incoming air will stir up the precipitated salts.



The fire-extinguishing apparatus, consisting of the reservoir A, hose and nozzle and the air-pump terminating in a jet, O', within said reservoir, above and near the bottom thereof on which the salt lies, thereby serving actively to form the solution and to discharge the same, substantially as specified.

160,072. ADJUSTABLE RECLINING-LOUNGE. Emil Bartels, New York, N. Y. [Filed June 6, 1874.]

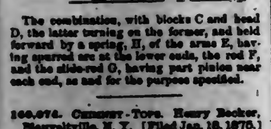
Brief.—To the upper end is pivoted the head or arm-piece, secured to blocks upon which are formed jointed connections with the upper section or arm-piece, the lower end of which is fitted with ratchets and pinions attached to a cross-shaft, the position of which is governed by a spiral spring, for raising and lowering the arm-piece or head, and its position governed by an upright spring attached to the frame.



The combination, with blocks C and head D, the latter turning on the former, and held forward by a spring, H, of the arms E, having quarred arc at the lower ends, the rod F, and the slide-rod G, having part pinion near each end, as and for the purpose specified.

160,074. CEMENT-TOPS. Henry Becker, Maysville, N. Y. [Filed Jan. 18, 1875.]

Brief.—The lugs are passed through the rectangular opening in the coping-plate at the corners, and they catch under the edge of the plate when turned so as to be opposite the sides of the rectangle, and thereby hold the top in place.



The chimney-top A, having base B and subjacent lugs C, constructed and arranged substantially as shown and described, to enable it to be attached to coping-plate A', in the manner set forth.

160,075. SECURING PINS TO ARTIFICIAL TEETH. Orin S. Bixby, Syracuse, N. Y. [Filed Jan. 26, 1875.]

Brief.—Holes are baked in the teeth, and the pins then inserted and packed with material more fusible than porcelain. The teeth, with pins inserted and packed with this material, are then subjected to heat sufficient to melt the material and securely fasten the pins.

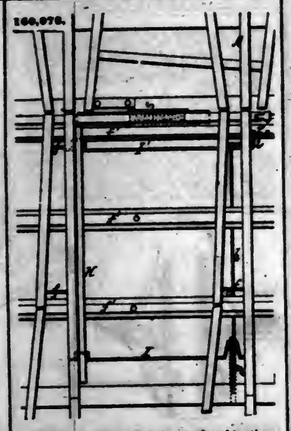


The above-described method of inserting and fusing metallic pins in artificial teeth, substantially as specified.

160,076. RAILWAY-SWITCHES. P. C. BYRD, Mayfield, Ky. [Filed Nov. 14, 1874.]

Brief.—The movable rails of the switch are locked in position by means of a longitudinal traverse acted upon by the flange of the wheels, said traverse being mounted upon double crank-shafts, which are connected by a longitudinal rod. The front crank-shaft carries a projection or stop, which engages with notches in a plate, thereby locking switch-rails. The stop is withdrawn from the notch by a spring at rear end of longitudinal rod, connected to rear crank-shaft.

160,076.

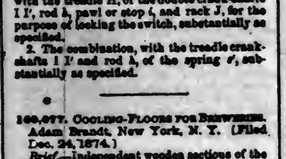


In a railroad-switch, the combination, with the treadle H, of the double crank-shafts I I', rod K, pawl or stop *i*, and rack J, for the purpose of locking the switch, substantially as specified.

2. The combination, with the treadle crank-shafts I I' and rod K, of the spring *s'*, substantially as specified.

160,077. COOLING-FLOORS FOR BREWERIES. Adam Brandt, New York, N. Y. [Filed Dec. 24, 1874.]

Brief.—Independent wooden sections of the floor ride on balls. Each is covered by a metal sheet, fastened to it only at the top of the depending side flanges. The metal flanges of adjacent sections interlock, and are soldered together. Result: a water-tight metal floor, each sheet of which can expand and contract without throwing itself or its wooden support out of a horizontal plane.



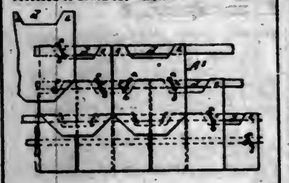
1. The cooling-floor, composed of sheet-metal sections *a a* that are respectively fastened to, and combined with, movable sections B B of flooring, substantially in the manner herein shown and described.

2. The sheet-metal sectional plate *a* of the cooling-floor, made with pendent flanges *g g*, of which two are formed into troughs *f*, substantially as herein shown and described.

3. The flooring B, constructed in movable sections to constitute a sectional support for a metallic cooling-floor, with which it is combined, substantially as specified.

160,078. SLATE ROOFS. Louis Brandt, New York, N. Y., assignor of one-half his right to Adam Brandt, same place. [Filed Jan. 30, 1875.]

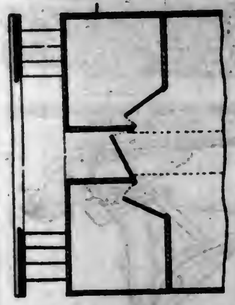
Brief.—A roofing-slate with two perforations near each of its opposite sides, to receive the wires by which the slate is fastened to the iron purlins. The upper edge is also recessed to avoid the wires.



1. A slate perforated at *a b* near its opposite sides to receive wires *c*, whereby it is secured to the beam B, substantially as specified.

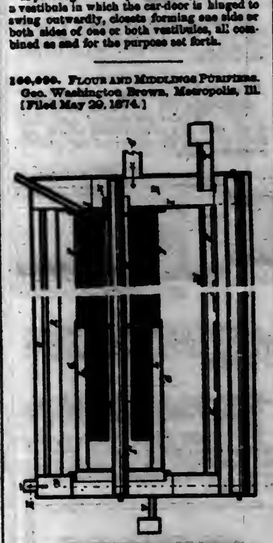
2. The slate A, having the holes *a b* for receiving fastening-wires *c*, and made with the recess *d* and ears *e e* at its upper end, substantially as set forth.

160,079. PASSENGER-CARS. I. Bridgman, Toronto, Canada. [Filed Apr. 28, 1874.]



A passenger railway-car having in each end a vestibule in which the car-door is hinged to swing outwardly, closets forming one side or both sides of one or both vestibules, all combined as and for the purpose set forth.

160,080. FLOUR AND MIDDLINGS PURIFIERS. Geo. Washington Brown, Metropolis, Ill. [Filed May 20, 1874.]



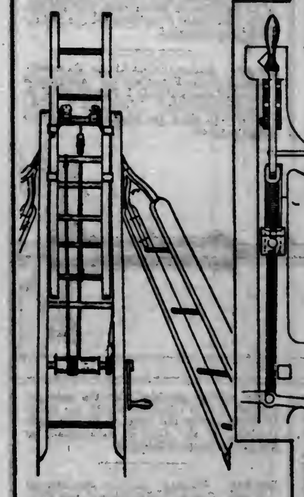
1. The combination of the perforated air-passages O P R S M, the perforated tube H, the pressure-chamber B, and the exhaust-chamber D with the bolting-reel, substantially as and for the purpose described.

2. The combination of the exterior bolt F G, interior bolt L, perforated tube H, and the perforated radial partitions K, all constructed and arranged to operate in the manner and for the purpose set forth.

3. The combination of the perforated air-passages O, P, R, S, and M, the perforated tube H, the pressure-chamber B, the exhaust-chamber D, the exterior bolts F G and interior bolt L, the perforated radial partitions K, the shaft I, and the perforated partition J, substantially as and for the purpose specified.

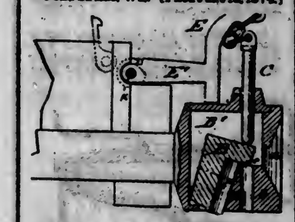
4. The perforated top and side conductors O and P, combined with the bolting-reel and the blast-chamber, substantially as specified.

160,081. FIREMEN'S LADDERS. P. P. Carnes, Cleveland, Ohio. [Filed Jan. 11, 1875.]



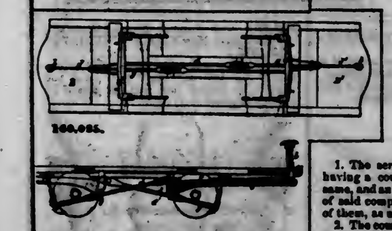
In a tripod ladder having its sections secured together at the top, the removable yokes O C, as shown and described, and for the purpose set forth.

160,082. CAR-COUPLINGS. Alex. H. Clark, Fond du Lac, Wis. [Filed June 13, 1874.]



The combination, with pins C, of the curved and chain-connected lifter E, having a right-angled arm, E', pivoted at its rear end, as shown and described.

160,083. CAR-BRAKES. Charles C. Clark, Boston, Mass. [Filed Jan. 22, 1875.]

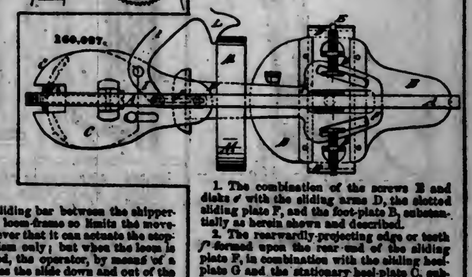


1. The combination of the twin levers J J', provided with the foot-rest *l*, and pivoted to the car-floor, with the rods *d* and *g*, attached to opposite brakes, substantially as and for the purpose set forth.

2. In combination with the notched foot-rest *l* and platform B, the sliding dog *n*, substantially as and for the purpose stated.

160,084. LOOMS. Elias D. Davis and Jos. M. Stone, North Andover, Mass., assignors to G. L. Davis, J. A. Wiley, J. M. Stone, G. G. Davis, J. H. Stone, and J. H. Davis, same place. [Filed Oct. 21, 1874.]

160,084.



Brief.—A sliding bar between the shipper-lever and the loom-frame so limits the movement of the lever that it can actuate the stopping mechanism only; but when the loom is to be reversed, the operator, by means of a treadle, presses the slide down and out of the path of the lever, thereby giving room for the lever to be shifted to its extreme outer position, which puts in gear the reversing mechanism.

The combination, with the shipper which operates the reversing mechanism of the loom, of a latch or detent, which prevents the reversing mechanism from being put into engagement with the loom until said latch or detent is withdrawn, substantially as described.

160,085. MEASURING-FAUCETS. Lyman L. Dennick, Syracuse, N. Y. [Filed Nov. 16, 1874.]

Brief.—Measuring-compartments arranged about a many-way cock, so that one, two, or more compartments may be emptied at once. A stop-cock is arranged between the compartments and the vessel containing the liquid to be measured.



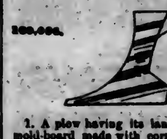
1. The series of measuring-compartments having a common inlet-faucet for filling the same, and an outlet-faucet that opens into each of said compartments and stops off one or all of them, as and for the purposes specified.

2. The combination of the faucet *f* and stop-cock *c* with the measuring-chamber *a*, as herein specified, opening and closing a series of measuring-compartments, as and for the above-described purpose.

160,086. PLOWS. Chas. R. Dugdale, Mason and Dixon, Pa., and Daniel Breed, Washington, D. C. [Filed Sept. 22, 1874.]

Brief.—The wearing-surfaces are corrugated and afterward enameled.

160,086.



1. A plow having its land-side, point, and mold-board made with corrugated or waved surfaces, and covered with enamel or porcelain, substantially as set forth.

2. A plow made with corrugated or waved surfaces, for the purpose of applying enamel, substantially as set forth.

160,087. SKATES. R. H. Earle, St. John, Newfoundland. [Filed Dec. 28, 1874.]

160,087.

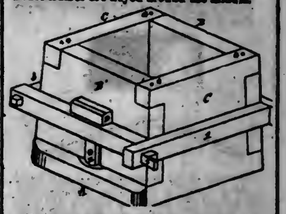
1. The combination of the screws B and disks *a'* with the sliding arms D, the slotted sliding plate F, and the fore-plate E, substantially as herein shown and described.

2. The rearwardly-projecting edge or teeth *f'* formed upon the rear end of the sliding plate F, in combination with the sliding heel-plate G and the stationary heel-plate C, substantially as herein shown and described.

3. The combination of the arm L with the lever I, that operates the clamps, and with the instep-strap M, substantially as herein shown and described.

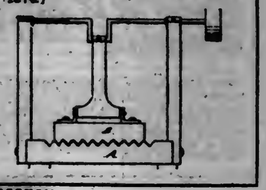
160,088. TRANSPLANTING-BOXES. Peter Eby, Salisbury Township, (near Kinzer's P. O.,) Lancaster County, Pa. [Filed July 9, 1874.]

Brief.—The sides of the box are notched together and secured with pins, which may act as hinges. The box is square in form, and a trifle smaller at the top than at the bottom. The bottom is provided with a slide, which can be removed, leaving the whole space clear. Brace-frames are keyed around the middle.



The construction of the sides C, having projecting tongues to enter notches in the sides B B', forming framed corners, in combination with a sliding bottom, A, brace-framing 1, 2, 3, and 4, the whole substantially as and for the purpose specified.

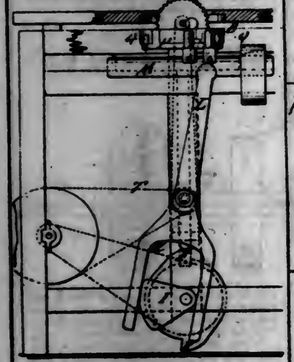
160,089. BUTTER-WORKERS. Jacob L. Englehart, New York, N. Y. [Filed Nov. 7, 1874.]



The combination of crusher B, flexibly pendent, and inclined table A, both correspondingly corrugated, as and for the purpose described.

160,090. MINING-MACHINERY. D. A. Fisher, Allegheny, Pa., assignor to himself and O. Chambers, same place. [Filed June 20, 1874.]

Brief.—The saw has an oscillatory motion parallel with the plane of the table, and is mounted in a frame which moves up and down, thus cutting misers on each side of a guide.



1. The combination, with a sawing-bench or table, of a circular saw, having a vertical movement up through the table and below it alternately, with an oscillatory movement in a plane parallel with the table, substantially as specified.

2. The cam I, rock-lever L, sliding bar M, studs N, and arm O, combined with the oscillatory ring R and ring-support C, to oscillate a o w, in the manner described.

3. The combination of the protracter P, and adjusting-pins Q, with the arm O of the oscillating ring-support R, and the adjustable studs N of the sliding bars M, substantially as specified.

160,091. CURLING HAT-BRIMS. Abraham Freudsdahl, New York, N. Y., assignor to himself and Henry Sax, same place. [Filed Feb. 5, 1875.]

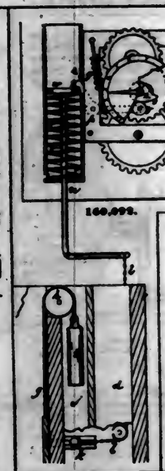


The curl B for a hat-brim, said curl being made of rattan or equivalent material, thinner toward the front and back of the brim, and higher at the sides, and perforated to admit the thread whereby it is fastened to the brim, substantially as herein shown and described.

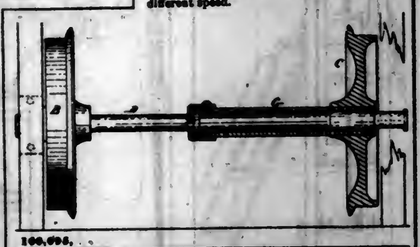
160,092. AUTOMATIC CLOCK-OPERATED BOXING-CHIRK. W. R. Gribbin and Angus McMillan, Portland, Me. [Filed Nov. 12, 1874.]

Brief.—An automatic boxing-cock operated by an ordinary alarm-clock mechanism, so that at a fixed time a catch will be released, and by the action of certain mechanical devices the fowl is exposed.

The crib A, having the compartments d d, the slide f, cord g, pulley h, weight i, catch k, and cord l, in combination with the piston w, lever p, spring q, and cam s, the whole being arranged to operate by mechanism similar to that of an ordinary alarm-clock, as and for the purposes set forth.



160,092.

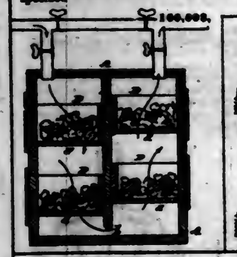


160,096.

160,093. APPARATUS FOR FLAVORING SPIRITS. Martin Grube, Lancaster, Pa. [Filed Jan. 6, 1875.]

Brief.—The boxes for flavoring material are arranged in two vertical tiers, and are clamped tightly in the frame. The liquor to be flavored is passed downward through one tier, and upward through the other.

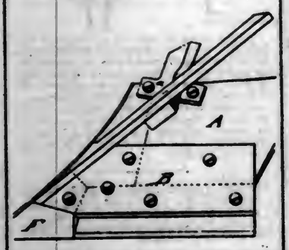
A series of two or more removable drawers, D, one over the other, in separate chambers made by a vertical partition, B, in a case, A, said drawers being provided with perforated bottoms d and overlapping flanges F, in combination with the clamps C and binding-screw s, the whole constructed, arranged, and operating substantially as and for the purpose specified.



160,093.

160,094. PLOWS. Alfred Hampe, Staunton, Ill. [Filed Aug. 4, 1873.]

Brief.—The point is one of the parts of a sectional mold-board. Its base runs horizontally to the rear, which, with dovetailed and angular joints, produces great strength.



1. The plow-point F, having an angular share-edge, a horizontal base, and a dovetailed recess to receive the land-side and plate B, as shown and described.

2. The sectional share and point, constructed as described, in combination with the sectional mold-board A and land-side, as and for the purpose specified.

160,095. RAILWAY-CAR AXLES. Samuel L. Harrison, San Francisco, Cal., assignor of one-half his right to D. L. Pennon and J. S. Pennon, same place. [Filed Aug. 7, 1874.]

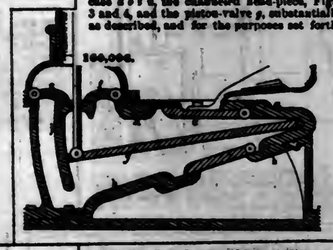
Brief.—To allow the wheels to rotate at a different speed.

The axle D, provided with the enlarged journals E F, in combination with the sleeve G, which carries the wheel C, to turn independently of the wheel B, substantially as and for the purpose described.

160,096. DOUBLE-ACTING SUBMERGED PUMPS. George G. Hartwick, Jersey City, N. J., and Ernest Metz, New York, N. Y. [Filed July 11, 1874.]

Brief.—A piston-valve hinged to the outer end of an angular casing is given a vertical reciprocating motion by a connecting-rod. The water is taken alternately through inlet-valves on either side of the piston-valve, and discharged through outlet-valves in the lower end of the pump-tube.

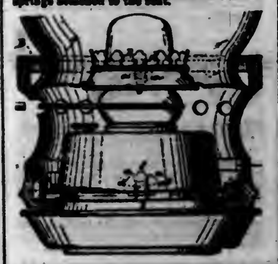
In combination with the angular box or case a b i c, the channeled head-piece, Figs. 3 and 4, and the piston-valve p, substantially as described, and for the purposes set forth.



160,096.

160,097. CAR-LAMPS. Michael Hicks and Thos. Smith, New York, N. Y. [Filed Feb. 12, 1873.]

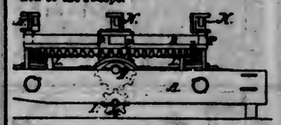
Brief.—Two curved arms hinged at one end to the seat, the other ends loose and opened by button and key, or closed by springs attached to the seat.



The combination of the curved arms B B, hinged at one end, and provided with legs a at the other ends, the springs U C, cord b, and handle or key B, substantially as and for the purposes herein set forth.

160,098. HORSE-POWERS. Ellis J. Hoyle and John W. Hoyle, Martin's Ferry, Ohio. [Filed Sept. 21, 1874.]

Brief.—The master-wheel is held in position by the flanges upon the pinion-rollers, and dogs upon the frame within the inner periphery of said wheel. It has near its outer periphery an upwardly-projecting rim, and strengthening-blocks at intervals cast therewith, which latter form sockets for the insertion of the sweeps.



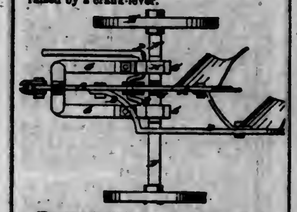
1. The combination of the flanged pinion-rollers L and L', and dogs T for supporting and holding in place the master-wheel B, substantially as set forth.

2. The combination of the master-wheel B, the flanged pinion-rollers L and L', shafts O and O', gear-wheels D and D', shaft P, pinion R, gear-wheel G, and shaft L, all of these devices being constructed and arranged in relation to each other to operate together substantially in the manner and for the purposes set forth.

3. The master-wheel B, cast with the high vertical flange b and strengthening-posts P thereon, in combination with the lever-lugs H fastened to said posts, substantially in the manner and for the purposes specified.

160,099. GANG-PLOWS. James R. Hunter, Ashley, Ill. [Filed Oct. 24, 1874.]

Brief.—Frame composed of two arms of U shape, rigid to the axle and projecting forward. From these rise two slotted posts, which support the elevated tongue and seat, and serve as guides for the beams, which are raised by a crank-lever.



The combination of the fixed U-bar G, the slotted vertically-adjustable forward standard K, and slotted rear standard J, with the axle F, the plow-beams A B, and the tongue J, as herein shown and described.

160,100. GUN-CARRIAGES. Nels E. Johnson, Chelsea Naval Hospital, near Boston, Mass. [Filed Nov. 20, 1874.]

Brief.—The carriage is brought to and from port by means of a rope and windlass; said rope being attached to the side of the port, thence around the windlass, and attached to the opposite end of the compressor-bar. The compressor-bar is provided with a slot, into which a locking-bolt drops, to hold the carriage stationary while not in operation. The pressor or friction screw is operated by means of a worm-wheel and a corresponding worm-shaft.

1. The combination, with a sliding gun-carriage, of a fixed compressor or friction bar Q, guide-bar Q'', the pressure-screw F', worm-wheel O', and worm-shaft H'', all constructed and relatively arranged as herein set forth.

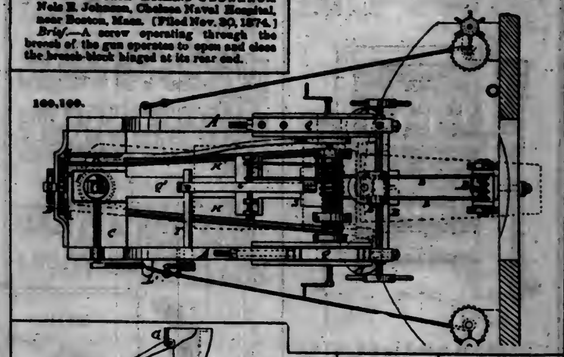
2. The combination of the locking-bolt V, arm U, and rock-shaft T, with the compressor-bar Q and gun-carriage A, as and for the purpose set forth.

3. The combination of the windlass Y and rope Z with the gun-carriage and compressor-bar, for bringing the gun to and from port, as and for the purpose specified.

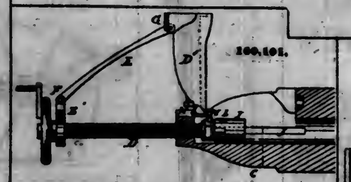
160,101. BREECH-LOADING ORDNANCE. Nels E. Johnson, Chelsea Naval Hospital, near Boston, Mass. [Filed Nov. 20, 1874.]

Brief.—A screw operating through the breech of the gun operates to open and close the breech-block hinged at its rear end.

160,100.



160,101.



1. The joint-bar E, breech-block D', and screw D, combined substantially as described, for the purpose set forth.

2. The combination of the sliding breech-ring I, screw D, swiveled therein, the hinged breech-block D', and the jointed bar E, connected with the block and screw, as herein shown and described.

160,102. PRUNING-SHEARS. Willis H. Johnson, Springfield, Ill. [Filed July 15, 1874.]

Brief.—One handle of a pair of pruning-shears is flattened out, and shaped to conform to the thumb and a part of the palm of the hand, a small flexible strap being attached to pass over the end of the thumb. The other handle is formed by prolonging the blade, and shaping it into a loose revolving bit or cylinder, to which a suitable leather guard is firmly attached; the construction giving a powerful leverage, while the revolving handle readily adapts itself to the varying motion of the blades. Both blades are conveyed upon a circle which, if continued, will pass through the center of the pivot.

1. The combination of the handle E of a blade, A, fitted to conform to the hand, and provided with a strap, c, and stud d', as described, with the handle of a blade, B, provided with a loose revolving bit or cylinder, F, and guard D, said handles being joined, as described, and the several parts operating substantially as set forth.

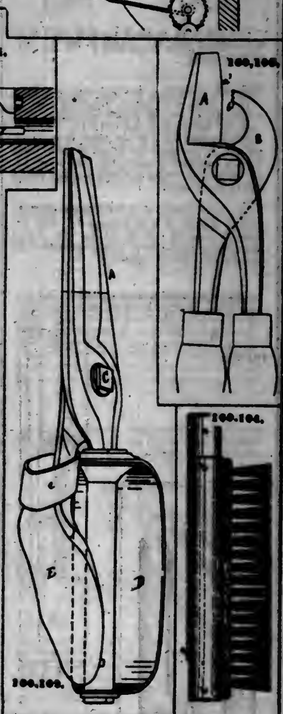
2. Pruning-shears having two blades, (one a thin cutting-blade, and the other a thick non-cutting blade,) with the edges of both blades conveyed upon a circle, which, if continued, would pass through or slightly behind the center of the fulcrum or pivot, substantially as shown and described.

160,103. PRUNING IMPLEMENTS. Willis H. Johnson, Springfield, Ill. [Filed July 15, 1874.]

Brief.—The novel feature is the blunt, corrugated end of the hook-shaped jaw, the use of which prevents undue injury to the bark of the tree in the process of lopping or laying down, or in hedge-work, &c.

The cutting-instrument described, wherein a short, sharp, convex-shaped blade, A, adapted for cutting, is combined with a curved jaw, B, having a blunt roughened end, b, terminating at a point nearly opposite the center of the cutting-blade, and adapted to seize the tree near the center thereof, substantially as and for the purposes set forth.

160,102.



160,103.

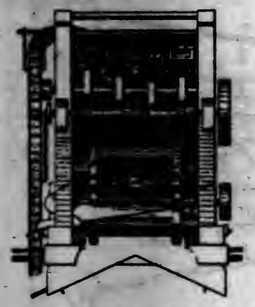
160,104. SHOE-BRUSHES. Israel Joseph and J. Albert Joseph, New York, N. Y. [Filed Jan. 11, 1875.]

Brief.—The ordinary back of a brush is provided with a tin receptacle for little brushes and a blacking-box, which is covered by a sliding tin cover.

1. The box C, made with rounded sides, and open at the top and one end, and the cover D, made with rounded sides and open at one end, in combination with the block or back of the brush A B, substantially as herein shown and described.

2. The brushes F G, having their backs and handles formed to fit upon each other and the blacking-box E, and into the cavity of the box C D, substantially as herein shown and described.

160,100. GRAIN-SEPARATORS. William M. Koppes, Seville, Ohio. [Filed Nov. 9, 1874.]



The upwardly-inclined bearing-rods d^1 in combination with the shaker d, for the purpose set forth.

160,106. COMBINED TRY-SQUARES AND BEVELS. John L. Larrison, Schooley's Mountain, N. J., and H. Leigh, Wurtsboro, N. Y. [Filed Nov. 20, 1874.]

Brief.—One piece of the bevel is made adjustable to the other by means of a lever-bar having a pointer in connection with the scale, to indicate the angle at which the two pieces are to one another.

The combination of pointed main piece A, having foot-pin a' and recesses b c, with adjustable notched rule B, having slot e, and the sliding lever-rod e, having pointer f, as and for the purpose specified.



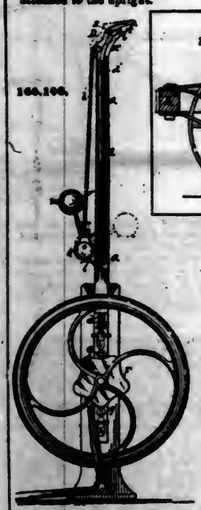
160,107. CHAIN-LINKS AND CHAINS. S. D. Locke, Hoosick Falls, N. Y. [Filed Dec. 12, 1874.]

1. A chain link, having its end bars eccentric to the side bars reversely to each other, one of said end bars being provided with a hook, substantially as and for the purpose specified.

2. A chain-link composed of the side bars a a, the bar b' at one end, and the bar b, having the hook c, at the other, the bar b being below, and the bar b' above, the plane of the side bars, substantially as and for the purpose specified.

160,108. PEG-FLOATS. Daniel Lydahan, Buffalo, N. Y., assignor of two-thirds his right to F. G. Fralick and D. B. Sherman, same place. [Filed Dec. 5, 1874.]

Brief.—The angle of the cutter-head is varied by means of an eccentric and bell lever attached to the upright.



160,109. ATTACHMENT OF MAINSPRINGS TO ARBORS. William O. Maynard, Binghamton, N. Y. [Filed Jan. 15, 1875.]

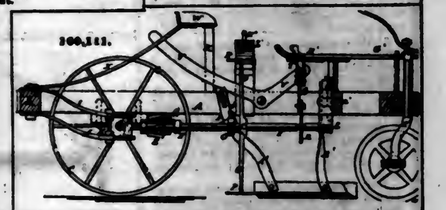
In combination, a watch-barrel arbor provided with a notch or recess which presents a holding-shoulder, and a mainspring having a hook upon its inner end arranged to engage with said holding-shoulder, substantially as and for the purpose described.

160,110. METHODS OF SOFTENING UMBRELLA-RIBS. John McAuliffe, New York, N. Y. [Filed Dec. 28, 1874.]

Brief.—The ends of the ribs are inserted in a shallow bath of melted lead, and allowed to cool with the lead, to remove the temper and render them soft and capable of being easily punched. When cold a gentle heat is applied to loosen the ribs from the solidified lead.



The process of softening umbrella-ribs of tempered steel preparatory to punching holes therein by standing the ends that are to be punched in molten lead brought to a red heat, then allowing both lead and rib ends to cool off together, and finally separating the surrounding lead from the ribs by a gentle heat, all substantially as set forth.



160,111. COTTON SCRAPERS AND CHOPPERS. William H. McClaugherty, Seguin, Tex. [Filed Nov. 14, 1874.]

Brief.—Devices for allowing one end of the chopper-shaft to be raised or lowered without releasing the gear-wheels from each other, and to allow the pinion-wheel to turn slightly on the shaft. A chopper-arm in two sections, hinged. Steering-wheels with cutting-flanges turned by a rudder, and having a standard upon which the frame is raised by a lever.

1. The combination of the clamp G with the slotted or grooved end of the small gear-wheel E, and with the polygonal section of the chopper-shaft F, substantially as herein shown and described.

2. The combination of the pivoted bearing-block H, and the vertically-adjustable U-shaped bar or slotted bearing I, with the adjustable chopper-shaft F and frame A, as and for the purpose described.

3. The arm of one of the cross-bars O that carry the chopper-knives F, made in two parts, hinged to each other, and provided with an adjusting swiveled screw, Q, substantially as herein shown and described.

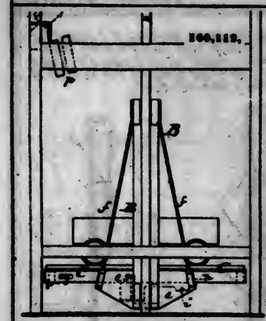
4. The combination of the two wheels B', short axle D', pivoted and sliding bent standard B', and foot-lever G' H', with the forward part of the frame A, that carries the scrapers and choppers, substantially as herein shown and described.

160,112. DUMPING-CARS FOR ELEVATORS. James McCollum, Kingston, Pa. [Filed Jan. 23, 1875.]

Brief.—The platform, with its ear, rests on a swinging bar pivoted to the frame, and is locked thereto by levers and side bolts. On reaching the top it is unlocked by a protruding lever passing into a diagonal groove at the mouth of the mine, where there is also a hook, which catches a projecting pin to tilt the platform.

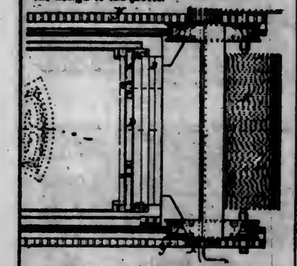
1. The combination of the hoisting-frame B, having the side plates a a, with the crank-shaft f, which supports the platform C, and with the dumping-cage r and s, all arranged to render the platform self-dumping without changing the location of the frame and cage r, substantially as herein shown and described.

2. In combination with the dumping-platform C of a hoisting-cage, the bolts j, levers n o, and inclined stationary guide p, all arranged to automatically unlock the pivoted platform during the ascent, and relock it during the descent, of the cage, substantially as specified.



160,113. APPARATUS FOR STAMPING EMBROIDERY PATTERNS. John McGavin, New York, N. Y., assignor to I. S. Van Deusen, Passaic, N. J. [Filed Dec. 12, 1874.]

Brief.—The rotating traversing brush passes over a perforated pattern, thereby transferring the design to the fabric.



1. The combination of a revolving and traversing brush with the pattern sheet or plate, and a table for holding the cloth to be printed, substantially as specified.

2. The revolving brush on a traversing table, geared with a crank-shaft, itself geared with the rack on table, to impart both the rotary and the traversing motion to the brush, substantially as specified.

3. The combination of the fastening-bars D with the pattern-sheet and the pattern-frame, the latter having grooves to receive said bars to fasten the pattern-sheet, substantially as specified.

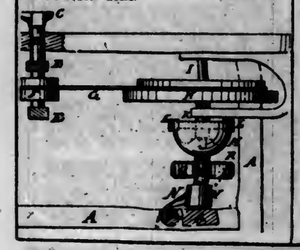
4. The sliding bar E and spring-fasteners G, in combination with the pattern-frame and rack-bars H on the latter, substantially as specified.

5. The cams Q on the pattern-frame, combined with the cloth-table I, substantially as specified.

6. The cloth-table I, arranged adjustably toward and from the pattern-frame, substantially as specified.

160,114. MOLDING-MACHINES. A. Miller, Ringtown, Pa. [Filed Jan. 25, 1875.]

Brief.—The molding-cutter is put in motion by the foot of the operator acting upon a treadle through a system of belts, pulleys, and ratchet-wheels.



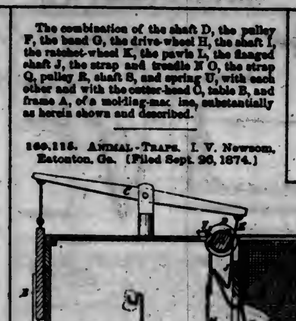
1. The combination of the lever H, carrying the dogs E, and having the rotary handle J journaled in its upper end, with the cranks P I, cord T, cam G, and spindle X, substantially as set forth.

2. The combination of the lever D, pawls F, and cam G, substantially as shown.

3. The lever H, dog S, cam-spindle X, and stop W, combined to operate as specified.

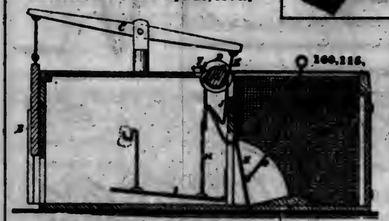
160,115. HEAD-BLOCKS FOR SAW-MILLS. John Osgood, Fort Edward, N. Y. [Filed Aug. 22, 1874.]

Brief.—The setting-jack of the head-block is moved forward by a setting-lever and pawls of peculiar construction acting upon a ratchet-wheel.



The combination of the shaft D, the pulley F, the band G, the drive-wheel H, the shaft I, the ratchet-wheel K, the pawls L, the flanged shaft J, the strap and treadle N O, the strap Q, pulley R, shaft S, and spring U, with each other and with the cutter-head C, table B, and frame A, of a molding-machine, substantially as herein shown and described.

160,116. ANIMAL-TRAPS. I. V. Newsom, Eatonton, Ga. [Filed Sept. 26, 1874.]



1. The combination, with door-lever C, having cord E, and door-arm having cord J, with the notched drum D, held by a spring-latch, F, and the treadle-arm H, as shown and described, for the purpose specified.

2. The door K, provided with handle O, and arm having cord J, combined with the lever-cord E and drum D, as shown and described, so that the trap may be opened by hand, as set forth.

160,117. NECK-TIE SHIELDS. R. R. Parker, Indianapolis, Ind. [Filed Oct. 3, 1874.]

Brief.—A neck-tie may be slipped through the loop, and adjusted upon the shield in any desired style of tie.

As a new article of manufacture, a neck-tie shield provided with elastic strap-loop a and button-loop b, when combined and arranged substantially as shown and described.

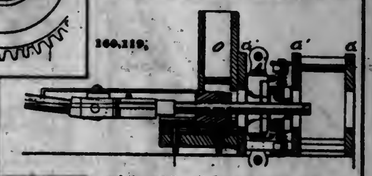


160,118. RAILWAY-RAIL JOINTS. Reuel Pickel, Keesville, N. Y., assignor to himself, J. G. Sawyer, and D. Kingsley, same place. [Filed Sept. 26, 1874.]

The joint described, consisting of the rails A A', having the extensions a a', vertical projections a^2 a^2, having the inner inclined faces a^3 a^3, as described.

160,119. GREEN-CORN CUTTERS. Wm. J. Potter, Mount Lebanon, N. Y., assignor to himself and Robt. M. Wagen, same place. [Filed Jan. 18, 1875.]

Brief.—A hollow plunger is concave in front to fit the ear and carry it as far as the knives. When the ear reaches the knives, the rod which is attached to the plunger is automatically released, and then passes through the center of the plunger, and carries the ear past the knives. The ears are fed from a hopper, the bottom of which is automatically withdrawn by a lever operated by a pin on the reciprocating cross-head of the plunger-rod.



1. The combination, with hopper O, of the hollow plunger J, concaved in front to center the ear, and carrying it forward to the knives, and the rod I moving therethrough and pushing the cob completely past the knives, as and for the purpose specified.

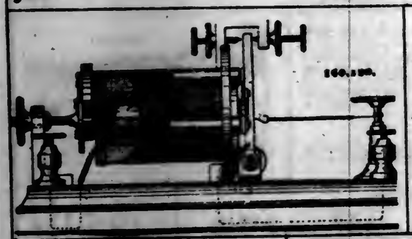
2. The combination, with hollow plunger J and rod I, having groove N, of the lever K, arranged to operate as and for the purpose specified.

3. The combination, with hopper O, of an intermittently-moving bottom, P, that feeds the ear, in the manner described.

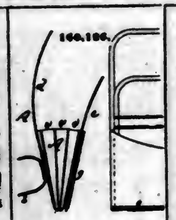
4. The lever S, having one end, V, operated by a pin, U, on the reciprocating cross-head H, and the other attached to the shank of spring-pressed plate P, as and for the purpose specified.

160,120. ELECTRO-MAGNETS. M. A. Rice, Pent Water, Mich. [Filed Dec. 28, 1874.]

The combination of two or more bars and an insulated coil, one leg or arm of each bar being arranged within the coil, and one exterior to it, in such manner as to make two or more magnets in one coil, substantially as specified.



160,120.



160,120.

160,121. SUGAR-CANE-CUTTING MACHINES. Julius Robert, Gross-Seelowitz, Austria, assignor to Dr. Otto Kratz and R. Sieg, New Orleans, La. [Filed Aug. 1, 1874.]

Brief.—The cutters are fastened to plates that can be removed from the wheel that carries them, in order to adjust the cutters and grind them.

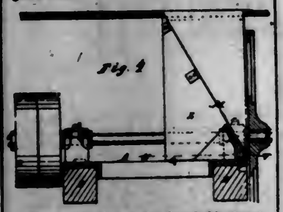
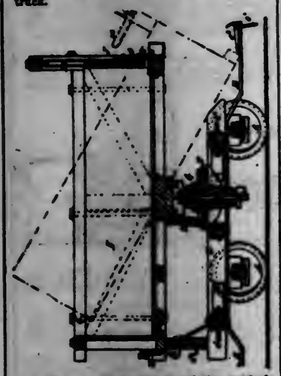


Fig. 1.

The combination of the detachable throat-plates C, cutters H, and fastening-bolts J with the revolving wheel E, having radial openings F for the reception of the throat-plates, substantially as set forth.

160,122. DUMPING-CARS. Robt. Roberts, Pattenburg, assignor of one-half his right to N. S. Wyckoff, Clinton, N. J. [Filed May 30, 1874.]

Brief.—The body is hinged to a cross-head belt turning within a cross plate upon the truck.



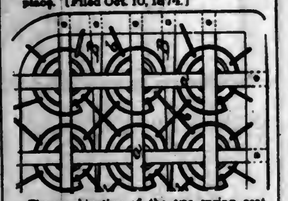
1. The cross-head belt L and the notched washer G, in combination with the plate F, attached to the car-frame C, and the plate H, attached to the car-body I, substantially as shown and described.

2. The guard-block M, in combination with the plates F H, cross-head belt L, notched washer G, frame C, and body I, substantially as shown and described.

3. The combination of the U straps M, with the tail-board J and the upper rear cross-bar of the body I, substantially as shown and described.

4. The combination of the drop-bolt N and lever O with the tail-board J of the car-body I, substantially as herein shown and described.

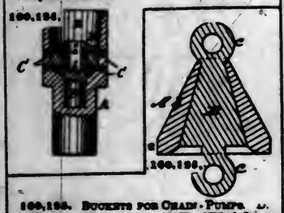
160,123. SPRINGS FOR SEATS, &c. John A. Stevenson, Belvidere, N. J., assignor of one-half his right to John J. Kline, same place. [Filed Oct. 10, 1874.]



The combination of the two spring-seat frames A A', tied together by interior oblique spring-braces B B, and exterior semi-elliptical spring-braces at the front and rear sides and at the ends of the frames, whereby all longitudinal and lateral movement of the seat-frames is prevented.

160,124. SPINDLE-BEARINGS AND THEIR LUBRICATION. Jos. M. Stone, North Andover, Mass. [Filed Oct. 21, 1874.]

The combination, with the bushing of a spindle-bearing, of the porous wooden plugs set radially around the same, and the porous wooden conducting-pieces to supply the oil thereto, and a reservoir to contain a supply of oil, substantially as described.



160,124. 160,125.

160,125. BUCKETS FOR CHAIN-PUMPS. A. F. Stow, Horseheads, N. Y. [Filed June 6, 1874.]

Brief.—Upon the conical core is fitted a shell or jacket of rubber, having the form of the core, except at its base, which is made cylindrical to fit the pump-tube.

The chain-pump bucket herein described, having the cylindro-conical elastic shell A, fitted to the solid core B, substantially as and for the purpose set forth.

160,126. POCKET-BOOKS. Gabriel Strauss, New York, N. Y. [Filed Jan. 27, 1875.]

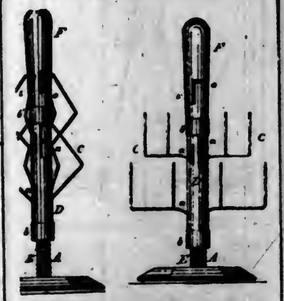
Brief.—The bill-wallet is constructed so as to be detachable from the specie-holding or body part of the book, it having an elongated flap, which passes through a loop formed upon the outer pocket of the book proper, and which is provided with a suitable fastening device.

1. A pocket-book composed of two parts, A and B, which may be separated to constitute, each, a distinct pocket-book, substantially as herein shown and described.

2. The book B, having the flap c, combined with the book A, having a slit or loop for the reception of the flap c, substantially as herein shown and described.

160,127. SPOOL-HOLDERS. F. J. Taylor, La-porte City, Iowa. [Filed Dec. 30, 1874.]

Brief.—Spools are held upon the pivoted arms, which are depressed and unlocked by lowering the slotted sleeve.

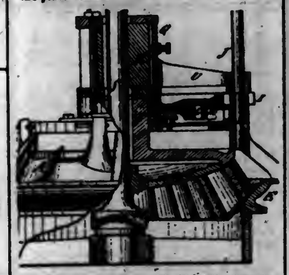


1. In combination with the shaft A, the arms C, sleeve D, and spring E, as and for the purpose specified.

2. The spool-holder, consisting of the shaft A, handle F, slotted sleeve D, pivoted arms C, and spring E, when constructed and arranged to operate substantially in the manner and for the purpose specified.

160,128. WATER-WHEELS. William J. Thompson, Springfield, Mo., assignor of one-half his right to Springfield Iron-Works. [Filed Oct. 31, 1874.]

Brief.—The gates are operated by a spring for each gate, to insure the simultaneous closing thereof; also, a three-chambered box around the main shaft, having an arm which extends over the sector-gears and supports the pinion-shaft.



1. The combination, with wheel C, of mechanism G I and L M, arranged to increase the leverage on the gates, and thus allow the application of a governor.

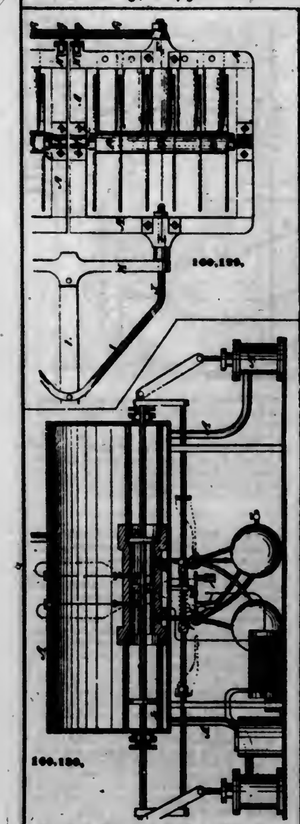
2. In combination with the arms B of the gates A, the springs N, as and for the purposes described.

160,129. LAND-PULVERIZERS. Augustus Underwood, Carrollton, Ill. [Filed Nov 30, 1874.]

Brief.—The pulverizing devices consist of a series of disks placed upon a shaft near to gether, and having cleaning-fingers between them. Two of these are mounted in rectangular frames, and placed end to end, each being journaled upon the end of a bent rod, which constitutes the bounds of the tongue.

1. In a land-pulverizing machine, the combination, with the pivoted oscillating frames A A, having friction-rollers H, of the bar C, having bearing-plates g', as and for the purpose specified.

2. The bent or V-shaped rods J, connected to the pole L and bar K to form bounds or braces, and extended rearwardly through the castings I and front bar of the oscillating frames A to form the pivots or journals thereof, as shown and described.



160,129.

160,130. GAS-ENGINES. Pedro Vera, Bogota, United States of Colombia. [Filed Mar. 20, 1873.]

Brief.—Hydrogen and oxygen gases alternately exploded within a double cylinder by means of an electric spark.

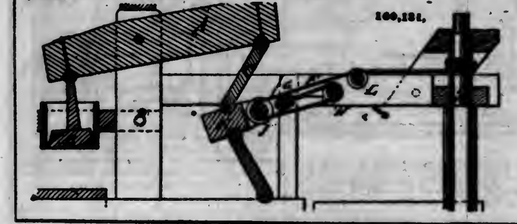
1. The combination of the gas-cylinder A, flexible hydrogen and oxygen gas holders, valve mechanisms, electrical-engine wires X Y Y', and the device for alternately connecting said wires, substantially as specified.

2. The combination of the air-pumps with the cylinder A and the gas-exploding mechanism, substantially as specified.

160,131. LEVER-PRESSES. Wm. O. Watson, Albany, Ga. [Filed Jan. 11, 1875.]

Brief.—The main lever is operated by toggle-levers connected to the capstan by a rope passing over intermediate pulley-blocks.

The combination of the block E, pulley J, and the pulley H with the rope F, capstan K, and the press-lever A, substantially as specified.



160,131.

160,132. PLANES. Geo. L. Weaver, Hartford, Conn. [Filed May 23, 1874.]

Brief.—An inclined wedge-shaped bed is adjusted by a screw, to enlarge or close the throat.



The hand-plane herein described, having the stationary inclined bed F d, the adjustable wedge-shaped bed D, having an angle coincident with that of the bed F, and a bevel surface parallel with the cutting-iron C, and affording, with the bed d, a rigid support for the same, and the clamp G, with its set-screw g', all combined for the purpose set forth

160,133. CAR-COUPLINGS. John West, Minneapolis, Minn. [Filed Dec. 10, 1874.]



The independently-acting piece e, in combination with the clevis-link b, uncoupling devices g e, and trips h, substantially as and for the purpose specified.

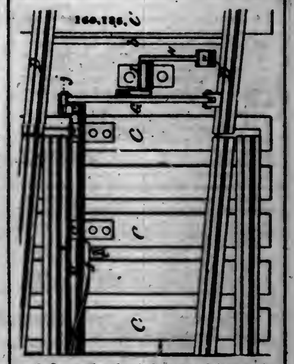
160,134. ANIMAL-HOPPLES. J. D. Wilson, Round Grove, Kans. [Filed June 27, 1874.]



A hopple for animals, consisting of the slide-piece C, cross-bar D, with forwardly-bent ends, rod E, having upwardly-inclined ends, and the flexible connection F, as and for the purpose specified.

160,135. RAILWAY-SWITCHES. George J. Woodruff, Norristown, Pa. [Filed Jan. 20, 1875.]

Brief.—A railroad-switch operated by flange of wheel upon a winding vane on a cylinder, the curvature of said vane being gradual at each end, and having a gain twist toward the center, to obviate sudden jars at the commencement of the movement of the switch-rails. A weighted locking-lever is combined with the shifting mechanism, to secure the switch-rails against accidental shifting.



160,135.

1. In a railroad-switch operated by a rock-shaft actuated by the wheel-flange, the lengthwise-curved flange d, extending partly around the shaft, and having a very slight curvature at each end, gradually becoming more marked in the center of its length, for the purpose of gradually overcoming the inertia of the switch-rails, giving them a rapid intermediate movement, and then gradually overcoming their momentum, substantially as specified.

2. The combination, with the flanged rotating rod E, crank-arm F, and pitman G, pivoted to the switch-rails, and having pin p, of the vertically-vibrating locking-lever H and slotted plate i, receiving pin p, substantially as specified.

3. The combination, with the flanged rotating shaft E, of the check-plate I, substantially as specified.

4. The combination, with the plate I, of lug P on rotating shaft E, for the purpose of preventing endwise displacement of the said rod, substantially as specified.

160,136. CHIN-RESTS FOR VIOLINS. Chas. F. Albert, Philadelphia, Pa. [Filed Jan. 12, 1875.]

Brief.—The rest is attached to the upper side of the upper holding-lip of the adjustable clamp.



1. A chin-rest for violins, in which are combined the rest proper A and the perforated plate B, with the bar D and its pin c, as set forth.

2. The plate B, provided at the top with a lip, e, which extends over the edge of the violin, and to which the rest A is attached, and between which and a lip, f, at the lower end of the plate B, the violin is clamped, all as and for the purpose set forth.

160,137. MACHINES FOR INDEXING BOOKS. Frank R. Alderman, Grand Rapids, Mich., assignor of one-half his right to F. B. Perkins, same place. [Filed Sept. 8, 1874.]

Brief.—Cuts the sheet and prints the letters at the same operation.

1. In a machine for indexing books, a slide provided with an adjustable knife, having a square projecting cutter at one end, to which a horizontal motion is imparted, the slide also carrying a type-wheel, to which a rotary motion is imparted, substantially as described, and for the purpose set forth.

2. The frame G, having a reciprocating vertical movement, and provided with the horizontal rock-bar J, in combination with the slide L, pinions T U, slotted arm Z, eye-bolt X, sliding on the horizontal rod W, and pawls e e, substantially as described, and for the purpose set forth.

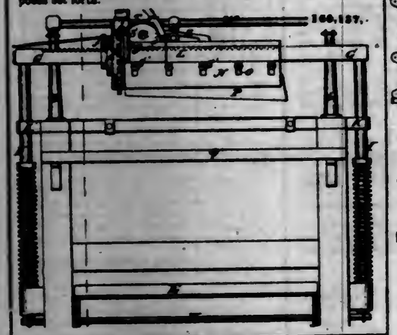
3. The slide L, having a slot, as set forth, and provided with a knife, P, in combination with the frame G, having rods I I', forming its sides, by means of which the knife can be operated when it projects beyond one of the side rods of the frame, substantially as described, and for the purpose set forth.

4. The slotted arm Z, journaled on the shaft R of the pinion U, and provided with the hinged pawls a a, in combination with the double eyebolt X, rod W, and spring-pawls b b, substantially as described, and for the purpose set forth.

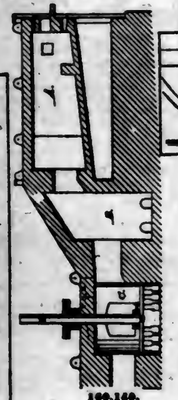
5. The type-wheel c, hung on a sleeve on the slide, provided with ratchet-teeth on its outer face, and slots on its periphery for the reception of the type, held in place by the cap, substantially as specified.

6. The type-wheel c, constructed as set forth, in combination with the slide L, slotted arm Z, rod W, eccentric-rod n, and pawls n n, substantially as described, and for the purposes set forth.

160,137.



160,138.



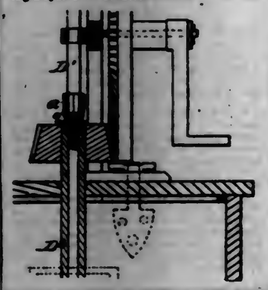
160,139. TREATING CHEWING-TOBACCO. S. V. Appleby, Spotswood, N. J. [Filed Oct. 6, 1874.]

1. The process of preparing chewing-tobacco by dampening, boxing, and treating the same with a compound consisting of gum arabic, slippery-elm, and flavoring and sweetening ingredients, and afterward drying and cutting, substantially as described.

2. As a new article of manufacture, chewing-tobacco prepared by dampening, boxing, and treated with a compound consisting of gum-arabic, slippery-elm, and flavoring and sweetening ingredients, and afterward drying and cutting, substantially as described.

160,140. CHURN. David C. Bailey, South Salem, Ohio. [Filed May 16, 1874.]

Brief.—Concentric vertical shafts are revolved in different directions, the top of the outer passing through a lever gear-pinion, and terminating at the top thereof, where it receives a hollow screw-nut, the head of which expands and becomes the bearing of an enlargement upon the inner shaft, the inner dash being then pendent, each shaft revolving a system of dashers.



The shafts D D', in combination with the enlarged socket a, having a shoulder, a', and the metallic bearing s, let into the upper end of the shaft D', substantially as and for the purpose set forth.

160,142. METALLURGIC FURNACES. E. Bayliss, Pittsburg, Pa. [Filed Nov. 6, 1874.]

Brief.—The iron is melted in chamber and carried by the conduit to the refining-chamber, and is thence run into the puddling-chamber, and puddled by the mechanical tool. The products of combustion pass from the fire-place f through all the chambers to the stack, and supply the requisite heat.

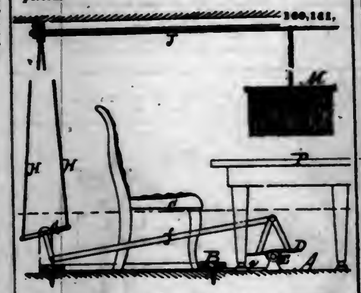
1. The combination of the melting-furnace A, refining-furnace B, and puddling-furnace C, said furnaces communicating and operating with relation to each other substantially in the manner herein described, and for the purpose set forth.

2. A puddling-furnace, provided with a rotary puddling-tool, in combination with a refining and melting furnace, arranged and operating with relation to each other substantially as herein described, and for the purpose set forth.

160,141. FLY-BRUSH ATTACHMENTS. Geo. S. Beekman, Tallula, Ill. [Filed July 30, 1874.]

Brief.—A foot-treadle being depressed vibrates a fan or fly-brush above the table or person.

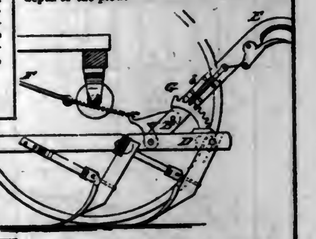
160,141.



The combination of the board B, treadle D, connecting-rod f, lever G, cord or band H, rock-shaft J, and fan or fly-brush M, substantially as shown and described.

160,143. CULTIVATORS. Jacob Bebel, Rockford, Ill., assignor of one-half his right to Ralph Emerson, same place. [Filed Jan. 26, 1875.]

Brief.—A rod or chain from the hanger to the handle suspends the plow-beam. A notched segment secured to the beam, and held by a spring-pawl upon the handle, adjusts the latter at any height, or limits the depth of the plow.



1. The handle E, pivoted to the beam or drag-bar D, in combination with the rod or connection F, substantially as and for the purpose specified.

2. The combination of the beam or drag-bar D, handle E, and rod or connection F with the ratchet-segment G and pawl or catch b, for changing and holding the beams in different positions, substantially as described.

160,144. HORSE-HAY AND COTTON PRESSES. T. B. Bennett and E. J. Beasley, Belton, Tex. [Filed Nov. 26, 1874.]

Brief.—A rock-bar carrying a follower is operated by a lever through the medium of two pivoted arms and a pair of pawl-blocks.

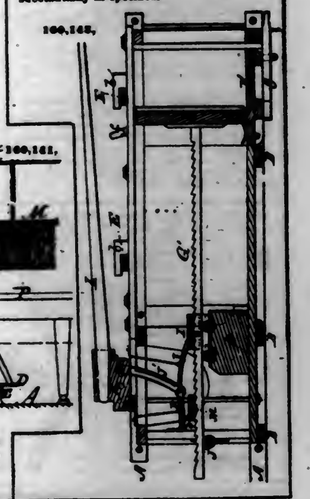
1. The combination, with the vertically-vibrating hinged doors O O and the sides of the press-box, having hooks b, of the transverse bars E, having upon their ends hooked plates c, substantially as specified.

2. The combination, with the doors F at the sides of the press-box, having vertical brace-bars d, of the bar G, endwise movable in the staples e, and having notches i, substantially as specified.

3. The combination of the vibrating catch g of the bottom door B' of the press-box with the hook h', substantially as specified.

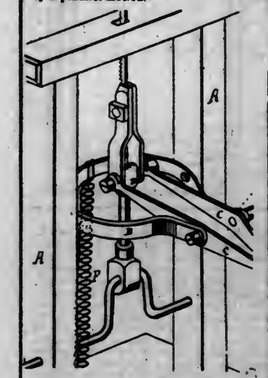
4. The combination, with the vertically-vibrating socket K and rack-bar G', of the pawl-block I, arms J J', plate P, and pawl-block M, substantially as specified.

160,145.



160,146. SCROLL-SAWS. Jas. M. Beagler, Williamsport, Pa. [Filed Feb. 4, 1875.]

Brief.—The saw receives its motion from a crank, and is made to reciprocate vertically by a parallel motion.



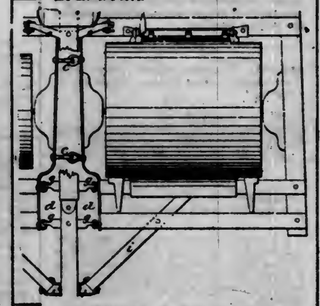
1. The combination of the yoke B, pivoted as described, rocking lever C, and crank-rod D, substantially as and for the purpose set forth.

2. The combination of the yoke B, rocking beam C, crank-rod D, treadle E, and rod d, substantially as and for the purpose set forth.

3. The combination of the yoke B, rocking beam C, crank-rod D, and spring F, substantially as and for the purpose set forth

160,147. LAND-ROLLERS. Peter Bilyeu, Sr., Mowequa, Ill. [Filed Oct. 12, 1874.]

Brief.—Each roller-frame is complete in itself, and is provided with stationary journal-boxes for the roller-shafts. The inner ends of the frames are hinged together by link-joints, and the tongue and braces are attached by like means. The seat is mounted upon the inner end of the frames. Each roller is provided with a scraper, which is operated by the driver's foot.



In a land-roller, the separate roller-frames, each carrying its roller-bearings, jointed together at e e, with the tongue jointed to and between the front portions of said frames by the double joints g g, in the space d, and the diagonal draft-braces i i, all arranged substantially as herein set forth.

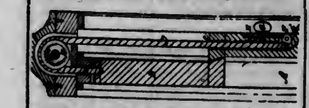
160,148. CAPS FOR WOOD-SCREWS. Henry T. Blake, New Haven, Conn. [Filed Feb. 6, 1875.]



A cover for screw-heads, consisting of the collar A, constructed with one or more spurs, a, combined with the disk B, substantially as described.

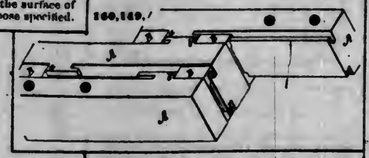
160,145. SASH-BALANCES. John Berndt, Denver, Colo. [Filed Dec. 28, 1874.]

Brief.—The two sashes are connected by flexible wire-rope passing over a pulley at the top, and brought down through a vertical hole in the meeting-rail of the inner sash, into and about half-way down the center of the mullion, and thence out through a horizontal hole, there being also a friction-pulley arranged within a slot, and a set-screw on the face of the mullion, for locking the device.



The combination, with sashes B C, of the cord D, pulley F, and clamp G, the first being brought down through a vertical hole in the top of lower sash, and partly through the mullion thereof, the second arranged within a slot, and the third attached to the surface of said mullion, as and for the purpose specified.

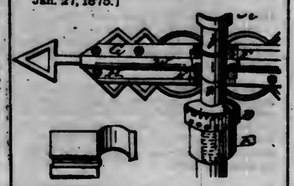
160,149.



160,146.



160,150. WEATHER-VANES AND POINTERS. James C. Bryan, Philadelphia, Pa. [Filed Jan. 27, 1875.]



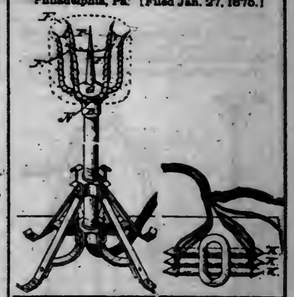
1. The improved weather-vane, consisting of four sheets, G, H, I, and J, with metal cap F on each side of center, riveted together to form V and W of the vane, as herein described.

2. The support E, having a circular groove provided with metal balls, in combination with the washer and bearing of weather-vane C, constructed of the four pieces of sheet metal, as herein described.

3. The combination of the staff provided with cap A, extending over the upper bearing of the vane, and the vane provided with cap D, extending over its lower bearing on the staff, as herein described.

4. The block M, consisting of the four pieces S S T T, each having attached a bracket to indicate one of the cardinal points of the compass, held in position and close contact with staff B by the bolts and nuts K K and dovetailing, substantially as and for the purpose herein set forth.

160,151. LIGHTNING-RODS. Jas. C. Bryan, Philadelphia, Pa. [Filed Jan. 27, 1875.]



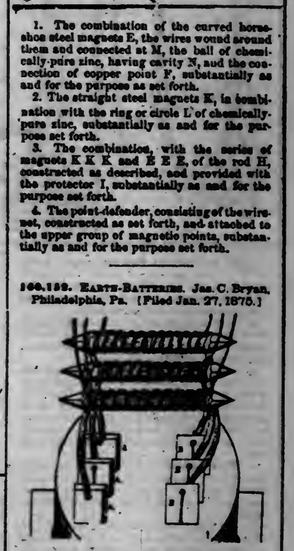
1. The combination of the curved horse-shoe steel magnets E, the wires wound around them and connected at M, the ball of chemically-pure zinc, having cavity N, and the connection of copper point F, substantially as and for the purpose as set forth.

2. The straight steel magnets K, in combination with the ring or circle L of chemically-pure zinc, substantially as and for the purpose set forth.

3. The combination, with the series of magnets K K K and E E E, of the rod H, constructed as described, and provided with the protector I, substantially as and for the purpose set forth.

4. The point-defender, consisting of the wire-net, constructed as set forth, and attached to the upper group of magnetic points, substantially as and for the purpose set forth.

160,152. EARTH-BATTERIES. Jas. C. Bryan, Philadelphia, Pa. [Filed Jan. 27, 1875.]



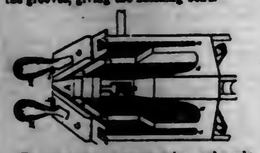
1. The improved voltaic earth-battery, consisting of the metals A B, partially embedded in the sulphur C, as herein set forth.

2. The combination, with the voltaic earth-battery and primary coil, of the series of magnets forming the magneto electric battery, substantially as herein described.

3. The combination, with the voltaic earth-battery, magneto-electric battery and primary coil, and the secondary coil F, substantially as herein set forth.

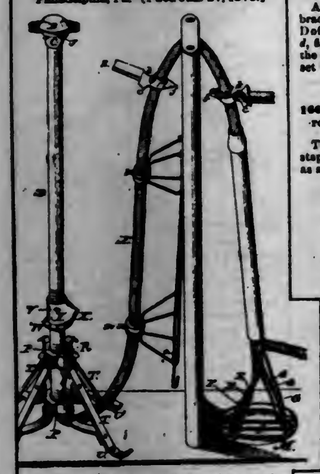
160,153. MACHINERY FOR PRINTING HOSIERY-MARKETS. Jas. C. Bryan, Philadelphia, Pa. [Filed Sept. 9, 1874.]

Brief.—The rod is entered, (gaged by R,) and the lever bends into staple-shape; the levers are then brought down, carrying the ends into the grooves, giving the finishing bend.



The arrangement, construction, and combination of the upper centering traveling lever A, the rear lever B, the carriage C, roadway D, front levers G G, with their flanges J J, grooves K K, guides N N, and centering gage X, as herein described, and for the purposes set forth.

160,154. LIGHTNING-RODS. Jas. C. Bryan, Philadelphia, Pa. [Filed Jan. 27, 1875.]



1. The combination, with the upper terminal of a lightning-rod, of the series of steel magnets A and the ball of zinc partially inclosing the magnets and extending over socket C, substantially as herein set forth.

2. The rod composed of the series of insulated wires F, F, F, G, G, G, and H, wound as described, and wrapped with a protector, substantially as herein set forth.

3. The combination, with a lightning-rod composed of the series of wires, as described, of the terminal magnets, batteries L and M, each single magnet of either battery being connected to one magnet of the other battery by insulated wires connecting their opposite poles, substantially as and for the purpose set forth.

4. The combination, with a lightning-rod, of the series of magnets placed at the lower end thereof, and forming a magnetic earth-battery, substantially as and for the purpose herein set forth.

5. The supporting-standard N, consisting of the central portion O and lead P, provided with cavities Q, bolts S, and grooves, constructed as shown, the parts being arranged and combined substantially as and for the purpose herein set forth.

6. The spiral protector, consisting of the tube provided with flange W, orifice X, and fastening-screw Y, substantially as and for the purpose herein set forth.

7. The inclined shoulder b, dip c, tapering points f of the metallic fastening Z, as herein set forth.

8. The roof-fastening, consisting of the frame and tie-wire i, secured together by the lead fillet or head h i, cast thereon, and extensions a e, substantially as and for the purpose herein set forth.

9. The insulating strip d, and having a groove along its center to fit within the arms f of support Z, and the side flanges for extension over the arms f, substantially as and for the purpose herein set forth.

10. The combination, with the rod and the protecting-tube t, of the lead socket or protector s, extending over the top of the tube and grasping the rod, substantially as and for the purpose specified.

160,155. FOLDING TABLES. Peter Cameron, Salford, Great Britain. [Filed Nov. 6, 1874.]

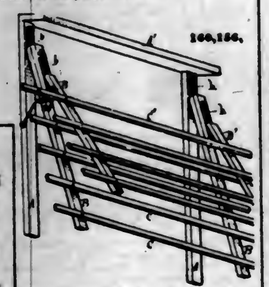


A table or bench having hinged legs, hinged braces extending through turning cross-pieces D of the legs, and combined with thumb-screws d, fitting openings in said cross-pieces, and in the top or frame of the table or bench, all as set forth.

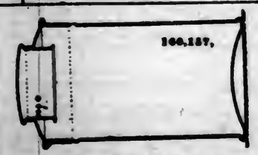
160,156. CLOTHES-FRAMES. Peter Cameron, Oshkosh, Wis. [Filed Jan. 19, 1875.]

The combination of the bars A B B' C C', staples a, loops b, and links c c', substantially as and for the purpose set forth.

160,156.



160,157.



160,157. SPICE-BOXES. Joseph B. Camp, Brooklyn, N. Y., assignor to S. A. Ilsley & Co., New York city. [Filed Dec. 22, 1874.]

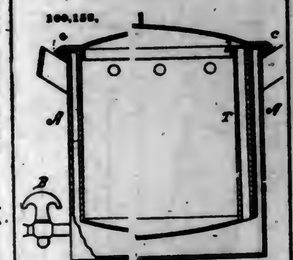
The spice-box having a removable ring-shaped cover and a perforated cylindrical cap sliding through the opening of the cover, as and for the purposes specified.

160,158. WASH-BOILERS. Jean B. Camyré, Montreal, Canada. [Filed Aug. 20, 1874.]

Brief.—A passage is provided through the clothes-chamber for introducing water to the lower chamber.

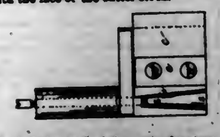
The outer vessel A, having a stop-cock, B, and lid h, the flange m of which is provided with an inward bead, l, in combination with the inner perforated vessel C, provided with the flange e and supply-pipe T, the whole constructed, arranged, and operated in the manner herein set forth.

160,159.



160,159. FITTING-TOOLS. T. S. Carroll, Winsted, Conn. [Filed Nov. 27, 1874.]

Brief.—The conical socket is in the axial line of the mandrel, which latter, for solidity and convenience, is, at its outer end, enlarged to a half-cylinder of the diameter indicated at b. This enlargement is planed down on one side until its plane cuts the socket, parallel to its axis, at a point that reduces the area of the socket by about one-fourth, and onto this plane surface is secured the cutter by the clamp plate and screws. The cutting-edge of the cutter is slightly beveled, and that surface which is terminated by the salient angle of the cutting-edge is placed downward in contact with the face of the cutter-stock.

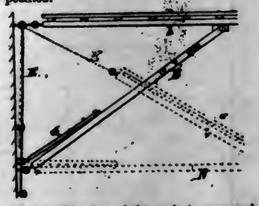


1. A fitting-tool of the general nature set forth, having a pattern-socket, s, greater than a half-circle, and a chisel, c, tizable at both ends to the stock, with its bevel c' to d on that side of the edge opposite to the chisel-seat, substantially as shown and described, and for the purpose set forth.

2. The mandrel a, having at one end the part-circular pattern-socket s, combined with the chisel c and screw t, substantially as shown and described.

160,160. CLOTHES-FRAMES. Jos. H. Chadwick, Wheaton, Ill. [Filed Jan. 23, 1874.]

Brief.—A flexible rack or grating is supported at the center by a diagonal hinged strut from a wall, and capable of being lowered by a cord, or raised into a horizontal position.



The combination of the rack A, composed of bars a, center bar b, and stringer c, the strut B, hinged to the rack and to the wall, the arm G, cord E, and pulley or eye f, substantially as specified and shown.

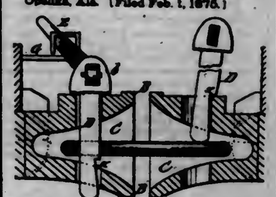
160,161. TURNING-TOOLS FOR METAL. Wm. Clay, Birkenhead, England. [Filed May 12, 1874.]

A tool for cutting or shaping metals, constructed substantially as described and represented, with a hole or passage through it for conducting water or other cooling fluid, gas, or vapor to the edge and beneath the shaving or cutting, substantially as specified.

160,161.



160,162. CAR-COUPLINGS. Jas. M. Clem, Opelika, Ala. [Filed Feb. 1, 1875.]



The re-enforced and slotted draw-head A, having V-shaped channel C, in combination with pin D, having slotted head b and notch a, bearing G, and loosely-working lever E, as and for the purpose specified.

160,163. POT-LIDS. Austin E. Colgrove, Attica, Ind., assignor of one-half his right to Elijah Young, same place. [Filed Sept. 8, 1874.]

Brief.—Upon the edge of the cover are projecting ears, to which are pivoted cams, which bear upon or under the flange of the pot.



The combination of the ears C C and cams D D with the cover B and the flanged pot A, all substantially as and for the purposes herein set forth.

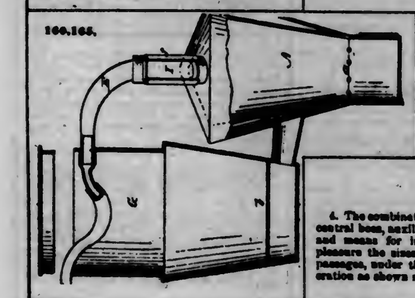
160,164. MOUTH-PIECES FOR MUSICAL INSTRUMENTS. Chas. G. Conn, Elkhart, Ind. [Filed Dec. 5, 1874.]

Brief.—The mouth-piece, where it comes in contact with the lip of the performer, is faced with india-rubber or other elastic covering.



The annular cushion C, of elastic material, applied to the face of a mouth-piece, B, of common form, in the manner specified.

160,165.



160,166. STEAM-GENERATORS FOR COOKING, &c. William Cooper, Tpsilanti, Mich. [Filed Jan. 9, 1875.]

Brief.—The slide governs the feed-opening. Steam is carried to any ordinary cooking or washing apparatus.

The combination of the fire-box or heater A, having grate a, and made flaring from bottom to top, as shown, the flaring chamber D, pipe J, with slide I, and the pipe E, all substantially as set forth.

160,166.



160,167. SAFETY-VALVES. Geo. H. Crosby, Somerville, Mass. [Filed Feb. 2, 1875.]

Brief.—The central portion of the valve rests upon a boss, from which auxiliary passages lead through the valve-casing. When the valve is lifted, steam issues through the auxiliary passages, the exit of steam being controlled by an adjustable collar.

1. The boss for auxiliary steam-escape, in combination with the main valve, which, when in position on its seat, rests on top of, and in contact with, the upper face of said boss, and covers the steam-inlet therein, substantially as shown and set forth.

2. In combination with the auxiliary steam-escape passages opening out from the side of the valve-shell, the adjustable sleeve encompassing said shell, and operating to regulate the size of the outlets, substantially as shown and described.

3. The sleeve encompassing and adjustable upon the valve-shell, and provided with an apturned flange or rim, which directs upward the steam escaping from the lateral openings in the shell, substantially as shown and set forth.

160,167.



4. The combination of the valve-shell, valve, central boss, auxiliary steam-escape passages, and means for increasing or decreasing at pleasure the sizes of the outlet ends of said passages, under the arrangement and for operation as shown and set forth.

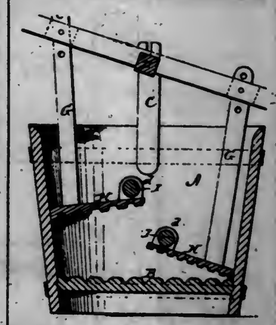
160,168. CORNER-CAPS FOR VALISES, &c. Geo. Crouch, New York, N. Y. [Filed Dec. 5, 1874.]

A leather corner-cap for trunks, valises, and bags, made of a single piece without seam, and molded or pressed into form, substantially as shown and described.

160,168.



160,169. WASHING-MACHINES. William D. Croy and David M. Croy, Blacksburg, assignors of one-third their right to William H. Coffman, Dayton, Va. [Filed Jan. 19, 1875.]



The combination, with the tub A B, of the corrugated pressers H H, rigidly attached to the arms G G in an inclined position, cars d d, and rollers I I, all constructed and operated substantially as and for the purposes herein set forth.

160,170. SHOVELS. Peter B. Cunningham, Freehold, assignor to Thos. Winn, Bethlehem, Pa. [Filed Feb. 6, 1875.]

Brief.—A socket is formed in the shovel-blade, and a metal tang attached to a wooden handle, fitted into the socket and secured by a pin or rivet.

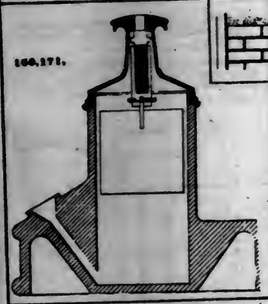


A shovel in which are combined a metal tongue, A, secured to the handle, with a socket, c, formed for its reception in the blade, as set forth.

160,171. INSTRUMENTS. Shmi. Darling, Providence, R. I. [Filed Nov. 6, 1874.]

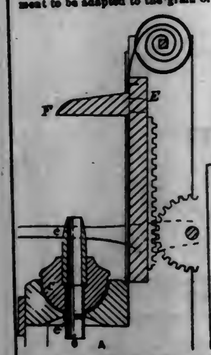
An instrument having a loose plunger, a dipping-cup, the lower diameter of which is less than the width of an ordinary pen, with proper steering-space below for the point of a pen, and a provision for the free passage of air from the reservoir, substantially as and for the purposes described.

160,171.



160,172. MACHINES FOR MAKING WOODEN PINS. Samuel S. Baker, Parkersburg, W. Va., assignor to Thomas P. Butcher, same place. [Filed Jan. 13, 1875.]

Brief.—The cutting-tool is suspended in a ball-and-socket joint, to permit a slight movement to be adapted to the grain of the wood.



1. The ball C, provided with the cutter *c* and regulating-tube *e* and the socket, for the purpose set forth.

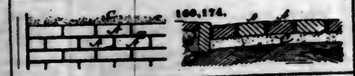
2. In combination with the stand A and slide E, having the projection F, the ball having the cutter *c* and weighted tube *e*, and the socket, as shown.

160,173. STRINGS FOR MUSICAL INSTRUMENTS. John Farmer, Harrow, and Jas. Ballie Hamilton, University College, Oxford, England. [Filed June 26, 1872.]

Brief.—The string is secured, at the ordinary hitch-pin end, to the vibrating end of a musical reed. The string may be also secured to the same by a rod touching the string between the hitch and tuning pins.

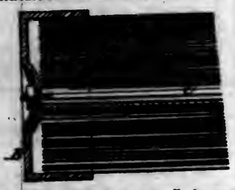
The combination, in a musical instrument, of a free reed-tongue, and a string connected with the vibrating end of the reed and to a tuning-pin, all substantially as herein shown and described.

160,174.



160,175. DEVICES FOR PROTECTING THE ENDS OF ROLLS OF PAPER, &c. Joseph L. Fitzi, New York, N. Y. [Filed Mar. 10, 1874.]

Brief.—Each end of the roll of paper or other fabric is protected by a metallic cap, perforated to receive the ends of a screw-rod passing through a sleeve or tube in the center of the roll, and countersunk in its center, so that the roll may be placed on end without interference from the nut on the screw-rod.



The combination of the tube F, the caps B D, countersunk in the center, and the screw-rod C, substantially as and for the purpose shown and described.

160,176. DISH-DRAINERS. Jane Ann Fox, Stamford, N. Y. [Filed Dec. 18, 1874.]

Brief.—The large dishes are placed in the rigid central receptacle, while the knives and forks and smaller articles are placed upon the sloping removable shelves, or either, and hot water poured over them, which drains through minute perforations into the pan beneath.

160,176.



1. The combination of the pan A, provided with ears *a*, and the drainer B, having concave bottom with perforations *c x*, substantially as and for the purposes herein set forth.

2. The combination of the pan A, with ears *a*, the drainer B, with perforated concave bottom, and the inclined plates C C, provided with perforations *y y*, substantially as and for the purposes herein set forth.

160,177. PRINTING-SURFACES. Julius Friedlaender, Berlin, Prussia, and F. H. Moeller, Leipsic, Saxony. [Filed Feb. 9, 1874.]

Brief.—Prepares plates or rollers by electro-deposit, from which to print in the manner of lithography.

A printing plate or roller having the within-described unpolished electro or chemically deposited metallic surface, on which the picture is drawn, or to which it is transferred, as set forth.

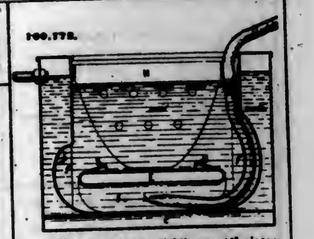
160,178.



160,178. APPARATUS FOR PICKLING METAL PLATES. William Gething, David Jenkins, and Sankey Gardner, Neath, South Wales. [Filed Sept. 22, 1874.]

Brief.—Water circulates through the outer vessel around the acid-bath, the temperature of which is thus regulated. The bath is separated into several compartments by partitions, and contains a shelf to support the plates. Steam is introduced beneath this shelf, and, aided by the peculiar form of the vessel, creates a circulation of acid among the plates on the shelf above.

160,179.



1. The acid-bath for pickling metal plates, consisting of an inner vessel with supports for the plates, an outer vessel containing water for regulating the temperature of the bath, and pipes for introducing steam into the acid, substantially as set forth.

2. The shelf E and frames H, between which the plates to be pickled are placed, in combination with the steam-pipes F, with their open ends beneath the shelf E, and arranged as specified, to produce a circulation of the acid in the bath, as set forth.

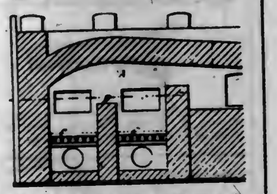
160,179. PIPE-WRENCHES. Daniel Gilbert, Waynesborough, Pa. [Filed Jan. 8, 1875.]

Brief.—The point of the lever bears in notches arranged on the outer edge of the links and opposite the teeth. The free end of the chain is passed through the first link.



In combination with the lever A, bent at the point, the chain formed of a series of links, B C D E, &c., constructed to receive the point of the lever on their outer edges to compress the chain against the pipe, the link B being open so as to permit the free end of the chain to pass through it, substantially as set forth.

160,180. FIRE-CHAMBERS FOR PUDDLING AND OTHER FURNACES. Henry H. Gilmore, Cambridgeport, Mass. [Filed Apr. 26, 1874.]

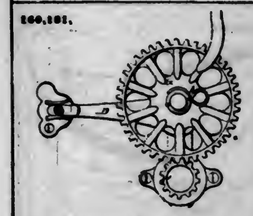


The firing-chamber A of a reverberatory furnace, divided by walls D into a series of connected sections, provided with stoke-holes C, as specified, to enable the sections to be fired successively, and the unconsumed products of combustion, that are always wasted for some time after a furnace-fire is started, to be thus burned and utilized.

160,181. GEARING. Horace L. Gordon, West Garland, Me. [Filed Dec. 7, 1874.]

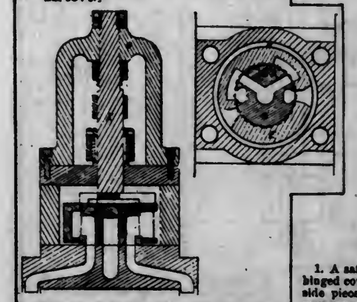
Brief.—A pinion on a churn-spindle is geared into by either of two wheels on the same center, having different diameters, and revolving as one piece on a pin standing on the short arm of a bell-crank lever. The change is made by unshipping and reversing the piece, and, giving a half-revolution to the lever.

160,181.



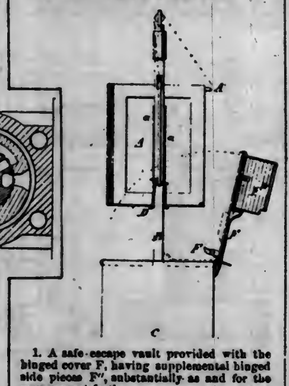
The combination, with a pinion, C, of the pivoted elbow-lever D D' with stud E, and the double cog-wheel G G' placed on said stud, substantially as and for the purposes herein set forth.

160,182. STEAM-VALVES. John J. Grant, Greenfield, Mass., assignor to himself and Solon L. Wiley, same place. [Filed July 22, 1874.]



The conical frustum arranged within the valve-jacket, and provided with two ports, opening into the cylinder, and two openings connecting with the exhaust-channel, in combination with the cylindrical slide, having two ports, through which steam is admitted, and cavities arranged to embrace the exhaust-passages and passages leading to the cylinder, as and for the purposes described.

160,183. SAFE-ESCAPE VAULTS. D. K. Hatfield, Pottstown, Pa. [Filed Oct. 16, 1874.]



1. A safe-escape vault provided with the hinged cover F, having supplemental hinged side pieces F'', substantially as and for the purposes set forth.

2. The combination of safe A, having boss A', with hinged cover F, having projection F', substantially as and for the purposes set forth.

3. The combination of vault C, having a hinged cover, F F' F'', and standards B, with the safe A A', provided with lateral flanges *a a*, the whole constructed substantially as described, and adapted to operate in manner set forth.

160,184. FIRE-ESCAPES FOR SAFES. F. Hackett and John C. Crounse, Hale's Corners, Wis. [Filed Dec. 12, 1874.]

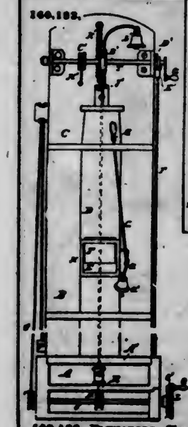
160,185. BED-BOTTOMS. Henry S. Hale, Philadelphia, Pa. [Filed Dec. 21, 1874.]

A bed-bottom consisting of a frame, A, metal springs B, and a covering composed of slats cemented to a suitable fabric, all being combined substantially as and for the purpose herein set forth.

160,186. CORPSE-PRESERVING CASKETS. Bartholomew Hartwell, Baltimore, Md. [Filed Aug. 22, 1874.]

Brief.—The ice-boxes are removable, and are set in a gutter formed by the upper edge of the lower section of the casket and an upward-turned flange of the raised table upon which the corpse is laid.

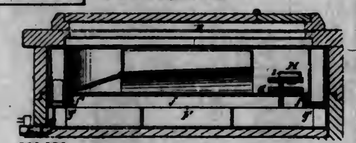
160,182.



160,185.



160,186.



160,182. ELEVATORS. Chas. H. Gullen, Chicago, Ill. [Filed Feb. 3, 1875.]

Brief.—A crank-shaft at top and bottom of a spout, with counterbalance rope-pulleys on each, for transmission either way, or to an intermediate floor, of parcels, bells announcing the operation.

1. The combination of stand F and cooling-board G, having, respectively, the flanges *f f'*, as and for the purpose described.

2. The clamps I I, swiveled and movable toward each other in a slot of head-rest, as and for the purpose specified.

3. The described combination with edges of lower section of casket-case, of the stand F, and raised cooling-board G, forming a gutter or groove to hold the sections of ice-chamber until the top section is put in place.

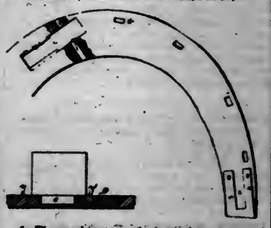
160,187. TOY AUTOMATONS. D. K. Hatfield, Pottstown, Pa. [Filed Oct. 16, 1874.]

Brief.—A toy figure seems to strike a bell. The operative lever is rendered automatic by attachment to the works of a clock.



As an improvement in toy automatons, the head and shoulders A secured upon the block B and pivoted within the post C, the rod D provided with the arms D' and D'', and the hammer E', in combination with the operating-cord G, the stop H, the wire loop I, and the spring K, substantially as and for the purpose specified.

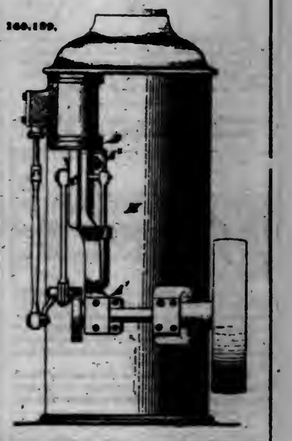
160,188. HORSESHOES. Samuel B. Henry, Farmwell, Va. [Filed Jan. 21, 1875.]



1. The combination of a horseshoe, A, having a recess, *c*, and transverse opening *i*, a calk, B, provided with a dovetailed projection adapted to said recess, and extending over the bearing on the face of the shoe, a block, D, fitting the recess *c*, overlapped by the calk, and retained by a transverse pin, *i*, all as set forth.

2. A shoe, A, having recesses *c c*, adapted to receive dovetailed projections of detachable calks, in combination with blocks of rubber fitted to and secured in said recesses, all as set forth.

160,189.

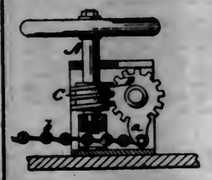


160,189. FRAMES FOR PORTABLE STEAM-ENGINES. J. W. Hill, Dayton, Ohio, assignor of one-half to Christian Horstkroede, same place. [Filed July 2, 1874.]

The combination of the upright cylindrical boiler H and the bercis described composed casting of the engine, having flanges A' A', standing in position oblique transversely to the plane of the guides C C', substantially as and for the purpose specified.

160,190. CAR-BRAKES. Martin M. Hiew and J. M. Fussler, Harrisburg, assignors of one-third their right to F. B. Calder, State College, Pa. [Filed Feb. 10, 1875.]

Brief.—The spindle on which the brake-chain is wound is revolved by a toothed disk engaging with a worm-gear. The chain is secured to the end of an arm formed upon the disk, and its slack is thus taken up by a partial revolution only of the spindle.



The segmental wheel D, provided with a downward-projecting arm, *a*, and the chain *b*, connected to said arm, in combination with the worm-wheel C on the brake-shaft A, all constructed to operate substantially as and for the purposes set forth.

160,191. FERTILIZING COMPOUNDS. Chas. H. Hoffmann, San Francisco, Cal. [Filed Sept. 22, 1874.]

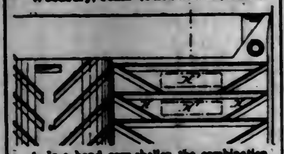
As improved fertilizer, composed of the common liquid manure, salt, saltpeter, lime, stone-oil, and sulphur-balsam, in the proportions substantially as herein set forth.

160,192. REVOLVING FIRE-ARMS. Freeman W. Hood, Norwich, Conn., assignor to the Hood Fire-Arms Company, same place. [Filed Dec. 9, 1874.]



In combination with the rotary magazine and its pivot-pin *a* of a revolver, a mechanism or latch, E, substantially as described, to hold the pin in place and operate as a friction-brake to the magazine, all as specified.

160,193. CORN-SHELLERS. T. J. Hoover, Woodbury, Tenn. [Filed Jan. 23, 1875.]



1. In a hand corn-sheller, the combination of the board or plate A and the oblique shelling-ribs D, having their adjacent ends terminating at a sufficient distance from each other to form an escape space or channel for the corn lodged in rear of the ribs, substantially as and for the purposes described.

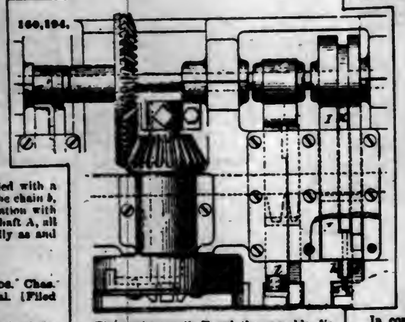
2. In a hand corn-sheller, the combination of the plate or board A, the oblique ribs H, and the straight ribs G, substantially as and for the purposes described.

3. The hand corn-sheller herein described, comprising the frame A, the board or plate B, having lateral flanges I, the double series of oblique ribs D, the straight ribs G, and the oblique ribs H, all constructed and relatively arranged substantially as herein described.

160,194. NUT-MACHINES. Wm. Horsfall, Armley, Leeds, England. [Filed Oct. 2, 1874.]

Brief.—The device claimed is one of several associated together, and is designed to compress the two edges of the bar, to partly form and sever a blank therefrom, which is at the same time subjected to the action of a presser, through which works the punch. The punched and partly-severed blank is removed on a mandrel by the attendant, and placed over a slide, which rises and holds the mandrel while a crowner operates. The nut is next subjected to the action of four radial hammers, and finally to a flattener, which partly removes the mandrel.

160,194.



The stationary die F and the movable die E, each constructed with the separate formers or dies *a b* and *c d*, in combination with the reciprocating slide K, having the punch *i*, and the slide I having the tool A, substantially as and for the object specified.

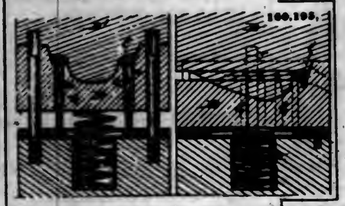
160,195. DIES FOR MAKING HORSESHOES. Wm. Horsfall, Armley, Leeds, England. [Filed Oct. 2, 1874.]

Brief.—The primary die B is a fac-simile of the section D', and the primary die B of the section D, except that it is not pierced to admit of the passage of the nail-punches.

1. The one primary die A, provided with a recess, *k*, for the toe-calk *l*, and, together with its fellow die B, constructed to form one or more lips, *i*, for clips, essentially as herein described.

2. The combination of the primary dies A B, constructed to unite the toe-calk with the shoe, and to form lips for clips on the latter, and the nail-hole-punching die-sections D D' D' and punches G, constructed to operate substantially as described.

160,195.



160,196. SADDLE-TREES. P. B. Horton, San Francisco, Cal. [Filed Oct. 31, 1874.]

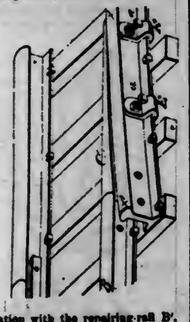
A saddle-tree, formed of saw-dust and glue or other agglutinating agent compressed to the desired shape in a mold, as a new article of manufacture.

160,196.



160,197. REPAIRING RAILROAD-TRACKS. J. Houston, Woodbura, Iowa. [Filed Dec. 14, 1874.]

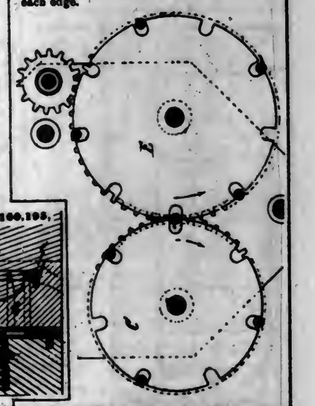
Brief.—A repairing-rail applied by means of clamp-plates extending beneath the rails, and combined in place by screw-bolts.



In combination with the repairing-rail B', the tapering rail C, having rib D secured to the repairing-rail by the clamps E and bolts *a a'*, substantially as set forth.

160,198. BRAIDING-MACHINES. Friedrich Wilhelm Huppelsberg, Brooklyn, E. D., N. Y. [Filed Dec. 5, 1874.]

Brief.—To enable a flat braid to be produced of two different colors, and of the same thickness and same amount of material on each edge.



In a braiding-machine, the combination, with an even number of jacks or bobbins, of two disks, F C, of unequal diameter, each disk being provided with an uneven number of notches, the number of notches in the large disk being two more than that in the small disk, said disks being made to revolve at the same circumferential velocity with or without intermediate disks, substantially as and for the purpose shown and described.

160,199. BOX-MACHINES AND BOXES. John W. Hyatt and C. M. Hyatt, Newark, N. J. [Filed Dec. 9, 1874.]

Brief.—The vertically-reciprocating cutters cut the stuff to the required bevel, and stationary cutters form the groove for the box which unites the different parts.



1. The punches K, in combination with the mitering-knives C C, carriage H, stationary cutters D D, and platform E, substantially as set forth.

2. The curved toes *s*, in combination with the mitering-knives C C, carriage B, stationary cutters D D, and platform E, substantially as set forth.

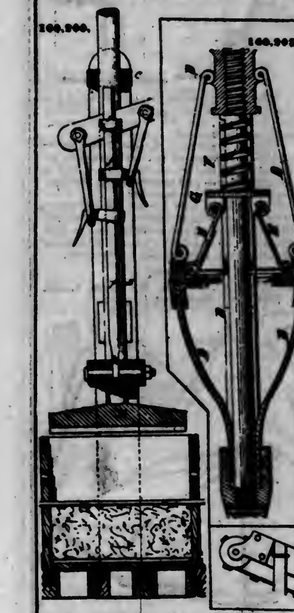
3. The clamp F, in combination with the mitering-knives C C, carriage B, stationary cutters D D, and platform E, substantially as described.

4. The slide G and wedges *f*, in combination with the clamp F, mitering-knives C C, carriage B, stationary cutters D D, and platform E, substantially as set forth.

160,200. PRESSES. Thos. J. Jenne, Gouverneur, N. Y. [Filed Feb. 8, 1875.]

Brief.—The pivoted lever-arm is attached to the stem of the follower, and connected with the standard on which the griping-pawls operate, in such manner that when the lever arm is depressed it will, through the medium of the alternating friction-pawls connected with the lever on opposite sides of its pivot, carry the stem of the follower downwardly.

160,200.



160,200.

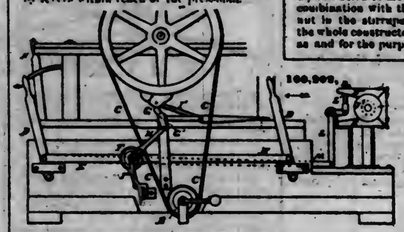
The combination, with the platen or follower D and stem E of a cotton or other press, of a pivoted lever, G, connected with said stem, and griping-pawls arranged upon a standard, F, parallel with the stem of the platen, and connected with the lever on opposite sides of its pivot, the whole being constructed and arranged to operate substantially as and for the purpose described.

160,201. COMPOUNDS FOR GAS-FUEL. C. Jouty, Paris, France. [Filed Aug. 28, 1874.]

The combination of peat which has been carbureted by immersion in prepared naphthaline with coal, lime, and tar, in the proportions described, the tar serving to bind the other powdered ingredients, as specified.

160,202. BRAKE MACHINERY. C. Kahler, Chicago, Ill., assignor of one-half his right to M. C. Barnes and Wm. L. Ogden, same place. [Filed Oct. 31, 1874.]

Brief.—The action of the cylinder of the printing-cylinder and the tension of the reel on which the paper is wound are controlled by levers within reach of the pressman.



1. The combination, substantially as described, of a brake with the cylinder and an adjustable belt-wheel, for the purposes set forth.

2. The combination of one or more pivoted levers, D D, pivoted bar E, adjustable wheel F, and yielding shoe I, resting on a rocker connected to said wheel for actuation, substantially as and for the purposes specified.

3. The lever N arranged at the foot of a printing-press, in combination with a tension mechanism of the paper-reel, for the purpose of enabling the attendant at the foot of the press to control the said tension through the instrumentality of the said lever, and thereby regulate the width of the margin on the printed sheets, substantially as specified.

4. The combination of the paper-reel, the hinged friction-blocks, the bell-crank, the connecting-rods L' and M, and the lever N, arranged at that end of the press opposite the tension, substantially as and for the purposes specified.

160,202.

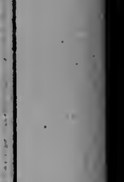


160,203. BRAKE-BEAMS. Robt. I. Knapp, Half Moon Bay, Cal. [Filed Aug. 18, 1874.]

Brief.—A brake-bar held in a stirrup in the draw bar, and adjusted by means of a screw to take up wear of the brake-shoes.

The brake-bar A, provided with the plate D, and fitted to move within the stirrup C, in combination with the screw E, to turn in the nut in the stirrups, and having the head *a*, the whole constructed to operate substantially as and for the purpose described.

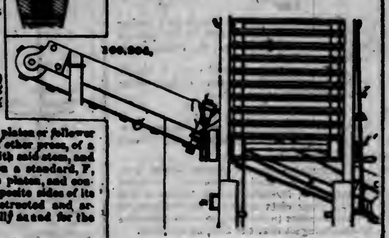
160,203.



160,204. STACKERS' ATTACHMENTS FOR THRASHING-MACHINES. Levi Kissinger and J. K. Kurtz, Massillon, Ohio. [Filed Jan. 19, 1875.]

Brief.—Adjustably-inclined stacker with deeply-adjustable band-tightening pulleys, over which passes the driving-belt from thresher.

160,204.



160,205. AIR-CHAMBERS FOR STEAM-PUMPS, &c. Lucius J. Knowles, Worcester, Mass. [Filed Jan. 26, 1875.]

Brief.—The cast-iron shell is of such form that the sheet-metal covering is easily removable; yet every part of it fits snugly upon the iron backing, and is able to resist inflatation.

A combined cast-iron and sheet-metal air-chamber for steam-pumps and other similar machines, composed of the cast-iron part A and sheet-metal part E, constructed and combined together substantially as and for the purposes set forth.

160,205.



160,206.



160,207. FORCE-PUMPS. Lucius J. Knowles, Worcester, Mass. [Filed Jan. 26, 1875.]

Brief.—Inlet and outlet valves—two or more of each for each cylinder, to relieve the impact of the plunger and liquid—are arranged on diametral levers, to carry any air or gases lodged in the column of liquid through the pump. Rail-valves operate in circular cages, secured in place by screw-plugs, which are covered by screw-caps, packed or nicely fitted to their seats, to prevent leakage of the liquid.

1. The combination with the central parts A A', cast in one piece and relatively arranged, one part partially above the other, as shown and described, and having cylinders C C projecting from the ends thereof, of two series of valves, a b, relatively arranged in respect to each other substantially as and for the purposes set forth.

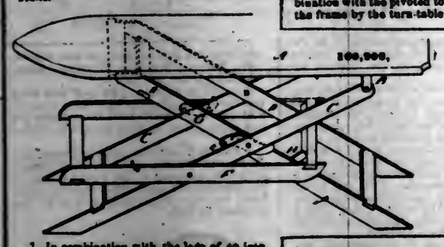
2. The combination, with valve frame or frames I, of the screw holding plug or plugs k, substantially as and for the purposes set forth.

3. The combination, with valve-frame I and the body of the pump that supports it, of screw-plug k and clamping and packing cap m, substantially as and for the purposes set forth.

4. A force-pump consisting of the central parts A A', projecting cylinders C C, separate pistons D, working in separate chambers d, cross-heads E, connecting-bars F, with two series of valves, a and b, and their respective liquid passage-ways, arranged as described, for the admission and outlet of the liquid to and from the pump, substantially as and for the purposes set forth.

160,908. IRONING-TABLES. Ezra B. Lake, Tom's River, assignor to S. T. Champion, Pleasantville, N. J. (Filed Jan. 11, 1875.)

Brief.—A folding skirt-frame in connection with the folding-legs of an ironing-board, which are held by locking-plates and pivotal steels.



160,908.

1. In combination with the legs of an ironing-table, a folding skirt-supporter, F, arranged above the lower ends of the intersecting pivoted legs, and secured or pivoted at its middle part only to the frame of the table, substantially as shown and described.

2. In combination with an ironing-table having intersecting pivoted legs, the locking-plate L or its equivalent, having locking pins at opposite ends on different sides, and pivotal stud projecting from both sides, said plate being cast or formed in one piece with its studs, and arranged between the legs or bars which it connects, substantially as described and shown.

3. The combination, with the board A, of the legs C O D D, frame F, and locks E, G, and H, substantially as shown and described.

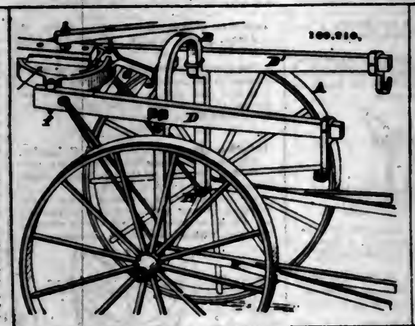
160,909. REVIVING STEEL. J. N. Leath, Pittsburg, Pa. (Filed Dec. 24, 1874.)

Brief.—Files or fagots the steel and covers with iron in the usual way; then raises the temperature to about a red heat, not to a welding heat, and compresses the iron and steel together, after which the mass is raised to a full welding heat and rolled into the desired shape.

In the reworking of steel when piled or fagoted exteriorly with iron, the step set forth, which step consists in arresting the heat at a point a little short of that at which the steel employed would be destroyed or materially injured by the action of air or other gases thereon, and then subjecting the pile or fagot to compression before bringing it to the usual working-heat, substantially as described.

160,910. CULTIVATORS. L. L. Lawrence and O. S. Thomas, Dublin, Ind., assignors to Wayne Agricultural Company, same place. (Filed Jan. 2, 1875.)

Brief.—The revolving plate of a turn-table rigidly secured to the tongue. A drop-catch actuated by a lever, when raised, permits the tongue to swing horizontally. When the tongue remains in longitudinal position, the catch drops into place, and the tongue is rigid with the frame.

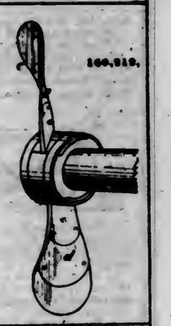


160,910.

1. The described combination of bed-plate E, turn-table G, tongue H, bolt K, lever M, and catch O, for the purpose herein designated.

2. The tongue H, rigidly secured to the circular turn-table G, in combination with the drop catch O and lever M.

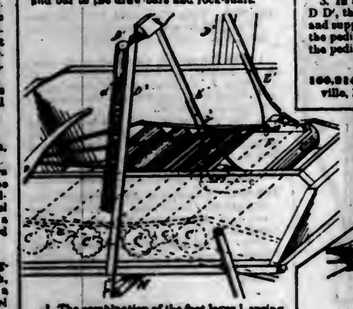
3. In a wheel-cultivator, the arched axle B, with the offsets b and the frame D D', in combination with the pivoted tongue H, secured to the frame by the turn-table E G.



160,911.

160,911. WASHING-MACHINES. Frances M. Lechner, Waynesburg, Ohio. (Filed Nov. 26, 1874.)

Brief.—The rubber is adjustable on the arms by slots and screw-bolts, and pressure is applied by a foot-lever with an elliptic spring and bar to the draw-bars and rock-shaft.

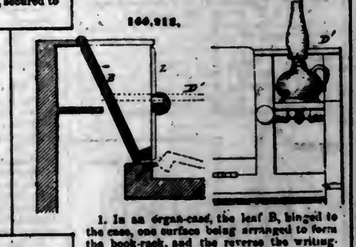


1. The combination of the foot-lever I, spring I', link i, cross-bar H, draw-rods D', and springs d' with the posts D and rock-shaft E, substantially as set forth.

2. The adjustable arms or bars a', in combination with the pendulum-arms E' and rubber F, substantially as set forth.

160,912. BLADES FOR SCREW-PROPELLERS. James Hart Loftus, Oakland, Cal. (Filed Nov. 21, 1874.)

A removable screw-propeller blade, constructed of a series of gradually-reduced plates, a b c, fastened rigidly together, and having their ends turned at right angles to fit the recesses in the hub, so as to make the blade strongest near the hub, as set forth.



160,912.

1. In an organ-case, the leaf B, hinged to the case, one surface being arranged to form the book-rack, and the reverse the writing-desk top, substantially as described.

2. In an organ-case, the leaf B hinged to the case, and arranged to form in one position the book-rack and inclose the space F, and in the other to open said space and form the desk-top, substantially as described.

3. In an organ-case having the pediments D D', the fronts L, pivoted so as to be turned and supported in a horizontal position to open the pediments and form a bracket, or to close the pediments, substantially as described.

160,913. ORGAN-CASES. John R. Lomas, New Haven, Conn., assignor to B. Shoninger, same place. (Filed Jan. 18, 1875.)

Brief.—The music-rack, when turned down, serves for a writing-table, and the lamp-shelves are centrally pivoted, ornamented upon the under side, and turned up out of the way when not in use.

160,913.

1. In an organ-case, the leaf B, hinged to the case, one surface being arranged to form the book-rack, and the reverse the writing-desk top, substantially as described.

2. In an organ-case, the leaf B hinged to the case, and arranged to form in one position the book-rack and inclose the space F, and in the other to open said space and form the desk-top, substantially as described.

3. In an organ-case having the pediments D D', the fronts L, pivoted so as to be turned and supported in a horizontal position to open the pediments and form a bracket, or to close the pediments, substantially as described.

160,914. UMBRELLAS. H. Martin, Louisville, Ky. (Filed Sept. 11, 1874.)



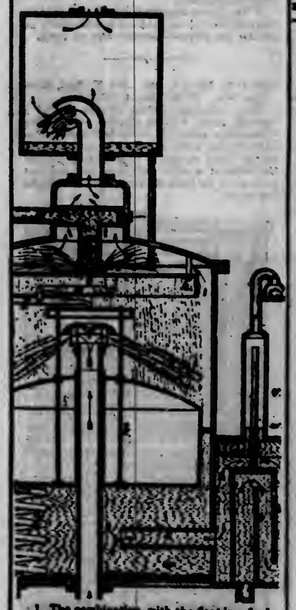
1. In an umbrella of the usual or ordinary construction, the tips B, pivoted to the outer extremities of the ribs, as described, and each tip capable of being turned up or down independently of the other, and the whole constructed so that the tips may be turned up to form a gutter or channel, or turned down to form an umbrella of the usual appearance, substantially as described.

2. The combination, with the ribs provided with the pivoted tips having the inwardly projecting arms a, of the strip C of flexible material, connected with the tips and the covering of the umbrella, substantially as described.

3. The pivoted tips B, constructed with sockets c, into which the ends of the ribs fit when the tips are in their normal position, substantially as and for the purpose described.

160,915. FEED-WATER HEATERS. Hiram S. Maxim, Brooklyn, N. Y. (Filed Nov. 13, 1874.)

Brief.—Air is admitted to and water of condensation escapes from the float through the coiled pipe communicating with it and the atmosphere. To prevent the escape of vapor, a pipe is extended upwardly within a tube, at the end of which is a return bend provided with a valve.



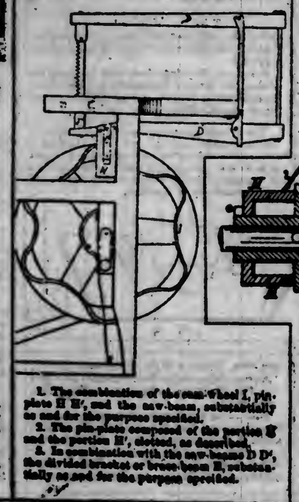
1. The combination, with the float in a feed-water heater, of a bolster spring, opening at one end within the float, and at the other end outside the heater, substantially as set forth.

2. The combination, in a feed-water heater, of a compound lever, f and f', having the fulcrums upon the sprinkler-plate h', and acting between the float and the valve that admits water, substantially as set forth.

3. The combination, with the oil-trap and air tube o', of the tube r', neck, and valve p, substantially as set forth.

160,916. APPARATUS FOR MANUFACTURING ILLUMINATING-GAS FROM LIQUID HYDROCARBON. Hiram S. Maxim, Brooklyn, N. Y., assignor to Maxim Gas-Machine Company of New York. (Filed Dec. 5, 1874.)

Brief.—A piston working in a cylinder, and connected with operating-valves, prevents the jarring, jerking motion. A water-pipe returns the condensed steam from the vaporizer to the boiler. The gasoline or other volatile hydrocarbon is vaporized by steam heat.



1. The combination of the cam-wheel I, plate H H', and the cam-beam, substantially as and for the purpose specified.

2. The pin-plate composed of the portion E and the portion H', arranged, as described.

3. In combination with the cam-beam D D', the divided bracket or beam-beam E, substantially as and for the purpose specified.

160,917. SCROLL-SAWING MACHINES. Robt. McConnell, Pittsburg, Pa. (Filed Aug. 3, 1874.)

Brief.—The saw is reciprocated by means of a cam through suitable connections, the machine being provided with devices for adjusting the various parts to meet the requirements of the work to be performed.

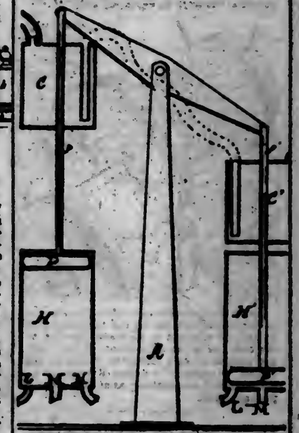
1. The combination of the cam-wheel I, plate H H', and the saw-beam, substantially as and for the purpose specified.

2. The pin-plate composed of the portion E and the portion H', arranged, as described.

3. In combination with the cam-beam D D', the divided bracket or beam-beam E, substantially as and for the purpose specified.

160,918. STEAM-ENGINES. J. W. Middleton, Philadelphia, Pa. (Filed Nov. 2, 1874.)

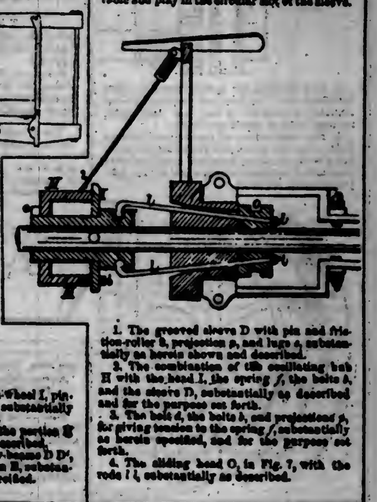
Brief.—The cylinder-pistons are operated by the introduction and condensation of steam. The vessels on the piston-rods are alternately filled with a liquid, one from the other, to assist the rise and fall of the pistons.



The combination of cylinders H H', provided with suitable pipes L M N, pistons F F', piston-rods p p', vessels C C', and beam A, with a mechanism for forcing the water from one vessel, C C', to the other, the parts being arranged for operation as shown and described.

160,919. WIND-WHEELS. Newell P. Mix, Avoca, and Wm. H. Jacobs, Columbus, Ohio; said Jacobs assignor to said Mix. (Filed Nov. 9, 1874.)

Brief.—The oscillating hub is placed in front of the wheel. The sleeve is moved to and from the spider by means of rods which extend through the bosses of the spider and the sliding piece, to which they are secured by nuts which are moved by a lever. The turning in and out of the wind of the fans is effected by the lever. The arms are secured to the turn-table and play in the circular slot of the sleeve.



1. The grooved sleeve D with pin and friction-roller b, projection p, and lugs c, substantially as herein shown and described.

2. The combination of the oscillating hub H with the head I, the spring f, the bolts A, and the sleeve D, substantially as described and for the purpose set forth.

3. The bolt d, the bolts b, and projections p, for giving tension to the spring f, substantially as herein specified, and for the purpose set forth.

4. The sliding head O, in Fig. 7, with the rods l l, substantially as described.

160,920. GARDEN-SPRINKLERS. P. Muller, Cleveland, Ohio. [Filed Jan. 14, 1875.]

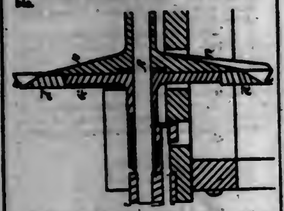
Brief.—A portable hose-rest having the discharge-pipe or nozzle of its hose attached to a suitable bearing at one end, and at the axial center of said rest, and capable of such change in its line as will enable the course of the stream of water to be varied at will.



As an improvement in garden-sprinklers, a portable hose-rest, having the discharge-pipe of its hose attached to a suitable bearing at one end, and at the axial center of said rest, and capable of such change in its line as will enable the course of a stream of water to be varied at will, substantially as and for the purposes specified.

160,921. MEAT AND VEGETABLE SLICERS. John W. Markland, Lowell, Mass. [Filed Dec. 28, 1874.]

Brief.—A disk revolving in a slot in a table-top, its shaft journaled above the table; said disk slotted for the reception of cutters like plane-irons, which are made to advance or recede by an adjusting-screw at one end of the shaft, the blades or cutters acting shear-like with the edge of a bearing-box lateral to the disk and near its periphery, and also adjustable.



1. In a machine for cutting meat or other articles, a revolving disk and a series of knives mutually adjustable to and from each other, substantially as herein set forth.

2. The combination of the adjustable arms D D, with blades *d d*, and the slotted adjustable disk G, all placed upon and revolving with the shaft H, substantially as and for the purposes herein set forth.

160,922.



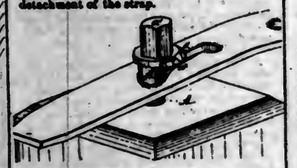
160,923. HEATING-STOVES. Chas. Noble, Philadelphia, Pa., assignor to Chas. Noble, M. D., Chas. Noble, and Francis F. Nicholson, same place. [Filed Oct. 7, 1874.]

Brief.—The grate is vibrated horizontally by means of the pin projecting through the hollow in the ring. The curved flange on the grate prevents escape of ashes through the hollow.

The combination of the ring A, its hollow projection D, and the grate H, having a pin, *m*, extending into the said projection, and provided with a segmental curved flange, *e*, adapted to the curved edge of the projection D, all as and for the purpose specified.

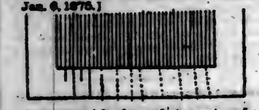
160,924. DEVICES FOR HITCHING HORSES. Ernest Ohm, Terre Haute, Ind. (Filed Oct. 14, 1874.)

Brief.—Upon the nail, which is either screwed or driven into the post, the punctured hitching-strap is passed, and then secured by a detachable cap-nut which is screwed upon the upper or outer end of the nail. Said cap-nut has a notched flange, to prevent the casual detachment of the strap.



A hitching-nail for animals, consisting of the body A and detachable cap *a'*, having a notched flange, *a*, as and for the purpose specified.

160,925. ORNAMENTAL TRANSFER-SHEETS. Otto J. E. Palm, Cincinnati, Ohio. [Filed Jan. 6, 1875.]



As a new article of manufacture, a transfer-paper sheet for use in decalcomania, when provided with a ground-color, or a covering of gold, silver, or metal leaf, and having parallel lines printed or otherwise produced upon the face thereof, substantially as and for the purpose described.

160,926. MEAT-CHOPPERS. Joshua Perkins, Danielsonville, Conn. [Filed July 16, 1874.]

Brief.—A chopping-block with the hoop inclosing the meat or vegetables to slide under the rotating knife, and so removable for cleaning or emptying deposits.

The detachable chopping-block B, carrying the bottomless vessel C, and provided with a slot, *s*, in combination with the base A, cleats *n n* on the uprights b b, catch *n*, and cutters D, capable of being raised above the vessel C, substantially as specified.

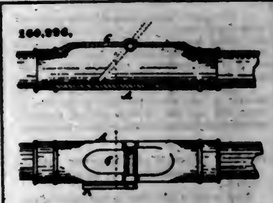
160,927.



160,928. BRIDLE-HOOK. Truman L. Pierce, Akron, Ohio, assignee of one-half his right to Jas. M. Segur, same place. [Filed Jan. 20, 1875.]

Brief.—An air-passage is arranged outside the inlet-valve, and is provided with a valve opening toward the pump, so that when the plunger is drawn out a small quantity of air will be drawn in. The air passes directly to the air-chamber to supply any deficiency therein.

160,929.



1. In sections of engine-hose, a gate or valve placed between the ends thereof, by which the water in the hose, while under pressure, may be allowed to escape from the hose on either side of the gate, substantially as and for the purpose described.

2. The herein-described bar A and gate G, when applied to engine-hose, substantially as and for the purposes hereinbefore set forth.

160,930. MILK-SAFES. Jos. F. Fool, Monroe, Wis. [Filed Mar. 4, 1874.]

Brief.—Circular shelves revolve around a vertical shaft, with a circular case having woven-wire sides, the lower half having also exterior close walls, at the upper end of which, on the inner surface, a ring packing presses the edge of a solid shelf, and prevents the passage of air from the lower cool division to the upper.



1. The solid shelf C, constructed to conform snugly to the internal shape of the safe, in combination with door A', provided with rib *a'*, substantially as and for the purpose set forth.

2. The central shaft E, solid stationary shelf G, revolving shelves G' G', ribs *a a'*, and doors A' and H, all arranged to form a combined milk-safe and refrigerator, substantially as herein described.

160,931. GAS-LIGHTING APPARATUS. Robt. M. Potter and William W. Thomas, Jersey City, N. J. [Filed Feb. 2, 1875.]

Brief.—The liquid-reservoir is divided by an annular cylinder into two chambers, by forcing air into the center of which the liquid is made to rise in the inner chamber to the mouth of an inverted cup set upon the gas-supply tube, and thereby cut off the supply.

1. The combination, with the burner A and gas-pipe B, of the cup or inverted cup J, cylinder K, and air-pipe H, substantially as and for the purposes shown and described.

2. The plunger-brush D, in combination with the burner A and pipe C, substantially as shown and described, for the purposes specified.

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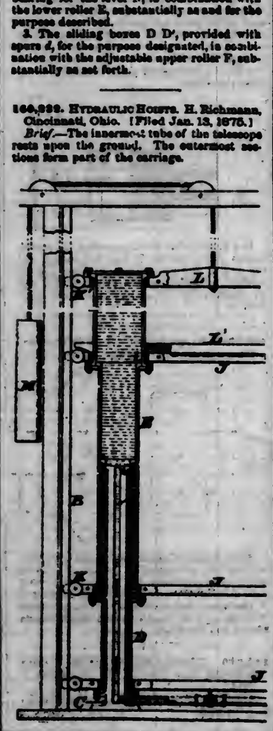


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160,932. VEHICLE-SPRINGS. J. M. Pressey, Salineville, Ohio. [Filed Feb. 3, 1875.]

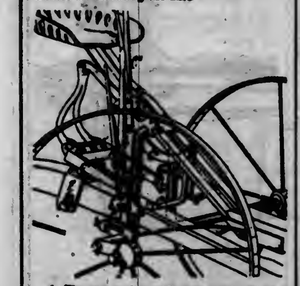
1. The combination of the spring *c* and pivoted lever *f*, having the knife-edge bearing *r* at the junction of said lever with the spring, substantially as set forth.

2. The combination, in a spring having its bearing-point *b* upon the pivoted end of a lever, *f*, of a knife-edged and oblong bearing-joint, substantially as set forth.

3. The combination of the spring *c* and the lever *f*, provided with the oblong eye *a*, with the clip *e*, and the knife-edge bearing-bolt *g*, substantially as and for the purpose set forth.

160,933. PLOW-CARRIAGES. D. W. Ralston, Rockford, Ill. [Filed Oct. 23, 1874.]

Brief.—The crank carrying the plow provided with lifting devices, operated both by hand and foot. An adjustable clamp composed of two parts, each bent at right angles. Device for elevating the axle.



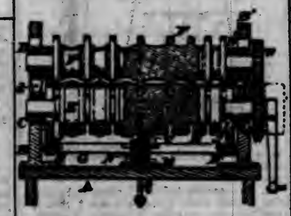
1. The arm or lever C', connected with the reversed plow-beam, as described, and provided with the hand-lever C' and treadle C', whereby the driver is enabled to raise the plow by the aid either of his hand or his foot, or both, as described.

2. The clamp which connects the plow-beam with the vertical swivel and bolt, composed of the slotted angular plate P and the angular bolt P', substantially as and for the purpose set forth.

2. The furrow-wheel stub-axle crank K, mounted upon the crank-axle A', and having the eccentrically-slotted plate *k* rigidly connected to it, in combination with the lever *l*, provided with a pin for retaining the axle K, arranged and operating as described.

160,934. MACHINES FOR CREASING AND FINISHING LEATHER STRAPS. C. B. Randall, Cincinnati, Ohio. [Filed Jan. 26, 1875.]

Brief.—The upper or creasing roll is supported in sliding boxes, and may be adjusted to suit varying thicknesses of stock by means of a lever and treadle. The fulcrum-bearing for the lever serves as a rest or bearing for the central portion of the lower roll.



1. In combination with the supporting-roller E is stationary bearings, and the facing-roller F in sliding bearings, the yokes J J', double-armed pressure-lever O H H', relieving-lever N, double treadle movements Q R S O T, and ratchet T, substantially as described.

2. The pedestal M, serving as a fulcrum-bearing for the lever N, in combination with the lower roller E, substantially as and for the purpose described.

3. The sliding boxes D D', provided with spurs *d*, for the purpose designated, in combination with the adjustable upper roller F, substantially as set forth.

160,935. HYDRAULIC HOISTS. H. Richmann, Cincinnati, Ohio. [Filed Jan. 13, 1875.]

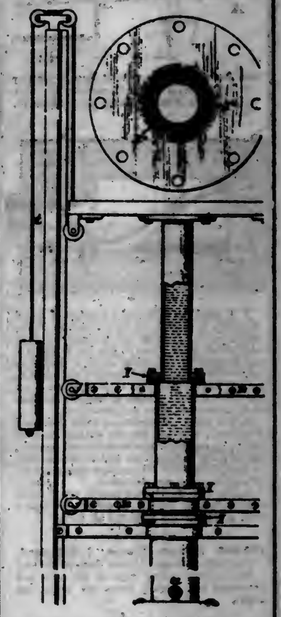
Brief.—The innermost tube of the telescope rests upon the ground. The outermost sections form part of the carriage.

1. The described arrangement, whereby the outermost tubes F in a conjoint series are made in conjunction with the parts J L L', to constitute the cage or platform.

2. The combination of inverted telescopic water-columns C D E F, stays J, beam L, rollers K K', and guiding-standpieces A B, A' B, for the purpose set forth.

160,936. MORTISE-MACHINES. H. Richmann, Cincinnati, Ohio. [Filed Jan. 4, 1875.]

Brief.—A ring in one, two, or more pieces occupies a counterbore in the upper flange of each containing-tube, and operates, in connection with a cap secured upon said flange, as a stop to arrest the movement of the contained tube. It is conserved on its upper interior part, to make room for the packing. This construction facilitates removal of the inner tube from the outer.



1. The gland or annulus F *p*, occupying a counter-bore, O, in the head of each containing-tube, in combination with flange or equivalent projection from the lower extremity of the contained tube and with a confining-cap, I, substantially as set forth.

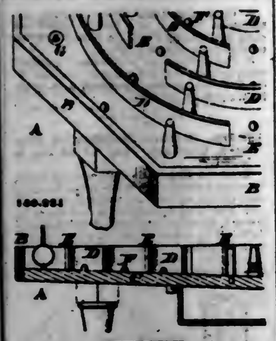
2. The combination of the slidable telescopic tubes, the gland F *p*, occupying the counter-bore O in the containing-tube, the leather or other flexible cup-packing, and cap I, secured and adapted to operate as set forth.

160,938. GAME-BOARDS. Michl. Riedinger, Yorkville, Ind. [Filed July 20, 1874.]

Brief.—A game-board in which a spinning-top moves about. In this case the floor has studs to deflect the course toward the center, where large numbers are made to count in favor of the spinner reaching them.

The game-table A, of octagonal contour, depressed toward the center, and having the peripheral curb or rampart B, and the contour of barriers in area of concentric circles D, having portals E, said floor having stamens or impediments F and numbered spots G at suitable intervals, for the reception of pieces or puppets to be used in connection with a spinning-top, substantially as represented.

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160,926.



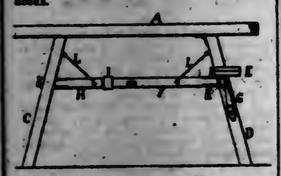
1. A mold consisting of a number of spiral segments or cores, *c*, formed with rims, webs, or flanges *c'*, by which they mutually support each other, such spiral segments or cores a bring carried by a piece of metal, *c*, shaped to receive them, and placed inside a mold-box, *b*, having a removable top, *b'*, and bottom *b''*, all constructed and arranged in manner substantially as herein shown and described.

2. The spiral segments or cores *c*, formed with rims, webs, or flanges *c'*, and without ferrets or segments of screws formed thereon, but of a like section from end to end thereof, in manner and for the purposes substantially as herein shown and described.

3. The cast spiral segments *c*, constructed as described, in combination with the flask *b b' b''*, as and for the purposes set forth.

160,926. INDIANA-TABLES. T. B. Roland, Burlington, Iowa. (Filed Nov. 27, 1874.)

Brief.—The folding legs of the table are connected by a sliding frame and heads and hooks.

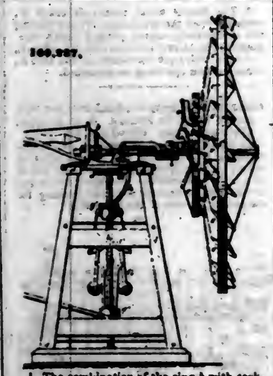


The combination of the board A with the folding frame-work D F H C, hook L, and heads I, substantially as and for the purposes above described.

160,927. WHEELS. George P. Reynds, Boston Harbor, Mich., assignor of one-third his right to E. W. Brown, same place. (Filed Nov. 6, 1874.)

Brief.—A governing and connecting-lever arm so combined with pivoted rungs as to control the speed of the wheel by schematic operation. The top of the lever consists of a ring having cushion to fit the upper end of the thickness, and a width flange that forms the seat of the turn-table.

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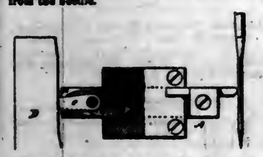


1. The combination of the ring *b* with sockets *c*, the turn-table *B*, the cap-ring *d*, and a supporting-frame or derrick, substantially as described.

2. The combination of the wheel C, having the pivoted vanes *e*, ring *g*, straps *h*, rods *i*, and springs *z*, with the bell-cranks *m o*, rods *n*, sliding collars *l*, crank *j*, rods *k k'*, governor G, and lever *F*, the parts being arranged for operation substantially as shown.

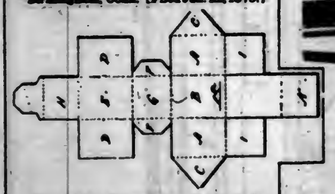
160,928. DEVICES FOR TURNING MACHINE-NEEDLE BLANKS. Edvd. Sautor, Birmingham, Conn. (Filed Dec. 26, 1874.)

Brief.—A foot hung in the tool-holder is so formed as to, upon the forward movement of said holder, bear against the former, and feel the center in its work. Upon the back movement of the tool-holder the foot turns, and its heel portion, which is cut away, bears against the former, and allows the cutter to fall away from the needle.



In a machine for turning needles, the combination of the former D, the tool-holder, and the foot *a*, having its heel cut back, as described, hung therein with the springs E and F, substantially as and for the purpose specified.

160,929. PAPER BOXES. R. De F. Shelton, Birmingham, Conn. (Filed Jan. 22, 1875.)

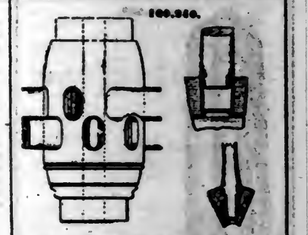


As an article of manufacture, the herein-described box consisting of the side B with its slit *a*, adjoining sides A A with their uniting tops C and flaps I, the end G with its flaps J J', the second end H with its tank K, combined with the lining L N, all in one piece, and as shown and described.

160,930. WHEELS FOR VEHICLES. James A. Smith, New York, N. Y. (Filed Dec. 1, 1874.)

Brief.—To secure firmness and prevent splitting the hub.

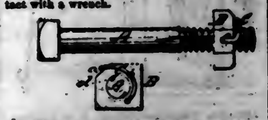
160,930.



The hub containing mortises, each of which is oblong and round-ended, and has a shoulder formed thereon, in combination with the spokes having tenons that are shouldered and made rounding to fit into said mortises, with the end of the spoke oblong in cross section, to rest against the shoulder, as set forth.

160,931. NUT-LOCKS. Benj. B. Snyder, Jr., Baltimore, Md., assignor of one-half his right to E. W. L. Ennis, same place. (Filed July 21, 1874.)

Brief.—A spring locking-pin is arranged on the exterior of the nut, its end entering an aperture through the side of the nut at right angles to the bolt. The corner of the nut is removed where the pin enters, to avoid contact with a wrench.

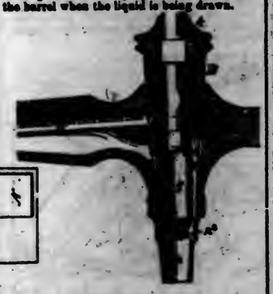


1. The spring locking-pin C, countersunk and arranged to have its locking end *a* extend radially through the nut B, and be held thereby close up to the grooves *d d* of the bolt A, its spring portion *b* being outside of the nut, substantially as and for the purpose herein specified.

2. The nut B, having one corner clipped for the reception of the locking-pin C, substantially as and for the purpose herein specified.

160,932. BEER-FAUCETS. M. J. Sullivan, New York, N. Y. (Filed Mar. 17, 1874.)

Brief.—The duplicate ports permit the faucet to be opened by a quarter-turn. The center chamber receives the liquid to be ejected by a piston to foam the beer in the glass. The small grooves in the plug allow air to enter the barrel when the liquid is being drawn.



The combination, with the conical plug or valve B, of the eccentric chamber *c c'*, with eccentric discharge-aperture *c a'* in the lower end of the same, duplicated cylindrical inlet-ports *c b'* at the upper end of the chamber, duplicated horizontal air-grooves *f* in the periphery above the said ports, and a square socket, *a*, in the uppermost of the plug, as herein shown and described, for the purposes set forth.

160,933. BRUSHES FOR GRAIN-CLEANERS. Gardner E. Throop, Syracuse, N. Y. (Filed Jan. 27, 1875.)

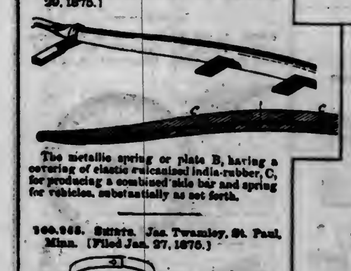
Brief.—Removable guard or rings are placed around the brush stock at either end, for protecting the fibers on their exposed sides, and shielding them from the action of the grain. Wings or scrapers on lower head of brush adapted to carry the cleaned grain to discharge-spout whichever way the brush revolves.



1. The removable guard or rings *c*, for protecting the fibers of the brush at its edges in grain-cleaners, substantially as and for the purposes described.

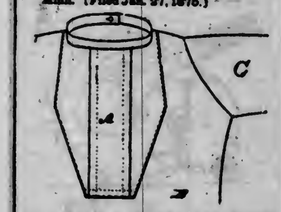
2. The V-shaped scrapers on the lower head of the runner, as and for the purposes specified.

160,934. SPRING SIDE BARS FOR VEHICLES. Jos. Tilton, New York, N. Y. (Filed Jan. 29, 1875.)



The metallic spring or plate B, having a covering of elastic vulcanized india-rubber, C, for producing a combined side bar and spring for vehicles, substantially as set forth.

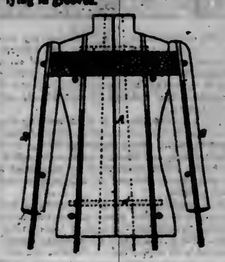
160,935. SHIRTS. Jas. Twamley, St. Paul, Minn. (Filed Jan. 27, 1875.)



A shirt having its flaps or skirt portions divided in front and rear, substantially as described and shown, and for the purpose set forth.

160,936. COAT-SHAPERS. Ellen B. Viets, Boston, Mass. (Filed Feb. 12, 1875.)

Brief.—A form upon which to true and shape coats is made with the body in four sections, and each arm in two sections, which are expanded by means of wedges between them, lying in grooves.

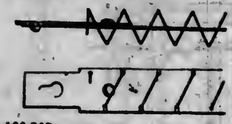


The cast or rest shaper, substantially as described, composed of the extensible body A and arms B B, provided with wedges, constructed essentially to operate as specified.

160,937. BODIES FOR FLORAL DECORATIONS. C. A. Warren, Watertown, Conn. (Filed Jan. 16, 1875.)

Brief.—A flat metal strip forms the base, around or through which is passed a coiled wire. The ends are provided with slots and kaphs, so that the two ends can be joined, or two or more can be united.

The herein-described body for floral decoration, consisting of the base A and coiled wire B, running through and through said base, substantially as specified.



160,938. INTERFERING-BOOTS FOR HORSES. Abraham D. Westbrook, Astoria, N. Y. (Filed June 23, 1874.)

An interfering pad or boot for horses, composed of an elastic annulus or band, with yielding points projecting from its entire outer surface, substantially as specified.

160,939. ELEVATED RAILWAYS. Francis A. Williams, Kansas City, Mo. (Filed Feb. 16, 1875.)

Brief.—An elevated railway having three rails, supported on a single row of posts, one rail elevated above the other two, the upper one forming the upper chord, and the under ones the lower chords, of a truss, which is strengthened by arched beams underneath extending from post to post. The structure is also strengthened by suitable brace-rods. The upper rail is held down on top of posts by metal straps suitably secured to posts, and forming seats for the lower rails.

1. In combination with the post A and rails C, E, and E, the strap or saddle D, provided with the steps *d* and *d*, substantially as and for the purposes specified.

2. In combination with the rail C and posts A and A, the beam F, posts G and G, brace-rods H and H, cross-beam I, braces K and K, and truss-rods L and L, substantially as and for the purposes shown.

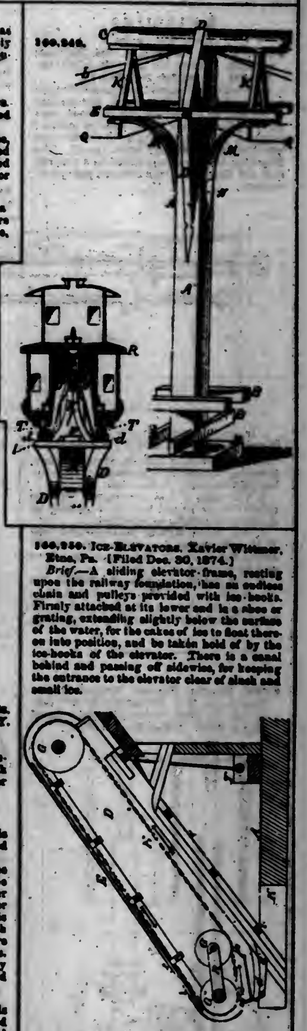
3. In combination with the rail C and beam F and their connecting parts, and with the posts A and A, the arch-beam M, cross-beams O and O, and braces P and P, substantially as and for the purposes set forth.

4. In combination with the rails E and E, the posts A and A, and the rail C, the saddles D, D, *d*, and *d*, the strap-beams I, O, and O, and braces K and K, substantially as and for the purposes shown and described.

5. In combination with the rails E and E, and with the posts A and A, the cross-beams O and O and tension-rods Q and Q, substantially as and for the purposes specified.

160,940. ICE-ELEVATORS. Xavier Wittmer, Erie, Pa. (Filed Dec. 30, 1874.)

Brief.—A sliding elevator-frame, resting upon the railway foundation, then an endless chain and pulleys provided with ice-hooks. Firmly attached at its lower end is a shoe or grating, extending slightly below the surface of the water, for the cakes of ice to float thereon into position, and be taken hold of by the ice-hooks of the elevator. There is a canal behind and passing off sideways, for keeping the entrance to the elevator clear of slush and small ice.



1. The combination of inclined sliding frame D, feet *d*, pulleys G G', vibratory pulley G'', endless chain K, having ice-hooks attached thereto, and stationary railway C, substantially as and for the purposes set forth.

2. The ice-hook F, composed of bar I, bars *f f'*, and rod *f''*, in combination with chain or cable K and inclined railway C, substantially as described.

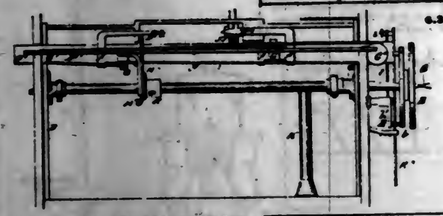
3. The ice-hook F, composed of bar I, bars *f f'*, and rod *f''*, in combination with chain or cable K, stationary railway C, pulleys G G', and upper rail P, having the arc-shaped projections P P' P'', substantially as and for the purposes set forth.

4. In combination with an ice-elevator, constructed substantially as described, the sluice or canal K, leading from the rear of the foot of the railway C, substantially as and for the purpose set forth.

REISSUES.

6,201. LOOMS. William V. Cox, Philadelphia, Pa. Patent No. 120,810, dated Oct. 31, 1871. [Filed Jan. 20, 1875.]

Brief.—The weft-threads are passed through sheds constructed by the jacquard, and are laid in the shed by a tubular finger and hook, each carrying the selected thread through one-half the shed. A reciprocating latch-needle knits the weft to the selvage warp-thread. The finger and hook are reciprocated by a grooved cam and sliding bar, with cord and pulley connections.



6,201.

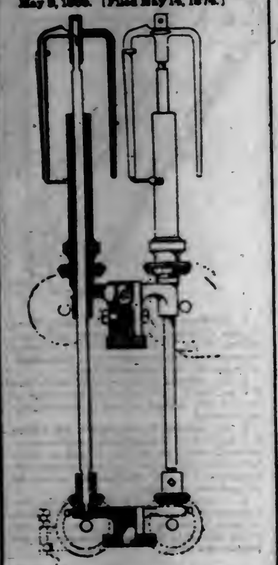
1. In a loom, the reciprocating tubular finger F^1 and reciprocating hook F^2, in combination with the oscillating hook H, having finger h, operating automatically to discharge the yarn-loop, substantially as described.

2. The needle J J, in combination with the tubular finger F^1 and hook F^2, operating together substantially as described.

3. The combination of the finger and hook F^1 F^2, with guides f, race F^3, pulleys G^1 G^2, cord g, and operating devices, substantially as and for the purpose set forth.

4. The bar E^1, cam E^2, cord i, link E^3, arm E^4, and pulley l, in combination with the cord g, pulleys G^1 G^2, finger F^1, and hook F^2, arranged to operate substantially as described.

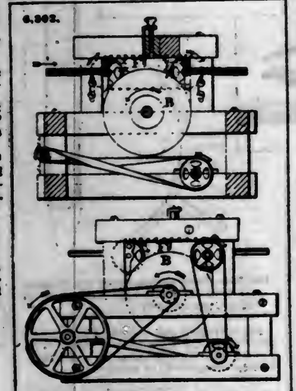
6,202. SAWING-FRAMES. Thomas Mayor, Providence, R. I. Patent No. 43,580, dated Feb. 21, 1865; reissue No. 1,969, dated May 8, 1866. [Filed May 14, 1874.]



The long bolster, adapted to extend above the base of the bobbin, having a bearing for the spindle near its top, and made in one piece with a bracket, by which it may be secured to the side of the rail G, substantially as and for the purpose described.

6,203. SAW-GRINDING MACHINES. David M. Mefford, Toledo, Ohio, assignor to the American Invention Company, St. Louis, Mo. Patent No. 137,705, dated Apr. 8, 1873. [Filed Jan. 21, 1875.]

Brief.—The adjustable rest-gage is made narrow and thin to bear on a limited portion of the saw only.

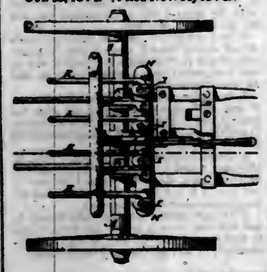


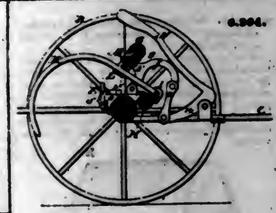
6,203.

1. In a machine for grinding long saws, the adjustable rest-gage F, constructed of a width and breadth to bear only on a limited portion of the saw widthwise and lengthwise, and located directly over the center of the grinding-wheel B, which revolves in an opposite direction to the feet, as shown and described.

2. In a machine for grinding long saws, the narrow thin-edged rest-gage F, in combination with rubber or rubber faced feed-rollers and an emery-wheel, B, arranged so as to operate substantially as specified.

6,204. HORSE HAY-RAKES. Benj. Owen, Dayton, Ohio. Patent No. 150,067, dated Oct. 13, 1874. [Filed Nov. 16, 1874.]





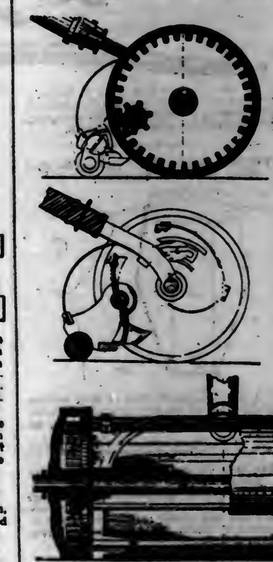
6,204.

1. The pivoted bearing, formed in two sections, I and I', provided with the opening i and lug i', and combined with bent end b of the rake-tooth K, substantially as and for the purposes shown.

2. In combination with the pressure-bar G of the pivoted rake, the block E and plate E', provided upon their contiguous faces with teeth or serrations e and e', and combined by means of the screw e^2, substantially as and for the purpose above described.

3. The arrangement of the hollow guide L on the under side of the bar G, near its center, and covering an orifice therein for the spring M, substantially as set forth.

6,205. LAWN-MOWERS. E. G. Passmore, Philadelphia, Pa. Patent No. 57,295, dated Feb. 23, 1869. [Filed Oct. 24, 1874.]



1. The combination, in a lawn-mowing machine, of a horizontal straight-edged stationary cutter, and a spiral cutter revolved on a horizontal axis by means of a train of gearing which is actuated by the carrying wheels of the machine, and inclosed by said wheels and by side plates.

2. The combination, in a lawn-mowing machine, of a horizontal straight-edged stationary cutter, and a spiral cutter revolving on a horizontal axis, and located between two driving-wheels, which actuate it by means of a train of gearing inclosed by said wheels and by side plates.

3. The combination, in a lawn-mowing machine, of side plates mounted on the main axle, and fitting into the rims of the driving-wheels, with a rotary and a stationary cutter, which are both supported on the side plates.

4. The combination, in a lawn-mowing machine, of two driving-wheels, cutters arranged between said wheels, and side plates mounted on the axle, and fitting into the rims of said wheels.

5. The combination, substantially as set forth, of loose driving-wheels, internal gears, fixed side plates, rotary cutters, and pinions mounted directly on the cutter-shaft.

6. The combination, substantially as set forth, of loose driving-wheels, fixed side plates, a tongue hinged on the axle, and stops on the side plate.

6,206. CHAIRS FOR SEWING-MACHINE ATTACHMENTS. John G. Powell, Philadelphia, Pa. Patent No. 142,812, dated Sept. 16, 1873. [Filed Dec. 5, 1873.]

Brief.—The attachment, having a vertical post, is held to the bed-plate by a radially-adjustable clamp, fastened to the bed by thumb-screw. The clamp is formed of two spring-arms, connected at the end where they surround the post, and having a latch at the free ends, to hold them when they are sprung together, to cause them to clamp the post tighter.

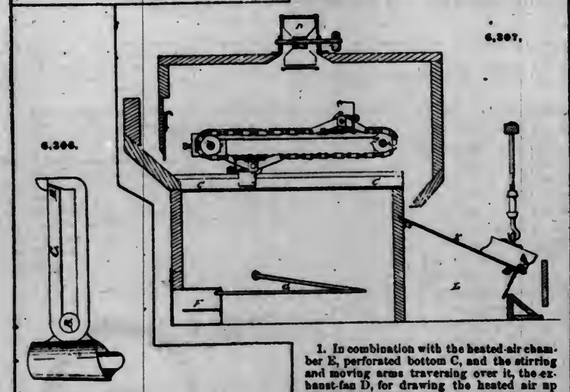
1. As an improved article of manufacture, a sewing-machine attachment provided with a vertical journal permanently attached thereto, and adapted to be grasped on its convex surface and held by friction thereon in a radially-adjustable clamp to the deck or bed of a sewing-machine, as set forth.

2. The vertical pillar or journal B, formed on a sewing-machine attachment, in combination with a radially-adjustable compressible clamp or arm, C, adapted to grasp the sides of said pillar, and provided with a slot for the passage of a screw to hold the same to the deck of a sewing-machine, substantially as described.

3. In combination with the compressible arm C, adapted to grasp the sides of the journal B, formed on the sewing-machine attachment, a latch, D, formed thereon, substantially as and for the purpose described.

6,207. GRAIN-DRIERS. Jesse B. Wheeler, Bolton, Mass., assignor, by mesne assignments, to Jas. A. Maloney, Georgetown, D. C. Patent No. 38,191, dated Apr. 14, 1863. [Filed Feb. 10, 1875.]

Brief.—The hot air is drawn up through the perforated floor, and discharged above by the fan. The grain is moved across the floor by stirrers on the endless chain. The overlapping inclined surfaces below the perforated floor conduct the dust into a contracted space below, allowing hot air to ascend between the joints.



6,207.

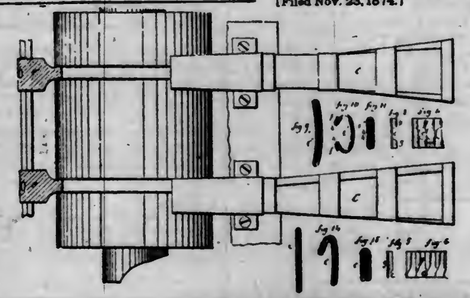
1. In combination with the heated-air chamber E, perforated bottom C, and the stirring and moving arms traversing over it, the exhaust-fan D, for drawing the heated air up through the grain or other material, and through the machine, substantially as described.

2. In combination with the hinged apron K, overlying the cool-air chamber L, the raising and lowering rods e e, and hinged valve s, substantially as described, so that said apron may be raised or adjusted without opening the chamber L, as specified.

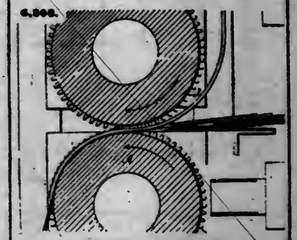
3. The stirring and moving mechanism, consisting, essentially, of the hinged and adjustable arms a b, moved by endless chains, substantially as herein described, and for the purposes set forth.

4. In a machine for drying, cleaning, and purifying grain, meal, flour, and similar materials, the combination of a horizontal screen, forming a diaphragm within a rectangular air-tight case, an exhaust-fan and discharge connected with the upper portion of said case, a feed-hopper and regulator to feed the material into the machine the entire width of the screen, and of even depth, and means for agitating and moving the material in one direction, while the air drawn up by the fan passes in another direction, and hopper beneath said screen having inclined overlapping surfaces, all substantially as and for the purpose set forth.

6,208. APPARATUS FOR MAKING FLUTED RUFFLES. Geo. H. Wooster, New York, N. Y., assignee of Susan A. Robjohn, administratrix of Thos. Robjohn, deceased. Patent No. 42,404, dated Apr. 19, 1864. [Filed Nov. 23, 1874.]



6,208.



6,208.

1. In combination with a pair of pressing or drawing rolls, a folding-guide, constructed substantially as described, so as to form an inclosed channel-way for guiding and supporting the material, and to turn or fold one or both edges of a strip of fabric as it passes through said guide, and deliver the same to said rolls in such folded condition, the said rolls operating to draw the said strip through said guide, and to press the fold or folds formed by said guides, substantially as described.

2. In combination with a folding-guide, constructed substantially as described, so as to form an inclosed channel-way for guiding and supporting the material, and to turn or fold one or both edges of a strip of fabric, the tongue j, substantially as and for the purpose specified.

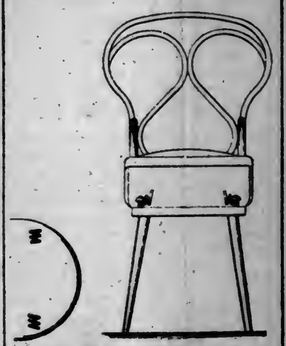
3. The combination, with a fluting-machine, of a folding guide, constructed and arranged to deliver a strip of muslin or other fabric to the fluting-rollers, and to fold and double the said strip as it is drawn through it by the said rollers, substantially as and for the purpose herein specified.

4. The combination, with the fluting-machine and the folding guide, of an interposed pressing-guide, substantially as herein specified.

5. The folding-guide, in combination with the socket, which receives and holds in place the said folding-guide, substantially as herein specified.

6. The combination, with a fluting-machine, of the folding-guide C C', constructed to turn in the two edges of a strip of muslin, or other material, toward each other on the same side of the strip, substantially as herein specified.

6,209. TILTING CHAIRS. Daniel B. Teal, New Lisbon, N. Y., assignor to Haywood Brothers & Co., Gardner, Mass. Patent No. 38,428, dated May 5, 1863; reissue No. 5,054, dated Sept. 10, 1872. [Filed Jan. 7, 1875.]



A tilting chair with one or more springs placed intermediately between the under side of the seat and its support, having their points of oscillation in the rear of a line drawn transversely through the center of the seat.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 9. TUESDAY, MARCH 2, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

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DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, DISTRICT OF MASSACHUSETTS.

SPRING *et al. vs.* PACKARD.—SAME *vs.* HOWARD.

[*In equity.—Before* LOWELL, *J.—October*, 1874.]

The machine covered by the patent of Charles and Andrew Spring, May 10, 1859, for Lathe for Turning Irregular Forms, the claim of which is for "The combination of a griping-chuck, by which an article can be so held at one end as to present the other free to be operated upon, with a rest preceding the cutting-tool, when it is provided with a guide-cam, or its equivalent, which modifies the movement of the cutting-tool, all operating together, for the purpose set forth," is anticipated by the Pernot lathe for turning sewing-machine needles, which had the griping-chuck, the rest, and the cutting-tool, but instead of the guide-cam a pattern, it appearing that, at the date of the patent, a fixed pattern was the equivalent, in machines of this kind, for a cam pattern or guide.

The case is nowise changed by the fact that the screw of the Pernot machine operated differently from the adjusting-screw of the patented machine, the screw not being an element in the claim of the patent, and the alleged difference not being such as would constitute a defense against the patent if the Pernot machine were later in date than the patented one.

It is immaterial that Pernot did not turn needles to *a point* on his machine, as is done in the patented one. The particular form of pattern used was not of the essence of the invention, and his lathe only needed a change of pattern to make it applicable to turning the point of needles.

[*Geo. E. Betton*, for complainants.
James B. Robb, for defendants.]

LOWELL, *J.*:

The plaintiffs are the inventors and owners of a valuable and ingenuous improvement in Lathes for Turning Irregular Forms, for which a patent was issued to them in May, 1859, but which they testify was completed in the summer of 1857. They describe the machine with fullness and accuracy in their specification. Its principal application was intended to be, and is, for turning sewing machine needles and similar articles, which are to be brought to a point; and the claim is for—

The combination of a griping-chuck, by which an article can be so held at one end as to present the other free to be operated upon, with a rest preceding the cutting-tool, when it is combined with a guide-cam, or its equivalent, which modifies the movement of the cutting-tool, all operating together, for the purpose set forth.

There is no doubt, upon the testimony, that the plaintiffs were original and meritorious inventors of an improvement over the machines then in general use for turning sewing-machine needles. But a machine was brought forward by the defendants, which one Pernot swears he made in New York in 1853, and operated there for thirteen consecutive years in turning needles, in great quantities, for several of the principal manufacturers of sewing-machines, and which appears to contain all the elements of the plaintiffs' combination, working together in the same way, and producing the same results. The dates are proved by Pernot and by another witness, and corroborated by circumstantial evidence, and might have been disproved if untrue, because the manufacturers could have testified concerning the needles which they are said to have bought of Pernot. No such contradiction is given. This machine has the griping-chuck, the rest, the cutting-tool, and, instead of a guide-cam, a pattern, which, so far as this case is concerned, appears to be an equivalent; and, as we understand the testimony, it is that a fixed pattern was, generally speaking, a well-known equivalent for a cam-pattern or guide in machines of this kind, at the date of the patent. (Waters, p. 110.)

It has been argued that Pernot's machine had no adjusting-screw. It had a screw which it is insisted should be called a set-screw, and which was no doubt less useful, in some respects, than the adjusting-screw of the plaintiffs' machine. The plaintiffs, however, do not claim the adjusting-screw as part of their combination. Mr. Waters, being asked whether it is part of the combination, says—

Hardly that—that is to say, hardly an element. I regard as essential that the organization should be such as to admit of the convenient use of a screw; and that that screw should make a part of the organization I regard as essential, as an adjunct to the combination—so essential that, as I have said, I would not give a sixpence for any one of them, for the purpose of turning sewing-machine needles, without it.

It is then an important adjunct, rather than an essential element, and Pernot's screw was a sufficiently-good adjunct to enable his combination to work successfully in making needles in the way of his business; and the difference in the screw would have been no defense if his machine had been later in date than the patented one.

It is further said that Pernot did not turn his needles to a point in the machine. He gives reasons for not doing this work, but says that he did turn points for a carding-machine; and that his lathe needed only a change of pattern to make it applicable to turning the points of needles. This is obviously true, and as the particular form of pattern used was not of the essence of the invention, we are of opinion that Pernot's machine contains the whole patented combination.

It is not denied that all the elements of the combination were old and well known before 1857; it is only contended that the precise combination was new, as it undoubtedly was to the trade generally, and to the patentees themselves; but we are obliged to say that Pernot's machine, which was not patented, and was somewhat guarded from view, perhaps for the very purpose that its mode of operation might not be generally known, was yet, by the law, such an anticipation of the plaintiffs' combination that they were not the first, though they were original, inventors thereof.

Bill dismissed with costs.

LIST OF TRADE-MARKS, DESCRIPTIONS OF WHICH HAVE NOT PREVIOUSLY APPEARED IN ANY PRINTED PUBLICATION.

Registrants.	Description.	Class.	No.
Allen & Ellis	Eagle alighting on nest, with young	Chewing-tobacco	1,314
Do	Female figure, decorated	do	1,316
Do	do	do	1,317
Do	Golden crown on crimson cushion, &c	do	1,315
Do	Picture of naval engagement	do	1,137
Do	Picture of "Paul and Virginia," &c	do	1,138
Do	Picture of "Signing Declaration of Independence"	do	1,318
Do	Stallion and man	do	1,139
Arguimbau, Daniel V	Eagle	Licorice paste	1,361
Arnold & McNary	Anchor entwined by dolphin, &c	Druggists' goods	1,299
Atkins & Co	Diamond, and "Diamond" within border	Crosscut wood-saws	1,371
Bailey Washing and Wringing Machine Co.	"Excelsior"	Clothes-wringers	1,130
Do	"Novelty"	do	1,131
Barnett, G. & H	Diamond-shaped figure	Files and rasps	1,281
Barnum & Co., F. W	"Wine of the Woods"	Medicinal preparation	1,329
Base, David, Jr	"Crown"	Quill bobbins	1,362
Batchelor Brothers	"B. B."	Cigars, tobacco, snuff	1,278
Baurquin Brothers	Cornucopia	Watches and watch materials	1,187
Beach, Abel	Outline-map, and seal of Iowa	Writing-paper	1,107
Bell & Co., R. W	Buffalo	Soap	1,318
Bell & Co., William G	"Hams" on side of a bell	Hams and cured meats	1,199
Berlin Mineral Water Co	German "Iron Cross," eagle, and words	Ginger-ale, cider, soda-water, &c	1,383
Bigelow, Horace H	Star encircled by words "Bigelow Boot and Shoe Co."	Boots and shoes	1,319
Bishop, Nathaniel H	"Grocers' Own," star containing letter "B."	Cranberries	1,352
Blow, William T	Symbol of the eye, and words	Eye salve	1,142
Boston Elastic Fabric Co	Four aces in a border	Rubber hose	1,174
Do	"Granite Hose," &c	do	1,175
Bradley, Charles D	"Ethesseline"	Medicine	1,389
Bredt & Co., F	Shield, stars, eagle, "Union," &c	Dye-stuffs, chemicals, &c	1,263
Bridgeport Cold-Swaged Needle Co	"Cold-swaged B. N. Co."	Sewing-machine needles	1,232
Browett & Co., Frederick	Dagger within a shield	Frillings, gimps, &c	1,211
Do	"Royal Sandringham"	Frillings	1,233
Brown Brothers	Star, "Star Oil Company," &c	Petroleum	1,286
Brownson Bros. & Co	"The Inter-State Industrial Exposition"	Scarfs, ties, and bows	1,372
Bullard, James Herbert	Longitudinal central section of a hobbin	Sewing-machine shuttles	1,344
Bumgardner & Sons, J	A still, with "Old" above and "Rye" below	Whisky	1,300
Burnham, Edwin E	Picture of fishermen, "Vilas' Aromatized," &c	Medical compound	1,282
Burt & Mears	"Burt" within an ellipse	Boots and shoes	1,141
Bussey, McLeod & Co	"Iron-clad Low Copper Reservoir"	Cooking-stoves	1,189
Cassard & Son, G	Five-pointed star	Hog products	1,301
Cassidy, John E	"Chestnut Hill"	Whisky	1,393
Cazade & Crooks	Bronzed border on white, "Marie, Brizard & Roger," &c.	Bottles of cordials, &c	1,246
Do	Crescent-shaped border, "Otard, Dupuy & Co."	Bottles of brandy	1,234
Do	Distilling apparatus on blue ground, with border	Bottles of cordials, &c	1,244
Do	Distilling apparatus in circle, and "Marie, Brizard," &c.	Packages of cordials, &c	1,245
Do	Ornamental device, buckle, "O. D. C.," crown, &c	Bottles of brandy	1,200
Do	Ornamented double border, "Marie, Brizard & Roger," &c.	Bottles of cordials, &c	1,247
Celluloid Manufacturing Co	"Celluloid"	Compound of pyroxyline	1,102
Chandler, Josephus	"Petrolerine"	Product of petroleum	1,176
Chisholm, James W	"Amykos"	Chemical compound	1,157
Christy & Hughes	"Red Clipper," and picture of shears	Pruning-shears	1,108
Cleve, Joseph	Cluster of grapes, leaves, "German Wine Bitters," &c.	Bitters	1,204
Clinton & Co., E	"Eureka"	Varnish-brushes	1,330
Clow, James B	Sheaf of wheat, with border of pearls, &c	Pearl-wheat	1,143
Collin, Redington & Co	"Electro Silicon"	Polishing material	1,267
Consolidated Fruit-Jar Co	"Mason's Standard"	Fruit-jars	1,307
Do	"Mason's Union"	do	1,308
Cook & Co., Thos. G	"Centennial"	Glassware	1,201
Cornwell, Willett	Bust of woman, &c	Charts and patterns for cutting dresses.	1,123
Courvoisier, Wilcox & Co	"C. W. & Co." in monogram	Watches	1,327
Cox & Co., Samuel E	American star and words	Compound for cleaning harness	1,144
Crane & Co	"Nabob" and grotesque figure	Pickles and sauces	1,145
Crawford & Co., Wm. H	"Phœnix Mills," and a phœnix	Coffee, spices, &c	1,153
Crocker Cutter-Tooth File Co	"Crocker Cutter-Tooth File"	Files	1,168
Cutler, Dwight C	"How 'Tis Done"	Books	1,309
Daddow, Samuel H	Elaborate device of fuses, crosses, &c	Blasting squibs and fuses	1,103
Dawes & Fanning	"Showcret"	Umbrellas and parasols	1,104
De Bary & Co., F	Elaborate device, border, and fac-simile of signature	Cigars	1,105
Do	Elaborate device, fac-simile of signature, &c	do	1,109
De Grath, Sarah	Hand holding leaf	Medicine	1,394
De Grath, Sarah	Concentric rings, (elaborate)	Medicines	1,302
Delano, George	"Compoline"	Candles	1,251
Devoe Manufacturing Co	"Brilliant" in arc of circle	Illuminating-oil	1,338
Do	"Photolite"	do	1,337
Dick, Dundas	Serpent	Medicine	1,373
Dilworth Brothers	Coffee-urn, &c	Roasted coffee	1,361
Dole Brothers	"Eagle Bluing-Paper"	Bluing-paper	1,364
Draper & Co., James O	"Lion of the Day"	Soap	1,390
Dunbar, C. & E. F	"Bethesda"	Mineral-water	1,374
Dunham, William S	"High Toned Tonic"	Liquors, wines, bitters, &c	1,340
Du Vivier & Co	"Diamond Bourbon Whiskey"	Whisky	1,219
Do	"Diamond Rye Whiskey"	do	1,220
Do	"Paragon Bourbon Whiskey"	do	1,221
Do	"Paragon Rye Whiskey"	do	1,222
Earickson & Harris	"Elaborate," "Jubilee Twist," &c	Plug chewing-tobacco	1,132
Elkinton, J. S. & Thomas	"Red-Paper Soap"	Soap	1,100
Ellis, George F	Unicorn rampant and scroll	Woolen goods	1,264
Engelke, Barnett H	"Jockey Club Bourbon"	Whisky	1,177
Evans Brothers	"Bee Hive"	Hams	1,115

Registrants.	Description.	Class.	No.
Evans, Lippincott & Cunningham	"Royal," and British arms	Sugar-cured hams	1,268
Fairbanks & Gilman	"Louisiana Crystal Syrup," &c	Sirup	1,170
Do	"New Orleans Crystal Syrup," &c	do	1,169
Farmer, Henry R	Tobacco-worm	Flues for draft, &c	1,270
Farr & Co., Warren A	"H & F" peculiarly arranged	Shirts	1,288
Flack Bros	Globe, "Globe Distillery," and monogram	Whiskies	1,140
Fletcher & Dwyer	"Diamond Stove Polish"	Stove-polish	1,375
Do	Satan holding a trident, and astride a barrel	Burnishing-ink	1,236
Fox, Joseph	"Excelsior"	Sponge or butter crackers	1,248
Frese, Emil	Fac simile of signature, &c	Medicinal compound	1,124
Friedmann & Lautenjung	"Electric"	Razors and cutlery	1,367
Fuller, Henry W	Angel flying, Maltese cross, "Iodo-Carbolated," &c	Medicinal compound	1,265
Gali & Ax, G. W	Roman cross, "G" surmounting an axe	Tobacco and snuff	1,320
Gallego Mills Manufacturing Co	"Gallego. 196. New"	Flour	1,266
Gardner Manufacturing Co	Five-pointed star	Chairs, settees, and cars	1,289
Gardner, Phipps & Co	Pine-apple, and "Pine-Apple Brand"	Sugar-cured meats, &c	1,354
Gein, Louis H	Phenix rising from flames	Printing inks and varnishes	1,190
Gerdom, Cook & Co	Man sliding down inclined plank, &c	Lubricating compound	1,212
Goodell, D. H	"Turn-Table"	Apple-paring machines	1,385
Goodrich & Co., M. S	"Goodrich's King of Oils"	Medical oils	1,237
Gunnison & Co., A	"Polar Grease"	Railroad greases	1,353
Hall, Elton & Co	Shield bearing monogram, &c	Spoons, forks, &c	1,110
Harrison Bros. & Co	Lion rampant	Paints and colors	1,202
Hartell and Letchworth	"Centennial"	Medals	1,271
Harwood & Son, L	Monogram, "Carbolized Glycerine," &c	Salve	1,272
Hastings & Berlin	Monogram "H & B" in circle, "Old Time Bourbon"	Whisky	1,321
Hicks & Wolfe	"Superb"	Stoves, heaters, ranges	1,303
Hodkinson, M., T. D., and S	Anchor, and word "Anchor"	Oils	1,324
Hopkins & Co	Square with ornamental scrolls, words, &c	Prepared flour	1,238
Hopkins, John H	"Magic Gold Dust," &c	Medical compound	1,206
Howe & Hubbell	"Triumph"	Casks, &c., of whisky	1,364
Hoyt, Reuben	"Camphorine"	Medical preparation	1,178
Hunt, Rankin, & Lamar	Monogram "H. M. F.," name in a circle, &c	Fertilizer	1,345
Imhorst, Henrich	Grapevine tracery, &c., (elaborate)	Bottles of brandy	1,376
Irskine & Co	Flying dragon rampant, monogram, &c	Trimmings, &c	1,205
Irving & Co., T. J	Yoke for shirt, and letters "E. Y. S.," (script)	Shirts	1,161
I X L Metal Company	"I X L"	Anti-friction metal and journal bearings.	1,116
Jackson & Co., James A	Female figure picking berries, &c	Blackberry brandy	1,325
Jacoby & Co., S	"Moldado," and fancy scroll-work	Cigars	1,111
Jenkins, Thomas E	"Empress Cologne"	Perfumery	1,356
Jones, Williams & Faxon	"White Loaf"	Flour	1,229
Joseph, Nathan	Monogram, and "Queen's Own Co"	Cutlery	1,146
Kane, Alonzo L	"Siloam Mineral Spring Water"	Mineral-water	1,228
Kelley, Ezra	Monogram, name, &c	Clock and watch oil	1,249
Kerbs & Spiess	Figure of horn of plenty, word "Cornucopia," &c	Cigars	1,179
Do	Bee-hive, word "Mirabilia," &c	do	1,180
Kimberly, Frederick H	Portrait, with "Kimberly's Ointment" above	Salt-rheum ointment	1,239
Kinney, Francis S	Turkish cap with radial lines	Cigars, cheroots, &c	1,365
Kineman, Frank W	Parallelogram, with two segments of circle, &c	Cough-balsam	1,171
Kipe & Townsend	Anchor, "C. Brinton, Jr."	Corn meal	1,213
Knoepfel, William H	"Angostura Bitters"	Bitters	1,112
Kohn, Tobias	Greek cross, with "N. W." and "B. W." inside	Braids, gimps, &c	1,283
Kowalski, W. A	"Carboline Oil" "W. A. K.," &c	Coal-oil	1,133
Laurencot, Joseph B	Rings of white and of red balls, "Genève," &c	Watch-glasses	1,273
Lesher, Whitman & Co	Crown surmounted with sphere, &c	Silicias	1,304
Lewis Bremer's Sons	Shield and arrow	Smoking and chewing tobacco	1,166
Do	"Union Jack"	do	1,167
Lewis, Frederick C	Locomotive	Raisins	1,310
Libby, Elizabeth F	"Libby's Raven Oil," raven, bottle, and spoons	Medicinal oil	1,252
Liggett & Myers	"A. A."	Plug chewing-tobacco	1,332
Do	"A. A."	Chewing-tobacco	1,253
Do	"Clipper"	Plug chewing-tobacco	1,256
Do	"Clipper," &c	do	1,331
Do	"Diana"	do	1,254
Do	"Flying Dutchman"	do	1,255
Do	"Sunshine"	do	1,311
Lippincott, Jesse H	"Banner Baking Powder," and shield	Baking-powder	1,203
Livingston, Hiram	"Golden Star Bourbon"	Bourbon whisky	1,279
Loewenthal, Kaufman & Co	"Hunky Dora Long Cut Smoking"	Smoking-tobacco	1,378
Long, Gabriella	Monogram "L S" on a leaf	Salve	1,147
Long & Ogden	"Credenda"	Steel and iron	1,377
Mac Gowan & Co., John K	"Champion of America"	Table-sauce	1,134
Mac Williams & Pieper	Oval-shaped figure and initials	Bread	1,158
Mandel, Louis L	Eagle, &c., (elaborate,) "Eagle Varnish," &c	Varnish	1,368
Marshall Bros. & Co	Moon and thirteen stars	Galvanized sheet-iron	1,374
Mauger, Victor E	Monogram within ace of spades	Playing-cards	1,191
Mayo & Co., Henry	"Helbutine"	Cured or smoked fish	1,305
McClelland, John J	"Carbon Cure, Kentucky Bourbon Company"	Whisky	1,181
McCullough Iron Company	Spread-eagle and name	Galvanized sheet-iron	1,117
Do	"Chetwynd" in crescent shape, and monogram	do	1,118
Merchant's Gargling-Oil Company	"Merchant's Gargling Oil"	Liniment	1,214
Do	"Gargling Oil"	do	1,215
Merritt, Charles	Acorn, and oak leaf, &c	Boots and shoes	1,119
Merwin, Hulbert & Co	"Blue Jacket"	Revolving-pistols	1,382
Do	"X L" arranged in monogram	do	1,383
Meyer, Edward A. E	"Ladies' Favorite and Gentlemen's Choice," &c	Hair-dressing	1,223
Miller Brothers	Monogram	Cosmetic	1,224
Miller, John P	Conical pile of stones, with bushes	Pile remedy	1,316
Mintzer, Samuel L	Elephant, and "Dr. Mintzer's Improved"	Tooth-brushes	1,290
Moody Brothers	Snow-drop flower, and "Moody's Snow-Drop"	Baking-powder	1,148
Morehead, Young & Co	Horse, "Longfellow," &c	Whisky	1,207
Morrow, Chamberlain & Co	Star, wreath of grape-leaves, "In vino veritas," &c	Wines and liquors	1,333
Moss, J. L., Jr., and N. F	Oval device, and "White Rock Fine Shirtings"	Shirtings	1,358
National Rubber Company	Rings, bands, &c., in fabric	Rubber hose and belting	1,169
Newton, Lewis H	Picture of salmon bearing words	Packed fresh salmon	1,125
North, John G	"Savoncerine"	Composition for leather	1,386
Oakford & Co	"Eagle Brand"	Sugar-cured hams	1,346
Oakley & Co., Jesse	"Queen Soap"	Soap	1,291
Oliver, James	Fancy device of plow, and "Chilled"	Plows	1,275
Orendorf, John T. M	"Brookefield"	Whisky	1,297

Registrants.	Description.	Class.	No.
Osborne & Co., D. M.	"Ceres," and picture of the goddess, &c.	Harvesting-machines	1,241
Osgood & Co., James R.	"Hellotype"	Prints	1,217
Pacific Balm Company	Chinaman, "Pacific Balm," &c.	Medicine	1,284
Parry, Thomas W.	"Peach Hill Slate" with device	Roofing-slate	1,347
Pevey, Charles K.	Device of a heart, and letter "K"	Playing-cards	1,348
Do.	Bust, spot, and rectangles	do	1,349
Do.	Rectangles and radiating lines	do	1,341
Preston & Merrill	"Portable," with picture of a lemon	Compound of sugar and lemons	1,183
Do.	"Infallible," and loaf of bread	Yeast-powder	1,225
Prince's Metallic Paint Company	Elaborate device	Metallic paint	1,135
Procter and Gamble	"The Light of Day"	Candles	1,192
Do.	"White Lily," and two white lilies	Starch	1,226
Rallinger, Rainer	Eye in triangle, balance-scale, &c.	Medicines	1,193
Rand, William J.	"C" in a pentagon, and "Rice Starch"	Rice starch	1,269
Ransom, Son & Co., D.	"Dr. A. Trask's Magnetic Ointment"	Medicinal compound	1,257
Do.	"Dr. J. R. Miller's Universal Magnetic Balm"	do	1,260
Do.	"King of the Blood"	do	1,259
Do.	"Prof. Anderson Dermador"	do	1,258
Do.	"Ransom's Hive Sirup and Tolu, or Honey Sirup"	do	1,261
R. B. Devell's Son	British arms, ribbons, firm-name, &c.	Sealing-wax	1,235
Remington & Sons, E.	"Clipper"	Plows	1,149
Reynard, Peter	"Great Western Vermin Exterminator"	Insect-powder	1,326
Rhodes & Co., B. M.	"South Sea"	Guano	1,395
Rives & Bailey	"Globe"	Printed publications	1,163
Robinson Tobacco Manufac'g Co.	"Mixed Golden Roll"	Smoking-tobacco	1,172
Do.	"Peach and Honey"	Fine-cut tobacco	1,173
Rockwell, James V.	Griffin rampant, "Universal Trimmings," &c.	Ruffles and dress-trimmings	1,194
Rogers & Brothers, C.	Arrow, shaft bearing name of firm	Forks, spoons, &c.	1,342
Rogers & Co., Herbert M.	Two codfishes crossed	Cod-liver oil	1,312
Rommeney, Theodore	Bent arm grasping a bottle	Lager-beer	1,327
Rubber Paint Company	India-rubber tree, man, &c.	Rubber paint	1,208
Do.	"Time" on a running mule, &c	do	1,209
Salamander Felting Co. U. S., &c.	Salamander in flames, steam-pipe, &c	Non-conducting felting	1,086
Sanger, Whiting P.	Lion rampant, crowned, and copy of signature	Gin	1,150
Sawyer, Henry	"Crystal Blue"	Bluing	1,242
Severns, Thomas W., Jr.	"The Princess"	Boots and shoes	1,164
Seidenberg & Co.	Blooming rose, "La Rosa Española," &c.	Cigars	1,227
Sellers Brothers	Bell, bearing "1776" and "1876"	Millers' soap-stone packing	1,319
Shaw, Charles A.	Globe supported by human leg	Clasps, suspenders, &c	1,335
Sherwood & Genin	Negro figures and basket of cotton	Soap	1,343
Silver Lake Company	Fancy device and name of company	Solid-braided cords	1,400
Do.	Lion, and "Lion Packing"	Steam-packing	1,399
Do.	Locomotive, and "Locomotive Packing"	do	1,398
Do.	Triangle, train of cars, and "Steam-Packing"	do	1,397
Sleeper, Wells & Aldrich	Peculiar figure made of curves, &c.	Preserved vegetables, fruits, &c.	1,355
Southard, Robertson & Co.	"Banner"	Cylinder stoves	1,370
Smith & Montrose	"A 1 X X handles, Smith & Montrose," &c.	Rakes and other handles	1,240
Smith & Parks	Monogram in globule, &c.	Globules for homœopathic medicine	1,369
Stark Mills	Picture, and "Rough Bathing Towels," &c.	Rough bathing-towels	1,360
Steele & Price	Cornucopia supported by a hand	Flavoring-extracts, &c.	1,306
Sternberger, Leopold	"Centennial"	Shirts, fronts, &c.	1,154
Stone, John W.	"Old Sledge"	Smoking-tobacco	1,159
Do.	"Saratoga"	Tobacco	1,155
Stone & Spencer	"Anthracite Salt"	Salt	1,276
Stoner, M. H.	Maltese cross and copy of signature	Pile remedy	1,151
Stowe, Samuel F.	"Ambrosial Nectar" in border	Small or root beer	1,391
Do.	Foaming goblet and wreath	Beverage	1,292
Straight & Son, S.	"S S & S's Sweet Clover Creamery," &c.	Butter	1,387
Straub Mill Company	"Queen of the West"	Grinding-mills	1,230
Suire & Co., F. P.	"Golden Crown Gin"	Gin	1,122
Do.	"Iron Crown Gin"	Gin	1,120
Do.	"Royal Nectar Gin"	Gin	1,121
Sussfeld, Lorsch & Co.	Staff of Mercury and letters "G. B."	Telescopes	1,231
Sweet, Barnes & Co.	Lozenge, with G. B. & Co. at angles	Steel and iron wares	1,380
The American Sardine Co.	"I X L" connected in a monogram	Fish	1,260
The Collins Company	"Charter Oak"	Axes and hatchets	1,126
Do.	Picture of "Charter Oak"	Axes and other tools	1,328
The Gold Heating Company	"Sanitary"	Heaters	1,381
The Sheffield File Works	Horse's head, and "Trusty"	Files, rasps, steels	1,350
The Willson Carb. Cod-Liver Oil Co	Shield containing a fish, tridents, &c.	Medicinal preparations	1,392
Thomas Emerson's Sons	Rising sun	Boots and shoes	1,166
Do.	"E," with circle of radiating lines	do	1,189
Thomson, Langdon & Co.	Crown, "The Crown Brush," &c.	Brushes	1,277
Do.	Figure of peculiar corset	Corsets	1,114
Tilden, Henry A.	"Elixir Iodo"	Medicine	1,156
Tomey & Sons	Thistle	Water-gages for steam-boilers	1,359
Tomlinson, D. Dodge	"H. E. H., Horse Medicine, D. D. T., 1868"	Medicine	1,195
Tompkins & Co., S. E.	"Universal Tree"	Saddle-trees	1,306
Townsend & Co.	Woman half kneeling, vase, "Digerentia Syrup," &c	Lozenges and sirup	1,210
Treey, Rachel A.	"Stopit"	Toothache preparation	1,351
Tripp, Job C.	"Improved Fairhaven"	Printing-presses, &c.	1,106
Tubbs & Co., E. M.	Globe, "Universal Eradicator," &c.	Medicine	1,313
Tuica Steam Gauge Co.	Railway-train, steam-gage with radiations, &c.	Steam-gages, &c	1,362
Wadsworth Bros. & Co.	Sphere, hemisphere, cross, dog, "Wadsworth," &c.	Zinc paint	1,265
Wall, Belvin & Day	Pear, and "California Pear"	Chewing-tobacco	1,398
Walker, McGraw & Co.	"Globe Chewing Tobacco," globe, &c.	Fine-cut chewing tobacco	1,136
Do.	"Hope Chewing-Tobacco"	Chewing-tobacco	1,250
Walsh, Brooks & Kellogg	"W B & K" in a diamond, and "Ned White's"	Whisky	1,292
Do.	"W B & K" in a diamond, and "Joe Fiske's"	do	1,293
Do.	"W B & K" in a diamond, and "Henry Houch"	do	1,294
Walter A. Wood Mowing and Reaping Company.	Diamond, "Trade, Wood, Mark"	Cutters for harvesting-machine	1,262
Warder & Cooper	"W & C" and "Maizola"	A product of corn	1,165
Webb, Henry P.	"The Diamond Black Coating"	Paint	1,336
Wessell, William T.	"Crème de Lis"	Cosmetic	1,334
White, Samuel S.	Globe, with words "Globe Gold Foil," &c.	Gold foil	1,184
Whiteley, Fessler & Kelly	"Champion"	Harvesting-machines	1,127
Do.	"Champion"	Self-rakes, droppers, reels, &c., of harvesters	1,128
Do.	"Champion"	Guard-fingers, knife-sections, &c., of harvesters	1,129

Registrants.	Description.	Class.	No.
Whitman, Josiah A.	Woman, cow, and broken lamp, words, &c.	Fountain-pumps	1,339
Williams & Co., J. B.	"Barber's Favorite"	Soap	1,185
Do.	"Pocket"	Soap	1,186
Williams, David	"Iron Age"	Printed publications	1,152
Winall, Alexander W.	"The Queen Mill"	Grinding-mills	1,295
Wittichen, O.	Lozenge, "Equitable," "Warranted"	Fertilizers	1,396
Wood, Mrs. Alonzo H.	A gas-burner and words "Steel-Check"	Gas-burners	1,243
Woodbury, Freeman P.	"Cristoval Colon," &c., (elaborate)	Hams and shoulders, pork	1,198
Do.	Spanish flag, "La Integridad Nacional," &c.	do	1,197
Do.	Two girls in elliptical outline, "Favorita," &c.	do	1,196
Zimmerman, Casper C.	"Swiss Household"	Medicine	1,206

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date March 2, 1875.]

8,180.—Show-Cards for Exhibiting Vest-Buttons.—JULIUS FULD, New York, N. Y. Application filed February 16, 1875. Term of patent 3½ years.

8,181 and 8,182.—Statuary.—JOHN ROGERS, New York, N. Y. Applications filed February 11, 1875. Term of patents 14 years.

8,183 to 8,185, inclusive.—**Show-Cases.**—LAWRENCE WIEGEL, Cincinnati, Ohio, and JOSEPH LEHNBEUTER, St. Louis, Mo.—Cases B, A, and C. Applications filed January 23, 1875. Term of patents 7 years.

8,186.—Fountains.—JOSEPH W. FISKE, New York, N. Y. Application filed February 24, 1875. Term of patent 7 years.

8,187.—Bouquet-Holder or Vase.—JOHN HOARE, Corning, N. Y. Application filed January 25, 1875. Term of patent 3½ years.

8,188 to 8,190, inclusive.—**Oil-Cloth.**—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Applications filed February 19, 1875. Term of patents 3½ years.

8,191.—Casing of a Soda-Water Apparatus.—FRANK H. SHEPHERD and EMIL SCHWAB, Lowell, assignors to JAMES W. TUFTS, Medford, Mass. Application filed February 10, 1875. Term of patent 14 years.

8,192.—Carpet.—THOMAS J. STEARNS, Boston, Mass., assignor to THE ROXBURY CARPET COMPANY, same place. Application filed February 19, 1875. Term of patent 3½ years.

8,193.—Dental-Tool Stand.—SAMUEL S. WHITE, Philadelphia, Pa. Application filed February 23, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date March 2, 1875.]

2,262.—Washing-Powder.—CORBETT, SCOVILLE & Co., Chicago, Ill. Application filed April 21, 1874.

"'Golden State Washing Powder.'"

2,263.—Food Made from Wheat.—E. R. DURKEE & Co., New York, N. Y. Application filed February 20, 1875.

"'GLUTENA.'"

2,264.—Medicine.—C. L. GOWDEY & Co., New York, N. Y. Application filed February 13, 1875.

"a quarter moon surmounted by a triangle with curved sides, and inclosing the letter L."

2,265.—Pickles and Vinegar.—HEINZ, NOBLE & Co., Pittsburg, Pa. Application filed February 18, 1875.

"'ANCHOR PICKLE AND VINEGAR WORKS.'"

2,266.—Watches.—J. W. TUCKER, San Francisco, Cal. Application filed July 18, 1874.

"'The Granger Watch,' and a symbol or device representing a sheaf of wheat."

2,267.—Cotton-Working Machines.—R. H. ALLEN & Co., New York, N. Y. Application filed February 24, 1875.

"'La Victoria.'"

2,268.—Liniment.—CORDELIA COUCH, New Haven, Conn. Application filed February 16, 1875.

"'POTENTILLA,' the figures of two equal triangles having equal sides and angles, and the monogram consisting of the letters 'C' and 'S.'"

2,269.—Kid or Lambskin Gloves.—HARRIS BROTHERS, New York, N. Y. Application filed December 8, 1874.

"two elliptical circles, one within the other, between which, on each end of the transverse axis, is a star; above the upper line of the outer circle the words 'Trade-Mark;' between the outer and inner circles, and upon the upper side, the words 'First Choice,' and between the same, upon the lower side, the words 'Medailles, Paris, Londres,' and within the inner circle the word 'VICTORIA,' on one line, and immediately beneath the same the initials 'H. B.'"

2,270.—Egg-Producing Food for Poultry.—L. H. SHERWOOD & Co., Hartford, Conn. Application filed February 24, 1875.

"'IMPERIAL EGG FOOD.'"

2,271.—Bonnets and other Head-Wear for Women and Children.—SAMUEL C. TALCOTT, Ashtabula, Ohio. Application filed February 23, 1875.

"'CENTENNIAL.'"

2,272.—Fans.—SAMUEL C. TALCOTT, Ashtabula, Ohio. Application filed February 23, 1875.

"'CENTENNIAL.'"

2,273.—Hats and Caps.—SAMUEL C. TALCOTT, Ashtabula, Ohio. Application filed February 23, 1875.

"'CENTENNIAL.'"

2,274.—Grinding-Mills for Fruit, &c.—THE HIGGANUM MANUFACTURING COMPANY, Higganum, Conn. Application filed February 24, 1875.

"'FARMERS' FAVORITE.'"

TO CORRESPONDENTS.

Persons ordering drawings of patents, or making inquiries in regard to patents, must always state the name of the inventor, subject-matter, and date. In making inquiries in regard to applications for patents letters must state the name of the applicant, subject-matter, and date of filing. In ordering drawings by classes, under the subject-matter index of September, 1871, (furnished gratis on application,) it will be understood that the Office cannot take upon itself to make selections of certain lines of inventions, embracing portions only of the patents in the classes as specified. The number of classes has been made as ample as the conduct of the business in this office will readily permit. An order should, therefore, embrace the entirety of a given class or classes. They cannot be subdivided unless ordered specifically by number, name, and date.

The cheapness of the copies, and the comparatively small number of patents in each of the one hundred and seventy-six classes, render an order by class by no means an onerous undertaking.

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Bale tie, G. N. Osgood	7	160,345
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Butter worker, F. B. Aldrich	45	160,293
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Firman, H. S., Combined Turkish and vapor bath	160,412
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Harrington, G., assignee	160,402, 160,403, 160,404, 160,405
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Seagrave, J. D., Faucet	160,354
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Soobodo, F., and F. Luxa, Car brake	160,477
Spang, H. W., Electric railway signal apparatus, (reissue)	6,318
Spencer, C. L., Weft thread knitting machine	160,478
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Thurstin, E. A., assignee	160,475
Tinker, H. H., assignee	160,437
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Whitman, S. F., Candy mixing machine	160,494
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Woodruff, J., Damper for furnaces	160,497
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Young, McC., Machine for making matches	160,376

TITLES, DRAWINGS, AND CLAIMS

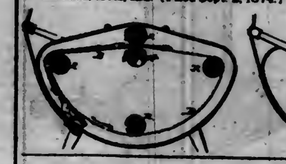
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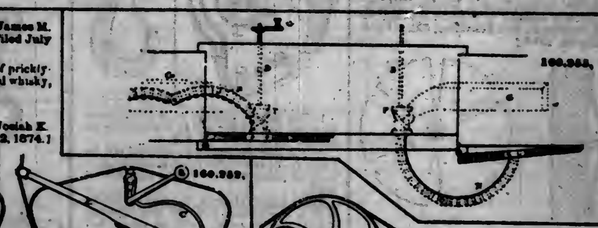
PATENTS GRANTED MARCH 2, 1875.

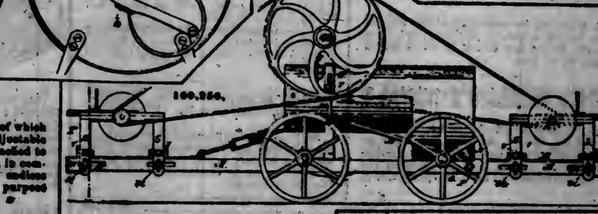
160,266. MEDICAL COMPOUNDS. James M. Adamson, Prairie City, Iowa. [Filed July 10, 1874.]

A medical compound consisting of prickly ash, rhubarb, wahoo, poplar bark, and whisky, substantially as described

160,282. WASHING-MACHINES. Josiah K. Alwood, Mota, Ind. [Filed Sept. 2, 1874.]



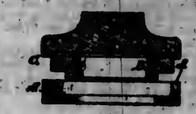




The bent springs C, the upper ends of which surround the journaled ends of the adjustable roller R', having their lower ends attached to the staples b of the pivoted levers L, in combination with the rollers R R' and endless belt B, substantially as and for the purpose set forth.

160,262. PITH-WHEELS. Edward Barraclough and Timothy Pritchard, Brooklyn, N. Y. [Filed Sept. 30, 1874.]

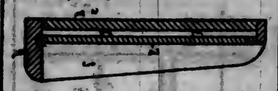
Brief.—Two circles of angle-iron fitted together with a cap-plate to exclude dust.



1. The outer flanged ring A in combination with the inner flanged ring B, as and for the purpose set forth.

2. The outer flanged ring A with inner flanged ring B and cap C in combination, as and for the purpose set forth.

160,264. DOOR-CHECKING BOARDS. L. L. Black, Lowell, Mass., assignor to himself and Geo. B. Hart, Sandwich, N. H. [Filed Jan. 18, 1875.]

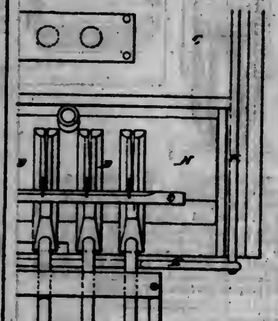


As a new article of manufacture, a door-checking board composed of a back, B, and a glass top or face, E, bedded in an interposed layer, *g*, of softened substance, with or without the back and end flanges *b f*, substantially as shown and described.

160,263. SHUTTER-WORKERS. J. Burrell, Philadelphia, Pa. [Filed Sept. 30, 1874.]

Brief.—A swinging jointed rack, with downwardly-projecting arms, teeth, engages with the worm of an endless screw, and works entirely within a flanged bed-plate let into the window-sill, all parts of the device being protected from the weather; the crank-handle reached and operated from inside the window.

An improved shutter-worker, consisting of the flanged plate G, secured within the window-sill, the circular hinged or jointed rack H, attached at one end to the shutter, the endless screw F, and the crank-shaft C D, all constructed, arranged, and operating substantially as described and shown, for the purpose set forth.



The pedal F, lever E, air-reducator C, receiver B, valve D, and pedal rod-board H, all in combination, as set forth.

160,265. GAUGE-MACHINES. Robert B. Boyd and Henry C. Fox, Memphis, Tenn. [Filed Mar. 19, 1874.]

Brief.—A portable engine and boiler support an adjustable platform, on which are sewing-machines operated by the engine.

1. The combination of the carriage A, rods H, strap F', nuts J, bands N, lugs O, and slots P, all constructed and operating as and for the purposes described.

2. The combination of slots R in timbers W of carriage A, bolts U, lugs S of frame T, and slotted wedges V, all constructed as and for the purpose described.

160,267. PEDAL ATTACHMENTS FOR ORGANS, &c. Riley Burdett, Erie, Pa. [Filed Dec. 3, 1874.]

Brief.—Each pedal-key provides the wind-pressure to sound its own reed as it is played.

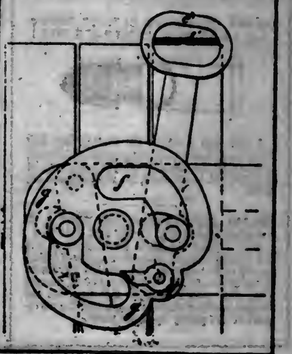
160,268. WAGON-BODIES. Isaac S. Clawson, Monroe, Wis. [Filed Jan. 11, 1875.]



The combination, with the bottom A, skirt D D, and auxiliary sides E E of a wagon-box, of the irons C, formed with the rods *a* and open-ended semi-tubes *d*, and the irons D, formed with the rods *c*, all substantially as and for the purposes set forth.

160,250. BELT-SHIFTERS. Thos. S. Crane, Newark, N. J., assignor of two-thirds his right to C. M. Bolen and F. K. Day, same place. [Filed Dec. 26, 1874.]

Brief.—Each of two partly-eccentric slots in a disk rotated on a frame by a pitman has working in it a pin attached to each of two arms pivoted to such frame at one end, their other ends having eyes, through which the bolts pass.

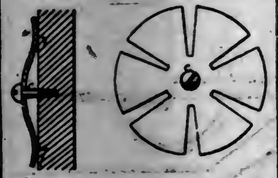


HELIOTYPE RELIEF PROCESS. JAMES ROSS COR & CO. BOSTON

The combination and arrangement of two shippers, *c c'*, support *x*, and slots *f f* on disk *g*, with the belts *d d'* and pulleys to be driven by the same, when operated substantially in the manner and for the purposes described

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160,260. TICKET-CLASPS. Mordecai Disney, Oakland, assignor of one-half his right to E. C. Kibbee, San Francisco, Cal. [Filed May 18, 1874.]



A ticket-holder consisting of the annular disk, having a flanged periphery, and being radially slotted and struck up into a convex shape, as set forth.

160,261. SHUTTLE-GUARDS FOR LOOMS. J. L. Dow, Manchester, N. H. [Filed Feb. 6, 1875.]

Brief.—The guard-rod is arranged to be turned up against the rod-cap when required, and is held down in working position by a central support having a notched rib adapted to receive the rod when sprung into it.



In combination with the top-bar of the reed-frame of a loom, the stands B, B, and D and bent rod C, arranged to work substantially as described, for the purpose set forth.

160,262. WHIFFLETREE-CLIPS. J. Alderman, Chicago, Ill. [Filed Feb. 8, 1875.]



The whiffletree-clip having the head A and loop B cast in one piece, and open, as shown, to be closed and riveted cold, as and for the purpose specified.

160,263. CARTRIDGES. De Witt C. Farrington, Lowell, Mass. [Filed Feb. 8, 1875.]



A cartridge in which the shell or case and the projectile are connected together, as shown, and having the metal of the projectile turned over the end of the shell, for the purposes set forth.

160,264. FIREARMS-CLEANERS. Edwd. S. M. Furnald, Stacy, Me. [Filed Jan. 6, 1875.]

Brief.—Wing-segments are secured at one end to the pulley, their concave surfaces fitting closely to the bushing. The upward movement of the lower forces the segments into contact with and cause them to quickly clasp, the flanged bushing, thereby regulating the movement of the pulley upon the shaft.



1. The flanged bushing B, in combination with the ring-segments C C, substantially as and for the purposes specified.

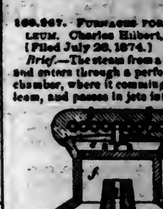
2. The ring-segments C C, adjusted and secured as shown and described, in combination with the pulley A, as and for the purposes set forth.

3. The levers D D, with the adjusting-screws E E, in combination with the ring-segments C C, to operate substantially as shown, and for the purpose described.

4. The combination of the flanged bushing B, ring-segments C C, and levers D D, constructed and operated as and for the purposes specified.

160,265. SEAMING-MACHINES. William J. Gordon, Philadelphia, Pa. [Filed Dec. 17, 1874.]

Brief.—A vertical plunger has pivoted seaming-jaws with inclined faces, entering corresponding recesses in the female die, opened to open the can by cams, and closed around the can by springs.



160,266. WHEELS FOR VEHICLES. Andw. J. Hodges, Peoria, Ill. [Filed Jan. 15, 1875.]

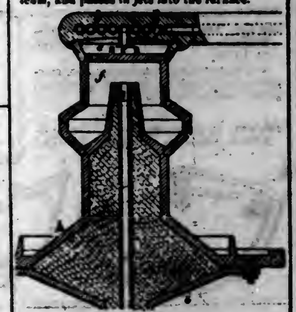
1. The double circle C C, of angle-iron, spokes B B, &c., cast in the cast-iron hub A, of one piece, all combined substantially as and for the purposes set forth.

2. The combination, with the hub A and the angle-iron spokes B B, &c., of the double circle of angle-iron fellies C C, and the tire D, substantially as described.

3. The combination of two circles of spokes, B B, set in a single hub, A, inclining together at their outer ends, the angle-iron fellies C C, and tire A, shrunk thereon, substantially as and for the purposes described.

160,267. FURNACES FOR BURNING PETROLEUM. Charles Hilbert, Sing Sing, N. Y. [Filed July 20, 1874.]

Brief.—The steam from a coil is superheated, and enters through a perforated diaphragm a chamber, where it commingles with the petroleum, and passes in jets into the furnace.



The petroleum supply-pipe *l*, passing through the base *h i*, filled with non-conducting material, and entering the mixing-chamber *f* that has jet-holes around the lower portions of such chamber, in combination with the superheating steam-pipe *b*, cap *c*, and jets passing into the chamber *f*, as and for the purposes set forth.

160,268. WHEELS FOR VEHICLES. Andw. J. Hodges, Peoria, Ill. [Filed Jan. 15, 1875.]

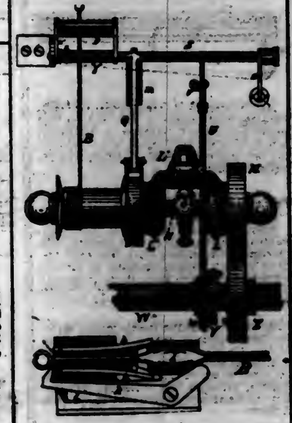
1. The double circle C C, of angle-iron, spokes B B, &c., cast in the cast-iron hub A, of one piece, all combined substantially as and for the purposes set forth.

2. The combination, with the hub A and the angle-iron spokes B B, &c., of the double circle of angle-iron fellies C C, and the tire D, substantially as described.

3. The combination of two circles of spokes, B B, set in a single hub, A, inclining together at their outer ends, the angle-iron fellies C C, and tire A, shrunk thereon, substantially as and for the purposes described.

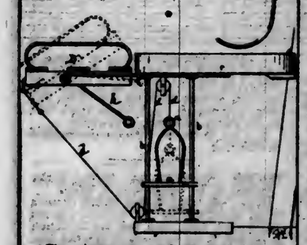
160,269. CAR-BRAKES. Geo. M. Hopkins, Albion, N. Y., assignor of one-half his right to J. A. Straight, same place. [Filed Oct. 6, 1874.]

Brief.—A Chinese-windlass combined with a cable or chain extending throughout the train, the latter provided with automatic coupling and uncoupling devices and friction-gearing upon the locomotive, or under one of the cars, arranged to take power from an axle.



160,270. SCRAP-DROPPERS FOR HARVESTERS. Smith G. King, Round Grove, Ill. [Filed Dec. 16, 1874.]

Brief.—Arrangement of devices as claimed, whereby the bound sheaves are carried and deposited together upon the ground, where a sufficient number has been collected to form a shock.



The stirrup *a*, perpendicular rods *b b*, and cord *d*, in combination with the tilting platform D and stop-rod *h*, as and for the purpose specified.

160,271. TELEGRAPH SOUNDERS AND RECORDERS. Danl. F. Leahy, Portland, Oreg. [Filed July 17, 1874.]

Brief.—Adjustable recording-pen attached to sounding-bar. Paper passes over a concave plate, so as to spring slightly under the pen, and not interfere with the movement of the sounder-bar.



1. The adjustable pen E, provided with the inking attachment P and the supplying-trough Q, in combination with sounder N, substantially as and for the purpose set forth.

2. In combination with the sounder N and pen E, the concave plate H, substantially as and for the purpose set forth.

160,272. SHAKING GRATES. Jas. Mahony, Newport, R. I. [Filed Jan. 27, 1875.]

1. The alternately-rocking grate-sections C D, in combination with a rocking shaft, E, with toes thereon, adapted to raise the one section while the adjacent sections are depressed, substantially as herein specified.

1. The combination of the winding-drum A, spring F, cables *g*, B, and *f*, pulley C, and lever D, substantially as shown and described.

2. The combination of the fuses *e*, part *c*, cable *f*, and pulley C, for producing a gradually-increasing strain with diminishing speed, as shown and described.

3. The combination of the coupling G and cable B, as set forth.

4. The combination of the parts H and I and springs *h h*, as shown and described.

5. The combination of the sleeves J *j'*, catch *k*, and spring *l*, as shown and described.

6. The combination of the pedal T, lever *o*, shaft S; lever *n*, shaft U, cam *v*, lever *w*, and clutch V, substantially as shown and described.

7. The combination of the arms *x x'*, rollers *y y*, ball Z, stud *x*, pin *x'*, spring Y, shaft S, and lever *m*, as set forth.

8. The combination of the spring *r*, sleeve *q*, rod *p*, and catch *t*, substantially as shown and described.

9. The combination of the axle W, spur-wheels X and M, epicycle-train, consisting of the wheels L L' L'', friction-wheel P and strap surrounding it, lever Q, drum R, cable B, pedal T, shaft S, levers *m*, *n*, and *o*, rollers *y y*, arms *x x'*, stud *x*, pin *x'*, ball Z, spring Y, cam *v*, shaft U, lever *w*, and clutch V, substantially as shown and described.

160,273. MILK-COOLERS. George McEwan and Charles O. Gibson, Derby Line, Vt. [Filed Feb. 12, 1870.]

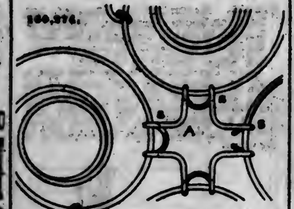
Brief.—The milk is cooled or heated by a continuous or intermittent flow of cold or warm water through pipes immersed in the vat. The contents of the pipes are drawn off and regulated by means of the siphon-cup.

1. The combination, with the pan A, having at its end guide-stripe or flanges *g g* and standard G, of the cooling or heating pipes B, provided with induction-tube C, funnel E, and rods *d d*, substantially as and for the purpose specified.

2. The combination of the pan or vessel A, having guide-stripe or flanges *g g*, and the cooling or heating pipes B, with siphon or ejection-tube D of the cup F, provided with nozzle *e*, projecting flange *h* and *i i*, substantially as and for the purpose set forth.

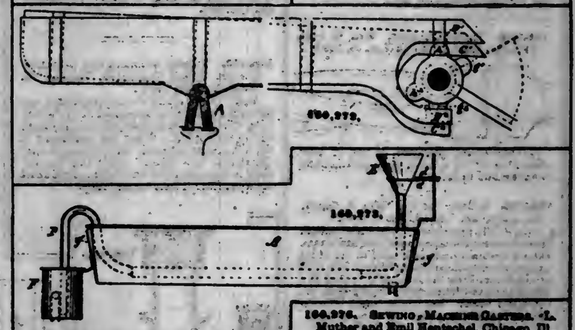
160,274. CONNECTIONS FOR BED-BOTTOM SPRINGS. A. C. McMains, San Francisco, Cal. [Filed Jan. 7, 1875.]

The combination of the double four-armed clamps A B with the spiral springs, substantially as and for the purpose set forth.



1. The combination of the stem E, having stud *s'*, head *s''*, the bent *d*, and faucet or cock A, to operate as and for the purpose set forth.

2. The combination of the pin F, rod C, with groove *f*, and faucet or cock A, as and for the purpose set forth.



160,275. SEWING-MACHINE CASTERS. E. Muther and Emil Hentschel, Chicago, Ill., assignors to R. W. Phillips and Amos B. Keith, same place. [Filed Dec. 29, 1874.]

Brief.—A cross-bar carrying at its two ends caster-wheels or rollers, and likewise recessed above these rollers to receive the feet or standards of a sewing-machine table, is provided with a vertically-adjustable hook, arranged to pass through the cross-bar midway between the rollers. The upper part of this hook engages with the frame-work of the standards, and its lower part being threaded with milled-nut attachment, the hook is easily adjusted, and adapted for suspending or holding the cross-bar carrying the casters in desired position.



A sewing-machine caster-attaching device, consisting of the cross-bar C, constructed to receive the feet of the standards, and provided with rollers D and with the vertically-adjustable hook F, substantially as and for the purposes specified.

160,276. FAUCETS. Ferdinand Meissner, St. Louis, Mo. [Filed Aug. 10, 1874.]

Brief.—The hose is drawn into the faucet, when it is inserted in the barrel, and forced out again by a stem after insertion, when it uncoils and rises to the surface to supply air to the liquid. To cut off the supply of air the valve-rod is turned to allow the pin in it to enter a groove in the faucet, which closes the valve.

160,277. RAILWAY-RAIL JOINTS. Chas. B. Phillips, Chicago, Ill. [Filed Feb. 16, 1874.]

Brief.—A rail-joint support consisting of a flat piece of metal bolted to under sides of two adjoining rails.

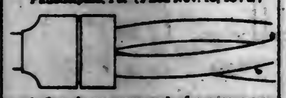


The rails B B, secured beneath the joint by the flat metallic plate A, equal in width with the base of the rails, and fastened thereto by bolts and nuts, substantially as specified.

160,979. CURTAIN-FIXTURE. S. H. Phinney, Rochester, N. Y., assignor to Wm. S. Reeve, same place. [Filed Dec. 2, 1874.]

A curtain-fixture having its pawl-lever A detachably connected to the bracket B by means of an offset-lip, c, projecting on opposite sides of the axial center of said lever, and playing in the slots a in the bracket, and a centering-pivot, f, substantially in the manner and for the purposes set forth.

160,979. FLUE-CLEANERS. Wm. O. Pike, Philadelphia, Pa. [Filed Nov. 16, 1874.]



A flue-cleaner composed of one or more tubes twisted into a spiral form, substantially as shown and described.

160,980. SULKY-PLOWS. Wm. B. Quick, St. Louis, Mo. [Filed Dec. 7, 1874.]

Brief.—The plow-frame is adjustable at both ends by means of segmental braces and levers. The plow-beam proper is hinged to the frame and supplemental stationary beam. The plow can be raised from the ground by means of a bent lever and friction-roller resting upon the stationary beam. The whole frame is vertically adjustable at either end, or as a whole.

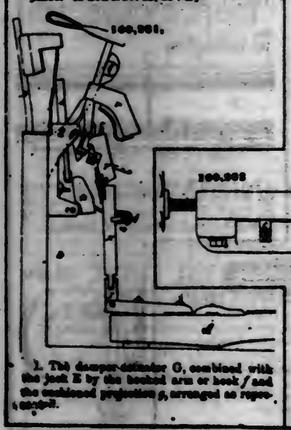


1. The plow-beam C, arranged in relation with the axle a as herein shown and described, and hinged by its brace s to the frame B and sub-beam D', in the manner and for the purpose set forth.

2. The combination of the adjustable frame B, its braces B' B', levers D' D', rods b', and axle a, as herein shown and described, to operate as and for the purpose set forth.

160,981. JUVENILE-PIANO ACTIONS. Chas. H. Rogers, Boston, Mass., assignor to the Vogers Upright-Piano Company, same place. [Filed Nov. 13, 1874.]

160,981.



1. The damper-detainer G, combined with the jack E by the hooked arm or hook f and the combined projection g, arranged as represented.

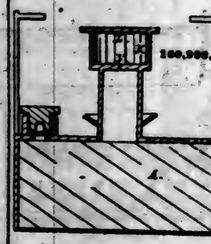
2. The jack E and escapement F, combined with the key A by the intermediate hinged piece I applied to them, substantially as set forth.

3. The hammer B, provided with the combined hook m, escapement-notch l, and arm r, arranged as described, in combination with the jack E, provided with the hooked escapement F, and the damper-actuator G applied to said jack, all being substantially as shown and specified.

160,982. VAPOR-BURNERS FOR COOKING-STOVES. Frank Rosengren, Chicago, Ill. [Filed Aug. 24, 1874.]

Brief.—There are two vapor discharges, one through a perforation in the side of the filling-tube, which may be entirely or partially closed by the screw-plug. When the perforation in the filling-tube is closed, the amount of vapor discharged and burned under the heating-plate is increased, and more heat is conducted downward to increase vaporization.

160,982.



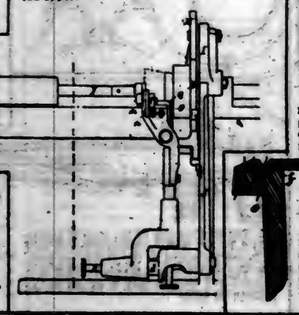
1. The combination, with chamber A, of two vapor-discharges, both under the vessel to be heated, one with a port, L, arranged to receive and transmit heat from its flame to the plate E, to produce vapor, and the other made adjustable and arranged to regulate the quantity of heat produced, substantially as set forth.

2. The combination of the filling-tube and the vapor-escape in one device, and separate and away from the regular burner-outlet, all substantially as set forth.

3. The combination of chamber A, filled with fibrous matter, with a vapor-discharge provided with plate L, having metallic conductors to convey heat from its flame to chamber A for vaporizing, and a vapor-discharge in a filling-tube not so provided, both being below the vessel to be heated, substantially as set forth.

160,983. MACHINERY FOR TRIMMING THE HEELS OF BOOTS AND SHOES. William H. Bounds, Brockton, assignor to the Shoe-Machinery Manufacturing Company, Boston, Mass. [Filed Aug. 14, 1874.]

Brief.—The machine is provided with a knife for trimming the outer surface of the heel-lifts, one for trimming the welt, acting simultaneously, which are provided with guards, so arranged that the knives may be tilted to any desired angle without injury to the upper.



1. In a heel-trimming machine, substantially as described, the combination, with the reciprocating knife Q, of the fixed guard m and the rotating guard q, when arranged as and for the purpose set forth.

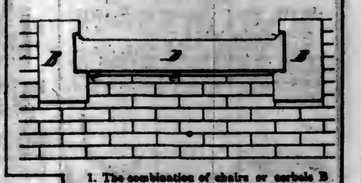
2. A heel-trimming machine provided with a reciprocating knife, Q, a fixed guard, m, welt-knife n, and a rotary adjustable guard, q, all constructed, arranged, and operating together in manner and for the purpose set forth.

3. In a heel-trimming machine, substantially as described, the combination, with the reciprocating knife and heel-pattern, of the guard U, the fixed guide m, and the rotary guard q, when constructed and arranged in manner and for the purpose set forth.

4. In a heel-trimming machine, substantially as described, the combination, with the reciprocating knife and heel-pattern, of the guard U, the fixed guard m, the welt knife n, and the rotary guard q, the whole being arranged in manner and for the purpose set forth.

160,984. WINDOW-SILLS. J. L. Rowland, New York, N. Y. [Filed Jan. 20, 1875.]

Brief.—A window or door sill made so as to be readily removable by means of chairs or seats at the ends embedded in the brick-work, which sustain the sill. The sill has a projection or drip formed on its lower side.

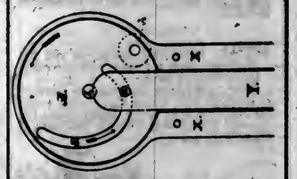


1. The combination of chairs or carbels B with a window or door sill, D, whereby the sill may be removed and another supplied in its place without removing, displacing, marring, or damaging the brick or stone work of the wall, substantially as described.

2. A sill, D, having a drip, c, substantially as described.

160,985. DOOR-CHECKS. George Royle, Buffalo, N. Y. [Filed June 10, 1874.]

Brief.—The novel feature merely consists of the revolving disk with involute slot, the construction being such that the revolution of the disk in one direction pushes the door check or bolt out of its casing, while an opposite movement draws it back and releases the door.

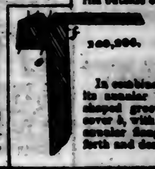


The combination, with the case X, having a circular recess, of the revolving disk A, involute slot S, pin L, concentric slot t, handle h, bolt Y, and stud d, all when arranged to operate substantially as described.

160,986. AIR-TIGHT DISHES. F. Shaw, Somerville, Mass. [Filed Dec. 9, 1874.]

Brief.—A glass dish provided with a flanged rim and groove, over which rim and into said groove a metallic cover is compressed. A cement may be applied between the cover and rim outside of the groove, for sealing.

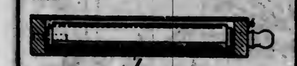
160,986.



In combination with the glass dish A, with its annular curved flange a d, annular V-shaped groove a, and ring f, the metallic cover b, with its annular V-shaped lip t and annular flange g, as and for the purpose set forth and described.

160,987. TRANSPARENT SLATES. C. C. Shephard, Passaic, N. J. [Filed Oct. 6, 1874.]

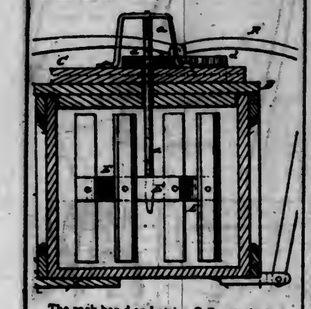
Brief.—The transparent slate is combined with rollers carrying the subjects to be copied to different points beneath the slate, as desired.



The transparent slate herein described, formed of ground glass in a frame, two rollers with a web containing the pictures or letters to be copied, and a backing, f, to retain the web in contact with the glass, as and for the purpose set forth.

160,988. CHURNS. Jas. W. Simmons, East Monroe, Ohio. [Filed Jan. 2, 1875.]

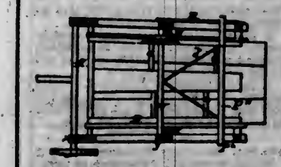
Brief.—The dasher, which has a pinion near its top, receives a vertical reciprocation from a horizontal reciprocating rack-bar, sliding in grooved cleats secured on the churn-lid. Said rack-bar is detachably connected by pitmen with the operating mechanism at either side of the churn.



The rack-bar d and stripe C C, attached directly to the lid B, in combination with shaft e, pinion h, frame D, arranged to operate the dasher by means of connecting-rods I E, all constructed and arranged as and for the purpose specified.

160,989. MACHINERY FOR STUFFING MATTRESSES. Joseph B. Spurgin and William J. Freeman, Kansas City, Mo. [Filed Mar. 17, 1874.]

Brief.—The width of the holder is regulated by bars and wedges, which are adjusted in slotted cross-bars. The stuffing material is placed in the holder, and the presser lowered thereon. It is then compressed by the cross-bar, which is placed across the presser, with one end under a hook on one side of the machine, while the other end is drawn down on the presser by a hook and lever on the opposite side of the machine. The material is then forced from the holder into the cover or ticking.

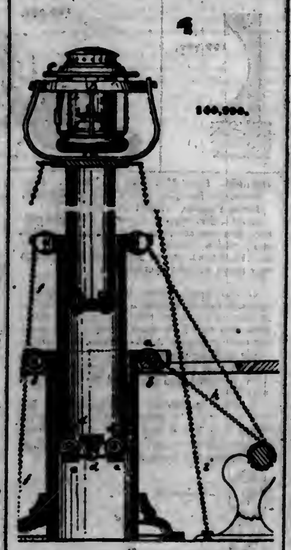


1. The holder and presser, in combination with the cross-bar F', hooks F F', and lever E, substantially as and for the purpose herein set forth.

2. The holder, in combination with the slotted cross-bar F', keys K, and wedges S, all substantially as and for the purpose set forth.

160,990. TELESCOPIC TOWERS FOR LIGHT-SHIPS. Stephen D. Trueheart, New York, N. Y. [Filed Feb. 6, 1875.]

160,990.

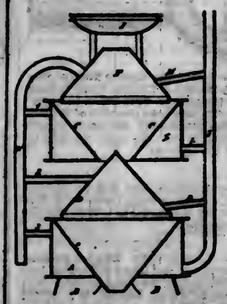


1. A tower for light-ships made in adjustable sections, as described, and adapted to carry a signal-light at its top, whereby the whole is adapted to be lowered to the deck of the vessel, substantially for the purpose specified.

2. The combination, with a series of tower-sections, of the pulleys b d, chains or shrouds h f i, and windlass p, substantially as and for the purposes herein set forth.

160,991. BEER-COOLERS. John B. Weis, Sandusky, Ohio. [Filed Dec. 14, 1874.]

Brief.—The beer to be cooled is divided into fine streams by passing through the perforated basin, then by falling upon the cone; thence to the inclined surface of the cylinder. It is still further cooled by passing over the other cone, and, furthermore, by its passage over the inclined sides C of the cylinder A. The amount of water flowing into cylinders and cones from the pipe J is regulated by the stop-cocks h.



1. The cylinder A, having oblique sides C, in combination with the hollow cone D, induction-pipe J, side pipe K, ejection-pipe N, and side pipes 1 2 3, substantially in the manner as described, and for the purpose set forth.

2. The cylinder A and cone D, in combination with the cylinder E, cone F, perforated bush I, induction-pipe J, side pipes M L K, stop-cocks h, and ejection-pipe N, having side pipes 1 2 3, substantially as described, and for the purpose specified.

160,992. SPOOLING-MACHINES. John W. West, Boston, assignor of one-half his right to Augustus Seaver, Milford, Mass. [Filed Oct. 31, 1874.]

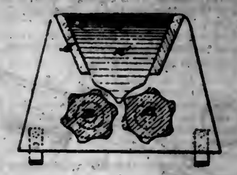
Brief.—The revolving spool-carrying rods and guide-rods are arranged in the arc of a circle. The latter are compensated along the former, to lay the thread upon the spools, being connected by means of the radial arms to the stock, and central shaft moved endwise by depending arms, which engage the screw-rod.



In a spooling-machine constructed substantially as described, the combination of the shaft H, provided with the arms S S', stock I, provided with the radial arms J, rods C K, and screw R r, substantially as and for the purpose set forth.

160,993. BUTTER-WORKERS. P. B. Allen, Chicago, Ill. [Filed Jan. 26, 1875.]

Brief.—The butter, being placed in a hopper, is drawn down through the machine, and in its passage is kneaded or worked by two rollers, so constructed that ribs of one work in grooves of the other. The ribs are formed concave on the front side, and convex on the rear, so that convexity of one works in concavity of the other.



The rollers D in a butter-worker, grooved longitudinally in such a way that the projections or ribs between said grooves may be concave upon the forward side, and rounded upon the rear side, and concaved or bevled upon their end parts, substantially as herein shown and described.

160,994. CAR-COUPLINGS. Cyrus F. Bahn, Young America, Ill. [Filed Feb. 6, 1875.]

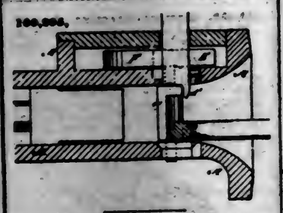


The draw-head A, having a straight bottom, and the locking-bar B combined therewith, and hinged in the aperture a', which it accurately fits, and provided with the arc-shaped recess b', to operate with the straight coupling-link C, having dogs c on its ends, substantially as and for the purpose specified.

160,995. CAR-COUPLINGS. Owen T. Baker, Wamego, Kans. [Filed June 27, 1874.]

Brief.—When it is desired that the cars shall couple on coming together, the pin is placed in the position shown in Fig. 1, so as to fall when the valves C are driven front under it by the entering link; otherwise the pin is raised and tipped forward, so that its toe d will rest in a notch in the upper plate of the link-chamber.

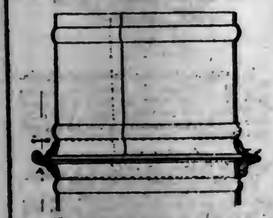
The combination of the valve C, lever E, spring F, and coupling-pin D, and the bumper A, to adapt them to operate in connection with link B, substantially as shown and described.



160,886.

160,886. STOVE-PIPE COUPLINGS. Robert R. Ball, West Meriden, Conn. (Filed Dec. 12, 1874.)

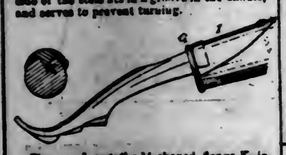
Brief.—The entire length of the sheet-metal sections is utilized.



A stove-pipe coupling having shoulder *f*, slots *h*, hook *i*, and slotted inclined flange *j k e*, as shown and described.

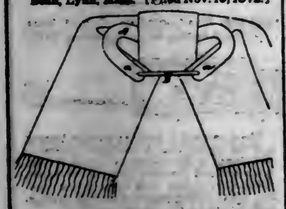
160,887. STOVE-LID LIFTERS. Robert R. Ball, West Meriden, Conn. (Filed Dec. 12, 1874.)

Brief.—A triangular flange on the under side of the stem fits in a groove in the handle, and serves to prevent turning.



The cap I and the V-shaped flange K, in combination with the disk G and handle B, for the purposes described.

160,888. NECK-TIE SUPPORTERS. Benj. F. Bean, Lynn, Mass. (Filed Nov. 10, 1873.)



The neck-tie supporter composed of the forested plate A and the elastic band B, constructed as described, and combined and arranged with the neck-tie bow and band, all substantially as specified and represented.

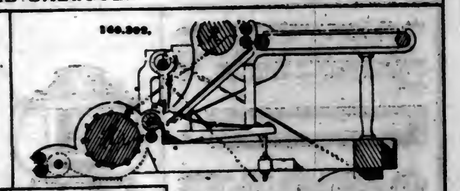
160,889. HAND-BOARDS FOR PIANO-FORTES. Jos. H. Behning and J. Diehl, New York, N. Y. (Filed Jan. 28, 1875.)

Brief.—The lower portion of the hand-board front is hollowed out to give more room for fingering the black keys.

A hand-board for pianos and organs having a longitudinal concave groove cut into the front or outer side, substantially as shown, and for the purpose set forth.



160,889.



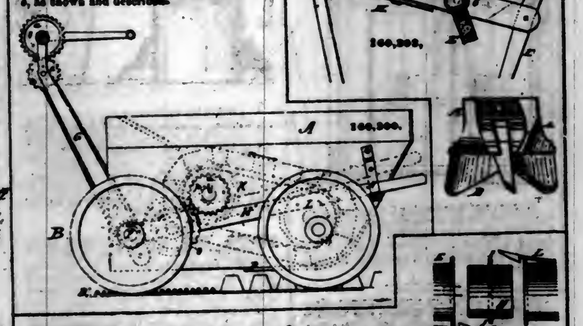
160,892.

160,890. PEAT-MOLDING MACHINES. Jean François Bocquet and Victor A. Bécard, Paris, France. (Filed Oct. 30, 1873.)

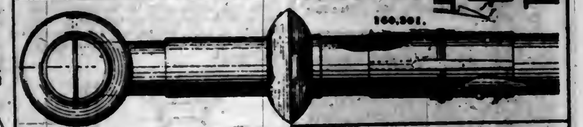
Brief.—The wheels move on a cogged railway, and operate through gearing the endless chain which carries the molds. The latter may be thrown out of gear, and the carriage may move without operating it.

1. The combination, with the stationary toothed rail laid upon a suitable horizontal surface, of a toothed wheel, B, working therewith, the axis F, a crank-shaft, C, the molding-case or hopper A, the drums K L, articulated molding-chain, and gearing for connecting the said axis, shaft, and drums, substantially as shown and described, for the purpose specified.

2. The combination of pivoted lever H, the spur-wheel *o*, mounted thereon, with the wheel *p*, drums K and L, the endless chain, and gearing for imparting motion to the wheel *o*, as shown and described.



160,890.



160,891.

160,891. SMOKE AND CINDER CONDUCTORS. Danl. L. Prancher, Lincoln, and J. L. Ring, Mount Pulaski, Ill. (Filed Dec. 26, 1874.)

Brief.—The longitudinal motion of the telescopic slides is limited by pins which work in slots in said slides. The parts are held together by spring hooks.

The combination of slides E E, having slots F, pins G, and spring hooks L with short thimble H, having median flange *j*, as and for the purpose specified.

160,892. COTTON-GINS. Edward Bonklin, Jr., Pawtucket, and Henry A. Stearns, Lincoln, assignors of three-eighths their right to Lysander Flagg, Lincoln, R. I. (Filed Sept. 30, 1874.)

In combination with the elastic feeding roller A of a cotton-ginning machine, a stationary knife attached to an adjustable arm, a reciprocating knife operated by an eccentric or equivalent device, and a spring for connecting the reciprocating knife to the arm of the stationary one, and regulating their positions with reference to the roller A without changing their positions relative to each other, substantially as and for the purpose described.

160,893.

160,893. APPARATUS FOR MINING. Wm. Buschley and Theodore Thorn, Pottsville, Pa. (Filed Feb. 3, 1875.)

1. The screw-threaded cutter-head A, having twisted grooves *a* and angular dovetailed slots, for the insertion of the cutters B, in combination with said cutters, arranged to slide in the slots from the circumference toward the center, as and for the purpose specified.

2. The combination of the stem C, crank or handle D, feed-screw E, and the adjustable eye-pin *b* in the beam C, substantially as and for the purposes herein set forth.

3. The combination of the beam C, carrying the drill, the adjustable clear-foot F, and pivoted lever I, with rubber shoe *h*, substantially as and for the purposes herein set forth.

160,894. MILLSTONE-BALANCES. Henry C. Byram, Dover, N. J. (Filed Nov. 19, 1874.)

1. A millstone-balance weight constructed with a projecting flange at top and bottom, one larger than the other, whereby by reversing the weight the center of gravity of the stone will be changed, substantially in the manner described.

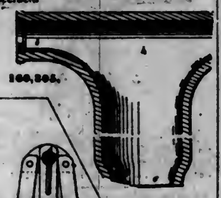
2. A millstone-balance weight constructed in rhomboidal shape, the side which is forward in the revolution of the stone slanting from front to rear, for giving a downward draft to the current of air, substantially as and for the purpose specified.



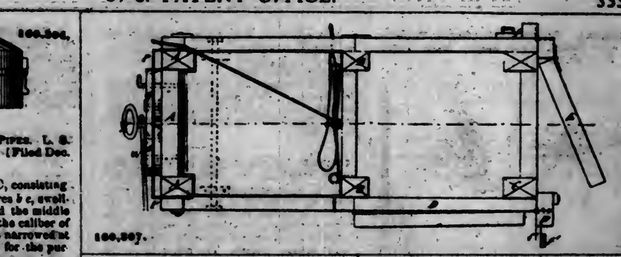
160,895.

160,895. SERVICE COUPLER-PIPES. L. S. Chapman, Washington, D. C. (Filed Dec. 30, 1874.)

A service coupler-pipe, A B C, consisting essentially of the transverse bores *b c*, swelling from their outer ends toward the middle and point of conjunction *b* into the caliber of the reservoir-chamber *a*, which is narrowed at its outlet *c*, substantially as and for the purpose specified.



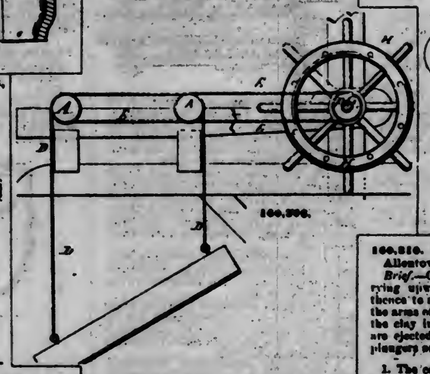
160,896.



160,897.

160,896. DROP-CHUTE REVERSERS. Jos. B. Crowthers, Monongahela City, and Wm. R. Wilkins, Pike Run, Pa. (Filed Jan. 25, 1875.)

Brief.—An improved combination of double windlasses and ropes for operating the reversible drop-chutes in common use, whereby they are more readily manipulated, reversed, adjusted to the rise and fall of the tide, &c.



The combination of the two ropes E, the two drums F, the two wheels H, the locking-pin L, and the shaft O with the rollers A, provided with ropes D, wound upon their ends in opposite directions, substantially as herein shown and described.

160,898. COMBINED CLOTHES AND QUILTING FRAMES. Melvin Churchill, Helvetia, Wis. (Filed Oct. 17, 1874.)

Brief.—Two sets of standards are pivoted at their upper ends, and connected by a cross-bar. Between these is journaled a quilting-frame, which can be turned up and used as part of the clothes-frame.

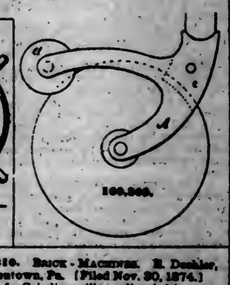
The slotted stands A B and pivoted tongues O' O', combined with pivoted quilting-frames E, having pivot-bar E'' and reversing bars E' E'', the battens F, pawls H, cranks I, pins J, and hooks K, being arranged and applied as and for the purpose specified.

160,899. COLTERS. Albert M. Davis, Jacksonville, Ill. (Filed Nov. 12, 1874.)

Brief.—A grooved roller and grooved block to limit vibration of colter.

1. In combination with the revolving colter, the grooved roller *a*, as and for the purpose described.

2. In combination with the colter, the grooved roller *a* and grooved block *c*, as and for the purpose described.



160,899.

160,896.

160,900. HOG-TRAPS. Jas. F. Cooper and William W. Hiett, Frankton, Ind. (Filed Oct. 24, 1874.)

Brief.—A gangway with a gate at its entrance, hinged to the posts of which are other posts, with the rudiments of rails to start hogs from. In the anti-division the floor is lifted centrally under the animal's hind legs, around which ligatures are passed, while his head is held between the sections of a divided door. One side of the inclosure is opened for surgery upon the animal.

1. The combination of the hinged rails F *f' f''* with the sides of the rear end of the hog-trap, substantially as herein shown and described.

2. The arrangement of the two boards O, the cross-bar Q, and the stationary bars P and S, with respect to each other and the frame A, substantially as herein shown and described.

3. The combination of the three-armed lever W, the keepers V, key X, lever-pawls U, cord or chain Z, and screw-loop Y, with the boards O, the rabbet-bar S, and the cross-bar Q, substantially as herein shown and described.

160,901. BRICK-MACHINES. B. Dunbler, Allentown, Pa. (Filed Nov. 30, 1874.)

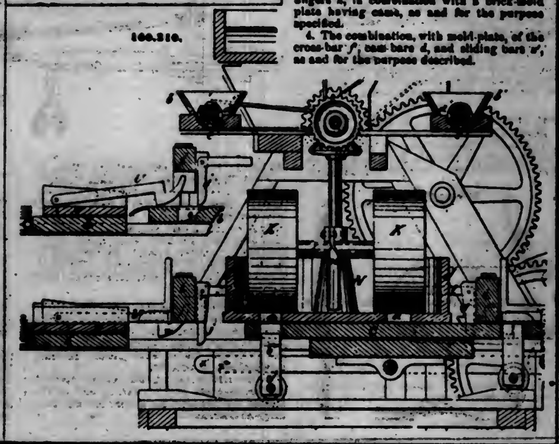
Brief.—Grinding-mills; endless belting, carrying upward material to tempering-mills; thence to a central cylinder, with rollers on the arms of a rotating stem therein, pressing the clay into molds, from which the bricks are ejected at each end of the machine by plungers on inclined ways beneath.

1. The combination, with vessel N, having holes *a*, of the rotary grinders K K and twisted blades X, arranged to operate in the manner described.

2. The combination of the board *g*, having pivoted hook-bar U *n*, spring-platform *h*, and mold A, as and for the purpose set forth.

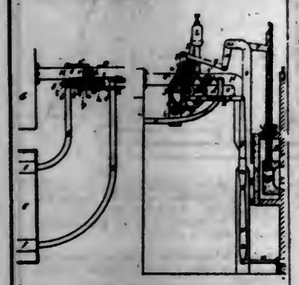
3. The cross-bar *i*, having angle-bar *j* and fingers *k*, in combination with a brick-mold plate having cams, as and for the purpose specified.

4. The combination, with mold-plate, of the cross-bar *f*, cam-bars *d*, and sliding bars *n'*, as and for the purpose described.



160,901.

160,211. REVERBERATING STEAM-BROILER. Geo. Buell Dimwell, Boston, Mass. [Filed Nov 20, 1874.]



1. The combination of the cooler P with the superheated-steam generator G, the engine-cylinder A, their connection-pipe H, and a valve, b, arranged in each pipe, all being substantially as described.

2. In combination with the superheated-steam boiler or generator G and engine-cylinder A, and the connection-pipe H, the two throttle-valves b f, and the cooler P, all being arranged and applied substantially in manner and to operate as described.

3. The combination of the steam alarm or whistle, with the superheated-steam generator G and engine-cylinder A, and their connection-pipe H, the two throttle-valves b f, and the cooler P, all being arranged and applied substantially in manner to operate as specified.

4. The pyrometric regulator or governor, substantially as described, consisting of the gears g h i, the vibratory shield t, the pyrometer I, and the vibratory arm p, and its pawls n o, all arranged, applied, and connected substantially as and to operate as explained.

5. The combination of the said pyrometric governor, with the superheated-steam generator G and engine-cylinder A, their connection-pipe H, the valves b f, and the cooler P, all being arranged and applied substantially in manner and to operate as set forth.

6. For operating a steam-engine piston by superheated steam used expansively in the cylinder, provided with a variable cut-off or mechanism for arresting at different parts of the stroke of the piston the admission of steam to the cylinder, the new art or method, substantially as described, it consisting in elevating the temperature of the steam of the generator or superheater, as the cut-off may be increased, and lowering the temperature of the said steam as the cut-off may be lessened, the same being so as to maintain, as described, in the cylinder a high or maximum safety temperature, such as will prevent condensation of steam therein, and effect other useful purposes, as set forth.

7. The combination of the pyrometer or heat-measure with the steam-engine cylinder, its piston, valve-chest, valve, and a cut-off applied thereto, each being substantially as and for the purpose or purposes as specified.

160,212. SHIRTS. Geo. R. Rogers, Boston, Mass. [Filed Jan. 27, 1875.]

Brief.—The bosoms may be reversed by turning them on the cord attachment, as on a pivot, without removing them from the shirt.

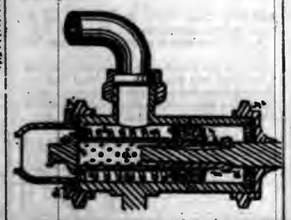


1. A reversible shirt-front, A, made in the manner substantially as described, and provided with a pivotal cord or cords, c c', for the purposes set forth.

2. The combination of one or more reversible fronts, A, each provided with a pivotal cord or cords, c c', with a shirt, the whole being constructed and arranged substantially as set forth.

160,213. WATER-CLOSET VALVES. J. Farrell, Pittsburg, Pa. [Filed Dec. 24, 1874.]

Brief.—The operation of the valve is regulated by the inflow of water to the chamber above the piston, through a passage or passages formed on the side of the coupling, and through the passage of adjustable area formed in the operating-stem. The collar below the piston closes the passages on the side of the coupling.



1. A water-way passage, A, having an adjustable area of water-escape opening, arranged in connection with the operating-stem e, whereby the area of water-escape port may be regulated by the adjustment of the operating-stem, substantially as set forth.

2. The adjustable operating-stem e, having a tapering groove, h, arranged therein, in combination with the piston n, whereby the area of water-escape port may be varied by the adjustment of the operating-stem e with reference to the leakage of the piston, substantially as set forth.

3. The hollow perforated valve-stem a, working by a longitudinal motion in the direction of its length through the valve-port a^2, substantially as set forth.

4. The tubular connection k, having one or more water-ways, m', in combination with an adjustable operating-stem screwed therein, a loose piston thereon, and a collar, o, arranged substantially as set forth.

5. The tubular connection k, with one or more water-ways, m', an adjustable operating-stem screwed therein, a piston thereon, and a collar, o, in combination with the hollow perforated valve-stem a, substantially as set forth.

6. The valve a^2, hollow stem a, collar o, and spring c, in combination with the loose piston n, substantially as shown and described.

160,214. NAIL-PLATE FEEDER. Wm. H. Field, Taunton, Mass. [Filed Jan. 11, 1875.]

Brief.—A standard provided with a rear extension, upon which slides a head provided with spring-actuated jaws, to take hold of the rear end of the nipper-rod, and a latch to hold said head back, the latch being raised by the depression of a pin between the spring-jaws by the insertion of the nipper-rod. The feed-way is provided with adjustable stops to limit the extent of feed.

1. The forked and slotted feeder-bar or rear extending standard, being attached to the main table-standard and provided with adjustable stops, in combination with the sliding and weighted feeder-head guided thereon, substantially as specified.

2. The sliding feeder-head, having pivoted and spring-actuated jaws for taking hold of the flanged above end of the nipper-rod, substantially as described.

3. The sliding feeder-head, provided with a rear extending latch-hook and vertically-sliding pin, acting on the opposite arm of the same, for raising the latch from the rear stop, and detaching the feeder-head on the insertion of the nipper-rod and the consequent depression of the pin, substantially as set forth.

160,215. CLOTHES-LINE SUPPORTS. John W. Fuller, Cleveland, Ohio. [Filed June 13, 1874.]

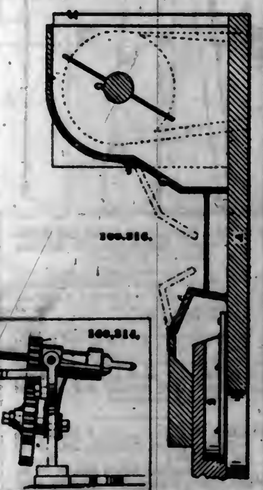
Brief.—On the upper end of a socket are two hooks with their openings in opposite directions.



A clothes-line holder, C, having at the top two hooks, c c, with their openings on diametrically-opposite sides, and the space a' between them, as shown and described.

160,216. REED-ORGAN TREMOLOS. Levi K. Fuller, Brattleborough, Vt., assignor to J. Estey & Co., same place. [Filed Dec. 30, 1874.]

Brief.—The inclosed tremolo-fan has a gate opening toward the swell-valve, and operated simultaneously therewith by knee-lever or other mechanism.



160,216.



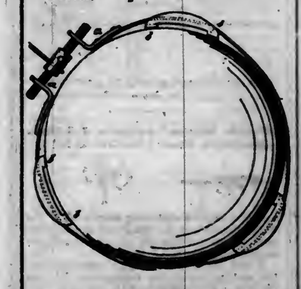
160,214.

1. The shade F, provided with a swell, O, constructed and arranged so as to be interposed between the tremolo-fan D and the reed-cells B, substantially in the manner shown, and for the purposes set forth.

2. The shade F, having its sectional contour wholly or partially curved concentric with the tremolo-fan D, when the said shade is provided with a swell, O, hinged thereto, and arranged to wholly or partially intercept the sound or tone on its way from the reed-cells to the tremolo-fan, substantially in the manner shown, and for the purposes specified.

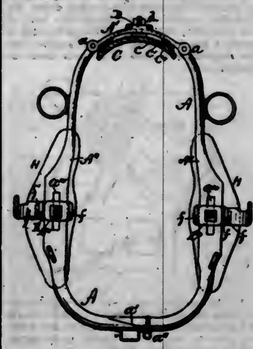
3. The combination of the tremolo-fan D and shade F, provided with a swell, O, attached thereto, with the reed-cells B, reeds a, and reed-swell O, all arranged to operate in conjunction with each other in the manner substantially as shown, and for the purpose set forth.

160,217. MILLSTONE-BALANCES. Christian B. Gosbert, Chambersburg, Pa. [Filed Feb. 9, 1876.]



The separate weights C, provided on the inside, at each corner, with projections b, for resting rests for the weights against the stones, substantially as and for the purposes herein specified.

160,218. HORSE-COLLARS. Lord W. Harbaugh, Muscatine, Iowa. [Filed Jan. 7, 1875.]



1. The rigid collar A, in combination with the bearing-pads H, the latter being formed to fit the shoulder, and pivoted to the collar so as to oscillate freely and conform to the movements of the animal, substantially as set forth.

2. The bearing-pads H, attached to the collar A by laterally-adjustable plates E, substantially as and for the purpose specified.

3. The bearing-pads H, attached to the collar A by vertically-adjustable plates E, substantially as described, and for the purpose specified.

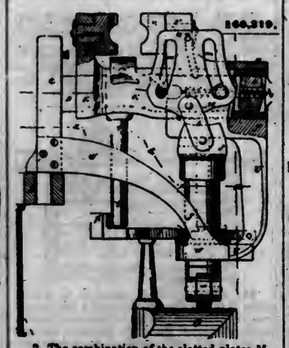
4. The combination of the collar A, oscillating pad C, vertically and laterally adjustable and oscillating pad H, and draft-hooks f, substantially as described, and for the purpose specified.

160,219. DEVICES FOR HOLDING PIPE-FITTINGS. Thos. P. Hardy, New York, N. Y. [Filed Dec. 6, 1874.]

Brief.—A circular track, which carries the post that holds the bar upon which the jaws are arranged, is mounted on posts attached to the bed-plate. Two jaws hold the fitting. One of said jaws is operated by slotted plates, which are attached by a link to the roller-carrying standard. An incline is formed upon the bed, and as the roller travels up said incline the slotted plates are moved upward and the jaws opened, and vice versa.

1. The two movable jaws E F, the spring H, and cross-bar b', in combination with the arm D and carrying-block C, substantially as herein shown and described.

160,219.



2. The combination of the slotted plates M, the guide-pins m' f' o', the links L, the standard J, and the guide-rod I, with the two movable jaws E F, substantially as herein shown and described.

3. The combination of the inclines O with the standard J, the links L, the slotted plates M, and the two movable jaws E F, substantially as herein shown and described.

4. The combination of the guide P and loose collar E with the standard J, links L, slotted plates M, and movable jaws E F, substantially as herein shown and described.

5. The combination of the guide S and arm T with the movable jaws E F, standard J, link L, and slotted plates M, substantially as herein shown and described.

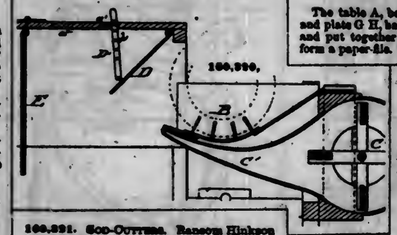
6. The combination of the brace-arms U W with the standard J, the movable jaws E F, and the carrying-block C, substantially as herein shown and described.

160,220. THRASHING-MACHINES. T. Harrison and Wm. C. Buchanan, Belleville, Ill. [Filed Dec. 6, 1874.]

Brief.—Arrangement of fan with upwardly-inclined nozzle immediately beneath the concave, to blow off the chaff from the thrashed grain immediately on its exit from the thrashing devices.

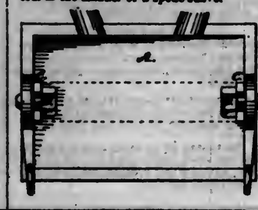
The combination, with the fan C, having tapering channel C', of the hinged plates D and E, all arranged, with respect to concave B and opening a', substantially as and for the purpose specified.

160,220.



160,221. SOD-CUTTERS. Ransom Hinkson and N. P. Hinkley, Buffalo, N. Y. [Filed July 14, 1874.]

Brief.—A box-frame to be drawn upon the ground; the cutter adjustable below its bottom in the manner of a spoke-shave.



In a sod-cutter, the combination of a hollow or box-shaped gage-board, A, an adjustable cutter, C C', and the handles B B, all arranged for joint operation, substantially in the manner and for the purposes described.

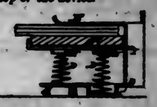
160,222. SADDLE-HORSE APPARATUS. A. Hitt, Flora, Ill. [Filed Aug. 10, 1874.]



In combination with the crupper and pulley-strap F, the stay-straps J, substantially as and for the purposes described.

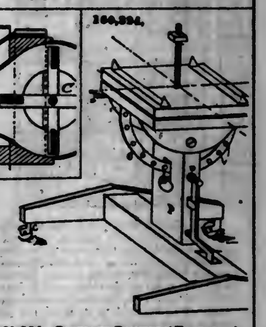
160,223. BILL-FILES. Richd. H. Hoffman, Keyser, W. Va. [Filed Jan. 20, 1875.]

Brief.—The bottom, back, and top are of one piece. A slot in the back passes a tongue which extends from the spring-follower. Bills or papers are clamped between this follower and the top of the device.



The table A, bed B C, springs D, plate E, and plate G H, having arms I, all constructed and put together in the manner described to form a paper-file.

160,224. CARRIAGE-PAINTERS' EASELS. A. Horne, Rutland, Ohio. [Filed Dec. 28, 1874.]



The combination of the adjustable platform T, provided with a semicircular ratchet-bar, O, with the upright post P and the turn-table T, substantially as herein shown and described, and for the purpose set forth.

160,325. BOTTLE-STOPPERS. T. J. Holmes, Boston, Mass. [Filed Jan. 6, 1875.]

Brief.—The vent-opening in the cap and the passage through the screw-shank are of such form as to allow of the entrance of an atomizing-tube, and at the same time to afford room for the passage of air between the outside of the tube and the inside of the screw-shank. The shank is inserted in a cork or rubber stopper.



The cap *b*, with its vent-opening, in combination with the hollow screw-shank *a* and stopper A, substantially as and for the purpose described.

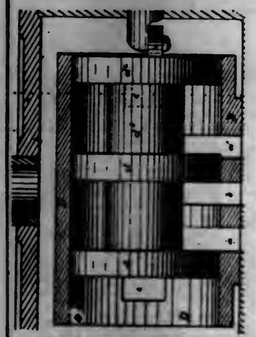
160,326. CAR-COUPLINGS. W. R. Hoopes and M'L. Smith, West Chester, Pa., assignors of one-third their right to B. Keech, same place. [Filed Feb. 16, 1875.]



1. The combination, with the slotted draw-head A, of the slide C, arms *a a*, stirrup D, with rod *b*, and the weight E, substantially as and for the purposes set forth.

2. The stop *f*, in combination with the stirrup D, arms *a*, and slide C, substantially as and for the purposes set forth.

160,327. BALANCED VALVES. James A. Hutchison, Pittsburg, Pa. [Filed Jan. 9, 1875.]

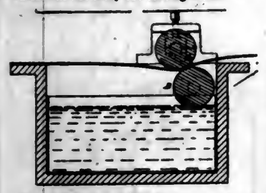


1. The piston-valves *d d'* and the valve-case D, in which they operate, arranged in the steam-chest B, the interposed valve *d''* serving to govern the exhaust-port, whereby steam-pressure being free to act against the outer ends of the outer piston-valves, and in the operation of the engine, between the valves, each valve will be balanced at all times, the combination being substantially as set forth.

2. The steam-supply ports *c* in the valve-case D, and the receiving and exhaust ports *a a'* *b*, the area in cross-section of each of said ports being greater than the aggregate area of each pair of said supply-ports, in combination with an arrangement of valves for conveying and uncovering the same, substantially as described.

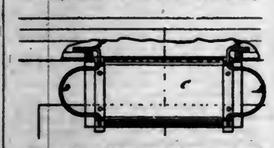
160,328. MACHINES FOR TINNING SHEET-COPPER. William Jenkins, Newark, N. J. [Filed Jan. 26, 1875.]

Brief.—Coats a sheet on one side only by elevating one of the rollers above the surface of the metal, and giving it a dead surface which will not carry the coating metal.



The combination, with the vat A, of two rolls, B C, the former running in the molten metal within said vat, and provided with a surface that will cause the adhesion thereto of said metal, while the latter has a dead surface, or one that will not permit the adhesion of said metal, all substantially as shown and described, so that a sheet of copper may be tinned on one side in the manner set forth.

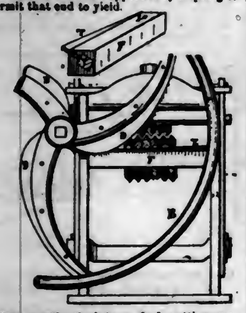
160,329. APRONS FOR STOCK-CARS. C. R. Jones, Berlin, Ill. [Filed Jan. 30, 1875.]



The combination of the bails or handles D and hooks E with the apron C, for enabling it to be readily secured to and released from the door-posts of a car, substantially as set forth.

160,330. FEED-CUTTING MACHINES. Wm. J. Jones, Hamilton, Ohio. [Filed May 5, 1874.]

Brief.—The cutter upon the front of the machine, with which the rotary cutter operates, is pivoted at its inner end, and its outer or articulated end is supported by a spring to permit that end to yield.

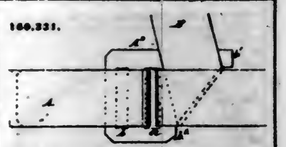


The combination, in a feed-cutting machine, of rotary knives D with the pivoted yielding knife T and grooved adjustable block F, substantially as described.

160,331. BALE-TIES. Wm. A. Jordan, New Orleans, La., assignor to Planters' Cotton-Tie Association, same place. [Filed Jan. 12, 1875.]

1. The buckle A^1, provided with the slots *a* and *b* and the angular extension A^1, substantially as described, and for the purpose set forth.

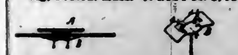
2. The buckle A^2, provided with the slots *a* and *b* and the angular extension A^1, having the projections b^1 and b^2, substantially as and for the purpose set forth.



1. The combination of the sliding or reciprocating feeder E, provided with mechanism for actuating it, as described, with the printing-press or bed C and platen A, arranged and to operate as set forth.

2. The combination of the feeder K, provided with mechanism for actuating it, as described, with the platen A and bed C and one or more sheet holders or clamps, L, as specified, arranged and connected with the bed as set forth.

160,332. BUTTON-FASTENINGS. J. H. Keating, Boston, Mass. [Filed Feb. 3, 1875.]



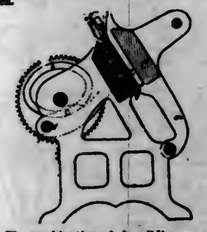
1. The button-fastening composed of the flexile wire A and the bead B, provided with perforations *a a* thereto, all substantially as shown and described.

2. The bead B, as made or provided with the middle bead *c*, the two arches *d d*, and the eyes *a a*, arranged in it, as set forth.

3. The bead B, as made with the lips *b b*, the eyes *a a*, the middle bead *c*, and the two arches *d d*, all arranged as set forth.

160,333. PRINTING-PRESSES. W. P. Kidder, Malden, Mass. [Filed Dec. 9, 1874.]

Brief.—On flanges on the vertical edges of the platen slide grooved blocks, united by a bar extending over the face of the platen. In its upward movement it presses down the clamping-fingers, and pushes off the hand of the operator; in its downward movement it meets a pin extending at right angles from the fingers, and thus tilts them from the platen.

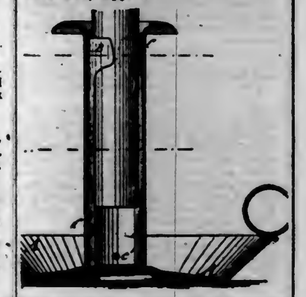


1. The combination of the sliding or reciprocating feeder E, provided with mechanism for actuating it, as described, with the printing-press or bed C and platen A, arranged and to operate as set forth.

2. The combination of the feeder K, provided with mechanism for actuating it, as described, with the platen A and bed C and one or more sheet holders or clamps, L, as specified, arranged and connected with the bed as set forth.

160,334. CANDLESTICKS. Wells Kilburn, Napa City, Cal. [Filed Jan. 30, 1875.]

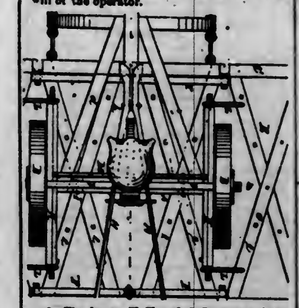
Brief.—The cross-wire presses against and raises the candle when the movable tube is raised. The tube can be entirely removed by lifting it so that the cross-wire passes out between the spring-jaws.



An improved candlestick, formed by the combination of the spring-jaws B and the loose tube C, provided with a cross-wire, *c*, in its lower part, with each other and with the base A, substantially as herein shown and described.

160,335. SULEY-HARROWS. Jos. Kimball, Pleasant Home, Neb. [Filed Jan. 6 1875.]

Brief.—The harrows are in sections, and hinged together longitudinally, and supported by levers resting upon the axle-tree of supporting-wheels. The driver's seat is so arranged as to act upon the levers, and these in turn raise the harrows from the ground at the will of the operator.



1. The levers H H and J J, arranged to operate with the bars K, rods L, harrows E E, axle A, and wheels B B, substantially as described, and for the purpose specified.

2. The driver's seat, combined with the levers H H and J J, bars K, rods L, harrows E E, axle A, and wheels B B, substantially as described, and for the purpose specified.

160,336. SEAL-LOCKS. Jacob Kinser, Pittsburg, Pa., assignor to himself, D. M. Watt, Robt. Pitcairn, and John J. Torley, same place. [Filed Sept. 29, 1874.]

1. The guides B' B'', arranged in line with the mortise in the flange D' of the hinged lid, in combination with the bolt B, hasp P, and spring-catch, substantially as set forth.

2. In the hinged lid D, the flanges *a'*, at the sides of its seal-opening, which, when the lid is closed, project inwardly, or cover a portion of the seal-seat of the lock-case, in combination with recesses *a''* in such flanges at suitable intervals, substantially as and for the purposes set forth.

3. The studs *c'*, for supporting the seal from below, in combination with the recess *c''*, substantially as described.

4. The bolt-B, in combination with a catch, *a'*, for locking it in one position, so as to lock the door, a loop and catch, *b b'*, for fastening it in another position, so as by engaging a hasp, P, to fasten the door without locking, and such bolt having a third position where it neither locks nor fastens the door, substantially as set forth.

5. As a new article of manufacture, a metallic seal-holder for seal-locks, having a distinguishing mark or design stamped or engraved thereon or therein, substantially as set forth.

6. As an imperforate or finely-perforated sheet-metal key-hole protector, arranged as a part of the seal between the frangible plate and the key-hole, and which, as a part of the seal, shall be broken or destroyed in the removing of the seal, substantially as and for the purposes set forth.

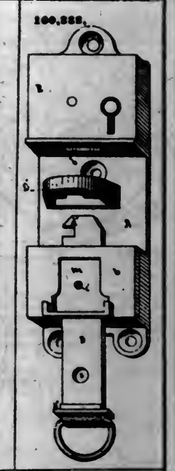
160,337. SEAL-LOCKS. Jacob Kinser, Pittsburg, Pa., assignor to himself, D. M. Watt, Robt. Pitcairn, and John J. Torley, same place. [Filed Dec. 10, 1874.]

1. A locking-bolt, spring-catch, and hinged lid, in combination with a seal-seat for holding a seal over both the head of the catch and the key-hole of the bolt, or over the catch alone, at the pleasure of the user, the said devices being arranged in or connected with a single case, and the bolt and catch working each independently of the other, substantially as set forth.



2. The hole *d*, through which to disengage the bolt-catch, arranged in the same seal-seat with the key-hole, in combination with a stop device to prevent the backward movement of the seal when slid forward so as to cover also the key-hole, substantially as set forth.





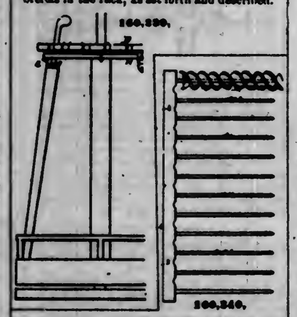
160,338. SEAL-LOCKS. Jacob Kinser, Pittsburg, Pa., assignor to himself, D. M. Watt, Robt. Pitcairn, and John J. Torley, same place. [Filed Dec. 15, 1874.]

In a seal-lock, the combination of two cases, one containing the lock, and the other the sealing devices, such lock and seal working independently of each other, and constructed with the staple for receiving the hasp between the cases, substantially as set forth, whereby the locking-bolt can be sealed with or without locking.

160,339. STANDS FOR HOLDING UMBRELLAS. Leonard B. Ladd, Philadelphia, Pa. [Filed May 6, 1874.]

Brief.—The umbrellas are held in the notched disk by means of a locked girdle.

The girdle H and hooks G, in combination with the notched plate D for fastening umbrellas in the rack, as set forth and described.



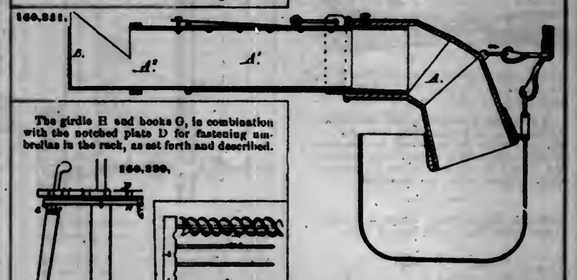
160,340. MORTISING-MACHINES. Washington Irving Ludlow, Washington, D. C. [Filed Aug. 7, 1874.]

Brief.—Guide-pins in a frame are used for a corresponding hole in an auger, to bore in the jambs of doors and windows for the corrugations of the hinges.

The device for forming hinge-mortises herein described, consisting of a plate with guide-pins, which may be secured between the door and seat, and a hollow cutting-tool working upon said guide-pins, substantially as herein set forth and specified.

160,341. FRUIT-GATHERERS. M. McDevitt, Hampton, Va. [Filed Jan. 9, 1875.]

Brief.—An adjustable tube is provided at the upper end with a device for separating the fruit from the branch. It passes down the tube to the ground or lower extremity of the tube, which is curved and cushioned, to check the descent of the fruit, and prevent injury by bruising. The fruit is received into a basket, and a handle is mounted upon a sliding ring, so that the picker can be manipulated with either hand.



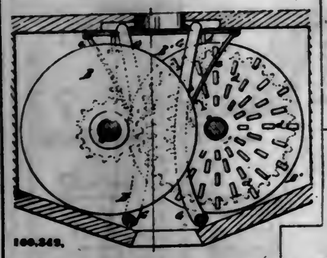
1. The fruit-gatherer herein described, composed of two or more tubes sliding one within another, provided with means for securing the same in any desired adjustment, and having a suitable covering device, B, at its upper extremity, as and for the purposes described.

2. The fruit-gatherer herein described, having the curved body, cushioned as shown, to prevent injury to and check the speed of the approaching fruit, as shown and specified.

3. The movable handle D, adapted to serve on the body A, and allow the operator to change hands at will, as specified.

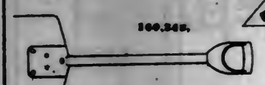
160,342. CORN-SHELLERS. Saml. H. Moore, Chicago, Ill. [Filed Feb. 16, 1875.]

Brief.—The ear descends between the overlapping portions of two sheller-disks, held toward each other by springs, and is held in position by two pivoted toothed bars retained against ear by springs.



160,842.

The combination, substantially as described, of the toothed disks B B', the hinged toothed arms or jaws C C, and the springs *b b* and *c c*, for the purpose herein set forth.



160,843. SHOVEL. Isaac Monroe, Peabody, Mass. (Filed Feb. 12, 1875.)

Brief.—The blade is struck up from a sheet of metal, and the handle is made of wood, with a broad foot-piece, to which the blade is strongly riveted, without strengthening-straps upon either side.

As an improved manufacture, the shovel having a sheet-metal blade and a wooden handle furnished with a foot, and arranged with and fixed to said blade by rivets or fastenings, all as specified.

160,844. RUBBER-COVERED SNAFFLE-BITS. F. J. Nodine, Brooklyn, N. Y., assignor to C. Nodine, A. Nodine, and R. H. Nodine, same place. (Filed Feb. 17, 1873.)



A snaffle-bit partially covered with conical sections A A, of rubber, which leave the middle joint of the bit uncovered, but terminate at their outer ends in bulbs *a*, which embrace the loops *b* at the ends of the bit, substantially as herein shown and described.

160,845. BALE-TIES. Galen N. Osgood, Savannah, Ga. (Filed July 17, 1874.)

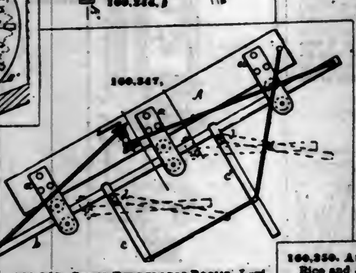
A cotton-bale tie of hoop metal, one end having half mortises cut into its edges to coincide with cuts made into the edges of the other end, forming tenons to be bent around through the half-mortises when lapped, locking them together, substantially as herein set forth.

160,846. TOPS FOR SALT AND PEPPER BOXES. George D. Paul, Brooklyn, E. D., N. Y., assignor to Paul Brothers & Co., New York city. (Filed Oct. 10, 1874.)

The perforated top of a pepper-box, in combination with an agitator provided with thumb-piece B and crushing points C, sliding upon a rod, D, and returned by a spring coiled around said rod, as and for the purpose specified.



160,846.



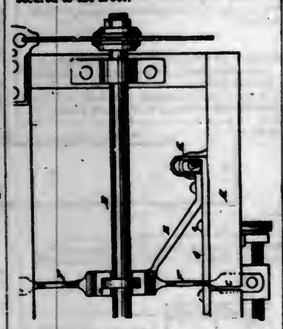
160,847.

160,847. SIDE-RUDDERS FOR BOOMS. Levi W. Pond, Eau Claire, Wis., assignor of one-half his right to Eau Claire Lumber Company, same place. (Filed July 13, 1874.)

The combination of the boom A, movable bar *b*, and rudders *c c'* with suitable operating devices, substantially as and for the purposes specified.

160,848. SAW-MILLS. Levi W. Pond, Eau Claire, Wis., assignor of one-half his right to Eau Claire Lumber Company. (Filed June 16, 1874.)

Brief.—The arbor of a circular saw is made adjustable longitudinally by means of a vibrating adjustable bar swung upon a collar secured to the arbor.



1. The pivoted bar F, in combination with the nut M and screw-shaft L, substantially as and for the purpose described.

2. The combination of the movable or spring bar F with the sliding bar G, brace or bar H, lever K, and stationary saw-guide O, substantially as and for the purpose set forth.

3. The combination, in a saw-frame, of the saw-mandrel B, provided with one or more collars, *c*, with the movable or spring bar F, nut M, screw-shaft L, sliding bar G or H, and lever K, substantially as specified.

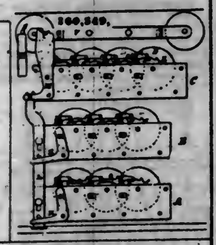
160,849. REGISTERING-MACHINES. Charles B. Rand and John T. Dupont, New York, N. Y. (Filed Jan. 11, 1875.)

Brief.—Two or more sets of registering-wheels so arranged that when any number is registered on either dial it will also be registered on a third dial for totals.

1. The combination of two or more special ranges, A B, of tallying apparatus, with another range, C, connected with the apparatus, for working them in such manner that it tallies for each tally of the special ranges, substantially as specified.

2. The combination of the bar L with the bell-cranks K of two or more ranges of special tallying apparatus and the lever M of a range for totals, substantially as specified.

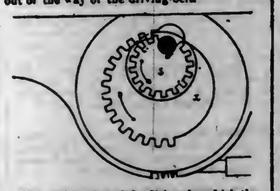
3. The revolving pin S and notched bar V, in combination with the notched lever M of the tallying-range C, substantially as specified.



160,849.

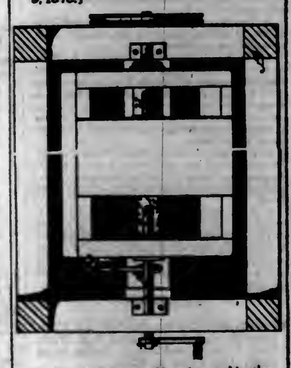
160,850. ADJUSTABLE SAW-BENCHES. D. H. Rice and J. W. Markland, Lowell, Mass. (Filed Jan. 13, 1875.)

Brief.—The saw is carried by a frame attached to a revolving disk moved by worm-gears, for the purpose of raising and lowering it. A stationary annular disk provided with internal gear, which acts upon a pinion attached to the frame carrying the journal-boxes of the saw-arbor, serves to keep the frame out of the way of the driving-belt.



The combination of the disk *x*, by which the saw is raised and lowered, with the revolving disk S and mandrel *c*, substantially as described.

160,851. MIDDLINGS-PURIFIERS. Jas. Rigby, Springfield, Ohio, assignor of one-half his right to T. A. Farr, same place. (Filed Jan. 9, 1875.)



1. In a middlings-purifier, the combination with a covered bolt-sash having an axially-oscillating motion to throw its contents from side to side, of an air-admitting tube or inlet at the head, and an air-exhausting tube or passage at the tail end of the sash, whereby a current of air is drawn over the whole surface of the material therein from the head to the discharge end thereof, substantially as and for the purpose herein specified.

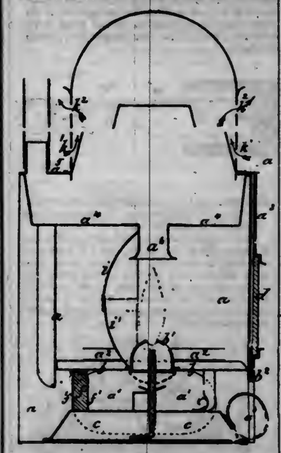
2. In a middlings-purifier, the combination, with an axially-oscillating sash, B, and driving-crank *d*, of a connecting-rod, D, provided with a longitudinal slot playing upon the pivot, which connects it with the sash at the close of each oscillation, substantially as and for the purpose herein specified.

3. In a middlings-purifier, a clearer, G, constructed and arranged as described, in combination with an axially-oscillating bolt-sash, B, substantially as and for the purpose herein specified.

4. In a middlings-purifier, the combination of an axially-oscillating covered bolt-sash, B, a sliding clearer, G, an exhaust-pipe, H, exhaust-fan I, and air admitting and feeding tube L, substantially as and for the purpose herein specified.

160,852. LAMPS FOR LIGHTING AND HEATING. Edwd. A. Rippingille, Holborn, England. (Filed Dec. 14, 1874.)

Brief.—The wooden hinge is a poor conductor of heat. The glazed slide acts as a catch to hold the lamp from horizontal movement. One-half the reflector is attached to the lamp-body, and the other to the cone-plate.



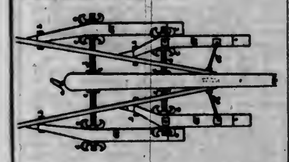
1. The cone-plate *b*, combined with the oil-reservoir *c* by hinging it to a piece of wood or other non-conducting material, *f*, in manner substantially as herein shown and described.

2. For forming the front of the lamp-stove, a glazed slide, *d*, in combination with grooves *e' f*, in manner substantially as herein shown and described.

3. The combination of the reflectors *i i* with the lamp for heating and lighting, in manner substantially as herein shown and described.

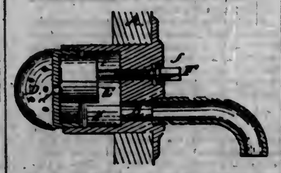
160,853. CULTIVATORS. Peter D. Roquemore, Pascola County, Tex. (Filed Nov. 9, 1874.)

Brief.—Standards pivoted to handles, allowing change of pitch by slots in the beam; the center standard removable.



The combination of beam A, having diagonal slots *a a*, adjusting-braces *d*, adjusting cross-rods and nuts *b c*, and standards *e*, pivoted to the handles, all arranged and operating substantially as set forth.

160,854. FAUCETS. J. D. Seagrave, Worcester, Mass. (Filed Sept. 26, 1874.)

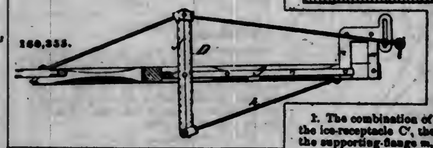


The faucet described, consisting of the case B having a chamber, E, and pad or valve within said chamber operated by screw F with a key, in combination with the diaphragm D and strainer J, constructed and operating in the manner and for the purposes above set forth.

160,855. DRAFT-EQUALIZERS. L. J. Seely, Waldron, Ind. (Filed Jan. 25, 1875.)

Brief.—Device for throwing the line of draft to one side of the beam for three horses.

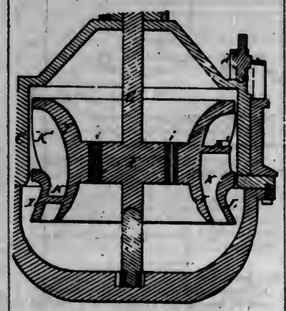
The improved draft-equalizer for plows, &c., composed of a slotted and rigidly supported and braced clevis, B, at the front end and land-side of the plow-beam, with adjustable draft-eye C, in combination with the strengthening draft and stay rods *a' b*, clevised to laterally-braced cross-bar D and bolted to front and rear ends of beam, substantially as specified.



160,855.

160,856. WATER-WHEELS. S. Sherwood, Independence, Iowa. (Filed Apr. 3, 1873.)

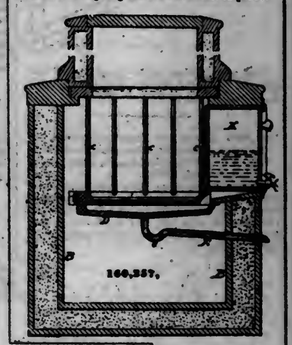
Brief.—The buckets are provided at their lower ends with an inclosing rim, and thereby enabled to receive a very large volume of water, which, as it passes into and through the wheel, is confined in a small space as it approaches the bottom of the wheel, and is finally delivered in a very small volume, compared with that at which it enters. By this means it is claimed the full force and power of the water is obtained.



In combination with the wheel I I J, the buckets K, formed with a very large broad mouth or receiving-end, and a small delivery or bottom-discharge end, and blades K' placed in a very gradual and downwardly-curved position on the wheel, the top portion of the blades being separated some distance apart, and the lower ends brought nearer together and protected by an inclosing flaring rim or band, L, as and for the purposes described.

160,857. REFRIGERATORS. Isaac Silsby, Georgetown, D. C. (Filed Sept. 30, 1874.)

Brief.—The ice box, having open sides and top, and a sealed drip-tube, is suspended in an air-chamber, and covered by a detachable packed air-chamber. The refrigerator is ventilated by repeatedly closing the hinged door, whereupon foul air is forced out of a self-closing valve. The water-cooler is removable from the side of the refrigerator, and has under it, and attached to it, a flue, for the passage of cold air to the cooler, and the return of condensed moisture to the drip-pan, which acts also as a spring to hold the cooler in place.

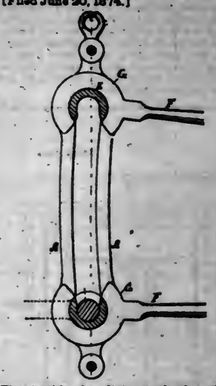


160,857.

1. The combination of the chamber B with the ice-receptacle C', the same consisting of the supporting-flange *m*, bars *c c*, drip-bottom D, with sealed drip-pipe E, surrounding air-chamber K, and superposed air-chamber G, as and for the purpose described.

2. The combination, with the chamber B, of the lid G and self-closing valve I, whereby, in closing the lid, a current of air is forced through the chamber B, and the chamber immediately closed, as and for the purpose set forth.

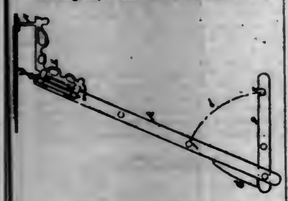
160,858. REVERSING-LINKS FOR STEAM-ENGINES. John Simpson, Meadville, Pa., assignor to Dick & Church, same place. (Filed June 20, 1874.)



The combination-links A, having slots, united to a block, B, and made circular at each end, in combination with the eccentric rods F, having notched pivots E, and the collar G, as and for the purpose specified.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

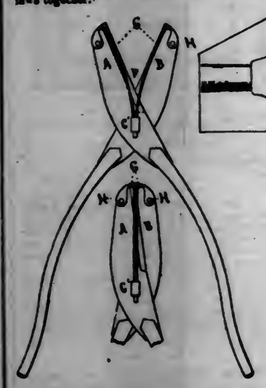
160,340. CLOTHES-FRAMES. C. F. Smith, Torrington, Conn. [Filed Jan. 25, 1875.]



The combination, with frame A, of the bracket L, jointed thereto, and having stud N, as and for the purpose described.

160,360. GRAPE AND FLOWER PICKERS. L. B. Snow, Cleveland, Ohio, assignor to himself and L. Grant Meddaugh, same place. [Filed Mar. 21, 1874.]

Brief.—The springs both grasp the fruit when severed, and serve to force apart the jaws of the implement, being attached to the extremity of each jaw, and extending to and being secured by the pivot which secures the jaws together.



First, the blade A; secondly, the blade B; thirdly, the device *c*, which performs the double function of a pivot for the blades, and a clamp in which the spring is secured; fourthly, the spring G, formed of a single piece of metal, and performing the double office of holding open the blades at exactly the required distance and grasping the stem, as and for the purpose described.

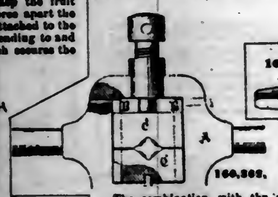
160,361. PORTABLE DRILLING-MACHINES. Michael Stephenson, Stratford, Canada. [Filed Dec. 10, 1874.]

Brief.—The block G embraces the two drill-spindles, and constitutes a nut for the feed-screw, that is rotated by hand through the medium of the crank on a counter-shaft, and the two spindles are rotated by a crank through the medium of the shaft and two pairs of beveled gears.

The combination, in a portable hand-drill, of a pair of vertical drill-tools having the bevel-gear wheels D D, the horizontal shaft B having the pinions C and journaled in the upper ends of the frame, the collar or block G embracing the drill-spindles, and the vertical adjusting-screw H, the whole being constructed and arranged for operation as herein shown and described.

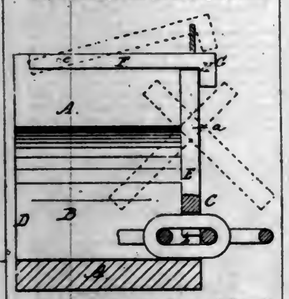
160,362. SCREW-PLATES. Geo. R. Stetson, New Bedford, Mass. [Filed Jan. 18, 1875.]

Brief.—Pivoted ways receive the dies. A stud enters, when the dies are advanced by the adjusting-screw, a socket in one of them, and serves to fasten the parts in working position.



The combination, with the solid integral screw-plate A, hinged guides B, separate from but hinged to the die-plate, and dies C, of the stud F, entering a socket in the rear of one die, and the screw-bolt E, working through a nut of die-plate against the other die, as and for the purpose specified.

160,363. CABLE-STOPPERS. D. G. Thompson, Waltham, Mass. [Filed Aug. 5, 1874.]



The gate E, pivoted to the stand through which the chain passes, and having at its lower end a slot, *b*, as shown, in combination with the pivoted lever F, for locking the upper end of the pivoted or swinging gate in position when it has interlocked with the chain, substantially in the manner herein shown and described.

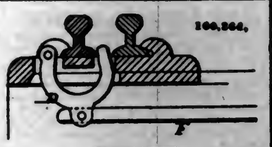
160,364. SWITCH-LOCKING DEVICES. John M. Toucey and Wm. H. Smith, New York, and W. Buchanan, Yonkers, N. Y. [Filed Jan. 7, 1875.]

Brief.—The locking device is a U-shaped bolt pivoted at one arm, so that the other rises by a longitudinal movement of the connecting-rod, and performs the office of a locking-bolt.

1. The hinged bolt D, for the purpose of locking switching-rails, substantially as above set forth.

2. The combination of the hinged bolt D with rod F and a suitable operating-lever, for the purpose above set forth.

160,364.



160,365. BIT-STOCKS. William Tucker, Fiskedale, Mass. [Filed Sept. 19, 1874.]

Brief.—The bit-stock is provided with a central V-shaped projection within a flat socket, for holding auger-bits having corresponding V-shaped notches in the flat holding ends or shanks of the same.

1. A stock or holder, H, having a central V-projection, *y*, within the inner end of a large flat socket, *x*, and a clamp-screw, *z*, in the same longitudinal plane, substantially as herein illustrated and described, for the purpose specified.

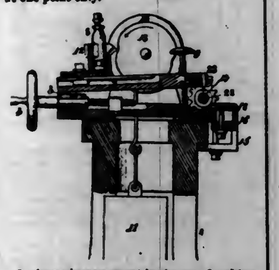
2. The stock or holder H, Figs. 1 and 2, having a flat socket, *x*, projection *y*, and clamp-screw *z*, at one end, and a square, *w*, at its other end, for application to the head of an ordinary brace, as and for the purpose herein set forth.

160,365.



160,366. MACHINES FOR TURNING PATTERN-CAMS. William Tucker, Fiskedale, Mass. [Filed Nov. 21, 1874.]

Brief.—The tool-post, with cutter, rests and is adjustable on the frame, which is hinged at one edge to the slide, while the other edge rests through the medium of the knife-edge in the rotating pattern-cam, which latter differs from others in use in that it is mainly cylindrical, having an irregularity of surface at one point only.

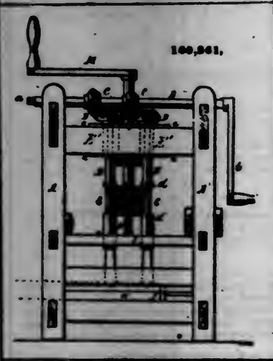


1. As an improvement in the art of making pattern-cams, the process of producing a series of uniform depressions or forms by operating the cutting-tool mechanically through the medium of a rotary cam, 22, having a single depression or form of the required shape or depth, substantially as herein described.

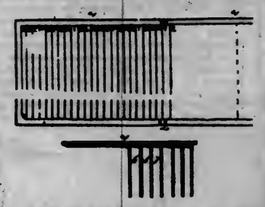
2. The combination of the rotary shaft 19, the generating-cam 22 thereon, constructed with a single depression or form of a given shape or depth, the treadle-edge 23, and the vertical feed-screw 9, with a weighted tool-carriage or its equivalent, for manipulating a cutting-tool, 12, in the manner herein set forth.

3. The combination, in an engine-lathe, of a weighted tool-carriage, provided with a treadle-edge, 23, at the rear end of its upper member, a generating-cam, 22, supported at the rear end of its lower member by a recessed journal-box, 18, a shaft, 19, supported against longitudinal displacement, and on which the generating-cam 22 and journal-box 18 are adapted to slide, and gearing 24 25 26 for rotating the shaft and generating cam in unison with the lathe-spindle, substantially as herein shown and described, as means for cutting a pattern-cam on the periphery of the face-plate by means of the lathe-tool, in the manner set forth.

160,361.



160,367. INDEXES. Chas. Virgo, Bradford, Yorkshire, England, assignor to Arthur W. Carter, Newton, Mass. [Filed Nov. 12, 1874.]



1. An index-book constructed of leaves so arranged that their front edges recede from each other a suitable distance, so as to present to view one or more letters of the alphabet at their head-lines, which may be read from right to left, and vice versa.

2. A series of sheets attached at different points to a base or support, so that when folded down either to the right or left in the same plane with the base their free edges will recede from each other and expose their index character.

160,368. WATCH-CASE SPRINGS. C. W. Wadsworth, Peekskill, N. Y. [Filed Nov. 30, 1874.]

Brief.—A watch-case spring made in two parts, the movable part being adjustable in corrugations in the rigid holder.



The combination, with watch-case, of the rigid holder A and untempered spring B, the former being end-corrugated and having lugs *a*' *a*' with downwardly-inclined apertures, arranged as and for the purpose specified.

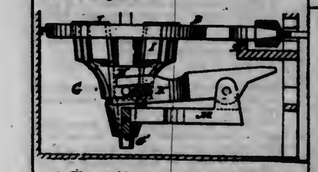
160,369. TOY ARROW-SHOOTERS. John H. Wales, Milford, Mass. [Filed Dec. 28, 1874.]



The toy for shooting arrows formed of the tube A, provided with an open ring, B, upon one side and the rubber band C, substantially as herein shown and described.

160,370. STOVE-GRATES. William Walsh, Albany, N. Y. [Filed Jan. 20, 1875.]

Brief.—The arms have a vertical movement independently of the annular surrounding portion of the grate.

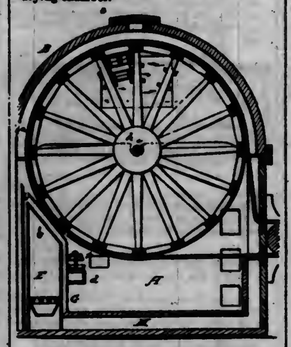


1. The combination of the circular horizontally-oscillating part B, and the vertically-movable part C, having legs I formed on its hub H, and projecting up in the spaces between the radial arms E of part B, as shown and described, to operate as specified.

2. The combination of slotted lever K, fulcrum-plate M, the vertically-adjustable grate C, having hub H, provided with pins Q and the supporting-bar O, as shown and described.

160,371. FRUIT-DRIERS. Thos. C. Walter, San Francisco, Cal. [Filed Jan. 30, 1875.]

Brief.—A chamber surrounding the furnace and discharging the heated air at the top, and a flue to conduct the same air back from the drying-chamber.



1. The case A B, furnace E, chamber *b*, and flue H, in combination with steamer *f* and pipe or chamber *d*, all constructed and arranged as and for the purposes herein specified.

2. The combination of the fruit-drier case A B, furnace E, exterior shell C, forming hot-air chamber *b*, and the flue H, as and for the purposes herein set forth.

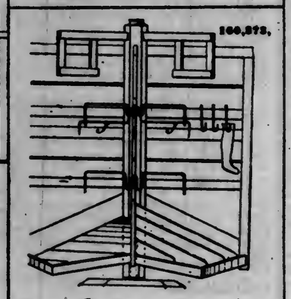
160,372. PLANING-MACHINES. Chas. P. S. Wardwell, Lake Village, N. H. [Filed Mar. 16, 1871.]

Brief.—By means of guide-rods pivoted to the middle of the table, and sliding in ways in the bed, the table can be adjusted independently at either of its edges, for varying the thickness of either edge of the clapboard without changing the thickness of the other edge.

1. The table B, when provided with means for independently adjusting either of its edges, in order to vary the thickness of either edge of the clapboards without changing the thickness of the other edge thereof, substantially as herein specified.

2. The guide rods or pins C C, pivoted to the middle of the table B, and sliding in holes or ways in the bed A, for keeping the table in position without interfering with the independent adjustment of its edges, substantially as set forth.

160,372.

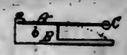


160,373. REVOLVING RACKS FOR HOLDING STOCKINGS. Danl. K. Wertman, Shenandoah, Pa. [Filed Nov. 30, 1874.]

The hooks I and pins J, in combination with a revolving rack, for the purposes described.

160,374. MECHANICAL TELEGRAPH-SOUNDERS. Martin F. Wessmann, Cherry Hill, N. J. [Filed May 19, 1874.]

Brief.—"Snapper sound," the sound being produced by the snapping of a "buckle" or dent in the spring.



1. A mechanical sounder, composed of an indented elastic metallic strip, A, and a base, B, the strip being attached to the base at one end, while the other end is free to move, substantially as and for the purpose herein specified.

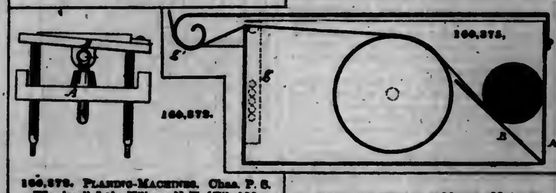
2. The sounder-base B, having inclosing sides *b b*, or their equivalents, substantially as and for the purpose herein specified.

3. The finger-guard C on the end of the metallic sounder-strip A, substantially as and for the purpose herein specified.

160,375. MACHINES FOR APPLYING PASTE TO WALL-PAPER. John Worley, Cleveland, Ohio. [Filed Dec. 30, 1874.]

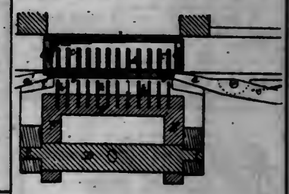
The combination of the box A, the partition B, the scraping-edge of the front wall of the box, and the adjustable lid with the latch *g* and the projecting-bended front, all constructed and combined to operate substantially as described.

160,375.



160,376. MACHINES FOR MAKING MATCHES. McClintock Young, Frederick, Md. [Filed Aug. 12, 1874.]

Brief.—The matches are forced from the plates in which they were dipped, and drop into proper receptacles ready for boxing, &c.

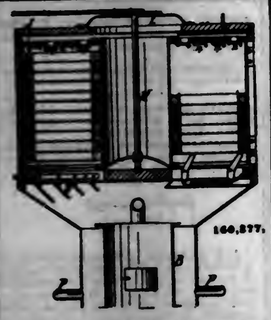


1. In combination with the plates holding and carrying a series of matches, the sliding frame carrying a similar series of plungers, and the tray or box, arranged and operating as and for the purpose described and represented.

2. In combination with the plates, the guiding-grooves and spring-dogs for bringing and holding the plates in proper position while the plungers are driving out the matches, substantially as described.

160,377. FRUIT-DRIERS. H. Julian Allen, Sturgis, Mich. [Filed Aug. 22, 1874.]

Brief.—By rotation of the radial chambers, each one can in turn be brought opposite the door in the inclosing-cylinder, and communication with the heating-chamber cut off and fresh fruit introduced. The moist air is exhausted from the dome over the drier, and forced into the furnace. The condensed vapor flows from the pipes connected with the fan through a drip-pipe into a close vessel.



160,877.

1. A series of radial chambers, rotating upon a common center post, and arranged within an inclosing-cylinder, all of said radial chambers, except the one adjoining the door, communicating with the heating-chamber below, and a space above, substantially as and for the purposes set forth.

2. The combination, with the revolving radial chambers, of the openings *m*, communicating with the space *J*, and dampers *n* and *p*, as and for the purpose set forth.

3. The combination, with the revolving radial chambers and the inclosing-cylinder, the devices herein named, for rotating said radial chambers, consisting of the disk T and lever V, as set forth.

4. The door section of the inclosing-cylinder, in combination, with the radial chamber in connection therewith, said radial chamber having no communication with the heating-chamber, and being cut off from communication with the space above by the cover or damper *p*, substantially as described, and for the purpose specified.

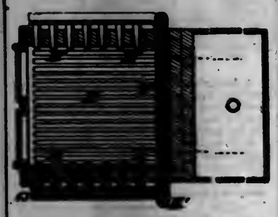
5. The combination, with the revolving radial chambers, open space J, and dome L, of the pipe M, rotary exhaust-blower N, pipes O P P, drip-pipe *s*, and closed reservoir S, all constructed and arranged substantially as described and shown.

6. In combination with the door section and a revolving or radial chamber, into which the door opens, the devices or spring-latches, in connection with the devices for raising the fruit-screens, substantially as specified.

7. In combination with the heating-chamber E, the revolving radial chambers, and inclosing-cylinder, the series of sliding dampers D, to close the bottom of said radial chambers, and the dampers *n* and *p* for closing the top of the same, as set forth.

8. In combination with the pipe O, the drip-pipe *s* and closed reservoir S, substantially as shown.

160,878. FURNACES FOR CONSUMING SMOKE. Daniel Arguebright and Wm. Allensworth, Troy, Ohio. [Filed July 29, 1874.]



The combination of the central air-blast pipe D, having the throttle-valve I, the exposed downwardly-projecting and boiler-encircling pipes E E', the portion F F', crossing the throat of the furnace above the bridge, and exposed at that point and forming a check to the highly-heated gases, and the exterior flask-pipes G G', having nozzles H H' inserted obliquely downward through the wall of the fire-chamber, as and for the purpose set forth.

160,879. WATER-METERS. Phinehas Ball and Hezekiah Pitts, Worcester, Mass., assignors to Union Water-Meter Company, same place. [Filed Aug. 8, 1874.]

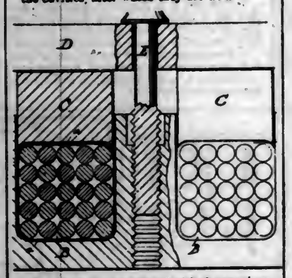
Brief.—To arrest the movement of the pistons at the end of stroke, the connecting piston-rods are provided with lugs, which abut against a fixed leg on the interior of the casing.



In combination with the double-acting piston B, the stop *g* and legs *f f*, arranged substantially as and for the purpose described.

160,880. CIGAR-BUNCHING MACHINES. Jno. Battin, 2d, Salem, Mass. [Filed Aug. 18, 1874.]

Brief.—The cigars to be bunched are placed in two cavities in a bed-plate, which are provided with the tying-ribbons. By means of a screw two plungers compress the cigars in the cavities, after which they are tied.

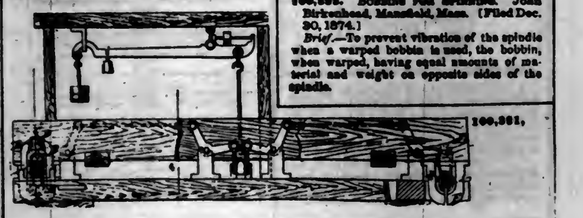


The block A, constructed with the openings B, for the reception of the cigars to be bunched and pressed, in combination with the followers C C, horizontal bar D, resting on the follower, and the vertical screw E, passing through the bar and into the block A, for pressing the cigars, as and for the purpose described.

160,881. PLATFORM-SCALES. Luther D. Berry, Moline, Ill., assignor of one-half his right to G. M. Sargent, Des Moines, Iowa. [Filed Dec. 10, 1874.]

Brief.—Iron arches project downward from the platform and upward from the base at each corner of the scales. Knife-edges at the ends of the levers, which are of the second kind, rest in the lower of two links hung from the base-arches, and the platform-arches rest in the lower of two links hung from the levers, thus allowing free horizontal vibration. The suspension devices are prevented by their construction from accidental disconnection.

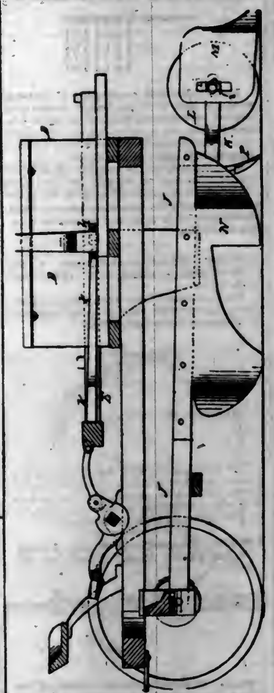
The combination, with the levers A A and platform-sticks E E of a platform-scale, of the arches B B and F F, links C C and G G, pins D D, and yokes H H and J J, all constructed and arranged substantially as and for the purposes herein set forth.



160,881.

160,882. CORN-PLANTERS. Creston Berryman, Juda, Wis. [Filed Jan. 2, 1875.]

Brief.—The hopper is made in two compartments, one of which has a slide reciprocated through it for planting ordinary seed, while the other has a pivoted disk worked by a pawl for planting pumpkin-seed. Pivoted to the axle are two sets of longitudinal beams, to which are attached coverers. Secured to the beams, and projecting ahead, are slotted frames, in which are adjustably journaled gage-wheels. In front of the gage-wheels, and upon their journals, are adjustably secured dividers for clearing away the rubbish.



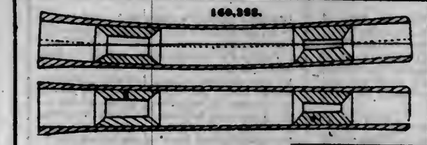
1. In combination with a corn-box, D, having a pumpkin-seed compartment, the revolving ratchet dropping-wheel k and pawl *l*, arranged to operate substantially as and for the purposes herein set forth.

2. The dividers M, provided with slot *s*, in combination with wheels L, bolt *s*, and adjustable frame K.

3. The combination of the frame J J, pivoted to the axle of the adjustable gage-wheel L, with dividers M, shovel P, dividers N, and coverers O, all constructed substantially as and for the purposes herein set forth.

160,883. BOBBINS FOR SPINNING. John Birtwhead, Mansfield, Mass. [Filed Dec. 30, 1874.]

Brief.—To prevent vibration of the spindle when a warped bobbin is used, the bobbin, when warped, having equal amounts of material and weight on opposite sides of the spindle.



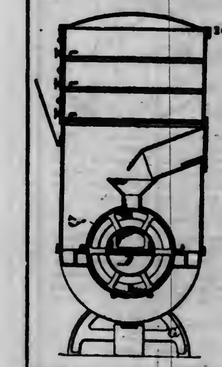
160,886.

The improved quill-bobbin, substantially as described, consisting of a single tube of uniform bore without heads, and not only having each of its two adhesive spindle-bearings arranged at or about the same distance from the next adjacent end of the bobbin, that each bearing is from the center of the bobbin, but having an open chamber extending from each bearing to the next adjacent end of the bobbin, and constituting part of the bore, all as represented.

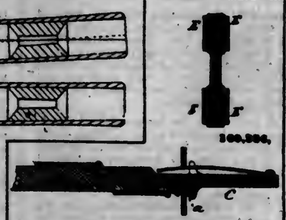
160,884. COFFEE-ROASTERS. Geo. Boyd, Philadelphia, Pa. [Filed July 31, 1874.]

Brief.—The location of the grate as indicated insures thorough utilization of the heat. Bread or similar substances placed on the trays above the roaster are impregnated with the flavor of the coffee.

The combination of the rotating cylinder A, its surrounding screen B, and the fire-grate D, arranged within the cylinder, as set forth.



160,884.



160,886.

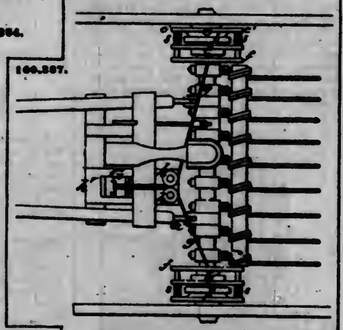
1. The spindle of the damper-plate, constructed with the notch *a*, combined with a spring arranged to enter and bear against the edge of the perforation in the pipe, substantially as described.

2. The combination of the damper-handle C and non-heat-conducting pads E, arranged in recesses in said handle each side of the center, substantially as described

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160,887. HORSE HAY-RAKES. S. H. Rushnell, Fairport, N. Y. [Filed Jan. 26, 1875.]

Brief.—The rake discharges its load by means of spring friction-clutches engaging with clutching-plates on the hubs of the wheels.

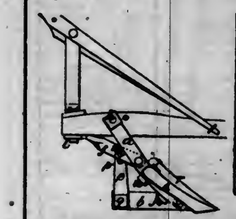


160,887.

In a horse-rake having the teeth fast on the axle, the frictional clutch-sections *b c*, armed collar *e*, connecting-rod *f*, rods *d*, and springs *a*, combined with chains *g* and treadle G, substantially in the manner and for the purposes set forth.

160,888. PLOWS. William Bradford, Valdosta, Ga. [Filed Dec. 7, 1874.]

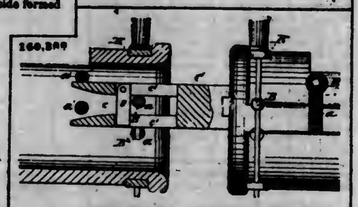
Brief.—The standard and land-side formed and braced as shown.



The brace *f*, combined with the heel-foot-bar *e*, the heel-bar *c*, and the beam, with the three points of attachment *g m l* of these parts arranged above the plowshare, as described, whereby the pivots of the heel-bar *c* and the land-side *b* are relieved from the strain upon the foot-bar and its brace.

160,889. STOVE-PIPE DAMPERS. R. Moss Brockenridge, West Meriden, Conn. [Filed Dec. 21, 1874.]

Brief.—The spring holds the notch firmly in place. The pads may be of cork or other non-conductor.



160,889.

160,890. CAR-COUPLINGS. B. F. Cadenhead, Bolingbroke, Ga. [Filed Aug. 21, 1874.]

Brief.—To uncouple it is necessary to remove the draw-pin B', which releases the coupling-pin, so that it may be withdrawn. The link is held horizontally by a pin, E, passed through either of the holes *a'*.

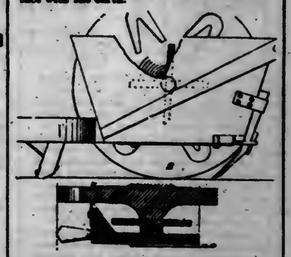
1. A car-coupling link, C, having at each end slots *a' a'*, and pivoted drop-catches D D, combined as and for the purpose described.

2. The combination, with cross-bar B, of cross-pieces B' B', and draw-pin B', combined as and for the purpose specified.

3. The combination, with the coupling-link C and the draw-head, having rear perforations *a' a'* of the pruner-pin E, applied as and for the purpose described.

160,891. COTTON-SEED PLANTERS. B. F. Cadenhead, Bolingbroke, Ga. [Filed Nov. 4, 1874.]

Brief.—Journaled within a seed-box, having slotted bottom, front, and back, is the seed-wheel, provided with recesses at regular intervals between the periphery and the hub, and having arms passing through the hub on each side, to work the seed to the bottom. Motion is imparted to the seed-wheel by contact with the earth.



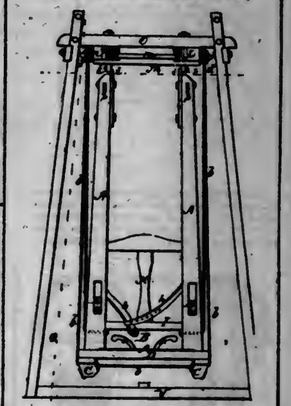
1. A seeder provided with a single seed wheel, B, recessed as shown, journaled and revolving in the seed-box and on the ground, thus both supporting the whole and distributing the seed in the manner described.

2. A seed-wheel for cotton-planters, having the seed-recesses arranged at regular intervals between the periphery and hub, as shown and described.

3. A recessed seed-wheel, journaled in the seed-box, and provided with a stirrer on each of its side bosses, as shown and described.

4. The combination, with a front furrowing-plow, of a wheel, B, recessed as shown, and which distributes the seed laterally in the furrow made, and on opposite sides of said furrow, as shown and described.

160,892. SWINGS. Cornelius H. Cain, Jeffersonville, Ind. [Filed Jan. 19, 1875.]



1. The combination of the slotted tapering hangers A A, with inclined tie B, seat I, stays G, back H K, and arms E, all constructed substantially as and for the purposes herein set forth.

2. The combination of the hangers A A, with seat attached thereto, tie B, having slots *a a*, treadle C D, rope *b*, and pulleys *d d*, all constructed and arranged substantially as and for the purposes herein set forth.

3. The combination, with the hangers A A, having bosts *i*, of the blocks L, tie-board M, axle *m*, washers *n*, pulleys *d*, and eyebolts *h*, all as and for the purposes set forth.

4. The combination of the head-block O, rests B, stationary blocks V, bar W, with a self-acting swing hung therein, substantially as herein set forth.

160,391. CALENDARS. John J. Conlon, New York, N. Y. [Filed Dec. 30, 1874.]

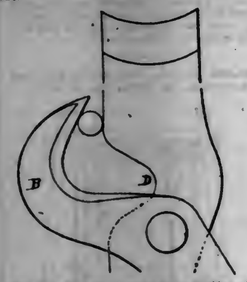


1. In a movable-card calendar, the combination of the day-cards C, having the names of the days printed on opposite sides and edges thereof, the month-cards D, having the names of the months printed thereon in a like manner, the numeral-cards E, with the numerals printed on both sides, each set being, respectively, wider than the one next succeeding, as described, and a suitable clip frame or case, B B, for holding and binding them together, attached to a backing, A, substantially in the manner shown, and for the purposes set forth.

2. In a movable-card calendar, the holder or case for the cards, composed of a back card, A, and the clips B B, said clips being constructed in the manner shown, with tongues *a a*, lower lip *c*, body *e*, and upper lip *f*, and attached by clinching to the back card, substantially as shown, and for the purposes specified.

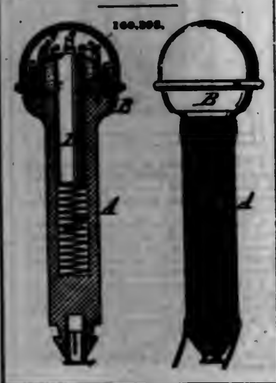
160,392. PRUNING-SHEARS. Jeff. Chase, Orange, Mass. [Filed Dec. 19, 1874.]

Brief.—One blade of the shears carries upon its end, and in a direct line with it, a chisel-edge, and has a recess near the pivot. The other blade is the usual hooked and recessed one.



The described pruning-shears, consisting of the hooked blade B, and the blade A with the recess D, as specified, and the chisel *a* on the extremity of and in line with the blade A and the handle, all constructed as herein set forth.

160,393.



160,393. POLICEMEN'S TORCHES. Wm. H. Clark, J. W. Richardson, and John Foller, Washington, D. C. [Filed Jan. 2, 1875.]

Brief.—The igniter-ring is rotated by means of the pivoted handle, and ignites the matches. The stationary ring or cap is lined with non-conducting material, and obviates too rapid melting of the candle.

1. In a billet, the combination of the recessed candle tube or holder A, helical spring E, and ring or cap C, substantially as specified.

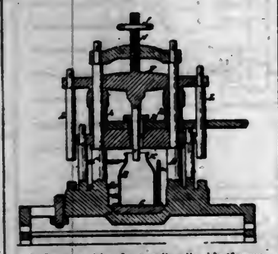
2. In a billet, the combination, with the aforesaid tube A, spring E, and ring C, of the match-holders *a* and igniter G, substantially as and for the purpose set forth.

3. The handle *c*, pivoted to the igniter-ring G, in combination with a torch, substantially as described.

4. The tube A, provided with a cylindrical recess at its upper end, and helical spring E, in combination with the screw-threaded cap B, ring C, provided with match holders *a*, and a match-igniter, G, substantially as and for the purpose described.

160,394. MACHINES FOR BOTTLING AERATED LIQUIDS. Henry E. Clinton, Seymour, Conn., assignor to the firm of John Matthews, New York, N. Y. [Filed Feb. 4, 1875.]

Brief.—The bottle stands on an adjustable bed-plate, and is clasped by a sectional safety-screen casing, which has arms that extend to and fit loosely around the standard, to permit the jaws of the casing to be swung to one side by means of the levers, which are connected to a block that slides in a slot. The filling-head and bar have each an opening, through which the liquid may pass to the bottle below, and in which the cork plunger works, to force the cork into the mouth of the bottle



1. In a machine for bottling liquids the sectional safety-screen casing hinged to a support, which is independent of and not joined to the bed-plate upon which the bottle stands, and operated with or without a lever, substantially as and for the purpose set forth.

2. The sectional safety-screen casing B, hinged to the standard C and operated with or without levers *e*, in combination with the bed-plate *b* and pin *m*, substantially as described.

3. The swinging bar I, with projections *h* interposed between the filling-head E and sliding plunger-bar F, as and for the purpose set forth.

4. The swinging bar *i* and its projections, in combination with the sleeves *i* encircling the standards C and D, and with the plunger-bar F and its plungers *e*, substantially as and for the purpose set forth.

160,395.



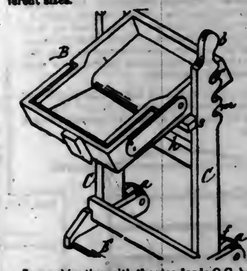
160,396. SAW-GUMMERS. R. J. Cordesman, Jr., Cincinnati, Ohio, assignor to James P. Alley, same place. [Filed Feb. 16, 1874.]

Brief.—The milling-tool C is placed at an angle not quite perpendicular to the plane of the saw, clamped in head A, and is gradually moved across the edge of the saw by means of the screw D, the gearing E, and the nut F the latter being fastened to the head by a pin, *f*, that may be withdrawn to allow the nut to be rapidly turned back by the fingers for re-adjustment of the cutter.

In combination with a saw-gummer constructed substantially as described, the loose nut F *f* and pin G, operating substantially in the manner and for the purpose specified.

160,398. BAG-HOLDERS. Leonard Crofoot, Pavilion, N. Y. [Filed Sept 21, 1874.]

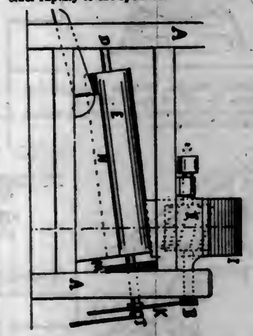
Brief.—Bag-holder provided with a stationary and removable platform, whereby the holder can be adapted for filling bags of different sizes.



In combination with the standards C C, having the open notches *m m* and spout B, with its clamp *p*, the lower platform E arranged at the bottom of the standards, and the intermediate removable platform G, arranged between the lower platform and the spout, substantially as and for the object specified.

160,397. CIDER-MILLS. Enos Curtiss, Traverse City, Mich. [Filed Jan. 18, 1875.]

Brief.—The two wooden expressing-cylinders are arranged in the press at an inclination, so as to serve as a trough to convey the cider rapidly to the spout H.



1. In a cider mill and press, the wooden inclined rollers E, in combination with the shaft D, cog-wheel M, handle P, and spout H, as heretofore specified and shown.

2. The combination of the wooden inclined rollers E and their shafts D with the frame A, toothed drum F, hopper I, shaft B, driving-wheel K, handle P, cog-wheels M M', scraper N, and spout H, all arranged as specified and shown.

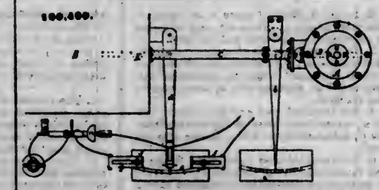
160,398. HEATING-STOVES. Mark A. Cushing, Aurora, Ill. [Filed June 16, 1874.]

Brief.—The tubes are fitted together with tongues and grooves.

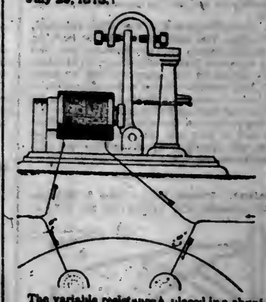
160,399.



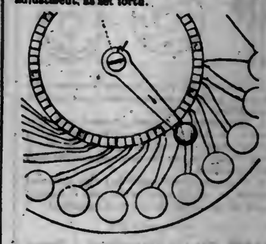
160,400.



160,402. ADJUSTABLE ELECTRO-MAGNETS FOR RELAYS, &c. Thos. A. Edison, Newark, N. J., assignor to himself and George Harrington, Washington, D. C. [Filed July 29, 1873.]



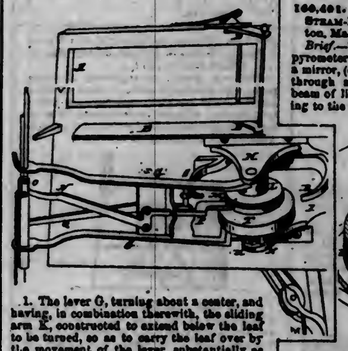
The variable resistance *b*, placed in a shunt-circuit, in combination with an electro-magnet for equalizing action of the current in the electro-magnet and dispensing with the spring-adjustment, as set forth.



1. In an open stove, the combination of a series of vertical contiguous tubes, which have a rib on one side and a depression on the other, are open only to the exterior surrounding air, and form the back and sides of said stoves, substantially as described and shown.

2. In an open stove, the combination of the combustion-chamber with a radiating-chamber placed immediately above it, the back and sides of said chamber being composed of separate contiguous tubes, which have a rib on one side and a depression on the other, and air-passages extending continuously through said tubes from the bottom to the top, substantially as described

160,399. MUSIC-LEAF TURNERS. George L. Dimpfel, Benicia, Cal. [Filed Sept. 14, 1874.]



1. The lever G, turning about a center, and having, in combination therewith, the sliding arm K, constructed to extend below the leaf to be turned, so as to carry the leaf over by the movement of the lever, substantially as herein described.

2. The lever G, with its lifting-arm K passing below the leaf, and the arm J passing above the leaf, so as to retain it between the two while it is being turned, substantially as herein described.

3. The device for operating the lever G and sliding arm K, consisting of the pulley L with its contained spring, the connecting-rod P, and the knee-lever N, linked to the arm K, the whole constructed to operate substantially as and for the purpose herein described.

4. The device for operating the sliding arm J, consisting of the knee-lever Q, pivoted to the lever G and linked to the arm J, and the curved stationary arms R and S, when constructed to operate substantially as herein described.

5. In combination with the pulley L, with its contained spring, mounted as shown, the ratchet-wheel U and the pawl V, for regulating the tension of the spring, substantially as herein described.

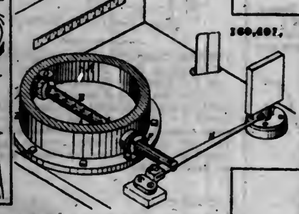
6. In combination with the pulley L, with its spring-lever G and sliding arms J and K, operated as shown, the cord M, passing over the pulley and connecting with a treadle, so as to be operated by the foot, substantially as described.

7. The metal strip X, arranged with spring-clips to be attached to the leaf, when used in combination with the turning device having the sliding arms J and K, substantially as and for the purpose herein described.

160,401. PYROMETRICAL INDICATORS FOR STEAM-ENGINES. Geo. Basil Dimwell, Boston, Mass. [Filed Jan. 12, 1875.]

Brief.—The longitudinal expansion of the pyrometer-bar moves a lever, thereby turning a mirror, (on which a beam of light is thrown through a slitted plate,) which reflects the beam of light to a degree on a scale according to the angle of mirror.

160,401.



160,404. PYROMETERS FOR STEAM-ENGINES. Geo. Basil Dimwell, Boston, Mass. [Filed Dec. 19, 1874.]

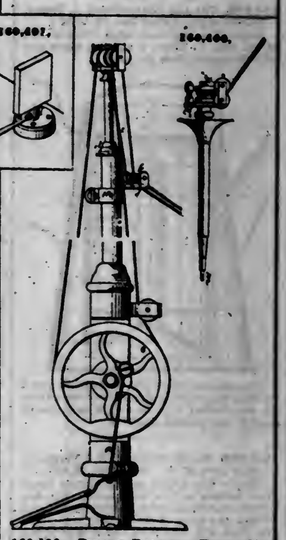
Brief.—A pyrometer is placed in the cylinder and one in the superheater of a steam-engine, to ascertain the temperature the steam in the superheater must be to maintain a certain temperature in cylinder. The scale of the pyrometer in the superheater may be graduated to indicate the temperature of the cylinder at any cut-off after their relations to one another have been determined.

1. The combination of the two pyrometers D E with the superheater B and the engine-cylinder A, to be operated by each, as and for the purpose specified.

2. In combination with the two pyrometers D E, superheater B, and the engine-cylinder A, applied as described, one or more adjustable slides, *f f'*, and one or more electro-magnetic alarms, applied thereto and to the pyrometer of the superheater, all substantially as and for the object and purposes as explained and represented.

The rod B, tubular and perforated, as described, applied to the cylinder and to the lever H, in manner, and to operate therewith as specified.

160,405.



160,405. SOLUTIONS FOR CHEMICAL TELEGRAPH-PAPER. Thos. A. Edison, Newark, N. J., assignor to himself and George Harrington, Washington, D. C. [Filed June 1, 1874.]

The solution for chemical telegraph-paper prepared with ferricyanide of potassium, substantially as set forth.

160,406. SOLUTIONS FOR CHEMICAL TELEGRAPH-PAPER. Thos. A. Edison, Newark, N. J., assignor to himself and George Harrington, Washington, D. C. [Filed June 1, 1874.]

The solution for chemical telegraph-paper prepared with tannin and hydrosulphuret of ammonia, substantially as set forth

160,406. SOLUTIONS FOR CHEMICAL TELEGRAPH-PAPER. Thos. A. Edison, Newark, N. J., assignor to himself and George Harrington, Washington, D. C. [Filed June 1, 1874.]

The solution for chemical telegraph-paper, prepared with tincture of logwood, substantially as set forth.

160,406. DENTAL ENGINES. Horace M. Edson and Robert L. Evans, Toledo, Ohio. [Filed Feb. 4, 1875.]

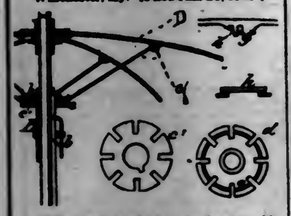
Brief.—The spring-rod, with endless belt, is combined with an independent hand-piece furnished with pulleys. Adjusting-pulleys for the belt are secured upon the standard, on which the spring-rod moves.

1. In a dental engine, the hollow stem D, the spring-rod E, and a continuous cord or belt, which runs from the driving-wheel to the hand-piece, in combination with the pulleys and the independent hand-piece, all substantially as and for the purposes herein set forth.

2. In combination with the hollow standard, spring-rod, and continuous cord or belt, an adjustable clamp on the standard, provided with a pivoted frame and pulleys, all substantially as and for the purposes herein set forth.

3. The combination, in a dental engine, of the hollow standard inclosing a spring, an extension-rod having pulleys on its top, the adjusting-pulleys on the standard, the continuous cord or belt, and the independent hand-piece, all substantially as and for the purposes herein set forth.

160,407. UMBRELLAS. John J. Bubank, Winchester, Ky. [Filed Jan. 29, 1870.]



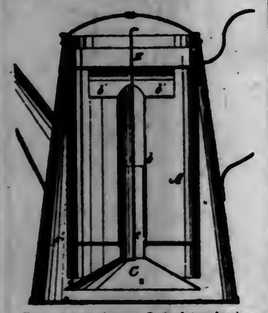
1. The notched rib *a*, in combination with the staff A and a spring-catch, *b*, as and for the purposes described.

2. The flanges *c*, slotted, grooved, and perforated, as described, in combination with the slotted cap *c'*, the washer A, and the stud *f*, substantially in the manner and for the purposes specified.

3. Fins *g* on ribs D, provided with eyes and notches, in combination with pins *h*, having heads on them, for the purposes described.

160,408. TEA AND COFFEE POTS. L. BYERS, Pittsburg, Pa. [Filed Dec. 12, 1874.]

Brief.—The wire is connected with the tube of the cone, for lifting it and the inside cup with their tubes from the pot.



The separate pieces A C, the latter having a tube, *a*, that slides in a tube, *b*, of the former, in combination with the wire E, arranged as and for the purposes specified.

160,409. GAS-GOVERNORS. H. J. Ferguson, New York, N. Y. [Filed Oct. 16, 1874.]

Brief.—The double communicating chambers contain a fluid, such as mercury, &c., which operates the valve-carrying float located within the inner chamber. The valve is in the form of a split tube, and it dips into a vertically-adjustable mercury-chamber, over which the gas must pass on its way to the burners.

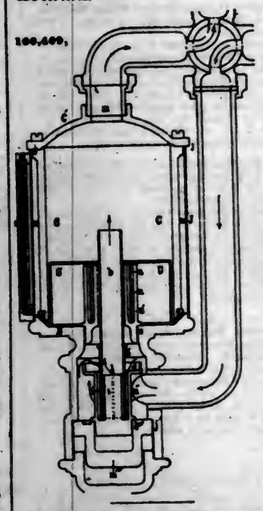
1. In a gas-governor, the jacket J, forming external of the body of chamber C the annular space *a*, substantially as herein shown and set forth.

2. Jacket J, forming space *a*, in combination with flange *j*, orifices *o o*, and chamber C, substantially as shown and set forth.

3. The central float-tube *b* and movable jacketed counterpart *b'*, in combination with float-valve U, slits *c* and *f'*, and the adjustable mercury-vessel *w''*, substantially as herein shown and set forth.

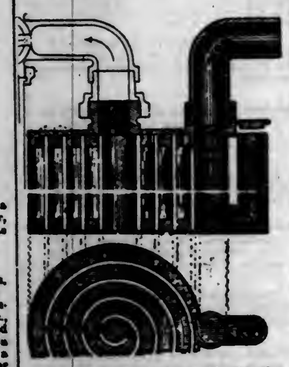
4. The threaded neck *e* of the mercury-vessel *w'*, in combination with the bottom of chamber C, substantially as herein shown and set forth.

5. The threaded neck *e'*, threaded flange *f*, and thumb-piece *m''* of the mercury-vessel *w''*, in combination, substantially as herein shown and set forth.



160,410. CARBURETERS OR HYDROCARBON-DIFFUSERS. H. J. Ferguson, New York, N. Y. [Filed Oct. 16, 1874.]

Brief.—The cover of the carburetor is detachable, and has secured to its under side by screws a spiral coil of metal, to which is secured a vertical scroll-coil of fibrous material. The lower end of the fibrous scroll is also attached to a metallic coil, by which its sides are kept separate.



In a gas-carburetor, the combination of a detachable cover with a vertical scroll-coil, consisting of a thin sheet of fibrous absorbent material, provided with detachable strips of heavy metal at each end, and secured to the cover, substantially as herein shown and set forth.

160,411. METHODS OF STRAIGHTENING WHALEBONE. Wm. H Ferguson, Rochester, N. Y. [Filed May 15, 1874.]

Brief.—The whalebone strips, after being heated by steam, are stretched in frames to take out the kinks and left to dry.

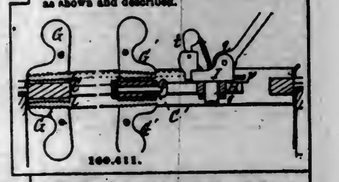
1. The process of straightening whalebone herein described, the same consisting in heating the strips by steam, straining the same in a longitudinal direction, and drying it while under this tension, substantially as set forth.

2. The combination of the stationary and movable head-blocks C C', provided with jaws G G', for clamping and holding strips of whalebone under tension, as and for the purpose specified.

3. The combination, with the movable head-block C', of the pinion *d* and sliding rack-bars E E, engaging with notches of the frame, as shown and described, and for the purpose specified.

4. In combination with the head-blocks C C', provided with jaws for holding the tension of the strips, the fulcrum-bar H, provided with a jack for drawing the strips through the jaws, as described.

5. The jack consisting of the bearing I, rack-bar *p*, lever *q*, and jaw *t*, pivoted to an extension of the rack-bar, so as to move therewith, as shown and described.



160,412. COMBINED TURKISH AND VAPOR BATHS. Henry S. Firman, Jersey City, N. J. [Filed June 3, 1874.]

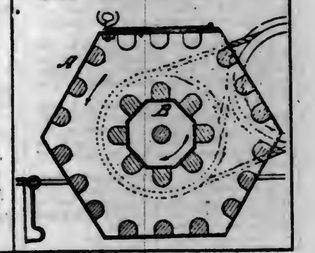
Brief.—A special arrangement of pipes, cocks, and other appliances, with an arm-hole located in the top plate, and provided with a hinged cover adapted to be opened from the inside, enables the bather to use the apparatus without the services of an attendant.



1. The bath described, adapted, by means substantially as described, for convenient use without the services of an attendant, consisting, essentially, in the open top to permit the projection of the head for the purpose of comfort and observation, the system of pipes with regulating-cocks within convenient reach, the adjustable chair, the arm-hole, and the window *a'*, arranged as and for the purpose set forth.

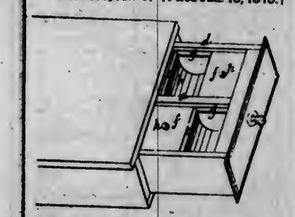
2. The arm-hole, relatively arranged as described, and provided with the hinged cover, adapted to be operated from the inside, as set forth.

160,413. WASHING-MACHINES. J. Thomas Forbes, Charleston, S. C. [Filed Aug. 31, 1874.]



The two prismatic ribbed drums A B, arranged one within the other, in combination with shafts G H and pulleys E E' F F', for giving opposite motions to said drums, whereby a beating and rubbing action on the clothes is produced, substantially as described.

160,414. NEEDLE-CASES. Ambrose Fowler, West Troy, N. Y. [Filed Jan. 16, 1875.]



1. The combination, with a case divided into separate rows of compartments or receptacles *b*, for needles or other articles for show or sale, of separate sliding covers *f* for each compartment, so arranged that only one compartment of each separate row is opened at a time by the movement of said slides, whereby the needles or other articles of the several compartments are prevented from being mixed while being handled.

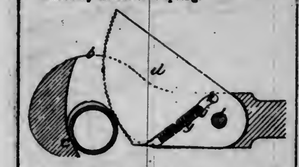
2. The combination, with a case of separate rows of compartments *b*, and separate sliding covers *f* for each compartment, of a stop or stops, *i*, whereby the movement of one or more covers is limited to a distance equal to the width of the cover, to exactly uncover one compartment at a time in the row.

3. The combination, in a case for needles and other similar articles, of separate lines or rows of separate compartments *b*, an equal number of separate and distinct slides, *f*, of equal width with the compartments, and sliding in ways *g* in the same plane, either all at a time or singly, substantially as and for the purpose set forth.

4. The combination, with a case of separate rows of compartments *b*, and separate and equal number of sliding covers *f* therefor, having a limited movement, of a stop or stops, *j*, in the outer case, substantially as described, whereby the inward movement of the compartment-case automatically closes all the slides of the separate rows.

160,415. PIPE-WRENCHES. C. H. Fulmer, Indianapolis, Ind. [Filed Jan. 25, 1875.]

Brief.—An improvement on Patent No. 154,471, August 25, 1874. The tongue is held in position for use in any position of the wrench by means of a spring.

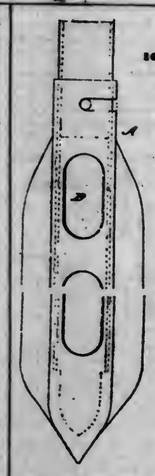


The combination, in a pipe-wrench, of the pivoted tongue *d*, arranged to open and close with the jaw, as described, of a spring, *g*, fixed within and carried by said tongue and a fixed bearing-pin, *j*, in the jaw for said spring, whereby the tongue is always held in position for use without regard to the manner in which the wrench is handled.

160,416. GRAIN-SAMPLERS. F. A. Furst, Baltimore, Md. [Filed Feb. 10, 1875.]

Brief.—A device for testing the quality of grain at different depths when stored in bulk.

A grain-sampler, consisting of the perforated casing A, provided with the wings *a*, in combination with the hollow shaft B, correspondingly perforated, the said shaft being adapted to be partially revolved within the said casing to a position causing the sampler to be opened or closed, as may be desired, substantially as specified.

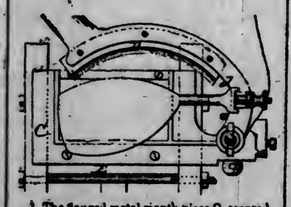


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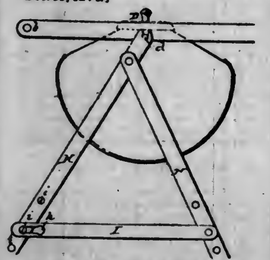
160,417. STRAW-CUTTERS. Warren Gale, Chicopee Falls, Mass. [Filed Nov. 20, 1874.]



1. The flanged metal mouth-piece C, secured to the frame-piece E, and having the parts *a b*, which form a carrier for the lever-knife, extended beyond the side of the mouth of the box A, permitting the removal of the leg B without displacing the said mouth-piece, as and for the purpose set forth.

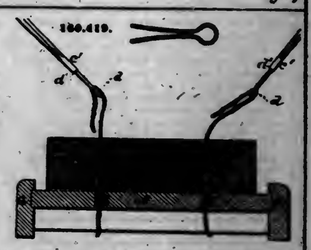
2. The curved handle, to which the curved blade D is attached, pivoted on an extension at the lower part of the metal mouth-piece, and in line with the stationary blade thereon, to cause both ends of the curved knife D to operate upon the feed at or about the same time, as set forth.

160,418. CHURNS. David W. George and John J. Stutzman, Pulaski, Iowa. [Filed Dec. 19, 1874.]



The folding frame H H, having notches *d*, and having beaded pins *i i*, to which are connected the slotted braces I I for adjusting the height of the removable churn-box, all constructed substantially as set forth.

160,419. TEMPORARY BINDERS. Abram A. Goldsmith, Charleston, S. C. [Filed Nov. 14, 1874.]



The sling-needles H, having triangular blades *c*, merging into cylindrical portions *c'*, shoulders *d'*, reduced portions *c''*, and eyes *d*, substantially as specified.

160,420. CARTRIDGE-HOLDERS. N. S. Goss, Neosho Falls, Kans. [Filed Jan. 23, 1875.]

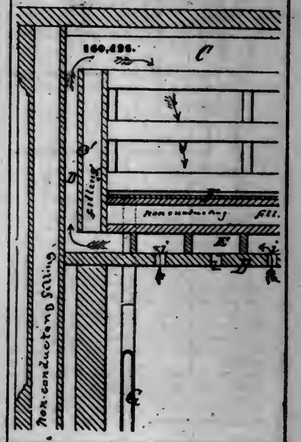
A cartridge spring-socket, having a flaring or funnel-shaped top, and the tongue A and groove G, constructed and arranged substantially as described, for the purpose specified.

160,421. LAWN-SETTEES. H. H. Grats, Lexington, Ky. [Filed June 9, 1874.]

Brief.—The settee is provided with a stationary back and a slatted seat. At the upper rear edge of the seat a cover is hinged, which can be turned up against the stationary back to form a solid back, or down upon the seat to protect it from rain, snow, &c.



The combination, in a lawn-seat, of a body, A, having a slat seat, *a*, a stationary back, B, and a solid back, D, hinged at its lower edge to lie against the back or upon the slat seat, substantially as set forth.

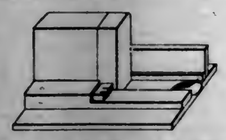


160,422. REFRIGERATORS. Wm. Grayson, St. Louis, Mo. [Filed Dec. 12, 1874.]

Brief.—The ice-box, slatted on both sides to form air passages, has a packed end and an arched and packed bottom. Beneath the bottom is a chamber communicating with the provision-chamber, and with the flue along the packed end of the ice-box.

1. An ice-box, C, having a non-conducting filling at its bottom and inner end, and provided with open-slatted sides, substantially as described.
2. The ice-box C, the doubly-inclined bottom of which is provided with a filling, in combination with a perforated platform, B, chamber E, and air-passage D, substantially as and for the purpose set forth.
3. The perforated platform B, in combination with the air-chamber E, communicating with the air-passage D, substantially in the manner as described.

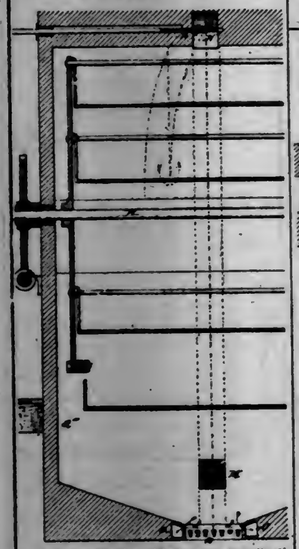
160,423. MAKING MATRICES FOR CASTING TYPE. John Greene, London, England. [Filed Apr. 4, 1873.]



The mold described, having the side piece *b*, block *c*, pouring-opening *d*, constructed and arranged as and for the purpose described.

160,424. BAKERS' OVENS. Jas. Hall, Cincinnati, Ohio. [Filed Oct. 24, 1874.]

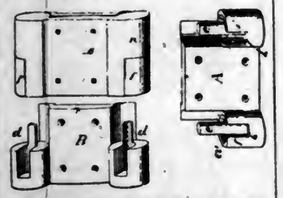
Brief.—Draft may be through either the upper or the lower flues.



1. In combination with the grate-bars D of the furnace, which open directly into the body of the oven, the perforations *d* and flues *e e*, arranged on either side of the grate, and flue F, leading to the uptake, substantially as specified.
2. The combination, in a bake-oven, of the curved top *a* and curved back *a'*, the latter extending past the direct flue M down to a level with the grate, substantially as and for the purpose specified.

160,425. DOUBLE REVERSIBLE HINGES. E. Halsey, San José, Cal., assignor of one-half his right to Daniel C. Bailey, same place. [Filed Mar. 17, 1874.]

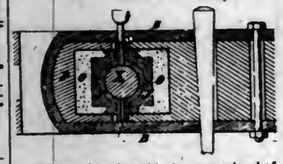
Brief.—The hinge opens both ways, but cannot be unshipped in any position unless the part on the gate be off the pintle. The plate upon the post is convexed to give a rocking motion when the gate closes, and thus prevent undue jarring.



1. The combination of the leaves or plates A and B, one having the sockets *j j* slotted at *k k*, and the cylindrical pintles *r s*, with annular spaces *j j* around them, the other leaf B having the inwardly-inclined slots *i i* and the segments *d d*, adapted to fit in said spaces, all constructed and arranged as shown and described.
2. The leaf B, having a convexity, as shown and described, in combination with the leaf A, said leaves being provided with pintles and sockets, adapted to co-operate substantially as and for the purpose specified.

160,426. ELASTIC PITMAN-CONNECTIONS. Geo. W. Harrison, Lansing, Mich. [Filed July 7, 1874.]

Brief.—The pitman has a recessed chamber in the end to receive the india-rubber block and the metallic box J.



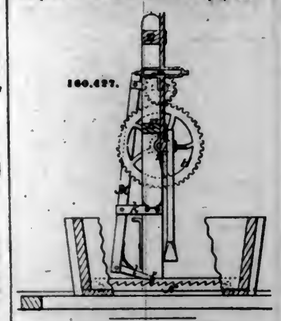
1. In combination with the recessed end of the pitman, the shouldered metallic boxes J, which together form an inclosed chamber to receive the elastic blocks O, substantially as set forth.
2. In combination with the pitman having a recessed end, the recessed cap P, elastic blocks O, metallic boxes J, and strap B, substantially as set forth.

160,427. MECHANICAL MOVEMENTS. John A. Hart and Harmon Scott, Iola, Kans. [Filed Jan. 30, 1875.]

Brief.—A double ratchet-bar, having its teeth set in opposite directions, is rigidly secured to the main box. A vertically-reciprocating and laterally-moving pawl engages the teeth, and imparts a horizontally-reciprocating motion to the box, the whole being operated by the clothes-pounding mechanism.

1. In a mechanical movement for operating washing and other machines, the combination, with a vertically-vibrating pawl, *i*, actuated by the mechanism for imparting a vertically-reciprocating movement to the shaft, of the double bar N, having its teeth set in opposite directions, substantially as specified.
2. The combination, with a vertically-vibrating pawl, *i*, of the spring S, for the purpose of accelerating the change of the said pawl from one series of teeth to the other, of double ratchet-bar N, substantially as specified.
3. The combination, with an actuating pawl, *i*, having lateral play, of the separating-strip *s*, substantially as specified.
4. The double ratchet-bar N, having its teeth *i' i'* arranged in oppositely-inclined series, separated by a strip, *s*, and set with their bite in opposite directions, the same being adapted for use substantially as specified.

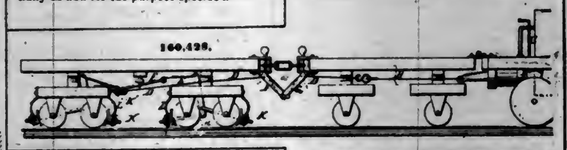
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160,428. CAR-BRAKES. Lamar T. Hay, Xenia, Ohio. [Filed May 28, 1874.]

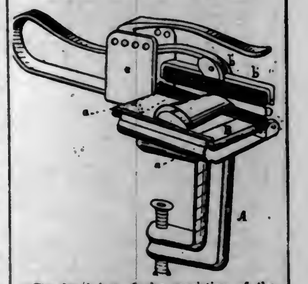
Brief.—Rubber springs upon brake-shoes and cord of a continuous railway-brake.

160,428.



The combination, with the brake cord or chain D, yielding frame F G, brake-rods E, and brake-connections, of the rubber springs K K', whereby the cord D, yielding frame F G, and brake-shoes are relieved of sudden strains, substantially as described.

160,429. HAND HEM-FOLDERS. F. Henry, Philadelphia, Pa. [Filed July 28, 1874.]



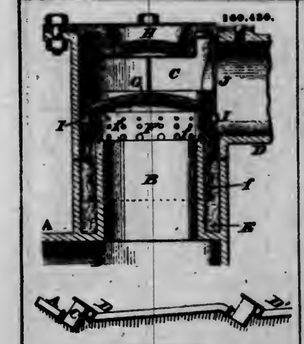
The hand hem feeder, consisting of the yielding presser-bar D, the grooved plate B for variable hemmers, and the clamp A, substantially as and for the purpose set forth.

160,430. GAS-REGULATORS. Andw. Hickenlooper, Cincinnati, Ohio. [Filed Sept. 28, 1874.]

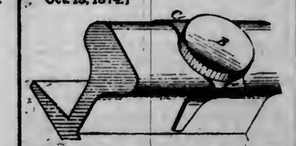
Brief.—Removable weights for regulating the position of the perforated valve, such perforations diminishing from bottom to top of the valve, and all in combination with ascending gas-mains.

In combination with the ascending mains D D' D'', the permanent case C B, side pipes A D, liquid-chamber E, perforated valve F, removable weights O, and detachable cap H, constructed and operating substantially as and for the purpose specified.

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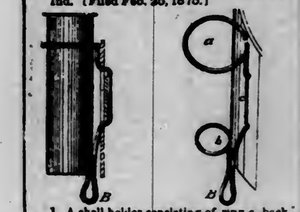


160,431. DETONATING RAILROAD-SIGNALS. Francis Hickman, Reading, Pa. [Filed Oct. 13, 1874.]



In a torpedo consisting of a pellet, A, cap B, and straps C C, the cap and straps formed of a single piece of soft or ductile sheet metal, for the purposes herein set forth.

160,432. CARTRIDGE-SHELL HOLDERS. W. H. Holabird and Aaron Parks, Valparaiso, Ind. [Filed Feb. 26, 1875.]



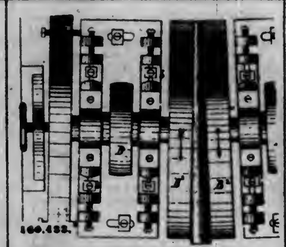
1. A shell-holder consisting of ring *a*, back wire A, and spring shell-clamp and charge-supporter, substantially as described.
2. The combination of ring *a*, back wire A, spring-hook B, and ring *b*, arranged substantially as shown and described.
3. A shell holder consisting of ring *a*, wire A, attaching-loop C, spring-hook B, and ring *b*, substantially as shown and described

160,433. METAL-ROLLING MACHINES. J. Holmes, Pittsburg, Pa., assignor to himself and Hussey, Wells & Co., same place. [Filed Jan. 20, 1875.]

Brief.—A pair of plane-faced disk-rolls, geared to revolve in opposite directions, with an open-sided tapering guide between them, the axial line of which is a little above the centers of the rolls, whereby the rod, in being rolled, is given a longitudinal movement.

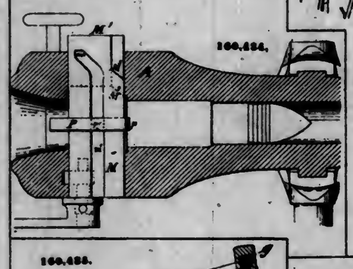
1. A pair of plane-faced disk-rolls with their faces inclined to each other and their centers opposite, and arranged for the introduction of the rod or bar to be tapered on the side of the greatest opening, the feed being from such side toward the side of the least opening, whereby, on the completion of the taper, the rolls will have a bite or bearing along the entire length of the taper, substantially as set forth.
2. The plane-faced inclined disk-rolls B' B', arranged with a line of bite from at or near the center to the side of least opening, in combination with an open-sided tapering guide arranged along such line of bite, and with reference to a feed from the side of greatest opening, substantially as set forth.

160,434. BREECH-LOADING ORDNANCE. B. B. Hotchkiss, New York, N. Y. [Filed May 20, 1874.]

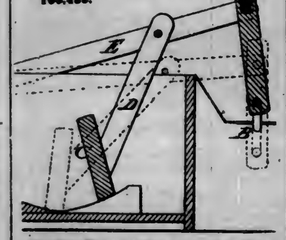


1. The extractor P', with its hook *p* and pin *p'*, in combination with the gun A, and with the groove *m'* in the breech-block M, as herein specified.
2. The breech-block M, having the groove *m'* and offset M', in combination with the extractor-hook P *p*, as herein specified.
3. The bevel or flare M' on the breech-block M, in combination with the groove *m'* and the extractor P *p*, operating together as herein specified.

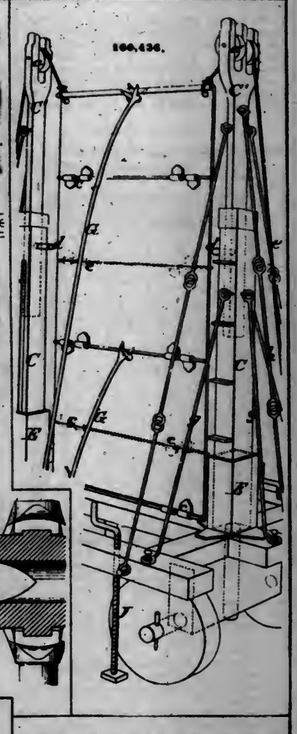
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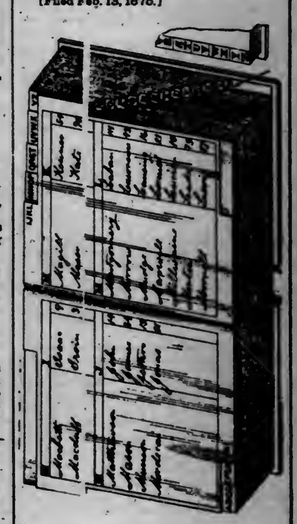
160,435.



160,436.



160,437. INDEXES. A. J. Jones, Cincinnati, Ohio, assignor to H. H. Tinker, same place. [Filed Feb. 13, 1875.]



160,438. WASHING-MACHINES. A. G. Huey, Garnett, Kans. [Filed Oct. 10, 1874.]

Brief.—The beaters are operated by levers that are attached to a rod having a spring and a hand-crank.

In combination with the beaters C, pivoted beater-arms D, levers E, crank B, and rods F *e'*, the spring *g*, applied to rod F, as shown and described.

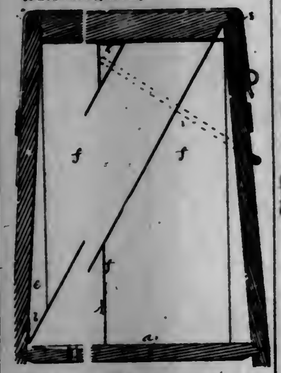
160,439. FIRE-SHIELDS. John M. Johnson, Stillsville, Ind. [Filed Jan. 9, 1875.]

Brief.—A fire-shield consisting of a series of metal plates hinged together at their edges, and extended by means of ropes and pulleys attached to extensible posts. The whole is mounted on a truck, which is provided with steadying-screws.

1. In a fire-shield, the extensible parts C C' and hinged folding sections, operated substantially as described.
2. In combination with a folding fire-shield, the extensible parts C C', the carriage D, and the steady-screws J, substantially as and for the purposes described.

An indexed book, each of whose leaves for family names is accompanied by a secondary group or series of notched and initialed leaves for Christian names of individuals, said secondary group being capable of being read forward and backward, and separate space for incorporations, firm-names, and miscellaneous matter, substantially as and for the purpose designated.

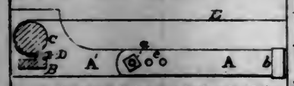
160,439. REMOVABLE REFRIGERATORS FOR PAILS, &c. Jas. C. Jones, New York, N. Y. [Filed Nov. 3, 1874.]



The ice-chamber D, arranged diagonally within the vessel A, and provided with flanges *r r* and *s* at its upper portion, and a flange, *t*, at its bottom, in combination with the vertical wings *f*, substantially as and for the purpose described.

160,440. BED-BOTTOMS. Danl. C. Kellam, Detroit, Mich. [Filed Jan. 12, 1875.]

Brief.—The attachment of the fabric to the wedges instead of to the roller enables it to be detached, and any irregular stretching or sagging caused by use to be adjusted by simply readjusting the fabric on the wedges, and then securing it thereto.



1. The fabric E, loose at both ends of the bed-bottom, as shown, in combination with the rollers C, cross-pieces B, wedges D, and frame A A', substantially as and for the purposes specified.

2. The extensible frame A A', the part A being provided with the holes *c*, in combination with the bolts and nuts *a*, bands *b*, rollers C, and cross-pieces B, substantially as herein specified, for the purposes set forth.

160,441. MEANS FOR RAISING SUNKEN VESSELS, &c. Henry F. Knapp, New York, N. Y. [Filed May 12, 1874.]

1. The jacks constructed of upper and lower sections A A', fitted together and forming a single structure, substantially as described, and for the purposes specified.

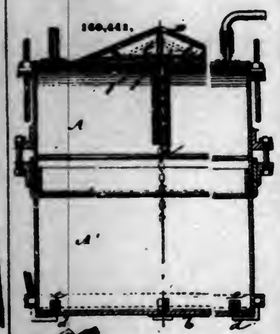
2. The full open bottom jacks, constructed with rising and falling or movable bottoms B, essentially as shown and described.

3. The combination, with the open bottom jacks and their movable bottoms B, of the lower supports or pins *d*, and the holes or pockets *e* in the movable jack bottoms, substantially as and for the purpose herein set forth.

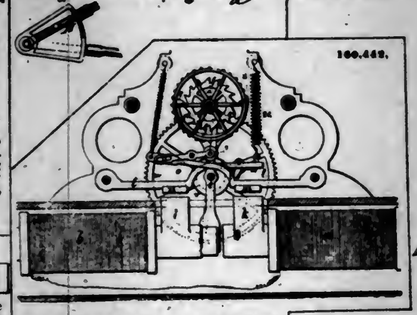
4. The combination, with the hydro-pneumatic lifting-jacks, of the attached perforated water-distributer E arranged around the bottoms of the jacks, essentially as described.

5. The slide valve H, in combination with the inlet and exhaust pipes or hose I J, and tubular connection G of the jack, substantially as described.

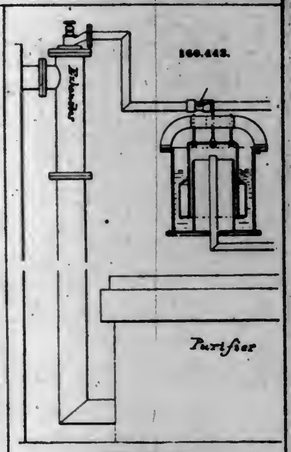
160,442.



160,443.



160,444.



160,444. GRASS-CULTIVATOR TEETH. Ezra Leonard, Akron, Ohio. [Filed Dec. 16, 1874.]

Brief.—A tooth with sharp cutting-front, and curved to allow the flattened point to run under the sod nearly parallel with the surface, and cut upward.

160,444,

160,449.

160,445. PRINTING-TELEGRAPHS. Adolphus A. Knudson, Brooklyn, N. Y. [Filed Aug. 18, 1874.]

Brief.—Improvement in Knudson's Patent No. 149,143. Type-wheel escapement controlled by rapidly-alternating pulsations. Prolongation of current allows extended poles *l k* to attract armatures *n m*, one accomplishing the printing, the other straining spring *u* to furnish the power to turn type-wheel.

The combination, in a printing-telegraph instrument, of two magnets in one circuit, and a polarized armature between them operating the escapement, a printing or impression lever receiving motion from a lateral core and armature, and self-winding mechanism receiving its power from lateral cores and another armature, substantially as set forth.

160,446. STEAM-JET GAS-EXHAUSTER. E. Korting, Hanover, Germany. [Filed Dec. 3, 1874.]

Brief.—The steam-jet exhauster is located beyond the scrubber, so that the tar is deposited before coming into contact with the steam, thus preventing the deposit of crystallized naphthaline in the pipes.

The combination, with the scrubber or washer and the purifier, of a gas apparatus, a steam-jet exhauster, located beyond the scrubber and before the purifier, as and for the purposes described.

As a new article of manufacture, the above-described cultivator-tooth, consisting essentially of the shank C, the colter B, and the two-winged share H, having the sharp cutting-edge D, curved to run nearly parallel with the surface of the ground, substantially as set forth.

160,445. ROOFING-TILES. John M. Lewis, New Castle, Ohio. [Filed Jan. 13, 1875.]



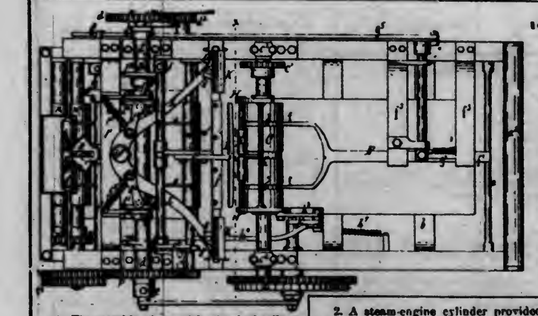
The tiles A and B, constructed with the longitudinal grooves *a b'*, tongues *a' b'*, shoulders *a' b'*, cross-grooves *a' b'*, tongues or ribs *a' b'*, stops or keys *a'*, and notches *b'*, when

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160,446. PAPER-BAG MACHINES. William Liddell, Buffalo, assignor to himself and Howland & Co., Sandy Hill, N. Y. [Filed Nov. 3, 1874.]

Brief.—The tube end is spread open and creased for folding, is then fed into delivery-rolls a proper distance, and cut off to bag length. The bag-blank is then pasted and folded to close its bottom as it travels over an inclined table.

160,446.



1. The combination, with the feed-rollers C C', of the reciprocating bar F and expanding-springs *f f* attached thereto, for distending the mouth of the tube against the peripheries or faces of the rollers, preparatory to folding the same, substantially as hereinbefore set forth.

2. The combination, with the feed-rollers C C' and expanding-springs, of the side folding hands and arms K L, constructed and combined as described, for forming the side laps of the bottom of the bag, substantially as hereinbefore set forth.

3. The combination, with the arms L L and side folding-hands K K hinged thereto, of the shoulders *k* and springs *k'*, substantially as and for the purpose hereinbefore set forth.

4. The combination, with the rollers C C, of the side folding-hands K K, and the folding-rollers *h h*, adapted to the peripheries of the feed-rollers, for folding the upper and lower bottom laps, substantially as hereinbefore set forth.

5. The combination, with the feed-rollers C C' and folding-rollers *h h*, of the swinging bearings H H, links *h'*, and rock-lever *h''*, for operating the folding-rollers simultaneously, substantially as hereinbefore set forth.

6. The combination, with the simultaneously-operating folding-rollers *h h*, of the projecting plate or spring *h''*, for folding one of the laps a little in advance of the other, substantially as hereinbefore set forth.

7. The combination, with the intermittingly-revolving pasting-plate R and shaft *r'*, of the notched disk *r s* and spring-pawl *s'*, for supporting the pasting-plate in its proper position while at rest, substantially as hereinbefore set forth.

8. The combination, with the driving-shaft D and paster-shaft *r'*, of the connecting gear-wheels P S, and the perfect and mutilated gears S' S', for imparting an intermittent rotary motion to the pasting-plate, substantially as hereinbefore set forth.

9. The combination, with the table M and tape conveyer *o o'*, of the folding-plate U, for refolding the lower bottom lap of the bag, substantially as hereinbefore set forth.

10. The combination, with the table M and conveyer *o o'*, of the folding-plate U and oscillating striker V, the bottom lap 3 being folded and held down by the striker until the folder-plate has folded back the bottom lap 4 and secured it in an overlapping position over the lap 3, substantially as hereinbefore set forth.

11. The combination, with the folder-plate U secured to the shaft *u*, of the sliding bar *u'*, spring-dog *u''*, and spring-arm *u'''*, for operating the folder-plate, substantially as hereinbefore set forth.

12. The combination, with the oscillating striker V and paster-shaft *r'*, of the sliding bar *v'*, cam *v''*, and spring *v'''*, for operating said striker, substantially as hereinbefore set forth.

13. The combination and arrangement, with the table M and revolving pasting-plate R, of the friction-roller *r''*, substantially as and for the purpose hereinbefore set forth.

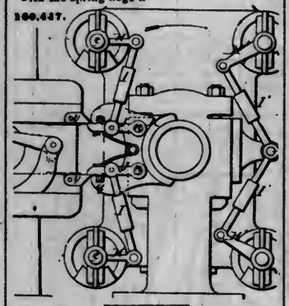
160,447. OSCILLATING ENGINES. Geo. G. Lobdell, Wilmington, Del. [Filed Aug. 6, 1873.]

1. The combination of the circular slotted valve G and its spindle *s*, with a set-screw, *k*, at each end of the spindle, and an elastic medium interposed between each screw and the spindle, all substantially as and for the purpose described.

2. A steam-engine cylinder provided with a jacket, the space between which and the said cylinder is separated by a partition into two passages, one for the live steam and the other for the exhaust steam, as set forth.

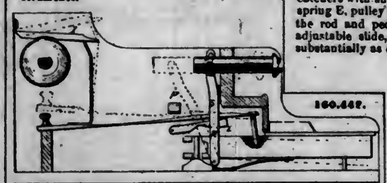
3. The combination of the arms H H, secured to the spindles of the steam-valves, the spring-arms J J, hung to a bracket on the cylinder's trunnion, and the connecting-rods I I, with the spring-dogs *i*.

160,447.



160,448. REED-ORGAN ATTACHMENTS. J. R. Lomas, New Haven, Conn., assignor to B. Shoninger, same place. [Filed Jan. 16, 1875.]

Brief.—A set of chime-bells is arranged as an attachment for organs or other keyed instruments.



160,448.

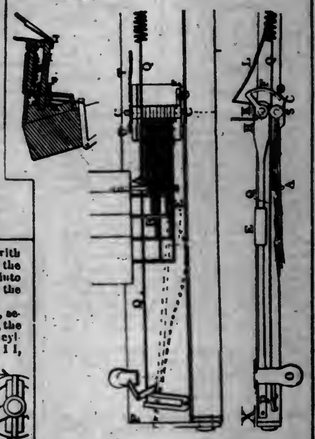
1. A series of bells arranged and secured in axial line upon a shaft having a non-conducting surface, substantially as described, and combined with a corresponding series of keys, substantially as specified.

2. The combination of a series of bells and a corresponding series of elastic hammer-levers with a corresponding series of keys and the interposed stop P, substantially as described.

3. The combination of a series of bells, a corresponding series of elastic hammer-levers in connection with a corresponding series of keys, and the interposed stop P with the hinged fulcrum L and cam R, in connection with a stop, T, substantially as described.

4. The combination of a series of bells, a corresponding series of elastic hammer-levers in connection with a corresponding series of keys, the interposed stop P, and the checks I, substantially as specified.

160,449. MUSIC-LEAF TURNERS. Ernst A. Mandel, Washington, D. C. [Filed Oct. 9, 1874.]



1. In a leaf-turner, the combination of a series of swinging arms and catchers with shaft H, and its curved lever F arranged to slide thereon, substantially as described.

2. In combination with shaft H, the swinging arms, curved and sliding lever F, and the spring E, constructed and arranged to operate substantially as described.

3. In combination with shaft H, swinging arms, and sliding lever F, the spring E, the pulley K, and spring L, all arranged to operate substantially as described.

4. The shaft H and sliding curved lever F, with its spring E, the pulley K, spring L, and elbow-lever M, all combined and arranged to operate substantially as described.

5. In combination with swinging arms and catchers, the gatherer A, cord Q, spring N, and compound lever P, substantially as described.

6. In combination with shaft H and hinged box X, the flat spring T, substantially as described.

7. The combination of swinging arms and catchers with shaft H, sliding lever F, having spring E, pulley K, spring L, and elbow-lever, the rod and pedal, the gatherer A, with its adjustable slide, and the hinged box X, all substantially as described.

160,450. SHOE-BRUSHES. Andw. McElrath, New York, N. Y. [Filed Apr. 6, 1874.]

Brief.—The back of the brush has receptacles for implements used in blacking boots and shoes, and are inclosed by a cover. The brush back, by being made thick, permits it to be grasped and held with ease.

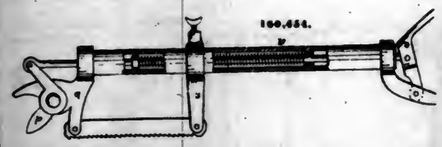


The boot-polishing brush having a hollow back provided with the cavities *o* and *o'*, and connecting-grooves to receive the auxiliary implements specified, and the hinged cover C for confining them in their appropriate places, as shown and described.

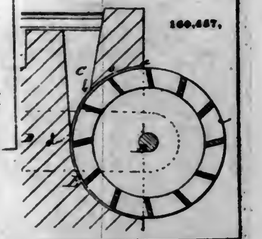
160,451.



160,454.



160,457.



160,451. LAMP-BURNERS. W. McKinley, Tremont, Ohio, assignor to himself and O. Kiser, same place. [Filed Jan. 16, 1875.]

Brief.—Wick-tube, spur-wheels, and shaft, each detachable, to aid in cleaning lamp-burner. Spur wheels with peripheral groove and latch, and boss upon the shaft for securing shaft in place.

1. The combination, with the burner cap A, of a detachable wick-tube, C, a detachable set of spur-wheels, D, and a detachable shaft, E, substantially as and for the purpose described.

2. In a lamp-burner, the set of toothed wheels D, having the circumferential grooves, and adapted, by reason of a connecting-barrel, to move laterally upon a shaft, and revolve rigidly with it, substantially as described.

3. The combination, with shaft E, of the boss G and catch H, substantially as and for the purpose described.

160,452. CAPS. Moses Mendel, New York, N. Y., assignor to Adolph Schwarz. [Filed Feb. 16, 1875.]

Brief.—A "cap-shaped" head-covering formed with neck and ear muffs in one piece, the latter being of sufficient length to encircle the neck one or more times, and provided with suitable fastenings at their ends. The muffs, when disused, are wound around the side crown.



The muffs B B', forming a continuation of the back and side portions of the cap A, and provided with the fastenings *b b' c*, as herein shown and described, for the purpose set forth.

160,453. BAG-FASTENERS. Asher M. Miller, Sturgis, Mich., assignor of one-half his right to J. B. Jacobs, same place. [Filed Oct. 21, 1874.]



The metal plate curved to form a segment of a circle, with its ends curved in reverse direction, or turned outwardly, as described, and provided with the slot *a*, in connection with the cord B, as and for the purpose specified.

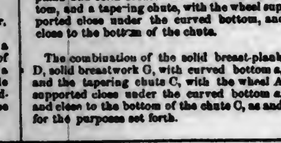
160,454. PRUNING IMPLEMENTS. C. Miller, Boonville, Mo. [Filed Aug. 3, 1874.]

Brief.—Shear-blades are mounted upon a hollow metal tube, and an extension of one of the blade-shanks serves as an arm to carry a saw-blade. The other end of this saw-blade is pivoted in an arm, which embraces and adjusts upon the tubular operating-rod of the combined devices.

The combination of shear-blades, saw with its adjustable arm, and tubular metal support *c*, all arranged as shown.

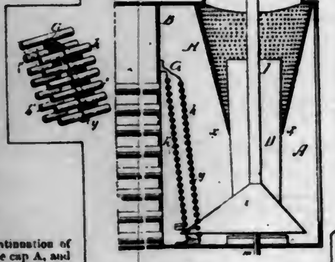
160,455. LAP-BOARDS. Wm. F. Mitchell, Lynn, Mass., assignor of two-thirds his right to H. W. French and A. R. Payne. [Filed Oct. 15, 1874.]

Brief.—The lap-rest is placed upon the knee, and the table revolves, so as to be brought into any desired position



The portable writing or work board herein shown, consisting of the flanged lap-rest *c d d*, revolving board *a*, and hinge-pin *e*, all arranged and constructed substantially as and for the purpose herein set forth.

160,456. LOCOMOTIVE SPARK-ARRESTERS. Alex. Mitchell, Wilkesbarre, Pa. [Filed Jan. 15, 1875.]



1. A spark-disintegrating screen in which notched bars G G are combined with two sets of rods, substantially in the manner described.

2. In a locomotive smoke-box, the tubes I, having flaring lower ends, and communicating above with the chimney, in combination with nozzles *a*, from which jets of live steam may be projected into said tubes, all as set forth.

160,457. WATER-WHEEL CHUTES. Mark B. Moomaw, Catawba, Va. [Filed June 28, 1873.]

Brief.—A breast water-wheel so combined with the chute as to avoid the presence of any great amount of air between the water and the wheel, which thereby receives the full concussion of the water. There is a solid breast-plank and solid breast-work with curved bottom, and a tapering chute, with the wheel supported close under the curved bottom, and close to the bottom of the chute.

The combination of the solid breast-plank D, solid breastwork C, with curved bottom *a*, and the tapering chute C, with the wheel A supported close under the curved bottom *a*, and close to the bottom of the chute C, as and for the purpose set forth.

160,458. WINDOW-VENTILATORS. Granville Nicholson, Brooklyn, N. Y. [Filed Jan. 20, 1875.]

Brief.—A ventilator-frame not only made in sections and adjustable in the direction of its length, to suit different widths of window, but the sections of which (there may be two or more) are constructed with a tongue and groove on their adjacent faces, whereby the sections may be slid the one over against the other, thus giving great compactness to the ventilator.

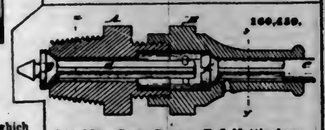


1. A contracting and expanding ventilating frame or bar having one or more stops or projections, *c*, on its back or outer surface intermediately of its height, substantially as and for the purposes herein set forth.

2. In combination with the contracting and expanding ventilating frame or bar, the bolts or catches *d* applied to the adjustable sections of the bar, essentially as described.

3. The adjustable or expanding and contracting sections of the ventilating frame or bar, in dovetail fit with each other throughout their length, whereby the frame may be shut up within the length of a single section, substantially as herein set forth.

160,459.

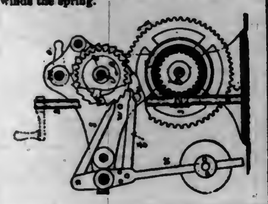


160,459. GAGE-COCKS. T. J. Nottingham, Cincinnati, Ohio. [Filed Nov. 13, 1874.]

A gage-cock in two parts, A B, having separate valves C D, both arranged to close automatically by boiler-pressure, substantially as specified.

160,460. MOTORS. Henry Odell, Peekskill, N. Y. [Filed Aug. 22, 1874.]

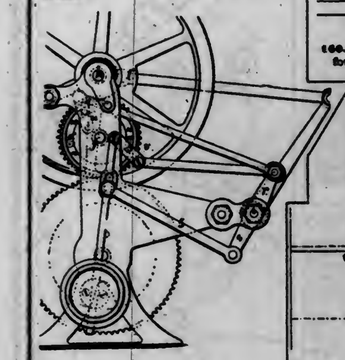
Brief.—Surplus power is utilized by slipping the pinion on the vertical shaft, so that it gears into the worm-pinion of the shaft, and winds the spring.



In combination with the pawls *s t*, rock shaft *b*, and revolving shaft *m*, the movable pinion 5 and worms 3 7, for transmitting motion from the shaft *m* to the spring-barrel shaft *b*, and partially wind the same, substantially as set forth.

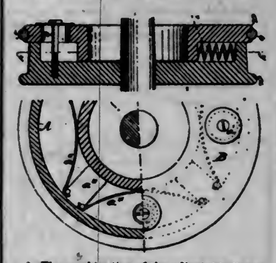
160,461. MOTORS FOR CHURNS, &c. Henry Odell, Peekskill, N. Y. [Filed Nov. 11, 1874.]

Brief.—Power is transmitted from the spring to the fly-wheel by combining friction-clamps with a revolving wheel and its connections.



The double friction-clamps *s* and *o*, friction wheel *g*, constructed and operating substantially as set forth, in combination with a fly-wheel and connections and a motor for the friction-wheel, as specified.

160,462. CAR-WHEELS. George Palmer, Littlestown, Pa. [Filed Jan. 26, 1875.]



1. The combination of the adjustable flange B with the main wheel A, as and for the purpose set forth.

2. The combination of the bolts *a'*, springs *a''*, and slots *b* with the adjustable flange B and car-wheel A, as and for the purpose described.

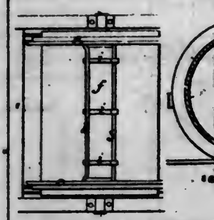
3. The combination of the india-rubber band *b'* with the adjustable flange B, as and for the purpose described.

4. In a railway-car wheel, the vertical adjustable flange B, to yield when coming in contact with frog or switch, and secured to the main car-wheel by bolts, either with or without springs attached to such bolts, as and for the purpose set forth.

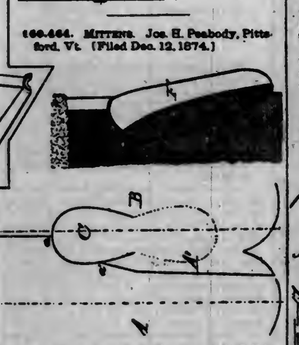
160,463. FREIGHT-CARS. George Paul and Josiah Sibley, Kenton, Ohio. [Filed Jan. 2, 1875.]

Brief.—Rotary cylindrical freight-cars with peculiar door-fastening.

The combination, with the door *f*, having hinges *i*, of the locking-bar *k*, substantially as and for the purpose set forth.



160,463.



160,464. MITTENS. Jos. H. Peabody, Pittsford, Vt. [Filed Dec. 12, 1874.]

A mitten composed of pieces A B C F, in combination with facing-pieces E G, all cut and united as described and shown.

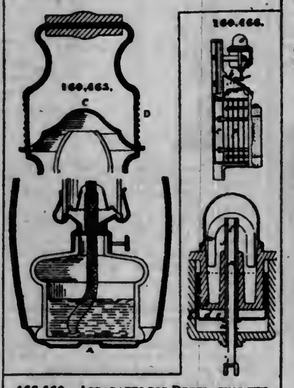
160,465. LAMP-HOLDERS. Jas. D. Pierce, Milwaukee, Wis., assignor of two-thirds his right to J. B. Smith and F. R. Pierce, same place. [Filed Jan. 22, 1875.]

Brief.—The holder is adapted to receive lamps of various sizes.

1. The combination of bottom A, wire B, forming a handle at the top, and shade C, arranged substantially as set forth.

2. The combination of bottom A, side wire B, shade C, handle E, and notch D, substantially as specified.

160,466.



160,466. APPARATUS FOR REGULATING THE SUPPLY OF AIR TO FURNACES. Thomas S. Prideaux, Blackheath, England. [Filed Dec. 4, 1874.]

Brief.—The cistern being raised to the top of the cylinder, the plunger, entering the cistern, displaces the mercury, which is forced out over the top of the cistern, and descends to the bottom of the cylinder. The cistern, being depressed, enters the body of the fluid, which then gradually re-enters the cistern through the small orifice in its bottom.

1. In combination with the furnace-door and movable damper *b p*, the screw segment *y*, forming a part of the door and the lifting-rod *z*, the segment being adapted, when the door is opened, to lift the rod and move the damper, as described.

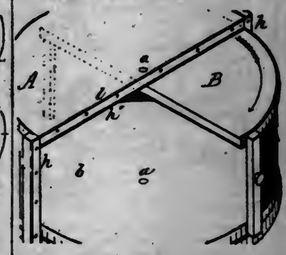
2. The combination of the furnace-door, having the segment *y*, as described, the lifting-rod *z*, the movable damper *b*, and the motor-regulator *o g*, the damper being opened by the movement of the door, as described, and closed by the operation of the regulator, substantially as set forth.

3. The combination of the receiving-cylinder *g*, the cistern *d*, having the hole *e* and the plunger *h*, substantially as described.

4. The combination of the grating *c c c* and the dampers *b p*, the grating being adapted to heat and distribute the air received through the damper, substantially as described.

5. The combination of the cylinder *g*, cistern *d*, plunger *h*, cistern-rod *f*, connecting-rod *i*, and weight *w*, as and for the purpose described.

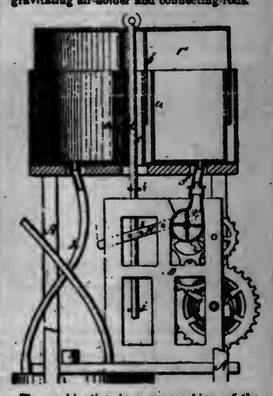
160,467. CHIMNEY-SAFES. Wm. P. Quackenbush, Holley, N. Y., assignor of one-half his right to H. M. Latimer, same place. [Filed Oct. 24, 1874.]



The half-circular sections A B, turning one within the other, the bottom *b*, attached to the inner section and turning with it, and the packings *h h h* at the joints between the sections, all combined and arranged to operate in the manner and for the purpose specified.

160,468. CARBURETING GAS-MACHINES. A. C. Rand, Minneapolis, Minn. [Filed Dec. 15, 1874.]

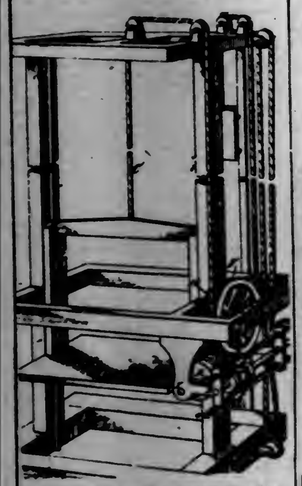
Brief.—The machinery which operates the air-blower is regulated automatically by a gravitating air-holder and connecting-rods.



The combination, in a gas-machine, of the water-tank B, with central concentric tubes *a e*, the holder C with central tube *b*, the rod *d*, extending through the tubes and having pins *i i*, the lever H, the air-forcing apparatus E, and machinery D, all substantially as set forth.

160,469. ELEVATORS. H. J. Reedy, Cincinnati, Ohio. [Filed July 31, 1874.]

Brief.—The hoisting-rope has a weight to counterbalance the platform, and passes around a flanged wheel on a shaft, which has also a worm-wheel driven by the belt-shaft. The belt is shifted by pins worked by a slotted drum on a parallel shaft.



1. The combination, in a hoisting-machine, of positive driving and locking mechanism H G I i, frictional grooved sheave-wheel F, platform A, rope C, and weight D, substantially as described.

2. The combination of shifter-shaft L M, projection S, spring brake-bar T, and driving-pulley J, operating substantially as and for the purpose specified.

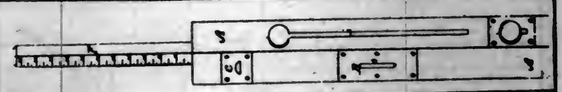
160,470. SASH-HOLDERS. J. W Reycroft, East Cambridge, Mass. [Filed Jan. 20, 1875.]

Brief.—Wedge-shaped blocks in inclined recesses are operated by rotary knob, cords, and pulleys, in ordinary manner. Elastic bands attached to the lower end of the block, and fastened above them, give a friction-surface, and at the same time serve as retractors, automatically drawing up the wedges until released by rotary movement of the knob or handle.



In combination with the mush a a a' and its frame b b, the rotary knob or handle d, cords c c', pulleys f f', inclines g g', runners h h', and elastic retracting-bands i i', substantially as and for the purpose herein set forth and described.

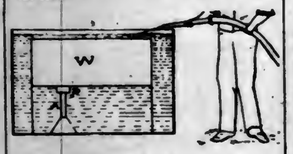
160,471. STAIR-BUILDERS' RULES. John J. Robinson, Orange Court-House, Va. [Filed Dec. 17, 1874.]



The improved stair-builder's rule consisting of the case A, spirit-levels B and C, extension-rule F, and adjustable stud I, provided with a prick, all combined and arranged substantially as shown and described.

160,472. PRESERVING APPARATUS. John P. Schmitz, San Francisco, Cal. [Filed Dec. 2, 1874.]

Brief.—The tank or case which contains the meat is provided with a fire-protector. Within this fire-protector the flame is allowed to burn as long as there is sufficient oxygen within the tank to support combustion. When the flame dies out, (which may be perceived through the glass plate,) the tank is placed within the box, which is then filled with water for the purpose of cooling said tank. After the tank is sufficiently cooled the water is drawn off, and the tank lifted out; then tie with a string the elastic tube, after which cut the same apart, and place thereon a screw-cap and fasten to the screw



1. The flexible pipe A, applied to the tank W, in combination with the screw-stem P and the oil-can, substantially as and for the purpose described.

2. The preserving apparatus consisting of the tank W, fire-protector D, screw-stem P, the flexible pipe A, containing a wick, and a suitable oil can, all combined and arranged substantially as shown and described.

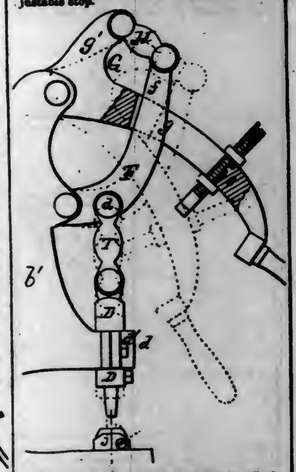
160,473. CAR-COUPLINGS. W. C. Scales, Circleville, Ohio. [Filed Aug. 26, 1874.]

1. The combination of the lever D, having incline d', and the post E, with the lever B and the pin C, as shown and specified.

2. The levers B D, post E, and pin C, in combination with springs b and d', substantially as and for the purposes set forth.

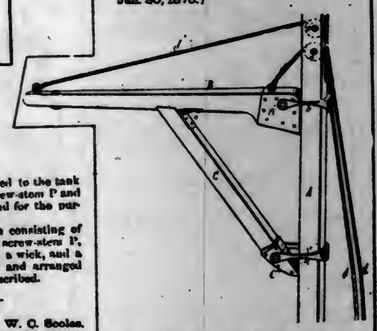
160,474. PUNCHING-MACHINES. James B. Sexton, Falls, Iowa. [Filed Nov. 7, 1874.]

Brief.—The power-arm of the lever is provided with a slot, through which operates another lever, and in which is placed the adjustable stop.



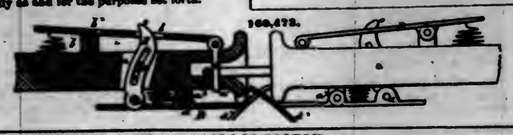
The combination, substantially as described, of the lever G, link H, lever F, arm T, die-holder D, and frame B, as and for the purpose set forth.

160,475. SCAFFOLDS. John A. Shannon, Bowling Green, Ohio, assignor to himself and Earl A. Thurstin, same place. [Filed Jan. 30, 1875.]



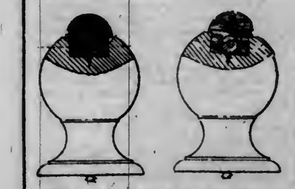
The bracket B and its shoe B', provided with the clevis b, the brace C, hinged to the bracket, and provided with the shoe C' and clevis b', in combination with the standard A, sheaves a a', and ropes d d' substantially as and for the purpose set forth.

160,472.



160,476. ATTACHING RUBBER CUSHIONS TO DOOR-CHECKS, &c. Jas. Shepard, Bristol, Conn. [Filed Feb. 16, 1872.]

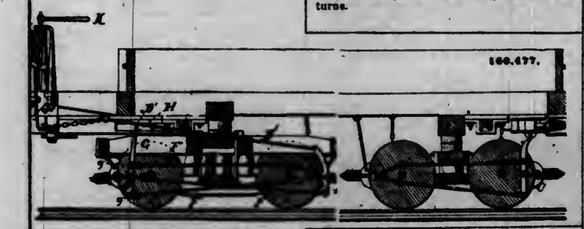
Brief.—A piece of wood is inserted in the rubber, and this piece of wood afterward glued in the socket. The two surfaces of wood can be firmly held, while it is somewhat difficult to glue rubber to wood.



The improvement herein described in the art of securing rubber cushions to articles of wood by means of a key of wood, or other material equally adapted for gluing, which key is first secured to the rubber cushion, and then glued to the wooden article, substantially as set forth.

160,477. CAR-BRAKES. Ferdinand Soobodo and Franz Luza, Cleveland, Ohio. [Filed Jan. 30, 1875.]

Brief.—A sliding block, adjustable, so that the brakes may be operated by a push, but not by a pull, or vice versa, or only by hand.



1. The combination, with the brake-shoes and draw head, of the levers E G, their connecting-rods F F', and the brake-rod D, whereby the brake-shoes are automatically or by hand brought into contact with the wheels, said wheels then, by their action against the shoes and through the connections G E F F', causing the shoes to still further bind and "brake" the wheels, substantially as and for the purposes set forth.

2. The combination of the draw-bar, the sliding block H, the levers E G, and their connecting-rods F F', substantially as and for the purpose set forth.

3. In combination with the block H, bearing the lever G, the lever or rod K and the yoke L, substantially as and for the purpose set forth.

4. The combination, with the draw-bar, of the shifting-block and mechanism for shifting the said block H, whereby the brakes may be operated either by a draft or by a push upon the draw-bar, or can be adjusted so as not to be affected by either, substantially as and for the purpose described.

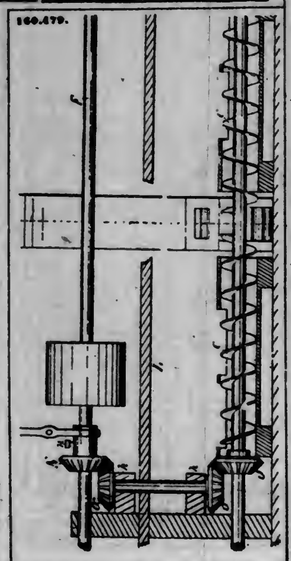
5. The draw-bar, provided with the sliding block H, the spring M, and the barbed or arrow-headed arm N, for operating automatically the brake-shoes of the car, substantially as and for the purposes set forth.

6. The combination, with the sliding block H, yoke L, and lever K, of the pawl and ratchet-wheel P, for holding the block H in position, substantially as described.

160,478. WEFT-THREAD KNITTING-MACHINES. Charles L. Spencer, Providence, R. I. [Filed June 24, 1874.]

Brief.—The filling-yarn passes between a pair of corrugated disks, which crimp it, and deliver it in that condition to the needles, so that it will not be subject to strain by the return of the needles into line.

160,479.



1. The corrugated wheels A A, for separating the needles of a knitting-machine and crimping the filling-yarn when inserted, substantially as herein described.

2. The combination of the wheels A A, trumpet-guide D, and the reciprocating needles of a knitting-machine, substantially as herein described, and for the purpose specified.

3. In combination with a weft-thread knitting-machine, mechanism, substantially as described, for crimping or corrugating the filling-yarn previous to its presentation to and between the needles, substantially as and for the purpose set forth.

160,479. GRAIN-CONVEYERS. Wm Stanton, Erie, Pa. [Filed Jan. 21, 1875.]

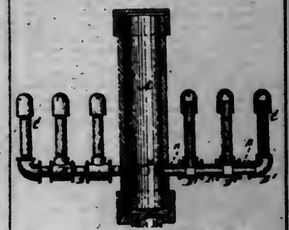
Brief.—In each compartment of the ship there is at bottom a case, open at top, inclosing a right and left hand screw-conveyer; also, a vertical shaft with bevel-gearing, operated by power attached to a horizontal shaft with a sliding pinion. An elevating bucket-belt is adapted to operate each compartment by turns.

1. In the several grain-compartments of a ship's hold, right and left closely-inclosed screw conveyers C C', open at the top, in combination with the gearing connecting shafts U and the line driving shaft F, connecting the separated conveyers, the elevator-leg E, and the shifting-gear N, as set forth.

2. The combination, with the right and left conveyers C C' and their operating gearing O O' O'' N, arranged in each separate grain-storing compartment of a ship's hold, of the line-shaft F, connected with the separate conveyers, to operate each independently of the other as each separate compartment is emptied of its grain, and the leg is shifted from an empty to a filled compartment, as herein set forth.

160,480. STEAM-JETS FOR FURNACES. Geo. Steele, Mott Haven, New York, N. Y. [Filed Sept. 3, 1874.]

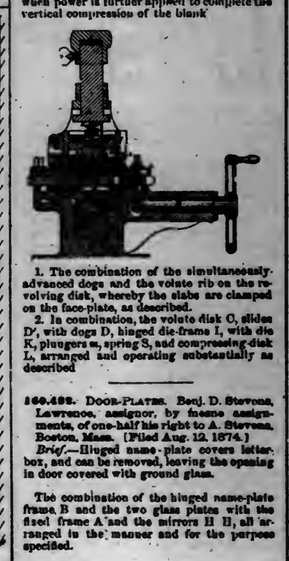
Brief.—The object of the jets is to increase the draft in furnaces.



The combination of the steam-reservoir A, the radial pipes B, the detachable nipple-connections B^1 B^2, and the nipples C C', substantially as and for the purpose herein set forth.

160,481. MACHINES FOR MAKING BOOT AND SHOE HEELS. Wm. Stevens, Northampton, England. [Filed Oct. 16, 1874.]

Brief.—Simultaneously-advancing slides, upon which are mounted dogs faced to correspond with the outer surface of a finished heel, serve to laterally press the blank. At the same time a nail-die is turned over upon the outer lift, and the nails forced through the lifts, when power is further applied to complete the vertical compression of the blank



1. The combination of the simultaneously-advanced dogs and the volute rib on the revolving disk, whereby the slabs are clamped on the face-plate, as described.

2. In combination, the volute disk C, slides D', with dogs D, hinged die-frame I, with die K, plungers n, spring S, and compressing disk L, arranged and operating substantially as described

160,482. DOOR-PLATES. Benj. D. Stevens, Lawrence, assignor, by mesne assignments, of one-half his right to A. Stevens, Boston, Mass. [Filed Aug. 12, 1874.]

Brief.—Hinged name-plate covers letter-box, and can be removed, leaving the opening in door covered with ground glass.

The combination of the hinged name-plate frame B and the two glass plates with the fixed frame A and the mirrors H H, all arranged in the manner and for the purpose specified.

160,482.



160,482. DROP-HAMMERS. N. C. Stiles, Middletown, Conn., assignor to the Stiles & Parker Press Company, same place. [Filed May 11, 1874.]

Brief.—A weighted lever is attached loosely to the eccentric bearing of the forward roll. A pair of clamps, hung on eccentric bearings, bite upon the strap, and prevent it from falling after being released by the rolls. A lever, connected by a rod to a weighted treadle, acts when the treadle is depressed to turn the eccentric bearing of the forward clamp, thereby drawing said clamp away from the strap, and allowing the hammer to fall. As the lever for operating the clamp is raised, it in turn raises the weighted lever before referred to, a stud on which strikes against an arm attached to the bearing of the forward rolls, turns it, and causes the roll to approach the strap, the bearing being kept in its turned position by a latch which engages with a stud on the lever. A cross-bar attached to projecting wings, which inclose the bearings of the forward roll, is provided with a long arm, on which is an adjustable stop, which the hammer in its ascent strikes, turns the bearing, and releases the strap.

160,483.



1. The combination of the rolls D^2 and E^2, the lever L, its counter-balance L^1, and the latch L^2, substantially as and for the purpose specified.

2. In combination with the two rolls D^2 and E^2, the eccentric bearings D^3 for the shaft of the driven roll D^2, pinions D^1, shaft I^1, and pinions F^2, for the purpose of adjusting said driven roll, substantially as set forth.

3. The clamps F F^1, the one F of which is provided with an adjustable eccentric bearing, k, substantially as and for the purpose set forth.

4. The combination of the two rolls D^2 and E^2, the lever L, and the latch L^2 with the clamps F F^1 and the lever F^3, all operating together substantially as described.

5. In combination with the rolls D^2 E^2, the lever I^2, and rod P, the slot I^3 in said rod, substantially as and for the purpose specified.

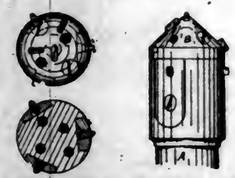
6. In combination with the rolls D^2 E^2, the hammer B, vertical bar P, and stop I^3, the trip N, substantially as and for the purpose specified.

7. The piece B^1, projecting from the hammer, combined with the spring-pin b^1 and corresponding recess in said piece, and the perforation b^2, substantially as and for the purpose specified.

8. In combination with the spring-pin S, and the nut by which the parts are secured together, and recesses upon the under side of said nut to receive said spring-pin, the perforation S^1, opening into the said recess, but of less diameter than the said recess, substantially as described, for the purpose of disengaging said pin.

160,484. METHODS OF SETTING DIAMONDS IN DRILLS. Chas A. Torrey, Southwark, England. [Filed Aug. 14, 1874.]

Brief.—The diamond is placed upon the drill-head, projecting through an orifice in the cap, which is forced down to its place by a screw.

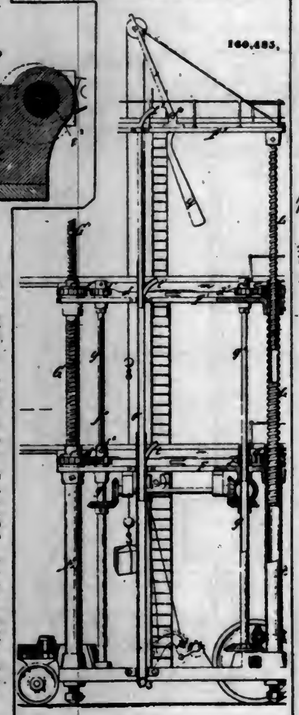


The combination of a perforated cap with a drill or other cutting or boring tool, substantially as and for the purpose specified.

160,485. FIRE-ESCAPE ELEVATORS. Chas. F. Thomas and Herman Joerns, New York, N. Y. [Filed Jan. 29, 1875.]

Brief.—The several platforms are supported on telescoping columns, on which are cut screw-threads. On top of each platform, and encircling the columns, are screw pinion-wheels, which engage with supplemental pinion-wheels which in turn engage with pinion-wheels on the driving-shafts. The supplemental pinion-wheels are pivoted to levers, by which they are thrown in and out of gear. The driving-shafts, as well as the water-supply pipe, are telescopic. The several platforms are extensible, and the extreme sections are provided with grapnels for engagement with the window-sill. On the top platform is pivoted a weighted derrick, provided with pulleys and ropes, for raising and lowering goods.

160,485.



1. The combination of two or more frames or platforms, the lowest one of which is supported by two or more hollow columns rising from a truck-frame, while the upper platform or platforms are supported by screws, to which a rising and falling motion is imparted, substantially in the manner herein shown and described.

2. The combination of two or more platforms, F F^1 F^2, hollow columns E, screws O G^1, nuts e e^1, shafts g g^1, and lever-frames d d^1, which carry intermediate cog-wheels c c^1, and which are connected to suitable shipping levers, substantially in the manner set forth.

3. The combination of hinged traps I with the slides H, platforms F, hollow columns E, and elevating-screws O, substantially as set forth.

4. The combination of grapnels s with the traps I, slides H, and platforms F, substantially as described.

5. The combination of a balanced derrick, L_1 with a platform, F^2, screws G^2, and hollow columns E, substantially as set forth.

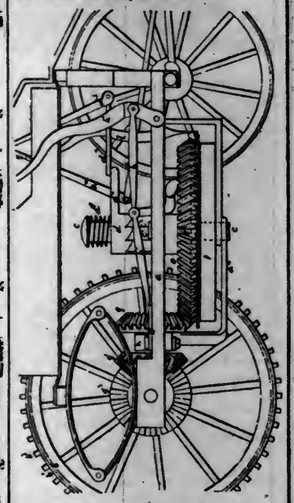
160,486. EARTHEN BUCKETS. W. F. Towns, Ravenna, Ohio. [Filed Feb. 13, 1875.]



The earthen bucket a, having a projecting flange, c, in combination with the bail b, substantially as herein set forth.

160,487. HAND-CARRIAGES. Wm. O. Umstead, St. Clairsville, Ohio, assignor of one-third his right to J. F. Baldwin, same place. [Filed July 22, 1874.]

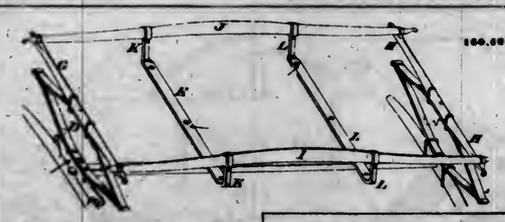
Brief.—A vehicle propelled by power stored in a coiled spring by the driver.



1. The coiled spring f, master-wheel c, shaft c, frame a a^2, platform a^3, clutch c^1, clutch-lever d d^2, ratchet c^2, and pawl c^3, combined to operate as and for the purposes specified.

2. The combination, with the master-wheel c, pinions g g^1, and frame a a^2, of the lever h^1, links h^2 h^3 h^4 h^5, sliding bearing h, yoke h^1, and pawl i, as and for the purposes set forth.

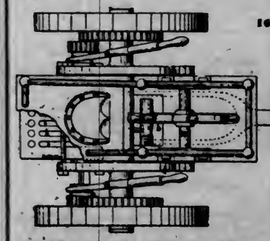
160,488.



160,488. SPRING-VEHICLES. Jas. Walker, Cincinnati, Ohio. [Filed Feb. 4, 1875.]

The combination of bent bearing-bars K and L, attached rigidly to the spring side bars I and J at points intermediate between their middle and end portions, said bars I and J resting upon the extremities of spring cross-bars G and H, connected by elliptical springs D and E with the bolster and the rear axle, respectively, substantially as set forth.

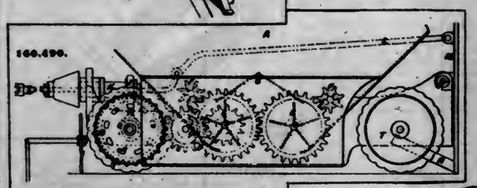
160,489.



160,489. MACHINES FOR SUBSOILING AND DIGGING VEGETABLES. Theodore L. Webster, Brooklyn, N. Y. [Filed Feb. 11, 1875.]

Brief.—A pair of bearing-wheels support upon their axle-tree an adjustable frame, which carries a revolving digger or fork-head. Rotation is given to the fork-head by means of cog-gears applied to the bearing-wheels, working into pinions that slide upon the shaft of the fork-head. The fork-head has, in addition to a rotary motion, an endwise intermittent motion, for the purpose of keeping the forks clear, which pass through a slotted cleaning-table, which also partakes of the endwise motion.

160,490.



1. The charger described, provided with the revolving distributing-blades E, receiving motion from the movement of the carriage in the retort, as set forth.

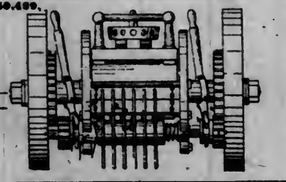
2. The combination of the disk M and the plow N, substantially as described.

3. The combination of the wheel T, the wheel G, the forked arm H, the eccentric wrist J, and the hollow rod K, substantially as described.

4. The combination of the revolving blades E, the pinions F F, and the transverse rake-shafts for feeding down the coal.

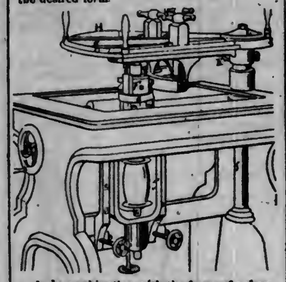
5. The charger described, having the hopper A, inclined guiding-board C, rake-shafts F, and feeding-blades E, combined and arranged as and for the purpose described.

160,491.



160,491. MOLDING-MACHINES. George W. Wetmore, Sturgis, Mich. [Filed Feb. 4, 1875.]

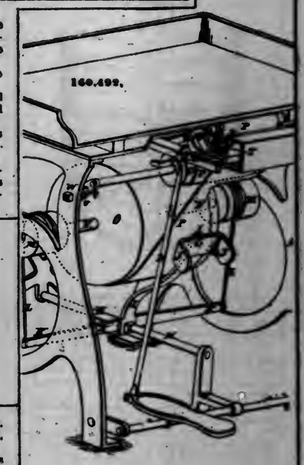
Brief.—The article to be molded or shaped is attached to a horizontally-vibrating table, and moved past a revolving cutter, which gives it the desired form.



1. In combination with the frame of a shaping-machine having a traversing cutter-head, the spindle G, quadrant H, provided with the ways g g g, the several clamping devices I I^1 I^2, each moving in one of the ways g, substantially as shown, and for the purpose set forth.

2. The combination, with the quadrant H and the several cross-heads and clamps I, of the feed-screws J, pinions K, and gear L, for simultaneously giving the said cross-heads I a radial adjustment with relation to the spindle G, as shown and set forth.

160,492.



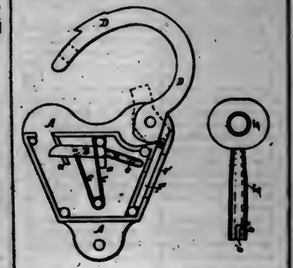
160,492. CIGAR-MACHINES. Josephine Wettstein, Highland, Ill., administratrix of John Wettstein, deceased. [Filed July 21, 1874.]

Brief.—The wheel that carries the usual belt is oscillated by means of a knee-lever, that turns two pulleys situated upon either side of the wheel, through bands wound around the pulleys in opposite directions.

1. The movable roller Q, fixed rollers R S T, and belt P, in combination with the arm E, rock-shaft F, arms G G, rod D, and treadle C, for adjusting the roller Q, as and for the purpose set forth.

2. The drum O, shaft N, and pulleys M, in combination with belts L, cross-bar K, and knee-lever I J, for operating the drum O, as and for the purpose specified.

160,493. SEAL-LOCKS. C. O. Wheeler and Anthony Laffrey, Chicago, Ill. [Filed Dec. 4, 1874.]



160,494. CHARGERS FOR GAS-RETORTS. J. West, Maidstone, Great Britain. [Filed Nov. 17, 1873.]

Brief.—The charger, upon being projected into the retort, pushes the coke before it into coke-boxes, and upon being withdrawn it distributes the coal in the retort by means of revolving blades, revolving rakes, and a plow.

A padlock wherein the key-hole is arranged in the rear edge of the case, and is surrounded by a recess, open at one end or side to receive a seal, the said lock also being provided with a pivoted shackle, having its head constructed substantially as specified, to close the said open end or side of the recess and inclose or lock the seal when the shackle is locked.

160,494. CANDY-MIXING MACHINES. S. F. Whitman, Philadelphia, Pa. [Filed Jan. 23, 1875.]

Brief.—A concave-bottomed cylindrical vessel holds a shaft fitted to revolve, which bears a series of vanes. A yoke arranged to revolve in an opposite direction carries similar vanes. Vanes at the bottom of the shaft, curved to conform to the concave bottom of the vessel, are inclined transversely, to raise the contents and keep the same from being scorched.



1. The combination of the vessel A, having a concave bottom, with the inclined rotating vanes d', curved to accord with the said concave bottom of the vessel, as set forth.

2. The combination of the vessel A, the shaft B, carrying vanes b and d', and the two sets of vanes m n, arranged above the vanes b d', and caused to revolve in contrary directions, as specified.

3. The shaft B, made in two parts detachable from each other, and the lower portion carrying the vanes m, in combination with the tubular shaft d, and with the yoke D carrying the vanes n, all substantially as set forth.

160,495. ELECTRIC MOTORS. D. Williamson, Greenville, N. J. [Filed Jan. 8, 1875.]

Brief.—Upon a sliding sleeve on the fly-wheel shaft are two disks, the cut-away portions of which oppose one another. These disks allow conducting-pieces, each connected with its magnet and attached to swinging arms, to come into contact at proper times with a metallic disk connected with one pole of the battery. When the disks are in position, so that the swinging arms rest upon both disks, the machine comes to rest, and, according as one or the other of the disks revolves under the swinging arms, the revolution of the shaft is to the right or to the left.

1. The cushions or bumpers d in combination with the magnets and armature-levers, substantially as and for the purpose specified.

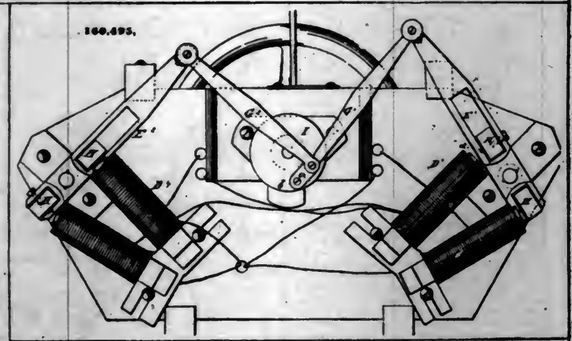
2. The cams L L', attached to the adjustable slide K, in combination with rollers n or equivalents, as and for the purpose described.

3. The cams L L', arranged as described, in combination with the slide K, arms m, rollers n, springs t, and bars s, substantially as and for the purpose set forth.

4. Two or more cross-bars, s, in combination with the fixed insulated device h and h' and the sliding cams L L', whereby the currents are completed and broken, dispensing with all friction, for the purpose herein described.

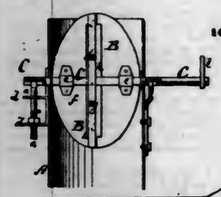
5. The magnets D^1, D^2, D^3, and D^4, and levers E^1 E^2, in combination with pitman G^1 G^2, crank d, and pin b, and shaft B, all as and for the purpose herein described.

160,496.



160,496. DAMPERS FOR FURNACES. Joseph Woodruff, Rahway, N. J. [Filed Feb. 1, 1875.]

Brief.—The damper being of two sections, the parts may be inserted or removed separately.

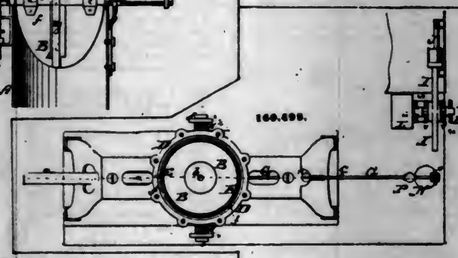


1. The damper C, mounted on the vertical arbor a, which rests partially on the step d, and is partially suspended by the chain f, substantially as and for the purpose described.

2. The adjustable screw g, fitted in a stationary lug, A, and combined with the chain f, and with the arbor a of the damper C, substantially as set forth.

3. The combination of the weighted bell-crank j with the arbor a of the damper C, and with the bell-crank l, link q, and operating-lever G, all arranged for operation, as specified.

160,498.



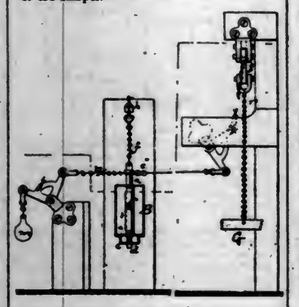
1. The damper B, made in two sections, f g, each section having a strap, s, for connection with the shaft C, with which said damper is combined, substantially as described.

2. The arched braces i and ribs h, applied to and combined with a sectional damper, B, substantially as and for the purpose specified.

3. The adjustable supporting-pins a b, combined with a recessed shaft, C, and with a damper, substantially as and for the purpose specified.

160,497. DAMPERS FOR FURNACES. Joseph Woodruff, Rahway, N. J. [Filed Feb. 1, 1875.]

Brief.—The adjustable suspension from above, in connection with the supports from below, is designed to facilitate the operation of the damper.



160,498. DRAFT-REGULATORS. Jos. Woodruff, Rahway, N. J. [Filed Feb. 1, 1875.]

Brief.—The parts m and C constitute in effect a double diaphragm. The part a limits the movement of the lever, and thus prevents the draft-opening from being entirely closed.

1. The lever G of a draft-regulator, arranged beneath the diaphragm C, with which it is combined, for transmitting the effect of steam-pressure on said diaphragm to a damper, and to dispense with a superstructure of the supporting-frame, substantially as described.

2. In a draft-regulator, the combination of the lever G and cross-bar j with the links i i, yoke H, and upper flexible diaphragm C, the yoke straddling said diaphragm, substantially as described.

3. The lower diaphragm B, combined with the flanged tube b, nut s, supporting-plate d, and steam-supply pipe a, substantially as described.

4. The combination of the inner ring E, having the projecting lugs f f, with the outer rings D D, and with the diaphragms B C, substantially as and for the purpose described.

5. The upper diaphragm C, arranged beneath and combined with a secondary or false diaphragm, m, which connects directly with the lifting-plate g and yoke-pivot h, substantially as described.

6. The combination of the lever G of a draft-regulator with the rod e, chains s t, and segmental transmitting-lever I, substantially as and for the purpose specified.

7. The damper J, combined with the segmental lever I and chain p, and with the chains s t and rod e, substantially as set forth.

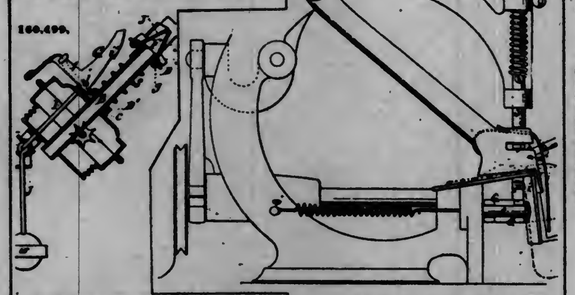
8. The combination of the slide P, which carries the projecting toe Z, with the lever G, for affecting the suspended weight N, substantially in the manner herein shown and described.

160,499. LAMP-EXTINGUISHERS. William T. Wood, Mount Juliet, Tenn. [Filed Feb. 6, 1875.]

Brief.—When the lamp is overturned the pendent swinging weight draws down the hinged rod, and thereby releases the notched lever, and allows the extinguisher to be operated by the spring.

1. The combination, with the sectional interlocking jaws f of an extinguisher-cap and the wick-tube B, of the slotted plate D, guide-rods e, and springs s, substantially as specified.

160,499.



2. The combination, with the guided and vertically-movable extinguisher-cap holder-plate D, operated to extinguish the flame by springs s, of the angular vertically-vibrating notched lever O, substantially as specified.

3. The combination, with the extinguisher cap-plate D, springs s, and holding-lever O, of the jointed rods I J, having each a bell-shaped attachment, x x', and the latter a weight, w, upon the lower end, adapted to be received within the body of the lamp, substantially as specified.

160,500. HOUSEMAIDS' PAILS. Emma C. Wooster, New York, N. Y. [Filed Nov. 2, 1874.]

Brief.—The pail is furnished with side pockets, which are open at their bottoms, and the water that drips from sponges and brushes in these pockets is caught in a trough around the bottom of the pail.



The implement consisting of pail A, trough B, soap-dish C, and brush-receptacle D, all constructed and connected substantially as and for the purpose shown and described.

REISSUES.

6,210. APRON-SUPPORTERS AND PAGES. W. H. Chipley, New Midway, Md. Patent No. 147,479, dated Feb. 17, 1874. [Filed Nov. 21, 1874.]



The combination of the hard-rubber spring nose A and slide C, when constructed and arranged to operate relatively to each other, substantially as described, and for the purpose set forth.

6,211.

6,211. SEWING-MACHINES FOR SEWING THE SWEAT-LININGS OF HATS. R. Bickemeyer, Yonkers, N. Y. Patent No. 52,006, dated Feb. 20, 1866. [Filed Jan. 27, 1875.]

Brief.—The cloth-plate is inclined backward from its front edge, which is carved out so as to conform to the shape of the crown of a hat, and has depending therefrom a plate which is bent in a similar form. The presser foot is formed with two faces, and is attached to an arm which is pivoted to the goose-neck of the machine, in such a position that when the presser is raised by the presser-bar it moves away from both the cloth and depending plates. To the side of said presser is attached a secondary plate, of a form corresponding to the depending plate, and serves as a guide to conduct the hat to the presser and stitching mechanism. Upon the upper edge, and on the outside of this plate, is arranged another guide, by means of which the sweat-lining is placed in proper position on the hat for stitching. The feed-dog, having two serrated surfaces, is arranged below in such a manner that it operates toward and from the angle formed by the junction of the cloth and depending plates.

1. In combination with a mechanism for making stitches, and a presser-foot, a guide for controlling the edge of the sweat-lining, and a cloth-plate, these four elements being constructed and relatively arranged substantially as described, whereby the re-entering corner of the hat formed by the junction of the brim and side crown may be held in proper position with relation to the sweat-lining and the stitching mechanism, to receive stitches through the sweat-lining and the hat, as specified.

2. A stitching mechanism and a feeding mechanism, in combination with a yielding presser-foot having two acting surfaces, and arranged to act substantially as described, whereby the re-entering corner of the hat formed by the junction of the side crown and brim may be held in proper position with relation to the stitching mechanism to receive stitches, as specified.

3. The combination, with a presser-foot having two acting surfaces, of a feed-bar having two serrated acting surfaces, and operating substantially as described.

4. In combination, a yielding presser-foot, a cloth-plate or table, the edge of which is arranged with reference to a needle to form stitches in a hat, as specified, a mechanism for making stitches, and a stationary depending plate, whose surface supports a side crown, as described.

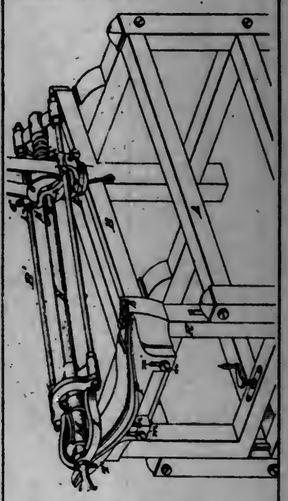
5. In combination with a presser-foot having two pressing-surfaces, a mouth-piece, substantially as described, for guiding the hat to the stitching mechanism.

6. In combination with the yielding presser-foot, a guide which controls the edge of a sweat-lining, and an auxiliary sweat-guide, these two being constructed and operating substantially as described.

7. A presser-foot having two acting surfaces, in combination with a guide which controls the edge of the sweat-lining, and which is arranged relatively to the stitching mechanism, as hereinbefore described, and a depending side-crown support, whereby a hat and a sweat-lining to be sewed therein may be held in proper relative position, as described, the combination of these elements being and acting to form stitches through the hat and the lining, as herein set forth.

6,212. MACHINES FOR MOLDING CHAIR-BACKS. John Lemman, Cincinnati, Ohio. Patent No. 93,803, dated Aug. 17, 1869. [Filed July 30, 1874.]

Brief.—Chair-backs can be molded as desired by means of a vertically-adjustable form, in connection with a swinging radial cutter-spindle frame, the cutter-spindle being rotated by a single localized pulley, and the movement of the spindle over the form controlled by a coiled spring fitted over the spindle between its bearings and the end of the cutter-frame. Picture-frames may be made by a proper arrangement of the form, work, and cutter-frame, with suitable driving mechanism; and by a suitable-shaped form "wave-moldings" may be cut.



1. A cutter-spindle, N, journaled in bearings of a swiveling sweep, B, substantially as herein shown and described.

2. The sliding and swiveling cutter-frame A' B' and cutter-spindle M N, constructed and operating substantially in the manner described, in combination with the form F, for the purpose specified.

3. The coiled spring V, in combination with the projection T of the cutter-frame, when constructed and arranged substantially in the manner and for the purpose specified.

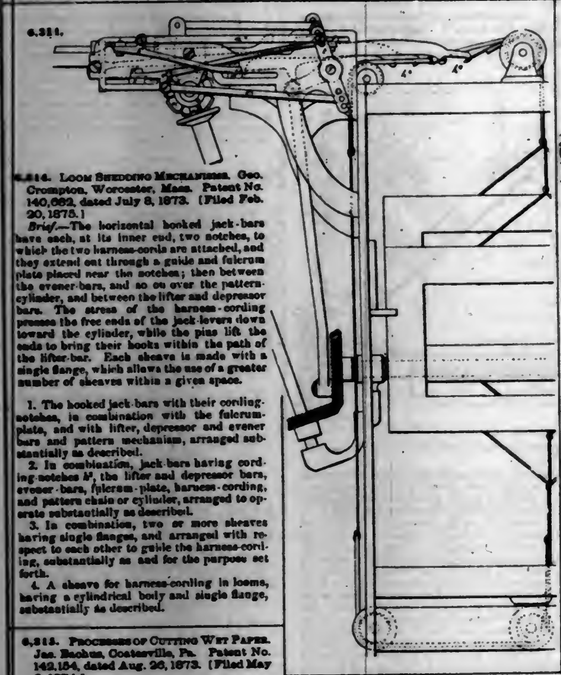
4. The arrangement of the sliding frame R, form F, made adjustable by screws m m and slots m' m', cutter-frame A' B', spindle M N, spring V, and projection T, all being constructed and arranged to operate as described.

6,213. COATING METALS WITH METAL. American Nickel-Plating Company, (assignee of Isaac Adams, Jr.,) New York, N. Y. Patent No. 57,271, dated Aug. 21, 1866. [Filed May 3, 1869.]

Brief.—To protect articles subject to heat and moisture against corrosion. Especially applicable to gas-burner tips and similar articles.

Rendering gas-tips and other articles of metal anti-corrosive to heat or moisture by surfacing them with nickel, substantially as set forth.

6,314.



6,314. LOOM SHEDDING MECHANISMS. Geo. Crompton, Worcester, Mass. Patent No. 140,662, dated July 8, 1873. [Filed Feb. 20, 1873.]

Brief.—The horizontal hooked jack-bars have each, at its inner end, two notches, to which the two harness-cords are attached, and they extend out through a guide and fulcrum plate placed near the notches; then between the evener-bars, and so on over the pattern-cylinder, and between the lifter and depressor bars. The arms of the harness-cording pressure the free ends of the jack-levers down toward the cylinder, while the pins lift the ends to bring their hooks within the path of the lifter-bar. Each sheave is made with a single flange, which allows the use of a greater number of sheaves within a given space.

1. The hooked jack-bars with their cording-notches, in combination with the fulcrum-plate, and with lifter, depressor and evener bars and pattern mechanism, arranged substantially as described.

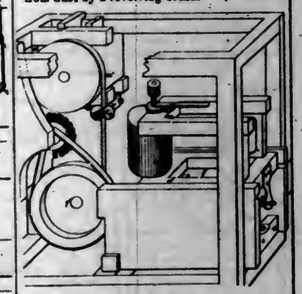
2. In combination, jack-bars having cording-notches b^1, the lifter and depressor bars, evener-bars, fulcrum-plate, harness-cording, and pattern chain or cylinder, arranged to operate substantially as described.

3. In combination, two or more sheaves having single flanges, and arranged with respect to each other to guide the harness-cording, substantially as and for the purpose set forth.

4. A sheave for harness-cording in looms, having a cylindrical body and single flange, substantially as described.

6,317. SAWING-MACHINES. Chas. H. Mayo, Bath, Me., assignor, by mesne assignments, to himself, Edwd. Gove, and E. W. Marble, same place. Patent No. 109,436, dated Nov. 22, 1870. [Filed Apr. 10, 1873.]

Brief.—The log is rotated and moved toward a band-saw, the teeth of which are freed from dust by a revolving brush.



1. In a sawing-machine for sawing logs, as described, the combination of a band-saw, traveling continuously in one direction, and a revolving cleaning-brush, rotating in the same direction with, but at a different rate of speed from, the saw, and operating in connection with said saw, substantially as shown and set forth.

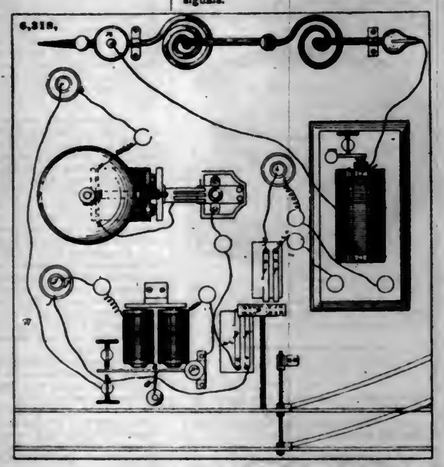
2. The combination of the head or frame a^3, swiveled as explained, the carriage m, and the endless band-saw a^2, under the arrangement and for operation as herein set forth.

3. The combination, with the endless band saw, of the directing-roller c', the horizontally vibratory roller-bar x', and the devices for adjusting the position of said roller and bar, under the arrangement shown and described.

6,313. ELECTRIC RAILWAY-SIGNAL APPARATUS. Henry W Spang, Reading, Pa. Patent No. 141,305, dated July 29, 1873. [Filed Nov. 12, 1873.]

Brief.—Uses Geissler tubes for night visual signals.

6,313.

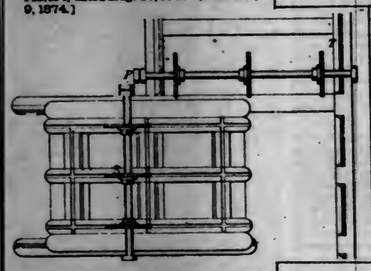


1. A Geissler tube, or its equivalent, illuminated by electricity, in combination with a track or railway switch circuit-closer, for general railway-signal purposes.

2. In combination with a track or railway switch circuit-closer, a visual signal illuminated by an induced electrical current.

3. In combination with a railway-signal apparatus and a track or railway switch circuit-closer, a visual signal illuminated by an induced electrical current.

6,315. PROCESSES OF CUTTING WET PAPER. Jas. Bachus, Coatesville, Pa. Patent No. 140,154, dated Aug. 26, 1873. [Filed May 9, 1874.]



The process of sawing paper board as herein described, consisting in sawing the paper board while it is in the wet state in which it is taken from the paper-making machine, substantially as described, and for the purpose set forth.

6,316. TUCK-MARKERS FOR SEWING-MACHINES. Harry C. Goodrich, Chicago, Ill. Patent No. 61,618, dated Jan. 29, 1867. [Filed Feb. 11, 1875.]

Brief.—Reissue of Patent No. 61,618. The curved spring-arm is notched at the outer end, and coiled at the curve to cause it to rise. The part of the marker resting on the table has a flange to guide the last-made tuck which passes under it, and also to prevent it riding on the marker and being creased again.

6,316.



1. In a tuck-marker for sewing-machines, a lip or flange, J, arranged to prevent the last-made tuck from being creased a second time, as herein set forth.

2. The combination of plate A and its spar, of the notched arm B, coiled at C, to throw it upward in the path of and to be depressed by the movement of the needle-actuating devices, to crease the fabric, substantially as described.

HELIOTYPE RELIEF PROCESS, JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 10. TUESDAY, MARCH 9, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, DISTRICT OF CONNECTICUT.

THE RUSSELL AND ERWIN MANUFACTURING COMPANY *vs.* THE P. & F. CORBIN MANUFACTURING COMPANY AND FREDERICK H. NORTH.

[*In equity.—Before* WOODRUFF *and* SHIPMAN, *J. J.—April*, 1874.]

The claim of the letters patent granted to Rodolphus L. Webb, December 31, 1867, for an "Improvement in Reversible Locks and Latches"—namely, "The combination of a lock and latch when the latch-bolt and its operative mechanism are arranged in a case or frame independent of the main case, and constructed so that the latch-bolt may be reversed, substantially as described, without removing the said independent case from the main case," is infringed by the combination of a lock and latch in which the latch-bolt and its operative mechanism are arranged in a skeleton frame within an outer or lock case, which operates to preserve the proper relations of the yoke and tumbler while being moved forward and backward, although it does not so operate when the latch and latch mechanism are removed from the outer or lock case.

Infringement is not avoided by the fact that, when the patentee's latch-bolt is drawn forward for the purpose of reversing it, the case or frame moves forward with it in a straight line, and that the defendants' frame, when the latch-bolt is drawn forward, moves in a curved line.

Nor is infringement avoided by the fact that the defendants introduce a catch and spring to hold the latch and its mechanism in position, after reversal, until the knob-spindle is inserted. This superadded device may improve the aggregate structure, but it has no effect whatever upon the functions or mode of operation of the patented devices, nor does it justify the defendants in appropriating them to their own use.

The word "independent" in the claim does not mean that the latch and its mechanism operate without any contributory aid from the main case or adjuncts thereto. All that it imports is that there is an outer case and a separate inner frame or case in which the latch mechanism is arranged and held in position.

[*Charles E. Mitchell* and *Benjamin F. Thurston*, for complainant. *Charles R. Ingersoll* and *Charles F. Blake*, for defendants.]

WOODRUFF, *J:*

The bill of complaint herein is filed to restrain the alleged infringement by the defendants of letters patent for an "Improvement in Reversible Locks and Latches," granted on the 31st of December, 1867, to Rodolphus L. Webb, and assigned by him to the plaintiff on the 12th of May, 1868, and to recover from the defendants the gains and profits arising from such infringement, and for other relief. The answer of the defendants places their defense upon two grounds—viz., that the invention described in the patent is not the invention of Webb, but of one Burton Mallory, and was known and used by him before the said Webb had any knowledge thereof, and was described in letters patent granted to Mallory May 5, 1863; and that, under any proper construction of the patent to Webb, the defendant corporation has not made use of or employed any improvement described or claimed in the said letters patent, or sold any locks which correspond with the construction claimed by the patentee, as described in his claim. They then allege that the locks which they have made and sold are constructed with the improvements described in letters patent issued to W. T. Munger, March 1, 1870.

In a suit in this court between the present complainant and the same Burton Mallory referred to in the answer of these defendants, we considered the construction and validity of the claims in the patent granted to Webb, held him to be the first inventor, and adjudged the said Burton Mallory an infringer of the rights of these complainants. (*Russell & Erwin Manufacturing Co.* vs. *Mallory*, 10 Blatch., 140.) The defendants in this cause have so far acquiesced in that decision that, on the trial of this cause, the only question raised and discussed, or to which proofs on the part of the defendants were addressed, was whether the locks and latches produced, and which, as admitted, the defendant corporation is engaged in manufacturing and selling, do infringe the patent granted to Webb on

which this suit is founded. Upon that question we entertain no serious doubt. There is, it is true, a conflict of testimony. The defendants have examined experts, who point out noticeable differences between the latch mechanism made by the defendants and that made by the complainant; but those differences are mainly formal, and in some respects verbal only. If, in any feature, there is material change of construction, it is at most an addition, modification, or improvement on the structure of the patentee, which nevertheless embraces its substantial features, and operates by the same substantial means and in substantially the same way. We do not think it necessary to enter very fully into the details of the patented invention in disposing of this case. It is described with some minuteness, in the opinion of the court in the suit against Burton Mallory, above referred to. (10 Blatch., 140.)

The claim of the patentee is in these words—

> What I claim, therefore, and desire to secure by letters patent is the combination of a lock and latch, when the latch-bolt and its operative mechanism are arranged in a case or frame independent of the main case, and constructed so that the latch-bolt may be reversed, substantially as described, without removing the said independent case from the main case.

The description in the preceding specification and the drawings and model of the patentee show that the case or frame in which the latch mechanism is arranged is of thin sheet metal, partially surrounding the mechanism of the latch, to hold the parts in proper relative position when drawn forward for the reversal of the latch-bolt, and while it is being returned to its place. But the patent cannot be avoided by making that case or frame a skeleton frame operating in substantially the same way. The patentee seems to have anticipated some such attempt to limit the meaning of the word "case," by inserting the words "case or frame," as, for the purposes of his invention, synonymous, as, in their connection and application to this mechanism, we think they are. The defendants use a frame, which operates to preserve the proper relations of the yoke and tumbler while being moved forward and backward, as does the complainant's "case or frame." It was suggested that it does not so operate when the latch and latch mechanism are removed from the outer or lock case, but that, when so removed, the forward end of the bolt is not sustained, but falls, and the due adjustment of the mechanism is not preserved; whereas, it is said the case used by complainant always preserves the parts in their proper adjustment, whether in or out of the outer or lock case. We apprehend the question of infringement does not depend upon what capacity the several parts of the latch mechanism used by the defendants have or have not, when in no condition for practical use, or outside of the conditions in which the latches of both parties are intended to operate, and in which alone they are in fact used. If, therefore, in point of fact, there be any such difference between the two structures, (which, however, the complainant denies,) the question would still be, Do the defendants, in making their locks and latches, construct and insert a mechanism and frame, which, in the actual condition and relation to the means of practical use, is like the complainant's patented invention, producing the same result in substantially the same way, by substantially the same means? If they do, then it is not material that, outside of those conditions, or removed from the outer or lock case, the complainant's latch mechanism and frame has the capacity of holding the parts in due relation, which the defendants' has not. This may show that the defendants' device is not good or not so useful and convenient as the complainant's; but that is all.

Besides, the patent to Webb is not for the latch with its mechanism and case in a condition not adapted to use. As more fully explained in a former suit, above referred to, it is limited to the structure which contains the latch mechanism within an outer case. It will not avail, therefore, to say that they do not infringe because when removed from the outer case the defendants' devices will not operate in the same manner as the complainant's device will do when thus removed. If the defendants can make their peculiar frame and mechanism of the latch useful outside of any outer case, probably the complainant would not object that, by doing so, the patent was infringed. If the opinion in the former case was correct, the defendants infringe, if their device, constructed and used in the arrangement and connection described in the patent for the aggregate structure, does operate in the same way and produce the same result by substantially the same means. In this view we think the defendants' frame is not even entitled to be treated as an equivalent. It is, in substance, the same thing as the complainant's case or frame.

Again, there is a difference in the line of motion of the case or frame. When the complainant's latch-bolt is drawn forward for the purpose of reversing it, the case or frame moves forward with it, in a straight line. By means of a projection in the main case, at a corner or projecting angle of the defendants' frame, the movement of their frame, when the latch-bolt is drawn forward, is in a curved line forward, the frame being made to turn on such projecting angle as a center of motion. This difference is so obviously an immaterial variation, so far as the question of infringement is concerned, that, although the defendants' expert witnesses gave it some prominence, their counsel expressly declined to claim for it any significance.

So another difference is stated by the defendants' experts. When the complainant's latch-bolt has been drawn forward, reversed, and returned to position, but the knob-spindle has not been inserted, it can easily be drawn forward again—it is not held in place until such spindle is inserted. The same is true of the defendants' devices which are claimed to infringe. But the defendants have superadded another device—a catch operated by a spring, by which, when the latch and its mechanism is returned to its proper position, it is caught and held in position before the knob-spindle is inserted. This is a merely superadded device. If of any conceivable utility, it may improve the aggregate structure, but it has no effect whatever upon the office, functions, or mode of operation of the patented devices, nor does it justify the defendants in appropriating them to their use.

It is further insisted that, because the complainant's patent, and especially the claim therein, characterizes the case or frame as "independent" of the main case, and the defendants, in their structure, make the main case useful by inserting studs therein to receive the bearing of the bolt-spring, there is, therefore, no infringement. That argument can have no force, unless we should construe the claim as involving, in the aggregate structure, the complete independence of the latch mechanism from any office or function of the main case. Such is, in substance, the argument. In the first place, the claim does not, in terms or by a just interpretation of its meaning, import that the latch and its mechanism, in the combination in which it is described and patented, operate without any contributory aid from the main case or adjuncts thereto; but only that the case or frame is independent of the main case, which means separate from, or forming no part of, the main case; and this is literally and exactly true of both complainant's and defendants' case or frame. Second, when the claim and specification are read together, it becomes obvious that the contributory aid of the main case to the successful operation of the latch, in connection with a lock-case, as it is patented, is just as essential as in the defendants' device. Studs therein guide the movement of the latch mechanism, the inner side of that case, or a stud therein, (shown in the drawings,) sustain the mechanism against the backward thrust, and against the bearing of the spring before the knob-spindle is inserted, and the latch is sustained by, and slides between, the two surfaces of that outer case. The claim does not, therefore, mean, and could never be understood by one who ever read the specification or saw the model, that the latch and its mechanism operated independently of the main case. All that it imports is that there was an outer case and a separate inner frame or case, in which the latch mechanism is arranged or held in position. Whether the bearing of the bolt-spring was against the case or frame of the latch mechanism, or against a stud or studs in the outer case, is of no materiality to the claim of the patent. The whole operates substantially in the same way, and produces the same result, and by substantially the same means.

A decree must be entered for the complainant, agreeably to the prayer of the bill of complaint, with costs to the complainant.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF OHIO.

JAMES F. TRADER, SAMUEL R. COLLIER, AND GEORGE VLEREBOME, PARTNERS, AS TRADER, COLLIER & VLEREBOME, *vs.* A. L. MESSMORE AND JAMES COULTIS, PARTNERS, AS MESSMORE, COULTIS & CO., ROBERT M. BOWMAN, AND W. H. BOWMAN.

[*In equity.—Before* SWING, *J.; January*, 1875.]

Where complainants had used their device for thirteen years without ascertaining that their patent covered such a device as that which formed the alleged infringement, and this latter had become the subject of a patent and possessed superior utility to that of complainants: *Held*, that the patent sued on should be interpreted strictly.

It becomes important, in interpreting the language of a patent, to know what construction the patentee himself placed upon it; and to this end recourse may be had to the files of the application, to ascertain what changes were made in the original specification and claims, and the significance of those changes as revealed by the history of the case.

The patent of William Blessing, December 13, 1859, for "an improvement in seed-planters," must, in view of the application record, be narrowly interpreted, so as to limit the invention to a *particular* arrangement of a *particular* top with *particular* openings, so that the chaff may be removed in a *particular* way. Thus construed, it does not control a device in which there are no lateral chaff-openings in the periphery of the distributer, through which the chaff is worked by the vibrations of the feed-bar, but in which, instead, the chaff falls directly to the ground.

While patents are to be construed liberally, they should not be so construed as to enable patentees to reach out and cover every improvement or invention which, after seeing the same, they conclude they might have embraced within their patent, but which was not so embraced and included.

[*Wood* and *Boyd*, for complainants.
Fisher and *Duncan*, for defendants.]

SWING, *J.*:

This suit is brought by the complainants against the respondents for the infringement of letters patent granted to William Blessing, December 13, 1859, for an "Improvement in Seed-Planters," and extended for seven years from December 13, 1873, the title to which, for certain territory described in the bill, has become vested in complainants.

The respondents admit the manufacture and sale by them, within the territory claimed, of a certain planter, which has been introduced in evidence as the "Bowman distributer," but deny that this is an infringement of the invention claimed in the Blessing patent. They also deny that Blessing was the original and first inventor.

The determination of this case depends upon the construction which shall be given by the court to the patent of the complainants. It is said by the courts that "patents should be liberally construed;" that we should look at the whole instrument, the patent, specifications, drawings, and claim, and ascertain from them the nature and extent of the patentee's invention. This is undoubtedly true; but, in doing so, Mr. Justice Woodbury, in *Smith* vs. *Downing*, (1 Fisher, 69,) said: "We should not put a broader construction on the language of the patentee than the whole subject-matter and description and nature of the case seem to indicate as designed; no fancied construction, but rather what is natural and clear, considering what already exists upon the same subject."

With these general suggestions let us approach the examination of this particular invention.

In the specification first filed by William Blessing, his claim was for "the employment of the feed-bar, in combination with the chaff-chamber;" but this application was rejected, for the reason that the patent granted to Chapin Street for grain-drill, May 29, 1855, contained substantially the same device claimed by him. Whether it did so or not may not be material—except in this, that it did contain a feed-bar and chaff-chamber; but it becomes important in interpreting the language subsequently used by the applicant in his amended specification and claim, and to know the construction he himself placed upon it.

The rejection was on the 5th of October. Afterward, on a subsequent day in October, the applicant empowers his attorney, L. D. Gale, to amend the papers; and soon after Mr. Gale files with the Commissioner the following, by way of amendment:

"In reply to your letter of 5th instant, refusing the claim of William Blessing for a distributing apparatus for a corn-planter, I have amended the claim to modify the application and confine the claim to the construction of the semi-lunar top with its recess and the side

openings H. You will, therefore, please correct the existing claim and substitute therefor the following:"

What I claim as my invention, and desire to secure by letters patent, is—

The arrangement of the top portion of the distributer made with a semi-lunar opening, and the recess under the covered portion of the said top, when the periphery of the said top is made with the chaff-openings H on either side of the reciprocating seed-bar, so that the seed-bar, by its reciprocating action, shall work out the chaff through the passages H H on either side of the seed-bar, and thus prevent choking the distributer.

On the 27th of October the specifications were returned to him, so as to enable him to amend or erase the nature of his invention, so that it might not conflict with the claim as amended; and on the 28th day of October he filed his amendment, by striking out or cancelling lines fifteen to twenty-four, inclusive, and inserting in place thereof the following:

The nature of the invention consists in the arrangement of the top part of the seed-distributer, having on its periphery or sides peculiar chaff openings for removing chaff and other obstructions, more particularly described in the specification.

The original claim was the employment of the feed-bar, in combination with the *chaff-chamber*, but the amendment was—

The arrangement of the top portion of the distributer made with a semi-lunar opening, and the recess under the covered portion of the said top, when the periphery of the said top is made with the chaff-openings H on either side of the reciprocating seed-bar, so that the said bar, by its reciprocating action, shall work out the chaff through the passage H H on either side of the seed-bar.

And he said the object of this amendment was to *confine* the claim to the construction of the semi-lunar top with its recess and side openings. And, without looking to what he said was his *object*, does not a fair construction of the language show plainly that he had limited the invention originally claimed by him to a *particular* arrangement of a *particular* top with *particular* openings, so that the chaff may be removed in a particular way? He certainly did not intend to claim a chaff chamber, however constructed, and certainly not every mode of removing chaff.

We think it, therefore, clear that this patent must receive the limited construction indicated. If so, it is very clear that the respondents' device does not embrace either the particular top with its particular arrangement or its particular openings. But suppose we give it a broader construction, and say complainants are entitled to a chaff chamber, and one of a different form, and openings of a different form, and at a different place; still, in order to find that the respondents infringe, we must find that they have a chaff-chamber and openings substantially alike in mode of operation and results.

If the respondents' device can be said to have a chaff-chamber at all, it is so different in operation that it can hardly be said to be substantially the same. The complainants' chaff-chamber is for the reception of the chaff, and openings are made necessary for its escape, and the operation of the seed-bar is necessary to carry it from the chamber through the openings. In the respondents', by the arrangement of the parts, the chaff falls directly to the ground, or upon that portion of the mechanism upon which the device is fastened; no other openings are necessary; and the seed-bar performs no office, such as is required by the seed-bar in complainants' device.

But there is another view of this matter. Their devices are very different in form. The respondents have received a patent for them from the Government; and the presumption of law is that it is novel; that it involved invention; and the proofs of complainants' and respondents' experts show very clearly that it is of superior utility to that of complainants'. Under such circumstances, I do not feel disposed to give such a construction to the complainants' patent as will embrace the respondents' device; and more so, as complainants had been using their device for thirteen years without ever ascertaining that their patent covered such a device, or its suggesting to them the valuable changes and alterations made by respondents' invention. While patents should be liberally construed, they should not be so construed as to enable patentees to reach out and cover every improvement or invention which, after seeing, they conclude they might have embraced and included within their patent; but which was not so embraced and included.

EXTENSIONS GRANTED.

31,378.—Improvement in Harvesters.—Granted to RUFUS DUTTON, February 12, 1861; reissue No. 4,125, dated September 20, 1870; reissue No. 4,217, dated December 27, 1870.

Claim.—1. A hollow metal casing-plate, separate and apart from any driving or carrying wheel, which casing-plate makes one side or main part of a box or case which incloses and protects the secondary gear-wheels of a mowing or reaping machine, substantially as described.

2. A box or case, made substantially as described, of two casing-plates, separate and apart from any driving or carrying wheel, which box or case incloses and protects the secondary gear-wheels of a mowing or reaping machine.

3. A hollow metal casing-plate, separate and apart from any driving or carrying wheel, which casing-plate makes one side or main part of a box or case which incloses and protects the secondary gear-wheels, and which casing plate also supports a journal of the secondary gear-wheel axle of a mowing or reaping machine, substantially as described.

4. A box or case made, substantially as described, of two casing-plates, separate and apart from any driving or carrying wheel, which box or case incloses and protects the secondary gear-wheels, and also supports the journals of the secondary gear-wheel axle of a mowing or reaping machine.

31,394.—Improvement in Molding Pottery.—Granted to ELIZABETH LINTON, administratrix of WILLIAM LINTON, deceased, February 12, 1861.

Claim.—A revolving core-mold in combination with a stationary yielding or traversing lip-mold, or top-molder, operated by springs, so as to hold the vessel formed in the mold when the core is removed, substantially as described.

31,445.—Improvement in Lime-Kilns.—Granted to MARGARET DONALDSON, administratrix of RICHARD DONALDSON, deceased, February 19, 1861; reissue No. 1,476, dated May 19, 1863.

Claim.—1. The cooler F beneath the kiln communicating therewith and exposed to the air, all substantially as described.

2. In combination with the said cooler I claim the beveled blades L, so arranged and operating as to support the lime within the said cooler, and to permit the lime to fall therefrom, substantially as described.

3. The tray-like lid G, when hung to the cooler and arranged for closing the same, substantially as specified.

4. Making that part of the interior of the kiln beneath the flues of the funnel form illustrated and described, for the purpose specified.

5. Combining with a lime-kiln, substantially as described, a chimney surmounted with a damper, T, or its equivalent, for the purpose specified.

Disclaimer filed February 15, 1875.

Disclaims the fifth clause of the claim, as above set forth.

31,502.—Improvement in Machine for Breaking Coal.

Granted to R. A. WILDER, February 19, 1861.

Claim.—1. So constructing and arranging a rotating toothed disk in a coal-breaking machine as that it shall serve the purpose of a breaker as well as form one of the sides of the hopper into which the coal to be broken is thrown, substantially as described.

2. I also claim, in combination with a rotating toothed disk forming one side of the hopper, a perforated plate or plates, F, forming the bottom of said hopper, substantially as described.

3. I also claim hinging the bottom of the hopper F at its middle and adjusting it at its ends, for the purpose of passing the coal to or from the center or to or from the larger and smaller openings in it, so as to break the coal of greater or less sizes, substantially as described.

4. I also claim, in combination with the rotating disk and the perforated bottom, the curved shroudings E, as and for the purpose described.

5. I also claim constructing and operating a coal-breaking machine, so that the teeth or knives of one rotated vertical disk shall pass the teeth or knives of the other rotated vertical disk in opposite directions, so that they may strike the coal that comes between them on opposite sides at the same moment, for the purpose of cracking the coal into pieces and preventing the waste by crushing or pulverizing, substantially as described.

31,511.—Improvement in Lamps.—Granted to CHARLES W. CAHOON, February 19, 1861; reissue No. 1,735, dated August 9, 1864.

Claim.—1. The combination of the chimney-holder and clamp chimney-fastenings of a lamp with the support of the chimney-holder by a horizontal joint, the combination as a whole operating substantially as set forth.

2. I also claim the combination of the chimney-holder, chimney-fastenings, support for the chimney, joint, and thumb-plate, the whole operating substantially as set forth.

3. I also claim the combination of the preceding combination with a guard, arranged substantially as set forth.

4. I also claim the combination of a spring with the chimney-holder, chimney-fastenings, support for the chimney, and joint, the whole operating substantially as set forth.

5. I also claim the combination of a chimney-guard with the chimney-holder, chimney-fastenings, support for the chimney, and joint, the whole operating substantially as set forth.

6. I also claim the combination of a transparent plate with an opaque metal lamp-body, substantially as set forth.

DISCLAIMERS FILED.

31,445.—Improvement in Lime-Kilns.—RICHARD DONALDSON, Mount Nebo, Pa.—Patented February 19, 1861; reissue No. 1,476, dated May 19, 1863. Disclaimer filed February 18, 1875. Disclaims:

"That part of the claim in said Letters Patent which is in the following words, to wit:

"'5. Combining with a lime-kiln, substantially as described, a chimney surmounted with a damper, T, or its equivalent, for the purpose specified.'"

105,599.—Improvement in Concrete Pavements.—JOHN J. SCHILLINGER, New York, N. Y.—Patented July 19, 1870; reissue No. 4,364, dated May 2, 1871. Disclaimer filed March 1, 1875. Disclaims:

"That part of the specification in the following words, to wit: 'and since the concrete in setting shrinks, the second block when set does not adhere to the first, and so on,' which occur near the middle part of the specification, and the following words near the end of the specification:

"'In such cases, however, where cheapness is an object, the tar-paper may be omitted, and the blocks formed without interposing anything between their joints, as previously described. In this latter case the joints soon fill up with sand or dust, and the pavement is rendered sufficiently tight for many purposes, while the blocks are detached from each other, and can be taken up and relaid each independent of the adjoining block.'"

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date March 9, 1875.]

8,194.—Drawer-Pulls.—OTTO F. FOGELSTRAND, Kensington, Conn., assignor to HART, BLIVEN & MEAD MANUFACTURING COMPANY, same place.—Case O. Application filed February 26, 1875. Term of patent 7 years.

8,195 and 8,196.—Match-Safe.—OTTO F. FOGELSTRAND, Kensington, Conn., assignor to HART, BLIVEN & MEAD MANUFACTURING COMPANY, same place.—Cases A and B. Applications filed February 26, 1875. Term of patents 7 years.

8,197 and 8,198.—Carpets.—ALFRED HEALD, Philadelphia, Pa., assignor to HUGH MCCALLUM, ORLANDO CREASE, ANDREW J. SLOAN, and WILLIAM MCCALLUM, same place.—Cases Y and Z. Applications filed February 15, 1875. Term of patents 3½ years.

8,199.—Coffin-Handles.—WILLIAM M. SMITH, West Meriden, Conn., assignor to MERIDEN BRITANNIA COMPANY, same place. Application filed February 25, 1875. Term of patent 7 years.

8,200.—Writing-Paper.—HENRY C. BAINBRIDGE, Brooklyn, N. Y. Application filed February 24, 1875. Term of patent 3½ years.

8,201 and 8,202.—Breastpin and Pendant.—LEONARD S. BEALS, Astoria, N. Y.—Cases A and B. Applications filed February 24, 1875. Term of patents 3½ years.

8,203.—Breastpin.—LEONARD S. BEALS, Astoria, N. Y.—Case C. Application filed February 24, 1875. Term of patent 3½ years.

8,204.—Inkstands.—OTTO F. FOGELSTRAND, Kensington, Conn., assignor to HART, BLIVEN & MEAD MANUFACTURING COMPANY, same place. Application filed February 26, 1875. Term of patent 7 years.

8,205.—Paper-Weights.—OTTO F. FOGELSTRAND, Kensington, Conn., assignor to HART, BLIVEN & MEAD MANUFACTURING COMPANY, same place.—Case M. Application filed February 26, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date March 9, 1875.]

2,275.—Cigars, Tobacco and Snuff.—BATCHELOR BROTHERS, Philadelphia, Pa. Application filed February 26, 1875.

"'KEY-EAST.'"

2,276.—Commercial Fertilizers.—HENRY N. HOOPER, Dedham, Mass. Application filed January 13, 1875.

"'MATFIELD."

2,277.—Cigars.—ROBERTS & FULWEILER, Philadelphia, Pa. Application filed February 24, 1875.

"pictorial representation of two children, a boy and a girl, standing on the margin of a beach and looking out to sea."

2,278.—Bourbon Whisky.—TORLINA, ENDRES & CO., St. Louis, Mo. Application filed February 17, 1875.

"words 'Grape Creek' and the representation of a grape."

2,279.—Perfume.—SAMUEL C. UPHAM, Philadelphia, Pa. Application filed February 23, 1875.

"'Liberty Bell.'"

2,280.—Carpet-Lining and Stair-Pads.—GEORGE W. CHIPMAN & CO., Boston, Mass. Application filed February 26, 1875.

"word 'Globe.'"

2,281.—Alpacas.—FARR ALPACA COMPANY, Holyoke, Mass. Application filed January 28, 1865.

"word 'Champion.'"

2,282.—Holland Gin.—CYRUS A. HUBBARD, Haddam, Conn. Application filed February 26, 1875.

"swallow in flight, with the words 'Swallow Schiedam.'"

2,283.—Hams, Beef, and Tongues.—J. H. MICHENER & CO., Philadelphia, Pa. Application filed January 30, 1875.

"'Excelsior.'"

2,284.—Fertilizers.—PATAPSCO GUANO COMPANY, Baltimore, Md. Application filed March 1, 1875.

"'GRANGE MIXTURE.'"

2,285.—Axes.—RICHARD PATRICK & CO., San Francisco, Cal. Application filed February 27, 1875.

"'EUREKA.'"

2,286.—Spectacles, Eye-Glasses, and Optical Goods. SUSSFELD, LORSCH & CO., New York, N. Y. Application filed February 6, 1875.

"crown, with pointed ends, finishing in balls."

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Lewis, W. J., Vehicle end gate rod	160,531
Lippy, D., Grain thrasher and separator	160,689
Lockwood, J. F., and G. E., Carbureter	160,690
Lockwood, S., assignee	160,671
Lomas, J. R., Reed organ tremolo	160,605
Lay, D. O., Machine for sanding brick molds	160,532
MacNeil, T., Chamber of fire arms and ordnance	160,691
MacNeill, D. L., Retort for the manufacture of illuminating gas	160,740
Macomber, W. C., Drive well strainer	160,692
Mann, C. S., and W. Y. A. Boardman, Machine for bending awls, needles, &c	160,533
Marsh, C. W. and W. W., Harvester, (reissue)	6,329
Marsh, C. W. and W. W., Harvester, (reissue)	6 330
Marsh E. H., Chinch bug gatherer	160,606
Martin, G., Tackle block	160,534
Matson, E. C., assignee	160,706
Mayer, S., Apparatus for cutting goods on bias	160,607
McCall, A., J. T. Watkins, and J. S. Scott, Road scraper	160,535
McColl, M. J., Manufacture of sheet wax for flowers	160,608
McIntyre, R., assignee	160,534
Mefford, D. M., Dry measure	160,609
Mellinger, B., Horse hay rake	160,693
Menegay, J., Watch case spring	160,610
Michel, J., Invalid bedstead	160,694
Miller Brothers, assignees	160,651
Mills and Moore	160,536
Minneapolis Manufacturing Company, assignee	160,692
Mitchell, N. C., Bee hive	160,695
Moore, J., Overalls	160,537
Moore, J., Bricklayer's rest	160,538
Moore, J. R., and J. G. Mills, Machine for patching railway rails	160,536
Morgan, E. M., Seed dropper	160,611
Morse, A. J., Attaching hose to hose coupling	160 696
Moses, J., Dish of pottery ware	160,539
Murdock, J., Attachment for sinks	160,540
Myers, S. C., Wagon end gate	160,612
New England Awl and Needle Company, assignee	160,533
Newberger, H., Lemon press	160,697
Nickerson, Z., assignee	160,540
Norton, E. M., assignee	160,717
O'Brien, P. L., Stencil cutter	160,613
Old, J., Fire place fender	160,541
Old, J., Cooking range	160 542
Olson, W., Clothes sprinkler	160,698
Oppenheimer, J. D., assignee	160 637
Osborn, C. S. and E., Locomotive spark arrester	160 614
Pagan, O., Boiler tube expander	160,699
Painter, W., Hose coupling	160,700
Painter, W., Apparatus for removal of night soil	160,701
Painter, W., Discharge gate for night soil tanks	160 702
Painter, W., Measuring indicator for night soil tanks	160,703
Painter, W., Foot pipe for suction hose	160,704
Patterson, T., Washing machine	160,706
Patterson, W. A., Implement for binding grain	160,705
Patterson, W. F., Screw driver	160,543
Pearce, H., Elevator	160,615
Peasley, J. H., Loom shuttle	160,544
Pennypacker, H. E., Seed planter	160,707
Perry, W. R., Hinge for safe doors, &c	160,616
Petersohn, A., Combined envelope and letter sheet	160,708
Phenix, J. H., and J. Curtis, Spring vehicle	160,709
Pickels, J. H., Car spring, (reissue)	6,321
Plympton, N., Window bracket hook	160,710
Pond, L. W., Saw swaging machine, (reissue)	6,322
Poole, J. M., Machine for grinding rolls or rollers, (reissue)	6,323
Porter, W. T., assignee, (reissue)	6,323
Potter and Farrington	160,661
Potter, F. S., assignee	160,529
Prickett, H., Portable fence	160,711
Quitman, L., Sash holder	160,712
Rath, E., Perfume fountain	160,713
Raynor, S. & Co., assignees, (reissue)	6,324
Reigea, G. V. N., Dental plate	160,714
Rentchler, H., assignee	160,611
Rider, L. P., and W. H. Shillito, Relief valve for air and steam brake cylinders	160,715
Rigby, C. F., Barrel rack	160,716
Roberts, E. J., Car brake	160,717
Robson, J., Weed cutter and hiller	160,545
Rose, C. P., Curtain fixture	160,718
Rowel and Morris, assignees	160,546, 160,547
Rowell, G. D., Harvester wheel	160,546
Rowell, G. D., Slip teeth for seeders	160,547
Rowland, F. S., Windlass	160,617
Rudy, D., Clay pulverizer	160,618
Rukgabee, C. B. and H. Clarke, Fly trap	160,719
Ryan, J. D., Pantaloon stretcher	160,619
Ryberg, F. T., Bottling machine	160,720
Sager, D., Butter worker	160,548
Saladee, C. W., Vehicle torsional spring	160,549
Scaife, R., Apparatus for extracting the oleaginous matter from textile material	160,550
Scholfield, S., Pneumatic paper feeder	160,721
Scott, McCall, and Watkins	160,535
Seton, J., assignee	160,518
Sharpsteen, W. M., Machine for tapering the tenons of spokes	160,722
Sheckler, P., and H. W. Bolender, Windmill	160,620
Shillito and Rider	160,715
Shoninger, B., assignee	160,608
Simons, A. D., Combined horse hoe and plow	160 621
Sipes, R. H., Grave cover and monument	160,622
Smith and Kinsman	160,687
Smith, D., Revolving fire arm	160,551
Smith, F. W., and F. Egge, Hasp	160,723
Smith, G. F., Thill coupling, (reissue)	6,331
Snellbaker, W. H. H., Wagon seat	160,623
Spencer, C. F., Tilting chair	160,624
Squires, W. J., Peg cutter	160,724
Staples, H., Tool handle	160,725
Stearn, I. N., Alkali for soap	160,726
Stevens, S., Tooth brush	160,552
Stewart, J. J., Pegging jack	160,727
Strader, S. M., Thill coupling	160,728
Strattan, D., Tire shrinker	160,729
Stratton, C. H., Side hill plow	160,625
Sturges, G., assignee	160,649
Sutherland, G., assignee	160,733
Swan, C. S., Press	160,626
Swartout, J. H., and A. L. Whedon, Grate	160,553
Sweet, J., Sash holder	160,554
Taylor, D., Cartridge belt	160,730
Taylor, J. F., Hydraulic packing	160,731
Thomson, D. W., assignee	160,616
Tillinghast, J. A., assignee	160,554
Travis, C. L., Grain binder	160,732
Treble, J. Q., assignee, (reissue)	6,324
Tucker, G. W., Handle for umbrellas, parasols, &c	160,627
Tullock, J., Ore feeder	160,628
Underwood, E. C., Weather strip	160 555
Underwood, L., Hay loader	160,556
Van Buren, J. S., Cooking stove	160 557
Walker, A., Seed sower	160,733
Watkins, Scott, and McCall	160 535
Wellman, G. O., Folding rocking chair	160,629
Whedon and Swartout	160,553
Wheeler, E. G., Pocket book safety attachment	160,630
Wheeler, G. B., Spice box	160,631
Whitehead, W. E., and A. T. Atherton, Cotton opener and lapper	160,558
Whitney, E., Breech loading fire arm	160,734
Whitney, E., Earth auger	160,632
Wilcox, H. C., Coffee urn	160,633
Wild, T. S., Screw tap	160,559
Wilford, J. B., Sash holder	160,735
Willard, P., Chimney staging bracket	160,736
Witter, H. M., Surcingle	160,560
Wood, O. K., Grain separator	160,561
Wood, R., assignee	160,641
Woodbury, C. T., assignee	160,544
Wright, G., Thill coupling	160,738
Wright, J. C., Coping for walls	160,737
Zacharias, S., Stud fastening	160,634
Zimmerman, W. H., Hydro electric lamp	160,739

TITLES, DRAWINGS, AND CLAIMS

OF

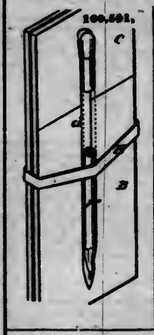
PATENTS GRANTED MARCH 9, 1875.

160,501. BILL-FILES. Franklin B. Alderson, San José, Cal. [Filed Jan. 23, 1875.]

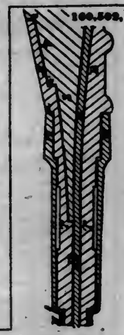
Brief.—The upper clamp or cover is made with a hinged flap, and provided with a longitudinal groove for the reception of a pencil, whereby the latter, in combination with the elastic band that encircles both clamps, is caused to hold the hinged flap in position.

The hinged front B C of a paper holder, having the groove or slot *d d* extending across both parts, in combination with the rigid bar F and single elastic strap E, substantially as and for the purpose herein described.

160,501.



160,502.



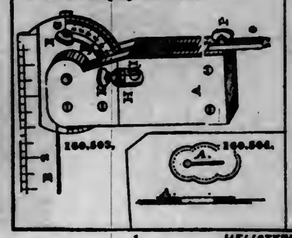
160,502. WAGON-AXLES AND THIMBLE-SKEINS. Isaac L. Anderson, Lancaster, Mo. [Filed Feb. 3, 1875.]

The combination of the axle A, formed with the shoulders *s* and *s'*, the projection *p*, and the tapered spindle S, the thimble T formed with the socket B, shoulder *s*, the level bearings *b*, *b'*, and *b''*, nut N, tension-rod R, adjusted in a groove on the under side of the axle A and its spindle S, and extending through a longitudinal aperture in the thimble T, and the nut *n*, all constructed to operate substantially as and for the purpose specified.

160,503. COMBINED BEVELS, TRY-SQUARES, AND DIVIDERS. William Ascough, Buffalo, N. Y. [Filed Dec. 20, 1874.]

1. The combination, with the stock A of the pointed tongue B, provided with the projection L, thumb-screw G, fastening-screw K, passing through one side of the stock A and the protractor E, and engaging with a nut, K', and the adjustable plate I let into the recess H, all when arranged substantially as described, and for the use and purpose set forth.

2. The combination, with the stock A, of the pointed tongue B and the reversible compass-point O, provided with a dovetail tenon, and engaging with a like mortise in the stock A, and fastened therein by the thumb-screw P, in a manner substantially as described, and for the use and purpose set forth.



160,503.

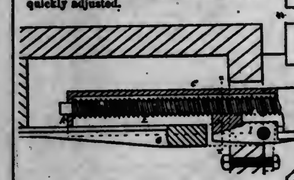
160,504.

160,504. BUTTON-HOLE CASINGS. Virginia Viard Balmforth, Oakland, Cal., assignor of one-half her right to Mrs. M. P. Benton, same place. [Filed Dec. 18, 1874.]

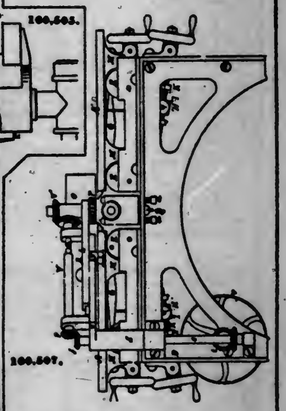
The attachable and removable button-hole casing or lining, consisting of the outer ornamental piece A, in combination with the inner strengthening-piece C, the same being stitched or worked, substantially as set forth.

160,505. VISES. Thos. L. Bayliss, Edgartown, Mass. [Filed Aug. 27, 1874.]

Brief.—When the front end of the box-slide is raised the vibrating piece is relieved of the imposed weight, and the greater weight of the rear end of said piece causes said end to drop and disengage the threads of the nut and screw, thus permitting the movable jaw to be quickly adjusted.



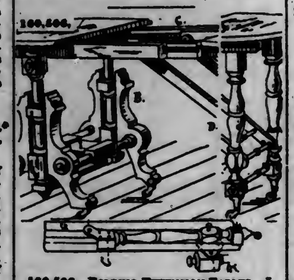
160,505.



1. The vibrating piece I, provided with the nut H and bearing-pieces *u u*, in combination with the movable jaw and screw of a vise, substantially as described, and for the purpose set forth.

2. The bed-plate G, provided with the flanges *b b*, bearing-pieces *u u*, and nut H, in combination with the box-slide C, provided with the flanges *p p*, and plate A, and clamping-screw E, when the parts specified are arranged so as to permit a vertical movement to be given to the box-slide, substantially as described, and for the purpose set forth.

160,506.



160,506. FOLDING EXTENSION-TABLES. J. F. Birchard, Milwaukee, Wis. [Filed June 12, 1874.]

Brief.—The main supporting-frame is provided with four legs, and to this frame the top and slides are pivoted. To the outer end of the slides a pair of legs is pivoted, which, together with the permanent top and slides, fold against the main supporting-frame. A shelf is arranged in the lower part of said frame, to hold the loose leaves when not in use.

1. An extension folding table, constructed as described, and provided with leaves A and A', permanent pillars and legs B B, slides G, and joint L, substantially as shown and specified.

2. The combination of loose legs C C, brace D, and slides G, arranged substantially as described.

3. The shelf I for supporting the loose or extra leaves of an extension-table, in combination with pillars and feet B B, substantially as shown and described.

160,507.

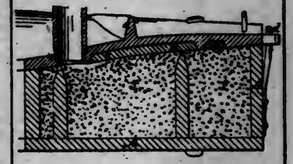
160,507. MACHINES FOR PLANING WOOD. Wilson W. Carey, Lowell, Mass., assignor to himself and Geo. W. Harris, same place. [Filed Oct. 22, 1874.]

Brief.—The table is provided upon its under side with four stops for preventing the advance movement of the same toward the cutter, and is made vertically adjustable by means of two pairs of eccentrics, connected together, and operated by a downwardly-projecting arm, which is adjustable by a tangent-screw provided with two stop-nuts. The material is fed to the cutter by a serrated feed-wheel, secured to the foot of a vertical shaft, which is attached to a horizontal, adjustable, and detachable arm, and is operated by the main driving-shaft through intermediate bevel-gearing.

1. The combination of the table A and its stops M M with the two pairs of eccentrics E F, their connection-rod G, and the operative arm H, extending from one of said eccentrics and provided with an adjusting-nut, I, and screw K, all being arranged substantially in manner and to operate as specified.

2. The combination of the journal T, shaft *s*, and gear *f* with the sleeve S, arm R, and its shaft V, provided with the gear *p*, the said gear *f* having a diameter less than that of the sleeve, and all being constructed, arranged, and applied substantially as set forth.

160,508. PROCESSES OF CHILLING CASTINGS. Edwin A. Chubb, Ionia City, Mich. [Filed Sept. 14, 1874.]

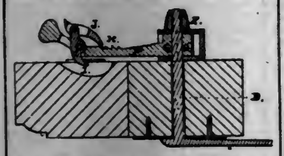


A series of sand molds adapted to a single chill-plate, so that the said chill-plate, after being once heated, shall be kept heated by the molten metal of the preceding mold, substantially as described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

160,509. COMBINED FASTENERS FOR MEETING-RAILS OF SASHES AND BLINDS. John Christie, New Orleans, La. [Filed Jan. 11, 1875.]

Brief.—The swinging arm is notched on top, and with these notches a hinged pawl passing through a slot near the outer end of the arm engages, the other end carrying a hook to fasten underneath a recessed plate. Combined with this window-sash fastening is a catch, having a right angled shaft with squared end, which passes up through an auger-hole in the meeting-rail, and terminates in a threaded nut on top of the sash-fastening, coacting with it to fasten the blind or shutter, in such manner that when in place one cannot work without the other, and the shutter can only be opened from the inside; the pawl and notches of the sash-fastening device serving also to draw the meeting-rails together, for excluding dust, and to prevent rattling.



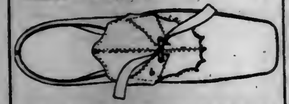
1. The blind-catch A, the right-angled shaft B, having squared end C, thread-screw D, and nut E, in combination with the sash-fastening F, all substantially as and for the purpose hereinbefore set forth.

2. The combination of the square cut G in the sash-fastening F, the pawl or clutch J, and the notches or ribs H, substantially as and for the purpose hereinbefore set forth.

3. The combination of the hook I and pawl or clutch J, hinged together, with the arm of sash-fastening F, substantially as and for the purpose hereinbefore set forth.

160,510. LADIES' SHOES. Gustavus L. Davis, Haverhill, Mass. [Filed Feb. 5, 1875.]

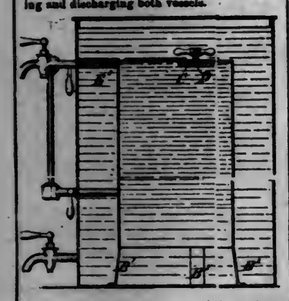
Brief.—The lapels are cut from the vamp, and form an integral part thereof, being left uncut at their bases. Pieces of the same material of which the vamp is made are stitched underneath the openings.



In a shoe, having its vamp overlapping and covering the front ends of its quarters, the lapels *b b* formed in the vamp, in manner and for the purpose set forth.

160,511. APPARATUS FOR THE STORAGE OF PETROLEUM. Gabriel Des Georges, Montreal, Canada. [Filed Dec. 8, 1874.]

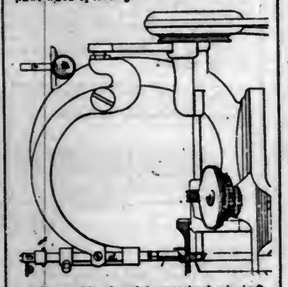
Brief.—An open-bottomed vessel for containing the oil is placed concentrically within an outer vessel, which contains water. The pressure of the water holds the oil within the inner vessel. Its height is shown by a gage outside. Suitable devices are shown for filling and discharging both vessels.



In apparatus for boiling petroleum and similar articles in store, surrounded by and under the pressure of water, an inner open bottom vessel, B, provided with an opening, C, plug D, let-off valve E, and gage F, in combination with an outer vessel, A, provided with let-off valve G, substantially as herein described.

160,512. SEWING-MACHINES. A. S. Dinsmore, Boston, Mass. [Filed Jan. 3, 1876.]

Brief.—The needle reciprocates in a horizontal path, and penetrates the fabric impaled on pins projecting from a circular basting-plate, which revolves and carries the work forward as it is stitched. The basting-plate is operated by a worm on the hook-shaft and wheels that gear into a rack on top of the plate. One of the wheels is loose on its shaft, (to allow the plate to be turned and the cloth brought into position at the start,) and is locked by means of a pawl when operating.



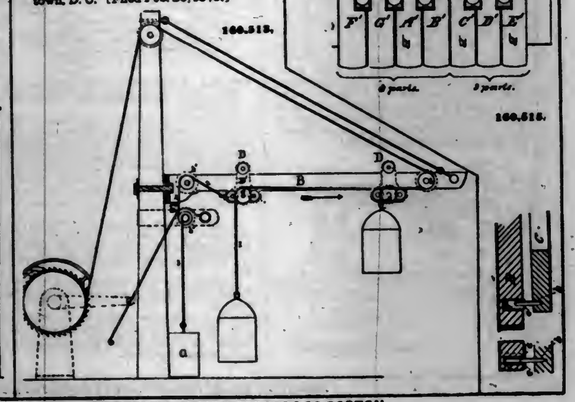
1. The combination of the rotating hook-shaft and its worm-gear with the toothed baster-plate, the toothed wheel for moving the baster-plate, and connecting-gearing, substantially as described.

2. The combination of the hook-shaft and its worm-gear with the shaft I, operated from the hook-shaft by gearing, its ratchet, and the toothed wheel *j* and pawl, and the baster-plate, substantially as and for the purpose set forth.

3. The combination of the horizontally-moving baster-plate with the needle-bar, needle, presser-bar, presser, and finger and collar *f*, the finger and collar holding the presser from the fabric while the feed takes place or the baster-plate is moving, substantially as and for the purpose set forth.

4. The combination of the frame A and its standard for supporting a stitch-forming mechanism with the circular and toothed baster-plate, the supporting-ring, and mechanism actuated by the hook-shaft to move the baster-plate, substantially as described.

160,513. CRANES. Jerry Dorman, Georgetown, D. C. [Filed Feb. 20, 1875.]



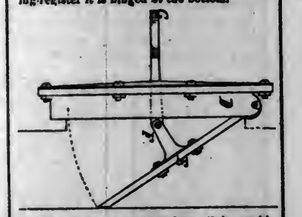
160,514.

1. In a crane for hoisting coal and other materials, a winding-drum, cords and pulleys, traveling-car and counter-weight, arranged, substantially as described, to elevate the loaded bucket, and its outward movement shall elevate the weight, which will retract the car when the bucket is emptied.

2. The combination of the traveling-car D, cords 2 and 3, pulleys *b' b''*, and axle *b''*, and weight G, substantially as and for the purpose described.

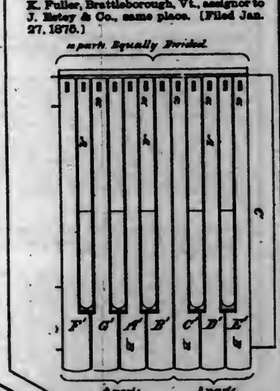
160,514. HOT-AIR REGISTERS. H. Fritz, Cleveland, Ohio. [Filed Dec. 1, 1874.]

Brief.—When used as a hot-air register the valve is hinged at the top; when as a ventilating-register it is hinged at the bottom.



The removable register-frame C, in combination with the hinged valve E F, and swinging handle G, said frame constructed with the perforated face, to admit of the egress of hot air, and projecting sides D, which enter or embrace the opening in the flue, the frame C D also forming the valve-seat and hinge or trunnion bearing for the valve E F, as and for the purposes set forth and shown.

160,515. KEY-BOARDS FOR ORGANS. Levi K. Fuller, Brattleborough, Vt., assignor to J. Estey & Co., same place. [Filed Jan. 27, 1876.]



160,515.

160,516.

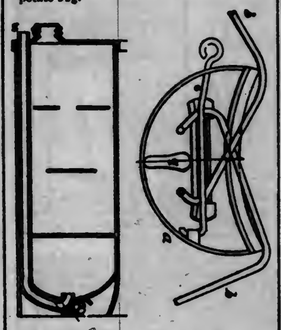
1. In a key-board or manual for organs, the keys made of equal width at the rear ends A A, and the white keys spaced at the front ends B B, in two groups of unequal width, as described and shown, and having all the pivot and guide pins equally spaced, substantially as set forth.

2. A key-board or manual for organs containing five kinds of keys, namely, the white keys A' B' C' D' and the black key, the keys A', B', and C' being duplicates of the keys C', F', and E', respectively, and all interchangeable, letter for letter, substantially as specified.

3. The improved method of bushing the guide-pins *b b*, consisting in having the ends *c c* of the felt *e* glued to the under side of the keys, so as to project therefrom and from the cushion between the keys and the key-frame, substantially in the manner shown, and for the purposes herein described.

160,516. GARDEN-SPRINKLERS. Frank M. Gray, Norwood, Ill. [Filed June 15, 1874.]

Brief.—Shelves are so located in the vessel as to catch and hold temporarily the solid matter used. An open air-pipe extends to the bottom for delivering the air at that point, and thereby serving to agitate the contents, and aid in keeping the solid matters mixed with the water. The device is intended for use in the application of paris-green mixed with water to potato-vines, to destroy the potato-bug.



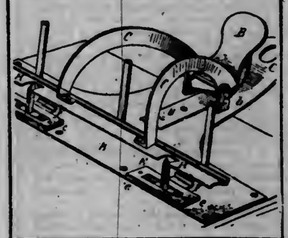
1. The receptacle *a*, in combination with one or more flexible discharge-pipes, *b*, compressing-rod *c*, and open air-inlet pipe *g*, substantially as and for the purposes set forth.

2. The receptacle *a*, provided with one or more shelves within the same, in combination with one or more discharge-pipes, *b*, and the air-pipe *g*, substantially as and for the purposes set forth.

3. In a garden-sprinkler, the vessel *a*, in combination with one or more flexible tubes, *b*, and the open air-pipe *g*, having its lower opening at or near the center of the bottom of the vessel, substantially as and for the purpose specified.

160,517. TEMPORARY BINDERS. J. N. Hale, Boston, Mass. [Filed Aug. 18, 1874.]

Brief.—The invention consists in the particular construction and combination of the device as shown.



The lower jaw B, slotted as shown, to form recesses for the heads of the fasteners, and the slotted plate E, supported upon the lower jaw by the interposed washers *c*, in combination with the bifurcated slip F for holding the fasteners, and the slotted movable jaw H, arms G, thumb-lever D', and a spring, I, all constructed and arranged substantially as herein shown, for the purpose described.

160,518. SKYLIGHT-BARS. James Harney, Brooklyn, N. Y., assignor of one-half his right to J. Seton, same place. [Filed Oct. 14, 1874.]

Brief.—A V shaped skylight-bar in which the gutter is wholly within the spread of the ledges which support the glass; said gutters being perforated to admit the water into the center of the bar, through which channel it is conveyed away. The glass-sustaining ledge is provided with grooves, through which the condensed vapor from the under side of the glass is admitted to the interior of the bar.



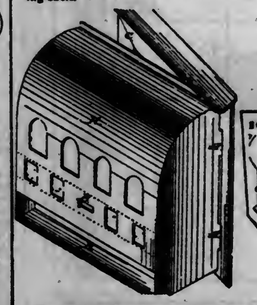
1. The grooves *c*, arranged so as to permit water to flow, as described, and for the purpose set forth.

2. The lengthwise groove, gutter, or depression *b*, in combination with the grooves *c*, and with the perforations *c*, as described and set forth.

3. In a skylight-bar formed of sheet metal, the gutters or gutter *d*, provided with suitable inlet-apertures *c c*, substantially as and for the purpose set forth.

160,519. AIR-CHAMBERS FOR STOVES. E. Hawks, Troy, N. Y. [Filed Nov. 26, 1874.]

Brief.—The recess may be used as a warming-shelf.



The combination, in an auxiliary chamber, for heating the air prior to its passage to the fuel-chamber of the reverberatory dome H, recessed warming-chamber D, and draft-damper B, arranged between the warming-chamber and reverberatory dome, substantially as and for the purpose described.

160,520. SAFETY-TANKS FOR OIL. John H. Hayward, New York, N. Y. [Filed July 23, 1874.]

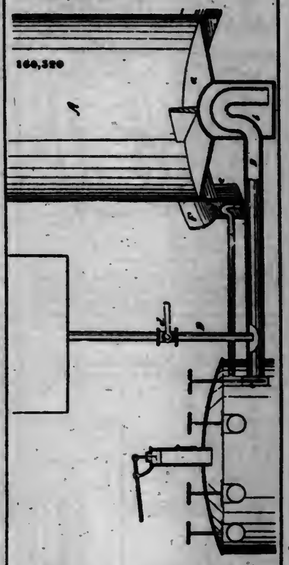
Brief.—Prevents a fire by running oil into subterranean tank, with liquid seal to prevent flame following it. Provides also interposition of water between tanks.

1. A storage-tank, A, for inflammable fluid, and the safety-reservoir C, connected by a conduit or pipe furnished with a trap or seal, as described, leading out of the bottom of the tank into the reservoir, through which the fluid, by its own gravity, will flow from the tank into the reservoir without opening a passage for the communication of flame from one to the other, substantially as and for the purpose specified.

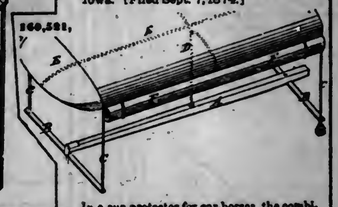
2. The combination, with the storage tank A and safety-tank C, of the water-reservoir E and its discharge-pipe D, leading into the pipe H, whereby when fluid is on fire in the tank A a body of water may be interposed directly between the burning fluid and the safety-tank C, as described.

3. The drip-pan F, formed upon the external base of the tank A, and a discharge-pipe, constructed, arranged, and operating as and for the purpose specified.

160,320



160,521.



160,521. SUN-PROTECTORS FOR CAR-HORSES. Victor Henry, Cedar Rapids, Iowa. [Filed Sept. 7, 1874.]

In a sun-protector for car-horses, the combination of a shifting-pole, A, provided with front and rear cross-bars B B, and the supporting-casters *a a* therefor, with the branching skeleton-frame C D, rising from said cross-bars, and carrying the awning E and the side flaps F thereof, as shown and described.

160,522. DRIVING-GEARS FOR SHAFTING. S. S. Hepworth, New York, N. Y. [Filed Feb. 6, 1875.]

1. The devices A B E, each constructed in two opposite and symmetrical parts, which can be united around a shaft, in combination with friction-bands constructed in two parts, and operated by toggles and cranks, substantially in the manner herein described.

2. The friction-packing in the forms F F', composed of the end grain of soft wood filled with shoe-pegs driven into it, substantially as herein described.

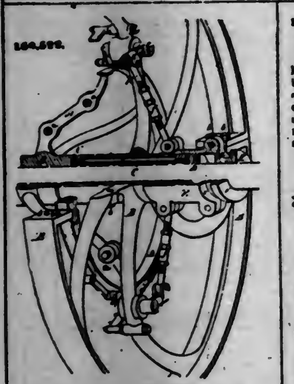
3. The bushing U, with its wings *e* and holes for passing oil to the shaft, substantially as herein described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

160,522. CHIMNEY-VENTILATORS. J. Howes, Worcester, Mass. [Filed Apr. 14, 1874.]

Brief.—Under a strong pressure of wind the upper portion of the horizontal air-receiving passage is lifted, and the strain on the bearings of the cowl is diminished.

The divided compressor C, in combination with the tube B and flue A, substantially in the manner and for the purposes above described.



160,524. MACHINES FOR SAWING SHINGLES. William Huey, Salisbury, Md. [Filed Jan. 26, 1875.]

Brief.—The track upon which the carriage runs is curved vertically, so as to form the segment of an ellipse.

The carriage M, moving upon a track which forms a portion of an ellipse, in combination with the horizontally-moving frame V, as and for the purposes specified.

160,525. FASTENERS FOR MEETING-RAILS OF SASHES. Julius H. Husted, Chicago, Ill. [Filed June 30, 1874.]

Brief.—A horizontally sliding spring bolt has one or more notches on the bottom of the bolt, which engage with corresponding slops or shoulders on the bottom of the case, and of the catch or keeper, making a step-shaped series, by means of which the bolt can be readily locked within its case, or in other desired positions.



The combination, of the bolt D, provided with stem H and notch F, with the stop n, elevated end M, case A, catch or keeper K, and spring m, as and for the purpose set forth.

160,526. HYDRAULIC HOSE. J. D. Joslin, Cleveland, Ohio. [Filed Jan. 6, 1875.]

1. The hydraulic hose, lined upon the inside and outside with canvas alone, with a filling between the said linings of canvas and rubber, substantially as and for the purpose described.

2. In combination with the hose constructed with the outer and inner canvas linings, and intermediate alternate layers of canvas and rubber, the single outstanding seam *e*, formed by turning the two free edges of the outside wrapper C outward, cementing them together by an intermediate rubber stratum, and sewing the same close to the body of the hose at *e'*, as and for the purpose described.

160,527. WATER-ELEVATORS. J. Keith, Providence, R. I. [Filed July 27, 1874.]

Brief.—Upon disconnecting the bucket windlass-shaft and crank-shaft, which are loosely connected by a sleeve-joint, the crank-shaft will be lowered, permitting the windlass-shaft (2 feet with its friction-wheel in contact with a friction-shoe, thereby retarding the descent of the bucket.

The combination of a bucket windlass-shaft and crank-shaft, loosely connected by a sleeve-joint, and operatively connected, by a clutch, with a lever which controls the clutch, and also supports the journal-box of the crank-shaft, a stationary friction-shoe, and a friction-wheel mounted on and secured to the windlass-shaft, substantially as described, whereby, on disconnecting the two shafts by means of the lever, the crank-shaft will be lowered, thereby permitting the windlass-shaft to rest with its friction-wheel in contact with the friction-shoe, as and for the purposes specified.

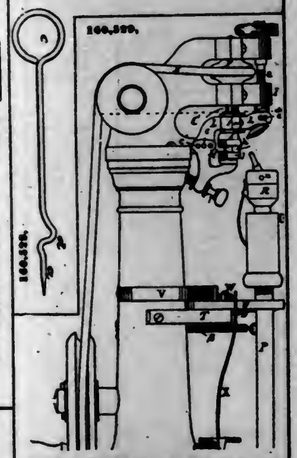
160,528. TOILET-PIN. Ansel N. Kellogg, Chicago, Ill. [Filed Nov. 16, 1874.]

1. The toilet-pin provided with a curve of a helical nature in the shaft near the point thereof, in combination with a ring, *c*, at the head, substantially as specified.

2. The toilet-pin *a*, provided near the point with a curve, *d*, which stands upon one side of the shaft, and the ring *c* at the head, so constructed that it shall lie flat, while the curve stands upward or outward, substantially as specified.

160,529. MACHINES FOR TRIMMING THE HEELS AND SOLES OF BOOTS AND SHOES. Richard C. Lambert, Quincy, assignor to F. S. Potter, trustee, New Bedford, Mass. [Filed Jan. 27, 1875.]

Brief.—The boot or shoe is mounted upon a vertical standard, which may be adjusted at any required angle relative to the cutter-head, and held positively in each position by means of ratchet and pawl. Improvement on Patent No. 152,368, of June 23, 1874.



1. The gages *h h* or *j j*, arranged to partially inclose the cutter-head D, and to vibrate about an axis coincident, or nearly so, with the axis of the cutter-head, substantially as described.

2. In combination with a rotary cutter-head and its spindle, the gages *h h* and gage-carrier *g*, provided with an annular journal surrounding the spindle, and mounted in a bearing concentric, or nearly so, with the axis of the spindle and cutter-head, substantially as described.

3. The combination of the gages *h h*, the gage-carrier *g*, and the bifurcated lever L, pivoted to the frame at a point coincident with the axis of the longitudinal curve of the front side of the cutters, and shiftable means of adjusting the movable end thereof, substantially as described.

4. The combination of the gages *j j*, the pivoted stand *i*, and the bifurcated lever M, provided with the horizontal arm M', and pivoted to the frame at a point coincident with the axis of the longitudinal curve of the front side of the cutters, and the screw N, for adjusting the same, substantially as described.

5. The combination, upon the jack of a sole or heel edge trimming machine, of a pivoted heel-pin, constructed with a lever-arm, with a spring secured to the vertical standard, and adapted to press against said lever-arm and hold the pin in an inclined position, all substantially as and for the purpose described.

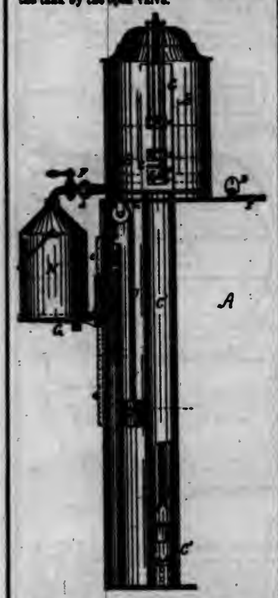
6. In combination with the jack-rod P, the forked lever U, pivoted to the stand T, the pawl *s*, and ratchet-teeth *p*, all as and for the purposes described.

7. The combination of the jack-rod P, forked lever U, pawl *s*, ratchet-teeth *p*, and lever W, provided with the pin *w*, all arranged substantially as described, for the purposes specified.

8. The combination of the jack-rod P, forked lever U, springs S and V, and the treadle-lever X, all arranged substantially as described.

160,530. MEASURING-TANKS. Jos. Lessler, Buffalo, N. Y. [Filed Sept. 23, 1874.]

Brief.—A tank having on top a measuring-can, provided with a pump extending to the lower part of tank, to raise the contents of tank into the measure, which has valves arranged at various heights, according to the quantity to be measured, all the excess pumped into the measure being allowed to return to the tank by the open valve.



1. The measuring device consisting of the cylindrical vessel or can B, tube C, having openings 1 2 3 4 and valves *a a' a'' a'''*, or their equivalents, pump E, and cock F, having check-valve *d*, arranged and operated substantially as herein before set forth.

2. The combination and arrangement of the adjustable shelf or bracket G, ways or guides *e e*, tank A, and measure B, as herein before specified.

160,531. RED-GATE RODS FOR VEHICLES. William J. Lewis, Pittsburg, Pa. [Filed Dec. 17, 1874.]



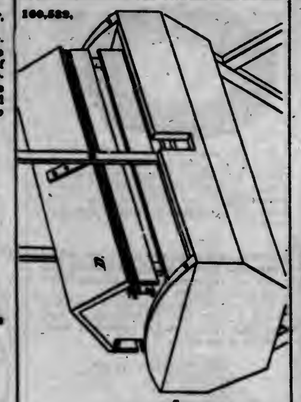
A wagon-box rod having an upset flange or collar, *c*, at the base of the ring, substantially as set forth.

160,532. MACHINES FOR SANDING BRICK-MOLDS. Daniel Oscar Loy, Farmer City, Ill. [Filed Aug. 8, 1874.]

Brief.—A vibrating sanding-case is pivoted to the ends of a waste-trough, and provided on each side with recesses for the reception of the molds to be sanded. The molds are held in place by pivoted levers, which serve also to vibrate the case.

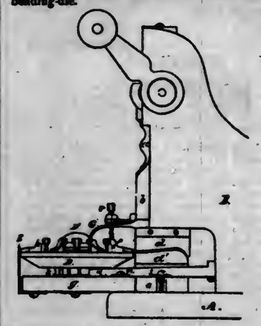
In combination with the rocking sanding-case D, provided at each side with a recess for the reception of the empty molds, the levers F, for locking in the molds and manipulating the case, substantially as shown and described.

160,533.



160,534. MACHINES FOR BENDING AWLS, NEEDLES, &c. Chas. S. Mann and W. Y. A. Boardman, West Medway, Mass., assignor to New England Awl and Needle Company, same place. [Filed Jan. 6, 1875.]

Brief.—A blank is entered into a spring grasping device or jaw by aid of a notched guide. In its circuit with the jaws (on the revolving table) it is first gaged, then bent by the dies, (during which bending it is released by the screw and again grasped when bent,) and afterward released by an arm and allowed to fall from the machine. A spring-retainer descends in advance of the upper bending-die.



1. In a machine for bending or curving sewing-awls, &c., the combination, with the rotary table and its series of spring jaws or grippers, of the notched guide E, substantially as and for the purpose set forth.

2. In combination with the table and its series of spring jaws or grippers, the dies *d d'*, substantially as and for the purpose set forth.

3. The spring-retainer *n*, in combination with the dies *d d'*, substantially as and for the purpose set forth.

4. In combination with the movable die or head *b* and the series of spring jaws or grippers, the tripping-dog *e* and releasing-dog G, or either one of them, substantially as and for the purpose set forth.

5. In a machine for bending or curving sewing-awls, &c., the combination of the following elements: A rotary table provided with a series of spring jaws or grippers for holding the awls, mechanism for guiding the shanks of the awls into the jaws, mechanism for adjusting or inserting endwisely in the projecting parts of the awls, mechanism for holding the awls while being curved, mechanism or dies for imparting the desired curvature to the awls, and mechanism for discharging the awls when curved or finished, the whole being arranged substantially as shown and described.

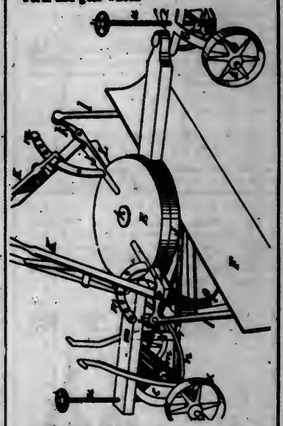
160,535. TACKLE-BLOCKS. Gratin Martin, Lynn, assignor of one-half his right to R. McIntyre, Everett, Mass. [Filed Dec. 4, 1874.]



In a tackle-block, the concave rollers *d d'* and convex rollers *c c*, combined and arranged to operate substantially as and for the purpose specified.

160,536. ROAD-SCRAPERS. Abijah McCall, Saratoga, and Jas. T. Watkins and Jasper S. Scott, Santa Clara, Cal. [Filed Dec. 17, 1874.]

Brief.—A wheeled scraper having a turn-table and various lever adjustments, to enable the scraper to be adapted to any angle of roadway. The axles are bent in opposite directions, to adjust the vehicle to inclinations of ground, the axle-shaft being operated by a worm and gear-wheel.



1. The turn-table E, with its arms I, in combination with the crank-levers K, connecting-rods l, racks m, and scraper F, substantially as and for the purposes above described.

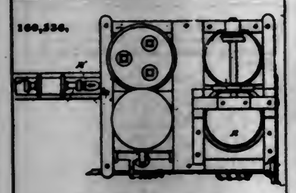
2. The scraper F, with its perforated semi-circular plate O and connecting-bar P, in combination with the rod *n*, braces *n*, and V-shaped push-bars *q q*, constructed and applied substantially as and for the purpose above described.

3. The axles A B, having oppositely-bent journals and pinions *t*, in combination with the upright shafts *u*, with screws *s'* and V, substantially as and for the purpose described.

160,537. MACHINES FOR PATCHING RAILWAY-RAILS. John R. Moore and James G. Mills, Chicago, Ill. [Filed Dec. 23, 1874.]

Brief.—Two disks fastened on the end of a shaft carry between them a series of rollers, that operate to hammer the top of the rail as it passes between the first pair of rolls. A horizontal steam-hammer situated upon a movable carriage, held up to the machine by a weight, is arranged to strike the end of the rail as it comes from the second pair of rolls, to upset the heated portion. A vertical plate capable of a limited movement is situated on the carriage in front of the hammer, and it is against this plate that the rail strikes and pushes the carriage back, while, at the same time, the hammer delivers its blows against the plate, from whence they are transmitted to the rail.

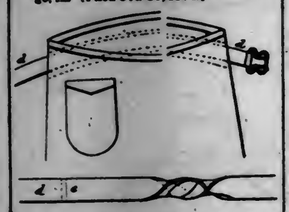
160,526.



1. The combination of the rolls and the rotary hammer, arranged substantially as shown and described with relation to each other, for the purpose of thereby causing the top of the rail or the patch thereon to be struck by the passage of the hammer between the rolls at their point of bite on the rail.

2. The combination of the sliding or yielding carriage N', carrying a steam-hammer, the slide R', mounted on the same carriage, and arranged to be struck by the said hammer and by the end of the rail, and the rolls for forming and compressing the rails and conducting them to the slide R' all operating together substantially as specified, and for the purposes set forth.

160,527. OVERALLS. Jonas Moore, Chicago, Ill. (Filed Oct. 20, 1874.)



The overalls, substantially as described, having straps *d*, crossed and twisted, as at *c*, and fitting the tube *e*, as specified, whereby the garment is held up without additional support or fastening, all constructed as and for the purpose set forth.

160,528. BRICKLAYERS' VESTS. Jonas Moore, Chicago, Ill. (Filed Oct. 20, 1874.)



As a new article of manufacture, the bricklayers' vest herein described, having the body A, stripe B, and collar C cut and combined to form the arm-holes and bracing-support, as specified and shown, whereby the vest is held in proper position on the person without the use of a waistband, as set forth.

160,529. DISHES OF POTTERY-WARE. Jas. Moore, Trenton, N. J. (Filed Jan. 25, 1875.)





160,530.

In a dish of pottery-ware having corrugations *a* on its outside, and a smooth interior surface, B, the outwardly-projecting rim *b*, corrugated on its under side and smooth on its upper surface, with or without scallops *b'* on its outer edge, substantially as shown and described.

160,531. ATTACHMENTS FOR SINKS. John Murdock, Carver, Mass., assignor of one-half his right to Zibar Nickerson, same place. (Filed Oct. 26, 1874.)

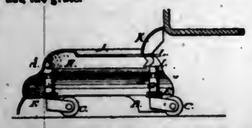
Brief.—An attachment for sinks, consisting of a foraminous table for supporting dishes, &c., which may be turned upward or backward when not in use.



The table B, provided with the legs F and pintles *a a*, in combination with the sink A, provided with the rim D, and the socket-piece C, having the slots *b b* and hooks *c c*, substantially as and for the purpose set forth.

160,532. FIRE-PLACE FENDERS. Jas. Old, Pittsburg, Pa. (Filed May 2, 1873.)

Brief.—The casters are held in place by a rubber band or other spring embracing the shaft between the upper and lower legs. A removable guard extends between the feeder and the grate.

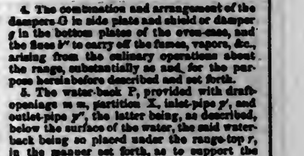


1. In a fire-place fender the casters C, arranged in rear of and concealed by the feet B, in combination with the legs I and ledges or bearings E, substantially as and for the purpose hereinbefore described and set forth.

2. The washers O, in combination with the casters C and ledges or bearings E, substantially as and for the purpose hereinbefore described and set forth.

3. The guard K, in combination with the fender-apron J and grate M, substantially as and for the purpose hereinbefore described and set forth.

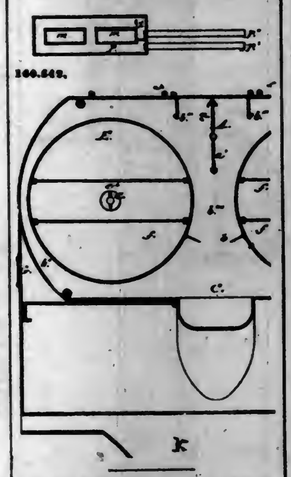
160,533.



4. The combination and arrangement of the damper G in side plate and shield or damper *g* in the bottom plates of the oven-case, and the flues *b''* to carry off the fumes, vapors, &c., arising from the culinary operations about the range, substantially as and for the purpose herein before described and set forth.

5. The water-back F, provided with draft-openings *n n*, partition X, inlet-pipe *p'*, and outlet-pipe *p''*, the latter being, as described, below the surface of the water, the said water-back being so placed under the range-top *r*, in the manner set forth, as to support the same, substantially as and for the purpose hereinbefore described and set forth.

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160,535. SCREW-DRIVERS. Wm. F. Patterson, Boston, Mass. (Filed Dec. 15, 1874.)

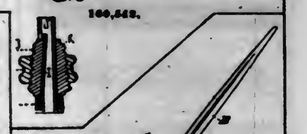
Brief.—A supplemental adjustable or reversible blade is attached to the main or fixed blade of a screw-driver by means of a detachable clamp provided with sectional screws and spring, and a clamping-nut. The rear end of the supplemental blade is secured in an adjustable step upon the main blade by a thumb-screw.

The screw-driver herein described, consisting of the blade B, adjustable step G, provided with screw H and shoulder *s*, reversible blade F, detachable clamp C, provided with the sectional screws D K and spring I, and the clamp-nut E, when constructed and arranged to operate substantially as and for the purpose specified.

160,536.



160,537.



160,538. COOKING-RANGES. Jas. Old, Pittsburg, Pa. (Filed Sept. 10, 1874.)

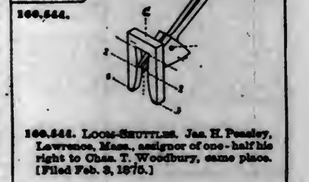
Brief.—The damper placed between the rotating ovens may be brought into contact with the surface of either, for the purpose of removing the soot. The water-back has draft-openings through it, and serves as a support for the top plates.

1. The damper A, having wings *a a'*, in combination with the direct flue *b'''*, flues *b'*, and circular ovens E, substantially as and for the purposes hereinbefore described and set forth.

2. The circular ovens E, arranged to revolve on their axes, in combination with the damper A, substantially as and for the purpose hereinbefore described and set forth.

3. The ash-pit K, in combination with the direct flues L and C, and in the rear of the fire-chamber, to receive the ashes, dust, soot, &c., carried by the draft through the flue L and openings *n n* in the water-back, substantially as and for the purpose hereinbefore described and set forth.

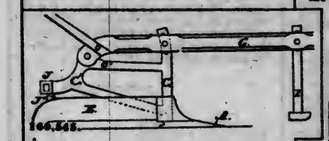
160,539.



160,540. LOCK-SHUTTLES. Jas. H. Pressley, Lawrence, Mass., assignor of one-half his right to Chas. T. Woodbury, same place. (Filed Feb. 3, 1875.)

In a loom-shuttle, the spindle B, constructed substantially as described, in combination with the slotted bar C, having the narrow opening on the line 2 2 and wide opening on the line 3 3, arranged to operate substantially as and for the purpose specified.

160,541.



160,542. WEED-CUTTERS AND HILLERS. Jos. Robson, Osceola, Wis. (Filed May 7, 1874.)

Brief.—The standard has arms extending backward and hinged to the rear end of beam. This gives vertical adjustment to the point, and holds the bars which govern the expansion of the cutting and hilling wings.

1. The adjustable standard C, with rearwardly-projecting arms *O' O'*, which are hinged to the rear end of the beam G, and have a socket to receive the adjusters J, in combination with the triangular weed-cutter A and horizontal knives H, substantially as and for the purposes described.

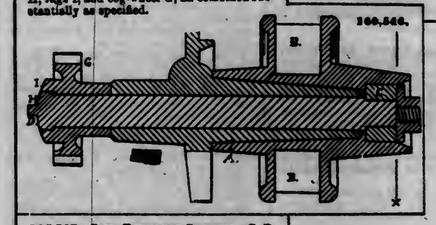
2. The combination of the standard C, having arms C', weed-cutter A, knives H, having adjusters J, and mold-board E, substantially as described and shown, and for the purposes set forth.

160,543. WHEELS FOR HARVESTERS. G. D. Rowell, Appleton, Wis., assignor to Rowell & Morris, same place. (Filed Jan. 16, 1875.)

1. Thimble-skein A, hub B, collar C, stem D, and nut E, all in combination, substantially as described.

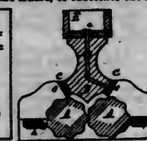
2. Thimble-skein A, stem D, with its head H, lugs I, and cog-wheel G, all combined substantially as specified.

160,544.



160,545. BUTTER-WORKERS. Daul. Hague, Belvidere, Ill. (Filed June 6, 1874.)

Brief.—A machine in which the butter is fed upon and between two corrugated rollers, to each of which a spring-scraper is held. Water descends through minute channels in the frame, to lubricate the roller-surfaces.



160,546.

160,547. SLIP-TEETH FOR SEEDERS. G. D. Rowell, Appleton, Wis., assignor to Rowell & Morris, same place. (Filed Jan. 16, 1875.)

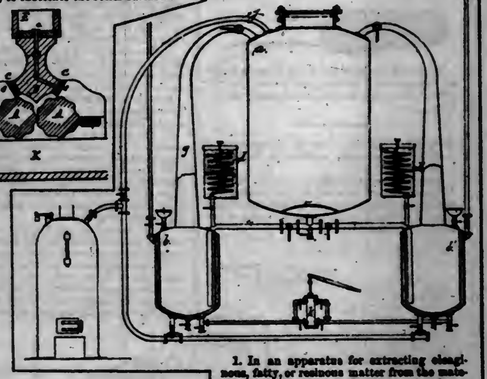
Brief.—The tooth is pivoted to the cultivator-beam, and has a brace projecting backward and upward between the forked rear ends of the beam. This brace has a projection which fits into a notched cam, for graduating the pitch of the tooth, and also to release the brace by the turning of the cam when the tooth strikes an obstruction.



1. The combination of slip-tooth B, having brace C, with notched cam D, substantially as set forth.

2. The beam A, tooth B, having brace C, and cam D, having indicator-figure E, all in combination substantially as set forth.

160,548.



1. The fluid-receptacle E, fluid-passages *c d*, and outlets *e*, in combination with the corrugated rollers A, as and for the purposes described.

2. The butter-worker herein described, composed of the fluid-passages *c d*, in uprights D, corrugated rollers A, self-acting cleaners H, and receptacle K, the parts arranged with relation to each other, substantially as and for the purpose described.

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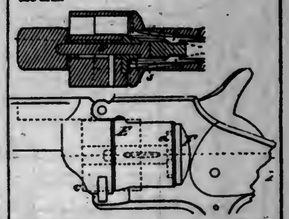
1. In an apparatus for extracting oleaginous, fatty, or resinous matter from the materials named in the specification, a closed vessel, *a*, for holding such materials, communicating with other vessels, *b b'*, in which the spirit-vapors are condensed, the vapors passing into the top of *a*, and down through the material therein, and out of the bottom of the vessel to the condenser, substantially as shown and described.

2. The combination, with the closed vessel *a*, of the vessels *b* and *b'* and their connecting-pipes *n p*, and a pump for increasing the circulation, substantially as described.

3. The combination, with the vessel *a*, of the vessels *b b'*, pipes *n p*, boiler *c*, pipe *f*, cisterns *f'*, and pipe *i*, as and for the purposes described.

160,551. REVOLVING FIRE-ARMS. Dexter Smith, Springfield, Mass. (Filed Jan. 21, 1875.)

Brief.—The object is to extract all the shells from the cylinder at the same time, which is accomplished by means of an ordinary extractor-plate, provided with a projection having a peripheral shoulder, in which clutches operating in the rear of the recoil-shield engage, to hold the extractor-plate stationary while the cylinder is moved forward. The clutches are so arranged that when the arm is half-cocked they are disengaged from the shoulders of the projection, thus entirely detaching the cylinder from the lock-frame of the arm.



1. The extractor-plate O', having the hollow stem C, arranged to move upon the center-pin O, and within the cylinder E, and provided with the peripheral shoulder *i*, in combination with one or more catches, *f*, arranged within the recoil-plate and frame, and operated by the movements of the hammer, substantially as described.

2. The extractor-plate O', having the hollow stem C, arranged to move upon the center-pin O, and within the cylinder E, and provided with the peripheral shoulder *i*, in combination with one or more catches, *f*, to hold the extractor stationary while the shells are being withdrawn, substantially as before set forth.

160,552. VEHICLE TORSIONAL SPRINGS. C. W. Saladee, Pittsburg, Pa. (Filed Oct. 16, 1874.)

Torsional springs, combined in pairs, one rod of each pair above the other, substantially as and for the purpose set forth.

160,553. APPARATUS FOR EXTRACTING THE OLEAGINOUS MATTER FROM TEXTILE MATERIAL. Reginald Scaife, London, Great Britain. (Filed Nov. 10, 1874.)

Brief.—The textile material contained in the vessel is subjected to the hydrocarbon vapor from the vessel through the pipe. The oleaginous matter collected in the bottom of the vessel *a* is then drawn off through pipe *b'* into the condenser *b'*. When in this vessel it is then vaporized, and allowed to pass up through pipe *n*; thence through the material in the vessel *a*, and then again the oleaginous matter is drawn off through pipe *h* into the condenser *b*, where it is again vaporized, as before. The material is afterward treated with steam, in order to drive off the traces of the naphtha vapor.

160,552. TOOTH-BRUSHES. Saml. Stevens, New York, N. Y. [Filed June 18, 1874.]

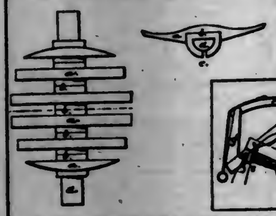
Brief.—The brush part is made of the vegetable fiber of palm-trees, and is woven into a sort of edging, and applied to the device by winding.



The brush made of the palm fiber, in loops extending from a heading, and wound around and attached to a handle, substantially as set forth.

160,553. GRATES. John H. Swartout and Albert L. Wheden, Geddes, N. Y. [Filed Oct. 20, 1874.]

Brief.—The grate-bars inclose the bearing-bar, and protect it from injury through excessive heating. The area of the fire-surface may be adapted to stoves or furnaces of different sizes and forms.

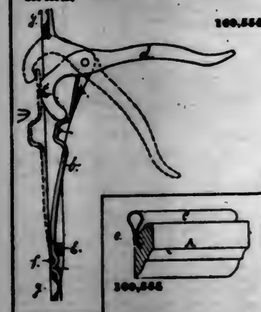


1. The series of grate-bars a of irregular lengths, in combination with the semicircular supporting-bar d, constructed and arranged as and for the purposes specified.
2. The air-space c, below the openings d in the grate-bars a, for the purpose set forth.

160,554. SASH-HOLDERS. John Sweet, Providence, R. I., assignor of one-half his right to John A. Tillinghast, same place. [Filed Dec. 12, 1874.]

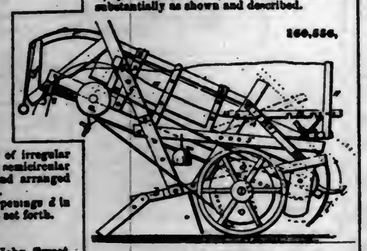
Brief.—A peculiar method of attaching and securing the spring (new in this class of device) constituting the essential novelty.

The frame A, cast with the cross-piece c and the bolsters E and f, and carrying the cam-lever d e, acted upon directly by the spring h, the latter cast around the bolsters, and secured below them by the lower screw g, passing through a hole in the spring, all substantially as shown and described, for the purpose set forth.



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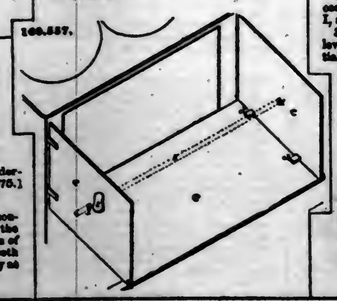
160,556. HAY-LOADERS. L. Underwood, Ottawa, Ill. [Filed Jan. 4, 1875.]

1. The rods d, projecting down through the axle, beams, and tongue, for the purpose of scattering the hay or grain, substantially as set forth.
2. The combination of the hay-rake and weighted levers, the rake being pivoted upon the rear end of the levers, substantially as shown and described.
3. The combination of the rake, weighted levers, and holding-latch, the rake being pivoted upon the end of the levers, and held in any desired position, substantially as described.
4. The combination of the rake, weighted levers, holding-latch 12, lever 11, and cords 13 and 15, substantially as specified.
5. The pulleys o, having the projections or catches o^2, arranged alternately in pairs and single ones, substantially as shown.
6. The combination of the revolving forks, blocks m, and washers n, the washer being countersunk into the forks to prevent hay or grain from working between them, substantially as shown and described.
7. The hinged spring-slat 2, arranged at the head of the bed to prevent the downward passage of hay or grain, substantially as specified.
8. The combination of the slats 3 4, substantially as shown and described.
9. The combination of the adjustable rods e^1, screw d^1, connecting-rods g^1, and bars e^1, substantially as shown and described.

160,557. COOKING-STOVES. JaRw S. Van Buren, Troy, N. Y. [Filed Apr. 29, 1874.]

Brief.—The double doors of the stove are opened and held at right angles to its face by a bottom plate provided with hooks for the purpose. The doors and the plate form three sides of the reservoir-casing or oven.

1. The combination of the doors, a cover, and a bottom plate, substantially as described.
2. The doors c or end plates, pivoted or hung upon a stove or range, in combination with a reservoir, A, provided with lips j, whereby the reservoir is supported upon the side of the stove or range, substantially as shown.
3. The combination of the doors c, provided with supports d, with the plate e, having braces or cushions for holding the doors in position, substantially as shown.
4. A water-reservoir, A, having the flange i upon each end, in combination with suitable supports, whereby it is supported in position, and can be adjusted back and forth in relation to the side of the stove, substantially as specified.



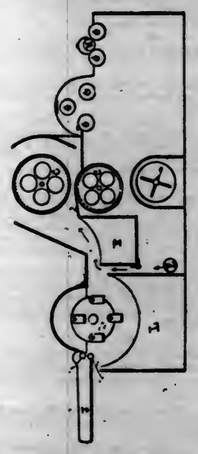
160,557.

160,558. WEATHER-STRIPS. R. O. Underwood, Boston, Mass. [Filed Jan. 22, 1875.]

The weather-strips described, the same consisting of the molding A, provided with the recess B, and the vibrating doubled strips of rubber C attached thereto by placing both edges together in the offset e, substantially as and for the purpose specified.

160,559. COTTON OPENERS AND LAPPERS. Wm. R. Whitehead, Miles Platting, England, and Abel T. Atherton, Lowell, Mass. [Filed Apr. 13, 1874.]

Brief.—The air-port is isolated from the dust-chambers, so that none of the waste beaten from the cotton shall be blown back thereto. The beater-shaft is supported at each end in a bushing which is ball-shaped, so that its bore may align itself with the shaft should the machine or the floor settle, and is adjustable endwise to take up wear.

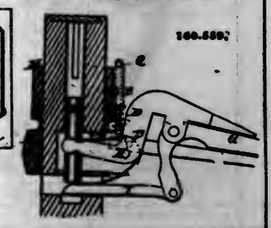


1. The combination of a beater and the two separate dust-chambers L and F with the air-opening E, isolated from both chambers, as and for the purpose set forth.
2. The combination, with the shaft N and adjustable-bushing O, of the stand M and plate S, the upper surface of the former and lower surface of the latter being made plain, to allow endwise adjustment of the bushing, as and for the purpose set forth.

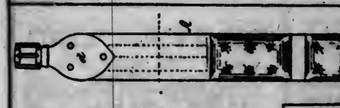
160,560. SCREW-TAPS. Thomas S. Wild, Chicago, Ill. [Filed Dec. 22, 1874.]

Brief.—A body slotted transversely and longitudinally, the latter to admit the dies and their wedge-shaped holder, said holder being moved to expand the dies by means of the lever, and held in place by the sliding piece. A gage is acted upon by the nut being tapped, and, through the medium of two levers and a slide, releases the tap when the cut is finished.

1. The combination of the tap-stock A provided with a transverse recess or opening to receive the sliding piece I, the die-holder B, and the sliding piece I, substantially as and for the purpose specified.
2. The combination of the die-holder B, the compound levers D and G, and sliding piece I, substantially as described.
3. The combination of the sliding rod Q, the levers O and G, and sliding piece I, substantially as and for the purpose specified.



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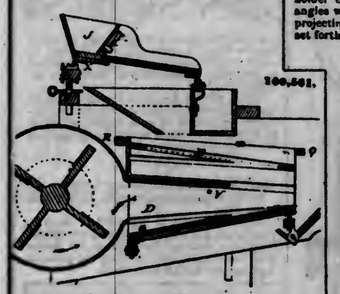
160,560.

160,560. SURCINGLES. Henry M. Witter, Worcester, Mass. [Filed Feb. 9, 1875.]

1. A surcingle composed of a tubular fabric, having intermediate pocket-spaces, forming a part thereof, substantially as described.
2. A surcingle having intermediate stuffed pockets, forming integral parts thereof, and practically solid ends, substantially as described.
3. A surcingle having intermediate stuffed and tufted pockets, forming integral parts thereof, practically solid ends, and leathers a d, substantially as described.

160,561. GRAIN-SEPARATORS. Orville K. Wood, West Chazy, N. Y. [Filed Sept. 1, 1873.]

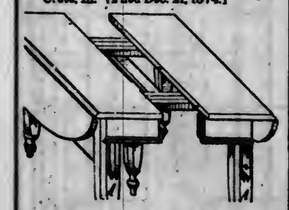
Brief.—A fanning-mill provided with vibrating feeder having device to give it smooth or tremulous motion at will, and the shoe supported upon rod passing through and between guide-bars to steady its movements.



160,561.

1. The combined smooth and cog rollers, having two grooves, in combination with the fluted iron X under the feeder J, for the purpose of giving either a smooth or tremulous motion to the rear end of the feeder without the necessity of changing the rollers, the parts being constructed and arranged substantially as described.
2. The rod V and the guides Q R, used to guide and direct the movement of the shoe D, made and constructed substantially as described, and used for the purpose set forth.

160,562. EXTENSION-TABLES. Geo. Ahrens, Crete, Ill. [Filed Dec. 21, 1874.]



The legs A of an extension-table provided with slots a to receive the movable leaves, substantially as set forth.

160,563. PNEUMO-SEMARS. C. H. Billings, La Grange, Ind. [Filed Jan. 28, 1875.]

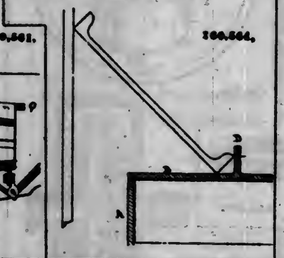
Brief.—A toggle-joint is pivoted by one end to the shank of the movable blade of a pair of shears, and by the other to the shank of the fixed jaw. This joint is operated by means of a lever which has its fulcrum upon the fixed jaw of the shears, and is connected to said joint by a pivoted link.

160,564.

In a pruning implement, the combination, with the movable jaw C and the fixed jaw A, of the toggle-jointed links D D', connecting-rod E, and vibrating actuating-lever F, pivoted to the shank of the fixed jaw A, substantially as specified.

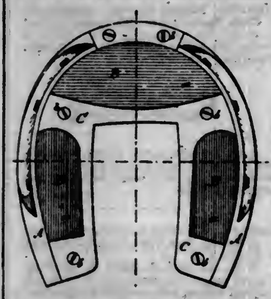
160,564. PICTURE-HOLDERS. Josephine Bancroft, Boston, Mass. [Filed Apr. 20, 1874.]

As an article of manufacture, a picture-holder composed of the arms A B, at right angles with each other, the rest D, and the projecting piece G, all as and for the purpose set forth.



160,565. HORSESHOES. Thomas B. Bishop, Washington, D. C. [Filed Aug. 4, 1874.]

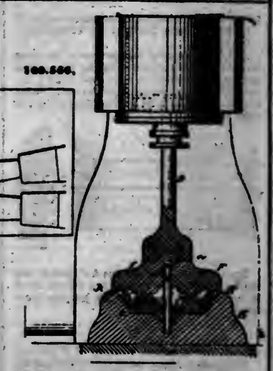
Brief.—The inner plate secures the rubber cushion in place, allowing projecting portions on the latter to serve as toe and heel calks.



At a new article of manufacture, the combination of the shoe A with the rubber B and inner plate C, together with the projecting cushions c, rounded at the front edges c, all constructed and arranged as described, and for the purposes set forth.

160,566. MACHINES FOR SWAGING CARWHEELS. Albert L. Blackmon, Nashville, Tenn. [Filed Feb. 20, 1875.]

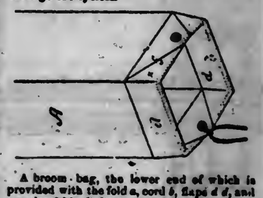
A combination of mandrel i, its eye hole g, and conical-shaped ends with the hole f in die-plate F, the dies F and E, escape-hole d, and the anvil E, when constructed in the manner and for the purposes set forth and described.



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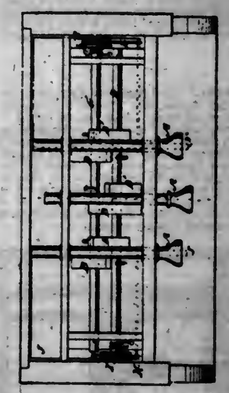
160,567. BROOM-BAGS. Edwd. D. Brunson, Amsterdam, N. Y. [Filed Nov. 14, 1874.]

Brief.—The lower end of the paper tube is turned down to form a binding with a string inside, and two opposite (upper and lower) flaps are each folded in V shape, and held by eyelets. The sides are each turned in halfway across the end of the tube, outside of which the V shaped flaps are held by a string through the eyelets.



A broom-bag, the lower end of which is provided with the fold a, cord b, flaps d d, and angular folds d^2 d^2, the latter being provided with eyelets i for the reception of strings h, substantially as described, and for the purpose set forth.

160,568. ORGAN-STOP ACTIONS. Frederick M. Brush, Potsdam, N. Y. [Filed June 27, 1874.]



The draw-stops A, having legs B B', and the rock-shafts C D, provided with the pulleys M I, springs K O, and cords H L, in combination with on and off treadles, all the said parts being constructed to operate substantially as and for the purpose set forth.

160,569. PROJECTILES FOR ORDNANCE. J. G. Butler, New York, N. Y. [Filed Nov. 23, 1874.]

Brief.—The area of that portion of the sabot which comes in contact with the bore of the cannon is reduced by means of cutting annular grooves in the outer surface of the same, requiring less force to impress the rifling and close windage.



The combination of the ribs *d*, *d'*, and *d''* and the annular groove *e* with the cup-shaped sabot B, substantially as and for the purpose hereinbefore set forth.

160,570. FRICTION-PULLEYS. T. F. Carver, Worcester, Mass., assignor of one-half his right to Jas. H. Gray, same place. [Filed Feb. 3, 1875.]

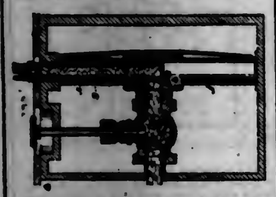
Brief.—The sliding of the collar causes the rotation of the cylindrical grooved nut, and the latter, acting on the threaded end of the longitudinal rod, slides the latter in or out, so as to cause the friction-ring with which it is connected to bear against one or the other of the loose pulleys.



The combination of the cylindrical nut B, having spiral grooves I and exterior and interior threaded portions, the collar K, having internal spiral lugs J, the recessed shaft H, having the slots *h*, and the rod E, having the threaded outer end *e*, the inner end of said rod being connected by the pin O, or its equivalent, with a sliding friction or other locking device rotating with the shaft H, and adapted to be locked with a loose pulley or pulleys on said shaft, substantially as specified.

160,571. NOZZLE-PRESERVER HYDRANTS FOR FIRE-PLUGS, &c. Huston I. Chapman, Portland, Oreg. [Filed Feb. 23, 1875.]

Brief.—Within a cylinder communicating with the water-main is fitted another cylinder having an opening through its side near the bottom, through which the water is discharged when the hydrant is in use. The interior cylinder, when the hydrant is not in use, is lowered in the outer cylinder, out of the reach of frost. The whole is inclosed in a box filled with dry sawdust.



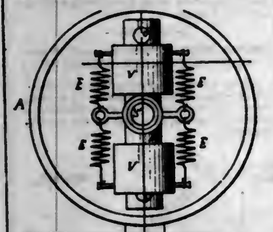
(In combination with the pipe L, the cylinder A A' and the sliding cylinder C B, substantially as and for the purposes described.

160,572. STEAM-GOVERNORS. Daniel L. F. Chase, Somerville, Mass. [Filed Dec. 1, 1874.]

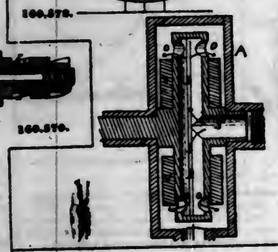
1. The combination, in a steam-governor, of a stationary steam-chamber, having induction and eduction ports, with a rotary steam conductor or conductors, disposed within said chamber, and provided with steam ports and valves, arranged to close such ports by direct centrifugal action, substantially as set forth.

2. In a governor for steam engines, &c., the combination of the case A A', provided with induction and eduction ports D C, the driving shaft B B', provided with hollow arms B E, having ports O O, the centrifugal valves V V, and springs E E, substantially as shown and described.

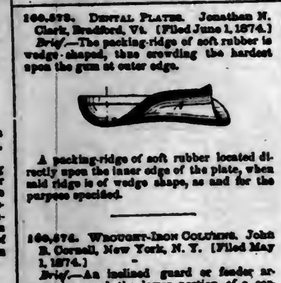
3. The combination of the centrifugal valves V V, with the hollow arms or conductors B B, provided with steam-ports O O, and the casing A A', substantially as shown and described.



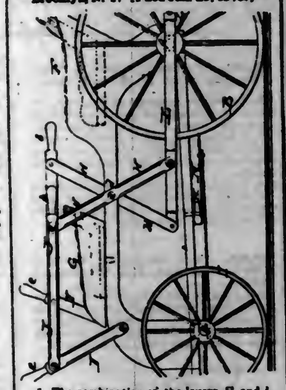
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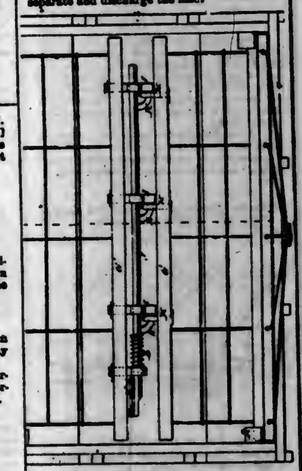


1. The combination of the levers H and I, handles *b* and *c*, and rod J, with the rod L, crank-wheel B, and the two seats F and G of a velocipede, substantially as shown and described.

2. The pivoted T-shaped front axle E, combined with the T-shaped steering and foot lever M, and joined to each foot-lever behind its pivot, substantially as and for the purpose shown and described.

160,576. GRAIN AND STRAW LIFTERS. D. Crane, Knight's Landing, Cal. [Filed Dec. 28, 1874.]

Brief.—The cord P, connected to the tripping-rod, is given a jerk, which moves the rod length-wise sufficient to withdraw the hooks from the staples, thus allowing the parts to separate and discharge the load.



The combination, in a grain and straw lifter, with bars G G', having staples H I, of the spring-rod J, having hooks K, as and for the purpose specified.

160,577. LAMP-BURNERS. James Curtis, Darien, Conn. [Filed Jan. 26, 1875.]

Brief.—The spring-valve is opened by the mouth of the oil-can, and closes automatically on the withdrawal of the same.

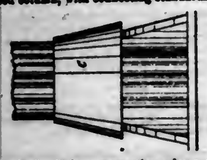
160,578. PACKING. Daniel L. F. Chase, Somerville, Mass. [Filed Dec. 1, 1874.]

Brief.—The packing-ridge of soft rubber is wedge-shaped, thus crowding the hardest upon the gum at outer edge.

A packing-ridge of soft rubber located directly upon the inner edge of the plate, when said ridge is of wedge shape, as and for the purpose specified.

160,579. WROUGHT-IRON COLUMNS. John B. Cornell, New York, N. Y. [Filed May 1, 1874.]

Brief.—An inclined guard or fender arranged around the lower portion of a corrugated column, with connecting-standards.



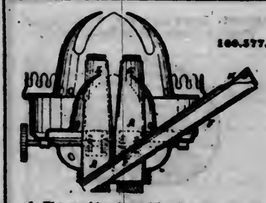
The fender C, for a supporting-column connected to the foundation-plate, to form a lateral support to the column, substantially as specified.

160,580. DENTAL PLATES. Jonathan M. Clark, Bradford, Va. [Filed June 1, 1874.]

Brief.—The packing-ridge of soft rubber is wedge-shaped, thus crowding the hardest upon the gum at outer edge.

A packing-ridge of soft rubber located directly upon the inner edge of the plate, when said ridge is of wedge shape, as and for the purpose specified.

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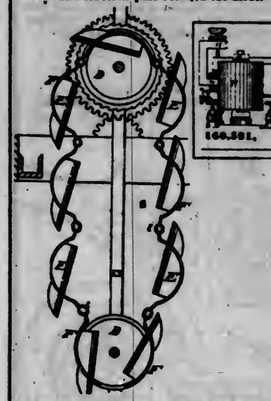


1. The combination, with a lamp-burner, of a feed-tube, F, having spring-valve H, arranged as and for the purpose described.

2. The combination of radial slotted tubes A, twisted into alignment at the lower end, with a single ratchet-bar or wick-raiser, as and for the purpose specified.

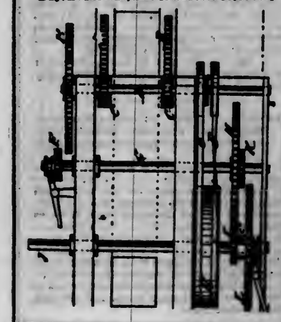
160,578. WATER-ELEVATORS OR CHAIN-PUMPS. Orson A. Davis, Washington, Cal. [Filed Jan. 23, 1875.]

Brief.—The pulleys consist of two disks, in combination with a series of connected buckets, which are provided with a curved plate or guard, which projects upon each side, so as to provide bearings upon the disks, and allow the buckets to pass between the disks.



The pulleys D D, each of which consists of two disks, *d d*, in combination with the series of connected buckets E E, when each of said buckets is provided with a curved plate or guard, F, which project upon each side so as to provide bearings upon the disks, and allow the buckets to pass between the disks, substantially as and for the purpose described.

160,579. HAY AND COTTON PRESSES. B. J. Day, Evansville, Ind. [Filed Jan. 18, 1875.]



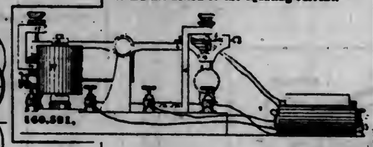
The combination, in drive mechanism for press followers, of pinion K and gear-wheel L, arranged upon the counter-shaft G and the driving-shaft J, respectively, with the pinion I, gear-wheel H, slide-pinion F, spur-wheel E, and the press-follower, pinion I and gear-wheel L being secured to a sliding sleeve, *e*, all as shown, and for the purpose specified.

160,580. SOLUTIONS FOR CHEMICAL TELEGRAPH-PAPER. Thos. A. Edison, Newark, N. J., assignor to himself and George Harrington, Washington, D. C. [Filed June 1, 1874.]

The solution for chemical telegraph-paper prepared with ferrocholoride of sodium, substantially as set forth.

160,581. DUPLEX-TELEGRAPH APPARATUS. Moses G. Farmer, Salem, Mass. [Filed Sept. 20, 1872.]

Brief.—Claims that when the circuit of a duplex apparatus is closed the static charge in the line causes the coil in main circuit to momentarily affect the armature before the equating-coil sets thereon. Prevents this by introducing momentarily an inducted current into the main line, to hinder the action of such charge, or else into the equating-circuit, to aid the action of the equating-current.



160,581.

1. The combination of a main telegraphic circuit and its batteries with an induction-coil so arranged as to hinder the effects of static charge, substantially as set forth.

2. The combination of an induction-coil with an equating-circuit to help the equating-circuit to neutralize the effect of static charge on the relay in the main circuit, substantially as set forth.

3. The combination of a continuity-preserving key and an induction-coil with an equating-coil and an independent equating-battery, substantially as set forth.

4. The combination, in the main or equating circuit of an induction coil or coils, in such parts of the main or equating circuits as are open when the main and equating batteries are disconnected, substantially as set forth.

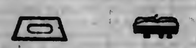
5. The combination of the circuit-preserving key above alluded to with a relay or its equivalent, and with one or more induction-coils, substantially as set forth.

6. The combination of the continuity-preserving key with a relay, an inductive coil or coils, and with a means of regulating both the strength of the inductive stroke or strokes and the strength of the equating-current, substantially as set forth.

7. The combination of primary and secondary helices with the means above described of preventing the appearance of a spark upon rupturing the primary circuit, substantially as above described.

160,582. PLATES FOR ARTIFICIAL TEETH. Benton J. Field, Loakeville, N. C. [Filed Feb. 9, 1875.]

Brief.—A nut with an oblong rectangular slot is secured in the plate, and forms an integral part of it. The flattened end of the tooth-pin is passed through this slot, and firmly secured therein by giving it a partial turn.



The combination of the nut with that part of the plate which may be made of some other material, the nut being embedded in or surrounded by said material, and making a part of the plate, and used in combination with a flattened pin in the tooth, which is keyed by being turned in the recess of the plate, substantially as described.

160,583. MANUFACTURE OF SHOES. Wm. Froehlich, New York, N. Y. [Filed Dec. 9, 1874.]

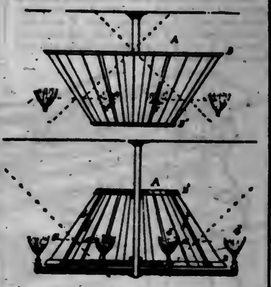


1. In the art of manufacturing shoes having wooden heels, the application of the wooden heel to the sole previous to the application of the leather covering *d* to the heel, to allow said covering to lap around the sole, substantially as specified.

2. A shoe, made with a wooden heel, B, whose leather covering *d* laps around the branch *a* of the sole, substantially as and for the purpose specified.

160,584. REFLECTORS. Bernard Goetz, Philadelphia, Pa., assignor of one-half his right to Frederick Klemm, same place. [Filed Feb. 11, 1875.]

Brief.—For a reflector a polygon having inclined re-entering angles upon both sides, arranged to throw light both upward and downward.



1. The combination, in the reflector A, of the exterior and interior reflecting-surfaces *b* and *b'*, arranged to throw the rays of light both upward and downward, substantially as herein shown and described.

2. In combination with an inclined many-sided reflector and its surrounding gas flames or radiants, the exterior reflecting-surface *b'*, whereby the rays of light are thrown upward to illuminate a ceiling or other overhead surface, substantially as herein shown and described.

160,585. REVERSIBLE PINIONS FOR WATCHES. John Gordon, San Francisco, Cal. [Filed Dec. 3, 1874.]

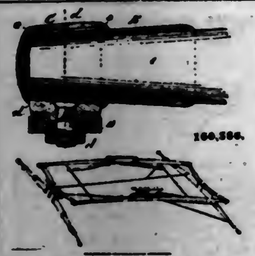


The staff A, with its center-wheel B and loose pinion D, in combination with the cap or disk *f*, with its corrugations or indentations *i* arranged to receive the ends of the teeth of the pinions, and the compressing-spring n and nut *o*, all combined and arranged to operate substantially as and for the purpose above described.

160,586. SPRING AND SIDE-BAR CONNECTIONS FOR VEHICLES. John W. Gosting, Cincinnati, Ohio. [Filed Oct. 14, 1874.]

Brief.—The side bars and end spring are coupled, so as to avoid the torsion of the spring.

The combination of spring B, side box A, and sleeve E, having ears *e e*, with elastic packing *d''* and divided socket C, attached by independent screws, all substantially as and for the purpose set forth.

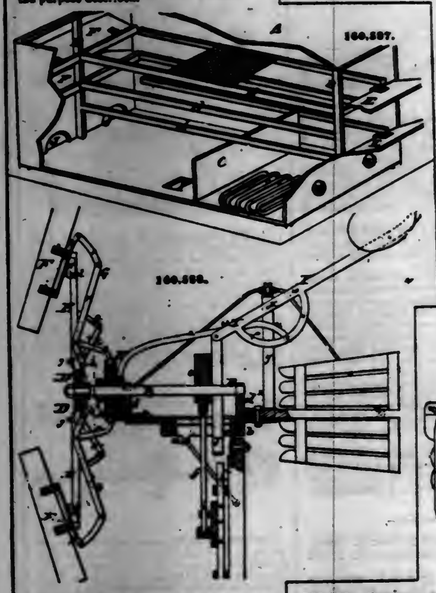


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160,587. FRUIT-DRIERS. Levi A. Gould, Santa Clara, Cal. [Filed Nov. 27, 1874.]

Brief.—By means of the partition the heated air is first forced upwardly through the contents of the drier. The opening at the bottom is designed to carry off the air which is most moistened. That which is less heavily charged with moisture is discharged through the lower openings in the rear wall. A stove, instead of the steam or hot-air coil, may be used.

The drying room or box A with its tracks d d arranged above one another, and provided with the partition or bridge-wall C and discharge-openings I and J, and the opposite doors E E and F F, substantially as and for the purpose described.



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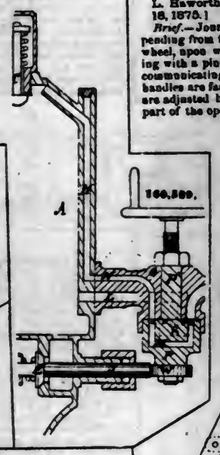
160,588.

2. The combination of the pivoted wings F of a wind-wheel, jointed levers G G, and disk D, with the links e, and with the rotary slide H, the links e terminating in balls that are confined in sockets formed by the two plates that compose the slide H, substantially as herein shown and described.

160,589. FAUCETS FOR DRAWING OFF EFFERVESCENT LIQUIDS. Carl Greiner, New York, N. Y. [Filed Aug. 18, 1874.]

Brief.—A two-way cock communicating with channel-ways in a chamber arranged above the fountain allows the gas to escape previous to drawing off the liquid, which prevents any sparting of the liquid.

The chamber A with a channel-way, H, valve E, and rod J, in combination with a faucet, O, provided with two channel ways, L N, and outlet K, and having a plug, P, provided with two channel-ways, S and M, and the cam-wheel W, the whole being arranged and operating together in the manner and for the purpose substantially as described.



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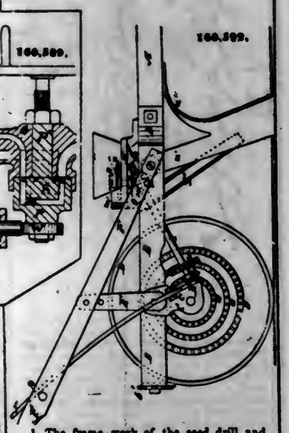
160,591. BAG-FASTENERS. C. W. Harvey, Waterloo, Iowa. [Filed Feb. 5, 1875.]



An improved bag fastener, formed by the combination, with each other, of a rubber block, A, a screw, B, and two metallic washers, C D, substantially as herein shown and described.

160,592. SEED DRILLS AND PLANTERS. L. L. Haworth, London, Ohio. [Filed Jan. 18, 1875.]

Brief.—Journaled to revolve in hangers depending from the metal frame is the bearing-wheel, upon which are sets of cogs for gearing with a pinion on the adjustable shaft, for communicating motion to the seed-dist. The handles are fastened to bars at the front, and are adjusted by a central brace. The upper part of the opening-plow is cut in stripe.



160,592.

1. The frame-work of the seed drill and planter, consisting of the adjustable handles F, the braces E, the bars B B, hangers C C, attached with braces E to bars B by a common bolt, and the adjustable bar F, attached to the two bars B B, so as to act both as a scraper and also as a brace to secure the loose ends of the said bars B B, all combined and arranged substantially as described.

2. The angular plow U, having its upper end divided into strips or braces, substantially as herein shown and described.

160,593. WHIFFLETREE. August Graf and Wilhelm Graf, Burnett Junction, Wis. [Filed Jan. 19, 1875.]

Brief.—The arms that support the wings and the jointed connecting-rods are secured to the hub by hook-bolts, which pass through the arms, and embrace a circular wire that is placed in a groove at the back of the hub-disk.

1. The hub-disk D of a wind-wheel, combined with the hook-bolts g, projecting radial arms E, circular wire h, and jointed levers G, all arranged so that the hook-bolts will rigidly secure the arms E and the wire h to the disk D, substantially as herein shown and described.

160,594. DEVICES FOR BENDING HORSE-SHOE-BARS. Robert Hale, Minneapolis, Minn., and Jas. B. Johnston, Chicago, Ill. [Filed Feb. 23, 1875.]

Brief.—A series of formers of different sizes, constituted of a solid hub and a number of dividing-plates; a rectangular projection, by which it may be clamped in a bench-vise; bridge-pieces that span the grooves at one end, under which to insert the end of the blank; and, in addition, a bar with a socket in one end, by which the blank may be handled and bent around the former.

The combination of the plates A, provided with the lugs B and ledge c, with the lever L, substantially as and for the purpose set forth.

160,595. POTATO-DIGGING MACHINES. Thomas Head, Copestown, Beverly Township, Wentworth County, Canada. [Filed Dec. 15, 1874.]

Brief.—A turn-plow is provided with an elevated cutter and spoon on the extreme end of the share, the space for the mold-board being occupied with gratings, reaching backward and upward from the share, to which they are separately pivoted; the upper ends being connected by a free bar jointed to a crank, which gives the bars an oscillating motion. The digger is designed to be attached to the tail-end of a mowing-machine after the cutter-bar has been removed, and motion is given to the shaker by the same means that give motion to the cutters.

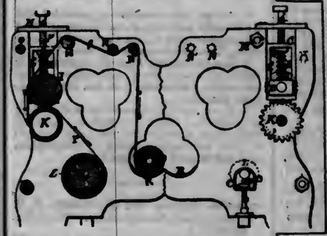


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The combination, in a potato-digging machine, substantially as described, of shaking grated mold-board B with outside cutter D, a continuation of which forms the spout C, substantially as described.

160,596. CLOTH-PRESSING MACHINES. W. Hebdon, Boston, Mass. [Filed Dec. 15, 1874.]

Brief.—The press-paper is in a continuous sheet, and is wound with the fabric onto the accumulating-roller, which is made in the form of a cylinder, adapted to be heated by steam or hot water. A yielding pressure-roll bears upon the cloth, and an adjustable brake gives the required tension.

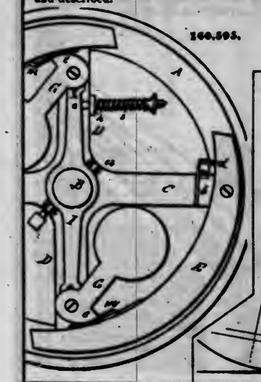


In a cloth pressing and papering machine, the combination of the accumulating-cylinder K and yielding pressure-roll I, with the basket B, and guide rods or rollers M N N', adapted to supply and guide the cloth to the accumulating-cylinder, and the roller L, having the adjustable brake or yoke e, adapted to supply paper to the accumulating-cylinder, the brake creating the necessary tension, all being arranged and operating substantially as and for the purpose set forth.

160,595. GOVERNORS FOR HORSE-POWERS. J. D. Hoebner, Norristonville, Pa. [Filed Jan. 21, 1875.]

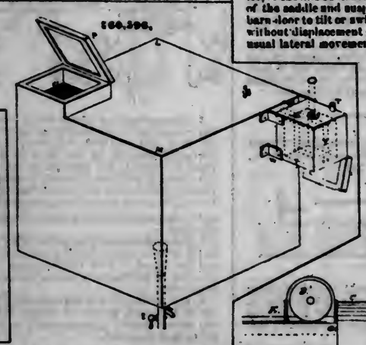
Brief.—As the speed increases the weighted arms are thrown out, causing the shoes to bear on the stationary rim, producing friction to retard the machine.

1. The stationary circle or casing A, arranged as described, in combination with the revolving shoes E E, substantially as shown and described.



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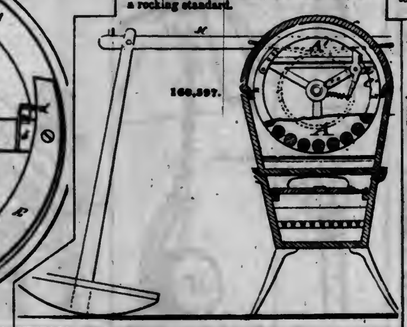
160,597. ICE-MAKING APPARATUS. Wm. Hood, San Francisco, Cal. [Filed Oct. 22, 1874.]

Brief.—To make a vacuum in the upper reservoir, fill the lower one with a non-drying oil; close cock I; pump oil into upper reservoir until it is full; shut the man-hole; open I; the oil passes into lower reservoir; shut cock L. To form ice, shut U; nearly fill W V T with cold water; fill Y with boiling water and close it; open stop-cock R. The rapid evaporization of boiling water in Y into vacuum in upper reservoir freezes water in W V T.

The combination, in an ice-making apparatus, substantially as described, of a vacuous reservoir, L M N, the receptacle Y for the water to be vaporized into the vacuum in L M N, connecting-pipe N, having stop-cock R, and the reservoir W V T, containing the water to be frozen into ice, and surrounding the receptacle Y.

160,597. WASHING-MACHINES. G. Huntington, Toronto, Canada. [Filed Jan. 4, 1875.]

Brief.—A drum for containing the clothes has a reciprocating motion by a pulley on the shaft, operated by a cord, horizontal bar, and a rocking standard.

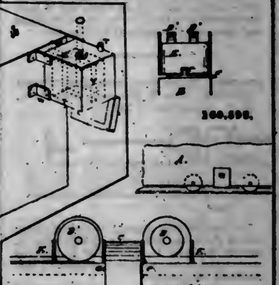


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In a washing-machine, the combination of the vibrating rocker-standard G, horizontal bar H, cords I, pulley J, and drum A, all combined and operating as shown and described.

160,598. DOOR-HANGERS. Wm. Johnston, Shelby, N. Y. [Filed Feb. 25, 1875.]

Brief.—A movable truck carries on each side rollers, which run upon a T-rail. The two parts of the truck are connected by an arched saddle or bridge. The hanger has arms for screwing it to the door, and terminates in a suspending-hook fitted to the saddle of the truck. Slots in the truck enable it to fit over and drop down upon the T-rail, and by its forward or backward movement clear away snow, ice, or the like obstructions. The peculiar form of the saddle and suspending-hook allows the barn-door to tilt or swing out from the bottom without displacement or interference with its usual lateral movement.

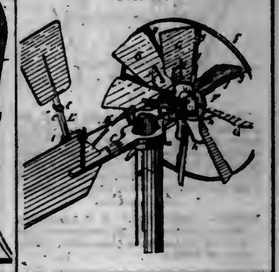


160,598.

1. The movable double case or truck E, connected by saddle or bridge c, and carrying the single rollers D, or the double rollers D', in combination with the T-rail F, when the case is slotted, to drop down upon the rail and clear the track of obstructions, all substantially as and for the purpose specified.

2. The hanger C, having hook c, in combination with, and fitted to, saddle c of the movable double case or truck E, whereby a tilting movement is secured for the bottom of the barn-door, all substantially as described and shown, for the purpose set forth.

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160,600. WIND-WHEELS. J. M. Kauffman, Goshen, Ind. [Filed Feb. 6, 1875.]

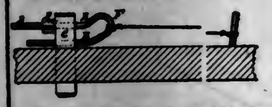
Brief.—The vanes are connected to automatic adjusting devices, which compensate the varying velocities of the wind; also, in mounting the vanes by hinging them at one edge to radial arms projecting from a central hub, and in the devices for adjusting the position of the vanes, so as to produce uniformity of speed in the wheel, whatever may be the velocity of the wind.

1. In a wind-wheel, the vanes G, hinged at their edges to the radial arms *f*, in combination with slip-joints *j*, shifting-hub h, having radial arms *h'*, and the regulator, substantially as described.

2. The combination of hinged vanes G, arms *h'*, shifting-hub h, having diagonal hole 1 in the end thereof, and disk 3, provided with inclined pin 2, substantially as and for the purpose set forth.

3. The combination of lever *k*, rod *o*, regulating wing-vane L, revolving about rod *c* as an axis when said rod vibrates, rod K, and the adjustable vanes of a wind-wheel, arranged and operating substantially as described.

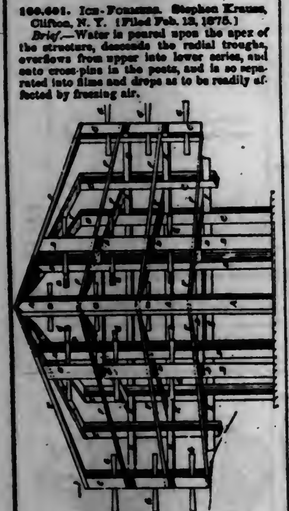
160,609. PIANO STRINGING AND TUNING DEVICES. Wm. F. Koerring, New York, N. Y. [Filed Nov. 7, 1874.]



The combination of the U-shaped adjusting device F, having the screw-threaded leg E, parallel guide-leg E, and the nut D, with the piano-string A and stationary rest-pin C, substantially as specified.

160,601. ICE-FORMERS. Stephen Krauss, Clifton, N. Y. [Filed Feb. 13, 1875.]

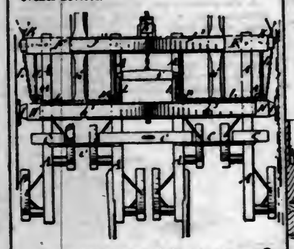
Brief.—Water is poured upon the apex of the structure, descends the radial troughs, overflows from upper into lower series, and onto cross-pins in the posts, and is so separated into films and drops as to be readily affected by freezing air.



The combination of the posts A B C, the cross-bars D E, two, three, or more tiers of spools, F, and the pins or cross-bars G with each other, in substantially the manner herein shown and described, for forming ice rapidly by silently dividing a small stream of flowing water while exposed to the air, as set forth.

160,602. CULTIVATORS. P. F. Landphere Mason, (Mervin P. O.,) Ill., assignor to himself and Dolson Jones, same place. [Filed Jan. 18, 1875.]

Brief.—The machine, as shown, is intended to cultivate both sides of two rows of plants. The frame is longitudinally sectional, and a portion may be removed, making a single-row cultivator; or, if provided with two extra wheels and spindles, two single-row cultivators are produced. Improved draft and steerer devices.



1. The combination of the two tongues C, the cross-bars F, connected by the bars *f'*, braces *f''*, and stay-bolt *f'''*, the two axles H connected together by the block *h'*, bar or plate *h''*, braces *h'''*, and stay-bolt *h''''*, the crank-axle arms J, and the wheels J, to adapt the machine for use as a three-horse two-row cultivator, or as one or two two-horse single-row cultivators, substantially as herein shown and described.

2. The combination of the pivoted draft-bars K, the rods or chains L, the guide-pulleys M, and the steerer N, with the cross-bars F and the axles H, substantially as herein shown and described.

3. The combination of the cross-bar C, having its end parts carved or arched with the two pairs of beams A, substantially as herein shown and described.

160,603. UMBRELLA-HANDLES. Ephraim Layman, Brooklyn, E. D., N. Y., assignor to Layman & Ankner, same place. [Filed Dec. 22, 1874.]

Brief.—The sections, united by the concealed screw, have an annular groove upon one end, into which passes a cylinder upon the end of the next section, which prevents their being turned.

1. The handle made of the sections *a b*, united by the internal concealed screw *c*, and provided with a socket at one end, as set forth.

2. A handle having the short cylinder *d* inserted at one end into a circular groove in the sections *a b*, and at the other end entering a similar groove in the next length, in combination with the connecting-screw *c*, as set forth.

160,604.



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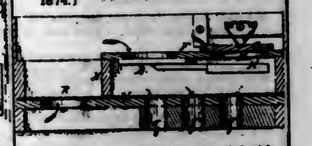


160,606. RUBBER-DAM TRENCH-WEIGHTS. Theodore G. Lewis, Buffalo, N. Y., assignor to the Buffalo Dental Manufacturing Company, same place. [Filed Nov. 16, 1874.]

Brief.—The usual rubber dam is held down in place by a bell and chain with pointed hook for catching into the rubber.

In combination with a rubber dam, the weight B, hook C, chain C, and pointed hook D, all as and for the purposes described.

160,607. REED-ORGAN TREMOLOS. John R. Lomas, New Haven, Conn., assignor to B. Shoninger, same place. [Filed Nov. 23, 1874.]



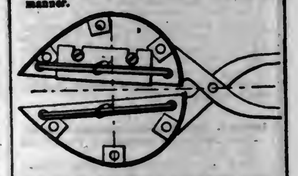
1. An air-tight tremolo-box, provided with a horizontal partition, F, on one side of which is a tremolo-valve, E, and on the other a relief-valve, D, substantially as described.

2. The wire-screen R, or its equivalent, in combination with the air-passages of a reed-instrument, substantially as and for the purposes described.

3. In an air-tight tremolo-box a secondary or minor box, adapted to inclose a tremolo-valve, E, by means of the partitions N and F, or their equivalents, acting in combination with the sides of the larger box.

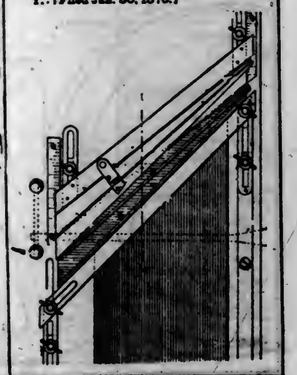
160,608. CHINCH-BUG GATHERERS. B. H. March, Osage Mission, Kans. [Filed Jan. 23, 1875.]

Brief.—This instrument is not unlike the old-fashioned candle-snuffer, with open top armed with supporting-wires. The bugs, when captured, may be destroyed in any convenient manner.



In combination with a pair of box-shears, the frames C C, arranged substantially in the manner and for the purpose set forth.

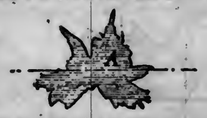
160,607. APPARATUS FOR CUTTING GOODS ON BIAS. Salomon Mayer, New York, N. Y. [Filed Jan. 30, 1875.]



1. An apparatus for cutting goods on bias, composed of a supporting-table, with one or more slots arranged on different bias angles, an adjustable treadle-operated clamp-piece, and adjustable gage-pieces corresponding to the angle of the slots, the whole being constructed and operated substantially as and for the purpose set forth.

2. The combination, with the adjustable base gage-piece, of one or more detachable gage-pieces, corresponding to the angles of the different slots in the table, for setting the goods to any required bias, as specified.

160,608. MANUFACTURE OF SHEET-WAX FOR FLOWERS. Mary Jane McColl, Hoboken, N. J. [Filed Jan. 4, 1875.]



1. The process herein described of producing, for the manufacture of artificial flowers, sheet-wax with different patterns of leaves or other designs, of uniform thickness with the surrounding parts, consisting, essentially, in first cutting out the patterns or leaves from cakes of wax of suitable colors, embedding the same into heated cakes of different colors, and then cutting the combined cakes performed, when cool, into thin sheets, substantially as and for the purpose described.

2. As a new article of manufacture, sheet-wax having embodied therein wax-patterns of leaves or other designs, differing in color from the surrounding parts or body, but of uniform thickness with the same, substantially as and for the purpose set forth.

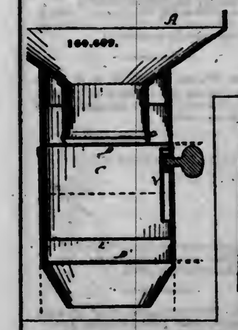
3. Sheet-wax provided with wax-patterns of leaves or other designs, as hereinbefore described and claimed, and having an additional backing or lining of sheet-wax, substantially as set forth.

160,609. DRY-MEASURES. D. M. Mefford, Toledo, Ohio, assignor to American Invention Company. [Filed Feb. 8, 1875.]

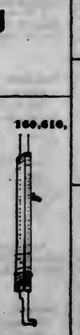
1. In a measuring-can, the shield V, substantially as and for the purposes specified.

2. The measuring-can A, provided with cylinders C and E, valves D and D', shield V, and notted thumb-screw T, substantially as and for the purposes specified.

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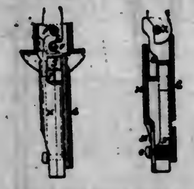
160,610. WATCH-CASE SPRINGS. Jules Meneguy, Brooklyn, N. Y. [Filed Jan. 18, 1875.]

Brief.—A watch-case spring adjustable in a groove in the case-rim.

The watch-case spring, made of uniform thickness, or thereabout, throughout its entire length, in combination with a portion, A, of the case-rim, having the dovetail groove in the inner face of the spring, and being split, as at C, and provided with the clamping-screw, substantially as specified.

160,611. SEED-DROPPERS. E. M. Morgan, Belleville, Ill., assignor to Henry Rentchler, same place. [Filed Oct. 3, 1874.]

Brief.—A seed piston made in two parts, for adjusting the size of the seed-cups, is worked vertically through the bottom of the hopper. These parts are held in position by a bolt passed through the slot in one half and screwed into the other. To the under side of the hopper are attached chambers having chutes discharging toward each other, to secure a uniform line of seed.

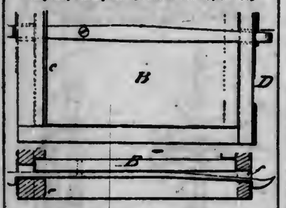


1. A grain-hopper piston, made in two sections, O H, having guides Q, nut N, and slot M to enable them to be clamped by a screw-bolt, O, at different points of adjustment, and thus regulate the size of seed-apertures.

2. The combination, with the piston, of the seed-cup, having grooves T and recess U, as and for the purpose set forth.

3. A seed-cup, having chutes V, discharging toward each other, one below the other, and placed on opposite sides of aperture, as and for the purpose described.

160,612. WAGON END-GATES. Samuel C. Myers, Pana, Ill. [Filed Feb. 13, 1875.]



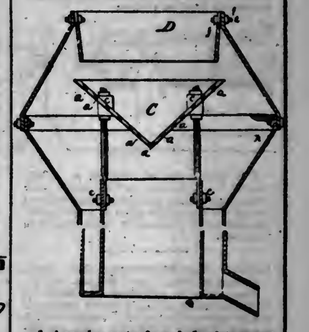
The wagon end-gate B, provided with lateral spring-bar with end catches *b* and *f*, in combination with the recessed side board and guide-strips *e*, the recessed hinged gate D, and the opposite side board, substantially as specified.

160,613. GRAIN-SEPARATORS. Henry Pearce, Cincinnati, Ohio, assignor to Lane & Bodley, same place. [Filed Feb. 23, 1875.]

Brief.—The winding-rope is passed around sheaves—one series stationary, two traveling; one of the last adapted, by a hook-shaft at the end of the ways on which the sheave-carriages run, to be interchangeable with the former function.

In the described combination with travelers permanently connected with a motor, one or more separable travelers, P, capable of being detached and detained to a stationary position at the will of the operator by means of hooks R, or their equivalent, substantially as and for the purpose set forth.

160,614. SPARK-ARRESTERS FOR LOCOMOTIVES. Chas. S. Osborn and Edwd. Osborn, Newton, N. J. [Filed Sept. 22, 1874.]

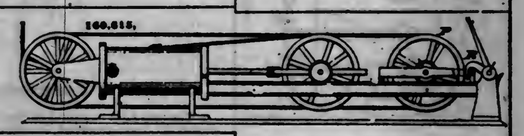


1. A spark-arrester formed of a plate or cast metal screen, D, and inverted cone C, when provided with the peculiar perforations *a*, substantially as herein set forth and described.

2. The tapering screen D, provided with the tapering perforations *a* and the bolts *e* and nuts *f f*, operating in slots in the stack and screen as a means of adjustment in the mouth of a smoke-stack, substantially as herein described, and for the purpose set forth.

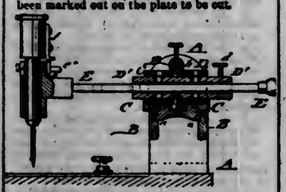
3. The construction and arrangement of the enlarged upper part of the smoke-stack, when provided with the bolts *g* and nuts h, operating in slots, substantially as shown, and for the purpose set forth.

160,615.



160,612. STENCIL-CUTTERS. P. L. O'Brien, New York, N. Y. [Filed Dec. 28, 1874.]

Brief.—The cutter is operated by hand, and made to follow the design which has already been marked out on the plate to be cut.



1. A stencil-cutter constructed of a main or supporting frame, A B, sliding casing C, with pivoted cutter-arm, carrying part D D', adjustable cutter-arm E, and weighted cutter-standard F, having one or two knives attached thereto, the whole to be operated substantially in the manner and for the purpose specified.

2. The sliding frame C, with interior pivoted casing or part D, having diametrically extending guide-recess, in combination with the cutter-carrying arm E, being adjustable by means of set-screws, in such a manner that the cutter arm may be moved in straight, curved, and circular lines, as required for cutting out the pattern, as specified.

3. The weighted cutter-standard F, being guided in the sleeve-shaped end of cutter arm E, and having adjustable shoulder-plate *f*, in combination with the pivoted cam *e* of the cutter-arm, for being raised or lowered within a fixed distance, substantially as and for the purpose specified.

160,616. HINGES FOR SAFE-DOORS, &c. Walter B. Perry, New York, N. Y., assignor of one-half his right to D. W. Thomson, New Haven, Conn. [Filed Jan. 27, 1875.]

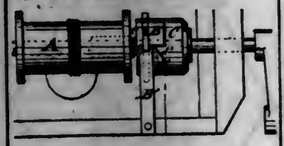
160,616.



The combination, with a sash or other door and its jambs, of a gear or gears and one or more rack-bars, the one being secured to the jambs, and the other to the door, to withdraw the door from its seat, as set forth.

160,617. WINDLASSES. Fletcher S. Rowland, Chaplin, Ky. [Filed Aug. 10, 1874.]

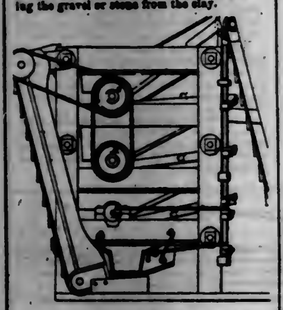
Brief.—The drum shaft terminates at one end in a sleeve-piece working inside another sleeve-piece on the inner end of the winch-shaft. This last piece connects with a corresponding piece, loose on the drum-shaft, but pressed into gear by a spiral spring. When the weight is to descend, a partial back revolution of the winch presses the spring-sleeve against the drum as a brake.



The combination of windlass A, sliding ratchet-box B, pivoted pawl b', clutch C, and friction-spring c, for producing brake action of the ratchet-box on the drum or windlass during descent of platform or other weight, as described.

160,618. CLAY-PULVERIZERS. Daniel Brady, Circleville, Ohio. [Filed Feb. 24, 1875.]

Brief.—Clay is pulverized by means of rollers revolving within a hopper having an elastic bottom, after which it passes through a series of sieves of different mesh, separating the gravel or stone from the clay.



1. The pulverizing-rollers B, in combination with springs or elastic bed for supporting the clay, substantially as set forth.

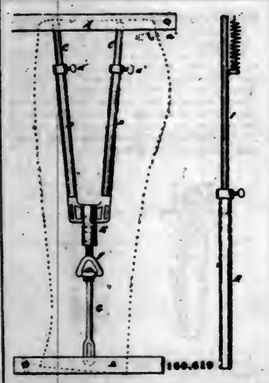
2. The series of sieves B, in combination with the sieves C, for separating successively the largest and then the smaller stones and the gravel substantially as set forth.

160,619. PANTALOONS-STRETCHERS. John D. Ryan, New York, N. Y. [Filed Sept. 30, 1874.]

1. The combination of the extension-rods C, tubes D, screw-socket E, swiveled screw F, and rod G, with the clamps A B, substantially as herein shown and described.

2. The combination of the extension-rod I and tube H, with the clamps A B, substantially as herein shown and described.

3. The combination, in a pantaloons-stretcher, of the spring J, and the extension-rod and its tube, said spring being arranged substantially as described, to operate in the manner set forth.



1. The turn-table C, pivoted in the center of platform B, and supported by rollers c, in combination with the weight or counter-balance l, substantially as shown.

2. The combination of the spring t, lever u, and the ratcheted lever s with the cylinder D and wheel W, substantially as described.

3. The combination of the slats 2, blocks 1, rods 3, having right-and-left-handed screws and nuts, substantially as shown.

4. In a wind-wheel without a vane, the wheel W, placed at an angle, so that it will never squarely face the wind, in combination with a spring or weight for returning it to position after having been turned sidewise by the wind, substantially as shown.

5. In a windmill, the combination of a derrick or supporting-frame and a turn-table having a cylinder that supports the wheel placed out beyond the edge of the derrick, whereby the wheel is made to revolve over the center of the derrick, substantially as shown.

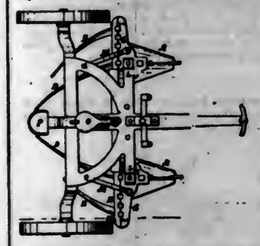
6. The turn-table C, revolving around the center of the derrick, in combination with the cylinder D, provided with stops 5, arm 4, with a cord, substantially as described.

160,620. WINDMILLS. Peter Shockley and Harrison W. Bolender, Orangeville, Ill. [Filed Feb. 4, 1875.]

Brief.—A self-regulating wheel made in sections, and supported upon a cylinder mounted upon a turn-table, rotating around the center of a platform on the top of a suitable frame or derrick. The shaft to which the wheel is attached is slightly turned to one side, so as not to be perpendicularly over the platform. There is no vane, and a spring attached to the turn-table serves to bring the wheel back into the wind after the force that has carried it out of the wind has ceased to operate.

160,621. CORRUGATED HORSE-HOE AND PLOWS. Albt. D. Simons, Windsor, Conn. [Filed Jan. 26, 1875.]

Brief.—Shovel-plows and hoe-blades curved inward, suspended beneath and in front of the axle, held down to their work by springs, and the whole raised and held above the ground by a lever.



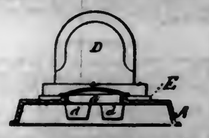
1. The arched beam C, having horizontal arms B, in combination with the guide-clamps G, plows A, and hoe-blades D, substantially herein described.

2. The arched beams C, with the plows and hoes attached as described, and the guide-clamps G, in combination with the arched support J, rods L braces M, and stude N, substantially as shown and described.

3. The combination of cultivators A D, arched beam C, lever O, and spring-catch P with the truck-frame and tongue, substantially as set forth.

160,622. GRAVE-COVERS AND MONUMENTS. Robert H. Sipes, Everett, Pa. [Filed Feb. 13, 1875.]

Brief.—Metallic plates are placed beneath the marble stones, to prevent discoloration of the same.

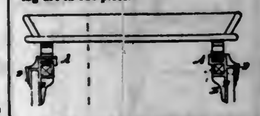


1. In a tombstone, the combination of a metallic plate, E, with a marble head or foot stone and a cast-iron grave-cover, A, substantially as and for the purpose specified.

2. In a grave-cover, the recessed parts d, adapted to protect pins e from the moisture of the soil, substantially as specified.

160,623. WAGON-SEATS. W. H. H. Shellbaker, Chicago, Ill. [Filed Aug. 7, 1874.]

Brief.—The seat-support and spring-bearing are in one piece.



A spring-bearing bracket composed of the bearing A and arms D, cast in one piece, as and for the purposes specified.

160,624. TILTING CHAIRS. C. F. Spencer, Cleveland, Ohio. [Filed Feb. 20, 1875.]

Brief.—The slotted frames attached to the seat move on the rollers attached to the leg-frame, and the chair can be tilted or inclined either forward or backward as pleasure.

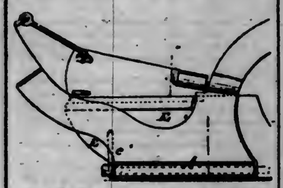
The frame B, having the vertical arms provided with rollers b, in combination with the frames A, having the curved slots in which the rollers operate, and the flanges a for securing them to the chair-seat, substantially as and for the purpose described.

160,625.



160,626. SIDE-HILL PLOWS. C. H. Stratton, Moorestown, Pa. [Filed Dec. 19, 1874.]

Brief.—The mold-board proper turns beneath the land-side. A wing pivoted to the beam turns above, and forms on either side the upper section of the mold-boards.



In hill-side plows, a mold-board, made in two longitudinal reversely-tapered sections, E F, as shown, the former turning under and the latter over the land-side, as and for the purpose specified.

160,627. PRESSES. Chas. S. Swan, Tomaree, DE. [Filed Oct. 17, 1874.]

Brief.—The hay is compressed to some extent in the beater-case. It then passes into a horizontal press-case, where it is acted upon by a follower worked by toggle-jointed bars, which complete the pressing.

1. The combination of a beater case, C, and beater H with the press A B, substantially as specified.

2. The combination of the block L, pawl O, catch P, and spring R with the rope M and the drum K, substantially as specified.

3. The combination of the lever T with the sweep J and shaft I, the sweep is also employed to turn the drums E F, substantially as specified.

4. The part W of the beater-case, having a removable front, X, and arranged on pivots Y, for dumping the hay into case B, substantially as specified.

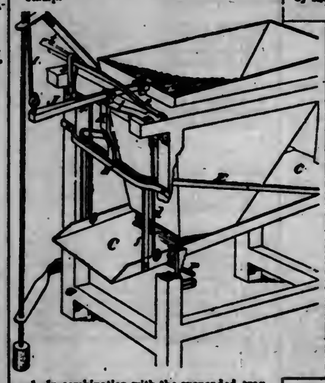
160,628. HANDLES FOR UMBRELLAS, PARASOLS, &c. Geo. W. Tucker, Waterbury, Conn., assignor to American Ring Company, same place. [Filed Feb. 2, 1875.]

1. As a new article of manufacture, the handle for umbrellas, parasols, or whips, made of crystallized tin-plate varnished in imitation of pearl, substantially as and for the purposes set forth.

2. A handle for umbrellas, parasols, or whips, made of a tube of crystallized tin-plate, varnished in imitation of pearl, and retained upon a wooden stock or stick by the metallic tip cap e and bead f, substantially as set forth.

160,629. ORE-PENDERS. James Tullock, Sonora, Cal. [Filed Oct. 10, 1874.]

Brief.—When the stamp descends the tappet pushes down the link, lever, and wedge. This wedge enters between the fixed bar and the U shaped bar, the ends of which are attached to the further part of the table, and thrusts the latter back. The wedge is lifted by a spring, when the table is returned by a spring until stopped by the bar. The ore is thus jolted from the hopper and fed to the stamp.

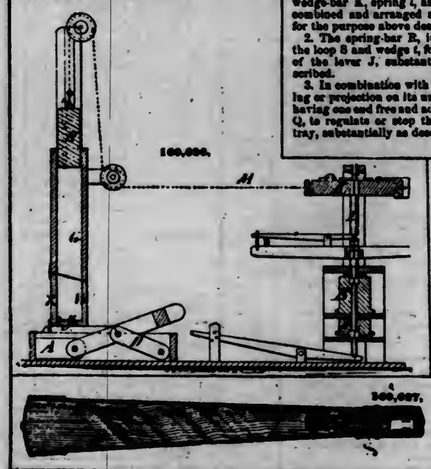


1. In combination with the suspended tray C, with its U-shaped bar E, supported at its front end by standards f, and the fixed horizontal bar N, the lever J, with its depending wedge-bar K, spring l, and tappet-rod L, all combined and arranged substantially as and for the purpose above described.

2. The spring-bar E, in combination with the loop S and wedge t, for regulating the lift of the lever J, substantially as above described.

3. In combination with the tray C, having a lug or projection on its under side, the bar P, having one end free and adjusted by the wedge Q, to regulate or stop the movement of the tray, substantially as described.

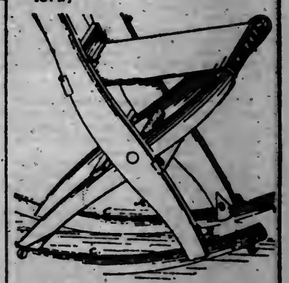
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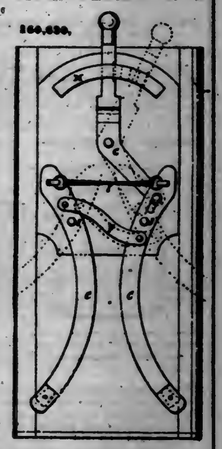


160,632. FOLDING ROCKING-CHAIRS. Geo. O. Wellman, Salem, Mass. [Filed Sept. 7, 1874.]



In a folding-chair, the combination and arrangement of the folding rocker C, pivoted to the standard A, and secured at the front end by the hook E.

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160,634. POCKET-BOOK SAFETY ATTACHMENTS. Edwin G. Wheeler, Winona, Minn. [Filed Jan. 4, 1875.]

Brief.—The projecting arms prevent the withdrawal of the book from the pocket.

1. The combination of the arms C, connecting-bar F, and lever G with a pocket-book, constructed and arranged substantially as specified.

2. The combination and arrangement of spring I, arms C, connecting-bar F, and lever G, substantially as specified.

3. The combination of arms C, connecting-bar F, lever G, and ratchet-bar H, substantially as specified.

4. The combination of arms C, connecting-bar F, lever G, ratchet-bar H, and the base-plate B, substantially as specified.

160,635. SEED-BOXES. Geo. B. Wheeler, New York, N. Y. [Filed Dec. 8, 1874.]

The combination, with the perforated cover B of the spice or dredge box A, having the headed pin b', of the plate C, made imperforate, and provided with the key-shaped slot c, as shown and described.

160,629. EARTH-AUGERS. Elisha Whitney, Marysville, Cal. [Filed Feb. 20, 1875.]

Brief.—The cutting portion is formed of a single flat bifurcated piece of metal, having the points curved in opposite directions. A spring-hinged reamer is located to the side of the cylinder. The shaft-coupling is a square socket and shank, held in place by a spring-pin.

1. The auger-bit composed of the single flat piece of metal H, bifurcated and having the bifurcations pointed and curved divergingly, to form the knives I I, in combination with the hollow cylinder A, as set forth.

2. The reamer C, composed of a quadrilateral section of a hollow cylinder, sharpened at one edge, and hinged at the other by a spring-hinge, D, to the interior of the hollow cylinder A, and having its cutting-edge projecting from the rectangular opening B, substantially as and for the purposes hereinbefore set forth.

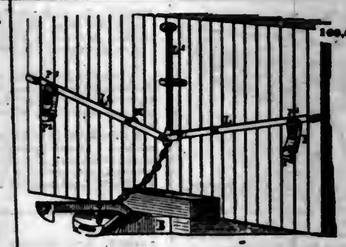
3. The bit-stock J, having its socket K provided with the hole L, in combination with the lateral spring M, provided with the pin N, substantially as set forth.

4. An earth-auger composed of the hollow cylinder A, having the reamer C secured to the interior thereof by the spring-hinge D projecting from the rectangular opening B, the bit-tube G, auger-bit E I I, and the bit-shaft H, constructed and operating as and for the purposes hereinbefore set forth.

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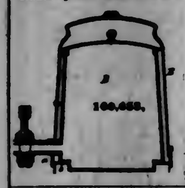
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160,632. COFFEE-URNS. Horace C. Wilcox, West Meriden, Conn. [Filed Feb. 11, 1874.]

The base a, constructed with a seat, b, and the inner vessel B, provided with a faucet, D, and fitted to the mild cast b, combined with the removable cans E, constructed with its top closed and bottom open, so as to set over said inner vessel and rest upon said base, substantially as herein set forth.

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160,634. STUD-FASTENINGS. Sallé Escherias, San Francisco, Cal. [Filed Dec. 10, 1874.]

The button A, constructed with the shank b and concentric disks f and f, the latter centrally pivoted on said shank, the rotating sleeve a, spring c, and notched rim, substantially as described.

160,635. CAR-COUPLINGS. David L. Adams, Buffalo, N. Y. [Filed Aug. 8, 1874.]

1. The draw-head B, having the horizontal link-aperture D within, and the inclined catch-plate C, with the pin-hole E, above the buffer-surface O', the inclined catch-plate extending transversely across, and projecting over, the sides of the draw-head B, (one of the same being reduced in width below the apex of the inclined catch-plate C,) and engaging with the hook F, pivoted within lugs F' on the top of the draw-head B, all combined substantially in the manner and for the purpose set forth.

2. The combination, with the levers L L', supported upon studs N, with capability of vertical and horizontal movement, and the rod L², also capable of horizontal and vertical motion, of the stops F, provided with catches F', all constructed to operate substantially as and for the purposes described.

3. The draw-head B, with the inclined catch-plate or shoulder O on a level with or projecting above, and extending transversely across and projecting over, one or both of the side plates or walls of the draw-head B, and having lugs F', for supporting the pivot of the hook F, formed above the draw-head B, substantially as and for the purpose described.

160,636. CUFF-HOLDERS. Henry B. Adams, New York, N. Y. [Filed June 26, 1874.]

Brief.—Secures the cuff in position with respect to the sleeve of the coat or dress.

The cuff-holder consisting of the spring-arms A and disk B, constructed and arranged substantially as described and shown, and for the purpose set forth.

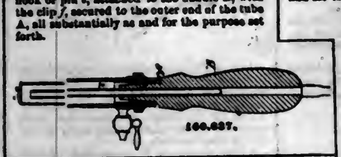
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160,637. CURLING-IRONS. Jas. M. Baxter, Camden, N. J., assignor of one-half his right to J. D. Oppenheimer, Philadelphia, Pa. [Filed Feb. 11, 1875.]

1. In a curling-iron, the tube A, closed at its outer end and provided with a waste-cock, d, in combination with a detachable handle, B, adapted to the inner end of the said tube A, and provided with a pipe, e, all substantially as and for the purpose set forth.

2. The combination, in a curling-iron, of the hook or pin e, attached to the handle B, with the clip f, secured to the outer end of the tube A, all substantially as and for the purpose set forth.

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160,638. LATHES FOR TURNING IRREGULAR FORMS. Jos. Beaudry, Ottawa, Canada, assignor of one-half his right to T. G. Courcelles, same place. [Filed Dec. 3, 1874.]

Brief.—An automatically-acting back-rest sustains the material while under the action of the revolving cutters.

1. The expansible support or rest consisting of the disk d, having the sliding arms c' mounted thereon, and the disk e, provided with studs which enter slots in the arms, as shown and described.

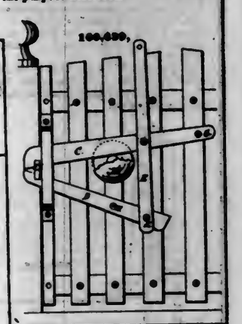
2. In combination with the rotary frame, provided with the rotary centers or arbors e, having ratchet-wheels m attached, one or more dogs, n, attached to the main frame, and operating as described to turn the blanks and present their different faces to the cutter automatically.

3. The knives or cutters, provided with lips p', substantially as and for the purpose described.

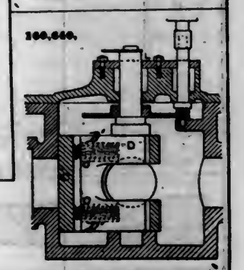
4. In combination with the main frame A and the rotating frame C, the frame H, provided with the adjustable bar r and adjustable pointer s, substantially as and for the purpose described.

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160,640. VALVES FOR STREET WATER-MAINS. John Bird, Jersey City, N. J. [Filed Oct. 20, 1874.]

The combination, with the intersecting branches of a street water-main, of the valve-stem D, having the lateral arms D' D', provided with recesses a in their outer ends, the loose segmental valve having the rectangular vertical opening, in which the valve-stem works, and the springs O, arranged in the recesses in the arms of the valve-stem, and pressing the valve outwardly, substantially as and for the object specified.

160,641. OPERA-CHAIRS. George W. Borel, Philadelphia, Pa., assignor to Robt. Wood, same place. [Filed Mar. 13, 1875.]

A chair in which a tilting seat, D, having two pins at each edge, is combined with two frames, each having a horizontal or slightly-inclined slot, m, and a slot, n, inclined downward and forward, and forming an acute angle with the slot m, said angle having its opening toward the front of the chair, all substantially as set forth.

160,642. WHEELS FOR VEHICLES. J. H. Bloy Boykin, Gadsden, Tenn. [Filed Feb. 3, 1875.]

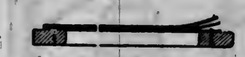


1. The combination, with the separate hub ends c c, of a box, b, provided with ribs or bars f, of less length than the said box, and to fit into grooves g in the hub ends, substantially as and for the purpose described.

2. The combination, in a wheel having separate hub ends c c, and a frame of spokes, of a box, b, having ribs f, to pass through notches h in the bearing ends of the spokes, and into the grooved hub ends, whereby the box is fastened alike with the spoke-frame and the hub ends, as described.

160,643. CHAIR-SEATS. Chas. Brown, New York, N. Y. [Filed Feb. 19, 1875.]

Brief.—The wood veneer and woven fibrous material are coated with glue and pieced together, with the wire-cloth between them. The three layers are then submitted to pressure sufficient to press the woven fibrous material through the interstices of the wire, and cause it to adhere to the wood.



A fabric for seats and backs of chairs and other articles, composed of wood veneer, wire-cloth, and woven fibrous material in combination, substantially as shown and described.

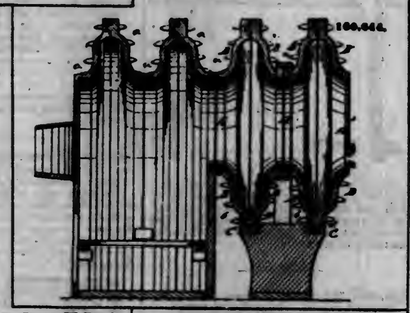
160,644. HOT-AIR FURNACES. W. Burrows, Brooklyn, N. Y. [Filed Feb. 18, 1875.]

Brief.—To furnish much radiating-surface.

1. The combination, in a furnace, of the rear sections, each having hub A, projections a, and concave flanges forming the open spaces between the flanges, all substantially as and for the purpose set forth.

2. The combination of the rear furnace-sections, each consisting of the hub A, concave flanges B, and the rims C C, having projections a, grooves b, and beads d, all substantially as and for the purpose set forth.

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160,645. HOES. Jas. N. Burton, Warnerville, Ga. [Filed July 20, 1874.]

Brief.—The eye of the hoe and flange to which the blade is attached are in one piece, and the flange is provided with a groove to receive the upper edge of the blade, which fits into it upon both sides, and is held by a single rivet at the lower end of the flange.

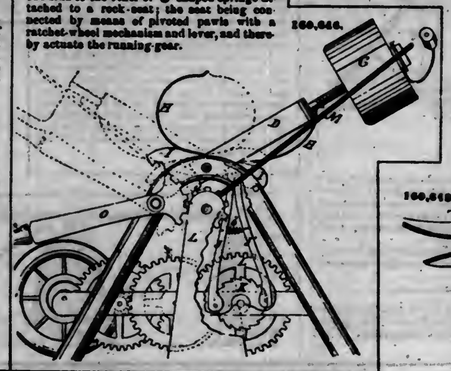


The combination of the swell D and shield C with a groove between the parts, and connected to the eye B with the hoe-blade A, having a V-shaped notch, a, and fitted between the two parts D and C, substantially as and for the purposes set forth.

160,646. MOTORS. John M. Cowen, Franklin, Tenn. [Filed Feb. 23, 1875.]

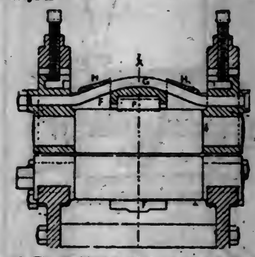
Brief.—A weight is attached to a pivoted support, which is intermittently shifted from one side to the other of C-shaped springs attached to a rock-seat; the seat being connected by means of pivoted pawls with a ratchet-wheel mechanism and lever, and thereby actuate the running-gear.

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160,647. METAL-BENDING MACHINES. J. C. Chapman, Passaic, N. J. [Filed Sept. 28, 1874.]

Brief.—Bending-rolls supported at their centers, to give stiffness, by saddles having friction-rolls, the saddles being stayed or supported by tension-rod G and supplemental stays H



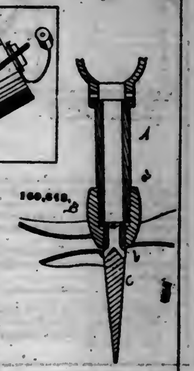
1. The combination of the support or saddle F, having friction-rolls F' and rod G, with the frame of a metal-bending machine, to support the bending rolls, as described, and for the purposes set forth.

2. The combination, with the supports or saddles F, having friction-rolls, the truss-rod G, and the frame of a metal-bending machine, of the supplemental stays E, substantially as and for the purpose described.

160,648. EARTH-AUGERS. Frederick J. Clarke, Mount Pleasant, Iowa. [Filed Feb. 20, 1875.]

Brief.—The point and hollow shaft are both detachable, and screw into a hub, so as to lock each other. The air-openings terminate just behind the flanges, and are protected thereby from entrance of dirt. The locking arrangement enables these holes to be accurately adjusted to the correct position.

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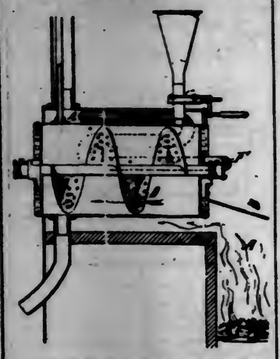


1. The detachable point C, screwing into the chuck or hub B, and the hollow shaft A, screwing into the same chuck, so as to lock each other, in combination with said chuck and cross-bar b, substantially as and for the purposes set forth.

2. The combination and arrangement of the hollow shaft A, detachable point C, provided with openings *a' a'*, which are protected by flanges *c c*, and the cross-bar *b* of the auger-blades, substantially as shown and described.

160,649. ORE-ROASTING FURNACES. Jacob H Clark, Philadelphia, Pa., assignor to G. Sturges and Jacob H. Clark, same place. [Filed July 2, 1874.]

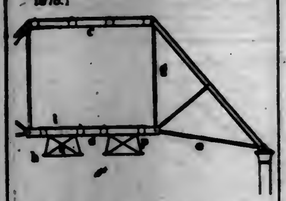
Brief.—An ore-roaster, heated externally by the fire, has heated air forced into it through a pipe coiled around the retort, so as to be exposed to the fire. A perforated screw-conveyor provided with teeth stirs up the ore, and conveys it from the hopper end of the retort to the discharge-pipe *f*, the perforations permitting the heated air to pass readily through the retort and oxidize the sulphur, &c. A pipe passing up the stack conveys the fumes from the retort to suitable condensers.



1. A desulphurizing apparatus in which are combined a furnace, A, a retort, B, arranged within the said furnace and containing a screw-conveyor, D, and a pipe, F, coiled around the retort within the furnace, and from which a blast of hot air is forced into and through the said retort, all substantially as specified.

2. The screw-conveyor D, constructed substantially as described, with perforations *t* and projections or points *u*, for the purpose specified.

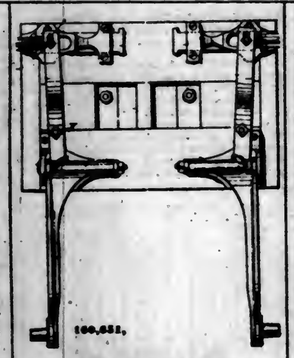
160,650. ELEVATED RAILWAYS. John B. Cornell, New York, N. Y. [Filed Feb. 3, 1875.]



1. In elevated railways, the truss formed of the inclined struts *b*, the horizontal compression member *c*, tie-rod *c d e*, and suspension-rods *g*, the suspension-rods *g* being far enough apart, in effect of the passage of railway-trains between them.

2. The rails A, suspended from the longitudinal supporting-girders *l* by the suspension-bars *p*.

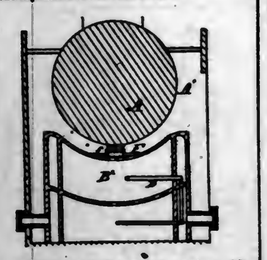
160,651. SHIFTING SEATS FOR CARRIAGES. John F. Cost, Bellefontaine, Ohio, assignor to Miller Brothers, same place. [Filed Nov. 21, 1874.]



As an improvement in convertible carriages, a shifting front seat, attached by hinged front legs, and provided with rear legs, which can be advanced and retracted instantaneously by the elevation and depression of the seat, substantially as set forth.

160,652. WATER FIRE-BOXES. J. De Bolt, Philadelphia, Pa. [Filed Nov. 7, 1874.]

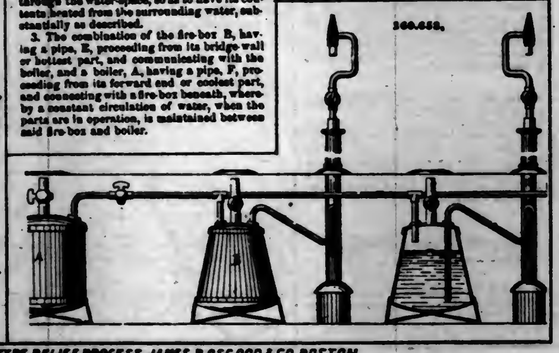
Brief.—A cast-iron water fire-box in one piece is provided with feed-water pipes, by which means the water is heated before entering the boiler. Circulation is kept up by pipes from the rear of the boiler to the rear of the fire-box, and the front of the boiler to the top and front of the fire-box.



1. The water fire-box, cast in one piece, with open front and hollow, stay-bolted or webbed side and bridge walls, and made independent of the boiler, substantially as and for the purpose set forth.

2. In combination with the water fire-box, having hollow walls for the reception of water from the boiler, the feed-pipe D passing through the water-space, so as to have its contents heated from the surrounding water, substantially as described.

3. The combination of the fire-box B, having a pipe, E, proceeding from its bridge-wall or hottest part, and communicating with the boiler, and a boiler, A, having a pipe, F, proceeding from its forward end or coolest part, and connecting with a fire-box beneath, whereby a constant circulation of water, when the parts are in operation, is maintained between said fire-box and boiler.



160,653. APPARATUS FOR SUPPLYING OIL TO LAMPS. Richard V. de Ostrom, Jersey City, N. J. [Filed Aug. 13, 1874.]

Brief.—A separate reservoir for holding compressed air in reserve has communications with a series of oil-cisterns which have outlets to burners. The air, when turned on from time to time, presses and holds the oil up to the burners. Improvement on Patent No. 140,515, July 15, 1873.

The combination, with a street-lamp post having a burner, of one or more oil-cisterns having discharge-pipes emanating from the oil-space of the same, and leading to the burner or burners, said cistern or cisterns being connected by an air-supply pipe having a stop-cock, said pipe extending from an air-chamber for holding compressed air located at a suitable distance from the cistern or cisterns, the compressed air being reasonable at will from its chamber into the oil cistern or cisterns, and serving to force the liquid oil to the burner or burners, substantially as described.

160,654. PRINTERS' GALLEYS. Alex. T. De Puy, New York, N. Y., assignor to R. Hoe & Co., same place. [Filed Mar. 2, 1874.]

Brief.—A tube of metal with two of its sides right angular, having a core of wood, is used for making the rails of galleys, triangular parts being cut from the inner side of the tube, leaving the outer edge uncut, and the tube then bent to form the corners, the joint being covered by the uncut metal.



A printer's galley, the metallic rail of which is formed of a continuous tube mitered and bent at its corner, substantially as described, and for the purpose set forth.

160,655. CENTRIFUGAL SUGAR-MACHINES. John O. Donner, New York, N. Y. [Filed Oct. 2, 1874.]

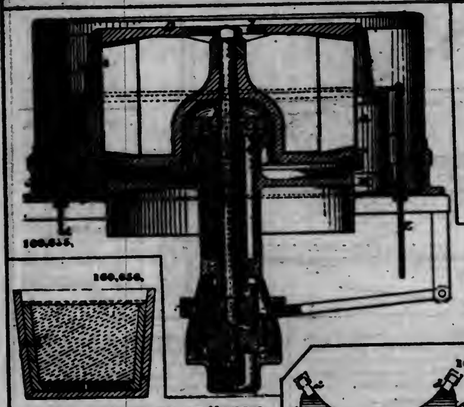
Brief.—The revolving basket containing the sugar-molds has an outer curtain, to pass any liquid down its interior surface. The green sirup and the white cleansing liquor are each passed into separate gutters, successively and at pleasure. Rotating radial wings within the basket draw air into and expel it from the basket through its contents.

1. The combination, with the revolving basket or perforated cylinder, of externally-arranged inner and outer gutters, and a partition separating them, essentially as and for the purposes herein set forth.

2. The movable partition or cam F, having guides L, and constructed to rise and fall, in combination with the inner and outer gutters J H and the revolving basket or perforated cylinder A, substantially as specified.

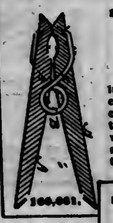
3. The combination, with the revolving basket or perforated cylinder A, of the shield or curtain E, substantially as specified.

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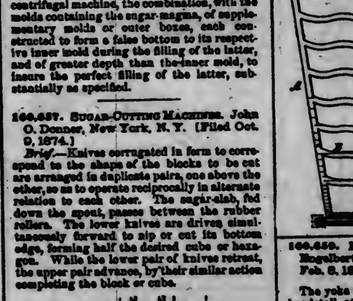
160,661.

160,656. APPARATUS FOR THE MANUFACTURE OF HARD SUGAR. John O. Donner, New York, N. Y. [Filed Sept. 15, 1874.]

In the manufacture of hard sugar by the centrifugal machine, the combination, with the molds containing the sugar-magma, of supplementary molds or outer boxes, each constructed to form a false bottom to its respective inner mold during the filling of the latter, and of greater depth than the inner mold, to insure the perfect filling of the latter, substantially as specified.

160,657. SUGAR-CUTTING MACHINES. John O. Donner, New York, N. Y. [Filed Oct. 9, 1874.]

Brief.—Knives corrugated in form to correspond to the shape of the blocks to be cut are arranged in duplicate pairs, one above the other, so as to operate reciprocally in alternate relation to each other. The sugar-slab, fed down the spout, passes between the rubber rollers. The lower knives are driven simultaneously forward to nip or cut its bottom edge, forming half the desired cube or hexagon. While the lower pair of knives retreat, the upper pair advance, by their similar action completing the block or cube.



The combination of duplicate sets or pairs of knives, arranged the one pair above the other for alternate operation on the sugar slab, as described, and with the cutting-edges of the knives formed by corrugations, having sloping sides and shaped to correspond with the cubes or block to be cut, essentially as herein set forth.

160,658. SHIRT-BOSOM SUPPORTERS. Jas. S. Edmunds, Princeton, Ky. [Filed Feb. 23, 1875.]

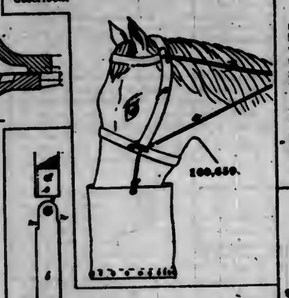
Brief.—An adjustable shirt-bosom supporter.

1. A shirt-bosom supporter consisting of elastic longitudinal metallic strips A A' A, connected by ribs B and plates C D, constructed in the manner and for the purpose described.

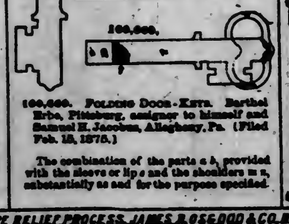
2. In combination with a shirt-bosom supporter, constructed as described, the buttons *d' e* on the under side, and the cord *d'*, as and for the purpose set forth.

3. The nets *a' a' a'* on the middle strip A', as and for the purpose specified.

4. The projections *d* on the ends of the plates C D, to fit into metallic or other pockets of the shirt, as and for the purpose described.



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160,660. FOLDING DOOR-KEYS. Barthel Erbe, Pittsburg, assignor to himself and Samuel E. Jacobus, Allegheny, Pa. [Filed Feb. 15, 1875.]

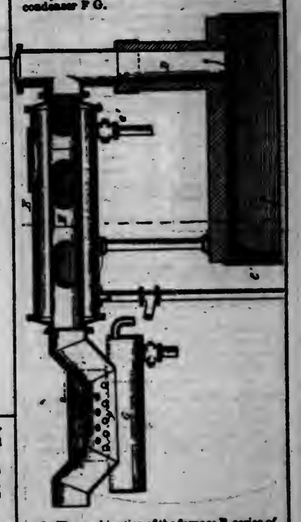
The combination of the parts *a A*, provided with the sleeve or lip *c* and the shoulders *m n*, substantially as and for the purpose specified.

160,661. CLOTHES-PINS. Geo. K. Farrington and Bradford S. Potter, Bloomington, Ill.; said Farrington assignor to said Potter. [Filed Dec. 14, 1874.]

The combination, with the clamps *A A*, having inclined slots *x x* and grooves *d d*, of the coiled spring B, forming the fulcrum for the clamps, and having its ends crossed and extending through the slots *x x*, the tips of the wire being bent and pointed to catch into notches formed on the exterior front portion of the clamps, all substantially as set forth.

160,662. METALLURGIC FURNACES. John Fair, San Francisco, Cal. [Filed Dec. 16, 1874.]

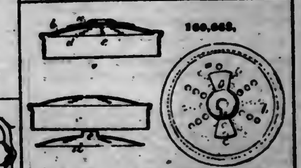
Brief.—The fumes pass from the furnace into the air-chambers; thence to the tortuous condenser, kept cool by its water-jacket, and finally beneath the concave sprinkler of the condenser F G.



1. The combination of the furnace B, series of air-chambers C, and the condenser E, having induction and eduction pipes, and communicated with the air-chambers by a flue, D, substantially as described, for condensing and separating the volatilized precious metals, as set forth.

2. In combination with the condenser E, the condenser F, consisting of a semi-annular chamber, perforated on the under side, and supported over a receiving-trough, G, for the purpose of condensing the mercurial vapors by subjecting the same to a shower of cold water, substantially as described.

160,663. DREDGING-BUCKETS. Jos S Field, Brooklyn, N. Y. [Filed Dec. 22, 1874.]



160,663.

1. The perforated cover *b* of the dredging or spice box, provided with a central hole receiving an open projection, *c*, that is bent up from the sheet metal of the turning plate *d*, which projection is bent over the sheet metal of the cover to attach the turning plate thereto, substantially as set forth.

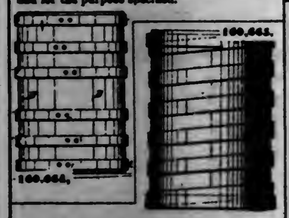
2. The spice-box having a perforated cover and a turning plate to open and close said perforations, and provided with a button, *n*, which is set into and soldered to the edges of the opening in the turning plate *d*, substantially as set forth.

160,664. BARRELS. Henry M. Fitzhugh, Bay City, Mich. (Filed Jan. 16, 1875.)

Brief.—The barrel is formed without bilge, and compressed at the time the hoops are applied, the ends of the hoops being fastened together and to the barrel by screws.

1. The combination, with heads D D, of straight staves E and constricted bands C C or set between the ends of a barrel, as and for the purpose described.

2. The combination, with a barrel, of a head, B, having overlapping ends fastened to the barrel by a screw extending into the wood, as and for the purpose specified.



160,665. BARRELS. Henry M. Fitzhugh, Bay City, Mich. (Filed Oct. 10, 1874.)

Brief.—The barrel is formed without bilge, compressed, and then surrounded by a hoop, which passes spirally from end to end.

The described combination, with two heads of staves having straight as well as parallel sides, and a spiral band, in the manner and for the purpose set forth.

160,666. HATS AND CAPS. P. Goldmann, New York, N. Y. (Filed Feb. 19, 1875.)

Brief.—Covers the "insignia" attached to the chin-strap of a cap by a spring-slide and hook, the latter being attached to the strap proper.



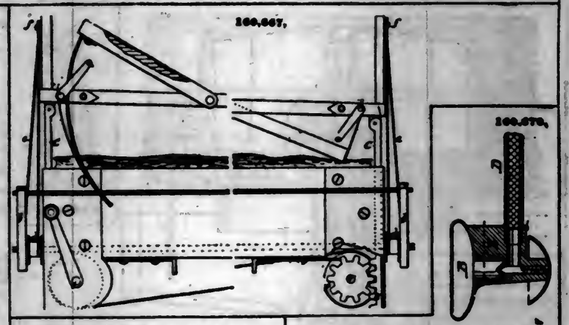
The combination, with the band B, of a spring-slide, *c*, a stiffening-strip, *e*, a retaining device, *h*, and a sleeve, *g*, for concealing the end of the spring-slide when the same is drawn out, all constructed and operating substantially as shown and described.

160,667. INVALID-BEDSTEADS. Jas. Goodwin, Lennoxville, Canada. (Filed Feb. 2, 1875.)

1. The combination of a tick-stretching frame, D, with the elevating-posts C, connected by means of joints or hinges, for the purpose of changing the inclination of the entire frame, substantially as described.

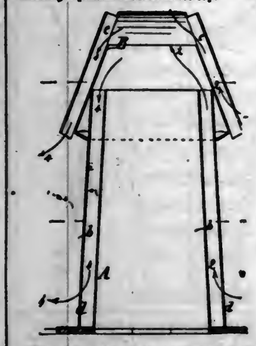
2. The combination, with an invalid-bed, of two radial arms at the head and foot of the bed, and a rod connecting the ends of the same, and adapted to be placed in the bed of the sheet, so that when actuated with a rotary motion the patient is turned from one side of the bed to the other, substantially as described.

3. The combination of a shaft, *a*, arms *b*, connecting-rod *g*, pulleys *d* and *f*, and cords *c*, for the purpose of operating a sheet attached to the rod *g*, substantially as described.



160,668. CHIMNEY-CAPS. James Gorton, New York, N. Y. (Filed Dec. 17, 1874.)

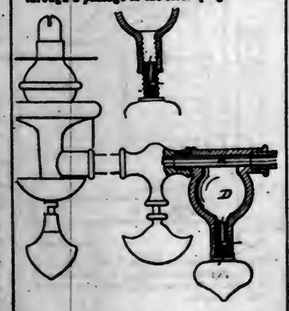
Brief.—The outer air-passages are designed to increase the draft of the central flue by creating a partial vacuum at its top.



The central flue A, having upon its sides independent or separated lateral flues *b*, each having at its lower end an opening, *d*, in combination with the top B, consisting of two truncated pyramids, having the separated air-chambers *e e*, substantially as described, whereby currents of air are induced up and down the lateral flues or passages and the air-channels, in the manner herein described.

160,669. VAPOR-BURNERS. Allen F. Gray, Boston, Mass., assignor to himself and S. S. Gray, same place. (Filed Oct. 20, 1874.)

Brief.—A single piece of wire, looped in the middle, is attached as a spring-fastener centrally to the lower edge of the blind, its free ends engaging alternately with suitable pins or catches on the window-sill and side of the house; either end of the spring serving as a handle to manipulate the device, the whole of which is covered up and concealed when the blind or shutter is closed.



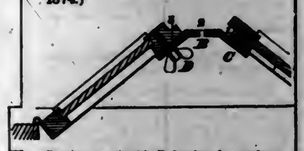
The water-trap D, in combination with a vapor-burner, all substantially as and for the purpose described.

160,670. VAPOR-BURNERS. S. S. Gray, Boston, Mass., assignor to himself and Allen F. Gray, same place. (Filed Oct. 20, 1874.)

Brief.—A wing-connection between the cup and the tube for conducting heat.

The combination, with the cup B and feed-tube D, of the wing E, connecting the cup and tube, substantially as and for the purpose described.

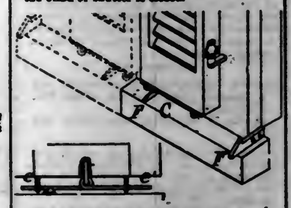
160,671. SHUTTER-BOWERS. Jos. B. Hand, New York, N. Y., assignor to himself and S. Lockwood, same place. (Filed Oct. 12, 1874.)



The bar or shackle B, having flat surfaces 1 2 3 at different angles on its back, and a perforation and notches, 4 5 6, formed in its respective portions corresponding with the flat surfaces, and countersunk, as described, in combination with wood-screws C D, for pivoting and fastening the shackle, the fastening-screw D having a thumb-head, by which to manipulate it, substantially as and for the purposes herein set forth.

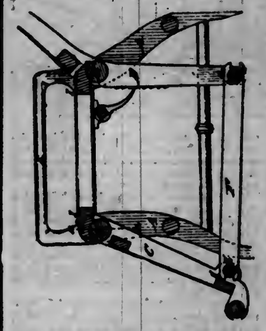
160,672. SHUTTER AND BLIND FASTENERS. Chas. B. Haynes, Worcester, Mass. (Filed Dec. 30, 1874.)

Brief.—A single piece of wire, looped in the middle, is attached as a spring-fastener centrally to the lower edge of the blind, its free ends engaging alternately with suitable pins or catches on the window-sill and side of the house; either end of the spring serving as a handle to manipulate the device, the whole of which is covered up and concealed when the blind or shutter is closed.



The blind-fastener described, consisting of the wire spring C, looped in the middle and secured at that point to the lower edge of the blind, and having free ends *e e* engaging with the catches F and F', one of which holds the blind closed, and the other open, when constructed, arranged, and operating substantially in the manner described and shown, for the purpose set forth.

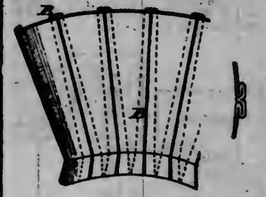
160,673. RECLINING-CHAIRS. Nathan E. Hill, Cincinnati, Ohio, assignor to John K. Coolidge, Nathan E. Hill, and E. C. Coolidge, same place. (Filed Sept. 10, 1874.)



The combination, in a reclining-chair, of the front and rear fixed rounds E E', connecting the side frames A, the back D, and the foot-piece C, pivoted directly upon the tenons of the fixed rounds, the removable seat I, having front and rear grooved rails fitting the rounds, and disconnected from the back and foot-piece, and the rods F, having slotted ends embracing the lower rounds of the back and foot-piece, all substantially as shown and described.

160,674. SHEET-METAL BUCKETS. C. Hoff, Cincinnati, Ohio. (Filed Jan. 13, 1875.)

Brief.—The body of the vessel is strengthened and shaped by flattened folds.

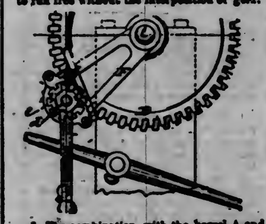


1. The lapped bucket-body B, formed from a rectangular piece of sheet metal, in the manner set forth.

2. The ribbed and flattened fold or lap *b b' b''*, substantially as and for the purpose set forth.

160,675. WINDLASSES. Martin G. Imbush, Brooklyn, N. Y. (Filed Feb. 4, 1875.)

Brief.—The windlass-barrel is operated by differential gear upon the barrel, and pinions carried upon a revolving yoke. By means of the loose pinion, sleeve, and catch the gear can be released from the barrel, permitting it to run free without the interposition of gear.

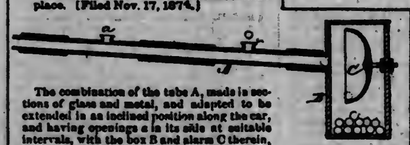


1. The combination, with the barrel A and its shaft or axle C, of the revolving yoke F, the shaft *d*, the pinions *e f*, the wheel D, fast on the barrel-shaft, and the fixed wheel or circular rack E concentric therewith, substantially as specified.

2. The combination of the loose sleeve *e* on the shaft *d*, the stop or catch *h*, for connecting the sleeve with said shaft, the revolving yoke F, the pinions *e f*, the rotating wheel D, the fixed wheel or circular rack E, and the barrel A, essentially as described.

3. The stop or catch *h*, in combination with the revolving yoke F, loose on the barrel-shaft C, the shaft *d*, the pinion *f*, the fixed wheel or circular rack E, and the wheel D, with which the catch locks, substantially as specified.

160,676. FARE-BOXES. Charles G. Imley, Philadelphia, Pa., assignor to the American Car-Fare-Register Company, same place. (Filed Nov. 17, 1874.)

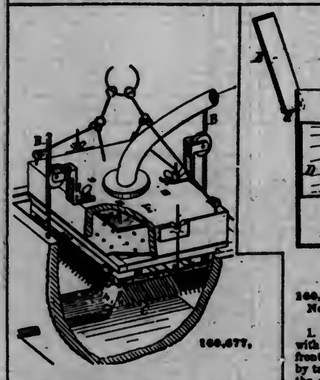


The combination of the tube A, made in sections of glass and metal, and adapted to be extended in an inclined position along the car, and having openings *a* in its side at suitable intervals, with the box B and alarm C therein, so that as balls are dropped into the openings they will gravitate to the box and sound the alarm, all substantially as set forth.



160,677. METHODS AND APPARATUS FOR DYEING WOOL ON SHEEP-SKINS. Alex. Jack, Barnet, Vt. (Filed Dec. 11, 1874.)

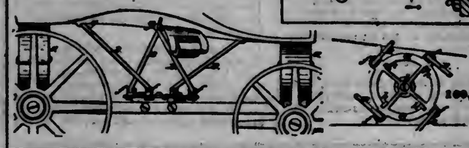
Brief.—The sheep-skin is attached, at its edges, to the under surface of an air-chamber, for the purpose of keeping it cool in the act of dyeing the wool. Air is received through the top of the chamber upon a distributing-plate; then passes through a perforated plate down onto the skin. The air-chamber is provided on the outside with brackets and rollers, which run on guide-rods fixed to the sides of the dye-vat, and is thus kept in a horizontal position, and the wool is evenly dyed.



1. An air-chamber, F, constructed and operating substantially as described, in combination with a dye-vat, A, for dying wool on the skins, as herein specified.

2. The combination of guide-brackets and pulleys H H on the air-chamber, with guide-rods B B on the vat, substantially as and for the purpose herein specified.

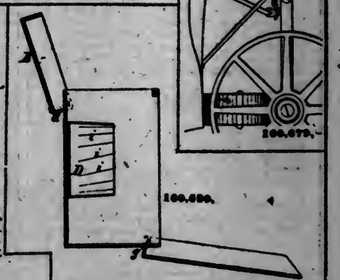
160,678. VEHICLE-SPRING EQUALIZERS. N. Jackson, Higginsville, N. Y. (Filed Sept. 9, 1874.)



The equalizing device for vehicles, consisting of the reach wheel or disk *c*, having a metal bearing-bed and stay-guides A, and the oblique rods B, connecting the latter with the body for joint action with the springs, substantially as set forth.

160,679. VEHICLE-FENDERS. N. Jackson, Higginsville, N. Y. (Filed Jan. 20, 1875.)

The combination of the body of the vehicle, the downwardly-projecting bracket *c*, and the roller *d*, to protect both the body of the vehicle and the equalizing device, as set forth.



160,680. HAT-BOXES. Gustav L. Jaeger, New York, N. Y. (Filed Dec. 17, 1874.)

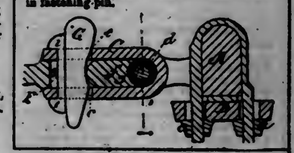
1. A box provided with a hinged cover and with a drop-front, both the cover and the drop-front being connected to the body of the box by tapes or other devices extending through the sides of the body, and through the side flanges of the cover and of the drop-front, substantially as shown and described.

2. The combination, with the body of a box, of the top or cover B, hinged to the box, and having the rear flanges *d* cut away, so that the top or cover can be opened and support itself in such position, substantially as described.

3. The combination, with a box, of a cylinder, D, secured in the interior of the box, and constructed with a series of incisions or slits, *i*, substantially as described, whereby the said cylinder is adapted to receive and hold articles of different sizes and shapes, as set forth.

160,681. TRILL-COUPLINGS. Edwin Jarrell, Thorntown, Ind. (Filed Feb. 20, 1875.)

Brief.—Locked by elasticity of the rubber collar forcing head of thill-iron against recess in fastening-pin.



1. In a thill-coupling, the locking wedge-key G and the key F, having lugs i, in combination with the coupling-strap C and shaft E, substantially as specified.

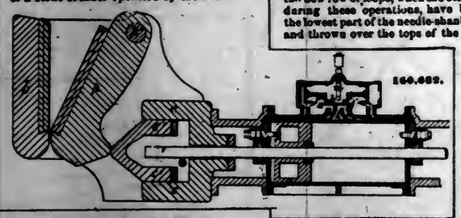
2. The combination, with the key F and locking-key G, of the rubber sleeve or spring d, substantially as and for the purpose set forth.

3. The shaft E, having slot g, the coupling-strap C, having slots e, keys F G, bolt c, and its encircling rubber d, combined substantially as specified.

160,682. APPARATUS FOR CRUSHING STONE. Saml. Henry Johnson, Stratford, England. [Filed Feb. 17, 1875.]

Brief.—As piston approaches hydraulic cylinder the plunger on the piston-rod enters hydraulic cylinder and forces water against the ram, which presses forward the pivoted crushing-jaw. Whenever there is excessive pressure, water escapes through weighted valve. Each loss of water is rectified on the return of the piston by suction from an outer water-tank through S, which is covered by a valve opening inward. Piston may loosely ride its rod between stops, when, moving a little sooner than the rod and plunger, a sudden blow instead of gradual pressure is injected. Pivoted jaw may be returned by a spring.

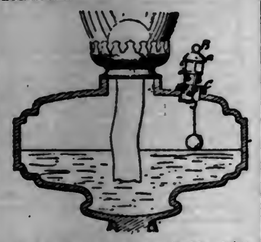
The combination, substantially as hereinbefore set forth, of a steam-piston, a plunger directly connected therewith, a hydraulic cylinder in which the plunger works, a ram also working in said cylinder, and the movable jaw of a stone-breaker operated by the ram



160,682.

160,683. LAMPS. Frederic Kampfe, New York, N. Y. [Filed Oct. 1, 1874.]

Brief.—In case the lamp be upset, the valve is held in position by the bent arm of the pendulum, thus preventing outflow of oil. Should an explosion of the gases within the bowl take place, the yielding weight of the pendulum-bob permits the valve to be forced from its seat.



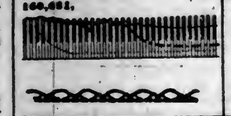
1. The valve B, having the shoulder *f* and spring-arms *h*, constructed with inclined shoulders *e*, in combination with the pendulum E, having at its upper end a hook, *h*, for engaging with the shoulder *f* on the valve should the lamp upset, substantially as and for the object specified.

2. The valve B, constructed with the flanged head or cap *a*, rings *c d*, and the spring-arms *h*, having the inclined shoulders *e*, in combination with the tube C, having the valve-seat *c'*, substantially as and for the purpose described.

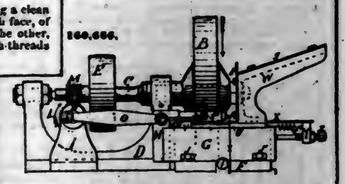
160,684. KNIT FABRICS. John Kent, New York, and Henry Lesson, Locust Valley, N. Y.; said Lesson assignor to said Kent. [Filed Nov. 3, 1874.]

An improved knitted fabric having a clean knitted face on one side, and a plush face, of similar or of different material, on the other, and in which no portion of the plush-threads appear on the knitted face thereof.

160,684.

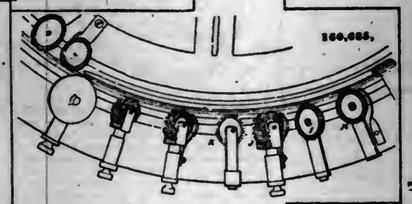


160,685.



160,685. KNITTING-MACHINES. John Kent, New York, and Henry Lesson, Locust Valley, N. Y.; said Lesson assignor to said Kent. [Filed Nov. 3, 1874.]

Brief.—The "plush-looping wheel" lays a thread to form plush or fleece behind two needles, and in front of one as the cylinder revolves, and the next wheel presses it down below the points of the beards. An ordinary loop-wheel then presents another or binding thread to and under the beards of the needles, and the "plush-blending" wheel, which is a combined landing, knocking-over, and presser wheel, closes the needle-beards, and brings up the first or plush thread, and throws it over the tops of the needles, freeing it entirely therefrom, and connecting it with the binding-thread, which remains looped upon the needles. The main knitting-thread is then introduced, and, being manipulated in the ordinary way, forms, together with the binding-thread, the new row of loops, when the old ones (which, during these operations, have been kept at the lowest part of the needle-shanks) are raised and thrown over the tops of the needles.



The combination of the plush-looping wheel H, plush-blending wheel K, and wheels I and J, each constructed and arranged to operate as described, with an ordinary circular-frame knitting-machine, substantially as and for the purposes herein specified.

160,686. MACHINES FOR BEVELING THE EYES OF NEEDLES-BLANKS. Saml. C. Kingman, Bridgeport, Conn. [Filed Feb. 9, 1875.]

Brief.—Pivoted to the reciprocating slide G is a lever, which carries a bar the under surface of which is covered with leather. As the slide moves forward it carries with it, against the action of a spiral spring, another slide, X. As G retreats, X is thrown forward by its spring, and forces one blank from the hopper under the leather-covered bar, by which it is carried forward past the emery-wheel, being, in consequence of the friction of the leather-covered surface, revolved during its transit.

1. In combination with the revolving grinding-wheel B, spindle C, endless screw M, worm-wheel L, shaft K, crank N, and connecting-rod O, the angle-block H, reciprocating slide G, stud *d*, pivoted lever P, spring T, friction-bar Q, slide-bearing F, and stationary plate U, all constructed, arranged, and operated for the purpose of revolving the hereinbefore-described wire blanks and presenting the ends of the same to the face of said revolving grinding-wheel, substantially as and in the manner and for the object set forth.

2. In combination with the reciprocating slide G, angle-block H, stud *d*, pivoted lever P, friction-bar Q, and stationary plate U, the hopper W, reciprocating plate X, spring *e*, block Y, and screw Z, all constructed, arranged, and operated for the purpose of receiving and supplying blanks for and to the plate U, substantially as and in the manner and for the object set forth.

3. The combination of the hopper W, reciprocating plate X, block Y, spring *e*, screw Z, plate U, bearing F, reciprocating slide G, angle-block H, pivoted lever P, swinging bar Q, friction-surface leather R, spring T, screw S, connecting-rod O, crank N, shaft K, bearing I, bearing J, worm-wheel L, endless screw M, spindle C, bearing D, pulley E, with the revolving grinding-wheel B, all constructed, arranged, and operated substantially as and for the purpose specified.

160,687. WASH-BASINS. John H. Kinsman, Salem, Mass., and Friend W. Smith, Bridgeport, Conn. [Filed Jan. 26, 1875.]

Brief.—The stopper is connected by a chain with a weight underneath the stand, the chain passing through a hole in the stand, so that when the stopper is removed from the aperture in the basin the weight will pull it to one side out of the way.



The combination, with a wash-stand or basin having a waste-pipe leading from its bottom, of the plug or stopper D, chain *a*, passing through an aperture in the stand, and a weight, E, fastened to the lower end of the chain, substantially as and for the purposes herein set forth.

160,688. AIR-REGISTERS. Geo. Lawrence, Williamsburg, Brooklyn, N. Y. [Filed Dec. 28, 1874.]

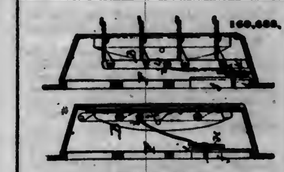
Brief.—The curved ends of the strap act as springs to hold the fans at any desired angle between an open and closed position.

1. The combination, with the fans C and grating F, of the slide G, the buckle H, and the connecting bar or strap J, formed with the spring or elastic branches *j j*, substantially as and for the purpose shown and described.

2. The plates B, formed with the arch-shaped notches *b*, in combination with the straight-edged flanges *a a'* of the fan-frame, substantially as shown and described.

3. The flanges *a*, beveled or inclined downward toward the outer sides of the frame, in combination with the notched plates B and the pivots *c* of the fans, substantially as and for the purposes shown and described.

160,689.



160,689. GRAIN TREASURERS AND SEPARATORS. David Lippy, Mansfield, Ohio, assignor to John S. Hymyer, same place. [Filed July 20, 1874.]

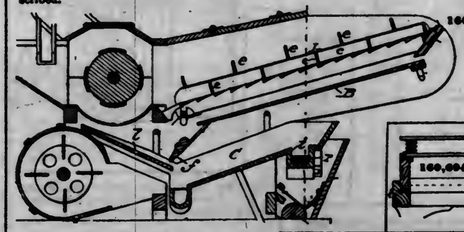
Brief.—A sheet-metal strip covers the upper edge of the rake-bars, and also forms teeth thereon. The chute-boards and delivery-spout have special clearing devices.

1. The bars *c*, having secured to their upper edges the metal strips I, bent at intervals to form the teeth *c*, substantially as described.

2. The wing *f*, arranged to rotate in the space between the ends of the delivery-boards E and *i*, for the purpose of preventing the material from becoming clogged, substantially as described.

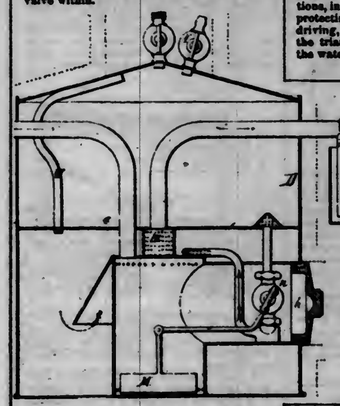
3. The notched board *r*, pivoted at its rear end in the spout *i*, attached to the shoe C, with its opposite end connected to and operated by the incline *m*, substantially as shown and described.

160,689.



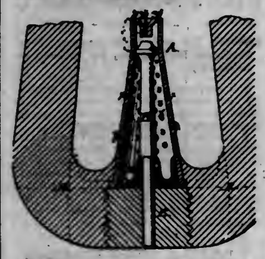
160,690. CARBURETTERS. Jos. F. Lockwood and Geo. E. Lockwood, Philadelphia, Pa. [Filed Jan. 15, 1875.]

Brief.—A detachable plug is secured to the side of the case, to afford easy access to the valve within.



The combination, in the carburetor, of the chamber G, the branch G' of the same, extending to the casing D, and closed by a detachable plug, h, the valve-chest *e* contained within said branch, and the float M connected to the valve of the chest, all as set forth.

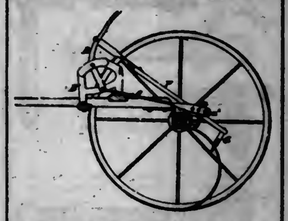
160,691. CHAMBERS OF FIRE-ARMS AND ORDNANCE. Thomas Mac Nell, Brooklyn, N. Y. [Filed Feb. 6, 1875.]



The combination of the perforated air-chamber A, and a firing device, B, constructed to ignite the charge at the extreme front end of the air-chamber, and prevent the fire from passing back into the same, substantially for the purposes herein set forth.

160,692. HORSE HAY-RAKES. Benj. Mellinger, Mount Pleasant, Pa. [Filed Dec. 16, 1874.]

Brief.—Devices whereby the rake-head and closer are operated simultaneously, and the rake-teeth securely held in working position.

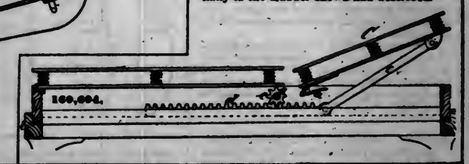


The devices for operating the rake, consisting of the frame B', having stop-hook C, bent lever E, connecting-rod A, bifurcated at the end, and provided with adjusting-holes *a'*, the branched rods F, and cleaner G, all combined and arranged substantially as and for the purpose described.

160,693. INVALID BEDSTEADS. J. Michel, New York, N. Y. [Filed Dec. 24, 1874.]

The combination of hooks or straps *a*, studs *b*, hinged braces *c*, and sliding rack-bars *d*, with the head-piece C of a bed or mattress, and with the frame A supporting said mattress, all constructed and operating substantially in the manner shown and described.

160,694.



160,694. DRIVE-WELL STRAINERS. W. C. Macomber, Minneapolis, Minn., assignor, by mesne assignments, to the Minneapolis Manufacturing Company, same place. [Filed Mar. 11, 1873.]

Brief.—The guards are formed in a triangular or V shape, and suited to the tube so that they extend directly over the perforations, in such a manner that while effectually protecting the wire-gauze in the process of driving, the rapidly-receding lines or sides of the triangular guards afford ready access of the water to the perforations.

160,695.



The triangular or V-shaped guards *F F*, constructed and applied substantially as described, for better protecting the wire-gauze covering the slots in the well-tube, and permitting a free ingress of water to the tube, as set forth.

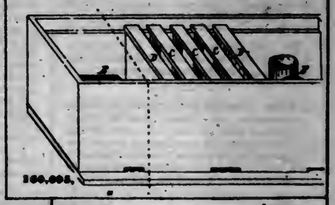
160,695. BEE-HIVES. Nelson C. Mitchell, Indianapolis, Ind. [Filed Feb. 26, 1875.]

Brief.—Formed of movable comb-frames, having air-tight partitions, which may be raised from the bottom of the hive by means of lugs, to allow passage-way for bees to pass under perforated sliding platforms situated at the bottom of the hive, upon which are placed jars, honey-boxes, or other receptacles for surplus honey.

1. The herein-described bee-hive, consisting of the comb-frames C, partitions D, provided with the rubber or woolen strip *b* and legs *a*, sliding platforms *c*, and boxes and jars E, when the several parts are arranged to operate substantially as herein described, and for the purpose set forth.

2. In a bee-hive constructed as herein described, the partition D, provided with the woolen or rubber strip *b* and legs *a*, substantially as and for the purpose set forth.

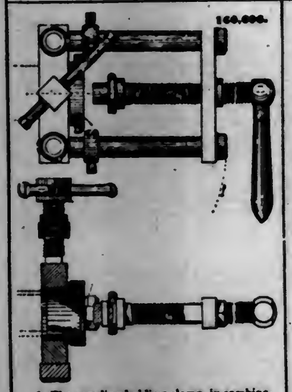
160,695.



160,696. ATTACHING HOSE TO HOSE-COUPLINGS. Andrew J. Morse, Boston, Mass. [Filed Feb. 6, 1875.]

Brief.—In order to attach the hose to the coupling-ring, a metal tube is placed inside the hose, and expanded to clamp the hose between said tube and ring.

160,696.



1. The coupling-holding clamp, in combination with a movable expanding-disk, and a supporting-frame for the screw or shaft of the expanding-disk, the expander being adapted to move through or into the inner ring of the coupling, substantially as described.

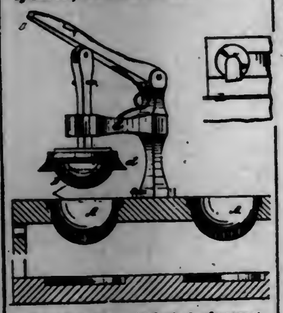
2. The combination, with the clamp, of the pivoted links and screw-bar to support and adjust the shaft or screw of the expanding device, substantially as described.

3. The combination, with the clamps, of links and adjustable gripes for holding the coupling against end movement, substantially as described.

4. The combination, with the clamp adapted to receive and hold the tubular binding-ring *p*, and the clamping-ring *s*, to center and hold the inner ring *r*, of the shaft or screw, and the loose expanding disk or ring, substantially as described.

160,697. LEMON-PRESSER. H. Newberger, Fort Wayne, Ind. [Filed Nov. 16, 1874.]

Brief.—The squeezer is provided with a circumjacent curtain, to prevent the juice flying up and out, and to exclude dust.



The combination, with basin A, of a squeezer, D, provided with circumjacent flexible curtain *d*, as and for the purpose specified.

160,698. CLOTHES-SPRINKLER. W. Olson, Sacramento, Cal. [Filed June 20, 1874.]

Brief.—Within an elastic cylinder, having a tapering tube and a perforated nozzle, is a coil-spring having a plate attached thereto at each end, to force the cylinder out into its proper form after it has been compressed.



160,699.



The interior coil-spring G and plates H H, in combination with the elastic cylinder A, tapering tube D, and sprinkler E, substantially as and for the purposes herein set forth.

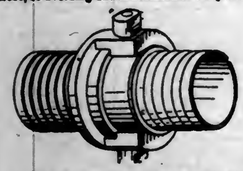
160,699. BOILER-TUBE EXPANDERS. Orestes Fagan, Philadelphia, Pa. [Filed Dec. 26, 1874.]

1. The mandrel B of a boiler-tube-expanding tool, made in two parts, *b* and *b'*, so as to permit the removal of the smooth from the threaded part, for the purpose specified.

2. A screw-threaded mandrel, B, of a boiler-expanding tube, having its smooth part connected with the threaded part, so that while the latter is held in engagement with the body, said smooth part is free to revolve, so as to present a rolling friction-surface for the rollers, substantially as shown and described.

160,700. HOSE-COUPLINGS. Wm. Painter, Baltimore, Md. [Filed Dec. 22, 1874.]

Brief.—A semi-annular flange and recess on one part receives a terminal flange on the other part. A locking-finger eccentrically pivoted in a rotating ping in the receiving part applies to the rear face of the terminal flange on the entering part, moving and bearing in a line parallel to the direction of the hose, so avoiding undue abrasion of the parts.



1. In a hose-coupling the members of which are connected and disconnected by a lateral movement thereof, the combination, with the receiving member, of locking-fingers, arranged to move to and from the rear surface of the flange of the entering member in lines practically at right angles to said surface, substantially as described, whereby undue abrasion of the flange and locking-finger at their points of contact is obviated, as specified.

2. The combination of the wrench-ping and finger, mounted on a spindle eccentrically located in the wrench-ping, substantially as described.

3. The combination, with the wrench-ping and finger, of the cam-block, substantially as described.

160,701. APPARATUS FOR REMOVAL OF NIGHT-SOIL. Wm. Painter, Baltimore, Md. [Filed Dec. 22, 1874.]

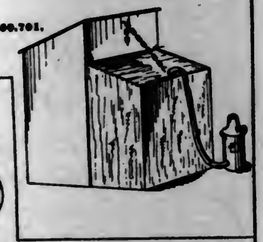
Brief.—A canvas screen is attached to the outer wall of the privy, inclosing the door. A charcoal deodorizer consumes the offensive gases evolved during the operation of removal, or they are passed into a conductor to rise above the building. Said conductor contains a disinfectant.

1. A portable stench-screen for use in the operation of removing night-soil and other offensive matter from privies, &c., composed of inclosing walls and a roof, and provided with devices for sustaining the same closely adjacent to the outer wall of a privy, substantially as described, whereby the workmen and transit-receptacles are wholly inclosed during the transfer of the offensive matter, as set forth.

2. The combination, with a portable stench-screen, of a stench-conductor, substantially as described, whereby the offensive vapors incident to the removal of night-soil and other matter may be prevented from creating a nuisance, as set forth.

3. The combination of a portable stench-screen, a stench-conductor, and a deodorizing apparatus, substantially as described.

160,701.



160,702.

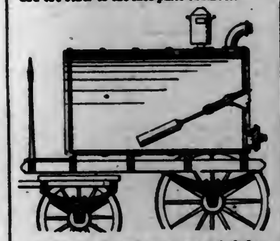


160,702. DISCHARGE-GATES FOR NIGHT-SOIL TANKS. Wm. Painter, Baltimore, Md. [Filed Dec. 22, 1874.]

The combination, with a flanged neck, of a gate-plate hinged thereto on a pintle, which is in a line at right angles to the plane of the opening at the mouth of the neck, a swinging-hook clamp, and a clamping-screw, substantially as described.

160,703. MEASURING-INDICATORS FOR NIGHT-SOIL TANKS. Wm. Painter, Baltimore, Md. [Filed Dec. 22, 1874.]

Brief.—A tight joint is made between the tank and the lever by means of a flexible tube, one end of which is secured to the lever, and the other to the face-plate chamber.



1. A measuring-indicator composed of a face-plate chamber, an indicating-lever, a float, and an elastic tubular connection for securing the lever to the neck of the chamber, substantially as described.

2. The combination of an indicating float-lever and face-plate with a ball-hook arranged to engage with the outer end of the indicating-lever and maintain the float in an elevated position, substantially as described.

3. The combination, with a vibrating float-lever, of an elastic tube, which serves as a packed flexible joint-connection, substantially as described.

160,704. FOOT-PIPES FOR SUCTION-HOSE. Wm. Painter, Baltimore, Md. [Filed Dec. 22, 1874.]

A curved foot-pipe provided with a cleaning-surface, substantially as described, whereby a cleaner may be readily thrust across the induction-aperture, and the foot-pipe readily cleared of extraneous matter, as set forth.

160,704.



160,705.

160,705. IMPLEMENTS FOR BINDING GRAIN. William A. Patterson, Juniata County, Pa. [Filed Nov. 5, 1874.]

Brief.—The cord or band, previously prepared, is caught in a slot in the lever, and the opposite end passed over the lever, and by it forced down, so as to make the two ends of said band meet.

1. The lever A, having mortise *a* and slot *a'*, and band *a''*, and pin-hole *a'''*, as and for the purpose described and shown.

2. The lever A, in combination with the pin B, which has the hole *b* in the head, and looped cord *b'*, secured in the hole, as and for the purpose described and shown.

160,706. WASHING-MACHINES. Thos. Patterson, Princeton, Ill., assignor to himself and Enos G. Matson, same place. [Filed Aug. 28, 1874.]

Brief.—A series of funnel-shaped cups with cross-bars at their openings are secured to a frame of radial bars that are swiveled to an operating-standard



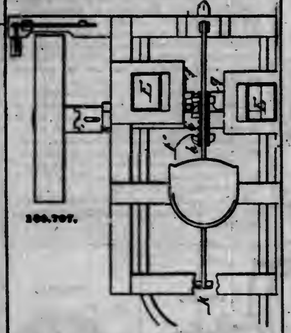
The swiveled pounding-head C, carrying a number of dirt-expellers B B, the latter being constructed of funnel shape, air-tight, and with cross-bars I I, as herein shown and described, for the purposes set forth.

160,707. SEED-PLANTERS. Herbert B. Pennypacker, Phoenixville, Pa. [Filed Dec. 10, 1874.]

Brief.—To the longitudinal beams, and in front of the axle, are two hoppers having spouts, the whole being held in suitable frames. One of these hoppers is for seed, the other for fertilizers. They have slides, forced back by projections on the cam-wheel, which revolves with the axle. Through the lower portion of the fertilizer-hopper revolves the axle, to serve as an agitator. To the front cross-beam is attached a bar, which extends rearwardly, and is provided with a hoe for covering the seed. Motion is imparted to the bar by contact with the projections on the cam-wheel.

1. The combination, in a seed-planter, substantially as described, of the pivoted hoe K, the disk F, and its projections *l l* for elevating the said hoe, and the adjustable rods *p*, for determining the extent of the downward movement of the same, all as and for the purpose set forth.

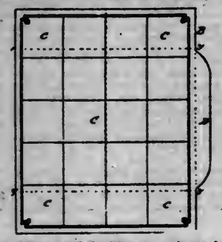
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2. The combination, substantially as described, of the seed-receptacle E, and its slides *f* and *f'*, with the disk F, and its cams *h* and *h'*.

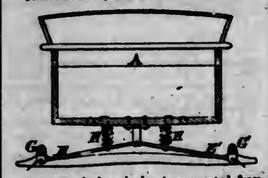
3. The fertilizer-receptacle H, the bottom of which is formed partly by the axle D and partly by the sliding plate *g*, substantially as and for the purpose set forth.

160,708. COMBINED ENVELOPES AND LETTER-SHEETS. August Peterssohn, Washington, D. C. [Filed Feb. 17, 1875.]



A folio provided with manuscript and advertising spaces, disposed as shown, and adapted to be folded in the manner described, so that when folded and fastened the manuscript portions are completely concealed, as hereinbefore set forth.

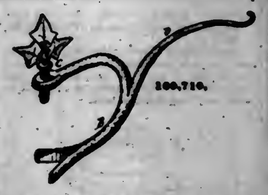
160,709. SPRING-VEHICLES. Jas. H. Phœnix and John Curtis, Cincinnati, Ohio. [Filed Jan. 18, 1875.]



A wagon bed or body, A, supported from the under sides of side spring-bars G G' by the conjoined action of the rigid cross-bars E E', which are hinged in pairs both to said spring-bars and to the body, and of the interposed springs or cushions H, substantially as and for the purposes set forth.

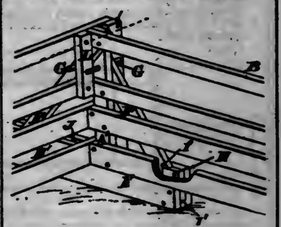
160,710. WINDOW-BRACKET HOOKS. N. Plympton, Easton, Mass., assignor to Bradley & Hubbard, West Meriden, Conn. [Filed Jan. 7, 1875.]

160,710.



The herein-described bracket, consisting of a supporting-arm, D, the bifurcated base B, and the clamping-screw C, substantially as described.

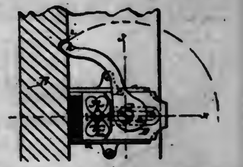
160,711. PORTABLE FENCES. H. Prickett, Edenton, Ohio. [Filed Dec. 5, 1874.]



The excavated and blocked sill H *h* H' *h'* I I' J, removable, notched, and perforated braces F *f* *g*, and plan G, in combination with the removable panels A, A', B, and I, as and for the purpose specified.

160,712. SASH-HOLDERS. Louis Quitman, Norwalk, Conn. [Filed Jan. 26, 1875.]

Brief.—The slotted sliding plate working in a larger flanged plate, giving novelty of construction, and the end of the lever, when reversed, engaging with notches in the sash, and locking the device.



The combination of the flanged plate C, angular sliding plate D, having slot *b*, box G, rubber H, and cam-lever E, having projecting end *h*, and secured by the screw *d*, all used with a window-sash and a window-frame, B, having notch *i*, substantially as set forth.

160,713. PERFUME-FOUNTAINS. Emil Rath, Hoboken, N. J. [Filed Jan. 29, 1875.]

Brief.—By alternately depressing the plunger, and then allowing it to rise by the action of the spring, the liquid contained in the bottle is sucked into the barrel, and then forced out in fine jets through a rose-head secured to the plunger.



A perfume-fountain composed of a bottle or flagon, A, having secured in its neck a barrel, B, in combination with the plunger C, suction-pipe D, spring *a*, valves *b b*, button or finger-piece *c*, and spout *e*, all constructed and operating substantially as shown and described.

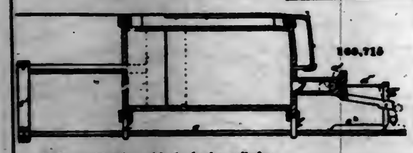
160,714. DENTAL PLATES. Geo. Van Nest Relyea, Belleville, Canada. [Filed Jan. 20, 1875.]

Brief.—The thin soft-rubber disk commonly secured in a recess in the upper side of a dental plate is provided upon its upper surface with small independent vacuum-cells, to assist in giving it a firm hold.



The flexible disk B, having a number of independent vacuum-cells in its palatal surface, combined with the chamber *b* in the plate A, substantially as described.

160,715. RELIEF-VALVES FOR AIR AND STEAM BRAKE CYLINDERS. Leonard P. Rider and Wm. H. Shillito, Pittsburg, Pa. [Filed Jan. 26, 1875.]

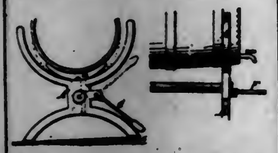


1. In combination with the brake-cylinder, a valve operated from the piston-rod through suitable intermediate mechanism, that will cause the first part of the return stroke of the piston to open the valve and allow of a free escape of the compressed air, substantially as specified.

2. In combination with the brake-cylinder, the valve *d*, weighted lever E, and cam-rod *e*, the cam-rod being relatively connected to the piston-rod, substantially as and for the purpose specified.

160,716. RACKS FOR BARRELS. C. F. Eighty, Newcastle, Pa. [Filed Jan. 20, 1875.]

Brief.—The rear support has a vertical recess for the admission of a piece, which is raised by means of a lever pivoted to the support, when it is necessary to tilt the barrel.



1. The combination of the two supports A A', connecting-rod B, piece *e*, and operating-lever C, substantially as shown and described.

2. The support A for the front end of the barrel, provided with a pivoted swinging stand, F, for the support of the measure, substantially as set forth.

160,717. CAR-BRAKES. Edwd. J. Roberts, Ashland, Ky., assignor to himself, A. John Bell, and Edward M. Norton, same place. [Filed Jan. 13, 1875.]

Brief.—Allows the brakes to be applied by uncoupling of the cars. Proportions brakage to degree of crowding. Enables engineer by pressure of foot to allow or prevent automatic action. Momentum of train regulates and restrains itself, whether advancing or receding.

1. The combination of the tender-buffer I, rigidly secured to shank I', having slots *l l* and spring-bolt K, as and for the purpose set forth.

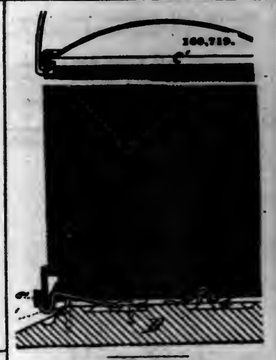
2. The combination of head I, slotted shank I' *l l*, spring M, spring-bolt K and trundle J, substantially as and for the purpose set forth.

3. In combination with a longitudinally-adjustable bumper, the series of carriage-buffers G, the slotted rods P Q, the pin R, and the draw-bars F, which extend the full length of their respective cars, and which operate on the braking mechanism at the middle of their strokes, substantially as and for the purpose set forth.

4. The combination of a longitudinally-adjustable bumper with a draw-bar, capable of being shifted to full or to half stroke, pin R on said draw-bar, and brake-levers P, whose free ends have the double-incline slot Q, substantially as and for the purpose set forth.

5. The combination of double-incline slotted lever P and braking apparatus S T U V W X *s*, substantially as set forth.

6. The combination of double-headed drawbar D F D, tappets I, and buffers G H *g*, as set forth.



160,718. CURTAIN-FIXTURES. C. P. Ross, Allentown, Pa. [Filed Oct. 13, 1874.]

Brief.—In one end of the roller is made a circular recess to receive a hollow cylinder, which is formed with a circumferentially-grooved pulley on its outer end. The cylinder and pulley are bisected longitudinally, forming two equal halves. A spindle placed longitudinally in said cylinder projects in an annular recess in the outer side of the pulley. On the inner side of the pulley the cylinder is enlarged, forming a hollow hub with an interior straight side. Within this hub the spindle has shoulders formed on it. A curved arm with a hook at one end is fastened in the hollow hub by a pin passing through an elongated slot in the other end. The outer side of the hooked end is beveled, so that when the hook is caught by either of the shoulders and drawn over, it will wedge between said spindle and the straight side within the hub, and hold the curtain in position.



In combination with the weighted curtain E and curtain-roller A, the bisected cylinder B, having hub *b*, with interior straight side *b'*, and pulley C, the slotted sliding curved hook *d*, and stationary shaft D, with shoulders *p*, all constructed substantially as and for the purpose herein set forth.

160,719. FLY-TRAPS. Chas. B. Bukgabee and Horace Clarke, Mount Pleasant, Iowa. [Filed Feb. 20, 1875.]

1. The spring-supports E, substantially as shown and described, in combination with cylinder A, as and for the purpose set forth.

2. The bottom plate D, provided with groove *d*, springs E, and staples *c*, substantially as shown and described.

3. The springs E and staples *c*, in combination with the base D and cylinder A, substantially as shown and described.

4. The combination of the bottom plate D, springs E, staples *c*, and hooks *e'* with the wire-cloth cylinder A and cone *a*, all constructed and operating as shown and described.

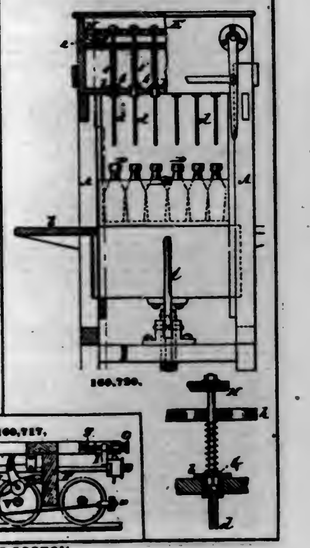
160,720. BOTTLING-MACHINES. Fredrick T. Ryberg, New York, N. Y. [Filed Feb. 4, 1875.]

Brief.—A rising and falling bottle-rack with a filling-reservoir above, having a number of simultaneously-operating valves within it, and seats for said valves in its bottom; also downwardly-projecting filling-tubes below it. There is also a means for adjusting and operating the valves, and for raising the bottle-rack to enter the filling-tubes down within the bottles.

1. The combination of a rising and falling bottle rack or receiver, B, with the filling-reservoir E, the valves G therein, connected to operate in common, the valve-seats *b* in the lower portion of the reservoir, and the filling-tubes *d*, substantially as specified.

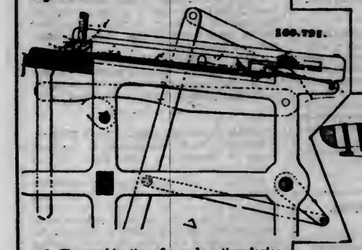
2. The combination of the follower H with the separately-adjustable valves G connected therewith, the cams *e* and springs *s*, or their equivalents, the valve-seats *b*, the reservoir E, and the filling-tubes *d*, essentially as described.

3. The combination of the trundle C or lever C, the rising and falling bottle-rack B, the filling-tubes *d*, and the collectively-operating valves G within the reservoir E, substantially as shown and described.



160,721. PNEUMATIC PAPER-FEEDERS. S. Schofield, Providence, R. I. [Filed Sept. 3, 1874.]

Brief.—The pneumatic bar is attached to the rear end of the oscillating registering-table, and from the suction-orifices in its under side extend pins, which penetrate the upper sheet as it is drawn from the pile, and push away those underneath it. Reciprocating grippers carry the sheet over the registering-table, whence it is delivered to the printing-cylinders. The height of the pile-table, on which the bank of paper is held, is automatically regulated.



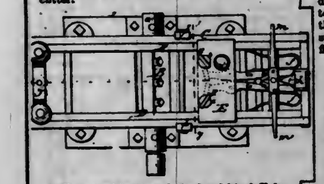
1. The combination of an exhausting device with a holding-pin, substantially as described, for separating sheets of paper by and through the simple act of suction.

2. The rising and falling registering-table C, provided at its upper or back end with the suction-bar or paper-lifting device B, for operation in common, substantially as specified.

3. The combination, substantially as herein specified, of a paper-lifting device and a griper-carriage with a pivoted registering-table and a pile-carrying table, having its height automatically increased or regulated at intervals by the action of the said registering-table.

160,722. MACHINES FOR TAPERING THE TENONS OF SPOKES. William M. Sharpsteen, Mechanicsburg, Pa. [Filed Jan. 26, 1875.]

Brief.—The spokes are held in a reciprocating frame, dressed and tapered by a rotating cutter.



1. The combination of the head-block E, levers G G, jaws *b b*, springs *f f*, and set-screws *d d*, substantially as and for the purposes herein set forth.

2. The adjustable plate *h*, with wedge-shaped projection *i*, in combination with the levers G G, as and for the purposes herein set forth.

3. The levers *m m*, with arms *a a*, in combination with the levers G G and projections *p p*, as and for the purposes herein set forth.

4. The combination of the adjustable cross-bar *t*, thumb-screws I I, rest J, and screw *v*, as and for the purposes herein set forth.

5. The combination, with the revolving cutter-head B, of the reciprocating frame or carriage D, having the devices herein described for adjusting and holding the spoke to be faced and tapered, substantially as herein set forth.

160,723. HASPS. F. W. Smith and F. Egge, Bridgeport, Conn. [Filed Jan. 19, 1875.]

Brief.—Improvement on Beall's patent of December 5, 1874. The cutter-head, when adjusted at any required angle, is locked to prevent displacement during the cutting operation.

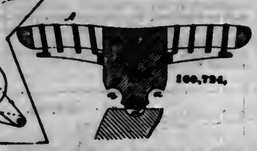


In combination with the hinged hasp A, the shield C, extending outside of the hasp, as and for the purposes set forth.



160,724. PEA-CUTTERS. Wesley J. Squires, Waterbury, Conn. [Filed Feb. 6, 1875.]

Brief.—A shield is attached to or forms a part of a hasp, for the purpose of preventing the insertion of any instrument to pry open the shackle of a padlock when the same is attached to the staple.



In combination with the adjustable head A, constructed with the shank B and the recesses *a* therein, and the shaft E, the axis of which is parallel with the axis of the head, constructed with a cavity, *d*, the disk F, on one end of the said shaft, with a spring beneath, and a head, *f*, on the other end, constructed to engage or disengage the post D, substantially as described.

160,725. TOOL-HANDLES. Hiram Staples, Battle Creek, Mich. [Filed Feb. 6, 1875.]

Brief.—The tool is secured to the handle-straps by a wedge driven between them, which forces them into the outer ends of the mortise through the tool.

The means for attaching a tool to its handle, consisting of the elongated mortise in the tool, the straps with enlarged ends, to which the handle is secured, and the wedge, all constructed and arranged substantially as specified.

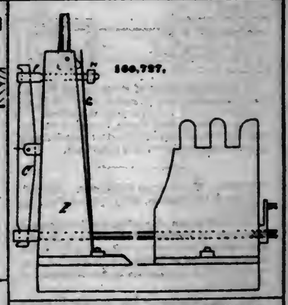
160,726. ALKALINE FOR SOAP. I. N. Stern, Keokuk, Iowa. [Filed Jan. 8, 1875.]

A compound for making soap, consisting of caustic soda and common salt, combined in the proportions and in the manner substantially as specified and described.

160,727. PEGGING-JACKS. John J. Stewart, Sargentville, Me. [Filed Aug. 27, 1874.]

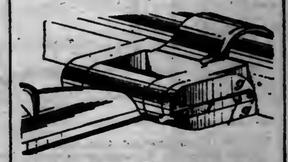
Brief.—Improvement on applicant's Patent No. 152,533, consisting of a spring to properly adjust the pivoted toe-support.

In a pegging-jack, the lever C, rods D F, nuts H E, and spring G, combined to operate substantially as and for the purpose described.



160,728. THILL-COUPLINGS. S. M. Strader, Madison, Ind. [Filed Jan. 16.]

Brief.—Bolt held in place by plate provided with spring catch and projecting corner, to prevent accidental displacement while allowing easy removal.

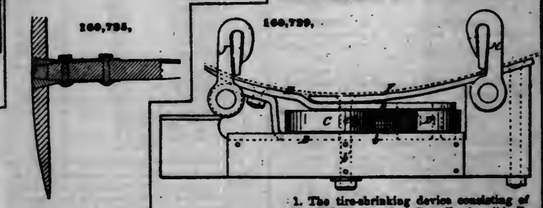


1. In combination with a sliding bolt for fastening the thill-iron to the axle-clip, the pivoted plate G, having prominent portion *f* for binding against the face of the axle, so as to prevent the complete elevation of the plate by accident, substantially as set forth.

2. The combination of the spring-catch I with the pivoted plate G and bolt F, substantially as and for the purposes set forth.

160,729. TIRE-SHRINKERS. Daniel Strattan, Cassopolis, Mich., assignor of one-half his right to Jos. Graham, same place. [Filed Dec. 26, 1874.]

Brief.—The two limbs of the bed-bar are slotted to accommodate the cam-axis and the roll, and the jaws of each pair of clamps are disconnected except by the axis, in virtue of which they, with their wedge, accommodate themselves to the contractile movement of the tire and its bed, and also may be turned over outward to facilitate the placing and removal of the tire.



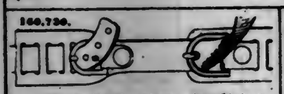
1. The tire-shrinking device consisting of the cam C, having the offset E, the slide B, with its roller D, the fixed tire-support F, and the pivoted arms H J, constructed and arranged for joint operation substantially as described.

2. The pivoted wedge-holding arms H J, in combination with the slide B and the fixed tire-support F, substantially as described, and for the purpose stated.

160,730. CARTRIDGE-BELTS. David Taylor, U. S. A., assignor to himself and T. Ewing, Tucson, Ariz. [Filed Nov. 18, 1874.]

Brief.—A narrow strip is laced through slots in the belt, and the slips which hold the cartridges are secured to the narrow strap by means of end extensions, instead of by rivets, as ordinarily.

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1. The combination of cross-slotted belt A, the interlacing-strap B, and clamps C D E, arranged as and for the purpose described.

2. A cartridge-belt clamp, having lower extensions D bent back wardly to attach them firmly to the strap, as shown and described.

160,721. HYDRAULIC PACKINGS. John F. Taylor, Charleston, S. C. (Filed Feb. 13, 1875.)

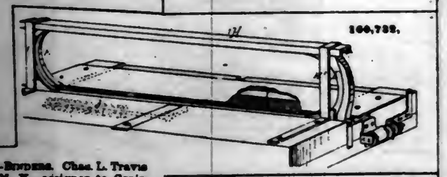
Brief.—The cup-ring, of leather, is supported by a ring of rubber formed to fit it loosely, and secured to it on the outer side by rivets, for the purpose of holding it in position, and compensating inequalities in the thickness of the leather.

The combination of the leather cup-ring with the India-rubber ring contained within the leather ring, and fastened thereto by rivets or their equivalents, substantially as and for the purpose described.

160,721.



160,722.



160,722. GRAIN-BINDERS. Chas. L. Travis Great Valley, N. Y., assignor to Grain-Binder Company, Fremont, Ohio. (Filed Feb. 12, 1875.)

1. The grooved compressing-slides E, provided with the spurs e', whereby they are adapted to pick up the ends of the bands and to pass them in opposite direction around the bundle, substantially as described.

2. The compressing-slides E E provided on their inner adjacent faces with the oppositely-diverging grooves a, for guiding the opposite ends of the prepared bands in their movements around the bundle, as described.

3. The grooved compressing-slides E, in combination with the double-grooved guide-rail H, for guiding the ends of the bands and passing them by each other, substantially as described.

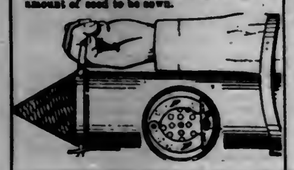
4. The compressing-slides E, provided with the grooves a e', the latter of varying depth, as described, whereby they are adapted, in connection with the grooved guide-rail H, to not only pass the ends of the bands around the bundle in compressing the same, but also to untie or tie said ends, substantially as described.

5. The combination, with the compressing-slides E, of a receptacle or passage-way for the prepared bands, through which said bands are conveyed to the compressing-slides.

6. The compressing-slides E, in combination with racks F F', for actuating the same, as described.

160,724. SEED-SOWERS. Alex. Walker, Mornington, assignor of one-half his right to George Sutherland, Listowell, Canada. (Filed Dec. 18, 1874.)

Brief.—To one end of a tubular seed-box, susceptible of attachment to the operator's arm by suitable handles, is hinged a perforated cap, over which is placed a cone of wire-cloth, into which the seed falls for distribution. Within the hinged cap, in rear of the cone, is pivoted a pair of cut-offs, for regulating the amount of seed to be sown.



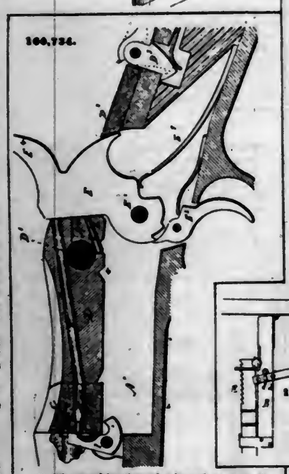
1. The seed-holder A, attachable to the arm of the operator by a strap, and provided with a handle, C, to be seized by the fingers of the operator when sowing, in the manner set forth.

2. The seed-holder A, having a perforated cap, D, and wire-cloth cone E, as and for the purpose set forth.

3. The cut-offs F, pivoted to the cap D, and held adjustably by the clamp G and screw H, as and for the purpose set forth.

160,724. BREECH-LOADING FIRE-ARMS. Eli Whitney, New Haven, Conn. (Filed Dec. 31, 1874.)

1. The combination of a barrel open at the breech, a vertically-sliding breech-piece, a lever pivoted in rear of said breech-piece, the forward arm of which is in connection with said breech-piece, the other arm extending in the rear of the pivot above the frame, the arrangement of the parts being substantially such as described, whereby the raising of the rear arm of the said lever throws down the said breech-piece to open the barrel, and returning said lever raises the said breech-piece to close the barrel.



2. The combination of a barrel open at the breech, a vertically-sliding breech-piece, provided with a loose firing-pin, a lever pivoted in rear of said breech-piece, the forward arm of which is in connection with said breech-piece, and provided with an auxiliary firing-pin, the other arm extending to the rear of said pivot above the frame, the arrangement of the said pivot being such relatively to the said vertically-sliding breech-piece that the shortest distance between said pivot and the forward or closing surface of said breech-piece is when the breech is closed, and that the arc described by the forward end of the lever in opening the breech will cause said forward end of the lever to retreat from the breech-piece, substantially as described.

3. The combination of a barrel open at the breech, a vertically-sliding breech-piece, provided with a loose firing-pin, a lever pivoted in rear of said breech-piece, the forward arm of which is in connection with said breech-piece, and provided with an auxiliary firing-pin, the other arm extending to the rear of said pivot above the frame, the arrangement of the said pivot being such relatively to the said vertically-sliding breech-piece that the shortest distance between said pivot and the forward or closing surface of said breech-piece is when the breech is closed, and that the arc described by the forward end of the lever in opening the breech will cause said forward end of the lever to retreat from the breech-piece, and the forward end of the lever in opening the breech will cause said forward end of the lever to retreat from the breech-piece, the arrangement of the said pivot above the frame, the arrangement of the said pivot being such relatively to the said vertically-sliding breech-piece that the shortest distance between said pivot and the forward or closing surface of said breech-piece is when the breech is closed, and that the arc described by the forward end of the lever in opening the breech will cause said forward end of the lever to retreat from the breech-piece, substantially as described.

4. The combination of the breech-closing lever D D^1, the bridge A^1 in rear of the forward part of the lever, the pivot of the lever taking its bearing on said bridge, substantially as described.

5. The combination of the breech-closing lever D D^1, the bridge A^1, spindle L in said bridge, and the hammer E, with its mainspring and trigger, substantially as described.

160,725. BASE-HOLDERS. John B. Wilford, Philadelphia, Pa., assignor to H. Bradford and H. Hamburger, same place. (Filed Jan. 19, 1875.)

Brief.—A double-cam rocker arranged within a case, and provided with suitable lever and spring, is attached to and combined with a friction pressure-plate in such manner as to diminish friction, and secure correct and reliable action of the pressure-plate, moving this latter with uniform force against the window-frame, to hold the sash in desired position.

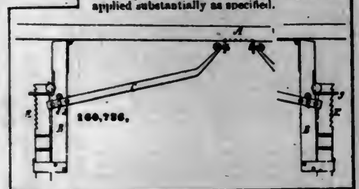


1. The cam-rocker c, jointed to the pressure-plate d, and acting between the fixed surfaces 4 and 5 of the case and the said pressure-plate, substantially as set forth.

2. The lever m and spring o, in combination with the rocking cam c and pressure-plate d, substantially as specified.

160,726. CHIMNEY-STAGING BRACKETS. F. Willard, Milford, Mass. (Filed Jan. 12, 1875.)

The described chimney-staging bracket, or combination of the bar A, its ears b b, and braces C C with the legs B B and the adjustable feet D D, provided with the brackets g g and stop-racks E E, all being arranged and applied substantially as specified.



160,726.

160,727. COPING FOR WALLS. Joseph C. Wright, Monocacy Furnace, Pa. (Filed Jan. 9, 1875.)

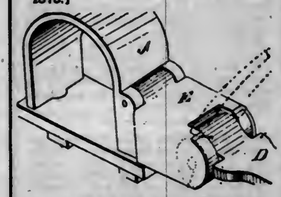
Brief.—A cast-iron coping in sections, provided with rabbets and locking-notches, to hold the contiguous ends together, and having dovetailed studs placed vertically in the walls, to secure the ends of the sections to the same.



1. Sections A, having rabbets e, and locking-notches f f, for holding their contiguous ends together, substantially as described.

2. The combination of studs C with sections A and wall B, for holding the coping firmly upon the wall, substantially as set forth.

160,728. TRILL-COUPLINGS. Geo. Wright, Old Point Comfort, Va. (Filed Feb. 10, 1875.)

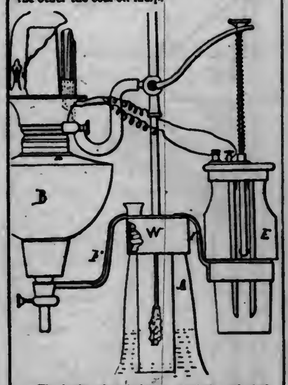


1. The combination, in a thill-coupling, of a locking-cap having flanges f f with a shaft-iron having projections e e', for locking the same, substantially as set forth.

2. The combination of clip A and hinged metal cap E, provided with recessed side pieces for retaining the bolt, with shaft-iron D, having projections e e' to lock the cap when said iron is raised, all substantially as set forth.

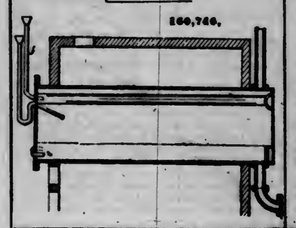
160,729. HYDRO-ELECTRIC LAMPS. Wm. H. Zimmerman, Chestertown, Md. (Filed Jan. 11, 1875.)

Brief.—Lamp is lighted by a flame of hydrogen gas, which is itself ignited from a platinum wire rendered incandescent by passage of electric current. The gas-generating reservoir forms the base of the apparatus, and a frame extending from it supports on one side the battery for generating the electricity, and on the other the coal-oil lamp.



The hydro-electric lamp, consisting of a bell-low base or pedestal, A, for forming the Döbereiner apparatus, the coil-oil lamp B, the battery E, and the supporting-frame W I F, all combined and arranged substantially as and for the purpose described.

160,746.



160,730. HYDRAULIC RAMS. Geo. Wright, Old Point Comfort, Va. (Filed Feb. 10, 1875.)

1. A retort, provided with one or more chambers for receiving water and deoxidizing material, in combination with a pipe, f, communicating with a water-reservoir and with said chambers, as set forth.

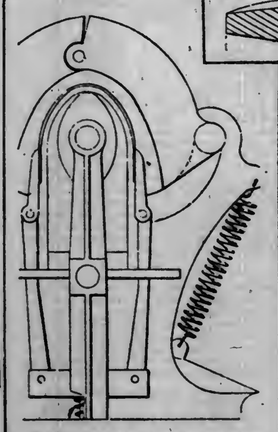
2. A retort, provided with a chamber or chambers for receiving water and retaining deoxidizing material, combined with an oil-pipe to deliver the oil directly upon the bottom of the retort.

3. The retort, its steam-generating and deoxidizing chambers, combined with the oil-pipe k and gas-pipe h to inject the gas into the retort at the point where the oil falls upon the bottom thereof, as and for the purpose set forth.

4. A retort, in the body of which are formed channels arranged to leave intervening portions consisting of one thickness of metal, as and for the purpose set forth.

REISSUES.

6,219. APPARATUS FOR CRIMPING THE STIFFENINGS OF BOOTS AND SHOES. J. W. Hatch, Rochester, N. Y. Patent No. 117,027, dated Aug. 1, 1871. (Filed Feb. 23, 1875.)



1. In a machine for crimping heel-stiffenings, the combination of a heel-form with a crimping mechanism, the parts being adapted to yield with relation to each other, substantially as described.

2. The combination, with the heel-form, of the stiffening-holder and crimping-jaws, adapted to operate substantially as described.

3. In a machine for crimping heel-stiffeners, a heel-form, a holder, and crimping apparatus, substantially as described, adapted to move with relation to each other, to turn the entire edge of the stiffener from the outside toward the center of the heel-form, substantially as described.

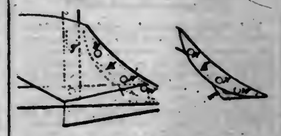
4. The combination, with the heel-form, of the crimping-jaws and gage for the turned edge of the stiffening, substantially as described.

5. In the process of forming heel-stiffeners, first impinging the stiffener against the heel-form at the edge where the stiffener is to be bent, then forcing or wiping the edge of the stiffener from end to end, from its outer side over the edge, and converging toward the center of the heel-form, whereby the flange is turned and crimped, substantially as described.

6. The combination, with a heel-form, of a yielding holder to hold the stiffener to the heel-form and adapt itself to the thickness of the stiffening, substantially as described.

6,220. PLOWS. John Lane, Chicago, Ill., assignor, by mesne assignments, to Hapgood & Co., St. Louis, Mo. Patent No. 111,854, dated Feb. 14, 1871. (Filed Feb. 20, 1875.)

Brief.—The standard, land-side bar, share, and mold-board are connected by means of a curved angular piece, perforated for receiving the securing-bolts.



1. The plow-block K, V-shaped in cross-section, and formed as described, to have affixed thereto the land-side, share, mold-board, and standard.

2. The removable plow-block K, perforated at g, N, W, and m, whereby to it is bolted the standard at g, the land-side bar at m, the share at W, and the mold-board at N, arranged substantially as and for the purposes shown.

6,221. CAR-SPRINGS. Jas. C. Pickles, Wilmington, Del., assignor of one-half interest to J. P. Hayes. Patent No. 152,264, dated July 7, 1874. (Filed Oct. 17, 1874.)



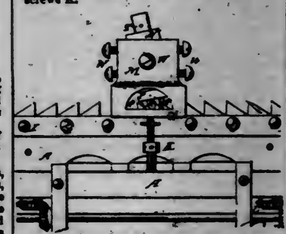
1. A coiled edge-rolled spring, the inner edge of which is of greater vertical thickness than the outer edge, substantially as set forth.

2. An edge-rolled spiral spring, composed of a single metallic bar of varying thickness in transverse section, substantially as set forth.

3. An edge-rolled spiral spring, having one edge of greater vertical thickness than the other, substantially as set forth.

6,222. SAW-SWAGING MACHINES. Levi W. Pond, Eau Claire, Wis., assignor to himself and the Eau Claire Lumber Company, same place. Patent No. 102,310, dated Apr. 26, 1870. (Filed Feb. 13, 1875.)

Brief.—Two blocks, one at each end of the machine, adjustable as to height by screws actuated by gearing, support the saw, and screws J actuate two pieces that clamp the saw; and the tool-carriage M is movable along ways H, which, fastened at each end by screws I, may be sprung to any desired curvature, convex or concave, to suit any saw, by the screws K.



1. In a machine for swaging saw-teeth, an adjustable and yielding tract, combined with a movable carriage for supporting the swage or jointer, substantially as described.

2. The adjustable blocks O, in combination with the frame A and a yielding tract, substantially as and for the purposes specified.

3. A saw-swage composed of the carriage M, stock N, clasp P, blocks Q, R, and S, pin T, and set-screw W, substantially as specified.

6,223. MACHINES FOR GRINDING ROLLS OR ROLLERS. J. Morton Poole, Wilmington, Del., assignor to himself, Wm. T. Porter, and Thomas S. Poole. Patent No. 79,663, dated July 7, 1868. (Filed Jan. 20, 1875.)

6,226.



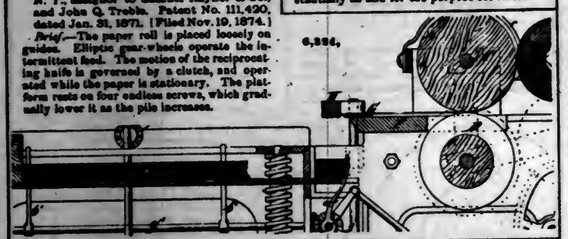
1. A grinding-machine for grinding rolls or rollers cylindrically true, said machine having its grinding-wheels operating with counter-threads, and sustained by a suspended support on a reciprocating carriage, to which all transverse movement, which imperfections in the machine create, is confined during the contact of the grinding-wheels with the roll or roller being ground, substantially as described.

2. A revolving roll or roller, which finally becomes the cylindrically true roll or roller, as a guide for the grinding-wheels during the operation of said wheels of grinding off the imperfections of the surface of said roll or roller, substantially as described.

6,236. MACHINES FOR CUTTING PAPER OR OTHER MATERIALS. James Ball, Brooklyn, N. Y., assignor to Samuel Raynor & Co., and John Q. Trebbs. Patent No. 111,420, dated Jan. 31, 1871. [Filed Nov. 19, 1874.]

Brief.—The paper roll is placed loosely on guides. Elliptic gear-wheels operate the intermittent feed. The motion of the reciprocating knife is governed by a clutch, and operated while the paper is stationary. The platform rests on four endless screws, which gradually lower it as the pile increases.

6,236.



1. The guides *c*, supporting the gudgeons of the roll of paper or other material, and allowing said roll to adjust itself laterally in accordance with the guides *c* of the feed-cylinder, combined to operate substantially as described.

2. The wheel *d*, with plain segment *f*, segmental step *g*, and wheel *e*, and the elliptic wheels *h i*, combined and operating together, in relation to the feed-cylinder, substantially as and for the purpose described.

3. The knife H, in combination with the rod *t*, disks *u*, worm pinion *k*, sleeve or clutch *l*, teeth *r s*, groove *v*, pin *q*, and cam-groove *s*, substantially as and for the purpose set forth.

4. The combination of the two knives G H, both being situated in horizontal planes, the knife G forming the continuation of the platform over which the material to be cut is fed, the cutting-edges of both knives being recessed to conform to the shape of the sheets to be cut, substantially as described.

5. The pin *o*, projecting from the lever *w*, and the notched disk *p*, operating together, in combination with the stop mechanism of the knife, substantially as and for the purpose described.

6. The platform I, having its edges bearing on the inner portions of the threads of the endless geared screws K, combined substantially as described, so that an empty platform may be substituted for the loaded platform.

7. The combination of the bearers *a' b'* and gages *d' d'* with the platform I, substantially as set forth.

6,265. STEREOTYPE-PLATE HOLDERS. Ariel Cass, New Haven, Conn., assignor to R. Hoe & Co., New York city. Patent No. 94,110, dated Apr. 24, 1869. [Filed Feb. 26, 1875.]



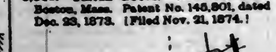
1. A stereotype-block, consisting of a number of quadrats, a beaded plate-holding block, F, and the plate-holding block B, carrying an adjustable bevel, whereby, when the said furniture is locked in a chase, the stereotype-plate may be detached therefrom, substantially as described, and for the purpose set forth.

2. The stereotype-plate holding-hook and its actuating-nut, constructed substantially as described.

3. The combination of the plate-holding jaw or hook A, having a screw-threaded opening in its cheek, with its actuating-screw D seated in bearings in a supporting block, substantially as described.

6,266. PRINTERS' GALLEYS. Alex. T. De Puy, New York, N. Y., assignor to R. Hoe & Co., same place. Patent No. 60,151, dated Dec. 4, 1866; reissue No. 3,066, dated Aug. 4, 1868. [Filed Feb. 26, 1875.]

Brief.—Flanged metal strips are attached to the wooden rails of galleys by corresponding grooves in the rails, so that the inner surface of the lining is not perforated.



1. In a printer's galley, the combination of the edge-rail and its metallic facing or lining by means which secure their union and leave the metallic facing or lining smooth, or free from perforations or similar interruptions, substantially as and for the purpose set forth.

6,234.

2. The metallic facing or lining of the edge-rail or ledge of a printer's galley, secured thereto by means of a flange or flanges, so that the point of securement shall be in rear of the face, thus leaving the latter smooth or uninterrupted by any fastening device.

3. An edge-rail for a printer's galley, having a metallic facing secured thereto behind the plane of its face, substantially as described, and for the purpose set forth.

6,267. PRINTERS' GALLEYS. Alex. T. De Puy, New York, N. Y., assignor to R. Hoe & Co., same place. Patent No. 93,422, dated Aug. 10, 1869. [Filed Feb. 26, 1875.]

Brief.—The rails of the galleys are composed of a metal tube filled with wood or composition, and are secured to the base-plate by screws from the under side, or by solder.



1. A printer's galley constructed with an edge rail or ledge, formed from a tubular metallic rod secured to the base-plate, substantially as described.

2. A printer's galley constructed with a tubular metallic edge rail, ledge, or rib, having a wooden or equivalent core or filling, which provides a suitable bed or bearing for the threads of the screws which secure it to the base-plate, substantially as described.

3. In combination with the mitered ends of the tubular edge rail or rib, the angle-braces or ties for uniting the corners, substantially as described.

6,268. GAITER-BOOTS. Calvin Hersome, Boston, Mass. Patent No. 145,801, dated Dec. 23, 1873. [Filed Nov. 21, 1874.]



The combination, with a fastening-strap passing from the vamp or instep-piece around the back of a shoe, of a cheek or stop to limit the vertical play of the strap.

6,232. HARVESTERS. Chas. W. Marsh and William W. Marsh, Sycamore, Ill. Patent No. 21,207, dated Aug. 17, 1858; reissue No. 1,710, dated July 5, 1864; reissue No. 2,014, dated June 27, 1865; extended seven years. [Filed Feb. 3, 1875.]

1. The secondary band of rakes F, consisting of toothed slats extending across on the under side of a slotted platform, the teeth protruding through the slots, in the manner described, and used in connection with a binders' grain-receptacle, substantially as and for the purposes set forth.

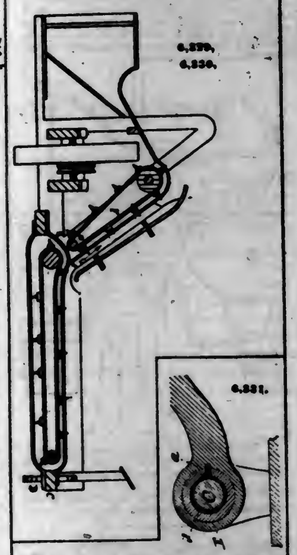
2. The carved or bent deflector *t*, forming a part of the cover, in combination with the grain-elevating mechanism and grain-receptacle, whereby the upward direction of the grain will be changed toward the receptacle, substantially as set forth.

6,233. HARVESTERS. Chas. W. Marsh and William W. Marsh, Sycamore, Ill. Patent No. 21,207, dated Aug. 17, 1858; reissue No. 1,710, dated July 5, 1864; reissue No. 2,014, dated June 27, 1865; extended seven years. [Filed Feb. 3, 1875.]

1. The combination of the binders' stand on the outside of the drive-wheel, and a grain-carrier on the opposite side, with the intermediate drive-wheel, elevator, and grain-receiver, all arranged in line, substantially as and for the purposes specified.

2. In combination with the binders' stand on the outside of the drive-wheel, and a grain-carrier on the opposite side, and the intermediate drive-wheel, elevator, and grain-receiver, arranged in line therewith, the elevated binders' tables, one in front and one in rear of the axis of the drive-wheel, substantially as described.

6,235, 6,236.



6,231.

6,231. THILL-COUPLINGS. Geo. F. Smith, Plantsville, Conn. Patent No. 149,535, dated Apr. 7, 1874. [Filed Dec. 8, 1874.]

1. The combination of the internal cylinder E, with elastic material *d*, and the shaft-eye A, the cylinder being divided, and a portion of it extending outward into the elastic material, substantially as and for the purpose described.

2. The combination of the internal cylinder E, and elastic material *d* with the shaft-eye A, the cylinder extending into connection with the shaft-eye, substantially as described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 11. TUESDAY, MARCH 16, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

THOMAS A. EDISON.—*Question of title.*

[*In the matter of the applications of Thomas A. Edison, assignor, &c., Nos.* 94, 95, 96, 97, 98, 99, and 100, *for Letters Patent for alleged* "IMPROVEMENTS IN DUPLEX TELEGRAPHS," *filed September* 1, 1874.—*Decided March* 20, 1875.]

In determining to whom a patent shall issue, where assignments have been made, the Commissioner of Patents must be governed by the record. He cannot regard mere equitable claims, but must issue the patent to the person or persons having the legal title, the requirements of the Office having been complied with.

An instrument purporting to convey inventions not yet *in esse* is not an assignment, but only an executory contract.

An applicant is estopped from contradicting his deed of assignment, but an estoppel by deed arises alone upon a recital of a particular fact.

It would seem that where, in enforcing specific performance of a contract to assign an interest in a future invention, equity may (after the invention has been perfected and patented) carve out an undivided interest in the patent, a valid assignment to a third party will afterward take effect upon the interest remaining in the patentee.

THACHER, *Commissioner:*

Prior to the filing of these applications the following assignment was sent to the Patent Office and recorded August 29, 1874, in Liber K[18], p. 62, Transfers of Patents.

Articles of agreement made and entered into this nineteenth day of August A. D. 1874, by and between Thomas A. Edison, of Newark, in the State of New Jersey, and George B. Prescott, of the city and State of New York, witnesseth—

Whereas said Edison has invented certain improvements in duplex telegraphs, for which he has executed or is about to execute applications for letters patent of the United States, and such applications are numbered 94, 95, 96, 97, 98, 99, and 100, and are dated August 19, 1874, and said Prescott is entitled to an equal interest in the same and others hereafter mentioned.

Therefore, in consideration of the premises and the sum of one dollar in hand paid, the receipt whereof is hereby acknowledged, the said Edison has sold and assigned, and does hereby set over and convey unto the said George B. Prescott one undivided half part of the right, title, and interest, of every character, in, to, under, and connected with each and all the aforementioned inventions and letters patent on the same, when granted, and authorizes and requests the Commissioner of Patents to issue the said letters patent to Thomas A. Edison and George B. Prescott, as the assignees of said Edison, for the use and behoof of themselves and their legal representatives. And whereas the said Edison has also invented other improvements in duplex telegraphs, the descriptions of which have been lodged with George M. Phelps for the purpose of models being constructed, it is hereby agreed that such inventions are included in this patent agreement, and that, when the applications for patents are made, the patents to be granted in accordance herewith, and that the said Edison shall sign the required papers therefor.

This transfer is made on the following terms and conditions, which are hereby made part of the consideration in the premises:

1. That both of the parties shall have an equal undivided interest in all letters patent of the United States, or of any foreign countries, which may be granted for all or any of said inventions, or of any future improvements thereon made, by either party, and of all extensions and reissues of any such letters patent.

2. That whereas Edison has heretofore expended $1,125 for models and patent fees, the benefit of which he contributes to the common interest, and waives reimbursement of that sum, or of any part of it, Prescott hereby agrees to pay solely and without contribution from Edison, all the future expenses and cost of specifications, drawings, models, Patent Office fees, and patent solicitors' and agents' fees, and all other charges incident to the procuring of letters patent for any of said inventions.

3. That neither of said parties will sell, assign, or otherwise dispose of the whole or any part of his interest in said inventions or letters patent therefor, or any of them, without the written consent thereto first obtained of the other party.

4. That neither of said parties will himself manufacture, use, or sell, nor grant licenses, nor the right in any way to any other party, to manufacture, use, or sell any of the said inventions, or any improvements thereof, or any machine embodying, or article containing any of said inventions or improvements, or protected by any of said letters patent without the written consent first obtained of the other party.

5. No sale of any of the said inventions, and no license or right to make or use the same, in any way, shall be made or given, except at a price to which both parties agree in writing, and all net profits shall be equally divided between the parties hereto.

6. The covenants and provisions of this agreement, binding either of the parties hereto, shall also bind his executors, administrators, and assigns.

In witness whereof the said parties have hereunto set their hands and seals the day and year first above written.

THOMAS A. EDISON. [L. S.]
Witnesses: GEORGE B. PRESCOTT. [L. S.]
HAROLD SERRELL,
LAMUEL W. SERRELL.

In accordance with this assignment the applications were entered in the Office, as made, by "Thomas A. Edison, assignor of one-half his right to George B. Prescott, of New York city;" and, under the usual practice of the Patent Office, the patents would have been issued, in accordance with the request contained in the assignment, to Edison and Prescott, as assignees of Edison. Before the examination of the applications had been completed, George Harrington presented to the Commissioner of Patents a petition, bearing date January 23, 1875, praying that the patents might issue to Edison and himself, as assignees of the former, on the ground that the following assignment, recorded May 6, 1871, Liber U[13], p. 412, Transfers of Patents, conveyed to him an interest in these inventions.

Whereas I, Thomas A. Edison, of the city of Newark, State of New Jersey, for certain valid and valuable considerations to me in hand paid, and in further consideration of certain covenants

and stipulations to be fulfilled by George Harrington, of Washington, District of Columbia, did stipulate and agree to invent and construct for the said Harrington full and complete sets of instruments and machinery that should successfully and economically develop into practical use the Little or other system of automatic or fast system of telegraphy, and subsequently to improve and perfect such instruments and machinery by adding thereto, from time to time, such further inventions as experience should demand and my ability as an inventor and electrician might suggest and permit; and furthermore to prepare or cause to be prepared the necessary description-papers, the model and drawings requisite to obtain patents for all such inventions and improvements, the said inventions and improvements to be the joint property of the said Harrington and myself, and the patents to be issued to the said Harrington and myself in the proportionate interest of two-thirds to said Harrington and one-third to myself; the whole to be under the sole control of said Harrington, to be disposed of by him for our mutual benefit in the proportions hereinbefore recited, in such manner and to such extent as he, the said Harrington, should deem advisable, with power to sell, transfer, and convey the whole or any part of the rights and titles in and to any or all of said inventions and improvements, as also of the patent or other rights arising therefrom. And the said Harrington having faithfully fulfilled all of the covenants and stipulations entered by him,

Now, therefore, be it known that, in consideration thereof and of the sum of one dollar to me in hand paid, I, Thomas A. Edison, of the city of Newark, State of New Jersey, do, by these presents, hereby assign, set over, and convey to him, the said Harrington, two-thirds in interest of all my said inventions, including therein all my inventions of mechanical or copying printers, and of all the patents for all such inventions and printers, whether already issued, applied for, or to be hereafter applied for, and of all and whatsoever of my inventions and improvements made or to be made, and of all the patents that may be issued therefor, that are or may be applicable to automatic telegraphy mechanical printers.

And whereas I am desirous of obtaining the co-operation and assistance of the said George Harrington in disposing of my said one-third interest, as before recited, and for the purpose of united and harmonious action in negotiating for its use or its sale and transfer by or to others in conjunction with his own and in such free and unrestricted manner as will tend to success, and for the sum of one dollar to me in hand paid, the receipt whereof is hereby acknowledged. Now, therefore, be it known that I, Thomas A. Edison, of the city of Newark, State of New Jersey, have constituted and appointed, and by these presents do constitute and appoint, George Harrington, of the city of Washington, District of Columbia, my true and lawful and only attorney, irrevocable, with power to substitute for me and in my name, and in such manner as he may think best, to sell, transfer, and convey all of my rights, titles, and interest in and to any and all of my said inventions, and the improvements thereto, whether made or to be made, and to sell, transfer, and convey all of my rights, by patent or otherwise, arising therefrom already made and obtained, and all such as may hereafter be made or obtained, and to execute in full any or all the necessary papers and documents requisite for the transfer of title, and to invest in other parties full and legal ownership therein, hereby divesting myself of and investing him, the said Harrington, with all the powers necessary in the premises, fully and completely, to carry out the purposes and intentions herein set forth, hereby fully confirming all that my said attorney may or shall do in the premises as fully as if done by me in person, and requesting the Commissioner of Patents to recognize him as such attorney.

In witness whereof I have hereunto set my hand and affixed my seal, in the city of Newark, this 4th day of April, 1871.

T. A. EDISON. [L. s.]

In presence of—
A. D. COBURN,
A. B. CANDEE.

A letter of even date with this petition was also received from Edison, stating that the assignment to Prescott was made under an erroneous impression, and requesting the issue of the patents to Harrington and himself.

The issue before the Commissioner is, to whom shall the patents be granted? In determining this question, the Commissioner must be guided entirely by the record. He has not the authority of a court to consider evidence, outside the record, as to outstanding equities. The only question that he can decide is, who on the record possesses the *legal* title to these inventions? He must issue the patents accordingly, if the requirements of the Office, in such cases provided, have been complied with.

In the investigation of this matter I have come to the conclusion that it is not necessary for the Commissioner to determine whether the assignment from Edison to Harrington, dated April 4, 1871, covers these inventions or not. However this question may be decided finally, there is no evidence that the inventions described in these applications were in existence at the time this instrument was executed. It is not even claimed by Harrington that they were. He simply says that there is no evidence they were not then in existence. But in a court of equity, one of the first requirements made of Harrington would be to prove affirmatively that Edison had perfected these inventions when he executed the assignment of April 4, 1871. In the absence of such proof the probabilities must guide. These are all against the existence of the inventions at that time. The applications were filed more than three years after the date of the assignment. The first record made by Edison in the Patent Office in any way connected with these inventions was some time in 1873, when he filed his first caveat relating to duplex telegraphy. It is also worthy of notice in this connection that Edison is a very fertile inventor, as the great number of patents obtained by him within the last few years conclusively shows. The present applications extend a series, commenced not long ago, to the number of one hundred. It must be remembered, too, that there has been great activity in inventions relating to telegraphy for a number of years past, and sharp competition has existed between inventors of various improvements. It is incredible, under these circumstances, that an inventor like Edison should allow such valuable improvements to lie three or four years after completion without applying for patents. In the absence of positive evidence on this point, I must follow the presumption, which in this instance is so strong as to amount almost to a certainty, that the inventions described in these applications were not *in esse* when the agreement was made between Edison and Harrington. Admitting, then, that this deed includes these inventions in unmistakable terms, no legal title in them passed thereby to Harrington; the instrument has the force only of an executory contract. (*Gibson* vs. *Cook*, 2 Blatchf., 144; *Curtis on Patents*, 4th ed., sec. 183, Note 2, p. 206.)

The *legal* title to these inventions, then, was entirely in Edison at the time he executed the assignment to Prescott, and he alone had the right to convey any interest in the inventions, or patents granted therefor. This right he exercised with all due formality when, in 1874, he conveyed an entire half-interest in the inventions to Prescott. Whether this was done in violation of an outstanding contract is not material to the present discussion. Prescott became the legal assignee of Edison, and, upon the execution of the assignment of 1874, Edison and Prescott became the possessors of the *legal* title to the entire inventions. This conclusion is controlling in effect, for Edison is estopped from contradicting his deed of assignment to Prescott. It is hardly necessary to cite authorities on this point, and I will only refer to *Van Rensselaer* vs. *Kearney et al.*, (11 How., 297,) and *Bowman* vs. *Taylor*, (1 Webster's Patent Cases, 292.)

It may be alleged, however, that the same doctrine should be applied to the deed of Edison to Harrington of 1871, and that then the rule that an "estoppel against an estoppel setteth the matter at large" would operate. But an estoppel arises alone upon a recital of a particular fact. Speaking of a mortgage-deed, "There is," said Lord Tenderden, delivering the judgment of the court in *Doe d. Jeffreys* vs. *Bucknell*, (2 B. and Ad., 278,) "a want of that *certainty of allegation* which is necessary to make it an estoppel. Lord Holt lays it down in *Salby* vs. *Kidley*, (1 Show., 59,) that *general recital* is not an estoppel, *though recital of a particular fact is.*" (*Doe* vs. *Oliver*, 2 Smith's Leading Cases, Hare & Wallace's Notes, 7th Am. ed., 656.)

The deed in question does not point out, either by recital or description, any particular invention or patent. It is vague in its terms and executory in its nature, and, for the latter reason, as well as for its uncertainty, an estoppel cannot be considered as arising thereupon. (*Doe* vs. *Oliver*, Ibid, 673.)

The discussion of this case might rest here, I believe, with perfect certainty that, if the necessary formalities have been observed, the Commissioner must necessarily order the patents to issue to Edison and Prescott. But I am still more strongly confirmed in this opinion by the fact, as I believe, that Prescott is the owner of *some* interest in the inventions, whatever effect may be given to the Harrington contract. If a court of equity shall hereafter carve out a two-thirds interest in the patents granted and give it to Harrington, the deed of Edison to Prescott will still take effect upon the lesser interest, if the grantee chooses to enforce it. (1 Sugden on Vendors, 347; *Brown* vs. *Jackson*, 3 Wheaton, 453; *Waters* vs. *Travis*, 9 Johns., 450; *Turnbull et al.* vs. *Weir Plow Co.*, 7 OFFICIAL GAZETTE, 173.) Whether in this contingency Prescott can enforce the contract to the full extent of the one-third interest remaining in Edison, or whether the terms and conditions of the grant are such that it can be enforced only to the extent of one-half Edison's remainder, is immaterial. Upon the record before me, Prescott, in my opinion, has an indefeasible right to *some* interest in the inventions described in the applications. This fact makes the necessity of joining Prescott with Edison as the sole possessors of the *legal* title to the inventions still stronger.

The only question left is to determine whether in the assignment to Prescott such formalities have been observed as will authorize the Commissioner to issue the patents to Edison and Prescott, as assignees of the former. On this point it is only necessary to say that the assignment is in the very words of the form which has been sent out by the Patent Office for years past in its annual official edition of "Rules of Practice." The practice has been invariable in such cases to issue the patents to the assignees, whenever assignments in this form are put on record prior to the issue. I see no reason whatever for departing from this rule in this instance. In the absence of any decision by a higher tribunal invalidating patents thus granted, I think the Commissioner should follow the practice which, so far as my knowledge extends, has never been questioned heretofore.

The applications are remanded to the Principal Examiner, and, when ready for issue, the patents will be granted to Edison and Prescott, assignees of Edison.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF OHIO.

WILLIAM W. PELTON AND HIRAM TAYLOR *vs.* GARDNER WATERS, JOSEPH J. STARR, AND CHARLES D. JOHNSON.

[*In equity.—Before* EMMONS *and* SWING, *J. J.—December*, 1874.]

The general rule is that the *first* in a series of applications for a patent is the one on which the patent, when granted, depends.

If, between the first and a second application for a patent, the patentee has manifested an actual intention to abandon the first, his patent will have relation to the last one only. His actual intention severs the proceeding.

W. and T., having filed applications for patents showing substantially the same device, at the respective dates March 31 and April 21, 1868, were rejected. T. persisted in his claim, and upon appeal secured his patent; while W. amended his application, excluding from his claim the common device, and thus, without appeal, obtained a patent of narrow scope. Subsequently, learning of T.'s patent, he filed a second application, broad enough to include the device previously omitted, and, in the consequent interference proceedings with T., was adjudged the prior inventor, and thereupon obtained a broad patent: *Held*, in a suit brought by T. against W., that W.'s second application was the commencement of a *new proceeding*, and that alone upon which the patent granted in pursuance of it depends; and, therefore, that the presumption, as regards priority of invention, was with T.

The accidental making of an improved article, in a single instance, without knowledge on the part of the producer of how to accomplish it, or to produce another like it, is not invention. (Letters patent for "Improvement in Lubricators," granted to Hiram Taylor, June 23, 1868, sustained.)

STATEMENT OF FACTS.

[Gardner Waters filed an application for letters patent for an "Improvement in Lubricators," March 31, 1868. On the 21st of April, 1868, Hiram Taylor made an application for a patent for substantially the same improvement. Both applications were rejected by the examiner. Waters narrowed his claim, and thereupon received a patent of limited scope; but Taylor persisted in his claim, and upon appeal secured his patent, which was issued to him June 23, 1868.

When Waters learned that a patent had been issued to Taylor with a "broad claim," he filed a second application, asserting therein a claim for the invention substantially as covered by the Taylor patent, and demanded an interference. This was granted him; and, upon the final appeal to one of the judges of the Supreme Court of the District of Columbia, he was adjudged the prior inventor; and accordingly letters patent were issued to him June 29, 1869.

The present suit under the Taylor patent had been begun in November, 1868, complainant's testimony being duly taken after the issue was joined.

In December, 1869, defendants filed an amended and supplemental answer, claiming that Waters was the first inventor, and setting up the interference decision.

Issue was joined upon this answer, and testimony for defendants, and rebutting proofs for complainants, taken and filed in 1870.

The hearing was had at the October term of 1874.

At the hearing the defendants objected to a certified copy of an application for a patent made by the complainant, Taylor, in September, 1867, which, it was claimed, described the device in controversy, on the ground that the copy of the application referred to drawings as being a part of the original application, no drawings, however, being attached to the copy. The objection was sustained by the court.]

[*Reuben Syler*, for complainants.
E. W. Kittridge, for defendants.]

EMMONS, *Circuit Judge*, delivered the opinion of the court.

The patent of the complainant, Taylor, antedates that of the defendant, Waters, and he is entitled to the presumption that his invention is novel.

This presumption is of importance only where the testimony is conflicting, and any considerable doubt is involved as to who is the first inventor. It is of but little consequence in this case. It has, however, been much argued.

The defendant insists that his application was made earlier than that of the complainant, and therefore his patent is to have relation to the date of its filing. As a general rule, this is undoubtedly true.

We do not intend to question, or even qualify, any of the cases on the subject, which we recently considered and applied in the case of the *Dental Vulcanite Co.* vs. *Willis*. These judgments assert several exceptions to the application of the rule.

If, intermediate the first and second application, the patentee manifests an actual intention to abandon the first, his patent will have relation to the last one only. His actual intention severs the proceeding. The law deems the first application terminated and as bearing no relation to the patent, which rests solely on the last one.

A withdrawal of a first application, and the reception of the fee paid back from the department, under the statute, is also a severance of the proceedings. The application so withdrawn is not deemed part of any proceeding, under a subsequent proceeding for a patent.

These are but illustrations of exceptions to the general principle, which deems the first in a series of applications for a patent as that upon which a patent depends.

We think the case before us comes within the reason of these exceptions.

Under the first application of the defendant he actually received a patent, after having amended his specifications so as to exclude the present device. We think this action wholly terminated the first proceeding. It was ended in the accomplishment of its object. The decision of the department was acquiesced in, and its final judgment obtained.

The subsequent application in such circumstances must be deemed the commencement of a new proceeding, and as that alone upon which the patent granted in pursuance of it depends.

This last application was subsequent to that of complainant's patent; and, as they are both for precisely the same device, the presumption is in favor of priority of invention on the part of complainant.

The complainant swears that in the fall of 1866 he cast an impervious joint upon the neck of a bottle. He proves his statement by a blacksmith, who came to present an account, and saw such a bottle in his shop; and the complainant's brother testifies that he also saw it at a subsequent period.

If his rights depended upon our adopting the theory that he completed his invention at that time, by such means, we should dismiss the bill. Positive as the testimony is, the fact of success at a period so early is too inconsistent with his subsequent conduct, manifestly evincing an entire ignorance of the thing we think he subsequently invented. Such singular stories are incident in nearly all these controversies in reference to priority of invention.

Parties frequently prove the making of some fixture which is destroyed; of some model which is lost; and some conversation which has never been acted upon sufficiently early to antedate his opponent. We could give many reasons why we fear the history of this caster-bottle finds its origin in the fact that the defendant in his testimony places his discovery about a year earlier than we think it was invented by any one.

Far more satisfactory and convincing is the proof that the complainant, in the latter part of 1867 and subsequently, was making and vending, in large quantities, the patented device. The defendant's agent, Pelton, who was selling at that time a different article for the defendant, in the fore part of 1868, bought of the complainant a number of lubricators of the kind in question, to supply the place of an inferior article, manufactured by the defendant, which he had sold for him, and which, on account of their leaking had to be supplied by a better.

It is needless to recapitulate the proofs; they are abundant and uncontradicted to show that, from the latter part of 1867 forward, the complainant was in the full manufacture and sale of the patented device. There is no satisfactory evidence of its invention before that date. It is with this concession that we grant him a decree.

To overcome this case and prove the defendant to be a prior inventor, he himself swears that, in the latter part of 1866, he too made an impervious joint upon the neck of a glass globe, tested it with steam, and placed it upon the cross head of an engine, where it worked successfully, as he proves by Henderson, the colored engineer, for three successive years. The witnesses, Reynolds and Phillips, with more or less confirmation, sustain Henderson.

We are absolved from the duty of contrasting this proof with other unquestioned facts in the case, for the purpose of ascertaining whether it was not 1867 instead of 1866 that this successful lubricator was made because the defendant's own statement as a witness renders it wholly unnecessary. He says, most explicitly, that, though he did succeed accidentally in making one close joint upon the neck of that single globe, he tried in vain, for five months thereafter, to make another. He says he broke many bottles in the attempt; that he did not even partially succeed but in a single instance during the five months; and that one leaked so badly it was unfit for use. It was not until 1868 that he learned how to produce a close joint; and, at a time considerably after complainant was publicly manufacturing them. The accidental making of this one joint without any knowledge on the part of the producer of how to accomplish it, with utter inability on his part to produce another like it, is not invention. His ignorance was so complete concerning the mode of its production that he himself swears he not only did not attempt their manufacture, but laid aside a large stock of material during this period for the making of a wholly different article. These he did manufacture and put upon the market through Starr & Pelton, his agents. He not only had not invented a close joint, but he had so little hope of success that he prepared extensively for the making of a different and inferior lubricator. In these circumstances a single fortuitous success is by no means invention, within the protection of the patent law. He not only did not, and could not, give it to the public, but he did not possess it himself. It might as well be claimed that he that should be carrying three bottles in a basket, which being accidentally broken, their contents mixing in unknown quantities upon the earth makes some useful compound, and enters upon a series of experiments for the purpose of ascertaining, if possible, its relative proportions, but who does not succeed in doing so until after another has successfully completed the discovery, can antedate him by proof of the casualty by which he saw the same thing produced. When the defendant saw the first bottle on the cross-head of the engine, without any knowledge of the mode by which he could make another, he stood in no other relation to it, as far as the patent law is concerned, than if it had been placed there by somebody else.

It is not necessary to consider the many other facts in the case which tend to show that the defendant in fact obtained his knowledge of the device from the complainant. We refer to a few of them only, as illustrating the rightfulness of the principle we apply to the defendant's testimony. When Pelton, his agent for the sale of a different manufacture, as late as 1868, presented the defendant with one of the complainant's lubricators, he pronounced it impracticable. He said they could not be profitably made, and that Pelton did not know how many bottles must necessarily be broken by the complainant in making his lubricator.

Other analogous proofs exist. We refer to these single instances only, to show the inconsistency of treating that man as an inventor who is so discouraged by his own failures, and the repeated breaking of his bottles, that he pronounces the attempt impracticable, and is himself at that time manufacturing a different and poorer article nearly a year and a half after the mysterious production of the close joint which the Court is asked to believe was placed upon the cross-heads in 1866.

We think the presumption of the law arising from the anterior patent of the complainant, is consonant with the inference of the fact to be drawn from the testimony.

The complainant was the first inventor of the lubricator described in his patent. The accidental making of one in 1866 by the defendant, if every thing occured precisely as he swears it did, is not invention in any sense. There can hardly be said to be a conflict of testimony in reference to the fact, that the complainant for many months before the defendant did so, manufactured and put these articles on the market.

There may be a decree for the complainant in the usual form.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date March 16, 1875.]

8,206.—Aquariums.—JOSEPH W. FISKE, New York, N. Y. Application filed February 26, 1875. Term of patent 7 years.

8,207.—Mustard-Bottle.—JACOB GULDEN, New York, N. Y. Application filed December 11, 1874. Term of patent 3½ years.

8,208.—Carpet.—ALFRED HEALD, Philadelphia, Pa., assignor to HUGH MCCALLUM, ORLANDO CREASE, ANDREW J. SLOAN, and WILLIAM MCCALLUM, same place.—A'. Application filed February 15, 1875. Term of patent 3½ years.

8,209.—Gauntlet.—BYRON G. SHULTS, Johnstown, N. Y. Application filed January 2, 1875. Term of patent 3½ years.

8,210.—Perfumery-Bottle.—GUSTAVUS STORM, Philadelphia, Pa. Application filed February 8, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Certificate bearing date March 16, 1875.]

2,287.—Perfumery.—WILL B. DORMAN, Georgetown, Mass. Application filed January 13, 1875.

"'CHAMPAGNE COLOGNE,' arranged as shown in the accompanying engraving, with the figure of a low broad perfume bottle or jug, with a handle on each side, and supporting an elephant which stands with feet close together upon the stopper."

2,288.—Cooking-Stove.—MARCUS L. FILLEY, Lansingburg, N. Y. Application filed December 23, 1874.

"'TEXAS GIRL.'"

2,289.—Medicine.—BONFIELD GORRELL, Hopewell, Md. Application filed March 9, 1875.

"'S. B.—75—1 D.'"

2,290.—Cigars.—HARNED & Co., Brooklyn, N. Y. Application filed March 5, 1875.

"side view or representation of the so-called East River bridge."

2,291.—Medicine.—JOHN F. HENRY, CURRAN & Co, New York, N. Y. Application filed February 13, 1875.

"Elaborate device. 'Dr. Wm. Hall's Balsam;' a female seated near the seashore; implements of agriculture and husbandry; an Indian pointing to distant object; a half-draped female figure with arm encircling the neck of American eagle, &c."

2,292.—Flour.—THOMAS C. JENKINS, Pittsburg, Pa. Application filed November 16, 1874.

"'White River.'"

2,293.—Prong Hoes.—REISIG & HEXAMER, New Castle, N. Y. Application filed January 25, 1875.

"'Hexamer's Prong Joy-Hill Hoe.'"

2,294.—Cigars.—A. SCHUNEMAN & Co., Detroit, Mich. Application filed March 4, 1875.

"'Commercial Traveler.'"

2,295.—Lubricating-Oils.—WILLIAM C. STILES, Jr., Volcano, W. Va. Application filed February 23, 1875.

"'Zero.'"

2,296.—Soap.—THE KENDALL MANUFACTURING COMPANY, Providence, R. I. Application filed March 8, 1875.

"'HOME.'"

2,297.—Deviled Entremets.—WILLIAM UNDERWOOD & Co., Boston, Mass. Application filed October 25, 1870.

"Picture of a red devil, monogram, &c."

2,298.—Burning-Fluid.—BUCKLEY A. ROSE, Urbana, Ohio. Application filed November 26, 1870.

"'Rose Burning-Fluid,' in conjunction with an illustration of a rose."

2,299.—Liniment.—ELFRET MAATMAN, St. Louis, Mo. Application filed March 6, 1875.

"the figure of a bell."

2,300.—Fertilizers.—THE PATAPSCO GUANO COMPANY, Baltimore, Md. Application filed March 1, 1875.

"'Patapsco Ammoniated Soluble Phosphate.'"

2,301.—Chemical for Dyeing.—WEEKS & DUPEE, Boston, Mass. Application filed October 18, 1871.

"'Aurantine.'"

APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., March 22, 1875.

On the petition of JOHN HASELTINE, of Boston, Mass., authorized by act of Congress approved February 18, 1875, praying for the extension of a patent granted to him on the 25th day of March, 1856, for an Improvement in Water-Wheels,

It is ordered that the testimony in the case be closed on the 11th day of May next; that the time for filing arguments and the Examiner's report be limited to the 21st day of May next; and that said petition be heard on the 26th day of May next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

INDEX OF INVENTIONS PATENTED MARCH 16, 1875.

	Class No.	No. of Patent.
Acid from borate of lime, obtaining boracic, F. Formhals	35	160,761
Advertising medium, C. H. and H. F. Torsch	54	160,971
Air compressors, relief apparatus for, G. H. Reynolds	2	160,956
Alarm, burglar, M. E. Lasher	24	160,918
Alloy, bronze, S. Doubleday	99	160,885
Anatomical specimens, jar for, J. M. Maris	156	160,926
Anvils, casting steel faced, J. Donovan	33	160,816
Atomizer, C. Weed	98	160,892
Awning, C. J. Trumper	102	160,973
Bag, rubber coated, W. D. Grimshaw	84	160,897
Barrel barrow, J. H. Brown	31	160,810
Barrel crozing machine, Steel and Munson	40	160,966
Bed bottom, P. C. Ingersoll	62	160,913
Bed bottom, E. W. Tucker, (reissue)	62	6,338
Bed bottom, spring, E. P. Bennett	62	160,809
Bedstead, C. Snyder	62	160,963
Bedstead, wardrobe, R. G. McClure	62	160,833
Beer vent, J. W. Spahn	40	160,847
Bill holder and separator, combined, A. M. Lockhart	146	160,780

	Class No.	No. of Patent.
Bird food holder, S. E. Tompkins	170	160,853
Blacking for boots, &c., C. Alvord	16	160,741
Blind stop, G. Woodward	24	160,805
Boiler feeder, F. McGuire	148	160,930
Boilers, feed water heater for steam, H. N. Waters	148	160,979
Book clip, H. T. Dunlap	146	160,886
Boot or shoe tip, Merrill and Hoitt	16	160,835
Boots, &c., blacking for, C. Alvord	16	160,741
Bowling alley, A. A. Hamlin	143	160,900
Box, sheet metal, W. C. McGill	136	160,834
Brick, mold for angle, J. H. Mathes	20	160,832
Bridle bit, J. P. Hisley	72	160,772
Brush, W. A. Megraw	24	160,933
Bucket ear, J. D. Field	136	160,818
Buckle, J. Hudson	23	160,912
Buckle, trace, J. P. Hisley	74	160,909
Burial caskets, composition for coating, C. H. Mulligan	39	160,784
Burner for the manufacture of lamp black, gas, P. Neff	107	160,787
Burner for the manufacture of lamp black, gas, P. Neff	107	160,789
Burner, gas, E. Evans	64	160,758
Burner, waste gas, P. Neff	64	160,785
Burners, automatic lighter for gas, E. L. Megill	64	160,932
Can for mixing paint, W. W. Thayer	107	160,852
Cap, traveling, A. Schwarz	76	160,844
Car coupling, W. Green	122	160,822
Car coupling, M. Kurtzeman	122	160,779
Cars, signal light for railroad, Burnham and Strong	120	160,871
Car starter, D. D. Hardy	122	160,769
Car truck, railroad, A. Gilman	122	160,821
Car wheel, S. B. Chapman	122	160,814
Cars, device for moving railroad, B. F. Phelps	121	160,839
Cars, &c., with endless traveling devices, clamp apparatus for connecting street, W. Eppelsheimer	122	160,757
Carriage, child's, R. Kreter	31	160,917
Carriage painter's easel, A. G. Rykert	31	160,959
Carriage spring, J. Enders	31	160,857
Carriage top, C. Heergeist	31	160,905
Carriage top support, A. Goodyear	31	160,894
Cart, dumping, J. J. Adgate	31	160,861
Cartridge, metallic, F. W. Freund	32	160,763
Casting steel faced anvils, J. Donovan	33	160,816
Chair, J. V. Meigs	62	160,934
Chair, folding, G. E. Whitmore	62	160,985
Chair, tilting, W. Gardner	62	160,764
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Porter, O. F., Clothes pin	160,840
Potter, G. A., Device for removing wire fastenings from corks	160,950
Prentiss, E. F., Rectifying still	160,951
Quaintance, E., assignee	160,949
Quinn, J. J., Machine for tapping malts	160,952
Radey, J. H., Finishing leather	160,841
Rathbun, J. G., assignee	160,775
Raymond, A. and G., Windmill	160,953
Raymond, F., Swinging gate	160,842
Rea, T. F., assignee	160,873
Reilly, J. O., Drill chuck	160,954
Reniff, J. R., Steam and air brake	160,955
Reynolds, G. H., Relief apparatus for air compressors	160,956
Richards, P. D., assignee	160,843
Robinson, G. H., assignee	160,956
Rowley, E. A., Machine for relishing tenons	160,957
Royer, R. R., Water wheel	160,958
Rumsey, L. M. and M., assignees, (reissue)	6,337
Rydbeck, S., Clamp	160,960
Rykert, A. G., Carriage painter's easel	160,959
Safford, M., Loom shuttle	160,843
Saunders, E. M., Wagon cover	160 792
Scholes, J. F., Barrel stove	160,961
Schwarz, A., Traveling cap	160,844
Shrader, C. D., Harvester	160,845
Smith and Hatch	160,824
Smith, G., Vehicle shaping iron	160,793
Smith, G. B., Apparatus for preserving wood	160,846
Smith, J. N., Seal lock	160,962
Smith, Winchester & Co., assignees	160,824
Snyder, B., Vehicle axle skein	160,964
Snyder, C., Bedstead	160 963
Spahn, J. W., Beer vent	160,847
Southwick, A. H., Windmill	160,794
Starr, E. T., Toy fire arm	160,965
Steel, S. S., and S. Munson, Machine for crozing barrels	160,966
Stephenson, H. B., Metallic robaud for attaching sails to spars	160,795
Stetter, G., Die for making metallic bases for jewelry	160,967
Stevens, B. A., Beer cooler	160,796
Stevens, E., Lamp pendant	160 968
Stone, J. R., assignee	160,769
Storey, A. G., and T. J. Lewis, Lamp	160,848
Straub Mill Company, assignee	160,874, 160,875
Strauss, L., & Co., assignees, (reissue)	6,335
Strong and Burnham	160,971
Swan, F., Needle book	160,849
Swasey, S. T., Glue drier	160,797
Sweetland, J. B., Elevator	160,850
Taft, O. W., Handle for cutlery	160,969
Tanuma, H., Mangle	160,851
Thacker, W. H., assignee	160 986
Thayer, W. W., Can for mixing paints	160,852
Thomas R., Cooking stove	160,798
Tilden, H., Key ring	160,970
Tompkins, S. E., Bird food holder	160,853
Torsch, C. H. and H. F., Jr., Advertising medium	160,974
Travis, C. L., Grain band	160,972
Trumper, C. J., Awning	160,973
Tucker, E. W., Bed bottom, (reissue)	6,338
Tutewiler, J. W., Congress gaiter	160,854
Upham, N., Rotary pump or motor	160,974
Vavasseur, J., Attaching rings to projectiles	160,855
Voigt, F. G., Apparatus for the production of gas from hydrocarbon liquids	160,799
Wade, S. H., Cotton planting attachment to harrows	160,975
Walker, D., Office table and bed combined	160,801
Walker, G. W., Parlor grate	160,856
Walker, G. W., Kettle for heating or cooking by steam	160,857
Walker, R. L., Stench trap	160,800
Walsh, J., and J. Dutot, Machine for shearing metal	160 858
Waste, C., Hay press	160,976
Waters, H. N., Feed water heater for steam boilers	160 979
Way, F. and M., Wash bench	160,977
Way, F. and M., Wash bench	160,978
Webb, W. A., assignee	160,836
Weed, C., Atomizer	160,802
Wenk, T., assignee	160,807
Westinghouse, G., Jr., Fluid ejector	160,803
Wheeler, H. N., assignee	160,744, 160,745
Whipple, I., Clothes drier	160,980
Whipple, J. L., Wrench	160,981
Whitcomb, F. N., Saw mill head block	160,982
Whitcomb, F. N., Saw mill head block	160,983
Whitcomb, J. B., Unloading and dumping grain	160,984
Whitmore, G. E., Folding chair	160,985
Whitney, E., assignee	160,860
Willard and English	160,888
Willie, W. T., Machine for distributing compound for destroying cotton worms	160,986
Willis, A. L., Ice creeper	160,804
Wilson, E. K., assignee	160,792
Winn, H., Lock for doors, &c	160,859
Witter, H. M., Surcingle	160,987
Wood, W. A., assignee, (reissue)	6,336
Wood, W. A. Mowing and Reaping Machine Company, assignee, (reissue)	6,339
Woodward, G., Blind stop	160,805
Wright, S., assignee	160,836
Zimmerman, W. H., Lamp extinguisher	160,988

TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED MARCH 16, 1875.

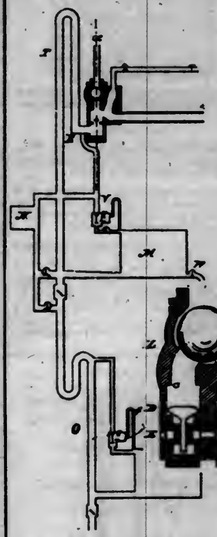
160,741. BLACKING FOR BOOTS, &c. Clark Alvord, Binghamton, N. Y. [Filed Jan. 26, 1875.]

Brief.—Compound of paraffine, bees wax, and bone or lamp black.

The composition, for blacking herein described, compounded of the materials substantially as above set forth.

160,742. PUMPS. Jno. S. Ash, Buckingham, Pa. [Filed Sept. 16, 1874.]

Brief.—A column of water is made to descend alternately through two vertical passages by a ball-valve, which vibrates over them within a common valve-chamber. The vertical tubes have horizontal outlets and pipe-connections (including check-valves) with a water-source below the vibrating ball. By suddenly checking the descent of the water through the vertical passage, the momentum of the column through the outlet-pipe below the ball operates to create a vacuum in the pipe-connection with the water-source below, and, by means of a system of valves and cisterns, to raise the water through it.



1. The passages L L', communicating with a common valve-chamber, for the purpose specified.

2. Ball B or its equivalent, in combination with passages L L', for the purpose of stopping and renewing the flow of liquid through L and L'.

3. The valves D D', in combination with the upper valve-seats C and C', for the purpose specified.

4. The branch G, for the purpose of separating air from a stream of liquid, the flow of which is made intermittent, for the reason specified.

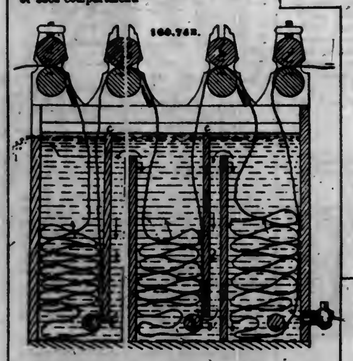
5. The chamber M, combined with tubes B V and E T O, for the purpose specified.

6. The valve arrangement V, consisting of passages A and a, opened and closed by valves e and b, as and for the purpose specified.

7. The chamber E, communicating with M for the purpose specified.

160,743. MACHINES FOR WASHING GOODS BY THE PIECE. Cyrus J. Barker, Lewiston, Me. [Filed Dec. 28, 1874.]

Brief.—Pieces the goods in folds into compartments, through which in a reverse direction water passes from the bottom to the top of such compartment.



1. The combination, with the tank, of the partitions *b*, which do not extend to the top of the tank, and partitions *c*, which do not extend to the bottom of the tank, and arranged with relation to each other substantially as shown and described, whereby the water passes from the top of one compartment into the bottom of the other compartment, as described.

2. The combination, with a tank provided with the partitions *b c*, having alternate top and bottom passages, arranged with relation to each other as shown, of the squeezing-rollers, one set for each pair of intermediate partitions, *b c*, and moving at substantially the same velocity, as and for the purpose set forth.

3. The combination, with the tank-compartments, divided by partitions *b c*, having alternate top and bottom passages, to control the passage of the water, and the fabric-moving rollers, of a water-supply pipe, A, at or near the bottom of the fabric-delivering end of the machine, adapted to maintain a current of water from that end of the tank to the fabric-receiving end of the tank, and over and under the partitions, substantially as described.

4. The combination, with the upper rollers *g*, of the lifting-levers, to permit the introduction of the fabric in folds, as and for the purpose set forth.

160,744. LANTERNS. Lewis F. Bettis, Chicago, Ill., assignor of one-half his right to Joseph F. Dennis and H. N. Wheeler, same place. [Filed May 25, 1874.]

Brief.—Guard-wires rigidly secured to the bottom, and resting upon a spring in the dome, which is provided with vertical slots, to admit the guard-wires and permit their vertical adjustment.

1. In combination, the slotted dome D with the spring E inside, and the guard-wires C C, having their upper ends resting on top of said spring, substantially as specified.

2. The dome D, constructed with the shoulder *a* to receive the bottom of the spring E, and side slots *d* to admit the guard-wires C C, combined with said wires and spring.

3. The guard-wires C C, having their ends connected together, passing through the dome D and secured to the lower frame of the lantern, combined with said dome D, provided with slots *d* to admit said wires, and a spring, E, below said guard-wire, as set forth.

4. In a lantern constructed with the guard-wires C C, rigidly secured at their lower ends to the plate A, upon which the burner B *b* is mounted, a dome, D, with vertical slots to let the guard-wires pass through a spring, E, inside said dome, and operating against said guard-wire to keep said dome depressed, and a bail, G, attached to said guard-wires, combined as set forth.



160,745. LUBRICATING-CANS. Lewis F. Bettis, Chicago, Ill., assignor of one-half his right to Jos. F. Dennis and H. N. Wheeler, same place. [Filed May 25, 1874.]

Brief.—A spout ascends from the bottom of can, braced at top by a smaller pipe of outwardly-tapering form, which has an inner pipe of similar form, plugged by a cork in its middle. This latter pipe, by a pin protruding through a curved slot on the outer pipe, is adapted to revolve for the purpose of tightening and closing all orifices, or the contrary.

1. The combination of the spout B, the cross-pipe C, and the inner tube D, cut with apertures E G, substantially as specified.

2. The combination of the tapering cross-pipe C, cut with a spiral slot, *i*, and the tapering inner tube D, provided with boss or pin *s* and apertures, substantially as specified.

3. The combination of the cross-pipe C, united to the can, and the spout B, entering the bottom of the can, and discharging through said cross-spout C, substantially as specified.

4. The interior tube D, provided with partition H and apertures E G, substantially as specified.

5. In combination with the tapering cross-spout C, provided with oblique slot *i*, and spout B, as described, the interior tapering sleeve D, provided with partition H and apertures E G, and pin *s*, to form a vent and spout for a can, as set forth.

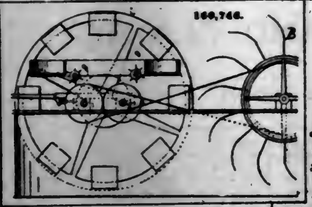
160,746. PAPER-PULP ENGINES. Marcellin R. Boujo, Paris, France. [Filed Nov. 17, 1874.]

Brief.—Patented in France, June 26, 1874. The pulp or half-stuff is kept moving by a wheel with wings or vanes, and is dipped up by a bucket-wheel, poured into a two-winged distributing-trough, and flows thence to toothed cylinders, which distribute it to the crushing-cylinders.

The combination, in a pulp-making machine substantially as described, of the wing-ed wheel B, the cog-wheel C, and the delivering-cylinders, with projections D D', as and for the purposes herein set forth.

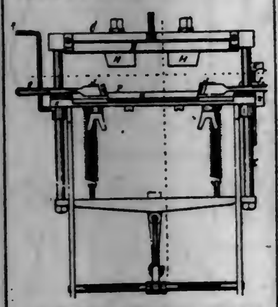
HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

160,746.



160,747. PAN-FORMING MACHINES. Geo. A. Bowers, Chicago, Ill., assignor to Jos. P. Bonfield, same place. [Filed June 2, 1874.]

Brief.—The sheet of metal is seized between die blocks, while the side is turned up to form one side of the pan by a core-plate arranged on a folding apron. The edge of the sheet is folded over the core-plate to form a groove for the wire, and the corners are folded by levers attached to lower die-blocks.



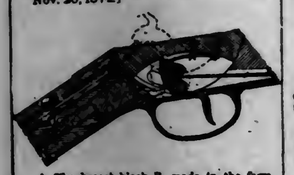
1. In combination with the movable cross-head C and mechanism to elevate and depress the same, the adjustable die-blocks H H J J and tilting core-plate M, as specified.

2. In combination with core-plate M, the forming-brake N, operating as described.

3. In combination with the core-plate M, the adjustable die-blocks H H and J J, provided with the levers O O, all arranged and operated substantially as and for the purpose specified.

4. In combination with the die-block E, provided with the circular groove r, the rabbeted die-block E', operating as specified, whereby the edges of the metal are closed around the wire, as described.

160,748. BREECH-LOADING FIRE-ARMS. Edwin Burt, Washington, D. C. [Filed Nov. 20, 1874.]



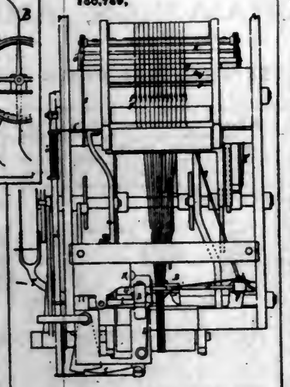
1. The breech-block B, made in the form and manner herein described, and for the purpose set forth.

2. The combination herein described of the hammer or striker, catch-spring K, and the breech-block, whereby the breech is opened by half-cocking the arm, and is then left free to be closed by thumb of the operator or the hammer, upon discharge.

3. The arrangement of the lock with the guard, and the attachment of the guard to the receiver, in the manner and for the purposes herein specified.

160,749. LOOMS FOR WEAVING SUSPENDER-WEBBING. Charles H. Chapman, Shirley, Mass. [Filed Jan. 20, 1875.]

160,749.



1. The combination of the auxiliary needle E with the main needle D, the lay B, and the shuttle H, all being provided with mechanism for operating them, substantially as described.

2. The combination of the harnesses M, formed with two eyes in each heddle, with the main and auxiliary needles D E, the lay B, and the shuttle H, to operate as set forth.

3. The combination of the shuttle-thread guide L with the needle or needles, the shuttle, and the lay, provided with mechanism for operating them, as set forth.

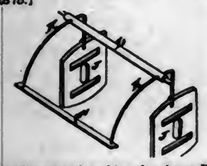
4. The combination of the shuttle-presser K with the shuttle H and its race G and carrier I, arranged and to operate as described.

5. The stop motion, substantially as described, composed of the series of furcated levers A', the shoulder-bar F, the reciprocating vibrator E, its operative arm e', the latch f, the slide-rod n', shoulder o', the spring o', and the shipper-latch S, all arranged to operate substantially as specified.

6. The shuttle-carrier I, provided with the bearing-horn q, and with the spring p, to draw the carrier toward the shuttle.

7. The shuttle-carrier actuating-levers s, provided with the spring t, to extend from it, as shown, into the notch o in the shuttle-carrier I, for the reception of said lever.

160,750. GRAIN-SEPARATORS. William S. Clymans, Burnt Cabins, Pa. [Filed Jan. 20, 1875.]



The combination of wind board m, levers K on rocking-shaft L, and slides J, as and for the purpose set forth.

160,751. HARNESS-CLIPS. F. Conway, Buffalo, N. Y. [Filed Apr. 20, 1874.]



A strap-fastener consisting of the strap A, having at one end the catch or hook b, the metal plate B, attached to the ring a, and having the stud e and series of slots c, and the loop C, having the tag d, and encircling the strap and plate, and adapted to slide thereon, as and for the purpose described.

160,752. PISTONS. Thos. S. Davis, Jersey City, N. J. [Filed Feb. 2, 1875.]



1. The piston constructed with the divided ring A, provided with lugs on its adjacent ends, compressed upon the packing C by means of the bolt or screw, substantially as and for the purpose set forth.

2. The flanged and rabbeted heads, the divided ring, having the lugs on its adjacent ends, the compressing bolt or screw, and the piston-stem, the whole arranged for operation substantially as and for the purpose set forth.

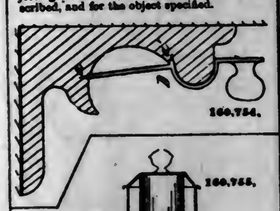
160,753. POUNCING-BLOCKS. Henry G. Disbrow, Newark, N. J., assignor to himself and William A. Brown, Newton, Mass. [Filed Feb. 16, 1875.]



A lint-pouncing block or form, A, composed of cork, substantially as and for the purpose set forth.

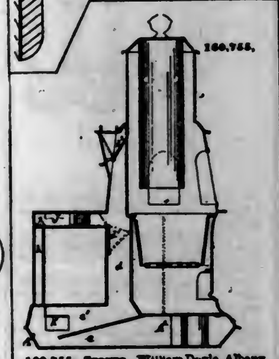
160,754. PICTURE-FRAME HANGERS. Socrates Dobbe and Wm. M. Brayton, Rochester, N. Y. [Filed July 2, 1874.]

A picture-frame hanger, consisting of a plate, D, formed with upper and lower projecting teeth a a', as herein shown and described, and for the object specified.



160,754.

160,755.



160,755. STOVES. William Doyle, Albany, N. Y. [Filed Dec. 16, 1874.]

Brief.—The direct draft being closed by the damper near the exit-flue, the smoke dives to the base-chamber, passes to the rear and returns in contact with the bottom of the oven, and ascends between the oven and fire-pot.

By closing the above damper and the one between the oven and fire-pot, and opening the ring-damper situated under the pot-hole, the smoke is compelled to pass back and forth over the oven, and does not dive to the base. By partially closing the latter and partially opening the one between the oven and fire-pot, none of the smoke may be made to circulate entirely around the oven.

1. The combination, with a heating-stove proper, of an oven, located laterally at the rear of said stove, and an ascending flue between the said stove proper and the said oven, and of the flue-chamber J, rear flue h, and return-flue e', to heat the said oven by the hot gases drawn from the combustion-chamber of the stove proper, and passing over the top, down the rear, and beneath the bottom, of the oven, and up the ascending flue, substantially as set forth.

2. In combination with a heating-stove proper and an oven placed laterally from the same, the flues c c and c', or their described equivalents, leading from the flues in the base of the stove proper to beneath the oven, and the flue-chamber J and rear flue h, leading from the combustion-chamber, to conduct one portion of the hot gases in a direction down into the base of the stove proper, and beneath the oven, to heat the same, and another portion over the top of the oven, down its rear, and beneath the oven, and among the hot gases led from the base-flues in the base of the stove proper into the ascending flue d, substantially as set forth.

3. The combination, with the side flues c c beneath the oven and the central return-flue A^3 in the base of the stove proper, of the inclined plates b b, beneath which the hot gases may pass to the flues c d, substantially as and for the purpose set forth.

4. The combination, with the flues c c', leading from the combustion-chamber, and the ascending flue d, located adjacent to the said flues, of the flue-chamber J, provided with the side flues f f and return-flue f', and the damper g', to revert the draft beneath a pot-hole and direct the discharge of the hot gases to the exit-flue through the ascending flue, substantially as and for the purpose set forth.

5. The combination, with the flues f f and return-flue f', of the ring-damper g, working in the flue-chamber J, located in the rear of the ascending flue d and the fire-pot, substantially as and for the purposes set forth.

160,756. PRISMS. Asahel K. Eaton, Brooklyn, N. Y. [Filed Aug. 4, 1874.]

Brief.—A plate of thick crown glass is cemented to one side of a prismatic frame. One end of this plate is polished and cut away at right angles to the side of the plate. By this construction the incident ray of light is twice refracted, and as it passes into the air is again refracted, and assumes a direction coincident with the incident ray.



A prism having upon one of its sides a piece of crown-glass, having one or more polished ends, substantially as herein set forth.

160,757. CLAMP APPARATUS FOR CONNECTING STREET-CARS, &c., WITH ENDLESS TRAVELING DEVICES. Thos. Eppelsheimer, San Francisco, Cal. [Filed Aug. 13, 1874.]

Brief.—For connecting street-cars and the like with an endless traveling device.

1. The shank G, having the stationary cylinder I, with its fixed jaw J, in combination with the tube A, screw m, and hand-wheel n, and the movable cylinder K with its movable jaw l, substantially as and for the purpose described.

2. In combination with the lower jaw l, the transverse bar O, with its vertical rope-supporting pulleys P, substantially as described.

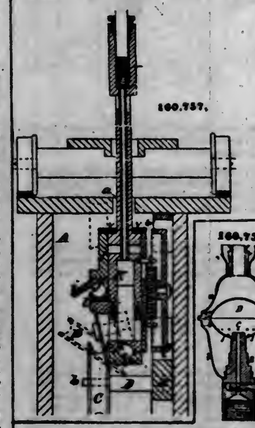
3. The pivoted spring-lever E, with its arm D, to carry the rope-supporting pulley C, in combination with the wheel Q on the shank G, for lowering the pulley as the shank passes, substantially as specified.

4. The shank G, having an enlargement inside of the tube A, to form a shoulder, V, in combination with the spring U, for the purpose of converting the griping device into a brake, by drawing said shoulder V up against the under side of the top of the tube A, substantially as specified.

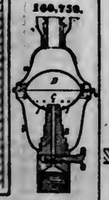
5. The spring-latch R, having one end hinged to the platform of the car, and its opposite end engaged with a pin, s, on the shank G, combined to be operated by a cord, t, substantially as and for the purpose described.

6. The projecting flange i on the upper jaw J, substantially as and for the purpose described.

160,757.



160,758.



160,758. GAS-BURNERS. Edwin Evans, Lynn, Mass. [Filed July 7, 1874.]

Brief.—The flanges of the lower bell and of the two domes clasped by the flange of the upper bell.

The domes C D, flanged and arranged, and having holes e in the two flanges and applied to the inlet B, all as described, in combination with the bell b, flanged at its larger base, and with the bell c, flanged, and having its flange to clasp around the flanges of bell b, and of the domes, so as to make therewith a tight joint and connect together said bells and domes, all as specified and represented.

160,759. MANUFACTURE OF LAMP-BLACK. Levi S. Fales, Cincinnati, and Peter Neff, Gambier, Ohio. [Filed Nov. 19, 1874.]

The within-described process for making lamp-black from acid oil or the carbonaceous oily residuum combined with sulphuric acid, resulting from the refining of petroleum, consisting in first treating the mass to remove the acid, then burning it in an apartment at a low temperature.

160,760. STEAM-PLOWS. James Fogarty, Newark, N. J. [Filed Oct. 10, 1874.]

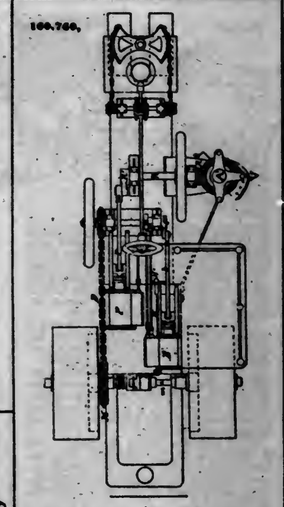
Brief.—Two engines or cylinders, distinct in their action and speed—one to drive the plow, the other to propel the carriage. A horizontally-rotating plow elevated, or its depth governed, through a steam-pipe and piston-rod attached to the vertical plow-shaft.

1. The rotating plow V, having the inclined plates V^1 and teeth V^2, combined and adapted to serve as and for the purposes herein specified.

2. In a steam-plow, the independent steam-cylinders B F, with their respective trains of mechanism, combined and adapted, the one to impel the revolving plow, and the other the propelling-wheels, with variable ratios of power and velocity, as specified.

3. In combination with the plow-shaft T and its propelling mechanism, the connected piston and cylinder A^1, with the controlling-valve J, to allow the plows to be raised and lowered at will, in the manner herein set forth.

160,760.



160,761. PROCESSES OF OBTAINING BORACIC ACID FROM BORATE OF LIME. Ferdinand Formhals, San Francisco, Cal. [Filed Oct. 16, 1874.]



The described process of obtaining boracic acid from borate of lime, consisting essentially in the treatment of borate of lime, while in suspension, with sulphurous acid, substantially as described.

160,762. BREECH-LOADING FIRE-ARMS. Frank W. Freund, Denver, Colo. [Filed June 10, 1874.]

1. The tail or extension F^1 o, the hammer, extended through the trigger-plate, in combination with the guard-lever D, substantially as and for the purpose described.

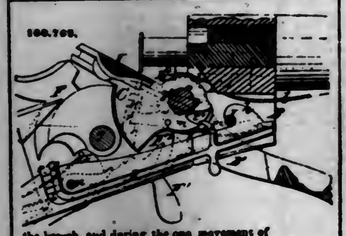
2. The nose or cam F^2, formed on the tail of the hammer, in combination with the lever m and the firing-pin M, whereby the firing-pin is moved out before the breech-block is moved, the said pin held out when the breech-block is fully closed, and the breech-block can be moved as much and as often as found necessary without releasing the firing-pin at a point where it will come in contact with the percussion, substantially in the manner and for the purpose described.

3. The slide K, having the stops r^2, for latching the hammer-spring and hammer-trigger, as shown and described, in combination with the breech-block C, notched at r^1, and the hammer-spring O' and hammer-trigger, substantially as and for the purpose set forth.

4. The forked guard-lever $D D^2 D^1$, fastened rigidly upon the extended ends of the pin o, on which the breech-block is hung, in combination with the breech-block C, which is fitted loosely upon the pins, and with a sliding thumb-piece, J, having a coupling-pin, q', attached to it, which pin, at option, is passed into an oblong slot of the pin o, substantially in the manner and for the purpose herein set forth.

5. The combination of the guard-lever D, the hammer F, the breech-block C, the oblong slot q in pin o, and the coupling-pin q', whereby the hammer can be cocked before the breech is opened by the lever which is used to open

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the breech, and during the one movement of the lever, and the breech can be closed without uncocking the hammer by the back movement of the lever, substantially as described.

6. A guard-lever, forked and connected rigidly by its prongs D' D' to the outer ends of the pin *e*, substantially in the manner described, and for the purpose set forth.

7. The transverse spring-pin *e*, having a holding-catch, *e'*, in combination with the thumb-piece J and its attached pin *g'*, substantially as and for the purpose described.

8. The rectilinear moving cartridge-extractor L, fitted in the guide L', in combination with the spring *l* and the breech-block C, whereby the extractor is operated and held in position without any fastening-pin, as and for the purpose set forth.

9. The extractor having the hook *b'* and the projection *b''*, in combination with the breech-block C, whereby the extractor is secured in place and operated by the breech-block, substantially as and for the purpose described.

10. The trigger-plate, constructed with a hook, *h*, on its forward end, in the manner specified, in combination with the permanent pin I, supported in the cheek-pieces of the breech, and, in turn, supporting said cheek-pieces against inward and outward pressure, whereby, while facilities for readily removing the trigger-plate and replacing it, by the removal of a single pin in rear of the pin I, are afforded, the cheek-plates are stayed firmly against any tendency to warp or spring, either outward or inward, during the hardening process and while in use, substantially as described.

11. The combination of the lever spring-stop *g'* with the socketed and notched pin *g* of the hammer, and with the trigger-pin *a*, substantially as and for the purpose described.

160,763. METALLIC CARTRIDGES. Frank W. Freund, Denver, Colo. [Filed Feb. 4, 1874.]



1. A cartridge-shell made, substantially as described, of one piece of metal, with a small powder-tube, C, between a fire-tube and a main powder-chamber, D.

2. A cartridge-shell made, substantially as described, with a thin hard-metal portion, D, and a thick soft-metal portion, A B.

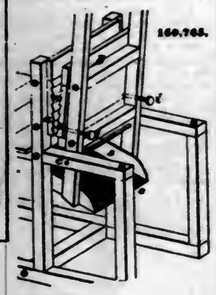
160,764. TILTING CHAIRS. Wm. Gardner, New York, N. Y. [Filed Dec. 20, 1874.]

1. The frame D, upon which the chair-seat is mounted by an axis, C, upon which swing a series of plates, A A, arranged, with their interposed pieces of rubber or springs B B, in the form of the arc of a circle, held in place by the said frame and the pendant *c*, substantially as and for the purpose set forth.

2. The plates A A, with the projections or toes *a a*, in combination with the springs B B, axis C, frame D, and pendant *c*, substantially as and for the purpose set forth.



160,765.



160,765. MACHINES FOR CRUSHING COKE. Charles Glazier, Indianapolis, Ind. [Filed June 18, 1874.]

The combination of the adjustable jaw *a*, set-screws *f f*, frame B, and sieve *s*, all constructed and arranged substantially as and for the purpose set forth.

160,766. PISTOL-STOCKS. Wm. L. Godfrey, New York, N. Y., assignor to himself and Jas. W. Godfrey, same place. [Filed Mar. 4, 1875.]



1. A pistol-stock constructed of composition or plastic material, in combination with a metallic framing entirely surrounding and affixed to the edges of said stock or the cheek-pieces thereof, substantially in the manner and for the purpose described.

2. A composition pistol-stock having a metallic strengthening-plate, substantially as and for the purpose described.

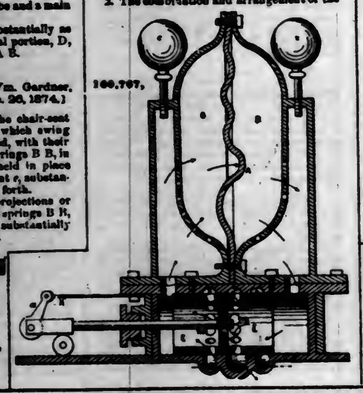
160,767. WATER-METERS. Alfred Guthrie, Chicago, Ill. [Filed July 20, 1874.]

Brief.—Air-chambers communicate with the water-chambers on each side of the diaphragm, to assist the back pressure of the water, when the diaphragm has reached the limit of its movement in either direction, to shift the valve. The valve receives the force of the water directly upon a central partition, and is held in place by the spring while the diaphragm is moving.

1. The combination and arrangement of the measuring-chambers B B, the diaphragm A, and the air-chambers C, operating essentially as and for the purposes herein set forth and described.

2. The combination and arrangement of the

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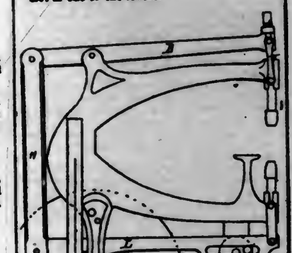
valve E with the pitman G and spring H, for the purposes substantially as herein set forth and described.

3. The combination and arrangement of the hollow valve B, with its ports *n n*, and wall *c*, with its surrounding inlet-channels *p p*, and discharging-channel *q*, as and for the purposes herein set forth and described.

4. In a fluid-meter, the valve E, arranged to be operated by the direct force of the fluid upon its face, substantially as herein set forth and described.

160,768. SCROLL-SAWING MACHINES. Jos. Hale, Somerville, Mass. [Filed Mar. 20, 1874.]

Brief.—The saw is strained between two vibrating levers, which receive their motion from a crank, the pin of which works in a slot in one of the levers.



In a fret-saw, the combination of the crank K M, slotted arm E, link H, and arm D with the links E B', slides F P', and adjusting-rod T, all constructed and operating together, substantially as described, and for the purpose set forth

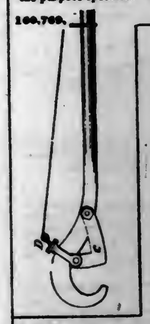
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160,769. CAR-STARTERS. Dexter D. Hardy, Delavan, Ill., assignor of two-thirds his right to Chas. L. Booth and John R. Stone, same place. [Filed Jan. 4, 1875.]

Brief.—The branches of the pivoted cam are connected by a yoke, to which the tripping-cord is attached.

In a car-starting device the two cams C hinged to the outer sides of and so as to turn above the lever A, and secured together by the yoke or clevis D, substantially as and for the purpose specified.

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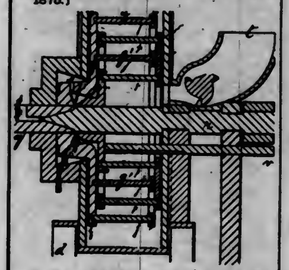


160,770. MACHINES FOR PRESSING LEATHER SHAPES. Jesse W. Hatch, Rochester, N. Y. [Filed Dec. 22, 1874.]

Brief.—The seam, in passing between the convex and concave faced rolls, is flattened, and at the same time the stock upon each side of the seam is straightened and stretched laterally upon each side of the seam, producing uniform tension upon the stitching, removing wrinkles, &c.

In a seam-pressing machine, the combination, with the convex and concave faced rollers B B', situated one on a fixed axis the other on movable shaft, said both having a positive and equal rotation, of the set-screws *s s* above the movable shaft, and the adjusting-screws *f f* with springs *d d* below the shaft, for the purpose of giving elasticity to the rollers and gaging them to different thicknesses of leather, all substantially as and for the purpose described.

160,771. DISINTEGRATING-MILLS. J. Moore Hendricks, Philadelphia, Pa., assignor to the Philadelphia Disintegrating-Mill and Manufacturing Company. [Filed Feb. 20, 1875.]



1. The combination of the fixed portion *e* of the mill-casing with cages *j* and *p*, when attached, respectively, to the opposite parts of a shaft formed in two portions or sections, *g* and *r*, of which one section is concaved or hollowed out at its inner end, to form a socket for the inner or contiguous end of the other section, in the manner and for the purpose substantially as set forth.

2. The bridge *v*, in combination with the cages, when said bridge is constructed in the corrugated or gridiron form, substantially as set forth.

3. The combination of the two sections *g* and *r* of the shaft, the oil-induction apertures *s*, the oil-receptacles *f''* and *f'''* in the hub of the cage *j*, and in the casing, respectively, and the oil-induction apertures *s''* and *s'''*, in the manner and for the purpose substantially as set forth.

4. The diagonal strengthening and grinding bars *w*, in combination with the other parts of the cages, respectively, in the manner and for the purpose substantially as set forth.

160,772. BRIDLE-BITS. John Peter Hisley, Syracuse, N. Y. [Filed Mar. 2, 1875.]



The combination of a cheek-piece and snap-hook cast in one piece with a detachable mouth-piece.

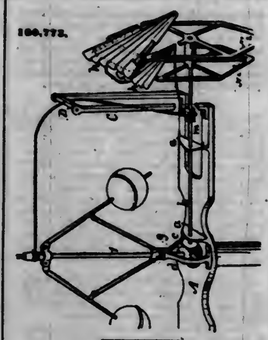
160,773. WIND-WHEELS. Saml. Johnson and David Johnson, Carlisle, assignors of one-third their right to Geo. W. Haworth, Hartford, Iowa. [Filed Aug. 25, 1874.]

Brief.—This wind-wheel has skeleton frames and two series of pivoted fan-tail sails, in combination with the cone, frame, shaft, gear-wheel, and collar linked to sails; also, a rock-shaft with governor mounted upon a spindle having a gear-wheel, whereby the wheel is self-adjusting in relation to the force of the wind, and self-regulating in maintaining uniformity of speed

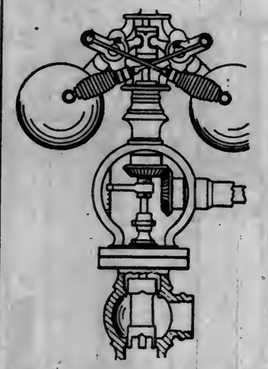
1. A wind-wheel composed of skeleton frames Nos. 1 and 2, and the two series of pivoted fan-tail sails A, substantially as described, and for the purposes specified.

2. The base A, having bearers *a a* and *d*, and frame C, in combination with the shaft h, gear-wheel *c*, collar *m*, linked to sails A, and the rock-shaft D, and the governor mounted upon the spindle *f*, having a gear-wheel, *g*, substantially as described, and for the purposes specified.

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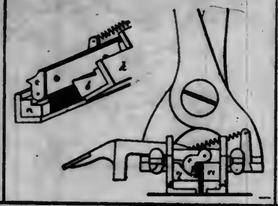
160,774. STEAM-ENGINE GOVERNORS. J. Judson and W. A. Cogswell, Rochester, N. Y.; said Cogswell assignor to said Judson. [Filed July 2, 1874.]



The combination, with the governor-balls and arms connected with the valve-rod, of the pivoted cranks and springs, each attached at one end to the ball and at its other end to the crank, substantially as described, and for the purposes specified.

160,775. DOUBLE-SEAMING MACHINES. F. Kenney, Hartford, Conn., assignor to himself, J. A. Case, and J. G. Rathbun, same place. [Filed Apr. 24, 1874.]

Brief.—To the holding-jaws of a seaming-machine are attached rectangular shoes, vertically adjustable, by means of which the bending-bar is accurately adjusted to the height of the edge of the metal to be folded. The shoes are held in adjustment by thumb-screws. To the rear end of the concaved jaw is attached a transverse rib, the end of which holds under the edge of the vertically-folded metal, so holding and guiding the tool in its work

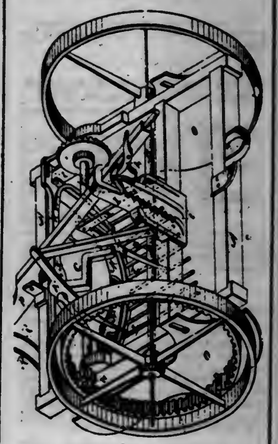


1. The adjustable gages *h i*, when used in combination with the bars *a b* and the former-bar *c* in a seaming-machine, constructed substantially as herein described.

2. The guiding and holding piece *q*, attached to the bar of a seaming-clamp, substantially as and for the purpose described.

160,776. POTATO-DIGGERS. M. W. KNOX, Sheridan, N. Y. [Filed Feb. 16, 1875.]

Brief.—The tongue is pivoted to the forward end of the frame, which is supported upon a pair of wheels, one of which is supplied with a cog-gear. The tongue extends to the rear of the frame, and is provided with a pawl and ratchet for elevating and depressing the digging apparatus, which consists of an ordinary digging-blade provided with an oscillating semicircular shaker, with jointed fingers, striking from front to rear alternately by means of a double crank-shaft.



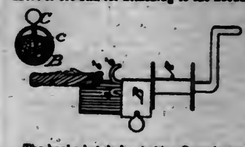
1. The adjustable side guards O, arranged in combination with the main frame A of a potato-digger, substantially as and for the purpose described.

2. The tongue F, provided with hooks R R, and pivoted to the frame A, in combination with spring-pawl *h*, frame I with rack *i*, and main frame A, supporting the potato-digging apparatus, as and for the purpose specified.

3. The semicircular riddle or shaker L and oscillating arm K, having one end extended and provided with slot *s*, in combination with the double crank-shaft O, bevel-gears J *h*, cogged rim D, and jointed fingers E H, all as and for the purpose set forth.

160,777. STRAW-TWISTING MACHINES. Sol Kuh, Jefferson, Iowa. [Filed Aug. 31, 1874.]

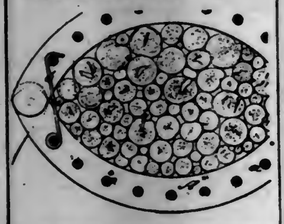
Brief.—For twisting straw and other material into bands or rope, a rotating shaft carries one or more hooks, to which the material is attached, and also a tubular holder and clamp, to receive such material as may be too short or too stiff for attaching to the hooks.



The hooks *h*, tubular holder B, and clamp-screw C, applied on a crank-shaft, A, as and for the purpose set forth.

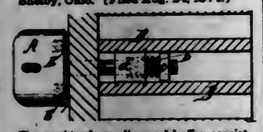
160,778. CLAMPS. Sol Kuh, Jefferson, Iowa. [Filed Aug. 31, 1874.]

Brief.—The upper and lower hinged segments are made internally extensible, for firmly holding corn stalks, brush wood, &c., while being cut to a uniform length.



The laterally-extensible holder composed of two jointed sections, A A', substantially as specified.

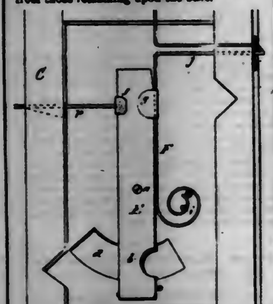
160,779. CAR-COUPLINGS. M. Kurtzeman, Shelby, Ohio. [Filed Aug. 24, 1874.]



The combined coupling and buffer consisting of the draw-head A, the draw-bar C, draw-spring D, and buffer-springs E, as shown and described.

160,780. COMBINED BILL HOLDERS AND SEPARATORS. Alex. M. Lockhart, Pittsburg, Pa. [Filed Jan. 26, 1875.]

Brief.—Attaches a spring-slip to a suitable base-piece, to hold the bill-blanks thereon, and provides said base with a pivoted spring lever, carrying a bent arm, which overlaps the upper surface of the base, and which can be operated either from beneath or at one side thereof, so as to hold one or more blanks separate from those remaining upon the base.



1. The combination, with a suitable bill, invoice, or memoranda holder, of a separator, substantially as and for the purpose set forth.

2. The combination, with a suitable bill, invoice, or memoranda holder, of a separator consisting of an operating-lever, E, and spring-rod F, substantially as described.

3. The combination with the lever E and spring-rod F, of the supplemental side lever H, substantially as and for the purpose set forth.

4. The separator herein described, consisting of the spring-rod F, main operating-lever E, guide g, the lever E being notched or cut away, as shown at h, and provided with a guide strip or stop, C, substantially as specified.

5. The separator, consisting, substantially, of said piece A, having slot or opening d, strips C C', the same formed with recesses n o and slots m p, main operating-lever E, guides f g, spring-rod F, supplemental lever H, and the upper side piece B, the whole combined to operate in connection with a suitable bill, invoice, or memoranda holder, as set forth.

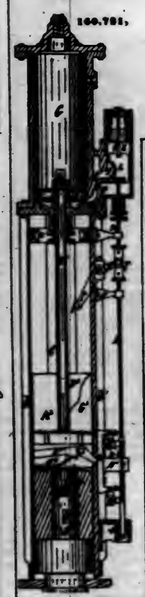
160,781. STEAM PILE-DRIVERS. Thomas T. Loomis, Chicago, Ill. [Filed Jan. 23, 1873.]

Brief.—The guiding-plate which holds the pile-head is loosely attached to the hammer-frame, so that any lateral strains may not be communicated to the hammer-frame, but are taken up by the leaders. Adjustable boxes are used in the coupling of the connecting-rod and valve-stem, loosely fitted into transverse mortises, so as to admit of a lateral movement, to prevent springing of the valve-stem and coupling-rod by the angular movement of arm p', giving an easy parallel motion.

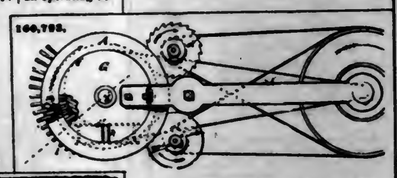
1. The detachable grooved plate F, loosely attached to the frame E, in combination with the grooved hammer A', arranged substantially as and for the purpose specified.

2. In combination with lever p', valve-stem M, coupling-rod M', and coupling F, the adjustable boxes t t and bolt r', all operating as specified.

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160,782. CLOTHES-PIN MACHINES. John W. Millet, Johnstown, N. Y., assignor of one-half his right to Louise B. Pettyjohn, same place. [Filed Aug. 14, 1874.]

Brief.—The pins, fed to a hollow disk, are slotted by a saw, and then by a cam shoved out of the channel.

1. The combination, in a clothes-pin slotter, of the rotary disk A, cam i' on plate G, hopper K, operating with the saw d, as set forth.

2. The combination, with the saw d, rotary disk A, cam i', and hopper K, of the beveling-disk e, with knives r, all constructed and arranged to operate as set forth.

160,783.



160,783. WASTE-GAS BURNERS. Peter Neff, Gambier, Ohio. [Filed Jan. 26, 1875.]

Brief.—The pipes supply air centrally to the chamber of the burner, and do not readily allow the downward escape of gas. The burning gas issuing from the orifices will ignite that issuing from the top of the burner when it has been extinguished by the wind.

160,784. COMPOSITIONS FOR COATING BURIAL-CASKETS. Chas. H. Mulligan, Brooklyn, N. Y. [Filed Jan. 5, 1874.]

A composition for coating burial-caskets, consisting of asphaltum, coal-tar pitch, sand, and mineral oil, in about the proportions specified, and for the purpose substantially set forth.

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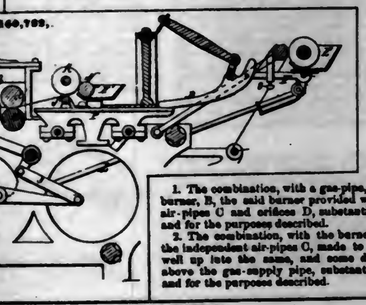
160,785. PAPER-BAG MACHINES. Herbert S. Merrill, Cambridge, Mass. [Filed Dec. 11, 1873.]

Brief.—The web has one of its folded edges carried up over the supporting-roller into contact with the paste-roll, which is supplied by an intermittingly reciprocating fountain-roller. The reciprocating severing-knife is so hung as to travel a short distance with the periphery of the roller on which it cuts.

1. In a machine for making paper bags from a continuous strip of paper, the following instrumentalities, to wit: a passing mechanism for pasting the paper prior to its entrance into the former, in which mechanism the paste-distributing wheel, moving conjointly with the paste-box, and, without being withdrawn from said box, is intermittently brought into contact with, and removed from, the paper, substantially in the manner and for the purpose specified.

2. The cutting mechanism described, consisting of the knife 5, the collar 12, projection 11, collar V, spring 4, roller D', and forked lever F', combined with the pulling-rollers f g, to operate substantially as specified.

160,786.



160,786. CAR-COUPLINGS. Peter Neff, Gambier, Ohio. [Filed Jan. 26, 1875.]

Brief.—The combination of a spring-bolt, a spring-lever, and a pivoted hook, with a link, substantially as and for the purpose described.

160,786. MANUFACTURE OF LAMP-BLACK. Peter Neff, Gambier, Ohio. [Filed Nov 21, 1874.]

The process herein described of making lamp-black or carbon-black from carbonaceous gases and crude petroleum, dead oil, or oily residuum combined with sulphuric acid, produced by refining petroleum, consisting in burning the said gas with the said substance in the same apartment, substantially as and for the purpose described.

160,787. GAS-BURNERS FOR THE MANUFACTURE OF LAMP-BLACK. Peter Neff, Gambier, Ohio. [Filed Jan. 26, 1875.]

Brief.—In the manufacture of lamp-black, an inverted burner surrounded by a flanged dome.



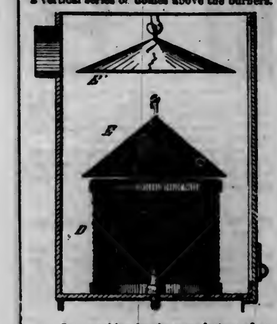
1. The combination, with a dome, D, of an inverted burner, C, substantially as and for the purpose described.

2. The combination, with a dome, D, of an inverted burner, C, with a wide open mouth, c, substantially as and for the purpose described.

3. The combination, with an inverted burner, C, and dome D, of a flange, d, substantially as and for the purpose described.

160,788. MANUFACTURE OF LAMP-BLACK. Peter Neff, Gambier, Ohio. [Filed Jan. 26, 1875.]

Brief.—From natural gases as they issue from the earth, lamp-black is formed by burning it in one or more chambers, each having a vertical series of domes above the burners.



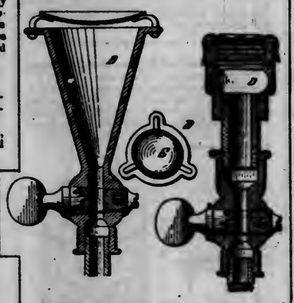
1. In a machine for the manufacture of carbon or lamp-black, the combination with the burners B of the domes or bells E E', placed one above the other, substantially as and for the purposes described.

2. The combination, with the burner or burners B, of the wire-gauze envelope D, and one or more bells or domes, E E', &c., substantially as and for the purpose described.

3. The combination, with one or more cells, A, provided with burners B, the bells or domes E E', &c., and with or without the wire-gauze envelope D, of a series of apartments, into which the products of combustion pass after leaving the cell or cells, substantially as and for the purpose described.

160,789. GAS-BURNERS FOR THE MANUFACTURE OF LAMP-BLACK. Peter Neff, Gambier, Ohio. [Filed Jan. 26, 1875.]

Brief.—A diminished gas-stem, a burner having a wide open mouth, and a removable deflecting-disk.



1. The combination, with the wide open mouth C of the burner for use in the manufacture of lamp-black, of the removable deflecting-disk D, substantially as and for the purposes described.

2. In a burner for use in the manufacture of lamp-black, the combination of a diminished orifice or stem, A, through which the gas is fed, a wide open mouth, D, from which it is burned, and a deflecting plate or disk, E, placed directly over the mouth thereof, substantially as and for the purposes described.

160,790. SAFETY-VALVES. Alex. Orme, Chicago, Ill. [Filed May 19, 1873.]

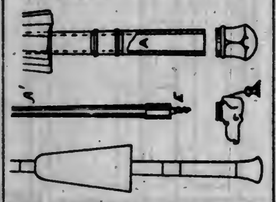
Brief.—An adjustable ring is secured to the valve-seat, to regulate the area of opening for escape-steam.



1. In combination with the valve-seat B', and valve F provided with the angular face f', the adjustable ring D', having the angular face f, as specified.

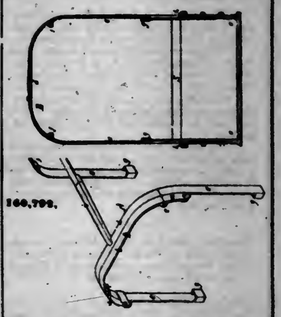
2. The valve F, provided with the flange e e, in combination with seat B', spindle C', spring G, and nut J, all operating as specified.

160,791. COMBINED PARASOLS AND WHIPS. John Perrine, San Francisco, Cal. [Filed Nov. 5, 1874.]



As a new article of manufacture, a parasol having a hollow handle, A, with screw-thread C, and the whip-extension A' having the screw E, the whole adapted and arranged for use as a parasol or whip at will, substantially as described.

160,792. WAGON-COVERS. Edward M. Saunders, Saugus, assignor to himself and Edwd. K. Wilson, Newton, Mass. [Filed Jan. 12, 1875.]



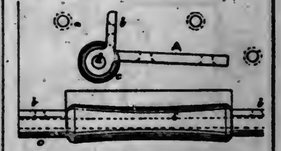
160,792.

1. The hood-bow D, composed of the three parts a b c, hinged together and to the uprights e e, in combination with the cover-bow A, composed of the three parts d e d, hinged together, so that when the bow D is turned up against the bow A the parts a c of both bows may be locked upon the parts b d thereof, as set forth.

2. The uprights or posts E E, provided with the hooked projections h, in combination with the bow A, B, or C, composed of the arch d and the two uprights e e, hinged to said arch, and provided with the sockets g g, all as set forth.

3. In combination with the bows A B C, the top brace H at the crowns of the arched parts d d d, all as and for the purpose specified.

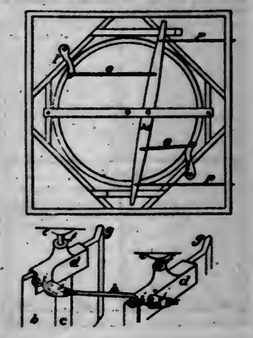
160,793. CHAFING-IRONS FOR VEHICLES. Gilbert Smith, San Francisco, Cal. [Filed Nov. 5, 1874.]



In combination with a concave roller, c, the plate A, provided with the upwardly-projecting lugs or angle-irons b and bearing-arms, whereby the roller is held firmly in position, substantially as specified.

160,794. WINDMILLS. Albt. H. Southwick, San Francisco, Cal. [Filed Feb. 2, 1875.]

Brief.—The wheel is surrounded by a series of overlapping shutters, which are mounted on suitable bearings, and are so connected together that they can be simultaneously and correspondingly opened and closed, for the purpose of regulating the speed of the wheel by gaging the quantity of wind admitted to it.



1. The shutters A, having the metal blading or slats d secured to each end, substantially as and for the purpose described.

2. The overlapping shutters A, having their inner or overlapped edges g bent, or otherwise constructed at an angle to the shutter, substantially as and for the purpose described.

3. The rod p, and connecting-rods h, in combination with the shutters b and arms t, substantially as and for the purpose above described.

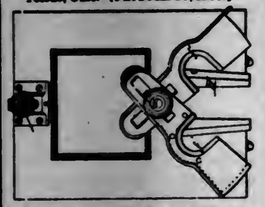
4. The centrally-pivoted lever M, having its ends connected by rods o with the crank-arms t, which are secured to the upper end of the projecting gudgeons K, in combination with the cords p, substantially as and for the purpose described.

160,794. METALLIC ROBANDS FOR ATTACHING SAILS TO SPARS. Howard B. Stephenson, Boston, Mass., assignor to C. Houghton, same place. [Filed Jan. 21, 1875.]



The metallic reband A, constructed with hook B and eye C, substantially in the manner described, and for the purposes set forth.

160,795. BEND-COOLERS. Benj. A. Stevens, Toledo, Ohio. [Filed Jan. 30, 1875.]

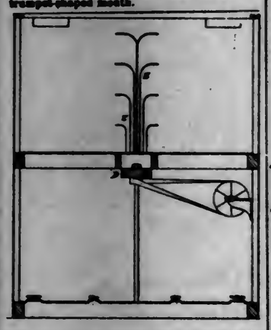


1. The faucet-clamp composed of sections independently adjustable both longitudinally and sidewise, substantially as and for the purpose set forth.

2. The combination of the slotted cooler-door, through which the faucet projects, the sectional slotted clamp, and the set-screw, these members being constructed and operating substantially as set forth.

160,797. GLUE-DRYING. Saml. T. Swasey, Salem, Mass. [Filed Jan. 30, 1875.]

Brief.—Air is uniformly distributed through the mass to be dried by a series of concentric pipes of varying height, each having a trumpet-shaped mouth.



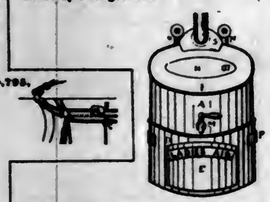
1. In an apparatus for drying glue, as herein described, by currents of heated air, the combination and arrangement of the steam chamber and drying-room, and their connections, substantially as set forth.

2. In an apparatus for drying glue, the hot air pipes K, arranged to deflect and divide the currents of heated air, substantially as shown and described.

160,798. COOKING-STOVES. Robt. Thomas, Toronto, Canada. [Filed Dec. 7, 1874.]

Brief.—An annular grate surrounding a dome for heating an oven underneath, and surrounded in turn by a reservoir for heating water. The dome is internally ribbed, and has a cold-air-supply pipe. The draft is controlled by a flanged cover.

160,798.



1. The combination and described arrangement of the oven D, the annular grate Q surrounding an unperforated dome, the water-vessel A surrounding the fire-chamber, and the top F, as shown and described.

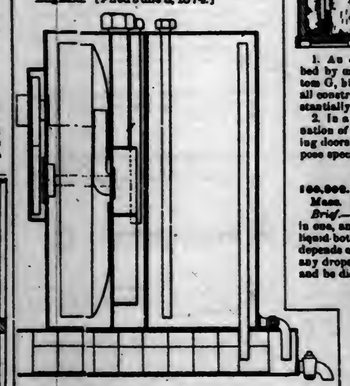
2. The oven D, as constructed with a dome, C, ribbed internally and closed except at its bottom, and in combination therewith, all as shown and described, and for the purpose set forth.

3. In combination with the oven D, constructed as shown and described, the cold-air pipe W leading into the central oven-heating dome C, all as set forth.

4. The combination of the draft-doors P P, the top F, adjustable flanged or ribbed cover H, raised flue S, and its chimney G, all as shown and described.

5. The annular water-vessel A surrounding the annular fire-chamber, and provided with the top M and the pipes N N, all combined as shown and described, and for the purpose set forth.

160,799. APPARATUS FOR THE PRODUCTION OF GAS FROM HYDROCARBON LIQUIDS. F. G. Voigt, 36 Grafton Road, Kentish Town, England. [Filed June 3, 1874.]



1. The hereinbefore-described generator-chamber, consisting of the combination of a series of compartments to be partially filled with hydrocarbon liquid, and a series of separate mixing-chambers, these members being constructed and operating in combination, substantially as hereinbefore set forth, whereby the air is caused to pass first through one of the liquid-chambers, and over the surface of the liquid to take up vapor, then through an air-chamber to thoroughly commingle the vapor and air, then through a liquid chamber again to take up more vapor, then through another mixing-chamber, and so on through the series.

2. The generator-chamber constructed, as hereinbefore set forth, with the liquid and mixing chambers, through which the air or partially formed gas alternately passes, in combination with the air vessel divided into compartments, and revolving within the chamber a', designed to be partially filled with hydrocarbon liquid, and the pipe c, connecting the chamber a' and the generator-chamber, for the purposes specified.

160,800. STENCH-TRAPS. Robt. L. Walker, Boston, Mass. [Filed Feb. 10, 1875.]

Brief.—A globe composed of two semi-spherical disks connected together by annular flanges. The disks are connected to the pipes by joints. There are fixed cross-bars in the pipes. These bars are provided with holes, forming ways in which the guide-rod works; and on this rod, within the disks, there is fixed a hollow globe, composed of thin sheet metal, to render it as light as possible, and still maintain the requisite strength.



The stench-trap described, the same consisting of the disks A B, globe F, rod G, and bars H, constructed and arranged to operate in combination with the pipes C C', substantially as and for the purpose specified.

160,801. OFFICE TABLES AND BEDS COMBINED. D. Walker, Newark, N. J. [Filed Feb. 8, 1875.]



1. An office-table made convertible into a bed by means of the hinged top A, bed-bottom C, hinged leaf J, and folding doors D D, all constructed, arranged, and operating substantially in the manner described.

2. In a combined table and bed, the combination of the bed-bottom C, leaf J, and folding doors D D, in the manner and for the purpose specified.

160,802. ATOMIZERS. Chas. Wood, Boston, Mass. [Filed Feb. 3, 1875.]

Brief.—The air and liquid tubes are inclosed in one, and all arise from the stopper of the liquid-bottle. The fluid-tube, at its extremity, depends over the end of the air-tube, so that any drops forming may fall out by gravity, and be dispersed by the air-tube.



1. The combination, with the bottle and a fluid-tube rising therefrom, and bent or curved substantially as described, of an atomizing-tube arranged below the overhanging liquid-tube, and adapted to discharge the fluid as a spray, in a direction inclined to the length of the bottle, or the main portion of the tube, substantially as described.

2. The combination, with the bottle, of an atomizer of a fluid-tube having its extreme or outlet end *a* depressed with relation to the remaining portion of the tube, substantially as described, to prevent the flow of the liquid along the outer side of the tube to the bottle, substantially as described.

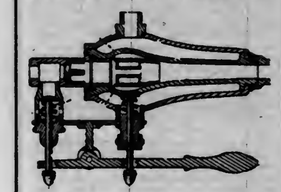
3. The combination, with the bottle-stopper and the inclosing tube rising therefrom, of the liquid-tube and atomizing-tube, arranged inside the inclosing tube, but projecting from it at top, substantially as shown and described.

4. In combination, the neck *g*, connecting-pipe *i*, stopper *f*, inclosing tube *e*, liquid-tube, and atomizing tube *a*, substantially as described

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160,803. FLUID-EJECTORS. Geo. Westinghouse, Jr., Pittsburg, Pa. [Filed Dec. 24, 1874.]

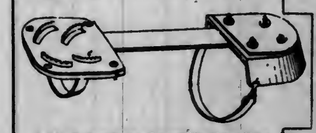
Brief.—A central jet and an annular jet concentric with the former act at different points on the outgoing column of air. The central jet is obtained by means of a T-tube inserted within the air-nozzle. Two valves loosely engage with an operating-lever—one for letting on steam, the other to restore atmospheric pressure in the exhaust-pipe.



1. In an ejector device, the combination of a central jet-nozzle, an annular jet-nozzle, and an intermediate annular exhausting-chamber, each jet-nozzles being arranged with their discharge-openings one somewhat in advance of the other, whereby the force of the escaping steam shall act at successive points or in different planes on the outgoing column of fluid, substantially as set forth.

2. The valves *c c*, seated by spring-pressure and opened by opposite movements of a common lever, in combination with an ejector-nozzle and check-valve, substantially as set forth.

160,804. ICE-CREEPERS. A. L. Willis, Philadelphia, Pa. [Filed Feb. 5, 1875.]



1. In an ice-creeper, the combination of two disks, united by a longitudinally self-adjusting elastic and flexible band, projecting points beneath to bite the ice, and straps for securing said disks to the foot, substantially as described.

2. In an ice-creeper composed of two disks, one for the heel and one for the sole, the combination of separate straight points for the heel with curved serrated ridges for the sole, substantially as described.

3. In an ice-creeper, the curved serrated ridge-plate O', stamped up or formed in one piece, having a curved set or ridge of pointed teeth, and base-plates for securing it to the disk, substantially as described.

160,805. BLIND-STOPS. Gilman Woodward, Providence, assignor of one-half his right to Jas. A. Matteson, Johnston, R. I. [Filed Feb. 9, 1875.]

Brief.—A pivoted thumb-piece is combined with the connecting-rod in such manner that when the thumb-piece is crowded back the rod serves to lock the blind-slats by bearing against the thumb-piece on a line behind the center of its revolution. There is also a ratchet arrangement with connected case, the ratchets acting additionally on the thumb-piece, and being locked automatically by an interposed spring.

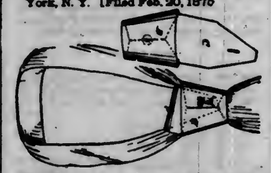
160,805.



1. The locking device consisting of the pivoted thumb-piece D, in combination with the connecting-rod E, made and operating substantially as described

2. The blind-slat fastener and adjuster, substantially as herein described, consisting of the case A, pin B, spiral spring C, thumb-piece D, rod E, and ratchets *b a*, operating as and for the purpose specified.

160,806. NECK-TIES. Alden J. Adams, New York, N. Y. [Filed Feb. 20, 1875.]



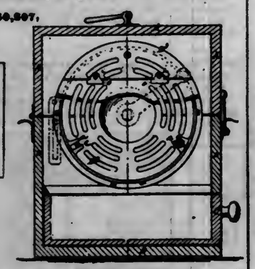
The combination of a flap, C, provided with a hook or other fastening with the body of a cravat-slide, B, substantially as herein shown and described, to prevent it from slipping upon said cravat, as set forth.

160,807. ASH-SIFTERS. Frederic Anthes, New York, N. Y., assignor to Theodore Wenk and Samuel Leber, same place. [Filed Nov. 7, 1874.]

1. In an ash-sifter, the slotted or open-work sections provided with slotted lugs *a*, in combination with the circular end parts having clamping bolts and nuts *c*, as shown and described.

2. The combination, with the cylindrical ash-sifter having lugs *a* and keeper F, of the detachable section D', provided with projections *i* and the slotted sliding bolt E, as and for the purpose specified.

160,807.

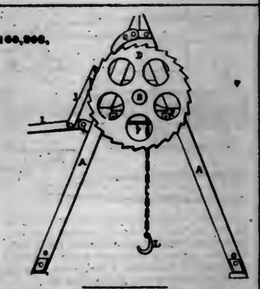


160,808. STUMP-ELEVATORS. J. H. Barnes, Baltimore, Md. [Filed Feb. 17, 1875.]

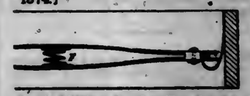
Brief.—Two upright timbers, converging to an apex, supported on flat feet, are braced horizontally by another piece, on which are shoulders, to lock them together. This piece sustains a vertical ratchet-wheel and pawl, operated by a catch-link and a lever.

The tie-beam F, having shoulders M M N N, the frame A A, and sills B B, in combination with ratchet-wheel D, pawl C, lever I, and link J, operating as described.

160,809.

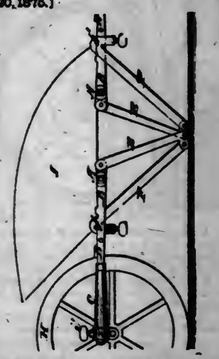


160,809. GRAIN BED-BOTTOMS. Edward P. Bennett, Elkland, Pa. [Filed Dec. 28, 1874.]



In a bed-bottom, the slats E, each notched at the ends, and having a spiral spring, F, interposed between the divided parts composing its body, in combination with the cross-rods D and the springs , having eyes C, and curved to adapt them for attachment to a bedstead, as shown and described.

160,810. BARREL-BARROWS. Jas. Harding Brown, Porter's Mills, Wis. [Filed Feb. 20, 1875.]



1. The combination of the two cross-bars A, the four side bars B, the handles C, the pivoted hanging side bars E, and the adjustable braces F, substantially as shown and described.

2. The combination of the wheel H, provided with the sockets I, and set-screws F, with the handles C at one end of the barrow-frame, substantially as shown and described.

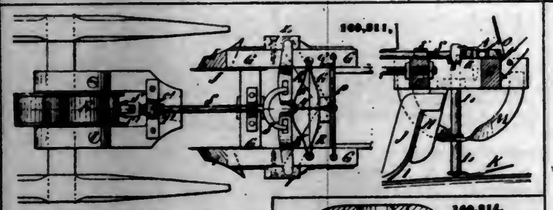
3. The combination of the body J, with the barrow-frame A B C E F, substantially as shown and described.

4. The combination of the triangular block G, with the hanging side bars E, of the barrow-frame A B C E F, substantially as shown and described.

160,811. COTTON-CHOPPERS. T. C. Burnham, Waco, Tex. [Filed Aug. 10, 1874.]

Brief.—A thrashing frame is connected by a draft-rod to the main frame. Vertical shafts, carrying horizontal knives, are pivoted on the former, and their bent arms meet above the main frame. A forked rod extends forward from the arms, having a roller, which travels in the channeled edge of a wheel, revolving with the main axle. This wheel has irregular projections, which operate the shafts, to open the cutting-knives and leave hills. A spring throws them back to position.

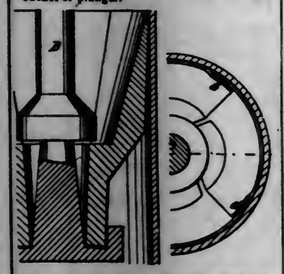
160,911.



1. The combination of the horizontal knives K, the vertical shafts L, having inwardly-projecting arms formed upon their upper ends, and the spring E with each other, and with the frame G, that carries the plows, substantially as herein shown and described.
2. The combination of the rods or chains N and armed shaft O P Q with the shafts L, forked rod S, and wheel E, and with the frame G, substantially as herein shown and described.

160,912. SECTIONAL BUCKETS FOR PUMPS. George W. Burr, East Line, N. Y. [Filed Feb. 6, 1875.]

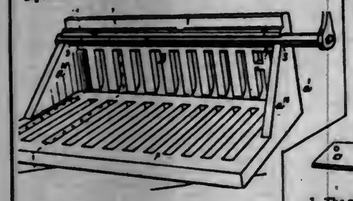
Brief.—A bucket made in sections, which are so constructed that they pack tightly together when the bucket is raised, and loosen or contract, when it is lowered, the same being connected with the plunger-rod by means of a cap grooved to receive the sections of the bucket or plunger.



1. A pump-bucket composed of sections arranged to expand to the barrel by the weight of water raised, and contract in descending, substantially as shown and described.
2. A sectional pump-bucket having the sections lap onto each other, substantially as seen at D, for the purposes described.
3. The cap or grooved flange C on the rod B, substantially as shown and described.

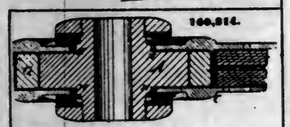
160,913. GRATES. Justin Byington, Wilmington, Del. [Filed Feb. 17, 1875.]

Brief.—In order to remove clinkers and the like from the horizontal grate, the swinging front portion is forced inwardly, thus leaving a space between the two portions for inserting a poker.



The combination, with the stationary horizontal grate A and open vertical front frame *a'* and sides *a''* *a''*, of the inwardly-swinging front grate B, substantially as herein before set forth and described.

160,914.

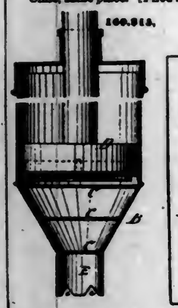


160,915. CAR-WHEELS. S. B. Chapman, New York, N. Y. [Filed Feb. 13, 1875.]

1. The combination of metallic ring E, with wooden sections D D, substantially as and for the purpose set forth.
2. The combination of metallic band F, with sectional tread D E D and rubber ring G, substantially as and for the purpose set forth.

160,916. EGG-BEATERS. Martin Cline, Chicago, Ill., assignor to himself and Wm. J. Cline, same place. [Filed Sept. 19, 1874.]

160,916.



160,918.



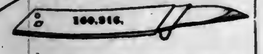
The combination, in an egg-beater with cylinder A and handled piston D, of the nozzle B, tapered, provided with varying diaphragms C, and having end-notched rest E *e*, as shown, and for the purpose specified.

160,916. CASTING STEEL-FACED ANVILS. John Donovan, Carpentersville, Ill. [Filed Dec. 12, 1874.]

Brief.—A steel plate is placed in the mold, and the body of the anvil cast upon it.

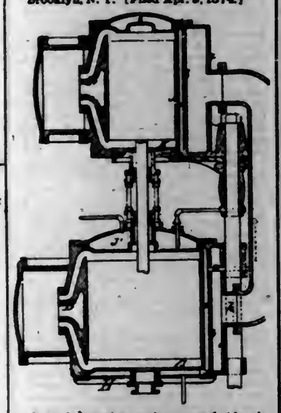


160,916.



1. The wire loop in the horn of the plate, for keeping it in place in the mold, substantially as specified.
2. Constructing the face-plate concave on the side receiving the iron, to compensate for the greater shrinkage of the iron in the middle, substantially as specified.

160,917. COMPOUND ENGINES. C. B. Emery, Brooklyn, N. Y. [Filed Apr. 9, 1874.]

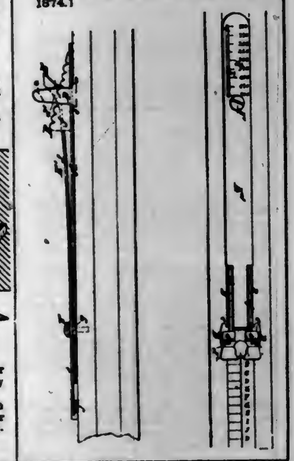


1. An independent casing, secured at longitudinal joints to a steam-cylinder, with end joints covered by plates or cylinder-covers to form a jacket, &c., substantially as described.
2. The combination of a chamber, *c*, forming a portion of the steam-jacket system of a steam-engine, with a depressed chamber, as at J', by means of a pipe, *a*, led to the former, substantially in siphon shape, from the bottom of the latter, whereby the supply of steam to the former will carry with it the condensed water from the latter, substantially as and for the purposes specified.
3. In an engine, where two cylinders are arranged in the same line, the bonnet or bottom K opening into the smaller, in combination with the intermediate stuffing-boxes and the cylinder-cover of the larger cylinder, substantially as and for the purposes specified.

160,918. BUCKET-EARS. James D. Field, Blue Rapids, Kans. [Filed Sept. 26, 1874.]

A bucket-ear formed of a single piece of sheet metal, and having a fold, B, perforated to receive the hooked end of the bail, all substantially as described.

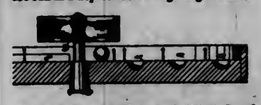
160,919. SIGHTS FOR FIRE-ARMS. Frank W. Freund, Denver, Colo. [Filed Oct. 19, 1874.]



1. The sight for a fire-arm, having a spring-tail, in combination with a stepped support having a tail, and with a guide, the sight and support being united together by a suitable fastening, F, and the supports being constructed and arranged to move in and out under the sight, and in its movement caused to adjust the sight to a higher or lower position with respect to the top of the barrel, substantially as and for the purpose described.
2. The guide D, constructed with step-shoulders *a b* for the sliding stepped support, and with stop projections *a i* for the spring-sight, substantially in the manner and for the purpose described.
3. The spring-tail of the sight, constructed with the shoes *g g'*, in combination with the slotted tail of the stepped supports, substantially in the manner described.
4. The tail B' of sight B, having an index thereon, and slotted at *b'*, in combination with the indicator *i* on tail A of support B, substantially as and for the purpose described.
5. The gun-sight arranged to rise and fall in a guide which has steps *a a*, and constructed with a holding-tooth on its under side, in combination with a stepped support, the notches in which prevent the slide from moving back or forward unless the sight is raised high enough to clear the tooth from the highest parts of the partitions forming the notches, as and for the purpose herein described.

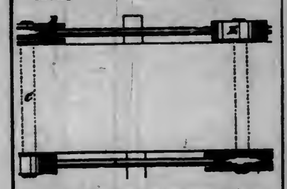
160,920. GAME-BOARDS. Owen A. Gill, New York, N. Y. [Filed Jan. 30, 1875.]

Brief.—The cup on the end of the handle is revolved, and a ball dropped therein. When the speed has sufficiently decreased the ball falls through the perforated bottom, and the efforts of the holder are directed to landing the ball in a depression having a high number.



The combination of rimmed disk A C and handle B, rigidly attached, as shown, the former having recesses *a*, and the latter a perforated wheel, D, as and for the purpose specified.

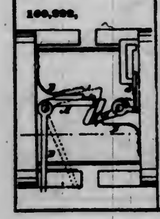
160,921. RAILROAD-CAR TRUCKS. Alonzo Gilman, Lewiston, Idaho. [Filed Nov. 14, 1874.]



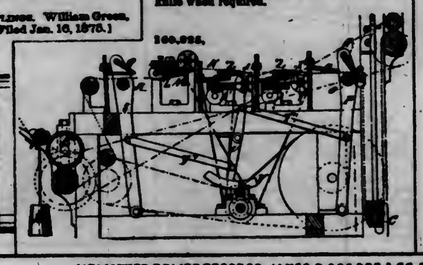
1. The combination of the car-axle, double-flanged wheel D, and flat-tread wheel E, said wheels being applied to opposite ends of the axle, as set forth.
2. The combination of the car-axles, double-flanged wheels D D, and flat-tread wheels E E, similar wheels being diagonally opposite, as set forth.

160,922. CAR-COUPLINGS. William Green, Ryde, England. [Filed Jan. 16, 1875.]

160,922.



160,924.

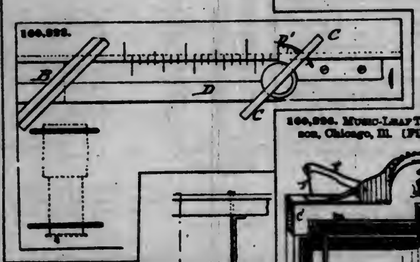


The combination, with a hook, A, supported by a rear spring, B, of the lever D, rod *d'*, and pin *d*², substantially as and for the purpose specified.

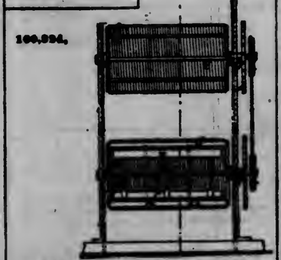
160,923. DISTANCE-MEASURING INSTRUMENTS. William F. Ekermeh, Chicago, Ill. [Filed Nov. 30, 1874.]

The combination, with a telescope, of a reflector, E, placed at an angle of forty-five degrees thereto, and a reflector, C, adjustably pivoted in relation to reflector E, and provided with the index D', and mounted on the graduated sliding piece D, substantially as and for the purpose described.

160,926.



160,924.



160,924. PAPER-DRESSES. Jonathan Hatch and Guilford Smith, Windham, Conn., assignors to Smith, Winchester & Co., same place. [Filed Jan. 30, 1875.]

Brief.—The journal of the fan-blower rests within the journal of the drying-cylinder.

The bats J J, spider-heads K K, rolls L, and rags M, combined with the spirally-wrapped wires to form a drying-cylinder.

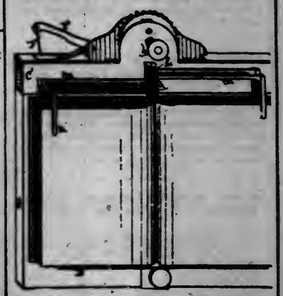
160,925. CLOTH-SEAMING MACHINES. I. L. Holmes, Saco, Me. [Filed Jan. 26, 1875.]

Brief.—The feeding mechanism is regulated by an automatic device, to give an even tension to the cloth, and gripping-jaws are so arranged and connected with the stopping mechanism as to be operated by a seam in the cloth, and stop the revolving cutters until the seam is carried through the machine. The stationary blade is placed in pivoted arms, so that it can be moved away from the revolving knife when required.

160,926.

1. The combination of the take-up roll C, with the feed-roll A and the drawing-roll E, the former being geared to run faster than the latter, substantially as specified.
2. The clutch-pulley F, belt-shifter lever F, sliding bar G, and stops G' and H, combined with the take-up roll and the feed-roll, substantially as specified.
3. The gripping-jaws N O and Q R, rock-frames P and S, connecting-rod T, rock-lever U, and cam V, combined with the cutters of a cloth-shearing machine, and the shifting clutch-pulley for driving the revolving cutters, substantially as specified.
4. The combination, with the rotary cutter, of stationary blade-supports, arranged on pivots A', to rise up for cleaning the machine, as described.

160,926. MUSIC-LEAF TURNERS. F. G. Johnson, Chicago, Ill. [Filed Jan. 19, 1875.]



1. The combination, with the desk A, of the adjustable book-support B, strips *a a*, clamp-screw *b*, nut *c*, and tongue *c*, substantially as and for the purpose set forth.
2. The plates D C', bar D, provided with the racks *f f*, the shaft *g*, spur-gear B, ratchet G, lever F, pawl *e*, stop *p*, pinions *h*, and arms *m*, in combination with the desk A, substantially as and for the purpose set forth.

160,927. CORDING ATTACHMENTS FOR SEWING-MACHINES. Hamilton C. Jones, Brooklyn, N. Y. [Filed Jan. 11, 1875.]



The presser-foot A, having guides *b*, recess *c*, and notches *d*', in combination with downwardly-flanged guide-plate B, having the hook-edged spring *d d'* and flat tapering tube-extension B', all constructed substantially as and for the purpose specified.

160,928. PERSONAL ORNAMENTS. Frederik C. Kiergaard, Philadelphia, Pa. [Filed Jan. 19, 1875.]



As a new article of manufacture, personal ornaments composed of prepared fish-scales and wires, combined and arranged to represent flowers and leaves, substantially as described and shown.

160,822. GRAIN-DRILLS. Benjamin Kuhns, Dayton, Ohio. [Filed Feb. 4, 1875.]

Brief.—The oscillating bar, to which one portion of the drag-bars are attached, has slotted arms, which rise above the frame and engage with projections, by which it is allowed to move back and forth as metal supporting-bars, to change the drill-tubes from a single to a double rank.



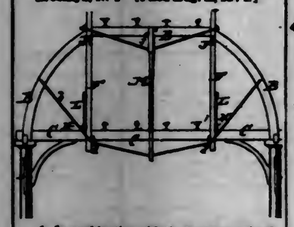
1. In a grain-drill, an oscillating bar, to which a portion of the drag-bars is attached, the point of resistance to the longitudinal movement of which is placed above the frame of the machine, the bar being provided with slotted arms or plates, whereby it is allowed to move in a horizontal plane, instead of through the arc of a circle, when changing the beam from a single to a double rank, or the reverse, substantially as described.

2. The combination of the oscillating bar C, having upon its ends slotted arms D D, the brackets D', the frame A A, the fixed bar, to which a portion of the drag-bars are attached, and the bars B B, upon which the oscillating bar is supported, the parts being constructed and arranged substantially as and for the purpose set forth.

160,823. CORSET-BRACE. Auguste A. Lallemand, Chateau, near Paris, France. [Filed Aug. 22, 1874.]

The position or surgical bandage herein described, consisting of sheets of a spongious or pervious material and an interposed layer of *Parma*-*crispus* muslage, substantially as herein described, for the purpose set forth.

160,824. ELEVATED RAILWAYS. L. Lois, Brooklyn, N. Y. [Filed Aug. 11, 1874.]



1. In combination with the transverse chord C, a superposed arch, E, the central pendant c, and boat braces b b, all arranged substantially as described.

2. The arch E, combined with the chord C, for supporting four lines of railroad-track, said arch being on top, and there combined with the pendant f and V-shaped brace g, substantially as specified.

3. The uprights F F, combined with the arches E, the chords C, braces a b f, and uprights F' and M, substantially and for the purpose herein described.

160,825. MOLDS FOR ADOBE-BRICK. J. H. Mathes, Elliot, Mo. [Filed Oct. 31, 1874.]

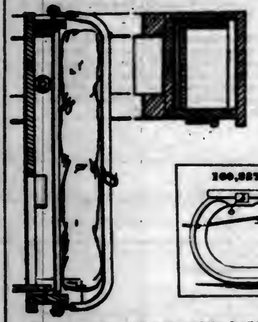


1. The described mold for molding bricks, composed of the bed a, having the ledges b, and the separate pattern-mold A, having the openings f through the same, of the configuration substantially as shown.

2. The described mold for molding bricks, composed of the bed a, having the ledges b, and the separate pattern-mold B, having the openings f through the same, of the configuration substantially as shown.

160,826. WAREROOM-BEDSTEADS. Robt. G. McClure, Jamestown, Ohio. [Filed Oct. 3, 1874.]

Brief.—The rigid straps prevent the bedding from bulging when the bed is turned up into a vertical position.



The straps D, rigid in the middle, flexible at each end, and provided with end loops, in combination with a bed-bottom, for the purpose specified.

160,827. HAND-SLEDS. James B. Monroe, Newburg, N. Y. [Filed Sept. 3, 1874.]

Brief.—The sled is adapted to be drawn either end foremost.

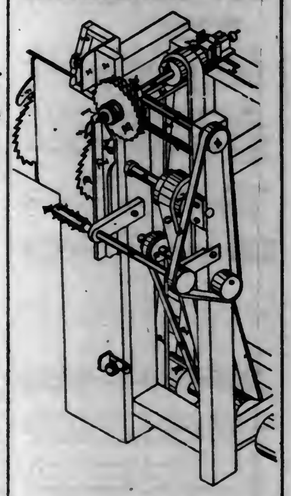
1. The double-ended runners g, formed in one piece with the supports i, in combination with the cross-bars a b and seat-board h, substantially as set forth.

2. A hand-sled having the double-ended runners g, perforated bars a, seat-board h, eye or staple c, and rope n, all combined substantially as shown and described.



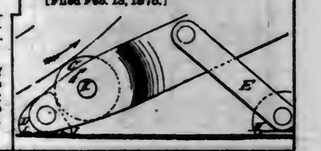
160,828. MACHINES FOR SAWING LATHS. Mason S. Norton, Bangor, Me., assignor to James E. Harriman, same place. [Filed Jan. 19, 1875.]

Brief.—A series of saws upon a vertical arbor act in connection with a pair of saws upon a horizontal arbor in bolting the material and reducing it to laths.



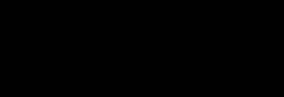
The combination of the bolting-saws C D with the gang-saws E, double adjustable box T, rolls H I, and gages F Y, to form a machine for sawing laths, all as shown and described, and substantially as and for the purpose hereinbefore set forth.

160,829. DEVICES FOR MOVING RAILROAD-CARS. Benj. F. Phelps, Kansas City, Mo. [Filed Feb. 12, 1875.]



160,830. SMOKY-METAL BOXES. William C. McGill, Washington, D. C. [Filed Feb. 2, 1875.]

Brief.—The blank is cut and folded to form a box of a single piece of metal.



A box constructed of a single piece of metal, cut and folded as shown and described, and provided with the cap C, as set forth.

160,831. BOOT OR SHOE TIPS. Hollis W. Merrill and James W. Hoitt, Lynn, Mass. [Filed Aug. 24, 1874.]



As an improved article of manufacture, a boot or shoe tip composed of rawhide permeated throughout with a suitable color, substantially as and for the purpose specified.

160,832. PLOWS. John O. Minor, Bedford, Iowa, assignor of nine-tenths his right to P. H. Oxley, John P. Bell, Burson Fordyce, A. J. Littlejr, Simon Wright, J. T. King, P. D. Curran, W. A. Webb, and D. Griffith. [Filed Apr. 26, 1874.]



Brief.—A second beam is attached to a common plow, with both couplings rigid, but having the capacity for vertical adjustment, adapting it for a tarn-plow and a subsoiler.

1. The perforated plate d on the front end of the beam B, in combination with the block a on the beam A, and the adjustable coupling devices c h i on the central portions of the beams A and B, substantially as shown and described, and for the purposes specified.

2. The loop or bearing e on the beam A, and having the groove e', in combination with the loop h on the beam B, having the slide b' carrying the set-screw k, substantially as described, and for the purposes specified.

160,833. HAND-SLEDS. James B. Monroe, Newburg, N. Y. [Filed Sept. 3, 1874.]

Brief.—The sled is adapted to be drawn either end foremost.

1. The double-ended runners g, formed in one piece with the supports i, in combination with the cross-bars a b and seat-board h, substantially as set forth.

2. A hand-sled having the double-ended runners g, perforated bars a, seat-board h, eye or staple c, and rope n, all combined substantially as shown and described.

160,834. MACHINES FOR SAWING LATHS. Mason S. Norton, Bangor, Me., assignor to James E. Harriman, same place. [Filed Jan. 19, 1875.]

Brief.—A series of saws upon a vertical arbor act in connection with a pair of saws upon a horizontal arbor in bolting the material and reducing it to laths.

The combination of the bolting-saws C D with the gang-saws E, double adjustable box T, rolls H I, and gages F Y, to form a machine for sawing laths, all as shown and described, and substantially as and for the purpose hereinbefore set forth.

160,835. DEVICES FOR MOVING RAILROAD-CARS. Benj. F. Phelps, Kansas City, Mo. [Filed Feb. 12, 1875.]

A machine for lifting and moving railroad-cars, consisting of the lever B, friction-wheel C, fulcrum-bars E, and crabs D and G, arranged substantially as and for the purposes described.

160,836. CLOTHES-PINS. Otis F. Porter, Bridgeport, Conn. [Filed Nov. 7, 1874.]

Brief.—Two strips of wood are secured together with an elastic block in the middle of their length by a wire band.



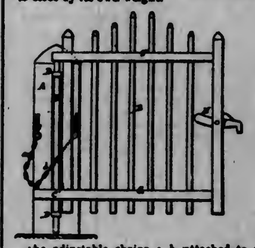
A new article of manufacture, consisting of two strips, A A, having end bevel B, an intermediate elastic block, C, and a wire band, D, that surrounds the strips and block, as shown and described, to form a double clothes-pin.

160,837. PROCESSES OF FINISHING LEATHER. John Henry Radey, Philadelphia, Pa. [Filed Jan. 19, 1875.]

The process for finishing leather, consisting in dubbing, whitening, waterproofing, dubbing and whitening leather, in the order, manner, and for the purpose as specified.

160,838. SWINGING GATES. F. Raymond, Cleveland, Ohio. [Filed Jan. 11, 1875.]

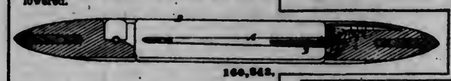
Brief.—The gate, with its hinge-rod, rises as it is swung by the operator, by means of chains which are attached to the heel-post, and descend and connect with the extended lower rail of the gate, thus causing the gate to close by its own weight.



The adjustable chains c b, attached to a projection of the bottom rail of the gate B, and also to the post A, in combination with the bracket C D, and rod E, for the purpose of automatically closing the gate, as set forth.

160,839. LOOM-SHUTTLES. Mark Sedford, Melrose, assignor to himself and Percival D. Richards, West Medford, Mass. [Filed Nov. 17, 1874.]

Brief.—To expand the bows of a split spindle for the purpose of securely holding the cop. A wedge-shaped piece is placed between the bows and rotated by means of a cam-piece, in the groove of which the head of the expander works as the spindle is raised or lowered.



160,842.

In the loom-shuttle, the combination of the split spindle A, with the rotary expander B, and piece b provided with the cam-groove f, all constructed and arranged to operate together, as and for the purpose specified.

160,844. TRAVELING-CAPS. A. Schwarz, New York, N. Y. [Filed Aug. 4, 1873.]

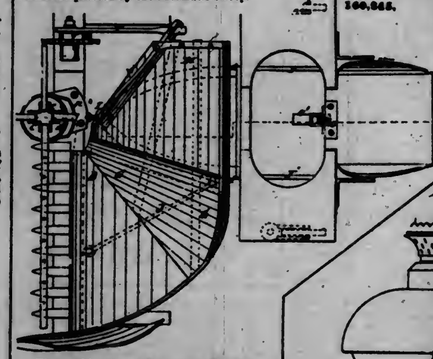
As an improvement in traveling-caps, the cross-band or face-protector D of the caps C, which leaves narrow openings a for the eyes and mouth, substantially as and for the purposes described

160,845.



160,845. HARVESTERS. Chas. D. Shrader, Lancaster, Wis., assignor to himself and Allen R. Bushnell, same place. [Filed Dec. 26, 1874.]

Brief.—As the cut grain is swept upon the elevated platform in reach of the binder, it is there compressed by the automatic sweep.

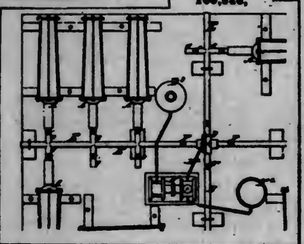


The combination of the sweep W and connecting-rod V, provided with a slot and pin, the wheel T, and cam U, having the form described, whereby the sweep is operated to compress the gavel against the rear side of the platform, as set forth.

160,846. APPARATUS FOR PRESERVING WOOD. Geo. B. Smith, Philadelphia, Pa. [Filed Sept. 2, 1874.]

The combination of the pipe E, having branches, and provided with cocks F and c, the conesve heads A A, applied upon one of the ends of the logs, and an engine or pump connected with a supply-tank, whereby the wood-preserving material may be applied at will to a train or parts of a train of logs, or to a single log, and the power concentrated on one log or diffused through a train or a number of trains or logs, as circumstances may require, substantially as and for the purpose set forth

160,846.

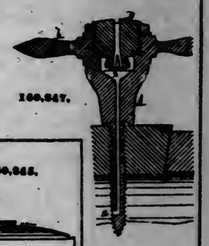


160,847. BEER-VENTS. Joseph M. Spahn, Chicago, Ill. [Filed Nov. 10, 1874.]

Brief.—A hollow screw-pointed plug provided with arms, and a detachable screw-plug, to which is attached a valve of rubber.

The combination of the hollow screw-pointed plug A, provided with the arms b, with the plug B and membrane c, substantially as described.

160,847.



160,848.



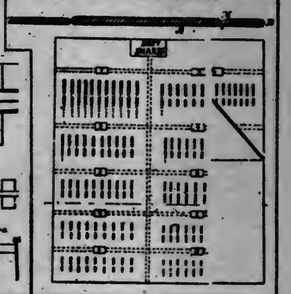
160,848. LAMPS. Albt. G. Storey and Thos. J. Lewis, Brooklyn, N. Y. [Filed Jan. 14, 1875.]

Brief.—The tube is provided with cap having gauze covering and inner perforated plate, gauze partition, and series of perforations below said partition.

1. In a lamp, the combination of the tube B, extending within the lamp-vessel, and cover A, provided with the gauze top E and perforated concave plate F, substantially as herein specified.

2. The tube B, provided with the gauze partition D and series of perforations C, combined with the screw-cap A E F G, all arranged as a part of a lamp, substantially as and for the purposes herein specified.

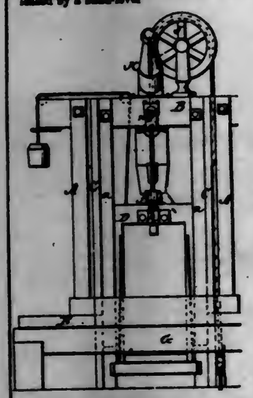
160,849. NEEDLE-BOOKS. F. Swan, New York, N. Y. [Filed Jan. 4, 1875.]



As an article of manufacture, a needle-book consisting of jointed covers A A, numbered sectional pads D, and partition H, constructed and arranged substantially as and for the purpose specified.

160,850. ELEVATORS. Jerome B. Sweetland, Pontiac, Mich. [Filed Aug. 29, 1874.]

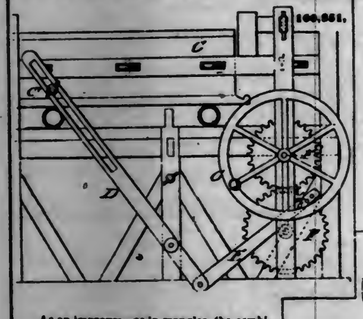
Brief.—The platform-framing is adapted to be shifted from floor to floor as the building progresses. On reaching its elevator the platform locks itself on a spring-hook, and is released by a hand-lever



1. The combination of the trestles A A, cross-beam B, vertical planks C C, strips a a, and bed-planks E E, supported upon the joists G G, with the vertical guides C' C', arranged between the floors of a building, so that the frame may be moved from floor to floor, and the carriage may be elevated and guided through the floors, substantially as set forth.

2. The combination, with the beam H, of the hook L hinged thereto, the arm m, spring k, and trip-lever K, for securing and releasing the carriage D at will, substantially as set forth.

160,851. MANGLES. Henry Tamms, Bartlett, Ill. [Filed Feb. 5, 1875.]



As an improvement in mangles, the combination of a balanced and weighted pressure-box, C, with the slotted and fulcrumed levers D, connecting-rods E, crank-wheels F, and actuating cog-wheel F', and crank-wheel mechanism G, for the purpose of reciprocating and tilting easily and rapidly the pressure-box by the rotary motion of the crank-shaft, substantially as shown and described.

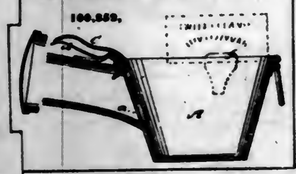
160,852. CASES FOR MINING PAINTS. W. W. Thayer, New York, N. Y. [Filed Dec. 19, 1874.]

Brief.—The can is provided with a hollow handle, forming a receptacle for the turpentine. The handle communicates by a vent-hole and issuing-orifice, which are closed and opened by a hinged spring-valve.

1. A marking-can, consisting of a mixing-vessel, a reservoir-handle, having orifices a b, and a spring-pressed valve, C, as and for the purposes specified.

2. The combination of sleeve c on handle and vessel A, having recess c' in its upper edge to hold the brush, in the manner described.

160,853.



160,854. BIRD-FOOD HOLDERS. Samuel E. Tompkins, Sing Sing, N. Y. [Filed Nov. 14, 1874.]

1. The combination of holding-jaws A and attaching-jaws D, constructed and arranged to temporarily attach to a bird-cage and hold a lump of food, substantially in the manner described.

2. The jaws A, slide B, jaws D, and slide E, combined and arranged substantially as specified.

3. The jaws A, pivoted to the jaws D, substantially as specified.

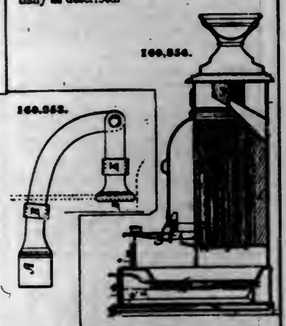


160,855. CONCEALED GAITERS. J. W. Twinwriter, Indianapolis, Ind. [Filed Feb. 26, 1875.]

Brief.—Flaps are formed on the tops of the front and back quarters of a Congress gaiter, which cover the upper edge of the elastic gore, and prevent it from wear and injury.

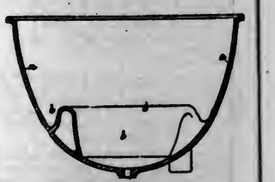
A gaiter constructed as shown and described, having the front and back quarters, with the flaps A and B adapted to lap over and meet centrally above the upper part of the elastic gore, substantially as and for the purpose specified.

160,856.



160,857. KETTLES FOR HEATING OR COOKING BY STEAM. Geo. W. Walker, Malden, Mass. [Filed Feb. 24, 1875.]

Brief.—The liquid contents pass from the depression around the steam-chamber, through the channel at the side, into the bottom of the kettle.

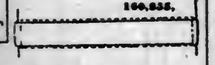


The boiler a, combined with the segmental steam-chamber b, constructed and arranged substantially as and for the purpose specified.

160,858. MACHINES FOR SHEARING METAL. John Walsh and Jas. Dutot, Newton, Iowa. [Filed Dec. 12, 1874.]

Brief.—The shears are both vibratory on the same axis. A sliding wedge under the free end of the lower shear serves to adjust it as to height, and a cam-lever held in a stirrup attached to the frame actuates the upper blade. The knives are, in the direction of their length, of an obtuse V shape, the salient points being at the middle.

160,855.



1. In combination with a shears for cutting metal, the wedge E, substantially as and for the purposes described.

2. The guide-piece L, in combination with the lower jaw B and wedge E, for the purposes described.

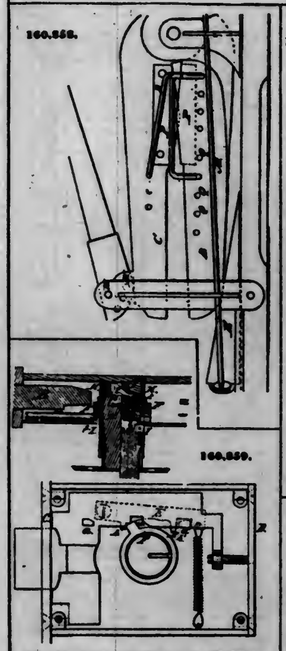
3. The combination, with levers B C, of knives P P inclined upwardly from the heel, as shown and described, so as to bring the thickest bolts, rods, or bars nearest to the fulcrum of levers.

160,859. METHODS OF ATTACHING RINGS TO PROJECTILES. Josiah Vavasseur, Bear Lane, Southwark, England. [Filed July 31, 1874.]

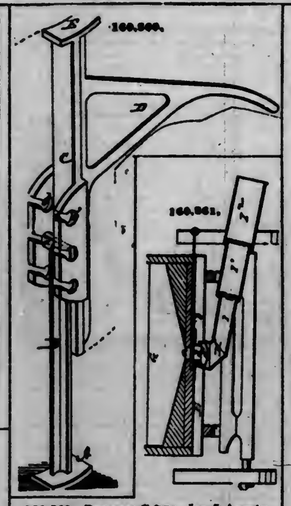
Brief.—Rings are pressed into grooves by compression.

The hereinbefore-described method of inserting a soft-metal ring in the groove of a projectile by reducing the diameter of the ring, in the manner substantially as set forth.

160,858.



160,860.



160,861.

160,859. LOCKS FOR DOORS, &c. H. Winn, Shelburne, Mass. [Filed June 26, 1872.]

1. The curvature of one or more of the tumblers *t t t t*, combined with one or more of the inclined surfaces s s' on part T, and with shell N.

2. A face-plate, C, and back plate D, made interchangeably adjustable to either end of the lock, as described, for the purposes described.

3. The combination of one or more inclined surfaces, s or s', on the stationary shell H, with the fence and shell N for the purposes described.

4. The combination, with the teeth b on the fence, of one or more of the inclined surfaces c c' on the teeth d d' of the ring F, arranged as described.

5. A tumbler having one or more of the inclined surfaces e e', combined with a part, T, as described, when the one partakes of the rotary motion of the key, while the other does not, and when said tumbler and part are arranged to react the one upon the other, and restore said tumbler by the reaction of said part, and of one of said inclined surfaces.

6. The combination of a bolt-operating device, thrown into connection with the rotating shell by the entry of the fence into the fence-notches in the tumblers, with said fence and shell, and with a system of tumblers, which have a motion while being set substantially recilinear with the key's axis, and which have fence-notches set simultaneously by key in position to receive the fence, all combined with the key, and operating as described.

7. The combination, with tumblers partaking of the rotary motion of the key, of an inclined surface to restore them.

160,860. LIFTING-JACKS. Jos. J. Adgate, Stevensville, N. Y. [Filed Feb. 18, 1875.]

The combination of the standard B, having base A, with the bar C, having bearing-piece E and handle D, the two parts being provided with connecting devices, substantially as described, for adjusting one part up or down upon the other, substantially as herein set forth.

160,861. DUMPING-CARTS. Jos. J. Adgate, Stevensville, N. Y. [Filed Feb. 24, 1875.]

1. The combination of a telescopic conducting tube or trough, attached by a swivel-joint with the bottom of a coal-vehicle, substantially as and for the purposes set forth.

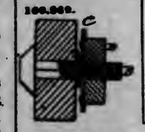
2. The combination of the hopper-shaped body G and a telescopic conducting tube or trough attached under the same by a swivel-joint, substantially as and for the purposes set forth.

3. The combination of the hopper-shaped body G, having opening c, with slide b, swivel *d d'*, elbow H, jointed to the swivel, and the telescopic conducting-tube I I' I', all constructed substantially as and for the purposes set forth.

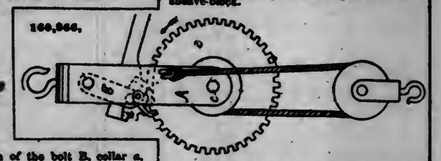
160,862. NUT-LOCKS. Joseph J. Adgate, Stevensville, N. Y. [Filed Feb. 18, 1875.]

Brief.—A spring-plate is interposed between the nut and a washer of less diameter. The nut is provided with a projection at each corner of its bearing-surface, which enter indentations in the spring-plate arranged outside the bearing-surface of the washer.

160,862.



160,866.



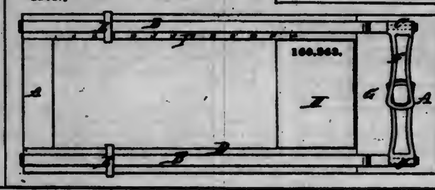
The combination of the bolt B, collar a, plate a' washer C with indentations d, and the nut D with corner lugs or projections b, substantially as and for the purposes herein set forth.

160,863. EXERCISING-MACHINES. Arthur M. Allen, New York, N. Y., assignor to Mary S. Allen, same place. [Filed Jan. 20, 1875.]

160,867.



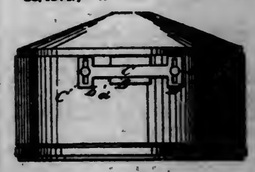
160,863.



1. In an exercising-machine, the combination of the frame A, spring bar or bars B B, slides E, and handles F, arranged and adapted to operate substantially as described.

2. The combination of the frame A D, spring-bar B B, slides E, handles F, and board or boards H, substantially as described.

160,864. MILLSTONE-BALANCES. John A. Althouse, New Harmony, Ind. [Filed Nov. 26, 1874.]



The vertically-adjustable T-shaped slotted strap C, in combination with the horizontally-adjustable weight B, provided with the groove *a'*, substantially as described.

160,865. SHOE-STUDS. Edwd. W. Averell, New York[illegible] N. Y., assignor of one-fourth his right to Horace Barnard, same place. [Filed Feb. 1, 1875.]



1. The circular spring-fastening of a stud or button, provided with a groove or depression in the heel, to keep the end of the spring in place, substantially as described.

2. In a spring-fastening for a stud or button, the combination of a cheek, a circular spring fastened in the plane of its circle, a detached point, and a groove or depression, substantially as and for the purpose described.

160,866. STUMP-EXTRACTORS. Joseph M. Batchelor, Foxcroft, Me., assignor of one-half his right to Cyrus Hill, same place. [Filed Jan. 20 1875.]

Brief.—Revolving within the sides of a downward-bent strap are a drum and toothed-wheel, actuated by a segment of a pinion on the end of a lever, which is pivoted to a link slung to the strap. One end of the rope is fastened to the strap, and its other end to the drum, intermediately passing through a hook sheave-block.

In a lifting-machine, the combination of the drum d, attached gear g, fulcrum-link p, hanging-lever f, portion t, and pawl j, all arranged in a suspended strap, A, and operating substantially as herein set forth and shown.

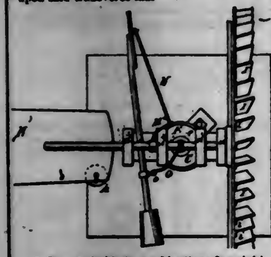
160,867. RATCHET WATCH-KEYS. George A. Beidler, Philadelphia, Pa. [Filed Feb. 20, 1875.]

Brief.—A watch-key in which the spring-handle grasps firmly the wheel on the head of stem, to make the requisite ratchet connection.

The spring bow or handle C, provided with tips *b b*, in combination with the ratchet wheel *a* on the key-stem B, substantially as and for the purposes herein set forth.

160,868. WINDMILLS. Owen B. Blakeslee, Rankin, Ill. [Filed Feb. 2, 1875.]

Brief.—The combination of a weighted rotating tail-vane, with a swinging transverse fan, which is pivoted so as to swing through a certain arc independently of the frame of said wheel, whereby the tail-vane is turned edge to the wind by the force of the wind upon said transverse fan.

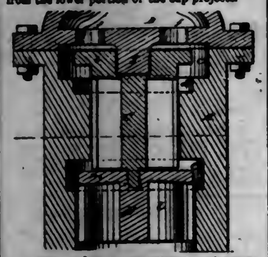


1. In a windmill, the combination of a weighted rotating tail-vane with a swinging transverse fan, which is pivoted so as to swing through a certain arc independently of the frame of said mill, whereby the tail-vane is turned edge to the wind by the force of the wind upon said transverse fan, substantially as and for the purpose set forth.

2. In a windmill, the weighted rotating tail-vane H, in combination with the swinging transverse fan I, arm M, rod N, and rope O, whereby the wind-wheel may be thrown entirely out of the wind and held in that position, as and for the purpose set forth.

160,869. CHECK-VALVES. W. H. H. Bowers, Franklin, Ky. [Filed Mar. 4, 1875.]

Brief.—An auxiliary valve of equal area with the outer surface of the main valve is attached to the latter for the purpose of relieving the pump of back pressure. The valve is unbalanced by forming a recess in the upper surface of the main valve equal in depth to the stroke of the same, into which a stem from the lower portion of the cap projects.

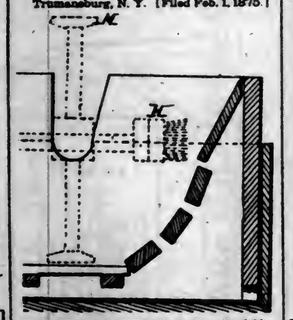


1. The valve C, having wings *h*, and recess *a* in the top, in combination with the part B', having stem *g*, and the valve-box A, with recesses *c d*, substantially as and for the purpose specified.

2. The valve C, in combination with lower detachable portion D and the valve-box A, with recess *c*, substantially as and for the purpose described.

3. The valve C, with wings *h* and recess *a*, in combination with the part B', with stem *g*, lower portion D, and the valve-box with recesses *c d e*, as and for the purpose set forth.

160,870. VEGETABLE-WASHERS. J. Brooks, Trumansburg, N. Y. [Filed Feb. 1, 1875.]



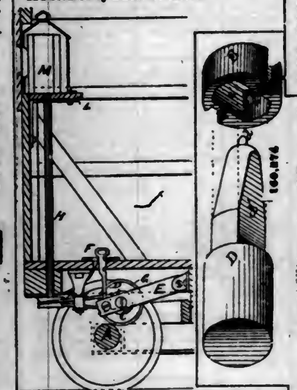
1. In a potato or vegetable washer, the yielding or self-adjusting spring-pressed brushes, substantially as and for the purpose described.

2. The combination of the revolving shaft F, spring-pressed yielding brushes H, and agitating arms or blades M, substantially as herein shown and described.

3. In a potato-washer, the combination of the shaft F, brushes H, and agitators M, with the hinged top section B, base section A, and the removable potato receptacle or crate C, substantially as herein set forth.

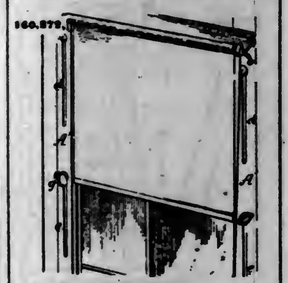
160,871. SIGNAL-LIGHTS FOR RAILROAD-CARS. R. F. Burnham and W. F. Strong, Charleston, S. C. [Filed Feb. 12, 1875.]

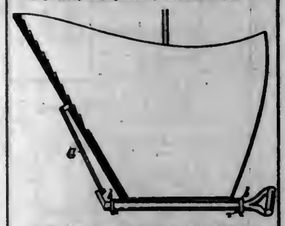
Brief.—A friction-wheel mounted in a swinging frame under the car is connected by a belt to the pulley of an upright shaft, on the top of which shaft is mounted a lantern. Rotative motion is imparted to the lantern by dropping the frame, so as to bring the friction-wheel in contact with the car-axle. When this is not desired, the frame may be raised and secured by a hook or catch.



The combination of the axle A, wheel C, beam E, pulleys D and I, band K, handle F, shaft H, and lantern M, as and for the purposes described.

160,872. COAL-HODS. Edward W. Byrn, Washington, D. C., assignor to himself and T. F. Rea, same place. [Filed Mar. 1, 1875.]





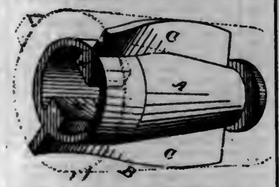
1. The combination, with a coal-hod, of a reciprocating slide, having its face wrought into transverse forwardly-inclined ridges, which form the bottom of the channel through which the coal is discharged, substantially as and for the purpose described.

2. The combination, with a coal-hod, of a rock-shaft having at one end a handle for tilting the hod and rocking the shaft, and at the other a crank for converting the rotary into a rectilinear motion, substantially as described.

3. The rock-shaft D, provided with a suitable handle, in combination with the connecting-rod G and the reciprocating slide H, substantially as and for the purpose described.

160,874. MILL-SPINDLES. Rodney S. Cathcart, Cincinnati, Ohio, assignor of one-half his right to Straub Mill Company, same place. [Filed Jan. 26, 1875.]

Brief.—Devices whereby the runner oscillates freely, without interfering with the motion of the spindle.



1. In combination with the hollow balance-rynd A, provided with the radially inward-projecting lugs *a'* and *a''*, and with the spindle D, having the flattened portion *d'*, the driver E, fitted loosely upon said spindle, and provided with recesses *e* and *e'*, which embrace said lugs *a'* and *a''*, substantially as and for the purpose shown.

2. In combination with the spindle D, provided with the flattened portions *d'* and *d''*, and shoulders *d'''* and *d''''*, the driver E having a central slot, *e'*, which embraces said spindle and the lugs *a'* and *a''* that bear upon said shoulders, substantially as and for the purpose set forth.

3. The combination of the combined eye and rynd A, *a*, *a'*, and *a''*, B, C, and C, the spindle D, *d*, *d'*, and *d''*, and the driver E, *e*, *e'*, and *e''*, substantially as and for the purpose specified.

160,879. CURTAIN-FIXTURES. H. B. Busch, Philadelphia, Pa., assignor to S. T. Lloyd and R. L. Lloyd, same place. [Filed Oct. 26, 1874.]

The combination of a shade-roller, and a rigid frame consisting of stripe A A' A'', carrying both the roller and a cord-retainer, *b*, and having slots *d e*, for the passage of screws by which the frame is secured to the face of the window-frame, all as set forth.

160,876. MILLSTONE-BUSHES. Rodney S. Cathcart, Cincinnati, Ohio, assignor of one-half his right to Straub Mill Company, same place. [Filed Jan. 26, 1875.]

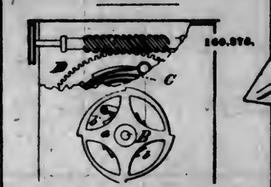
Brief.—Devices whereby the bearings for the spindle are afforded such freedom of motion from a vertical line as to enable them to conform automatically to any variations in the line of the spindle.



1. The combination of the follower H, provided with the lugs *h* and *h'* and concave disk *h''*, with the box-section I, having a recess, *i*, that corresponds to and receives said disk, said disk and recess forming a ball-and-socket bearing between said parts, substantially as and for the purpose specified.

2. In combination with each box-section I, provided upon its outer side with the convex recess *i*, the follower H, having upon its inner side the concave disk *h''*, and made radially adjustable toward or from the spindle, substantially as and for the purpose shown.

3. The casing A, provided with the cavity B and cover C, the wedges E and E, the nuts F and F, the screws G and G, the followers H, *h*, *h*, and *h'*, and the box-sections I *i*, all constructed as shown, and combined with each other, the spindle D, and the fixed stone of a grinding-mill, substantially as and for the purpose set forth.



160,876.

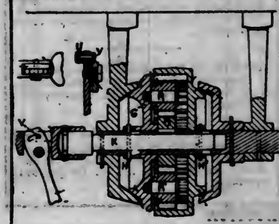
160,876. SEWING-MACHINE MOTORS. Benj. C. Chambers, Shady Plain, Pa. [Filed Dec. 19, 1874.]

Brief.—A shaft has a pedal-wheel on each end, to wind on it a spiral spring attached thereto, and to a worm-wheel on such shaft.

In a mechanical motor, provided with the spring C, shaft B, ratchet *b*, and pawl *b'*, the winding-wheels *a a* attached to said shaft and constructed with steps projecting from and formed on their peripheries for the foot of the operator, as shown and described.

160,877. REVERSING MECHANISMS. Rufus B. Chapman, Cambridgeport, Mass., and John C. Chapman, Passaic, N. J. [Filed Nov. 10, 1874.]

Brief.—A single pulley rotates always in the same direction between two friction-disks, and, revolving with the shaft, the other independent of the shaft, but fastened to the bracket by means of the gearing within the pulley, which can be shifted alternately from contact of one disk to the other, the shaft is instantly reversed, while the driving-pulley continues to revolve.



1. The combination of a single driving pulley with two frictional disks, one fastened to the shaft and the other independent of it and fixed or stationary, and intermediate mechanism for reversing the motion, substantially as described.

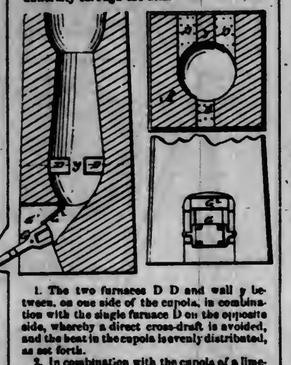
2. The combination, with a driving-pulley mounted between two frictional disks, as described, of a shipping-rod concentric with the shaft, as and for the purposes set forth.

3. In combination with the disk G and driving-pulley, as described, one or more pistons between the pulley and the shaft, as and for the purposes set forth.

4. In combination with the shipping-rod E and its T-head, the friction-plate U of elastic material, and the binding-screw V, as and for the purposes set forth.

160,878. LINSEED-LIFE. Frederick Cole and David D. L. McCulloch, Kankakee, Ill. [Filed July 20, 1874.]

Brief.—The "draw" is governed by two doors, the lower one having a projecting lever, and the upper one being hinged in such manner as to give way to any unusual obstruction. The furnaces and their dividing-walls are so situated as to distribute the heat uniformly through the kiln.



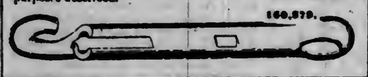
1. The two furnaces D D and wall *y* between, on one side of the cupola, in combination with the single furnace D on the opposite side, whereby a direct cross-draft is avoided, and the heat in the cupola is evenly distributed, as set forth.

2. In combination with the cupola of a lime-kiln, the door G^2, hinged at its top, and the door G, provided with extended arms, and pivoted under the hinged door G^2, substantially as and for the purposes set forth.

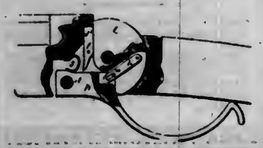
160,879. MANUFACTURE OF SNAP-HOOKS. Alonzo B. Condo, Trumansburg, N. Y. [Filed Aug. 13, 1874.]

1. In the manufacture of snap-hooks and analogous articles, the process of casting the main or body portion with its hook in a distorted position, substantially as described, whereby the finishing up of the socket by machinery is rendered possible, as set forth.

2. In the manufacture of snap-hooks and analogous contrivances, first japanning the castings, and subsequently putting them together with the inserted spring, and retaining the parts together by bending the hook into line with the bolt, substantially as and for the purposes described.



160,880. BREECH-LOADING FIRE-ARMS. D. Conner, Meriden, assignor to Eli Whitney, New Haven, Conn. [Filed Oct. 31, 1874.]



1. In a breech-loading fire-arm, the combination of the breech-piece C, swinging in the plane of the barrel and constructed with the shoulder *b*, the lever D, connected to the breech-piece by a slotted link, L, and constructed with the shoulder *b'*, the lever D, connected to the breech-piece by a slotted link, L, and constructed with the shoulder *f*, corresponding to the shoulder *b*, substantially in the manner described.

2. The combination, with the barrel of a fire-arm, of the breech-piece C, swinging in the plane of the barrel and constructed with the shoulder *b*, the lever D, connected to the breech-piece by a slotted link, L, and constructed with the shoulder *f*, corresponding to the shoulder *b*, the extractor P, and the spring S, substantially in the manner and for the purpose specified.

160,881. CHAIN-PUMP BUCKETS. Aaron L. Covey, Ypsilanti, Mich. [Filed Jan. 23, 1875.]

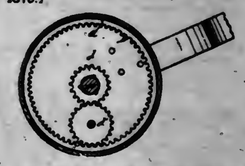
Brief.—The bucket is of rubber, of the form shown, and is clamped between two plates. By turning the screw the rubber is expanded.



1. In a bucket for chain-pumps, the rubber herein described, formed of the disk A and bell A', with offset *x*, all in one piece, as herein set forth.

2. The rubber A, formed with the oval top A' and projection *x*, in combination with the bell-shaped cap D, screw B, plate E, ball G, and nut *b*, all arranged as shown, and for the purpose set forth.

160,882. LAWN-MOWERS. H. C. Crowell, Erie, Pa., assignor of two-thirds his right to F. Jarecki, same place. [Filed Feb. 10, 1875.]



1. In a lawn-mower, the combination of the fly wheel or wheels with the main axle in the described relation to the flanged driving-wheel, substantially as and for the purpose set forth.

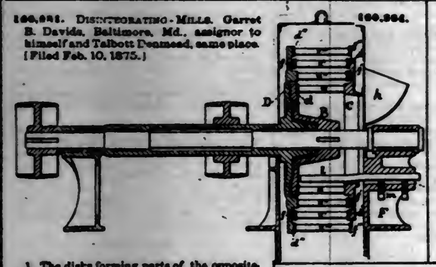
2. The flanged driving-wheel B, in combination with the fly-wheel C, gear-disk D, and the planetary gearing, all inclosed within and protected by the flanges of the wheel, substantially as shown and described.

160,883. FENDERS FOR VEHICLES. Henry M. Curtis, Ypsilanti, Mich., assignor to himself and F. P. Bogardus, same place. [Filed Oct. 16, 1874.]



A wooden wheel-fender having attached to its upper side and outer edge a border or frame, B, as described.

160,881. DISINTEGRATING-MILLS. Garret B. Davids, Baltimore, Md., assignor to himself and Talbott Desmead, same place. [Filed Feb. 10, 1875.]



1. The disks forming parts of the oppositely-revolving cages of disintegrating-mills, provided with re-enforcing rings, substantially as and for the purpose specified.

2. The cage of the mill, consisting of the recessed or rabbeted disk D d^2, pins c' c'', and rings f f'', in combination with the cage consisting of the disk B d, pins c, disk C d^1, pins c', and ring f, the two cages being mounted and running independently upon oppositely-revolving shafts, substantially as herein set forth.

3. The combination of the disk B, mounted upon its solid shaft, and disk D at the end of its hollow shaft, the projecting hub of the disk D entering the recessed hub of disk B, substantially as herein specified, for the purpose of balancing the mill as set forth.

4. In a disintegrating-mill having oppositely-revolving cages, as herein specified, the combination of the frame F, having the opening i, knife or breaker l, and set-screws m, substantially as herein shown, admitting of the vertical adjustment of the said knife or breaker, for the purpose specified.

160,882. BRONZE ALLOYS. S. Doubleday, Baltimore, Md. [Filed Oct. 20, 1873.]

A composition for bronze, consisting of copper, glass, antimony, tin, spelter, and lead, in the proportions herein described.

160,883. BOOK-CLIPS. Henry T. Dunlap, Galesburg, Ill. [Filed Jan. 2, 1875.]



The book-clip constructed, as described, of arms A, bent at their central parts e, as shown and described, and hinged to each other by means of a spring, B, with which they are combined and operate substantially as described, and for the purpose specified.

160,884. CARRIAGE-SPRINGS. Jos. Enders, Louisville, Ky. [Filed Jan. 18, 1875.]

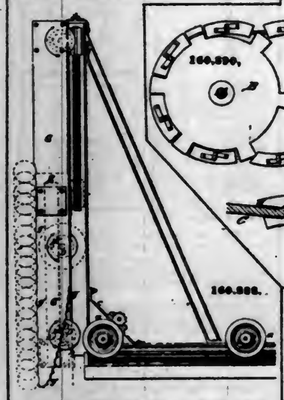


1. The swinging crank-bars F F, in combination with the springs E E, brackets G G G, and body K, constructed to operate substantially as and for the purpose set forth.

2. The steel bar D, inserted in the side bar C, and the brass-rod H, by which it is supported, combined and constructed to operate substantially as and for the purpose set forth.

160,885. MACHINES FOR CHANNELING AND SAWING STONE. Nathan F. English, Hartland, and Cyrenius M. Willard, Pittsford, Vt., said English assignor to said Willard. [Filed Feb. 17, 1875.]

Brief.—The saw, armed with cutting-points at the forward cutting edge, and on its rounded cutting end, is adjustably connected by guide-blocks thereon fitting corresponding guides upon the frame, the latter of which are connected with cranks and mechanism, by means of which motion is communicated to the saw, which is capable of being fed downward by any suitable mechanism.



1. The combination, in a machine for channeling or sawing stone, of the revolving cranks d^1, connecting-rod F', guide-bar E, and saw G, whereby each cutting-point is caused to cut upon the line of a given circle exclusively its own, substantially as described.

2. The saw G, constructed as described, in combination with the revolving cranks d^1 and their operating devices, as and for the purposes described.

3. In a machine for channeling in stone, the saw G, having its penetrating end g'' narrow in width, circular in form, and armed with diamonds or other hard substance for cutters, in combination with the revolving cranks d^1, as and for the purposes described.

4. In a machine for channeling in stone, the combination of the saw G, having the motion as set forth, with a mechanical device, whereby the saw is fed down to cut a channel into the rock, substantially as described.

5. The mode of channeling or sawing of stone by the saw G, in which each of the cutting-points in cutting describes a circle that is independent of that cut by any other point in the saw, substantially as described.

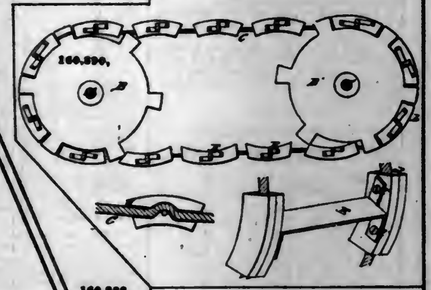
160,886. GANG CORN-PLANTERS. Silvanus P. Evans, Ash Ridge, Ohio. [Filed May 18, 1874.]

Brief.—Adjustably secured to the frame in rear of the seed-delivering tubes are covering-plows, turning downward and inward at their lower ends, for forming a ridge over the seed deposited.

In a corn-planter, the slotted bars K, plate I, and vertically-adjustable clevis I', in combination with the seed-spouts G, as shown and described.

160,890. ENDLESS-CHAIN PROPELLERS. H. B. Everitt, Philadelphia, Pa. [Filed Aug. 8, 1874.]

The improved chain-propeller, consisting of the cables C, grooved lugs d, transverse paddles E, and grooved spur-wheels B B', constructed and combined substantially as shown and described.



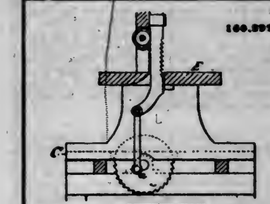
160,891. STREET-SIGNS. Hiram S. Finney, Detroit, Mich. [Filed Feb. 18, 1875.]



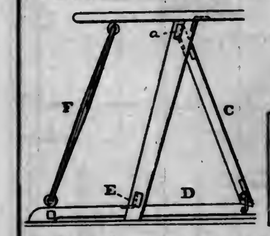
The sign-holder for lamp-posts, consisting of the ring A, with two or more horizontal integral arms, C, having dovetail seats a a', and the separate angle holders D D', secured to the arms by the dovetail seats and screw-bolts f, as set forth.

160,892. SAWING-MACHINES. John Gehr, Clear Spring, assignor to himself and Jos. R. Haines, Green Spring Furnace, Md. [Filed Nov. 23, 1874.]

The combination, with the tables C E placed at different altitudes, of the single shaft A, operating a jig-saw and a rotary saw at one side of the crank d, as and for the purpose specified.



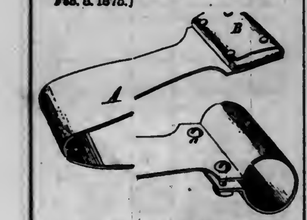
160,892. IRONING-TABLES. A. C. Gilbert, Philadelphia, Pa. [Filed Feb. 6, 1875.]



1. The legs B, connected at top by the supporting cross-bar a, and at bottom by the cross-bar E, in combination with the legs C, jointed to the cross-bar a, the legs B, resting on the floor outside of the base, and the cross-bar E, resting on said base, substantially as and for the purpose set forth.

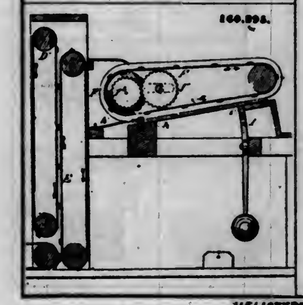
2. The board A, in combination with the legs B C and base D, and with the end rods F, substantially as and for the purpose set forth.

160,894. TOP-SUPPORTS FOR CARRIAGES. Andrew Goodyear, Albion, Mich., assignor to Zebulon C. Brown, same place. [Filed Feb. 9, 1875.]



1. As a new article of manufacture, the spring A, provided with a clamping device at one end, and a pad, B, at the other end, substantially as and for the purpose specified.

2. The spring A, having a clamping device at one end, in combination with the pad B B' c, substantially as and for the purpose specified.



160,895. HARVESTERS. Marquis L. Gorham, Rockford, Ill. [Filed Nov. 4, 1874.]

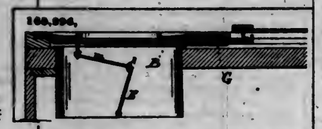
Brief.—An intermediate carrier is constructed so as to vibrate horizontally, to change the point of delivery of the grain

1. The pivoted vibrating frame H, having carrier F working therein, in combination with the carriers O D E and receiver G of a grain binder, substantially as described.

2. The weighted pendent arm I, with the segmental gear i thereon, and rack i', in combination with the vibrating frame H and its endless carrier F, substantially as described.

3. The hand-lever h^1, spring-catch h^2, toothed plate h^3, connecting-rod h^4, and arm h', in combination with the vibrating frame H and endless carrier F, as and for the purpose described.

4. In a machine for harvesting and binding grain, the carrier-frame H, with its endless carrier F, movably supported on the machine, so as to vibrate thereon, whereby the flow of the unbound grain is changed in its direction of delivery, substantially as and for the purpose described.



160,896. WATER-CLOSETS. John H. Gould, Hudson, N. Y. [Filed Aug. 27, 1874.]

Brief.—The sliding bar is pushed back by a thumb-piece, carrying with it the slide which uncovers the sink. The ratchet or cogged plate appended to the under surface of slide-plate winds up the coil of spring, and closes the cylinder-plate by means of connecting-rod, thus effectually excluding the foul air during the use of the closet.

The slide B, operated by means of the ratchet-plate G, in combination with ratchet-wheel D, spring a, rod m, and cylinder-plate E, the whole constructed and operated substantially as and in the manner described.

160,897. RUBBER-COATED BAGS. Wm. D. Grimshaw, Rocky Hill, N. J. [Filed Jan. 25, 1875.]



A water-proof bag coated with rubber, and having its edges cut, lapped, and united by the coated surface, by which the lapped parts are rendered homogeneous with the body of the bag, as a new article of manufacture, as herein described.

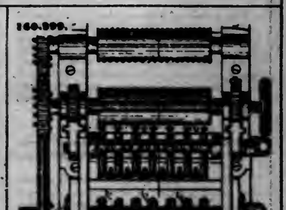
160,898. WATER-PROOF COMPOUNDS. Wm. D. Grimshaw, Rocky Hill, N. J. [Filed Jan. 25, 1875.]

Brief.—Coats textile fabrics with a composition consisting of caoutchouc, whiting, sulphur, oxide of zinc, lamp-black, and asphalt.

The composition herein described, in which lamp-black is combined with cleaned and masticated rubber, benzine, whiting or chalk, oxide of zinc, asphaltum, and sulphur, substantially in the proportions herein stated, for use in waterproofing fabrics, as described.

160,899. SAWING-MACHINES. William P. Hale, Brockport, N. Y., assignor to the Hale Manufacturing Company, Port Huron, Mich. [Filed Mar. 27, 1874.]

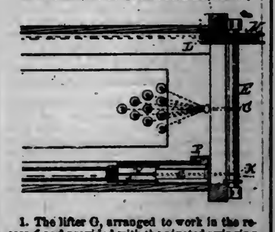
Brief.—The saw guides are tubular, thus allowing the constant lubrication of their bearings upon the saw.



1. As a means for lubricating saws, the hollow guides or projections E, furnished with leather or other suitable material, through which the oil is to exude or percolate.

2. In combination with the hollow guides or projections, a hollow shaft furnished with holes communicating with the interior of the guides, substantially as and for the purpose described.

160,900. BOWLING-ALLEYS. A. A. Hamlin, New York, N. Y. [Filed Jan. 29, 1875.]

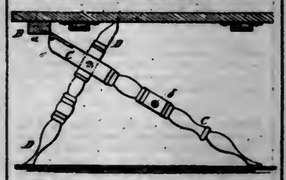


1. The lifter G, arranged to work in the recess f, and provided with the pivoted swinging arms g' g'' and cord K, substantially as shown and described.

2. The combination of the cord I, purchase-wheel M, and windlass E with the cord C, connected with the pins, and the cord K, connected with the lifter, whereby the pins are set up and the balls lifted and returned by one and the same operation, substantially as shown and described.

3. The spring-board P, constructed and arranged to operate as shown and described, for the purpose specified.

160,901. IRONING-TABLES. S. C. Hamlin, Ypsilanti, Mich. [Filed Sept. 15, 1874.]



The combination of the ironing-board A, having notches x x, the cross-bar B, with inclined surface a a, the hinged legs C C, united by round b, and the legs D D, pivoted to the legs C, all constructed and arranged as set forth.

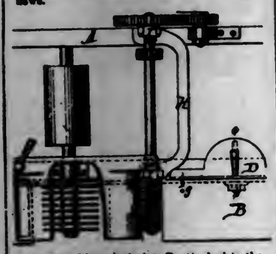
160,902. PROCESSES OF FLESHING, DRESSING, AND FINISHING SHEEP-SKINS. Richd. Hart, Gloversville, N. Y., assignor of one-half his right to Jas. Gillespie, same place. [Filed Sept. 12, 1874.]

Brief.—This process forms an imitation grain-surface upon skins from which the original grain-surface has been removed.

The process of dressing sheep-skins consisting essentially in immersing the skins, first, in a compound of alum water and flour, oatmeal and water, and, after a suitable period, in a compound of urine, soap, soda, salt and water, and oat-meal, flour and water, the skins being suitably manipulated meanwhile, substantially as described, for the purpose specified.

160,905. MACHINES FOR SAWING LATHS. Philo W. Hart, Camden, N. Y. [Filed July 6, 1874.]

Brief.—The table is made vertically adjustable, and is provided with a transversely-moving gage, and the feeding-rolls are made capable of angular adjustment with relation to the saws.



1. The table or bed-plate B, attached to the frame A by bolts working in slots *c*, so that it may be vertically adjusted, and having the elongated slot *e* and openings *g*, in combination with the right-angled gage-plate D, having the leg *d*, adapted to the slot *e*, and the pins *f*, adapted to the holes *g* in the adjustable guide-table, all substantially as herein shown and described.

2. The yoke E, extending transversely across the frame A, and having at each end a standard, I, in which the feed-rollers have their bearings, said yoke being adjustably attached to the frame, whereby the feed-rollers can be caused to revolve in a plane parallel to the planes of revolution of the saws, or obliquely thereto, substantially as described, for the object specified.

160,906. MEASURING-RULES. O. S. Hastings, Granby, assignor to himself and F. S. Johnson, Plainfield, Conn. [Filed July 2, 1874.]

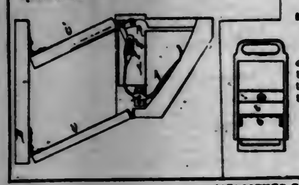
Brief.—Claims economy in the consumption of ivory in the manufacture of measuring-rules.



A measuring-rule composed of strips of ivory secured permanently together, or of strips of ivory and wood or rubber, so combined that the ivory shall be on the outside for receiving the graduations, all as set forth.

160,907. CARRIAGE-TOPS. Charles Heergeist, Cincinnati, Ohio, assignor to Crane, Breed & Co., same place. [Filed Feb. 18, 1875.]

Brief.—Top supported on swinging, whether up or down.



In a vehicle, the combination of top B, swinging bars C C, crank-shaft D O *g*, and spring F *f*, substantially as and for the purpose set forth.

160,908. FIRE-BACKS FOR STOVES. George W. Herrick, Detroit, Mich., assignor to Detroit Stove-Works, same place. [Filed Dec. 10, 1873.]

Brief.—Air is admitted to the space in rear of the fire-back through the sides of the stove.

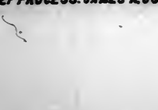
The fire-back A, consisting of a plate, constructed as described, to form an air-space with the back of a cooking-stove, bearing a series of frusto-pyramidal studs on its surface, said studs being arranged in lines, so that those of one line shall be opposite the intervals of those in another line, substantially as and for the purposes set forth.



160,908.

160,909. KNOB-ROSES. Selah Hiler, New York, assignor to William Irwin Martin, Brooklyn, N. Y. [Filed Aug. 10, 1874.]

Brief.—A thin ornamental film of metal is secured at the back of a glass rose, and a cushion of leather is fitted in a recess, also located at the back. This cushion lessens the liability of breakage.



1. A rose made of glass, with a film of metal applied to the back thereof, and protected by a suitable coating, substantially as set forth.

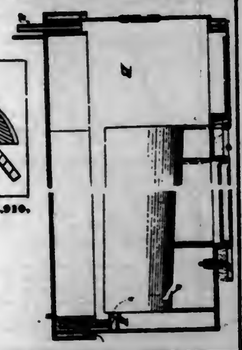
2. A rose made of ornamental glass, and recessed at the back, in combination with a washer of leather or similar material that fills, or nearly so, the space within such recess, substantially as set forth.

160,910. COOPER-COOLERS. Charles Hoff, Cincinnati, Ohio. [Filed July 17, 1874.]

Brief.—The several adjustable parts are fitted with water-joints for rendering them air-tight, also of draining the water which forms in the ice-chamber, and causing it to fill and keep full the lower joint of the preserver, while a pipe leading from said joint prevents it from overflowing

1. In combination with bed A and case B, the liquid-trough *a*, constructed substantially in the manner and for the purpose specified.

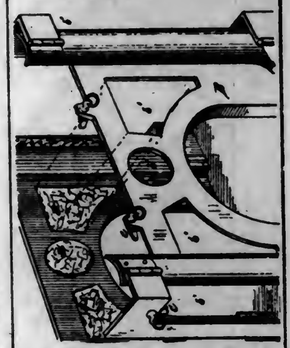
2. The bed A, case B, and liquid-trough *a*, in combination with ice-chamber *b'*, and pipes E and *e'*, substantially as and for the purpose specified.



160,910.

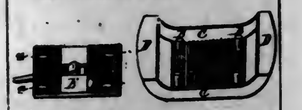
160,911. APPARATUS FOR MARBLEIZING MANTELS. Robert J. Howdon, Cincinnati, Ohio. [Filed Dec. 8, 1874.]

Brief.—The mantel is marbleized by dipping or splashing. The detachable frame acts as a shield to prevent certain portions from receiving the marbleizing material.



In the process of marbleizing mantels, the detachable frame B *b'*, provided with the clamps C, the whole constructed and operating substantially as and for the purpose specified.

160,912. BUCKLES. John Hudson, Detroit, Mich. [Filed Oct. 21, 1874.]



1. The combination of the plate A, having the studs B, with the compression-plate E, having the holes *a* and tongue *b'*, as shown.

2. The combination of the plate A, having the studs B, with the compression-plate E, having the holes *a* and tongue F, both of said plates being corrugated, as shown, for the purpose of holding the straps rigidly in place, as set forth.

3. The combination of the plate A, having the studs B, sides C, and loops D, of the compression-plate E, having the holes *a* and tongue F, all as and for the purpose set forth

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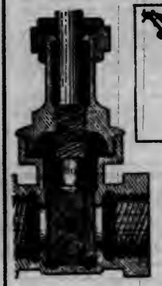
160,913. BED-BOTTOMS. Platt C. Ingersoll, Green Point, Brooklyn, N. Y. [Filed Dec. 10, 1874.]



1. The combination of the slats C, bars D, and loops or staples E, substantially as described, the latter being constructed and arranged to embrace and bear upon the slats, and to be adjusted along them, as and for the purposes described.

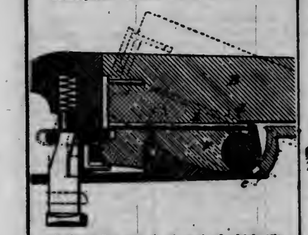
2. The strips J of leather or other fabric, in combination with the slats C and loops or staples E, substantially as and for the purpose shown and described.

160,914. STEAM-VALVES. John Johnson, Brooklyn, N. Y. [Filed Dec. 7, 1874.]



A valve, as made with two independent disks or gates, having upon their inner faces inclines, in combination with an intermediate operating mechanism, consisting of a suitable frame, swiveled or otherwise connected to the valve-stem, and provided upon its upper half with an incline projection or wedge, and carrying upon its lower half a loosely fitting wedge, substantially as set forth.

160,915. BREECH-LOADING FIRE-ARMS. Chas. A. King, Meriden, Conn., assignor, by mesne assignments, to Charles Parker, same place. [Filed Feb. 5, 1875.]

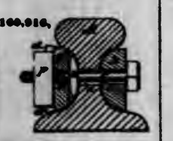


1. In a fire-arm the barrel of which tilts up at the breech, the collar E, constructed with a connection to the frame other than the pintle, substantially as described.

2. In a fire-arm the barrel of which tilts up at the breech, the recesses R in the frame around the pintle, substantially as and for the purpose described.

160,916. RAILWAY-RAIL JOINTS. Joseph M. Kenny, Blairsville, Pa. [Filed Jan. 27, 1875.]

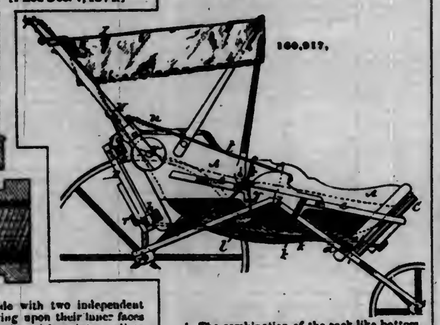
Brief.—The depression in the fish-plate holds the nut from turning, the same being drawn into place by turning the bolt head. The transverse piece on the bolt, lying in the space, is entered through the transverse slot, and turned so as finally to lie across it, its object being to assist the nut in confining the joint.



The combination of the bolt C, having the locking-bit E, with the plates B and B', the latter having spaces *c* and *d*, and the nut F, substantially as and for the purpose described.

160,917. CHILDREN'S CARRIAGES. Rudolph Kreter, New York, N. Y. [Filed Dec. 30, 1874.]

Brief.—Collapsible lengthwise and crosswise, so as to be easily folded and carried from point to point.



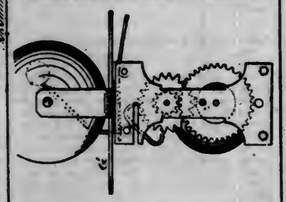
1. The combination of the sack-like bottom G and hinged sides A A, composed of rigid sections, and hinged ends B C, also composed of rigid sections, substantially as and for the purpose set forth.

2. The cord *f* and spring *s*, in combination with the sack-like bottom G and the back and front pieces B C, in sections, hinged together at *g g*, and united with the sides by hinges *h*, substantially as set forth.

3. The catches *w*, in combination with the pivoted supports fi H, the cords *t*, springs *u*, and hinged sides A A, constructed in sections, substantially as set forth.

4. The cords *t h*, in combination with hinged sides A A and hinged ends B C and flexible bottom G, substantially as set forth.

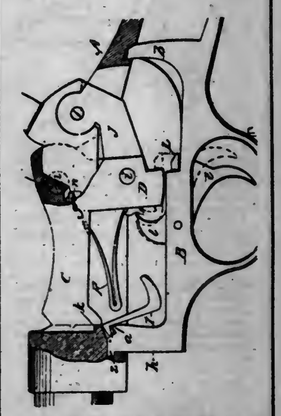
160,918. BURGLAR-ALARMS. M. H. Lasher, Champaign, Ill. [Filed Jan. 18, 1875.]



1. The combination, with a burglar-alarm operated by clock-work, of the pivoted lever G or its equivalent, extending on both sides of the alarm, and arranged to stop and start the clock-work, so that the alarm can be used with any door, whether opening to the right or left, as herein set forth.

2. The combination, with the clock-work, of a burglar-alarm, of the pin *i* on the rock-shaft of the hammer, and the pivoted lever, provided with the lug or bar A, substantially as and for the purposes set forth.

160,919. BREECH-LOADING FIRE-ARMS. James Lee, Milwaukee, Wis. [Filed May 9, 1874.]



1. The trigger-guard B, attached to the frame A by means of the lip *a* and arm *b*, fitting in corresponding recesses, and secured by the screw D, substantially as set forth.

2. The hammer H, pivoted to the swinging tumbler J, the said parts being constructed and arranged to operate as described.

3. The hammer H, constructed and operating in relation to the firing-pin *g*, so that its nose *n* will be depressed below the firing-pin when pressed forward, as set forth.

4. The trigger *t*, provided with the legs L, in combination with the arms D of the breech-block, for locking the latter closed, substantially as described.

5. The extractor I, arranged to bear on the shoulder *a* during the first part of its movement, and then to change its point of bearing to the strap below, substantially as set forth.

6. The mainspring F, constructed and located in reference to the breech-block and extractor, substantially as described, whereby it operates to elevate the breech-block, to a level with the bore, and also operates on the extractor to make it hold the breech-block open until released.

7. The horizontal projection *k*, extending across the opening in the frame A, below the bore of the barrel, whereby a chamber is formed for the head of the shell in rear of the barrel, with an unobstructed opening above for the escape of the gas, as set forth.

8. The pivot-pin *f*, flattened at the point where the hammer bears against it, in combination with the face *f* of the hammer, whereby the mainspring, operating through the medium of the hammer, serves to keep the pin *f* locked in position, as set forth.

9. The combination of the tumbler J and the trigger *t* with the breech-block C, the trigger having its point arranged to bear against the front end of the tumbler when the hammer is let down, so as to prevent the breech-block from closing entirely, and thus keep the point of the firing-pin below the primer, while the hammer rests thereon, as set forth.

10. A vibrating extractor, constructed to operate substantially as described, whereby its lip or point which is in contact with the shell is made to move in a straight line, as and for the purpose set forth.

160,920. COTTON-SEED PLANTERS AND FERTILIZER-DISTRIBUTORS. J. B. Logg, Rome, Ga. [Filed Oct. 12, 1874.]

Brief.—The seed-box is adjustably secured to the plow beam and standard by a guide-rod on the box working through an eyebolt on the standard, and boot stay-rods extending from the beam to the seed-box. The covering-plows are prevented from falling too low, when the box is adjusted, by pins projecting out from the frame.



1. The means employed for connecting together the seed-planting devices and the plow, consisting of the eye E, guide-rod F, and the curved bars H and H, said parts being constructed and combined in the manner and for the purpose substantially as specified.

2. The covering-plows L L, in combination with the seed-box G, and stops N, substantially as and for the purpose set forth.

160,921. MACHINES FOR GRINDING LATHE-CENTERS. Martin B. Leesman, Hamilton, Ohio. [Filed Apr. 24, 1874.]

Brief.—A detachable friction-ring is arranged on the face-plate, to communicate motion to the grinding machinery.



1. The detachable driving-ring R, in combination with a center-grinding attachment such as described, substantially as and for the purpose specified.

2. In combination with wheel I, spindle K, wheels H O F, spindle E, and frame A a, the pivoted adjustable bearing D I J, operating substantially as and for the purpose specified.

160,922. WINDMILLS. George H. Lucas, Pekin, Ill. [Filed Feb. 9, 1875.]

Brief.—The wind-wheel and its connections are supported upon the top of the tower, a strong frame-work of wood or iron. The turn-table rests upon a series of rollers, which run upon a circular track fixed upon the top of the tower. The rim and the hub of the wheel are connected by a number of spokes, on which a flanged ring is fastened. The sails turn on studs or journals projecting from their respective ends near their outer rectangular edge, and are tapering in width, and bent transversely upon a regular curve from end to end, so that they are true tapering segments of a hollow cylinder.

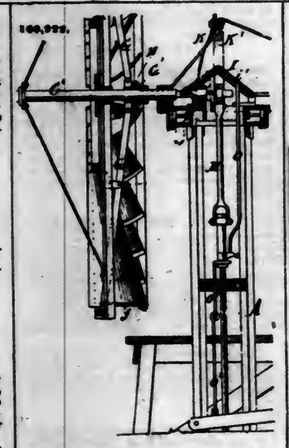
1. The combination of the sails E, ring F, links f, levers G, sleeve G', shifter H, and spring K, substantially as and for the purpose specified.

2. The combination of the sails E, ring F, links f, levers G, sleeve G', shifter H, spring K, and the toggle I, and hand-lever P, with intermediate connections, substantially as and for the purposes specified.

3. The sails E, in the form of tapering segments of a hollow cylinder, substantially as specified.

160,923. CORN-DRILLS. James B. Ludlow, Muncie, Ind. [Filed Jan. 30, 1875.]

Brief.—Upon the upper rear end of the opening-plow is formed a discharge, or clearing-finger, that projects into an annular groove in the seed-wheel, for forcing the seed out into the chute.



The clearing-finger *k*, formed on the upper rear end of the drill-opener G, in combination with the dropping-wheel E, provided with seed-cells intersected by an annular groove, as and for the purpose set forth.

160,924. PEN AND PENCIL CASES. George W. Mabie, Brooklyn, N. Y. [Filed Feb. 19, 1875.]

Brief.—The reversible pen-holder sleeve is inserted into the pencil end of the case, between the pencil mechanism and the outer case.

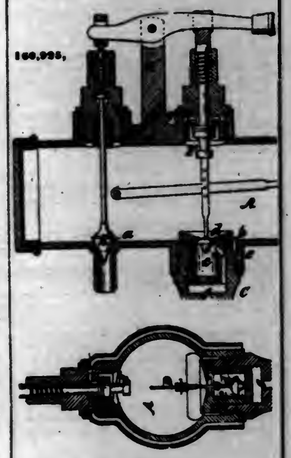


The combination, with the pencil movement, of the reversible pen-holder E, inserted at the pencil end of the outer case A, and entering the latter outside of or over the pencil movement, substantially as shown and described.

160,925. DRAWING EVANESCENT LIQUIDS. Peter E. Malmstrom and Paul E. Dummer, New York, N. Y. [Filed Feb. 8, 1875.]

Brief.—The induction-port passes up in an oblique direction, so that the valve, when it is down, cannot be raised by the force of the inflowing liquid. The induction-valve has a float, whereby the liquid is prevented from rising in said chamber beyond the desired level. The discharge-valve is situated in a cavity formed in the lowest part of the chamber, so that when said valve is raised, all the liquid contained in the chamber is free to discharge.

160,926.



1. The combination of an oblique channel or port, *c*, with the chamber *a*, containing the induction-valve *d*, substantially as shown and described.

2. The combination of a float, E, with the induction-valve *d* and vent-valve F, said vent-valve, when it is depressed, serving to open the induction-valve against the action of its float, substantially as set forth.

3. The combination of a chamber, A, formed as described, with a discharge valve, *h*, vent-valve F, float E, induction-valve *d*, and oblique supply-port *c*, all constructed and operating substantially in the manner shown and described.

160,927. BRICK-KILNS. R. F. Marshall, Lincomb, Iowa. [Filed Feb. 25, 1875.]

Brief.—One kiln only, or as many as may be necessary, may be used in connection with the single central chimney.

1. In combination with the kiln A, and the chimney B, arranged as described, the trunks or flues A j G J K, and their several valves, substantially as shown and described.

2. The combination of the kilns A, having the partition-walls *g* and openings *f*, with the flues J communicating with the flues K by openings *r* regulated by valves, and the chimney B regulated by the damper *s*, substantially as and for the purpose set forth.

3. The combination, with the flues K K, of the cross-flues N provided with valves *v*, substantially as and for the purpose set forth

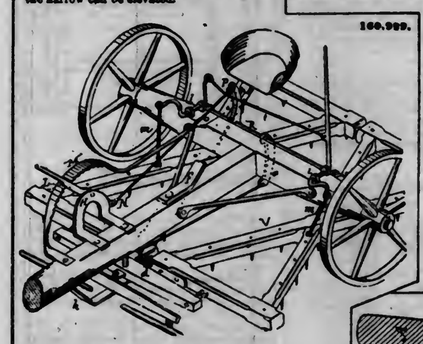
160,928. JARS FOR ANATOMICAL SPECIMENS. John M. Maris, Philadelphia, Pa. [Filed Feb. 23, 1875.]

Brief.—A glass rod rests by its journaled ends in recesses in the edge of the jar. The specimen is secured by cord to this rod, and hence need not be disturbed when the jar-cover is removed.

A specimen jar in which a bar, B, is adapted to recesses in the neck, and arranged in respect to the cover, all substantially as set forth.

160,929. HARROWS. William T. McGhee, Wheeling, Mo., assignor to himself, J. C. Gush, and W. W. Edgerton. [Filed Jan. 16, 1875.]

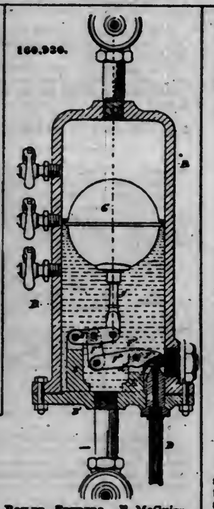
Brief.—The harrow is made in two sections and hinged together in front and rear, and supported upon bearing-wheels by chains rising from their centers and connected to the arms of a rock-shaft, by which means the harrow can be elevated and depressed, and by another lever and rock-shaft either side of the harrow can be elevated.



1. In combination with the frames V V, hinged together at their front and rear ends, the rock-shaft K, provided with the standards S S and arms P *c*, the double-tree *d*, elongated king-bolt *e*, and the lever I, engaging with the rack M, and connected to the arm P by the rope N, constructed and operating substantially as and for the purposes set forth

2. The combination with the frames V V, suspended at their front ends by the double-tree *d* and king-bolt *e*, and at their centers by the standards S S of the rock-shaft R, the crank rock-shafts *i* and *l*, rope *t*, and chains *m m*, substantially as and for the purposes set forth.

160,930. BOILER-FEEDERS. F. McGuire, Toronto, Canada. [Filed Nov. 20, 1874.]



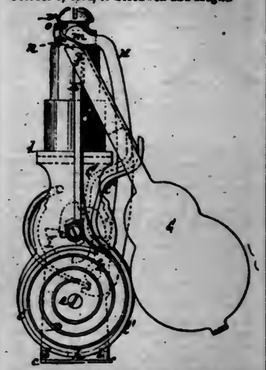
The float G, with connecting-rod *g*, lever F, hinged to the standard E, connecting-link F', and lever F', pivoted on the standard E', and having the shorter arm F' enlarged to form a disk, *f*, in combination with the case B B' and supply-plug D', arranged and operating substantially as and for the purposes specified.

160,931. SAD-IRONS. Jos. M. McMaster, Rochester, N. Y. [Filed Nov. 26, 1874.]

As a new article of manufacture A sad-iron made of clay, with glazed surface and having the openings or recesses *b b*, for the purpose of allowing the moisture to escape from the clay while baking, and the reception of a handle, substantially as described.

160,932. AUTOMATIC LIGHTERS FOR GAS-BURNERS. Edwd. L. Megill, Brooklyn, N. Y., assignor to W. G. Morgan, same place. [Filed Mar. 4, 1875.]

Brief.—Improvement on Patent No. 155,779, October 6, 1874, to Stockwell and Megill.



1. The hammer H, pivoted at *h* and constructed with an inclined face, *m*, in combination with the anvil E, bent, as at *n*, to correspond with the inclined face of the hammer, for explosion of the fulminate on the ribbon D as the latter is fed upward to the burner from the magazine below, substantially as and for the purposes herein set forth.

2. The magazine G, formed in part of a spring, G', in combination with one or more feed-wheels, *t*, and constructed to operate with an elastic or yielding pressure between it and the feed wheel or wheels on the fulminate-ribbon introduced between them, essentially as described.

3. The combination of the magazine-cover G, pivoted above to the anvil, as at *f*, and constructed to form, in concert with the anvil E, a guide for the fulminate-ribbon, substantially as specified.

4. The laterally-swinging magazine-cover G, pivoted above, as described, in combination with the spring G' of the magazine, whereby said cover, when being thrown back or open, is made to act upon the spring to enlarge the capacity of the magazine, essentially as and for the purposes herein set forth.

160,933. BRUSHES. William A. Megraw Baltimore, Md. [Filed Sept. 21, 1874.]

Brief.—The head of the brush is provided with a groove, across which the bristles are laid. A strap holds the bristles in the groove, and nails pass through said strap to bind it and the bristles in place.

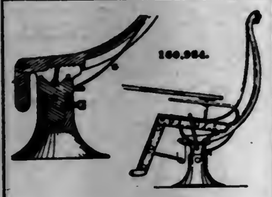


The groove *a* in the brush-block, and the bristles *b* nailed to said block in said groove through the strap or strip *d*, as and for the purpose described and represented.

160,934. CHAIRS. Joe V. Meigs, Lowell, Mass. [Filed May 16, 1874.]

1. The combination of the base, the post mounted thereon, the back-iron pivoted to the front of the post, the seat-frame, the flexible cover connecting the seat-frame and back-iron, and the pawl and rack for adjusting the back-iron and seat-cover independently of the seat-frame, substantially as and for the purpose set forth.

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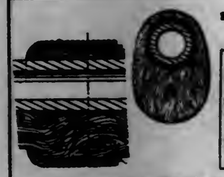


2. The combination of the base, the post, the back-iron pivoted on the post beneath the seat-frame, the rod and rack for adjusting the back-iron, and the spring G, for elevating the back-iron and adjusting the seat-cover, these parts being constructed and operating substantially as and for the purpose set forth.

3. The combination of the seat-frame, the arms secured thereto, the adjustable back-iron, the flexible seat-cover secured to the seat-frame and back-iron, and the foot-rest pivoted to the seat-frame and connected with the back-iron, these parts being constructed substantially as set forth, whereby the back-iron, the seat-cover, and the foot-rest are adjustable independently of the seat-frame and arm-rests.

4. The combination of the seat-frame, the adjustable curved back-iron, bifurcated at its upper end, and the flexible seat-cover extending from the seat-frame to the upper bifurcated end of the back-iron, as described, forming in its continuity a seat, a back-support, and a head-rest, as set forth.

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160,925. STOCKS FOR FIRE-ARMS. Joe V. Meigs, Lowell, Mass. (Filed May 16, 1874.)

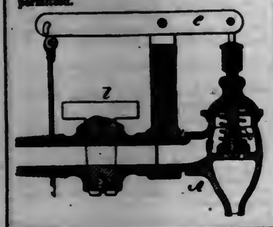
1. A gun-stock or imperfect conductor surrounding a gun-barrel, to prevent burning the hands when the barrel is heated, substantially as set forth.

2. The method herein described of protecting a gun-stock from being injured by heat from the barrel, by means of non-conducting material interposed between the stock and barrel, substantially as set forth.

3. The combination of a barrel, a stock surrounding the barrel, and non-conducting material interposed between the stock and the barrel, substantially as set forth.

160,926. BOTTLING-FAUCETS. A. C. Meyer, Baltimore, Md. (Filed Feb. 9, 1875.)

Brief.—A bottling-faucet and treadle so combined that the operator can control the flow of the fluid with his foot, and have his hands free for use in managing the bottles; also, in combining with the faucet a body or casket containing a cock, by which the flow of the fluid may be shut off, and the removal of the faucet for cleansing or other purposes permitted.



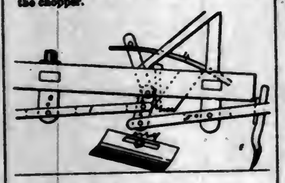
1. In combination with a bottling-faucet, A, a treadle, B, arranged and operating substantially as shown.

2. In combination with a bottling-faucet, A, a casket or body, B, provided with a cock, i, substantially as and for the purpose described.

3. In combination with the spring-faucet A, the lever c, cord g, and treadle k, as shown.

160,927. COTTON-CHOPPERS. John G. Mickle and Fountain F. Dearring, Fosterville, Tenn. (Filed Aug. 15, 1874.)

Brief.—A square block is rigidly secured to the axis. In revolving its corners trip a spring-lever, which connects with and raises the chopper.



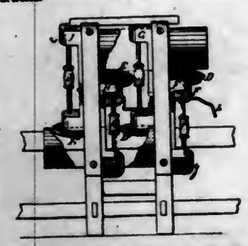
The combination, in a cotton chopper and scraper, of the box K, the levers 1 2 3 5, the spring-bar 4, and the trip 5, all constructed and arranged substantially as described, for the purposes specified.

160,928. CONSTRUCTION OF PIERS. John Milroy, Edinburgh, North Britain, and Jas. Wm. Butler, Willesden, England. (Filed Oct. 16, 1873.)

The mode described of building piers and other structures—that is to say, building a number of tubular sections independently, bringing each section so built to its position above the foundation or lower section, and then lowering the said upper section and securing it in position, all as set forth.

160,929. SAWING-MACHINES. M. M. Miller, Moline, Ill. (Filed Dec. 16, 1874.)

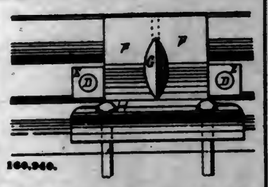
Brief.—A series of adjustable saws are placed diagonally to a traveling carriage, upon which the lumber is placed, for the purpose of forming it into gutters and analogous articles.



The combination of the saws D D' E E', arranged in adjustable bearings F G H I, substantially as described, with a lever, L, substantially as and for the purpose hereinbefore set forth.

160,930. RAILWAY-RAIL-JOINT PROTECTORS. Isaac Mills, Hamilton, Canada. (Filed Aug. 31, 1874.)

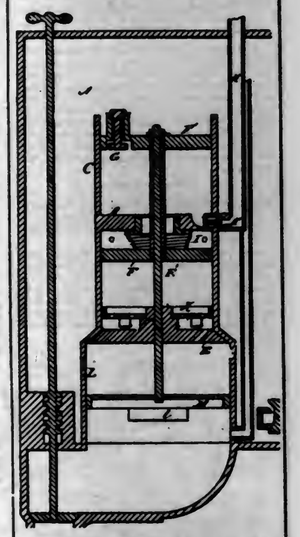
160,940.



The rails A A, fish-plates C C, secured by bolts D D and nuts E E, and the joist-protector F, the latter being secured in the manner shown, to act as a locking device for the nuts, the whole being combined and arranged to operate as and for the purpose specified.

160,941. AUTOMATIC FIRE-PLUGS OR HYDRANTS. Daniel Minich, Philadelphia, Pa. (Filed Feb. 26, 1875.)

Brief.—Within the hydrant-stock is arranged an air-pump, the piston of which is operated by the water from the main to compress the air within the stock, the air being used to force the water from the hydrant.



1. A fire-plug, hydrant, or pump provided with a cylinder, pistons, and valves for compressing air to be used in forcing the water admitted to the stock, substantially as described.

2. The stock A, holding the cylinder C, having diaphragm D, valve E, and pistons F F', constructed and arranged as described, for the purpose set forth.

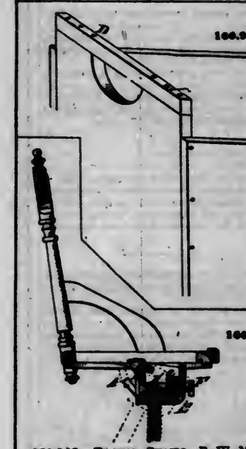
3. The combination, with the stock A, containing the cylinder C, provided with pistons and valves, as set forth, of the branch B and discharge-pipe N.

4. In combination with the cylinder C and branch B, the base L, having an outlet-port, l, for the purpose described.

160,942. FARM-BOXES. M. M. Murray, Cincinnati, Ohio. (Filed Feb. 17, 1875.)

As a new article of manufacture, the box composed of bottom A, sides C C', and notched and slotted flaring ends B D B' D', which extend above said sides, in the manner and for the purposes set forth.

160,942.



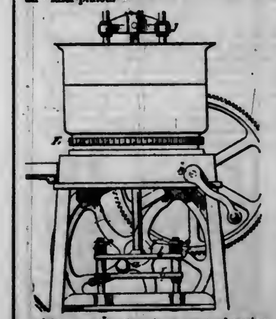
160,942. TILTING CHAIRS. R. W. Myers, New York, N. Y. (Filed Dec. 26, 1874.)

1. The drop or plate A, attached to the chair-seat, in combination with the spring B', receptacle E, with the internal projection or plate e, and an axis, G, having its bearing or bearings attached to the chair-seat, substantially as and for the purpose set forth.

2. The drop or plate A, fastened to the chair-seat, in combination with the spring B', receptacle E e, axis G, having its bearing or bearings connected to the chair-seat, and spring tension-regulating screw F, substantially as and for the purpose set forth.

160,944. MEAT-CHOPPERS. August Nittinger, Jr., Philadelphia, Pa. (Filed Feb. 24, 1875.)

Brief.—An improvement on patent to same inventor, No. 157,213, November 24, 1874. The vertical shaft carrying the knives is flexibly held by cross-arms beneath, between which works a crank-pin on a large wheel, the horizontal shaft through said wheel receiving motion from a primary cogged wheel, which also imparts motion, at the operator's will, through an "idler-pinion."



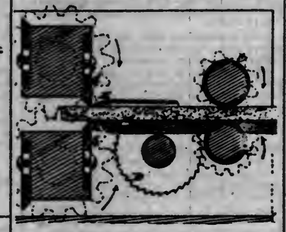
1. The combination, in a meat-chopping machine, having reciprocating knives operated by a crank, of the yielding spring-bar b, attached to or forming part of the knife-rod I, with the bar b', secured to the guide-pins d d.

2. The combination of the cog-wheel E on the chopping-block, the idler-pinion g, and pinion p on the shaft M, with the lever F and spring-bolt F, for supporting and releasing the said shaft.

3. The combination of the spring-bolt Q, the retaining and releasing arm x, and fly-wheel G, having a notch adapted to the bolt, all substantially as set forth.

160,945. SUGAR-CUTTING MACHINES. Geo. P. Ockerhausen, New York, N. Y. (Filed Feb. 2, 1875.)

Brief.—The sugar is passed between press ing-rollers, is held by spring clamps, and is cut by tangential cutters carried by rollers



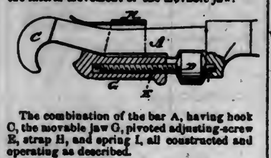
1. The combination of the elastic jaws E E with the elastic feed-rollers C C and the saws D D, substantially as specified.

2. The revolving cutter-heads F F, provided with tangential cutters G G, disposed to cut in a plane back of and parallel, or therewith out, with a plane intersecting the centers of the heads, substantially as described.

3. The combination, with the elastic jaws E E, of the revolving cutter-heads F F, having tangential cutters G G, as and for the purposes herein set forth.

160,946. PIPE-WRENCHES. Henry Otto, Bloomington, Ill. (Filed Jan. 9, 1875.)

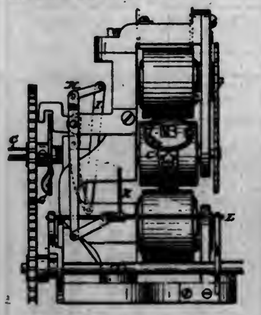
Brief.—The movable jaw bears on an inclined portion of the main bar. The journal of the adjusting-screw serves as a pivot for the lateral movement of the movable jaw.



The combination of the bar A, having hook C, the movable jaw G, pivoted adjusting-screw E, strap H, and spring I, all constructed and operating as described.

160,947. ROTARY PRINTING-PRESSES FOR DATING LETTERS AND CANCELING STAMPS. Timothy G. Palmer, Schultzville, and H. F. Clark, Poughkeepsie, N. Y. (Filed Mar. 10, 1875.)

Brief.—A cam-disk on the type-shaft actuates a compound lever, which throws forward a finger to discharge the pointed letter from the open side of the machine. A pawl-rack moving in grooved guide-plates may give intermittent motion to the main shaft.

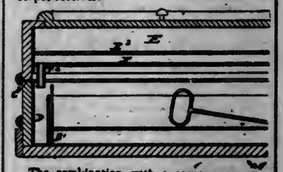


1. The cam C upon the shaft C, in combination with the compound levers H I, rod L, and discharging-finger K, as described.

2. In combination with the shaft C and ratchet-wheel M, the toothed pawl N and guide O O', as and for the purpose specified.

160,948. CORPSE-COOLERS. Chas. O. Peck, Pittsfield, Mass., assignor to N. G. Brown, same place. (Filed Feb. 13, 1875.)

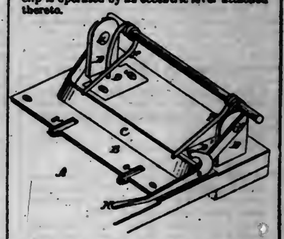
Brief.—The cooled water flows into and through perforated channels in the drip-floor and underlying troughs, and their outlets, into a water-receptacle, which extends around the corpse-receiver.



The combination, with a corpse-preserver having a continuous water channel or receiver, D, surrounding the entire corpse-chamber, of the ice-box E, having a continuous bottom, E', extending from side to side, with a series of perforated channels, e, formed therein, and troughs F, provided with tubes F', substantially as described.

160,949. PAPER-CLIPS. William Voorhees Perry, Beaver Dam, Wis., assignor of two-thirds his right to J. Aiken and B. Quaintance, Kokomo, Ind. (Filed Mar. 6, 1875.)

Brief.—Consists of a knife-edged spring-clip, which serves as a paper-cutter, and a slotted plate to hold paper-fasteners. The clip is operated by an eccentric lever attached thereto.



The combination of the board A, slotted base-plate B, metallic plates D D, the angular knife-edged clamp C pivoted thereto, shaft E, springs F F, and the J-shaped lever H, pivoted to the clamp C, all constructed substantially as and for the purposes set forth.

160,950. DEVICES FOR REMOVING WIRE FASTENINGS FROM CORKS. Geo. A. Potter, New London, Conn. (Filed Nov. 5, 1874.)

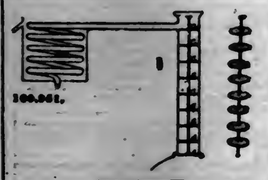


As a new article of manufacture, a device for removing fastenings from corks of bottles, consisting of the rigid hook b, ferrule B, provided with ears or projections a a, and handle A, constructed as described

160,951. RECTIFYING-STILLS. E. Freeman-Prentiss, Philadelphia, Pa. (Filed Dec. 30, 1874.)

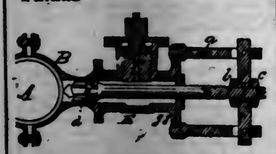
Brief.—A column located between a boiler and condenser contains a series of perforated diaphragms attached to a supporting-rod. This rod, with its diaphragms, is removable, the diaphragms themselves being removable from the rod. The perforations of small size, being punched from above downward, leave a burr on the lower face of the diaphragm.

The rod and perforated diaphragms, in combination with the boiler and column, in the manner and for the purpose substantially as set forth.


160,861.

160,862. MACHINERY FOR TAPPING MAINS. John J. Quinn, Pittsburg, Pa., assignor of one-half his right to Edward T. Jamesson, same place. [Filed Oct. 3, 1874.]

Brief.—A clip-collar formed in two sections (to one of which is attached the sub-main) is permanently secured to the main. A slide, which carries the drilling apparatus, is bolted to a flange on the sub main. Two check-nuts—one above and the other below the bridge—revolve freely with the drill, the feed of the same being effected when the play of the nuts is arrested.

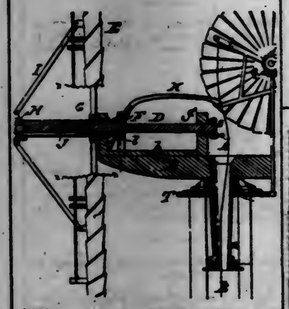


1. The combination of the clip-collar B embracing the main A, the sub-main branch E, having the bevel *g* and flange *g'*, and the valve C with the disk *c*, arms *c*, journal-bearing *c'*, screw D, and check-nuts *b c*, substantially as shown and described, and for the purpose set forth.

2. The threaded journal *b* and check-nut *c*, in combination with the bearing *c'* and threaded drill-shaft D, substantially as shown and described.

160,863. WHEELBARROW. Abel Raymond and Geo. Raymond, Waupun, Wis., assignors of one-half their right to M. J. Althouse, same place. [Filed Jan. 2, 1875.]

Brief.—A rotating frame or turn-table, with a weight on its forward end, and the wind-wheel on its rear end, fixing the pivot; also, the combination of the main wheel, arranged in rear of and fixing the pivot, and a small governing-wheel in front of and at right angles to the main wheel, to assist in keeping the same head toward the wind.



1. In combination with a pivoted frame or turn-table, B, a wind-wheel, E, mounted on its rear end and fixing the pivot, and a counter-weight, G, mounted on its forward end, as shown.

2. In combination with the turn-table B, saving the wheel E mounted on its rear end, as shown, the governing-wheel F mounted in front of the main wheel upon the turn-table, and connected with gearing for rotating the same, substantially as shown and described.

3. In combination with the collar P provided with single lugs *s* the bars I, arranged in pairs and connected to opposite sides of each lug, as shown and for the purpose described.

4. In combination with the rotating grooved collar P mounted on the main shaft, and the turn-table provided with the rib A, the band *l* controling the collar and engaging with the rib, as shown.

5. In combination with the shaft E and sliding collar H, the shield or cover W attached to the collar, as shown.

6. In combination with the grooved standards or uprights, the bearing-plate *b*, provided with the pipe *g* at its corners, as and for the purpose described.

160,864. DRILL-CHUCKS. John O. Reilley, Jersey City, N. J. [Filed Feb. 16, 1875.]

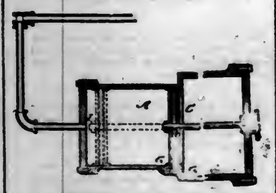
Brief.—The jaw-piece is slotted at each end, forming elastic jaws, to clasp the drill in two places at the same time, the jaws at the point being closed by means of the conical interior of the shell or cylinder, and those at the rear by means of the conical socket in the stock.



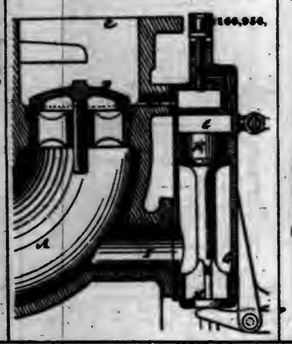
In combination with the chuck-cylinder A and stock B, the jaw-piece C, in one piece, and slotted at both ends, as shown and described.

160,865. STEAM AND AIR BRAKES. James R. Reniff, Bloomington, Ill. [Filed Nov. 23, 1874.]

Brief.—An accidental parting of the coupling allows the air within the smaller cylinder to escape, while the compressed air within the larger cylinder forces the piston over the communicating air-port, and confines the air back of the piston, the movement of the latter, through intervening mechanism, automatically setting the brakes.



The air-chambers A B of unequal diameters, and communicating with each other through a suitable air passage or port, C, in combination with the piston C, acting as a valve to closing and opening said port or passage, substantially as and for the purpose set forth


160,866.

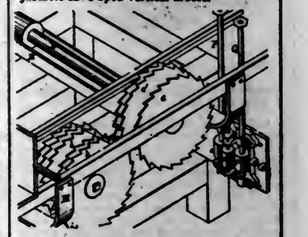
160,866. BELOW APPARATUS FOR AIR-COMPRESSORS. Geo. H. Reynolds, New York, N. Y., assignor of one-half his right to O. H. Delamater and Geo. H. Robinson, same place. [Filed Feb. 2, 1875.]

Brief.—When the pressure in the receiver reaches the required amount, it opens a small valve, that admits air to the top of a weighted valve, which is thereby opened, allowing the air to escape from the delivery-pipe.

The combination, with the feed A, of the check-valve B, the regulating-valve C, controlled by the pressure on the delivery side of the check-valve, the relief-valve H, controlled by the regulating-valve and opening to the atmosphere, and the passage I, substantially as and for the purpose or purposes herein set forth.

160,867. MACHINES FOR RELIEVING TEETH. R. A. Rowley, Williamsport, Pa. [Filed Jan. 16, 1875.]

Brief.—A series of circular saws are secured upon a stationary and an adjustable arbor, for cutting the sides of the teeth and wedges, the shoulders being cut by two adjustable saws upon vertical arbors.



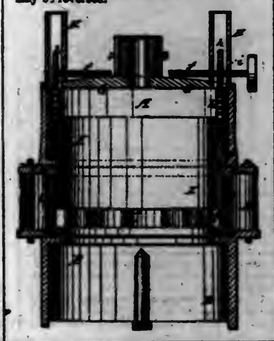
1. The adjustable saw-arbor D, carrying the series of saws *c*, *c'*, and *c''*, diminishing in size as they recede from the saw *c*, in combination with the frame E, slotted support G, and pivoted support F, substantially as and for the purpose set forth.

2. The arbor C, provided with the saws *b b* and the adjustable arbor D, carrying a diminishing series of saws, as described, in combination with the vertical saw-arbors P and Q, with their adjusting mechanism, as and for the purpose specified.

3. The carriage L, provided with the horizontally and vertically adjustable stops *g h*, adjustable stop or stops *i*, and lever *l*, substantially as and for the purpose set forth.

160,868. WATER-WHEELS. B. R. Royer, Ephrata, Pa. [Filed Feb. 9, 1875.]

Brief.—The casing is made of three principal parts—a top flume, bottom flume, and a center curb. The top and bottom flumes are cast exactly alike, each having a flange at the end. The middle part is cast of two annular rings, with triangular connecting-pieces set at an angle, and without any guides. The casing may be reversed.



1. A reversible flumed casing for water-wheels, as herein set forth.

2. The combination of the chutes or curb C, with guides D D, and the flanged flumes A and B, made exactly alike, to form a reversible casing for water-wheels, as herein set forth.

3. The combination, with a water-wheel casing, of the lid G, housings H H, gate I, rack bars *h h*, and shaft *f*, with pinions *i i*, all constructed substantially as and for the purposes herein set forth.

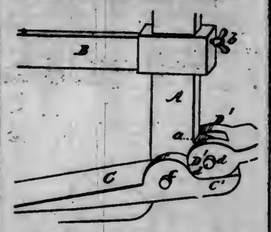
160,869. CARRIAGE-PAINTERS' EASELS. A. G. Rykert, Attica, N. Y., assignor to A. B. Miller, same place. [Filed Jan. 26, 1875.]



The platform C, constructed in one piece with the pivot-pin *d*, the arms *f f*, having a slot, *j*, adjustable jaw *h*, and eccentric lever *n*, and arms *f' f'*, provided with legs or teeth *g g*, all combined and arranged substantially as specified

160,870. CLAMPS. Brin Erdbeck, Red Wing, Minn. [Filed Aug. 20, 1874.]

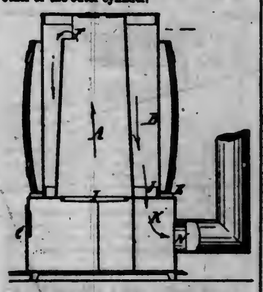
Brief.—The forked pivoted jaw of the clamp is adjusted by means of a cam-headed lever operating upon the short arm of said jaw.



The herein-described carpenter's clamp, composed of the stock A, sliding jaw B *b*, jaw C C', permanently pivoted to one end of the stock, and lever D, also permanently pivoted to the stock, and provided with a cam or eccentric head, D', all substantially as and for the purpose specified.

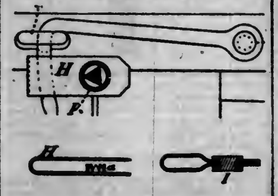
160,871. BARREL-STOVES. Jas. F. Scholes, Brooklyn, N. Y. [Filed Jan. 12, 1875.]

Brief.—The products of combustion are carried first to one side and afterward to the other of the outer cylinder.



The combination, in a stove for barrels, of the central fuel-cylinder A, having the lateral opening F at its top, the cylinder B entirely surrounding the central cylinder, and the base C having the opening or passage J and discharge-chamber K, and shoulder *a* of the base, substantially as described, whereby the products of combustion are caused to ascend the central cylinder, descend the outer cylinder, and pass through the opening J into the discharge-chamber, as and for the purposes described.

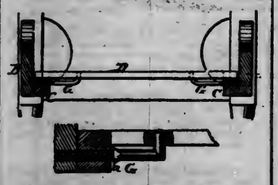
160,872. SEAL-LOCKS. J. M. Smith, Jersey City, N. J. [Filed Mar. 9, 1875.]



The sealed fastening described, consisting of the band H, having a hole at each end, and a rivet or tongues, *a*, formed out of the body of the band itself, which are passed through and riveted in the hole *b*, leaving an opening in the center, through which the seal I is entered, and headed down at both sides with any suitable impression, substantially as set forth.

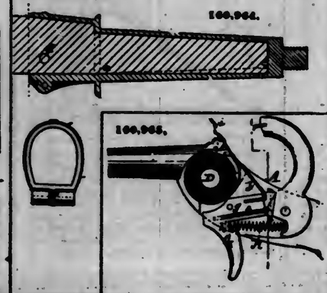
160,873. BEDSTEADS. Chas. Snyder, Belle Plaine, Iowa. [Filed July 27, 1874.]

Brief.—The cross-slats, having perforations *a*, side pieces B B, and side rails C C, in combination with the L-shaped screw-hooks G, with shoulders *a*, said hooks being adapted to secure the side rails to the side pieces, and to hold the cross-slats in position, all as and for the purpose specified.



160,874. AXLE-SKEINS FOR VEHICLES. B. Snyder, Johnson's Corners, Ohio, assignor of one-half his right to J. H. Miller, same place. [Filed Dec. 24, 1874.]

A thimble-skein, tapering from its front to its rear end, and gradually increasing in thickness from its outer to its inner end, and having on its lower inner bearing-surface a flat straight seat for the under side of the wooden axle, substantially as shown and described.


160,874.

160,875. TOY FIRE-ARMS. Hiram T. Starr, New York, assignor to Henry C. Morgan, Brooklyn, N. Y. [Filed Jan. 20, 1875.]

Brief.—A self-cocking pistol is arranged to feed a continuous fulminate ribbon under the hammer, to produce thereby a succession of reports.

1. The stock A of a toy gun or pistol constructed with the cavity D for receiving and holding the coil of fulminate-ribbon, and having its axis parallel with the axes of the hammer and trigger, substantially as herein shown and described.

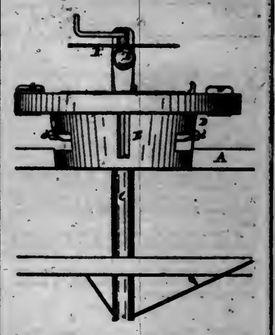
2. The combination, with the toy pistol or gun having a cavity for receiving and holding a coil of fulminate-ribbon, of the elastic strip J, having its upper end arranged to bear on the ribbon, and attached at its lower end to the trigger, by which it is operated for feeding the ribbon, substantially as and for the purpose described.

3. The combination of the cocking pin or spring *p*, arranged to move laterally, but confined vertically, in the slot *s* in the heel *g* of the trigger, and the wedge-shaped projection *m* on the hammer, substantially as and for the purpose shown and described.

4. The spiral spring H, arranged to engage, as described, with the hammer and trigger, and serving as a main spring and trigger-spring, substantially as specified.

160,876. MACHINES FOR CROZING BARRELS. Samuel S. Steel and Rhubel Munson, Martin, Ohio. [Filed Oct. 3, 1874.]

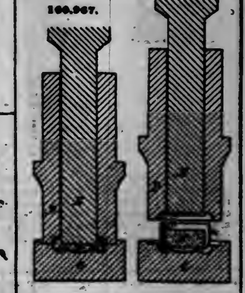
Brief.—The barrel to be crozed is placed in a recess of a bench, and the revolving crozing-tool lowered into its open end.



1. Slides I I', springs *e e*, drum *f*, cord *c*, and lever L, in combination with the head D, in the manner as described, and for the purpose set forth.

2. The combination of the head D; arm B, upright C, gearing R R', cord N, treadle O, and bench A, substantially in the manner as described, and for the purpose set forth.

160,877.



160,967. DIES FOR MAKING METALLIC BASES FOR JEWELRY. George Stetter Hoboken, N. J., assignor to Mulford, Hale & Cottle, New York city. [Filed Feb. 6, 1875.]

Brief.—A yielding former is placed in the cup-shaped blank. Through the closing die, which bends over the edges of the blank, works a plunger, (of a diameter to fit accurately the opening in the finished article,) the forcible impact of which upon the former causes it to expand and force the walls of the blank out into intimate and thorough contact with every portion of the mold-surface.

The combination of the female die, closing die, plunger working independently through one of the dies, and the yielding and displaceable former or block, for joint operation, as above and set forth.

160,968. LAMP-PENDANTS. Elisha Stevens, Cromwell, Conn. [Filed Feb 19, 1875.]

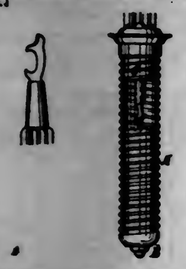
Brief.—The crown is attached to the vertical branches, so as to suspend the shade by means of a flange thereon.



1. The crown B, attached to and between the vertical branches A of the pendant-frame, in combination with the shade C, suspended from said fixed crown, as and for the purpose described.

2. The crown B, connected to the vertical branches A A by the lugs a a of the pendant-frame, in combination with the shade C, having the projecting flanged top c, for suspending it from the crown, substantially as and for the purpose described.

160,969. HANDLES FOR CUTLERY. Owen W. Toft, New York, N. Y. [Filed Jan. 26, 1875.]



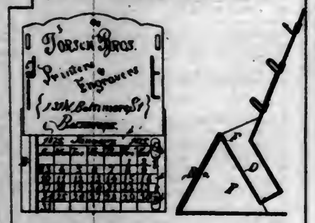
An improved article of manufacture, a handle for cutlery or other articles, made of a sheet-metal tube closed at each end, and stiffened and ornamented by fluted or corrugations arranged spirally about the handle, so as to form screw-threads, substantially as and for the purpose described.

160,970. KEY-RINGS. Howard Tilden, Philadelphia, Pa. [Filed Feb. 26, 1875.]



A key-ring formed from a single piece of ductile sheet metal, with the angular opening C and broadened inscription-plate B, said ring being divided at the junction of the broadened inscription-plate and the narrow portion of the ring to form the slit D, as and for the purpose described.

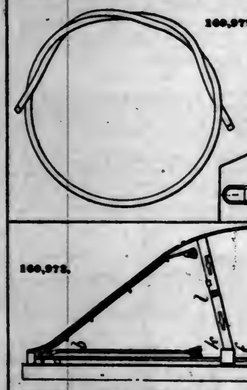
160,971. ADVERTISING MEDIUMS. Charles R. Torsch and Henry F. Torsch, Jr., Baltimore, Md. [Filed Jan 8, 1875.]



An advertising medium, consisting of the board A, pen rack C, card-case D, calendar-holder B a, and supporting wings F, all being constructed and arranged substantially as set forth.

160,972. GRAIN-BANDS. Charles L. Travis, Great Valley, N. Y., assignor to the Grain-Binder Company, Fremont, Ohio. [Filed Feb. 12, 1875.]

A prepared band made of wood, constructed and adapted for use in binding grain, substantially as described.



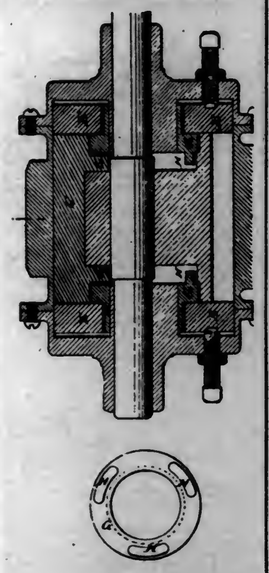
160,973. AWNINGS. Charles J. Trumper, Indianapolis, Ind. [Filed Dec. 3, 1874.]

Brief.—The frame is hinged at the angles, and also about the center of the side bars, so that the awning may be shifted to one side or the other, or so that it may be folded up entirely. A hooked clasp is pivoted across the hinged joints at the center of the side bars, to keep them rigid when open.

In a window awning, the loop or hook *f* on a *f*, constructed with the T-shaped rods *m* and *m*, the clasps *l* and *l*, the eyes *f* and *f*, and hinged, substantially as and for the purpose set forth.

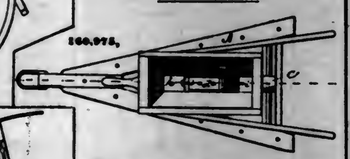
160,974. ROTARY PUMPS OR MOTORS. N. Upham, Athol, Mass. [Filed Nov 30, 1874.]

Brief.—The rotating rings on which the radial pistons bear are provided with projections of size sufficient to move the rings through their connection with the pistons, to avoid the liability of breakage in the connection between the rings and the pistons.



The rotating rings G G, provided with projections H H, in combination with the pistons and revolving cylinder, substantially as and for the purpose described.

160,975.



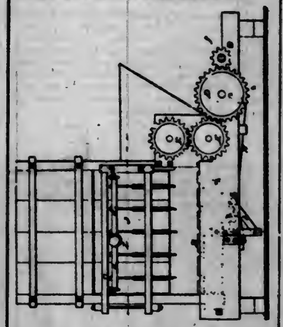
160,975. COTTON-PLANTING ATTACHMENTS TO HARROWS. Seaton E. Wade, Chapel Hill, assignor of one-half his right to W. U. Covington, Crystal Springs, Miss. [Filed Jan. 26, 1875.]

Brief.—Upon the V-shaped harrow-frame, and wedged in between the beams, is removably secured the hopper by a screw passing through the back and into the standard.

In combination with a V-shaped harrow-frame, the detachable hopper D, wedged in between the bars of the frame at its front, and secured to the upright U at its rear by the screw *a*, and the detachable wheel *d*, with pins *i*, all as set forth.

160,976. HAY-PRESSES. Charles Weste, Galesburg, Ill. [Filed Jan 5, 1875.]

Brief.—The material to be pressed is fed between rollers, and received in layers upon a filler or follower, and is then forced upward into the press-box. The feeding rollers have an intermittent motion, and the filler is caused to ascend and deposit its layer during the intermission of the motion of said rollers.



1. The rollers A A, gear wheel D, having the smooth surface F upon its face or periphery, and gear-wheels E E, in combination with the follower or filler B and press-box X, in the manner and for the purpose herein set forth.

2. The combination of the driver H, with its connecting-levers 1 1 2 2, with the follower or filler B, and arm G, in the manner and for the purpose herein set forth.

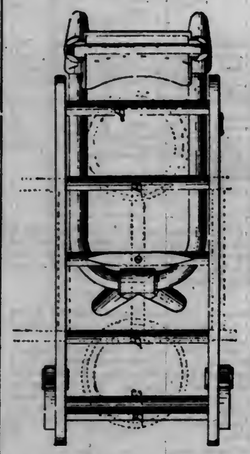
3. The bar *a*, pivoted, as described, to the door-frame O, in combination with the holders C C and weighted lever L, in the manner and for the purpose herein set forth.

4. In a hay-baling press, the combination of the rollers A A, gear-wheel D, with its smooth surface F on its face or periphery, gear-wheels E E, attached to the shafts or axles of the rollers A A, arm G, secured centrally to the shaft or axle D', driver H, and levers 1 1 2 2, with the filler or follower B, in the manner and for the purpose herein set forth.

1. The before-described wash bench, consisting of the side rails A and A and end rail B, constructed from gas-pipe, and connected with each other, and with the legs E, E', and E'', by means of the couplings B, b, and b, and C, c, c', c'', and c''', substantially as and for the purpose specified.

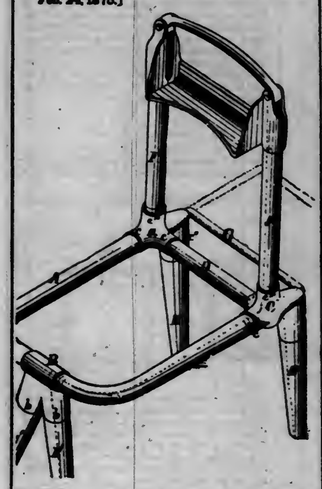
2. In combination with the wash bench shown, the basket rack G g, contained within said bench, and made longitudinally extensible, substantially as and for the purpose shown.

160,978. WASH-BENCHES. Francis Way and Martin Way, Springfield, Ohio. [Filed Feb 24, 1875.]

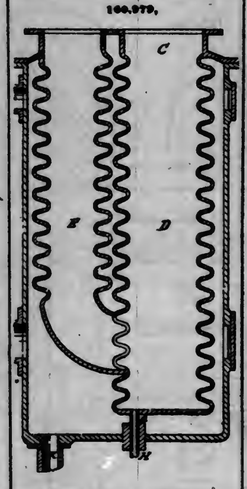


A wash-bench, pivoted centrally, and capable of rotation in a horizontal plane upon and around its pivotal bearing, so as to enable the relative positions of its ends to be reversed, substantially as and for the purpose specified.

160,977. WASH-BENCHES. Francis Way and Martin Way, Springfield, Ohio. [Filed Feb. 24, 1875.]



160,979.



160,979. FEED-WATER HEATERS FOR STEAM-BOILERS. Horatio N. Waters, West Meriden, Conn. [Filed Jan 25, 1875.]

Brief.—The expansion and contraction of the pipes through which steam passes is accommodated by the vertical projection therefrom passing through suitable packing in the bottom of the outer case.

In a feed-water heater, the pipes D and E, attached to and suspended from the cover B, and provided with the downward extension C, the plug H, and reservoir A, all combined, constructed, and arranged as shown and described, to operate as specified.

160,980. CLOTHES-DRIERS. Ira Whipple, Mystic River, Conn. [Filed Feb. 26, 1875.]

Brief.—The frames are formed of wooden slats and galvanized wire rods, with hooks projecting from one side. Two frames are connected together by slotted hinges at the top, and a hinge and stud at the bottom.



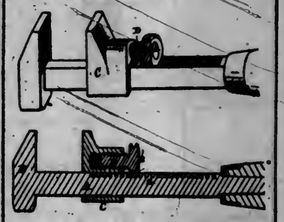
1. The frames A and B, provided with galvanized-iron rods C C, each rod forming at one end a hook, *b*, as and for the purposes set forth.

2. The two frames A B, in combination with connecting devices D D and G, whereby the frames A and B may be opened from one side or opened from the bottom, as and for the purpose set forth.

3. The combination of the frames A B, hinges D D, having slotted or forked leaves *d*' *d*', rod *d*², bolts *f*, and thumb-nuts h h, all substantially as and for the purposes herein set forth.

160,981. WRENCHES. Joe L. Whipple, Paw Paw, Mich., assignor to himself and C. W. Whipple, same place. [Filed Nov. 17, 1874.]

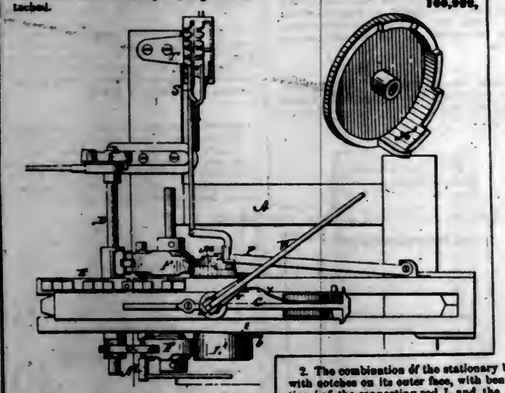
Brief.—The set-screw is tapped into the movable jaw, so that when its head is engaged with the rack on the main bar, the jaw is slightly moved toward or from the article grasped, according to the direction in which the screw is turned.



The combination, with the movable jaw C of a monkey-wrench, of the screw D, having the flanged head *b* fastened on one side, and rack *a* on the back of the shank of the wrench, said movable jaw being adapted to any adjustment by said screw, all constructed and arranged as and for the purpose set forth.

160,902. HEAD-BLOCKS FOR SAW-MILLS. F. N. Whitcomb, Amity, N. Y. [Filed Dec. 14, 1874.]

Brief.—A notched cam is employed as a stop to arrest the retrograde movement of the setting jacks at any desired point, and the dogs are thrown from the log by a spring when detached.



1. The combination, with the knee C, rack-bar H, and pinion I, of the counter-shaft K, gear-wheel O, and coiled spring L inclosed within the casing L', substantially as and for the purposes herein set forth.

2. The combination of the arm *b* on the spring-casing L' with the stud *c* on the head-block, as and for the purposes set forth.

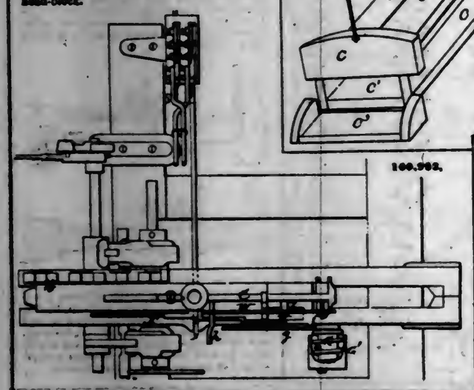
3. The combination of the cam M having notches on its face with the angular lever P and the retracting-knee C, substantially as and for the purposes herein set forth.

4. The combination of the removable stem *w*, having a projecting arm, V, the dog W pivoted to the stem and the spring *x* attached to the knee and bearing against the arm V, all constructed substantially as set forth.

5. The combination of a graduated scale, T, with the hand-lever S, connecting-rod O, angular lever P, and stepped cam M, substantially as and for the purposes herein set forth.

160,903. HEAD-BLOCKS FOR SAW-MILLS. F. N. Whitcomb, Amity, N. Y. [Filed Dec. 14, 1874.]

Brief.—A notched lever is pivoted to the head-block, and arranged in connection with a stop-bar, for the purpose of arresting the retrograde movement of the setting jack, such motion being communicated to it through the medium of a coiled spring attached to the head-block.



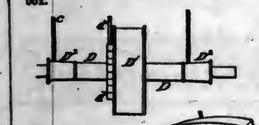
1. In combination with a head block, B, and knee C the short shaft *a*, casing C', and coiled spring G, extending up to the side of the knee, and the bar A projecting from said knee, all substantially as and for the purposes herein set forth.

160,905.

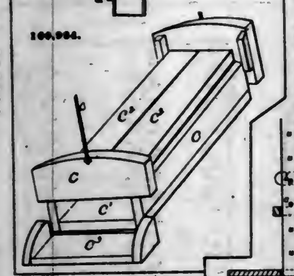
2. The combination of the stationary bar K with notches on its outer face, with bent portion *f* of the connecting-rod I, and the notch *x* in the head-block, all substantially as and for the purposes herein set forth.

160,904. UNLOADING AND DUMPING GRAIN. J. B. Whitcomb, Farmer City, Ill. [Filed Feb. 9, 1875.]

Brief.—The wagon being backed onto a platform, the box, by overhead tackle, is tilted; the grain falling into a box with an inclined bottom and hinged end. This has attached to it two ropes wound onto conical drums (loose outward) on a winch-shaft, to effect simultaneously the elevation and tilting of the box.



160,904.



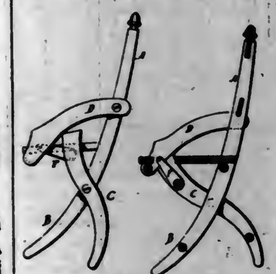
160,902.

1. The portable apparatus for elevating and dumping grain herein described, consisting of the platform A B, frame A' A', self-dumping box C, and elevating mechanism D E F, substantially as and for the purposes described.

2. The hoisting shaft and drum D D' constructed at each end with cone shaped portions or drums D^2 D^2, substantially as and for the purposes described.

3. In combination with the platform A B and elevating shaft D D^2, the trough C, constructed with the inclined bottom C^1, hinged folding sides C^2, and automatic gate C^3, and trough adapted, through the cords *e e* attached thereto and to alternate ends of the cones D^2 on the shaft D, to be elevated to its place, one end slightly in advance of the other, substantially as and for the purposes described.

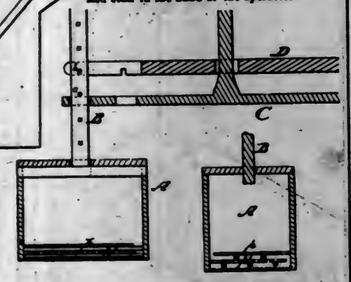
160,905. FOLDING CHAIRS. Geo. E. Whitmore, New Haven, Conn., assignor to the New Haven Folding-Chair Company, same place. [Filed May 2, 1874.]



The combination of the back and legs A B, the cross legs C, pivoted to the legs B, the arm D, pivoted to the back A and bearing upon the legs C, connections F, pivoted to the arms D, and legs C, substantially as described.

160,906. MACHINES FOR DISTRIBUTING COMPOUNDS FOR DESTROYING COTTON-WORMS. Wm. T. Willie, Brenham, Tex., assignor of one-half his right to Wm. H. Thacker. [Filed Mar. 6, 1875.]

Brief.—The boxes containing the powder to be sifted upon the plants have each a three-fold perforated bottom. A cross-bar rests upon the pommel of a saddle, and the boxes are suspended from it upon each side of the horse, and are adjustable both in width and in height by means of holes and pins. Agitation is given by means of a supplemental bar and staff in the hand of the operator.



1. The boxes A A, suspended, by means of standards B B and pins *c c*, from a cross-bar, C, which is adapted for being secured to a riding-saddle, in combination with the actuating-bar D, substantially as described.

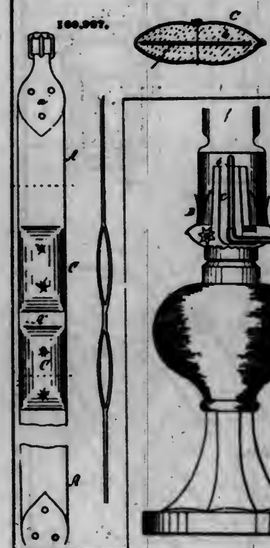
2. The boxes A A, suspended as described and made vertically and laterally adjustable, for the purpose set forth.

160,907. SURCINGLES. Henry M. Witter Worcester, Mass. [Filed Mar. 6, 1875.]

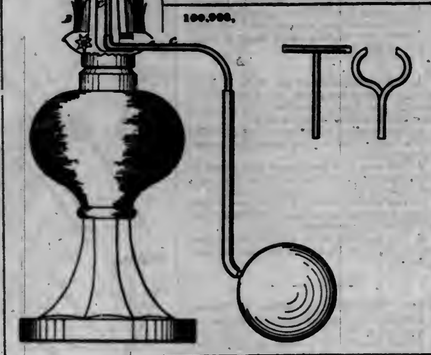
1. A surcingle consisting of the webs A and C, the latter having a double selvage, substantially as described.

2. A woven surcingle having a portion there of woven of single thickness, and other parts of double thickness to receive padding or stuffing, substantially as described.

160,907.



160,908.



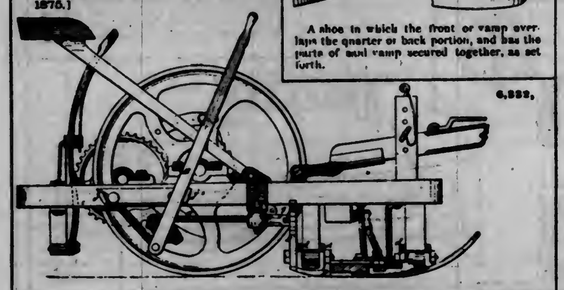
160,906. LAMP-EXTINGUISHERS. Wm. H. Zimmerman, Chestertown, Md. [Filed Feb. 16, 1875.]

1. The combination, with a lamp burner, of an elastic compressible air-chamber and a tube for conducting a current of air to the wick for the purpose of extinguishing the lamp, substantially as and for the purpose described.

2. The combination, with the burner B, of a tube, C, soldered to the same, and a detachable tube, C', having a circumferential row of perforations, *h*, substantially as and for the purpose described.

REISSUES.

6,322. MOWING-MACHINES. A. B. Allen, Tom's River, N. J., assignor, by mesne assignments, to R. Dutton and R. H. Allen. Patent No. 20,226, dated July 24, 1860; extended seven years. [Filed Feb. 10, 1875.]



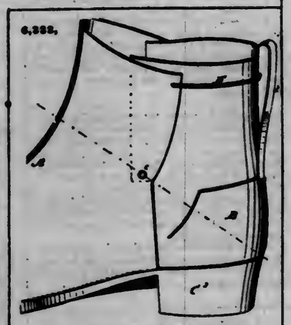
1. A locking lever pivoted on the shoe of a mowing machine, substantially in the manner described, so as to yield as the finger beam is folded up to the main frame.

2. The combination of a finger beam, a hinged shoe, a locking lever pivoted on the shoe, and a stop also mounted thereon, these members being constructed and operating in combination, substantially in the manner described.

3. The combination of a finger beam, a hinged shoe, a lever pivoted thereon, a stop against which the lever abuts, a lifting lever on the main frame, and a chain connecting the lifting lever and locking lever, these members being constructed and operating in combination, substantially as set forth, whereby the locking-lever is first locked partially to lift the divider end of the finger beam, and then yields to allow the finger beam to be folded up to the main frame.

6,323. SHOES. Achilles Ballard, Dublin, Ind., assignor, by mesne assignments, to Leopold Cohn. Patent No. 55,041, dated May 29, 1866. [Filed Feb. 5, 1875.]

6,323.

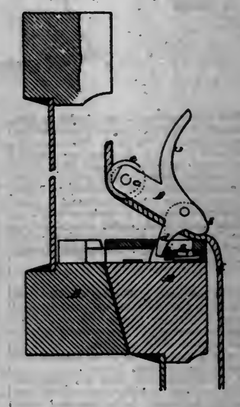


A shoe in which the front or vamp overlaps the quarter or back portion, and has the parts of said vamp secured together, as set forth.

6,322.

6,325. SASH-BALANCES. Obadiah Davis, Battle Creek, Mich. Patent No. 154,587, dated Sept. 1, 1874. [Filed Nov. 2, 1874.]

Brief.—A clamping dog of ordinary construction, having a tongue, finger piece, and gripping portion, with or without an anti-friction pulley, arranged for regulating the cord in raising and lowering sashes, is combined, by means of its projecting tongue, with an ordinary spring-bolt for fastening the meeting rails of the sashes, the two being arranged in such manner as to coact together, the one actuating and controlling the movement of the other.

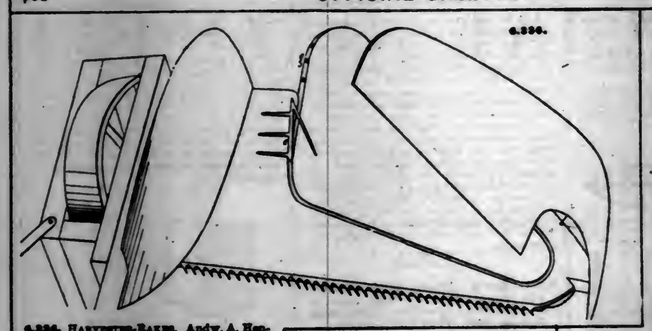


The dog D, with or without anti-friction pulley *c*, and having tongue *d*, finger-piece *e*, and griping portion *b*, in combination with the locking bolt *g* and spring S, all constructed, arranged, and operating substantially as described and shown, for the purpose set forth.

6,324. PANTALOONS, &c. Jacob W. Davis, Reno, Nev., assignor to himself and Levi Strauss & Co., San Francisco, Cal. Patent No. 139,121, dated May 20, 1873. [Filed Feb. 27, 1875.]



As a new article of manufacture, pantaloons or other garments having their pocket-openings secured at the edges by means of rivets, or their equivalents, substantially in the manner described and shown.



6,326.



6,326. HARVESTER-RAKES. Andw. A. Henderson, Brooklyn, assignor, by mesne assignments, to Walter A. Wood and the Walter A. Wood Mowing and Reaping Machine Company, Hoosick Falls, N. Y. Patent No. 20,604, dated Aug. 14, 1860; extended seven years. (Filed Feb. 1, 1875.)

Brief.—A rake having horizontal or pitchfork teeth is attached at its lower end to an endless chain, which passes around pulleys below the platform, and moves the rake in a circuitous path along a corresponding slit in the platform.

1. An automatic grain-rake, provided with teeth lying parallel with the platform and moving across said platform in rear of the cutters, in combination with a stationary side board, against which the grain is pressed by the rake in being moved to the ground, substantially as described.

2. The combination, with the grain-platform of a reaper, of a rake-head, having substantially horizontal teeth, said head being supported at its lower end and moving in a circuitous path upon the plane or surface of the platform for removing the grain therefrom, substantially as described.

3. An automatic rake, in combination with a platform and mechanism for actuating the rake, located below the upper surface of the platform, the combination being substantially such as hereinbefore set forth.

6,327. DRILLS FOR WELL-BORING. John M. May, Cedar Rapids, Iowa, assignor to L. M. Rumsey and Moses Rumsey, St. Louis, Mo. Patent No. 49,120, dated Aug. 1, 1865. (Filed Feb. 10, 1875.)

1. The combination of the parts E, F, G, and K, forming the swivel, and arranged substantially as herein described, for giving a single or double blow to the drill.

2. The combination of the spring-guide O s s with the drill rod or pipe, as and for the purpose set forth.

3. The screen or strainer of wire-gauze, in combination with a pump drill or tube, substantially as and for the purpose specified.

4. The combination of a screen or strainer with a perforated or cutting guide-flange, A, as and for the purpose set forth.

5. The combination of a screen or strainer with a bit, B or B', as and for the purpose specified.

6,328. END-BOTTOMS. Erwin W. Tucker, Indianapolis, Ind., assignor, by mesne assignments, to C. H. Ducka, New York city. Patent No. 53,706, dated Apr. 3, 1866. (Filed Dec. 28, 1874.)

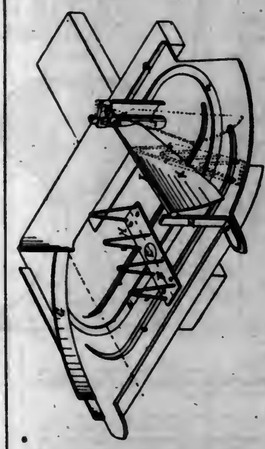
Brief.—The elastic metallic springs between the slats and spiral springs adapt the bed-bottom to yield under pressure at any point. The bed-bottom is pivoted near the foot end in bearings attached to the side rails, and is adjusted at the head end by means of racks and pinions.

1. In a bed-bottom, the combination of an elastic metallic spring, with free ends extending across the bed-bottom, a series of spiral springs secured at their upper ends to said metallic spring, and a rigid cross-bar, to which the lower ends of the spiral springs are secured, substantially as described.

2. The combination of the bedstead A, having bar H and cogs a a, with the bed-bottom, having bars F and rack-bars b b, as and for the purpose set forth.

3. The bars D and bars F, with springs E, in combination with the springs B and rails C, arranged substantially as and for the purposes herein set forth.

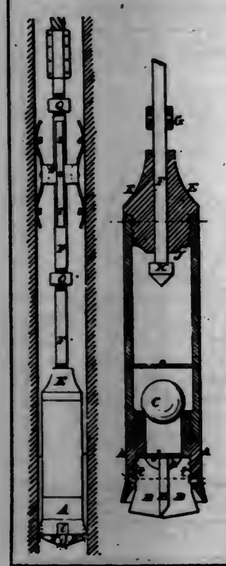
6,329.



6,329. HARVESTER-RAKES. Walter A. Wood Mowing and Reaping Machine Company, Hoosick Falls, N. Y., assignee, by mesne assignments, of Israel Dodenhoff, deceased. Patent No. 18,009, dated Aug. 18, 1857; extended seven years. (Filed Feb. 1, 1875.)

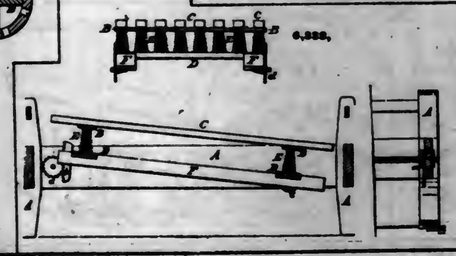
1. The grain-platform of a reaping-machine, provided with a guide for controlling the position or angle of an automatic rake moving in an endless path over said platform.

2. An automatic grain-rake, in combination with actuating mechanism located underneath the platform, and a guide on the platform for controlling and changing the angular position of the rake relative to its path, the combination being substantially such as described.



6,327.





6,328.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 12. TUESDAY, MARCH 23, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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DECISIONS OF THE COURTS.

SUPREME COURT OF THE UNITED STATES.

HENRY J. REEDY, APPELLANT, *vs.* GEORGE SCOTT.

[*In equity.—Appeal from the Circuit Court of the United States for the Southern District of Ohio.—October term*, 1874.]

The surrender of a patent to the Commissioner is an act which, in judgment of law, extinguishes it. It is a legal cancellation of it; and hence the patent can no more be the foundation for the assertion of a right, after the surrender, than could an act of Congress which has been repealed; and it has frequently been determined that suits pending which rest upon an act of Congress fall with the repeal of it. Antecedent suits depend upon the patent existing at the time they were commenced, and unless it exists and is in force at the time of the trial and judgment, the suits fail.

Where a suit in equity under a patent is pending at the time of the reissue, a supplemental bill setting up the reissued patent is not a proper pleading to revive such a suit, as nothing can be recovered, either as damages or profits, for the infringement of the surrendered patent.

The infringement of the reissued patent becomes a new cause of action, for which, in the absence of any agreement or implied acquiescence of the respondent, no remedy can be had except by the commencement of a new suit.

But where the complainant, having reissued his patent pending a suit, set up this fact in a supplemental bill, all the proofs in the case being taken thereafter, and neither the respondent nor the court below made any objection to the irregularity of the pleadings, the irregularity was also disregarded by the court on appeal.

Where the defence against a reissued patent is that it is for a different invention from the original, it cannot be doubted that the latter may be the subject of reference, as to a repealed statute, to aid in the construction of the new patent issued upon the corrected specification.

[*Geo. E. Pugh*, for appellant.
No counsel appeared for respondent.]

Mr. Justice CLIFFORD delivered the opinion of the court.

Patents may be surrendered, in certain cases, in order to obtain a new patent for the same invention, with a corrected specification.

Surrenders of the kind take effect when the amended patent is issued, and from that time the original patent ceases to be operative as a franchise to vest in the patentee the exclusive right to make and use the invention, and vend the same to others to be used.

Such a patent so reissued, together with the corrected specification, it is provided, shall have the same effect and operation in law, on the trial of all actions for causes *hereafter* arising, as though the same had been originally filed in such corrected form.

Surrendered patents cease to be operative when the new patent is issued; from which it follows that such a patent, after the surrender, is not the proper foundation of an action at law or of a suit in equity to recover either damages or profits for the infringement of the invention.

Pending suits are defeated when it appears that the patent on which the suit is founded has been surrendered; nor is a supplemental bill setting up the reissued patent a proper pleading to revive such a suit in equity, as nothing can be recovered, either as damages or profits, for the infringement of the surrendered patent. (*Moffit* vs. *Garr*, 1 Black, 273.)

Reissued patents must be for the same invention as the original patent; but, if the defence be that it is for a different invention, the original patent, though inoperative as a cause of action or to protect the rights of the inventor, is yet admissible in evidence to sustain or disprove such a defence; nor can it be doubted that it may be the subject of reference, as to a repealed statute, to aid in the construction of the new patent issued upon the corrected specification.

Letters patent were granted to appellant on the 9th of June, 1863, for an improvement in hoisting-machines, which is therein represented to be new and useful, and of which improvement the appellant alleges that he is the original and first inventor. Such an inventor of such an improvement, so secured by a valid patent, is entitled, for the term specified, to the exclusive right and liberty of making and using the invention, and of vending the same to others to be used. Pursuant to the patent he claims to enjoy that exclusive right, and he charges that the respondent below, without license, and in violation of his exclusive right, has made, constructed, used, and vended to others to be used, large numbers of hoisting-machines, which are the same in principle and mode of operation as the invention secured to him in his patent; and he prays for an account and for an injunction.

Service was made, and the respondent having failed to appear, the court entered an order that the bill of complaint be taken as confessed. On motion to the court, however, it was subsequently ordered that the complainant have leave to file a supplemental bill, and that the decree *pro confesso* be set aside, and that the respondent may plead, answer, or demur, within thirty days. Under that leave the complainant filed a supplemental bill, in which he alleges that he surrendered the original patent subsequent to the commencement of the suit, and that a reissued patent in due form of law was granted to him *for the same invention*, and he charges that the respondent, since that time, has made, constructed, used, and vended to others to be used, his said invention, without license, and in violation of his exclusive rights as secured by the reissued patent.

Leave having been granted, the respondent appeared and pleaded in bar of the charge contained both in the original and in the supplemental bills, that the parties, after the original bill was filed, entered into an arrangement in writing under their hands and seals, in which they stipulated to submit to Samuel S. Fisher the question whether the machine manufactured by the respondent is or is not an infringement of the complainant's patent, and to abide his decision of the question; that, if he decided that the machine of the respondent does infringe that of the complainant, the former agrees to abandon the manufacture of such machines, and to make no more of the kind in the United States; that, if the arbitrator decided that the machine of the respondent does not infringe that of the complainant, then the latter agrees that his bill of complaint shall stand dismissed at his cost, and that he will not molest the respondent in the manufacture of the machines; that the parties, in pursuance of the agreement, appeared before the person named as arbitrator and submitted the agreed question to him for his arbitration and decision; that the person designated by the parties consented to act as arbitrator, and that, the parties having been fully heard by him, he made and published his decision and award therein in writing, wherein he found and decided, in answer to the question submitted, that the machine manufactured by the respondent is not an infringement of the patent of the complainant for an improvement in hoisting-machines.

Instead of demurring to that plea, or tendering an issue to its allegations, the complainant, under leave, filed what he denominated "a further supplement to his original bill, and amendment to his first supplement." By that pleading he admits that the parties agreed in writing to submit the whole question of infringement to the opinion of the arbitrator; that he, the arbitrator drew up the agreement which they signed, but he avers that he did not understand that the agreement made the further prosecution of the suit dependent upon the opinion to be given by the arbitrator, and alleges that he executed it without consulting his solicitors in the suit, and without knowing the effect of the stipulation; that as soon as he became advised of the nature of the agreement he called upon the arbitrator and informed him that he, the pleader, misunderstood the nature and effect of the agreement, and served him with a notice in writing, revoking all authority and power given him by the instrument.

Still he admits that the arbitrator did proceed in the matter of the reference, and that he did make and deliver an opinion with respect to the infringement of the first claim of the original patent, but he alleges that the arbitrator did not make any award as to the second claim, for the infringement of which, as well as the first, the suit was brought; and he avers that the arbitrator did not award that anything should be done by the parties, that he was not notified of the sittings of the arbitrator, and that no opportunity was given him to call witnesses, or to be heard in person or by counsel, and that neither the infringing machine, nor any evidence of the same, was introduced at the hearing.

Responsive to those charges the respondent refiled his plea to the original bill, and alleged that it is not true that the complainant signed the agreement without understanding its effect, nor that he revoked the power conferred before the arbitrator made and published his decision and award, nor that the complainant was not notified of the sittings of the arbitrator, nor that he was deprived of the opportunity to call witnesses, or to be heard in person or by counsel.

Proofs were taken on both sides, and, the parties having been fully heard, the circuit court entered a decree dismissing the bill of complaint, together with the supplemental bill, and the complainant appealed to this court.

Since the case was entered here the complainant has filed the following assignment of errors: First, That the circuit court erred in holding that the plea of the respondent was true and sufficient with respect to the matters alleged in the supplemental bill. Second, That the said court erred in finding that the equity of the case with respect to the matters set forth in the supplemental bill is with the respondent.

1. All necessity for any discussion of the charges contained in the original bill of complaint is superseded, as the assignment of errors does not impugn, in that respect, or call in question the correctness of the decision or decree of the circuit court. Such an assignment of errors, if it had been filed, would have been utterly unavailing, for the reason that the surrender of a patent to the Commissioner within the sense of the provision, means an act which, in judgment of law, extinguishes the patent. It is a legal cancellation of it, and hence the patent can no more be the foundation for the assertion of a right, after the surrender, than could an act of Congress which has been repealed, and it has frequently been determined that suits pending which rest upon an act of Congress fall with the repeal of it. Antecedent suits depend upon the patent existing at the time they were commenced, and unless it exists and is in force at the time of the trial and judgment, the suits fail. (*Moffit* vs. *Garr*, 1 Black, 273; Curtis on Patents, secs. 399, 342.)

Where the patent expires and is extended pending the litigation, and the infringement by the respondent is continued in respect to the extended patent, a supplemental bill is a proper pleading to prolong the suit, as in that state of the case the complainant may well claim, if he is the original and first inventor of the improvement, to recover of the respondent the gains and profits made by the infringement, both before and subsequent to the extension; but the rule is otherwise where the original patent is surrenderd, as the effect of the surrender is to extinguish the patent, and hence

it can no more be the foundation for the assertion of a right than can a legislative act which has been repealed without any saving clause of pending actions. Consequently the infringement of the reissued patent becomes a new cause of action, for which, in the absence of any agreement or implied acquiescence of the respondent, no remedy can be had except by the commencement of a new suit.

Instances, however, may be found where in such a case the complainant sought his remedy in a supplemental bill, no objection having been made by the respondent, and such examples induce the court to disregard the irregularity in this case, inasmuch as neither the respondent nor the court below appear to have regarded it as a matter of any importance. Instead of that, the complainant was permitted to file a supplemental bill charging infringement as in case of an extended patent; and the respondent, making no objection to the regularity of the bill, refiled the plea which he filed to the original bill of complaint, accompanied with a general denial of every material allegation contained in the supplemental bill, as subsequently amended by leave of the court. Subsequently the proofs exhibited were taken, and the parties having been heard the court entered the aforesaid decree deciding the whole case, as more fully set forth on the record. None of the proofs were taken before the reissued patent was granted, nor until after the supplemental pleadings were completed.

These suggestions are sufficient to show that every irregularity, whether on the one side or on the other, was waived before the decree of the circuit court was entered, and that both parties understood that the question submitted to the arbitrator was whether the machine manufactured by the respondent infringed the improvement invented by the complainant. Conclusive support to that proposition is found in the fact that both parties proceeded, throughout the trial in the circuit court, upon the legal ground that the reissued patent was for the same invention as that embodied in the original patent.

Reissued patents are required by law to be for the same invention as that secured by the surrendered patent, and the complainant expressly alleges in this case that his reissued patent is for the same invention as the surrendered original. Nor can the court take any other view of the case, as neither the original nor the reissued patent is made a part of the record. Clear proof is exhibited that the agreement to arbitrate and the submission in form were both executed before the original patent was surrendered, and that the submission had been signed and delivered before the complainant made any effort to revoke the instrument.

Sufficient has already appeared to show that the arbitrator examined the question submitted to him, and made an award that the machine manufactured by the respondent did not infringe the invention secured to the complainant in his original patent, and that he gave his reasons for the conclusion, which appear to be satisfactory, as far as can be ascertained without the means of comparing the patent of the complainant with the machine of the respondent. Such a comparison cannot be made without such means, nor can the court look out of the record for means to make the comparison.

Attempt is made to avoid the force and effect of the award of the arbitrator, upon the ground that the complainant was misled in signing the agreement, and that he was deprived of the opportunity to summon witnesses and to be heard in person or by counsel; but it will be sufficient to say in response to those suggestions that the proofs exhibited do not satisfactorily sustain the charges. On the contrary, enough appears to convince the court that the agreement is obligatory, and that the complainant is bound to execute the agreement, and to dismiss his bill of complaint, and not to molest the respondent in the manufacture of his machine.

Substantial doubt cannot be entertained that the rule of decision adopted by the arbitrator is correct, if he properly construed the patents. He found that the patent of the complainant was a combination of old ingredients, and that the machine manufactured by the respondent did not contain all the ingredients embodied in the combination patented by the complainant. Nothing is exhibited in the record to show that the arbitrator erred in the construction of the patent; and, if he did not, and his finding as to the character of the machine manufactured by the respondent is correct, it is settled law that his decision is correct. (*Gill* vs. *Wells*, 20 Wall.; *Gould* vs. *Rees*, 15 Wall., 194; *Vance* vs. *Campbell*, 1 Black, 428; *Prouty* vs. *Ruggles*, 16 Pet., 341; *Carver* vs. *Hyde*, 16 Id., 514; *Brooks* vs. *Fiske*, 15 How., 210; *Stimpson* vs. *Railroad*, 10 Id., 329.)

Arbitrators as well as courts are presumed to decide correctly until the contrary appears; and, if the party desires that the decision of such a tribunal shall be re-examined by an appellate court, he must see that the means for such a review is embodied in the record. Neither the patent of the complainant nor any authentic description of the machine manufactured by the respondent is contained in the record, and in the absence of such it must be presumed that the arbitrator construed the patent correctly, and that his finding in respect to the construction and mode of operation of the machine manufactured by the respondent is also correct.

Judging from the character of the assignment of errors, it is presumed that none of these views, as applied to the matters alleged in the original bill, are controverted, and the court here is of the opinion, in view of the previous explanations, that they are equally applicable to the matters alleged in the supplemental bill, for several reasons: First, Because the agreement to arbitrate, and the submission in form, were duly executed before the original patent was surrendered. Second, Because the arbitrator proceeded to examine and to decide the question submitted without any objection from either party growing out of the surrender or reissue. Third, Because the subsequent pleadings and proceedings in the suit show that the surrender and reissue did not have the effect to change the substantial issue in the litigation. Fourth, Because the complainant alleged in his supplemental bill that the reissued patent was for the same invention as that embodied in the original. Fifth, Because the agreement to dismiss the bill of complaint, if executed by a proper decree, must include all the subsequent appendages to it, and would be of itself a decision adverse to the complainant.

Decree affirmed.

EXTENSION GRANTED.

28,470.—Improvement in Sliver-Machines.—Granted to CHAS. C. GRANT, administrator of FREDERICK T. GRANT, deceased, May 29, 1860. Extended by act of Congress, March 3, 1875.

Claim.—The combination of the feed-rolls G G, operated by worms H H and cam L, or their equivalents, and pressure-bars *p p*, for the purposes specified.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date March 23, 1875.]

8,211.—Statue.—DOMENICO BARSELOTTI and VENANZIO ALLUISI, New York, N. Y. Application filed March 4, 1875. Term of patent 7 years.

8,212.—Alto-Relievo.—JOSEF CHRISTL, Newark, N. J. Application filed February 13, 1875. Term of patent 3½ years.

8,213 and 8,214.—Cast.—JOSEPH W. FISKE, New York, N. Y. Applications filed March 6, 1875. Term of patents 7 years.

8,215.—Vase.—WILLIAM L. LIBBEY, Boston, Mass. Application filed March 3, 1875. Term of patent 3½ years.

8,216.—Carpets.—SAMSON MCDOWELL, Philadelphia, Pa. Application filed March 11, 1875. Term of patent 3½ years.

8,217.—Stair-Rods.—WILLIAM T. MERSEREAU, Orange, N. J. Application filed March 12, 1875. Term of patent 7 years.

8,218 and 8,219.—Carpets.—ALFRED REDFERN, Philadelphia, Pa., assignor to SAMSON MCDOWELL, same place. Applications filed March 11, 1875. Term of patents 3½ years.

8,220.—Salt-Cellars.—JAMES S. ATTERBURY and THOMAS B. ATTERBURY, Pittsburg, Pa. Application filed January 19, 1875. Term of patent 7 years.

8,221.—Dishes.—STEWART B. CLOSE, New York, N. Y. Application filed January 16, 1875. Term of patent 7 years.

8,222.—Call-Bells.—HUGH S. KERR, Philadelphia, Pa. Application filed March 8, 1875. Term of patent 14 years.

8,223.—Wall-Bracket.—HYLA H. PEACOCK, Philadelphia, Pa. Application filed March 13, 1875. Term of patent 14 years.

8,224.—Stove-Plates.—GARRETTSON SMITH and HENRY BROWN, Philadelphia, assignors to SHEELER, BUCKWALTER & CO., Royer's Ford, Pa. Application filed March 15, 1875. Term of patent 7 years.

8,225 and 8,226.—Envelopes.—ROBERT STEIDER, Brooklyn, N. Y.—Cases A and B. Applications filed March 13, 1875. Term of patents 7 and 14 years.

8,227.—Perfumery-Bottle.—FRANCIS STORM, Philadelphia, Pa. Application filed March 10, 1875. Term of patent 3½ years.

8,228.—Border for Shirt-Fronts, &c.—CHARLES S. VETTER, Philadelphia, Pa. Application filed January 29, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date March 23, 1875.]

2,302.—Plows.—B. F. AVERY & SONS, Louisville, Ky. Application filed March 9, 1875.
"letter 'O.'"

2,303.—Plows.—B. F. AVERY & SONS, Louisville, Ky. Application filed March 9, 1875.
"letter 'P.'"

2,304.—Plows.—B. F. AVERY & SONS, Louisville, Ky. Application filed March 9, 1875.
"letter 'N.'"

2,305.—Hams, &c.—EVANS BROTHERS, Cincinnati, Ohio. Application filed January 24, 1873.
"words 'Bee-hive' and a figure of a bee-hive."

2,306.—Steel Springs and Axles.—FORT PLAIN SPRING AND AXLE WORKS, Fort Plain, N. Y. Application filed December 24, 1872.
"words 'Green Jacket.'"

2,307.—Fire-Brick.—HARRISON & WALKER, Pittsburg, Pa. Case No. 1. Application filed March 9, 1875.
"word 'CLARION.'"

2,308.—Fire-Brick.—HARRISON & WALKER, Pittsburg, Pa. Case No. 2. Application filed March 9, 1875.
"word 'BENEZET.'"

2,309.—Baking-Powder.—JEWETT, SHEARMAN & Co., Milwaukee, Wis. Application filed December 13, 1872.
"words 'White Lily Baking-powder.'"

2,310.—Tobacco.—THE PIONEER TOBACCO COMPANY, Brooklyn, N. Y. Application filed March 9, 1875.
"words and letters 'Pride of the Port.'"

2,311.—Woolen, Worsted, and Cotton Goods.—THE WASHINGTON MILLS, Lawrence, Mass. Application filed March 8, 1875.
"representation of a shooting-match. The contestants are seen in the foreground, one of them being in the act of firing, while others are standing, sitting, or reclining in various positions around him. In the background is the mark or target. Above the illustration are the words 'Wimbledon Shooting Cloth. Trade-Mark.' Below the illustration are the words 'Washington Mills, Lawrence, Mass.'"

2,312.—Plows.—B. F. AVERY & SONS, Louisville, Ky. Application filed March 9, 1875.
"'WHITE METAL.'"

2,313.—Dentifrices.—CHARLES BULLOCK, Cambridge, Mass. Application filed January 27, 1875.
"symbol of a boy upon a rocky projection, resting upon his knee, and bearing, respectively, in his outstretched right and left hands a package of the preparation and a set of teeth."

2,314.—Lard, Beef-Tongues, Hams, and other Cured Meats.—CHESEBROUGH & BURROWS, Philadelphia, Pa. Application filed March 9, 1875.
"words 'Celebrated Centennial,' and the figure of a bell."

2,315.—Account-Book Paper.—KEITH PAPER COMPANY, Turner's Falls, Mass. Application filed March 12, 1875.
"bands and buckles, so as to make, when placed together upon the packages of paper, a double cross on the top and bottom of each package, while the buckles stand upon the edges of the package, and which bands and buckles may be discovered or recognized by both the sense of sight and feeling."

2,316.—Cigars.—KERBS & SPIESS, New York, N. Y. Application filed March 6, 1875.
"stag's head, in connection with the words 'Dancing Fawn.'"

2,317.—Ribbons.—KIEFER & Co., New York, N. Y. Application filed March 1, 1875.
"S."

2,318.—Prepared Beef and Beef-Tongues.—WHITNEY & Co., Lowell, Mass.
"word-symbol 'COLORADO.'"

APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., March 22, 1875.

On the petition of JOHN HASELTINE, of Boston, Mass., authorized by act of Congress approved February 18, 1875, praying for the extension of a patent granted to him on the 25th day of March, 1856, for an Improvement in Water-Wheels,

It is ordered that the testimony in the case be closed on the 11th day of May next; that the time for filing arguments and the Examiner's report be limited to the 21st day of May next; and that said petition be heard on the 26th day of May next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

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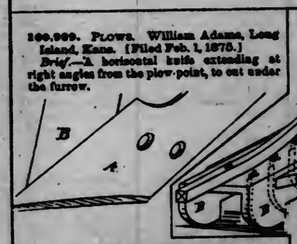
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED MARCH 23, 1875.

160,989. PLOWS. William Adams, Long Island, Kans. [Filed Feb. 1, 1875.]

Brief.—A horizontal knife extending at right angles from the plow-point, to cut under the furrow.



As a new article of manufacture, the plowshare A, with its attachment B, as described, and for the purpose specified

160,990. SCREW-BLANK FEEDERS. Walter Aiken, Franklin, N. H. [Filed Feb. 27, 1875.]

Brief.—Two levers, pivoted to a rectilinearly-moving bar, are formed with sockets at their forward ends for the reception of the screw-blank. Inclined shoulders on the levers strike against projections on the frame as the slide-bar moves back, and force, against the action of springs, the rear ends of the levers toward each other, thereby opening the jaws to receive a blank from the hopper.



1. In combination with the grooved bracket A, the projections *g g* and the inclined conductor D, arranged as described, the slide-bar B, and the two levers C C', provided with the sockets *d d*, inclined shoulders *f f*, and operative spring or springs *e e*, all being constructed and applied substantially in manner and to operate as and for the purpose specified.

2. The movable levers C C', provided with the blank-sockets *d d*, spring-recesses *b b*, inclined shoulders *f f*, and the side notches *c c*, all arranged substantially as specified.

160,991. PAPER BAGS. C. AMESBURY, Boston, Mass. [Filed July 31, 1874.]

Brief.—The sides of the sheet are folded inwardly, and to the laps are pasted a strip folded upon its longitudinal center. The bag-blank, folded upon its transverse center, and united with the side strip, forms a bellows-sided bag.



The improvement is making paper bags consisting in constructing a bag rectangular in cross-section when distended, with two longitudinal seams on each end, at or near the corners, from three pieces of paper, substantially as described.

160,992. RATTOON-CUTTING MACHINES. John Angers, Dallas, Tex. [Filed Dec. 15, 1874.]

Brief.—A rectangular frame is provided with runners at the front end, and a series of bent wardly-curved cutters. Behind these is mounted a rotary cutter with radial blades. The curved cutters divide the roots in one direction, and the rotary cutter in the other, thus rendering the plowing of the sugar-cane stubble practicable.

160,992.



The herein-described machine for cutting ratteen roots, provided with vertical cutters *a*, and cutter-wheel A with cutters *b*, substantially as described.

160,994.



160,993. COAL-HODS. Chas. P. Barker, Waverlytown, N. Y. [Filed Oct. 24, 1874.]

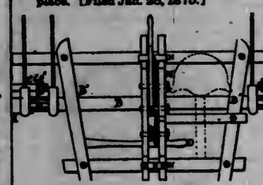
Brief.—The shovel covers the spout, but can be removed at pleasure for other uses.

160,995.



In combination with a pouring-spout of a coal-hod, a removable shovel or dust-pan, C, applied to said spout, substantially as described

160,996. HORSE HAY-RAKES. William S. Archer, Dayton, Ohio, assignor of three-fourths of his right to Charles R. Clegg, E. Morgan Wood, and Geo. A. Archer, same place. [Filed Jan. 26, 1875.]



1. In a horse hay-rake, a vertically-adjustable and swinging rake-head, hinged at its rear side to the shafts of the machine, it being arranged, with reference to the wheel-spindles, substantially as shown, whereby the position of the outer ends of the rake-teeth can be regulated with reference to the ground, and whereby the resistance offered by the material to be gathered is made to aid in swinging the head to a position below the spindles, for the purpose of facilitating the discharge of the load, substantially as set forth.

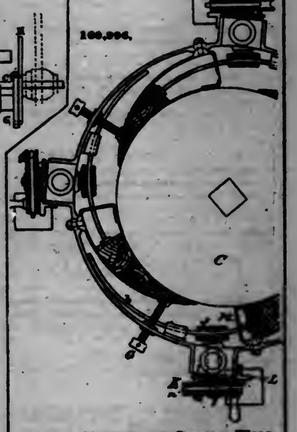
2. The slotted curved lever F, in combination with the connecting-links *j* and *j'* and rake-head E, substantially as and for the purpose described.

3. The slotted plate G and plate H, combined with the spindle C, slotted plate I, and rake-head E, substantially as and for the purpose described.

4. The combination of the slotted lever F, pins *b a*, link *j'*, chain 6', treadle D, and rake-head E, for the purpose described.

5. The guard-plate P, when constructed as shown, and combined with the teeth-holders L L', whereby it is made to act as a support for the rake-teeth against side pressure, as well as to prevent the clogging of the hay around the upper ends of the teeth.

160,996.



160,994. PAPER TOYS. WM. H. BOCKUS, Boston, Mass. [Filed Oct. 19, 1874.]

Brief.—The designs printed upon the sheets are such that the printed portion can be cut entirely away, and leave, when unfolded, an ornamental design.

As a new article of manufacture, a toy consisting essentially of a sheet of paper printed or stamped with a sectional or incomplete figure arranged to form, when folded radially and cut out, as described, a symmetrical design in a single piece, substantially as shown, for the purpose set forth.

160,996. MACHINES FOR GRINDING WOOD FOR PAPER-PULP. Benjamin F. Barbour, Curtisville, Mass. [Filed Aug. 6, 1874.]

Brief.—The invention is in the peculiar mechanism for feeding the wood to the stone.

1. In combination with the stone C and eccentric casing H, the feeder M, curved rack *b*, pinion *l*, pulley K, and weighted cord *n*, operating together as herein specified.

2. In combination with the stone C, casing H, feeder M, connected pulley K, and pin *k*, the stop-pawl L serving to arrest the feeder at both ends of its motion, as herein specified.

160,997. REED-ORGAN CASES. J. Estes, Boston, Mass. [Filed Nov. 13, 1874.]

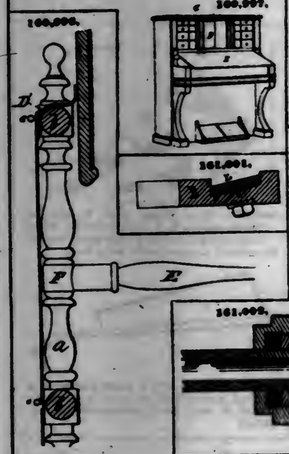
Brief.—Combined book-case, writing-desk, and organ-case.

1. The reed-organ case provided with the desk-chamber D and lid E, combined and arranged with the key-chamber A and its cover B, and the bellows and reed-chamber C, all substantially as specified.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

2. The reed-organ case provided with the chamber F, cover G, the desk-chamber D and lid E, the key-chamber A and its cover B, and the bellows and reed-chamber C, all arranged as set forth.

160,996.



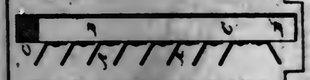
160,997.

161,001.

160,998. COMBINED WALL-PROTECTOR AND TOWEL-RACKER. M. G. Bell, Clarksville, N. J. [Filed Dec. 8, 1874.]

A combined wall-protector and towel-rack, consisting of the uprights a a, provided with clamping-springs D D, buttons c c, cross-bars b b, and towel-arms E E, pivoted to bars a a by the clasps F, substantially as and for the purpose set forth.

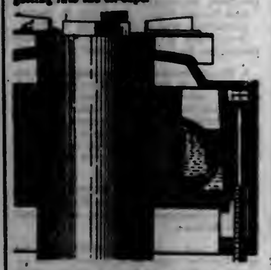
160,999. OATS-SCREENER. Jasper N. Bell, Fort Dodge, Iowa, assignor to J. N. Bell and R. W. Johnson, same place. [Filed Nov. 19, 1874.]



The inclined metal strip A, secured to frame C of sieve B at short distance above said sieve, to prevent oats from escaping through, as set forth.

161,000. MILLSTONE-DRESSER. Solomon Bernheisel, Green Park, Pa. [Filed Sept. 4, 1874.]

Brief.—Devices for distributing the grain between the stones, and sweeping the top of the bank, to prevent any dust or grain from getting into the oil-cups.



The distributer and sweeper G f f, in combination with the bank and spindle, substantially as specified.

161,001. STREET-RAILWAY SWITCHES. B. Bovelander, Boston, Mass., assignor to himself and S. L. Putnam, same place. [Filed Dec. 17, 1874.]

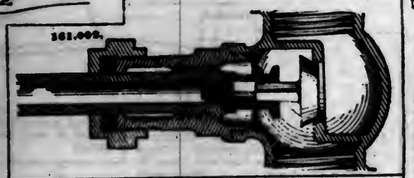
Brief.—A street railroad turn-out frog to which the inclined sliding surface most exposed to wear is formed of a hard piece of metal, capable of being detached and reversed when one face is worn.

The hard-metal plate E to the switch rail S, between the end f and the switch point g, and forward of the latter and between the side rails I, substantially as described.

161,002. COMBINED GLOBE AND CHECK VALVES. I. W. Brown, Glenville, Md., assignor of one-half his right to J. Lynch, Jr., Portland, Me. [Filed July 31, 1874.]

The combination of the hollow square or fluted socket B on the stem C and corresponding square or fluted stem on valve D, for the purpose of a combined globe and check valve, and to permit the rotation of the valve on its seat for grinding or keeping tight while in use.

161,002.



161,003. HOODS. John Brugger and Sebastian Christophe, Manchester, N. H. [Filed Dec. 5, 1874.]



As a new and improved article of manufacture, a knit hood constructed of woolen yarn, worsted, &c., constructed with the sections B C, for protecting the face, horizontal eye-slit E, the edges of which are capable of being closed by means of a button connection when the cap is worn, and the elastic neck-piece D, for fitting the neck closely, substantially as described and specified.

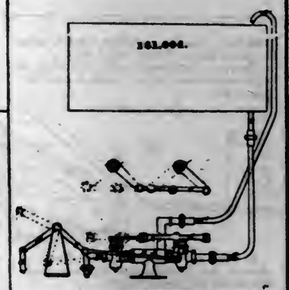
161,004. WATER-CLOSETS. H. P. Buchan, Southampton, England. [Filed June 3, 1874.]

Brief.—A cylinder, provided at each end with a tap, in connected by pipes with a reservoir for holding disinfecting fluid, and with the water-closet. When the handle or pull of the closet is raised, one tap is opened to allow the fluid to fill the cylinder, and the other tap is closed. When the handle is let down the reverse action takes place, and the fluid in the cylinder is discharged into the pan.

1. The combination, substantially as hereinbefore set forth, of a reservoir containing disinfecting fluid, a cylinder adapted to receive a charge of said fluid, taps at each end of said cylinder, a supply-pipe connecting the cylinder and water-closet, and lever-connections between the taps and pull-up handle of the water-closet, whereby the disinfecting fluid is shut off as the handle of the closet is raised to let on the water, and discharged when the water-supply is shut off.

2. The combination, substantially as hereinbefore set forth, of the reservoir, cylinder, the taps, their lever-connections, and the air pipe of the cylinder, whereby the capacity of the cylinder is increased, and the quick discharge of the fluid secured.

161,004.



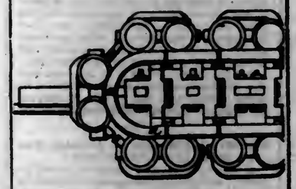
161,005. ARTIFICIAL MARBLE, AND PROCESSES OF MOLDING THE SAME. William Burnet, Chicago, Ill. [Filed Mar. 3, 1875.]

1. The artificial or manufactured marble described, made from Keene's or other equivalent cement or plaster, composed in part or entirely of sulphate or carbonate of lime, or both, in combination with potash-alum, or with potash and alum, and either with or without lime-water.

2. The process of molding artificial marble in varnished, polished, or glazed molds, as described.

3. The process of molding artificial marble in wooden molds, or their equivalents, without the necessity of the interposition of oleaginous matter, as described.

161,006. TRACTION-VEHICLES. Henry H. Chapin, Adrian, Mich. [Filed Jan. 23, 1875.]



1. An endless jointed track, a a a a, provided with a train of trucks flexibly connected together, and each truck carrying a shoe or section of track, all combined substantially as set forth.

2. The combination of two or more series of trains of trucks flexibly connected together, and to run independently upon endless jointed tracks, substantially as set forth.

3. The combination, with two or more endless jointed tracks, of sliding bars connecting the corresponding sections of the tracks, and levers for operating said sliding bars, substantially as and for the purpose set forth.

4. In an endless jointed track, the rails of the various sections, constructed to overlap each other at the ends, substantially as and for the purposes set forth.

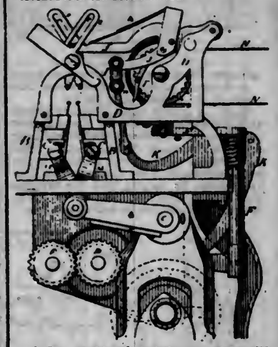
161,007. TOOLS FOR TURNING METAL. C. Cummings, Virginia City, Nev. [Filed Jan. 23, 1875.]



The construction of the cutter with a conical base and thin shank with a countersunk hole, whereby, by means of the bolt and nut, the cutter is securely held from turning while at work, and a perfect degree of adjustment is permitted.

161,008. KNITTING-MACHINES. Edward P. Curtiss, Norwalk, assignor of one-half his right to Theodore C. Foote, Cleveland, Ohio. [Filed Feb. 13, 1875.]

Brief.—The two rows of needles rise and fall simultaneously in inclined ways, so as to bring their beards close together to surely catch the threads. There are two thread-guides to each needle, and each pair are crossed by a single spring-actuated lever, all of which are operated by a pattern-card, the holes in which are eyeleted to prevent wear. The tripping-lever is for raising all the thread-guide-actuating levers, and moving the thread-guides, so that they shall lay their threads into the needle-hooks.



1. In a machine for knitting a straight solid fabric, two sets of needles arranged in inclined ways, and all of the needles in each set operated simultaneously, so as to bring the heads of the pairs of needles together, substantially as and for the purpose described.

2. The combination of the thread-guides Z, spring-levers f, and jacquard N, constructed and operating substantially as described, for the purpose specified.

3. The combination of the tripping-lever I, jointed lever K, and cam L, with the levers f and jacquard cylinder M, substantially as and for the purpose described.

4. In a knitting machine, a jacquard, having the pattern formed therein with eyeleted holes, for operating the threads, substantially as specified.

5. In a knitting machine, the cylindrical grooved jacquard carrier M, operating substantially in the manner and for the purpose described.

6. The sliding frame D, carrying the jacquard, thread guides, tripping-lever, and levers f, in combination with a cam, G, and rock-shaft F, substantially as and for the purpose set forth.

161,009. CIRCULAR-KNITTING MACHINES. Edward P. Curtiss, Norwalk, assignor of one-half his right to Theodore C. Foote, Cleveland, Ohio. [Filed Feb. 12, 1875.]

Brief.—All the needles reciprocate simultaneously in a vertical direction. A pair of rings, each provided with a yarn-guide for each needle, are reciprocated back and forth by the devices named in the fourth and fifth clauses of the claim, so as to cross the threads upon the needles and produce the fabric claimed.

1. In a circular-knitting machine, annular yarn-carriers F H, set in a bed-plate, G, and reciprocated simultaneously in reverse or opposite directions, substantially as shown and described.

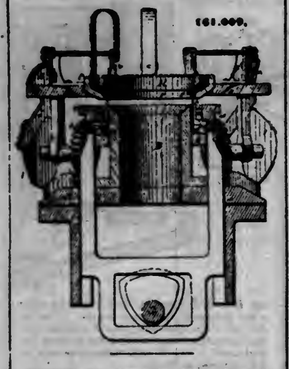
2. In combination with the grooved needle-carrier k, the independent sinkers n, having slot p, whereby the needles are held rigidly in place, and whereby any needle in said carrier may be removed and replaced at pleasure without disturbing the other needles or other parts of the machine, substantially as shown and described.

3. The within-described knit fabric formed of two threads crossed back and forth, as shown, so that such fabric may be cut length-wise at any point, and form or leave selvages on both sides, substantially as specified.

4. The combination, with the yarn-carriers, of the cams I, levers J and e, and connecting mechanism, whereby said carriers are reciprocated, substantially as and for the purpose described.

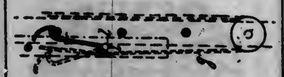
5. The toothed weft-carrier c, rotated by pinion h and meshing with pinions L, for the purpose of transmitting motion to the cams I, substantially as described.

161,009.



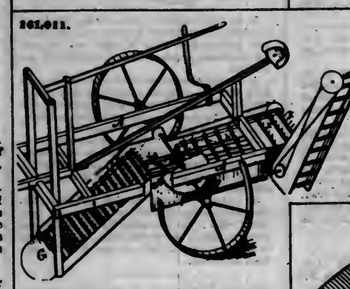
161,010. EXTENSION-LADDERS. James M. Davis, Bangor, Me., assignor to Joseph S. Smith, same place. [Filed July 22, 1874.]

Brief.—The sustaining-hooks are rigidly attached to a cross-bar pivoted loosely in the sides of the upper section. The elevating-chain is attached to said cross-bar, and is operated by a drum and crank. By turning the crank to extend the ladder, runner-shaped hooks pass over the rounds and drop into position, so as to hold the ladder extended. By turning the crank to contract the ladder the hooks are raised back, which frees them from contact with the rounds.



In an extension-ladder, the combination of two or more ladders with drums e, chain g, and lever l, substantially as and for the purposes set forth.

161,011.



161,011. POTATO-HARVESTERS. Albert J. Davis, Prairie City, Iowa. [Filed June 8, 1874.]

Brief.—In rear of an endless carrier, for conveying the potatoes from the ground, is a series of horizontal bars hung on a series of cranks on a transverse rod, for separating the potatoes from the earth. Above the sifter is an endless carrier for carrying the vines rearwardly.

In a potato-harvester, the combination of the plow G, carrier 1 2 3, shaker 4 A, and vine-carrier 4 4, substantially as described, and for the purposes specified.

161,012. SKIRT-PROTECTORS. Theodore D. Day, Elizabeth, N. J., assignor to Sallie V. Day, same place. [Filed Feb. 4, 1875.]



A skirt-protector formed of a strip of india-rubber, having a thin portion or web, through which the rubber is stitched to a strip of muslin or similar material, and a rib that projects from the surface of the rubber sufficiently to protect the line of stitches from wear, substantially as specified.

161,013. PAVEMENTS. Andrew B. Dean, Louisville, Ky. [Filed Feb. 6, 1875.]

Brief.—A foundation of broken stone or coarse gravel, the interstices of which are filled with sand, leaving the surface irregular and rugged. Melted candle-gum is then applied in a thin coating to bind the base together. Asphaltum and candle-gum are then melted together and mixed with coarse gravel, broken stone, and sand. This compound is evenly spread over the foundation and firmly rolled. Over this layer is spread a surface coating of coarse sand and fine gravel, or finely-broken stone mixed with hot candle-gum and asphaltum, and treated in the same manner as the previous layer. The final layer should be rolled while hot, and the rollers should be kept moist while in use.

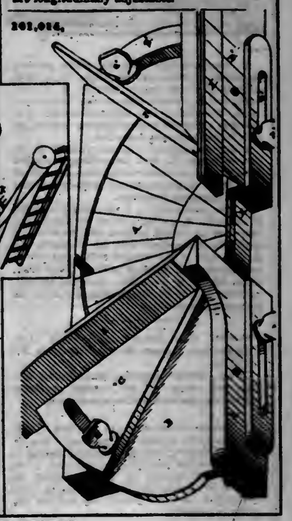
1. A paving compound consisting of candle-gum mixed with asphaltum, as described.

2. A pavement the binder of which is candle-gum and asphalt mixed together and incorporated with sand, gravel, broken stone, or other hard mineral substance, as set forth.

161,014. MITER-BOXES. H. Dittenhafer, Bloomville, Ohio. [Filed Sept. 19, 1874.]

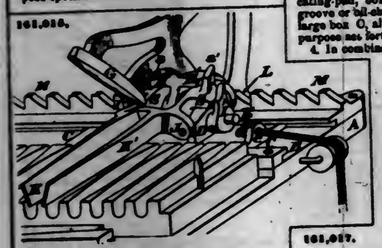
Brief.—The side of the box against which the material to be cut rests is formed of two segments having slotted flanges upon their front edge. One of the flanges, having attached to it a pivoted saw-guide, the segments are longitudinally adjustable.

161,014.



The herein-described miter-box, consisting of the bed-piece A, segments B B', provided with flanges D D' having slots E E', the set-screws F F', saw-guide I, adjustably-slotted segments C C' provided with flanges J J', and set-screws G G', all constructed and operating substantially as shown, and for the purpose specified.

161,016.



161,016. MACHINES FOR CHARGING CIGAR-MOULDS. Napoleon Dubrul, Cincinnati, Ohio. (Filed Apr. 13, 1874.)

Brief.—The jaws are opened and closed by means of cams, which are operated by the lever that works the plunger. The heel of the lever works into an incline, to automatically adjust the jaws over the mold to be filled.

1. The lever F and plunger G, having cams H H', the pivot E, having cam I I', in combination with the upwardly-closing jaws K K', having cars S S', and lugs *e e'*, adapted to operate in the manner and for the purpose set forth.

2. The lever F, having heel L, for adjusting the filling mechanism by the upward stroke of said lever, in combination with a ratchet, M, and with jaws K K', plunger G, slide C, and a suitable mold, substantially as and for the purpose set forth.

161,017. CAR-AXLE LUBRICATORS. J. S. Eggleston, Auburn, N. Y. (Filed Jan. 20, 1875.)

Brief.—Draws expansible from axle-box and from each other. Oil fed through groove to lubricating-pad instead in wire-netting.

1. The combination of the axle-box B, sliding removable drawer C, removable box E, and a lubricating-pad, the drawer C having on its sides elastic retaining-strips *c*, and in its interior coil-springs D, which support the smaller removable box E, containing a lubricating-pad, all substantially as and for the purpose set forth.

161,016. VEHICLE-AXLE LUBRICATORS. J. S. Eggleston, Auburn, N. Y. (Filed Dec. 28, 1874.)



2. In an axle-lubricator, the fabric or wick D, combined with and enveloped in a close meshed or woven cage or netting, E, of hair, cloth, cotton, or such like pliable fibrous material, and having the enlarged central portion and arched or curved bottom portion, as and for the purposes described.

3. In combination with the wick D E, the slot or gutter C, with the enlarged central portion, and provided on each side of its edges with flat or slight depressed surfaces, as and for the purposes described.

4. The combination, in an axle-lubricator, of the axle A, having groove or slot C, enlarged at its central portion, and provided on each side of its edges with flat surfaces, box B, and wick D, surrounded with a fine woven or close-meshed cage or netting, E, of hair, cloth, cotton, or such like material, all constructed and adapted to operate as and for the purposes described.

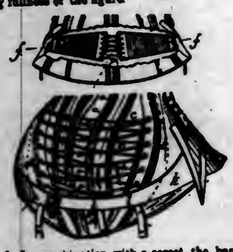
2. The removable drawer C, provided on its sides and bottom with retaining rubber stripe *c*, in combination with coil-springs D, substantially as and for the purposes described.

3. In combination with the removable drawer C, having retaining elastic stripe *c*, coil-springs D, removable box E, and a lubricating-pad, box E being provided with the groove or oil-channel *e*, and fitted within the large box C, all substantially as and for the purpose set forth.

4. In combination with the removable sliding drawer C, provided with retaining-stripe *c* and springs D, and small drawer E, having channel *e*, the lubricating-pad F, consisting of fibrous material inclosed in a fine netting, and contained in box F, substantially as and for the purposes set forth.

161,018. ABDOMINAL CORSETS. H. G. Emery, Boston, Mass. (Filed Oct. 27, 1874.)

Brief.—The abdominal portions of *c* and *d d'* are disconnected, so as to conform to varying fullness of the figure.



1. In combination with a corset, the band or strap *h i*, connected directly with the back, and arranged to pass beneath and support the abdomen, substantially as shown and described.

2. In combination with the extension parts *d d'*, the part *c* applied to and partly underlying the same, and admitting of expanding and holding the parts in the adjusted position, substantially as shown and described.

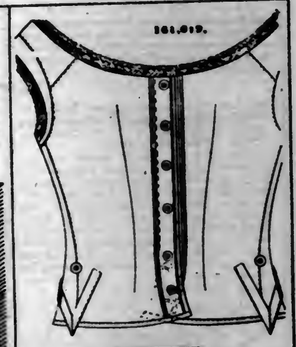
3. In combination with the extension parts *d d'*, constructed substantially as described, the lacing-straps *f* formed of closely-corded textile fabric, and stitched and made as described.

4. A corset formed with an open slit, 1 2, over the central line of the breast, and provided with a lapping-piece to lie under the opening, and a sustaining-strap, 5, arranged to operate substantially as and for the purpose described.

161,019. METHODS OF MANUFACTURING CORSETS. H. G. Emery, Boston, Mass. (Filed Oct. 27, 1874.)

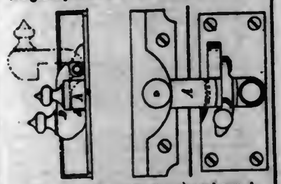
In the manufacture of corsets, the method above described of cutting variable measurements for the shoulders relatively to a given measurement for the waist, by means of the described series of cutting-out patterns, having a given waist measurement and graduated or varying shoulder measurements, substantially as set forth.

161,019.



161,020. FASTENERS FOR MEETING-RAILS OF SASHES. Edward O. Fathergeen, Buffalo, N. Y. (Filed Feb. 6, 1875.)

Brief.—A gravity locking-catch is pivoted to an upwardly-projecting lug in such manner as to drop down upon and hold the swinging arm firmly in place, the locking-catch being also provided with a suitable shoulder, to prevent the insertion of any thin instrument from the outside, for turning back the swinging arm, until released from the inside by lifting the gravity-catch from its locking position.



The combination, with the pivoted arm A, of the gravity locking-catch D, pivoted to lug *c*, and provided with a suitable shoulder, *d*, substantially as and for the purposes hereinbefore set forth.

161,021. SIGNAL-LANTERNS. Edward H. Foote and Edward L. Gilman, Somerville, Mass. (Filed Feb. 2, 1875.)

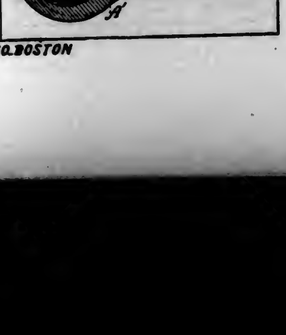
Brief.—A screen of thin colored fabric is arranged to surround the light, and is held extended by a coiled spring. The screen is drawn down by cords attached to its top, and passing through holes in the foot of the lamp, and operated by a lever beneath the lamp; said lever being held, when the screen is drawn down, by a spring-catch.



1. The lamp A, provided with the hoop B, standards *c*, ring D, spring *g*, and screen O, combined to operate substantially as and for the purpose specified.

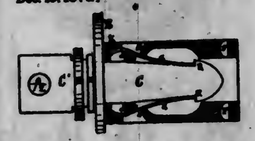
2. The lever I, catch L, and cords *h h*, in combination with the screen O and spring *g*, substantially as and for the purpose specified.

161,022. WRENCHES. Geo. W. Freeman, Indianapolis, Ind. (Filed Sept. 29, 1874.)



A wrench, combining in its construction a handle, A, having an annular opening in its end, with a scroll-formed face, and a ratchet-socket-piece, B, fitting loosely therein, and arranged to operate substantially in the manner set forth.

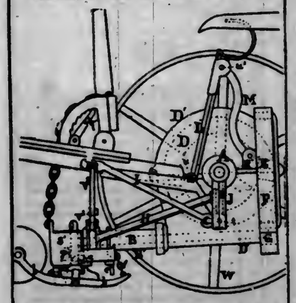
161,023. SEAL-LOCKS. Chas. C. Gale and George F. David, Indianapolis, Ind. (Filed Dec. 19, 1874.)



1. The case A, constructed and secured to the door as described, in combination with the key C, springs G G or pawls T T, and guard or cap D, substantially as specified.

2. The key C, constructed with barbs E E, flange E, breaking-groove V, projection C', and space X for the guard or cap D, substantially as specified.

161,024. MOWING-MACHINES. Joel Garfield, Ayer, Mass. (Filed Jan. 26, 1874.)



1. The finger-bar C, suspended from the main frame in front of the driving-wheel, in combination with the shoe *b* and pivot *c*, placed on the shoe, and on which it oscillates freely within limits defined by the set-screw *e* and chain *f*, on an axle parallel to the line of the finger-bar and head-piece *a*, by which the shoe is swung from the frame D at right angles to the line of the crank-shaft, around which it swings in the arc of a circle for the avoidance of obstructions, substantially as set forth.

2. In combination with the main frame, a portion, B', of which carries the finger-bar, the tongue F, pivoted at *i* to a projection on the main frame immediately under the axle, and projection J and brace I, applying the draft to the frame on one side of the crank-shaft, while the resistance of the finger-bar is on the other, and at the same time counterbalancing the weight of the latter by the force of the draft, substantially as set forth.

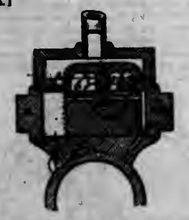
3. The guide *d*, pivoted to the shoe *b*, in combination with the spring *g*, pin *g*, and flange *h*, substantially as described, and for the purpose set forth.

4. The combination of the shoe *b*, lead-wheel W, pivot *c*, swinging head *a*, stop *e*, and chain *f*, substantially as described, and for the purpose set forth.

5. In combination with a finger-bar having transverse oscillation, a pitman and bell-formed crank-pin, and the boxes L and M, covering strap *k*, wedge-shaped head of the pitman *p*, slot *o*, and bolt *n*, so that the pitman may have free transverse oscillation, and the strain on the pitman in driving against the box made to tighten the fastening of the strap.

6. In combination with the main frame and finger-bar attached thereto and oscillating with it, the seat B, supported on arms L and M, the former of which rests on the pole P, which is attached to the main frame below the axle, and the latter to the frame in rear of the axle, substantially as described.

161,025. VALVES FOR ENGINES. George M. Githens, New York, N. Y. (Filed Aug. 29, 1874.)

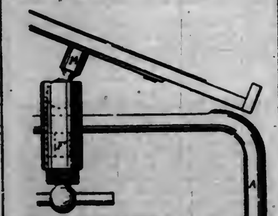


1. The valve-moving piston and a stem passing through the exhaust-port, in combination with the steam-valve and the main cylinder, piston, and ports, the valve-moving piston being located between the steam-valve and the main cylinder, for the purposes and substantially as specified.

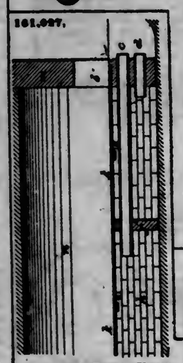
2. The valve-moving piston, having openings from each end to transverse groove receiving the valve-stem, in combination with the steam-valve, ports, main cylinder, and piston, substantially as specified, whereby the steam-spaces of the valve-moving piston are opened to the exhaust, as set forth.

161,026. BOOK-RESTS. Robt. S. Grummon, Newark, N. J. (Filed Dec. 19, 1874.)

In combination with the bent standard A, the sleeve B, having the ears D D and set-screws *a* and *b*, and the movable sleeve E, provided with the set-screw *d*, constructed and operating substantially as and for the purposes set forth.



161,027.



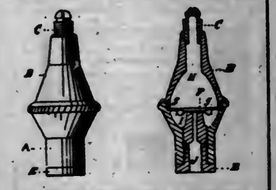
161,027. BRICK-KILNS. David P. Guise, Williamsport, Pa. (Filed Nov. 30, 1874.)

Brief.—A trench beneath the arch is divided into compartments by transverse partitions, and is covered by perforated pieces. Air for draft is supplied to any compartment by a separate or independent pipe leading thereto.

The combination and arrangement of the perforated pieces *h h h h*, sections *h h*, and tubes *c d*, as described and shown, for the uses and purposes set forth.

161,028. GAS-BURNERS. Thomas Haley, Cambridge, Mass. (Filed Feb. 13, 1875.)

Brief.—The flow of gas is regulated and the same entirely cut off by turning the burner in its seat.



The frustums A B, diaphragm F, ring E, and tip C, combined and arranged to operate substantially as and for the purpose specified.

161,029. LAMP-WICKS. Halvor Halverson, Cambridge, assignor to C. A. Shaw, Boston, Mass. (Filed Feb. 3, 1875.)

Brief.—The wick is subjected to the action of acid or gas, or oxidized by chemical action.

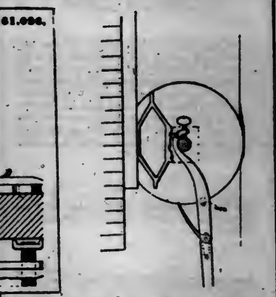


As a new article of manufacture, a fibrous lamp-wick, oxidized substantially as and for the purpose specified.

161,030. CAR-STARTERS. Dexter D. Hardy, Delavan, Ill., assignor, by mesne assignments, to himself, C. L. Booth, and J. R. Stone, same place. (Filed Oct. 12, 1874.)

Brief.—A lever with an adjustable fulcrum against the axle, and a lug and pawl against the periphery of the wheel.

161,030.



The combination of the lever A, having an adjustable fulcrum-bearing upon the axle of a car, the hook or lug *f*, and pawl *g*, substantially as described.

161,031.



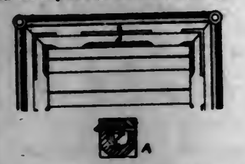
161,031. BIT-STOCKS. H. C. Hart, Unionville, Conn. (Filed Dec. 26, 1874.)

Brief.—The bit is secured to the stock by means of a screw-sleeve fitting over the head of the stock, and provided with a supplementary rotating cap, for holding the bit in the desired position.

The supplementary rotating cap C, in combination with the screw-head A and sleeve B, the cap and sleeve being provided with corresponding openings, all substantially as and for the purpose described.

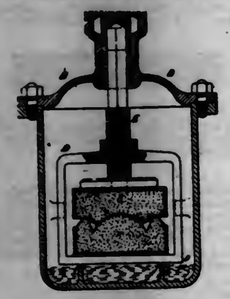
161,029. BEDBUG-TRAPS. John L. Hawkins, San Quentin, Cal., assignor to Wm. W. Walker and John L. Hawkins. [Filed Nov. 5, 1874.]

Brief.—The traps are placed on the bedstead beneath the mattress, and the bugs enter the trap through the slits or openings.



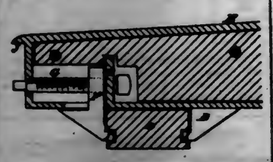
The trough A, consisting of the two parts, hinged together, and provided with the grooves F and slits or openings, substantially as and for the purpose set forth.

161,030. APPARATUS FOR FORMING DENTAL PLATES. F. L. Henrion and J. H. Moseley, Brooklyn, N. Y. [Filed Feb. 27, 1875.]



In a boiler for making dental plates, &c., the revolving hollow shaft c passing through the cover B, in combination with the cover B, from which it is detachable, and the mold-frame D, whereby pressure can be applied to the molds within the boiler, and the molds, frame, and cover can be withdrawn from the boiler and separated from the boiler-cover without reducing the pressure upon the molds, substantially as described.

161,031. WAGON-BRAKE BLOCKS. William Hendrick, Modesto, Cal. [Filed Mar. 1, 1875.]



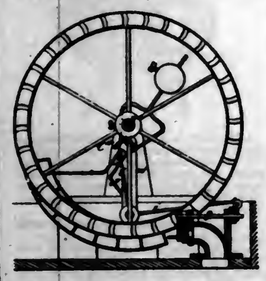
1. The combination, with cap E, of fixed jaw B, secured to said cap inside of the line of the wheel, movable jaw C, and screw G, outside of the wheel, for the purpose of allowing the brake-block to be adjusted as the wheel becomes more dished, and to prevent weakening the bar A, all substantially as set forth.

2. The fixed jaw B, in combination with movable jaw C and the brake-block D, the said jaws being provided with projections I, substantially as and for the purpose set forth.

3. In combination with the brake-bar, the fixed jaw, movable jaw, and the operating-screw, the cap E, having the projecting flanges J J, substantially as and for the purposes set forth.

161,032. WATER-WHEELS AND HYDRAULIC GOVERNORS. Frederick G. Hesse, Oakland, Cal. [Filed Mar. 31, 1873.]

Brief.—Curved buckets extending through the wheel from face to face between inner and outer rims, in combination with the single water-pipe, which is arranged to discharge the stream of water tangentially upon the buckets as the buckets come in proper relation to the pipe.



1. A water-wheel having curved buckets or water-passages extending through it from face to face between inner and outer rims, in combination with the single water-pipe, which is arranged to discharge the stream of water tangentially upon the buckets as the buckets come in proper relation to the pipe, substantially as and for the purpose herein described.

2. The buckets or passages through a wheel, curved and set as described, in combination with a single pipe, which is arranged to discharge the water tangentially upon the buckets, substantially as and for the purpose set forth.

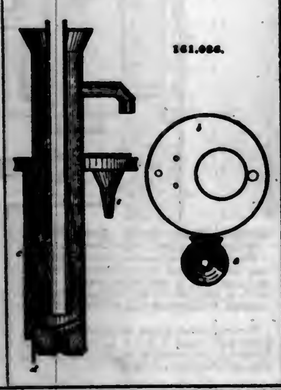
3. The automatic hydraulic governing segment connected with a regulating mechanism, in combination with a water-wheel, substantially as and for the purpose described.

161,033. FLUID THRIVER OR PUMPS. Jos. Hitchens, Port Washington, Ohio, assignor of one-half his right to Thos. B. Bukey, same place. [Filed Feb. 23, 1875.]

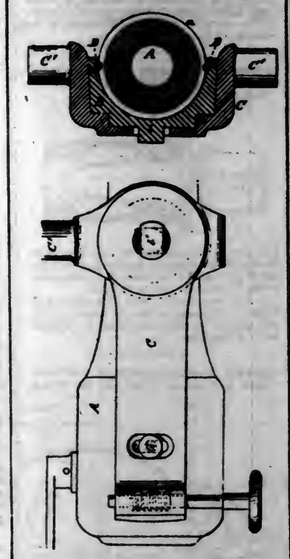
Brief.—A pump for drawing fluids from barrels through the bung by means of a circular cup, which is perforated near its outer rim with an opening for the passage of the cylinder. The cup is also perforated with another and smaller hole, which is the opening of a duct which leads into the barrel, and catches the drippings from the measure or spout, and redeposits it in the barrel. A funnel is hinged to the cup.

In a fluid thief or pump, the arrangement and combination, with the main tube a, of the cup b, discharge-pipe c, and funnel d, as and for the purpose set forth.

161,034.



161,037. MEANS OF MOUNTING AND OPERATING ORDNANCE. Benjamin B. Hotchkiss, New York, N. Y. [Filed May 26, 1874.]



1. The saddle-piece B, formed with swelled sides, adapted to match in the inclosing-box C, in combination with the gun A, collar a, and convenient locking means D, as herein specified.

2. The combination of gun A a, saddle B, and trunnion-frame C C, the parts being secured together by the locking projection b by engaging in the opening c, as herein specified.

3. In combination with the gun A, trunnion-frame C C, and traverse means E, the pinching-screw G, having the loaded lever attached thereto for holding the trunnion-frame firmly to the gun, so as to relieve the traversing means from concussion, as herein specified.

161,038. STRAW CONCRETE. F. B. Howard, New York, N. Y. [Filed Feb. 11, 1875.]

A compound composed of straw, silicate of soda, clay, sand, and coal-tar, substantially in the proportions and for the purposes set forth.

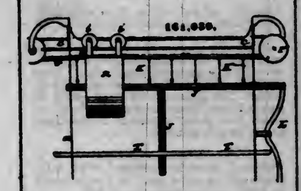
161,039. APPARATUS FOR THE MANUFACTURE OF LAMP-BLACK. John Howarth, New Cumberland, W. Va., assignor of one-half his right to Saml. T. Lamb, Cumbridge, Mass. [Filed Feb. 16 1875.]

Brief.—A horizontal gas-pipe, provided with burners branching alternately in opposite directions, extends the length of the apparatus below the soapstone slabs, and is movable longitudinally, to change the places of contact for flames and tiles, and so prevent overheating. A carriage, provided with scrapers to remove and boxes to receive the carbon, is suspended from and moves upon two longitudinal parallel rails.

1. In combination with the soap-stone tiles, the movable burners, substantially as and for the purpose described.

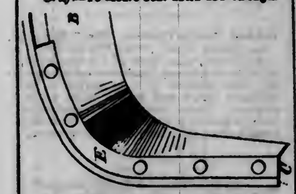
2. In combination with the soap-stone tiles, the movable carriage, with scrapers and collecting-boxes, substantially as and for the purpose specified.

3. In combination with the soap-stone tiles, the scrapers, connected with the carriage by roping and hinge, substantially as and for the purpose specified.



161,040. SEAT-BACKS FOR CARRIAGES. A. F. Hubbell, Sandusky, Ohio. [Filed Feb. 3, 1875.]

Brief.—To secure neat finish and strength



1. The combination, with the metallic seat-back B, of the wire D rolled in the edge thereof, said fillet E secured between the said wire and seat-back, as and for the purposes described.

2. The metallic seat-back, consisting of the back B, in the outer edge of which is rolled a wire, D, and a fillet, E, secured between the said wire and the seat-back, and made to extend only from the extremities of the sides back around the corners of the seat-back, the parts combined, as and for the purposes described.

161,041. FLOOR-SHIELDS FOR STOVES. J. A. Hunter, Peoria, Ill. [Filed Feb. 19, 1875.]

Brief.—A sheet-metal center grasping to rim of oil-cloth between flanges, or with the same riveted thereto.



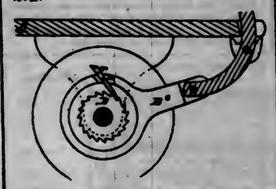
1. The combination, with a metal floor-shield for stoves, of an outer border or extension of oil-cloth, (as a carpet or floor protector,) united thereto by a double flange or rim, a b, which clamps the inner edge of the cloth, substantially as and for the purposes described.

2. The combination, with a metallic floor-shield for stoves, of a surrounding border or extension of oil-cloth or similar material, riveted thereto, or fastened together upon a wooden stiffener or platform, substantially as described.

3. The combination and arrangement of the shield A, flange b, and oil-cloth B, as described.

161,042. CAR-STARTERS. G. A. Hunt, Newburyport, Mass. [Filed Jan. 20, 1875.]

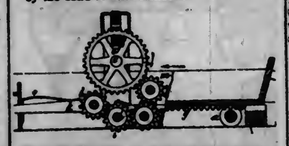
Brief.—Adds protecting-case to combination of pawl and ratchet actuated by bent lever.



The combination of ratchet D, pawl F, pawl-case E, and bent lever G, all substantially as and for the purpose set forth.

161,043. SUTTER-WORKERS. W. Johnson, Buffalo, N. Y. [Filed Sept. 15, 1874.]

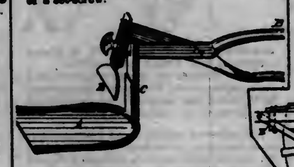
Brief.—A fluted roller transverse to the trough; the trough moved to and fro endwise, propelled by a wheel and rack, the wheel moving continuously, operated alternately by a pinion on each side, thrown in and out of gear by the hand of the attendant.



The combination, with the ribbed working roller and the trough having a gear-rack, g, of the shaft h, pinion i', and reversible transmitting mechanism, whereby the continuous rotary motion of the roller produces a reciprocating motion of the trough, substantially as hereinbefore set forth.

161,044. COMBINED SHOVELS AND ASH-PAN LIFTERS. Andrew Johnson, Youngstown, Ohio. [Filed Jan. 20, 1875.]

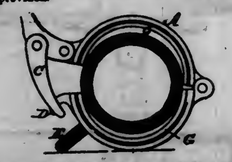
Brief.—The clamp slides between flanges upon the bent arm, and is adjusted by means of a set-screw.



The combination of a fire-shovel, A, with the adjustable clamp E and the tongs B D', substantially as and for the purpose specified.

161,045. HOSE CLAMPS OR FASTENERS. G. S. Knapp, Chicago, Ill. [Filed Feb. 13, 1875.]

Brief.—Concave halves hinged together, and provided with locking devices, by which they can be fastened around the hose. There may be any number of these locking devices, each consisting of a lever provided with a stirrup to engage with a lug or hook, the lug being formed on one of the halves, and the lever pivoted to the other. To prevent leakage when the clamp is in position around the broken portion of the hose, a rubber packing is provided.



1. The hose-clamp consisting of the two concaves A, hinged together, and provided with the lever B, link C, and hook D, as shown and described.

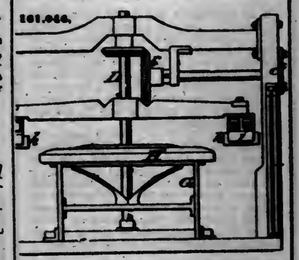
2. In combination with the hinged concaves A, provided with the lever B, link C, and hook D, as shown, the rigid handle E, serving as a means by which to hold the clamp when being locked and unlocked, and also as a means by which to carry the same when not in use.

3. In combination with the concaves A, hinged together, the packing G, arranged as shown, to form a joint around the hose, and also between the edges of the concaves, as set forth.

161,046. LEATHER-DRESSING MACHINERY. Norman O. Lounsberry, Wilmington, Del. [Filed Feb. 6, 1875.]

Brief.—The yielding table is supported upon slotted standards, and is provided with a raised bed or surface, which receives the stroke of the polishing-tool attached to arms which rotate in a horizontal plane.

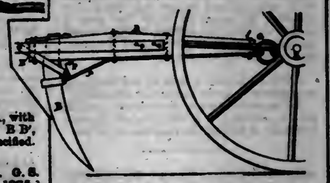
161,046.



The table B, having the slotted uprights C and springs S, in combination with the rotary cross-head J, carrying glazing-pieces A, substantially as described.

161,047. MACHINES FOR DIGGING STUMPS, STUMPS, ROOTS, &c. Charles M. Leffkin, Langdon, N. H. [Filed Feb. 24, 1875.]

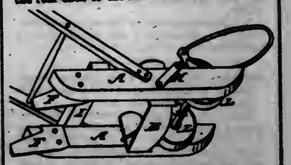
Brief.—The beam is constructed like an ordinary plow-beam, and is connected to the middle part of a cart axle-tree. The under side of the beam is strengthened by a rod of iron bolted to it, forming at the rear a supporting-brace for the colter-like standard, which is thrust beneath the stones, roots, and stumps, to loosen them from the ground. The machine is drawn by a team, and guided by handles extending rearwardly.



The combination of the hook or prong B, draw-iron D, swivel G, beam A, stay-iron I, handles O O, rod J, braces E E, and brace F, substantially as and for the purpose hereinbefore set forth.

161,048. SOD-CUTTERS. James McArdle, Winona, Minn., assignor of one-half his right to Alvin O. Hamilton, same place. [Filed June 18, 1874.]

Brief.—The perpendicular sides of the cutting-blade project in advance of the horizontal portion. Guide-plates are attached to the rear ends of the runners.



1. In a sod-cutter, the angular blade E, having perpendicular cutting portions, and a horizontal curved receding blade, substantially as shown and described.

2. The combination in a sod-cutter, of the angular blade E, guide-plates F F, friction-rollers L L, and runner-frame A, substantially as specified.

161,049. FEED-GUIDES FOR PRINTING-PRESSES. Edward L. Magill, Brooklyn, N. Y. [Filed Aug. 1, 1874.]



1. In a holder for feed guides, the hold-fast D, tapered in part of its length, having guards *c c* and fingers *b b* bent into angles *a a' a''*, by which it is retained upon the tympan-clamp, and thus secured to the platen of a printing-press, in combination with the counterpeak clamp E, provided with lugs *d d*, flanged set-screw *f* and dovetailed passage *e*, to receive and hold the feed-guides F and F', substantially as herein described.

2. In a feed-guide for printing-presses the beveled feed-guides F, having stop-curves *h* and mortise *i*, in combination with the adjustable elastic curved lip G, provided with lugs *g g* and hooks *c c c c*, arranged and constructed to project outward the distance allowed by the margin of the sheet of paper to be printed, and vibrate toward the tympan-sheet by the notice of the bed and platen in taking the impression, substantially as herein described.

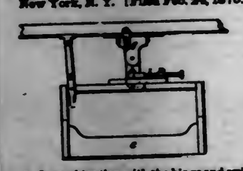
161,650. SAND-PAPERING. Geo. H. Mott, Wyandotte, Kans. (Filed Feb. 17, 1875.)

Brief.—A serrated eccentric head, a projecting hook, and a lever or handle are cast in one piece, and fitted in a suitable case, with an operating-spring. There is also a locking-arm and key-shaft, the former held in place by a spring-disk, a flanged key being also provided, by means of which the arm is turned up from the outside, resting its end against a shoulder on the back of the hook, thus securely locking the device.

1. The eccentric E *a*, hook F, and handle G, constructed as herein shown and described.

2. The combination of the eccentric head E, hook F, locking-arm *J*, and key-shaft K, substantially as and for the purposes set forth.

161,651. SWINGING BEDPAN. Jacob Michel, New York, N. Y. (Filed Feb. 24, 1875.)



1. In combination with the hinge and swinging bed, the screw-rod *l*, substantially as shown.

2. The combination of the swinging bed *c*, hinge *g h*, screw-rod *l*, and holding-lever *e*, substantially as shown and described.

161,652. TIME-LOCKS. D. Moore, Brooklyn, N. Y., assignor to J. Goldmark, same place. (Filed Feb. 13, 1875.)

Brief.—A receptacle for mercury or other flowing material is attached to a bolt-actuating lever, and a reservoir is provided, from which such material is allowed to run in a regulated stream into the receptacle. An adjustable weight upon the lever serves to regulate the time that will be consumed, during which the mercury accumulates in the receptacle upon the lever sufficient to overbalance the weight and liberate the bolt automatically. In connection with this is an electric indicator to denote when the apparatus is properly in position and operative.

1. An adjustable weight, *n*, applied to and combined with the bolt-actuating lever *f*, the reservoir *m*, the receptacle, and the supply-regulator, substantially as set forth.

2. The reservoir supply-regulator receptacle and locking-lever, in combination with an electrical alarm and a circuit-closing lever, *n'*, actuated by the mercury or other material as it passes from the reservoir to the receptacle upon the lever, as set forth.

161,653. MUSIC-BOXES. Charles Paillard, St Croix, Switzerland. (Filed Nov 19, 1874.)

Brief.—Combines with a revolving pin cylinder two or more combs or sets of tongues in substantial unison with each other. These duplicate combs can be used singly or together. The advantage of small combs repeated is less interference of the vibrations, which, in larger instruments of but one comb, are too long in duration.

1. In a musical box, two or more combs of vibrators, the similar notes in all of which are of one and the same pitch, or nearly so, substantially as described and specified.

2. The combination, with the cylinder B, of the series of combs D, the similar notes in all of which are of one and the same pitch, constructed and arranged to operate substantially in the manner described and specified.

161,654. SCREW-DRIVERS. Wm. F. Patterson, Boston, Mass. (Filed Feb. 20, 1875.)

Brief.—The main blade of a screw-driver has a supplementary detachable and reversible blade attached to it by means of an elongated slot in each of said blades and a set-screw. The inner end of the supplementary blade is secured to the main blade by an adjustable clamp provided with a locking device.



The improved screw-driver described, the same consisting of the blade A, reversible blade L, screw D, and spring-clamp E, provided with the tapering flange K, all constructed and arranged to operate substantially as and for the purposes specified.

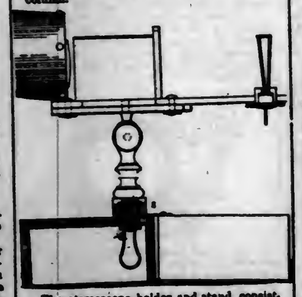
161,655. IRONING-BOARDS. M. E. Moore, Auburn, Me. (Filed Feb. 3, 1875.)

Brief.—At each end of the board is a sliding clamping-board, for holding the garment to be ironed, one being held by a spring-key, and the other by a roughened surface.

The improved ironing-board described, the same consisting of the body A, provided with the curved collar-slide B, spring-key C, and frictional stretcher D, constructed and arranged to operate substantially as and for the purpose specified.

161,656. STEREOSCOPES. Peter Murphy, Jersey City, N. J. (Filed Aug. 6, 1874.)

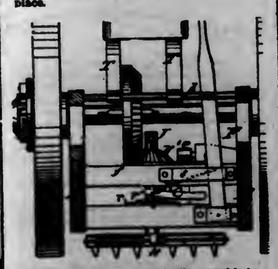
Brief.—A box (in which the stereoscope is folded) is made in two parts, hinged together, and provided with a hook at *d*, and a metallic nut, *e*, into which is screwed the base of the column.



The stereoscope holder and stand, consisting of a hinged two-part box opening to form the stand, and provided with the nut *e* for the screw-standard, and the link *i* secured by that standard and holding the box open, as set forth.

161,657. REVOLVING HARROWS. Jas. Phillips, Thorntown, Ind. (Filed Aug. 1, 1874.)

Brief.—A vertical shaft carries at its lower end a horizontal harrow. The upper end of the shaft has a cog-gear wheel, that receives motion from a driving-gear upon the axle-tree of the bearing-wheels. The harrow is elevated by means of a lever and clutch, and its gravity forces it into the ground. A friction-wheel rests upon the flange of the bevel-gear on the vertical shaft, to keep the wheel in place.



1. The wheel N' on vertically-movable harrow-shaft J, combined with flange *f* and holding-down wheel *c*, substantially as described.

2. The combination of the wheel N', provided with flange *f*, the wheel *c*, the grooved shaft J, provided with fixed collar *r'* and sliding collar *r*, the rod *a*, arm *c*, and lever K, operating substantially as described.

161,658. SCREW-ADJUSTING DEVICE. Wm. Wilson, Jr., Philadelphia, Pa. (Filed Feb. 20, 1875.)

Brief.—The screw-shaft is provided with a collar, and a sliding collar is fitted to the shaft, and provided with a pin, which enters a slot in the sliding-bar, and prevents the sliding collar from turning. The screw-shaft is turned by a key, and the sliding collar is moved by the screw-shaft, and carries the sliding-bar with it.

1. The sliding collar *d*, pin *e*, and sliding-bar B, in combination with the screw-shaft A, provided with the collar *c* and key-hole *f*, substantially as described.

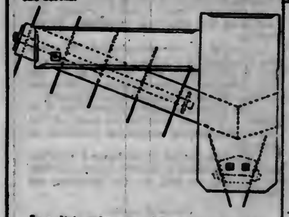
2. The sliding collar *d*, pin *e*, and sliding-bar B, in combination with the screw-shaft A, provided with the collar *c* and key-hole *f*, and the sliding-bar C, substantially as described.

161,659. STEP-LADDERS. Wilson L. Potter, Hartford, Conn. (Filed Jan. 26, 1875.)

The combination of the ladder *a*, the hinged frame A, the centrally-set toggle-joint *c*, the hinged shelf *d*, and the toggle-joint *e*, all substantially as and for the purpose set forth.

161,660. DISK HARROW-CULTIVATORS. S. G. Randall, Greene, N. Y. (Filed Feb. 20, 1875.)

Brief.—Two revolving shafts are secured to the under side of a frame, in a position oblique to the line of draft. Upon these shafts are secured a series of disks, with their faces looking inward and forward. A space is left between the inner disks of each series, and between and forward of these is placed a pair of disks, the faces of which look forward and outward. The soil is thrown outward by the two inner disks, and inward by the others of the series.



In a disk-cultivator, the combination, substantially as hereinbefore set forth, of a frame, two series of revolving disks arranged diagonally to the line of draft, with their axes inclined thereto, and leading disks interposed between the two series, and arranged to throw the earth in the opposite direction therefrom.

161,661. SHUTTLES FOR LOOMS. Alfred Rollason and James Brown, Lowell, Mass. (Filed Jan. 20, 1875.)

1. The combination, with the shuttle D, of a supplementary race-plank, as and for the purpose described.

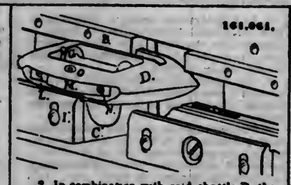
161,662. INSULATING-BLOCKS FOR TELEGRAPH-LINES. Geo. S. Pidgeon, Pulaski County, Ill. (Filed Apr. 24, 1874.)



1. An insulating-block provided with two or more apertures, *b c d*, Fig. 1, to receive and retain wires to prevent crossing or contact.

2. The combination of the angular openings *f* with the apertures *b c d* in an insulating-block having two or more apertures to receive and retain wires, all substantially as and for the purposes set forth.

161,663. SHUTTLES FOR LOOMS. Alfred Rollason and James Brown, Lowell, Mass. (Filed Jan. 20, 1875.)



2. In combination with said shuttle D, the supplementary race-plank H, adjustable vertically, as and for the purpose described.

3. In a shuttle for narrow-ware looms, the combination of the plate L, spring M, and projecting eyelet K, all arranged and operating together, as and for the purpose described.

4. In a shuttle for narrow-ware looms, the combination of the plate L, spring M, projecting eyelet K, and set-screw N, all arranged and operating together, as and for the purpose described.

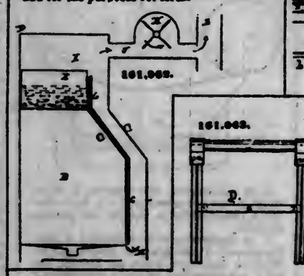
5. In a shuttle for narrow-ware looms, the combination of the plate L, spring M, set-screw N, eyelet K, and supplementary eyelet O, as and for the purpose described.

6. In a shuttle for narrow-ware looms, the tension device herein described, arranged in front of the delivery-eyelet K, as and for the purpose described.

161,664. WATER-EVAPORATING REFRIGERATORS. George D. Satterlee, New York, N. Y. (Filed July 21, 1874.)

Brief.—Usually needs no ice. Water drips down the fluted sides of the refrigerator, and is assisted in evaporation by a current of air induced by a fan, and conveyed into a chimney.

In combination with the water evaporating refrigerator hereinbefore described, the air-collecting chamber I under the dome D, eduction-pipe J, exhaust-blower K, and chimney flue or pipe L, substantially as described, and for the purposes set forth.



161,665. DAMPER-COLLARS. F. J. Seymour, Wolcottville, Conn. (Filed Oct. 20, 1874.)

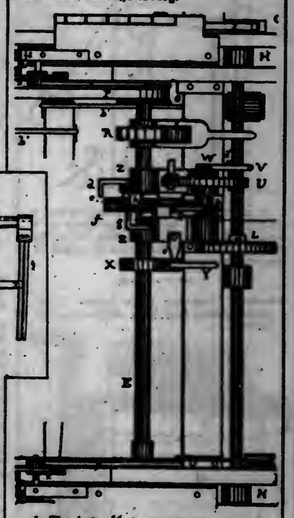
Brief.—The perforated groove receives the drip. The metal of the screw-cylinder extends upward from the bottom of the annular groove, avoiding the sharp bend in the metal required when the cylinder is turned downward.



The lamp-collar made of one piece of sheet metal, with an annular groove and escape-hole, and with the cylinder *c*, extending upward at the inner portion of the annular groove, and having a screw-thread in the inner surface of the cylinder, as set forth.

161,666. HEAD-BLOCKS FOR SAW-MILLS. Noah Shaw, Eau Claire, Wis. (Filed June 27, 1874.)

Brief.—The setting-knees are drawn back by an arrangement of springs and levers after the last cut through the log.



1. The spring plate or tongue D, attached to the damper, in combination with the notched or recessed spindle B, substantially as and for the purpose set forth.

2. The combination, with the thimble E, of the sleeve F, arranged and operating relatively to the spindle-bearing in the pipe A, substantially as described.

3. The thimble or sleeve F and spring *g*, applied to the spindle B, and operating in combination with the damper C, to hold the pipe with a frictional grasp, substantially as and for the purpose set forth.

161,667. SHUTTLE-MOTION. Alfred Rollason and James Brown, Lowell, Mass. (Filed Jan. 20, 1875.)

1. The spring plate or tongue D, attached to the damper, in combination with the notched or recessed spindle B, substantially as and for the purpose set forth.

2. The combination, with the thimble E, of the sleeve F, arranged and operating relatively to the spindle-bearing in the pipe A, substantially as described.

3. The thimble or sleeve F and spring *g*, applied to the spindle B, and operating in combination with the damper C, to hold the pipe with a frictional grasp, substantially as and for the purpose set forth.

161,668. LAMP-COLLARS. F. J. Seymour, Wolcottville, Conn. (Filed Oct. 20, 1874.)

Brief.—The perforated groove receives the drip. The metal of the screw-cylinder extends upward from the bottom of the annular groove, avoiding the sharp bend in the metal required when the cylinder is turned downward.

The lamp-collar made of one piece of sheet metal, with an annular groove and escape-hole, and with the cylinder *c*, extending upward at the inner portion of the annular groove, and having a screw-thread in the inner surface of the cylinder, as set forth.

161,669. HEAD-BLOCKS FOR SAW-MILLS. Noah Shaw, Eau Claire, Wis. (Filed June 27, 1874.)

Brief.—The setting-knees are drawn back by an arrangement of springs and levers after the last cut through the log.

1. The lever M, in combination with the springs N, rods *b'*, cord *p*, and knee C, substantially as and for the purpose specified.

2. The pawls *e f*, arms *i s*, and shaft E, in combination with links *j* and *l*, rock-shaft W, with projections *m* and *n*, substantially as and for the purpose set forth.

3. The lever S, pawl *o*, ratchet-wheel R, wheel X, and lever Y, in combination with knee C, blocks B, shaft E, pawls *f* and *o*, links *j l*, and rock-shaft W, substantially as and for the purpose herein specified.

161,067. PAPER HAT-BINDING. De Lane Shoplin, Boston, Mass. [Filed Feb. 4, 1875.]

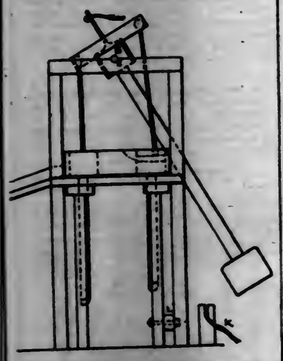
Brief.—The binding is made preferably from manila paper, colored to the proper shade, gummed on one side, and wound on blocks like ribbon.



As a new article of manufacture, paper binding for hats and other articles of dress, consisting of a strip or web of paper of proper width, coated on one side with an adhesive composition, substantially as described.

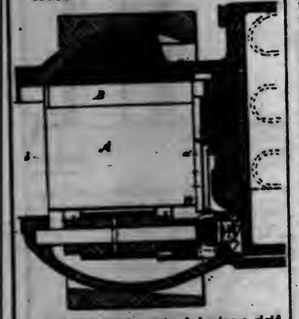
161,068. HYDRAULIC REGULATOR. William L. Smith, San Francisco, Cal. [Filed Jan. 30, 1875.]

Brief.—The movement of the pendulum is arrested by a rope and a spring-bar arranged in the rear of the frame.



In combination with the frame-work of a hydraulic engine, operated by means of a weighted pendulum, as described, the spring cable or rope K, and spring-bar L, as and for the purposes specified.

161,069. RAILWAY AXLE-BOXES. J. N. Smith, Jersey City, N. J. [Filed Dec. 19, 1874.]



1. In a railroad-car truck, having a rigid frame, the ball-and-socket joint interposed between the bearings of the journal and the frame of the truck, in combination with the housing D, the bearings B, and axle A, substantially as and for the purposes set forth.

2. In combination with the box-frame D and journal A, having flanges a b, the lining B and cast C, as and for the purposes set forth.

3. In a railroad-car truck, in combination with the journal A and housing D, which is connected to the truck by a ball-and-socket joint, the stopping-bar F, substantially as and for the purpose set forth.

4. The combination of the bolt H, roller K, tumbler I, web J, and oil-well o, for oiling the journal, substantially as and for the purpose set forth.

5. The combination, with the stopping-bar having a recess in its bearing-face extending beyond the center of the axle, of the web J, tumbler M, roller L, and bolt H, substantially as and for the purposes set forth.

6. In combination with the box-frame D, well o, bearings B and r, and oiling devices, the oil-tank E, substantially as and for the purposes set forth.

7. The combination, with the oil-tank E and box-frame D, of the valve h and spring i, substantially as set forth.

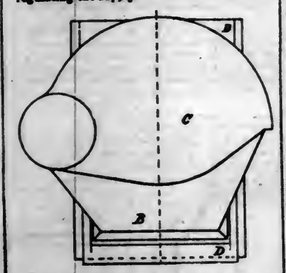
8. The combination, with the oil-tank E and box-frame D, of the packing k and hinge f, for excluding dust from the box-frame, substantially as set forth.

9. The combination of the stops t with the box-frame D and stopping-bar F, substantially as set forth.

10. In combination with the box-frame D, connected to the truck by the ball-and-socket joint, and axle A, the sliding cover O, for excluding dust, &c., substantially as set forth.

161,070. CAR-AXLE BOXES. J. N. Smith, Jersey City, N. J. [Filed Nov. 19, 1874.]

Brief.—Divided upper bearings, with wiper between them, for retaining surplus lubricant. Aperture in stopping-plate for observing wear of parts. Supplementary oil-chamber between well and journal-box, with openings for regulating the supply.



1. In combination with housing B, outer frame D, ball-and-socket joint a c, the projection b, substantially as and for the purpose set forth.

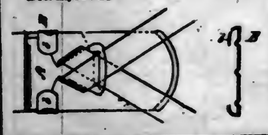
2. In combination with the journal A, bearing-pieces B B', cut apart, as shown, and lubricating apparatus below the journal, the roll f, and depending curtain g, substantially as and for the purpose set forth.

3. In combination with the journal A, and housing B, frame D, and ball-and-socket joint, the stopping-bar F G, made in two parts, connected by a hinge-joint, substantially as and for the purpose set forth.

4. The combination of journal A, bearings B B', and stopping-bar F G, provided with the notch or opening m, substantially as and for the purpose set forth.

5. In combination with the oil-tank C and housing B, the intermediate chamber e', connected with the interior of the oil-tank, and with the oil-well by the openings or holes e and d', respectively, substantially as and for the purpose set forth.

161,071. SUSPENDER, BELT, OR GARTER FASTENINGS. Albert C. Smith, Fort Madison, Iowa, assignor of two-thirds his right to Morris Morris and S. H. Craig. [Filed Dec. 31, 1874.]



The plate A, having the turned-down lip or flange a and slotted tongue C, of the form described, in combination with the locking-bevil B, provided with indentations c c and curved ends b b, as specified.

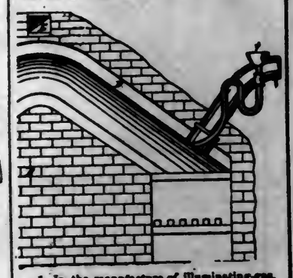
161,072. PROCESSES OF PRESERVING FOOD. David Sneddaker, Jersey City, N. J., assignor of one-third his right to F. C. Gebhauer, New York, N. Y. [Filed Feb. 23, 1875.]

Brief.—Treats the substance which has been impregnated with sulpherous acid with fumes of burning sugar.

The process herein described of deodorizing solid, liquid, or seriform substances from the fumes of sulphur by subjecting them to the action of the vapors generated from burning sugar or other saccharine matter subsequent to their impregnation with the sulpherous fumes, substantially as herein set forth.

161,073. PROCESSES AND APPARATUS FOR THE MANUFACTURE OF ILLUMINATING-GAS. Wm. H. St. John, New York, N. Y. [Filed Sept. 14, 1874.]

Brief.—The retort is U-shaped, placed horizontally, and so constructed that the first limb rises obliquely upward to its middle, and then extends obliquely downward, where it is bent to form the second limb, which rises and falls similar to the first limb. Each end of it rests over a separate furnace, from which flues extend, surrounding its entire length. The retort is very long, and constructed as described, for the purpose of completely fixing the gas before it passes from it.



1. In the manufacture of illuminating-gas, the process herein described for converting hydrocarbon into gas, consisting of the introduction of the hydrocarbon into a retort or a series of retorts, vaporizing it, and passing it through the retort or retorts, alternately ascending and descending, substantially as set forth.

2. The process herein described for producing an improved illuminating-gas, consisting in first producing oil-gas and coal-gas in separate retorts, then mixing them, and afterward passing them together through the scrubbing and purifying apparatus, as described.

3. A retort for converting hydrocarbon into gas, composed of a portion ascending on one side of the furnace and descending on the other side, and a corresponding portion ascending and again descending, as set forth.

4. The friction-chambers b, provided with plates c, so as to give the gas a serpentine course, and take out any excess of carbon, as set forth.

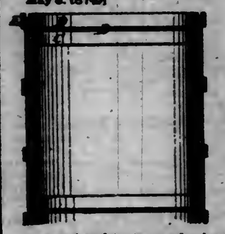
5. The combination of the boxes b with the boxes d, connected by suitable pipes provided with valves, as and for the purposes set forth.

161,074. BALE-TIES. Richard Terrell, New Orleans, La. [Filed Jan. 13, 1875.]



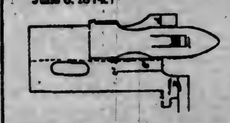
A cotton-bale tie consisting of the base-plate A, having a bar, B, cast with or folded over the same, and the projecting section D of the plate A, having the relation to the plate B shown, whereby the lower section of the hook of which the plate B provides the bearing shall, when fastened, extend along said plate D, impinging against the same, as stated, and the shield C rounding the whole width of the base-plate A, and curved at its outer section, as shown, so as to provide a lateral opening for the insertion of the hook on the free end of the band, and a bearing-shoulder to retain the same in position when fastened, substantially as and for the purposes specified.

161,075. PAPER BARRELS. Judson L. Thomson, Beloit, Wis., assignor of one-half his right to F. N. Davis, same place. [Filed May 8, 1874.]



A paper barrel having wooden heads B B let into the barrel and resting on hoops C C, in combination with wooden hoops D E, both of which project beyond the chine, for the double purpose of protecting the latter from abrasion in handling, and to prevent injury from dampness, substantially as described.

161,076. SEWING-MACHINE ATTACHMENTS. John J. Thompson, Goshen N. Y. [Filed June 6, 1874.]



The sewing-machine attachment, comprising the fingers B' C', with the cord-tube r within their curves r', the elastic pressure-fender D, and the presser-plate B formed with the groove e in its under side, the whole being constructed and the several parts arranged, for co-operative action, substantially as and for the purpose set forth.

161,077. SELF-CLOSING WATER-COCKS. John B. Tongue, Worcester, Mass., assignor of one-half his right to A. P. Richardson, same place. [Filed Dec. 28, 1874.]

Brief.—Friction is diminished, and the escape of water around the spindle prevented by forming air-chambers in the upper part of the body of the valve, through which said spindle passes.



The cock or faucet herein described, consisting of the shell or body A A', with passages B C, valve-seat F, and the portions or projections K K K, the same forming air-chamber I, and the valve and spindle D E, as and for the purpose set forth.

161,078. HARVESTER-COUPLER. Geo. Vanfossen, J. H. VanFossen, and M. VanFossen, Bethesda, Ohio. [Filed Feb. 15, 1875.]

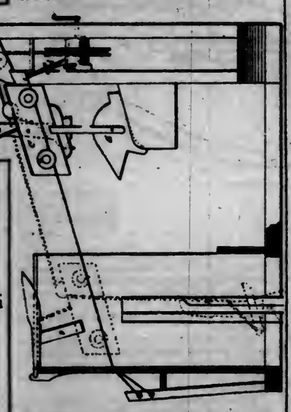
Brief.—Grooved shanks of the sickle-blades are confined in recesses between two grooved plates by means of a rod inserted in said grooves.

Sickle-blades A having grooved shanks a, in combination with the sickle-bar, formed of two grooved plates, B B', and with the rod C, substantially as described.



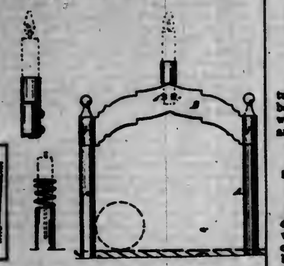
161,079. WATER-ELEVATORS. W. Walter, Derry Station, Pa. [Filed Feb. 1, 1875.]

Brief.—The bucket is secured to a frame attached to a shaft that passes through the carrier, and is held in place by a spring-catch. Upon the descent of the carrier a catch upon the frame over the well engages with a loop on the carrier, and at the same time a stop throws the spring-catch out, thus allowing the bucket to descend. Upon the ascent of the bucket the spring-catch locks the shaft to the carrier.



The combination of the carrier C, having the loop F attached thereto, shaft D, spring-catch G, catch E, stop t, and a hoisting apparatus, substantially as shown and described.

161,080. CROQUET APPARATUS. Prasbury West, Worcester, Mass., assignor to the West & Lee Game and Printing Company, same place. [Filed Jan. 5, 1875.]

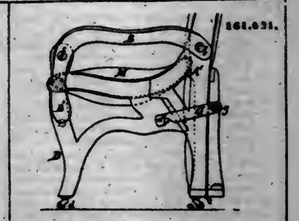


1. In a croquet-wicket, the combination of the wood side columns A A and detachable arch-piece B, substantially as and for the purposes set forth.

2. The combination, with a croquet-wicket or croquet-stake, of a candle-socket or light-holder, for the purpose specified.

161,081. CONVERTIBLE CHAIRS AND LOUNGES. Henry Willgoke, New York, N. Y. [Filed May 20, 1874.]

Brief.—The arm-pieces are constructed and arranged to connect the front and back portions of the chair, and also to serve as legs when the chair is converted into a lounge. The seat-piece is pivoted at the front, and its position can be adjusted as a seat, or to form the head portion of the lounge.



1. The piece M, turning on the pins m, in combination with the stops A' A', and adjustable to rest on either, as herein specified.

2. The L-shaped parts B B', in combination with the back A and front piece D, to both of which they are hinged, and adapted to serve the double purpose of arms for the chair and legs for the lounge, as specified.

161,082. COUPLING-JOINTS FOR OIL-WELL DRILLS. O. B. Wiser, Butler, Pa. [Filed Sept. 9, 1874.]



The pin A, the point of which is constructed of steel, and provided with a nut having a recess in its lower end for the reception of the elastic packing at the base of the pin, said pin, nut, and packing-ring combined with the screw-box of the auger-stem, constructed substantially as hereinbefore described, and for the purpose set forth.

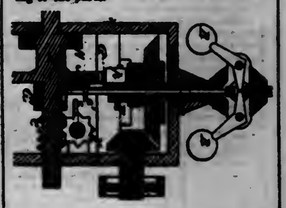
161,083. TOY FURNITURE. B. P. Woods, Lowell, Mass., assignor to himself, Daniel Sherwood, and C. H. Latham, same place. [Filed Sept. 28, 1874.]



As a new article of manufacture, toy furniture consisting essentially of chairs, tables, bedsteads, and similar articles, when made of wire, substantially as described and shown, and for the purpose set forth.

161,084. WATER-WHEEL GOVERNORS. A. Woodworth, Cambridge, N. Y. [Filed Sept. 12, 1874.]

Brief.—When the gate is open on account of low water or slow speed, the pin on the wheel will strike the collar on the rod, and cause the governor-balls to move both shields beneath their pawls, thus disengaging them, and preventing any disarrangement or breaking of the parts.



1. The worm-shaft F and wheel K, carrying the tappet *e*, in combination with the vertically-movable rod C, having the collar *e'*, substantially as and for the purpose described.

2. The combination of the reciprocating slide E, having gravitating-pawls *p*, actuated by an eccentric, *b*, on the governor-spindle A', with the ratchet-wheel J, the oscillating shield G, vertically-movable rod C attached thereto, and provided with collar *e'*, and wheel K, having tappet *e*, substantially as described.

3. The sectional clamp H, embracing the shaft F of the ratchet-wheel J, connected by means of the pin *p*, and adjusted to gripe with greater or less force the said shaft by means of a spring, *s'*, and a nut upon the end of the said pin, for the purpose of balancing the gate, so that it will be steadily moved by the governor, as specified.



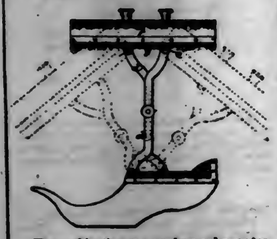
161,065.

161,065. STEAM-RADIATORS. Jas. R. Worswick, Cleveland, Ohio. [Filed Jan. 11, 1875.]

Brief.—The projections cast with and depending from the top of the base are intended to insure a continuous circulation.

The projection F, in combination with the base A and the pipes, substantially as and for the purpose set forth.

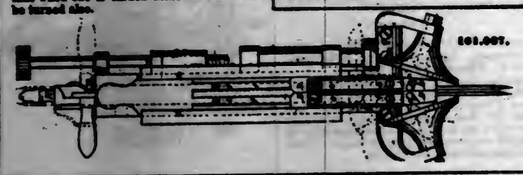
161,066. CHILDREN'S CARRIAGES. Chas. H. Amidon, Miller's Falls, Mass. [Filed Nov. 10, 1874.]



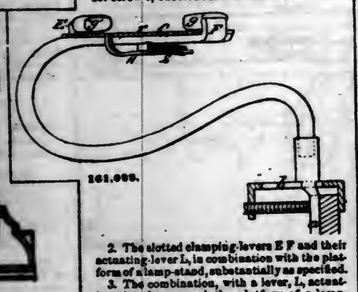
The combination of a carriage or baggy top with the two standards d and a clamping or locking device, substantially as set forth.

161,067. SEWING-MACHINES. John H. Applegate and Chas. B. Webb, Philadelphia, Pa. [Filed June 9, 1874.]

Brief.—The bars which carry the pressers are geared together near their lower ends, so that when one is turned aside the other will be turned also.



161,067.



161,068.

2. The slotted clamping-levers E F and their actuating-lever I, in combination with the platform of a lamp-stand, substantially as specified.

3. The combination, with a lever, I, actuating the clamps, and the platform of a lamp-stand, of the vibrating pawl H, substantially as specified.

4. The combination, with a pawl, H, adapted to engage with a rack, *r*, of a lamp-stand platform, of the spring *s*, for holding the same to an engagement therewith, substantially as specified.

5. The combination, with the simultaneously-actuated clamping-levers E F, of the shoes *f'*, of any flexible material, substantially as specified.

161,069. MACHINES FOR ROUNDING AND BACKING BOOKS. George L. Bailey, Portland, Me. [Filed Dec. 26, 1874.]

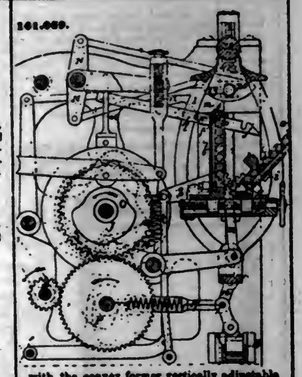
Brief.—The book is placed in the hinged holder, which closes and rises vertically, inserting the back of the book between jaws, which close upon it lightly. The roll then moves over and back, rounding the book, while the front edge of it rests on the convex former. The holder then rises a second time, together with the jaws, which latter now firmly gripe the book, when the roll moves back and forth again, performing the backing operation. The holder then descends and opens while the book is removed and another placed therein.

1. The book-holder provided with anti-friction devices for holding the book, whereby the outer leaves of said book are allowed free motion to accommodate themselves to the action of the roll during the process of rounding.

2. The book-holder, provided with anti-friction devices having an automatic adjustment by means of springs, whereby they adapt themselves to books varying slightly in thickness.

3. The hinged book-holder, in combination with the segmental gears *p*, *r* cam K, and connecting mechanism, whereby said holder is opened after the book is rounded and backed.

4. The book-holder, provided with anti-friction devices, as set forth, in combination



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with the convex former vertically adjustable therein.

5. The hinged book-holder, in combination with the adjustable latch *f*, catch *k*, and standard 49, operating to lock the holder when the same is raised.

6. In a machine for rounding and backing books, a holder for said book, provided with operative mechanism whereby two distinct and successive upward motions are imparted thereto, one presenting the book to the roll for the operation of rounding, and the second and additional motion raising it still farther for the operation of backing, in combination with a swinging roll by which both these operations of rounding and backing are performed, substantially as herein described.

7. In combination with the vertically rising book-holder, the jaws 1 2, combined with operative mechanism, whereby, as the holder rises to present the book to the roll for the operation of rounding, said jaws close upon it lightly, and support it in an upright position during the operation.

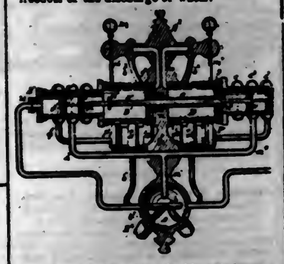
8. In combination with a book-holder provided with anti-friction devices, as described, convex-former, and guiding-jaws 1 2, the swinging roll and its operative mechanism.

9. In a machine for rounding and backing books the vertically-rising holder, in combination with the vertically-rising and griping jaws and swinging roll, whereby the book is raised, griped, and backed, after being rounded, substantially as set forth.

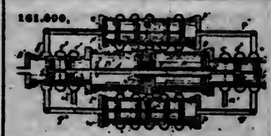
10. The jaws 1 2, in combination with the toggle-joints and adjusting-wedges.

161,070. AIR-COMPRESSING APPARATUS. Harry J. Bailey, Pittsburg, Pa. [Filed Jan. 12, 1875.]

Brief.—The apparatus is so constructed that on the opening of the discharge-cock of a hydrant or water-faucet, the water flowing through the compressor from the source of supply, under pressure, will automatically operate the compressor, and compress and store air, without materially interfering with the freedom of the discharge of water.



1. In a double-acting double-cylinder air-compressor, an apparatus for automatically and simultaneously supplying water under pressure to, and taking the water-waste from, the outer ends of the pumping-cylinders, the construction being substantially as set forth.



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2. In a double-acting double-cylinder air-compressor, an apparatus, operating automatically by water-pressure, for automatically and simultaneously supplying air at atmospheric pressure to and conducting compressed air off from the inner and adjacent ends of the cylinders, such operations of air inflow and outflow being simultaneous in the two cylinders, but alternating on each, the construction being substantially as set forth.

3. Valve-chambers B B', arranged on the outer opposite ends of a double-acting double-cylinder air-compressor, such valve-chambers containing a system of valves, pistons, ports, and connections for supplying automatically and alternately water-pressure to and conducting it from the plungers, the construction being substantially as set forth.

4. In a double-cylinder air-compressor, a pumping-plunger in each cylinder, attached to a common stem, in combination with a valve-stem, having valves that govern the water-supply, arranged on the outer ends of the same, both stems moving in or near the axial line of the pumping-cylinder substantially as set forth.

5. In combination with a pair of pumping-cylinders, D D', a system of pipes, a^2 a^3 a^4 *e e'*, with suitable ports supplying water to and exhausting it from the pumping-plungers, and a valve-motion operated by water-pressure to change the direction of inflow and outflow, substantially as set forth.

6. In combination with a pair of pump-cylinders, D D', a system of pipes, b^1 b^2 b^3 b^4 b^5, with suitable ports for supplying and carrying off air to and from the pumping-cylinders, and a valve-motion operated by water-pressure to change the direction of ingress and egress, substantially as set forth.

7. As a means of effecting the movement of the valves by which water is supplied to the pumping-plungers, a system of pipes, c^1 c^2 c^3 *g g'*, in combination with valves c^4 c^5, valve-chamber F, and pistons *o o'*, and intermediate ports, substantially as described.

8. A system of pipes, c^1 c^2 c^3 *g g'*, in combination with valves c^4 c^5, valve-chamber F', and pistons *o o'*, and intermediate ports, substantially as and for the purposes described.

9. A valve-chamber, F, containing an arrangement of valves and ports for automatically regulating the water supply and escape to and from the pumping-cylinders, a piston or pistons for moving such valve or valves, and pipe-connections for the supply and escape of water in the automatic operation of such pistons, substantially as set forth.

10. A valve-chamber, F', containing an arrangement of valves and ports for automatically regulating the air supply and exhaust to and from the pumping-cylinders, a piston or pistons for moving such valve or valves, and pipe-connections for the supply and escape of water in automatic operation of such pistons, substantially as set forth.

11. The combination of one or more air-compressing cylinders, the pistons of which are operated by water-pressure, a valve-motion for governing the water supply and escape, arranged in a separate chamber or cylinder, and automatically operated by water-pressure in the main cylinder, substantially as set forth.

12. The combination of one or more air-compressing cylinders, the pistons of which are operated by water-pressure, a valve-motion for governing the air inflow and outflow, arranged in a separate chamber or cylinder, and automatically operated by water-pressure acting independently of the water-pressure in the main cylinder, substantially as set forth.

13. Valves c^4 c^5, arranged one in each cylinder B B', with suitable ports and pipe-connections to and in combination with the water valve-chamber F and valves therein, for regulating the water supply and exhaust to and from the main pumping-cylinder, substantially as set forth.

14. Valves c^4 c^5, arranged one in each chamber B B', with suitable ports and pipe-connections to and in combination with the air valve-chamber F' and valves therein, for regulating the air ingress and egress to and from the main pumping-cylinder, substantially as set forth.

15. Piston-valves *s* c^1 c^2 c^3, arranged with communicating ports and pipes to and in combination with the water valve-chamber F, and valves and ports therein, substantially as set forth, whereby, at the completion of the stroke of the plungers *g g'*, the pistons in t^2 will be subject to a preponderance of water-pressure on one side, so as to give the valves a complete throw, and thus avoid danger of stoppage at a dead-point.

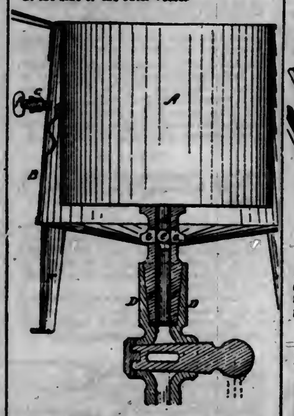
161,071. GAS-BURNERS. Charles B. Ball, Philadelphia, Pa., assignor to Jas. W. Carson, same place. [Filed Aug. 11, 1874.]



In an argand gas-burner, the ring A, constructed as described, to open on the outside, in combination with the tube B, having branches C, provided with shoulders C', expanded into the ring A, all substantially as and for the purpose herein set forth.

161,072. STEAM COOKING-VESSELS. E. P. Bates, Syracuse, assignor of one-half his right to W. H. Warner, Brooklyn, N. Y. [Filed Nov. 23, 1874.]

Brief.—Air may escape through the vent at the side of the outer vessel.



The combination, with the jacketed vessel A B, provided with legs F F, of the taper tube C, with perforations *e e*, and the socket D, forming a steam-tight connection with the steam-supply pipe, constructed and operating substantially in the manner described and specified.

161,073. TICKET-CASES. Leonard J. Hodge, Boston, Mass. [Filed Feb. 8, 1875.]

Brief.—An inclined drawer, with sheet-metal partitions bent to form bottom and steps, has a ball-follower in each division.

1. The drawer A, composed of the series of united bent strips *a a'*, having lips *a' d*, substantially as described.

2. A drawer having the division-strips *a*, provided with lips *d a'*, bent in opposite directions, substantially at right angles to the strip *a*, as and for the purpose described.

3. The combination, with the ticket-holding drawer, of the globular circular or ball-like follower, adapted to roll down on the bottom of the drawer and support the tickets, substantially as described.

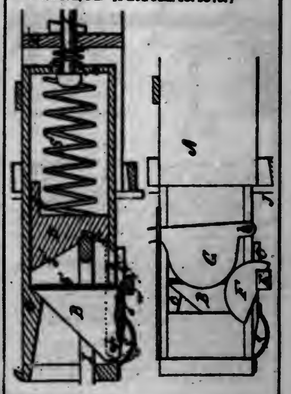
161,074. PLOW-STANDARDS. Henry Borger, Urbana, Ohio. [Filed Oct. 26, 1874.]

Brief.—Standard pressed to shape in dies; the top fitted in and welded.



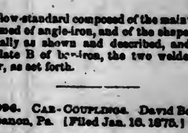
A plow-standard composed of the main body A, formed of angle-iron, and of the shape substantially as shown and described, and the flat plate B of bar-iron, the two welded together, as set forth.

161,075. CAR-COUPLINGS. David Bower, Lebanon, Pa. [Filed Jan. 16, 1875.]



161,076. LOCKS FOR POCKET-BOOKS. Bart M. J. Blank, Jersey City Heights, N. J., assignor to Chas. Kohlmann, New York city. [Filed Feb. 13, 1875.]

Brief.—The barb or pin *a* of the closing flap turns but a half-revolution, by reason of its leg *b* striking the inner edge of the binding-frame on the under side, thereby bringing the leg *b'* coincident with the slots *d* of the clasp-plate, attached to the body of the book.



The combination of lever-plate C, attached to binding-frame B, the pin *a*, having projecting legs *b b'*, with intermediate recess, and the clasp-plate D, having slots *d*, all constructed and arranged as and for the purpose specified.

1. The pivoted coupler B, provided with the transverse bar E and the spring S, in combination with cam lever G and cam F attached to the transverse bar E, substantially as described.

2. The combination, with a draw-bar, A, having slot *b* and shoulder *c*, of the vertically-vibrating coupler B, having projection C, substantially as specified.

161,097. MILLSTONE-DRESS. Jefferson Carvill and John Caven, Kingston, Minn. [Filed Jan. 18, 1875.]

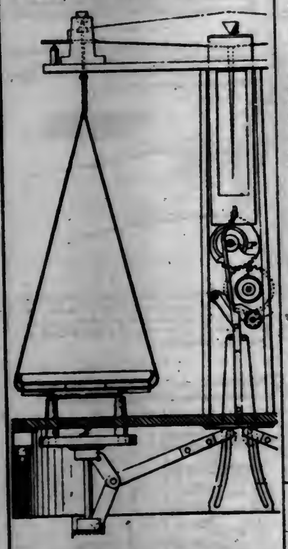
Brief.—Adjustable portion can be lowered to recess as the stone wears away.



The combination of the adjustable portion A with a stone having a recess, C, substantially as specified.

161,098. COIN-SCALES. Henry S. Cochran, Philadelphia, Pa. [Filed Feb. 9, 1875.]

Brief.—For primary weighing, scale-pans rest on rollers supported by posts connected with lever or main weighing apparatus, friction on knife-edges thus reduced to minimum. For check or auxiliary weighing, a beam, N, supporting scale-pans, is thrown into operative position on knife-edges, through intervention of cam O and spur wheels S T.



1. The combination of the vertically-movable scale-pan frames, the toggle-levers, the lever-frames, the vertical arms, and the pointer or finger, substantially as herein described.

2. The combination, in a weighing apparatus, of two independent scales, A, and mechanism, substantially as described, for simultaneously throwing one scale into an operative position and the other out of action, substantially as described, for the object stated.

3. The combination of the scale-beam, its knife-edge, the vertically-movable plunger or post, and suitable lifting mechanism therefor, with the suspension-rods and scale-pans, substantially as herein set forth.

4. The combination of the lifting-cam, rack-arm, spur-wheel, and pinion with the movable plunger and the duplex scale mechanism, substantially as herein described.

161,099. CHINCH-BUG DESTROYER. John Cochran, Jr., Roscoe, Mo. [Filed Sept. 11, 1874.]

Brief.—A sheet metal furnace is mounted upon wheels. A fire is built upon a grate in the forward end. The bottom plate becomes heated, and as the machine is drawn over the ground the radiated heat and products of combustion are thrown upon the ground, and the insects thus destroyed.



The combination of the fire-box or furnace A, broad elongated flue C to extend toward the rear, with bottom-exit *b*, axle *d*, wheels E, and draft-bail G, all constructed substantially as and for the purposes herein set forth.

161,100. COMPOSITION PAVEMENTS. David G Conger, New York, N Y [Filed Jan. 14, 1875.]

Brief.—A paving-block composed of the following composition, viz: Two barrels paving-pitch, four quarts rosin, one part cement, four parts sand, one part plaster, and gravel equal in bulk to the aggregate of the cement, sand, and plaster. The pitch is first boiled to remove the volatile elements. The rosin, sand, cement, plaster, and gravel are then added. The composition is then pressed into blocks under a heavy rolling pressure, and allowed to remain in the molds until set.

As an article of manufacture, a paving-block formed and subjected to pressure while still hot, and allowed to set while under pressure, the said block composed of a compound of ingredients consisting of pitch or asphaltum, resin, cement, sand, field-plaster, or gypsum, and gravel, in the proportions and united and compounded substantially as described—that is, plastic while hot, but hardens when cool.

161,101. WEAVERS' SHUTTLES. John A. Crosby, Lawrence, Mass. [Filed Mar. 6, 1875.]

1. The combination of the part *a* of the spindle, arranged to be pivoted to the shuttle-body, with the part *f* pivoted to part *a*, and provided with a butt adapted to operate in connection with the spring *e* and shuttle body, substantially as described.

2. The combination of the shuttle body and its spring with the two-part spindle *a f*, curved or made bulbous, and pivoted together and adapted to operate substantially as described.

161,102. WHEEL-CULTIVATORS. William P. Dale, Pennsylvania State College, Pa. [Filed Aug. 20, 1874.]

Brief.—The plow-beams are connected to swinging rockists in front. Long staples connect the rear of the beams to vibrating inclined arms and also each beam independent for ward and back movement. The arms or lifting-levers are flexibly pivoted and connected, permitting the movement of the beams in all directions.

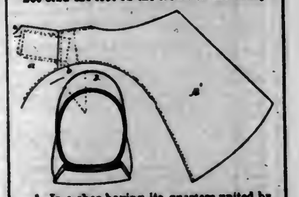
1. In combination with hinged or pivoted shovel-carrying beams D D, the vertically and laterally vibrating arms F F, connected together at their front ends by means of a hand bar, G, substantially as described.

2. Beams D D, connected by joints C C to longitudinally-vibrating arms E E, having independent bearings on the bounds O, substantially as described.

3. The supports S S, pivoted to the seat B, and having hooks *s* on their ends, in combination with plates *l l* and bounds C C, as described.

161,103. SHOES. Gustavus L. Davis, Haverhill, Mass. [Filed Feb. 5, 1875.]

Brief.—One of the quarters is made longer than the other, and stitched vertically, so as to form a pocket for an elastic strap, which is applied only at one side, and therefore cannot bind the foot on the crown of the instep.



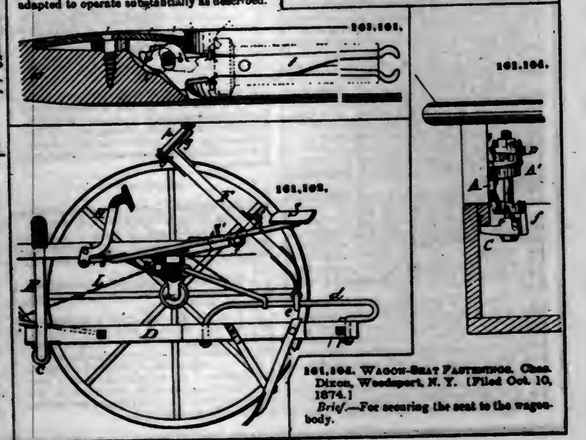
1. In a shoe having its quarters united by an elastic gore, and having a vamp applied externally thereto, the quarters A A', having their lapels or front portions formed of unequal length, one of such lapels extending over and beyond the crown of the instep, while the lapel of its fellow quarter is of a correspondingly-decreased length, the same being as shown and described, and for the purpose set forth.

2. In a shoe having its quarters A A' united by elastic connection or gore, and having a vamp applied externally thereto, the part A formed with the extension *c*, as and for the purpose set forth.

3. In a shoe having its quarters united by an elastic connection or gore, the vamp B, having its body or toe and side portions formed whole or of a single piece of leather, and its instep part *d* curved and united thereto, as and for the purpose set forth.

161,104. WAGON-SEAT FASTENINGS. Chas. Dixon, Woodport, N. Y. [Filed Oct. 10, 1874.]

Brief.—For securing the seat to the wagon-body.



1. The wagon-seat fastening, composed of main plate, having socket legs A A', adjustable bolt B, with clamping-piece C and swinging locking-lever D, all combined to operate substantially as and for the purpose set forth.

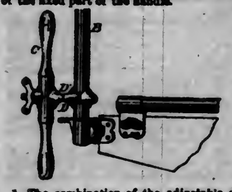
2. The combination of upper leg A', having inclined surface and side shoulder *d*, with bolt B, and recessed cam-lever D, for producing rigid locking of parts, as described.

3. The clamping-piece C, having projecting shoulder *f*, in combination with recess *f'* of lower leg A', for defining extent of motion of clamp-piece, as specified.

4. The fastening cam-lever D, having side flanges *b* at upper side, for securing position of bolt-fastening nut, combined as set forth.

161,105. HANDLES FOR CROSSCUT-SAWS. Jos. E. Emerson, Beaver Falls, Pa. [Filed Jan. 20, 1875.]

Brief.—The handle is constructed in two parts, one of which is fixed, and the other adjustable and removable, secured together by means of two intermediate collars, provided with nearly half-circles on their opposite ends, and serrations at their meeting surfaces, for holding the adjustable and removable part at any desired angle with relation to the fixed part, or for placing the adjustable and removable part at any desired part of the length of the fixed part of the handle.



1. The combination of the adjustable and removable handle C and its intermediate devices with the fixed handle B of a saw, substantially as and for the purposes described.

2. The collars D and D', with their serrations or teeth *d*, in combination with the handles B and C, as and for the purposes described.

161,106. DRILL-BITS. Theodore P. Farmer, Boston, Mass. [Filed Jan. 18, 1875.]

Brief.—The bit is cut from a grooved bar and properly pointed.

drill, B, having longitudinal straight grooves *a* a extending its entire length, the cutting-edges *c c*, and point *b*, as described, for the purpose set forth.

161,107. BOTTLE FILLERS AND CORKERS. George H. Ferry, New York, N. Y., assignor to Jeremiah B. Bradford, Boston, Mass. [Filed Jan. 18, 1875.]

Brief.—A series of measuring-receptacles connected with the supply-reservoir, and provided with valves, which control their inlet and outlet passages,—each receptacle being provided with a central passage or tunnel extending vertically through it, and each receptacle being of the exact capacity of the bottle to be filled.

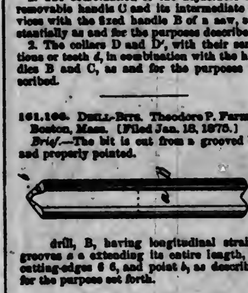
1. A series of measuring-receptacles, C C, of predetermined capacity, connected with the supply-tank, and provided with inlet and outlet passages *i d*, controlled by valves, in combination with plungers W W, substantially as and for the purpose described.

2. A series of plungers, W W, acting simultaneously in combination with a corresponding number of measuring-receptacles, C C, provided with central tunnel-shaped openings, or cork-conductors *a a*, substantially as described for the purpose set forth.

3. The bottle carrier Q, raised and lowered by suitable mechanism, in combination with a series of measuring-receptacles, C C, and cork-conductors *a a*, substantially as and for the purpose specified.

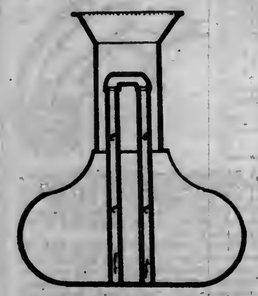
4. The platform I, and bottle-carrier Q, in combination with the measuring-receptacles C C, substantially as and for the purpose set forth.

5. The spindles *f f*, with their springs *h h*, pad valves *i i*, operated by the levers *n n*, connected with the movable bars I I, as and for the purpose set forth.



161,108. SMOKE-STACK HEATER-PIPES. T. B. Field, Corning, N. Y. [Filed Nov. 7, 1874.]

Brief.—The circulation-pipes, which may contain either air or water, are placed vertically in the smoke-chamber at the front of the boiler.

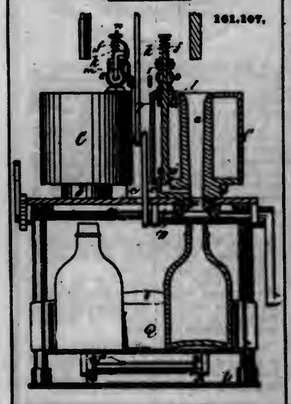


In a heater in which the waste heat of the smoke box and stack of a steam-boiler is utilized for heating air or water, the pipes C, combined therewith and arranged in pairs, as described, to enter and leave the smoke-box below the impinging currents of heat from the furnace, whereby the fluid to be heated is caused to pass twice through that portion of the smoke-box at which the heat enters from the furnace, and obtain thereby the full benefit of the heat upon said entering and exit pipes, as described.

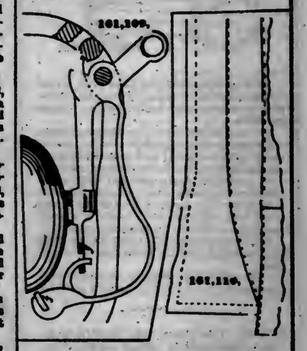
161,109. GOODS FOR STREET-CARS, &c. E. P. Pinnell, New York, N. Y. [Filed Nov. 1, 1873.]

Brief.—The sudden checking of the motion of the parts, by the shoulder on the bell-carrying lever striking the stop on the bracket, causes the arm of the hammer to spring sufficiently to allow the bell to be struck by the hammer.

1. The elastic hammer-shaft, rigidly attached or formed in one with the lever carrying the bell, the lever and hammer-shaft being arranged and constructed to operate in relation with each other, so that the checking of the motion of the lever shall cause the hammer, by its own momentum, to strike the bell, substantially as set forth.



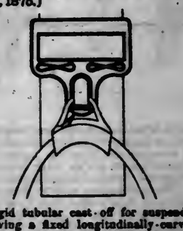
2. The lever B, constructed with the arm *d*, the spur *b*, and carrying the elastic shaft of the hammer, in combination with the hanger, or its equivalent, for suspending the said parts, substantially as and for the purpose specified.



161,110. SHIRTS. Henry Green Fisk, New York, N. Y., assignor to Fisk, Clark & Flagg, same place. [Filed Dec. 12, 1874.]

The combination of the shirt-collar, the bosom, and the pointed neck-band with its ends terminated inside of the ends of the collar, the ends of the said collar being in direct contact with the bosom, and the collar and bosom being separated elsewhere by the pointed band, substantially as described and shown.

161,111. CAST-OFFS FOR SUSPENDERS. S. W. Fisk, New York, N. Y., assignor to Fisk, Clark & Flagg, same place. [Filed Jan. 12, 1875.]



The rigid tubular cast-off for suspender ends, having a fixed longitudinally-curved tubular passage for the strap of the suspender ends to slide in, substantially as before set forth.

161,112. FISHING-MAIL TENSIONS. Valentine Fogarty, Boston, Mass. [Filed Feb. 24, 1875.]

Brief.—The annular frame carrying the cutter is rotated around the finger-receptacle.

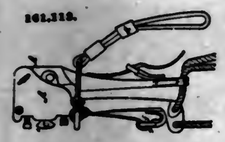


The combination of a nail-cutter with the conserved finger-holding body *c*, adapted to operate with reference to each other substantially as described.

161,113. FISH-HOOKS. Thos. P. Forsyth, New Haven, Pa. [Filed Jan. 26, 1875.]

Brief.—The clamping-levers are provided with detachable and adjustable bits or clamping-pieces pivoted thereto, so as to adjust themselves to the rope. The clamping-levers are also provided with leather straps or loops for securing the hands, and the stirrups are furnished with slides for securing the feet of the operator.

161,112.



1. The pivoted clamping piece or bit, in combination with the clamping-lovers, and pivoted thereto, substantially as and for the purpose specified.

2. In combination with the clamping-levers, a detachable clamping piece or bit capable of being rigidly attached to the clamping-lever, substantially as and for the purpose specified.

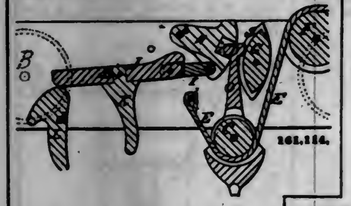
3. A clamping-lever, provided with a pivoted clamping piece or bit, in combination with a clamping-lever having a detachable bit capable of being rigidly secured to said lever, substantially as and for the purpose specified.

4. In combination with clamps A, the strap D, substantially as and for the purpose specified.

5. The stirrup E, provided with the slide f, substantially as and for the purpose specified.

161,114. HAY-ELEVATORS. E. V. R. Gardner, Johnstown, N. Y. (Filed Jan. 23, 1875.)

Brief.—Suspended from the carriage-frame, running on guiding-ways, is a carrier, which, on terminating its ascent, throws a knobbed extremity over its sheave, into a recess on the periphery of a pivoted segment, the movement of the latter being permitted by the hinged end of a lever, held in position by a hanging stop-piece, which, when struck, unlocks the devices.

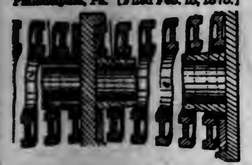


161,114.

1. In a hay-elevator the combination, with the fixed segment G and the vertically-vibrating clamping-cam E, of the pulley-block C, having extension c, with right cylindrical or cylindroidal block D, substantially as specified.

2. The combination, with the fixed segment G and knob D of pulley-block C, of the vertically-vibrating cam E, link I, lever J, and gravitating stop L, substantially as specified.

161,115. CAR-SPRINGS. George F. Godley, Philadelphia, Pa. (Filed Feb. 15, 1875.)



1. A spiral solid plate-spring, having the upper and lower surfaces of the thickest part of the plate parallel when coiled, substantially as set forth.

2. A spiral solid plate-spring, having the opposite surfaces of the plate parallel when coiled, and the plate itself thinner at its central portion, substantially as set forth.

3. The combination, with the two cone-shaped coils, d d, of the plate f provided with axial projections, substantially as set forth.

161,116. TRIMMING PLATFORMS FOR SEWING-MACHINE TABLES. Maximillion Grobner, New Orleans, La. (Filed Jan. 16, 1875.)

The platform herein described, consisting of the base-plate A, tilting-frame F, and bracket-frame D, arranged to elevate the hind feet or legs of a sewing-machine, as described, and for the purpose specified.

161,116.



161,117. LOCKS FOR FIRE-ARMS. Dana G. Hadley, Bethlehem, N. H. (Filed Feb. 17, 1875.)



1. The locking-lever provided with a square-shouldered hooked end, to operate in conjunction with a square-shouldered notch and undercut recess in the hub of the hammer or cock, substantially in the manner and for the purpose set forth.

2. The combination, in a fire-arm with the hammer cocking and releasing mechanism, of a hammer whose hub is formed with a square-shouldered notch, having an undercut recess, as described, and a locking-lever, formed with a square-shouldered hooked end, bearing against the periphery of said hub with a yielding pressure, and adapted to engage said notch and undercut recess at the times and in the manner set forth.

161,118. LAMP-WICKS. Haivor Halvorson, Cambridge, assignor to Chas. Albt. Shaw, Boston, Mass. (Filed Feb. 10, 1875.)

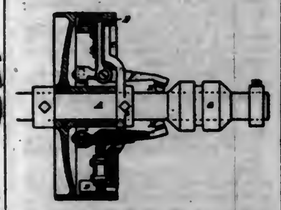
Brief.—To make the wick a better conductor and more easily trimmed.



As a new article of manufacture, a fibrous lamp-wick, oxidized by means of permanganate of potash, substantially as and for the purpose specified.

161,119. FRICTION-CLUTCH PULLEYS. D. Harrington, Worcester, Mass., assignor of one-half his right to N. D. Gay, same place. (Filed Feb. 12, 1875.)

Brief.—A shaft carrying a sleeve and a fixed cross-bar revolves in the hub of the pulley, a portion of which hub being oval for the purpose of a cam. A clutch-plate works in a slot near each end of the bar, and has pivoted on it a short lever parallel with the shaft. These, being forced apart at one end by a taper on the sleeve, become acted upon by the cam at their other end, and effect the clutching of the pulley by the full power of the machine.



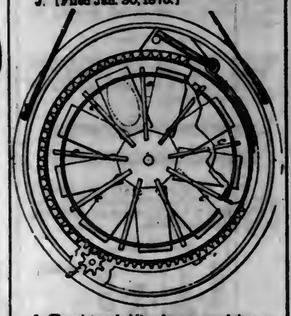
1. The cam E, when employed in combination with the clutching or frictional surfaces and the movable sleeve or shipper in a friction-clutch wheel or pulley, for forcing into contact said frictional surfaces and locking the clutch, the parts being arranged for automatic action by force derived from the driving belt or power.

2. Substantially as described, in a friction-clutch pulley, the cam E, in combination with the pulley B, friction-pads D, and shipping-sleeve G, when used to automatically bring the friction-pads in contact with their bearing-surfaces on the pulley.

3. The combination, with the cam E, rotating with the pulley, the friction-pads D, connected with the shaft, and shipper-sleeve G, of the levers F and springs I, substantially as and for the purpose set forth.

4. The combination, with the cam E, pads D, shaft A, and shipper-sleeve G, of the levers F and springs I, as and for the purpose set forth.

161,120. PHOTOGRAPHIC-PICTURE REMINTERS. A. Loquince High, Mount Holly, N. J. (Filed Jan. 30, 1875.)



1. The picture-holding frames, revolving on a central pivot of the face-plate, in combination with intermediate connecting-legs, and a circumferential cog-wheel and pinion gearing therewith, substantially as described.

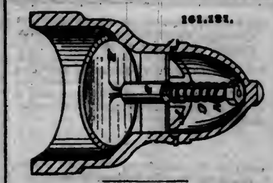
2. The revolving picture-holding frames, in combination with separate spring-brakes applied to their circumference, for preventing the turning of the frames until released by the direct action of the operating pinion on the frame gearing therewith, substantially as specified.

161,121. VACUUM RELIEF-VALVES FOR WATER-PIPES. Philip Hinkle, San Francisco, Cal. (Filed Jan. 30, 1875.)

Brief.—When the pressure of the spring and the water inside the pipe is removed by the vacuum caused by the flow of the water, the pressure of air outside of the valve will open it and allow air to enter.

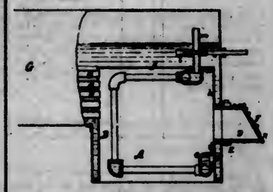
The air-chamber A, valve B, stem C, guide D, spring H, and screw-nut I, in combination with the water-pipe J and stand-pipe M, substantially as and for the purpose described.

161,121.



161,122. STEAM-BOILER FURNACES. John C. Hoadley, Lawrence, Mass., assignor to the J. C. Hoadley Company, same place. (Filed Dec. 10, 1874.)

Brief.—The straw or long fuel is fed through a "box," and prevented from passing through the boiler-tubes by means of a "grillage" of pipes, through which water is heated and fed to the boiler.



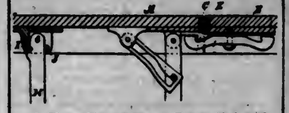
1. In combination with the fire-box B and the boiler G, provided with a series of flues leading out of the rear of the said fire-box and through the water-space of said boiler, the grillage A, constructed and arranged wholly in the said fire-box B, and with the said flue, substantially in manner and for the purpose as specified.

2. The combination of the educt l m, provided with a stop-cock, k, as described, with the grillage A, boiler G, and the fire-box B, arranged as set forth.

3. The feeding-box D, combined with, and to open through, the door E, and provided with a flap, H, and register F, all substantially as shown and described.

161,123. FOLDING TABLES. Jas. W. Howland and D. Howland, New Haven, Conn. (Filed July 25, 1874.)

Brief.—The sections of the table-top are provided with adjacent edge-sections at the joint, to receive and cover the hinges. The hinged legs are provided with socket-blocks and a holding-pin, so that the leg may be held by said pin in an extended or folded position.

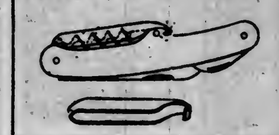


1. The table-sections A B, provided with adjacent edge-sections E E at the joint C, to receive and cover the hinges D, in the manner set forth.

2. The combination, with hinged legs H, of socket-blocks I and pin J, applied as and for the purpose specified.

161,124. CORDAGE KNIVES, CORKSCREWS, AND SHIELDS. John S. Jameson, Bangor, Me. (Filed July 3, 1874.)

Brief.—The shield is removable, and adapted to be fitted over the corkscrew, so that when the latter is closed against the handle of the knife the point of the screw is prevented from giving or receiving injury.



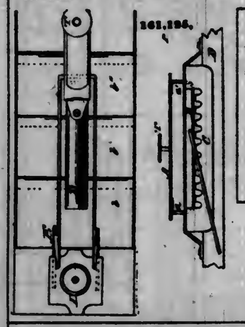
In combination with a knife having a corkscrew hinged thereto, the shield for said corkscrew, detachable therefrom when the same is in use, and retained in place by the corkscrew itself when said corkscrew is shut down, substantially in the manner herein set forth.

161,125. BLIND-STOPS. Louis Jermain, Green Island, assignor to Geo. A. Mosher, Troy, N. Y. (Filed Feb. 4, 1875.)

Brief.—The key attachment, with its facing-plate and handle, serving as a lifting device to raise the spring out of and above the notches, and thus to adjust and hold the blind-slats in desired position.

The key or plate B, having arms a a', facing-plate A, and handle T, in combination with the notched lock C, spring E, and rod D, all constructed, arranged, and operating substantially as described and shown, for the purposes set forth.

161,126.



161,126. PENCIL-SHARPENERS. Walter H. Keyes, Princeton, Mass., assignor of one-half his right to A. H. Keyes, same place. (Filed Feb. 12, 1875.)

As a new article of manufacture, a pencil-sharpener, E, having a divided surrounding casing, A B, constructed with the opening f, to insert the pencil, and the locking device H i, as set forth.

161,127. MATCH-BOXES. John Knox, Auburn, N. Y. (Filed Dec. 28, 1874.)

Brief.—The caps are removable for the purpose of filling the supply-cylinder and grooves. The grooved cylinder is revolved by means of the milled outer cap, for presenting the match to the slide.

The combination of slotted outer shell A, grooved cylinder C, head G, having notch g, head B, provided with friction-outlet I J, and sliding pusher F, all as specified.

161,127.



161,128.



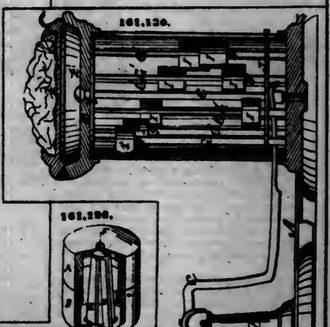
161,128. BUTTERFLY-OVERSHOE. John La Blanc and Xavier St. Pierre, Ophir City, Utah. (Filed Sept. 12, 1874.)

As a new article of manufacture, the within-described envelope-opener, consisting of the tube A, open at the upper end, closed at the lower, having V-shaped guides C C, and provided with the median blade D, as shown and described.

161,129. COLLECTING GOLD, SILVER, &c., FROM THEIR ORES. Matthew Ladin, Chicago, Ill. (Filed Mar. 2, 1875.)

The process herein described for collecting gold, silver, and other metals from ores, grit, and the like, the same consisting in boiling the ore-pulp, mixed with pulverized charcoal, coke, and other carbon, in a pan or other vessel containing water and mercury, so as to collect the metal by amalgamation, substantially as specified.

161,130.



161,130.



161,130. POSTAL WEIGH-SCALES. Tolbert Lanston, Washington, D. C. (Filed Dec. 10, 1874.)

Brief.—The longer arm of lever moves a platform along vertical guide-rods. The guides pass through movable weights, whose play on rods is limited by stops. Greater the weight on scale-pan, greater the number of weights elevated by platform. A needle or indicator attached to platform passes through a slot in containing-case, the face of which is graduated to ounces and fractions of ounce.

1. In a weigh-scale, the combination of a platform, J, vertically movable upon guides in a horizontal plane, with the vertically-vibrating scale-beam C, substantially as specified.

2. The combination, with the platform J, vertically movable in a horizontal plane upon rods G G', of the weights I, vertically movable, and arranged upon the said rods, substantially as specified.

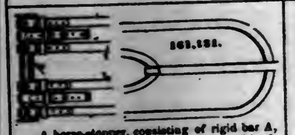
3. The combination, with the rods G', having shoulders g, of the vertically-movable weights I, substantially as specified.

4. The weights I, arranged one above the other, and guided to move vertically upon rods G', in combination with vertically-movable platform J and beam C, substantially as specified.

5. The combination, with the vertically-vibrating beam C and guide F, of the letter-platform E, pivoted to the said beam, and having shank e', substantially as specified.

6. The combination, with the vertically-vibrating scale-beam C, of the letter-trough E', having its lower side e larger than the other, substantially as and for the purpose specified.

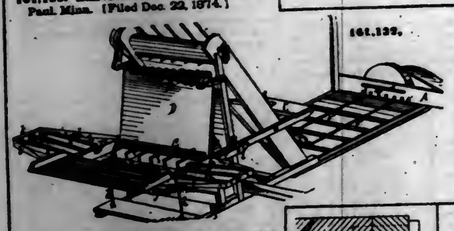
161,131. HORSE-STOPPING APPARATUS. J. Lambert and William Woerle, Milwaukee, Wis.; said Woerle assignor to said Lambert. (Filed Dec. 2, 1874.)



161,121.

A horse-stopper, consisting of rigid bar A, and straps B B and C C, arranged, combined, and operating substantially as set forth.

161,122. HARVESTERS. C. W. Levalley, St. Paul, Minn. [Filed Dec. 22, 1874.]



161,122.



161,124.

1. The grain or divider board A, provided with the longitudinal slot a or its equivalent, in combination with the adjustable retarding-rod or cord a', substantially as described.

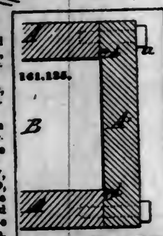
2. The scroll-bar B, made tapering in form, and operating in combination with the plat-form-apron, substantially as described.

3. The stripper-brush E, made tapering from front to rear, in combination with the elevator-apron, substantially as and for the purpose described.

4. The shattered-grain receptacle or box D', formed in part by the inclined chute-board D, and hinged thereto independently of the binders' stand, in combination with the hinged grain-receiving fingers g, arranged above the box D' and supported at their outer ends, when in working position, by said box, as described.

5. The slatted dumping-tray J and tables K, arranged in the described relation to each other and to the binders' stand and shattered-grain receptacle D', in combination with the apron L L', arranged to discharge the shattered grain gathered from the said tables to the receptacle, as described.

161,125.

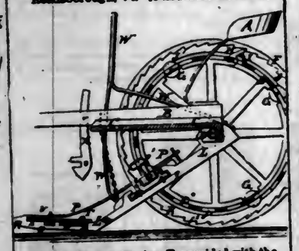


161,125.

161,126. WATER-RETAINER BOXES FOR PUDDLING-FURNACES. J. O. Longland, Rome, N. Y. [Filed Oct. 21, 1874.]

In a water-tank, the longitudinal pieces A A, provided with the tongues c c, in combination with the longitudinal pieces A' A', provided with grooves d d, tenoned end pieces B B, and packing b b, and water induction and eduction passages C C', substantially as and for the purpose set forth.

161,126. MOWING-MACHINES. Jason P. Lord, Francis E. Lord, and Orrin E. Lord, Readsborough, Vt. [Filed Dec. 12, 1874.]



1. The loose outer rims F, provided with the central rib f' and the ratchet-teeth f², the spring-pawls H I, and the grooved friction-wheels G, in combination with the rims of the wheels E, rigidly attached to the axle of the mower, substantially as herein shown and described.

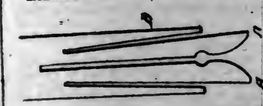
2. The combination of the hinged pawl O, the stationary pawl N, and the U-slide M with the notched edges of the rim of the wheel E, with the forked bar L, that carries the cutter-bar J, and with the connecting-rod P, that operates the sliding bar Q and vibrates the cutters, substantially as herein shown and described.

3. The three-armed lever W, in combination with the forked bar L, that carries the cutter-bar J, substantially as herein shown and described.

161,127. PROCESSES OF MANUFACTURING AMMONIA. Farnham Maxwell-Lyte, Paris, France. [Filed Mar. 10, 1875.]

The herein-described process of producing ammonia by the combination of nitrogen with nascent hydrogen liberated in the presence of a triad or pentad element, substantially as described.

161,128. CLOTHES-PINS. William H. Mayo, Menasha, Wis. [Filed Jan. 18, 1875.]

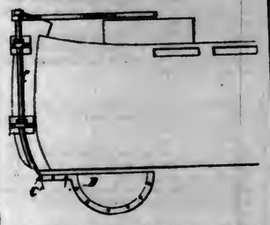


As an improved article of manufacture, the pin herein described, formed of a single piece of wood with inner prongs A, wide at the bottom and narrow at the top, and the outer prongs B of reverse construction, to give strength and elasticity, all as and for the purpose specified.

161,129. COMPOUNDS FOR SCOURING WHITE GOODS. Moritz Mayer, New York, N. Y. [Filed Mar. 9, 1875.]

A compound for dressing and cleaning white fabrics, consisting of a mixture of French chalk, salts of sorrel, oxalic acid, and bicarbonate of soda in water, in the proportions and in the manner substantially as and for the purpose set forth.

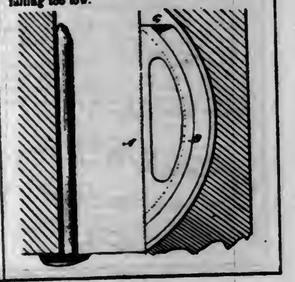
161,130. MEANS FOR HANGING BUDDIES. Richard B. McIlhtire, East Boston, M. Y. [Filed Oct. 22, 1874.]



The clasp-bearings B, operating shaft C and rudder-blade D, combined and arranged as and for the purpose set forth.

161,131. BEDSTEAD-FASTENINGS. Wyly Merritt, Atlanta, Ga., assignor to himself and M. T. Castleberry, same place. [Filed Dec. 5, 1874.]

Brief.—The cylindrical enlargement holds the plate in the end of the rail, and the flange at the bottom of the plate prevents the rail from falling too low. The shoulders at the top of the curved head rest on the walls of the post-mortise, and prevent the plate from falling too low.

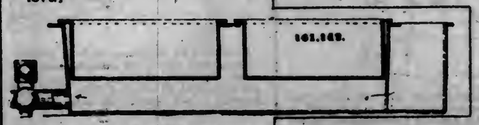


1. The combination of the curved T-headed plate A, having an enlarged portion, C, with the post having a curved anchorage mortise, D, and the rail having the slot E, with the enlargement F at the bottom, substantially as specified.

2. The improved fastening-plate A, having a curved T-head, H, with shoulders G and the flanged cylindrical enlargement C, substantially as specified.

161,132. MILK-TESTING PROCESSES. Alvin Middaugh, Scio, N. Y. [Filed Dec. 12, 1874.]

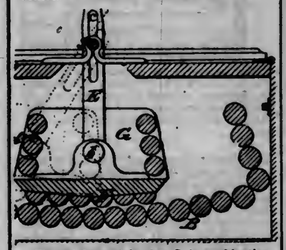
161,132.



The process herein described of discovering impurities in milk, and the excess of water therein, by heating a given quantity of standard milk and a given quantity of each farmer's supply, to be tested, in separate vessels, to about 90° Fahrenheit, then coagulating the standard and samples, and finally compressing the undrained and unsalted curd, the specified heat thus developing the odors of the impurities, and the quantity of curd or whey indicating the water present, all substantially as herein before specified.

161,133. WASHING-MACHINES. Geo. W. Mikesell, Huntington, Ind. [Filed Oct. 31, 1874.]

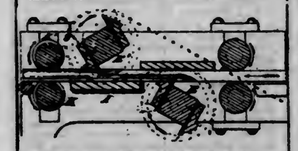
Brief.—The rubber is adapted to have a weight placed within. The handle is pivoted at the lower end to the rubber, and adjustable by a slot, and operates over a concave bed of rollers.



The weight-receiving box C, in combination with the pivoted adjustable handle E, provided with the slot e, fulcrum-pin g, and the concave bed B, substantially as and for the purpose set forth.

161,134. MACHINES FOR MAKING CHAIR-ROUNDS. John W. Millet, Johnstown, N. Y., assignor of one-half his right to Louisa Banks Pettyjohn, same place. [Filed Sept. 29, 1874.]

Brief.—The blanks for chair-rounds or similar articles are placed upon a fluted bed, and fed by suitable mechanism between two revolving heads provided with fluted knives, which plane both sides of the blank at the same time.



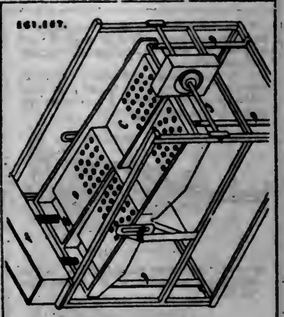
1. The combination, in a chair-round planer, of the fluted bed I, rollers K K', and roller L, as shown and described.

2. In combination with the cutters E E', the fluted bed I, roller L, rollers K K', and feed-rollers e e, as and for the purpose set forth.

161,135. PLASTER-SOWERS. F. C. Moder, Hortonville, Wis. [Filed Jan. 26, 1875.]

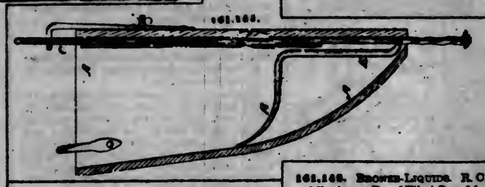
Brief.—Within the hopper, and upon the lower end of the plunger, are tines, the two inner ones of which are made spiral, while the outer ones are smooth, and to their lower ends is attached a beveled scattering board. Near the bottom of the hopper, and to the plunger, is attached the bent stirrer, for agitating the material to be sown.

161,135.



The combination, with box A, of the crooked stirrer E and reciprocating distributer C C C, all constructed and arranged substantially as and for the purpose specified.

161,136.



161,136.

161,137. WASHING-MACHINES. Geo. W. Mikesell, Huntington, Ind. [Filed Oct. 31, 1874.]

Brief.—Takes the water from a well or mining-shaft, where the water in the same is at a higher level than the surface of the ground, at a distance, in such a manner that a portion of the water may be withdrawn from the well and utilized for irrigating or other purposes, while the remainder of the water passes to a lower level than the bottom of the well or shaft, and operates as a power to raise the water in the well to the surface.

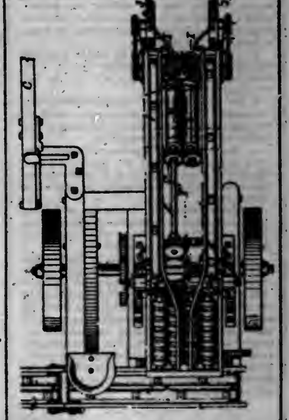


The combination of the reservoir C, provided with the pipe c, pipe D, wheel E, having the crank Y, connecting-rod H, and pump B, as and for the purposes set forth.

161,138. BROWER-LIQUIDS. R. C. Ockmler, Allegheny, Pa. [Filed Dec. 14, 1874.]

The compound of dragon's-blood, linseed-oil varnish, gum-copal, essential oil, spirits of turpentine, and gum-gamboge, consisting of its parts and proportions, as described, to be used for dissolving bronze-powder for the purpose of converting the same into a paint.

161,139. CORN-HARVESTERS. Wm. T. Orr, Kewanee, Ill. [Filed Jan. 2, 1875.]



The gathering-rollers J, provided with lifters, and arranged to operate with the feeding-rollers I and pulling-rollers F, substantially as described, and for the purpose specified.

161,140. CHAIR-SEATS. M. O'Brien, San Francisco, Cal. [Filed Nov. 19, 1874.]

The hopper F, tubes I, chamber H, and screens E and C, in combination with the adjustable double eccentric K L and adjusting screws E, whereby I am enabled to adjust and control both the pitch and the throw of the screens, substantially as and for the purpose set forth.

161,141. KING-BOLTS. Levi Penta, Canton, Ohio, assignor to himself and H. W. Worts, same place. [Filed Jan. 20, 1875.]

Brief.—Prevents strain and wear on the king-bolt.

1. The combination of the king-bolt E I, made with the small lower part I, thimble-clip bar G g, and bridle L K, substantially as and for the purpose set forth.

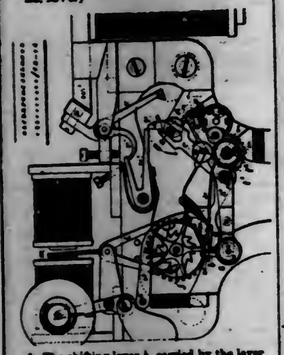
2. The combination of the thimble-slip C D, axle A B, thimble-bar G g, bridle L K, and king-bolt E I, substantially as and for the purposes set forth.

3. The combination of the thimble-slip C D, thimble K with flanges h h, axle A B, thimble-bar G g, and king-bolt E I, substantially as and for the purpose set forth.

161,160.



161,161. PRINTING-TELEGRAPH. George M. Phelps, Brooklyn, N. Y. [Filed Aug. 22, 1874.]



1. The shifting-lever A, carried by the lever e that is operated by the crank c and shaft d, in combination with the shifting impression-roller r and the independent frame r', carrying that roller and the cam 16 for moving the same, substantially as set forth.

2. The dedusting-plate 20 placed between the type-wheels, in combination with the movable impression roller or pad r, as and for the purposes set forth.

3. The spring-lever o', in combination with the magnet r, armature a, levers e e', and revolving arm s, for operating the printing mechanism, substantially as set forth.

4. The pause-wheel i gearing into the wheel f, in combination with the paper-feed, substantially as set forth, so as to allow the paper to remain stationary while the impression takes place.

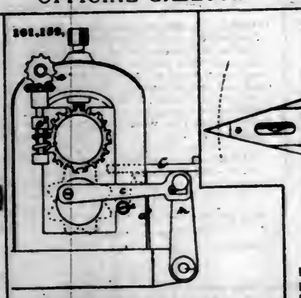
5. The arrangement of two sets of figures, fractional signs, and letters on one type-wheel, combined with a second type-wheel containing letters, substantially as set forth.

6. In a printing-telegraph with two type-wheels and a mechanism for shifting the printing from one to the other, the combination of the arm a, the detents thereto controlled by an electro-magnet, the wrist-pin or a cam operating the roller-shifting mechanism and the cam operating the printing mechanism, arranged relatively to each other, substantially as shown, the shifting mechanism being thereby operated and then removed from the parts moving with the type-wheel before an impression is given, as set forth.

161,162. MACHINES FOR CORRUGATING SHEET METAL. J. L. Piper and J. A. Michels, Pittsburg, Pa. [Filed Nov. 2, 1874.]

Brief.—The feed-table is carried on two pairs of pivoted supports, the outer pair fastened to a rock-shaft that receives its motion from a link attached to a crank-pin on the end of the lower roll. Said link works over a pin on the frame, and its outer end has an L-shaped slot to receive a pin on the rock-shaft lever. During a portion of the revolution of the rolls, the link is raised and rides freely on the pin, while at others the pin enters the vertical slot. When this causes the table to move forward and delivers a new sheet between the rolls.

161,163.



The combination of the rolls B B', feed-table C, pivoted supports c' c', rock-shaft n, slotted link o, and pin o, substantially as and for the purpose specified.

161,164. RAILWAY-RAIL SUPPORTS. Saml. E. Porter and Duane Peck, Rochelle, Ill. [Filed Feb. 8, 1875.]

Brief.—A hollow metal rail-support, provided upon its upper side with lugs, between which and the rail are inserted securing-blocks, one of which is wedge-shaped, and when driven home is secured by a set-screw. The support is also provided with diagonal slots, the outer ends of which are enlarged to allow the insertion of the heads of the bolts which secure the rails.

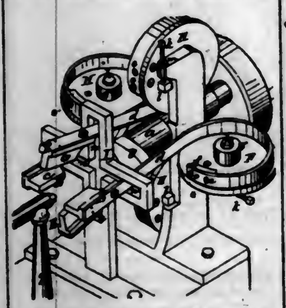


1. The bed-plate A, having ledges or lugs C and D, block E, key H, and set-screw J, in combination with the rails B B, substantially as and for the purposes described.

2. The bed-plate provided with orifices N, having the square portion O and diagonal slot P, as and for the purpose specified.

161,165. MACHINES FOR FORGING NAILS. Silas S. Putnam, Boston, Mass. [Filed May 26, 1874.]

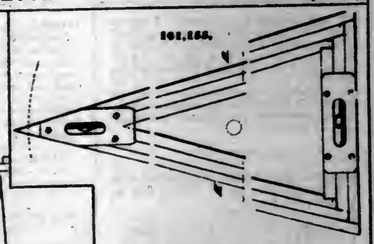
Brief.—Two pairs of hammers—one horizontal and the other vertical—provided with spring-helves, the rear ends of which are attached to disks. By turning said disks (which is effected by adjusting-screws) the tensions of the spring helves are increased, and by loosening the adjusting-screws they are diminished.



The two pairs of hammers E E, in combination with the spring-helves d, disks H, screws h, and stops f, substantially as and for the purpose described.

161,166. MILLERS' PAINT-STAFFS. William Sansom, Noah, Ind. [Filed Sept. 21, 1874.]

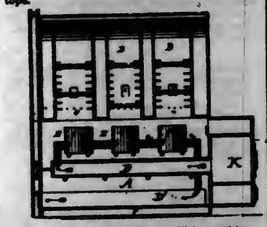
161,155.



A rod-staff for milestones, made in triangular form, each side of the triangle being composed of a series of stripe, A, set on edge, and a flat strip, B, covering their edges, and the sides joined together, all as and for the purpose herein set forth.

161,156. DRYING. John B. Register, Dover, Del., assignor of one-half his right to the Dover Fruit and Vegetable Preserving Company. [Filed Feb. 22, 1875.]

Brief.—Vertical plates in the drums deflect the current of smoke upwardly against their tops.



The chamber A and furnace K in combination with the flat flue D, drums E E, connecting-flues e e, sections B, and trays b b, all constructed and arranged to operate substantially as and for the purpose set forth.

161,157. CULTIVATORS. Leonard C. Robbins, Gorham, Me. [Filed Aug. 1, 1874.]

Brief.—The frame consists of three beams, pivoted together at the rear ends, and made laterally adjustable in front, the front end of each outside beam being provided with gage-wheels, independently adjustable. The cultivator-teeth are secured to the outer beams.



The outer beams, pivoted at the rear ends and made laterally adjustable in front, in combination with an adjustable gage-wheel on each, as shown and described.

161,158. APPARATUS FOR STAMPING PATTERNS. Isidore Rosenthal, New York, N. Y. [Filed Jan. 11, 1875.]

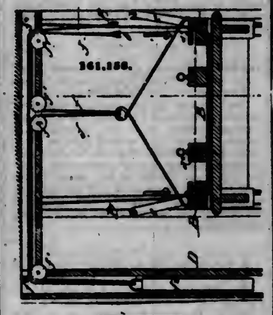
Brief.—A perforated pattern is stretched upon a frame, which is raised and lowered by means of the weighted cords working on pulleys.

1. The improved stamping apparatus, composed of a cloth-supporting table, with guide-pins, and a balanced suspended transfer-frame, having the perforated pattern-paper stretched thereon, and adapted to be raised and lowered by suitable mechanism, substantially in the manner and for the purpose set forth.

2. The balanced transfer-frame B, provided with central rail, and connected by cords and pulleys, with compensating-weights f', arranged to slide in guide-box D, in combination with additional weight-cord f'' and front cord f, substantially as shown and described.

3. The transfer frame, provided with adjustable intermediate pieces, and clamping top strips, for adjusting and stretching the transfer-paper to any width of pattern, as specified and shown.

161,159.



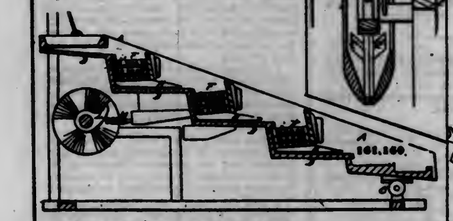
161,159. POCKET-BOOK FASTENINGS. M. Rubens, New York, N. Y. [Filed Jan. 26, 1875.]



The combination, with the hinged jaws B, of the spring-clasps C, made concave on the under side, and attached as shown and described, whereby they shut past each other, (without contact,) and each catches over the opposite jaw.

161,160. AMALGAMATORS. J. Rutherford, San Francisco, Cal. [Filed Feb. 4, 1874.]

Brief.—An inclined box, suspended at its upper end by rods, and at its lower resting on a roller, has its bottom formed of a series of steps, which support trays of amalgamated copper. These trays contain sieves, on which amalgamated copper balls are placed, and kept in motion by the jarring motion of the machine. Cams and a "crimped flange" give a compound lateral and longitudinal motion to the box, which is pulled back toward the cam-frame by its suspending-rods, and impinging against it is jarred. The pulp and water pass down through the sieves, copper balls, &c., to the bottom of the box, which retains the amalgam.



1. The inclined box A, suspended as shown, and provided with the steps D, for holding the screens and plates, substantially as herein described.

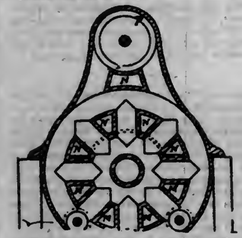
2. The trays or boxes F, provided with screens and placed in seats upon the steps, as herein described.

3. The amalgamated copper balls or rollers f, placed upon a surface and kept in constant agitation on the pulp or sand passes, substantially as and for the purpose described.

4. In combination with the boxes F, with their screens, as above, the balls or rollers f, substantially as and for the purpose herein described.

5. An amalgamator consisting of a series of offsets, each of which is provided with one or more boxes, F, with perforated bottoms, and provided with the balls or rollers f, together with the amalgamated plates H beneath, the whole being given a constant shaking motion, substantially as and for the purpose herein described.

161,161. SECTIONAL STEAM-BOILERS. C. L. Sanborn and H. M. Shaw, Boston, Mass. [Filed Jan. 12, 1875.]



A steam-generator composed of sections, made up of two or more annular hollow rings, connected with each other by radial tubes, the outer ring being connected, by tubes, with a steam-chamber, and having semicircular ribs, which, when the sections are placed in position, form the upper apertures into retorts, substantially as shown and described.

161,162. MACHINES FOR JOINTING STAVES. Marvin J. Seymour, Tarr Farm, Pa. [Filed Feb. 6, 1875.]

Brief.—Two concave disks are attached to each other at their outer edges, and have planing-bits inserted with their cutting-edges inward. The stave, being held between the revolving disks, is jointed upon both sides.

The beveled groove a in the wheel A, combined with cutters c and a stave-blank holder, substantially as described.

161,163.



161,164.



161,165.

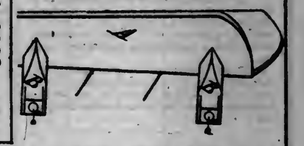


161,169.

161,168. FUMIGATORS FOR GREENHOUSES. Thomas Shaw, Danville, Pa. [Filed Nov. 7, 1874.]

Brief.—A conical or other shaped vessel is provided with grates to hold combustible material. The bottom connects by pipes with two fan-blowers, from which the conducting-pipes unite in one. The fumigating material is put into the vessel and ignited. Motion being now given to the blowers, a current of air is drawn into the mouth of the vessel, and the noxious gas discharged through the exit-pipe to any point desired.

161,166. PIN-SEPARATORS. J. D. Shelton, Huntington, Conn. [Filed Dec. 12, 1874.]



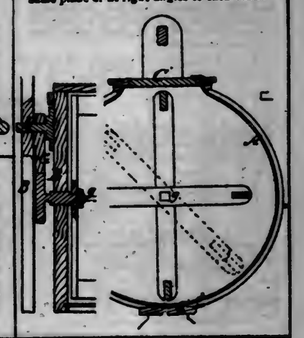
The separable bracket B B, made in two parts, with an orifice between them for the passage of the pins, and secured to the inclines A A, said brackets being also provided with recesses in their ends for the reception of adjusting-screws, as specified.

161,167. CAR-COUPLERS. Ira T. Sherrill, Paducah, Ky. [Filed Feb. 19, 1875.]

The combination, with a vertically-vibrating coupler, C, having a convex rear end, with notches a, of the end-wise movable rod B, and spring S, recessed into the draw-head, substantially as specified.

161,170. CHURNS. H. M. Simkins, Greenfield, Ohio. [Filed Feb. 23, 1874.]

Brief.—The dashers can either be set in the same plane or at right angles to each other.

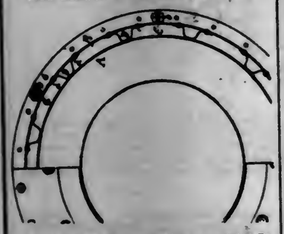


The dashers E E', made to fit one within the other, and provided with square apertures at one end, in combination with the flanged pin h, nut-screw c, and cone-shaft g, substantially as described, and for the purpose set forth.

161,167. BOTTOMS FOR WELDING AND HEATING FURNACES. William Small, McKeesport, Pa. [Filed Feb. 3, 1875.]

Brief.—Forms a loose or navitrified compound for furnace-bottoms, consisting essentially of an admixture of sand and salt, substantially as specified.

161,168. BOILER-COVERINGS. E. W. Smith, New York, N. Y. [Filed July 6, 1874.]

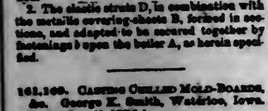


1. The flanged sections of sheet metal B B' and fastenings b, through said flanges, in combination with the soft packing C and strut D, for holding the sections B B' at a uniform distance from a boiler, A, as shown and specified.

2. The elastic struts D, in combination with the metallic covering-sheets B, formed in sections, and adapted to be secured together by fastenings b upon the boiler A, as herein specified.

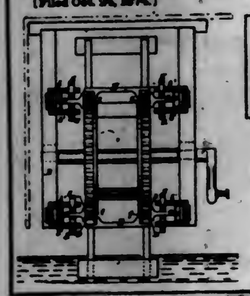
161,169. CASTING CHILLED MOLD-BOARDS, &c. George K. Smith, Waterloo, Iowa. [Filed Jan. 11, 1875.]

Brief.—To prevent chilled castings from warping or cracking in cooling.



A series of circular concave depressions in the plates, mold-boards, or other castings, evenly distributed over the entire side, opposite the face to be chilled, substantially as and for the purpose herein shown.

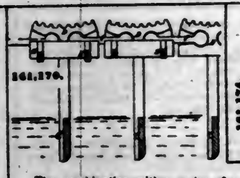
161,170. CHAIN-PROPELLERS. Clark Smith, Cornwall on the Hudson, N. Y., assignor to himself and Wm. H. Clark, same place. [Filed Oct. 24, 1874.]



1. The combination of the combined standard and spring, the rod G, and the lever and pawl, substantially as described.

2. The combination of the standard A, spring B, rod G, and lever and pawl, substantially as described.

3. The combination of the standard A, spring B, rod G, and lever and pawl, with the bolster, substantially as described.



161,170. [duplicate]

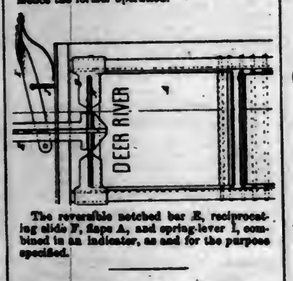


161,170½.

The combination with a series of paddle-blocks D, jointed together, and provided with side flanges G, of upper and lower ways provided with top, bottom, and side rows of friction-rolls, as and for the purpose specified.

161,171. STATION-INDICATORS. J. D. Smith, Gregg, N. Y. [Filed Apr. 1, 1874.]

Brief.—The flaps or boards indicating the stations are hinged to rods located in the center of a box, their free ends resting upon a support attached to the back of the box at the top and bottom thereof, and are temporarily held in place by the end of a notched bar attached to a reciprocating slide, which passes over the open face of the box. When the flaps have been released to fall to the bottom of the box, the slide is moved to that end also, and the box is then inverted to commence the former operation.



The reversible notched bar E, reciprocating slide F, flaps A, and spring-lever I, combined in an indicator, as and for the purpose specified.

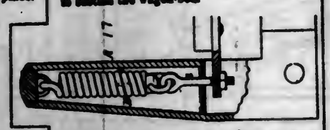
161,172. SIDE-BAR WAGONS. E. Soper, New York, N. Y. [Filed Dec. 26, 1874.]



The side bars C C, C-springs K K, and truss B, combined with the rear axle of a wagon, as and for the purpose specified.

161,173. COMBINED STANDARDS AND SPRINGS. Geo. H. Spencer, Jersey City, N. J. [Filed Aug. 22, 1874.]

Brief.—Hollow standard containing springs to sustain the wagon-bed.



1. A hollow standard, A, provided with a spring, B, and rod G, connected at the lower end to the body of the vehicle, all combined as set forth.

2. The hollow standard A containing a spring, B, and having at the lower end a socket, c, for receiving the end of the bolster, all combined as set forth.

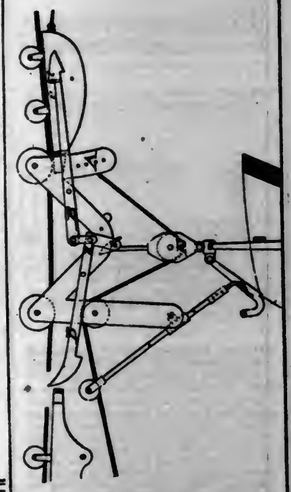
3. The combination, with the hollow standard and its spring B, of the rod G, guided as described, or so as to prevent contact of the spring with the standard.

161,174. KEY-RINGS. Nelson Stafford, Bayonne, N. J. [Filed Dec. 26, 1874.]

The key ring made with a rib or tongue at one end of the wire interlocking with a groove at the other end of the wire, and parallel, or nearly so, to a plane that runs through the center of the wire composing each ring, as set forth.

161,175. HOISTING AND CONVEYING COAL, &c. George Stancliff and Joseph Green, New York, N. Y. [Filed Mar. 1, 1875.]

Brief.—A carriage suspended on wheels on an inclined wire-rope has hooked up and automatically hooked to it the material in a bucket, balanced and held in position by a catch, the withdrawal of which is effected to trip the bucket by the tightening of the hauling-rope. At the top of the ascent of the hauling-chains an attached hook operates the engagement or otherwise of barbed latches on the carriage, for its attachment to the line at either end.



1. In hoisting and conveying apparatus, the combination of the bucket-suspending hook with the fulcrumed carriage-locking latch-levers, having lighter elbow-shaped front part with supporting cross-pins, for the purpose of attaching the bucket and releasing simultaneously the latch-levers for starting the carriage, substantially as and for the purpose set forth.

2. The combination of the bucket-suspending hook with the weighted and pivoted guard-plate and the cross-pin of the latch-levers, for producing the release of the hook and the lowering of the bucket, substantially as shown and specified.

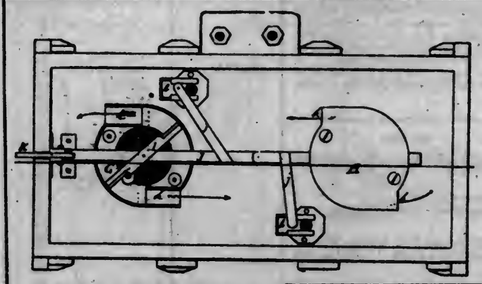
3. The sliding and pivoted trip rod and hook, operated by the hoisting-rope, in combination with the pivoted latch-lever of the bucket-bail, for tilting the bucket on releasing the latch-lever by the trip-hook, as specified.

4. The fulcrumed latch-levers, provided with hooks at the upper side, being at greater distance from their outer end than the hooks at the lower side, in combination with the sliding and weighted upper legs or pins, and with the lower fixed pins of a stationary or movable end station, substantially as and for the purpose set forth.

161,176. HEATERS FOR CHEESE-VATS. L. A. Sunderland, Madison, Ohio. [Filed Aug. 13, 1874.]

Brief.—The tangential openings, discharging in opposite directions, serve to equalize the distribution of the heat beneath the vat.

161,176.



1. The combination, with cape H, having openings h h of the valves i i, constructed and operating substantially as and for the purpose described.

2. The combination of the sliding bar J, and its operating mechanism, with the valve-arms I, carrying valves i i, and cape H, substantially as and for the purpose described.

3. The combination of the arms I, carrying valves i i, the sliding bar J, valves l l on the return pipes, arms j j, and lever K, substantially as and for the purpose described.

4. The tapering pipes or connections G G, combined with the heating apparatus of a cheese-vat, and constructed and arranged substantially as described.

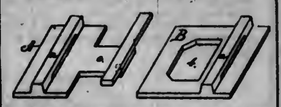
5. In a heater for cheese-vats, the cape or chambers H, having tangent openings h h, in combination with the connections G G, as shown and described, for the purpose set forth.

161,177. BALE-TIES. Richard Terrell, New Orleans, La. [Filed Mar. 4, 1875.]



The bale-tie herein described, consisting of the plate A, provided with bars b b', sides a a', and cleats or hooks c c', as described, and for the purpose specified.

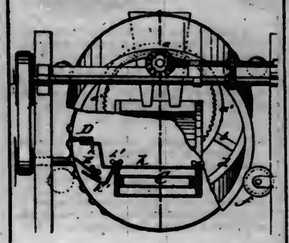
161,178. BALE-TIES. Richard Terrell, New Orleans, La. [Filed Mar. 4, 1875.]



A bale-tie consisting of two sections, A and B, the former provided with a raised bar, a, and tongue c, and the latter with raised bar a and slot b, as described, and for the purpose specified.

161,179. GRAIN-SEPARATORS. W. Toepfer, Milwaukee, Wis. [Filed Jan. 18, 1875.]

Brief.—Vibrating shoe within rotating cylinder carries with it an adjustable brush for cleaning the pockets of cylinder, and an adjustable blade for delivering into a trough attached at the side of shoe.

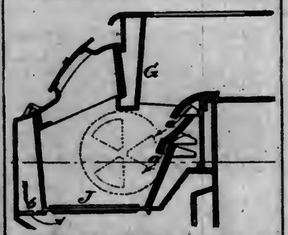


1. The combination of the brush D, its adjustable slotted supporting-arms A, the binding-screws b', and the sleeve-frame C, substantially as and for the purpose described.

2. The inclined adjustable blade E attached to and moving with trough E', substantially as and for the purpose described.

161,180. COOKING-STOVES AND RANGES. Wm. B. Treadwell, Albany, N. Y. [Filed Jan. 9, 1875.]

Brief.—The fire-chamber is surrounded on all sides by air-chambers.



The air-chamber G above the fire-chamber, and communicating with the end air-chambers F F', provided with registers F, in combination with the front air-chamber E, having at its bottom perforations b, and back air-chamber E', provided with air-passages a a, substantially as described.

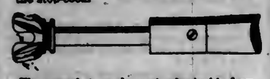
161,181. BOX-SCRAPERS. A. W. Tuckerman, Boston, Mass. [Filed Feb. 3, 1875.]

Brief.—Two quadrangular adjustable and detachable blades are arranged upon one head-stock, at an obtuse angle to each other, so that when one of the cutting-edges becomes dulled, another may be readily substituted.



The box-scraper described, consisting of the shank B, provided with the head-stock C and cutting-blades d d, constructed and arranged to operate substantially as and for the purpose specified.

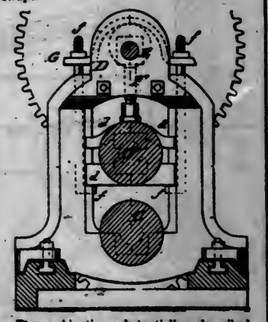
161,182. GAS-WRENCHES. S. B. H. Vance, New York, N. Y. [Filed Mar. 1, 1875.]



The wrench A, made semi-spherical in form, with cross-notches a' in its edge, and with ribs a' upon the inner or concave surfaces of its segments, substantially as herein shown and described.

161,183. MACHINES FOR ROLLING TAPERED BARS. T. R. Veasey and Richd. Rowley, Cumberland, Md. [Filed Jan. 11, 1875.]

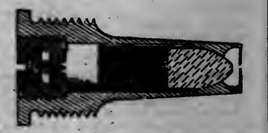
Brief.—The journals of the upper roll are arranged in sliding bearings, which are supported upon gibs attached to the eccentric straps. The eccentrics act upon steel pins arranged in the sliding bearings, to push the roll downward, said roll being elevated again when the eccentrics act upon the arched straps.



The combination, substantially as described, of the sliding journal-carriages d, that support upper roll, gibs f, pins F, and the eccentrics E', revolving in yokes or straps G, for the purpose set forth.

161,184. SHELL-FUSES. Rudolph L. Walter, Washington, D. C., assignor to Wm. A. De Caindry, same place. [Filed Dec. 10, 1873.]

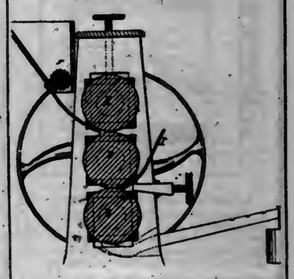
Brief.—The firing-pin is adjustable, so as to be withdrawn into the cap, to insure safety in handling or transportation. In use it is screwed down and projects through said cap, to serve as a means for igniting the cartridge by concussion.



1. The combination of an ordinary center-primed metallic ball-cartridge, c, with a fuse-plug, A, arranged and operated in the manner substantially as and for the purposes described.

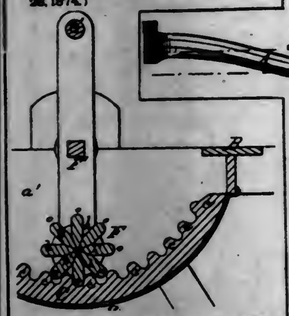
2. The firing-pin c, substantially as described, when used in combination with a fuse-plug and metallic cartridge.

161,185. MACHINES FOR CRUSHING GRAIN. Cadwallader C. Washburn, Madison, Wis. [Filed Mar. 13, 1875.]



The combination of the rollers B K L, arranged one above the other, feed-hopper P, and chute l, all constructed to operate substantially in the manner as and for the purpose specified.

161,186. WASHING-MACHINES. Thomas J. Webster, Humboldt, Kans. [Filed Nov. 28, 1874.]



The combination, with the hangers e of the rotating dasher and squeezer F, and with the vertical sides a' of soda-box A, of the grooved pulley-wheels C, upon the ends of the rock-shaft f', substantially as specified

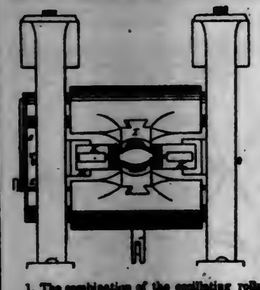
161,187. METHODS OF ENAMELING MOLDINGS. Albert C. White, Brooklyn, N. Y. [Filed Mar. 1, 1875.]



The described method of enameling moldings, consisting, essentially, in tapering off the layer or covering of enamel toward the bottom of the recesses or grooves by means of suitably-constructed gages A', whereby a reduced thickness of enamel is presented to the action of the plane, and the splitting off of the edges prevented, substantially in the manner and for the purpose set forth.

161,188. ROLLS FOR FORMING THE EYES OF PICKS, &c. Wm. Westenhagen and John Bexler, Pittsburg, Pa. [Filed Jan. 12, 1875.]

Brief.—Pivoted between the journal-bearings of the two oscillating rolls are two segments, operated from a rock-shaft that receives its motion from a lever fixed to the lower roll. Suitable dies fitted in the upper and lower rolls, together with those on the pivoted segments, form the die-box in which the eye of the pick is drawn down and formed. A mandrel is inserted in the blank. This mandrel is provided with a loose collar that is struck to release the blank.



1. The combination of the oscillating rolls or die-carriers C C', geared by segments E, and driven by suitable power, and the lateral pivoted dies K K, the latter operated from the former by means of rock-shaft L and rods or arms h h, substantially as specified.

2. The combination of oscillating rolls or die-carriers C C' having dies I I, pivot-bearings H H, having dies K K, and suitable mechanism for operating the same, substantially as and for the purpose specified.

3. Mandrel N, provided with a sliding stripper, n', substantially as and for the purpose specified.

161,189.



161,189. CARRIAGE-BOW RESTS. Wm. H. Yeager, Lawrence, Kans. [Filed Jan. 30, 1875.]



The combination, with prop-bolt C and back-bow F, of the arm A and links G H, the said arm having a hub, B, with shoulders I J and stop K, as and for the purpose specified.

161,190. WELL-REAMERS. Wm. Young, Troy, Iowa. [Filed Nov. 6, 1874.]

Brief.—An outer revolving cylinder is provided with reamers to cut at different distances from the center, and is combined with an interior bucket, which receives the earth. The ball of the outer bucket is pivoted eccentrically at one side, the other being supported by a rod concentric with the pivot, the object being to rotate the ball out of the way of the inner bucket by reversing the motion when it is desired to raise said inner bucket.



1. A well-reamer consisting of the revolving cylinder A and cutters B B', substantially as described.

2. The cutters of a well-reamer, when constructed to cut at different distances from the center and in different planes, substantially as described.

3. The combination of the cylinder A, with a removable ball and the bucket C, substantially as described.

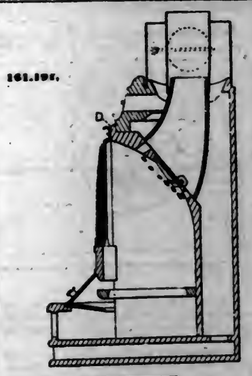
161,191. FIRE-PLACES. W. P. Abendroth, Port Chester, N. Y. [Filed Oct. 26, 1874.]

Brief.—When the damper is closed, the products of combustion are brought in contact with the wall of the conical flue. The flange prevents the escape of gas from the fire-place into the hot-air chamber.

1. The combination, with a fire-place, of the dome-shaped hood, provided with the rib or flange D, substantially as and for the purpose described.

2. The dome-shaped hood over the grate, provided with a rib or flange that surrounds the arch, to project over the face of the front plate, substantially as described, and for the purposes set forth.

161,192.



161,192. COPY-SLIPS FOR TEACHING PENMANSHIP. Campbell Allen, Albany, N. Y. [Filed Aug. 26, 1874.]

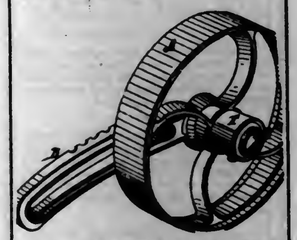
Brief.—The copy-slip being transparent enables the pupil, after copying it, to place the slip over the imitation to discover errors.



A transparent copy-slip, combined with a frame or border, substantially as herein described.

161,193. FLOW-WHEELS. David Allen, Allegan, Mich., assignor to Jno. M. Heath, same place. [Filed June 18, 1874.]

Brief.—The wheel-spindle is rigid with the standard, and has grooves on outer end, into which fits a spar of the sleeve, to prevent the latter from turning on the spindle. A flange covers the inner end of the hub, and a cap the outer end, leaving the wearing joints entirely protected.

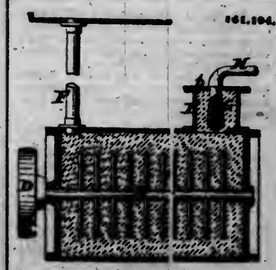


In combination with the curved and slotted standard B, with flange C and recessed arm D rigidly attached thereto, the chill E, extending partially through the hub, and having spur d, wheel-hub F, and cap G, attached to, and revolving with, the hub, substantially as and for the purposes herein set forth.

161,194. FILTERS. Christian Anderson, Brooklyn, N. Y. [Filed Sept. 21, 1874.]

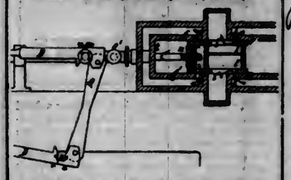
Brief.—Has an agitator and a dome arrangement for receiving the strainer of the discharge-pipe, and thus preventing floating particles of the filtering material present in the liquid from flowing out of the vessel into and through the discharge-pipe.

161,184.



In combination with a filtering-vessel having an agitator, as described, a dome, E, rising from such vessel, for receiving the strainer G of the discharge-pipe, and for supplying the vessel with filtering material, substantially as described.

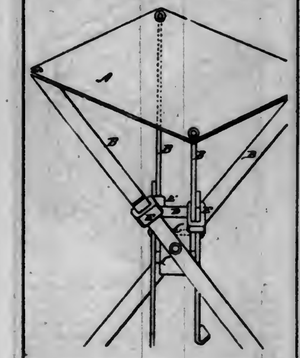
161,185. VALVE-GEARS. Frank H. Ball, Foxburg, Pa., assignor to Brainard T. Ball, Buffalo, N. Y. [Filed Apr. 24, 1874.]



1. The combination, with the recessed eccentric rods D D and studs e e', of the double-wedge-shaped bar Q, arranged between said studs and connecting the ends of the eccentric rods, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the eccentric rods D D, provided with recesses p, of the bearing-pins r and set-screws s, substantially as and for the purpose hereinbefore set forth.

161,196. STOOLS AND SEATS. H. Beagle, Philadelphia, Pa. [Filed Dec. 10, 1874.]

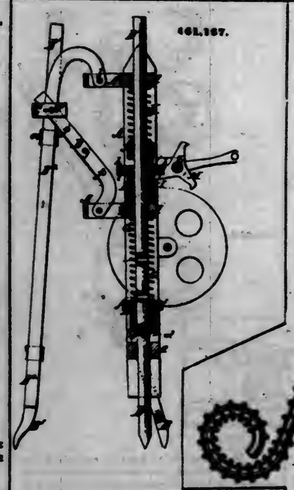


The combination of the seat A, jointed metallic legs B B, pivots C C, block D, and sliding collars E E, substantially as shown and described.

161,197. ROCK-DRILLING MACHINES. J. A. Beamisderfer, Campbelltown, Pa. [Filed Feb. 26, 1875.]

Brief.—The lifting and turning collar of the drill-rod is fastened and released through the intervention of the long wedge

161,197.



1. The combination, with the turning and lifting-collar H of rock-drills, of the wedge I for fastening and releasing said collar, substantially as herein described.

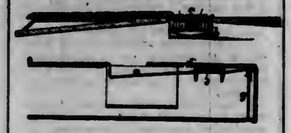
2. The combination of the revolving collar H, the revolving drill-rod D', the sliding wedge I, the spring-stop J, and the lifter M, substantially as and for the purpose described.

3. The combination of the revolving ratchet f, having a notched collar, E, the stop-bar F, revolving drill-rod D', having an adjustable pin, d, the springs G and K, the revolving, turning, and lifting collar H and wedge I, substantially as described.

4. The sectional extension-bar B' and B², hinged to the drill-frame, in combination with the bracing-support D, hinged to the machine, and the screw-clamp C and C', substantially as described.

161,198. TEMPORARY BINDERS. H. A. Bohn, Jr., Troy, N. Y. [Filed Sept. 12, 1874.]

Brief.—Binding-wires are separated by partitions, their inner ends bearing on the back, while their outer ends catch over the plate. By means of hinged cross-piece and slide, the wires are held in position. Covers are constructed wedge-shaped, thicker at their outer edge, so as to prevent them from warping out of shape.



1. The springs c, having their inner ends bent so as to press or hold the papers or music down upon the back b, and their outer ends to catch over the top of the plate g, substantially as set forth.

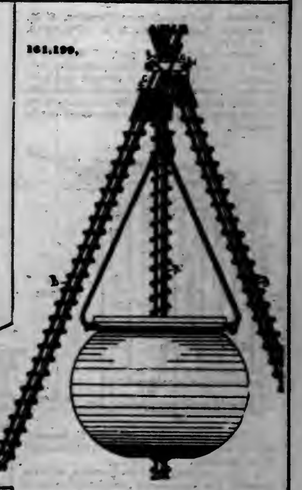
2. The springs c, bent as shown, in combination with the partitions c, substantially as shown.

3. The combination of the springs c, partitions c, cross-pieces 3, and plates b, substantially as described.

4. In a temporary binder, the covers c, having an increased thickness on their inner sides, which is greatest at or near their outer edges, substantially as shown and described, and for the purposes set forth.

161,199. WIRE STANDS. Josiah H. Bigelow, Worcester, Mass., assignor to the National Manufacturing Company, same place. [Filed Feb. 26, 1875.]

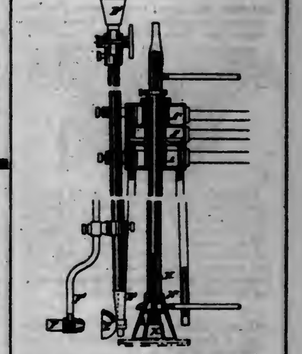
161,199.



1. A wire stand constructed of wire-covered wire, such as herein described, and having the shafts B formed with shouldered necks e, produced by divisions of the covering-wire, and connected by links g, encircling the necks between the shoulders f, substantially as described.

2. The link g, constructed as described, in combination with necks e, and the shoulders f of the shafts B, of said wire-covered wire, and connecting the shafts, substantially as described.

161,200. SOLDERING-MACHINES. Wm. D. Brooks, Baltimore, Md., assignor to Mary C. Brooks and Geo. D. Brooks, same place. [Filed Mar. 16, 1875.]



1. The elastic pipes B, and apertured sliding ring C c, combined as described, to allow of adjustment to different sizes of can.

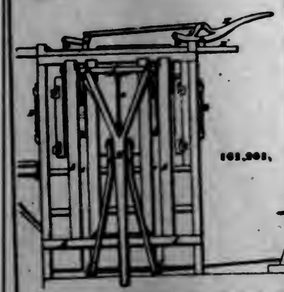
2. The combination, with nozzle D², of the bowl E, and blow-pipe F F', arranged as described, to fuse the solder quickly, and cause it to flow through said nozzle upon the joint of can.

3. The air-injecting tube H, protector G, and water-chamber H', combined, to keep the cap from injury by the heat.

4. The hollow plug K, having side apertures k, combined with the air-injecting tube H, to force the air out upon the inner face of protector G, in the manner and for the purpose set forth.

161,901. HAY AND COTTON PRESSES. H. K. Burnett, Poughkeepsie, N. Y. [Filed Feb. 10, 1875.]

Brief.—The detached part of the side is held up by depressing a lever operating bell-cranks. When the bale is pressed the lever is raised, thereby allowing the detachable side to slide downward, whereby the bale is released from pressure, and room made for its removal.



161,901.

1. The combination of the lever E, braces I and G, rod b, and the follower F, substantially as described.

2. The construction of the frame A, with its movable side M, grooves g', and blocks o, doors B, and hinged platform or tables C, and top frames D, moving in the guides E', substantially as set forth.

3. The bell-cranks S and connecting-rod f, in combination with the lever H, for the adjustment and support of the side M, substantially as specified.

4. The combination of the capstan L, ratchet f', slotted lever P, with the projections d' and g'', the lever E, and the rod b', substantially as shown.

5. The combination of the frame of a hay-press with a movable side or section, whereby the bale can be loosened, so as to be readily removable from the frame, substantially as described.

6. In combination with a capstan, L, a slotted lever, P, and a ratchet, f', substantially as set forth.

161,902. MACHINES FOR MAKING CURVED EARTHENWARE PIPES. H. B. Camp, Cuyahoga Falls, Ohio. [Filed Mar. 24, 1874.]



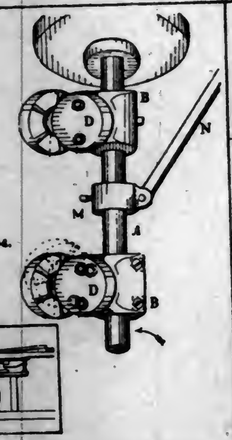
The combination, in a machine for making pipe of plastic material, by pressing it through an annular orifice between an outside hollow die, and a core of a plate having an orifice of a shape conforming to the size of the pipe to be made, said plate having a beveled edge, and surrounding the mandrel, and interposed between the head of the receiver and the hollow die, substantially as described.

161,903. COMPOUNDS FOR COATING LEATHER. J. Carmody, New York, N. Y. [Filed Nov. 10, 1874.]

As a coating for leather, animal blood from which the clot has been removed, substantially as described, for the purpose specified.

161,904. SAND-PULLEYS. John Charlton, Philadelphia, Pa., assignor to Geo. V. Cresson, same place. [Filed July 31, 1874.]

Brief.—A sleeve, adjustable longitudinally and axially on a suspended rod, has on a vertical face a disk revolving by means of pins working in a circular groove. A projecting arm from the disk has a pulley revolving on it. A brace is pivoted to a similar sleeve, for adjustment.



161,904.

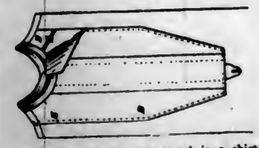
1. The guide-pulley head B, encircling the suspended rod A, and having universal lateral adjustment thereon, substantially as and for the purpose set forth.

2. The guide-pulley head B, fitted on the rod A, and sliding and rotating thereon for purposes of both universal vertical and rotary adjustments, substantially as described.

3. The guide-pulley head B, with cavity C, in combination with the disk D, with screws J, having their heads fitted in said cavity, and operating substantially as and for the purpose set forth.

4. The sleeve M, adjustable upon the pulley-hanger rod A, in combination with the rod N, jointed to said sleeve, substantially as and for the purpose set forth.

161,905. SHIRT BOSOMS. Robert Truett, Troy, N. Y. [Filed Apr. 8, 1873.]

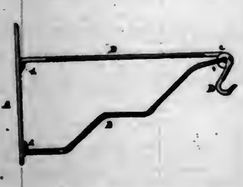


1. The welts S S, interposed in a shirt-bosom between the shoulder-pieces and a line drawn across the bosom at the front of the neck-band, as shown and described.

2. A shirt-bosom composed of two or more plies or thicknesses of cloth in the main part, and of a less number in the upper portions of the extensions of the bosom, as shown and described.

3. The stiffening-welts S S, and the shirt-bosom B, composed of varied thicknesses, in combination, and placed in the relation to each other shown and described.

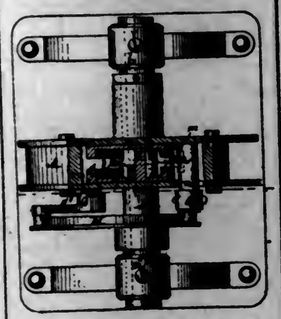
161,906. BIRD-CAGE HOOKS. Jas. Comly, Philadelphia, Pa., assignor to Feigl, Stulb & Co., same place. [Filed Jan. 16, 1875.]



1. The plate A, with openings a and grooves c, in combination with the wires B, entering the openings and secured therein, and formed with heads d, entering the grooves c, substantially as and for the purpose set forth.

2. The combination, with one wire formed with the hook or eye c, of the other wire continued into an eye, C, and hook D, and operating as set forth.

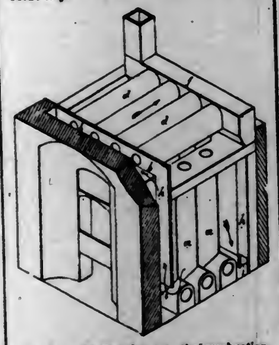
161,907. ROTARY ENGINES. Herbert Cottrell, Newark, N. J., assignor to Cottrell & Taylor, same place. [Filed Aug. 11, 1874.]



The stationary eccentric C, forming a fixed abutment within the cylinder A, and constructed with an induction and eduction compartment, and with an induction-port, m, narrower at the point where it first takes steam and broader where it ceases, to admit a greater volume of steam, as described, in combination with the rotating cylinder, swinging pistons, and hollow shaft having induction and eduction passages, substantially as set forth.

161,908. HOT-AIR FURNACES. J. W. Crary, Philadelphia, Pa. [Filed Dec. 14, 1874.]

Brief.—The air-heating pipes are of unburnt clay.



1. In a heating-furnace, the combustion-chamber B and air-heating pipes a of clay, arranged at the sides, back, and top of said combustion-chamber, and combined with the surrounding air-space x and hot-air chamber D, all substantially as and for the purpose set forth.

2. The combination, in a heating-furnace, of a combustion-chamber, B, flues or passages communicating with the chimney, and openings i, forming communications between said flues and the combustion-chamber near the lower corners of the latter, as and for the purpose set forth.

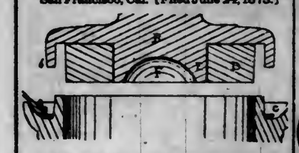
3. The combination of the passages b and f, the connecting-pipes d, vertical flues A, having openings i, and exit-flue j, communicating with said passage f, all as and for the purpose set forth.

161,909. BAG-FASTENERS. J. A. Danielson, Calumet, Mich. [Filed Feb. 12, 1875.]



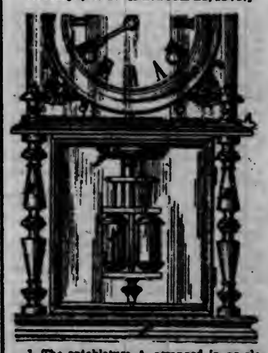
The combination of the shanks A A', pivoted together, and provided with the guide-segments B B', toothed jaws C C', collar D, and spring E, as and for the purpose set forth.

161,910. FRUIT-JARS. Pierre F. Darche, San Francisco, Cal. [Filed June 24, 1873.]



The fruit-jar A, provided with the groove C, and having its inner wall k extending above the outer wall i, in combination with the cork D and cover B, provided with the outer flange b and inwardly-projecting portion E, whereby is secured an inside and an outside sealed joint, substantially as and for the purpose set forth.

161,911. CLOCK-CASES. Henry J. Davies, Brooklyn, N. Y. [Filed Jan. 28, 1875.]



1. The entablature A, arranged in an elevated position, and constructed to receive and support the clock-work, and the glass shade, arranged over and inclosing the clock-movement, as and for the purpose described.

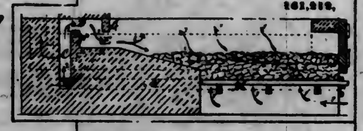
2. The elevated entablature, constructed to receive and support the clock-movement and the glass shade inclosing said movement, the pendulum of the clock passing downwardly through said entablature, and vibrating within a case below the entablature, as and for the purpose described.

161,912. FURNACES FOR GAS-RETORTS. D. Davison, New York, N. Y. [Filed Mar. 27, 1874.]

Brief.—The flue for introducing air above the fuel has a guarded opening, formed by an upward-extending bridge, a top plate, and a downward-extending bridge, which prevent the passage being choked by fuel.

The combination of the draft air flues A B C D in the brick work surrounding the furnace of the oven for heating retorts for the manufacture of illuminating-gas, combined with the bridge F, the bridge G, and the cap-tile H, forming opening E at the back of the furnace, the whole to be operated, in combination with the furnace, the oven, and the retorts contained therein, substantially as and for the purpose herein described.

161,912.



161,913. BENCH-PLANES. Asahel H. Dean, Philadelphia, Pa. [Filed Jan. 30, 1875.]

Brief.—The bit can be readily withdrawn, replaced, and adjusted by means of a lever-clamp, provided upon one side with a ring, fitting in a segmental recess in one of the cheeks of the body of the plane, and upon the other side with a segmental projection, adapted to a circular opening in the other cheek. To prevent the bit from slipping it is caused to bear directly upon a suitable projection upon the wooden handle.



1. A plane in which the bit is confined to its bearings by a lever-clamp, H, constructed for connection to, and lateral withdrawal from, the frame or body of the plane, substantially in the manner described.

2. The clamp H, its set-screw d, projection e, and ring f, in combination with the cheek B, having an opening adapted to the said projection, and the cheek B', having a segmental recess adapted to the said ring, all substantially as set forth.

3. A plane having a metal body or frame, a wooden handle, and a retaining-screw, or its equivalent, between which and the handle the plane-bit is clamped, all substantially as described.

161,914. REAMERS FOR SHOT-GUNS. F. A. Deland, Memphis, assignor of one-half his right to A. C. Harrington, Lapeer, Mich. [Filed Dec. 30, 1874.]

Brief.—A conoidal reamer, the cutting-edges of which are disposed at various angles to its axis.

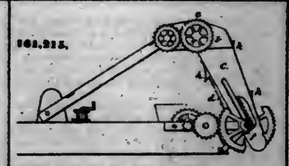


The truncated conical reamer A, having its flutes or cutters a disposed at various angles, substantially as and for the purpose set forth.

161,915. PEAT-CUTTERS. Benj. J. Denton, Oswego, N. Y. [Filed Jan. 21, 1875.]

Brief.—The elevating apparatus consists of a frame suspended by arms from the driving-shaft above, and can be raised and depressed together with the driving-gear and elevator-buckets. Adjustable cutters are attached to the elevator-belt and buckets, and are perforated to allow the water to drip off.

161,915.

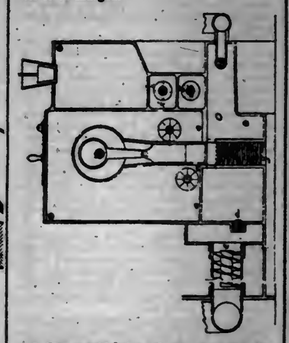


1. The elevating apparatus, consisting of a frame, a, suspended to arms b centered at the driving-shaft c, together with the driving-gear for moving the elevator-buckets A while elevating or depressing the frame a, substantially as and for the purposes set forth.

2. The combination of the adjustable cutters a and scoring-cutters i with the elevator-buckets A for cutting peat, in the manner and for the purposes specified.

161,916. APPARATUS FOR CHARGING A STREAM OF WATER WITH CARBONIC-ACID GAS. Humphrey B. Dunham, Newark, N. J. [Filed Nov. 18, 1874.]

Brief.—A stream of water is charged with carbonic-acid gas while passing through the discharge-pipe or hose. The generating and charging mechanism is operated by the water to be charged.



1. The combination of an apparatus for charging water with carbonic-acid gas, and a pipe so arranged in connection with said apparatus that a stream of water flowing through said pipe may be mixed with water charged with carbonic-acid gas, and discharged on a fire, substantially in the manner and for the purposes set forth.

2. The combination of a water pipe or hose, provided with a water-wheel and gear, caused to revolve by the force of the water passing through a reservoir for marble-dust, or such like substance; and a reservoir for acid, provided with such mechanism, operated by said wheel, that charges of said marble-dust are mixed with sulphuric, or other suitable acid, and water, to charge the latter with carbonic-acid gas, and the mixture discharged into the said water pipe or hose, for the purposes set forth.

3. The combination of a water pipe or hose, through which water is forced by pressure, and an apparatus connected to it by a discharge-pipe, and an inlet-pipe for admitting water to said apparatus, all arranged in such manner that a stream of water may be charged with carbonic-acid gas and water by mechanism substantially as set forth.

161,917. ROAD-ENGINES. Geo. T. Ellis, Oswayo, Pa., assignor of one-half his right to H. Lord, same place. [Filed Jan. 23, 1875.]

Brief.—Boiler always self-adjusted horizontally. Power communicated by straight gearing to engine-shaft, which operates every wheel in the train. Wheels fixed or made to revolve freely on axle while running, at will of operator. Revolution of driving-shaft regulated without affecting that of engine-shaft. Steering-wheel axles pivoted, so that on striking obstacles no leverage is exerted against pilot. Subordinate improvements set forth in claims.

1. The combination of the pilot-wheels, the rigid part of the axle, and the movable parts of the axle, pivoted to such rigid part, and having the wheels attached to their outer ends, while to their inner ends power may be applied from the steering-wheel, substantially as set forth.

2. The combination of the pilot-wheel, the rigid part of the axle, and the movable part of the axle, pivoted to the rigid part in the line of draft of the wheel, substantially as and for the purposes set forth.

3. The combination of the movable parts of the pilot-wheel axles with the guide-plate K^2, bars K^1, and steering-wheel H, substantially as and for the purposes set forth.

4. The combination, in a locomotive carriage, of driving-wheels and axle with a longitudinal driving-shaft and a rotary engine, having its axis longitudinally of the carriage, so that the power can be applied to the driving-wheels directly from the engine-shaft, or from a shaft connected to the engine-shaft by straight gearing, substantially as set forth.

5. The combination of the engine-shaft with the parallel driving-shaft I I^2 and the friction-wheel gearing, for communicating motion from one shaft to the other, substantially as set forth.

6. The set of pulleys of different sizes on the engine-shaft, combined with the set of similar pulleys on the driving-shaft, and the set of adjustable intermediate friction-wheels, by which the power or speed of the driving-shaft can be varied at will without varying the power or speed of the engine-shaft, substantially as set forth.

7. The combination of driving-wheels and axle with a driving-shaft passing above or below the axle, and communicating power by means of a crown-wheel and beveled oblique-toothed gearing, for the purpose of driving the carriage, substantially as described.

8. The combination of the carriage-frame, the driving-wheels and axle, the longitudinal driving-shaft, operated directly from the steam-engine, and the crown-wheel and bevel-gear, to apply the power at the front edge of the crown-wheel, for the purpose of lifting the carriage-frame on its bearings on the axle while the carriage is running, and by the power applied to drive the same, substantially as set forth.

9. The combination of the driving-wheels and axle, the longitudinal driving-shaft, and the two bevel-gears, the driving-shaft being capable of sliding endwise, so as to apply the power to the front edge of the crown-wheel, whichever way the carriage may be moving, substantially as set forth.

10. The combination of driving-wheels, driving-shaft, and sliding-clutch connection, by which the wheels can be made to run with the shaft backward or forward, or independently on it, substantially as set forth.

11. Driving-wheels combined with their axles, actuating mechanism, and attaching or detaching devices, constructed to permit the wheels to rotate with the axle, or to be liberated and rotate freely thereon while the vehicle is in motion, all substantially as set forth.

12. In a locomotive or other carriage having a driving-axle and driving-wheels connected by a sliding clutch, the rods M M, combined with the elbow-levers, substantially as and for the purposes set forth.

13. The combination of two or more carriages with the crossed rods M M, connected to the sliding clutches that lock the driving-wheels to their shaft, for the purpose of enabling the movement of the carriages themselves to unlock and liberate the wheel on the inner side of the curve, substantially as set forth.

14. The combination of the divided and pivoted pilot-wheel axle and the steering apparatus with the rods M M and the driving-wheels, axle, and clutches, by which the same movement of the steering-wheel that changes the course of the pilot-wheels also unlocks and liberates the driving-wheel on the inner side of the curve, substantially as set forth.

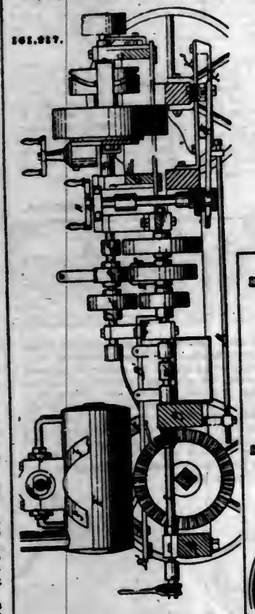
15. The combination of two or more carriages with a single longitudinal driving-shaft common to all the carriages, for the purpose of driving the same, substantially as described.

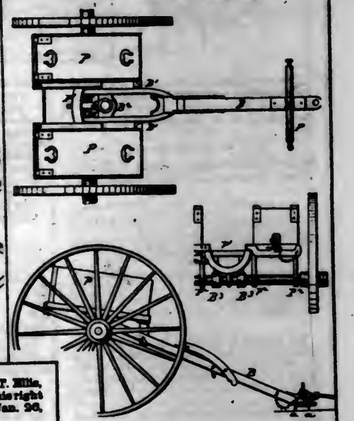
16. In a locomotive, a boiler and furnace combined with axle suspended by a gimbal or universal joint, so as to swing automatically to a horizontal position in any direction, substantially as set forth.

17. The oscillating cross-head $f f f f$, combined with the boiler and furnace, and with the feed-water and steam pipes, substantially as and for the purpose set forth.

18. The plug or block P, combined with the tube p, the oscillating cross-head, and the steam or water pipes, substantially as and for the purpose set forth.

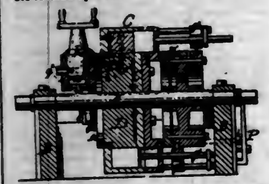
161,917.





161,918. ROTARY ENGINE. Geo. T. Ellis, Oswayo, Pa., assignor of one-half his right to H. Lord, same place. [Filed Jan. 26, 1875.]

Brief.—The outer cylinder is cast in one piece, and revolves on a stationary center. One side of the cam-groove is made adjustable to take up wear.



1. A rotary engine having a revolving cylinder, C, constructed in one piece, combined with the fixed center D and independent abutment E, substantially as and for the purpose set forth.

2. In combination with the fixed center D and rotary cylinder C, the inner packing-ring n, working in a rabbet of the fixed center, and the outer ring M, held against the inner one by adjustable springs O, substantially as described.

3. The combination of the independent abutment E, with the center D, secured by means of the pin e in the elongated recess e', substantially as and for the purpose described.

4. The independent abutment E, combined with the sheet or plate metal packing s, applied around the rear wall and sides of the abutment in the cylinder C, substantially as described.

5. The independent abutment E, combined with the packing-strips $s s$, held in grooves or recesses in the proximate faces of the abutment and cylinder, substantially as described, to prevent steam from passing under the abutment.

6. The springs l^2, combined with the shaft A, the cylinder C, and the fixed center D, substantially as described, for the purpose specified.

7. The plug-valve R, having the cross-way r, the circumferential recess r^1, and vertical recess r^2, combined with the steam-pipe q^2, exhaust r^3, and ports or passages q q^1, substantially as and for the purposes set forth.

8. The combination of the fixed part H and the adjustable plate H^2, composing the cam, substantially as and for the purposes set forth.

161,919. CARRIAGES FOR FIELD-GUNS. W. B. Franklin and Chas. B. Richards, Hartford, Conn., assignors to Colt's Patent Fire-Arms Manufacturing Company, same place. [Filed Jan. 7, 1875.]

Brief.—Consists generally in details of construction whereby the carriage is composed principally of light wrought metal, and in an arrangement of caissons upon the same carriage with the gun, adapted to be tilted out of the way when the gun is to be fired.

1. The trail of a gun-carriage, constructed from I-shaped wrought metal, substantially as described, and combined with a tip and means for attachment to the axle of the carriage.

2. In combination with the trail and axle of a gun-carriage, the piece B, constructed to form the socket B^4 and ears B^3, substantially as and for the purpose described.

3. The tip for the trail, consisting of the transverse socket C, the shoe D, and the loop E, constructed substantially as described.

4. The hand-bar F, removably arranged in a recess beneath the trail, substantially as and for the purpose described.

5. A gun-carriage caisson-frame, constructed from angle or L-shaped metal, arranged in the manner described, to receive and secure the caisson, substantially as described.

6. The bar F^1, constructed with ears F^2 for attachment to the axle, combined with frames fixed thereon for the support of the caissons, substantially as described.

7. In a gun-carriage, the arrangement of the caisson-frame to be turned down forward of the pintle of the gun, substantially as described.

8. In a gun-carriage, the arrangement of the caisson-frame to be turned down forward of the pintle of the gun, combined with means, substantially as described, for holding said frame when so turned down forward, and to the trail when returned.

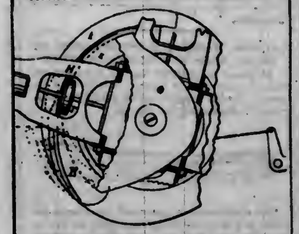
9. The combination of the frame for supporting the caisson F, and the hinged bar H^1 provided with stud or studs a, substantially as described.

10. A gun-carriage caisson, constructed with longitudinal pockets opening to the end of the caisson, substantially as described.

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161,920. HARVESTER-RAKES. M. F. Gibbs, Livonia, N. Y. [Filed Oct. 20, 1874.]

Brief.—The reel and rake arms are provided with radially-adjustable rollers, which are directed to the upper or lower track by a movable switch, thus changing them to rakes or besters.



1. In combination with the roller r, having a lateral adjustment parallel to its axis, and tracks k and k', the hinged switch B forming a portion of the track over which the roller passes, all constructed and operating substantially as shown and described.

2. The reel-arms H, provided with the locking-pins j, and the radially-adjustable rollers r, in combination with the hinged switch B, for the purpose of locking said switch while the arm and roller is passing over it.

3. In combination with the arms H, and traverse-rollers r, the locking guard or disk G, for the purpose of holding the rake upon the platform while it is required to act as a rake, as set forth.

161,921. ELEVATORS. Andw. Goodyear, Albion, Mich. [Filed Oct. 14, 1874.]

1. The combination, in a self-loading manure-wagon, of an independently operative fork and scraper, for simultaneously taking up the long and short staff, substantially as set forth.

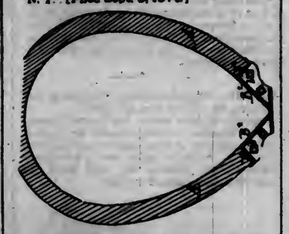
2. The independently operative fork or scraper, in combination with the lifting-chains H H^1, whereby the scraper or fork may be lowered and inclined to take on a load, and raised for carrying it away, substantially as set forth.

3. In combination with the fork or scraper and chains H H^1, the eye H^3 and hooked latch G and disengaging-arm L', substantially as set forth.

4. In combination with the fork or scraper and chains H H^1, respectively attached thereto in front and rear, the shaft I and sleeve I^1, for communicating a more rapid movement to the points in rising or falling, substantially as set forth.

5. In combination with the fork or scraper, the blocks K and guides K^1 and friction-wheel K^2, arranged in such relation to each other that when the former are taking on a load the latter shall be below and out of contact with the guides, substantially as set forth.

161,922. SEWERS. L. A. Cocoh, Yonkers, N. Y. [Filed Sept. 3, 1874.]



A sewer composed of an iron girder constructed with a base, B^1, inclined sides B^2, and flanged supporting-surfaces B^3, in combination with a superincumbent arch of masonry, substantially as herein described.

161,923.



161,924.



161,925. CAR-WHEELS FOR TRAM-ROADS. Archibald D. Griffin, Hopewell, Pa. [Filed Feb. 13, 1875.]

1. The combination of a soft-iron hub A, wrought-iron spokes B, and a rim or tread, C, cast of hard white iron without a chill, substantially as set forth.

2. The combination of the soft-iron hub A, spokes B, rim C, and ring c, whereby the spokes are secured in position without the use of bolts, substantially as set forth.

161,926. PACKING MATERIALS. Henry J. Halbert and Francis King, Baltimore, Md. [Filed June 1, 1874.]

As a packing for general purposes, the material herein described, consisting of the hoofs of animals treated by removing all fatty or oily substance, and cut or shaped to the desired size or form, substantially as set forth.

161,927. POSTAGE-STAMP HOLDERS. P. W. Hall, St. Louis, Mo. [Filed Jan. 13, 1875.]

Brief.—Stamps are arranged one upon another, and placed upon a spring follower or rest within a box, and beneath the inward-turned flanges of the latter. The box being slightly wider at its top allows the uppermost stamp to be freely fed out, while the others are retained by the contracted portion thereof.

161,928.

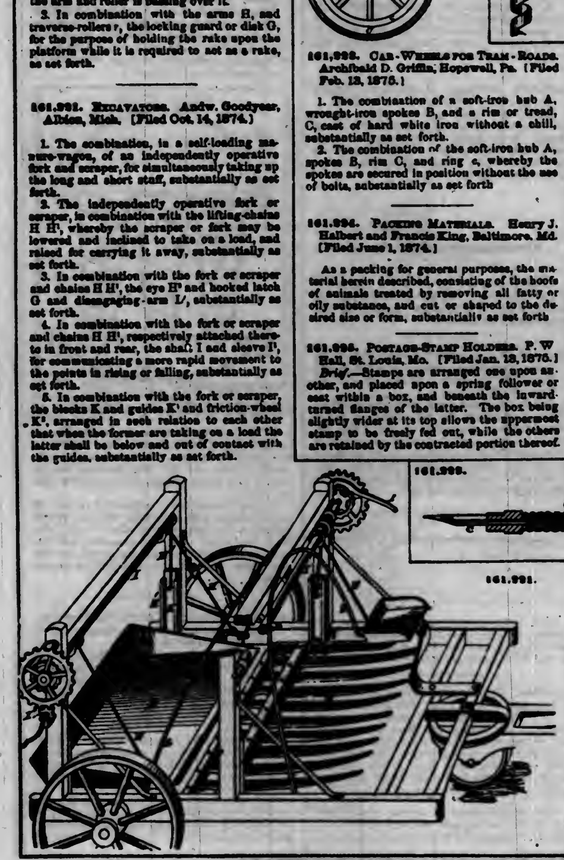


The within-described stamp-holder, consisting of the box A, provided with flanges a a, interior grooves b, and exterior ribs y, the apron C, one or more springs, D, slide B, and cover G, all constructed and arranged substantially as and for the purposes herein set forth.

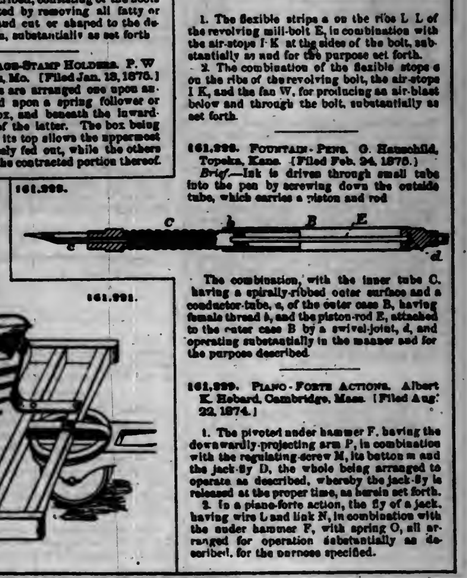
161,929. STRINGS FOR MUSICAL INSTRUMENTS. James Baillie Hamilton, Oxford, England. [Filed Nov 13 1874.]

A string for musical instruments, composed of a coiled wire or metallic strip flattened in a direction parallel with the axis of the coil, in the manner and for the object specified.

161,930.

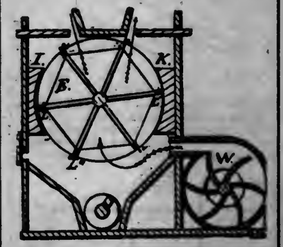


161,931.



161,932. MIDDLINGS-PURIFIERS. C. T. Hanna, Keokuk, Iowa. [Filed Nov. 1, 1872.]

Brief.—Devices for preventing the air passing between the sides of the bolt and the casing of the machine.



1. The flexible strips a on the ribs L L of the revolving mill-bolt E, in combination with the air-stops I K at the sides of the bolt, substantially as and for the purpose set forth.

2. The combination of the flexible strips a on the ribs of the revolving bolt, the air-stops I K, and the fan W, for producing an air-blast below and through the bolt, substantially as set forth.

161,933. FOUNTAIN-PENS. C. Hauschild, Topeka, Kans. [Filed Feb. 24, 1875.]

Brief.—Ink is driven through small tube into the pen by screwing down the outside tube, which carries a piston and rod

The combination, with the inner tube C, having a spirally-ribbed outer surface and a conductor-tube, a, of the outer case B, having female thread b, and the piston-rod E, attached to the outer case B by a swivel-joint, d, and operating substantially in the manner and for the purpose described.

161,934. PIANO-FORTE ACTIONS. Albert K. Hobard, Cambridge, Mass. [Filed Aug. 22, 1874.]

1. The pivoted under hammer F, having the downwardly-projecting arm P, in combination with the regulating-screw M, its bottom m and the jack-fly D, the whole being arranged to operate as described, whereby the jack-fly is released at the proper time, as herein set forth.

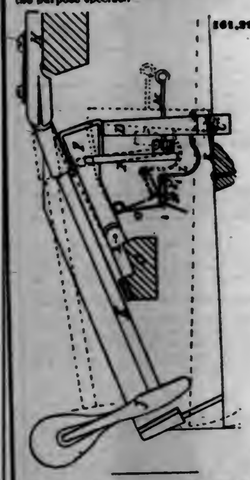
2. In a piano-forte action, the fly of a jack, having wire L and link N, in combination with the under hammer F, with spring O, all arranged for operation substantially as described, for the purpose specified.

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3. The spring E, in combination with the pivot of the fly of a jack, substantially as described, for the purpose specified.

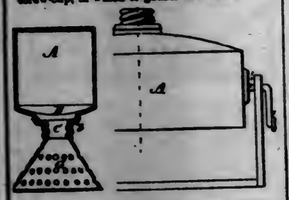
4. In combination with an under hammer, F, having the arm P and spring O, the fly of a jack, having wire L and link N, all arranged for operation substantially as described, for the purpose specified.

161,209.



161,208. CHURNS. Geo. P. Herndon, Tupelo, Miss. (Filed Jan. 19, 1875.)

Brief.—Rotary churn formed of rectangular box, with a screw inlet-pipe and a conical screw-cap, in which to gather the butter.



The combination of the rectangular revolving box A, having screw inlet-pipe C, and the perforated conical screw-cap O, all constructed substantially as set forth.

161,209. METHODS OF APPLYING CAPS TO THE HEADS OF SCREWS. Geo. Hookham, Birmingham, England, assignor of one-half his right to Alfd. Ludlow, same place. (Filed Feb. 6, 1875.)

Brief.—The screw-head is reduced in size, and the neck enlarged. A metal cap struck up from a disk, and having a slight depression or nick formed therein, is placed on the head, and firmly attached thereto by means of dies, the edges of the cap being compressed against the under side of the head, and extending to the shank of the screw. The head is then finished by turning and remicking.

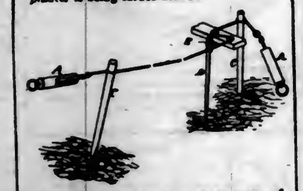


1. The method herein described of providing the heads of iron screws with a cover of brass or other ductile metal or alloy, the same consisting in applying to the screw-head, preliminarily prepared, as herein specified, a cap or covering of ductile metal or alloy, which is first compressed, fixed, and shaped on said head by pressure or stamping in a die, and subsequently finished and nicked, substantially in the manner herein set forth.

2. The series of tools or apparatus, herein-before described, and illustrated in Figs. 4, 5, 7, 8, and 9 of the accompanying drawings, to be used in fashioning the brass or other metallic cap, and for compressing, fixing, and shaping the brass or other cap or covering upon the head of the screw.

161,222. CHECK-ROWERS. V. Horne, Atlanta, Ill. (Filed Jan. 25, 1875.)

Brief.—To each end of the knotted check-rope is attached a spring-balance for regulating the amount of force applied in tightening the rope. A forked stake having a pulley is employed for holding the rope while the planter is being turned around.



1. The combination, in a check-rower, of the knotted rope B, or its equivalent, scales A A, and stakes C C, substantially as and for the purposes herein set forth.

2. The combination, in a check-rower, of the knotted rope B, or its equivalent, scales A A, stakes C C, and the forked iron stake D, with pulley E, substantially as and for the purposes herein set forth.

161,223. TRUSSES. Henry Howe, Council Bluffs, Iowa. (Filed Feb. 18, 1875.)

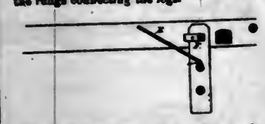
Brief.—The truss-pad rests in a socket, which is secured by a metal band to the waist-band. A coil-spring within the socket forces forward the pad proper. A pin on each side of the pad moves in side slots in the sockets, serving as a guide.



The combination of the waist-belt A, interior plate B, socket C, with band E, compress D, and a spring, G, substantially as and for the purposes herein set forth.

161,224. COT-BEDSTEADS. Otis Howe, Cambridgeport, Mass., assignor to the Howe Spring-Bed Company, same place. (Filed Nov. 11, 1874.)

Brief.—The bent arms prevent the braces from rising above the top of the bed-frame when the legs are folded up, and when the legs are turned down to support the frame the arms move with the legs, and draw the braces down into such a position that their bent ends can be readily inserted in the sockets in the rungs connecting the legs.

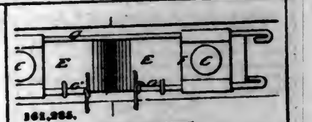


In a cot-bedstead, substantially as described, the bent arms F, in combination with the braces E, and the legs of the bedstead, as and for the purpose set forth.

161,225. NUT-LOCKS. Samuel T. Hughes, Irondale, Ohio. (Filed Oct. 10, 1874.)

Brief.—Upon the nut is placed a recessed locking-block. Upon the block an auxiliary nut of thin metal, one or more sides of which are rolled over to form loops. Through said loop, and a wire loop fixed in the locking-block, is passed a key, which again is held in place by a swivel-pin in the end of it.

The recessed blocks E, auxiliary nuts F, and keys G', in combination with the bolts C and nuts D, substantially as shown and described.



161,265.

161,226. MAINSPRINGS FOR WATCHES. G. Hunter, Elgin, Ill. (Filed Oct. 1, 1873.)

Brief.—A mainspring having a tongue cut near its outer end to engage in a suitable recess in the barrel, and act as a safety attachment of the spring and barrel.



The mainspring A, provided at or near its outer end with the tongue a, which tongue is cut from the opening a', and extends forward and slightly outward, in combination with the winding-barrel B, provided within its inner side with the engaging notch b, substantially as and for the purpose specified.

161,227. CONDENSERS FOR ICE-MACHINES. Auguste Jas, New Orleans, La., assignor of one-half his right to A. C. Janin, same place. (Filed Mar. 13, 1875.)

Brief.—The fluid to be condensed enters the upper dome, and passes through diminishing chambers in a passage through a spiral flue formed by inserting a screw into the chamber. G is a tank or chamber, through which water flows freely or under pressure.



1. The combination, in the condenser or liquefactor, of the vapor-receiving chamber, the liquid-receptacle, the intermediate connecting-tubes, and the Archimedean screws within said tubes, substantially as shown and set forth.

2. The intermediate connecting-tubes, of conical form, provided with internal spiral passages, communicating at their larger ends with the vapor-receiving chamber, and at their smaller ends with the receptacle for the condensed vapor or gas, substantially as set forth.

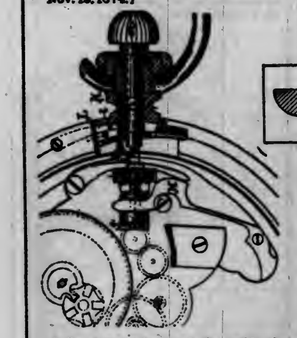
161,228. SEAMLESS MOLDS FOR ELECTROTYPES. Maurice Joyce, Washington, D.C. (Filed Mar. 8, 1875.)

Brief.—Mold is made preferably on paper or bristol-board, which is immersed in melted wax, then coated to the necessary thickness, and the design impressed or cut in. When bent to proper form the edges of the mold are soldered.

1. The process of preparing a seamless mold or matrix for producing seamless cylindrical or irregular-shaped electrotypes by putting a suitable coating upon a flexible base, and molding or cutting in the desired design while the mold is flat, then bending the mold to the desired shape, and uniting the edges by melting or soldering the coating together, substantially as described.

2. A seamless cylindrical or irregular shaped mold or matrix for producing electrotypes, consisting of a flexible base or support provided with a suitable coating, and having the desired design molded or cut into the same, with the edges of the mold united by soldering or melting the coating together, as set forth.

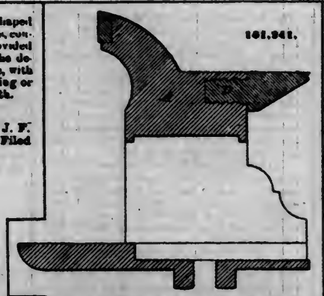
161,229. STEM-SETTING WATCHES. J. F. U. Jurgensen, Locle, Switzerland. (Filed Nov. 19, 1874.)



1. In a stem-setting watch, the combination of a sliding pin working in the stem and a ring surrounding said stem, substantially as herein described, whereby the setting mechanism is thrown into gear by pressure upon said ring transmitted through said sliding pin.

2. In combination with the cap M and sliding pin K, the spring L provided with the the projection i, whereby the setting mechanism is prevented from being operated when the case is closed, substantially as shown and described.

161,241.

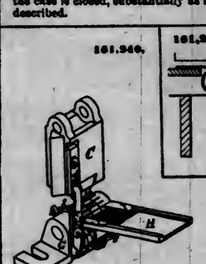


A cast-metal vise-jaw, having the anvil B formed thereon in one and the same piece with the jaw, and the wrought-metal horn C when attached to the anvil in the process of casting the jaw, substantially as described.

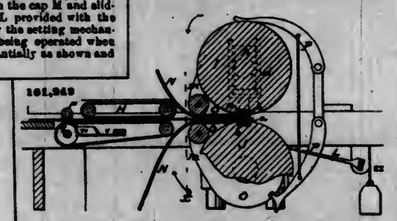
161,242. MACHINES FOR CALENDERING PRINTED SHEETS. George Kivlan, Boston, Wm. Kivlan, Cambridge, and Geo. Wood, Boston, Mass. (Filed Feb. 5, 1875.)

Brief.—Two sheets of scabboard are attached to pressing-cylinders, so as to be free at one end, and to lift from the cylinders over a cam during a portion of the revolution. The printed sheets are fed between these scabboards as they pass over the cam, are pressed between them, and the offset taken up, when the sheets are delivered to a fly, and the scabboard, released, dries itself during the remainder of its revolution.

161,240.



161,243



1. The combination, with the revolving rolls I and J, of the flexible trails N, applied to the rolls, substantially as described, for the object specified.

2. The combination of the two rolls I J, each having a trail, N, with the disks O, having cams M, substantially as and for the purpose described.

3. The combination of the endless feed-apron H, delivery-fly L, and rolls I and J, having flexible trails N, all arranged together and operating substantially as described, for the purpose specified.

161,239. MACHINES FOR FLATTENING THE SHANKS OF MACHINE-NEEDLES. Saml. C. Kingman, Bridgeport, Conn. (Filed Feb. 19, 1875.)

Brief.—An intermittingly-revolving grooved (parallel to the axis) die-wheel receives the blanks from the hopper, and carries them successively under the stamp, by which the shanks are flattened.

1. In combination with the revolving pulley F, revolving eccentric shaft D, connecting-bar E, reciprocating slide C, and flattening-stamp b, the adjustable bar d, pawl-carrier e, pawl e, spring f, ratchet-wheel g, semicircular grooved die a, die-seat G, and spring-pawl h, all constructed arranged and operated for the purpose of automatically flattening the shanks of a series of needle-blanks, substantially as and in the manner and for the object set forth.

2. The combination of the frame A, pulley F, shaft D, connecting bar E, reciprocating slide C, gibe B B', adjustable bar d, pawl-carrier e, pawl e, spring f, die a, ratchet-wheel g, spring-pawl h, and die-seat G, with the inclined hopper H, all constructed, arranged and operated substantially as and in the manner and for the object set forth.

161,244.



161,245.



161,241. VISES. Chas. L. Kingsley, Meriden, Conn., assignor to Chas. Parker, same place. (Filed Sept. 24, 1873.)

161,244. WATCH-PLATES. F. A. Lange, Glashutte, Saxony. (Filed Feb. 9, 1875.)

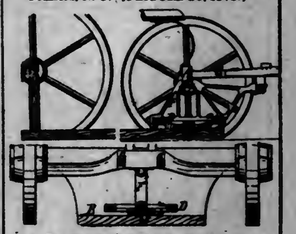
Brief.—A watch-plate provided with a slot, through which the barrel-arbor may pass, and the barrel thus be removed without raising the plate.

1. The top plate, having a slot or pathway for the removal of the barrel-arbor, extending from the outer edge of said plate to the opening through which said arbor passes vertically, substantially as set forth.

2. The spindle or arbor D, with its bearing d, combined with the top plate 2, having slot E, substantially in the manner and for the purposes set forth.

3. The combination of plate A, countersunk, as described, with spindle D, bush d, screws c, mainspring-barrel C, and back plate B, substantially as and for the purposes herein described.

161,245. WHEEL-VEHICLES. L. P. Larson, Yonkers, N. Y. (Filed Jan. 20, 1875.)

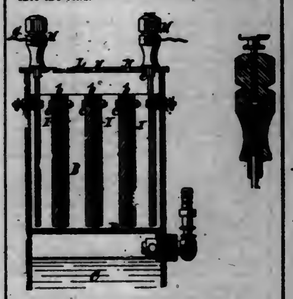


1. The combination of a frame, F, fastened to the fifth-wheel D, with the front axle connected to said frame by a hinge-joint, substantially as described.

2. The combination of the platform B with a fifth-wheel, D, resting on its upper surface, and provided with a raised frame, F, to which the front axle is connected by a hinge-joint, substantially as and for the purpose described.

161,246. GALVANIC BATTERIES. J. Lotter, Vienna, Austria. (Filed Feb. 24, 1875.)

Brief.—Cup divided into two compartments by horizontal partition. Upper compartment divided into a number of cells, containing the plates, and each communicating, through a tube provided with a cock, operated from the top of the cup, with the lower compartment, which contains the battery solution, and which has no opening in its side, through which air-pressure is applied to force the solution up into the cells.



1. In a galvanic battery, the combination of the cup A, its horizontal partition D, one or more connecting-pipes, F, stopper G, and cock E, substantially as described.

2. In combination with the partition I of the compartment E, the tie-pieces b, supporting the elements of the battery, substantially as described.

3. The combination, with the cup A, of the lid L, having the holes N, and telescopic keys M, having springs f, substantially as described.

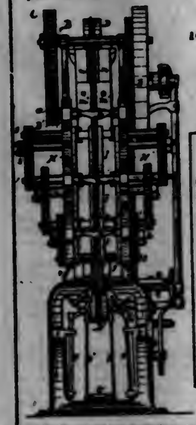
161,947. MACHINES FOR CRIMPING LEATHER FOR BOOTS AND SHOES. C. B. Long, Worcester, Mass., assignor of three-fourths his right to C. D. Parisen and J. D. Faitonte, Newark, N. J., and O. W Swick. [Filed Jan. 28, 1875.]

Brief.—The prepared stock is placed upon a form attached to an endless chain, and is passed between a series of vertical jaws, arranged one directly above the other, which are provided with right-and-left screws for positive lateral adjustment, and adapted to automatically increase or diminish their griping power by means of editable gearing actuated by weighted levers.

1. The pressure-plates I within the frames H H', provided with projections *f f'*, in combination with the right and left hand screws F', all substantially as and for the purpose set forth.

2. The presser-plates I within the frames H H', operated automatically by the right and left hand screws F', in combination with the gears 1, 2, and 3, and the weighted levers L, all arranged substantially as and for the purpose set forth.

161,947.



3. In a leather-crimping machine, a series of crimping-jaws, I, arranged one above the other, in combination with a series of levers adapted to vary the griping power of the jaws, and to act independently upon each pair of jaws, all substantially as and for the purpose described.

4. The jaws or plates I, provided with right and left threaded devices for their positive adjustment, in combination with the weighted levers L, substantially as described and shown.

5. The clamping-jaws R, provided with the stems *y y'* and levers 7 and 8, and adapted to be operated by rods *v v'*, all substantially as and for the purpose set forth.

6. In combination with the clamping-jaws R, provided with a suitable guide for direction, the cam-lever 7, connecting-rod *s*, and lever O', substantially as and for the purpose set forth.

7. The combination of the lug *e*, spring-catch *i*, lever Q, and upright shaft, provided with a forked device for operating the clutch for engaging or releasing the pulley C', all substantially as described, and for the purpose set forth.

8. The combination of hand-lever O and pivoted lever P, forked arm K' and weighted lever L, all arranged substantially as and for the purpose set forth.

9. In a crimping machine, in combination, the endless chain *c'*, provided with projections *o* and the pivoted cranks *v*, all arranged substantially as and for the purpose set forth.

10. In a crimping-machine, the combination, with the presser-plates I, of the projections *f f'*, right and left hand screws F', gears 1, 2, and 3, levers L, and weights J, substantially as and for the purpose set forth.

11. In a crimping-machine, the combination of the plates I, projections *f f'*, right and left screws F', gears 1, 2, and 3, levers L, forked upright K', and pivoted levers P and M, substantially as herein set forth.

12. In combination with the plates I and their supporting projections *f f'*, right and left screws for operating said plates, and the forms F, substantially as and for the purpose set forth.

13. The combination of the forms F, of the plates I, right and left screws F', gears 1, 2, and 3, weighted levers L, pivoted cranks *v*, and endless chain *c'*, provided with projections for automatically operating or applying pressure to the material in its passage between the jaws, all substantially as set forth.

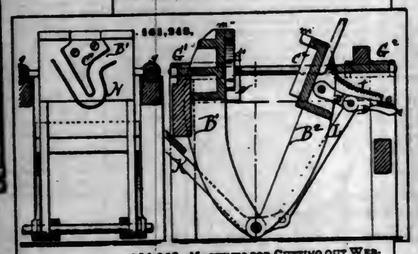
14. The combination, with the form or forms F, of the plates I, right and left screws F', gears 1, 2, and 3, weighted levers L, pivoted cranks *v*, projection 4, endless chain *c'*, provided with cam *s*, chain-wheel E, gear C, and driving-shaft B', substantially as and for the purpose set forth.

15. The combination, with the form F, of plates I, right and left screws F', gears 1, 2, and 3, levers L, pivoted cranks *v*, chain *c'*, provided with lugs or cam *s*, chain-wheel E, gear C, driving-shaft B', and clutch and lever S, substantially as and for the purpose set forth.

16. The combination of the presser-plates I, pressure-screws F', gears 1, 2, and 3, lever L, forked rod K, levers P and M, lever O', clutch-wheel C', gear C, chain-wheel E, chain *c'*, cam *s*, and pivoted cranks *v*, all arranged substantially as and for the purpose set forth.

17. The combination of clamping jaws R, pivoted ear or lever 7 8, rods Z Z', foot lever or treadle O', with projections 9, 10, for automatic disengagement of the material, substantially as set forth.

161,948.



161,948. MACHINES FOR CUTTING OUT WEB-GATES FOR CAST LEAD TRAPS. J. A. Lowe, New York, N. Y. [Filed Sept. 16, 1874.]

Brief.—A pair of cutters of a peculiar shape mounted on a fixed and movable frame, one of them provided with a support for the trap, and both arranged to abut instead of overlap the edges. The movable cutter is operated by treadle, rod, and toggles, one end of the toggle being attached to the movable frame, and the other being held by a spring against adjustable plate.

1. The combination of the cutters C' C', formed with square flat edges, arranged to come in contact without pressure or overlapping, substantially as and for the purpose shown and described.

2. The combination, with the cutters C' C', of the stationary plate or bar B', movable plate or bar D', and stops *n' n'*, substantially as and for the purpose shown and described.

3. The combination of the plates or bars B' B', cutters C' C', toggle-joint D' D', plate or bearing G', treadle or lever K, and connecting rods L, substantially as and for the purpose shown and described.

4. The rest or guide N, in combination with the cutter C', substantially as and for the purpose shown and described.

161,949. SLEEPING-CARS. Christian R. Lucas, Atlanta, Ga. [Filed Feb. 4, 1875.]



1. The upper berth C to take the place of the inner paneling of the upper part of the car, supported by its lower and inner ends upon the molding B, and hung to the wall of the car by the triangular pieces D D, which form divisions between the berths and allow the berth so much play that it can be readily lifted from the molding B for cleansing purposes, all combined as described.

2. The sliding seat-frame I, attached to the inside of the ends of the bases K by means of the slotted arms L, all combined as and for the purpose stated.

161,949.



3. The combination, with the bases K K, of the long metallic connecting-box located beneath the floor of the car, and forming, with the bases K K, a receptacle, for the bedding, as set forth.

4. The window recess in the lower part of the car-body, and made open below, and provided with a water-table, all as and for the purpose described.

161,950. FEED-WHEELS FOR SEWING-MACHINES. Ira Manning, Philadelphia, Pa. [Filed Feb. 11, 1875.]

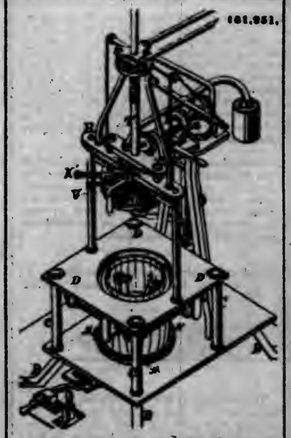


In combination with the feed wheel A, the reversible or interchangeable clamp B, having two bearing ends, *c c'*, two shoes, *f f'*, and two eyes, *g g'*, as and for the purpose described and represented.

161,951. MACHINES FOR MAKING BARRELS. Jacob Martin, Cairo, Ill. [Filed Jan. 26, 1875.]

Brief.—The staves are set up and forced into their proper positions by means of truss-hoops and revolving press-rollers. The cross is cut and staves chamfered before removing the barrel from the machine.

161,951.



1. As a means for compressing the upper portion of a barrel, the circular sectional head O, arranged to expand and contract radially, and operated by means of the connected shafts P' P', &c., eccentrics *p p*, and yokes *o o*, substantially as specified.

2. In combination with the studs M M, for supporting the lower truss-hoop N, and with suitable mechanism for forcing the barrel-staves downward, the disk K, for supporting the ends of the staves, arranged to move vertically, and sustained in position by the yielding pressure of a spring, I, substantially as and for the purpose shown.

3. In combination with the upper truss-hoop N, the vertically-moving head V and studs *v v*, substantially as and for the purpose set forth.

4. In combination with the truss-hoops N and N', which operate as guides for limiting the radial motion of the staves, the rollers *y y*, journaled upon and rotating in horizontal planes with the spring-bars Y Y, caused to travel over the inner faces of barrel-staves, and forced outward with a yielding pressure against the same, substantially as and for the purpose shown and described.

5. The means employed for cutting a croze and chamfer within each end of a barrel, consisting of the cutters *h h'*, fixed within and moving radially with the sliding heads H' and H'', and thrown outward by the wedge-bar K', recessed rods D' D', disk I', and inclined legs *i''* and *i'''*, said parts being combined to operate in the manner and for the purpose substantially as specified.

6. The metal head band M', made contractible, so as to be capable of closely embracing the ends of the staves, substantially as and for the purpose shown.

161,952. RETORTS FOR BURNING OR REVIVIFYING CHARCOAL. Franz O. Matthiessen, Jersey City, N. J. [Filed Feb. 12, 1875.]

Brief.—The retort is divided by one or more partitions, stationary or movable, which run longitudinally through the chamber. Object: to burn and discharge less than the whole retort's charge at a time, it being found in practice that one side is "done" before the other is ready to be discharged.



The combination, with the retort, of one or more upright or longitudinal partitions, arranged in transverse relation to the course of the flame or heated gases on the exterior of the retort, substantially as and for the purposes herein set forth.

161,954. COFFEE-POTS. N. S. McFarland, New York, N. Y. [Filed Feb. 16, 1875.]

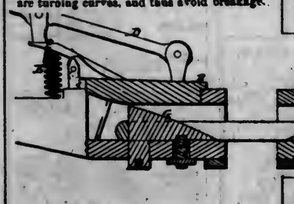
Brief.—A fixed upper strainer, a removable lower strainer, and circulating-orifices above the former.



The combination, with a coffee-pot, of the suspended coffee-receptacle G, provided with fixed upper strainer I and removable lower strainer and cap *i' i'*, and with circulation-orifices A above the upper strainer I, all substantially as herein described

161,955. CAR-COUPLINGS. B. A. McKanna, Ellison, Ill., assignor of two-thirds his right to John Dalton and Geo. Dalton. [Filed Sept. 5, 1874.]

Brief.—The tongue is pivoted and held parallel with the sides of the draw head by springs, that it may "give" when the cars are turning curves, and thus avoid breakage.

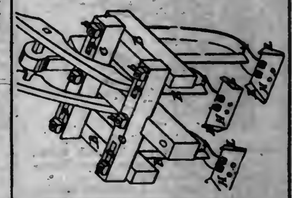


1. The wedge-shaped tongue C, made movable, and combined with the draw-head, as and for the purpose set forth.

2. The door B, in combination with lever D, arm *a*, and spring E, as and for the purpose specified.

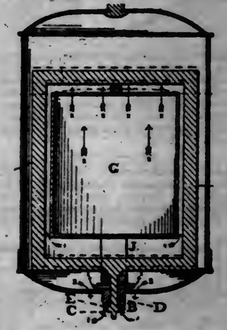
161,956. COMBINED COTTON CHOPPERS AND SCRAPERS. Roderick McRae, Fayetteville, N. C. [Filed Dec. 1, 1874.]

Brief.—A reversible blade with upturned ends, the wide edge designed for scraping, and the narrow for chopping, cotton.



The reversible double-edged scraping-share and chopping-blade H, having turned-up sides or vertical oblique flanges L, to adapt the same for use, in the manner and for the purpose herein set forth.

161,957. AIR AND WATER TRAPS. Nathan Middleton, Philadelphia, Pa., assignor of one-half his right to Stephen Morris, same place. [Filed Feb. 26, 1875.]



An air-chamber, automatically operating the valve of an air and steam trap or receiver, by the expansion and contraction of the air in said chamber, substantially in the manner and for the purpose set forth.

161,958. STEAM-GENERATORS. J. A. Miller, Providence, R. I. [Filed Mar. 26, 1874.]

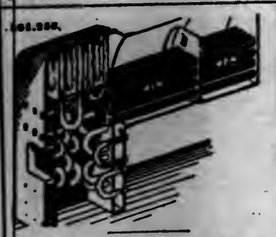
Brief.—Return-water bends extend into the fire-box, and through the inner and outer walls, said box forming stays. The portion between the fire-box walls is perforated to allow circulation. A chamber is formed in the rear of the boiler by means of a tube-sheet partition, whereby the sediment is collected from the water before entering the main portion of the boiler.

1. The tubular stay, secured in the sheets of a fire-box, and provided with openings, and with plugs on its outer ends, the inner portion projecting into the furnace, to perform the duties of a stay and generating-tube, substantially as described.

2. The tube-sheet B, in combination with the barrel of a locomotive-boiler, said sheet extending above the water-line of the boiler, substantially as and for the purpose specified.

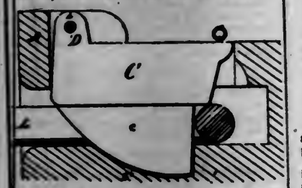
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161,260. CAR-COUPLINGS. Hiram H. Miller, J. F. Rogers, and Christian Feree, Duncotown, Md. [Filed Aug. 1, 1874.]

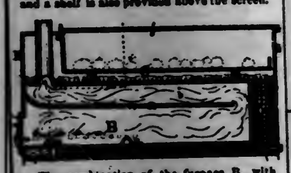
Brief.—To couple in an automatic manner, and to hold the link horizontally when coupled.



The catch C, having the hollow cylindrical part *b*, curved lower portion *c*, and longitudinal shoulders *d d*, to rest on the link, and maintain it in position when coupled, in connection with the link L and draw-head, having the slot B and curved recess F, all constructed to operate in the manner and for the purposes set forth.

161,261. AGRICULTURAL BOILERS. F. N. Mitchell, El Paso, Ill. [Filed Feb. 13, 1875.]

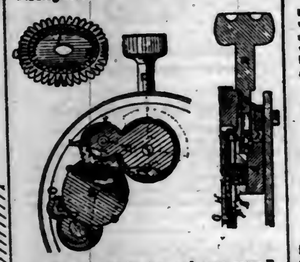
Brief.—The furnace entirely within the boiler, save the door, is covered by a screen, and a shelf is also provided above the screen.



The combination of the furnace B, with usual horizontal return flue *i*, the boiler A, screen D, and shelf C, as described

161,262. STEM-WINDING WATCHES. C. S Moseley, Elgin, Ill., assignor of one-tenth his right to the National Watch Company, same place. [Filed Apr. 18, 1874.]

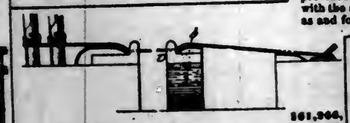
Brief.—Main spur-wheel is chambered out, the crown or miter wheel, gearing with the winding stem, being inserted in chamber. An intermediate gear-wheel, connecting the main spur wheel and the one on the winding-arbor, is carried on a plate pivoted on main spur wheel, and so kept normally out of gear with winding-arbor.



1. The combined miter and spur gears F and G, constructed in the manner and for the purpose substantially as specified.

2. The vibrating arm H, which carries the intermediate pinion K, pivoted to or upon the screw *f*, and having a friction connection with the gear G by means of the corrugated steel rings I and J, placed between their contiguous faces, said parts being constructed and combined in the manner and for the purpose substantially as shown.

3. The bridge for carrying the winding-train, consisting of the sections A and A', provided within their contiguous faces with the bearing *a* and recess *e'*, and combined with said winding-train and the plate of a watch, in the manner and for the purpose substantially as set forth.



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4. The driving pinion C, provided interiorly, at opposite ends, with the square and round openings, and combined with the bridge A and A', push-pin or stem D, and bearing pin E, in the manner and for the purpose substantially as shown and described.

161,263. DEMIJOHN-CASES. C. Newman, San Francisco, Cal. [Filed Feb. 18, 1875.]

Brief.—An open top box of any size or shape to suit the body of the bottle or demijohn which is to be packed and cased. Two opposite sides of the box are made slightly higher than the body of the bottle, so that its neck will project above, while the other two sides are tapered upward from the sides in the form of a gable, so that they will be higher than the top of the bottle.

A bottle or demijohn box or case, A, having the truncated gable-ends *c c* in combination with the cover, consisting of the sloping sides *i i*, horizontal strip *j*, and brace K, the whole secured to the top of the box or case by means of screws *m m*, substantially as and for the purpose described.

161,265. SEWING-MACHINE SHUTTLES. J. G. Nichols, New Eureka, Kans. [Filed Oct. 3, 1874.]



The combination of the shuttle-body A, having a notch, H, and a slotted eye, K, in its opposite side walls, the fixed tension-disk or and plate F, provided with a notch, G, the spring-pressed tension-plate I, the pivoted latch or bobbin-retaining frame B, having a notch, D, and groove E, all constructed and relatively arranged as herein shown and described.

161,266. PIANO-FORTE AGRAFFES. F. W. Niehaus, St. Louis, Mo. [Filed Jan. 26, 1875.]

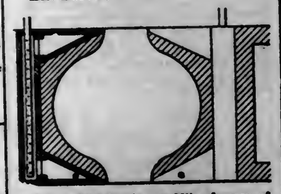
Brief.—The agraffe-pin is provided behind its bearing-point with a wood or other riser, held in place by the strings.

The agraffe D, constructed as described, with holes for the passage of the strings, and provided with the block *b*, in combination with the sounding-board bridge, substantially as and for the purpose herein set forth.

161,267. BREECH-LOADING FIRE-ARMS. W. F. Parker, Meriden, Conn. [Filed Feb. 6, 1875.]

The combination of the bolt E in the frame, notch *e* in the barrels, the bearing-surface of one or both inclined, and the vertical bar F, substantially as and for the purpose described.

161,268. CHILLS FOR PUDDLING-FURNACES. Jos. L. Peacock, Coatesville, Pa. [Filed Mar. 4, 1875.]

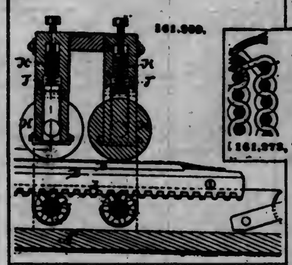


The combination, in a puddling-furnace, of the within-described chills and cheeks with perforated steam-pipes, as set forth.

161,269. MACHINES FOR PEBBLING, GRAINING, AND EMBOSSING LEATHER. Adelbert W. Perrin, New York, assignor of one-half his right to James H. Ferguson, Brooklyn, N. Y. [Filed Feb. 18, 1875.]

1. In a machine for pebbling, graining, or embossing leather or other materials, two or more sets or series of pressure-rollers, journaled independently, arranged with the rollers of one set in rear of and opposite the spaces between those of the adjacent set, substantially as and for the purpose shown and described.

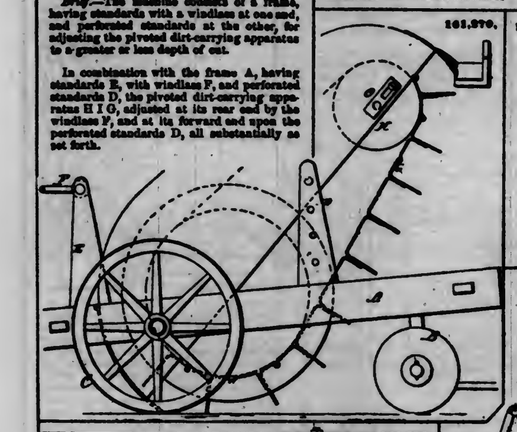
2. The combination of the yokes I, carrying the rollers H, the springs K, screws M, and vertically-adjustable frames J, substantially as shown and described.



161,270. REDUCATORS. Moreau Phillips, Springfield, Ill., assignor of one-half his right to H. A. Morgan, same place. [Filed Sept. 5, 1874.]

Brief.—The machine consists of a frame, having standards with a windlass at one end, and perforated standards at the other, for adjusting the pivoted dirt-carrying apparatus to a greater or less depth of cut.

In combination with the frame A, having standards E, with windlass F, and perforated standards D, the pivoted dirt-carrying apparatus H I G, adjusted at its rear end by the windlass F, and at its forward end upon the perforated standards D, all substantially as set forth.



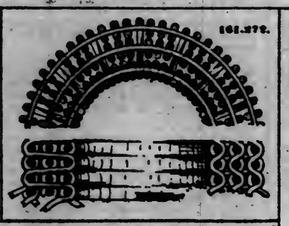
161,271. STEAM-BRAKES. J. T. Prundergast, Huntington, W. Va. [Filed Mar. 6, 1875.]

The combination of the closed piston-cylinder B, the piston C, the guide-rod *a*, extending through the cylinder, the rack-bar D, drum G, suspended under the car-body, and having gear-wheel E, and the guide-roller *h* above, and bearing upon the rack-bar, all constructed and arranged to operate substantially as set forth.

161,272. FIRE-HOSE. J. Van Dusen Reed, New York, N. Y. [Filed Mar. 16, 1875.]

Fire-hose woven entire of an originally circular form, constituted of more than a single ply, and having the warp-threads uniformly spaced and the weft compactly packed up, substantially as described.

161,272.



161,272. FIRE-HOSE. J. Van Dusen Reed, New York, N. Y. [Filed Mar. 16, 1875.]

As a new manufacture, woven hose, suitable for fire-hose, in which the warp-threads around the entire tube are laid substantially uniformly contiguous to each other, and the weft-threads are packed up closely, the fabric being thus of substantially uniform compactness and strength throughout, and of uniform curvature of cross-sections, as described.

161,274. WINDOW-AWNINGS. Alphonso W. Redgrave, Chicago, Ill., assignor of one-half his right to F. B. Wilson, same place. [Filed Feb. 11, 1875.]

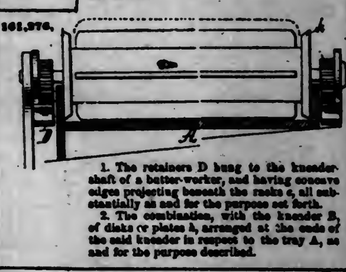
Brief.—The sliding rods have swiveled rings at the ends.

1. The casing A A' B, with downward-projecting part C, in combination with the hinged and sliding rods *d* and awning D, substantially as and for the purpose set forth.

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2. In an awning, the rods *d*, having a fork, *r*, and the rings *e*, in combination with the upright rods *b b'*, substantially as specified.

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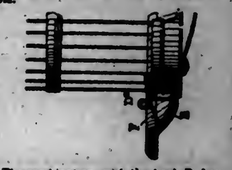


1. The retainers D hung to the kneader-shaft of a batter-worker, and having concave edges projecting beneath the racks *c*, all substantially as and for the purpose set forth.

2. The combination, with the kneader B, of disks or plates A, arranged at the ends of the said kneader in respect to the tray A, as and for the purpose described.

161,273. BIRD-CAGES. Louis P. Reichert, Buffalo, N. Y. [Filed Dec. 20, 1874.]

Brief.—The hinged hook is locked by a brace hinged at the opposite end of the hasp-plate, which attaches the hook to the cage-bottom.



1. The combination, with the hook D, having the projection D' and the eye D", of the double hinge-plate E and the lock F, when the said lock F acts as a stop or brace to the hook D, substantially as and for the use and purpose set forth and described.

2. The combination, with the hook D, of the double hinge-plate E, lock F, base or bottom C, and lower horizontal head B, all when arranged to operate substantially as and for the use and purpose described.

161,276. BUTTER-WORKERS. A. H. Reid, Brandywine Manor, Pa. [Filed Nov. 24, 1874.]

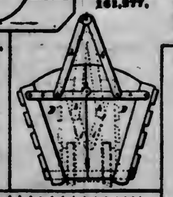
Brief.—The working-roll, passing lengthwise in the trough, carries a disk at each end to throw the butter to the center, and pendent retainers outside the trough are adapted to render fluffy the change of direction at each end thereof.

161,277. FOLDING CRADLES. H. D. Reichard and J. R. Fisher, Reading, Pa. [Filed Feb. 12, 1875.]

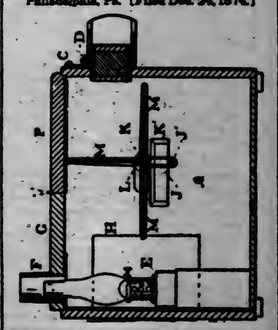
Brief.—The cradle is suspended from the standards by the jointed rods, and the folding ends, jointed rods, and hinged bottom are so arranged that the cradle can be compactly folded.

In a folding cradle, the combination of the folding ends D with the jointed rods *h i*, hinged bottoms *p*, and a suitable supporting-frame, substantially as shown and described.

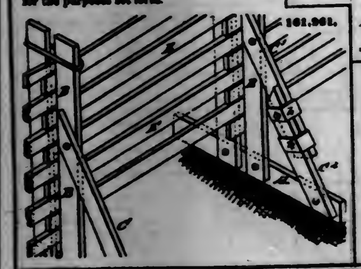
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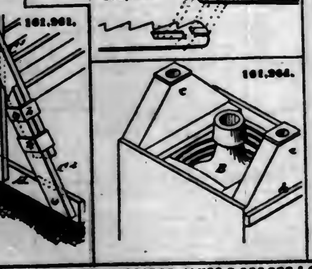
161,278. STEREOSCOPES. Henry Bight, Philadelphia, Pa. [Filed Dec. 24, 1874.]



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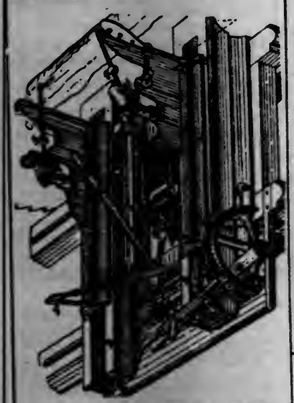
1. The stereoscopic box A, in combination with the removable eyeglass or lens frame B and notch C D, substantially as and for the purpose set forth.

2. The stereoscopic box A, provided with stereoscopic lens and lens-frame in front, an illuminator at the rear, and a revolving view-holder arranged between the lens and illuminator, substantially as and for the purpose set forth.

3. The view-holder, constructed of the piece L, with horizontal notch e and vertical grooves b, in combination with the vertically-arranged rubber bands M, substantially as and for the purpose set forth.

161,879. HEAD-BLOCKS FOR SAW-MILLS. Alex. Rodgers, Muskegon, Mich. (Filed Dec. 31, 1874.)

Brief.—The setting-jacks are attached by a wire-rope passing over a series of sheaves to a hinged platform in the rear of the carriage, upon which stands the operator. His weight, added to that of the platform, retracts the setting-jacks, when they are released from the setting mechanism.



1. The supplementary rack D, in combination with the head-block B, as specified.

2. The stops E upon the rack D, in combination with the stop Q upon the head-block B, as set forth.

3. The disengaging-rack L, in combination with the setting-jack C and adjusting-lever F, as and for the purpose specified.

4. The reciprocating rack G, in combination with the setting-shaft O, provided with the teeth H, as and for the purpose set forth.

5. The cam I, operated by the hand-lever, as set forth, in combination with the toothed arc J and setting-rack G, as specified.

6. The platform S, in combination with the devices for retracting the setting-jacks, substantially as set forth.

7. The platform S, in combination with the carriage and head-blocks of a circular-saw mill, giving a suitable position for the operator of the head-blocks, as set forth.

8. The dogs provided with the rubber cushions g, in combination with the oscillating spring-posts V and setting-jacks, as specified.

9. The setting-shafts N and O, provided with the adjustable couplings, as herein described, for the purpose of regulating the relative positions of their pinions or other operating devices, substantially as set forth.

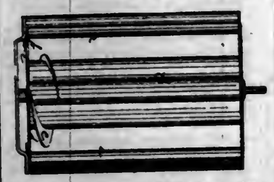
161,880. MAIL-BLANKS OR STRIPS FOR PRINTING-MACHINES. Willard A. Rogers, Boston, Mass., assignor to the American Cable-Screw-Wire Company, same place. (Filed Oct. 6, 1874.)

1. A metallic nail blank or strip provided with grooves or corrugations h, extending obliquely across one or both sides of the blank, from the base c of its thick edge to the ridge b of its thin edge, substantially as and to obtain the advantages stated.

2. As a new article of manufacture, a metallic nail blank or strip having oblique side grooves, tapering sides, and a beveled and serrated edge, from which to produce shoe-pegs embracing the characteristics herein stated.

161,881. RICE-CLEANING MACHINES. John B. Rupert, New Orleans, La., assignor of one-half his right to Columbus H. Allen. (Filed Jan. 20, 1875.)

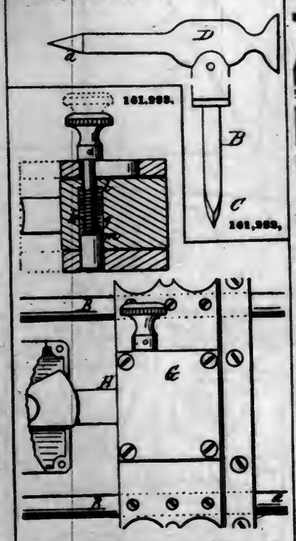
Brief.—The grain is deflected upwardly and against the interior corrugated sides of the cylinder by the beaters and spiral screw-plate, until its hulls are freed of all foreign matters.



The cylinder A, provided with corrugations c c, and head b, shaft c', beaters C, spiral screw-plate c, and brace B, all arranged as herein described, and for the purpose specified.

161,882. ICE-PICKS. Wm. C. Russell, Philadelphia, Pa. (Filed Sept. 9, 1874.)

The herein-described implement for cutting and breaking ice, consisting of the flat blade C, provided with the stem B, and the tubular handle A, provided with the head D, having the face E and point c, all constructed substantially as set forth.

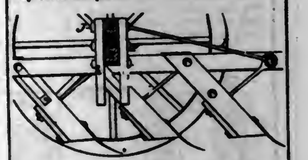


161,883. BOLTS FOR SAFE, VAULT, AND OTHER DOORS. James Sargent, Rochester, N. Y. (Filed Feb. 16, 1875.)

The combination, with the safe-bolts B B and lock D, of a socket or bearing, G, attached to the safe-bolts, a bolt or slide, H, connected with said socket or bearing, and a locking device for engaging said socket and bolt when the safe-bolts are thrown out.

161,884. GANG-PLOWS. S. S. Schenmack, Victoria, Tex. (Filed Dec. 12, 1874.)

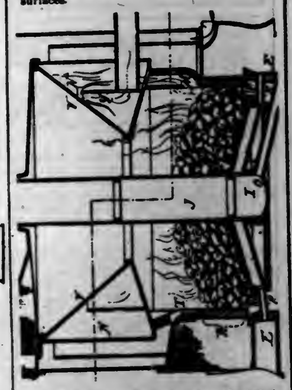
Brief.—On the axle of a pair of wheels a cross-beam is placed, having two pairs of hangers projecting downward on either side of the axle. Another cross-beam bolted rigidly to the plow-frame slides in the hangers below the axle, and is vertically adjustable by bolts and pins.



The plow-frame A A' E, and saddle H, having adjusting hangers k k, and pivoted braces l l, combined with the axle K, as and for the purpose specified.

161,885. HOT-AIR FURNACES. James H. Shoemaker, Wilmington, Del. (Filed Jan. 20, 1875.)

Brief.—To provide extended air-heating surfaces.



1. The combination, in a heater, of a hot-air chamber I, central pipe J, communicating with said chamber, and a series of hollow radial arms, m, forming the grate and conducting air to the said central pipe, all as set forth.

2. The hollow grate-supporter I, and its tubes K, in combination with the central pipe J.

3. The combination of the grate-supporting ring n, and its tubes p, attached to the casing E, with the grate and its hollow bars.

4. The fire-pot, having internal recesses, in combination with detachable plates q, arranged to cover said recesses and form flues M, all as set forth.

5. The combination, in a heating-stove, of the space N and its partition y, with the smoke-pipe s, connected to said partition y at one side of the same, all as and for the purpose set forth.

161,886. SHIRT-BOSOMS. Alex. Sinsheimer, Philadelphia, Pa. (Filed Oct. 10, 1874.)

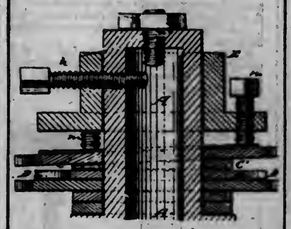
Brief.—The side plaits are reversible, so that either side may be turned out, and thereby present a bosom of different faces from the same plaits



The shirt-bosom, having jaws-faced and reversible plaits B B, constructed and arranged substantially as described.

161,887. CUTTER-HEADS. A. W. Slayton, Tecumseh, Mich. (Filed Feb. 9, 1875.)

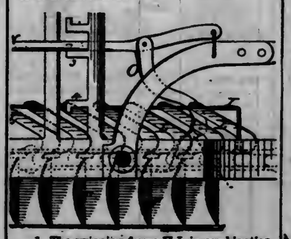
Brief.—One or more circular saws are attached to an adjustable flanged head, to prevent tearing out of cross-grained lumber when being tongued or grooved. The upper saw is secured in an inclined position by means of an inclined washer placed between the upper and lower saws, and held in place by set-screws passing through the lower end of a flanged sleeve.



The combination of the flanged adjustable head A, saws B B D, washers C C', flanged sleeve E, and set-screws k and m m, all constructed and arranged as and for the purposes herein set forth.

161,888. ROAD-SCRAPERS. W. Smith, Bernard Castle, England. (Filed Jan. 2, 1874.)

Brief.—The scrapers are hinged independently to a rod, and furnished with springs, so as to adapt themselves to the inequalities of the surface. The degree of pressure is regulated, through the swinging frame, by the lever N and rack R.

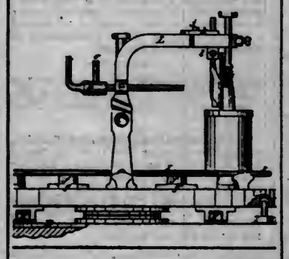


1. The swinging frame H I, in combination with the rod G and scrapers F, with spring-arms L, substantially as and for the purposes described.

2. In combination with the swinging frame H I, the lever P, link Q, and lever N, with or without the rack or frame R, substantially as and for the purpose set forth.

3. The scrapers F, constructed, as shown, with spring-arms L and thimble-connections M, substantially as and for the purposes described.

161,889. SOLDERING-MACHINES. Richard Henry Smith, Baltimore, Md., assignor to Mrs. Sarah J. Smith, same place. (Filed Jan. 4, 1875.)



1. The soldering iron holder R, having a rear opening, m, and adjustable vertically and longitudinally by the slotted piece k and binding-screws j and l, in combination with the hinged frame L and compound blow-pipe S, substantially as and for the purpose described.

2. The independently rotating and detachable seats l, having the adjustable clamping devices J and the studs f, in combination with the sockets g, substantially as and for the purpose described.

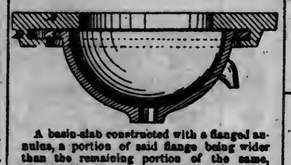
161,890. PROCESSES OF EMBOSSING WOOD. Wm. Sochofsky, New York, N. Y. (Filed Feb. 8, 1875.)

The described process of embossing wood with metallic leaf by treating the wood, or portions of the same, with glycerine, applying the leaf, and embossing with heated dies, substantially as and for the purpose described

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161,891. SETTING BASINS. John Stevenson, Brooklyn, N. Y. (Filed Oct. 20, 1874.)

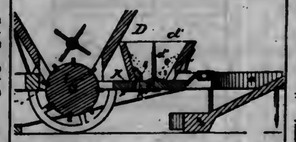
Brief.—A flanged annulus, having a portion of the flange made to project, is secured to a slab or other fixture. The flange of the basin is inserted beneath the widest portion of the flange, when the entire flange of the basin will readily go within the annulus, and the basin being moved back from beneath the broader part, the flange of the basin will be supported by the entire flange of the annulus.



A basin-slab constructed with a flanged annulus, a portion of said flange being wider than the remaining portion of the same, whereby the basin is affixed to the slab, substantially in the manner described.

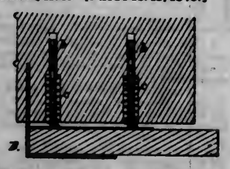
161,892. SEED-PLANTERS. U. T. Stewart, Rossville, Tenn. (Filed Feb. 4, 1875.)

Brief.—The seed-hopper is made in two parts, the front one of which is provided with the pivoted partition, to make a double hopper for sowing two kinds of seed, beneath which is reciprocated the seed-slide for dropping the seed.



In a seed planter, the double hopper D, consisting of rear chamber d and front chamber d', provided with pivoted partition d'', in combination with seed-delivering wheel I and dropping-slide K, having apertures k k', substantially as described.

161,893. BOOK-SUPPORTS. R. T. Stoddard, Boston, Mass. (Filed Feb. 19, 1875.)



The improved book-supporter, consisting of body A, the fixed plate H, and spring-plate C, constructed, combined, and arranged, substantially in manner as shown and described.

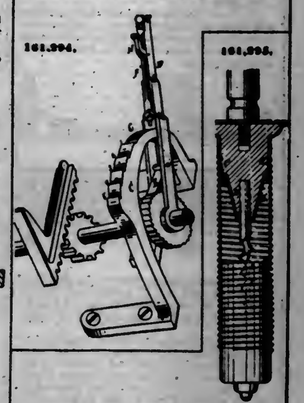
161,894. SET-WORKS FOR SAW-MILLS. J. W. Stokoe, Manistee, Mich. (Filed Feb. 12, 1875.)

Brief.—The quadrant is provided with a series of steps, with either of which the stop-pawl on the setting-lever engages, at the option of the operator.

1. The combination of the lever D, latch F, spring b, and bell-cranks G G' G' G', with the quadrant C, having a series of abutments in varying planes, substantially as and for the purpose set forth.

2. The combination of the latch F' and its bell-crank H with the lever D and latch F, substantially as and for the purpose set forth.

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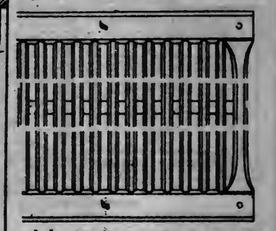


161,895. ATTACHING HOLLOW HANDLES TO CUTLERY. Owen W. Taft, New York, N. Y. (Filed Mar. 6, 1875.)

Brief.—A sheet-metal filled bolster has a fork, steel, or analogous article secured at one end, and a corkscrew at the other, and is removably secured in a hollow handle by a screw-thread or like device.

The combination, with a hollow handle, of a sheet-metal bolster or end piece, removably connected by screw-threads or equivalent device, and in which a fork, steel, corkscrew, or analogous article is secured by solder or analogous material, substantially as specified.

161,896. TRAYS OR SCREENS FOR COAL-GAS PURIFIERS. Andw. J. Tewksbury, Haverhill, Mass. (Filed Jan. 6, 1875.)



1. In a tray for gas-purifier, the bars B B, formed with dovetailed grooves b, the series of slats a, having their ends formed with corresponding dovetailed tenons c, and the spacing-blocks d, arranged and combined together in manner as shown and described.

2. In a tray for gas-purifying boxes, the bars C C, having their outer vertical faces formed concave, as and for the purpose set forth.

3. In a tray for gas-purifying boxes, substantially as described, the end bars B, formed with shoulders i i, in combination with the slats, formed with inclined shoulders l l, as and for the purpose set forth.

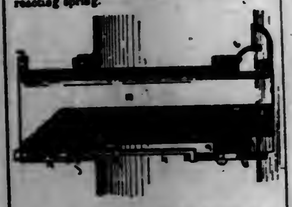
161,297. ORNAMENTAL CHAINS. C. Thiéry, Newark, N. J. (Filed Aug. 26, 1874.)



An ornamental chain composed of a series of separate rings or links, *a b*, united by secondary chains *c* passed through said main rings or links, substantially in the manner herein shown and described.

161,298. DIP-PIPES OF GAS-WORKS. Alex. Thomson, Worcester, Mass. (Filed Jan. 12, 1874.)

Brief.—A peculiar water-seal on the outside and at the foot of the dip-pipe; a sliding gate-valve working a part in the dip-pipe and within the main, and itself worked by a lever and a reacting spring.



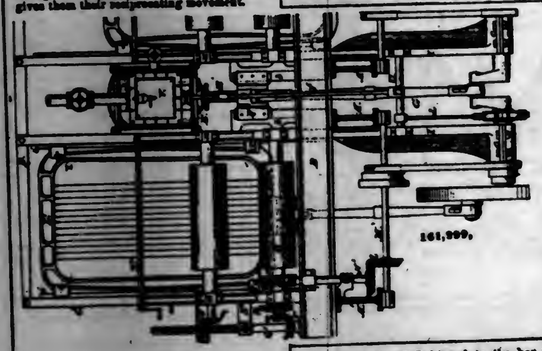
1. The combination, with the dip-pipe B, of the water-seal cup C, constructed with an outer lip, *m*, inner lip *n*, and partition *o*, arranged for operation substantially as herein set forth.

2. The combination, with the dip-pipe B, of a sliding gate-valve, G, arranged upon the exterior of said dip-pipe, and within the hydraulic main, substantially as herein set forth.

3. The combination, with the dip-pipe B, of the water-seal cup C, gate G, gate-rod H having collars *f*, lever K, and spring I, all constructed and arranged for operation substantially as and for the purposes set forth.

161,299. GANG-SAW MILLS. F. R. Town, Boston, Mass. (Filed Mar. 1, 1875.)

Brief.—The pair of saw-frames are operated by a single engine placed between them, and acting directly upon the crank-shaft, which gives them their reciprocating movement.



1. A gang-saw mill having its various parts constructed, combined, and arranged substantially as herein shown and described.

2. The frame composed of beams A and A', the feeder-beams B B', vertical posts C C', provided with guides *i* and lugs, to which is bolted the steam-cylinder E and the connecting-cap D', the parts being united and arranged as and for the purpose set forth.

3. The mechanism herein described for feeding logs to the saw, consisting of a pair of cone-pulleys, or their equivalents, connecting shafting and gear, and rotating screw-gearing, with a worm-wheel upon the roll-shaft, as specified.

4. The feeding-rolls O O' and the worm-gear for driving the same, in combination with the sprocket-wheels E and pitch-chain *p*, substantially as and for the purpose specified.

5. The slide-blocks Y, constructed as shown and described, and provided with the adjusting-screw *g*, in combination with the recessed saw-frame *x x*, as set forth.

6. The suspending-brackets I, provided with the journal-boxes *c*, in combination with the beams A A' and crank-shaft H H', as and for the purpose set forth.

161,300. BARRELS FOR SHOT-GUNS. Joel B. Tubbs, Waterloo, N. Y. (Filed Feb. 23, 1875.)



A shot-gun provided at its muzzle end with a concentrating-ring, arranged within the bore, and secured against displacement, substantially as and for the purposes herein before set forth.

161,301. SPRING-CASES FOR DRAW-BARS. John Turner, Grosse Isle, Mich. (Filed Oct. 1, 1874.)



The combination, with the sills A A, draw-bar C, and volute spring D, of the cast-iron spring-case B B', having ribs *a a*, and secured to said sills by the transverse bolts *b*, as and for the purpose set forth.

161,302. WAGONS. T. Y. Van Cleave, Cornersville, Tenn. (Filed Nov. 21, 1874.)

Brief.—A cuff for vehicles, hinged at one side, and fastened at the other.



1. The shaft-cuff B, hinged to the bar C, and fastened by means of the bent end *a*, bolt *b*, and rubber *d*, all combined as and for the purposes set forth.

2. A vehicle-cuff made in two pieces, and hinged together and fastened by a bolt passing through the bent end of the top part, and screwed into the end of the bottom part, all combined as set forth.

3. The lower part D of the fifth-wheel, provided with the bars G G', in combination with the hinged bar H and bolt *b'*, as and for the purposes set forth.

4. The combination of the coupling-cuff I, cil-cup *f*, parch-iron N, with nut *n*, and the fastening-bolt *m*, substantially as and for the purposes set forth.

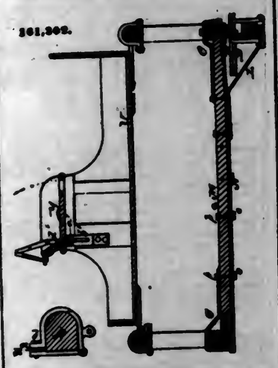
5. The combination of the coupling-cuff I, hinged bars J J, cross-bar K, perch-brace L, pin *k*, and rubber *i*, substantially as and for the purposes set forth.

6. The perch-iron N, provided with hinged loops O O, in combination with the front and back springs, perch-pole M, bolts *p*, and nuts *o* made solid in the perch-iron, all as and for the purposes set forth.

7. The combination of the axle-stays P P, secured to the rear axle by the hinged cuffs R R, perch-pole M, bolts *s*, and nuts *r* made solid in one of the stays, as and for the purposes set forth.

8. The combination, with the bed U and spring-bar V, of the bed-irons T formed with loops *w*, the hinged bars *x*, and bolts *y z*, all substantially as and for the purposes set forth.

161,303.



161,304. JEWELERS' MOUNTS. John A. Van Dreisen, Peoria, Ill. (Filed Feb. 18, 1875.)

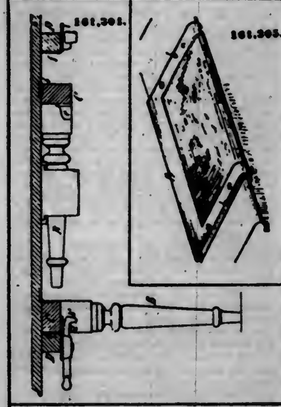
In combination with a mat, C, having an opening through which the picture is seen, and its under surface covered with an adhesive substance, a backing, A, or mount composed of card or other suitable material, having a countersunk shallow recess, *a*, to receive a picture or similar object, substantially as and for the purposes described.

161,305. FOLDING TABLES. Emil T. Wagner, Buffalo, N. Y., assignor to A. Engelin and C. Lenkler, same place. (Filed Mar. 2, 1875.)

1. The combination, with the bed of a table, provided with cross-pieces D, of the hinged legs B, connected by cross-pieces C, and the fastening-device E *e*, substantially as and for the purpose herein before set forth.

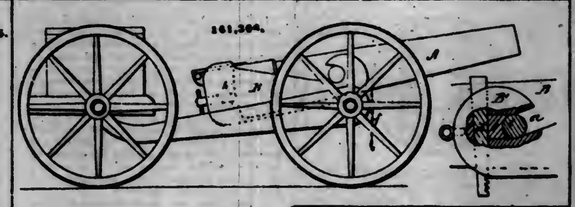
2. In combination with the bed of the table, cross-pieces D C, and fastening-device E *e*, the interposed elastic strip *f*, substantially as and for the purpose set forth.

161,301.



161,305.

161,306.



161,305. STAIR-PADS. Thomas F. Walter, Philadelphia, Pa. (Filed Jan. 29, 1875.)

The combination of the frame A, with its curved edge, the carpet H, secured to the said frame, and the frame B, with its curved ends *c*, the whole being adapted to the tread of a stair, as set forth.

161,306. WATCH-KEYS. Albert Wanner and Charles A. Wanner, New York, N. Y. (Filed Nov. 17, 1874.)



A watch-key consisting of the barrel A, composed of two sections, each section having one side of its interior of a width equal to the width of the arbor to be wound, and two sides at right angles thereto and parallel with each other, said sections being permanently connected together by a cylinder or collar, substantially as herein shown and described, whereby an imperceptible joint is formed, and the corners of the arbor to be wound are prevented from acting upon the meeting-points of the sections composing the barrel, as set forth.

161,307. BREECH-LOADING FIRE-ARMS. B. C. Watson, New York, N. Y., assignor of one-half his right to Leon Furniss, same place. (Filed Mar. 10, 1875.)

1. The combination, in a breech-loading fire-arm, of the barrel or barrels, having trunnions on a line with the center of the barrel or barrels, and a cable or frame, having adjustable bearings, substantially as and for the purposes herein set forth.

2. The extracting-plate G, rod *m n*, and elliptic spring *p*, arranged and combined for operation, substantially as and for the purposes herein set forth.

161,308. BREECH-LOADING ORDNANCE. B. C. Watson, New York, N. Y., assignor of one-half his right to Leon Furniss, same place. (Filed Feb 12, 1875.)

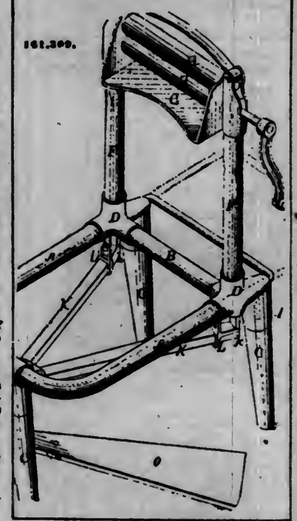
1. The cannon A, provided with trunnions *e e*, in combination with the case B, formed with the breech C, lips B', and grooves, as described, substantially as and for the purposes herein set forth.

2. The combination, with the cannon A and case B, constructed as described, of the bearing-blocks *b* and wedges *d*, as and for the purposes herein set forth.

161,309. CLOTHES-WRINGERS. F. Way and M. Way, Springfield, Ohio. (Filed Feb. 24, 1875.)

Brief.—The frame and standards are hollow. The lower roller is moved upward by rods within the standards by levers and a treadle. A drip-trough and the upper ends of the standards are cast in one pie

161,309.



1. A clothes wringer in which the lower pressure-roller H is moved toward or against the upper roller H by means of rods I and I, that at their upper ends bear against the journals *b* and *b* of said lower roller, and are moved vertically and longitudinally by levers K and K, which bear against their lower ends, substantially as and for the purpose specified.

2. The pressure-rods I and I, contained within the hollow standards F and F, and the levers K and K, suspended from fixed fulcrums M and M, and at their forward ends bearing upon the lower ends of said levers, in combination with each other and with the frame of the machine, substantially as and for the purpose shown.

3. The drip-trough and roller-frame G, constructed of cast metal, in one piece, and provided with the threaded sockets *g* and *g*, in combination with the standards F and F, hav-threaded ends that fit into said sockets, substantially as and for the purpose set forth.

161,310. SEWING-MACHINES. Harry B. Weiland, Martinsburg, W. Va. (Filed Feb. 16, 1875.)

Brief.—On the extension of the main shaft is a sliding sleeve, locked thereon by a pin and groove. This sleeve also carries a sliding knob, locked in same manner, and which has two pins that engage the fly-wheel, and cause the main shaft to rotate. To wind the bobbin these pins are disengaged from the fly-wheel, which may then revolve without operating the machine.

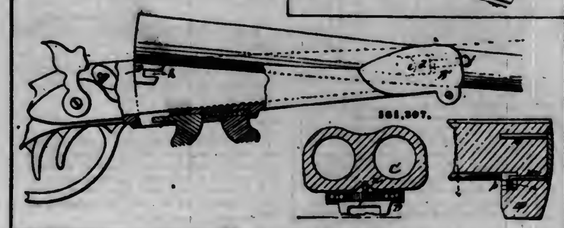


The combination of the extension *a*, pin *c*, the sleeve *f*, provided with the slot *d* and spring *h*, and pin *m*, the nut *p*, and the knob *i*, substantially as shown and described.

161,311. SCREW-THREADING DIES. F. R. Wells, Greenfield, Mass., assignor to the Wiley & Russell Manufacturing Company, same place. (Filed Dec. 11, 1874.)

Brief.—The screws interposed between the two sections of the die-plate are tapered, and the two sections are clamped against them by the screws H, without the employment of the annular die-holder commonly used

161,307.





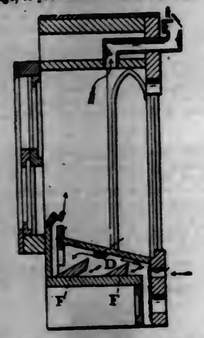
161,311.

1. The improved die-plate, consisting of the sectional die-plate D D', the tap-screws c, and the binding-screws H, all constructed and combined substantially as described and shown.

2. The combination, with the improved die-plate consisting of the sectional die-plates D D', the tap-screws c, and the binding-screws H, of the holder A, substantially as described.

161,312. DUST-TRAPS FOR BULK-WINDOWS. Spencer A. Wight, Philadelphia, Pa. [Filed Jan. 23, 1875.]

Brief.—Traps are placed in the ventilating-passage, to prevent the entrance of dust.



The combination, with the ventilating-passage D of a bulk-window, of the dust-trap F, substantially as and for the purpose set forth.

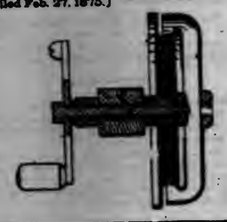
161,313. CURLING-IRONS. Lewis Wilkinson, Brooklyn, N. Y., assignor to W. O. Morgan, same place. [Filed Jan. 18, 1875.]

Brief.—The handle clips over a gas-burner, the small openings admitting air to the flame which burns at the opening



As a new article of manufacture, a curling-iron, composed of the tapering spindle A, the hollow shank C attached to the base of the spindle A by the lips or flanges *b b*, and the handle B, having a tapering socket, all constructed, combined, and arranged to operate substantially as and for the purposes as herein shown and described.

161,314. FENDER-RAILS. Thomas Winans and Thomas D. Whistler, Baltimore, Md. [Filed Feb. 27, 1875.]



1. The combination, with a rotary fishing-reel, of an eye or ring, independent of the reel proper, arranged by the side of and about on the prolongation of the axis of said reel, operating to lead the line over the side of the reel, and to deliver it freely without necessarily rotating the reel, substantially as and for the purposes set forth.

2. In a fishing-reel, a guide eye or ring, located at one side of, and about in line with, the axis of rotation of the reel proper, and provided with a lateral opening through which the line from the reel can enter and be withdrawn from said eye or ring, substantially as and for the purposes set forth.

3. The rotary reel, in combination with the said axially arranged guide eye or ring and cover in which said eye is contained, for joint operation, as set forth.

4. The combination, with the rotary reel proper, of the hinged cover, the central eye or ring contained by the same, and the line-passage extending from the circumference of the cover to the central eye or ring, substantially as set forth.

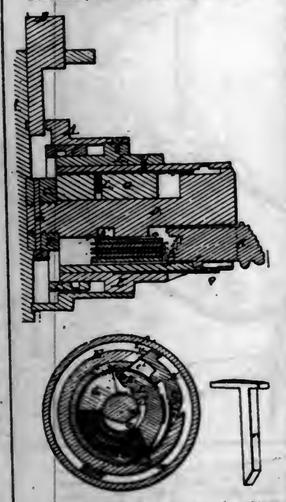
5. The cover, containing the eye or ring, and formed with a line opening or passage, as described, in combination with a slide or gate, movable to open and close the said passage, substantially as set forth.

6. The combination, with the hinged cover, central eye or ring, and sliding gate, closing the line-passage, as described, of the stationary inclined arm, encircled by a loop on the sliding gate, and operating to close or open the same, according as the cover is moved to or from the reel, substantially as set forth.

7. The line cover or case, in combination with the reel, formed with an outer disk of greater diameter than the case, whose periphery constitutes a braking-surface, substantially as shown and set forth.

8. The combination, with the butt of the pole, of the reel attached to the same, by a central spindle or shaft passing through and secured to the butt, substantially as shown and set forth.

161,315. LOCKS FOR DOORS, &c. H. Winn, Shelburne, Mass. [Filed July 30, 1874.]



1. The combination of the tumblers and key with a rotating shell and a non-rotating shell, when one of said shells contains the tumblers, and is carried backward and forward by the reaction of a pin or projection on one of said shells against two or more inclined surfaces on the other shell, carrying the tumblers toward and from the bits of a key, as described.

2. A shell containing tumblers, combined with a part having a key-hole, giving access to said tumblers, when said shell and tumblers partake of the rotation of the said part carrying the key-hole during the time while the tumblers are being set, but do not partake thereof at the time when the fence is projected against one or more of said tumblers, or into the notches thereof, to admit of the operation of the lock, for the purposes described.

3. The arrangement of a shaft, having a key-hole and a depression to admit the fence, relatively to said key-hole, fence, and the end surface or surfaces of a shell or other part, and of a set of tumblers, which partake of the rotation of the key through a portion thereof, whereby said depression is not brought under said fence to admit the same, except at that point of the rotation of the shaft carrying the key-hole, when said key-hole is opposite the surface of the shell or other part, and not opposite the surface or surfaces of the tumblers.

4. One or more of the projections l' l' on a shaft, D, combined with one or more of the depressions m^1 n^1 in shell G, and m^2 n^2 in the tumblers, for the purposes described.

5. The spring Q, combined with the groove *q* and the inclined surfaces *t s*, arranged and operating as described.

6. A shell partaking of the rotation of the key through a part, but not through the whole, of the same, having the slots a^1 a^2 combined with the key or a projection thereon, for the rotation of said shell.

7. The hub V of the return-cap C, combined with the bolt, and a guide therefor, the projections e^1 e^2, the depressions p^1 p^2, the notch *w*, and tooth X', and one or more stops x^1 x^2, with the arrangement thereof, relatively to the position of the tooth X' in its rotation, as described, whereby the tooth X' strikes one of said stops when the key reaches its point of exit.

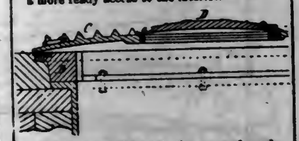
8. A fence and a key combined with a rotating shaft having a key-hole, which has one or more of its sides extended into the longitudinal portion of the lock, in which the ends of the tumblers take their setting from the key, and combined with a system of tumblers which have said ends located in said longitudinal portion, and in the same plane as the key-hole, at the time when they take their setting, but not at the time when the fence enters the tumbler-notches, or impinges on the sides of the tumblers to enter the same.

9. A fence and a system of tumblers having a motion substantially rectilineal with the axis of the key, a key of which the bitted portion rotates with the rotating shaft, combined with a rotating shaft having a key-hole, and with a cut-off located in position to intervene between the key-hole and the ends of the tumblers, which are set by the key at the time when the fence enters the notches of said tumblers, or impinges upon the sides of said tumblers, to enter said notches.

10. A system of tumblers and a fence, combined with a rotating shaft having a key-hole, and with a key of which the bitted portion rotates with said shaft, and with a cut-off which is stationary before the time when the fence enters the notches of the tumblers, or impinges on the sides of the tumblers, to enter said notches, whereby at said time the key-hole is rotated into such position relative to said cut-off that said cut-off intervenes between the key-hole and the ends of said tumblers, which take the setting thereof from the key.

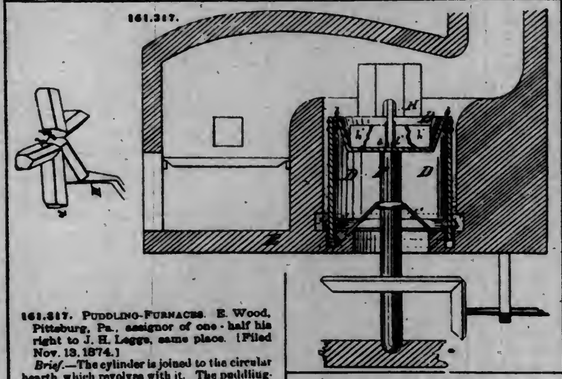
161,316. ASH-CAN RECEPTACLES. Louis F. Winter, New York, N. Y., assignor of one-half his right to Michl. Madden, same place. [Filed Dec. 4, 1874.]

Brief.—A gasket of zinc is placed on the support of the main cover, for preventing the formation of ice. The main cover is provided with a small central-hinged cover, to admit of a more ready access to the interior.



1. In combination with the covers for ash-can receptacles, as described, a gasket of zinc or a zinc support for the purpose of preventing freezing, substantially as described.

2. In combination with the cover C, a central cover, D, as and for the purposes set forth.



161,317. PUDDLING-FURNACES. E. Wood, Pittsburg, Pa., assignor of one-half his right to J. H. Legge, same place. [Filed Nov. 13, 1874.]

Brief.—The cylinder is joined to the circular hearth, which revolves with it. The puddling-tool is kept stationary in the revolving hearth. The cylinder forms a sand and water joint with the walls of the furnace.

1. The balling tool, consisting of the handle H, with the diverging wings *h'* pivoted or hinged thereon, substantially as described and shown.

2. The combination, with the cylinder D and the furnace-wall surrounding the same, of the intervening annular sand-joint, substantially as described.

3. The cylinder D, in combination with the rotary basin B and the water-trough e^1, said trough being formed in the base of the furnace, substantially as shown and described.

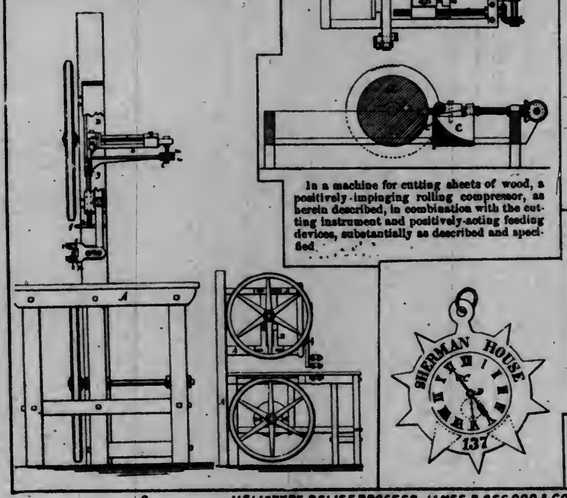
4. The guard-flanges *e e'*, in combination with the cylinder D and trough e^1, substantially as and for the purposes specified

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REISSUES.

6,340. RAND-SAWING MACHINES. Olpha Bonney, San Francisco, Cal. Patent No. 126,121, dated Apr. 22, 1873. [Filed Feb. 19, 1875.]

Brief.—The bearings of the upper saw-pulley are vertically adjustable, the inner one resting upon an elastic support. The saw-guides are formed of movable steel plates, which may be adjusted to compensate for wear.



In a machine for cutting sheets of wood, a positively-impinging rolling compressor, as herein described, in combination with the cutting instrument and positively-acting feeding devices, substantially as described and specified.

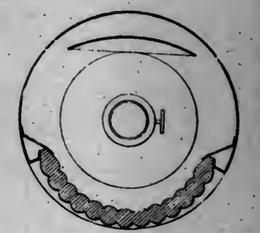
6,341. MACHINES FOR CUTTING VENEERS. Julia A. Brown, Southfield, N. Y., assignee, by mesne assignments, of J. C. Brown, deceased. Patent No. 124,880, dated Mar. 26, 1872. [Filed Jan. 9, 1874.]

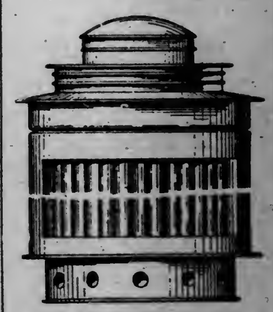
Brief.—The checking or splitting of veneers or sheets of wood in cutting them from round or flat logs is effectually prevented by means of a suitable cutting instrument, governed by positive feeding mechanism, in connection with a positively impinging rolling compressor.

1. The pulley-shaft G, supported at a point between its middle and the pulley C in a suspended box, in combination with the screw I and nuts n and n, substantially in the manner and for the purpose set forth.

2. The block Q, with its gibs *s s*, and steel bearing-plates *t*, and screws *r*, in combination with the vertically-adjustable support and frame A, as and for the purpose set forth.

6,342. LENSES FOR HEAD-LIGHTS. Henry C. Felthousen, Buffalo, N. Y. Patent No. 110,449, dated Dec. 27, 1870. [Filed June 15, 1874.]

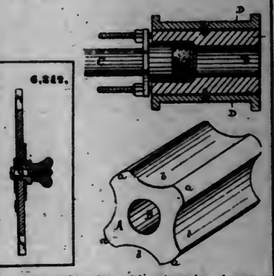




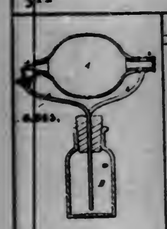
A front glass for head-lights, cast solid or in one piece, with convex ribs or collecting refracting-surfaces, substantially as and for the purposes herein shown and described.

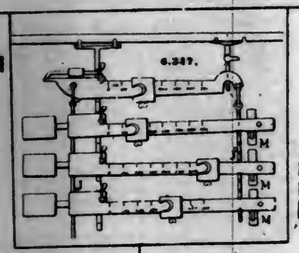
6,343. TRUNNIONS FOR STEAM-ENGINES AND CALENDERS. Thomas Hill, Augusta, Ga. Patent No. 106,196, dated Oct. 11, 1870. [Filed Mar. 6, 1875.]

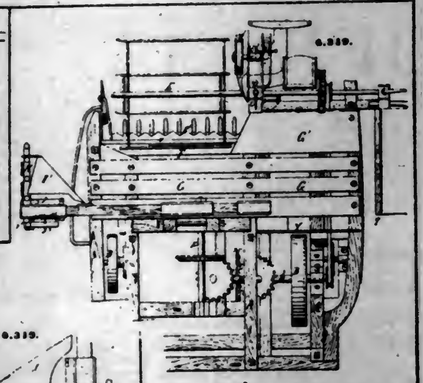
Brief.—A longitudinally-grooved stuffing-box is secured within the hollow trunnion, to allow of a free passage of air through the trunnion.

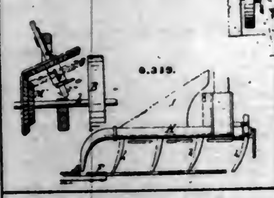


The combination, with a trunnion, A, provided with arms *a* and spaces *b*, of the sleeve D, substantially as and for the purpose specified.









6,245. ATOMIZERS. Chas. P. Jones, Boston, assignor, by mesne assignments, to Wm. D. Atkinson, Jr., Lynn, Mass. Patent No. 115,615, dated June 6, 1871. [Filed Feb. 3, 1875.]

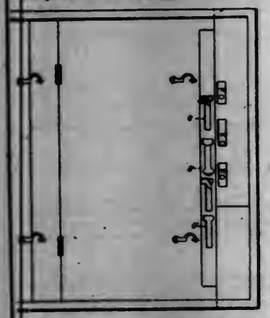
Brief.—The liquid jet pipe has a branch, which is secured to the valve-case, so that the air-bulb is supported by one branch at either end. A drip-pipe carries back the waste into the bottle.

1. In the atomizer, the combination of the drip-cup *e* and its conduit *f* with the jet-tube *d* and the air-syringe nozzle, all being substantially as described.

2. The combination of the valve-case *b*, nozzle *a*, jet-pipe *d*, and branch *k*, all arranged and to run with the bulb A and vessel D, substantially as set forth.

6,246. WEIGHING APPARATUS. A. B. Davis, Philadelphia, Pa. Patent No. 37,569, dated Feb. 3, 1863. [Filed Nov. 11, 1874.]

Brief.—Scale-beams and weights inclosed in case, provided with doors that may be locked, and thus prevent access to apparatus, except to authorized persons.



1. The combination, with a many weight scale, consisting of a main weighing-beam and auxiliary weighing apparatus, of a box or casing furnished with doors, and having such openings that, while the attendant can observe the operation of the auxiliary apparatus from the outside of the casing, he cannot gain access to the apparatus itself, or gain a knowledge of the weight determined by said apparatus.

2. A box or casing containing a main weighing-beam and an auxiliary weighing apparatus, and provided with levers or equivalents, for the auxiliary weighing apparatus to be thrown in and out of connection with the main beam without allowing access to the apparatus itself, or imparting knowledge of the weight determined by said apparatus.

6,247. WEIGHING APPARATUS. A. B. Davis, Philadelphia, Pa. Patent No. 37,569, dated Feb. 3, 1863. [Filed Nov. 11, 1874.]

Brief.—Main weighing-beam has attached to it a stirrup supporting auxiliary scale-beams. Projecting levers regulate movement of auxiliary beams in stirrup, so that each beam may be used in succession, or all auxiliary beams may be thrown out of action, and only main beam used, as in ordinary platform-scale.

1. A many weight scale consisting of a main weighing beam and auxiliary weighing apparatus, in combination with a secret-box, wherein the auxiliary apparatus is so arranged that, by means of levers or equivalents, it can be thrown in and out of connection with the main weighing-beam, whereby the weigher may operate the auxiliary weighing apparatus to suit various commodities, without being able to determine what amount he is weighing, or in any manner tamper with the weights.

2. A weighing-beam connected to the platform of a scale, in combination with any desired number of weights of an auxiliary apparatus, any or all of said weights being adapted to be connected to or disconnected from the main weighing-beam, for the purpose specified.

3. The levers M, and stirrup J', operating in combination with the main weighing-beam E, and an auxiliary weighing apparatus, substantially in the manner and for the purpose set forth.

4. The stirrup suspended from the main beam, and having bearings for auxiliary weights, which may be communicated to the main beam, substantially as and for the purpose set forth.

6,248. RING SPINNING-FRAMES. C. B. Morse, Rhinebeck, N. Y. Patent No. 76,798, dated Apr. 14, 1868. [Filed Jan. 18, 1875.]

Brief.—The slots in the bolster and step rails allow the lifting-rod and ring-rail to be adjusted to centralize the spindles in the rings. The ring is secured in a holder which is located on top of the ring-rail over the holes, and provided on opposite sides with slotted ears, so as to be adjustable with respect to the spindles.



1. The combination of a continuous ring and lift rail, and a holder that holds the ring centered by two opposite slotted lugs or flanges and clamp-screws, as shown and described, for the purpose specified.

2. The tube E, in combination with the slotted rails A B and lifting-rod D, as and for the purpose specified.

6,249. HARVESTER-RAKES. John Rynearson, Farmington, Ill., assignor to J. H. Elward, St. Paul, Minn. Patent No. 36,800, dated Oct. 28, 1862. [Filed Mar. 5, 1875.]

Brief.—Rake-arm is pivoted above the platform, and revolves in a vertical plane, delivering the grain from an elevated incline at the side of the machine.

1. An inclined elevating-surface at the inner end of the platform and cutting apparatus, extended in advance of the line of cut, in combination with an elevating mechanism, the forward part or tooth of which shall move up said incline in advance of the line of the bar to which the fingers are attached.

2. In the described combination with the vertically-curved platform G, the rake H, pivoted to and projecting horizontally forward from the rake-arm I, by which it is carried in a vertical orbit, all as herein shown and described.

3. The guide L and spring *h*, operating in the described combination with the pivoted rake-head H, to present it in the proper position to gather the grain and afterward retract it therefrom.

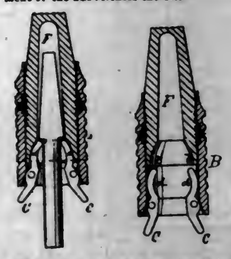
4. The fender Q, employed in combination with the pivoted rake H, in the manner and for the purpose specified.

5. The yielding hood *i*, operating in combination with the revolving rake H I, substantially as and for the purpose explained.

6. A platform constructed of vertically-curved slats, placed transversely of the machine at sufficient distance apart to admit the points of the rake-teeth between them, when used in combination with the rake H I, revolving in a vertical orbit, all as herein shown and described.

6,250. BIT-BRACES. Chas. H. Stockbridge, Whateley, Mass., assignor, by mesne assignments, to the Miller's Falls Company. Patent No. 62,232, dated Feb. 19, 1867. [Filed Mar. 5, 1875.]

Brief.—The bit is attached to the brace by means of an adjustable exterior nut, within and near the base of which are two pivoted dogs, in connection with a socket provided with two curved lower and inner edges, serving the purpose of cams. The bit is locked and fastened in place by moving the nut upward in the socket, thereby forcing the inner ends of the dogs against the body and under the shoulder of the bit. A reverse movement of the nut releases the bit.



The combination of the socket F, having cams *b b*, and a nut, B, provided with dogs C C, substantially as and for the purposes herein set forth.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 13. TUESDAY, MARCH 30, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

HARLOW *vs.* GUERNSEY.—*Interference.*

[*Appeal from the decision of the Examiner of Interferences in the matter of the interference between the applications of Charles F. Harlow and patent of James W. Guernsey, for* "IMPROVEMENT IN MACHINE FOR CLIPPING ANIMALS."—*Decided March* 22, 1875.]

A party to an interference, having conceded priority of invention to his opponent in general terms, and a patent having issued in accordance with his concession and request, is estopped from claiming a new interference with the same party on the subject-matter common to the same applications.

In an interference, judgment of priority is conclusive, not only on interfering matters which were claimed, but on all which might have been claimed.

SPEAR, *Acting Commissioner:*

This appeal is taken from the decision of the Principal Examiner refusing to dissolve the interference declared between the parties above named. It appears from the record that an interference was declared, in October of 1873, between the application of Harlow and that of Guernsey, on claims precisely the same and with subject-matter identical in both applications. On the 26th day of January, 1874, priority of invention was awarded to Guernsey, and letters patent were issued to him in accordance with the request of Harlow himself, and upon concession of priority made by Harlow over his own signature. Harlow now comes before the Office with an amended claim much broader in its scope than either of those allowed Guernsey, but including only elements which were also included in Guernsey's claims. Not only are the parties the same in this case, but the applications are the same.

It is not contended on the part of Harlow that he has any new evidence to bring forward, such as would ordinarily prevail in the Office for the granting of a new interference on the same subject-matter; but he appears to base his claims to this new interference, on the alleged ground that the subject-matter is not the same as that upon which he conceded priority of invention, or upon which the former judgment of the Office was based.

The concession which has been referred to is in the following terms:

I, Charles F. Harlow, above named, hereby concede priority of invention in the above-named interference to James W. Guernsey, above named, and ask that the above-named interference may be dissolved, and letters patent to be issued to said James W. Guernsey upon his above-named application.

It is to be observed that the terms of this are not limited to any special parts named or described by Guernsey, but refer generally to that application. Certainly there is nothing in the concession itself to intimate that he conceded to Guernsey the somewhat narrower claim for the combinations included in Guernsey's application, reserving to himself the right to the broad claim which would leave Guernsey's patent, when issued, comparatively worthless. The plain inference from the concession would be that he conceded all that Guernsey described in his application; and there is nothing in the specification of Harlow to weaken this inference, for his claims were no broader than Guernsey's. Harlow conceded at least all that he was then claiming. Further, as the two inventions are exactly the same in both applications, it is difficult to understand how that which Harlow now claims could be considered a completed invention at all, or be separated from the parts claimed by Guernsey. In any event, this concession is such that it has led Guernsey to take out a patent which the interpretation now put upon that concession would virtually render void, or, at best, of little value; for the interpretation now placed upon the concession is not that Guernsey was the prior inventor of what is shown in his patent, but only of a certain "pin, *a*," and "crank-pin *g*," and other subordinate and unimportant matters. But Guernsey's case does not rest solely upon the interpretation to be given to the concession made by Harlow. In the former interference between these two parties upon claims deliberately made in the same applications which are now brought forward, on due proceedings, Guernsey obtained from the Office judgment of priority over his competitor. The question now is whether that judgment included simply the combinations specifically claimed at that time and no more, or went to the ex-

tent of including anything which might properly have been claimed in those applications. A point precisely similar to this was before the Supreme Court in the case of *Beloit* vs. *Morgan*, (7 Wall., p. 619,) and was very clearly stated in the opinion of the court, and in cases cited in that decision. In *Henderson* vs. *Henderson*, quoted in that decision, the Vice-Chancellor said—

In trying this question I believe I state the rule of the court correctly, that where a given matter becomes the subject of litigation in, and of adjudication by, a court of competent jurisdiction, the court requires the parties to bring forward their whole case, and will not, except under special circumstances, permit the same parties to open the same subject of litigation in respect of a matter which might have been brought forward as a part of the subject in contest, but which was not brought forward, only because they have, from negligence, inadvertence, or even accident, omitted a part of their case. The plea of *res judicata* applies, except in special cases, not only to the points upon which the court was required by the parties to form an opinion and pronounce a judgment, but to every point which properly belonged to the subject of litigation, and which the parties, exercising reasonable diligence, might have brought forward at the time.

No reason appears why the rule here recognized should not be strictly applied to cases of interference in the Patent Office. Certainly, by reasonable diligence, applicants may ascertain at the outset the state of the art to which their inventions appertain, and the proper limitation which must be placed upon their claims.

In cases precisely like this, where the inventions shown by the two parties are the same, the enforcement of this rule can work no hardship; since, as before suggested, it seems hardly possible that any party should be entitled to claim, as sole inventor, whether broadly or narrowly, a machine, details of which essential to its completeness, he did not invent, and had expressly disclaimed. In no case will it occasion any hardship which may not be avoided by the exercise of ordinary prudence. On the other hand, to allow an applicant to split up his application and put his claims by piecemeal into successive interferences, would be to unnecessarily prolong litigation, and might work great hardship to an inventor manifestly entitled to priority.

It seems clear that Harlow, having gone into the interference with the narrow claims, equal in scope to those of Guernsey, and having accepted judgment upon them, is concluded as to the whole matter in the applications, and cannot have any new interference solely by reason of the presentation of claims not then made, in the applications when the first interference was determined.

The decision of the Examiner is accordingly reversed, and the interference will be dissolved.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, EASTERN DISTRICT OF MISSOURI.

ALFRED F. FOSTER vs. WILLIAM M. LINDSAY AND GERALD O. KALB.

[*In equity.—Before* TREAT, *J.: December*, 1874.]

Section 58 of the patent act of 1870 authorizes the court, in a suit thereunder, to review both patents on their merits, and to decree the cancellation of either or of both; and this on the ground of lack of novelty as to either or both, or any other ground that in an action for infringement would affect the validity of either. In a suit brought under section 58 of the act of 1870, to repeal an interfering patent, motion was made to strike out such part of defendants' answer as related to an alleged lack of novelty in the invention covered by complainant's patent, on the general ground that the object of the statute was merely to enable the complainant to determine the question of priority as between himself and his adversary prior to going before the public to test the validity of the patent on its merits: *Held*, that this allegation of the answer was admissible. The motion was overruled.

[*Hatch* and *Parkinson*, for complainant.
Kellogg and *Holmes*, for defendants.]

[This was a bill in equity, brought under sec. 58 of the patent act of 1870, for the repeal of certain letters patent granted to the defendants April 14, 1874, which were alleged to be for the same invention as was covered by a patent granted to complainant May 12, 1874, and, therefore, to constitute an interfering patent.

The defendants in their answer, besides denying that their patent was for the same invention as complainant's patent, and alleging that they were prior in date, asserted that complainant's patent was void for want of novelty, and set up alleged anticipations.

The case came up upon motion of complainant's counsel to strike out that part of the answer which alleged want of novelty and the anticipations, as irrelevant and immaterial.

In support of the motion, and in behalf of complainant, it was urged that the object of sec. 58 of the statute was to enable the patentee to remove the cloud cast over his *prima facie* right by the improper action of the Patent Office in granting two patents for the same invention, prior to going before the public to test the validity of his patent upon its merits, and to place himself in the same position—no better and no worse—than he would have occupied had the interference been declared and determined, as it should have been, in the Patent Office; that it was the design of the section to enable the patentees to determine between themselves which was prior in rights before either should be put to the expense of ascertaining whether his patent was valid as against the world; that, if the construction was otherwise, the patentee would derive no advantage whatever from this section, as he could without it, in an action for infringement, determine the validity of the respective patents, while, if he was obliged, in an action under the section in question, to establish the validity of his patent, he would be put to the same trouble and expense as in an action for infringement, while he must fail to obtain a decree for profits or damages; that the object of the statute was not to provide an additional mode of determining the validity of a patent, since, if it were, there was no reason why it should not apply to the repeal of other patents as well of interfering patents; that the court could, under the statute decree the cancellation of either patent only on the ground that it was in conflict with the other, since the statute makes no provision for cancellation on the ground of want of novelty, or upon any other ground than the existence of the other patent; that the statute provides in terms for the repeal of either of the interfering patents, but not of both; that the statute provides in terms for the defense of want of novelty in an action for infringement, and the fact that it makes no such provision in this case supports the presumption that it contemplated no such defense; and that the fact that an earlier patent was defective on grounds extraneous to the Patent Office record was no reason why a later patent, which was defective on the very ground and the only ground to which this statute referred, should not upon that ground be cancelled.

It was insisted, on behalf of the defendants, that the complainant's right of action being founded upon the existence of his patent, they were at liberty to attack its validity upon any ground that affected it.]

TREAT, *J.*:

The court delivered no written opinion; but, after stating the nature of the motion and the character of the suit in which it was made, referred to the 16th section of the statute of 1836 as analogous to the one it was called upon to construe. The case of *Mowry* vs. *Whitney*, (14 Wall., 434,) was referred to as indicating the construction put upon that statute by the Supreme Court. That was a suit in equity for the repeal of a patent on the ground of fraud in the extension of it, brought in the name of a party who had been sued for infringement. The Supreme Court held that "no one but the Goverment, either in its own name or the name of its appropriate officer, or by some form of proceeding which gives official assurance of the sanction of the proper authority, can institute judicial proceedings for the purpose of vacating or rescinding the patent which the Government has issued to an individual, except in the cases provided for in sec. 16 of the act of July 4, 1836;" that, under this 16th section, the court was only authorized to try the conflicts of claim arising from two interfering patents, and only to annul or set aside one patent so far as is necessary to protect the rights of the other party; that the decree in such a suit can have no validity except between the parties to the suit, and that the general public is left to the protection of the Government and its officers.

The court, after a review of this case of *Mowry* vs. *Whitney*, held the statute of 1870 to be broader in its application than that of 1836; that under it the court was authorized to review both patents on their merits, and to decree the cancellation, not only of either, but of both; and that it might do so on the ground of want of novelty in either or both, or any other ground that would in any action of infringement affect the validity of either.

The motion was accordingly overruled.

EXTENSIONS GRANTED.

31,443.—Improved Felly-Machine.—Granted to CHARLES H. DENISON, February 19, 1861.

Claim.—1. The adjustable plates *n p*, provided with the pins *o q*, when used in connection with the plate G and cutter-head F, as and for the purpose set forth.

2. The combination of the adjustable semicircular bed or bearing piece I and yielding bar J with the cutter-head F, plate G, and bars *n p*, provided with the pins *o q*, all being arranged for joint operation as and for the purpose herein set forth.

31,525.—Improvement in the Manufacture of Hoe-Blanks.—Granted to NATHAN BRAND, February 26, 1861; reissue No. 1,481, dated May 26, 1863.

Claim.—I claim the vibrating reciprocating roller-dies E E', constructed and operated as described, for the purpose set forth.

And in combination with the dies E E', having a longitudinal score, I claim a pair of vibrating reciprocating dies or rollers, provided with a lateral or circumferential score for the shank of the hoe-blank, so as to roll the hoe-blank and elongate it parallel with the shank.

31,525.—Improvement in the Manufacture of Hoe-Blanks.—Granted to NATHAN BRAND, February 26, 1861; reissue No. 1,482, dated May 26, 1863.

Claim.—In the production or manufacture of hoe-blanks with shanks made of the same piece of metal with the plate, and extending onto the plate as a rib, and strengthened around and at the point of the rib by making the metal thicker than in the more extended portions of the hoe-blank, I claim forming said hoe-blanks by rolling them in different directions at a right angle to each other, as set forth.

31,533.—Improvement in Weighing Apparatus.—Granted to AUGUSTUS B. DAVIS, February 26, 1861.

Claim.—A series of weighing-frames, each having the levers I and K and bell-crank lever M, connected together and operating as set forth, when the said frames are so arranged along the opposite side walls of a lock that the said levers I shall be at right angles to and partly overhang the said walls, as and for the purpose herein described.

31,534.—Improvement in Scale-Beams.—Granted to AUGUSTUS B. DAVIS, February 26, 1861.

Claim.—A weighing apparatus composed of an upper and lower graduated beam, when the lower beam is suspended, at or near both its ends, to the upper beam, and when it is entirely dependent upon the said upper beam for its support, and for the proper performance of its functions, as and for the purpose herein set forth.

31,546.—Improvement in Polishing Iron Bars and Rods.—Granted to B. LAUTH, February 26, 1861.

Claim.—The production of polished bars, rods, plates, or sheets of iron or steel by passing them cold through between rolls, after they have been subjected to the acid bath, to remove the scale, substantially as herein described.

31,566.—Improvement in Drying Fruits, Vegetables, &c.—Granted to MARSHALL P. SMITH, executor of FRANCIS H. SMITH, deceased.—Patented February 26, 1861; reissue No. 3,017, dated June 30, 1868; reissue No. 4,468, dated July 11, 1871; reissue No. 4,834, dated March 26, 1872.

Claim.—1. A chamber through which a current of air is passed, and in which the articles to be dried are subjected to a progressive temperature and dryness, substantially as described.

2. I claim the process of drying fruits and vegetables by subjecting them to a current of air artificially warmed, in combination with a gradually-increasing temperature and increasing dryness, substantially as described.

3. I claim a drying-chamber in which the operation is continuous, in combination with increasing temperature and dryness, as above set forth.

4. I claim a drying-chamber in which the drying air is admitted at one end and escapes at the other, when such air passes through and around the articles to be dried, so as gradually to reduce its temperature and dryness, as described.

31,578.—Improvement in Paper-Folding Machines.—Granted to WILLIAM H. MILLIKEN and JOHN MILLIKEN, February 26, 1861; reissue No. 3,785, dated January 4, 1870.

Claim.—1. The combination, with the horizontal rolls E, of the inclined rolls I and inclined table H, so arranged that the sheet of paper, after receiving its first fold, shall slide down the inclined table to gages, which determine its position for the second fold without loss of register, and without the use of tapes or belts, substantially as described and specified.

2. The combination and arrangement of the inclined table H, inclined roll I, gages K, and knife L, for making the second fold in the sheet, substantially as described and specified.

3. The combination of the inclined trough M with its fingers a^3 b^3 d^3, so arranged that the sheet shall be guided into the trough after passing the rolls I, and slide to the position for its third fold, substantially as described.

4. The inclined rolls P and Q, at right angles to each other, in combination with the knife U, substantially as described and specified.

5. The guide-plate *q*, employed for deflecting the sheet in one direction or the other, for giving it three or four folds, without the necessity of unshipping or stopping the operation of the machine, substantially as described and specified.

6. The combination, with the folding-knives, of a pair of rollers, one of which is kept in contact with the other by a spring-pressure, so as to readily yield to the edge of the folding-knife, the passage of double sheets, or any inequalities in the paper folded, substantially as described and specified.

Disclaimer filed February 19, 1875.

Disclaims fifth clause of claim, as above set forth.

31,578.—Improvement in Combined Paper-Folding Machines with Printing-Presses.—Granted to WILLIAM H. MILLIKEN and JOHN MILLIKEN, February 26, 1861; reissue No. 3,786, dated January 4, 1870.

Claim.—The combination, with the rolls E E of a folding-machine, of a knife, or the equivalent therefor, upon the fly of a printing-press, which shall enter the sheets to the rolls, whereby the two machines become co-operative, and the folding of the printed sheets is completed direct from the press, substantially as described.

31,579.—Improvement in Corn-Planter.—Granted to FRANCIS B. PRESTON, February 26, 1861.

Claim.—The combination of the three handles *d h i* with the slide D, tube A, and hopper B, one of the handles, h, being attached to the slide, and the other two being attached to plate *c*, as and for the purpose set forth.

DISCLAIMERS FILED.

31,578.—Improvement in Paper-Folding Machines.—WILLIAM H. MILLIKEN and JOHN MILLIKEN, Manchester, N. H.—Patented February 26, 1861; reissue No. 3,785, dated January 4, 1870. Disclaimer filed February 19, 1875. Disclaims: "The sixth clause of the claim in the following words, to wit: "'6. The combination, with the folding-knives, of a pair of rollers, one of which is kept in contact with the other by a spring-pressure, so as to readily yield to the edge of the folding-knife, the passage of double sheets, or any inequalities in the paper folded, substantially as described and specified.'"

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date March 30, 1875.]

8,229 and 8,230.—Monument.—ANTON LINGEMANN, Port Huron, Mich.—Cases A and B. Applications filed March 6, 1875. Term of patents 7 years.

8,231.—Pedestal for Stools.—ASAPH MERRIAM and CHARLES L. LITTLE, West Meriden, Conn. Application filed February 9, 1875. Term of patent 7 years.

8,232.—Pitchers.—THOMAS B. ATTERBURY, Pittsburg, Pa., assignor of one-half his right to JAMES S. ATTERBURY, same place. Application filed January 12, 1875. Term of patent 7 years.

8,233 to 8,236, inclusive.—Carpets.—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Applications filed March 22, 1875. Term of patents 3½ years.

8,237 to 8,239, inclusive.—Carpets.—ETIÉNNE GUIRAUD, New York, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass. Applications filed March 22, 1875. Term of patents 3½ years.

8,240 to 8,244, inclusive.—Font of Printing-Types.—CARL E. HEYER, Boston, Mass. Applications filed February 18 and March 22, 1875. Term of patents 3½ years.

8,245.—Font of Printing-Types.—PETER A. JORDAN, Philadelphia, Pa., assignor to MACKELLAR, SMITHS & JORDAN, same place. Application filed March 10, 1875. Term of patent 7 years.

8,246 and 8,247.—Oil-Cloths.—HENRY KAGY, Philadelphia, Pa., assignor to THOMAS POTTER, SONS & CO., same place.—Cases A and B. Applications filed March 16, 1875. Term of patents 3½ years.

8,248.—Carpets.—CHARLES S. LILLEY, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed March 22, 1875. Term of patent 3½ years.

8,249 and 8,250.—Carpets.—DAVID MCNAIR, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Applications filed March 22, 1875. Term of patents 3½ years.

8,251.—Tea-Caddies.—WILLIAM T. SHERER, Chicago, Ill. Application filed February 6, 1875. Term of patent 7 years.

8,252.—Carpets.—CHARLES W. SWAFF, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed March 22, 1875. Term of patent 3½ years.

8,253.—Carpets.—THOMAS J. STEARNS, Boston, Mass., assignor to THE ROXBURY CARPET COMPANY, same place. Application filed March 22, 1875. Term of patent 3½ years.

8,254.—Towel-Racks.—CORNELIUS TEN EYCK, White House Station, N. J. Application filed March 12, 1875. Term of patent 14 years.

8,255 and 8,256. Ornamentation of Rubber Boots and Shoes.—ANDREW R. TROTTER, Providence, R. I.—Cases A and B. Applications filed March 13, 1875. Term of patents 14 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Certificate bearing date March 30, 1875.]

2,319.—Washing-Powder.—OTIS CORBETT, Chicago, Ill. Application filed March 11, 1875.

"words 'Corbett's California Concentrated Erasive Soap Plant,' arranged as the sides of a parallelogram, and inclosing a representation of the plant *Phalangium pomaridianum*."

2,320.—Loom-Temples.—DUTCHER TEMPLE COMPANY, Hopedale, Mass. Application filed August 2, 1871.

"letter 'D' and a lozenge."

2,321.—Fine-Cut Chewing-Tobacco.—ARTHUR GILLENDER & CO., New York, N. Y. Application filed February 19, 1872.

"word 'Solace.'"

2,322.—Cigars.—S. JACOBY & CO., New York, N. Y. Application filed December 9, 1872.

"word 'Moldado.'"

2,323.—Heaters, Ranges, and Grate-Work.—DANIEL MERSHON'S SONS, Philadelphia, Pa. Application filed February 6, 1875.

"words 'THE RUSSIAN.'"

2,324.—Preparation to be used on Sheep.—REDINGTON, HOSTETTER & CO., San Francisco, Cal. Application filed March 20, 1875.

"device, design, cut, or print of a sheep, and the words or name 'Saponaceous Carbolic Sheep Dip,' combined and arranged as shown."

2,325.—Flour.—AUGUSTUS A. TAYLER, Londonville, Ohio. Application filed March 18, 1875.

"words 'World's Favorite.'"

2,326.—Bitters.—PETER D. VAN INGEN, Brooklyn, N. Y. Application filed March 19, 1875.

"word 'Centennial.'"

2,327.—Hose for Pumps, Engines, &c.—WANNALANSET MANUFACTURING COMPANY, Boston, Mass. Application filed February 8, 1875.

"one or more red yarns or threads woven into the fabric of which the hose is composed or made, and running lengthwise, parallel with the axis of the cylindrical hose, as shown in the photographic fac-similes accompanying this amendment, and also of the words 'RED LINE HOSE.'"

2,328.—Medicine.—J. C. AYER & CO., Lowell, Mass. Application filed August 24, 1874.

"words 'Ayer's Cherry Pectoral.'"

2,329.—Silk Fabrics.—P. A. DAILY & CO., New York, N. Y. Application filed March 25, 1875.

"word 'ENTERPRISE.'"

2,330.—Coffees, Spices, Mustard, &c.—JAMES M. EARLE, New York, N. Y. Application filed March 16, 1875.

"representation of a head of an American Indian."

2,331.—Boots and Shoes.—GRAFF, WATKIN & CO., Philadelphia, Pa. Application filed March 24, 1875.

"word 'KEYSTONE.'"

2,332.—Cotton Prints.—HAMILTON WOOLEN COMPANY, Southbridge, Mass. Application filed March 22, 1875.

"words 'Knickerbocker Prints.'"

2,333.—Cough-Sirup.—LES SŒURS DE L'ASILE DE LA PROVIDENCE DE MONTREAL, Montreal, Canada. Application filed March 24, 1875.

"seal of corporation, around which are printed the words 'Sirop de Gomme d'Epinette Composé,' and 'Compound Syrup of Spruce Gum,' which have been generally arranged as shown in the accompanying drawing. Such seal is composed of the figure of a virgin, sitting on a throne, at the foot of which are two figures of saints; around these figures are the words 'Charitas Christi Urget Nos,' and under the throne the letters A. P. M., the whole being surrounded by a wreath of lilies."

2,334.—Petroleum and its Products and Other Oils.—POWER BROTHERS & CO., London, England, and WILLIAM H. POWER & CO., New York, N. Y. Application filed March 25, 1875.

"word 'INTERNATIONAL.'"

2,335.—Floor-Cloths and Similar Fabrics.—FREDERICK WALTON, Staines, England. Application filed March 22, 1875.

"letters 'LINOLEUM.'"

2,336.—Cider-Mills.—WHITMAN AGRICULTURAL WORKS, St. Louis, Mo. Application filed March 22, 1875.

"words 'Whitman's Americus.'"

2,337.—Atomizers.—YOUNG, LADD & COFFIN, New York, N. Y. Application filed March 13, 1875.

"words 'Centennial Perfumer and Atomizer.'"

APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., March 22, 1875.

On the petition of JOHN HASELTINE, of Boston, Mass., authorized by act of Congress approved February 18, 1875, praying for the extension of a patent granted to him on the 25th day of March, 1856, for an Improvement in Water-Wheels,

It is ordered that the testimony in the case be closed on the 11th day of May next; that the time for filing arguments and the Examiner's report be limited to the 21st day of May next; and that said petition be heard on the 26th day of May next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

BOUND VOLUMES OF PATENTS.

The bound volumes of patents, containing the specifications and drawings of patents in full from May 30, 1871, to within a few months of date, may be consulted at the following places:

Astor Library, New York city.
American Society Civil Engineers, New York city.
Bronson Library, Waterbury, Ct.
Court of Appeals, Syracuse, N. Y.
Cooper Union Library, New York city.
Cornell University, Ithaca, N. Y.
City Library Association, Springfield, Mass.
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Atlanta, Ga.	Fort Smith, Ark.	New Albany, Ind.
Brooklyn, N. Y.	Grand Rapids, Mich.	New Orleans, La.
Buffalo, N. Y.	Huntsville, Ala.	Ottumwa, Iowa.
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Engineers, Chief of, Washington, D. C.
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Free Public Library, New Bedford, Mass.
Grosvenor Library, Buffalo, N. Y.
Illinois Industrial University, Champaign, Ill.
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Mercantile Library, Galveston, Texas.
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Mercantile Library, Philadelphia, Pa.
New Britain Institute, New Britain, Ct.
Odd-Fellows Library, San Francisco, Cal.
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Public Library, Lynn, Mass.
Public School Library, St. Louis, Mo.
Patent Office, Great Seal, London, England.
Stevens Institute of Tech., Hoboken, N. J.

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In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

Copies of the specifications and drawings of design patents will be furnished by the Patent Office at the cost of making them. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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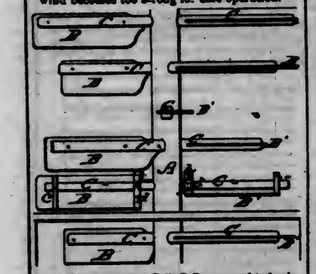
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED MARCH 30, 1875

161,316. WINDMILLS. John M. Armour, Northwood, Ohio. [Filed Oct. 26, 1874.]

Brief.—The features of this invention are the self balancing and regulating arrangement, by allowing the opposite vanes to swing beyond the horizontal and vertical points till they are balanced, and the yielding and turning of the vanes on their shafts when the wind becomes too strong for safe operation.

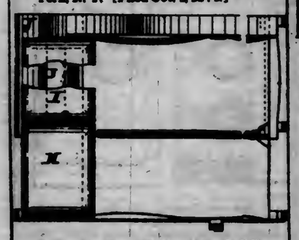


1. Counter-vanes B B' B B', secured to horizontal rocking shafts C C, arranged in bearings of a vertical driving-shaft, A, the said vanes being arranged to have a free self-limiting movement beyond the horizontal and vertical lines, respectively, and constructed to turn automatically upon their shafts when a certain predetermined pressure of wind thereon shall have been reached, substantially as herein specified.

2. Regulating-brake D D, in combination with the vane-shafts C C, substantially as and for the purpose herein specified.

3. Safety latches or pins *f f*, in combination with the vanes B B' and shaft C, substantially as and for the purpose herein specified.

161,319. BED-LOUNGES. C. Antaly, New York, N. Y. [Filed Oct. 1, 1874.]



The combination, with the seat and sliding extension-frame of a sofa-bed, of the head-board H, connected to the upwardly-curved portion of the front rail of the sliding frame, and the supplemental head-board I, connected to the head-board H, substantially as and for the purpose described.

161,320. MANUFACTURE OF IRON. J. F. Bennett, Pittsburg, Pa. [Filed Jan. 2, 1875.]

Brief.—Makes silicon pig, rich in silicon, in the blast-furnace, and subjects it in a reverberating-furnace to the neutral flame for a definite time, whereby the silicon is replaced by the carbon of the carbonic-acid gas in a certain ratio.

1. The process herein described, for manufacturing iron, consisting in first reducing the ore in a blast or similar furnace with the minimum amount of flux, so as to obtain a silicon iron, and then subjecting the impure pig metal to a neutral flame of carbonic-acid gas for the removal of the silicon.

2. The process herein described for obtaining a pig metal containing a high percentage of carbon, consisting in first adding silica, such as quartz or jasper, to the iron ores, and reducing the admixture, so as to obtain an impure pig containing the desired amount of silicon, and then subjecting the impure pig metal to a neutral flame of carbonic-acid gas, so as to eliminate silicon and deposit carbon

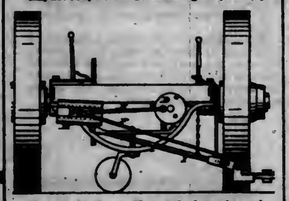
161,321. SHOVELS. Thos. J. Blake, Pittsburg, Pa. [Filed June 1, 1874.]

Brief.—A shovel in which the blade is of steel, and the straps of iron, the two being united without welding or riveting.



As a new article of manufacture, a shovel consisting of a blade and shank, with socket and straps for attachment to handle, the whole complete in a single piece of metal, composed of steel differing in temper, or composed in part of steel, and in part of iron, as above described, the said components existing in union independent of pressure-welding, rivets, or other separate fastening, substantially as specified.

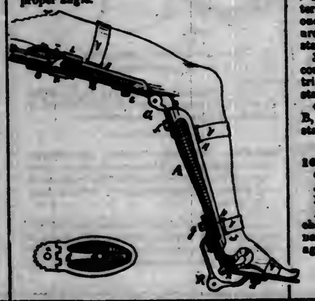
161,322. MOWING-MACHINES. W. W. Briglin, Avoca, N. Y. [Filed Aug. 28, 1874.]



The inclined way H, attached to the main frame, and sliding pin G, in combination with the connecting-rods E and F and crank-wheel D, all constructed and arranged to operate the cutter-bar in the manner substantially as described.

161,323. FRACTURE-SPLINTS. George H. Brown and Robert C. Davis, Indianapolis, Ind. [Filed July 23, 1874.]

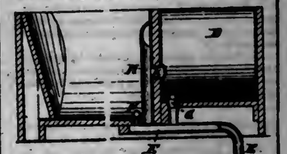
Brief.—In a jointed splint the section which carries the foot is so hinged as to permit lateral as well as vertical motion, and has a set-screw for one movement, and rack and pawl for the other, to confine the foot section at its proper angle.



The adjustable hinge-joint *s*, in combination with the section C and A of the splints, pivot-bolt *e*, ratchet *y*, and pin *p*, substantially as described.

161,324. BATH-TUBS. Asa C. Brownell, Brooklyn, N. Y. [Filed Sept. 4, 1874.]

Brief.—A bath-tub having a partition which forms on one side a plunge-bath, and on the other a sits or foot bath. A single overflow and discharge pipe serves for both baths.



The sits or foot bath D, having its sides cut down, as described, in combination with the overflow-pipe H and discharge-pipe E of the plunge-bath C, all constructed and arranged substantially as shown and described.

161,325. MINING-POWDERS. S. Cahuc, Toulouse, France. [Filed Aug. 21, 1874.]

Brief.—Adds sulphate of iron to prevent combustion, except at very high temperatures.

A mining-powder composed of nitrate of potash, sulphur, tanner's bark, lamp-black, water, and sulphate of iron, substantially as described.

161,326. TOY PISTOLS. Truman Case, New Haven, assignor to James D. Frary, New Britain, Conn. [Filed Mar. 26, 1874.]



1. The method herein described of discharging suitably-prepared match-splints or arrows from toy pistols or guns by exploding the detonating material, substantially as described, within a barrel adapted to hold the splint until the explosion, and to substantially guide it thereafter.

2. A toy pistol for exploding detonating material, provided with a hammer and trigger in one piece, and operated by a simple lever-pressure to crush said detonating material, substantially as specified.

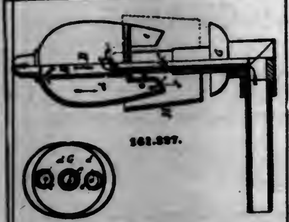
3. The combination of the barrel and stock, constructed in one piece, with a hammer and trigger, also constructed in one piece, substantially as described.

4. In combination with the stock A, barrel B, trigger C, and hammer D, the cap E, substantially as and for the purpose specified.

161,327. GAS-GENERATING BURNERS. E. F. Clayton, Melrose, assignor to himself and John Costello, Boston, Mass. [Filed Feb. 17, 1875.]

Brief.—The dome consists of a longitudinal chamber with lateral passages, which terminate in hollow legs, perforated to cast a jet against the generating-pipe.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON



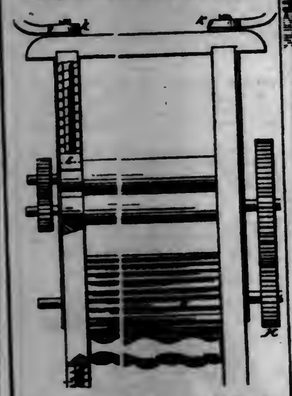
161,827.

1. The dome-shaped case D, composed of the mixing-chamber B, lateral passages *d*, hollow legs *e*, substantially as and for purposes stated.

2. The dome D, consisting of chamber E, lateral passages *d*, and hollow legs *e*, in combination with the generating-pipe C, as shown and set forth.

3. The combination of the dome D, consisting of chamber E, lateral passages *d'*, and hollow legs *e*, with generating-pipe C, and shield H, as shown and set forth.

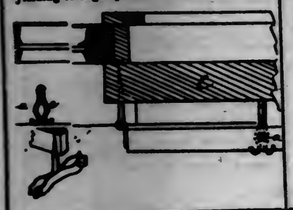
161,828. COMBINED WASHING AND WRINGING MACHINES. Joseph H. Cook, Mercer, Pa., assignor of one-half his right to J. B. Moury, same place. [Filed Apr. 10, 1874.]



The combination of the cog-wheel H on the end of the washing-roller D, the cog-wheel J on the end of the wringer-roller G, the spring *i* under said roller, the screw-rods *f*, and the adjusting-nuts *h*, all as and for the purposes set forth.

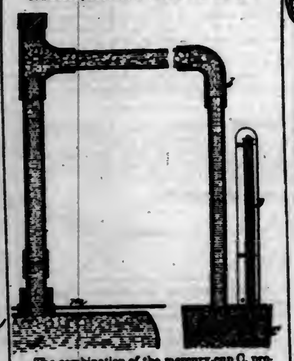
161,829. SHUTTER AND BLIND FASTENINGS. Chas. H. Craig, Quincy, Mass., assignor to Edmund S. Sparrow, same place. [Filed Jan. 6, 1875.]

Brief.—A clutch or spring-fastening, made of thin strips of metal, with drive-spike attachment, is secured to the blind, and engages with a vertical pin or projection, like-wise secured to the window-sill or side of the building; the construction automatically fastening the blind or shutter closed or open, but yielding to slight pressure for release.



An improved blind fastening, consisting of the clutch or spring fastening *c* and the pin or projection *a*, secured, one to the blind and the other to the window-sill or side of the building, all constructed, arranged, and operating substantially as described and shown, for the purpose set forth.

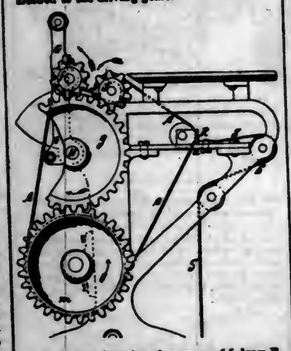
161,830. PYROMETERS. Mary Crawford, Pittsburg, Pa., administratrix of Benjamin Crawford, deceased. [Filed Oct. 31, 1874.]



The combination of the mercury-cup C, provided with a suitable indicating device, and the receiving-vessel A, filled with oil, tin, or a suitable metallic alloy, connected by a tube filled with oil, substantially as and for the purpose set forth.

161,831. LUMP TOBACCO-MACHINES. David W. De Forest, Brooklyn, N. Y. [Filed Oct. 2, 1874.]

Brief.—The size of the pocket is determined by a band-tightener operated by a treadle. The rolls that carry the band or apron have gears situated at one side, that give positive movement to them, and they are always meshed to the driving-gears.



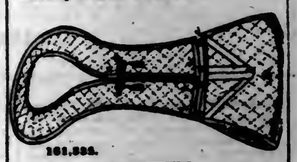
1. The combination of gears *g m f f*, drum E, rolls B U, belt A, and pivoted frame U, as described.

2. The combination of gears *g m f f*, drum E, rolls B C, frame G, and the sliding roll D, band S, and treadle T, as described.

161,832. COMBINED TIPPETS AND MUFFS. Jos. Engel, Frankfort-on-the-Main, Germany, assignor of one-half his right to G. L. Palmer, Wilkesbarre, Pa. [Filed Aug. 17, 1874.]

1. A combined tippet and muff, finished and provided with fastenings upon both sides, to adapt it to be reversible, so as to be worn either side out, substantially as described and shown.

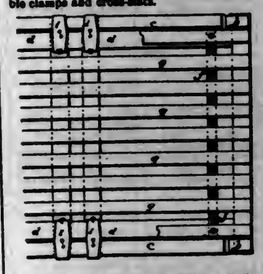
2. A combined tippet and muff, detachably connected, and made to be reversible, substantially as described and shown.



161,833.

161,834. BED-BOTTOMS. Oscar F. A. Faulkner, Mount Pleasant, Iowa. [Filed Dec. 24, 1874.]

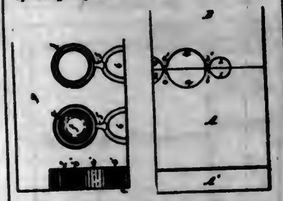
Brief.—The slat-frame rests on the side spring-bars, which are supported by the hooks at the corners of the bedstead. The rigidity of the spring-bars is regulated by the adjustable clamps and cross-slats.



The combination of the hooks *b*, spring-bars *c d*, clamps *l e*, cross-slats *c*, cross-bars *f*, and slats *g*, substantially as described.

161,834. DIES FOR FORGING SPINNING-RING BLANKS. Sullivan Forehand and Henry O. Wadsworth, Worcester, Mass. [Filed Feb. 20, 1875.]

Brief.—The invention comprehends several dies, forming a series, by means of which the end of a rectangular bar is swaged into a spinning-ring blank.



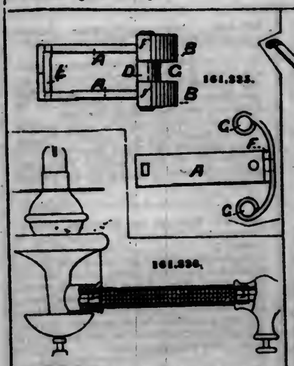
1. The combination, with the part A, provided with the openings or recessed parts *a*, 1, and 3, and projections *b* and *c*, recess 6, concavity *h*, rounded projection *f*, and circular groove *g* of the part B, provided with openings or recessed parts *a'*, 2, and 4, projections *b' c'*, recess 6, concavity *h*, rounded projection *f*, and circular groove *g*, substantially as and for the purposes set forth.

2. The combination, with the peculiarly-constructed part D, of the part D', substantially as and for the purposes set forth.

3. The combination, with the part G H, of the central trimming-plunger I, substantially as and for the purposes set forth.

161,835. DRAW-HEADS. Jos. H. Gartside, Port Perry, assignor to John B. Geyser, Pittsburg, Pa. [Filed Aug. 4, 1874.]

A draw-head formed by uniting the separate pieces A A, B B, C C, D D, E, and F F, having the tenons, mortises, and openings shown, substantially as and for the purposes set forth.



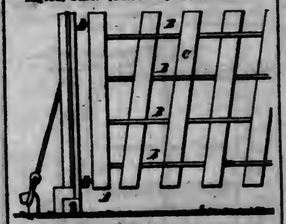
161,835.

161,836. VAPOR-BURNERS. Solomon S. Gray, Boston, Mass., assignor to himself and Allen F. Gray, same place. [Filed Oct. 20, 1874.]

Brief.—Shot in the feed-tube for communicating heat from the burner and regulating the flow.

The combination, in a vapor-burner having a feed-tube, a burner-tube, and a series of jet openings arranged below the burner-tip, of a packing of shot within the feed-tube, heated by the said flame from the said jet openings for vaporizing the liquid naphtha, and regulating the flow of the liquid, as and for the purpose specified.

161,837. FARM-GATES. S. R. Holt, Worthington, Ohio. [Filed July 22, 1874.]



The gate herein described, composed of the end vertical posts A, horizontal stringers B, and pickets C, said pickets provided on alternate faces with slots *c*, and placed or woven in an inclined or slanting position on the horizontal stringers B, substantially as and for the purposes described.

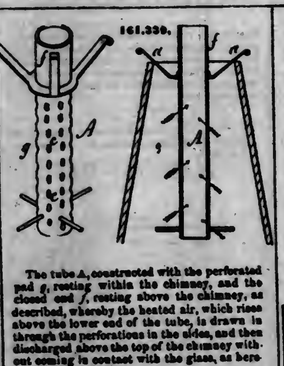
161,838. HARNESS-SNAPS. Leroy Humbert, Sioux City, Iowa, assignor of one-half his right to H. A. Lyon, same place. [Filed Feb. 26, 1875.]



A harness-snap having loop A, beveled and curved side bars B B, oblate space C, and a hook, D, ending in a tongue which passes between, and is prolonged in the plane of, said side bars, substantially as specified.

161,839. LAMP-CURRENT ATTACHMENTS. Henry Johnson, Rochester, N. Y., assignor, by mesne assignments, to Margaret Johnson, same place. [Filed Feb. 20, 1875.]

Brief.—Intended to assist in producing draft through the chimney, and to obviate breakage.

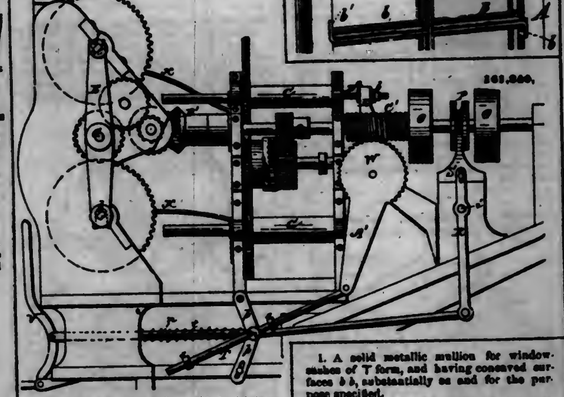


161,839.

The tube A, constructed with the perforated pad *g*, resting within the chimney, and the closed end *f*, resting above the chimney, as described, whereby the heated air, which rises above the lower end of the tube, is drawn in through the perforations in the sides, and then discharged above the top of the chimney without coming in contact with the glass, as herein before described.

161,840. MACHINES FOR TAPPING PIPE-FITTINGS. J. Kacerovsky, Bridgeport, Conn., assignor to C. M. Alexander and J. M. Mason, Washington, D. C. [Filed Aug. 28, 1874.]

Brief.—The parts are duplicated. The chucks are disposed radially in a carrier revolved by the operator, to bring the fittings into position. One jaw of each chuck is pivoted, and is closed by a lever pivoted so that one end bears against the jaw, and the other against a curved bar on the frame. The side taps are in the same plane and operate together, while the third tap is situated below, and operates after the others have finished. The motion of the taps is reversed by clutch mechanism operated to automatically run back the taps after they have completed the thread, and stop the machine. A sleeve, fastened to each of the three shafts that communicate motion to the spindles, carries a pin that bears against a stud on the first gear-wheel, and permits a certain amount of lost motion when the clutch is shifted.



161,840.

1. The plate or clutch J, provided with jaws *f* and levers *h*, in combination with the adjustable bar K on the main frame, for holding the fittings to be tapped, and releasing the same automatically, substantially as herein set forth.

2. The combination of the adjustable frame I, set-screw *d*, clutches J, lever L, and gearing M, all constructed substantially as and for the purposes herein set forth.

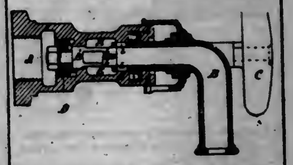
3. The combination of the adjustable worm C', segment W, with arm A', pivoted rod T, passing through the swivel-pin *m*, the adjustable collars *r r* on the rod T, the toggle-links *p p*, rods *b a*, spring I, lever E, and shipper S, all constructed substantially as and for the purposes herein set forth.

4. The combination of the movable clutch P, lever R, rod *k*, swivel-pin *m*, toggle-joint *p p*, rod *a*, spring *t*, and lever V, all constructed substantially as and for the purposes herein set forth.

5. The combination of the mandrels B B, formed with screws D D, the sleeves C C, yoke E, barrel-nuts *a a*, jam-nuts *b b*, adjusting-screw G, and gearing H, all constructed substantially as and for the purposes herein set forth.

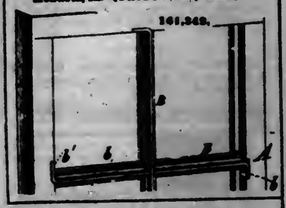
161,841. SELF-CLOSING COCKS. William Knaust, Vienna, Austria. [Filed Mar. 1, 1875.]

Brief.—When the knob is depressed the bent pipe is pressed inward, the valve removed from its seat, and the piston above said valve out of its recess, allowing water to flow into the recess, from whence it enters through openings into the bent pipe, and is discharged.



A cylinder, A, with recess E, in combination with a bent pipe, B, sliding in said chamber, valve-disk D, openings L L, and knob C, the whole being arranged in the manner and for the purpose substantially as described.

161,842. WINDOW-SASHES. W. Kreisner, Mendota, Ill. [Filed Feb. 20, 1875.]



161,842.

1. A solid metallic mullion for window-sashes of T form, and having concaved surfaces *b b*, substantially as and for the purpose specified.

2. The solid metallic mullion B *b b*, constructed with ears *b'* at the ends, substantially as specified.

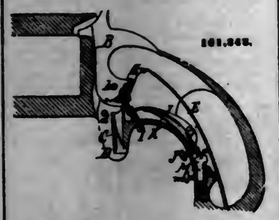
161,843. LOCKS FOR FIRE-ARMS. John H. Lester, Winsted, assignor to himself and H. P. Morgans, New London, Conn. [Filed Feb. 20, 1875.]

1. A fire-arm having the pin or locking means I, in combination with the hammer H, having two or more recesses, 1 2 3, and adapted to serve therewith in locking the hammer in several different positions as and for the purpose herein specified.

2 In combinance with the trigger D *d* and the usual provision for cocking, retaining, and liberating the hammer by the trigger, the employment of one or more separate recesses, 1 2 3, in the hammer, in combination with a locking piece, l, and spring K, acting through suitable connections to constantly throw the locking-piece into engagement with the recesses, as and for the purposes specified.

3. The safety-catch M *m*, serving in combination with the hammer B, locking-piece l, and with suitable connecting and operating means to further insure against accident, as herein specified.

161,842.



161,844. BOLSTER-PLATES FOR VEHICLES. William J. Lewis, Pittsburg, Pa. (Filed Feb. 20, 1875.)



As a new article of manufacture, a bolster-plate having a raised ring on one face, and a corresponding depression on the opposite face, so that each plate shall serve either as an upper or lower bolster-plate, when used with a second plate of the same form, substantially as described.

161,845. FIREBOX-CAR DOORS. Harry C. McCarty and Edward Glenn, Renovo, Pa. (Filed Feb. 11, 1875.)



The combination of door C, pivoted at one of its lower corners to the door-frame, and having sliding gate G, with the car A, provided with keepers D and E, substantially as set forth.

161,846. WAGON-BODIES. Robert W. McClelland, Cerro Gordo, Ill. (Filed Apr 30, 1874.)

1. The side-beams provided with dovetailed grooves on their outer faces, in combination with the standards C C, severally attached to the sills B B, and provided with dovetailed tenons on their inner faces, by means of which the side-boards may readily be removed, and at the same time the employment of belts and nuts dispensed with, substantially as described.

2. In a wagon-body, the combination of the hinged foot-board F, having lugs G and supporting-chains H, with the removable dash-board I, the latter being adapted to hold the foot-board in a vertical position by resting on the lugs G, substantially as and for the purposes set forth.

161,847. WAGON-STANDARDS. Robert W McClelland, Cerro Gordo, Ill. (Filed Oct. 30, 1874.)



The brace A, consisting of the base a, having a suitable bolt-hole, adapting it to be attached to the wagon-body, and having the vertical standards a' adapted to receive the side boards B, all substantially as described.

161,848. FIFTH-WHEELS FOR CARRIAGES. Robert W. McClelland, Cerro Gordo, Ill. (Filed Oct. 30, 1874.)

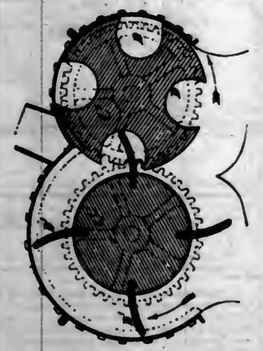


1. In a fifth-wheel the small upper plate B, fitting into the large recessed lower plate B', and carrying the reach-rod F, all combined substantially as and for the purpose specified.

2. The combination, in a fifth-wheel, of the lower plate B, having the rim B', the upper plate B', having the recessed bench G, and the clip king-bolt D' having the boss D, all to operate substantially as described.

161,849. ROTARY BLOWERS. J. McCloskey, Connersville, Ind. (Filed Feb. 20, 1875.)

Brief.—The solid part of one cylinder revolves in near proximity to the surface of the other. The form of the recesses is such that, receiving the blades, the latter may traverse the groove without touching the solid surface.



The combination of the double-lobed casing and cylinders C and C', having the segmental recesses D and blades D', respectively, constructed and arranged to operate so that the approximate contact between the circular parts of the cylinders shall be continued till the blades have entered the recesses a little way, and be resumed as the other side a little before they pass out of the recesses, substantially as set forth

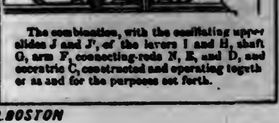
161,850. ARTIFICIAL FLOWERS. Susette Orth, Pittsburg, Pa. (Filed Feb. 6, 1875.)

1 As a new article of manufacture, artificial flowers made of tissue-paper or other suitable material, and coated with a compound of india-rubber and wax, substantially as described, and for the purpose specified.

2 Sheets of tissue-paper or other suitable material, coated with a compound of india-rubber and wax, and tinted in various colors previous to the application of such compound, substantially as and for the purpose set forth.

161,851. BOTTLES FOR MUSTARD. Asa A. Plastridge, Chicago, Ill. (Filed Aug. 3, 1874.)

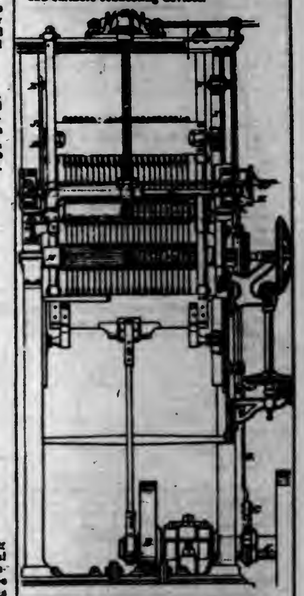
Brief.—The neck of the bottle and the cylindrical stopper are provided with corresponding vertical slots, so that the width of the opening can be varied to suit the consistency of the contents, and by turning the stopper one side the bottle is made air-tight; the vertical slot also provided for the handle of a spoon, when mustard is used.



The improved mustard-bottle herein described, consisting of the body A, having the cylindrical neck B, provided with the vertical slot b, and the cylindrical stopper C, having the vertical slot a, substantially as and for the purpose shown and described.

161,852. SAW-MILLS. D. Clint Prescott, Marinette, Wis. (Filed July 2, 1873.)

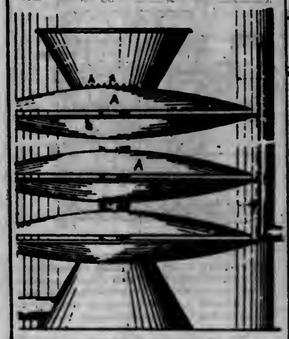
Brief.—The upper slides are pivoted, and a vibrating movement given to their lower ends by means of an eccentric on the crank-shaft and suitable connecting devices.



The combination, with the oscillating upper slides J and J', of the levers I and H, shaft G, arm F, connecting-rods N, E, and D, and eccentric C, constructed and operating together as and for the purposes set forth.

161,853. EVAPORATING APPARATUS. F. Bandon, New Orleans, La. (Filed Mar. 16, 1875.)

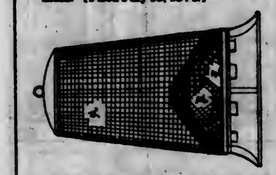
Brief.—The juice, conveyed into a hopper, passes out through small perforations in a fine stratum upon the deflector, which is the convex top of a steam-heated chamber. The juice rising from the deflector into the tray below, which conveys it back to the center, where it repeats the process. The series of deflectors is heated by steam or hot air. Pipes remove the water of condensation. A pipe is also provided, by which hot or cold air is injected across the surface of the deflectors. The treated product is conveyed away at the bottom.



1. The plane-convex deflecting-chambers A A, trays E E, and central steam or hot air tube C, the whole being combined as described, whereby the liquid to be evaporated, as it runs off the deflecting-surfaces, is caught in the tray below and reconveyed to the center of the apparatus and discharged on the deflecting-surface below through an opening around the heated surface of the tube C, as and for the purpose specified.

2. The deflecting-chambers A A, trays E E, pipe G, having openings *g g* for discharging a blast of either hot or cold air between each of the series of deflectors, as and for the purpose specified.

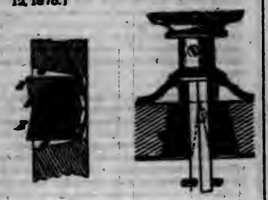
161,854. FLY-TRAPS. David B. Roe, Ayer, Mass. (Filed July 16, 1874.)



1. In combination with a trap for flies, the mat E, having a radially-extending edge, upon which part of the bait is placed as a decoy.

2. The base D, cone B, with receiver A opening therefrom, and the mat E, having a projecting edge, in combination, as and for the purposes above set forth.

161,855. FASTENINGS FOR BELL-PULLS, &c. John Schade, Stamford, Conn. (Filed Jan. 12, 1875.)



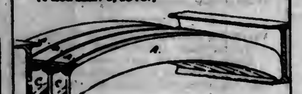
161,856. HORSE HAY-RAKES. D. P. Sharp, Ithaca, N. Y. (Filed Feb. 11, 1875.)

Brief.—Rake-teeth are raised to dump the load by turning the friction-pad attached to the axle up against the inner periphery of a circular rim on one of the transporting-wheels.



The combination, with the axle A and wheel B, of a rim, *a*, formed on the wheel, and the friction-pad *b* on the axle, resting therein, the connection being made by turning the pad against the inner periphery of the rim, as specified.

161,856. FIRE-PROOF FLOORS AND CEILINGS. Levi T. Scofield, Cleveland, Ohio. (Filed Mar. 6, 1875.)



A ceiling or floor tile, A, constructed to extend in a single length from beam to beam, and formed with lateral projecting portions *a*, whereby channels C are left, which said channels extend from beam to beam, substantially as and for the purpose described.

161,857. FIRE-PROOF FLOORS AND CEILINGS. Levi T. Scofield, Cleveland, Ohio. (Filed Dec. 12, 1874.)



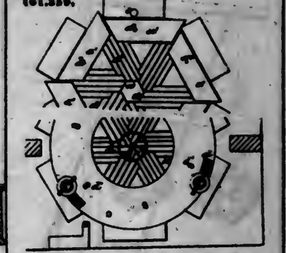
1. A tile of terra-cotta, burnt clay, or any other suitable material, constructed to span, in a single piece or length, the space between two beams, and provided with the hollow spaces C, extending from beam to beam, as substantially as and for the purpose described.

2. A tile designed to span, in a single length, the space between two beams or supports, the said tile provided with orifices extending from beam to beam, and with intermediate unbroken webs *f*, substantially as and for the purpose described.

161,858. APPLE SLICERS AND CORERS. H. H. Siler and T. A. Brooks, St. Lawrence, assignors to themselves and T. A. Brooks, Raleigh, N. C. (Filed Aug. 21, 1874.)

Brief.—The cutters or knives are grouped and secured together in a series of triangular sections, each having one blade extending beyond the apex, forming together a core-cutter, which may be adjusted to and from the center, varying with the size of core to be cutted; or all the blades may be brought together when there is no core to be removed. These triangular cutting-sections slide upon each other, and upon base-blocks, by means of a slotted ring-plate provided with perforations to receive pins on each cutting-section, so that the action of all the sections is simultaneous.

161,859.



1. The series of cutters *c'*, arranged as shown on knives *c*, as and for the purpose specified.

2. The combination, with base blocks C, of cutter-bed sections *c*, arranged to slide on each other and on the base-blocks, as and for the purpose described.

3. The combination, with ring-plate D, having slots *d* and perforations *d'* arranged in a circle, of the cutter-bed sections *c*, provided with pins *c'*, to enable the core-cutters to be moved by the plate to or from the center.

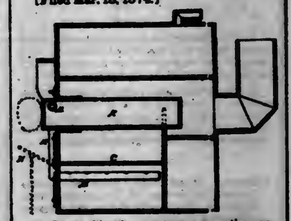
161,860. CANDLE-HOLDERS. Henry Smith, Westminster, England. (Filed Jan. 28, 1875.)

Brief.—By raising the encircling ring the spring-spars are forced through the slots in the holder into the candle.



The holder A, provided with the openings *a* and *a'*, and having attached to its outer side the spring-clutches B and B, provided with the spars *b b*, &c., in combination with an encircling ring, which, when moved upward over said springs, causes them to close inward, substantially as and for the purpose specified.

161,861. FURNACES FOR STEAM-GENERATORS. Horatio M. Smith, Chicago, Ill., assignor of two-thirds his right to Moses W. Lester and Franklin Lester, same place. (Filed Mar. 18, 1874.)



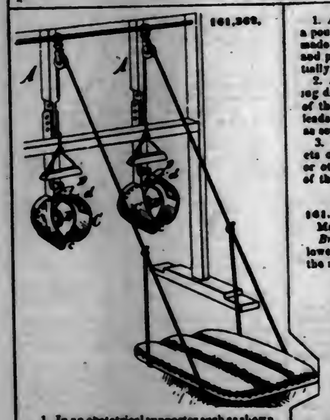
1. In combination, a steam-generating apparatus, a closed retort, having an outer door, and arranged within the influence of the fire employed to generate the steam, and the pipe M, for conducting to or impinging upon the said fire the gas generated within the retort, substantially as and for the purpose specified.

2. The combination, in a steam-generating apparatus, of the retort K, the pipe M, and the horizontally-hinged door H, all arranged substantially as described, and for the purposes specified.

161,862. OBSTETRICAL SUPPORTERS. Wm. E. Steinbeck, Somerville, Tenn. (Filed Feb. 8, 1875.)

Brief.—The pendent knee-supports are made adjustable in length, and the knee cushions or parts are surrounded by a leather rim of a shape to readily confine the knee when inserted.

161,862.

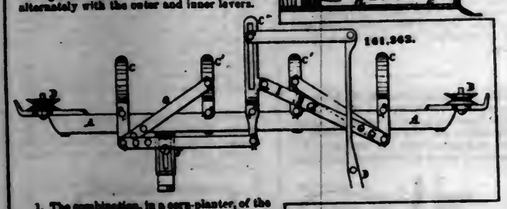


1. In an obstetrical supporter such as shown, the suspension-bars A, adjustable in length, substantially as and for the purpose specified.

2. The knee-supports B, in combination with the shields C c, provided with strap D and buckle d, substantially as and for the purpose specified.

161,863. CORN-DROPPERS. Isaac G. Vail, Logan County, Ill. [Filed Jan. 12, 1875.]

Brief.—To the planter-frame, by adjusting-pieces, is attached a beam, to which are pivoted the forked vibrating bars, connected together and to the main spring-bar by connecting-rods. The knotted check-row cord imparts motion to the seed-slide by passing through the forked levers, the knots engaging alternately with the outer and inner levers.



1. The combination, in a corn-planter, of the spring-bar D with the forked levers C C' and lever C' and supporting-bar A, substantially in the manner and for the purpose set forth.

2. The combination, with the planter-frame and the supporting-bar A, of the adjusting-piece E and F, for adjusting the height of the check-row attachment, substantially in the manner and for the purpose described.

161,864. GLASS SYRUP-PITCHERS. Louis Wagner, Wheeling, W. Va., assignor to J. H. Hobbs, Brockunier & Co., same place. [Filed Feb. 1, 1875.]

Brief.—The syrup-pitcher is made wholly of glass, with the exception of the lid and one-half of the hinge.



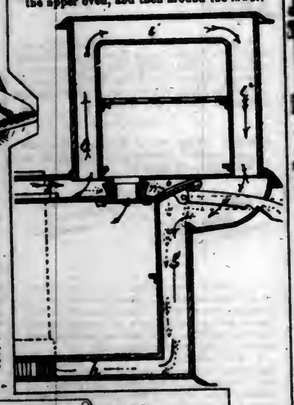
1. A glass syrup-pitcher, having a body, B, a pouring-spout, a, and flaring drip-cup b, all made at the same operation and in one piece, and provided with a drip-opening, c, substantially as set forth.

2. A glass pouring spout or lip, a, and flaring drip-cup b, made in one piece, the juncture of the two forming a sloping bottom, which leads back to a drip-opening, c, substantially as set forth.

3. As a means of attaching a lid, the sockets or recesses e in the sides of the handle, or other projection from the cylindrical part of the pitcher, substantially as set forth.

161,865. PORTABLE RANGES. O. W. Walker, Malden, Mass. [Filed Feb. 6, 1875.]

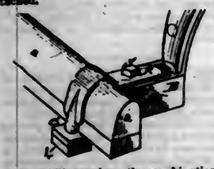
Brief.—The draft may pass around the lower oven only, or it may pass first around the upper oven, and then around the lower.



The combination, with the range-body, its oven, and the damper or plate o, closing the end of the flue-space f between the two ovens, of the flues f^1 f^2 g h, to convey the products of combustion from the fire-chamber, over the lower oven, about the elevated oven, and then about the lower oven, substantially as described.

161,866. THILL-COUPLINGS. Jas. Walker, Cincinnati, Ohio. [Filed Jan. 19, 1875.]

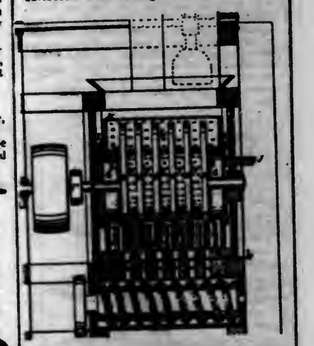
Brief.—Lubricator protected, but easily detached.



In a thill coupling the combination of recessed bearing-iron C, rubber P, R, bolt S, lips E, and bearing-rod K, substantially as set forth.

161,867. MACHINES FOR HULLING AND CLEANING GRAIN. Thomas Wallace, Chicago, and Geo. W. Hyde, Joliet, Ill. [Filed Feb. 10, 1873.]

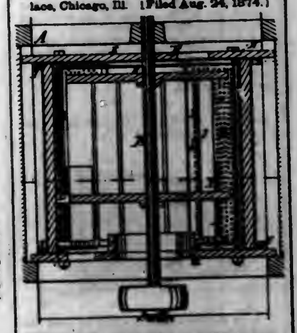
Brief.—Grain fed along entire length of cylinder, so that the sides and periphery of the stones are immersed in the grain. The rods projecting from the bottom and sides of the outer cylinder in between the disks cause the grain to change position, and present new surfaces to the scouring-faces of the disks.



1. The vertical revolving annular disks D, spaced along a horizontal shaft, in combination with the cylinder H, into which the grain is fed along the entire length at the top, and from whence it is drawn along the entire length at the bottom, substantially as specified.

2. The combination of the vertical revolving disks D, cylinder H, and stationary rods M, projecting from said cylinder in between the disks at the sides and bottom, a the manner specified.

161,868. GRAIN-SCOURERS. Thomas Wallace, Chicago, Ill. [Filed Aug. 24, 1874.]



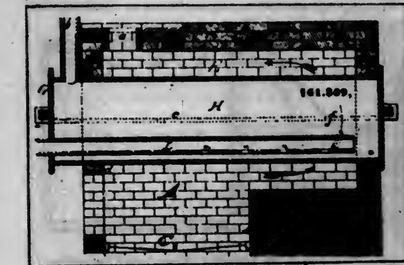
The combination of the cases M, air-openings N, perforated metal sections D, frames E, and scouring-stones C, substantially as and for the purpose specified.

161,869. GAS-RETORTS. Wm. F. Welble, Tidioute, Pa. [Filed Oct. 24, 1874.]

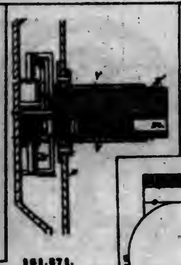
Brief.—Horizontal flanges extend longitudinally along the outsides of the retort, and rest in ledges in the walls of the furnace, thus dividing it into upper and lower flues. The flanges have openings at the back end for the passage of flame and smoke, and at the front end they extend and are turned up to hold the retort-hands.

1. The portable retort, consisting of the cylinder H, its horizontal side flanges e, extended at their ends, the gas-pipes, the cylinder-heads O, their bearing-lugs k, and the perforated distributing-pipe L, substantially as specified.

2. The combination, with the retort-cylinder H and its side flanges e, notched at f, of the furnace, having the ledge-bearings s in its side walls, to receive the side flanges e of the retort, as specified.

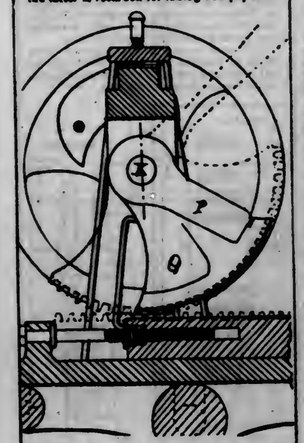


161,869.



161,870. PLATE-PRINTING PRESSES. James Wilson, Boston, Mass. [Filed Dec. 26, 1874.]

Brief.—The impression-segment, balanced by a counter-weighted wheel, is fixed on a rock-shaft independent from the rock-shaft which carries the operating-lever, and a segment-rack geared with the reciprocating bed, and has a lug adjustably engaging with a clutch-lever extending from the latter shaft. The depression of a treadle connected by a cord to the counter-weight wheel brings the lug on the segment into contact with the clutch lever, and the operating-lever being depressed, the bed and impression-segment are moved forward simultaneously for the impression, whereupon the weight retains the segment out of contact with the bed, while the latter is returned for inking and paper



1. The combination, in a plate-printing press, of the impression-segment Q, counterpoise-weight S', and pulley S', all mounted upon the shaft R, with the weight and segment upon opposite sides thereof, and connected, by the cord or chain s, to the treadle T, and arranged to operate substantially as described, for the purpose specified.

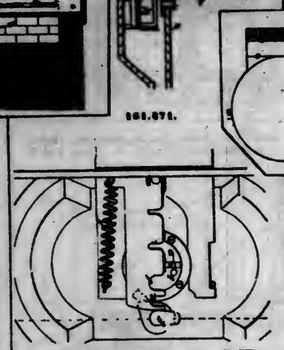
2. In a plate-printing press, the impression-segment Q, mounted upon the shaft R, in combination with the dog or clutch P, mounted upon the shaft K, and arranged to engage with said segment when moving in one direction, and to move independently thereof when moving in the opposite direction, substantially as described.

3. In combination with the impression-segment Q and dog P, mounted upon separate and independent shafts, an adjustable point of contact, f, whether attached to the segment or dog, substantially as described.

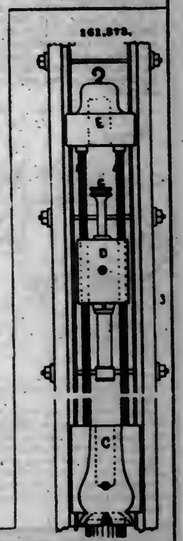
4. In combination with the segment Q and dog P, mounted upon separate shafts, and arranged to engage with each other, as set forth, the toothed rack l, secured to the carriage or table H, and the toothed segment J, arranged to engage therewith, and mounted upon the same shaft with the dog P, substantially as described

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161,871.



161,872.



161,872.

161,871. LOCKS FOR DOORS, &c. H. Winn, Shelburne, Mass. [Filed Aug. 5, 1874.]

1. A fence, a rotating shell having a key-hole, a key composed of a bitted portion to act the tumblers, and a shank working in said key-hole to rotate said shell, of which key the bitted portion and the shank rotate in common, a system of tumblers, and a cut-off located in position to intervene between the key-hole and the tumblers when the fence enters their notches or impinges on their sides to enter the same, all combined together, when the tumblers partake of the rotation of the rotating shell at the time when the cut-off intervenes, as aforesaid.

2. The operative parts of the two ends of the fence arranged in different vertical planes, for the purposes described.

3. The enlargement from d' to d^2 of the slot V in shell M, for the purposes described.

4. The tumblers and a box containing them, moved back and forward for the purposes described, combined with a restorer, when said restorer is located in position to stop the backward movement of the tumblers at the time they are required to be restored, while the backward movement of the box continues pressing the tumblers therein against said restorer until said tumblers are in a restored position in said box.

5. A rotating shell having a key-hole and a system of tumblers, between which and said key-hole a stationary cut-off is made to intervene by the rotation of said shell and tumblers, which tumblers, if retired (without other motion) from their position while being set, would collide with said cut-off, combined with said cut-off, a box containing the tumblers, a bearing for it and a stationary shell, when of said box and stationary shell the one has a pin or projection acting against one or more inclined surfaces of the other, said pin or projection and surfaces being arranged, relatively to each other and to the cut-off, to project said box and the tumblers therein, before they reach the cut-off in their rotation, into position to avoid the collision of the tumblers and cut-off, when said tumblers are further rotated to cause said cut-off to intervene as described.

6. The supplementary pick d^3 in the tumbler r, for the purpose described.

7. A box containing tumblers and having a bearing, as described, combined with an outer shell, when the one rotates in common with the key throughout its rotation, while the other does not, and when the one has a pin or projection acting against four or more inclined surfaces of the other, whereby said box is projected forward and back, carrying the tumblers toward and from the bits of the key, all combined with said tumblers and key, and operating as described.

8. The fence I and slot V, with its enlargement in the stationary shell, combined with a rotating shell and a system of tumblers, partaking of the rotation of said rotating shell.

161,873. CONSTRUCTION OF SPINDLE-SHAPED VESSELS. William Louis Winans and Thomas Winans, London, England [Filed Mar 9, 1875.]

The combination, substantially as described, of a dock or docks, cabin or cabins, with the hull of spindle-shaped vessels, such as are herein described and referred to, as aforesaid

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161,874. EXPLOSIVE PILE-DRIVERS. James M. Allen, Baltimore, Md., assignor to F. B. Colton, Philadelphia, Pa. [Filed Mar. 10, 1875.]

Brief.—An explosive pile-driver is provided with guide-rods extending from the head-block to the gun below, which also serve as brace-rods.

Guide-rods F F and a head-block, E, combined with the ram D and gun C of a powder pile-driver, substantially in the manner and for the purpose herein set forth.

161,874. EARTH-AUGERS. Don Juan Arnold, Brownsville, Nebr. [Filed Aug. 28, 1874.]

Brief.—An earth-auger provided with a screw-shaped flange having a series of V-shaped cutters arranged on an inclination outward, to cut the earth successively from circumference to center.



The spiral flange C, provided with a series of V-shaped cutters, arranged on an inclination outward toward the circumferential edge of auger, as shown and described.

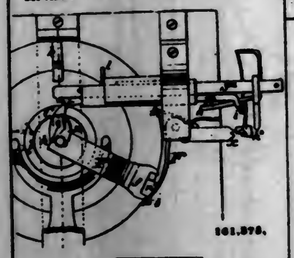
161,875. COMBINATION-LOCKS. Wm. Baldwin, Tioga, Pa. [Filed Aug. 18, 1875.]

1. The fork-arm F', carried by the spindle within the lock, in combination with a fence-lever, F, having an arm or projection, b, to engage therewith, substantially as herein described

2. The fence-lever F, provided with a notched or corrugated plate, *b*, to cluster with a point or points in letting down the fence, substantially as herein specified.

3. The combination of the yielding cam C on the spindle, the sliding rod E, carrying projections *e f*, the detent *g*, having a beveled head, *h'*, and the fence-lever F, having a notched and beveled head, *n*, arranged and operating substantially as described, to periodically drop and to re-elevate and support the fence in the manner set forth.

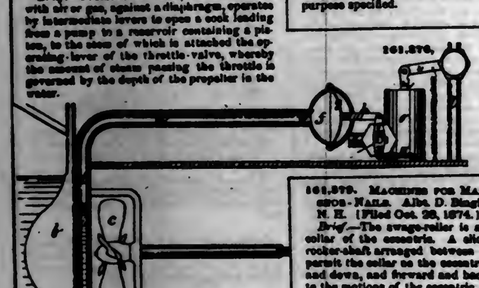
I a and detent *g*, in combination with the fence-lever F, having an arm, *m*, and notched head *n*, and the projection *h* on one of the tumblers for successively disengaging the fence and disarranging the tumbler-notches during the retraction of the bolt or bolts, as herein set forth.



161,876.

161,876. SPEED-REGULATORS FOR PROPELLERS. Edwin B. Bean, Boston, Mass. (Filed Mar. 15, 1875.)

Brief.—Pressure of water, in a tube filled with air or gas, against a diaphragm, operates by intermediate levers to open a cock leading from a pump to a reservoir containing a piston, to the stem of which is attached the operating-lever of the throttle-valve, whereby the amount of steam passing the throttle is governed by the depth of the propeller in the water.



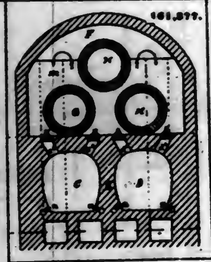
The combination, with the pipe *d*, receptacle *f*, flexible diaphragm *g*, of the cock *i*, cylinder *o*, piston *s*, connection *w*, lever *t*, and rod *h*, as and for the purpose herein shown and described.

161,877. APPARATUS FOR THE MANUFACTURE OF COKE AND ILLUMINATING-GAS. John T. B. Bennett, Birmingham, England. (Filed Sept. 10, 1874.)

Brief.—The gas-retorts are placed in an inclosed chamber directly over the coke-ovens. Dampered passages connect the ovens with the retort-chamber. Waste heat and products of combustion from the former pass into the latter for heating the retorts.

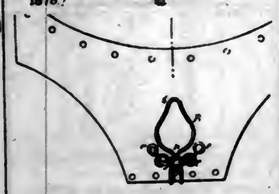
1. An apparatus consisting of ovens C D and chamber F, connected by dampered passages *c' d'*, and having the retorts G H I, as and for the purpose specified.

2. Sliding dampers K, recessed slab K', and covering-tile K², combined as and for the purpose set forth.



161,877.

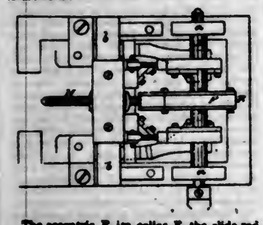
161,878. NECK-TIE FASTENINGS. Emile Berliner, New York, N. Y. (Filed Feb. 6, 1875.)



A neck-tie shield provided with the loop B, having U-shaped portions *f f*, with eyes *e e*, and attaching-cord C, constructed and arranged to operate substantially as and for the purpose specified.

161,879. MACHINES FOR MAKING HORSE-SHOE-NAILS. Alba D. Bingham, Nashua, N. H. (Filed Oct. 20, 1874.)

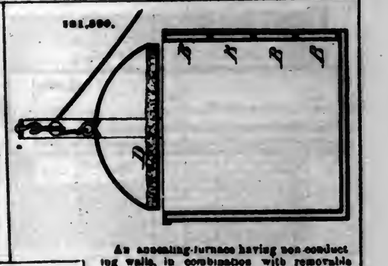
Brief.—The swage-roller is applied to the collar of the eccentric. A slide-rod and a rocker-shaft arranged between the standards permit the collar on the eccentric to move up and down, and forward and back, or conform to the motions of the eccentric, and they also maintain the swage-roller in its due relation to the anvil.



The eccentric E, its collar F, the slide-rod or arm H, and the rock-shaft I, arranged and applied together and to the driving-shaft D, swage-roller G, and the hook-standards *b b*, all essentially as and to operate as specified.

161,880. OVENS FOR ANNEALING BUILDING-BLOCKS OF FOUNDAGE-SLAG. Beanlee Boyer, Lebanon, Pa. (Filed Feb. 27, 1875.)

Brief.—After heating the oven to the required temperature, the slabs are removed, and the blocks to be annealed are introduced layer after layer. With the layers the slabs are reapplied, and the cover is raised as required.



161,880.

An annealing-furnace having non-conducting walls, in combination with removable pieces B and a vertically-movable cover, D, substantially as and for the purposes described.

161,881. PRUNING IMPLEMENTS. Charles B. Cannon, Keokuk, Iowa. (Filed July 13, 1874.)

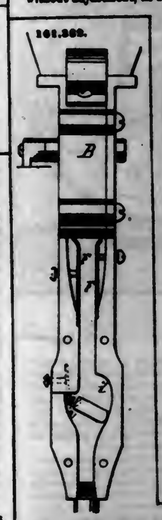
Brief.—Consists in combining within a double-grooved and slotted handle two operating-shafts—one carrying a saw and the other the cutting parts—and in the use of two or more sleeve-rings fixed at intervals on the handle, for convenience of operating the tool at different distances without adjustment.

1. The combination, in an improved pruning-tool, of the double grooved and slotted handle A, the saw and cutting operating shafts H K, and the sleeve-rings K, all made, arranged, and operating substantially as set forth.

2. The pruning-tool, with a number of sleeve-rings, K, fixed at intervals on the handle for use in operating the tool at different distances without adjustment, as set forth.

161,882. MACHINES FOR FEEDING CARTRIDGE-SHELLS. Augustus C. Carey, Boston, Mass. (Filed Feb. 6, 1875.)

Brief.—A peripherally grooved and corrugated feed-wheel provided with pockets receives the blanks from the hopper, and carries them around to the mouth of an ejection-tube, through which they fall by gravity. The blank, if started with its closed end downward, engages with a hook arranged in a recess in the tube, and is turned by said hook to its proper position. An agitator in the hopper is constantly actuated by the corrugations in the wheel. Fingers fixed to the frame prevent the blanks from clogging.



161,882.



161,883.

1. In a machine-feeder for cartridge-shells, &c., the combination of the hook *f*, arranged in a recess, *i*, of the ejection-tube D, with wheel C and hopper A, substantially as specified.

2. The ejection-tube D, having recesses *i'* and hook *f*, adapted for use substantially as specified.

3. The adjustable thrust-springs F, in combination with a feed-wheel, C, and hopper B, substantially as specified.

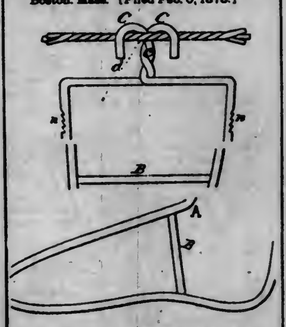
4. The finger H, in combination with a peripherally grooved feed-wheel, C, substantially as specified.

5. The fingers *k*, in combination with a peripherally-grooved feed-wheel, having pockets *b*, substantially as specified.

6. The feed-wheel C, having corrugations *c*, peripheral groove *c'*, and cups *b*, substantially as specified.

7. The agitator-spring G, in combination with a transversely-corrugated feed-wheel, C, and a hopper, A, substantially as specified.

161,883. DEVICES FOR DRYING AND STRETCHING HOSE. Augustus C. Carey, Boston, Mass. (Filed Feb. 6, 1875.)



1. A device for drying and stretching hose, consisting of the foot and leg shaped wire frame A, substantially as specified.

2. In combination with a device for drying and stretching hose, the hooks C, having a shank, *c*, forming a bight or bend, *d*, substantially as the manner and for the purpose specified.

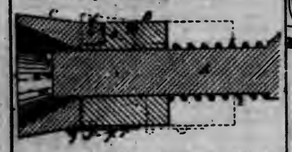
3. The wire frame A, for drying and stretching hose, having notches *n*, for holding the hose against longitudinal shrinkage, substantially as specified.

4. In combination with the wire frame A, the transverse braces B, substantially as specified.

5. The frame A, having braces B, notches *n*, and hooks C C, substantially as specified.

161,884. CENTERING DEVICES FOR WOOD-TURNING LATHES. Ward B. Carpenter, Topsham, Vt. (Filed Feb. 1, 1875.)

Brief.—The funnel-shaped portion of the chuck is hinged to the sliding cylindrical part, so that it may be turned to one side.



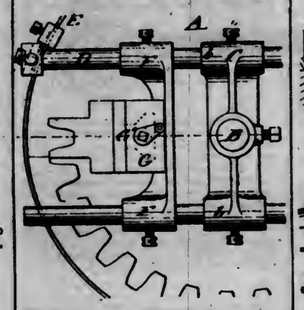
1. A centering device for a lathe, composed of the sliding sleeve B, hinged or pivoted at one side to the funnel-shaped centering-cup C, as and for the purpose described.

2. The combination of the funnel-shaped cup C, sleeve B, hinged together as described, with the locking-strap F, constructed substantially as and for the purpose described.

3. The funnel-shaped centering-cup C, hinged or pivoted to and adjusted with relation to the sliding sleeve B by the strap F, in combination with springs *e*, as and for the purpose described.

161,885. MACHINE FOR FORMING GEAR-WHEEL MOLDS. James Clayton, Portsmouth, Ohio. (Filed June 13, 1874.)

Brief.—The position of the arm of the revolving pattern-support is defined by the adjustable marker clamped to the bed flange. A screw-clamp secures the arm to the flange.



The combination, in a gear-wheel-molding machine with a vertical circular bed-flange, A, of the stop-piece D', on guide-arm and the marker E, both adjustable on same flange, as and for the purpose set forth.

161,886. CAR-SPRINGS. Benj. A. Clooney, New York, N. Y., assignor to New York Car-Spring Company. (Filed Dec. 4, 1874.)



A spring composed of a hollow cylinder of rubber placed between two spiral springs of half-round and half-flat coils, with the round faces next to the rubber, all combined substantially as and for the purposes set forth.

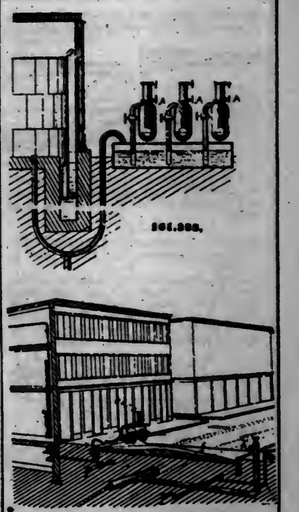
161,887. TELL-COUPLING JACES. John H. Combs, Seamford, Conn. (Filed Sept. 9, 1874.)



A shackle-jack consisting of the hooked jaw A and the removable sliding jaw H, to be operated by a rack and pinion, substantially as and for the purpose set forth.

161,888. APPARATUS FOR EXTINGUISHING FIRES. Jos. H. Connelly, New Brighton, Pa. (Filed Jan. 25, 1875.)

Brief.—A system of carbonic-acid-gas generators, with gas-holder and distributing mains and pipes extending into houses and rooms, is employed for extinguishing fires. Jet-nozzles introduced into the water-mains, or other pipes from the gas-mains, or into the gas-pipes from a steam-boiler, impregnate either the water with the gas or the gas with steam.



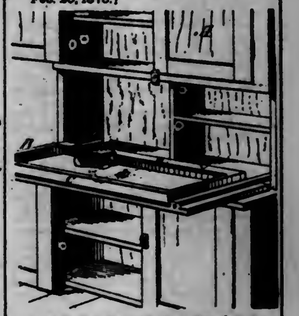
1. In combination with the system of gas-mains, distributing-pipes, holder, valves, and independent connections to the several rooms or compartments to be protected, one or more fixed or permanent carbonic-acid-gas generators, A A, connected therewith, with intermediate purifiers, substantially as set forth.

2. In combination with the main, service, and distributing pipes of a carbonic-acid-gas apparatus for extinguishing fires, an ejector-nozzle arranged therein for supplying a jet of steam thereto, substantially as set forth.

3. An ejector, *f'*, arranged in the line of hose from the service-pipe, with a steam-pipe connection thereto from the steam-generator, substantially as described.

4. The combination of a carbonic-acid-gas service-pipe and a fire-plug, arranged relatively to each other substantially as set forth, with reference to Fig. 6.

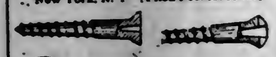
161,889. COMBINED CUPBOARDS AND SINKS. Henry Coil, Marshalltown, Iowa. (Filed Feb. 20, 1875.)



1. In combination with the cupboard A, the hinged or pivoted lid B, provided upon its inner surface with a raised edge, C, forming a sink when the lid is in a horizontal position, substantially as shown and described.

2. The combination of the sink, having inclined bottom, raised edge-strip at rear side, and exit-pipe, with a receptacle of sufficient size to admit the swinging of the exit-pipe therein, and a waste-pipe for the purpose of draining off the water in the open or closed position of the sink, substantially in the manner and for the purpose set forth.

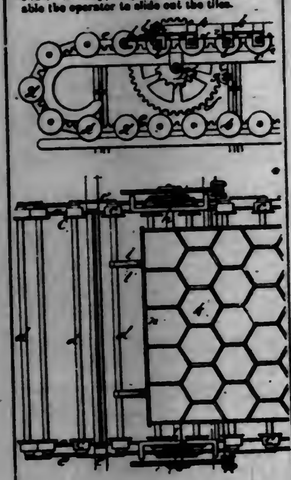
161,390. WOOD-SCREWS. A. Cummings, New York, N. Y. [Filed Feb. 15, 1875.]



A screw the head of which is provided at its center with an angular cavity, as shown and described, and with the usual slot, as set forth.

161,391. TILE-MOLDING MACHINES. Chas. Diebold, Lebanon, Pa. [Filed Mar 6, 1875.]

Brief.—An endless way is partly or fully covered on its length by a tray consisting of lateral rows hinged together of hexagonal molds. As each row, on reaching the curved end of the way, drops, their opened ends enable the operator to slide out the tiles.



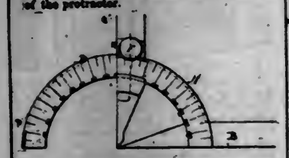
1. In a tile-molding machine, the endless revolving carriage, the molds *b* connected therein, and the upper and lower disconnected rails *a b*, combined in the manner described.

2. Mold-boxes *b*, arranged in transverse rows, hinged to the axles *d*, substantially as described.

3. The hooks or clasps *l*, hooked to plates *m*, and constructed with braces *F*, substantially as described.

161,392. PROTRACTORS. Alvin E. Dodd, New York, N. Y. [Filed Jan. 18, 1875.]

Brief.—The bars are so arranged that one side of each bar must radiate from the center of the protractor.



The protractor A, having bar B rigidly attached at one end and extending to the center thereof, in combination with the bar C, adjustably attached to said protractor by clamp E and screw F, as shown and described.

161,393. DENTAL PLUGGERS. Robt. B. Donaldson, Washington, D. C. [Filed Mar. 9, 1875.]

Brief.—The tubes through which the plugger moves are secured to a circular box, in which a hammer forced out by a spring operates against the end of the plugging-tool. Tool is to be used with a rotating engine.



1. The combination of the rotating disk C, provided with the spring-hammer H, the tubes G I, tool-stock K, and spring S, in the manner and for the purpose described.

2. The combination of the disk C, hammer H, spring F, and tool-holder K, together with mechanism for driving the disk, as and for the purpose specified.

3. The combination of the tubes G I, connected together and with the case A, in the manner and at the angle described, the spring S, and tool-stock K, with mechanism for driving the tool-stock, as set forth.

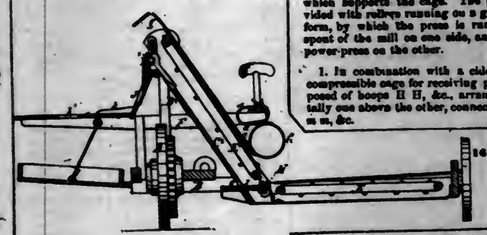
161,394. PIANO-STOOLS. C. A. A. During and John Lack, New York, N. Y. [Filed Oct. 31, 1874.]



The screw D', cross-piece C', and rods C C, combined in the manner described with stool A and bank B, for the purposes specified.

161,395. HARVESTERS. John H. Elward, St. Paul, Minn. [Filed June 27, 1874.]

Brief.—The cut grain falls upon the platform-apron, and is carried from it by the elevator-apron to the binders' table.



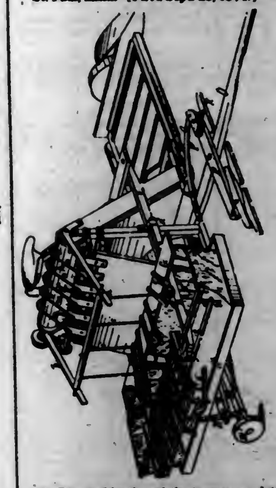
1. The cylindrical shield G, suspended from the seat-plank, as described, and forming the support for the retaining-rods *g*, connected to its lower inner face, and leaving an unobstructed convex surface upon its outer or platform side, as and for the purpose set forth.

2. The tootbed cams or rods I and crank or eccentric shaft H, in combination with the platform apron and elevator, substantially as and for the purpose set forth.

3. The crank or cam shaft H' and its stripper-rods I', arranged at the delivery end of the elevator-apron for removing the grain therefrom, as set forth.

4. The combination, with the cam or crank shafts H, of the stripping rods I and the intermediate bent straps or wires *r*, arranged and operating as and for the purpose set forth

161,396. HARVESTERS. John H. Elward, St. Paul, Minn. [Filed Sept. 20, 1874.]



1. The combination of the transverse plate or cleats with the inner face of the endless apron, with the teeth protruding on its working face, whereby said apron is made to present an unobstructed continuous surface to the action of the stripping device, as explained.

2. The dumping-tray J, in combination with the toggle-link or jointed locking brace or lever and link K L, arranged and operating, substantially as described.

3. The hinged axle-bar M, wheel M', hinged adjustable bar N, and standard N', arranged and operating in the described relation to the binders' platform, substantially as and for the purpose set forth.

161,397. CIDER-PRESSES. David F. Henry, Canton, Ill. [Filed Feb. 12, 1875.]

Brief.—The whole of the exhausted pomace is removed at one operation by means of hooks and ropes attached to rings on fixer-arm piece which supports the cage. The press is provided with rollers running on a grooved platform, by which the press is run under the spout of the mill on one side, and under the power-press on the other.

1. In combination with a cider-press, the compressible cage for receiving pomace, composed of hoops H H, &c., arranged horizontally one above the other, connected by bands *n n*, &c.

161,398.

2. In combination with the circle of uprights F, the pivoted supports *p p*, notched to support the cage H H, substantially as described.

3. The cider-press base, when constructed with bottom D, sides or hoop E, joists *h h h*, and rollers *g g*, &c., and circle of uprights F F, substantially as described.

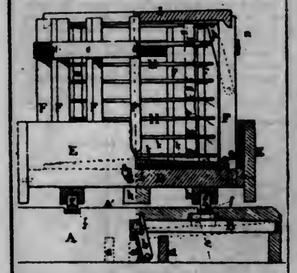
4. In combination with the press E d A, and rollers *g g*, &c., the grooved platform A A', provided with the traps or drops *c c*, bars B *b b'*, lever C, and catch *b*, or its mechanical equivalent, substantially as described.

5. In combination with the circle of uprights F F, the disk or follower I, when constructed with slots *q q* on the edge to receive the respective uprights F, and a hanging lip, *n*, between each slot, to inclose the margin of the cage H, as described.

6. The pomace lifter or cross G, provided with the radiating grooves *s* and perforations *t t*, and the rings *v* at the end of each arm, by which to raise said cross and cage, with the pomace, from out of the press at one operation, substantially as described.

7. The arrangement and construction of cross G, with rings *v*, cage H, supports *p*, uprights F, and follower I, with slots *q*, and rim *n*, as described.

8. The construction and arrangement of the grooved platform A A, roller traps *c c*, bars B *b b'*, lever C, and catch *b*, as described.



161,399. MANUFACTURE OF STEEL. Jean Erquem, Paris, France. [Filed Feb. 20, 1875.]

Brief.—Heats iron with a mixture of peat with an ammoniacal salt, preferably sal-ammoniac.

The process, herein described, of converting iron into steel by placing the iron, together with pulverized peat and with an ammoniacal salt, preferably hydrochlorate, into a furnace, and heating, so that the gases given off by the decomposing peat and hydrochlorate will affect the iron, substantially as set forth.

161,400. PISTONS FOR STEAM-ENGINES, PUMPS, &c. Franz Feldinger and Johann G. Koch, Vienna, Austria. [Filed Sept. 21, 1874.]

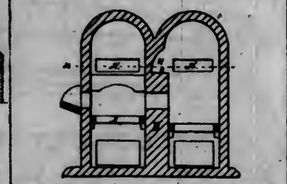
1. A piston having a series of radial cavities, with openings at different points, communicating with its opposite sides or faces, a series of small pistons having stems, and a circumferential packing-ring, said parts being combined as shown and described.

2. The combination of a small piston, F, having a projection or stem, I, with a piston having a radial cavity for reception thereof, and a passage leading out from said cavity to the sides of the piston, substantially as shown and described, whereby steam is admitted around the stem and in rear of such small piston.

3. The combination, with the piston A, having arms D, as described, of the cylinders G, for reception of the small pistons F, as specified.

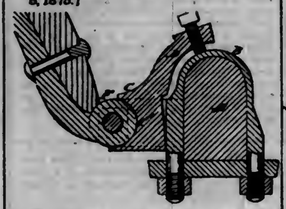
161,401. PIPE-WELDING FURNACES. Jos. Fieldhouse, Chicago, Ill., assignor of one-half his right to George N. Dutcher, same place. [Filed Jan. 23, 1875.]

Brief.—Improvement on Patent No. 86,918, granted to same party August 7, 1868; and consists in the addition of means for supporting the blanks in the welding-chamber after they have been heated in the first oven, and preparatory to giving them the final or welding heat.



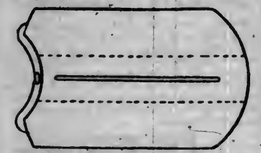
In the pipe-welding furnace herein described, the recess H, arranged to form the shelf *s* for supporting the pipe-blanks, in combination with opening L, arranged to admit of the insertion and removal of the pipe-blanks, as specified.

161,402. BELL-COUPLINGS. Alfred W. Forwood, Georgetown, Ky. [Filed Feb. 5, 1875.]



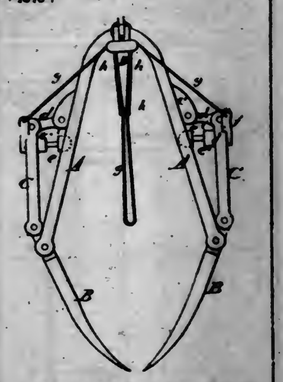
The box C C', having a lever-arm, D, adjustable by a set-screw in relation to the clip B, for regulating the approach of the box to journal F, substantially as set forth.

161,403. PAPER BOXES. E. P. Furlong, Biddeford, Me. [Filed Apr. 20, 1872.]



An imitation shirt-bosom having the slit or slits made therein, and having the plait a secured either to the front or back side thereof, substantially as described.

161,404. HORSE HAY-FORKS. Emmet V. R. Gardner, Johnson, N. Y. [Filed Mar. 6, 1875.]



1. In combination, with the forks B B, pivoted to the slotted arms A A, the links *d*, arrow-head catches *e*, arms *f*, and ropes *g*, substantially as described.

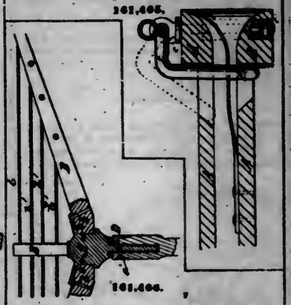
2. The handle D, pivoted to the arm A, and having the pulleys *h h*, and staple *k*, for the tripping-ropes *g g*, substantially as described.

161,405. CAR-COUPLINGS. Charles C. Garrett, Calvert, Tex., assignor to himself and Louis M. Oppenheimer, same place. [Filed Jan. 4, 1875.]

1. The sliding rods C C, in combination with draw-head A and angle-pin E, on shaft D, to avoid the coupling of two cars that may accidentally come in contact, as set forth.

2. The cross-bar rods C C, having nuts *a a'*, combined with tapering holes of draw-head, as shown and described.

161,406.



161,406. CLOTHES-DRIERS. M. C. Griffeth, Canadaga, N. Y. [Filed Aug. 20, 1874.]

In a horizontal rotating clothes-drier, the arms B, connected by ropes *b'*, in combination with the hub A, having sockets *a*, spindle *a'*, and annular recess *c*, and the socket ferrels D, having the annular projection *d*, substantially as and for the purpose set forth.

161,407. CURTAIN-FIXTURES. H. L. Hall, Chicago, Ill. [Filed Feb. 23, 1875.]

Brief.—The case, containing the pulley-bearing shank and coiled spring, is held in position by a set-screw passing through the outer case, and engaging in notches on the exterior of the inner case. The outer or clamp case is secured to the window-casing. Above the pulley, on an arm of the shank, is arranged a dog with a serrated edge, that bears against the curtain-cord, and holds it securely against a projecting stud.

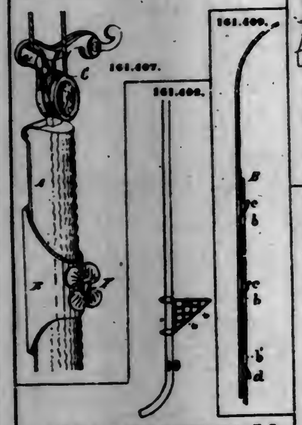
1. The combination of the case A and heat tachments B C, or its equivalent, and spring D, with the clamp case E and screw F, as and for the purpose specified.

2. The combination of the pulley C, or its equivalent, with head of stem H, and *e*, and the dog B, substantially as and for the purpose set forth.

161,407.

161,408.

161,409.



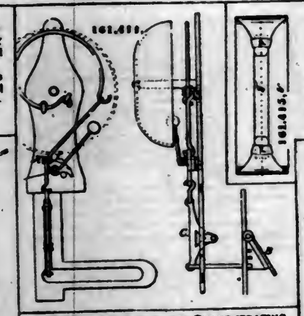
161,409. BRIDGING ATTACHMENTS. T. S. Hanchett, Wolcottville, Conn. [Filed Sept. 17, 1874.]

The multiple-staple for the holdback-strap, made of the sheet vertical bars 2 between the horizontal bars in the frames attached to the shafts, for the purposes and as set forth.

161,410. BALE-TIES. John H. Hardman, Allegheny, Pa., assignor of three-fourths his right to Wm. W. Tyson, W. H. Faulkner, and J. Johnston, same place. [Filed Feb. 28, 1875.]

The tongues *c c* and reverse tongue *d* on end C, in combination with slots *b b b'* in end B, substantially as and for the purpose described.

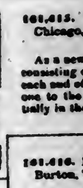
161,411.



161,412.

161,413.

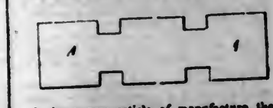
161,414.



161,415. BELL-FILES. Thos. Hutchinson, Chicago, Ill. [Filed Jan. 23, 1875.]

As a new article of manufacture, a bell-file consisting of the tablet A and elastic cord B, each end of the cord and tablet being united one to the other by the clasps *d d*, substantially in the manner specified.

161,416. BALE-TIES. Henry Bradley Jones, Burton, Tex. [Filed Jan. 30, 1875.]



1. As a new article of manufacture, the buckle herein described, consisting of the base or bar B and the two projecting horns C C', curving toward each other from said base, substantially as and for the purpose specified.

2. The combination of the buckle herein described with a band or hoop, A, notched in the manner shown, as and for the purposes specified.

161,417. AUTOMATIC CRADLES. Wm. Kindermans, Troutville, Pa. [Filed Oct. 17, 1874.]

Brief.—When the base-frame is placed upon an inclined floor, the horizontal movement of the cradle is preserved by the lateral adjustment of the guide-bar.

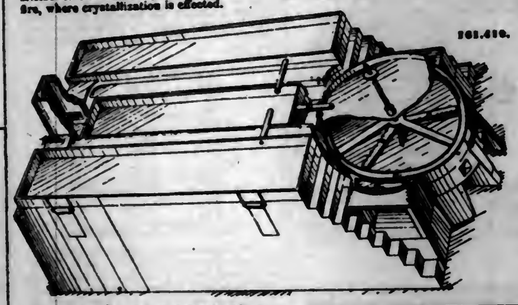


The combination, with cradle A, turning on pivots *a a*, of the clock mechanism O, rod F, wire D, and guide-bar E, as and for the purpose specified.

161,418. PURIFYING AND CONCENTRATING SALT-BRINE. Wm. Harrison, Liverpool, England. [Filed Dec. 22, 1874.]

Brief.—The brine is detained in the shallow pans over the flues of the furnace until impurities have been deposited and saturation has been attained. Then the brine is admitted to the shallow pan directly over the fire, where crystallization is effected.

161,419.



The herein-before-described process of manufacturing chloride of sodium or common salt from saline waters which hold in solution foreign matters, the same consisting in the use of broad and shallow pans placed over the flues as well as over the fire-place of the furnace, and exposed to the direct contact of the products of combustion, the brine being detained in the primary pan or pans over the flues until brought to the point of saturation, and made to discharge the foreign matters, and then being carried forward to the remaining pan or pans, in which it is subjected to the more intense heat of the fire-place, until the crystallization of the salt takes place and the evaporation is complete.

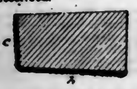
161,420. COMBINED SHAWL-PINS AND CLASPS. Geo. Hartje, Newark, N. J., and Frederick Hartje, New York, N. Y. [Filed Feb. 17, 1875.]

In combination with a shawl-pin, constructed as described and shown, the arm *b* and ring *c*, arranged to operate substantially as and for the purpose set forth.

161,421. MODES OF MAKING EMERY-RUBBERS FOR BURR MILLSTONES. E. C. Hinsey, Iowa City, Iowa. [Filed Aug. 10, 1874.]

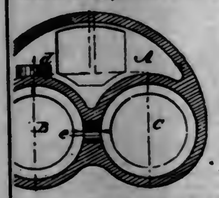
The improved process of preparing emery, to be used as a furrow and face rubber for millstones, by boiling a mixture of glue and shellac in milk or water, after which the emery is mixed with the boiled glue and shellac, and then pressing such compound into sheets of proper dimensions, which sheets are thereafter treated to a solution of alum, substantially as described.

161,414.



161,422. PUMPING-ENGINES. Wm. Markness, Providence, R. I. [Filed Jan. 6, 1875.]

Brief.—The different chambers have extended mouth-pieces and lids at each end.



A gas-retort composed of the two circular chambers B C, arranged side by side, and the semicircular chamber A above the two former, with internal connecting-passages *e d*, the whole being cast in a single piece, substantially as described.

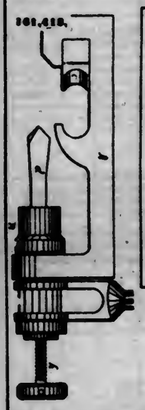
161,423. LETTER-BOX ALARMS. Jos. Harrison, Reading, Pa. [Filed Jan. 18, 1875.]

1. The combination of the letter-port A, the cover B, and the projecting flange *d*, substantially as described.

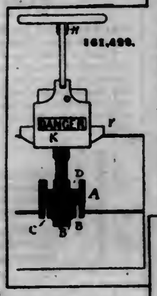
2. The combination of the cover B, having the regulator-pins *h*, with the plate A, and a bell mechanism, constructed substantially as shown and described.

The combination, as described and shown, of the frame A, key *c*, drill-stock B, and actuating lever or handle C with the sliding drill *d* and screw *k* acting directly against the head of the drill, substantially as specified.

161,424.

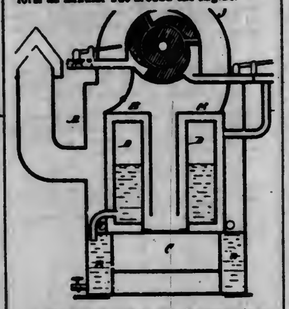


161,425.



161,426. STEAM-GENERATORS. Sebra B. Mathewson, Gilroy, Cal. [Filed Dec. 10, 1874.]

Brief.—A rotary engine is combined with an upright boiler, the latter constructed to form an annular flue around the engine.



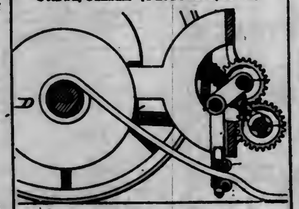
1. The shell A, with its annular water chamber B, fire-place C, and annular boiler D, having the shell E arranged to form a flue surrounding the boiler, substantially as and for the purpose described.

2. The combination of the annular flue J with the engine-cylinder, the flue forming a jacket around the engine, substantially as and for the purpose set forth.

161,427. PROCESSES OF MANUFACTURING HARD SUGAR. Frans O. Matthiessen, Jersey City, N. J. [Filed Feb. 4, 1875.]

As an improvement in manufacturing hard sugar, the process herein described, which consists in cutting the mass of sugar, while soft, into pieces of the required size, and then subjecting such pieces to the drying operation, as and for the purposes specified.

161,428. HOSE-CARRIAGES. Thos. McCabe, Ottawa, Canada. [Filed Feb. 9, 1875.]



1. A hose-carriage having its reel or drum D operated from one of the traction-wheels through the medium of a friction-wheel, E, and a friction-pulley, G, the latter bearing on the face of wheel E to move to and from the center of the same, in order to vary the speed of the reel, all combined substantially as shown and described.

161,419. WINDOW-SCREENS. Lorenzo D. Lockwood, Charlestown, N. H. [Filed Feb. 13, 1875.]



1. The strip *f*, having the groove *f'*, for the reception of the net D, in combination with the bar A, having the recess *f*, as described.

2. The bar A, having the recesses *e f*, the strip *f*, provided with the groove *f'*, and the bar B, having the groove *l*, in combination with the tension-rod C, substantially as described.

161,420. METALLIC ROOFS. Thos. M. Louis, Elmira, N. Y. [Filed Feb. 20, 1875.]

In a metallic roof consisting of sectional plates, the wick or packing J, in combination with the capping C and trough *e*, formed substantially as specified.

161,429.



161,421.



161,421. WATCH-KEYS. Henry Lohmeyer, Shreveport, La. [Filed June 4, 1874.]

Brief.—The watch-key screws into or upon a hollow push-rod attached to a stud rising from the catch-spring.

In combination with the pendant D of the watch and short watch-key A, the hollow push-rod C *c*, placed within the pendant, and acting directly on the case-spring, closed at its lower end by the stud *d* on the case-spring, and receiving and holding within its top end the milled-head watch-key A B, substantially as and for the purposes described.

161,422. FUSIBLE PLUGS FOR STEAM-GENERATORS. James F. Mahoney, Erie, Pa. [Filed Mar. 19, 1875.]

Brief.—A ring provided with a valve-seat and a plug containing fusible metal are inserted in the crown-sheet. When the fusible metal melts, the valve can be forced down upon its seat to close the aperture in the plug. To the saddle on top of the boiler is attached a plate containing the words "Safe," "Danger," over which slides a slotted plate, which is attached to the valve-stem.

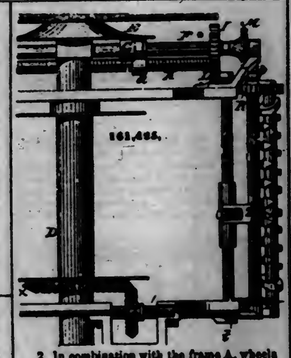
1. In combination with a valve seat or ring containing a fusible plug for use in steam generators, an adjustable valve, which may be forced down upon its seat or raised therefrom from the outside of the generator, substantially as and for the purpose set forth.

2. In combination with a valve for closing the aperture in a fusible plug for use in steam-generators, caused by the melting out of the fusible portion of the metal, a slide made to move with said valve, and a stationary seat, the parts being arranged substantially as and for the purpose set forth.

3. The combination of the recessed valve seat or ring A and the plug B B', a portion of which is made of fusible metal, substantially as and for the purpose set forth.

4. The combination of the recessed valve seat or ring A, the valve D, rod E, clamp H, connecting-rod I, sliding plate K, and the stationary plate upon which it moves, substantially as and for the purpose set forth.

161,423.



2. In combination with the frame A, wheels C, and drum or reel D, having the wheel X, the friction-wheel G, and the shafts F, O, and V, provided with pinions, whereby motion is communicated from the traction-wheel to the reel, as set forth.

3. In combination with the shaft F and the drum or reel D, connected therewith by suitable gearing, the friction-wheel E, sliding pulley O, and screw-shaft K, to move the pulley, as described.

4. In combination with the frame A and the drum or reel D, the sliding guide-frame or carrier Z, with the double-threaded screw P and fork *m*, for moving it to and fro, as described.

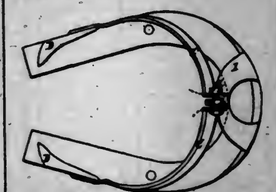
5. The guide-frame or carrier Z, provided with the rollers *p*, and having one side hinged to swing outward, all combined as shown and described.

6. In combination with the wheel E, the shaft F, provided with one or more friction-pulleys, and having one end mounted eccentrically in the block *d*, having the hand-lever *e*, as set forth.

7. In combination with the wheel E and the shaft F, provided with the sliding pulleys O and H, the screw-shaft K, provided with the detachable nuts *s* engaging with the pulleys, as shown and described.

161,424. HORSESHOE-FASTENINGS. Saml. McVean and Benjamin E. Price, Cleveland, Ohio. [Filed Dec. 5, 1874.]

Brief.—Improvement on patent of Stickney & Taylor, October 18, 1864, No. 44,754. The toe-piece is provided with a perforated lug, through which the bolt that secures the side straps passes.



The bands O O', pivoted to the heel of the shoe, as described, bolt G, toe-piece I, having a perforated lug, H, in combination with the shoe B, substantially as described and for the purpose set forth.

161,425. BEER-FAUCETS. William B. Miller and Wm. Powell, Cleveland, Ohio. [Filed Oct. 21, 1874.]

Brief.—Air is drawn into the pump-chamber through the orifice in the lower part of the spigot, and forced into the barrel through the upper orifice, both of which are controlled by valves.

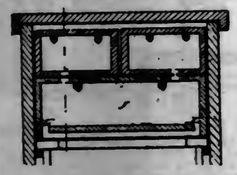
The herein-described faucet, consisting of the body A, cylinder A', piston D, key C, having therein hole *d*, and valve *e*, port *b*, port *a*, and valve *c*, outlet G, and chamber E, constructed and arranged to operate substantially as described, and for the purpose set forth.

161,427.



161,428. BEE-HIVES. George H. Mobley, Nevada, Mo. [Filed Mar. 18, 1875.]

Brief.—The honey-box, of equal length and width with the brood-chamber beneath, has a space beneath its bottom, which bottom does not touch its sides. A passage-way for the bees and for the escape of air is thus provided.

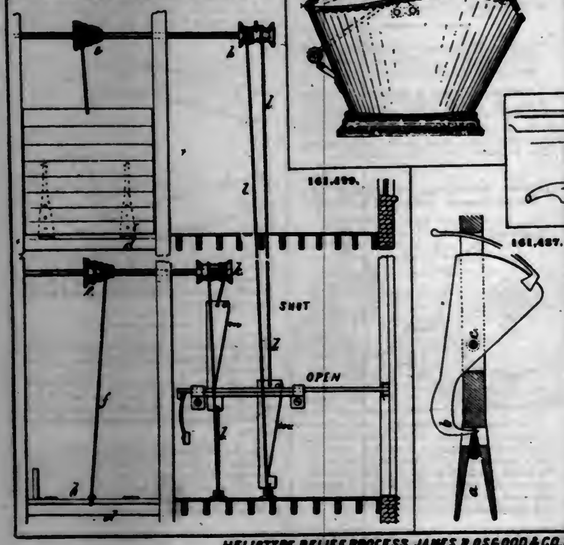


The honey-box J, having bottom K raised and narrower than the box to allow the bees to pass therein and up through the spaces I, as set forth.

161,429. HATCH CLOSING AND INDICATING APPARATUS. Daniel Moore, Brooklyn, N. Y., assignor to Jos. Goldmark, same place. [Filed Feb. 13, 1875.]

Brief.—The several hatches are connected by ropes to conical grooved pulleys attached to horizontal shafts. Wedge-shaped counter-balance-weights are attached by ropes to drums on the horizontal shafts. These weights from each shaft descend to the room on the first floor; and when any one of the hatch-doors is open, its corresponding balance-weight enters a slot in a bolt-bar, which is projected into the outside door-jamb, thus preventing the door from being locked until all the hatches are closed.

1. The conical grooved pulley *c*, connected by a rope or chain to the hatch, in combination with the counterbalance-weight *m*, suspended by a rope or chain, *t*, to the cylindrical drum *h*, for the purposes and as set forth.



2. The counterbalance-weights *m*, connected to the respective hatches by ropes or chains and intermediate pulleys or drums, and located side by side in a convenient position to form indicators, by which the condition of the various hatches in the building can be ascertained by inspection of such weights, substantially as set forth.

3. The safety bar or bolt *n*, combined with and actuated by the hatch opening and closing mechanism, whereby the bolt is interposed to prevent the door-lock being operated when either hatch is raised, substantially as set forth.

161,430. PRIMINGS FOR ELECTRIC FUSES. George M. Mowbray, North Adams, Mass. [Filed Mar 13, 1873.]

A composition of metallic antimony and fulminate of mercury, as a priming for electric fuses, substantially as described.

161,431. PRIMINGS FOR ELECTRIC FUSES, &c. George M. Mowbray, North Adams, Mass. [Filed Mar. 19, 1873.]

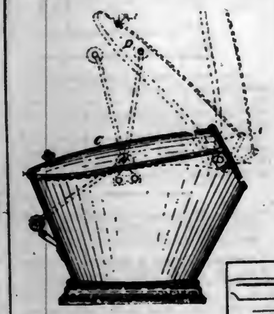
The above-described composition of bismuth and fulminate of mercury, as a priming for electric fuses, percussion-fuses for shells, &c.

161,432. PRIMINGS FOR ELECTRIC BLASTINGS, &c. George M. Mowbray, North Adams, Mass. [Filed Mar. 19, 1873.]

The above-described composition of cadmium and fulminate of mercury, as a priming for electric fuses, friction-primers, percussion-fuses for shells, torpedoes, &c.

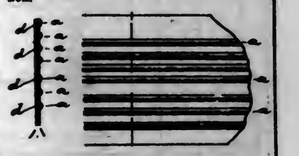
161,433. COAL-HODS. John H. Murphy, Worcester, Mass. [Filed Feb. 20, 1875.]

Brief.—As the cover is raised the discharge-opening is contracted.



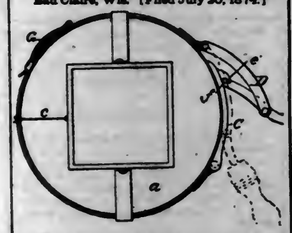
161,434. CORDING MATERIALS FOR BOOTS AND SHOES. Alonzo P Nash, Weymouth, Mass. [Filed Jan. 6, 1875.]

Brief.—A cordal material in which the cords project only on the upper side, the under side being a plane surface. A piece of this material of the proper size is to be stitched to the vamp of a boot or shoe for ornamentation.



The herein-described cording material for boots and shoes, having parallel projecting ridges *a a a a* on one side of it, as and for the purposes set forth.

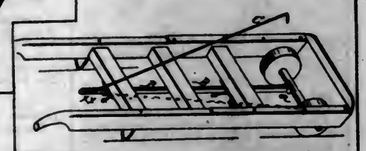
161,435. BAG-HOLDERS. Michael Olson, Eau Claire, Wis. [Filed July 20, 1874.]



The combination of the spout A, having the head or flange *a*, the band B, sustained by the supports *c c*, the link C, having hooks *e*, the link D, and the hand-lever E, all combined as shown.

161,436. HAND-TRUCKS. Henry Parker, Otsego, assignor of three-fourths his right to J. Jacobsen, St. Joseph, Mich. [Filed Sept. 5, 1874.]

Brief.—To hold packages on the truck.



In combination with an ordinary hand-truck, A, provided with the loops *a' a'* on the under edges of its cross-bars, the horizontally-sliding rod B, with hook *e*, and openings X X, and the rod C, with hooks at one end, and pivoted in the perforated end of the bar B, so as to be thrown over the top or folded under the bottom of the truck, substantially as set forth.

161,437.

161,437. LOOMS FOR WEAVING HAIR-CLOTH. Jos. Paradis, Brooklyn, assignor to Edward H. Faulkner, New York, N. Y. [Filed Nov. 8, 1873.]

Brief.—The selector consists of a fork or jaw so shaped at its narrowest part as to hold one hair only, and is provided with a pivoted hooked arm, the hook arranged to work across the fork in such manner as to pass between the innermost hair and the one next it, and retain it while the selector is passed through the shed.

In combination with the bed formed with discharge opening or spout, as described, the cover C, pivoted to the front of the bed at or near said spout or opening, substantially as set forth.

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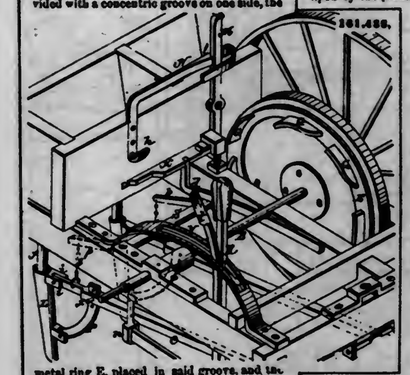
The selector formed of a jaw with a hook vibrated laterally to pass between the first hair and the next above it in said jaw, and acting to clamp said hair, substantially as set forth.

161,439. SEED-PLANTERS. Warren Post and Mason Colbert, Warsaw, Mo. [Filed July 6, 1874.]

Brief.—The cams which act upon the seed-slide are set in a metallic ring, which is fitted in a concentric groove in a wooden wheel.

1. The combination of the wheel D, provided with a concentric groove on one side, the

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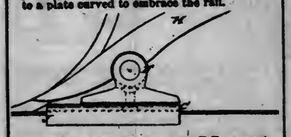


metal ring E, placed in said groove, and the cams G G, each provided with pins *e e*, passing through the ring and wheel, and riveted on the opposite side of the wheel, substantially as herein set forth.

2. The vertical pivoted lever M, and spring-arm N, with catch *s* and hook A, in combination with the plate K and seed-slide I, as and for the purposes set forth.

161,439. RAILROAD PINCH-BARS. C. Regan, Waterloo, Iowa. [Filed Jan. 16, 1875.]

Brief.—The bar works on a fulcrum-pin passing through a bearing, which is swiveled to a plate carved to embrace the rail.

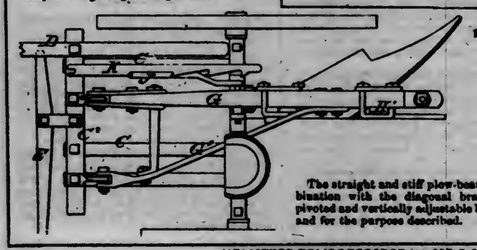


A railroad-pinch having jaws F F, connected by a pivot, E, with plate C, as and for the purpose specified.

161,440. SULKY-PLOWS. Edwin Robertson, Fairmount, Ill. [Filed Dec. 5, 1874.]

Brief.—The plow-beam, with a rigidly-attached diagonal brace, is made adjustable at their forward ends in a vertical direction. A cam and lever has its fulcrum upon the axletree of the bearing-wheels, and by the movement of the lever the cam acts upon a friction-wheel upon the under side of the beam, thus elevating the plow at pleasure.

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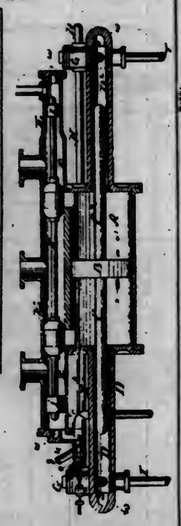


The straight and stiff plow-beam G, in combination with the diagonal brace G^1, both pivoted and vertically adjustable by the means and for the purpose described.

161,441. HYDRAULIC ENGINES. F. Rochow, Brooklyn, N. Y. [Filed Jan 26, 1875.]

Brief.—From the faces of the pistons in the main cylinder project plungers of smaller diameter, which fit into chambers projecting from the heads of the cylinder of the engine. The plungers and their chambers constitute pumps for forcing water or other fluid with a degree of pressure greater than that required to move the large pistons. May use for operating the engine a liquid different from that acted upon by the plungers—as, for instance, overflow water for the engine, and oil or equivalent liquid, in a continuous circuit, to be acted upon by the plungers.

161,441.



1. In combination, with the larger main cylinder A, piston B, and main valve-chamber E, the projecting smaller pressure-cylinder D, piston C, and valve-chamber G, the chamber E, having a valve for controlling the entry and discharge of the liquid which operates the piston B, and the chamber G having a separate suction and a delivery valve for the admission and discharge of the liquid which is acted upon by the piston C, substantially as described.

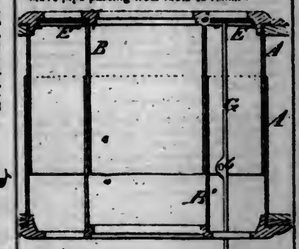
2. The valve-rod F, carrying the larger piston *j* at one end and the smaller piston I at the other end, to be affected automatically by continuous hydraulic pressure on the smaller piston, and alternate pressure on the larger piston, substantially as specified.

3. The reciprocating pistons *p*, placed within the cylinder *o*, and combined with the supply-pipe *q*, tubes *n* and *r*, and chamber E, substantially as and for the purpose herein shown and described.

4. The pocket *w*, arranged at the end of a hydraulic chamber, for the reception of a plunger moving in said chamber, and provided with tapering notches, substantially as set forth.

161,442. ADJUSTABLE VENTILATING-REGISTERS. Geo. W. Rogers, Lake City, Minn. [Filed Dec. 26, 1874.]

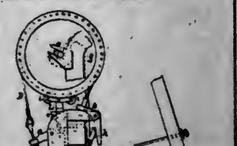
Brief.—Adapted for use as a thimble for a stove-pipe passing from room to room.



The adjustable perforated plate E, in combination with the lever G, pivoted to the cylinder A, and extending up through the plate E and through a slot, *e*, as and for the purpose set forth.

161,443. LET-OFF MECHANISMS FOR LOOMS. George P. Rose and Abel Cartwright, Slocumville, and Benoni S. Rose, Lafayette, R. I. [Filed Feb. 1, 1875.]

Brief.—The let-off is regulated by a friction-strap controlled by a padded lever bearing on the warp roll, and the beam is held at the beat-up by connection with the lay, which tightens the strap, and at the same time causes the padded lever to press on the warp. The beam is in part supported on an adjustable stand, and having friction-rollers, and the tension of the strap is removed by means of a cam-piece when the beam is to be reversed.



1. The combination of the arm *g*, rock-shaft F, cam *h*, lever *b*, strap D, and lever *a*, operated by the lay or any moving part of the loom, with the beam B, all operating together, substantially as and for the purposes set forth.

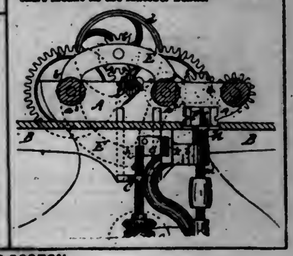
2. The combination of the beam B, arm *g*, cam *h*, lever *b*, strap D, and lever *a* with the cam *f*, all operating together, substantially as and for the purposes described.

3. The combination of the cam *f*, lever *a*, and friction-strap D with the beam B, substantially as and for the purpose specified.

4. The combination of the adjustable stand L with the pivoted friction-rolls *i i* and beam B, substantially as and for the purpose set forth.

161,444. WOOD-PLANING MACHINES. J. Ross, Buffalo, N. Y. [Filed Jan. 13, 1875.]

Brief.—The bed upon which the lumber rests while being planed is made vertically adjustable in connection with and by the same means as the matcher-heads.

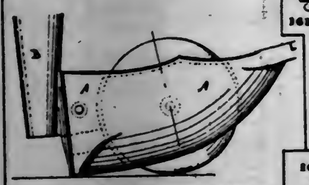


1. In combination with the frame A, having notches *a a* upon one side, the yoke E, having the boxes *b b* and lug *c*, all cast in one piece, and carrying the operating gears C, and connected with the feed-rollers *d' d''*, substantially as and for the purposes set forth.

2. In a rotary wood-planing machine, the adjustable table B, having the matcher cutter-head frames attached to and operating in connection therewith, substantially in the manner and for the purpose hereinbefore specified.

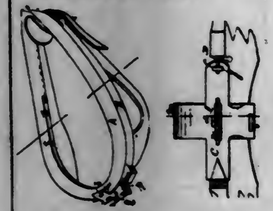
161,445. GRAIN-DRILL TEETH. I. B. Sandusky, Lexington, Ky. [Filed Feb. 20, 1875.]

Brief.—The conductor-spout and the furrow-opener are made in halves, and bolted together. The opener is recessed to receive the journal of the cutting-wheel that severs the vines in advance of the tooth.



The tooth A and conductor-spout B, made in halves, recessed to receive the cutter-wheel, and provided with bearings therefor, all as shown and described.

161,446. HORSE-COLLARS AND HAMES. J. J. Schneider and Alexd. S. Mook, Bedford, Iowa. [Filed Mar. 3, 1875.]

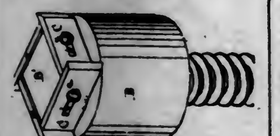


1. In combination with the hames B B', having projections *d d* and swinging hasp C, the collar A, divided at *a* and *b*, as described.

2. The swinging hasp, constructed with the eye *i*, opening *l*, staples *n o*, and curved projection *m*, as and for the purpose described.

161,447. CUTTER-HEADS. F. Schwamb, Chicago, Ill. [Filed Feb. 7, 1873.]

Brief.—For cutting the entire surface inscribed by the cutters, downward onto a vertical line, in cutting pictures, frames, &c., the head of a cylindrical cutter head is cut away, so as to form an inscribed square, to each face of which an adjustable cutter is attached. The cutters extend beyond the line of the head, have their entire upper edge beveled from the outside to the inside, and are tapered from heel to point, so that the cutting-edge is slightly wider than the heel of the cutter.

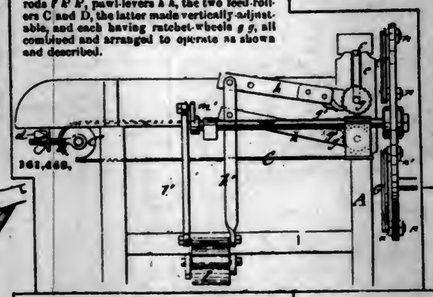


The cutter-head B, with square portion B', cut away as described, in combination with cutters C, having beveled cutting-edges *c'* extending beyond the part B', all constructed substantially as and for the purpose specified.

161,448. FEED-CUTTERS. J. A. Schwerdt, New York, N. Y. [Filed Sept. 26, 1874.]

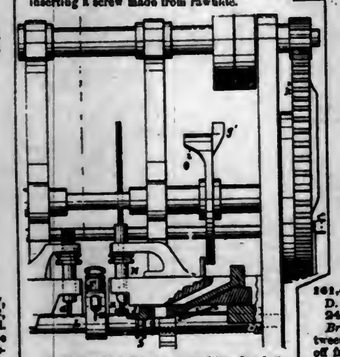
Brief.—The rolls are operated by ratchets upon each end; and a lever pivoted in the center under the feed-box communicates motion to the ratchet-arms.

In a feed-cutter, the wheel G, provided with two cutting-blades, G' G', the crank-shaft *w*, centrally pivoted treadle-lever *l*, connecting-rods *l' k' k'*, pawl-levers *h h*, the two feed-rollers C and D, the latter made vertically-adjustable, and each having ratchet-wheels *g g*, all combined and arranged to operate as shown and described.



161,449. MACHINES FOR INSERTING FIBROUS SCREW-FASTENINGS IN BOOTS AND SHOES. Geo. V. Sheffield, New York, N. Y. [Filed Mar. 1, 1875.]

Brief.—A screw tap is provided for screw-threading the punched hole preparatory to inserting a screw made from rawhide.



1. The combination, in a machine for fastening shoe-soles and other work with screws of fibrous material, of a boring-tool to make the holes for the screws, a screw-tap for screw-threading the holes, a chuck for inserting the screws, a cutter for cutting off the inserted screws, and suitable apparatus for operating the different instrumentalities in the order described, substantially as specified.

2. The combination, in a machine for fastening the soles and other work with screws of fibrous material, of a boring-tool to make the holes, a screw-tap for screw-threading the holes, a chuck for inserting the screws, a cutter for cutting off the inserted screws, and apparatus for operating them all, adapted to effect the several operations described for each successive screw in one and the same place, while the work remains in one and the same position, all substantially as and for the purpose specified.

3. The boring-tool, combined with the rod I, arranged in the inclined slots or bearings M and vibrating and rising and falling levers N, substantially as specified.

4. The combination, with the sliding screw-tap G, of pulley X, clutches Z and *f*, and the reversely-turning shafts Y and *g*, substantially as specified.

5. The combination, with the sliding chuck H, of the pulley K, toothed rim *t* and *q*, wheels *r*, spring-catches *p d'*, reversely-turning shafts Y and *g*, and the mechanism for working the spring-catches, substantially as specified.

161,450. HAND-STAMPS. John Sigwalt, Jr., Chicago, Ill. [Filed May 19, 1874.]

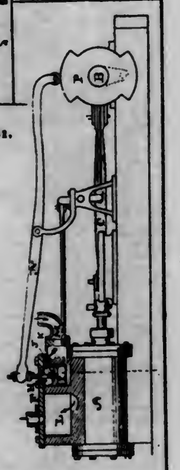
Brief.—The lugs are provided to prevent lateral movement of the arm.

The lugs A and A of the vibrating arm *a'*, in combination with the extensions B and B of the lugs *b''* and *b''* of the bed-piece, substantially as herein described, as and for the purpose set forth.



161,451. CUT-OFFS FOR STEAM-ENGINES. D. H. Smith, St. Louis, Mo. [Filed Feb. 24, 1875.]

Brief.—A single cut-off valve is used between the two steam-chests. As steam is cut off from one engine it is admitted to the other.



1. The compound cylinder A A', provided with suitable pistons, the shaft B, rods C C', cranks D D', valves E E', chest F, provided with the chambers G G' and H, valve I, ports J J' K K', and pipe M, combined and operating substantially as described and shown.

2. The valve I, chamber H, ports J J' K K', pipe M, rod N, cam P, and shaft B, combined and operating substantially as shown and described.

3. The valve I, chamber H, ports J J' K K', pipe M, combined and operating substantially as described and shown.

161,452. ROTARY REVERSING AND CUT-OFF VALVES. John C. H. Stut, San Francisco, Cal. [Filed Feb. 26, 1875.]

Brief.—As the valve is oscillated to admit and exhaust steam, the inclined edges of the valve steam-ports give a variable cut-off. The two sets of ports are arranged in reverse order, so that by moving the valve longitudinally, a steam-port takes the place of an exhaust-port, and vice versa, and reverses the engine.

1. The cylindrical valve-chamber C, having the ports B B extending around the inside of the chamber spirally, or at an angle with a circular cutting-plane, in combination with a rotating valve having steam and exhaust ports to correspond with the ports B, substantially as herein described.

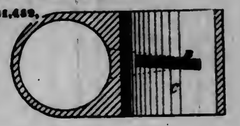
2. The valve E, having the two sets of steam and exhaust ports D E and F G situated in parallel planes, which cut the valve at right angles with its axis, so that one set may be used in admitting steam to move the engine in one direction, and the other set to reverse it, substantially as herein described.

3. The cylindrical rotary valve H, having two steam and two exhaust ports for forward and reverse motion, said valve being provided with a sliding steam-pipe, I, so that the valve may have a motion endwise in its chamber, to bring either set of ports in a line with the ports B B without causing leakage, substantially as herein described.

4. The rotary valve having the steam-ports E and G, one side, *e*, of which is made angular or inclining, so that by moving the valve endwise either of these ports will give a variable steam-opening in connection with the spirally arranged ports B B in the valve-chamber, substantially as herein described.

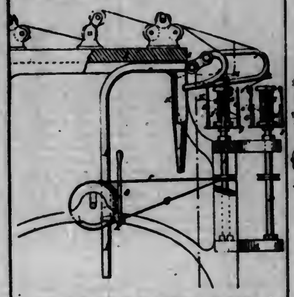
5. The cylindrical valve-face H, composed of two segments, and provided with the packing-strips *h* and *i*, the interior strips *j* and *k*, and springs *l*, and the end springs *n*, substantially as herein described.

161,453.



161,455. TWISTERS FOR MAKING THREAD, TWINE, &c. L. M. Sutherland, Catskill, and Thos. Groves, Brooklyn, N. Y., administrators of James Sutherland, deceased. [Filed Jan. 4, 1875.]

Brief.—The strands, on the way from the bobbin to the tension-rollers, are dampened by being led through a slit in the bend of the water-pipe. The stop-cock of the water-pipe is connected to the belt-shifter, and the water is thus cut off when the machine is thrown out of operation.



1. The slitted bent pipes J, hinged or jointed to a water-pipe, I, and interposed between the fliers and the tension-rollers for wetting the strands while being twisted, substantially as herein shown and described.

2. The combination of the cock P of the water-pipe I, that supplies water to wet the strands, with the ordinary belt-shifter O of the machine, substantially as herein shown and described.

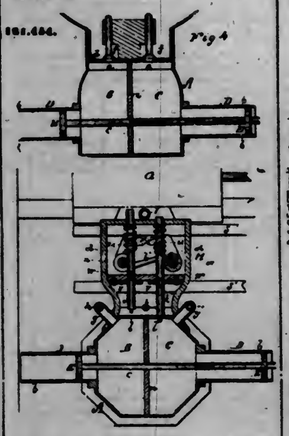
161,454. AIR AND GAS ENGINES. John Taggart, Boston, Mass. [Filed Oct. 26, 1874.]

Brief.—Hydrogen gas and air automatically supplied are ignited within the explosion-cylinders, thereby heating air which is stored in a conservator, and constitutes the motive power of a common engine.

1. The air and gas engine, substantially as described, composed of the double-headed piston *e* B E', the two explosion-chambers B C, the perforated tubes D D', the conservator F, and its valves *f f*, and the two exploders *h h'*, provided with mechanism for operating them alternately, as set forth, all being combined and arranged and provided with gas-inducts and platina wires, essentially as explained.

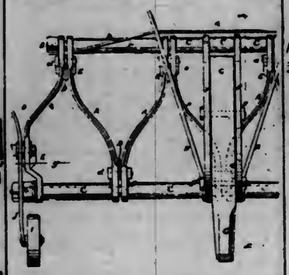
2. The combination or mechanism, substantially as described, for actuating the exploders, such consisting of the springs *a a*, shafts *a' a''*, arms *b' b'*, studs *d' d''*, tops *e' e''*, gravitating latches *v v*, catches *w w*, and the slides *t t'*, provided with the trippers *z* and the triggers *e' f'*, all arranged together and with the case H as set forth.

161,456.



161,463. CULTIVATORS. F. W. Tolley, Coxsackie, N. Y. [Filed Jan. 4, 1875.]

Brief.—The entire frame turns upward and forward to be transported upon the wheels.



1. A cultivator-frame consisting of curved bars A, long rods B, with and screws receiving nuts, and tubular washers C, all substantially as shown and described.

2. The combination, with frame and pivoted tongue, adjustable in slotted guides F, of the pivoted draft-hook K, having link L, adapted to couple with the hook M or N, in the manner and for the purpose specified.

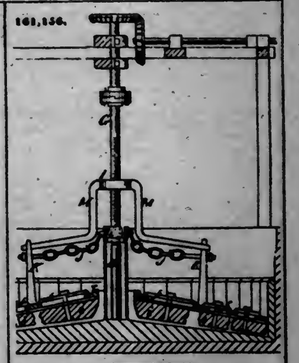
161,456. ORE-CRUSHERS. D. Trumbull, Jr., Coulterville, Cal. [Filed Jan. 23, 1875.]

Brief.—Separate stones are attached to a skeleton muller by bars and bolts. The shaft may be removed after untaying it from collar I, screwing the collar upward and casting off the chains. Then the muller may be removed. The basin is lined with stones.

1. The pan A, with its stone bottom and stone sides, in combination with a skeleton muller, consisting of the hub *c*, with its radial arms *d*, rings *e e*, having stones *i i* bolted firmly thereto, substantially as and for the purpose above described.

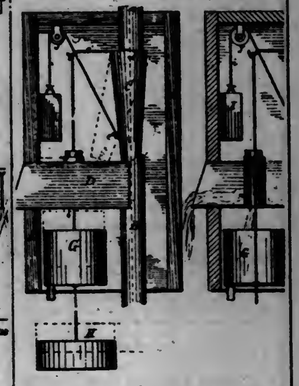
2. The vertical driving-shaft G, having its lower end formed into a screw, and stepping in the standards B, in combination with the collar A, chains *f*, standard K, and nut L, with its arms M, all combined and arranged to operate substantially as and for the purpose specified.

161,456.



161,457. AUTOMATIC CISTERN-SUPPLY REGULATOR. Theophilus Van Kannel, Cincinnati, Ohio. [Filed Oct. 9, 1874.]

Brief.—An apparatus which allows the first part of a rain-fall to pass off, carrying with it the soot, &c. A float, pulley, and a vibrating spout or tube, which works automatically, and carries the pure water into the cistern.

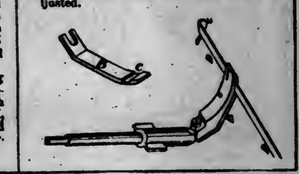


1. A cistern-supply regulator having the vibrating tube C, vessel G, float H, and weight I, combined to alternately change the stream of the supply, as and for the purpose described.

2. The tube E, with longitudinal opening *e*, combined with cut-off E', to divide the water conducted into vessel G and that wasted through trough D, as set forth.

161,458. GAGE QUILTERS AND CORDERS. Geo. Vincent, Stockton, Cal. [Filed Feb. 2, 1875.]

Brief.—The quilting-gage is held in a notch in the top of a plate bearing against the bottom of the presser-foot. The plate is screwed fast to the heel of the presser-foot, and has a square shoulder that fits the beveled heel, and prevents the plate from sliding sidewise. The elasticity of the plate allows the gage to be tilted.



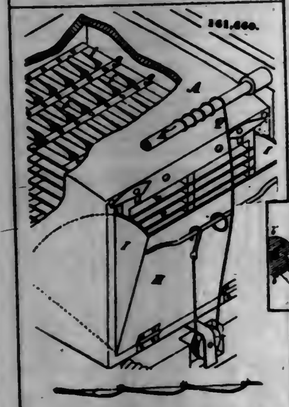
The gage-bar D, with its shutter c, in combination with the plate B, slotted at c and recessed to the heel of the presser-foot, substantially as and for the purpose herein described.

161,459. GUIDE ATTACHMENTS FOR SEWING-MACHINE PRESSER-FEET. George Vincent, Stockton, Cal. [Filed Feb. 2, 1875.]



The presser-foot D, constructed with the sharp bend a and the screw c, with its nut d, in combination with the attachment B constructed with the sharp bend b and slot e, as set forth.

161,460.



161,460. CON-CENTRATORS. John Vincent, Sr., San Francisco, Cal. [Filed Feb. 19, 1875.]

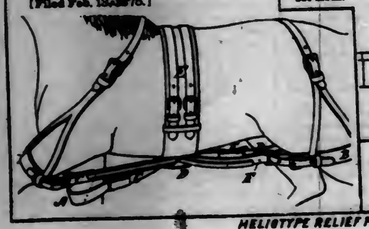
Brief.—A concentrator consisting of a number of shelves having pockets partly covered at their rear ends, the whole contained in a box mounted on journals and hangers. The box is given a vibrating and rocking motion to facilitate separation.

1. The box A, having a series of concentrating-trays, c, mounted on journals b, and suspended by hangers D, in combination with the bent-shaft K, having arms i, which are attached to the box by chains of the rod m, substantially as and for the purposes described.

2. The box A, provided with the hinged end H', having side-boards I, said box inclosing one or more concentrating-trays, c, substantially as and for the purposes described.

3. A concentrating device, in combination with an external cam mounted on journals, whereby it can be turned to any desired position on said journals, for the purpose of charging and discharging the ore and concentrates.

161,461. APPARATUS FOR BREAKING HORSES. J. S. Walling, Red Wing, Minn. [Filed Feb. 15, 1875.]

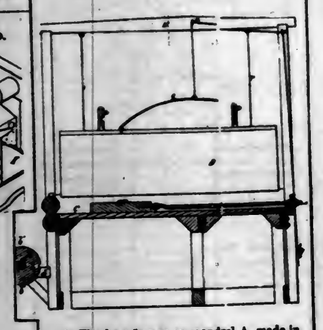


The diagonal straps I and G, in combination with straps C and F, surcingle E, for supporting the pulley-block D, and straps or bands A B, substantially as and for the purpose set forth.

161,462. NUT-LOCKS. Orrin T. Welch, Topeka, Kans. [Filed Sept. 22, 1874.]

A nut-lock formed of grooved nuts D, encircling wire E, and intermediate binding-wire F, substantially as and for the purpose described.

161,463. MACHINES FOR MANUFACTURING HYDRAULIC HOSE. John A. Wiley, North Andover, Mass. [Filed Feb. 12, 1875.]



1. The hose-former or mandrel A, made in sections *a b c d*, provided with tenons and mortises, as described.

2. The hose-former A, made in sections, as described, and provided with the air-channel *s*, extending through them, as set forth.

3. The hose edge-clamp B, composed of the bar A and the series of bow-springs or clamps i, provided with clamping-screws, as set forth.

4. In combination with the table C, the boarder D, arranged with and applied to such table, substantially as and for the purpose specified.

5. In combination with the table C, the clincher F, and its rod G, arranged with and applied to the table, substantially as specified.

6. The combination of the flattening-rollers L L with the table C, the clincher F, and its rod G, applied to the table, as set forth.

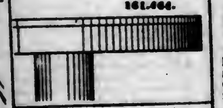
7. The combination of the grooved receiving-roll K, provided with mechanism for operating it, as described, with the table C, the clincher F, and its rod G, applied to such table, as specified.

8. The combination of the table C, the grooved receiving-roller K, provided with mechanism for operating it, as described, the flattening-rollers L L, and the clincher F, applied to the table, all being arranged substantially as explained and represented.

161,464. BUTTER-PRINTS. R. S. Williams, Philadelphia, Pa. [Filed Dec. 17, 1874.]

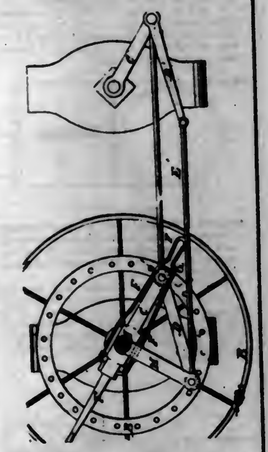
A butter-print having a porcelain or enamelled face, substantially as and for the purpose set forth.

161,464.



161,465. MECHANISMS FOR OPERATING THE ADJUSTING-SCREWS OF ROLLS. John S. Worth, Centerville, Pa. [Filed Feb 20, 1875.]

Brief.—The power to drive the screws is derived from a horizontal shaft, and transmitted through a reversing-clutch, a vertical shaft, and a sliding crank. Each screw is provided with a crank, to the end of which is fastened at an angle a secondary crank. One bar connects the ends of the two secondary cranks, and another the ends of the cranks proper. The driving-crank is attached to the center end of one of the secondary cranks. The crank on one of the screws is loose, but capable of being locked to the hand-wheel fastened to the screw, so that either end of the roll may be adjusted independently, or both ends simultaneously.

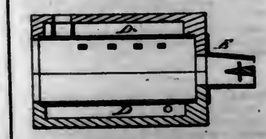


1. The combination of the hand-wheels B *b'*, the catch-block G, and the latch F with the cranks or wrenches C C', and the two pairs of connecting-rods D D' and E E', substantially as herein shown and described, to enable either of two screws to be turned separately, or both at the same time, as set forth.

2. The combination of the return-crank H, the extensible crank I, the gear-wheels J K L, shaft L, and the double clutch M, and its shifting-lever N with the two cranks or wrenches C C' and the two pairs of connecting-rods D D' and E E', substantially as herein shown and described.

161,466. PEAT-KILNS. William B. Wright, Rome, N. Y. [Filed Aug. 20, 1874.]

Brief.—By the operation of the central cone, the mass of peat is prepared to receive the heated air upon its interior as well as its exterior surface.



1. In combination with a drier for a peat-kiln, a cone, B', centrally arranged in its outlet E, for the purpose herein described.

2. The double-wall drier, having the upper portion of its inner wall D perforated, the annular outlet H, and the inclined cone B', all combined and arranged substantially as and for the purpose set forth.

161,467.



161,467. COMBINED PEN-HANDLES AND LEAD-PENCILS. Henry C. Benson, Yonkers, N. Y., assignor to Jos. Reckendorfer, New York city. [Filed Jan. 22, 1875.]

The herein-described article, consisting of a hollow pen holder or handle, or other article, and a lead-pencil received within said handle, and provided with a rubber head, that forms a plug to fit tightly in and close the upper open end of the handle, as shown and set forth.

161,468. LUBRICATING COMPOUNDS. Ira G. Betts, Detroit, assignor of two-thirds his right to George B. Peters, Marshall, Mich. [Filed Feb. 16, 1875.]

1. The process of making a base for lubricating compounds by saponifying alkalies, water, and fats, and combining with the same, when cold, a quantity of cold oil, substantially as described.

2. A lubricating compound composed of a base made by partially saponified alkalies, water, and fats, combined, when cold, with cold oil, and asbestos, paper-pulp, or other suitable material, to hold said base mechanically, substantially as described.

161,469. LUBRICATING COMPOUNDS. Ira G. Betts, Detroit, assignor of two-thirds his right to George B. Peters, Marshall, Mich. [Filed Feb. 16, 1875.]

A lubricating compound adapted to be used in cups, wherein to a base made of alkali, water, and fat partially saponified, to which a certain quantity of cold oil has been added and a vehicle of asbestos and paper-pulp, or either, to take up and mechanically hold the greasy or oily substances, there is added an essential oil, substantially as and for the purpose set forth.

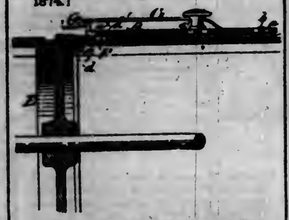
161,470. FEET FOR FENDERS, &c. F. S. Bissell, Pittsburg, Pa. [Filed Jan. 22, 1875.]

Brief.—To protect the surfaces of hearth or floor, and insure noiseless movement.



The combination, in a foot for fenders, coal-boxes, &c., of the socket *a*, ball C, of rubber, or similar material, and ring or circle-piece *b*, substantially as specified.

161,472. SEWING-MACHINES. Helen A. Blanchard, Boston, Mass. [Filed Oct. 27, 1874.]

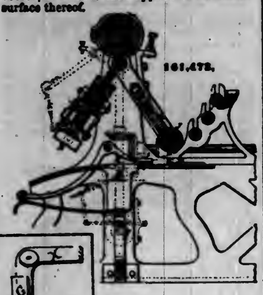


1. The combination of the horizontally-reciprocating feed-wheel, carrier-plate B, interlocked therewith, as described, cloth-gage A, and spring presser-bar G, both secured to and upon said carrier-plate, substantially as and for the purpose specified.

2. The horizontally-reciprocating feed-wheel E and carrier-plate B, interlocked therewith, as described, and provided with a slot, *f'*, in combination with the fixed and bossed needle-guide *F f*, substantially as and for the purpose specified.

161,473. MACHINES FOR NUMBERING, EMBOSSING, AND INKING BOOKS, &c. Louis O. Bodel, Jacques Masse, and Wm. Webster, Paris, France. [Filed Dec. 31, 1874.]

Brief.—The male numbering and embossing die is fixed in the table. An oscillating shaft above it has arms carrying the corresponding female die and an inking-roller. The paper, placed over the die on the table, is first embossed, and ink is then applied to the raised surface thereof.



161,473.

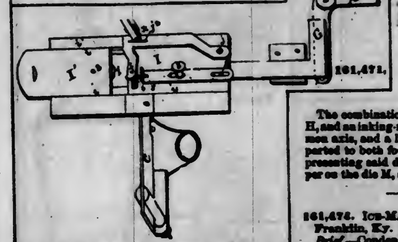
The combination of the relief-die M, the die H, and an inking-roller, J, mounted upon a common axis, and a like oscillating movement imparted to both for the purpose of alternately presenting said die H and roller J to the paper on the die M, substantially as described.

161,474. ICE-MACHINES. W. H. H. Bowers, Franklin, Ky. [Filed Mar. 9, 1875.]

Brief.—Condensed air is forced through pipes set in compartments, through which cold water flows in an opposite direction, and also through a valve set to yield at a predetermined pressure, and is then allowed to expand in a freezing-chamber divided by partitions having fines alternately at top and bottom. In each compartment are pans holding water to be frozen, set alternately against opposite sides of the apartment, and protected by superposed framed muslin screens.

1. The divided compartment A, in combination with the pans C and the muslin screens D, all as and for the purpose specified.

2. The combination of the radiator-compartments G^1 G^2 G^3, pipes I, J, and R, valve-chamber K, and water-pipe K', all constructed substantially as and for the purpose herein set forth.



161,471.

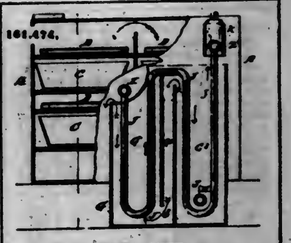
161,471. SEWING-MACHINES. Helen A. Blanchard, Boston, Mass. [Filed Sept. 16, 1874.]

1. The combination of gear-wheel A, having cam-groove *e*, bell-crank X, having a stud working in said cam-groove, bar H, and plate I, substantially as and for the purpose specified.

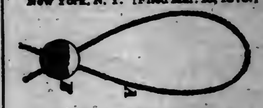
2. The combination of the laterally-reciprocating plate I, spring presser-foot J *f*, secured thereto, and presser-bar K *h*, substantially as and for the purpose specified.

3. The combination of plates I and I', adapted to be reciprocated in the guide-plates *f* and *f'* of the spring connecting-book I, and the bottom 2, whereby said plates may be securely locked together or unlocked to afford access to the shuttle, substantially as set forth.

161,476.

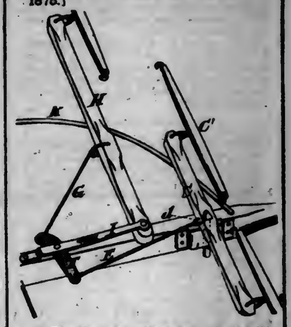


161,475. METALLIC SEALS. R. J. Brooks, New York, N. Y. [Filed Mar. 13, 1875.]



A metallic seal consisting of a wire bow, A, and a ball or disk, B, of soft metal, with apertures crossing each other, so as to cause the ends of the wire to afford a mutual anchorage and bearing to each other when the seal is compressed, as hereinbefore described.

161,476. DRAFT-EQUALIZERS. William M. Brown, La Fayette, Ind. [Filed Jan. 8, 1875.]



1. The pole A, in combination with the sliding double-tree C, rod E, lever F, rod G, and lever H, substantially as and for the purpose specified.

2. The rod K, in combination with the lever H and the pole A and its cross-bar B, substantially as and for the purposes specified.

161,477. CURTAIN-FIXTURES. Chauncey Buckley and Lodowick L. Sawyer, Meriden, Conn. [Filed Mar. 16, 1874.]

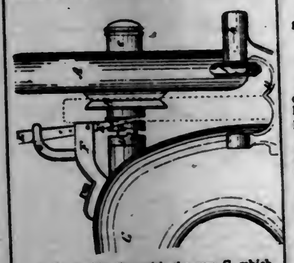
Brief.—A toothed pendulum-disk is provided with a friction-plate, bearing against a corresponding plate on the end of the roller, so that the curtain may be governed in its movement by either.



The combination of the roll B, bracket A, constructed with the bearing F and projection *f*, the toothed friction-plate D, and lever L, all constructed and arranged substantially as specified.

161,478. SEWING-MACHINES. Jas. H. Burr, Cahoba, Mo., assignor of one-third his right to G. White. [Filed Dec. 26, 1874.]

Brief.—One part of the clutch is stationary on the main shaft, and the other part, attached to the driving-wheel, loose on the shaft. When a bobbin is to be wound, the parts are thrown out of gear by a lever pivoted in a bracket on the arm of the machine, and are locked thus by a spring on the lever fitting into a notch in the bracket. When the lever is released, a spring on the end of the main shaft, bearing against its cap, forces the parts of the clutch into contact.



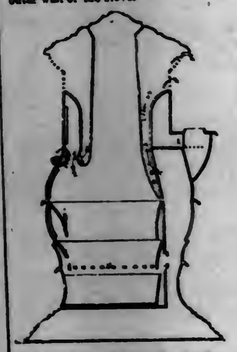
1. In combination with the arm G, which carries the driving-shaft and the axially-adjustable fly-wheel, of the bracched bracket F and the spring-lever E of the clutch device, arranged and held in the notched end of said bracket against the action of the spring c when the fly-wheel is made free for winding the bobbin, as herein set forth.

2. The combination, with the clutch-spring b, the fly-wheel A, and its shaft C, of the removable screw-cap sleeve c, arranged upon an extension of said shaft, and forming both a seat and cover for said spring, as and for the purpose set forth

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161,479. MAGAZINE-STOVES. Enos Bussey, Troy, N. Y., assignor to himself and C. A. McLeod, same place. [Filed Mar. 3, 1875.]

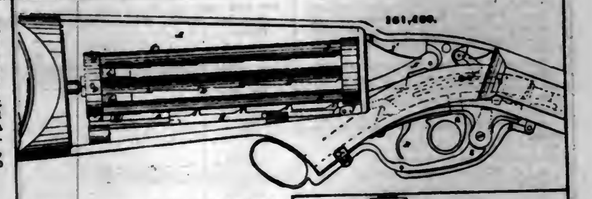
Brief.—Air is introduced both from the chamber surrounding the magazine and through the outer wall of the stove.



1. In a heating-stove, substantially as herein described, the upper and lower combustion-chambers, communicating with each other by a narrow throat, into which external air is admitted through inclosed lateral passages or ducts, and constructed and combined substantially as and for the purposes set forth.

2. The combination of the upper and lower combustion-chambers, provided with an internal air-inlet in the throat between the two, with a hot-air chamber inclosing or surrounding the fuel-reservoir, and communicating with said throat, substantially as described.

3. In a magazine-stove, the hollow contracted neck or throat, formed by double walls between the upper and lower combustion-chambers, and combined therewith, substantially as described.



161,480. MAGAZINE FIRE-ARMS. Reuben S. Chaffee, Springfield, Ill., assignor of one-half his right to Bernard Stavi, same place. [Filed Feb. 9, 1875.]

1. The pins E of the revolving magazine, in combination with the spring-cam F and the loading-bar H, operating as described, for the purpose of turning the said magazine.

2. The tubes B, having notched openings D, in combination with the cartridge-driver C, provided with springs, substantially as and for the purpose described.

3. The loading-bar H, with its lugs I, its stop-plate G, the spring-cam F, and its hook J, all combined and arranged substantially as shown, and for the purpose described.

4. The hollow breech-block P P, having shoulders K K, its finger L, trigger E, hammer Q, and extractor V, all arranged substantially as and for the purpose described.

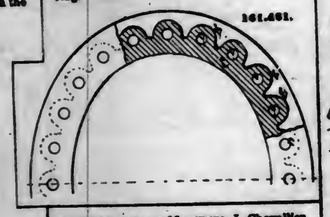
5. The cut-off N, with its cam and spring, in combination with the revolving magazine and the breech-block, substantially as and for the purpose described.

6. The stud M, in combination with the finger L, substantially as and for the purpose described

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161,481. FIRE-BOX-DOOR RING. George F. Chalender, Aurora, Ill. [Filed Apr. 4, 1874.]

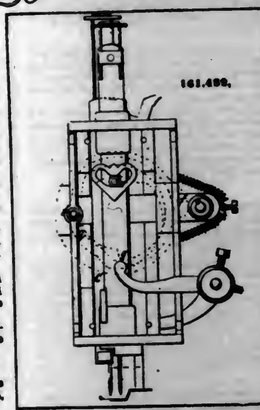
A fire-box-door ring, consisting of curved plates B B and intermediate ring C, the plates and ring being held together by rivets D, and the metal being cut away about the rivets, as shown and described, thus enabling the water to prevent too great a temperature in the ring.



161,482. LEVER ATTACHMENTS FOR MOWING-MACHINES. Alonzo B. Coonds, Trumansburg, N. Y. [Filed Aug. 13, 1874.]

Brief.—Repeated movements of the hand-lever, in connection with an intermediate hoisting-plate, operate the lifting-cam to raise the cutting apparatus.

The combination of the stationary holder-plate A, intermediate oscillatory lifting device F, and repeating hand-lever D, the combination of devices operating substantially as set forth.



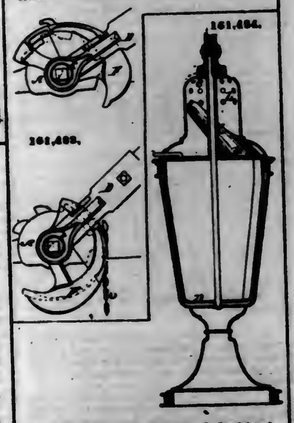
161,483. SEWING-MACHINES. L. Chevallier, Brooklyn, E. D., N. Y. [Filed Oct. 9, 1874.]

Brief.—The vertical movements of the main awl are for piercing a hole in the leather being sewed, and its lateral motions are to feed the leather along, and moving out of the way of the needle; and the latter, besides its usual vertical motions, has a lateral motion to enter the hole, and to move out of the way of the awl. An additional awl opposite the main one destroys the burr made by the latter.

1. The combination of an eye-pointed needle and its needle-bar, a feeding-awl and its bar, with a shuttle, the needle and awl being situated on the same side of the sewing platform, and each adapted to move vertically and laterally, alternately and independently of the other, substantially as described.

2. The combination of an awl-bar and needle-bar, both located on the same side of the work-plate, and each adapted to move vertically and laterally independent of the other, substantially as described, for the object specified.

3. In combination with the piercing or feeding awl and the needle, a secondary awl, having its projecting point extending above the cloth-plate, for forcing back the beard or ragged edged produced by the penetration of the main awl, substantially as described.



161,484. SEASONING-CUPS. J. Coulthard, Brooklyn, N. Y. [Filed Oct. 23, 1874.]

Brief.—The different spices are contained in a removable divided vessel, with foraminous cover, provided with tube and perforated plate, whereby the contents of any one spice-receptacle may be used while the other receptacles are closed.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

1. The combination, substantially as hereinbefore set forth, of the cup A, the foraminous cover, and a removable divided vessel having two or more compartments.

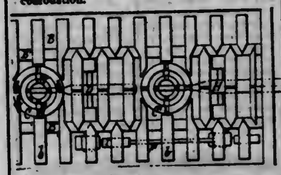
2. The combination, substantially as hereinbefore set forth, of the cup A, the foraminous cover, the divided vessel, the vertical rod, and the register provided with a spring and socket.

3. The combination, substantially as hereinbefore set forth, of the cup A, the foraminous cover, a removable divided vessel, and the stationary and movable plates.

4. The combination, substantially as hereinbefore set forth, of the cup A, the foraminous cover, the stationary and movable plates, and tube k.

161,485. GRATE-BARS. Alonzo W. Cram, Haverhill, Mass. (Filed Jan. 26, 1875.)

Brief.—The short transverse side bars project over the adjoining main bar, and form a passage for air the entire length of said bar. Air-tubes are arranged between the main bars, to supply additional air to the products of combustion.



1. A grate-bar, B, consisting of a central web, B', and side bars b b, arranged to form the opening c, substantially as set forth.

2. The open-top air-tubes C C, consisting of inner and outer tubes, and provided with slots or depressions h, as and for the purpose described.

3. The combination, with the air-tubes C C, constructed as described, of the rock-shafts E, levers D H, arms i k, and link F, arranged substantially as specified.

4. The combination of the grate-bars B, provided with side bars b b and opening c, with the open-top air-tubes C C, constructed as shown, and for the purpose described.

5. The combination of the grate-bars B, having side bars b b and opening c, with the air-tubes C C, rock-shafts E, levers D H, arms i k, and link F, all constructed and operated substantially as described.

161,486. DIRECT-ACTING RECIPROCATING ENGINES. Robt. Creusbaur, Williamsburg, (Brooklyn,) N. Y. [Filed May 26, 1874.]

Brief.—The shaft is at one side of the axes of the cylinders, to reduce the wear of the pistons. Steam is admitted through a rotary valve, with diametrical passages. The cut-off valve is stationary in the rotary valve. Its passage corresponds with the rotary valve by turning the rotary valve backward.

1. The combination of two or more single-acting cylinders arranged side by side, a crank-shaft arranged at one end of the said cylinders, in connection with the pistons thereof, and a rotary valve, common to all of said cylinders, arranged at the opposite end thereof to the crank-shaft, and driven by gearing from the said shaft, all substantially as herein described.

2. The combination, with the two or more single-acting cylinders A B C, arranged side by side, and their pistons and connecting-rods, of the crank-shaft F, placed to one side of the central plane of the several cylinders, substantially as and for the purpose herein specified.

3. The rotating distributing-valve, with its duplicate steam-ports s' s' and duplicate escape-cavities s² s², in combination with the valve-seat having ports a b c q q' q', the whole arranged substantially as herein described.

4. The variable cut-off valve, composed of a spindle, with transverse slots p' p' p' extending through it, one for each cylinder, in combination with the surrounding rotary main valve having two steam-ports, s' s', the whole arranged substantially as herein described.

5. The combination of a rotary valve, its stem, and a connection-piece, provided with tongues on opposite sides to fit into grooves in the adjoining ends of the valve and stem, substantially as set forth.

6. The combination, for reversing the engine, of the loose gear-wheel B², the valve-carrying wheel T, driving-bolt t', spring-lever c², and check-stud r², arranged to operate substantially as and for the purpose hereinbefore set forth.

7. The combination, with a cut-off valve, P, and its controlling-spindle S', of the sectors X W' and lever W, arranged substantially as and for the purpose hereinbefore set forth.

8. The escape-steam stop-valve Z and port Y, in combination with the check-valve 4, operating in relation to each other substantially as described, and for the purposes set forth.

161,487. SHUTTLE-BOX MECHANISMS. Geo. Crompton, Worcester, Mass. [Filed Jan. 18, 1875.]

1. The combination of a rocking lever, connected with and operating a shuttle-box rod, with toothed or notched sectors, adapted to engage with and actuate the rocking lever through different degrees of oscillation, substantially as described.

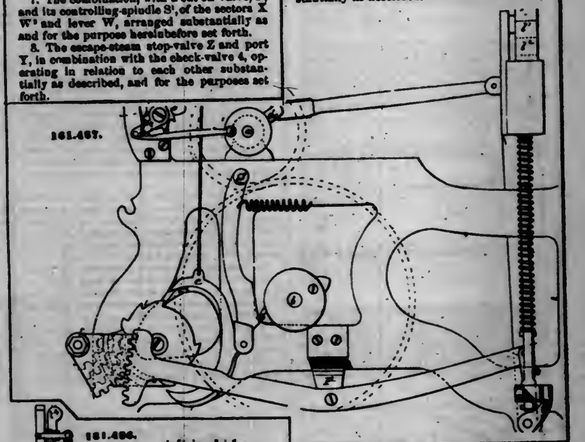
2. In combination, a rocking lever, connected with and operating a shuttle-box rod, toothed or notched sectors, adapted to engage with the rocking lever, and a pattern-cylinder, adapted to select the sector to be moved, and to govern the extent of movement of the rocking lever, substantially as described.

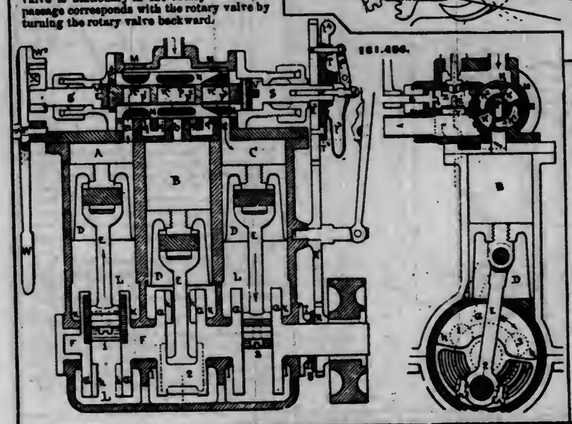
3. In combination, a rocking lever and toothed or notched sectors, adapted to engage with the lever, and to move the levers through different degrees of oscillation, substantially as set forth.

4. In combination, the rocking lever, a series of notched and toothed sectors, adapted to engage therewith, and pawls governed by pattern mechanism, and adapted to turn the lever through different degrees of oscillation, substantially as described.

5. The combination of the rocking lever and toothed sectors, adapted to engage with and move it through different degrees of oscillation, with the shuttle box lever and shuttle-box rod and boxes, substantially as described.

6. A rocking lever and toothed sectors engaged with it, and adapted to move the lever through different degrees of oscillation, in combination and connected with shuttle-box-carrying rods at opposite sides of the loom, to move a double series of shuttle-boxes, substantially as described.





161,488. SHUTTLE-BOX MECHANISMS. Geo. Crompton, Worcester, Mass. [Filed Jan. 18, 1875.]

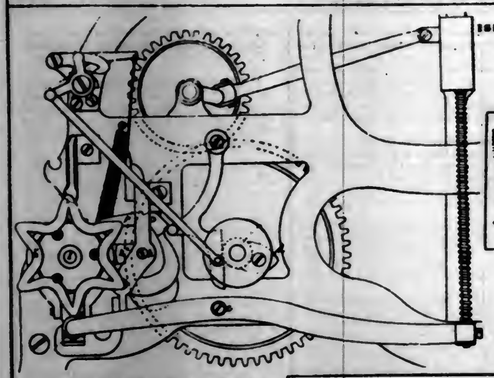
Brief.—The axis of the star wheel or cam, which operates the lifting-lever, is carried on a pivoted arm, and is raised or lowered by means of a second star-cam on the same axis, arranged to bear on an arm fixed on the loom-frame. Both star-cams are operated by pawls having shoulders, so arranged that sliding bolts or catches, controlled by a pattern-cylinder, hold the pawls out of working position when desired.

1. In combination with a shuttle-box lever, a cam to move the shuttle-box lever, and a cam to govern the position of the axis of the cam that moves the shuttle-boxes, substantially as described.

2. In combination, two cams mounted on a common movable axis, a friction-roller on a stationary arm or support, and a shuttle-box lever, all adapted to move a series of shuttle-boxes, substantially as described.

3. The combination of two cams—one actuating the shuttle-box lever, and the other controlling the position of the cam that actuates the shuttle-box lever—with a series of pawls

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

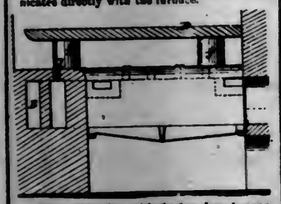


and pattern mechanism, to govern the movement of the cams and the shuttle-boxes, substantially as described.

4. The combination of two cams, each having a series of elevations and depressions, substantially as described—one moving the shuttle-boxes through a distance equal to one box, and the other a distance equal to two boxes—with a movable cam-axis, a shuttle-box lever, and a series of shuttle-boxes having four operative dells, substantially as described.

161,489. FURNACES OF BAKERS' OVENS. Alex. Ormsbie, Nyack, and David Donald, Brooklyn, N. Y. [Filed Mar. 4, 1875.]

Brief.—The hot-air chambers are supplied from without, and communicate directly with the oven. The heated space outside communicates directly with the furnace.



The combination, with the fire-place A, open above, as described, and the outside heated space B, connected therewith, of the interposed hot air-chamber C, and the shield or cover D, substantially as shown and described.

161,490. LUMBER-DRIER. John J. Curran, Chicago, Ill. [Filed Feb. 15, 1875.]

Brief.—The drying-chamber is closed by vertically sliding doors. The lumber-car is composed of three independent timbers, connected by cross braces, each timber being provided with wheels or rollers in the same plane that is obtained from a furnace located beneath the tracks.

1. In a kiln for drying lumber, the inclined floor B, extending beyond the ends of the kiln to form the loading and unloading platforms, and provided with openings *c*, and sheet-metal part *f*, substantially as and for the purposes herein set forth.

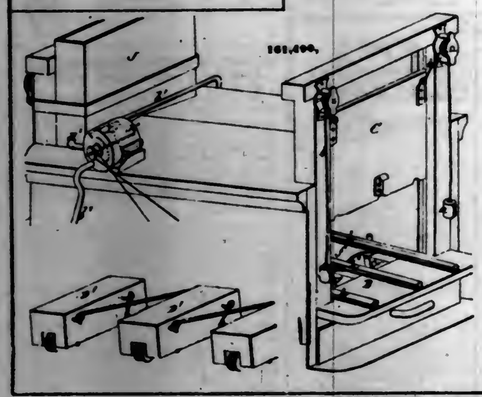
2. The flexible self-adjusting car for lumber-driers, herein described, consisting of the independent beams D', provided with wheels *i*, and connected by means of hooks *k*, substantially as and for the purposes herein set forth.

3. In combination with the inlet and exit pipes, the steam-chamber D, provided with the valves *p*, operated by means of the rod *s*, substantially as and for the purposes herein set forth.

4. In a hot-air lumber-drier, the combination, with the inclined bottom B and steam-pipes E E, of the horizontal partition *o'* and the vertical partitions *w*, arranged alternately above and below the pipes, substantially as and for the purposes herein set forth.

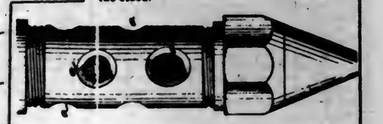
5. The combination, in a hot-air lumber-drier, of the steam-chamber D, with valves *p* and pipes *t*, pipes F, steam-chamber G, and steam-trap H, all constructed substantially as and for the purposes herein set forth.

6. The combination of the kiln A, inclined bottom B, doors C C, steam-chambers D G, pipes E, trap H, wide chimney J, and suction-fan I, all constructed and arranged to operate substantially as and for the purposes herein set forth.



161,491. DRIVE-WELL POINTS. Delos A. Danforth, Elkhart, Ind., assignor to himself and A. N. Chamberlain, same place. [Filed Oct. 28, 1874.]

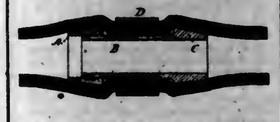
Brief.—The wire screen is secured to the tube by means of solder applied at the edges of the countersunk holes, and at the ends of the stock.



The combination, with the stock A, having countersunk holes *a a*, of the interior wire screen *b*, soldered to the edges of the holes *a*, and having its ends turned over and soldered to the ends of the stock, substantially as here in set forth.

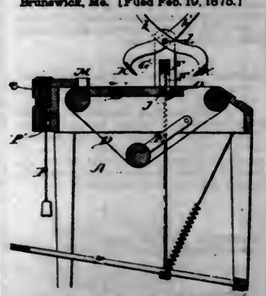
161,492. HOSE-JOINTS. Edwin Dayton, Meriden, Conn. [Filed Dec. 26, 1874.]

Brief.—A conical thimble, internally threaded, is entered into one of the ends to be joined. A hollow plug, externally threaded and formed at its rear end like the thimble, is similarly entered into the other end to be joined. The plug is then screwed into the thimble (the ends of the hose being embraced within a ring or sleeve) till the hose is clamped between the edges of the sleeve and the thimbles.



The herein-described union joint, consisting of the internal socket *A* and plug B, provided with an enlargement, C, at one end, and the external sleeve D, substantially as set forth.

161,493. MACHINES FOR MAKING CUSHIONS FOR FINGER-RING BOXES. B. L. Dennison, Brunswick, Me. [Filed Feb. 19, 1875.]



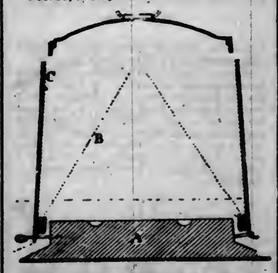
1. An endless apron or carrier, D, in combination with the removable bottom-less holder M, grooved bed-piece or mold J, and suitable compressing and folding devices, substantially as described, whereby the filling of a cushion is molded and compressed between its backing and covering, and the edges of the covering folded over the adhesive back of the backing, substantially as described, for the purpose specified.

2. A vertically-sliding pressure-bar, G, in combination with a grooved bed-plate, J, a removable holder, M, and a pair of swinging jaws, K, substantially as and for the purpose specified.

3. The jaws K, having the intersecting pivoted arms *b b'*, in combination with the groove *f* and holder M, substantially as described.

4. The receptacle O, having the sliding weighted bottom P' and steps S S, in combination with the holder M and apron D, substantially as described.

161,494. FLY-TRAPS. Henry B. Ewing, Peoria, Ill., assignor of one-half his right to Richard A. Culter, same place. [Filed Feb. 18, 1875.]



1. The stair-shaped cleats D D D, having two horizontal surfaces united by an intermediate riser, each attached by its vertical surface at equal distances to the interior lower edge of the cone B, to connect said cone and cage C jointly to the base A, substantially as and for the purposes set forth.

2. The arrangement of the cleats D D with the cone B, cage C, and base A, as described.

3. The base A, as constructed, with circular flat top and vertical periphery, in combination with the cleats D D D.

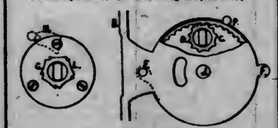
161,495. PANTALOONS-SHAPERS. Rufus M. Eastman, Boston, Mass., assignor to A. D. French, same place. [Filed Dec. 5, 1874.]

Brief.—Steam passes from one compartment of the former to the other through the flexible connecting-tube, which permits of their adjustability.

1. The combination, with one or more of formers A, of the post *b*, frame *a*, rod *c*, and lever *d*, substantially as and for the purpose above set forth.

2. The combination, with the two parts of the former A, of the flexible connecting-pipe *t*, as and for the purpose specified.

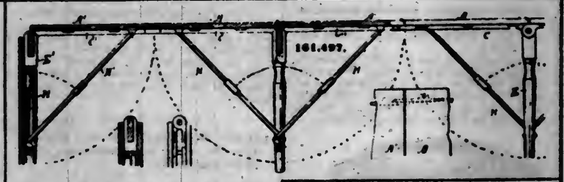
161,496. CURTAIN-FIXTURES. O. Ellsworth, Boston, Mass. [Filed July 29, 1874.]



1. In a spring curtain-fixture, the arrangement, with reference to the curtain-roller, of the spring E, internal gear C, and pinion D, substantially as described, for the purpose specified.

2. In combination with the roller H, pinion D, and internal gear C, the ratchet L, having inclined notches alternating with concave or plain portions, all constructed to operate substantially as described.

161,497. FOLDING EXTENSION-TABLES. A. W. Fay, Troy, assignor of one-half his right to Wm. R. Benedict, Cohoes, N. Y. [Filed Mar. 15, 1875.]



1. The pairs of leaves A A', fast on the cleats or brackets C C C C, that extend across the leaves and are pivoted to and upon the outer ends of the pairs of united legs E E', in combination with the jointed braces H H', all constructed and arranged to operate substantially as described.

2. In combination with the detachable pairs of leaves upon the cleats or brackets pivoted to the legs, the projecting extensions N N N N of the said cleats or brackets, having the lateral pins *p*, and sockets *q*, that engage together, and thereby connect the detachable pairs of folding leaves and legs, substantially as specified and shown.

161,498. SLIDE-VALVES. V. Forquenot, Paris, France. [Filed Dec. 24, 1874.]



In combination with the valve-seat, the steam-valve A, having that face which is in contact with the valve-seat fitted with numerous separate and independent cells *a*, which, while so formed and arranged as not to permit live steam to interpose and exercise material pressure between the valve and its seat, will take up particles of steam and convey them to the parts of the valve and seat to be lubricated, as shown and described.

161,499. PAINTINGS AND BANNERS. Gottfried Probe, Buffalo, N. Y. [Filed Feb. 26, 1874.]

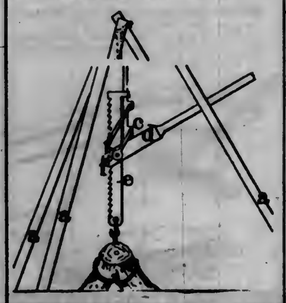
Brief.—The picture portion of the banner is composed of velvet painted in the manner indicated in the claim.

1. As a new article of manufacture, a banner, the body of which is composed of the ordinary silk or other light material, while the picture portion secured thereto is composed of velvet painted, substantially as and for the purposes set forth.

2. The process of painting on velvet, by first applying the ground-colors mixed with turpentine or other suitable volatile liquid, which will evaporate, for coloring the body of the velvet without rendering it unpliable, and then painting with oil-colors on the nap of the velvet, substantially as herein before set forth.

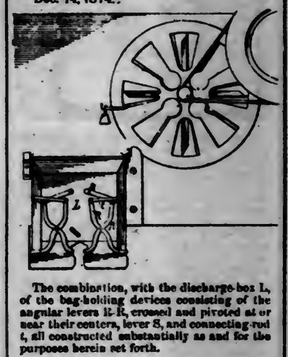
161,500. STUMP-EXTRACTORS. W. H. Fulton, Foxcroft, Me. [Filed Oct. 20, 1874.]

Brief.—Suspended from triangles is a rod with two links, the upper one working into the teeth of a rack sliding upward on it, the lower one attached by its lower end to a lever forked onto the rack, and taking a purchase on its teeth by a pin through the fork.



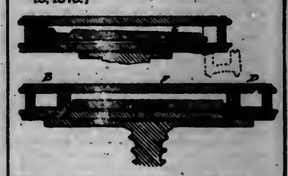
In combination with the frame *a*, supporting-rod *b*, pointed fulcrum-yoke *c*, and lever *d*, the rack bar *e*, and link *f* jointed to said suspending-rod, all arranged and operating substantially as herein shown and described.

161,501. BAG-HOLDERS. Daniel Garver and Cyrus Garver, Hagerstown, Md. [Filed Dec. 14, 1874.]



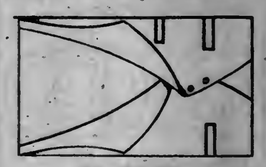
The combination, with the discharge-box L, of the bag-holding devices consisting of the angular levers E E, crossed and pivoted at or near their centers, lever S, and connecting-rod *t*, all constructed substantially as and for the purposes herein set forth.

161,502. CONVERTIBLE TABLES. Frederick A. Gilbert, New Haven, Conn. [Filed Feb. 13, 1875.]



The frame, consisting of the stationary sides B C D, grooved upon their inner sides to receive the panels, and the hinged side A, combined with the interchangeable panels F G H, each constructed to be inserted into either of the grooves in the said frame, and inclosed by the said hinged side, substantially as set forth.

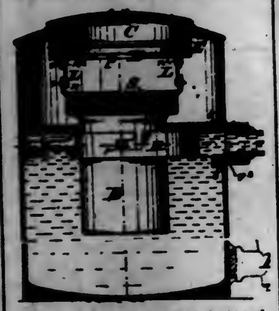
161,503. SHIRT-ENVELOPES. Jos. Gilbert, Philadelphia, Pa. [Filed Nov. 12, 1874.]



A shirt or shirt-bosom envelope having a pocket, with the front cut and marked to represent the front of a vest, as and for the purpose set forth.

161,504. CHEMICAL FIRE-EXTINGUISHERS. Adam Gray, Cincinnati, assignor to Mrs. A. Gray, College Hill, Ohio. [Filed Mar. 3, 1875.]

Brief.—The stopper is pivoted above the acid-bottle, so as to be displaced in the act of tilting the bottle by the movement of the latter. The pivoted frame of the bottle is connected with the discharge-faucet, so that the bottle can be tilted by turning the faucet.



1. An acid-bottle supported by horizontal pivots or trunnions, so as to be tilted or inverted to discharge its contents, in combination with a stopper supported above the same by parallel pivots, so as to be displaced by the movement of the bottle, substantially as herein illustrated and described.

2. An acid-bottle supported by pivots or trunnions in a frame having pivots or trunnions at right angles to those of the bottle, to adapt the bottle to accommodate itself to a stopper supported above the same.

3. An acid-bottle mounted in a pivotal frame attached to a discharge-faucet, so that the latter shall constitute its handle.

4. In combination with the acid-bottle B and its frame K, the lugs or trunnions r and bayonet-slots q, forming pivotal supports, and adapting the bottle to be readily removed and replaced.

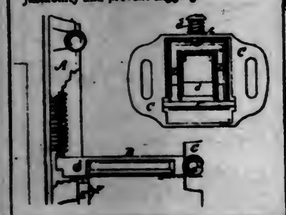
5. The combination of the faucet F, the bottle-frame M, having the hollow trunnion r^2 and external flange or collar t, the gasket s, interposed between the said collar and the wall of the tank, and the clamping-nut u, applied to the protruding neck of the bottle-frame, substantially as herein specified, for attaching and packing the faucet and bottle-frame by the same means.

6. In combination with the pivoted acid-bottle, the stopper S and its supporting-ring D, having pivotal ears or lugs $n n'$, and united by vertical links L, adapted to afford a solid support when in line, and to yield laterally when the bottle is tilted, as set forth.

7. The combination of the screw-cap C, the supporting-ring D, having lugs $n n'$, the notched flange p within the neck of the tank, and the vertical links L, for applying, securing, and relieving the stopper, in the manner set forth.

161,505. DOOR-CHECKS. Daniel Gundelfinger, Jefferson City, Mo. [Filed Jan. 16, 1875.]

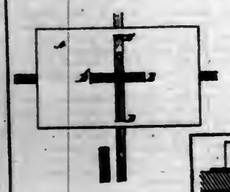
Brief.—Improvement on Patent No. 185,942, October 13, 1874. The catch with which the folding lever engages is formed of a quadrangular slide having a spring-pin, thumb-piece, and cross-bar. There is also a slotted slide on the opposite box or casing, so arranged with respect to the folding lever as to give adjustability and prevent sagging.



1. The quadrangular slide *d*, having shank d^1, thumb-piece d^2, and spring d^3, combined with a case, C, having groove *c* and cross-bar c^1, as and for the purpose described.

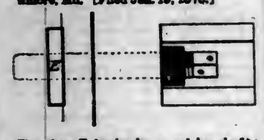
2. The slotted slide E, combined with a clamp-screw, F, placed on the box A, and with respect to lever B, as and for the purpose specified.

161,506. FILE-WRAPPERS. Wm. Grinsted and John A. Darling, Washington, D. C. [Filed Mar. 2, 1875.]



As a new article of manufacture, a file-wrapper, A, provided with the tapes *c c*, and openings B B and B' B', substantially as and for the purpose described.

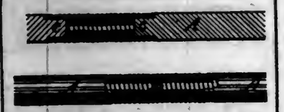
161,507. DEVICES FOR FASTENING BED-PLATES TO PRESS FORMS. Louis Guienot, Baltimore, Md. [Filed Jan. 19, 1875.]



The plate E, having lug *c*, and loosely fitting a mortise in the rail A, in combination with the bolt C, fitting a hole in the rail B, and having an angular groove, D, at one end, and a screw-thread and nut at the other end, whereby the parts A B can be drawn together and locked, as also the locking device adjusted without separating the parts, substantially as described.

161,508. BELT-COUPLINGS. James Hare, Providence, R. I. [Filed Nov. 16, 1874.]

Brief.—Any tension of the belt reduces the diameter of the spring, and it therefore clamps the ends of the strap or cord more firmly.



The method of uniting the ends of a round belt by means of a helical spring, substantially as described.

161,509. DITCHING-PLOWS. A. L. Harned, Benton, Ky. [Filed Mar. 6, 1875.]

Brief.—A ditching-plow having a long share or neck and a cutter projecting upward from the heel of the share.

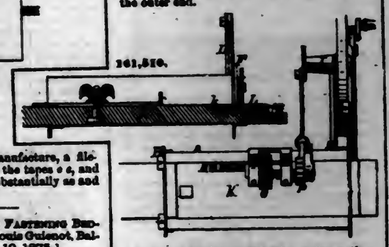


The share D, having an elongated neck, D', and mold-board E, in combination with a fixed cutter, F, and revolving adjustable cutter G, all constructed and arranged substantially as and for the purpose specified.

161,510. MEAT-CUTTERS. John P. Harris, Newburg, N. Y. [Filed Nov. 13, 1874.]

Brief.—A horizontal knife is reciprocated in a shear-like movement at the end of the feeding-box, the knife being connected with a crank-pin on the main wheel. A like crank movement on the reverse side of the wheel operates a system of gearing beneath the box, giving motion to the bed-plate, at the cutting end of which a changeable surface block is inserted, and held by an adjustable clamp at the outer end.

161,510.

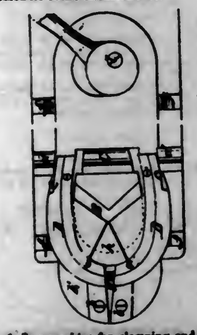


1. In combination with the reciprocating cutter F, the bed-piece K, moved longitudinally beneath the same by means of the rack M, worm-wheel O, ratchet-wheel P, pivoted arm Q, pawl R, connecting-rod S, and disk T, said parts being constructed and combined to operate substantially as and for the purpose shown.

2. In combination with the bed piece K, provided with the rabbet *k*, the cutting-block L, clamp M, and screws *m* and *n*, substantially as and for the purpose set forth.

161,511. MACHINES FOR CONSTRUCTING BOOT AND SHOE HEELS. Eben N. Higley, Great Falls, N. H. [Filed July 20, 1874.]

Brief.—The laterally and longitudinally movable hinge jaws rest upon a sliding bed. Their outer ends are beveled to pass through cam-shaped slots formed by the stationary jaw and fixed cams, one upon each side of the jaw, by which means the heel-blank is compressed its entire circumference.



1. In a machine for clamping and holding the lifts of boot and shoe heels, the combination of clamping-jaws D D, adapted to receive a lateral closing movement, and, simultaneously therewith, a longitudinal motion toward a fixed jaw or stop, C, with the said stop, for the purpose of producing compression against the entire edges of the heel-lifts, substantially as herein specified.

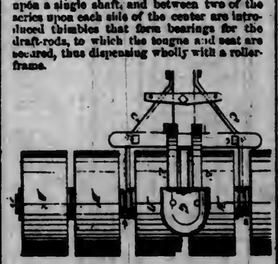
2. The combination of the movable jaws D D, having inclined or cam-acting surfaces *o o* thereon, the fixed studs or cams *d d*, and the stationary jaw C, substantially as and for the purpose herein specified.

3. In a machine for clamping and holding pieced lifts of boots and shoe heels, the combination of a base, A, fixed jaw C, pivoted movable jaws D D, sliding carrier E, and stationary cams *d d*, substantially as and for the purpose herein specified.

161,512. AIR-COOLING APPARATUS. Frank A. Hyatt, Denison, Tex. [Filed Oct. 13, 1874.]

Brief.—The tank is provided on its bottom with bars *a*, which extend to within three inches of the ends of the box, for the purpose of furnishing supports for the air-box. Said box is divided by bars into air-chambers, which are provided at the ends with air-pipes E and *d*, and nozzle G, to which nozzle an air-blower is attached. The tank is filled with brine.

161,512.



In combination with the tortuous pipe H and box or tank A, having longitudinal bars *a a* on its bottom, the air-box D, divided by bars *b* into longitudinal spaces, the air-inlet pipes E, exit-pipes D of varying size, and the nozzle G, all constructed substantially as and for the purposes herein set forth.

161,513. FIELD-ROLLERS. Anthony Hilts, Springdale, Ohio. [Filed Feb. 23, 1875.]

Brief.—A series of free rollers are placed upon a single shaft, and between two of the series upon each side of the center are introduced thimbles that form bearings for the draft-rods, to which the tongue and seat are secured, thus dispensing wholly with a roller-frame.

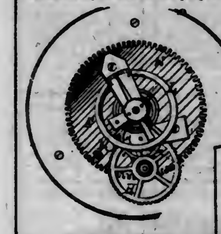
1. The combination of the draft-irons C C, sleeves *d d*, having collars *e e* and projections *f f*, and the rollers D D and D^1 D^1, substantially as and for the purpose herein set forth.

2. The combination of the tongue A, draft-irons C C, seat G, headed rod *b*, sleeves *d*, rollers D D, D^1 D^1, and D^2 D^2, and the spring-key b^1, all constructed substantially as and for the purposes herein set forth.

161,514. WATCHES. Jason R. Hopkins, Washington, D. C. [Filed Nov. 13, 1873.]

A watch-movement in which the operative parts are placed upon and revolve with a centrally-pivoted spring-barrel, and the balance-wheel is pivoted at the center of such motion, substantially as and for the purpose specified.

161,514.



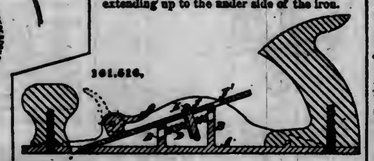
161,515. BENCH-PLANES. Wm. Johnstone, Montreal, Canada, assignor of one-half his right to Wm. W. Robertson, same place. [Filed Mar. 1, 1875.]

Brief.—The plane-iron is adjusted, as desired, by means of transverse slots in the same, and a screw-threaded rod provided with a flat nut, working upon two cross-bars or partitions formed on the body of the plane, and extending up to the under side of the iron.

161,515.



161,516.



The plane A, having bars B B, in combination with screw D, nut E, and plane-iron C, having slits F and F', substantially as and for the purposes described.

161,516. PROP NUTS AND RIVETS FOR CARRIAGES. George A. Keene, Lynn, Mass. [Filed July 28, 1874.]



A metallic prop nut or rivet, having its head A enveloped as far as the shoulder C with the resilient rubber cover B molded and vulcanized thereon, substantially as and for the purpose described.

161,517. CARTRIDGE-SHELLS. N. C. Hunting, Lincoln, Ill. [Filed Oct. 1, 1874.]



1. The combination, with a cartridge-shell open at both ends, of the flanged head B, rubber disk C, and plate D, united by the priming-tube *d*, substantially as set forth.

2. The combination of the shell A, enlarged at its rear, and having flange *a*, with the removable head composed of the flanged plate B, rubber disk C, plate D, and the priming-tube *d*, all constructed substantially as set forth.

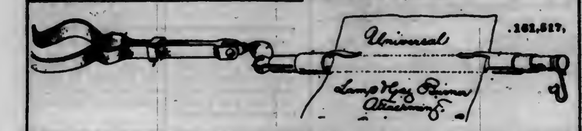
161,517. LAMP AND GAS-BURNER ATTACHMENTS. Thos. V. Keam, Santa Fé, N. Mex. [Filed Mar. 11, 1875.]

Brief.—The clasps for holding the article are adjustable upon the extension-arm, which is, in turn, adjustable through the flexible joint.

1. The combination, as before set forth, of a clamp for attachment to a standard, a flexible joint, and a sliding clasp upon the extension.

2. The combination, as before set forth, of a clamp, a joint, springs for holding the object, and a telescopic portion.

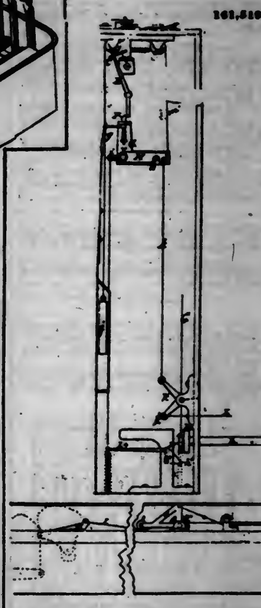
161,517.



161,518. RAILROAD-SIGNALS. Robt. L. Kilpatrick, Springfield, Ohio. [Filed Dec. 30, 1874.]

Brief.—The treadle or operating lever, which is operated by a passing train, has a clutch which works when the train passes in one direction, and is disconnected when the train moves in the opposite direction. This lever is connected by a wire with an alarm mechanism, to sound an alarm and display a signal on the approach of a train.

161,519.



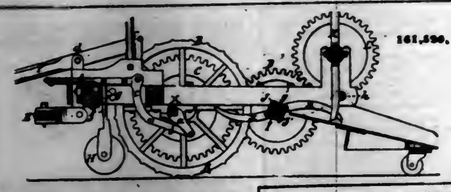
1. The combination, with a shaft, O, that operates an alarm mechanism, of the treadles P Q, having lugs *p p'*-*q q'*, and the spring-pressed sliding part-sixth R *r' s*, arranged to operate in the manner described.

2. The combination, with wire L, of the angle-lever S, having pulley *t*, spring-shaft T, and holding-wire *r*, applied as and for the purpose specified.

3. The combination, with hammer-shaft, of the armed shaft O D, lever E, cross-bar E^1, angle-lever G, having spring-catch F, shaft I, arm H, and wires *k l*, extending to treadle, as and for the purpose described.

4. The combination of loose arm H^1, shaft I, having arm *i*, the wire *l*, and spring-catch lever A^1, as and for the purpose set forth.

5. The combination of treadle H^2, shaft A, having rigid hook-arm HP, the wire G^1, spring F^1, lever E^1, slotted arm D^1, and signal-card shaft A^1, as and for the purpose specified.



161,520.

161,520. POTATO-DIGGERS. H. W. King, Canaan, N. J. [Filed Mar. 10, 1875.]

Brief.—The digging is accomplished by a rotating digger, consisting of a series of curved arms upon a shaft, which receives motion from the driving-wheels. A clearing-wheel of similar construction conveys the potatoes to an inclined screen or table, by means of which the earth is separated from the potatoes.

1. The revolving digger I, consisting of the S-shaped fingers *e*, having shoulders *f*, the section J', and the detachable section J, all combined and arranged substantially as and for the purpose described.

2. The combination of the digger I with the clearer K and the table M, substantially as and for the purpose described.

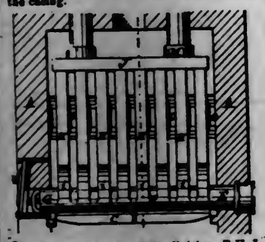
3. The combination, with the wheels D and the digging devices, of the wheels B B, carrying the cog-wheels C, the crank-axle X, and the devices for shifting the same, substantially as and for the purpose described.

161,521. LUBRICATING COMPOUNDS. J. J. Koch, St. Louis, Mo. [Filed Nov. 16, 1874.]

The lubricating compound, substantially as herein described.

161,522. BOILERS FOR WATER-HEATERS. Jos. R. Lamb, Jacksonville, Ill., assignor to Ambrose Marriott, St. Louis, Mo. [Filed Mar. 1, 1875.]

Brief.—The spaces between the sections are reached through the opening in the wall of the casing.



1. The combination of the divisions E H J, which constitute the single casting, substantially as set forth.

2. In combination with the cast boiler E H J, the case A, provided with the opening O, as and for the purpose set forth.

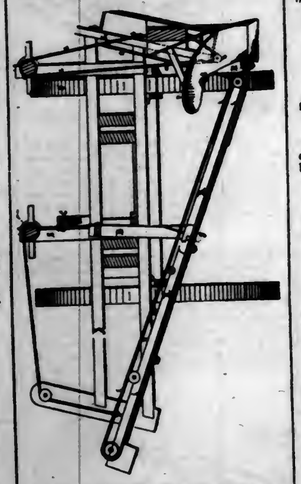
161,523. FRUIT-GATHERERS. Nathan Lash, Montpelier, Ohio. [Filed Mar. 18, 1875.]

Brief.—The jaws, made of bent wire, are attached to and project from the side of the staff, their upper ends being brought together at an acute angle for seizing the fruit.

The curved jaws A A, having their upper ends united and secured to the upper end of the staff C, and their lower ends separated and secured to each side of the said staff, the bag B being attached to the staff and to the jaws, all combined substantially as and for the purpose specified.

161,524. EXCAVATORS. Morgan R. Lasher, Champaign, Ill., assignor of one-half his right to George F. Beardsley, same place. [Filed Dec. 12, 1874.]

Brief.—The chains for elevating the plow-beam pass over pulleys secured at lower end of framing to the windlass. The elevator-frame has an overlap-joint, to which cords are secured and pass over a windlass in standards to raise and lower it. A revolving roller is secured, at the lower end of the elevator, to prevent it from being cut or injured. A chain connects a projecting bar to the guide-standards of the plow.



1. The chains *a*, in combination with the plow-beam M, by means of the pulleys *b* and the windlass N, substantially as and for the purposes specified.

2. The projecting bar *d*, in combination with the chain *a* and the foot of the front guide-standard L.

3. The lever C, in combination with the elevator-frame E, by means of the overlap-joint *g*, the pivot bar or pin *h*, and the standards S, with the sliding frame B, the check-pin *m*, and the guide-rod *L*, substantially as and for the purposes specified.

4. The revolving roller E, in combination with the elevator-frame E, substantially as and for the purposes specified.

161,525. CRUSHES. P. La Tourrette, Vestal, N. Y. [Filed Dec. 21, 1874.]

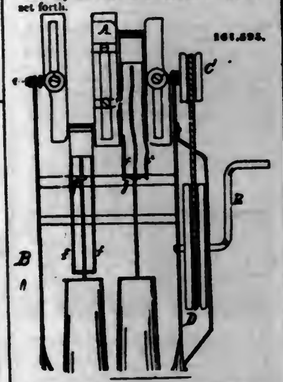
Brief.—The stroke of the dashers is regulated by means of a reciprocal adjustment of sections forming the crank-shaft.

1. The combination of the double adjustable crank-plate A' and plates *d d* with the shafts *a c*, substantially as set forth.



161,526.

2. The combination of the adjustable crank A, of the frame B, pulley C on the end of shaft *c*, driving-pulley D, hung on the side of frame B, hand-crank E, projecting guides *g g*, and connecting-rods *f f*, all constructed substantially as herein described, for the purpose set forth.



161,526.

161,526. DEVICES FOR EXHIBITING SHOES. Robert T. Leaverton, Holden Mo. [Filed Feb. 9, 1875.]

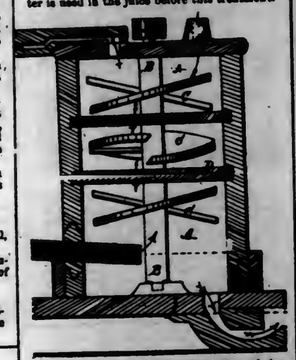
Brief.—A frame-work of wire provided with clamps and hooks adapted to hold a shoe or boot for exhibition.



The wire clasp A, formed with the hook *a*, bend *b*, coil *d*, bend *e*, and part *h*, with or without the bend *i*, in combination with the hooks B and C, the former having the pin *f*, all as and for the purposes herein set forth.

161,527. APPARATUS FOR BLEACHING CANE-JUICE. John M. Lesoe'a, Paincourtville, La. [Filed Dec. 10, 1874.]

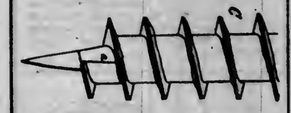
Brief.—Spiral revolving wings elevate the sulphurous-acid gas, and spray the falling juice, which drops onto and passes through holes in the intervening partitions. To counteract too much acidity from the gas, lime-water is used in the juice before this treatment.



The bleaching apparatus consisting of the outer casing A, shelves D, having central openings *a*, the revolving shaft B, and the spirally-arranged wings C, attached to the shaft and alternating with the shelves, all combined and arranged substantially as and for the purpose described.

161,528.

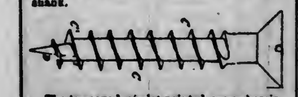
161,528. WOOD-SCREWS. Chas. T. Litchfield and Reinhold Boeklen, Brooklyn, N. Y. [Filed Mar. 20, 1875.]



The improved wood-screw herein described and shown, the same having a reduced threaded body, C, and a thread of equal radius—greater than that of the shank B—and of equal pitch or spirality throughout its entire length, terminating on the conical point of the screw in a broad radial blade or edge, and having also (starting from said terminal points of the thread) a cutting-shoulder, *a*, extending longitudinally along the body of the screw upward to the next convolution of the thread, for the purpose herein described.

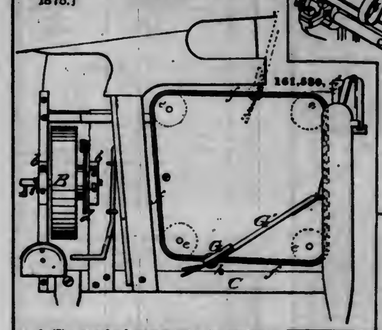
161,529. WOOD-SCREWS. Chas. T. Litchfield and Reinhold Boeklen, Brooklyn, N. Y. [Filed Mar. 20, 1875.]

Brief.—A screw with a reduced threaded shank and a long conical central point, on which commences the screw-thread, of which the second spiral may be said to constitute the base of the conical point, except on one side, where the space between the first and second spirals has a longitudinal cutting-shoulder, formed of a prolongation of the shank.



The improved gimlet-pointed screw herein described and shown, the same having a reduced threaded body, C, the thread of which is of equal and uniform radius greater than that of the shank B, and of uniform pitch or spirality, a conical point, D, having a thread of equal pitch with that of the body of the screw, but of which the breadth or radius gradually diminishes until it vanishes entirely in the conical point, and the cutting-shoulder *b* of the same radius as the body of the screw, extending from the first to the second spiral of the thread, at a point where the radius of the thread is as great or greater than that of the shoulder, for the purpose specified.

161,530. HARVESTERS. S. S. Loudenslager, Polo, Ill., assignor of one-half his right to W. T. Smith, same place. [Filed Jan. 16, 1875.]



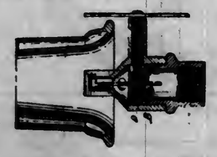
161,530.

1. The standard-segments *b b* in combination with the chain *a*, and the wheel B, turning loosely upon the axle *a*, and provided with an operating crank, substantially as and for the purpose set forth.

2. The rake G provided with the stiffening-bar *h*, having perforations for the adjustment of the rake, in combination with the adjusting-pin *p*, bearing *h*, endless belt *f*, and the hinged arms G^1, G^2 substantially as and for the purpose set forth.

161,531. GAS-BURNERS. James W Lyon, Brooklyn, E. D., N. Y. [Filed Mar 17, 1874.]

Brief.—A bent lever or cam, playing loosely in the stem of the valve, when rotated, raises or lowers the valve.



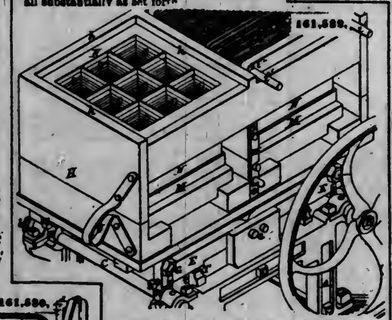
The combination, with a gas-burner, B C, of the loose valve D, provided with the slotted head *b* and the crank or cam shaft *a*, the latter projecting loosely into the slotted head *b*, substantially as and for the purpose specified.

161,532. MACHINES FOR BOXING MATCHES. Fielding Mansfield, St. Louis, Mo. [Filed Dec. 16, 1874.]

Brief.—The racks of matches, after being dipped, are placed upon a shaking-bot, which shakes them out of the racks and into receptacles, each of which contain an ordinary bunch.

1. The combination of the dipping-frame I, and body H, having a vertical reciprocal motion, and constructed to support the dipping-frame while the matches are shaken therefrom, as set forth.

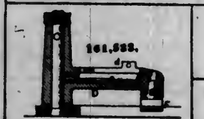
2. The shaking-box or body H, having funnels O P, and receivers M, and constructed to receive the matches in the funnels as they are shaken from the dipping-frames, and to deposit them in the receptacles L of the receiver, all substantially as set forth.



161,532.

3. In combination with a body, H, having funnels O P, and receiver M, the jointed arms E E, &c., and cams R R, &c., all constructed substantially as and for the purpose set forth.

4. In combination with the body H, arms E E, &c., and cams R R, &c., the anvils T T, &c., to receive the impact of the arms, and relieve the cams and cam-shafts from the jar of said impact, as set forth.



161,533.

161,533. MOWING-MACHINES. Homer C. Markham and D. Clinton Markham, Lyon's Falls, N. Y. [Filed Dec. 22, 1874.]

The combination of the rock-shaft, the hollow arm of which, D, is provided with the tightening-screw *d*, and the eccentric arm *c*, in the outer end of which is a thimble-shaped socket, engaging with a stud, *g*, upon the knife-bar.

161,534. SEWING-MACHINES FOR STITCHING BUTTON-HOLES, &c. J. McCloskey, New York, assignor of one-third his right to Deborah C. Folk, Brooklyn, N. Y. [Filed Nov. 19, 1874.]

Brief.—The shuttle, provided with a recess for the bobbin, a hook for deflecting the thread, and an eye-pointed needle, is arranged in a depression formed in the end of a horizontally-reciprocating slide, and is held in place by a disk which is hung in an arm above, in such a manner as to be revolved thereon, so that, as the machine is operated and the needle perforates the cloth, a hook on the revolving disk takes the loop from the needle on the back of the cloth, and carries it around and over the shuttle. An oscillating take-up is pivoted on the opposite side of the cloth from the needle-operating mechanism, and is actuated by means of a rod from the reciprocating slide that carries the shuttle.

1. A sewing-machine in the working or operation of which the loop of thread from the sewing-needle is passed entirely over said needle, substantially as specified.

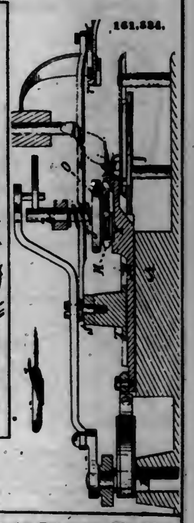
2. The shuttle H, provided with an eye-pointed needle, as and for the purpose specified.

3. The combination of a bobbin, O, and a shuttle provided with an eye-pointed needle, essentially as described.

4. The combination of the revolving hook O with the shuttle, provided with an eye-pointed needle, the whole being arranged to reciprocate in common, essentially as described.

5. The combination of the reciprocating needle-thread take-up or secondary looper R with the hook O, having, in addition to its revolving motion, a reciprocating movement in common with the shuttle, having the eye-pointed needle, substantially as specified.

6. The combination of the revolving hook-disk J with its rib *d*, the lenticular shuttle H, with its crease *e*, the bobbin O, the spring *f*, the revolving stud *h*, and the cam *i*, essentially as and for the purpose herein set forth.



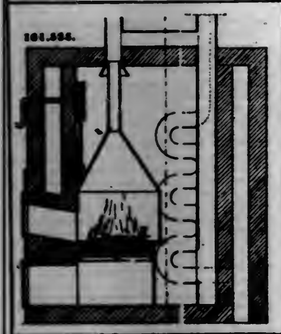
161,534.

161,535. HOT-AIR FURNACES. Wm. McFarland, Trenton, N. J. [Filed Sept. 23, 1874.]

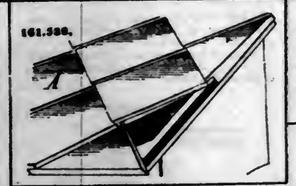
Brief.—An adjustable hood hung over the fire-box, and connected by means of a sliding pipe and flue with the chimney.

The combination, in a hot-air furnace, of a fire-place, a flue communicating with the chimney, air-heating pipes arranged in a chamber, and a hood or cap, on the adjustment of which the heated gases from the fire-place may be directed either to the chimney or to the said chamber, as set forth.

161,536.



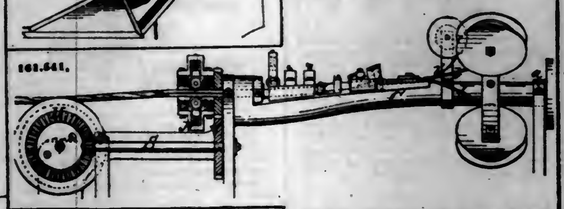
161,537.



3. The pitmen H H' h' and eye m, in combination with the clutch I and vibrating post A, substantially as and for the purpose set forth.

4. The combination, with the gatherer n o q r, of the uprights G G, segmental toothed or rack bars N N, pinions O O, and crank and pawl P P', substantially as and for the purpose set forth.

161,541.



161,536. SEWING-MACHINE ATTACHMENTS. Davis M. Mallon, Tremont, Pa. [Filed May 5, 1874.]

Brief.—An arm projecting from the plate of the attachment extends up through a hole in the slotted plate, and, projecting backward, engages notches formed on the slotted plate, thus locking the two together firmly.



A sewing-machine attachment, A, provided with an arm or projection entering an aperture in the slotted arm B from underneath, and provided with a pin or leg to take into holes or their equivalents, on the upper surface of the arm

161,537. CHILDREN'S ROCKERS. Benjamin R. Meyenbeck, Philadelphia, Pa. [Filed Jan. 28, 1875.]



1. The removable cradle C or seat E, having beveled or inclined supports c, in combination with the rocker-platform G, having the transverse beveled cleats G', substantially as shown and described.

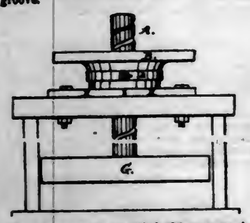
2. The combination, with the rockers A A, of the flat springs f, projecting outwardly and upwardly from said rockers, constructed and arranged substantially as shown and described, and for the purpose set forth.

161,538. ROOFING-TILE. Saml. Mills, New Castle, Ohio. [Filed Feb. 6, 1875.]

A quadrilateral roofing-tile, A, increasing in thickness from the upper to the lower angle, and having rabbets c in the bottom surface along the two lower sides only, increasing in width toward their junction, substantially as and for the purpose specified

161,539. SCREW-PRESSES. W. H. H. Minge, Mobile, Ala. [Filed Mar. 26, 1874.]

Brief.—The barrel has on it a spiral groove with a lessening pitch. This works through the nut equivalent, where, projecting into the interior, are two loose pins, which enter the groove.



1. A screw-press, provided with a screw, A, formed with a thread of diminishing pitch, in combination with follower G, substantially for the purpose set forth.

2. In combination with a screw, A, having a thread of varying pitch, the nut B, provided with pins C, to form the female thread, substantially as set forth.

3. The screw A, in combination with the nut B, pins C, and head D, substantially as described, and for the purposes set forth.

161,540. HARVESTER-RAKES. Jno. F. Monnett, Bucyrus, Ohio. [Filed Feb. 6, 1875.]



1. The vibrating post A and the stationary toothed track or sector C, in combination with the rake D, with its cranked portion or axis d provided with the ratchet e, engaged by a pawl, f, and the loose cog g, and clutch h, substantially as and for the purpose set forth.

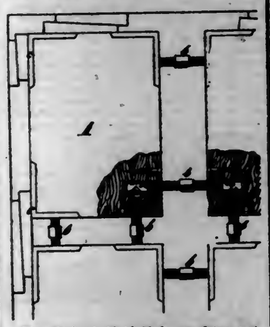
2. The cut-off device consisting of the pivoted angular bar or frame s', depressed by the cord or chain j, pulley l, and vibrating post A, and elevated by a spring, k, substantially as shown and described, and for the purpose set forth.

161,541. MACHINES FOR MAKING LIGHTNING-RODS. William B. Munn, Camden, N. J. [Filed Mar. 1, 1875.]

The shaft C in a lightning-rod machine, distorted or cut away, as shown, so that a series of tools may be secured thereto, and the finished rod passed through the true axis of the shaft, substantially as and for the purposes set forth.

161,542. REGISTERING DEVICES FOR STEREOTYPE-BLOCKS. Andw. Jackson O'Shea, Jersey City, N. J. [Filed Feb. 12, 1875.]

Brief.—The corners of stereotype-blocks have applied to them right-and-left-hand screw-bolts, nut-formed at the center, through which the position of the blocks in relation to each other may be adjusted for registering colors printed therefrom.



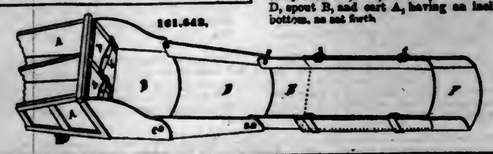
The blocks A A' A² A³, for receiving and holding the plates from which to print the desired color, each provided with screw-threaded sockets a a, in combination with the right and left hand screws b b, adapted to the screw-threaded sockets of the blocks, substantially as and for the purposes described.

161,543. TROUSERS FOR COAL-CARTS. Wm. P. Patton, Harrisburg, Pa., assignor to Eby Byers & Son, same place. [Filed Feb. 6, 1875.]

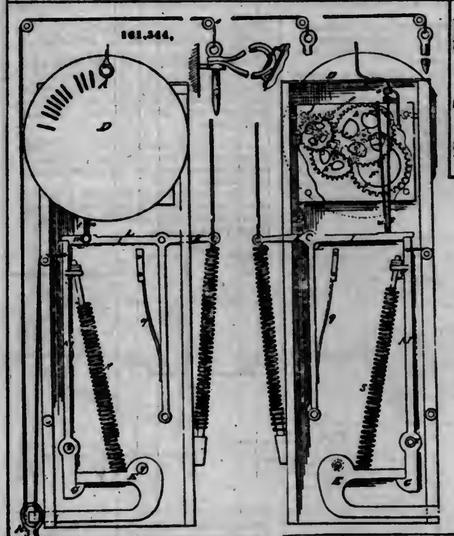
Brief.—Body of trough flexible and end stiff.

The combination of two or more sliding telescopic chutes, B F, with a pivoted section, D, spout E, and cart A, having an inclined bottom, as set forth

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161,544. FIRE-ALARM REGISTERS. Daniel T. Phelps and Charles W. Edmonds, San Francisco, Cal. [Filed June 29, 1874.]

1. In a fire-alarm-registering device, the marker A, dial D, wires f w s, and pin p in the wheel h of the clock-work h h' h'' h''' F, in combination with the T-shaped lever L, bar M, detaching-rig R E e e, spiral spring T, alarm-hammer connection, and bell attachment v, arranged substantially as and for the purposes described.

2. The combination of the T-shaped lever L with perpendicular bar M, fitted with spring S, catch N, registering and stopping wires f w s, respectively, alarm-hammer connection, and detaching-rig R E e e, with spring T and fire-alarm attachment v, arranged in the manner described, substantially as and for the purposes specified.

161,545. LOOM-SHUTTLES. R. W. Porter, Nashua, N. H. [Filed Jan. 9, 1875.]

In combination with a loom-shuttle having a contracted throat, the tension-regulating screw-post C, having an open-end slot, i, and nick in its bottom to effect the adjustment of the post from the under side of the shuttle, as and for the purposes set forth.

161,546. FILTER-WELLS. Wm. P. Powers, La Crosse, Wis. [Filed Oct. 16, 1874.]

Brief.—The filter is made from fine-wire fabric or finely-perforated sheet metal, which is secured around the tube over the V-shaped grooves. The wall of the tube is provided with a series of vertical slots, which communicate with the cavity of the tube.

The tube A, provided with the V-shaped grooves a and longitudinal slots C, in combination with filter D, all constructed as specified.

161,547. RAILWAY-RAIL CHAIRS. J. Reddin, Lynn, Mass. [Filed Oct. 26, 1874.]

Brief.—The elastic bearing is compressed between an adjustable plate and the bottom of the chair, the rails resting upon said plate.



1. In a railway-joint, the combination of the chair A, compressible packing c, and covering-plate b, securely bolted to the chair and compressing the packing, substantially as described.

2. The combination of the splicing-plates B and rails C with the chair A, when constructed with a plate confining an elastic cushion, as described, all bolted together, substantially as specified.

161,548. COMBINED BOOT AND GLOVE BUTTONERS. Greenleaf Stackpole, Elizabeth, assignor to G. D. Collard, Mount Clair, N. J. [Filed Mar. 26, 1875.]

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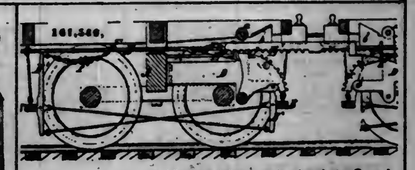


As an article of manufacture, the implement herein described, consisting of the frame B C, which combines the boot-buttoner, glove-buttoner, and ear-spoon, having the movable tweezers thereon, and adapted for the purpose set forth.

161,549. CAR-BRAKES. Henry F. Rice, Jas. M. Rice, and Wm. B. Rice, Dubuque, Iowa. [Filed Mar. 16, 1875.]

1. Vibrating sectors, made with a partly toothed and partly plain perimeter, in combination with rods having teeth on their free ends and brakes, substantially as and for the purpose set forth.

161,550.



2. The pendulous spring-brackets G and the springs H, in combination with the rods E, substantially as and for the purpose set forth.

3. The guiding-brackets D, having a friction-roller stop, a, and a funnel-shaped mouth, b, in combination with the sectors and toothed rods, substantially as set forth.

4. The combination of the vertically-vibrating partly toothed sectors with toothed rods and a car-brake, the sectors being pivoted so as to fall by their own weight to their original position when released, substantially as and for the purpose set forth.

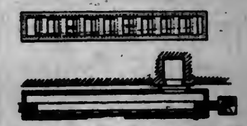
161,550. COMPOSITIONS FOR PAVEMENTS. James P. Richardson, Washington, D. C. [Filed Aug. 1, 1874.]

Brief.—Gum-copal, five pounds; asphaltum, twenty pounds; coal-tar, forty gallons. Are mixed with the aid of heat, and broken stone or ashes is added. Applied hot and afterward rolled until compact.

The composition of copal gum, asphaltum, and coal-tar, alone or mixed with crushed stone, ashes, or equivalent material, for the formation of pavements, carriage-ways, and the like, as herein described.

161,551. VENTILATING BEDS. Ebenezer L. Roberts, Plainfield, N. J. [Filed Sept. 5, 1874.]

Brief.—The construction of the trunk with a graduated opening, which is narrowest adjacent to the escape-flue, is designed to obtain a uniform current or draft. By the use of the guide-cleats and hooks, the bedstead is adjusted to its proper position and held therein, and the elastic packing makes a tight joint between the trunk and the ventilating-flue. The guard or grating prevents the obstruction of the flue-opening by the bed-clothing or pillows.



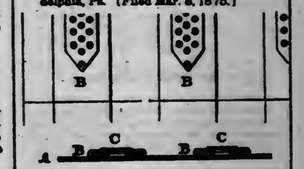
1. A horizontal trunk connected with a bedstead, and provided with a graduated opening contiguous to the head-rests, which opening is narrowest adjacent to the escape-flue, for the purposes specified.

2. The guide-cleats *f*, secured to the floor or skirting-board, in combination with the bedstead and ventilating-flue trunk thereon, for the purposes specified.

3. In combination with a bedstead, *a*, flue-trunk *b*, and the wall of the building, having a flue, *c*, and mouth contiguous to the opening in the trunk *b*, the elastic packing *h*, cleats *f*, and hooks *i*, substantially as and for the purposes specified.

4. A guard or grating applied in front of the horizontal opening passing into the flue-trunk at the head of the bedstead, for the purposes specified.

161,552. TRIMMINGS. John T. Ross, Philadelphia, Pa. [Filed Mar. 3, 1875.]



1. As a new article of manufacture, trimming composed of a body, A, with plaits B, in combination with inserting C, constituting portions of the visible faces of the plaits, substantially as and for the purposes set forth.

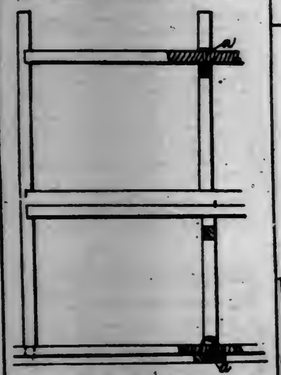
2. The body A, plaits B, inserting C in said plaits, and border E, combined and arranged substantially as and for the purposes set forth.

161,553. FEED-REGULATORS. Jas. M. Ross, Morrisonville, Ill., assignor to M. C. Ross, same place. [Filed Mar. 11, 1875.]



An oral mill-burr feeder, A, divided into the conical chambers c^1 c^2 by the central shelf c, having opening c^3 and valve d, and exhaust-pipe f, connecting with the chamber c^2 immediately under the shelf c, as and for the purposes specified.

161,554. CLOTHES-FRAMES. Chas. T. Rowe, Brooklyn, N. Y. [Filed Feb. 13, 1875.]



The combination, in a clothes-frame, of the two folding frames, each composed of a series of horizontal bars connected at each end to a standard, said frames crossing each other, and pivoted at or near their middle by the pivots c, substantially as shown and described.

161,555. TRIGGERS. John L. Rowe, New York, N. Y. [Filed Mar. 10, 1875.]

Brief.—A pawl and ratchet, for adjusting the pressure, is combined with a bent spring, which connects the pad with a plate in the rear.



The rest f upon the frame-pad d, and the pawl e, connected with the plate c, in combination with the spring f, pad d, plate c, and supporting-straps, substantially as set forth.

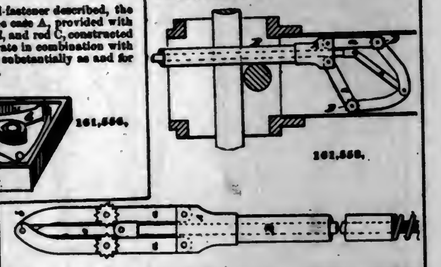
161,556. SHUTTER-FASTENERS. Chas. Russell, Worcester, Mass., assignor of one-half his right to Edwin Schofield, same place. [Filed Dec. 15, 1874.]

Brief.—A small case, inclosing a pivoted pawl and U-shaped spring, is attached to the under side of the lower cross-bar of the shutter, the pawl swinging freely in a lateral direction, and being operated by a push-and-pull rod projecting through the side of the case. There are also two notched staples, one bent at right angles, driven into the window-sill, and the other straight, and driven into the side of the building. These notched staples alternately enter the case, and, engaging with the pawl, secure the blind open or shut, as may be desired.

The improved blind-fastener described, the same consisting of the case A, provided with the pawl B, spring d d, and rod C, constructed and arranged to operate in combination with the notched staple F, substantially as and for the purpose specified.



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161,557. SAW-GUMMERS. David Stettler, Napoleon, Ohio. [Filed Jan. 27, 1875.]

Brief.—The roughened under surface of the die prevents the saw-plate from slipping during the gumming operation. The die-holder rests upon washers. As the upper die wears away, said washers are gradually removed, and the die allowed to descend to the same depth as when new and of full size.

1. In a saw-gummer, the die having its under surface inclined, and provided with teeth or corrugations b, or otherwise roughened, substantially for the purposes set forth.

2. The hollow die-holder G, with adjustable central bar H, connecting it with the operating eccentric lever I, substantially as and for the purposes herein set forth.

3. The combination of the hollow die-holder G, headed connecting-bar H, and one or more washers, f, for the purposes herein set forth.

161,558. BOILER-TUBE CLEANERS. Charles Schmandt, Baltimore, Md. [Filed Mar. 6, 1875.]

Brief.—Levers are connected to a head-block, which allows the scrapers to vibrate from a horizontal line, so that the said scrapers may be introduced into tubes, through which bolts pass, and is then expanded by means of toggle-joints.

1. The jointed arms e, pivoted to the block A, and provided with the revolvable cutters D, in combination with the rod e, substantially as described.

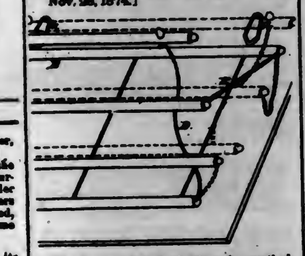
2. The combination of the block A, jointed arms e, cutters D, rod e, pipe B, spiral spring C, and thumb-nut d, substantially as and for the purposes specified.

161,559. BREECH-LOADING FIRE-ARMS. W. M. Scott, Birmingham, England. [Filed Feb. 23, 1875.]

1. In drop-down breech-loading fire-arms, the combination, with the barrel or barrels, formed with side enlargements, as described, of two outer sliding locking-bolts carried by the break-off, and taking into sockets formed in said side enlargements, substantially as shown and set forth.

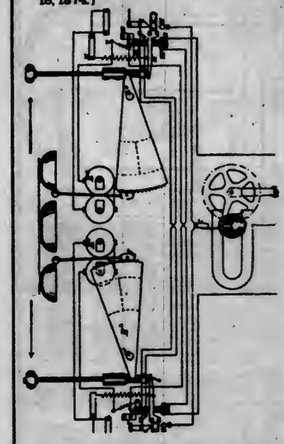
2. In fire-arms such as specified, the combination, with the ordinary central sliding bolt, of the two outer sliding locking-bolts arranged to take into side enlargements on the barrel or barrels, substantially in the manner shown and set forth.

161,560. FOLDING RACKS FOR TOWELS. Jas. T. Sherwin, Philadelphia, Pa. [Filed Nov. 20, 1874.]



The improved rack, having the vertical back and pivoted outwardly-inclining front, formed of horizontal rounds and connecting-wires, the wires D D of the front being pivoted to the bar B of the back and bent laterally between the rounds O O, to produce springs, and the front and back being coupled by means of chains or connections E, all substantially as and for the purpose specified.

161,561. ELECTRICAL RAILWAY-SIGNALING APPARATUS. Ernst W. Siemens and Carl L. Frischen, Berlin, Germany. [Filed Aug. 18, 1874.]



1. The toothed semaphore arm or segment B^1 B^2, biased by a weight or spring to move either upward or downward, in combination with an anchor engaging with its teeth, and connected to the armature of an electro-magnet, which is rendered active by a number of successive and alternating electric currents, whereby the arm or segment, being moved tooth by tooth in obedience to its bias, is not materially affected in its position by accidental or defective currents, or by atmospheric electricity, substantially as herein described.

2. The combination of the said semaphore arm or segment B^1 or B^2 with a knob or handle, T^1 or T^2, and its rod for moving a sliding weight, f^1 or f^2, to give the bias to the arm or segment, and at the same time moving a commutating-lever, i, to alter the electric circuits of the apparatus, substantially as herein described.

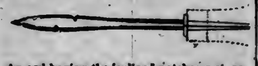
3. The combination, in one instrument or apparatus, of two sets of biased arms or segments, B^1 B^2, and their appropriate knobs or handles T^1 T^2, with their rods and commutating-levers i, with one magneto-inductor, b, and with line-wires L^1 L^2, connecting them to distant instruments or apparatus of like kind, substantially in the manner and for the purposes herein set forth.

4. The combination of the biasing and commutating knobs or handles T^1 or T^2 and their rods with extended rods G, acting, by means of spring-pawls, on point-rods or signal-pulleys, and held down or released by detent-levers L M being engaged with or escaping the arms Z of the arms, substantially as herein described.

5. The combination, in one apparatus, of two or more sets of biased arms or segments, E, and their knobs T, rods and commutators i, with extended rods G, acting, in the manner above referred to, on two or more sets of point or signal motors, substantially in the manner and for the purposes herein set forth.

161,562. AWLS FOR SHOEMAKERS. S. A. Smith, Muscatine County, Iowa. [Filed Feb. 13, 1875.]

Brief.—A notch is cut on each side of the awl. The opening on one side is toward the point, and on the opposite side toward the head, so that when the awl is forced through the material, it will carry through with it a thread, and when withdrawn will pull a thread through from the opposite side.



An awl having the inclined notches a a', as and for the purpose described.

161,563. PUMP-BOXES. Wm. A. Spooner, Springfield, Mass. [Filed Jan. 7, 1874.]

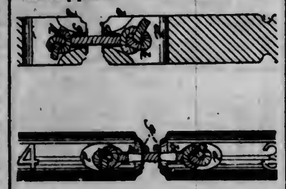


1. The combination and arrangement of the valve b, provided with the protuberance c, the valve-leather e, metallic washer f, and the screw g, extending up into, but not through, the said valve, whereby the leather is secured thereto without inability of leakage through the valve, substantially as set forth.

2. The combination of a tapered pump-box, e, having a shoulder, h, with a tapered leather packing-ring, f, and metallic ring e, secured in place by screws c passing up into, but not through, the main part of the box, substantially as described.

161,564. SASH-WEIGHTS. E. J. Sprague, Youngstown, Ohio. [Filed Jan. 16, 1875.]

Brief.—A sash-weight, provided at each end with a lateral open eye, is deeply grooved at or near the middle, so that dealers can easily break in parts, and adjust to the desired weight. The coupling may be a short double-headed bolt, but is preferably a short knotted cord; and to prevent this cord from working out, a metallic thimble-guard is inserted in the lateral openings of the suspension-eyes. There may also be light cap-pieces or sectional weights added at the top, and for this purpose the eyed ends are cast with shouldered seats, to receive the concave bottoms of these cap-pieces.



1. A sash-weight, having a suspension-eye at each end, and divided into two distinct weights by a deep annular groove, to form a double weight of equal or unequal number of pounds, so that when broken at the groove will form two complete eyed weights, substantially as herein set forth.

2. The combination with sash-weights, provided with laterally-open eyes b, and coupled by shoot-cords h, of the thimble-guards g, whereby the side openings are closed, and the accidental working out of the coupling prevented, as herein set forth.

161,565. STREET-CARS. John Stephenson, New York, N. Y. [Filed Mar. 2, 1875.]



1. In combination with a car-body a removable seat, B, substantially as set forth.

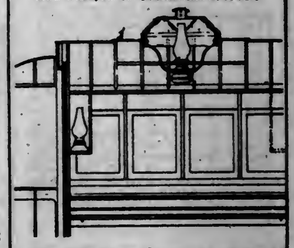
2. A removable car-seat, B, in combination with the dowel h and car-body, substantially as and for the purpose set forth.

3. A removable car-seat, in combination with bolts f and car-body, substantially as and for the purpose set forth.

4. A removable car-seat, B, in combination with bolts f, rail a, and hooks and sockets, substantially as and for the purpose set forth.

5. A removable car-seat, B, in combination with bolts f, dowels h, and car-body, substantially as and for the purposes set forth.

161,566. STREET-CARS. John Stephenson, New York, N. Y. [Filed Mar. 2, 1875.]

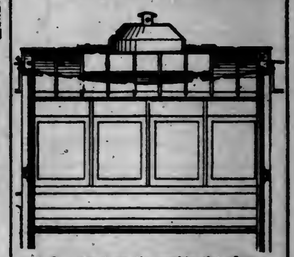


1. A street-car roof having a central opening combined with a lamp partly beneath and partly above the plane of the roof, substantially as and for the purpose set forth.

2. A street-car roof in combination with a lamp near its center, and with a reflector above the point for the flame of the lamp, consisting of two inclined surfaces, a and c, for casting light in reverse directions, substantially as and for the purpose set forth.

3. In a street-car, the combination of a lamp near the center of its roof, and a lamp or lamps located in one or both ends of the car, to serve the double purpose of a signal and of illuminating the interior of the car, substantially as set forth.

161,567. STREET-CARS. John Stephenson, New York, N. Y. [Filed Mar. 2, 1875.]



1. In a street-car, the combination of one or more adjustable truss-rods, b, with a short roof, B, and detachable canopies, substantially as set forth.

2. The combination of one or more curved adjustable truss-rods, b, with the roof and ends of a car, substantially as and for the purposes set forth.

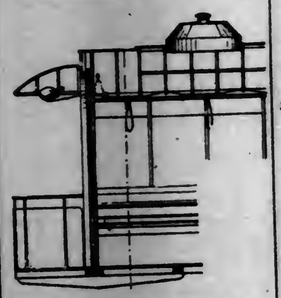
3. A street-car roof, with an opening therein, in combination with one or more adjustable truss-rods, substantially as and for the purpose set forth.

4. In a street-car, the combination of an elevation above the general plane of the roof with one or more adjustable truss-rods, as and for the purpose set forth.

5. The combination of a street-car roof, with seats thereon, and one or more adjustable truss-rods, as and for the purpose set forth.

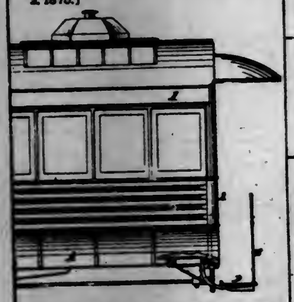
6. In a street-car, the combination of supporting-frames with the roof and ends, having openings for ventilation between the under side of the roof and the upper side of the respective bonnets, substantially as set forth.

161,568. SIGNALING DEVICES FOR STREET-CARS. John Stephenson, New York, N. Y. [Filed Mar. 2, 1875.]



In a street-car, two bell-cords, each provided with a system of pull-straps, and arranged in such manner as to pass along the lower margin of the roof on the opposite sides of the car, and connect directly with a signal bell or gong attached to the outside of the driver's end of the car, substantially as and for the purposes set forth.

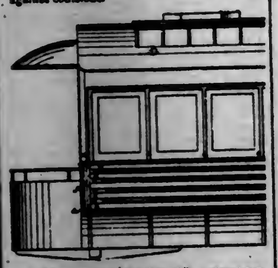
161,569. STREET-CAR PLATFORMS. John Stephenson, New York, N. Y. [Filed Mar. 2, 1875.]



The railing E, and platform-step D, in combination with the main body A of a street-car, the platform being below the level of the car-floor, substantially as and for the purposes set forth.

161,570. STREET-CAR BODIES. J. Stephenson, New York, N. Y. [Filed Mar. 2, 1875.]

Brief.—Detachable plating for protection against collisions.

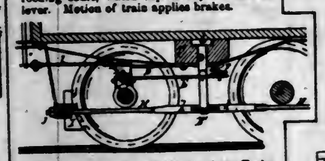


1. Ribs c, in combination with a street-car body, to form the external surface of its main side panels, substantially as set forth.

2. The combination of the ribs c and plates f with a car-body, substantially as set forth.

161,571. CAR-BRAKES. E. Stewart, Fort Madison, Iowa. [Filed Feb. 26, 1875.]

Brief.—Sectional sleeve easily clamped on ordinary car axle, and having screw-thread, in which works a point attached to the end of a lever having both vertical and lateral play, and connected through rods with brakes at the other end. Engineer controls operation by rocking shaft, which depresses point end of lever. Motion of train applies brakes.



1. The combination of vibrating lever E, the screw on the axle, rock-shaft D, and connecting-rods H b for actuating the brakes, substantially as set forth.

2. The longitudinally-divided axle-sleeve A', provided with screw-threads, substantially as set forth.

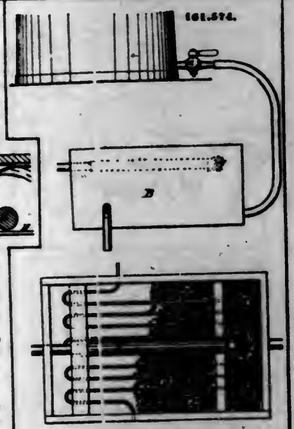
161,572. DIES FOR RAISING ARTICLES OF SHEET METAL. Norman C. Stiles, Middletown, Conn. [Filed Feb. 18, 1875.]

Brief.—The blank is held between the follower B and part D, while the central portion is operated upon by the punch A. The part D is seated in a spherical seat, so that it may have a slight movement therein, and maintain a true bearing with the follower, notwithstanding any inequalities in the thickness of blank.

161,573. MANUFACTURE OF MEDICATED BEER. Robt. W. Tavener, Bay City, Mich. [Filed Feb. 24, 1875.]

Brief.—The contents of the vat are drawn slowly into a purifier, and enter beneath a steam-coil, the spaces between which are packed with sponge, wherein is absorbed the impurities. The contents then flow through a sponge plug into a pipe, and from thence into the bottles.

161,574.



1. A brewers' compound for the manufacture of cooling and tonic beverages, formed of the ingredients specified, prepared in the manner set forth.

2. An apparatus consisting of the connected vat and purifier A B, the latter provided with heating-coil and absorbent, as and for the purpose described.

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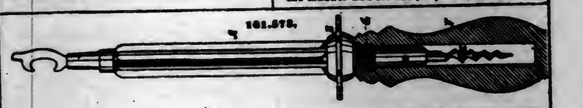
In combination with a central punch, A, and external follower or punch B, the part D, arranged substantially as described, so as to be universally self-adjusting relatively to the plane of the follower B, substantially as specified.

161,577. SCALE-BEAMS. Theodore Tebow, Lexington, Ky., assignor to himself and John F. Miller, same place. [Filed Dec. 5, 1874.]

Brief.—Two shafts are geared together, so as to revolve simultaneously. The upper one supports a drum having in a spiral line upon its face figures to indicate the weight. The lower one actuates a slide provided with a pointer bearing against the spiral line on the drum. The scale-weight is attached to the slide.

1. The combination of beam A, screw-shaft D, sliding weight L M O, gearing G H, and indicating-drum F, operating substantially in the manner and for the purpose specified.

161,578.



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161,580. TABLE IMPLEMENTS. O. W. Taft, New York, N. Y. [Filed Jan. 16, 1875.]

Brief.—The guard that protects the hand when the sharpening-steel is used also serves as a handle to the corkscrew.

The steel A, the guard H, and the corkscrew E, permanently united to the bolster B, and the hollow handle F, screw-threaded at its open end, to adapt it for detachable connection with the bolster, all as shown and described, for the purpose specified.

161,581. MANUFACTURE OF MEDICATED BEER. Robt. W. Tavener, Bay City, Mich. [Filed Feb. 24, 1875.]

Brief.—The contents of the vat are drawn slowly into a purifier, and enter beneath a steam-coil, the spaces between which are packed with sponge, wherein is absorbed the impurities. The contents then flow through a sponge plug into a pipe, and from thence into the bottles.

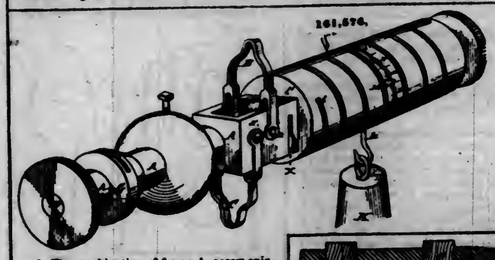
2. In combination with the shafts D E and gearing G H, the spring I, substantially as and for the purpose specified.

3. In combination with the slide L n and screw-shaft D, the nut M having flanges m, and tongue N, operating substantially as and for the purpose specified.

161,582. SCALE-BEAMS. Theodore Tebow, Lexington, Ky. [Filed Jan. 22, 1875.]

Brief.—A screw-shaft revolved by thumb-nut I' passes supporting-frame and drum with spiral slot graduated as thus to indicate weight. A screw, having attached the suspending rod of weight and arm of indicating-finger, moves the traversing-weight. Indicating-finger kept in horizontal position while it revolves. Weight traverses until an equilibrium is established with article suspended from yoke attached to beam. The finger then points out on graduated face of drum the weight of article.

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1. The combination of frame A, screw-spindle D, box N, weight K, indicator M, and spirally-slotted drum L i, the parts being connected and the whole operating substantially in the manner and for the purpose specified.

2. In combination with the hollow frame A, the double-jawed yokes B C, and fulcrums a a a a' a' a', constructed and operating substantially as and for the purpose specified.

161,577. COAL-HODS. Charles F. Thomas, New York, N. Y., assignor of one-half his right to H. Joerns, same place. [Filed Feb. 13, 1875.]

Brief.—The spout extends into a discharge-chamber, which is divided into compartments by the abutments.



1. The base or bottom of a coal box or hod, constructed with abutments or strips for dividing the discharge-chamber into compartments, said abutments extending from the rear of the extension projecting from each base in combination with the magazine inclosing the spout, having a contracted mouth, which extends downward into the discharge-chamber, substantially as herein shown and described.

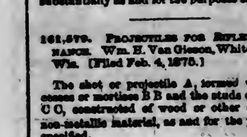
2. The combination, with the magazine and the spout arranged therein, and having a contracted mouth, of the false or secondary spout, and the discharge-chamber beneath, substantially as described.

161,578. WHIP-SOCKETS. John M. Underwood, Newark, N. J. [Filed Jan. 9, 1875.]



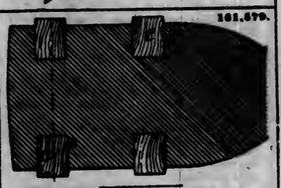
The combination, with a whip-socket, of the rubber bulb formed of the two dish-shaped pieces B B, having openings c and flanges b, substantially as and for the purposes set forth.

161,579. PROJECTILES FOR RIFLED ORDNANCE. Wm. H. Van Gieson, Whitewater, Wis. [Filed Feb. 4, 1875.]



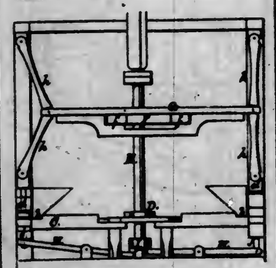
The shot or projectile A, formed with recesses or mortises B B and the studs or plugs C C, constructed of wood or other suitable non-metallic material, as and for the purpose specified.

161,579.



161,580. BRICK-MACHINES. Wm. S. Wallace, Mount Vernon, Ill., assignor of one-half his right to Willis Duff Green, same place. [Filed Dec. 29, 1874.]

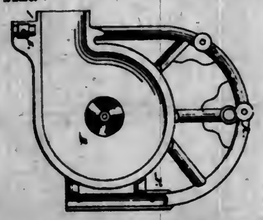
Brief.—A vertical shaft operates by three cams, respectively, a horizontal reciprocating bar and toggle-joint plungers below it, and parallel thereto an ejecting-bar, and at bottom levers to press upward the bricks from the molds. The shaft is central to duplicate devices.



The combination of the vertical shaft E, eccentric F, friction-rollers f f, and rigid sliding bar G, connected with the toggle-jointed levers h h, and plunger d, substantially as and for the purposes herein set forth.

161,581. FORGE-BLOWERS. L. H. Watson, Cleveland, Ohio. [Filed Jan. 27, 1875.]

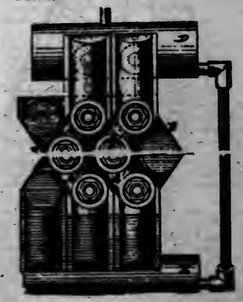
Brief.—One-half of the fan-case is cast in the same piece with the upper portion of the frame.



1. A frame, as shown in Fig. II, with one-half of a fan-box cast therein and forming a part of said frame, as shown and described.

2. The frame, as shown in Fig. II, in combination with the detachable half of fan-box D, legs t, F, and H, and gearing to drive the fan, as shown and described.

161,582. SECTIONAL STEAM-BOILERS. H. Whittingham, New York, N. Y. [Filed Feb. 4, 1875.]

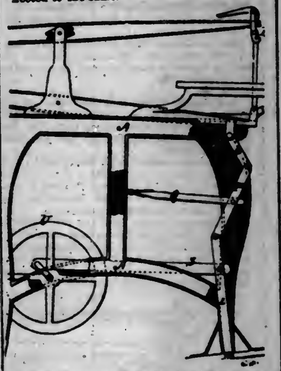


1. The combination of the front and back uprights A B, of reverse zigzag construction or arrangement relatively with each other, and the longitudinal tubes C, made to connect each front zigzag upright with two back zigzag uprights, and each of said back uprights with two of said front uprights, substantially as and for the purposes herein set forth.

2. The combination, with the drums D E, or either of them, and end uprights, to which they are attached, of the tubes b, the taper rings or plugs c, and the clamps d, connected with the end uprights by screws e e, substantially as specified.

161,583. JIG-SAWS. Giles S. Williams, Madison, Wis. [Filed Dec. 10, 1874.]

Brief.—A reciprocating motion is given to the saw through the agency of a treadle operating a pair of toggle-levers, which are connected to the same.



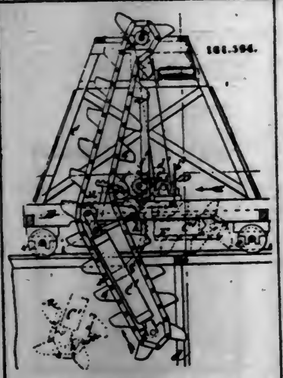
1. The compound double toggle-lever connecting the saw-frame of a jig-saw directly with the operating-treadle, substantially as described, for the purpose specified.

2. The vibrating pivot-arm Q, connecting the compound lever to the frame of the machine, substantially as described, for the purpose specified.

3. The combination of the compound lever, vibrating pivot-arm Q, and the balance-wheels with the saw and frame of the machine, substantially as described, for the purpose specified.

161,584. COAL AND OTHER ELEVATORS. S. Winslow, Rutherford Park, N. J., and T. Goldsmith, New York, N. Y. [Filed Oct. 23, 1874.]

Brief.—Portable ways are placed over a scow or other vessel, on which runs a carriage having an endless chain, in two sections, of buckets, the lower section adapted, by a top pivot, to vary its angle with the upper one, by means of a pinion and segmental rack.



161,384.

1. The combination, with the buckets G, connected to the chains F F by the upper and lower pins e e', of the drum E, having a plurality of sides, and provided at each end with a pulley, *i*, having notches, with which the chain-pins e e' engage, substantially as described, and for the purposes set forth.

2. The combination, with the movable truck frame B and section C of elevating-buckets mounted upon said truck-frame, of the bucket-carrying section C', pivoted upon a shaft, *i*, mounted in the frame B, substantially as described, whereby the said section C' may be moved or adjusted to a horizontal, vertical, or angular position, for the object specified.

3. The combination, with the endless chains F, section C of buckets, and pivoted bucket-carrying section C', of the rollers M, having fixed centers, and the rollers N, attached to the upper extensions of the swinging-frame section, substantially as described.

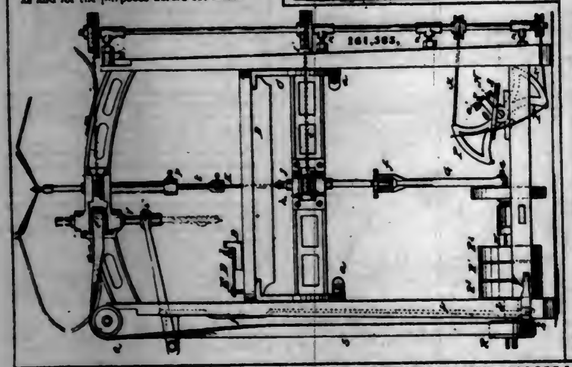
161,383. SCROLL-SAWING-MACHINES. Geo. S. Young, Clearfield, Pa. [Filed Feb. 27, 1875.]

Brief.—The saw is so arranged that it may o revolved by the action of a treadle. A boring device is attached and the saw-table made adjustable.

1. The combination, with the sleeve J', of the collar *p*, with tube *s*, adjustable rod *t*, and adjustable guide *w*, arranged to turn with the saw, substantially as and for the purposes herein set forth.

2. The combination, with the upright shaft M, of the pulleys *y y'*, chains *x x'*, quadrants I' I'', with arms *z z*, set-screw *a'*, shaft N, and foot-piece O, all constructed substantially as and for the purposes herein set forth.

3. The combination, with the driving-shaft of a scroll-sawing machine, of the loose pulley R', fast pulley R'', pulley R', having elongated hub *b'*, with pulley R, and the belt S, connecting with the boring-spindle V, substantially as and for the purposes herein set forth.



161,383.

REISSUES.

6,351. HARVESTERS. John E. Buxton and Thos. J Howe, Owatonna, Minn. Patent No. 147,477, dated Feb. 17, 1874. [Filed Oct. 10, 1874.]

Brief.—As the cut grain falls upon the inclined platform it is carried by the sweep-rake to the binders' table.

1. The harvester-platform extending backward and upward on a regular curve in a spiral plane, narrower at its rear than at its front, and combined with a binder's stand or stands, and platform at its rear, substantially as and for the purposes set forth.

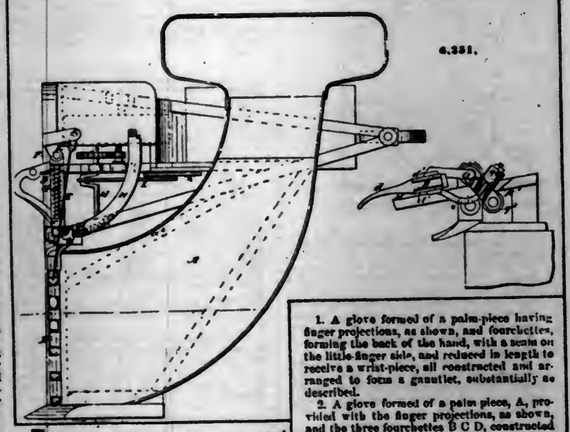
2. In combination with the harvester-platform A, rising, receding, and narrowing in a spiral plane, as set forth, the rake D *d d'*, journaled in a rising hinge, F, and guided by the rising track H, substantially as described.

3. The rubber spring *g'*, brace-rod *x*, and arm *g'*, combined with rake-head, substantially as described.

4. A harvester rake having teeth flexibly connected and alternately contracted and expanded by a push-rod, E, substantially as and for the purpose specified.

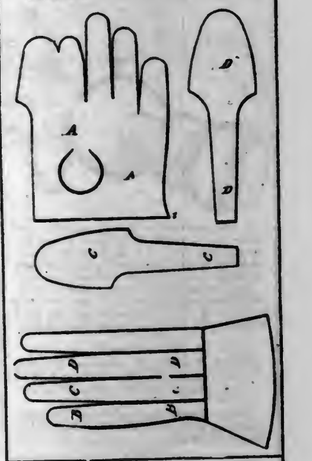
5. A rake-shank, G, journaled in a rising hinge, F, and provided with spring *g*, roll *g'*, arm *g''*, and roll *g'''*, in combination with a rising track, H, substantially as and for the purpose described.

6. The two tracks H H', having a junction at the notches *h h'*, combined with the spring-supported auxiliary track H'' and the pivoted rake-shank G, having the spring-vibrated arm *g''*, substantially as and for the purpose set forth.



6,351.

6,338. GLOVES. Solomon J Clute and Dast. M. Durfee, Rockwood, N. Y. Patent No 129,934, dated July 30, 1872. [Filed Feb 25, 1875.]



1. A glove formed of a palm-piece having finger projections, as shown, and fourchettes, forming the back of the hand, with a seam on the little-finger side, and reduced in length to receive a wrist-piece, all constructed and arranged to form a gauntlet, substantially as described.

2. A glove formed of a palm piece, A, provided with the finger projections, as shown, and the three fourchettes B C D, constructed and arranged substantially for the purposes herein set forth.

3. The enlarged or projected corners *i i'*, formed on the palm-piece A and fourchette B, respectively, substantially as and for the purposes herein set forth.

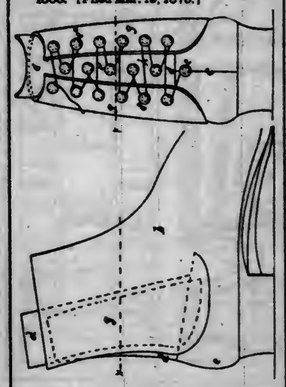
6,352. GRATE-BARS. Robt. C. Graves, Cambridge, Ohio, assignor to Wm. H. Hobbs and R. C. Graves. Patent No. 135,799, dated Feb. 11, 1873. [Filed Feb. 6, 1875.]



The combination of the bar D, provided with studs *c*, with grate-bars or ribs A, and operating lever E, substantially as and for the purposes set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

6,354. SHOES. Charles Parley, New York, N. Y., assignor to Calvin Heyscone, Boston, Mass. Patent No. 76,046, dated Mar. 3, 1868. [Filed Mar. 19, 1875.]



1. A shoe, with side openings, in which the front-quarters overlap the back-quarters, and have their lower rear edges drawn toward each other by a fastening extending across the back near the heel.

2. A boot or shoe having flaps *g g*, combined with a back, *d*, and a check or checks, substantially as described.

3. A shoe, having side openings, the front quarters overlapping the back quarters, and cut in such a pattern that the rear edges of the front quarters fall in the recess back of and below the ankle-joint and above the heel, substantially as and for the purposes specified.

4. A boot or shoe opening at the sides, and provided with a check or checks, *c*, at the back portion thereof to prevent the parts from working out of place.

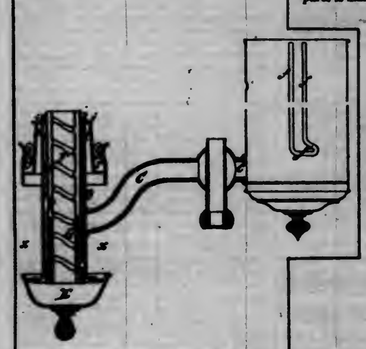
5. The padding, applied at *f* within the rear portion of the boot or shoe, substantially as and for the purposes specified.

6. The padded back *d*, substantially as and for the purposes specified.

7. The buttons or fastenings along the back *d*, between the flaps *g g*, substantially as and for the purposes set forth.

6,355. LAMPS. Bennett B. Schneider, New York, N. Y. Patent No. 102,163, dated Apr. 19, 1870. [Filed Feb. 2, 1875.]

Brief.—The valve in the bottom of the reservoir is operated, upon turning the reservoir, by means of an arm which works in a groove or passage on the wall of the receiver. The slotted wick-tube is strengthened by strips of metal.



1. The combination, with the bottom plate of the reservoir B, having an aperture therein for the admission and escape of oil, of a valve having a corresponding aperture, and attached to the bottom of the reservoir, to be capable of turning thereon, substantially as herein described.

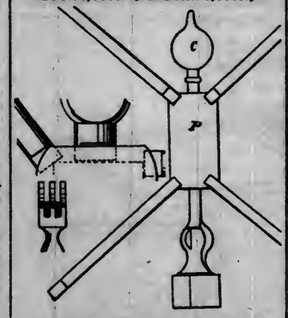
2. The combination of the reservoir B, a turning-valve attached to its bottom, an arm, *c*, provided on such valve, and a receiver, A, having a groove or passage in its inner side receiving said arm, substantially as and for the purpose herein described.

3. The combination, with the reservoir B, valve *b* or *c*, furnished with an arm, *c*, of a receiver, A, provided in its inner side with a passage, terminating in a transverse extension, substantially as herein set forth, whereby the reservoir may be secured in the said receiver against removal by simply lifting it out.

4. The plate or sheet of metal which unites the deflector I to the tube H, constructed with a series of apertures in close contiguity with the tube H, substantially as set forth.

5. The combination of the tube H and strips of metal *i i*, substantially as set forth.

6,356. TOY BLOCKS. Charles M. Crandall, Montrose, Pa., assignor to C. M. Crandall & Co., same place. Patent No. 61,721, dated Feb. 5, 1867. [Filed Mar. 8, 1875.]



1. As a new article of manufacture, children's building-blocks or other toys, constructed with interchangeable mortise and tenon joints, substantially as described, so that the several parts of the toy, irrespective of size or shape, may be fitted together and retain any desired position or combination by the clamping or friction caused by one part fitting or entering into another part, substantially as and for the purpose set forth.

2. Children's toys, provided with one or more jaws, grooves, recesses, or similar clamping devices, within which corresponding tongues, tenons, or other projections of the toy are fitted and retained in position by friction alone, substantially as described, so that a given combination and arrangement of the several parts is maintained, as specified.

6,357. PUMPS. Francis Curtis and Edward P. Russell, Newburyport, Mass. Patent No. 154,785, dated Sept. 8, 1874. [Filed Jan. 20, 1876.]

Brief.—A double-acting pump having a piston-cylinder and two valve-cylinders, each containing inlet and discharge valves; the piston and valve cylinders being so arranged that their upper ends terminate in an open basin, into which the valve-cylinders discharge their contents, and through which free access is had to all three cylinders, and to the several valves

1. In a double-acting pump, the combination of an open water-basin with two valve-wells, each provided with inlet and discharge valves, and opening and discharging their contents into the basin, substantially as shown and described.

2. The combination in a double-acting pump of the valve-wells D E, each provided with inlet and discharge valves, and piston-cylinder B, with an open water-basin extending over said valve-wells and piston-cylinder, said valve-wells discharging their contents into the basin, substantially as shown and described.

3. The cross-stay *b'*, secured to the basin, and forming a guide for the piston-rod of the pump, and provided with legs *b''* for holding the cap or cover *b* in place, substantially as shown and described.

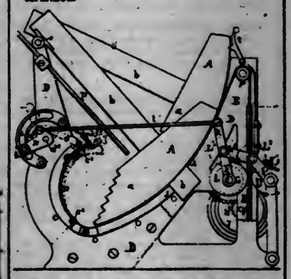
4. The combination, with the cross-stay *b'* and its legs *b''*, of the studs *b'''*, passing through holes in the cross-stay and keys *b''*, whereby the cross-stay *b'* and cap *b* are secured without requiring screws or bolts, substantially as shown and described.

5. The combination, with the casing A formed with a main or piston cylinder, a pair of valve cylinders D E, and a basin, F, having a central nozzle, C, all cast in one piece, and provided with studs *b'*, as described, of the stay *b'*, provided with a bearing for the piston-rod *b'*, and vertical projections *b''*, for retaining the cap or cover *b* in position, substantially as set forth.

6. The piston-cylinder B and its head *b*, in combination, with the projections *b''*, of the bridge piece *b''*, substantially as and for the purpose specified.

6,358. FULLING-MILLS. Rudolf Bickensoyer, Yonkers, N. Y., assignor to Bickensoyer Fulling Company. Patent No. 144,841, dated Nov. 25, 1873. [Filed May 9, 1874.]

Brief.—The hinged apron and the flange hinged to its top are independently and jointly adjustable, to vary the area of the falling-space. The straps which elevate the stocks are operated by griping-rolls, which alternately seize and release them. These rolls are actuated by gear-wheels, so hung in an adjustable frame that the contact of the rolls may be governed, and the height to which the stocks are raised thereby determined.



1. The combination, substantially as before set forth, of the adjustable tip and the adjustable apron of the bed of the fulling-mill.

2. The combination, substantially as before set forth, of the fulling-stock with adjustable raising mechanism, which is adjustable to vary the distance to which the fulling-stock is raised, so that the force of the blow can be varied as the fulling progresses.

3. The combination, substantially as before set forth, of the adjustable bed for the fulling-mill, the fulling-stock, and the adjustable raising mechanism for the fulling-stock, so that the resistance to the movement of the articles may be increased when the force of the blow is increased.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

4. The combination, substantially as before set forth, of the falling-stock, the adjustable raising mechanism therefor, and the cone-pulley for varying the number of strokes of the falling-stock in a given time.

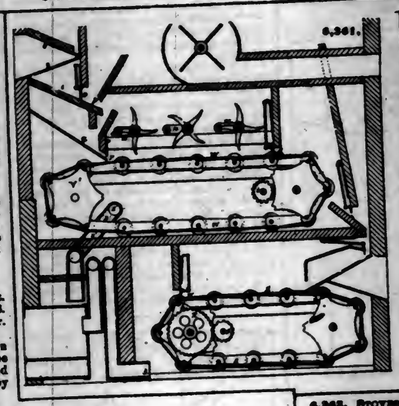
5. The combination, substantially as before set forth, of the falling-stock, the raising-strap, and the griping-rollers.

6. The combination, substantially as before set forth, of the raising-strap, the eccentric griping-rollers, and the adjusting mechanism for varying the relative angular positions of said rollers, so as to vary the time during which they operate upon the raising-strap.

7. The combination, substantially as before set forth, of the falling-stock, the raising-strap, the griping-surfaces which operate on said strap, and the springs which cause one of said griping surfaces to bear against said strap with a yielding pressure.

6,259. HARVESTERS. John H. Hiward, St. Paul, Minn., assignor to himself and W. S. Goodhue. Patent No. 113,000, dated Apr. 25, 1871. [Filed Mar. 5, 1875.]

Brief.—The binders' seat is adjustable on the stand I, to or from the grain-receiver. The main supporting-axle is adjustable up and down in the main frame, and secured to it by pins.



6,259.



1. The binders' platform I, suspended from the transverse overhanging bars G, supported by the main frame, substantially as described.

2. The movable binders' seat J, provided with the fork J' and stirrup *f*, in combination with the binders' stand or platform, as described.

3. The main drive-wheel axle E, provided with the flattened ends, in combination with the grooved segments or flangings, and the through-pins, for setting the axle at any desired height, and for stiffening the frame, as described.

6,260. MANUFACTURE OF PUTTY. George W. Hatfield, Dayton, Ohio. Patent No. 99,231, dated Oct. 26, 1869; reissue No. 6,161, dated Dec. 8, 1874. [Filed Feb. 1, 1875.]

As a new article of manufacture, putty composed, in part, of pulverized limestone, substantially as and for the purpose specified.

6,261. GRAIN-DRIERS. Ransom S. Reynolds, Waterbury, Conn., assignor, by mesne assignments, to James A. Maloney, James S. Welch, A. H. Herr, E. P. Welch, J. H. Welch, Rosie W. Welch, and H. P. Welch. Patent No. 82,926, dated June 23, 1868. [Filed Mar. 20, 1875.]

Brief.—Either hot or cool air is blown under the endless apron in the upper chamber, and the dust is drawn out by the fan at the top. The automatic valves prevent egress of air at the grain inlet and outlet.

6,261.

1. The combination, in a machine for drying, cooling, or cleaning grain or other material, of a horizontal movable apron or screen within an air-tight case, a blower-fan for producing an air-blast, auxiliary air-pipes connected with said fan to convey the air generated by the fan-blower immediately beneath said horizontal movable apron or screen, thereby causing the air to pass up through the perforations of the same, and a suction or exhaust fan and discharge duct or trunk connected with the chamber above the horizontal movable apron or screen, substantially as and for the purpose set forth.

2. In a machine for drying, cooling, or cleaning grain or other material, the combination of a horizontal movable apron or screen with an air-tight case, an air-blast from a fan-blower beneath it and auxiliary air-pipes, an exhaust or suction fan connected with the upper portion of said horizontal movable apron or screen, automatic valves for feeding and delivering the grain or other material, and preventing the entrance and exit of air with the grain or other material, substantially as and for the purpose set forth.

3. In a machine for drying, cooling, or cleaning grain or other material, the combination of a horizontal movable apron or screen within an air-tight case, with adjustable feed-regulator, an exhaust or suction fan, two or more eddy or cam chambers arranged above said horizontal movable apron or screen, substantially as and for the purpose set forth.

6,262. APPARATUS FOR DRYING SHOE-SOLES. Aaron F. Smith, Lynn, Mass., assignor by mesne assignments, to Lyman A. May, Amos B. Withey, and Henry L. Drake. Patent No. 123,560, dated Feb. 13, 1872. [Filed Jan. 20, 1870.]

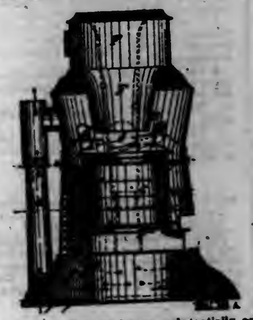
Brief.—A metallic case, into which heat is introduced by means of a perforated pipe, is provided with a raised rack, upon which boots or shoes are placed for drying the soles. Reissue of No. 123,186, of February 13, 1872.



The portable box or case A, provided with heating apparatus, as shown, and a raised or elevated rack for supporting a boot or shoe, substantially as and for the purposes described.

6,263. STOVES. Hiliu Smith, Albany, N. Y., assignor to Saml. H. Ransom, trustee. Patent No. 62,966, dated Apr. 12, 1869; reissue No. 5,709, dated Dec. 20, 1873; reissue No. 5,902, dated July 7, 1874; reissue No. 6,091, dated Oct. 20, 1874. [Filed Mar. 10, 1875.]

Brief.—The stove is adapted to heat its walls adjacent to the upper plane of the fire-pot, and also the sloping walls of a chamber located below the plane of the ash-pit chamber, more highly than the intermediate parts. The main current of smoke is drawn to the rear edge of the fire-pot, and away from the mica lights.



1. In a stove or heater, substantially as above described, a descending flue placed at the rear, and an ascending flue near to or adjoining the same, and a hot-gas-circulating chamber located below the ash-pan chamber and the bottom plate proper of the stove, combined to operate substantially as set forth.

2. In a stove or heater, substantially as above described, a combustion-chamber above the fire-pot, a gas-circulating chamber in the base of the stove, beneath the ash-pan chamber and the bottom plate proper of the stove, a descending flue communicating from the combustion-chamber above to the said hot-gas chamber, an ascending flue located near the said descending flue, and communicating from the said gas-circulating chamber to the exit, and a fire-pot section, with an air-space between the fire-pot and its casing, substantially as set forth.

3. In a stove or heater, substantially as described, a combustion-chamber inclosed by a grate set with mica lights, and a fuel-receiver terminating within the said combustion-chamber, and opposite said mica lights, combined with a descending flue located within the casing of the stove, in rear of and adjoining the fire-pot, heated by radiant heat from the latter, and communicating from the said combustion-chamber to the hot-gas chamber, located below the ash-pan chamber and in the base of the stove, substantially as set forth.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 14. TUESDAY, APRIL 6, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D.C.

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COMMISSIONER'S DECISIONS.

CASE *vs.* HASTINGS.—*Interference.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the interference between the application of Thurman Case and the application for reissue of Glover S. Hastings, for* "IMPROVEMENT IN TOY PISTOLS."—*Decided February* 19, 1875.]

Where the Examiner and the Board agree in their findings upon the facts in interferences, it is not necessary for the Commissioner to minutely review the testimony.

The case of *Stoddard* vs. *Perry*, (6 OFFICIAL GAZETTE, 33,) commented on to show the distinction to be made, in ascertaining priority of invention, between an abandoned experiment and a perfected invention.

Where an inventor employed and paid an attorney to file his application for patent, and was deceived by false representations that it had been done, the delay thus fraudulently caused was not unreasonable delay by the inventor, such as to work forfeiture or abandonment of his invention.

Claims for what are called "mechanical processes" should not be allowed when they comprehend no more than the mere functions of mechanism described; in such cases it is the apparatus only that is patentable.

THACHER, *Commissioner:*

Hastings filed his original application September 25, 1873, and a patent was issued to him the 23d day of December following. He filed an application for the reissue of this patent March 11, 1874. Case's application is an original one, and was filed March 26, 1874. The burden of proof, therefore, rests upon Case; and Hastings, having already obtained a patent, is entitled to all the advantages growing out of this fact.

The Examiner of Interferences and the Examiners-in-Chief have agreed in their findings of fact, and, also, in awarding priority of invention to Case. This being the state of the case, in accordance with the usual practice of the Commissioner, it will not be necessary to review the testimony at great length. It may be summed up as follows:

Hastings conceived the idea of exploding matches by a crushing action early in October, 1870. He experimented at that time with a pair of shoemaker's pliers, and found that he could explode matches with this instrument, but did nothing more, except to bend the handle of the pliers, so as to obtain a better leverage. The pliers were still further changed in some unessential particulars, and put in the condition in which they appear in the case in the summer of 1873. Another pair of pliers is also exhibited, in which the upper jaw is severed, the nose portion being riveted to the lower jaw, and a horizontal hole drilled between the two, in which the match is to be placed, and from which it is projected by the explosion. It is admitted, however, that this modification of these pliers was not made before July, 1873. Up to July, 1873, both exhibits (1 and 2) were nothing more than common shoemakers' pliers, and all that could be done with them was simply to crush the end of the match between the jaws to produce an explosion. The stick would not be projected from the jaws, for it must be pinched between them; but the invention consists not merely in exploding the match by a crushing action, but also in throwing the splint from its receptacle by the force of the explosion; and the device in controversy is one which will accomplish both results. Exhibit 2, in its present condition, will, perhaps, explode the match and project the stick from the hole in the nose. It may be regarded, then, as a crude embodiment of the invention. It is, however, the first illustration by Hastings of the device in controversy; and, as it was not accomplished until the summer of 1873, an earlier date cannot be fixed for the invention by him.

Case appears to have commenced with the idea of projecting the match-splint from the barrel. He conceived this idea as early as July, 1870. His first experiment was for the purpose of determining whether the explosion of the match would throw out the stick, and he used a small block of cast-iron, in which a hole was drilled, the match being exploded both by percussion and by crushing the end. This was in July, 1870.

In August of the same year he made a wooden pattern of a pistol, which is not of much account, however, in the development of the invention. In November, 1870, he had a pistol cast, which is filed in the case, and marked Exhibit C. This pistol is a complete embodiment of the entire invention. A slight change was made subsequently in the exploding device; but in this pistol (Exhibit C) the match is exploded by a crushing force, and the splint is thrown from the barrel by the explosion. It is, therefore, a practical embodiment of the invention in controversy. The subsequent change to the construction shown in Case's application was merely mechanical; but even this was effected prior to the invention of Hastings, for in the winter or spring of 1871 the pistol (Exhibit E) was constructed, which is identical with the device shown in his application. Three additional pistols were made prior to June 10, 1871, which were shown to and tested by others.

From this evidence, the conclusion is unavoidable that Case was the first to conceive the invention, the first to commence experiments, the first to embody the device in practical form, and, also, the first to exhibit it as a completed and salable article.

I have no hesitation whatever in deciding the question of priority in favor of Case.

The decision in the case of *Stoddard* vs. *Perry* (6 OFFICIAL GAZETTE, 33) has been referred to as authority for a different conclusion; but an examination will show that the facts in the two cases are very different. The finding in the Stoddard and Perry interference was that Stoddard never reduced the invention to practical form. The first and only machine built by him was used experimentally only, and then destroyed. It was held, therefore, to have been an abandoned experiment. But in this case I find no ground for the conclusion that the issue of Case's efforts was only an abandoned experiment. His early models were preserved, and the pistols, showing the full embodiment of the invention, were shown to others, tested, and are brought forward as exhibits in this interference. I fail, therefore, to see any similarity between the two cases. In one there is an invention perfected, in the other there is not.

The opinion pronounced in *Stoddard* vs. *Perry* does not appear to be applicable to the present controversy.

But it is insisted that, if Case is the first inventor, he has forfeited his right to a patent by long delay in applying therefor. I believe that the evidence shows that this delay is excusable.

In 1871, Case employed a patent solicitor to prepare and prosecute an application for letters patent, putting into his hands the necessary models and papers, and paying him the fees required. It appears, however, that the solicitor cheated his client. He never filed the application, although he represented to Case that he had done so, and put him off from time to time with statements that the application was delayed in the Patent Office. Under these circumstances, and in view of the decision in the case of *Russell and Ervin Manufacturing Company* vs. *Mallory*, (5 Fisher, 632,) I do not think the delay of Case can be held to work either forfeiture or abandonment of the invention.

The decision of the Examiners-in-Chief, awarding priority of invention and the right to a patent to the applicant, Case, is affirmed.

I find occasion, however, to criticise somewhat the claim presented. Not only is the device claimed, but also the method of impelling match-splints from the barrel of a pistol. Claims for what are called "mechanical processes" are, in the majority of instances, objectionable. I do not intend to say that a mechanical process is an impossibility; but claims are repeatedly presented to the Office, and in many instances granted, which cover nothing more than the operation of the ordinary functions of the mechanism described. When this is the case, there is nothing patentable but the device or apparatus itself, and claims for such processes ought not to be allowed. They have been sharply criticised by the courts, and in some instances saved only by forcibly construing them to cover devices only.

I recommend the Examiner to carefully investigate this question before allowing a patent to issue with the first claim in Case's application.

ARNOLD *vs.* WILCOX.—*Interference.*

[*Appeal from the decision of the Examiners-in-Chief in the matter of the interference between the applications of Alfred Arnold and Horace C. Wilcox for Letters Patent for* IMPROVEMENT IN COFFEE-URNS.—*Decided February* 26, 1875.]

Where the invention is a very limited improvement upon an old device, a former patent covering such device will not be held to embrace the improvement unless it is distinctly described therein.

He is the inventor, entitled to the protection of the patent law, who is first to complete the invention and publish it to the world, and not he who confines the knowledge of it to his closet.

THACHER, *Commissioner:*

The subject-matter of this interference is a very limited improvement upon the construction of urns for table use.

The issue is defined by the Principal Examiner in his letter to Arnold, declaring the interference to be "the base B, constructed with a seat for the inner vessel, which is provided with a faucet, as shown, in combination with the removable case A, having an open bottom, and with or without the opening and cover C."

In his letter to Wilcox notifying him of the interference, the Examiner states that the subject-matter involved "is explained by the claim." The claim of Wilcox is as follows: "The base *a* constructed with a faucet, D, and fitted to the said seat *b*, combined with the removable case E, constructed with its top closed and bottom open, so as to set over said inner vessel and rest upon said base, substantially as herein set forth.

In view of Arnold's patent of April 20, 1869, the matter in issue is limited to the specific form of the base of the urn. The Examiner, rightfully, I think, regarded the base B of Arnold to be precisely the same in construction as Wilcox's base *a*, otherwise there would have been no ground on which to base an interference between the two applications. Arnold now insists that his 1869 patent covers this form of the base, as well as all other features of the device. This also appears to have been the opinion of the Examiner of Interferences and the Board.

The case was remanded to the Principal Examiner for reconsideration, in view of the patent referred to. The Examiner adhered to the position already taken by him that Arnold's patent is not a sufficient reference, so far as the urn-stand claimed by the parties is concerned. In this opinion I think he is right. The Examiner of Interferences and the Examiners-in-Chief erred in construing the claim to be broadly for the combination of the decoctor and *a base*.

Arnold, in the patent referred to, speaking of the removable case, says: "When applied to urns the spirit-lamp" may be dispensed with, as but little "heat will be radiated." He thus clearly indicates that the ornamental jacket could be applied to any form of urn then in common use. He makes no allusion, however, to the base of an urn, and shows no form for one. This single loose expression in regard to urns cannot be construed to comprehend all forms of urns or urn-stands that might thereafter be constructed.

The urn-base which forms the important element of the subject of this controversy is of a specific form. It is not a table, or a block of wood, or a fruit-dish, or any similar well-known support; but, as shown and described by both applicants, it is a base having an inner annular flange below its rim, forming a seat for the inner vessel, and provided with a notch or recess corresponding to a similar notch in the jacket to receive the faucet of the decoctor, so that when the decoctor is placed upon the stand and the case put over it a neat close joint is formed at the junction of the stand and the case. There is no proof that such a base was known when Arnold's patent was granted. Arnold's patent of 1869 has answered the purpose of narrowing down the subject of this controversy to the special construction above described, which limited invention it does not cover.

The evidence adduced in behalf of Arnold consists alone of the testimony of himself and wife. From this it appears that Arnold conceived the subject of this dispute about the time he filed the application for his former patent, which was in April, 1869. He, at that time, made a sketch of an urn, which is introduced in evidence. It represents the form of base now claimed. Instead of incorporating the form thus represented in his application he put the sketch away somewhere in his house, where it remained undisturbed and unnoticed for five years, and where it might have continued to so remain for an indefinite period of time had he not learned that Wilcox had filed an application for a patent embracing the same device.

The evidence in behalf of Wilcox shows that he conceived this invention in January, 1874, and at once embodied it in an urn capable of use, which urn he filed as a model with his application for a patent February 11, 1874.

Priority of invention must be awarded to Wilcox in this case on the well-established ground that he is the inventor entitled to the protection of the patent laws who is first to complete the invention and publish it to the world, and not he who confines the knowledge of it to his closet.

Arnold's excuse that he thought his 1869 patent covered the present invention cannot avail him. The inventions of a patentee are to be gathered solely from the matter of his patent, and if, by his own negligence or carelessness, his whole invention is not embodied therein, he alone should suffer the evil results of such omission if any occur.

The decision of the Board is affirmed.

DECISIONS OF THE COURTS.

SUPREME COURT, DISTRICT OF COLUMBIA.

[*General term, March* 13, 1875.]

STEPHEN HULL *vs.* COMMISSIONER OF PATENTS.—*Mandamus.*

[*In the matter of Stephen Hull's petition for mandamus against the Commissioner of Patents.*]

Powers and duties of the Commissioner of Patents.

A favorable decision of an Examiner or of the Board of Examiners-in-Chief in the Patent Office, upon an application for a patent, is not conclusive upon the Commissioner of Patents, and it does not follow thereupon that he has only the ministerial duty to perform of countersiguing and sealing the patent.

According to the organization of the Patent Office, the question of patentability of an alleged invention is to be referred for examination first to one of the Primary Examiners. If his decision be unfavorable the applicant has the right of appeal to the Examiners-in-Chief; and then—in case of unfavorable decisions—to the Commissioner and to the Supreme Court District of Columbia.

The statute nowhere prescribes the duties of Examiners and their assistants. They are appointed upon nomination of the Commissioner, and their duties are such as he is authorized to prescribe under the 19th section of the patent act. (Sec. 483 Revised Statutes.)

The result of an examination is to be reported to the Commissioner, and if it should appear to him, upon inspection of the report, that the alleged invention is neither novel nor meritorious, he would be bound in duty, under section 31, not to issue the patent. (Sec. 4893 Revised Statutes.)

If to decide that a claimant is justly entitled to a patent, and that his invention is sufficiently useful and important, be the office of Examiners, then, by section 7 of the statute, it is made the duty of the Commissioner to superintend the performance of these duties by the Examiners.

Under the 23d section of the act (sec. 4885 Revised Statutes) it is not the duty of Examiners to pass and allow patents. It is the duty of the Commissioner alone, after the examination has been reported, to say whether the patent shall be allowed and passed.

The 53d section of the act contains an express recognition of power in the Commissioner to refuse patents, and an *ex parte* bill in equity is given applicants as a remedy for such refusal. This section provides for a different class of cases from those which come before the Commissioner by appeal from the Examiners under sections 47 and 48—cases in which the Commissioner may refuse patents after favorable decisions by his subordinates, by virtue of his general supervisory authority. (Secs. 4910, 4911, and 4915 Revised Statutes.)

In that the 53d section supplies a remedy for a refusal of a patent by the Commissioner in such cases, it is decisive against the remedy by mandamus; for this writ will not issue where the law furnishes any other adequate specific remedy.

[*Charles Mason*, for the relator.
Marcus B. Hopkins, for the Commissioner.]

WYLIE, *J.:*

The petitioner, having made application for a patent in the usual manner, his application was referred, in the first instance, to one of the Primary Examiners, who made an adverse decision. It was then carried by appeal to the Board of Examiners-in-Chief, by whom a favorable decision was made.

The Commissioner himself, however, was not convinced by the favorable decision, and for reasons satisfactory to himself has heretofore withheld the patent.

The first question for the court to determine in the present case is this: Whether, *in an ex parte application* for a patent, the Commissioner possesses any authority,

under the law, to withhold a patent in opposition to the report of a Primary Examiner, or the report of the Board of Examiners-in-Chief in its favor; in other words, whether, in such a case, the decision of the Primary Examiner, if favorable to the patent, is conclusive upon the Office, and if unfavorable, and the applicant has carried his case by appeal before the Board of Examiners in-Chief, and there obtained a favorable decision, this latter decision is conclusive, so that nothing is left to the Commissioner except the ministerial act of countersigning and affixing the seal of the Office to the parchment.

The petitioner, for this writ, claims that, according to the organization of the Patent Office, the question of the patentability of an alleged invention is to be referred for examination first to one of the primary or assistant examiners. If his decision be unfavorable, the applicant has the right to appeal to the Examiners in-Chief. If their decision should also be unfavorable, he has the right of appeal to the Commissioner. And should the Commissioner's decision be unfavorable, the right of still further appeal to this court.

In all this the petitioner's views of the law are correct; but he, also, claims that because his application is *ex parte*, and no one can take the appeal but himself, and nobody will ever appeal from a decision in his own favor, that the first favorable decision he obtains at any stage of the proceedings must be conclusive on the Office, since the case can go no further except by appeal. This view of the law we think is not correct.

The only act of Congress now in force on this subject is the act approved July 8, 1870, entitled "An act to revise, consolidate, and amend the statutes relating to patents and copyrights."

The first step to be taken by an applicant for a patent is, of course, to file his application.

By the 31st section of the act it is provided—

That on the filing of any such application and the payment of the duty required by law, the Commissioner shall cause an examination to be made of the alleged new invention or discovery; and if, on such examination, it shall appear that the claimant is justly entitled to a patent under the law, and that the same is sufficiently useful and important, the Commissioner shall issue a patent therefor.

By this section it is made the duty of the Commissioner to cause an examination to be made of the alleged new invention or discovery; but neither in this section nor in any other of the act is he specifically told by what particular officers he is to have the examination made. It is true that he is furnished, under the law, with a large number of officers, among whom are twenty-two principal examiners, twenty-two first assistant examiners, and twenty-two second assistant examiners, all of whom are appointed by the Secretary of the Interior upon the Commissioner's nomination.

The duties to be performed by these officers are nowhere defined in the law, but are such only as the Commissioner himself is authorized to prescribe in pursuance of the 19th section, which is in these words—

That the Commissioner, subject to the approval of the Secretary of the Interior, may, from time to time, establish rules and regulations, not inconsistent with law, for the conduct of proceedings in the Patent Office.

All these "principal examiners," "first assistant examiners," and "second assistant examiners," sixty-six in number, have no functions to perform in the Office except only such as may be assigned to them by the Commissioner.

Would it not be a very anomalous condition of things if the Commissioner, under these circumstances, were to have no authority to review and set aside the acts of any of these subordinate officers? We shall look into this question a little more fully after we have examined the law in regard to the Examiners in-Chief.

The duties of Examiners in-Chief are, in general terms, prescribed in the 10th section, which is in these words—

SEC. 10. *And be it further enacted.* That the Examiners-in-Chief shall be persons of competent legal knowledge and scientific ability, whose duty it shall be, on the written petition of the appellant, to revise and determine upon the validity of the adverse decisions of examiners upon applications for patents, and for reissues of patents, and in interference cases; and, when required by the Commissioner, they shall hear and report upon claims for extensions, and perform such other like duties as he may assign them.

Upon this section, especially, is it that the relator in the present proceeding relies in his application for a mandamus against the Commissioner. By it the Examiners in Chief are required to be persons of competent legal knowledge and scientific ability, qualifications nowhere expressly required for the Commissioner himself. These officers, also, as required by section 2, are appointed by the President, by and with the advice and consent of the Senate. One of their duties is to "revise and determine upon the validity of the adverse decisions" of the subordinate Examiners which may be brought before them by appeal.

Undoubtedly the decision of this board, when in favor of the applicant for a patent, must be conclusive, unless a superior supervisory authority is vested by law in the Commissioner. The same may be said with equal force, also, in respect to the decisions of the inferior Examiners in like circumstances; for none but adverse decisions can be appealed at any stage of the examination.

It is provided, also, by the 31st section, that—

If, on such examination, it shall appear that the claimant is justly entitled to a patent under the law, and that the same is sufficiently useful and important, the Commissioner shall issue a patent therefor.

But by the same section it is declared that it is the Commissioner who is to cause the examination to be made. The examination, when made, with its results, is then to be reported to the Commissioner, and if, "on such examination"—that is, on the face of the examination—"it shall appear," &c., the Commissioner shall issue the patent. But suppose it should "appear" to the Commissioner, on his own inspection of the report, that the alleged invention is neither novel nor meritorious, he would be bound, in duty, under this section, not to issue the patent. Certainly there is nothing in this section which excludes this superintending authority of the Commissioner.

Had Congress intended that the decision of the Examiners, when favorable to the applicant, should be final and conclusive, we would suppose so great an anomaly in executive administration would have been introduced into the law by the use of terms of the clearest import. A certified copy of the decision would have been a mandate to the Commissioner, requiring him to issue the patent by authority, it might be, of a second assistant examiner who had been appointed at his instance, and subject to removal in the like manner.

By the 7th section it is declared—

That it shall be the duty of the Commissioner, *under the direction of the Secretary of the Interior, to superintend or perform all the duties respecting the granting and issuing of patents which herein are, or may hereafter be, by law, directed to be done;* and he shall have charge of all books, records, papers, models, machines, and other things belonging to said Office.

If to decide "that the claimant is justly entitled to a patent under the law, and that the same is sufficiently useful and important," be the office of the Examiners, then by this section it is made the duty of the Commissioner to superintend the performance of these duties by the Examiners. It is impossible to escape from this conclusion except by denying that these duties are such as respect the issuing and granting of patents. If the decisions of the Examiners, when favorable to applicants, leave nothing to be done by the Commissioner but the ministerial act of writing his name at the left-hand corner of the parchments and directing the seal to be affixed, how vain are the words of the law which declare that it shall be his duty "to superintend or perform all the duties respecting the granting and issuing of patents which herein are, or hereafter may be, by law, directed to be done."

By the 23d section it is provided—

That every patent shall date as of a day not later than six months from the time at which it was passed and allowed.

By whose authority are patents to be "passed and allowed?" If they are to be passed by the Commissioner, they are also to be allowed by him. This language is not appropriate to the duties of Examiners. These officers neither pass nor allow patents. They examine claims for inventions or discoveries. It is the duty of the Commissioner alone, after the examination has been reported, to say whether the patent shall be allowed and passed.

By the 52d section it is provided as follows:

That whenever a patent on application *is refused*, for any reason whatever, *either by the Commissioner* or by the Supreme Court of the District of Columbia upon appeal from the Commissioner, the applicant may have remedy by bill in equity; and the court having cognizance thereof, on notice to adverse parties and other due proceedings had, may adjudge that such applicant is entitled, according to law, to receive a patent for his invention, as specified in his claim, or for any part thereof, as the facts in the case may appear; and such adjudication, if it be in favor of the right of the applicant, shall authorize the Commissioner to issue such patent, on the applicant filing in the Patent Office a copy of the adjudication, and otherwise complying with the requisitions of law. And in all cases where there is no opposing party a copy of the bill shall be served on the Commissioner, and all the expenses of the proceeding shall be paid by the applicant, whether the final decision is in his favor or not.

Here is an express recognition of power in the Commissioner to refuse the patent, and an *ex parte* bill in equity given to the applicant as a remedy for such refusal. On the trial the court is to investigate the merits of the applicant's claim *de novo*, and determine the right. What need to provide this mode of investigation if the Commissioner is bound by law in all cases to issue the patent where a favorable decision has been made by the Examiners? Should the decision be against the applicant, he can get no patent, although he may have previously secured favorable decisions from all the Examiners in the Patent Office. On the trial such decisions would not be received as even *prima facie* evidence in support of his claim. This section provides for a different class of cases from those which come before the Commissioner by appeal from the Examiners under the 47th and 48th sections of the act. In these cases the Commissioner is obliged by law to make his decision, and, if such decision be adverse to the applicant, the latter may appeal to this court, as provided in the 49th and 50th sections of the act.

The case of the present relator was not one of this class. It was not brought before the Commissioner by appeal from any adverse decision of the Examiners. It was not brought before him at all, except with the report made by the Examiners-in-Chief, and he exercised no authority in respect to it, save such as belongs to him in virtue of his general supervisory authority in such a case. He simply withholds the patent for reasons which he does not give, but makes no decision. It is not a case, therefore, which could be brought into this court by appeal; but it is a case for which the applicant may have the remedy given by the 52d section, and that is alone sufficient, without respect to any other question, why the application for a mandamus in this case should be denied.

In that this section recognizes the authority of the Commissioner to withhold a patent in any case, for any reason satisfactory to himself, it shows that the decisions of the Examiners are in no case obligatory as to his action. In that it supplies a remedy under which his judgment in withholding the patent may be revised, it is decisive against the remedy by mandamus applied for in the present instance, for this writ will not lie where the law furnishes the party with any other adequate specific remedy. (See *Kendall* vs. *The United States*, 12 Peters, 614.)

Mr. Justice OLIN—

I fully concur with the views expressed by Mr. Justice Wylie as to the true interpretation of this patent law. The interpretation contended for would turn the head of the Office into the tail.

It will be noticed that the law provides for the appointment of Primary Examiners upon the nomination of the Commissioner, but gives no appeal from their favorable action upon an application for a patent. Now, upon the principle contended for here by the relator, the decision of the Primary Examiner would be final, and would conclude and bind the Commissioner, whose nominee he is.

The relator's counsel has dwelt upon the fact that the law does not expressly give the Commissioner the right of appeal from the decision of the Examiners-in-Chief, and has urged this as proof that such action is final. This does not seem to me to be the proper inference. I think the right of appeal was omitted because it was unnecessary to confer it; for the Commissioner's supervisory power over the acts of the subordinates in the Office is such as to preclude any necessity of his "appealing" from the Examiners-in-Chief. He can refuse to grant the patent.

As to the remedy; nothing is clearer than that where the law has pointed out a particular remedy the writ of mandamus does not lie.

Moreover, the Commissioner does not issue the patent. It is signed by the Secretary of the Interior, and countersigned by the Commissioner. The former really controls the issuing.

I had intended to write out an opinion, but in the feeble state of my health I have not completed it. In fact I found I was going further in the statement of principles governing the case than my brethren might feel inclined to follow me.

Chief Justice CARTTER and Justice MAC ARTHUR dissented.

Mr. Justice MAC ARTHUR—

I suppose the officers in charge of the Patent Office desire to ascertain the grounds on which the mandamus was refused, so as to regulate their future actions in matters affected by the decision.

The views of the minority will not be of much importance in this respect, as the judgment of the court and not the dissenting opinions will determine the course to be followed hereafter. On a subject of so much consequence, however, I desire to state some of the reasons for the dissent which I indicated one week ago, and I am authorized by the Chief Justice to say that he agrees with me in opinion.

I will premise by observing that the Patent Office has become a conspicuous feature in our Government. This branch of business had accumulated so enormously that in 1870 Congress revised and reduced the whole system to order by the law of that year. The officers were classified, and their duties, to some extent, defined, so that the work might go on efficiently and harmoniously. In conformity with this idea the second section provides for three Examiners-in-Chief to be appointed by the President by and with the consent of the Senate, and their duties are prescribed in the tenth section, which reads as follows:

"That the Examiners-in-Chief shall be persons of competent legal knowledge and scientific ability, whose duty it shall be, on the written petition of the appellant, to revise and determine upon the validity of the adverse decisions of Examiners upon applications for patents, and for reissues of patents, and in interference cases; and, when required by the Commissioner, shall hear and report upon claims for extensions, and perform such other like duties as he may assign them."

The forty-sixth section enacts—

"That every applicant for a patent, or the reissue of a patent, any of the claims of which have been twice rejected, and every party to an interference, may appeal from the decision of the Primary Examiner, or of the Examiner in charge of interferences, in such case to the Board of Examiners-in-Chief, having once paid the fee for such appeal provided by law."

The sections following this provide for an appeal where the party is dissatisfied with the decisions of the Examiners-in-Chief to the Commissioner in person, and then for an appeal to the Supreme Court of this District from the decision of the Commissioner, if it is adverse to the applicant. Here we have a system judicial in form and substance for the express purpose of deciding upon the rights of applicants for patents, and there is nowhere throughout the entire law any power given to the Commissioner to set aside or disregard the rights of an applicant thus settled and pronounced, except in the cases which come to him by way of appeal from the adverse decisions of the Board. It appears to have been the design of Congress to furnish in the Patent Office itself a judicial method of determining when a patent ought to issue, giving to the Commissioner only an appellate power of revision, and it is simply in these cases that he is to exercise the right of refusing a patent. The Examiners-in-Chief are to be selected with reference to their fitness to perform the special duties assigned them. The law directs that they shall be persons of competent legal knowledge and scientific ability, and, therefore, specially qualified to pass upon the legal and scientific questions that are in most cases involved in deciding upon the validity of a claim for a patent. No such requirement is made in selecting the Commissioner. His position is undoubtedly one of high trust and great responsibility; but he is appointed on account of his general character and administrative capacity. The special duty of deciding upon the propriety of a patent is, therefore, confided to the Examiners designated by the law for that purpose, and no appeal is given, except upon an adverse decision. In no other case and in no other way does the law provide for a revision of their action. If their decision is favorable to the inventor there is no authority given the Commissioner to defeat his rights by suspending the proceedings, or refusing to prepare and countersign the patent. On the contrary, the thirty-first section expressly makes it his duty, if upon the examination it shall appear that the claimant is justly entitled to a patent, 'The Commissioner shall issue a patent therefor.' The law is mandatory upon him in case the applicant procures a favorable decision, and he cannot evade it without dispensing with the law itself. He has no right to take up cases except by appeal, overrule decisions, suspend proceedings, and refuse patents at his own will and pleasure. Congress never designed to confer a power so dangerous in the hands of any Commissioner, and one so inimical to the interests of inventors. They have provided how the merits of an application for a patent are to be examined and determined, and the result is called a 'decision.' The case is heard before the Examiners upon testimony and argument. The inventor is heard by himself or counsel, and a decision is then made in his favor upon the merits of his application. Is it possible that where there is no regular appeal given, and without notice, or any of the forms prescribed by the law, the Commissioner can take this case up on his own arbitrary motive and defeat or reverse the whole proceedings? We are not at liberty to infer that Congress intended an act so inconsistent with the judicial system they have ordained in the law of 1870.

Where any new fact is developed, raising new grounds of objection, or where fraud is discovered, or where any gross irregularity appears, then it is competent, no doubt, for the Commissioner, by virtue of his supervisory power, to direct a re-examination of the case. In this very case there was a re-examination by order of the Commissioner, and the Board affirmed their previous decision in favor of Hull. But when a case has been regularly presented and duly examined, and decided favorably to the applicant on its merits, it is the duty of the Commissioner to prepare the patent, and the law, as we have seen, expressly makes it mandatory upon him in all cases.

It has been suggested that the remedy of the relator is under the 52d section, which provides 'that whenever a patent is refused for any reason whatever, either by the Commissioner or by the Supreme Court of the District of Columbia upon appeal from the Commissioner, the applicant may have remedy by bill in equity,' and that, therefore, mandamus will not lie in this case, as the applicant has a remedy. But it is to be noticed that this proceeding in equity is given only in case the Commissioner refuses to issue the patent. It is clear to my mind that the refusal of the Commissioner can only occur in cases which regularly come before him on an appeal from an adverse decision of the Examiners-in-Chief. These are the only cases he can examine and decide, and it is not until his refusal to issue the patent in a case upon such an appeal that the remedy prescribed by the 52d section can be invoked. We have seen that, by the 31st section, it is the duty of the Commissioner, where an application is filed, to cause an examination to be made, and if such examination shows that the applicant is entitled to a patent the Commissioner shall issue one to him. He can refuse to issue a patent when he himself makes the examination, and this he can only do upon an appeal regularly taken from the action of the Board. It is only an adverse decision that can be reviewed by a bill in equity, while here the last regular decision was in favor of Hull. The Commissioner clearly understood that he could not absolutely refuse to issue a patent, for on the 14th of April, 1870, he simply placed a written order on file 'suspending further proceedings until his further order,' and no further order has ever been made. The proceedings are still suspended, and the further order, when made, may or may not be a refusal. The contingency, therefore, upon which the remedy in equity depends has not occurred, and cannot be urged as an objection to the mandamus.

The Commissioner has, in fact, decided nothing and examined nothing respecting the merits of Hull's application. In his return he sets forth certain circumstances in the history of the case that have no relation to the rights acquired by Hull in the favorable decision of the Board. He has simply interdicted all further proceedings until he shall make a further order. It is impossible for Hull to resort to equity before this final action shall have taken place. If the Commissioner should make an adverse decision, the statute provides for an appeal to this court; but in the present anomalous condition of the record I can see no remedy, unless it may be asserted in this form.

As to the objection that Hull is barred in this case by the delay of more than two years in prosecuting his application, it is sufficient to say that the time limited in the 32d section does not begin to run until notice shall have been given of the action taken by the Office, and no such notice of the order suspending the proceedings has been served in this case.

I have thus given my construction of the patent law of 1870 as far as the same is involved in this case, and I think the writ ought to issue in such form as will compel the Commissioner to perform the ministerial work necessary in issuing a patent.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF OHIO.

PHILIP GEIER *vs.* AUGUST GOETINGER.

[*In equity.—Before* SWING, *J.—October term*, 1874.]

The presumptions of the law are in favor of the patent and the utility of the invention.

The patentee having described a wooden bung rendered impervious by the application of a coating to its end, and having pointed out the particular material which he regards as the most suitable for the purpose, his claim for "A wooden bung rendered impervious to the passage of fluids through the pores of the wood by means of the described *or other suitable substances*" will not be held void as being too broad.

Testimony of witnesses examined in a case as to alleged prior use by parties not set up in the answer, can only be considered by the court for the purpose of showing the state of the art at the time of patentee's invention.

The same rule would apply to printed publications by which it is sought to anticipate the invention.

If it should appear that such testimony clearly established the invalidity of the patent, the court might grant the respondents leave to amend.

Letters patent to Philip Geier, of February 23, 1869, for "Improved Method of rendering Wooden Bungs Impervious to Liquids and Gases," construed and sustained.

[*Dunham & Forsker*, for complainant.
Shouter & Smith, for defendant.]

SWING, *J.*:

In construing a patent, the court should look to the patent, specifications, and drawings to ascertain what is the thing claimed and patented. (*Pitts* vs. *Whitman*, 2 Story, 621; *Duvall* vs. *Brown*, 1 Woodbury & Minot, 57; *Hogg* vs. *Emerson*, 11 Howard, 606; *Goodyear* vs. *Railroad*, 2 Wall, Jr., 363; *Bell* vs. *Daniels*, 1 Fisher, 374.)

Applying this rule, what is the thing claimed and patented? The patent recites that Philip Geier alleges that he has invented a "new and useful improved mode of rendering wooden bungs impervious to liquids and gases." In the schedule the patentee says he has invented "a new and useful improvement in wooden bungs," and says: "My invention consists in rendering wooden bungs impervious to the passage of gases, or beer or other liquor, through the pores of the wood by means of any suitable substance." The drawing shows a bung with a coat of the impervious material. Then the substance used is described, as also its manner of application. The claim is: "A wooden bung rendered impervious to the passage of fluids through the pores of the wood by means of the described or other suitable substance."

I think, from the patent, specifications, and drawings, that the invention of the patentee consisted in a wooden bung rendered impervious to the passage of gases or beer or other liquids. This is the thing he has produced. This is the end he has accomplished, and a fair interpretation and application of the language used cannot well bear any other construction.

The patentee points out the method by which his invention is produced, and the material used—to wit, by the application of impervious material to the end of the wooden bung. He also describes a particular material, which he regards as most suitable, but claims the use of any suitable substance for accomplishing the result.

The presumptions of the law are in favor of the patent and the utility of the invention; but, aside from that, the testimony establishes clearly the utility of the invention. The testimony shows that many experiments had been made, prior to complainant's invention, to produce such a thing; but they had failed to produce one adapted to the use for which they were desired.

So far as the prior use of the respondent is concerned, the testimony does not show that his experiments were more successful than many others, for it shows that the bungs which he manufactured did not answer the purpose, and the use thereof was abandoned.

It is attempted to be shown in the testimony, however, that the invention had been used by other parties than those set up in answer; and it is also attempted to be shown that the invention had been described in printed publications. If the testimony clearly established either of these propositions, we might, perhaps, grant the respondent leave to amend; but they do not

so clearly establish either point as to warrant the court to permit such an amendment at the hearing of the case. Such testimony cannot, therefore, be considered by the court, except for the purpose of showing the state of the art at the time of complainant's invention, and such knowledge would in nowise affect the construction which I have given to the patent.

If the pleadings properly raised the issue, I should not think the patent void by reason of the claim being too broad.

The respondent, having admitted the manufacture of the invention of the complainant, by the use of substances which are within complainant's patent, is, therefore, guilty of an infringement; and, as no reference is desired, and the damage shown is but fifteen cents, a decree for an injunction will be granted without costs.

DISCLAIMERS FILED.

17,798.—Improvement in Harvesters.—JOHN P. MANNY, Rockford, Ill. Patent granted July 4, 1857; reissue No. 3,580, dated August 3, 1869. Division A. Disclaimer filed April 10, 1875. Disclaims:

"The fifth and seventh clauses of the claim, in the following words, to wit:

"'5. The combination of a platform vibrating about the main axle, reel-supports vibrating with the platform, and an oscillating rake, also vibrating vertically in conformity with the movements of the platform, the combination being and operating substantially as set forth.

"'7. The combination of a rake turning on a vertical axis with a cam-guide vibrating vertically in unison with the movements of the platform about the main axle, the combination being and operating substantially as set forth.'"

26,013.—Girt-Buckles.—LUCIUS C. CHASE, Boston, Mass. Patent granted November 8, 1859; reissue No. 1,438, dated May 26, 1863. Disclaimer filed September 7, 1874. Disclaims:

"In the matter of the disclaimer filed in case of Lucius C. Chase's patent for 'Improvement in Buckles,' reissued May 26, A. D. 1863, I hereby amend the said disclaimer by adding thereto at the end thereof, after the words 'Frazer buckle,' the following: 'thereby limiting said claim to the use of the wings B B, or their equivalents, furnished with holes for the rivets or screws,' so that said claim as amended shall read 'Confining a buckle to a strap or other article by means of rivets or screws passing through wings or flanges B B, substantially as set forth, and for the purpose described.'"

159,365.—Improvement in Wrought-Iron Columns.—JOHN B. CORNELL, New York, N. Y. Patented February 2, 1875. Disclaimer filed April 8, 1875. Disclaims:

"Add to the third line of the second column, as printed in the letters patent issued, so as to read as follows, the additional portion being in brackets:

"'The cylindrical strut or cord is formed of the rolled plates *a*, of segmental form, provided with vertical strengthening-ribs *b*. The joint between the several plates *a* is formed by riveting their edges to the lateral flanges of the T-shaped bars *c*, as shown, the said lateral flanges being within the cylinder formed by the rolled plates *a*, and there being at least two strengthening-ribs, *b*, rolled with each of said plates *a*.'"]

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date April 6, 1875.]

8,237.—Toy Money-Box.—THOMAS A. BAILEY, Philadelphia, Pa. Application filed March 19, 1875. Term of patent 3½ years.

8,238.—Clip or Fastener for Suspending Cards.—GEORGE W. MCGILL, New York, N. Y.—Case A. Application filed February 26, 1875. Term of patent 14 years.

8,239.—Tread of Boot and Shoe Heels.—FRANKLIN SHAW, Braintree, Mass. Application filed March 18, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date April 6, 1875.]

2,338.—Pig-Iron.—BAY STATE IRON COMPANY, Boston, Mass. Application filed June 8, 1872.

"Port Henry."

2,339.—Plate Metal.—BAY STATE IRON COMPANY, Boston, Mass. Application filed June 8, 1872.

"Bay State."

2,340.—Baking-Powder.—GEORGE F. GANTZ, New York, N. Y. Application filed April 16, 1872.

"words 'Gantz Sea-Foam,' used in conjunction with the following emblems and devices, viz: A figure of a crown within a double circle, between the outer and inner lines of which are the words, letters, and numerals 'G. F. Gantz & Co., 176 Duane St., N. Y.' A group or stand of flags, the two outer ones bearing upon their faces a figure of a Maltese cross. Upon the extreme right and left of these flags are two banners or standards, bearing upon their faces certain words and letters. In the center of this group, and situated upon the flags, and between the banners above mentioned, is the figure of a circle or disk, bearing upon its face the following words, letters, and numerals: 'Awarded to Geo. F. Gantz & Co. by the American Institute, for the best Baking-Powder, 1870.'"

2,341.—Sewing-Machines.—GROVER & BAKER SEWING-MACHINE COMPANY, Boston, Mass. Application filed August 23, 1872.

"monogram of the initials G and B and the name of our company."

2,342.—Moth-Proof Fabric.—HALL & KENNELL, New York, N. Y. Application filed March 13, 1875.

"word 'Mothaline.'"

2,343.—Bitters.—WILLIAM H. KNOEPFEL, New York, N. Y. Application filed September 23, 1871.

"words 'J. G. B. Siegert's Angostura Bitters.'"

2,344.—Bitters.—WILLIAM H. KNOEPFEL, New York, N. Y. Application filed January 24, 1873.

"words 'Angostura Bitters.'"

2,345.—Spring-Beds.—WILLIAM LATHERS, New York, N. Y. Application filed March 13, 1875.

"words 'CENTENNIAL SPRING-BED.'"

2,346.—Soap.—CHRISTOPHER LIPPS, Baltimore, Md. Application filed March 31, 1875.

"words and letters 'Chr. Lipps, Premium Soap,' arranged as shown, above and below the figure of a sitting woman, resting with her left arm on a shield with cross in its center, and pointing to the left side with her right arm, and placed in a circular medallion, upon one side of which are inscribed the words 'Premium awarded to.' The whole is inclosed by an ornamental border."

2,347.—Soap.—MCKEONE, VAN HAAGEN & CO., Philadelphia, Pa. Application filed March 24, 1875.

"words 'CROWN JEWEL,' and the figure of a crown."

2,348.—Cloth-Faced or Paper Collars.—MEDBERRY & MANN, Ballston Spa, N. Y. Application filed March 15, 1875.

"word-symbol 'GARRETT.'"

2,349.—Tobacco.—CHARLES R. MESSINGER, Toledo, Ohio. Application filed March 13, 1875.

"word 'GAMBRINUS,' in connection with the figure of King Gambrinus sitting astride of a cask of beer, and holding up an overflowing tankard of beer."

2,350.—Cod-Liver Oil.—PETER MÖLLER, London, England. Application filed March 13, 1875.

"representation of a fish, in connection with the words 'Möller's Cod-Liver Oil,' arranged within the same."

2,351.—Cotton Sheetings and Shirtings.—MONOHANSETT MANUFACTURING COMPANY, Putnam, Conn. Application filed February 13, 1875.

"word 'PEERLESS.'"

2,352.—Rubber Goods.—NATIONAL RUBBER COMPANY, Bristol, R. I. Application filed April 1, 1872.

"word 'ANCHOR' and representation of an anchor."

2,353.—Life-Ointment.—WILLIAM OSTRANDER & SON, Watsonville, Cal. Application filed March 5, 1875.

"likeness of Dr. S. F. Collins."

2,354.—Mustard.—ASA A. PLASTRIDGE, Chicago, Ill. Application filed March 13, 1875.

"word 'ACME,' inscribed upon a flag, which is mounted on the summit of a mountain."

2,355.—Grey Cloth.—L. POMEROY'S SONS, Pittsfield, Mass. Application filed February 14, 1871.

"words 'WEST POINT CADET.'"

2,356.—Medicine.—WILLIAM RENNE & SONS, Pittsfield, Mass. Application filed April 13, 1872.

"words 'Magic Oil.'"

2,357.—Shirts.—STERN & CO., New York, N. Y. Application filed August 31, 1872.

"words 'Champion Shirts.'"

2,358.—Medical Preparation.—JAMES D. WATTLES, New York, N. Y. Application filed March 27, 1875.

"figure of a heart having a key in the center thereof, with the words 'Dr. H. W. Beach's Vital Principle' above, the word 'or' on the left, and the word 'the' on the right, and the words 'Key of Life' below."

2,359.—Suspenders and Elastic Webbing.—JOSEPH WARREN WATTLES, Canton, Mass. Application filed September 10, 1870.

"representation of the bust of an Indian chief or warrior surmounting the words 'Trade-Mark,' and having on the head a coronet of feathers, and on its neck a necklace of talons."

2,360.—Cooking-Stoves.—FULLER, WARREN & CO., Troy, N. Y. Application filed March 27, 1875.

"words and figures 'Spirit of 76.'"

2,361.—Oil.—SIMONS & BROTHER, Philadelphia, Pa. Application filed March 27, 1875.

"words 'Nova Scotia Wool-Oil,' in connection with the representation of a bale of wool."

BOUND VOLUMES OF PATENTS.

The Office is now prepared to furnish to subscribers the monthly volumes of patents at $125 00 per annum, bound in half-sheep.

In these volumes the specifications are in full, the type of the same size as the printed patents and records; the drawings are in full, but are one-half the size (linear) of those attached to the patents and bound up for record; the illustrations are four on a page, but *fac-similes* of the originals, with the headings and signatures.

The volumes are the same size as the patents and the OFFICIAL GAZETTE, and have an average of 800 pages of specifications, 260 of drawings; total of each volume about 1,060 pages. They commenced with the issue of July 2, 1872, being the successors in this form of the weekly volumes of patents published under the joint resolution of Congress, passed January 11, 1871, which discontinued the publication of the illustrated annual report of the Commissioner of Patents, and provided for the publication in lieu thereof of complete copies of the specifications and drawings of patents issued subsequently to June 30, 1869. Under this resolution the volumes were to be placed for free public inspection in the capital of each State and Territory of the United States, and in the clerk's office of certain of the federal courts. The Commissioner is also authorized by the resolution to "furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office, and for the transportation of the same, and which shall also provide proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable."

After filling the requisition as provided above, a surplus remains which the Commissioner now offers at the rate of $125.00 per annum—say, 1,060 pages per month: 9,600 pages of specifications, 3,120 pages of drawings—12,720 pages.

The OFFICIAL GAZETTE of the United States Patent Office is published weekly by the Patent Office. It is printed by authority of an act of Congress, which provides for its gratuitous distribution to libraries at the rate of eight for each congressional district.

The GAZETTE contains the decisions of the Commissioner of Patents, and such decisions of the courts in patent causes as are believed to possess general interest to inventors and patentees.

During the past year a complete synopsis of foreign patent laws, prepared by members of the British Legation in foreign countries, has been printed in the GAZETTE. Also an epitome of the proceedings of the Vienna International Patent Congress, with the action of that body to perpetuate itself. Matters of this character will receive further attention in the GAZETTE.

The claims of all patents granted are printed in the GAZETTE, bearing the same date as the issue of the patent, accompanied by a brief synopsis of the invention and a portion of the drawing.

The illustrations are photographic reproductions on a reduced scale of the drawings accompanying the original application, and preserve their fidelity, which was sometimes lost under the old plan of drawing or tracing and engraving.

Application for extension of patents, and the action of the Office in such cases, have their earliest publication in the GAZETTE. Disclaimers filed in the Office are nowhere else published.

Changes in the rules of practice of the Office are announced in the GAZETTE, which affords a much readier mode of communication with parties interested than to await a new edition of the Rules of Practice.

Finally, any matter believed to be of interest to inventors in their official intercourse with the Office, will receive in the GAZETTE the attention the subject warrants.

FINAL FEES.

The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited, and the invention therein described will become public property, as against the applicant therefor, unless he shall make a new application within two years from the date of notice of the original allowance.

APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., March 22, 1875.

On the petition of JOHN HASELTINE, of Boston, Mass., authorized by act of Congress approved February 18, 1875, praying for the extension of a patent granted to him on the 25th day of March, 1856, for an Improvement in Water-Wheels,

It is ordered that the testimony in the case be closed on the 11th day of May next; that the time for filing arguments and the Examiner's report be limited to the 21st day of May next; and that said petition be heard on the 26th day of May next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

INDEX OF INVENTIONS PATENTED APRIL 6, 1875.

	Class No.	No. of Patent.
Alarm register, fire, F. H. Field	50	161,676
Axle skein, J. A. Ellis	31	161,603
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Hurd, W. C., Door bolt	161,792
Hutchings, C., Rein holder	161,617
Iden, J. C., Safety pocket	161,793
Israel A., Washing machine	161,685
Jackman, J., Corn dropper	161,849
James, R., assignee	161,794
Jewett, T. B. Churn	161,849
Kent and Winne	161,686
King, D., Truss	161,687
Kittoe, E. F., and F. Brotherhood, Shaft for ore washers	161,618
Kline, J., Carriage axle	161,795
Knowles, W. W., Cotton press	161,796
Knudson, P., Beer cask	161,797
Korff, J. K., Combined water cooler and refrigerator	161,729
Koss, J. W., assignee	161,688
Kuhns, B., Feed wheel for grain drills	161,689
Kunzendorf, E., Fire-proof roofing composition	161,601
Latham, C. H., assignee	161,690
Lawrence, T. C., Miter box	161,798
Lawrence, T. C., Lamp attachment	161,691
Lawther, A. B., Machine for crushing oleaginous seeds	161,799
Lazear, C. G., King-bolt	161,800
Lazear, C. G., Carriage spring	161,692
Leaber, J. and C. M., Tire tightener	161,693
Levy, L., Oiler	161,801
Leydet, A., Boiler covering	161,694
Libert, P., Refrigerating table	161,802
Louis, W. W., Cotton press	6,369
Lovatt, J., Skate, (reissue)	161,619
Lumbert, J., Door hanger	161,715
Luxa and Svoboda	161,620
Manes, J., Revolving furnace	161,695
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McCall, C. H. and J. H., Sheep shearing chair	161,696
McCarter, J., Vehicle tongue support	161,806
McCheesney, W. H., Key board for musical instruments	161,623
McClelland, W., Sr., Draft equalizer	161,763
McCollum, W., assignee	161,697
McConoughey, T. E., Ore separator	161,624
McEwen, J., Sewing machine caster	161,625
McInnes, J., Liquid measure	161,807
McPherson, J. R., Stock car	161,626
Meeks, J. A., Refrigerator	161,698
Meloon, J. C., Stop cock	161,808
Merriman, B. H., Whiffletree coupling	161,627
Metz, C., Game apparatus	161,809
Meyer, W., and H. Freiburg, Boot and shoe	161,628
Miller, T. L., Shoe sewing machine	161,810
Millspaugh, J. H., Machine for reliabing tenons and cutting wedges	161,629
Moore, G. W., Machine for rowing exercise	161,699
Moore, H. A., Chair seat	161,650
Moore, H. E., assignee	161,618
Moore, J. A., assignee	161,811
Moore, S. and G. F., Mechanism for feeding heel stiffeners or counter blanks	161,812
Morse, E. L., Press for cotton bales	161,813
Mott, T. H., Calendar movement of clocks	161,700
Munger, W. T., Reversible latch	161,814
Nelson, H. G., Fly or insect trap	161,815
Newell, W. H., Injector	161,816
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Patton, C. W., Churn	161,702
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Price, E., Jr., assignee	161,730
Ramey, S., Cannon pinion for watches	161,822
Randall, C. E., assignee, (reissue)	6,365
Rawbone, W. G., Cartridge loading implement	161,636
Reed, A. J., Hay slide	161,637
Rehfuss, G., Journal for sewing machine fly wheels	161,823
Reiman, R., Riding saddle	161,824
Relph, F. H., Cattle support	161,825
Richard, J. S., Warping machine	161,638
Richards and Spear	161,831
Robinson, A. J., Chimney cowl	161,704
Robinson, C., Thill coupling	161,826
Robinson, F. D., Latch for doors, &c	161,705
Rogers, H., assignee	161,811
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Savery, T. H., Condenser ferrule	161,707
Schaffhaus, J., Mash machine for brewers	161,708
Scherer, C., assignee	161,713
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Seaman, R., assignee	161,845
Seaverns and Goodwin	161,778
Seitz, S., Fertilizer	161,827
Selden, G., Preventing boiler explosions	161,709
Shelton, S. C., Tobacco hanger	161,828
Shepard, H. W., assignee	161,845
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Sherman, J. L., Piston packing	161,710
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Sickels, F. E., Compound steam engine	161,711
Sights, C. B., Corn stalk cutter	161,830
Simmons, G. P., and J. Franz, Quilting frame	161,639
Simon, S. B., Watch case	161,712
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Spear, W. B., and J. W. Richards, Purifying galvanizer's dross	161,831
Spears, E., Tongue support	161,713
Spencer, G. H., Turn buckle	161,832
Spier, J. G., Aging liquors	161,642
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Squier, D., Tire setter	161,834
Squire, J. J., Stone dressing machine	161,835
Stanley, I. N., Process and apparatus for the manufacture of gas	161,836
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Stetson, G. H., assignee	161,605
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Svoboda, F., and F. Luxa, Cigar press	161,715
Swank, H., Stopper for ladles	161,644
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Tapscott, J. B., Railway rail joint fastening	161,839
Thomas, E., Rest for truing off emery wheels, &c	161,717
Thomas, S., Separating refuse from coal	161,840
Thomas, S. A., Mouth piece lid for gas retorts	161,716
Thorn and Buechley	161,655
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Ulman, L., Corset	161,841
Union Manufacturing Company, assignee	161,588
Van Wagenen, A., Screw threaded wire for use in manufacture of boots and shoes	161,842
Vaughan, A. J., Snap hook	161,843
Vincent, G. H., assignee	161,646
Vinton, H. S., Tire upsetting machine	161,844
Waterbury C. G., Track cleaner	161,718
Webber, C. C., Centrifugal hydro-extractor	161,719
Webster, W., Paper bag machine	161,720
Weeden and Hallas	161,763
Weeks, S., Compound switch for fire alarm telegraph	161,721
Weidig, J., assignee	161,764
Weinstock, S., Basket	161,846
Welch, A. T., assignee	161,621
Wells, J. T., Riding attachment for plows	161,645
West, J. W., Spooling machine	161,847
West, T., Car seat	161,646
Weston, C. C., Incubator	161,722
Whipple, C. F., Wagon hound and tongue	161,648
Whipple, C. F., Clothes frame	161,649
White, A. E., Box nailing machine	161,650
White, E. D., assignee	161,836
White and Bois	161,749
Whiteley, W. N., Harvester rake	161,723
Whitworth and Higgins	161,613
Wiesebrock F. W., Soda fountain	161,845
Wilson, B. J., Cotton and hay press	161,847
Wilson, J. A., Sheet metal can	161,848
Wilson Packing Company, assignee, (reissue)	6,370
Wilson, W. J., Preserving and packing cooked meats, (reissue)	6,370
Winfield, W. S., Ventilating attachment to hearths	161,724
Winne, J. J., and W. H. Kent, Vegetable slicer	161,849
Woerd, C. V., Stem winding watch	161,725
Woodbury, G. E., Planing machine	161,726
Woods, E. P., assignee	161,601
Yale, C. O., Combination lock	161,727
Yeagly, J., Car coupling	161,850
Yockel, C., assignee	161,764
Zeigler, Culver, and Broadbent	161,744
Zwietusch, O., Carbonic acid gas generator	161,728

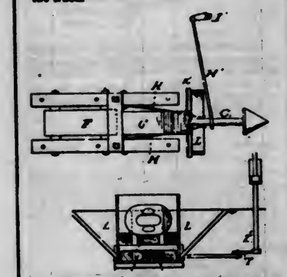
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED APRIL 6, 1875

161,586. CAR-COUPLINGS. Lewis J. Baker, Minneapolis, Minn. [Filed Aug. 11, 1874.]

Brief.—When the cars come together the arrow head passes between the jaws on the approaching draw-head, which catch behind its head. The cars are uncoupled by moving the arrow-head to one side or other, and consequently will uncouple when one car leaves the track.

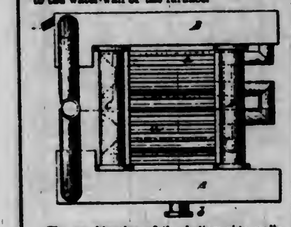


1. The coupling-bolt C, having the conical or arrow head C', and connected to the spring-rod D by the eyes *a a'*, so as to produce a flexible joint, in combination with the side springs H H, and the top spring G, connected to the movable cross-head K, all substantially as and for the purpose described.

2. The coupling-bolt C, side springs H, and the top spring G, connected to the cross-head K, bearing against the coupling-bolt, in combination with the link H', and the vertical shaft I', having the lateral arm I, at its lower end, and connected to the link H', substantially as and for the purpose described.

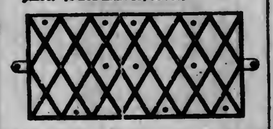
161,587. FEED-WATER HEATERS. Bert B. Bennett, St. Johnsbury, Vt. [Filed Mar. 3, 1875.]

Brief.—Water is caused to circulate through the grate-bars, from whence it is conveyed, by a tortuous pipe located beneath the grate-bars, to the water-wall of the furnace.



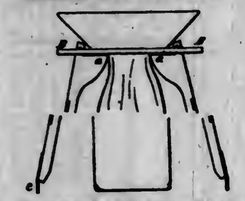
The combination of the hollow side walls A B, connecting-pipe C, closed at one end, connecting-pipe D, closed at both ends, and the hollow grate-bars *a a*, connecting the two pipes C D, substantially as herein set forth.

161,588. CLOTH-PRESSING MACHINES. Geo. G. Bishop, Norwalk, Conn., assignor to the Union Manufacturing Company, same place. [Filed Mar. 15, 1875.]



The combination of the plates with a resilient gum-elastic frieze having its surface divided into numerous small angular cavities by means of elastic bisecting walls or partitions, substantially as described, and for the purposes set forth.

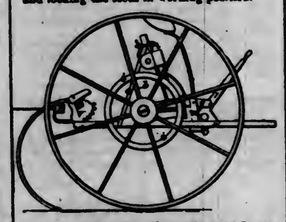
161,589. BAR-HOLDERS. Jos. A. Budkeg, Chicago, Ill. [Filed Feb. 18, 1875.]



The combination of the horizontal base or open table B and the legs C C, pivoted in slots in the said table and provided with the projections *a a*, arranged to press against the lower side of the table, and with the points or spurs *c c* arranged as shown, substantially as and for the purposes specified.

161,590. HORSE HAY-RAKES. A. Bugbee, Hilkhart, Ind., assignor to Saml. A. Harris, Minneapolis, Minn. [Filed Jan. 19, 1875.]

Brief.—Devices for operating the rake-head and locking the teeth in working position.



1. The combination of the rake-head 2, cam 9, sliding lever 8, arm 10, rod 6, and lever 7, substantially as specified.

2. The lever 7, provided with the arm 8 and notch 9, in combination with the sliding lever 8 and pin 10, substantially as shown and described.

161,591. CALCIMINE. Melvin S. Church, Grand Rapids, assignor to himself and G. Bartman, Hastmanville, Mich. [Filed May 22, 1874.]

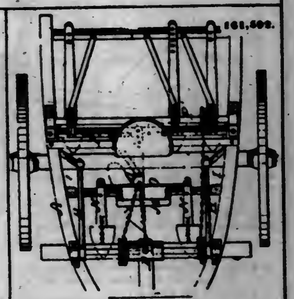
A calcimining composed adapted to be used with brushes, composed of pulverized calcined gypsum, dissolved glue, and cold water, substantially as described

161,592. COMBINED GANG-PLOWS AND CULTIVATORS. William Clements, Fickville, Tex. [Filed Dec. 23, 1874.]

Brief.—Pivoted standards upon the arched cross-beam of a cultivator, whereby the shovels may be vibrated laterally or lifted from the ground.

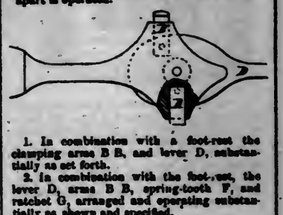
The cross-bar M, adapted to straddle the row, and rising up to form a foot-rest, and journaled in the frame I L, in combination with the cultivator-standards N, pivoted at or near their centers to the bar M, and near their upper ends to a cross-bar, O, whereby they may be lifted or laterally adjusted, substantially as and for the purposes set forth.

161,593.



161,594. BOOT-CLAMPS FOR BOOT-BLACKS. Orvis Collier, Sacramento, Cal. [Filed Jan. 6, 1875.]

Brief.—The sole of the boot is clamped upon a standard to hold it while being blacked. A ratchet and pawl holds the jaws automatically as the lever that throws them together or apart is operated.

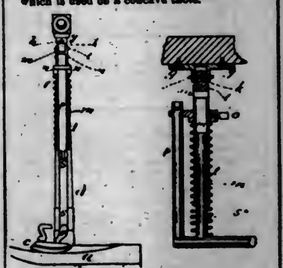


1. In combination with a foot-rest the clamping arms B B, and lever D, substantially as set forth.

2. In combination with the foot-rest, the lever D, arms B B, spring-tooth F, and ratchet G, arranged and operating substantially as shown and specified.

161,595. IRONING APPARATUS. James G. Crawford, Boston, Mass. [Filed Aug. 3, 1874.]

Brief.—To a pivoted arm is jointed a tube, in which slides a rod surrounded by a spiral spring. The rod is curved to form a handle, and is attached to a convex smoothing-iron, which is used on a concave table.



1. The combination of the knees *g*, block *k*, pin *l*, and tube *m* with the spring *t* and rods *p s s' s''*, substantially as and for the purpose herein specified.

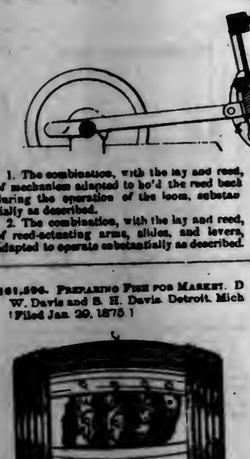
2. In an ironing apparatus, the combination, with the smoothing-iron, arranged as described, of the concave table *e*, as and for the purpose set forth.

3. The combination of the frame *d e f*, table *e*, and iron *s*, rods *s s' s'' p*, tube *m*, connecting-piece *n*, nut *o*, pin *o*, and spring *t*, substantially as and for the purposes herein before set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

161,595. LOOMS. George Crompton, Worcester, Mass. [Filed Feb. 3, 1875.]

Brief.—To prevent the reed from beating up when the loom is reversed, it is carried back by means of an arm pivoted to the lay-sword, and operated by a treadle.



1. The combination, with the lay and reed, of mechanism adapted to hold the reed back during the operation of the loom, substantially as described.

2. The combination, with the lay and reed, of reed-actuating arms, slides, and levers, adapted to operate substantially as described.

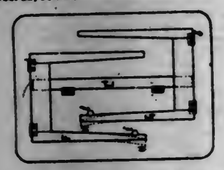
161,596. PREPARING FISH FOR MARKET. D W. Davis and S. H. Davis, Detroit, Mich. [Filed Jan. 29, 1875.]



1. The mode of preparing fish for transportation and market by freezing them into cakes suitable to be packed in casks or other packages, substantially as described.

2. As an improved method of preparing fish for market, the series of cakes D of frozen fish, arranged as to size and height to completely fill the barrel or package C, substantially as described.

161,597. FOLDING TABLES. Wm. Decker, Manchester, Mass., assignor of one-half his right to L. C. Trott, same place. [Filed Dec. 15, 1874.]



The top A, provided with the headed pins *c c*, in combination with one leg, B B, of each pair, capable of being sprung out over said pins, to hold them in position when folded, as set forth.

161,598. FERRULES FOR TOOL-HANDLES. Rice C. Denio, Auburn, N. Y. [Filed Feb. 8, 1875.]

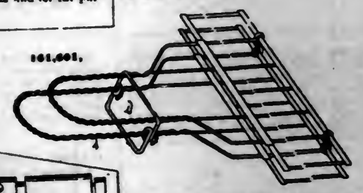
Brief.—The head of a tool is supported by two or more annular curved and slotted ferrules, each of which extends beyond the end of the tool-handle, forming a double bearing upon each side of the head.



Two or more ferrules, D G, each being slotted to receive the head of the tool, and each extending beyond the end of the handle, and bent or curved over to support the head of the tool, in combination with a handle, A, and tool-head B, constructed as and for the purpose set forth.

161,601. BROILERS. Geo. D. Dudley, Lowell, Mass., assignor to E. P. Woods, Danl. Sherwood, and C. H. Latham, same place. [Filed Feb. 19, 1875.]

Brief.—The double-looped slide is attached to the longer handle.



The double or two-looped slide D, attached by eyes *g* to the broiler-handle A, and presenting one of its loops in position to slide over the other broiler-handle, whichever way the broiler may be folded together, substantially as described.

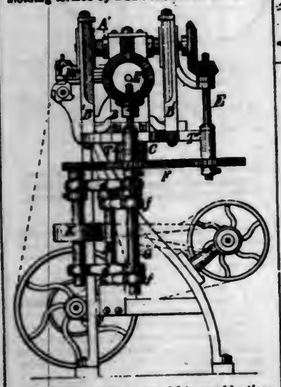
161,599. STEAM-VALVES. E. H. Dewey and C. H. Palmer, New York, assignors to C. H. Dewey, Brooklyn, N. Y. [Filed Dec. 24, 1874.]

1. Cylinders *a b*, in combination with conduits *f g*, ports *i*, *j*, and *e*, when arranged to operate by oscillation of the valve, substantially as herein set forth.

2. Grooves *c c* and canal *d*, when said grooves encircle the entire circumference of *c*, as and for the purposes described.

161,600. MACHINES FOR MAKING HOOP MOLDING. Onesiphore P. Dorey, Worcester, Mass. [Filed Feb. 5, 1875.]

Brief.—The material is carried forward and rotated by rollers placed diagonally, and the molding formed by a suitable rotary cutter.

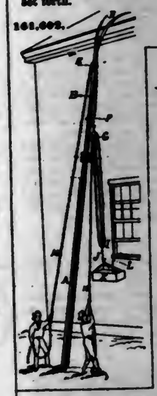


1. The supporting-arms *f f*, in combination with the pivoted feed mechanism, as above set forth.

2. The cross-rolls A and A', their pivoted stands B and B', the shafts J, E, and C, the gears F and H, and the arms *f f* and *d d*, in combination, as and for the purposes above set forth and described.

161,602. FIRE-ESCAPES. M. F. Eldredge, Lynn, Mass. [Filed Mar. 1, 1875.]

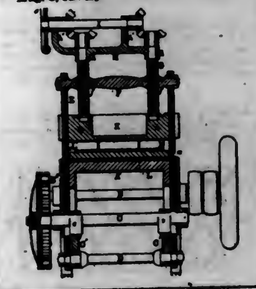
The sectional mast A B, bearing at the end the duplex claws D and sheave E, cord M, and ring F, in combination with the tackle G H I J and box K, all constructed and operated as set forth.



161,603. AXLE-SKEINS. J. Alder Ellis, Chicago, Ill. [Filed Jan. 5, 1875.]

The combination of the band A, straps C C, having the ribs or flanges D D, and the shoulders H H, as and for the purposes specified.

161,604. ENVELOPE-CUTTING MACHINES. John F. Ellis, Toronto, Canada. [Filed Aug. 5, 1874.]



In an envelope-machine, the reciprocating cross-head K, adjusting screws G, cross bar F, frame H *h'*, shaft I, bevel gears J' J', and hand-wheel J, in combination with the vertically-reciprocating standards E, substantially as specified.

161,605. CAR-REPLACERS. Saml. L. Oaten, Boston, Mass., assignor of one-half his right to G. H. Stetson, same place. [Filed Nov. 10, 1874.]

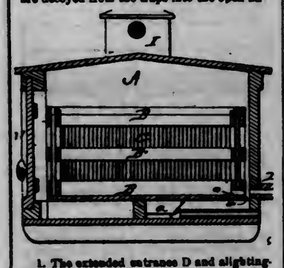
Brief.—A car replacer and displacer provided with a laterally-extending tread-surface, which, in case of the wheel-flange failing to roll inside of the guiding-flange, will take up the wheel, and permit of its being pulled over into the guide-flange.



In a car-replacer, the deflecting-rail D, so applied as to form a guiding-projection, *a*, and a bearing-surface, *d*, as described.

161,606. BEE-HIVES. Edson Gurry, Garden City, Minn. [Filed Feb. 26, 1875.]

Brief.—A sectional hive so constructed that the tops of the sections form feeding-boards and the bottoms form tops to the moth-traps. These traps are so constructed that the moths are decoyed from the traps into the open air.



1. The extended entrance D and alighting-board E, forming passage *a'*, in combination with the sections having passages *a''*, and the open space forming passage *a'''*, leading to chamber *c*, and the tube *b* on the bottom of chamber leading to the outside of the hive, all as and for the purpose set forth.

2. The sections, substantially as described, having passages *d* and *d'*, in combination with the reversible board G and cone A, as and for the purpose set forth.

3. The open-top frames B, provided with blocks *f'*, in combination with the board H, with cut corners and chambers *e*, and perforations *e'*, and openings *e'*, forming a bee-feeder and a support for comb-frames, all as and for the purpose set forth.

161,607. SHAPING-BLOCKS FOR FUR SACKS. Jacob Glass, Buffalo, N. Y. [Filed Jan. 18, 1875.]



The forming-block B, provided with the three projections or ribs B^1, B^2, and B^3, substantially as set forth and described.

161,608. MILK-COOLERS AND CHEESE-VATS. Charles W. Granais, Gowanda, N. Y. [Filed Dec. 23, 1874.]

Brief.—The cool surrounding the interior of the pan is attached thereto, one-half of the pipe being formed by the sides of the pan. The second coil is suspended in the pan.



The horns described pan for use in cooling milk or making cheese, composed of the vessel A, provided with a fixed central injection-pipe, B, and connected series of fixed pipes *b*, *c*, *d*, *d'*, *e*, *f*, *g*, *h*, *i*, *j*, *h'*, *p p'*, *q q'*, *r r'*, *s s'*, and *t*, and the ejection-pipe *u*, constructed and arranged substantially as shown and specified.

161,609. BENCH-PLANES. Thos. Hagarty, New York, N. Y., assignor to J. A. Pickersgill, same place. [Filed Dec. 2, 1874.]

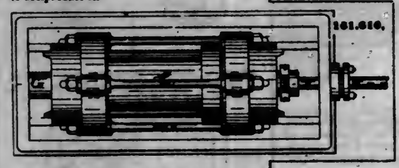
Brief.—The plane-iron and cap are of semi-circular form, fastened together by a clamp-screw, and secured to a bed-block of corresponding shape by means of a slotted clamp-plate and screw. The bit is adjusted as desired by a flange-nut which traverses a male screw, the flange of said nut operating in a transverse slot in the rear of the cap.



The combination of the plane-stock A with the bed-block B, semicircular bit C, cap D, and adjusting-nut E, provided with screw *b*, all constructed and operating substantially as herein shown and described.

161,610. STEAM-VALVES. James Hare, Brooklyn, N. Y. [Filed Oct. 16, 1874.]

Brief.—As the small piston-valve is reciprocated it alternately admits and exhausts steam from the ends of the main valve-piston to reciprocate it.



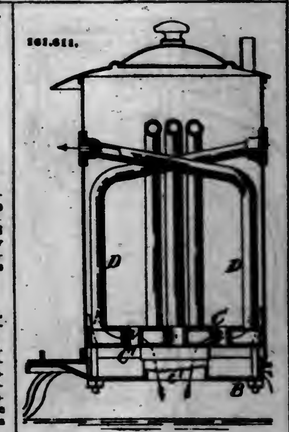
The combination, substantially as herein-before set forth, of a main sliding valve, arranged to reciprocate in steam-chest on a valve-seat, over suitable ports, its ends being fitted to cylinders sustained by said valve, but prevented from moving endwise by stops on the chest, as described, with a central piston-valve, recessed, so as to act in connection with suitable ports and passages in said main valve, to admit and release steam or other fluid to and from said cylinders, for giving motion to said main sliding valve, for the purpose set forth.

161,611. HEATING-STOVES. William W. Hatch and C. W. Fuller, Lowell, Mich. [Filed Oct. 30, 1874.]

Brief.—The air-passages which lead to the fuel-chamber are distinct from those which discharge into the apartment.

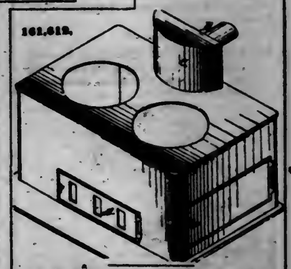
1. The combination of the base B, air-conduits b^1 *c'*, and hollow grate, composed of the plates C C^1, the perforations of which are connected by short pipes *c*, substantially as and for the purpose specified.

2. The combination of the hollow grate C *c*, air-conduits b^1 *c'*, and dome D, ranging along the sides of the combustion-chamber, and having horizontal portions extending across the upper portion thereof, substantially as and for the purpose specified.



161,612. GARDING-MACHINES. Henry Higgins and Thos. S. Whitworth, Manchester, Great Britain. [Filed Sept. 3, 1874.]

Brief.—The bands are toothed, and gear-wheels on opposite ends of a hollow shaft carried by the traversing stripper-frame engage the teeth on the bands, and square the motion of the frame. The ends of the flats are made in separate and adjustable pieces, so that they may be aligned truly over the pockets of the filters.

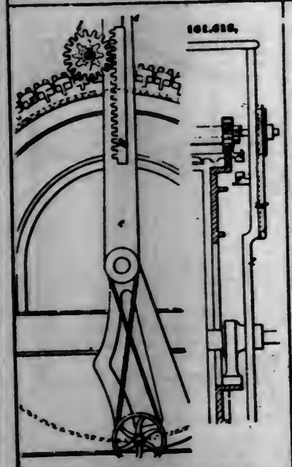


161,613. SUMMER-STOVES. Elizabeth Hawkins, Troy, N. Y. [Filed Nov. 28, 1874.]

Brief.—The stove has a grate, and may or may not be placed upon a larger stove.

The combination, in a stove in which the body is constructed with an imperforate bottom and provided with a draft-opening, of the hot-air drum C and pipe D, the said drum rising from the body of the stove and constructed with a flat top adapted to form a heating-shelf, substantially as described.

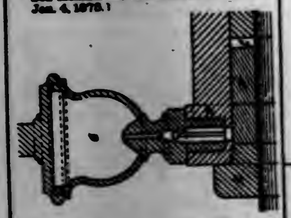
161,616.



1. The combination, with the vibrating levers *c*, of the bands *b*, having racks *d*, and the shafts *f h*, having pinions *i F* and *l P*, as and for the purpose described.

2. A fan having the parts *h* made in separate pieces, and adjustable, as and for the purpose specified.

161,617. LUBRICATORS FOR PISTON-RODS. Sol. Hollinger, Harrisburg, Pa. [Filed Jan. 4, 1875.]



The gland A, having a bushing, D, and nut E, forming the annular chamber C around the piston-rod, for the reception and retention of the pad F, the oil being supplied from the oil-cup G, or other reservoir, substantially as described.

161,618. REVOLVING FIRE-ARMS. Freeman W. Hood, Norwich, Conn., assignor to the Hood Fire-Arms Company, same place. [Filed Mar. 15, 1875.]

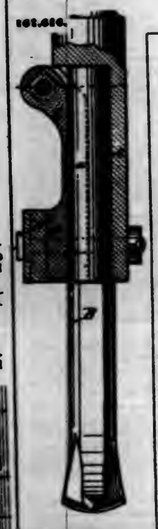


The compound elastic latch E, substantially as described, composed of the main spring *g*, its stud *h*, and the auxiliary elastic-armed hook *i*, arranged in and applied to the lock and magazine-frame, and to the hammer, as set forth, in combination with the cam *a*, constructed and projected from the hammer essentially in manner as specified.

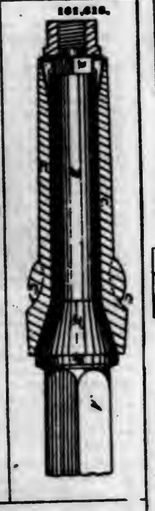
161,619. DRILL-CHUCKS. N. W. Horton, New York, N. Y. [Filed Mar 23, 1875.]

The combination, in a drill chuck, of the socket A, the bisgel jaw C, slightly curved longitudinally on its its inner face, the clamp bar D, and bolts *e e'*, as and for the purpose specified.

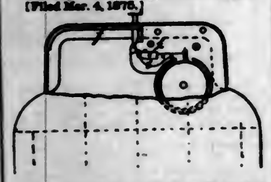
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161,617. SAFETY-POCKETS. Jas. C. Idle, Buckingham Township, Bucks County, Pa. [Filed Mar. 4, 1875.]



A bag or pocket made of a textile or other fabric crossed at intervals with wires or metallic plates and attached to a spring-clasp, in combination with a bell and hammer, or other equivalent alarm devices, arranged within guards inside of said pocket, and actuated to sound an alarm by the depression of the thumb-piece or clasp-fastening when the pocket is opened, substantially as set forth.

161,619. CARRIAGE-AXLES. Jacob Kline, Camp Hill, assignor of three-fourths his right to J. A. Moore and W Bear, same place, and M. M. Grove, Harrisburg, Pa. [Filed Mar. 5, 1875.]

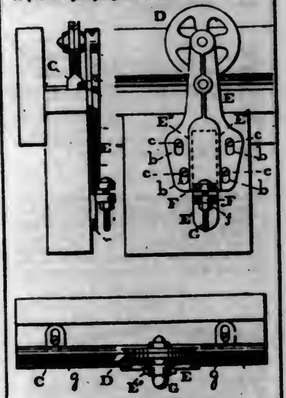
1. The axle A B, provided with the square part D and the screw E, as a solid extension of arm B, as and for the purposes set forth.

2. The combination of the axle A B D E, the follower G, nut F, and skein C, all constructed and combined to operate compensatingly, as set forth.

3. The combination of the axle A B D F, follower G, nut F, skein C, and washer H, as and for the purpose shown and described.

161,619. DOOR HANGERS. Jos. Lambert, Wiltraham, Mass. [Filed Feb. 26, 1875.]

Brief.—A door-hanger, differing but little in appearance from the ordinary construction, is given double adjustability, to prevent sagging and the like—vertical by means of sliding plates, tongue, slots, and an adjusting-screw, and horizontal by transverse slots in the rail, and pins or screws working therein. There is also on the bracket a projection or lug, which engages with the shouldered rails, to prevent jumping the track.



1. The combination, with the sheave D, of the sliding-plate E', formed with the longitudinal depression *d*, and the vertically-adjusting plate E with tongue *e*, and with the screw-bolt G, substantially as and for the purpose set forth.

2. The combination, with the sheave D, of the supporting-rail C, made transversely adjustable by means of slots and the screws *g*, substantially as and for the purpose set forth.

3. The rail with shoulder J, and bracket with projection or lug K, combined and operating substantially as and for the purpose set forth.

161,620. REVOLVING FURNACES. James Mason, Pittsburg, Pa. [Filed Mar. 6, 1875.]

Brief.—The ore is placed in the globe, the blast enters through the tuyere, and, the globe revolving, the mass is stirred by the intersecting ribs A', and roasted and smelted by the blast.

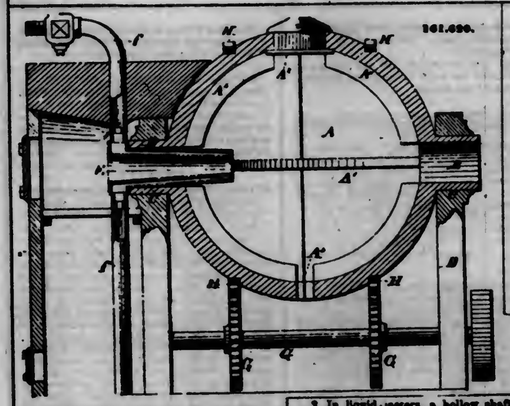
1. The globe or sphere A, constructed of sheet metal boiler-plates, and lined in the interior with fire-brick A', provided on both sides with hollow axles B B, through one or both of which project water tuyeres E, a man-hole, A', discharge-vent A', and shelves A', secured in the interior of the globe, in circles at right angles to each other entirely around its central portion, as and for the purposes described.

2. In combination with the globe A and furnaces F, constructed as described, the tuyeres, E, supplied with a constant stream of water through pipes *f f'*, as and for the purpose described.

3. In combination with sphere or globe A, the shelves A', secured entirely around the interior of the globe, in circles at right angles to each other at its central or large portion, as and for the purposes described.

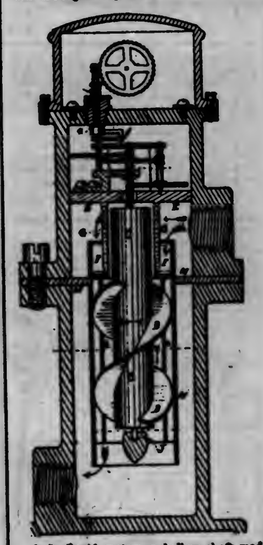
4. The combination, in a furnace for general purposes, of the globe A A' A', revolving on hollow axles B B, one or more furnaces, F, placed on the sides and communicating through the hollow axles, water tuyeres E, and revolving mechanism G *G' g* H, all constructed and adapted to operate substantially as and for the purposes described.

161,620.



161,621. LIQUID-METERS. Hiram S. Maxim, Brooklyn, N. Y., assignor of one-half his right to A. T. Welch, same place. [Filed Feb. 10, 1875.]

Brief.—The screw-shaft is made of light metal, hollow, and is supplied with chemicals (in a dry state) for producing carbonic-acid gas, to reduce the specific gravity of the screw to less than that of water, and, by the revolution of the gas upon the first sweeping of moisture through the metal, to prevent the filling of the shaft, so keeping it light. The case in which the screw revolves is square, with vertical radial splines in the angles of it, to prevent the water taking the course of the pitch of the screw. The shaft has a very small pivot at the top, and a larger one at the bottom, and by its own lightness runs upon the former when but a small quantity of water is passing, and changes to the latter when the quantity is greater. A shaft working in a ground tapering joint connects the interior with the registering-heads.



1. In liquid-meters, a hollow shaft made lighter than the surrounding liquid, when protected from filling with water, in the manner hereinbefore set forth.

2. In liquid-meters, a hollow shaft made lighter than the surrounding liquid, and provided with two pivots, one on which it runs when a large volume of liquid is passing, and another and smaller one, onto which it changes when only a small volume is passing, in combination with the acid and carbonate of soda, when operating in the manner and for the purpose herein before specified and set forth.

3. The combination of the plate B B, cylinder G G, and radial arms F F, as set forth, and for the purpose specified.

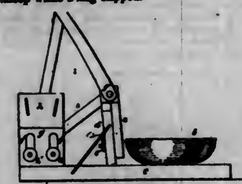
4. The square trunk M, having the internal vertical webs *h h h h*, for the purpose herein described and set forth.

5. The combination of the air-tight ground joint *e*, crank *f*, and spiral spring, when used for the purpose specified, and in the manner set forth.

6. The combination of the hollow shaft C, screw-blades *D D*, square trunk M, vertical webs *h h h h*, plate B B, cylinder G G, and arm F F, all operating in the manner herein described, and for the purpose set forth.

161,622. SHEEP-SHEARING CHAIRS. Chas. E. McCall and J. E. McCall, Morristown, Ohio. [Filed Feb. 5, 1875.]

Brief.—A chair having a stationary seat, about which revolves a platform carrying rack with adjusting apparatus, for supporting the sheep while being clipped.

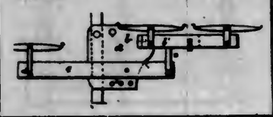


1. The revolving platform *c*, in combination with the stationary seat *b*, substantially as and for the purpose specified.

2. The combination of the adjustable frame *c*, with the rack *f*, revolving platform *c*, and seat *b*, substantially as and for the purpose set forth.

3. The combination of the adjustable frame *h* and brace *i*, with the revolving platform *c*, frame *c*, and rack *f*, substantially as and for the purpose set forth.

161,623. DRAFT-EQUALIZERS. Wm. McClelland, Sr., Fowler, Ill. [Filed Nov. 18, 1874.]

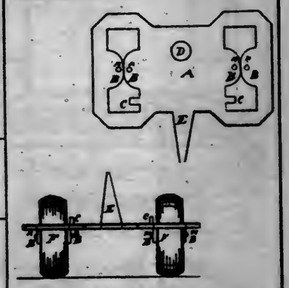


1. The adjustable supporting-plate *a*, substantially as shown.

2. The combination of the long lever *c*, short lever *l*, connecting straps *n*, supporting-plate *a*, and the means of attachment for the horses, substantially as described.

161,624. SEWING-MACHINE CASTER. Jas. McEwen, Chicago, Ill. [Filed Jan. 7, 1875.]

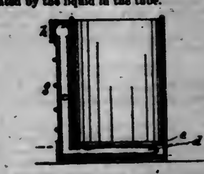
Brief.—Novelty is confined to peculiarities in the blank from which the caster-plate is struck up or formed.



A caster for sewing-machines, consisting of the plate A, which is provided with two upwardly-projecting legs, C C, lug E, ears B, and screw-hole D, formed from a single sheet of metal, and combined with rollers F F, and secured to the foot of a sewing-machine table, as and for the purpose specified.

161,625. LIQUID-MEASURES. John McInnes, Jersey City Heights, N. J. [Filed Jan. 26, 1875.]

Brief.—A flexible bulb inside a measure is connected with a glass tube having a bulb at top, on outside of measure. The lower bulb is filled with a liquid, so that when liquid is put in the measure, its quantity will be indicated by the liquid in the tube.



1. As a means of indicating the amount of liquids in a vessel by the pressure thereof the bulbs *d* and *f*, with connecting-tube *e*, combined to operate substantially as described and set forth.

2. In a measuring-vessel, the combination composed of the following elements, viz., perforated plate or false bottom *c*, bulb *d*, tube *e*, bulb *f*, protecting-plate *h*, with gage *g*, substantially as and for the purpose described and set forth.

161,626. REFRIGERATORS. John A. Meeks, Berea, Ohio. [Filed Mar. 6, 1875.]

Brief.—In an outer case having packed walls and bottom, with an inner air-space around the packed walls, communicating with the outer air, and with the ice-chamber, is loosely set a cooling-chamber, carrying around it near its foot a rack for the ice, which is placed between this chamber and the outer case. Narrow racks for food slide horizontally from side to side of the cooling-chamber. The removable drip-pan slides on and off ways beneath the outer case.

The refrigerator or preserver consisting of a box or case, A, provided with the charcoal-space C, the air-space D, with its openings *d*, the ice-chamber E, water-drip G, with its openings *g*, and interior portable box F, substantially as and for the purpose described.

161,627. GAME APPARATUS. Christn. Metz, Pawtucket, R. I. [Filed Mar. 3, 1875.]

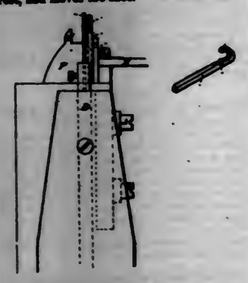
Brief.—Improved apparatus for a spinning-top to attack, knocking over movable figures in its course.



The game apparatus herein described, consisting, essentially, of the box *a*, fort, outworks, soldiers, and other figures, numbered and stationed, swing-doors *c*, cannon *i*, spring *n*, flag-staff and flags, and the top *p*, all constructed and arranged to operate substantially as set forth.

161,628. SHOE-SEWING MACHINES. Thos. L. Miller, Philadelphia, Pa. [Filed May 20, 1874.]

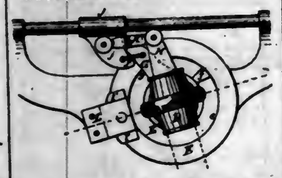
Brief.—The shoe is supported on the double-pronged stationery rest, the prongs entering the channel. The heel passes about the edge of the sole, and between it and the last, and the beveled edge of the sole rests against the guide near the curved portion of the heel. The sole is held firmly by the rest and heel. The needle enters the sole, and moves horizontally between the prongs, and in front of the rest, and moves the shoe.



The heel-rest I, provided with guides *b d*, when combined and arranged with the stationery rests C and C', as and for the purpose set forth.

161,629. MACHINES FOR ROWING EXERCISE. George W. Moore, Newark, N. J. [Filed Feb. 19, 1875.]

Brief.—For use on dry land, the action and resistance of the machine imitating the same in a boat on the water.



1. The horizontal slide J, link K, and arm H, in combination with the rowlock C, as and for the purposes described.

2. The rowlock C, lever-arm H, link K, and horizontal reciprocating slide J, with arm *j*, in combination with the arm G and spring *j'*, constructed substantially as described, whereby a varying resistance is produced in the stroke of the oar.

3. The rowlock C, lever-arm H, link K, slide J, having arm *j*, arm G, and pivoted pawl or clutch-arm *j*, in combination with the revolving wheel E, substantially as and for the purpose described.

4. The bracket L, temper-screw *m*, spring-plate *n*, and ribbon *l* and F, in combination with the revolving wheel E, substantially as and for the purposes described.

161,630. VENTILATING-FAUCETS. William C. North, Cleveland, Ohio. [Filed Mar. 4, 1875.]

Brief.—The neck of the faucet is provided with a core having passage-ways through it, which are controlled by a valve. Air from the pump-cylinder is forced, through the pipe on the side of the faucet and the hose, into the cask. The key is provided with a vent to prevent any liquor remaining in it.

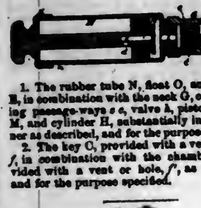


1. The rubber tube N, float O, and air-tube B, in combination with the neck G, core *b*, having passage-ways *c c*, valve *h*, piston I, valve M, and cylinder H, substantially in the manner as described, and for the purpose set forth.

2. The key C, provided with a vent or hole, *f*, in combination with the chamber B, provided with a vent or hole, *f'*, as described, and for the purpose specified.

161,631. STEAM ROCK-DRILLS. George E. Nutting and Joseph C. Githens, New York, N. Y. [Filed Mar. 20 1874.]

The combination, in the interior of the steam-chest and cylinder of a steam-engine, of the three-armed rocking lever J, the valve I, and the double-headed piston K, having an annular recess between the heads and the inclined surfaces *h h'*, constructed and operating as and for the purpose specified.



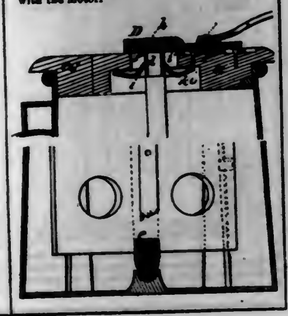
161,632. EMBROIDERING ATTACHMENTS FOR SEWING-MACHINES. Charles H. Palmer, New York, N. Y. [Filed Nov. 18, 1874.]

Brief.—A tubular embroidery-thread carrier is attached to the lower end of a vertical rock-shaft, which is journaled in arms projecting from the side of a lever that is pivoted at its upper end to an arm projecting from the presser foot. This lever is provided on its edge with an inclined projection, against which a screw in the needle-bar acts, imparting to such lever a swinging motion, causing thereby the carrier to be swung back and forth past the needle, and on its backward movement it strikes a shoulder on the presser-foot, and is partially revolved with the rock-shaft against the action of a spring thereon, which movement, in connection with the swinging cam, forms an embroidery-loop upon the surface of the cloth around the path of the needle



161,633. CHUCKS. Chas. W. Patton, Louisville, Ky. [Filed Aug. 10, 1874.]

Brief.—A concave-convex disk countersunk in the under side of the cover deflects the splash, and catches impurities from above, where the perpendicular revolving shaft goes with the motor.



161,634. CARTRIDGE-LOADING IMPLEMENTS. W. G. Rawbone, Toronto, Canada. [Filed Feb. 12, 1875.]



1. The pressure-lever G, with cam G^2, link F, and pin G^1, in combination with the arm A^1, with crosser-bit C, and arm A^2, with head B, arranged and operating substantially as described, and for the purpose specified.

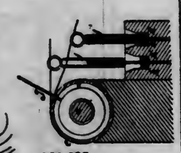
2. The lever-arm A^2, adjusting-pin D, and spring E, or its equivalent, in combination with the upper arm A^1, arranged and operating substantially as described, and for the purpose specified.

161,635. VAPOR-BURNERS. Chas. H. Prentiss, Cleveland, Ohio, assignor of one-half his right to John P. Humphrey, same place. [Filed Mar. 2, 1875.]

Brief.—The flange for spreading the flame is provided with an opening for supplying air.



The combination of the tip *a*, the flaring flange *b*, having the recess *c* and the opening *e*, and the plate *d*, as shown and described.



161,636. WARPING-MACHINES. J. S. Richard, Paris, France. [Filed Dec. 2, 1874.]

Brief.—The cleats of the expanding and contracting reed are inserted in holes drilled through the coils of a spiral spring, which is inclosed in a slotted case. Each thread carries a forked wire or rider, which, when the thread breaks, drops into a double mercury-trough connected with an electro-magnet, thereby completing the electric circuit, and operating the armature, which is arranged to control the stopping mechanism.

1. The spiral spring *e*, made with perforated coils and combined with the projecting dents *g*, said dents being inserted in the holes drilled into the coils and arranged to form a reed or comb, substantially as set forth.

2. In combination with the right and left screw *c* and nuts *b b*, the spiral spring *e*, dents *g*, and slotted box *e*, all arranged substantially as described, and for the purpose specified.

3. In combination with the electric stopping mechanism of a warping-machine, the riders *j*, constructed substantially as shown, and the mercury-troughs adapted to receive and support the riders, all operating together to stop the machine when a thread breaks, as herein before described and set forth.

4. In combination with the electric stopping mechanism of a warping-machine, the double mercury-trough *k k'*, provided with a partition adapted to guide and support the riders *j*, substantially as hereinbefore described and set forth.

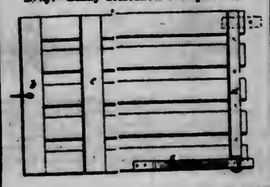
5. In combination with the electric stopping mechanism of a warping-machine and the riders *j*, the double mercury-troughs *k k'* constructed substantially as described, and provided with a hinged cover, as set forth.

6. In combination with the electric stopping mechanism of a warping-machine and the double mercury-trough, slotted as shown, a two-pronged rider provided with an eye arranged to receive the thread below the trough, substantially as hereinbefore described and set forth.

7. In combination with the armature *x* of the electric stopping mechanism of a warping-machine, the sliding bar *a'*, provided with a friction-roller, *c*, the spring *s*, and rollers s^1 s^2, all operating together substantially as herein before described and set forth.

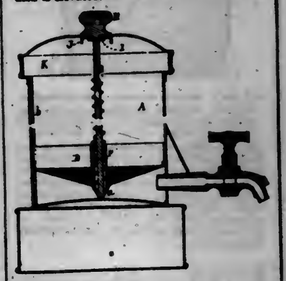
161,637. HAY-SLINGS. A. J. Reed, Pleasant Grove, Ind. [Filed Feb. 13, 1875.]

Brief.—Easily detachable hook-piece.



161,638. QUILTING-FRAMES. Geo. F. Simmons and Johan Frans, Cambridge, Mass. [Filed Mar. 1, 1875.]

A quilting-frame consisting of the rail A, side rails B B, eyes K, head-stocks C C, and roller D, the head stocks being provided with the screws I and bolts G, and the roller with holes in its ends to receive the bolts, the whole being combined and arranged to operate substantially as and for the purpose specified.



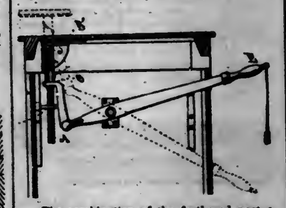
161,640. COFFEE-POTS. Charles B. Smith, Cleveland, Ohio. [Filed Mar. 13, 1875.]

Brief.—By turning the knob the perforated dish is elevated.

The knob H, clamp J, and cover K, in combination with the screw G, dish D, and body A, substantially in the manner as described, and for the purpose set forth.

161,641. SCUTTLE-ELEVATORS. Ferdinand A. Smith, Portland, Oreg. [Filed Aug. 21, 1874.]

Brief.—The scuttle-cover is mounted near one corner upon a revolving post mounted by a hand-lever. Said post has a "feather," straight for a portion of the way, and oblique for the remainder. The straight portion carries the scuttle directly up until it clears its seat, when the screw-shaped portion comes into play, and throws the scuttle around, so as to permit egress.



The combination of the featherel post A, the brackets B and B', and the lever E, substantially as and for the purpose herein described.

161,642. METHODS OF AGING LIQUORS. J. G. Spier, Peoria, Ill. [Filed Dec. 30, 1874.]

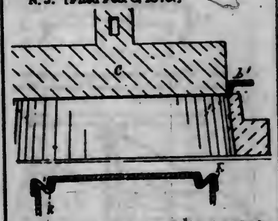
Brief.—Percolates the spirits through wood chips or shavings which have been baked in an oven heated from 190° to 210° Fahrenheit. Claims that the spirits absorb the tannic acid and are rapidly "ripened."

1. The process of aging spirituous liquors, consisting in treating them with baked wood in chips or in shavings, or ground, to impart the tannic principle thereto, substantially as described.

2. The combination of the stratum of gravel and pulp, gravel, shavings, dust, or chips of baked white-oak or other wood, for a percolator or filter in aging spirits, as described.

The concave-convex disk *k*, attached to the upper end of the dasher-shaft B and arranged in an opening, *i*, in the cover *a*, in combination with the spur-wheel *f* and cap D, provided with an opening, *f'*, substantially as and for the purpose set forth.

161,639. MACHINES FOR PRODUCING FLANGED LIDS AND COLLARS FOR SHEET-METAL CANS. Jacob M. Patterson, Woodbury, N. J. [Filed Feb. 8, 1875.]



The process or mode described and set forth, of producing the flanged and grooved collar E and the flanged lid or cover D, whereby the portion *b'*, which remains, (after the portion which forms the flanged lid or cover D has been punched out,) is grooved and its aperture contracted to receive the said flanged lid or cover over and upon the surrounding inner flange of the said collar, as and for the purpose described.

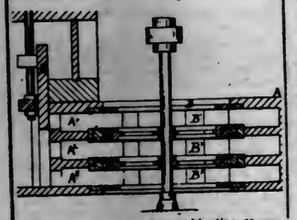
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161,642.



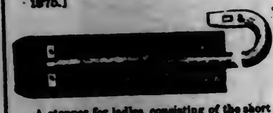
161,642. WATER-WHEELS. J. H. Staples, Chelsea, assignor, by mesne assignments, of one-half his right to J. J. Clapp, South Braintree, Mass. [Filed Mar. 20, 1874.]

Brief.—This water-wheel has a single straight gate, which, when opened to a greater or less degree, will admit water into one or more horizontal flumes, each horizontal section of the inclosing a distinct horizontal section of the wheel. The divisions of sections on the wheel correspond accurately with the divisions of the flumes, each having an annular-groove water-packing.



In a water-wheel, the combination of two gates D, the gateways or flumes A^1 A^2 A^3, provided with water-packed joints between the divisions of the flume and the wheel, with the wheel B divided into horizontal sections B^1 B^2 B^3, all the parts operating together, substantially as described, and for the purpose set forth.

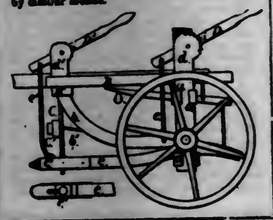
161,643. STOPPERS FOR LADLES. Hiram Swank, Johnstown, Pa. [Filed Feb. 9, 1875.]



A stopper for ladles, consisting of the short baked sections b d, secured to the rod a by means of a cement of fire-clay and black-lead, substantially as shown and described.

161,644. RIDING ATTACHMENTS FOR PLOWS. James T. Wells, Scott County, Ill. [Filed Nov. 12, 1874.]

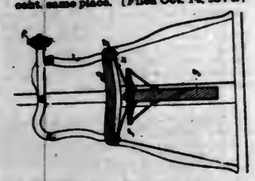
Brief.—The forward end of the plow-beam is swiveled to a block that slides up and down upon a hanging rod, and is held at any desired position by means of a pawl and ratchet upon the end of the elevating-lever. The rear end of the plow can be raised simultaneously by similar means.



1. Block d', in combination with lever D', rod c', and upright d', substantially as and for the purpose set forth.

2. Levers D' and O, upright d', rod c', and block c', in combination with pieces C C', B B', b b', all constructed and arranged to operate substantially as and for the purpose set forth.

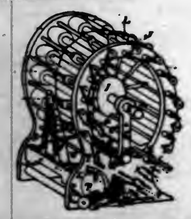
161,645. CAR-SEATS. True West, Boston, Mass., assignor to himself and G. H. Vincent, same place. [Filed Oct. 14, 1874.]



In a railway-car, the seat A and its springs E, arranged and connected as described, in combination with the brackets F, applied to the support-piece g, and also with the said support-piece extended along underneath the seat, and connected to the end portions of the frame B, all being as shown and described.

161,647. SPOOLING-MACHINES. J. W. West, Boston, Mass. [Filed Feb. 13, 1875.]

Brief.—The threads, on their way to the delivering and polishing guides, are led through eyes on two series of levers—one series for operating the belt-shifter when a knot occurs in the thread, and the other operating it when a thread breaks. The guide-rods are passed through a head-stock, and are reciprocated by an oscillating lever engaging alternately the right and left hand screw. The times and amount of reciprocation are governed by studs on the oscillating lever sliding over and under horizontal levers, one stud traveling over and the other under one of the horizontal levers its length, and then being tilted by a spring, so as to reverse their position. One end of each horizontal lever is placed in an inclined slot of the converging rods on the transverse bar. As the spools fill, the thread presses against the thread-guides, forcing them out against a lever that depresses this bar, and causes the levers to time the throw of the oscillating arms, so as to increase the amount of reciprocation as the length of the spool increases on the flange.



1. The head-stock I, rods K, bar S, rod H, screw d d, and arms a a', in combination with a device for automatically changing the movements of the rods K, substantially as and for the purpose specified.

2. The arms a a', provided with the studs b b', in combination with the levers f f', springs g g', and screw d d, substantially as and for the purpose specified.

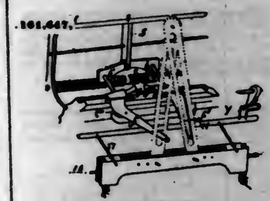
3. In combination with the finger M, the rocking shaft W, bar Q, and slotted bars P, for actuating the levers f f', substantially as set forth.

4. In combination with the rods K, the wires n', eyes L, and lever e, substantially as and for the purpose described.

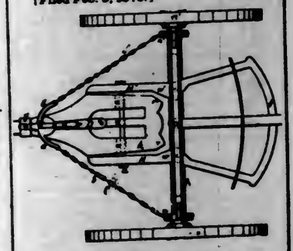
5. The rod K, provided with the slot v, and the spoke J, provided with the pin z, combined to operate as and for the purpose specified.

6. The stop mechanism described, the same consisting of the levers U, provided with the needles 6, the lever T, provided with the eyes 4, and the lever 11, combined to operate with the shipper 9, substantially as set forth.

161,647.



161,648. WAGON HOUNDS AND TONGUES. Clarence F. Whipple, Grand Rapids, Wis. [Filed Feb. 9, 1875.]

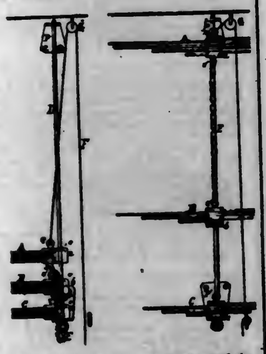


1. In a wagon, the combination of the tongue T, the slotted hounds h h', with their outer sides inclined toward each other from front to rear, the large hounds H H', projecting from the axle A parallel to each other, the bolt e, the brace-bar D, pivoted upon the tongue at c, having the end or arm c, the guide-plate g, the draw-chains C and C', with their swivels f and f', the hooks n n', and the bands c c' and d d', as described.

2. The combination of the tongue T, the slotted hounds h h', with their beveled ends r and r', the large hounds H H', with their wedges w and w', the pin c, the draw-bar D, pivoted upon the tongue at c, the end or arm c, the guide-plate g, the chains C and C', the hooks n and n', and the axle A, as described.

3. The combination of the band c' with its lug p, having an opening in it through which passes the hooked end n of the band d', forming a hinged joint, the bolt x, the axle A, and the draw-chain C, as described.

161,649. CLOTHES-FRAMES. Clarence F. Whipple, Grand Rapids, Wis. [Filed Feb. 13, 1875.]



The combination, as a clothes-drier, of the sets of bars A B C, the perforated clamps a b c, the bolts a' b' c', the eyes c c', the stanchion e, the rod 19, the brackets 1^1 1^2, with their openings, the chain 15, the rope F, and the pulley G, constructed and arranged to operate as described.

161,650. BOX-NAILING MACHINES. Albert E. White, Chicago, Ill., assignor to H. E. Moore, same place. [Filed Dec. 22, 1874.]

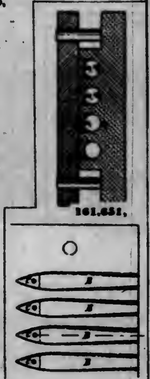
Brief.—A hopper for receiving the nails is attached by a spring to the die.

The combination of the hopper E, mounted freely on the yielding arm F, the die, and the punch-holder or clip, substantially as and for the purposes specified.

161,650.



161,651.



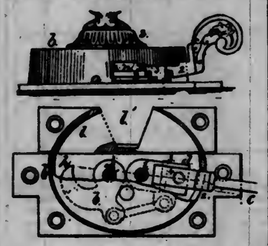
161,651. CIGAR-MOLDS. R. Appleby, Perth Amboy, N. J. [Filed Dec. 26, 1874.]

Brief.—The tips of the upper halves of the molds are of metal, and the lower corresponding parts are provided with an inclined metal plate, so that the edges of the cigars will be sheared off to a taper, and the shearings permitted to escape.

The notched plate D, sloping toward edge of mold, and metal tips C, in combination with wooden mold having cavities A B, as and for the purpose specified.

161,652. FASTENINGS FOR MEETING-RAILS OR SASHES. Stephen D. Arnold, New Britain, Conn., assignor to P. and F. Corbin, same place. [Filed Feb. 13, 1875.]

Brief.—A suitable box or case carries a lever-latch, which has a spring applied so that it latches upwardly into two or more locking-notches of the curved front plate. This lever is jointed to a jaw-piece, and connected by a link with a swinging hook-ended holder, and this last, operated by the lever-handle, engages with a curved keeper, which is notched to pass around or straddle the mullion of the sash. There is also an ornamental knob, having a conical skirt for ornamentation, detachably connected by a screw, and independent of the other parts, so that two styles can be made from the one set of patterns.



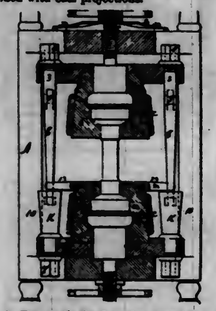
1. The lever-handle a, jointed to the jaw d, and provided with a spring, in combination with the hook-ended holder h, plate a, box b, and curved front plate, notched at 2, as and for the purposes set forth.

2. The lever-handle c, jointed to the jaw d, in combination with the hook-ended holder h, link n, and keeper-plate l, substantially as set forth.

3. The sash-lock, made with a lever and hook-ended holder between the plate a and box b, in combination with the knob r and skirt c, connected by a screw to the top of the box b, as set forth.

161,653. MACHINES FOR TESTING THE STRENGTH OF MATERIALS. L. A. Beardslee, Washington, D. C. [Filed Jan. 23, 1875.]

Brief.—The clamps holding the piece to be tested are held together by a number of rods having hooks and eyes. The strain is suddenly transferred to the piece to be tested by disengaging the hooks by means of a ring provided with cam projections.



1. The method of testing metals by suddenly transferring a given strain from any means of restraint to the specimen to be tested, for the purpose set forth.

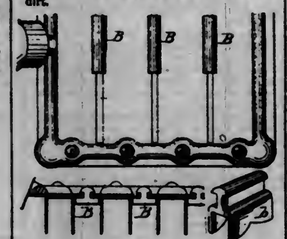
2. The plates B B', in combination with the bolts 3 3, legs g g, having feet h h, and bolts k k, having recesses 10 10, substantially as described.

3. The plates B B', bolts 3 3, legs g g, having feet h h, bolts k k, having recesses 10 10, in combination with the clamps b b', as and for the purpose set forth.

4. The ring m, constructed with the lever 12 and projections 13 and 13, in combination with the clamp B and legs g g, substantially as described, and for the purpose set forth.

161,654. CURRY-COMBS. Jas. Owens Berry, Vienna, Va., assignor of one-half his right to Richd. Berry, Georgetown, D. C. [Filed Feb. 26, 1875.]

Brief.—The back of the comb is slotted crosswise, and in these slots slide loose weights, for jarring, or scraping and jarring, off the dirt.



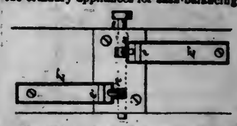
1. In combination with a curry-comb, a movable weight or knocker, for the purpose of jarring dust, &c., therefrom, substantially as set forth.

2. In combination with a curry-comb, A, one or more sliding weights, B, held and guided by slots or equivalent guides, as set forth.

3. In combination with a curry-comb, a sliding weight, B, provided with a lip, b, to remove adhering hair from the teeth of the comb, as set forth.

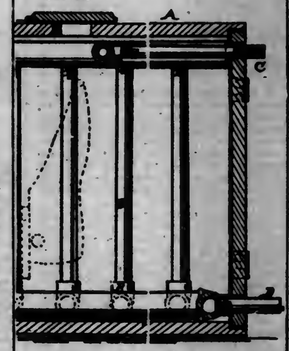
161,655. SASH-FASTENERS. Wm. Buechley and Theodore Thorn, Pottsville, Pa. [Filed Mar. 15, 1875.]

Brief.—A pair of long, flat springs, one to either sash, are recessed in the sash-frame, there being lugs attached thereto, which engage with notches in the sash. These are thrown in and out of engagement by means of a crank-shaft provided with short operating-arms; and the device may be used in connection with a window-sash, winding up and down on spiral rods, or furnished with any of the ordinary appliances for sash-balancing.



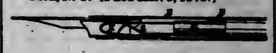
The combination, with the recessed window-sash B C, of the springs E E', having lugs a a', and the shaft m, provided with crank G and arms n n', substantially as and for the purposes herein set forth.

161,656. VULCANIZING APPARATUS. Wm. J. Birdsall, Naugatuck, Conn. [Filed Feb. 6, 1875.]



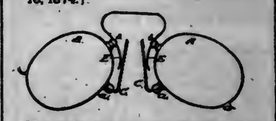
In a vulcanizing apparatus, the combination of the steam-pipes B C D and cross-pipes E within, on the bottom, and on the sides of the chamber A, as and for the purpose specified.

161,657. PEN-HOLDERS. John Boyd, New York, N. Y. [Filed Mar. 6, 1875.]



In combination with the handle A, a pen-holder, B, an elastic band, D, and a spring, E, the arrangement being substantially as shown and described.

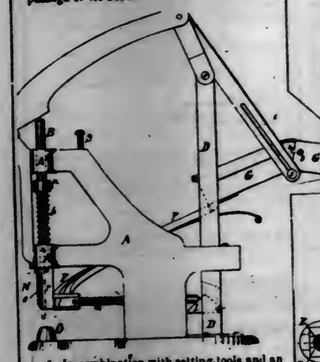
161,658. EYEGLASS-FRAMES. Marrick C. Brackett, Holland, Mass., assignor to Geo. B. Brigden, Norwich, Conn. [Filed Nov. 16, 1874.]



The eye-frames A A, having the side springs C C, provided with roughened facings, and fastened in the joints or posts a a, and extending upward above the posts b b, and also having the re-enforcing springs E E projecting below the posts b b, to support the upper free ends of the side springs, substantially as and for the purpose set forth.

161,660. RIVET-SETTING MACHINES. M. Bray, Newton, Mass. [Filed Feb. 19, 1875.]

Brief.—The hopper for receiving the rivets is made in two parts, and hinged together, each part inclining in opposite directions, the front portion loosely pivoted to an inclined chute, and the rear portion to a slotted arm attached to a vibrating frame. The hopper is slotted longitudinally in the bottom of the front portion, to receive the body of the rivet, and an aperture cut in the end to admit of the passage of its head.



1. In combination with setting-tools and an inclined chute for conveying the rivets thereto, a hopper provided with a slot in its bottom, of suitable width to receive the body of the rivet, and an opening through one end for the passage of the head of the rivet, with the hopper pivoted at one end to the upper end of the chute, and adapted to be vibrated around the pivots, substantially as described, for the purpose specified.

2. A hopper for receiving, separating, and arranging rivets, pivoted and slotted, as described, having that portion of its bottom farthest from its pivoted end and beyond the end of the slot made at an angle to the other portion, substantially as and for the purpose set forth.

3. The hopper G G', made in two parts, hinged together, and adapted for adjustment at different angles relative to each other, substantially as described.

4. In combination with a hopper, an inclined chute leading therefrom, and a plunger for moving the lower rivet in the chute to the setting-tools, the pivoted wedge-cam L, operating-bar D, and spring *m*, all arranged to operate substantially as described.

5. The combination of the chute F, guide-channel *h*, provided with the spring *l*, plunger J, and receiver N, arranged to operate substantially as described, whether said receiver is mounted upon the setting-plunger or the anvil.

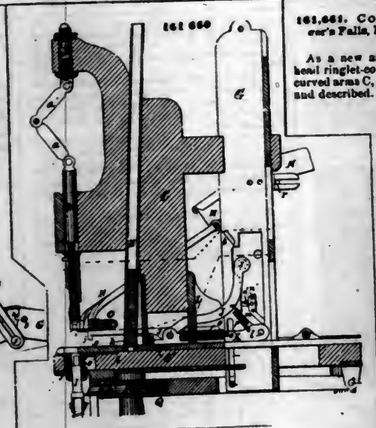
6. The receiver N, adapted to hold the rivet in position to be acted upon by the setting-tools, and to move vertically or in line with the movement of the setting-plunger, for the purpose of guiding the rivet to the work, whether said receiver is mounted upon the setting-plunger or the anvil, substantially as described.

7. The rivet-receiver N, provided with the springs *r* and *r'*, mounted upon the setting-plunger B, and arranged to operate substantially as described, for the purpose specified.

8. The combination of the receiver N, setting-plunger B, and special anvil O *u*, provided with the slit *w*, all arranged to operate as and for the purposes described.

161,659. RIVETING-MACHINES. M. Bray, Newton, Mass. [Filed Feb. 19, 1875.]

Brief.—The rivets are fed from a hopper down an inclined chute, and are transferred singly to a receiver, through which the setting-instrument works. An automatic reciprocating punch cuts a hole in the stock, and a burr or washer is fed underneath the punched stock, the rivet forced down, and headed by a hammer or plunger from beneath, each instrument automatically receding in its order of action, and all operating at one and the same point.



1. In a riveting-machine, the combination of the plunger D, receiver E, hammer I, and tubular receptacle H, into which a column of burrs or washers may be placed, and from the lower end of which the bottom burr or washer may be separated and fed into a position in line with the setting-tools, substantially as described.

2. In a riveting-machine, the combination of a pivoted hopper provided with a slot, as shown, into which the rivets are placed in bulk, and from which they emerge in regular order, with their heads all in one direction; an inclined chute, down which the rivets move from the hopper to the setting-tools; a tubular receptacle, in which is placed a column of burrs or washers, one above another, and a reciprocating carrier-bar, all arranged as set forth, to separate a single rivet and a single burr, and feed them into position, so that the descent of the setting-plunger will pass the rivet through the material to be riveted, and through the burr, all substantially as and for the purpose described.

3. The operating-bar G, provided with the cam-slot *e*, in combination with the carrier-bar *g*, provided with the recess *h*, arranged to feed the lower burr in the column of burrs in the tube H to the setting-tools, substantially as described.

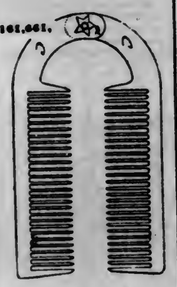
4. The operating-bar G, provided with the inclined leg *k* and cam-groove *m*, having the pivoted side *n*, in combination with the reciprocating bar K, pivoted lever J, carrying the punch *j*, and the springs *o* and *p*, all arranged to operate substantially as described, for the purposes specified.

5. The combination, in a machine for setting rivets, of a punch adapted to be moved into position to punch the material to be riveted directly in line with the setting-tools, and then to recede from its position; a mechanism for separating a single rivet from a number, and feeding it to a position in line with the setting-tools upon one side of the material; a mechanism for separating a single burr from a column of burrs, and feeding it into a position in line with the setting-tools upon the other side of the material; a mechanism for forcing the rivet through the hole punched in the material, and through the hole in the burr, and a hammer arranged to rivet the whole together by a single blow, the consecutive actions being accomplished without moving the goods on the table, substantially as described.

6. The vibrating lever Q, provided with the yielding pin *q*, in combination with the hammer-rod I, provided with the collar *o'* and spring *w*, all arranged to operate substantially as described.

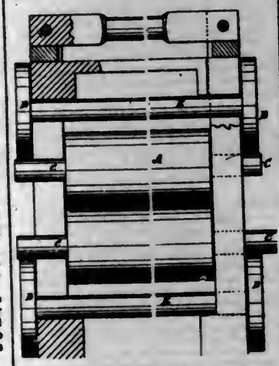
161,661. COMBS. Elias Brown, Wappinger's Falls, N. Y. [Filed Mar. 6, 1875.]

As a new article of manufacture, a back-head ringlet-comb, made in two parts, having curved arms C, pivoted at their ends, as shown and described.



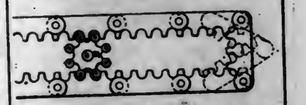
161,662. CLOTHES-WRINGERS. I. F. Brown, New London, Conn. [Filed Jan. 18, 1875.]

Brief.—Each journal of the roller bears upon a single anti-friction roller, the two being connected by a shaft under a spring-bearing.



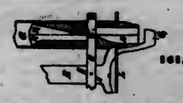
The combination, with roll *A*, having extension-journals C C, of the wheels D D, arranged on the ends of spring-pressed shaft E, as and for the purpose specified.

161,663. HORSE-POWERS. George B. Burt, Harvard, Mass. [Filed May 5, 1873.]



The combination, in a horse-power, of an endless chain or gear, and a pinion which communicates the power to the machine operated, having the cylindrical teeth of one of the interengaging sets constructed to revolve upon their respective axes, substantially as set forth.

161,664. SEED-PLANTERS. James T. Carr, Milo, Me. [Filed Mar. 5, 1875.]

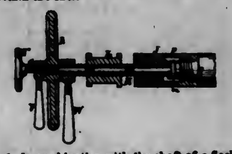


161,665.

The improved hand seed-planter described, consisting of the plate I, provided with the covers M, the bifurcated plunger E, having feet O and handle J, the slotted hoppers H within the casings *a*, and the slide C, having the openings P, the whole being constructed and arranged to operate substantially as and for the purpose specified.

161,666. JOURNALS AND BEARINGS. Geo. A. Chapman, Millbury, Mass. [Filed Sept. 26, 1874.]

Brief.—Within an oil-receptacle an adjustable bearing is arranged, to adjust the cutters within the shell.

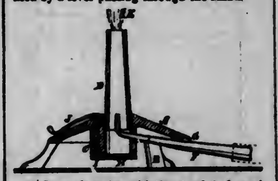


1. In combination with the shaft of a flocking-machine, the sleeve J, shouldered screw K, and stationary nut L, substantially as shown and described.

2. The combination of the sleeve J, screw K, pin *a*, with the stationary nut L, and screw S, substantially as and for the purpose described.

161,667. LABORATORY GAS-BURNERS. C. D. Cheney, Canandaigua, N. Y. [Filed Mar. 6, 1875.]

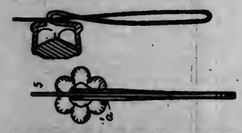
Brief.—The foot-tube secured to the stand by a dovetail connection. The valve is actuated by a lever passing through the stand.



1. In combination with the stand A, formed of a rim or flange and a central hollow pendent portion, C, the valve H, pivoted at one side and operated by handle J, and the burner-tube D, secured by a detachable connection, as shown and described.

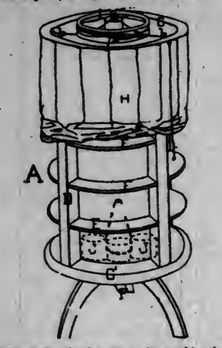
2. In a napkin-holder, the combination of the ring A, legs B, and rest C, substantially as and for the purpose set forth.

161,668. FASTENINGS FOR STUDS AND BUTTONS. Barnes Clayton, Philadelphia, Pa. [Filed Mar. 4, 1875.]



A looped-spring fastening for a stud or button, constructed with the bifurcated end *a'*, and attached to the back of the stud or button, as described, for the purpose of allowing the free arm *b* to be moved in the space between the said attached bifurcated end of the looped spring, as and for the purposes hereinbefore set forth and described.

161,669. BOOK-CASES. John J. Crandall, Philadelphia, Pa. [Filed Oct. 15, 1874.]



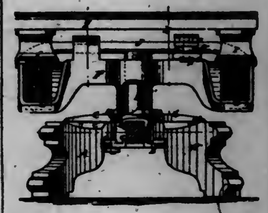
A revolving book-case, A, in combination with the curtain H, pulley I, and the cords *b c*, as shown and described.

161,670. LIFE-PRESERVING STOOLS. H. B. Cromwell, Providence, R. I. [Filed Nov. 7, 1874.]



A life-preserving stool having the air-chamber A, and with air-chambers formed in the legs, substantially as set forth.

161,671. TILTING CHAIRS. W. T. Doremus, New York, N. Y. [Filed Jan. 11, 1875.]



1. The herein-described plates B C, constructed with flanges *b' c'*, points *c'*, and pivot E, said plates being bolted together to hold the legs A, in the manner set forth.

2. The combination with hooks K, cross-bar F, having inclined seats G at its ends and rubber blocks H, and of rock-bar J that connects arms I, as and for the purpose specified.

3. The combination of cross-heads L, yokes M, holes N, and rubber blocks O, with the cross-bar F and rock-bar J, as and for the purpose set forth.

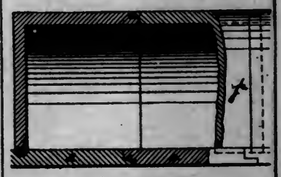
4. The combination of rock-bar J, front cross-bar F, pivot-bar B, and arms I, as shown and described, to bring the center of oscillation in front of the center of rotation.

161,672. COMPOUNDS FOR DECOLORIZING PETROLEUM. Henry Dubbs, Franklin, Pa. [Filed Jan. 9, 1875.]

Brief.—Slaked lime, water, and sawdust are mixed at a pasty consistency, kept until the sawdust is saturated, then dried at not exceeding 200° Fahrenheit. The oil is filtered through this compound in a filter heated by steam in a jacket, to be deodorized and discolored.

The improved compound for decolorizing petroleum or other oils, consisting of lime and sawdust combined, in the manner substantially as herein described, for the purpose specified.

161,673. BURIAL-VAULTS. L. K. Dutton, Oskaloosa, Iowa. [Filed May 21, 1874.]



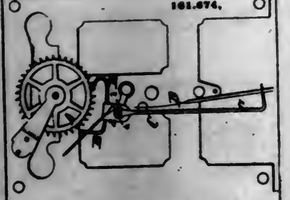
An improved portable and adjustable burial-vault, consisting of the two arched end sections *f*, having their sides, top, and end made in one solid piece, lap-jointed, and tongued, the bottom or base plate sections *d d c c*, lap-jointed and grooved, and the interchangeable arched sections *f' f'* of corresponding lengths, and lap-jointed and tongued, all substantially as described and shown, for the purpose set forth.

161,674. PENDULUM-CLOCKS. F. Eckel, New York, N. Y. [Filed Feb. 4, 1875.]

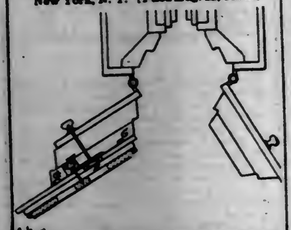
Brief.—The crutch-wire and anchor-escapement work upon the same axis, which forms a flexible joint, to alter their position as the position of the clock-frame is altered.

The combination of the crutch-wire C, which carries the tubular screw *a*, with the fixed pin *b*, and with the anchor B, having the threaded leg *d*, all arranged substantially as herein shown and described.

161,674.



161,675. DOORS FOR SAFES. John Farrel, New York, N. Y. [Filed Aug. 12, 1872.]

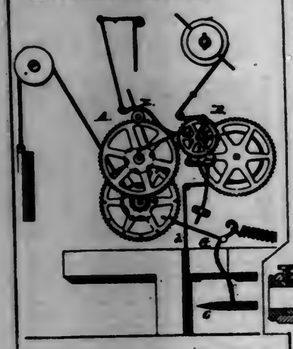


1. The combination of inner and outer doors and bolt-works, connected by the means specified, or its equivalent, whereby the inner door may be detached and separately locked, and when opened is attached to the outer door and swings with it.

2. The projections F, depressions G, clasps E, and cavities E', to provide for attaching and detaching the inner from the outer door at will.

161,676. FIRE-ALARM REGULATORS. F. H. Field, Providence, R. I. [Filed Sept. 26, 1874.]

Brief.—Bell-hammer in backward movement preceding each stroke strikes the arm of the lever, starting both sets of gears. Paper strip is unwound from the roll, and carried down by the weight. The point, operated by levers and spring, records on paper strip the number of strokes of bell-hammer.

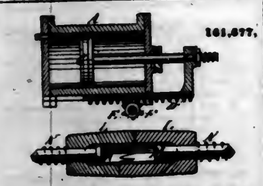


The combination of point C, ribbon d, gears A B, and levers E G, operating substantially as and for the purpose specified.

161,677. STRAIN-BREAKER. T. F. Foote and Elijah Flenck, Burlington, Iowa. [Filed Feb. 13, 1875.]

Brief.—A rack on the piston-rod, which moves transversely to the engine, rotates a shaft that runs the length of the train. The shaft is coupled between the cars by two cups, which are held together by springs, and in which the square ends of the shafts slide.

161,677.

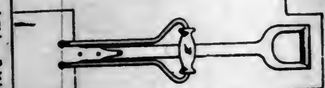


1. The combination of the cylinder A, piston C, sliding rack-bar D, and spring E, all arranged and operating transversely in respect to the locomotive, with the line or brake-operating shaft E and pinion F, as and for the purpose set forth.

2. The sliding socket-couplings L and springs N, combined with the sections of the line-shaft, substantially as specified.

161,678. LIFTING ATTACHMENTS FOR SHOVELS AND FORKS. Francis M. Gardner, Hornellsville, N. Y. [Filed Mar. 31, 1875.]

Brief.—A lifting attachment consisting of two rods extending downward upon each side of the handle, and hooking into holes in the upper part of the shovel-blade, or embracing the head-bar of a fork each side of the handle. This supplemental handle is about half the length of the ordinary shovel-handle, is detachable, and may be applied to any shovel or fork.

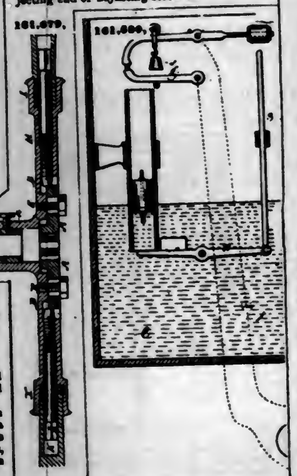


A lifting attachment consisting of two arms and a handle, each arm provided with a hook for attaching and detaching at will, with the blade of an ordinary shovel or cross-bar or head of a pitch-fork upon each side of the main rigid handle, substantially as described.

161,679. SCREW-CUTTING DIE-PLATES. B. Grilling, New Haven, Conn. [Filed July 13, 1874.]

Brief.—Pipe-guide rigidly attached to plate, and both dies adjustable to center, with it. Detachable handle J is slotted to receive projecting end of adjusting-screw H.

161,679.



161,680.

1. In a screw-plate for cutting pipe, the combination of the detachable and adjustable slotted dies A A and fastening bolts E E with the recessed holder B, pipe-guide C, adjusting-screw H, and handles J, substantially as herein described, for the purpose set forth.

2. The combination, with the frame B, provided with socket I, of the screw H and screw-threaded hollow handle J, substantially as herein described, for the object set forth

161,680. REGULATORS FOR ELECTRICAL WATER-RAISING APPARATUS. J. H. Guest, Brooklyn, N. Y. [Filed Nov. 3, 1874.]

A float and circuit-closing levers, arranged and acting substantially as described, in combination with a circuit to a battery and motor, and a pump driven by such motor, substantially as set forth.

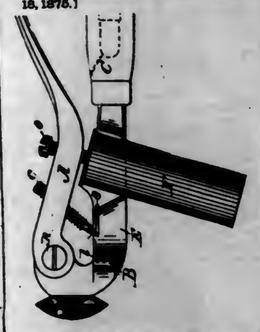
161,681. MECHANISMS FOR WEAVING MATS. Daniel M. Herman, Baltimore, Md. [Filed Feb. 15, 1875.]

Brief.—The device is intended for use in the manufacture of cocoa mats, and consists of a flat bar, which, after its insertion in the shed, is so operated as to press up the tufting-warp, and thereby form the loops, which are fastened to the foundation-warp by the weft-threads.



The flat filling-bar D, provided with an arm, *d*, and adapted to be operated in such a manner as to raise the tufting-warps into loops, as and for the purpose set forth.

161,682. CARTRIDGE-LOADING IMPLEMENTS. Lewis L. Hepburn, Bloc. N. Y. [Filed Jan. 18, 1875.]



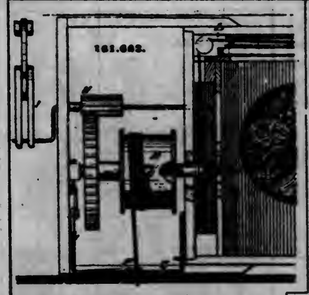
1. The implement consisting of the arm B, having a recess, E, in its side for receiving and holding the shell, in combination with the arm A, provided with the pointed screw *c*, said arms being pivoted together at their extremity, in the manner shown, whereby the implement is made to operate substantially as described.

2. The arm B, provided with the recess E, having the groove *e* and flange or lip *l*, constructed and arranged to operate substantially as shown and described.

3. The arm B, having the recess D in its side, in combination with the pivoted arm A, provided with the adjustable plunger *c*, all constructed and arranged to operate as set forth.

4. The herein-described implement, having one of its arms provided with the circular head I and the handle C, whereby it is adapted for use as a cartridge-loader, as set forth.

161,683.



161,683. TWINE-HOLDERS. Jonathan Hill, Stanhope, N. J. [Filed Jan. 20, 1875.]

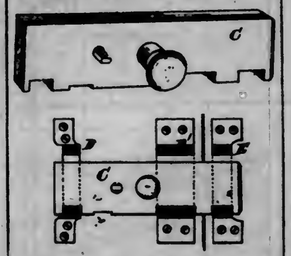
1. The combination of ball-box A, hollow axle C, and drum D, all constructed and arranged substantially as and for the purpose specified.

2. The combination, with spring-drum D, of trip-lever G, having eye F, the swinging axle-support N, and the regulator H I, as and for the purpose specified.

3. The combination of the drum D, hollow spindle C, spring-drum J, and belt L, substantially as specified.

161,684. DOOR-BOLTS. William C. Hurd, Watertown, Conn. [Filed Mar. 13, 1875.]

Brief.—A gravitating sliding bolt is provided with suitable notches in its lower edge, so arranged as to engage or hook over corresponding bars in both the keeper and the supporting-frame or staples which carry the bolt. The construction requires the bolt to be lifted bodily its entire length before it can be disengaged and slid back, while the force of gravity again automatically rocks it in restored position.



The gravitating bolt C, having suitable notches in one edge, in combination with corresponding bars in both the keeper E and the supporting frame or loops D D', substantially as and for the purpose specified.

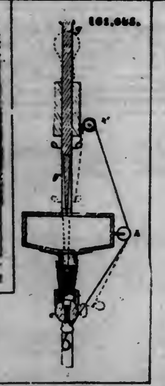
161,685. CORN-DROPPERS. Jos. Jackman, Richmond, Ohio. [Filed Mar. 5, 1875.]

Brief.—The uprights are secured at the top to a head-block, between which and the seed-cylinder is a hopper, into and through which is worked the lower end of a plunger, for agitating the seed and forcing it into the depositing spout beneath, to which is fastened a feeding-tube, the lower end being made concave to fit over the seed-cylinder, operated by a cord passing over pulleys and secured to the plunger, so that when it is forced down the cylinder is revolved. A spring retracts the seed-cylinder.

1. The combination, with the shaft *g g'* and seed-cylinder *c*, of the spring *f*, cord *h*, and pulley *h'*, as and for the purpose specified.

2. The combination, with the box *b* and seed-cylinder *c*, of the wire spout *e* and shaft *g g' g''*, for the purposes set forth.

161,685.



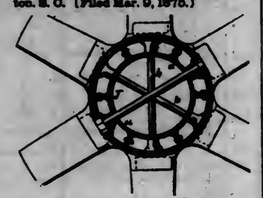
161,686. TRUSSES. Delaney King, Salamanca, N. Y. [Filed Feb. 20, 1875.]

Brief.—Radial pivoted arms carry small pads at their ends. The arms are automatically adjusted through an embracing-ring, which is itself adjustably connected by a short arm to the main band of the truss.

1. In a truss, the combination of a series or cluster of self-adjusting finger-pads I and pivoted arms G, substantially as herein described, for the purpose set forth.

2. The disk H, flange J, arm E, arc F, ring D, and fingers G, for the purposes described, in combination with a truss.

161,687. SHAFTS FOR ORE-WASHERS. R. F. Kittoe and Fred Brotherhood, Charleston, S. C. [Filed Mar. 9, 1875.]



1. A shaft for ore-washing machines, &c., consisting of a tubular column, J, composed of flanged plates *c*, riveted together at the edges, and blocks D, secured to the column between the ribs formed by the flanges, as set forth.

2. The combination, in a shaft for ore-washing machines, of a hollow ribbed column, J, sections C, confined to the column between the ribs, and blades D, secured to or forming part of said sections, as set forth.

3. The combination of the column J, blades D, and bolts *b*, passing through the column and securing the blades, as described.

161,688. FEED-WHEELS FOR GRAIN-DRILLS. Benj. Kuhns, Dayton, Ohio. [Filed Mar. 9, 1875.]

Brief.—Upon the feed-wheel are projecting flanges, converging toward and diverging from each other, and from end to end of the wheel.



The within-described feed-wheel, consisting of the hub A and projecting flanges A', the flanges converging toward and diverging from each other from end to end of the wheel in a zigzag line, substantially as and for the purpose set forth.

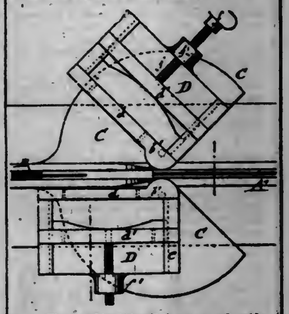
161,689. FIRE-PROOF ROOFING COMPOSITIONS. Emil Kunzendorf, Newark, N. J. [Filed Mar. 10, 1875.]

Brief.—A composition of one part lime, six parts carbonate of lime, ten parts sand or powdered stone, and sufficient water-glass to produce a mass of the consistency of mortar. This mastic is then spread on the roof-boards, which are preferably narrow strips, and before the mastic sets or becomes hard, nails may be driven through the mastic, and partially into the roof-boards.

The composition of lime, carbonate of lime, sand, and water-glass, substantially as and in the proportions set forth.

161,690. MITER-BOXES. T. C. Lawrence, Ladoga, Ind. [Filed Dec. 28, 1874.]

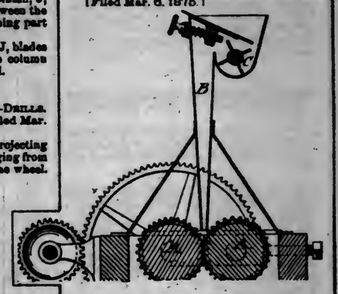
Brief.—The box is constructed entirely of metal, and is provided with a metallic recessed guide-casing, having a central wooden strip. The saw operates in the casing by means of detachable guide-strips upon the same; and the work is secured at the desired angle by two pivoted clamping-plates, one upon either side of the casing, and supported upon symmetrically-extending wing-plates.



1. The combination of the recessed guide-casing A, horizontal wing-plates C, and pivoted adjustable clamping-plates or work-holders D, substantially as herein described, for the purpose set forth.

2. The combination of the recessed guide-casing A, central wooden strip A', and pivoted work-holders D, with a saw having pendent guide-strips B, substantially as herein described.

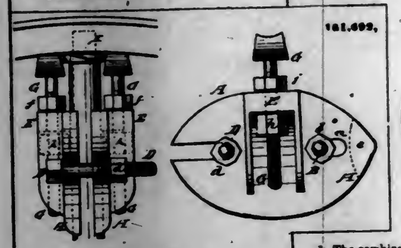
161,691. MACHINES FOR CRUSHING OLEAGINOUS SEEDS. A. B. Lawther, Chicago, Ill. [Filed Mar. 6, 1875.]



Brief.—The hopper and the crushing-rollers are connected by means of a tube contracted at its lower end, through which the seeds are fed to the crushing-rollers by means of the fluted roller within the hopper.

An improved machine for crushing oleaginous seeds, composed of crushing-rollers, revolving at great pressure, in combination with an upright feeding-tube, through which the oil-seeds are forced, under suitable pressure, for being uniformly crushed by the rollers, substantially in the manner shown, and for the purpose described.

161,692.



161,692. TUBE-EXPANDERS. John Lesher and Charles M. Lesher, Northumberland, Pa. [Filed Mar. 11, 1875.]

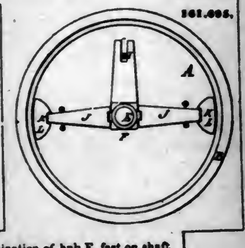
1. The clamps A A, forked at one end, and provided with slots *a a* at the other end, said ends being beveled on the inner sides at *c*, and the clamps fastened by means of bolts B D and nut *b d*, substantially as and for the the purposes set forth.

2. The combination of the clamps A A, provided with projections E E, the fastening-bolts B D, with nuts *b d*, and the raising-bolts G G, with nuts *f f* and *h h*, all substantially as and for the purposes set forth.

161,693. LOCKING DEVICES FOR MACHINERY. Timothy D. Marsh and F. M. Crane, Jersey, Ohio. [Filed Feb. 6, 1875.]

Brief.—The clutch mechanism is combined with regulating mechanism, by means of which the griping-arms can be adjusted so as to propel the disks in one or either direction, or their motion may be entirely stopped.

161,693.



1. The combination of hub F, fast on shaft E, and shoes K L, having arms J loosely attached to said hub, with a loose and flanged disk, A B, as and for the purpose described.

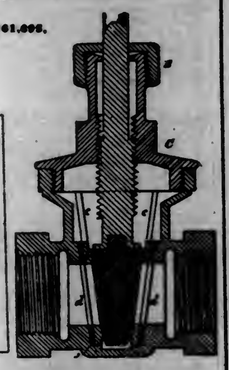
2. The combination, with hub F, of end-slotted lever *a* having pins I P, spring R, and disk D, having pin Q, and arc slot O, all arranged substantially as and for the purpose specified.

161,694. TONGUE-SUPPORTS FOR VEHICLES. James McCarter, Frankfort, Ind. [Filed Feb. 20, 1875.]

Brief.—Adds a spool or pulley to spring-supports for tongue.

A support for wagon-tongues, consisting of a tongue bearing front pulley, in combination with a spring attached thereto, bent spirally around side pulleys of the tongue-pivot, and having its rear ends fitted to the front axle, substantially as and for the purpose set forth.

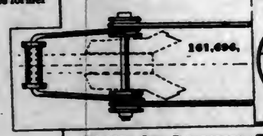
161,695.



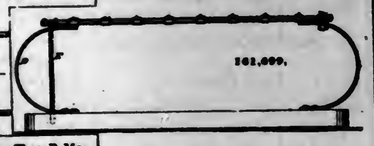
161,695. CHAIR-SEATS. Henry A. Moore, Brooklyn, N. Y. [Filed Aug. 22, 1874.]

The chair-seat constructed with the continuous metallic rim A, the interlaced metal straps B, folded over the said rim, and attached thereto, the arc-shaped springs D, and the vertical guide-stems E, the whole combined and arranged substantially as herein set forth.

161,696.



161,699.



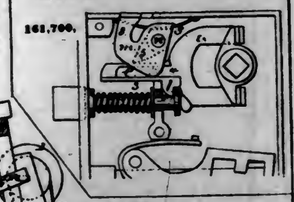
161,697. ORE-SEPARATORS. Thos. B. McConaughey, Newark, Del. (Filed Feb. 13, 1875.]

Brief.—By means of the reciprocating shovels the ore is forced through a current of water upon an oscillating screen, which delivers it upon the endless apron.

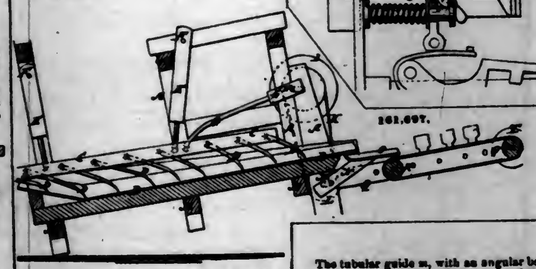
The combination, with belt, screen, and trough, arranged substantially as described, of the reciprocating shovels D, whereby the ore is dragged up the inclined trough and discharged upon the screen and belt, in the manner set forth.

161,700. REVERSIBLE LATCHES. Wallace T. Munger, New Britain, Conn., assignor to P. & F. Corbin, same place. [Filed Feb. 27, 1875.]

161,700.



161,697.



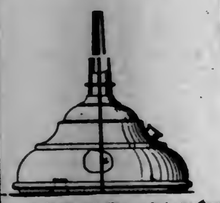
The tubular guide *m*, with an angular bearing for the spring *o*, a curved arm, S, and studs 4 and 5, in combination with the grooved bar *s* of the horseshoe, the talon *l*, and reversible latch, whereby the sliding bar is securely held in position when in use, as set forth.



The combination of inclined box D and rectangular box E, having intermediate space F between them, covered by table A, having hinged part, and supported upon legs C, as and for the purpose specified.

161,698. OILERS. Isaac Levy, Ellaville, Fla. [Filed Mar. 13, 1875.]

Brief.—One half of the oiler is made of sheet metal and the other of rubber. The latter is used for blowing away dust, shavings, &c., from the place to be oiled, and the former used for applying the oil.



An improved oiler, made in two parts—one made of sheet metal, for the oil, and the other made of india-rubber, for the air—said parts being separated by a division plate, and each part being provided with its own nozzle or discharge-channel, substantially as herein shown and described.

161,694. REFRIGERATING-TABLES. Pauline Libert, Leavenworth, Kans. [Filed Feb. 6, 1875.]

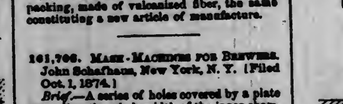
Brief.—A table has a packed and drained cooling-tank directly beneath its top, a part of which constitutes the hinged cover of the tank.

161,702. CHEMNEY-COWLS. A. J. Robinson, Troy, N. Y. [Filed Jan. 16, 1875.]

Brief.—The plate separates horizontally the smoke and the air blowing through the trumpet-mouthed pipe.

The oblique and angled plate E, arranged in the ventilator A B C D, as and for the purpose described.

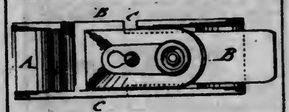
161,703. LATCHES FOR DOORS, &c. Francis D. Robinson, Boston, Mass., assignor to Albert M. Robinson, same place. [Filed Feb. 17, 1875.]



The combination, with the sliding bolt, slotted at its front end, as described, of the notched or forked lever D, pivoted to the latch-case to work in the slot of the bolt, and engaging with its notched or forked part a transverse pin, *b*, extending across the slot, substantially as shown and set forth.

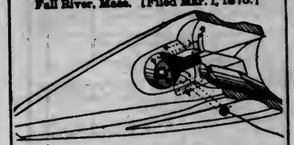
161,701. BENCH-PLANES. J. B. Norwood, Boston, Mass. [Filed Feb. 13, 1875.]

Brief.—The plane-stock has guide-edges on its sides, and is provided with side openings, through which the cutting-iron, having side extensions, passes. The lower edges of the iron are flush with the outside of the stock.



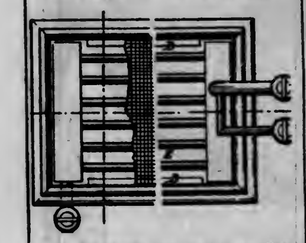
The combination of a stock, having guide-edges on each side, with openings C C and a plane-iron, B, having extensions B', as and for the purpose described.

161,702. LOOM-SHUTTLES. J. M. Peckham, Fall River, Mass. [Filed Mar. 1, 1875.]



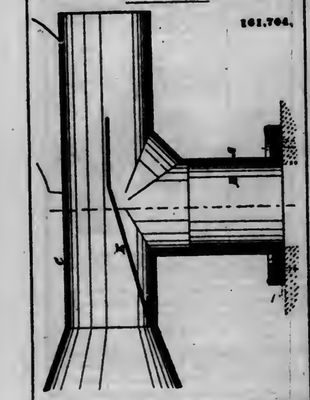
The tension-cloth holder F, constructed substantially as described, in combination with a shuttle body, having grooves *k k*, for the purpose set forth.

161,705. LABEL-COOLERS. Frank C. Pray, New York, N. Y. [Filed Feb. 5, 1875.]



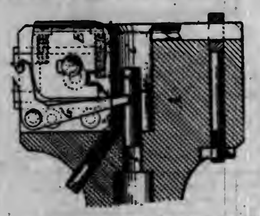
The combination, with vessel A, spreading-sleeve, C, and cooling-tubes E, of a bottom sleeve, D, as shown and described, whereby the lard is blanched, after having been cooled, by being separated through the perforations of bottom sleeve and caused to drop in small globules through the air.

161,704.



161,706. CHUCKS FOR MAKING SWELLED TENONS. Alexander D. Ruff, Owingsville, Ky. [Filed Jan. 18, 1875.]

Brief.—Swelled tenons are cut by means of a revving chuck, provided with a suitable cavity, in connection with a turning-tool, which is forced down against the portion of the blank to be dressed, by the end of the blank pushing a sliding pin back as the blank enters the cavity. A curved spring secured in a slot in the exterior of the chuck draws back the tool, frees the sliding pin, and thus prevents the swell of the tenon from being cut off as the blank is being withdrawn.



1. The combination of the pin J, lever G, and the sliding and adjustable tool E in a chuck, A, having a cavity, C, and a notch, D, substantially as specified.

2. The combination of the spring L with the sliding tool E, lever G, and pin J in a chuck, A, substantially as specified.

161,707. CONDENSER-FERRULES. Thomas H. Savery, Wilmington, Del. [Filed May 29, 1874.]

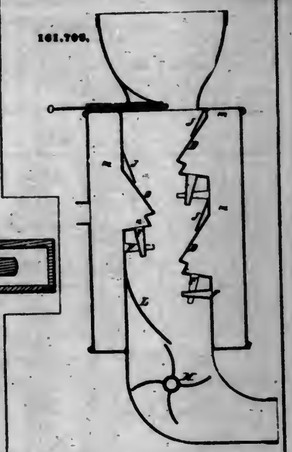


The within-described condenseer ferrule or packing, made of vulcanized fiber, the same constituting a new article of manufacture.

161,708. MASH-MACHINES FOR BREWERS. John Schaefhaus, New York, N. Y. [Filed Oct. 1, 1874.]

Brief.—A series of holes covered by a plate extending the whole width of the inner chamber, terminating close upon the inclined ridges or surfaces, in such a manner that a continuous flat stream of water is made to pass over these surfaces, to wash the same perfectly clean, and prevent the lodgment or accumulation of any substance thereon. There is also a wheel in the passage below the chamber, upon which the mash falls, turning thereby said wheel.

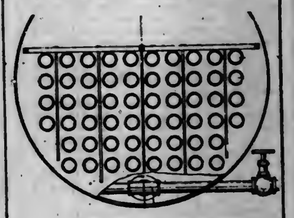
161,709.



1. The holes or openings *m* at the upper part of the surfaces D, in combination with the plate J, arranged in relation with the projecting surfaces D in a mash-machine, substantially as and for the purpose set forth.

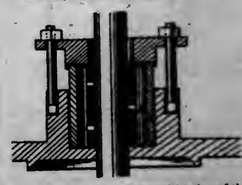
2. In a mash-machine, constructed substantially as herein described, the self-turning wheel H, in combination with the guiding plate I, arranged and operating in the manner and for the purpose specified.

161,709. MEANS FOR PREVENTING BOILER-EXPLOSIONS. Geo. Selden, Erie, Pa. [Filed May 18, 1874.]

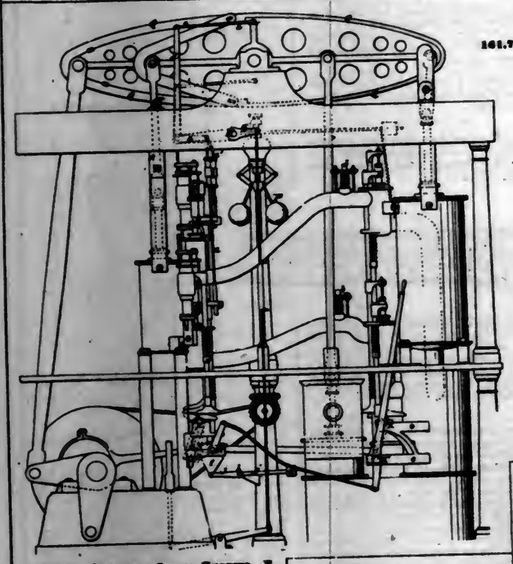


As a means of preventing steam-boiler explosions, the method herein described, consisting in forcing or injecting air into the contained water of the boiler at or near the bottom thereof while the said water is at rest and subjected to the action of heat.

161,710. PISTON-PACKINGS. J. L. Sherman, Janesville, Wis. [Filed Dec. 19, 1874.]



In a piston-packing, the combination of the ring H, having grooves I, with a series of divided rings, F, and the cup D, the arrangement being such that an annular chamber, I, is formed around said rings to receive the steam, as shown and described.



161,711.

161,711. COMPOUND STEAM-ENGINE. F. R. Sickel, Swarthmore, Pa. [Filed Feb. 27, 1875.]

Brief.—The engines are connected to opposite ends of the beam. The exhaust from the small cylinder enters the adjacent ends of the large cylinder, the pistons moving in opposite directions. If the cut-off fails on one stroke a larger quantity of steam is admitted to the low-pressure cylinder, equalizing the action. When the engine is unlocked, the small engine steam-valves are open; the hand-lever then gives live steam to the large cylinder.

1. The combination of the trip cut-off and its fluid-check with the compound engine, substantially as described.

2. The combination of the trip cut-off and its fluid-check with the governor and the compound engine, substantially as described.

3. The combination of the double truss with the skeleton beam, to carry the load of the small cylinder, substantially as described.

4. The toes on the rock-shaft of the small cylinder, to hold open the exhaust-valves of that cylinder, in combination with the blow-valves on the exhaust-pipes, to avoid compressing the steam, substantially as described.

5. The combination of the rock-shaft to work the valves of the small cylinder for blowing through, with the rock-shaft that applies the steam direct from the boiler to the large cylinder, substantially as described.

161,712. WATCH-CASES. Simon B. Simon, New York, N. Y. [Filed Mar. 1, 1875.]

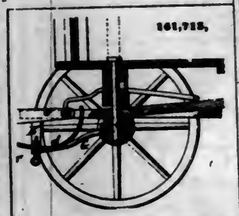


A cylindrical watch-case, constructed substantially as herein shown and described.

161,713. TONGUE-SUPPORTS. Emanuel Spoors, La Fayette, Ind., assignor of one-half his right to Christian Sefherer, same place. [Filed Mar. 4, 1875.]

1. The combination of the tongue A, curved and perforated bar D d, fixed hanger E, and pin F, substantially as and for the purpose specified.

2. The combination of the tongue A, bar D d, pin F, hanger E, brace G, and axle C, substantially as specified.



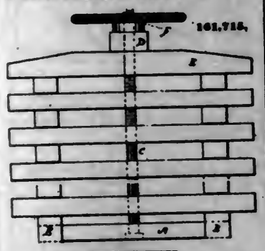
161,715.

161,715. CIGAR-PRESSES. Ferdinand Svoboda and Franz Leza, Cleveland, Ohio. [Filed Mar. 6, 1875.]

1. The cigar-press, consisting of a lower frame or platform, an upright central screw-shaft, a movable jaw traveling upon the said central screw-shaft, and a hand-lever set for causing the said movable jaw to traverse up and down the shaft, and whereby pressure is transmitted, substantially as and for the purpose described.

2. The combination, with the cross piece A and the side pieces B, vertical shaft C, and the cross-piece D, side pieces E, and hand-lever set F, substantially as and for the purposes described.

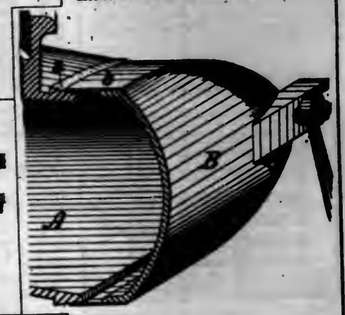
3. The combination, with a press, constructed substantially as described, of the cigar-molds H, arranged between the jaws of the said press in block-house order, substantially as and for the purpose described.



161,715.

161,716. MOUTH-PIECE LIDS FOR GAS-RETORTS. Samuel A. Thomas, Philadelphia, Pa. [Filed Mar. 15, 1875.]

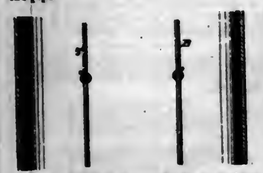
Brief.—The lid is screwed down, and the flexible flange fits over a bevsled bearing-surface on the end of the retort-neck.



As a new article of manufacture, a mouth-piece lid for retorts provided with a flexible rim or flange, substantially as set forth.

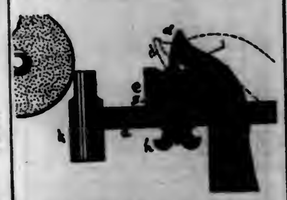
161,716. DAMPERS. Jacob Stewart, Moline, Ill. [Filed Oct. 24, 1874.]

Brief.—The dampers are both operated by one movement, and when partially closed leave a space in the center of the flue for ascending smoke, and also an open space next the pipe.



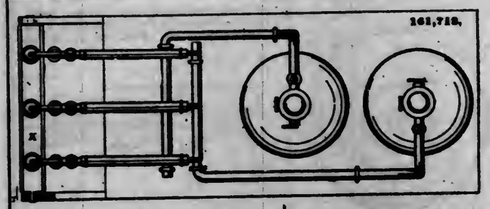
The combination, in a smoke-damper, of two plates, B, pivoted at opposite sides of the center of a flue, to form converging inclines, and the wheels or toothed segments D, substantially as specified.

161,717. REMS FOR TRUING-OUT BRIGHT-WHEELS. Eleazer Thomas, Pawtucket, R. I. [Filed Mar. 4, 1875.]



In a rest for truing-off emery-wheels and stones, and for evening-up castings, &c., the slotted bar *a*, having a support and arm or arms, *b*, in combination with the cam-lever *c d*, and its supporting and adjusting devices *e f h*, substantially as herein specified.

161,718. TRACE-CLEANERS. C. G. Waterbury, New York, N. Y. [Filed Mar. 6, 1875.]



161,718.

1. The combination, in a portable snow-melting track-cleaner, of an oxygen-gas holder, a hydrogen-gas holder, oxyhydrogen-burners, and pipes connecting them with the gas-holders, substantially as and for the purposes set forth.

2. The combination of pivoted burners G H, pivoted support K, flexible joints J, and supply-pipes, substantially as and for the purpose set forth.

161,719. CENTRIFUGAL HYDRO-EXTRACTORS. C. C. Webber, Holyoke, Mass. [Filed Aug. 20, 1874.]

Brief.—The basket revolves in a horizontal plane, while its supporting-shaft oscillates from one to another side of a vertical position; a band-brake on the belt-wheel.



1. The combination of the basket B, constructed substantially as described, with the ring *a*, pivots *c*, pivot *d*, and shaft E, arranged substantially as herein set forth.

2. In combination with the basket B, the ring *a*, pivots *c* and *d*, shaft E, the foot-plate G, horizontal springs A, and springs *n*, and the universal joint, all arranged substantially as described.

161,720. PAPER-BAG MACHINES. William Webster, Middletown, Ohio. [Filed Jan. 19, 1875.]

Brief.—Improvement on patent to applicant January 13, 1874.



1. The adjustable rest S, in combination with the paste-carrier frame, for the purpose specified.

2. The hinged plate or former R, in combination with the body-former C, substantially as described.

3. The slotted adjustable rest *a b c*, in combination with the hinged former R, substantially as and for the purpose described.

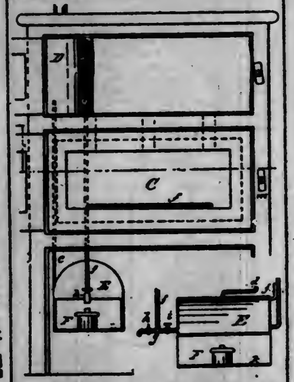
161,721. COMPOUND SWITCHES FOR FIRE-ALARM TELEGRAPHS. Sami. Weeks, New Orleans, La. [Filed Jan. 11, 1875.]



A compound switch for fire-alarm telegraphs, for throwing by one movement a series of switches into circuit, composed of a series of upper switch-fingers, establishing and breaking circuit of main alarm-battery, and of a set of lower spring-fingers for closing and opening the local batteries, in combination with an intermediate insulated crank-shaft, with opposite non-conducting cam-extensions, so arranged that a turn of the crank-shaft causes simultaneously the contact of the upper fingers and the disconnecting of the lower, or the breaking of contact of the upper and the closing of the lower, substantially in the manner and for the purpose set forth.

161,722. INCUBATORS. C. G. Wenton, Washington, D. C. [Filed Mar. 3, 1875.]

Brief.—Cold water is forced into the boiler by pressure of hot water through the safety-pipe, which terminates near the top of the reservoir. Water returning from the coil in the hatching-room may be admitted to the boiler, or discharged without it to regulate temperature.



1. In an air-incubator, the reservoir D, arranged above the hatching-room C, and communicating with the boiler B through pipe *e*, as specified.

2. In an air-incubator, the combination, with the boiler B and reservoir D, of the safety-pipe *d*, substantially as and for the purpose set forth.

3. In an air-incubator, the combination, with the boiler E and heating-pipes *f*, of the means, substantially as herein described, whereby the temperature of the hatching-room can be regulated by controlling the circulation of the water through the heating-pipes, as set forth.

4. The reservoir D, boiler E, lamp F, and pipes *e d f*, and the pipe *g*, provided with flanges *h i*, the whole combined and arranged to operate as specified.

161,723. HARVESTER-RAKES. William N. Whiteley, Springfield, Ohio. [Filed Apr. 23, 1874.]

Brief.—Special construction of devices for supporting and guiding the rake mechanism.

1. The rake-supporting arch or bridge A', constructed with a lateral offset, *a*, projecting outward, and oblique top surface, substantially as shown and described.

2. The base-plate B', constructed with a depressed seat for the bridge-plate A', a radial serrated seat for the rake-cam, and a spindle-stud, *q*, projecting laterally and slightly downward for the rake-driving pinion, all as shown and described.

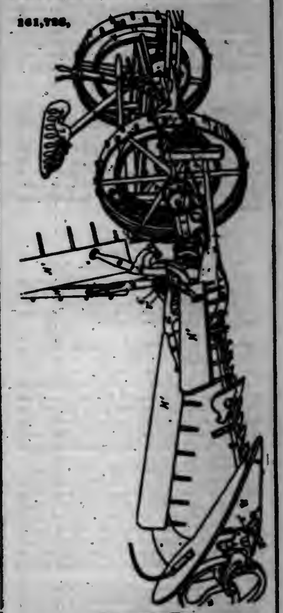
3. The rake-arm G', jointed at its inner end to the carrier F', and bifurcated at its outer end, to receive the end of the beater H', and provided with a curved slot, *g'*, at its outer end for the reception of an adjusting clamp-bolt and a pendent arm, *i*, bearing a roller, I', to traverse the arm D, as shown and described.

4. In combination with the base-plate B', cam D' resting thereon, and cam with corresponding radial serrations, and the revolving carrier F', the sleeve-journal E', cap *c'*, and bolt *d'*, as and for the purpose set forth.

5. The rake-bridge A', constructed with a lateral offset, as described, and attached at its front end to the lug *b* and at its rear end to the arm or stiffener T, as set forth.

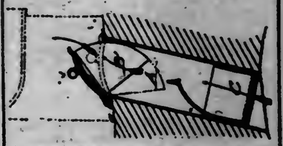
6. In combination with the shoe U, the grain-wheel bracket V, bolted directly thereto at its front and rear, and the divider W, bolted only to said bracket, as set forth.

161,723.



161,724. VENTILATING ATTACHMENTS TO HEARTHS. Wm. S. Winfield, Cross Plains, Tenn. [Filed Jan. 20, 1875.]

Brief.—Intended to supply a better draft, and to obviate smoking during kindling of the fire.



The ventilating attachments to hearths of open fire-places or grates, composed of a hollow box or casing set into the bottom of the hearth, to communicate with the air outside of the room, and provided with a hinged or adjustable lid, with side wing-plates, for throwing a direct current of air on the grate, substantially as specified.

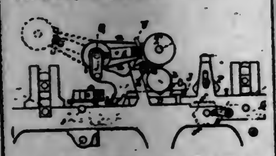
161,725. STEM-WINDING WATCHES. Chas. V. Woerd, Waltham, Mass., assignor to American Watch Company, same place. [Filed Feb. 19, 1874.]



The means for actuating the mechanism whereby the watch is changed from a stem winder to a stem-setter, consisting of the combination, with a watch, of a cam, *c*, and thumb-catch *f*, for actuating the cam, and the flattened surface or landing *c'*, whereby the cam is caused to rest steady, after being raised, until again pressed back into the case, substantially as and for the purpose described.

161,726. PLANING-MACHINES. George H. Woodbury, Cambridge, Mass. [Filed Mar. 26, 1874.]

Brief.—A grinding device is attached for the purpose of sharpening the cutters upon the planing-cylinders without removing them from the machine, and the feeding-rolls are placed in a swinging frame, so as to give ready access to the planing-cylinders.



1. A chip-breaking pressure-bar, H, or roll, constructed and arranged to move in an arc of a circle the curve of which is in the reverse direction to the arc of a circle described by the edge of the planing cutters while they are acting upon the board, substantially as described.

2. In a machine for planing lumber, the combination of two cutting-cylinders, adapted to plane both sides of a board at the same time, and a pair of draft-rolls, placed in front of said cylinders, and mounted upon a supplementary frame, arranged to be swung to one side, for the purpose of giving access to the under cylinder, all the parts being constructed, arranged, and operating in the manner shown and described.

3. The combination, with the cylinder G in a planing-machine, of the grinding-wheel T, the radius-arm b, the shaft G_2, the pulleys R and *n*, and the belt *a*, all arranged and operating substantially as shown and described.

4. In combination with the radius-arms S and the pulley R, fitted to slide on the shaft Q, and grinding-wheel T, the adjustable stop U, arranged to operate substantially as described.

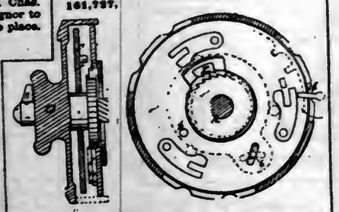
5. The combination, with the cutter-cylinder G, of a pivoted hook, arranged to lock said cylinder in position by engaging with holes formed in said shaft, or a hub or flange secured thereon, substantially as described.

6. The pivoted hook S, made in two parts and screwed together, substantially as described, for the purpose specified.

161,727. CORRELATION-LOCKS. C. O. Yale, New York, N. Y. [Filed Dec. 1, 1874.]

1. The combination, with an operating-spindle and freely-revolving dial or indicator, of suitable engaging mechanism, and one or more sets of tumblers to control and determine the action of the engaging mechanism.

2. The dog-plate attached to the dial, and the catch-wheel on the spindle, for locking the dial to the spindle and preventing its removal therefrom while free to rotate thereon.



3. Arranging and combining the tumblers on and pivoted to a plate affixed to the dial, so as to revolve with it.

4. In combination, the engaging mechanism, the tumblers, and the displacing-studs on the fence-plate for disarranging or displacing the tumblers.

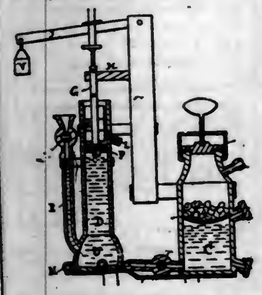
5. The combination, with the catch-wheel, of the engaging-dog and dog-plate, operated by a motion of the fence-plate in coupling the dial to the spindle.

6. The special form of cam-stop described, in combination with the dial or indicator adapted thereto, as set forth.

7. The combination, with the engaging-dog, spindle, and catch-wheel, of an index-pointer, to show the relation of the dial or indicator B to the catch-wheel.

161,728. CARBONIC-ACID-GAS GENERATORS. Otto Zwietasch, Milwaukee, Wis. [Filed Jan. 14, 1875.]

Brief.—The gas-generator is connected by a coiled pipe to a water-cylinder. A loaded piston in the latter, acting upon the water, forces the acid up into the alkali-chamber. The pressure of the gas generated forces back the acid, and consequently the water-column and piston. As the gas is drawn off the piston again acts to cause the acid to come in contact with the alkali. Instead of piston, may use water under pressure.



1. In combination with a carbonic-acid-gas generator, a water receiver or cylinder, suitably connected with said generator, whereby the generation of the gas is controlled by the alternate action of the gas pressure and hydrostatic column, substantially as described.

2. In combination with a receiver, D, the piston F, rod G, and weighted pivoted lever J, all arranged to operate substantially as set forth.

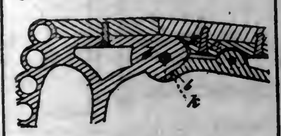
3. In combination with a gas-generator and cylinder D, the piston F, and overflow-pipe L, substantially as and for the purpose described.

4. The cylinder D, filling-pipe E, cock *e*, and pipe N, in combination with the acid-chamber O, substantially as and for the purpose set forth.

5. The cylinder D and coil-pipe N, in combination with a carbonic-acid-gas generator, substantially as and for the purpose set forth.

6. The piston-rod G, guide H, lever J, weights K and V, all in combination with the piston F, cylinder D, and frame A, substantially as and for the purpose set forth.

161,729. SELF-SUPPORTING HINGES. Saml. Adams, Boston, Mass., assignor to Jos. W. Ross, same place. [Filed Nov. 12, 1874.]

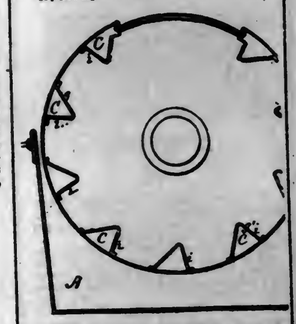


The hinge C, composed of the portion *d* and the portion *h*, with its notch *k*, in combination with the lever or pawl *k*, and with or without the spring *i*, constructed and operating substantially as and for the purpose set forth.

161,730. COMPOUNDS FOR WELDING STEEL. Edwd. Anthony and James Beadle, Shickshinny, assignors of one-third their right to Edwd. Price, Jr., Scranton, Pa. [Filed Jan. 26, 1875.]

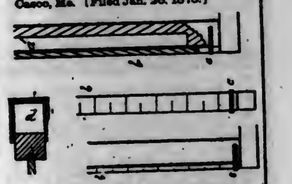
The compound for welding steel herein described, consisting of dross, saltpeter, and lime, as set forth.

161,731. BOILER WASHING-MACHINES. J. D. M. Armbrust, Apollo, Pa. [Filed Dec. 19, 1874.]



The combination, in a rotating clothes-receptacle, of the angular ribs C, having induction perforations *j*, and distributing perforations *i*, with the steam and water spaces *e* formed by walls *d d'*, and communicating with boiler A by means of perforations *f*, substantially as specified.

161,732. SLATE-FRAMES. J. H. Barbarick, Casco, Mo. [Filed Jan. 26, 1875.]



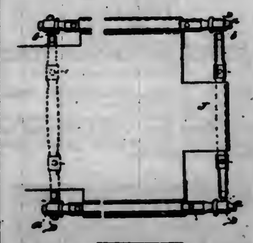
A slate-frame, provided with the channel *a'*, the rule *b*, elastic band *c*, incision *d*, and cap *e*, all constructed and arranged to operate substantially as and for the purpose set forth.

161,733. CAMP-LOUNGES. G. T. Barker, Pittsfield, Mass. [Filed Jan. 16, 1875.]

1. As a new article of manufacture, a camp-lounge arranged and constructed to support the body of the occupant in a reclining position above the ground, while the feet rest on the ground, substantially as specified.

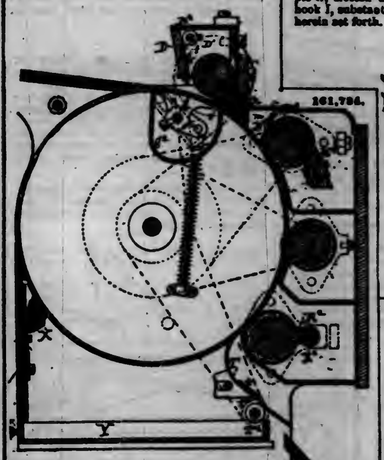
2. The combination of couplings D, consisting of ferrule *a* and shank *b*, with the side pieces and cross-pieces of the frame, substantially as specified.

3. The combination of the legs T with the ferrules for driving them on and off the side pieces.



161,734. BRONZING-MACHINES. H. Battermann, New York, N. Y., assignor to F. Emmerich, same place. [Filed Feb. 4, 1875.]

Brief.—Pertains to special construction of parts.



1. The combination, with the cylinder C, of the bronze-receptacle D, bronzing-roller E, and scrapers G and H, and bronzing pad or cushion K, adjustable substantially as and for the purpose shown and described.

2. The combination, with the receptacle D and bronzing-roller E, of the removable and adjustable partitions D^1 and bar D^2, substantially as and for the purpose shown and described.

3. The combination, with the bronze-receptacle D, of the reciprocating scrapers G and H, and pad K, and their carrying-bar I, substantially as and for the purpose shown and described.

4. The combination of the sliding plate M^2 with the wiping-roller L and the cylinder C, substantially as shown and described.

5. The slide M^1, in combination with the reciprocating pad K and sliding plate M^2, substantially as and for the purpose shown and described.

6. The combination, with the delivery-roller R, of the reciprocating brush R^2, substantially as shown and described, for the purpose specified.

7. The combination of the curved plate T, wires *i*, and disks i^2, on the shaft T^2, as shown and described, for the purpose specified.

8. The combination, with the fly-board W, of the slotted hinges and the set-screws, for adjusting the height and inclination of the fly-board, substantially as described.

161,735. GAS-BURNERS. Alfred G. Bayles, New York, N. Y. [Filed Mar. 15, 1875.]

Brief.—Adapted to render the flow of gas even.



The hollow cap C, with wire-gauze disks *g*, in combination with chamber A, with inlet-pipe *b* and burner *d*, substantially as described and set forth.

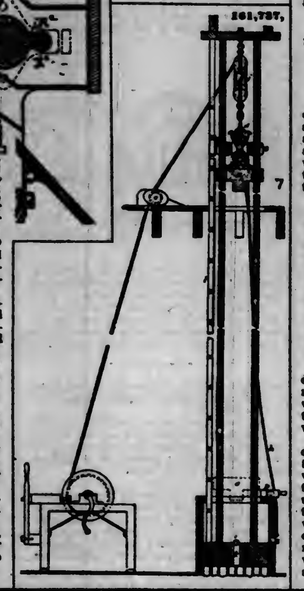
161,736. HORSE-COLLAR FASTENINGS. V. M. Beamer, Noblesville, Ind. [Filed Feb. 15, 1875.]

The combination, with a horse-collar, A, hames B B, and neck-yoke strap C, of the staple G, slotted metal straps H H, and snap-hook I, substantially as and for the purposes herein set forth.

161,736.



161,737.



1. The combination, with the cylinder C, of the bronze-receptacle D, bronzing-roller E, and scrapers G and H, and bronzing pad or cushion K, adjustable substantially as and for the purpose shown and described.

2. The combination, with the receptacle D and bronzing-roller E, of the removable and adjustable partitions D^1 and bar D^2, substantially as and for the purpose shown and described.

3. The combination, with the bronze-receptacle D, of the reciprocating scrapers G and H, and pad K, and their carrying-bar I, substantially as and for the purpose shown and described.

4. The combination of the sliding plate M^2 with the wiping-roller L and the cylinder C, substantially as shown and described.

5. The slide M^1, in combination with the reciprocating pad K and sliding plate M^2, substantially as and for the purpose shown and described.

6. The combination, with the delivery-roller R, of the reciprocating brush R^2, substantially as shown and described, for the purpose specified.

7. The combination of the curved plate T, wires *i*, and disks i^2, on the shaft T^2, as shown and described, for the purpose specified.

8. The combination, with the fly-board W, of the slotted hinges and the set-screws, for adjusting the height and inclination of the fly-board, substantially as described.

161,737. TESTING-MACHINES. Lester A. Beardslee, Washington, D. C. [Filed Feb. 26, 1875.]

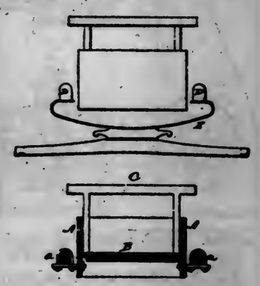
Brief.—The specimen to be tested is laid across the opening in the anvil, and the hammer, with wedge-shaped face, allowed to fall upon it from any desired height.

1. The hammer *a*, provided with a wedge-shaped face, in combination with the anvil *i*, provided with the central opening *k*, substantially as and for the purpose described.

2. The hammer *a*, provided with a wedge-shaped face, and anvil *i*, provided with the central opening *k*, in combination with the traveling block *c*, hooks *d*, and trip-bar *h*, substantially as and for the purpose described.

3. The hooks *d*, provided with the spring between the lower jaws, in combination with the rod *l*, provided with the pointer *n* and hook *m*, and with the traveler *c*, substantially as and for the purpose described.

161,738. HANGING CARRIAGE-BODIES. S. N. Beecher, Milford, Conn. [Filed Jan. 22, 1875.]



The combination of the body A, elastic bottom B, elastic side bars D, rigidly attached to the body, and the end springs E, substantially as described.

161,739. TRANSMITTERS AND RECEIVERS FOR ELECTRIC TELEGRAPHS. Alex. G. Bell, Salem, assignor to himself and Thos. Sanders, Haverhill, and G. G. Hubbard, Cambridge, Mass. [Filed Mar. 6, 1875.]

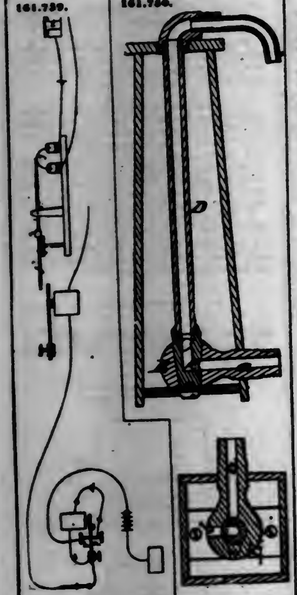
Brief.—Receiver set into vibration by isochronous pulsations transmitted from the sending end. The vibrating piece *b* takes against a lever, *f*, whose times of vibration are less than those of *b*; hence, during each vibration, its end *f* is kept depressed, changing the intermittent contacts of *b* and *f* into a continuous close of circuit.

1. In a system of telegraphy in which the receiver is put in vibration by electrical impulses sent along the line-wire from the transmitting-station, as described, the combination at the receiving end of a local circuit independent of the receiver and a vibratory circuit-breaker in said local circuit, acted upon by said receiver to effect a permanent make or break, as the case may be, of the local circuit, which is continued so long as the receiver continues to vibrate, and ceases with the cessation of the receiver's vibration, substantially as herein set forth.

2. The combination, substantially as herein described, with the vibratory portion of the receiver, of a vibratory circuit-breaking lever which will vibrate or oscillate at a slower rate than that at which the former moves when in vibration, as and for the purposes set forth.

3. The autograph-telegraph, comprising the combination of a series of transmitters and transmitting bristles or wires, a single main wire, receivers corresponding in number to the transmitters, tuned to a pitch to vibrate in unison with the succession of electric impulses transmitted from their respective transmitters, vibratory circuit-breakers, one for each receiver, and a local circuit, electro-magnet, and recording-lever for each circuit-breaker, the whole for operation substantially as shown and described.

161,739.



161,740.

161,740. ADJUSTABLE HYDRANTS. Geo. D. Hosher, Martinsburg, W. Va. [Filed Feb. 13, 1875.]

Brief.—The water is let on or cut off by turning the discharge-pipe, the nozzle of which works in a bridge provided with a removable stop, by the shifting of which the pipe may be limited to turn in a direction to allow the waste-water to escape or not, according to the season of the year.

In a hydrant having a waste-passage, b, a tubular plug, C, discharge-pipe D, and nozzle d, the bridge E, perforated at e e', and removable pin f, all combined in the manner described.

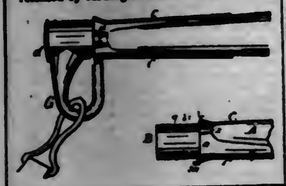
161,741. CORSET-BONES. M. E. Burtess, Jackson, Mich. [Filed Feb. 12, 1875.]



The herein-described corset-case, consisting of the box A and cover A', the latter having octagonal end pieces e', substantially as shown and set forth.

161,742. WHIFFLETREES. Geort H. Bote and Wm. H. White, Zeeland, Mich. [Filed Oct. 13, 1874.]

Brief.—The trees can be locked in place or released by turning the hook and sleeve.



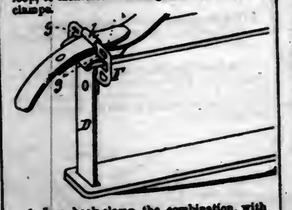
1. The sleeve D, provided with the hook G, in combination with the ferrule B, having shoulder e, with notch or groove x, and the straps C C, all constructed to operate substantially as and for the purposes set forth.

2. In combination with the whiffletree A, ferrule B, and sleeve D, the L-shaped pin m, to work in the slot i on the sleeve D, for the purposes set forth.

3. The combination, with a whiffletree, A, of the ferrule B, with grooved shoulder e and straps C C, the sleeve D, with hook G and slot i, the pin m, washer d, and screw e, all substantially as and for the purposes set forth.

161,743. BOOK-CLAMPS. Joseph B. Boyce, Lockport, N. Y. [Filed Nov. 28, 1874.]

Brief.—Loop F, attached to the end of strap D, is drawn over and upon the end of the upper bar, and lodged in groove c'. Strap B forms a handle, and is rigidly attached to the upper bar. A supplemental strap, G, is centrally attached to the free end of the handle-strap, both passing out beneath bridge h of the loop, to facilitate attaching and releasing the clamps.

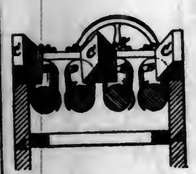


1. In a book-clamp, the combination, with the board A, having a transverse groove, c', of the loop F, having shoulders g g', substantially as specified.

2. The combination, with the loop F and the groove c' of the upper board A, of a detaching-strap, substantially as specified.

161,744. APPARATUS FOR SEPARATING SLATE FROM COAL. Sidney Broadbent, C. W. Ziegler, and W. B. Oliver, Scranton, Pa. [Filed May 17, 1875.]

Brief.—The mixture of coal and slate is directed by the triangular piece between the upwardly-revolving inclined rollers, between which the slate falls, while the coal passes on and is discharged at the lower end of the rollers.



1. The series of inclined revolving rollers B, arranged and operating substantially as and for the purpose shown and described.

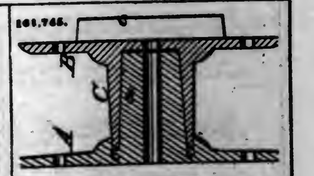
2. The combination, with the rollers B, of the covering-bars C, arranged over the descending sides of said rollers, substantially as and for the purpose shown and described.

161,745. PLOW-STANDARD FASTENINGS. G. B. Brimingham, Trenton, Tenn. [Filed Jan. 23, 1875.]

Brief.—A plate having a conical projection is secured to the beam, and another flanged plate for the standard has a corresponding cavity, allowing the standard to be adjusted at any angle with the beam.

In a standard-fastening for plows or cultivators, a plate, A, having a perforated tapered boss formed on it, in combination with the plate B, having a socket portion, C, formed on it to receive said boss, substantially in the manner and for the purposes set forth.

161,746.



161,746. LUMBER. Wm. H. Brock, Philadelphia, Pa. [Filed Mar. 3, 1875.]

Brief.—The pieces of lumber are formed of two different kinds of wood, connected by tongues and grooves of the peculiar form shown in the drawing.



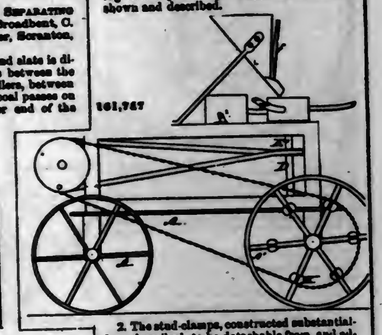
The mode herein described of uniting boards—that is to say, forming on the faces to be united a series of ribs, each of which is straight on one side and inclined on the other, and by forcing the ribs of one board into the corresponding grooves of the other, all as set forth.

161,747. BROADCAST SEEDING-MACHINES. David Buist and Charles E. Alden, Philadelphia, Pa. [Filed Nov. 28, 1874.]

Brief.—To the centrifugal scattering-box are removably attached tubular arms, curving laterally and upwardly. To the spokes of one of the front bearing-wheels are clamped adjustable studs, around which passes an endless belt, for communicating motion to the scattering-box.

1. The broadcast centrifugal scatterer or distributer F, having the tubular arms F', curving laterally and upwardly, substantially as shown and described.

161,747



2. The stud-clamps, constructed substantially as described, to be detachable from, and adjustable upon, the spokes of any ordinary wheel A, substantially as and for the purpose specified.

161,748. INVALID-CHAIRS. Wm. Reych, Anstinburg, Ohio. [Filed Oct. 24, 1874.]

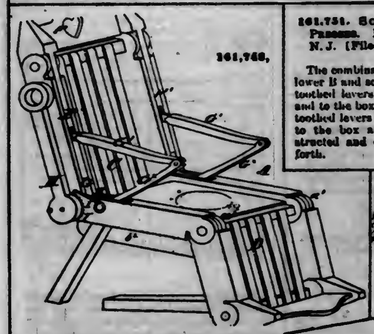
Brief.—The head and foot rests are adjusted by a lever pivoted at the point of junction with the seat.

1. In combination with a reclining-chair having a rigid seat, and a hinged back and foot section, connected through the lever F, the lever H, ratchet I, and pawl I', arranged at one side, as shown, said lever H being attached to the hinge-plate connecting section C and lever F, as and for the purpose described.

2. The jointed legs F', in combination with the jointed sections C D and jointed braces G', substantially as described and shown.

3. The combined arms and leg-braces G' G' and supplementary legs F', in combination with the folding bed and chair frame A, substantially as shown and described.

161,749.

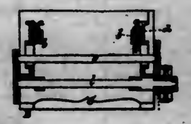


161,750.



161,749. PLANING-MACHINES. Chas. Bass and George F. Bass, Marlborough, N. H. [Filed Sept. 16, 1874.]

Brief.—The lumber is carried beneath the planing-cylinder upon a vertically-adjustable endless bed.



The herein-described combination of the ribs a a, bars b b, and packing-plates d d, in connection with the housing E E, and bed-rails H H, substantially as and for the purposes stated.

161,750. FOLDING TABLES. H. Butman, Brooklyn, N. Y. [Filed Aug. 18, 1874.]

A folding table containing the combination of top board A, end stripe C, clamp-hinges H, rod E, and knee-joint braces J, substantially as described.

161,751. SECURING HANDLES TO OUTLERY. E. C. Carleton, Port Huron, Mich. [Filed Mar. 6, 1875.]

Brief.—The tang passes entirely through the handle, and has a slotted key, which is pivoted in its mortised end. After the tang is passed through the handle, this key is turned up at right angles, and rests against the end of the handle.

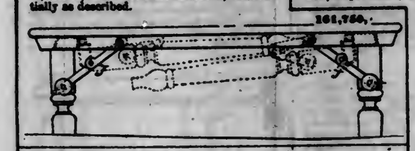


The slotted key C, secured to the mortised tang A for detachably fastening the handle B thereon, substantially as described.

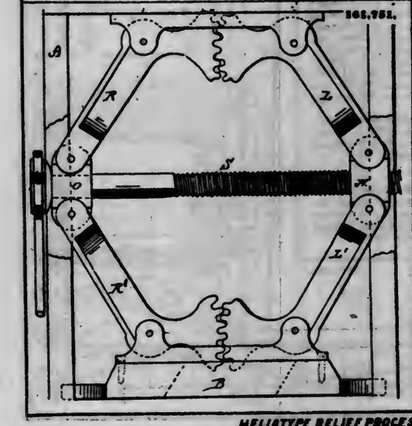
161,752. MECHANICAL POWERS. R. Carr, New York, N. Y. [Filed Feb. 6, 1875.]

Brief.—The stud of the connecting-rod is guided by a swivel-box, which, as it reaches the point in the slotted cam in line with the connecting-rod, it gives a sliding movement, without imparting any motion to the lower shaft, while the driving-shaft is turned without interruption. Therefore the lower shaft makes a partial revolution, and there it stops during the time the stud slides in the cam-slot, as previously explained.

161,750.



161,751.



161,752.



161,753. SCREW AND TOGGLE-LEVER PRESSES. Robert Butterworth, Trenton, N. J. [Filed Mar. 10, 1875.]

The combination, with the frame A and follower B and screw S, of the nut N, box O, the toothed levers E' L', pivoted to the follower and to the box and nut, respectively, and the toothed levers E L, pivoted to the frame and to the box and nut, respectively, all constructed and operating substantially as set forth.

161,754.

The combination of the rod B, swivel guide-box C, eccentric wrist-pin b, shaft A, slotted cam F, and shaft E, all constructed and operating substantially in the manner herein shown and described.

161,754. TURPENTINE-PANS. W. W. Clements, Camilla, Ga. [Filed Feb. 13, 1874.]

Brief.—The turpentine-pan is formed of a single plate of sheet metal by folding or doubling the corners, and pressing into the proper shape without soldering. It fits around the tree, and is secured to it by means of nails passing through the ends of the lip into the tree.

As a new article of manufacture, the laterally bowed metallic cup or box, struck or pressed out of sheet metal in the concavo-convex form, adapted to fit the convexity of the trunk of a tree, and having its upper portion perforated, substantially as and for the purpose specified.

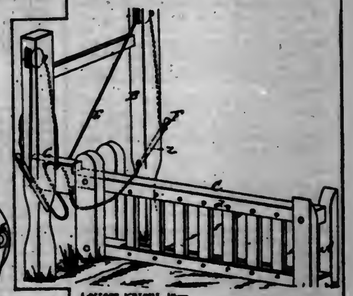
161,755. WIRE CORKSCREWS. William R. Clough, Newark, N. J. [Filed Mar. 17, 1875.]



A corkscrew formed of a wire of iron, steel, brass, or other metal, twisted spirally, as described, for a portion of its length, the remaining portion being bent into an angular or polygonal shaped loop to form the handle, the free end being secured to the wire immediately at the termination of the spiral, as and for the purposes herein set forth.

161,756. FARM-GATES. Leopold S. Cohn, Berlin, Wis. [Filed Dec. 19, 1874.]

Brief.—The endless operating-cord plays through high posts on opposite sides of the gate, and also through the weighted end of the gate, and by means of removable wedging-pins, which are inserted in the holes in the high posts against the cord, the movement of the gate is controlled.



Letters Patent, to—

In combination with the sliding and folding gate C, having weight G, the posts B B, having pulleys y y and inclined holes e e, the endless cord E, and the pins F F, all substantially as set forth.

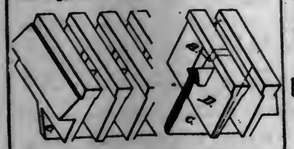
161,757. CLASPS OR THIMBLES FOR HINGING DUTCHES. Jas. C. Covert, Troy, N. Y. [Filed Feb. 4, 1875.]



The combination of the tube A, having the projection *a*, with interior screw-threads cast therewith, and the screw C, having the eye D and the sharp point *x*, for entering into the rope, all constructed as and for the purposes set forth.

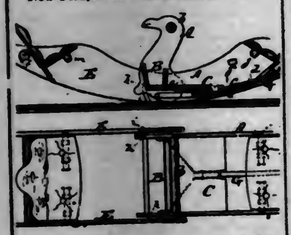
161,762. GRATE-BARS. Alonzo W. Cram, Haverhill, Mass. [Filed Jan. 20, 1875.]

Brief.—The main bar is provided with short transverse bars, having an open space through them, to cause a circulation of air over the entire length of said bar.



1. The cross-bars D, provided with the opening A, in combination with the main supporting-bar C.
2. The cross-bar D, provided with the space E and opening A, in combination with the main supporting-bar C.

161,763. CHILD'S COMBINED ROCKERS, SIDE-SAWS, AND OBLIQUE. James A. Crandall, New York, N. Y. [Filed Mar. 6, 1875.]



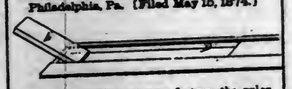
1. A combined rocker and seesaw, or double rocker, composed of the rocking side plates A A, seat D, and folding side rockers E E, substantially as herein shown and described.
2. The stop-pin *h* and groove *i*, in combination with the folding side plates A E of a combined rocker and seesaw, or double rocker, as set forth.
3. The pivoted seat D, arranged to be adjustable in a rocker, so that its position may be changed when said rocker is converted into a seesaw, or double rocker, or into a chair, substantially as specified.
4. The combined rocker and baby-chair, composed of the side plates A E, pivoted seat D, and cross-bar *f*, substantially as herein shown and described.

161,765. PROCESSES FOR ORNAMENTING SURFACES OF GLASS, &c. John H. Crane and Chas. W. Crane, Boston, Mass. [Filed Oct. 21, 1874.]

Brief.—The surface painted with asphaltum, which is then coated with soap; design brushed through stencil-plate with spirits turpentine, and washed out with water; same process applied to silvered glass, after being coated with red shellac paint; the shellac then washed away with alcohol, where it is not protected by the asphaltum; the exposed silver then removed with nitric acid, the glass subjected to the action of the sand-blast, the asphaltum removed with spirits turpentine, and the shellac with alcohol.

1. The described process of forming designs upon surfaces, consisting essentially of the employment of asphaltum varnish, soap, stencil-plates, and spirits of turpentine, as and for the purpose substantially set forth.
2. The described process of ornamenting silvered glass, consisting essentially of the subject-matter above claimed, with the additional employment of red shellac paint, alcohol, nitric acid, and the sand-blast, as and for the purpose substantially set forth.

161,761. RULERS. George W. Cronecup, Philadelphia, Pa. [Filed May 15, 1874.]



As a new article of manufacture, the ruler A, provided with the receptacle D for containing pens, pencils, &c., the sliding cover C, and the pencil-sharpener E, pivoted to the sides of the receptacle, so as to fold therein, substantially as hereinbefore described and set forth.

161,762. ROOFING. Allan Cummings, New York, N. Y. [Filed Mar. 17, 1875.]



In combination with the roof A of a building covered with water-proof felting or paper *a'* the strips of wood *a a* and *b*, fastened thereto at suitable intervals, dividing the roof into a series of sections inclined from its center, into which sections is placed a coating of composition and gravel, substantially as and for the purposes as herein shown and described.

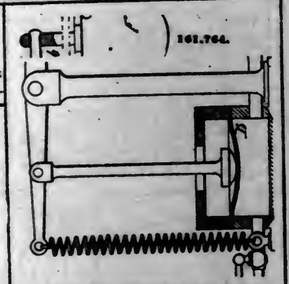
161,763. HOSE-MOULDS. Mosely S. Curtis, Long Island City, assignor of one-half to W. McCollum, New York, N. Y. [Filed July 1, 1874.]

Brief.—Attached to the end of a nozzle is a tip of rubber, having a cylindrical bore and an inverted bell-shaped exterior form. A sleeve encircling the tip is arranged to be forced outward, for contracting the sectional area of the nozzle at its end without changing abruptly the direction of the water.

1. A nozzle provided on its end with a flexible rubber tubular tip, attached rigidly thereto, the said tip being of inverted bell shape, or inverted conical exterior form, in combination with a stretching-sleeve of similar internal contour, encircling the said tip, and arranged to be forced in a direction from the end of the nozzle, the rubber acting by its own retractile force to draw itself back through the small end of the sleeve, thereby diminishing its bore.
2. The combination of nozzle A, tip B, stretching-sleeve D, and mechanism for driving the said sleeve in a direction from the end of the nozzle, substantially as and for the purposes set forth.
3. The tip B, made of flexible rubber, of inverted frustum of a cone, or inverted conical exterior form, and provided with a cylindrical bore, substantially as described.

161,764. AUTOMATIC REGULATING DEVICES FOR STEAM-ENGINES. Alex. de Beaumont, Philadelphia, Pa., assignor of one-half his right to John Weidig and Charles Yockel, same place. [Filed Dec. 14, 1874.]

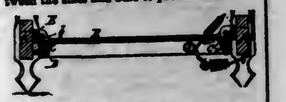
161,764.



A steam-engine regulator, in which are combined the following elements—namely, an elastic loaded diaphragm or piston, B, a chamber, I, beneath the same, the exhaust-pipe or exhaust-passage of the engine, a pipe, *b*, forming a communication between the exhaust-pipe and the chamber, an outlet, *c*, from the latter, a regulating-valve, F, and mechanism whereby the pulsating movements of the diaphragm or piston are communicated to the said regulating-valve, all substantially as set forth.

161,765. SEED-BOTTOMS. James L. Decker, Wayne, Mich. [Filed Nov. 7, 1874.]

Brief.—The slats rest on transverse spring-bars suspended from the side rails by elastic bands, and the slats are kept in place by transverse bars bearing on them at their ends. Rubber or other elastic straps are placed between the slats and bars to prevent noise.

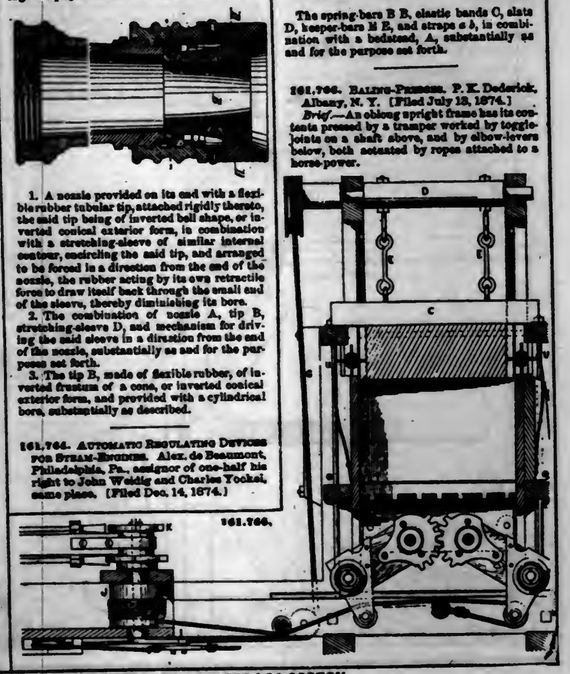


The spring-bars B B, elastic bands C, slats D, keeper-bars E E, and straps *a b*, in combination with a bedstead, A, substantially as and for the purpose set forth.

161,766. BALING-PRESSES. P. K. Dederick, Albany, N. Y. [Filed July 13, 1874.]

Brief.—An oblong upright frame has its contents pressed by a tramper worked by toggle-joints on a shaft above, and by elbow-levers below, both actuated by ropes attached to a horse-power.

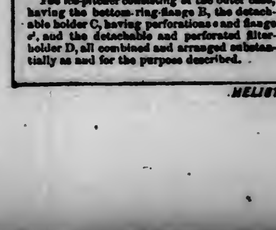
161,766.



1. In a baling-press, the combination of the roll D, tramper C, and toggle or jointed connection F, constructed and operating as and for the purposes set forth.
2. In a baling-press, the retaining-rolls U U, substantially as and for the purpose set forth.
3. The retaining-wedge T, in combination with the springs S and box A, substantially as and for the purpose set forth.
4. The combination of the ropes O, swivel H, crank I, shaft and ratchet K, capstan-drum J, and horse-lever P, substantially as and for the purpose set forth

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161,767. RUNNING-GEARS FOR CARRIAGES AND WAGONS. Henry Dibel, Ridgway, Pa. [Filed Feb. 13, 1875.]



1. The combination of the axle, bounds, sand-board, and holding-clips, the clips being placed around the sand-board and axle and through the bounds, as set forth.
2. An axle provided with a sand-board, C, bounds B, and clips E, all secured by said clips firmly to the neck *d* of the thimble-skein D, as set forth.

161,768. SELF-CLOSING FAUCETS. Patrick W. Doherty, Boston, Mass. [Filed Dec. 26, 1874.]

1. The combination, with a faucet having a valve provided with a vertical stem projecting through the cap of the faucet, of the two pivoted levers, both operating upon the stem, for raising the valve from its seat, and a spring encircling said stem, for closing the valve after the levers have been released, substantially as described.
2. The combination, with the pivoted levers E E, both operating upon the vertical stem of the valve, of the sliding clamping-ring, and a spring for closing the valve after it has been raised by the levers and clamp, substantially as described.

161,769. ICE-PITCHERS. Louis Evans, Pittsburg, Pa. [Filed Dec. 31, 1874.]

The ice-pitcher consisting of the outer case, having the bottom-ring-flange B, the detachable holder C, having perforations *c* and flange *c'*, and the detachable and perforated filter-holder D, all combined and arranged substantially as and for the purpose described.

161,769.



161,770.



161,770. SULKY-PLOWS. John Fay, New Boston, Mich. [Filed Jan. 22, 1875.]

Brief.—A guide-frame for the beam is swivaled beneath the axle in which the plow-beam is held at work, by a notched bar and spring, or lifted by chains from the front and rear ends, connecting with a pulley and single lever.

1. The pulley G, lever H, ratchet *g*, pawl *h*, and chains I F, in combination with the tongue and plow-beam of a sulky-plow, substantially as and for the purpose set forth.
2. The combination of the bolt *a*, swivel *b*, guide-bars D D, set-screws *c c*, eyebolt *d*, nuts *e*, and braces E E', in combination with the axle and pole to receive and guide a plow-beam, substantially as described.

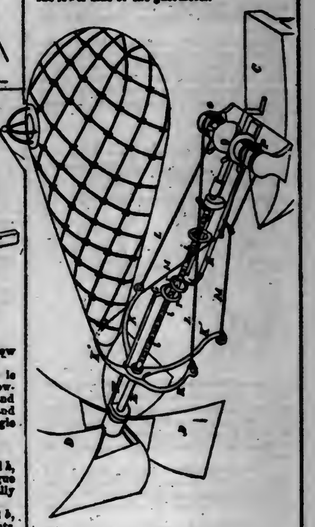
161,771. AERIAL TOYS. Peter B. Fernandez, San Francisco, Cal. [Filed Feb. 2, 1875.]



The apparatus consisting of the propeller D, with its driving mechanism, and the containing-case C, when mounted upon the arm B, so pivoted as to be susceptible of rotation in a horizontal plane, substantially as herein described.

161,772. AERIAL AND MARINE GYRATORS. Peter B. Fernandez, San Francisco, Cal. [Filed Feb. 2, 1875.]

Brief.—The suspending-netting is so arranged that the balloon will stand with its major axis horizontal, and the car is suspended beneath the larger portion of the gas-holder. The propeller may be made in any suitable form, and mounted on a short rigid shaft, which turns in boxes upon a frame or bar. The rear end of this bar is connected by a hinge-link, admitting of motion in any direction, with the forward end of an inclined bar, which extends down to the car, and by means of which the whole device is suspended along the lower side of the gasometer.



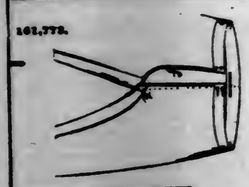
1. The gasometer A, made conical, as shown, and having the car C suspended beneath the larger and more buoyant end, while the propeller D is placed in front of the smaller end, so that it can be turned to greater angles and control the movements of the balloon, substantially as herein described.
2. The propeller D, constructed as shown, and mounted upon the frame F, having a universal-joint connection, O, with the inclined bar H, so that it can be turned in any direction, substantially as herein described.
3. The arms K K', extending from the frame F, and provided with the cords L and M, together with the drums O and P, placed within the car for the purpose of turning the propeller, substantially as herein described.
4. The flexible shaft, consisting of the cylindrical jointed sections *f f*, united as shown, and passing through the guides *r r* at the joint G, so as to unite the rigid shafts E and J and rotate the propeller in any position, substantially as herein described.
5. An aerial machine, consisting of the gasometer A, having the car C and propeller D attached to it relatively, as shown, and united by the inclined bar H, said propeller being so mounted as to allow it to be turned in any direction, and rotated, by means within the car, through the medium of a flexible shaft, *f f*, substantially as herein described.

161,773. DRAWERS. John J. Fitz Patrick, Philadelphia, Pa. [Filed Nov. 21, 1874.]

A new article of manufacture a pair of drawers, one of the front sides of which from the crotch upward is cut in a curved line, while the other front side is cut in a diagonal or straight line, the latter overlapping the former in the crotch, substantially as and for the purpose set forth.

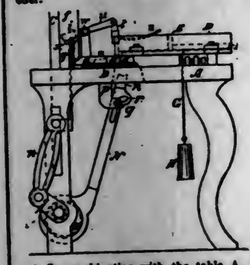
HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

161,773.



161,774. COUNTER-PRESSES. I. Frechette, St. Hyacinthe, Canada. [Filed Mar. 10, 1875.]

Brief.—The stock is cut into blanks of suitable form, which are placed in a box or trough, and automatically pressed forward to an aperture, through which they drop singly into a mold, when, by means of reciprocating dies, they are "struck up" into the form of a stiffener.



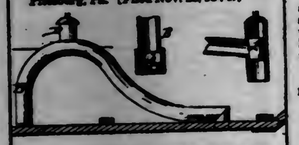
1. In combination with the table A, the bars *a b c*, grooves *d*, raised portion B, dies *e*, mold *q* and frame C, having projections *f f*, with beveled ends *f*, spiral springs *g' g'*, shaft *h*, cranks *i*, and connecting-rods *m*, substantially as and for the purposes described.

2. In combination with the table A and mold *q*, the die *n*, rod N, provided with the slot *r*, eccentric *s*, swage *p*, and guide-pin *q*, substantially as and for the purposes described.

3. In combination with the table A, the feeding-trough D, having slot *x*, board E, bar F, cord G, weight H, and spring *z*, substantially as and for the purposes described.

4. In combination with the trough D, the block *t*, lever *u*, pivot *w*, pin *v*, and spring *y*, substantially as and for the purposes described.

161,775. MEANS FOR DISCHARGING BILGE-WATER FROM VESSELS. Chas. M. Gearing, Pittsburg, Pa. [Filed Nov. 21, 1874.]

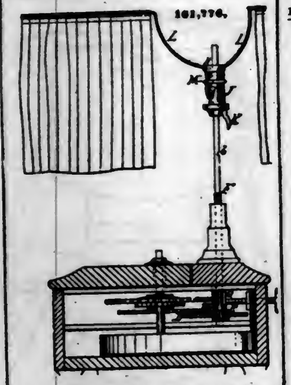


The combination, with a boat, of a siphon, B, leading from the well, with its upper part extended above the water-line, and passing through the bottom or side of the boat, substantially as set forth.

161,776. AUTOMATIC FANS. John Gilliford and John M. Hoffman, Spruce Hill, Pa. [Filed Mar. 12, 1875.]

Brief.—Relates to the fan-shaft, the adjustable casket, and the attachment of the fan-arms to the same.

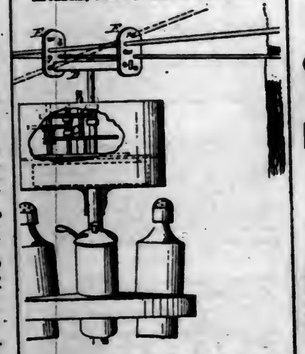
1. The revolving shaft F, having notches *h*, in combination with the adjustable sleeve *i*, having spring-catch J and lever K, the clock-gearing, and the regulator, consisting of the screw P and the spring Q, substantially as and for the purposes described.



161,776.

2. The sleeve I, having rings M and N, holes *d* and *f*, and notches *e*, in combination with the arms L, having their ends bent at right angles, provided with notches *c*, and sprung outwardly, substantially as and for the purposes described.

161,777. TABLE-FANS. Christian Good, Arcanum, Ohio. [Filed Feb. 4, 1875.]



In combination with a table-fan operated automatically, the coupling described, consisting of the bar D and the perforated and plates E E, for adjusting the fans at various lengths, heights, and inclinations, substantially as set forth.

161,778. COMPOSITIONS FOR FILLING THE PORES OF PAPER. George H. Goodwin, Boston, and George W. Seaverns, Lawrence, Mass.; said Seaverns assignor to said Goodwin. [Filed Apr. 1, 1874.]

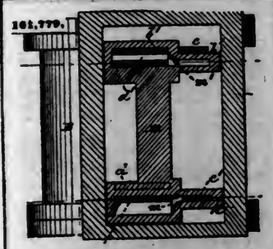
Brief.—Carbonate of lime is supposed to be surface-converted into sulphate by a quantity of acid too small to effect complete conversion, and in this state is used as a filling for fiber in the pulp.

A filling for the fibers of paper, consisting of calcic carbonate treated with from three to twenty per cent. of sulphuric acid, substantially as and for the purpose described.

161,779. VALVES FOR COMPOUND ENGINES. Stephen B. Grosscup, Newark, N. J. [Filed Jan. 12, 1875.]

Brief.—The side extension of the valve serves to conduct the steam from the high-pressure to the low-pressure cylinder, the induction-ports being on a line transverse to the cylinders.

161,779.



The valve D, constructed with connecting passages or apertures *n n'* between the cavities or hollow face portions *g g'* and *h h'* of the valve, in combination with the ports *b b'*, *c c'*, and *d d'* in the valve-seat, the whole being arranged for operation substantially as shown and described.

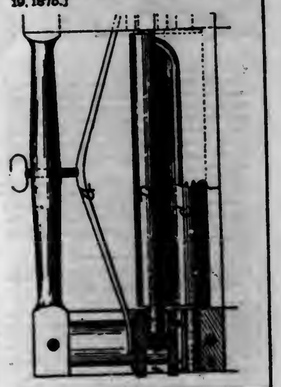
161,780. PERKING-MACHINES. Thos. Hagerty, New York, N. Y., assignor to John A. Pickersgill, same place. [Filed Dec. 2, 1874.]

Brief.—The cutting-blade and anvil are adjusted to any tension by means of the lever and adjusting-screw.



In a pinking-machine, the frame A having cutting-wheel D, in combination with the bifurcated lever C, anvil B, and adjusting-screw E, all constructed as and for the purpose set forth.

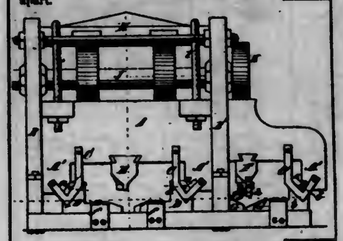
161,781. WRINGERS. Alex. W. Hall and Albert E. Hall, Adrian, Ohio. [Filed Feb. 19, 1875.]



The combination, with the standards A of a clothes-wringer, of the journal-boxes F for the upper roller, constructed with the recesses *f*, vertical portions *f'* of reduced thickness, and projecting guide-flanges *f''*, substantially as and for the purpose described.

161,782. MACHINES FOR MAKING OX-SHOES. Joseph Hall, Napanoch, N. Y. [Filed Feb. 27, 1875.]

Brief.—Chamfered pendants A' push the dies forward as the beam descends, while angular bars C engage with projections *c* on the dies as the beam ascends, and throw them apart.

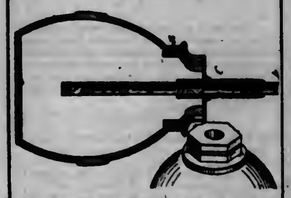


1. The die-beam A, with the projections or pendants A' A' and angular bars C C, in combination with the dies or presses D D, substantially as and for the purpose set forth.

2. The nail-hole marking and cutting or finishing die F, having the points or markers *g g* and the cutter *h*, in combination with the beam A and dies or presses G G F, substantially as and for the purpose set forth.

161,783. OIL-CUPS. James G. Hallas and William N. Weeden, Waterbury, Conn., assignors to Benedict & Burnham Manufacturing Company, same place. [Filed Dec. 31, 1874.]

Brief.—The tube is split at one or both ends, for the purpose of slightly griping at any point the rod placed within it, and thus prevent its coming in contact with the journal. The metallic ring is secured to the neck of the cup by a collar turning and locking into an annular groove formed in the neck.



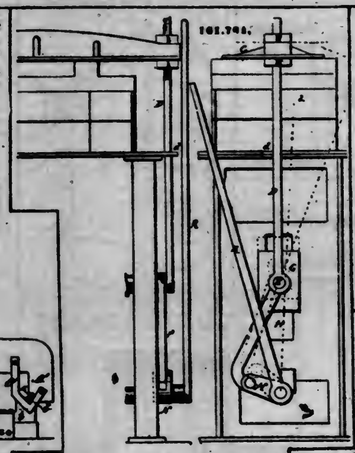
1. In combination with an oil cup or reservoir, a tube, C, contracted at one or both ends, and the rod D held in suspension in said tube, substantially as and for the purpose specified.

2. The combination of the cap, its neck of other than cylindrical form, and constructed with the groove *d*, the metallic ring E, constructed to pass onto the neck above the groove, and the auxiliary collar *f* set onto the neck, and turned in said groove to interlock with the angles of the neck, substantially as described, to secure the neck to the cap.

161,784. MOLDING-MACHINES. Thorvald P. Hammer, Branford, Conn. [Filed Feb. 25, 1875.]

Brief.—For banking a proper quantity of sand a thin hoop is provided, which fits inside the flask, so that it may be pressed down with the sand into the flask by the piston. The sprue-pattern is compressible, so that it yields with the pressure on the sand, and is provided with a spring, so as to rise above the surface of the sand on the withdrawal of the piston, thus forming a convenient handle for its removal.

161,785.



161,785. RIDING-SADDLES. Chas. H. Harris, Cedartown, Ga. [Filed Feb. 13, 1875.]



In a riding saddle the spring C, rising from the top of the bow B and terminating at F, and having a leather covering, C', ending in a loop, T, passing under the rod *d* and inclosing the curved rod *e*, to which is attached the seat D, all constructed as and for the purpose described.

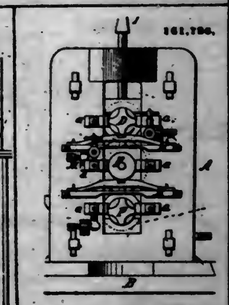
161,786. THREE-HIGH ROLLS. Wm. Harris and J. M. Ayer, Chicago, Ill. [Filed Feb. 2, 1875.]

Brief.—The journals of the upper and intermediate rolls rest upon flat springs, and all of the rolls have lateral bearings against the blocks *a a*, secured in the frame. The intermediate roll is hollow, and is kept cool by water passing through it. The upper and lower rolls are cooled by jets of water thrown upon them—troughs, pressed against the rolls by springs, being provided to catch the water, and prevent its descending upon the metal being rolled.

1. The improved three-high rolls herein described, consisting of the top roll D, intermediate hollow roll E, and lower roll F, supported or journaled, one above the other, in a frame, A B, the top and intermediate rolls D E, supported upon flat springs H, and the central hollow roll E, being larger than the others, and adapted to receive through it a constant stream of water, as and for the purposes described.

2. The troughs for carrying off the water, and preventing the same from falling upon the metal, substantially as set forth, in combination with the spiral springs for pressing them against the rolls, and the pipes for supplying the water, as herein described.

161,787.



161,787. CURRY-COMBS. George Havell, Newark, N. J. [Filed Feb. 18, 1875.]

Brief.—The tooth-bar is formed with rib *a* along its base, which serves to strengthen the plate, and is left wide in order to find a broad base and seat upon the back of the curry-comb.

The tooth-bar D, formed with the head or rib *c* at its upper part, and provided with the rivet-prongs *a a*, as set forth.

161,788. BIRD-CAGES. Andw. B. Hendryx, Ansonia, Conn., assignor to Hendryx & Bartholomew, same place. [Filed Nov. 14, 1874.]

Brief.—Friction-rollers upon the arms of a cam-lever, for operating the brake-heads.



1. In combination with the pan A and lower ring or bar of a bird-cage, the radial bolts C, more or less in number, passing through the pan A, substantially as and for the purpose specified.

2. In combination with the wires centering at the top of a bird-cage, the doubled or grooved ring D inclosing the ends of said wires, and the flanges of said ring struck down outo and so as to bend all the wires at the ends, substantially as specified.

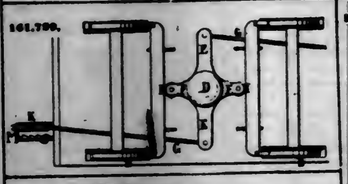
161,789. RAILWAY-CAR BRAKES. Gottlob Hiller, New York, N. Y. [Filed Sept. 11, 1874.]

1. The cam D, having arms E E for connecting with the brake rods or chains, and arms F F, having friction-rollers for operating the brake-heads, all combined for operation from either end of the car, substantially as and for the purpose specified.

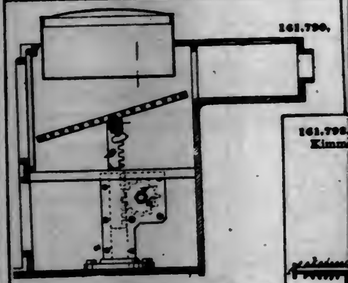
2. The combination, with the arms E E and with the brake-heads, of anti-friction rollers I, substantially as specified.

3. The levers K K and detent O, in combination with the brake-rods G and the cam-lever D, substantially as set forth.

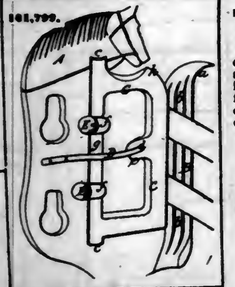
161,789.



161,790.



161,789.



161,790. GRATES FOR STOVES. Ambrose N. Hoysradt, New York, N. Y. [Filed Mar. 4, 1875.]

Brief.—The grate may be tilted as well as raised and lowered.

The combination, with a stove-grate provided with mechanism for raising and lowering the same, of a traverse connected at its ends with the said raising and lowering mechanism, and carrying the grate which is journaled thereon, substantially as described, whereby the grate can be turned to dump the contents, whatever the elevation of the same may be, as set forth.

161,791. UMBRELLA-RIB-TIP HOLDERS. A. G. Hubbell, Norwich, Conn., assignor of one-half his right to R. M. Hubbell, same place. [Filed Mar. 20, 1875.]

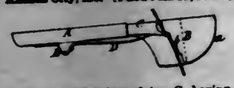




1. A parasol or umbrella rib-tip holder, consisting of the jointed ring-clasps C C, pivoted to the sliding ring *b* on a ferrule or thimble, B, secured in position on the staff or handle A, substantially in the manner and for the purpose herein shown and described.

2. A parasol or umbrella rib-tip holder, consisting of the oval clasp-ring C', pivoted to the ring *b* upon the ferrule or thimble B, substantially in the manner and for the purpose specified.

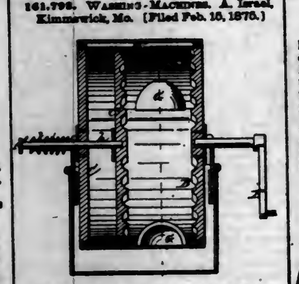
161,792. BEER-HOLDERS. Chas. Hutchings, Kansas City, Mo. [Filed Jan. 18, 1875.]



1. The vertically-hinged jaw C, having a beveled edge and a return upper end, in combination with the vertical branch B of the figure-head A, terminating in an under lip, *c*, and having a beveled and corrugated surface, *a*, substantially as and for the purpose set forth.

2. The combination, with the vertical branch B of the figure-head A, of the vertically-hinged jaw C, socket-bearings *c c*, finger-piece *e*, jockey-vivified guards E *f*, and the spring D, substantially as and for the purpose set forth.

161,793.

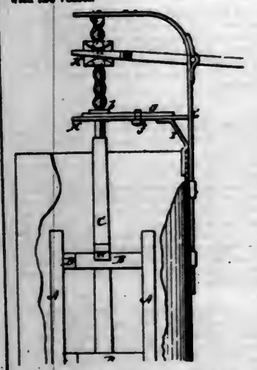


161,793. WASHING-MACHINES. A. Israel, Kimmswick, Mo. [Filed Feb. 10, 1875.]

In combination with the washing-cylinder, having interior corrugated and stationary rubber B, slots *a*, and cups O, the corrugated board C', connected to the rod A, and adjustable within the cylinder by means of the exterior spring *i*, as and for the purposes set forth.

161,794. CHURNS. Thos. B. Jewett, Lawrence, Kans. [Filed Apr. 5, 1875.]

Brief.—The dasher has a reciprocating rotary motion, and, in connection with the operating mechanism, is adjustable to be accommodated to vessels of varying size. The dasher and mechanism are both detachably connected with the vessel.

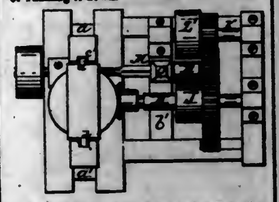


1. The adjustable churn-dasher herein described, consisting of the vertical bars A A, with arms B B held and adjusted in catches *a a* on the central shaft or bar C, substantially as and for the purposes herein set forth.

2. The combination, with the adjustable churn-dasher A B C, of the screw D, adjustable plate J, nut K, and perforated arm H of the removable frame G H, substantially as and for the purposes herein set forth.

161,795. COTTON-PRESSES. William W. Knowlen, Bastrop, Tex. [Filed Oct. 21, 1874.]

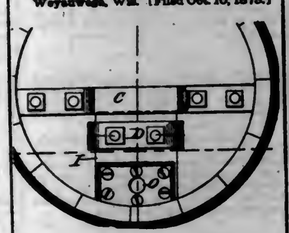
Brief.—A friction-pulley is placed upon the end of an actuating-shaft, that is operated by a vibrating lever, whereby said friction-pulley is brought to bear against the larger pulley, for the purpose of running up the follower, or against the smaller pulley, for the purpose of running it down.



1. The combination of the pulley P on the horizontally-vibrating shaft M, the pulley *l'* on the shaft K, and the pulley J on the shaft H, all arranged in the same horizontal plane, the pulley *l'* being of greater diameter than the pulley J, substantially as and for the purpose set forth.

2. The combination, with the horizontally-vibrating actuating-shaft M, of the vertically-vibrating lever O, pivoted to the intermediate brace *b'*, substantially as and for the purpose set forth.

161,796. BEER-CASKS. Peter Knudsen, Weyauwega, Wis. [Filed Oct. 10, 1873.]



A beer-cask, having the cross-bar C secured to the outside of the head for holding the parts securely in place, in combination with the beveled removable section I, having the bar D secured to its outer face, all constructed and arranged to operate substantially as and for the purpose set forth.

161,797. COMBINED WATER-COOLERS AND REFRIGERATORS. John K. Korff, Georgetown, D. C. [Filed Feb. 23, 1875.]

Brief.—A crescent-shaped vessel passes through a relatively small opening, and fits the wall of the cooling-chamber, and affords inner space for a circular vessel.

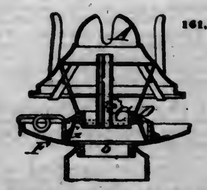


The combination of the refrigerating-chamber C, having an entrance and a circular perimeter, the crescent-shaped pan D, and inner circular dish, as and for the purpose described.

161,798. LAMP ATTACHMENTS. Theodore C. Lawrence, Ledoga, Ind. [Filed Feb. 6, 1875.]

Brief.—The cup-shaped shelf catches runff and drip. The conical flange makes a tight joint.

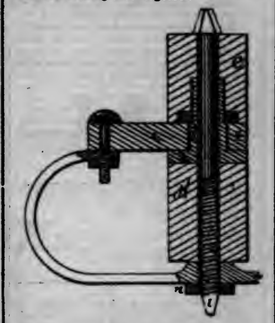
161,796.



The cup-shaped shelf F, having the conical flange G, and hinged base D, provided with a spring-catch, *c*, in combination with the elevated lamp-burner cone A, substantially as and for the purpose set forth.

161,799. KING-BOLTS. Cornelius G. Lasear, Chicago, Ill. [Filed Oct. 1, 1874.]

Brief.—A hollow sleeve upon the axle-plate fitting into a socket in the bolster-plate, with a bolt passing through both, and the bolster and axle locking them together.



1. Combined with the bolster-plate *c*, having a socket, the axle-plate A, constructed with a sleeve, *i*, fitted to said socket, and a holding device to lock the parts together and prevent accidental displacement, as set forth.

2. The bolster-plate *c*, provided with a socket, and the axle-plate A, formed with a hollow sleeve, *i*, and a holding device to lock the parts together, combined with a tie-bolt, I, extending through said sleeve, and through the bolster and axle, as set forth.

161,800. CARRIAGE-SPRINGS. Cornelius G. Lasear, Chicago, Ill. [Filed Sept. 26, 1874.]

Brief.—Spring composed of side plates and cross-plates, hinged together, and resting upon the running-gear in elastic seats.

1. The side plates D D and cross-plates E E, connected at their ends by hinge-joints, said side plates being attached at their middle to the running-gear, and said cross-plates attached to the front and rear bed-pieces of the body A, all combined to form a body-spring flexible in every direction, all as set forth.

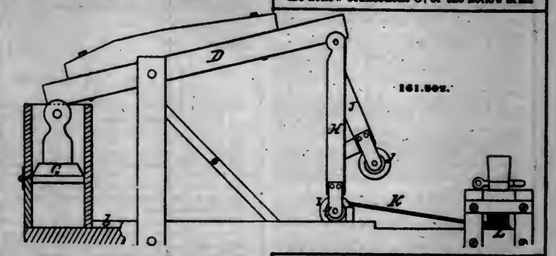
2. Combined with the carriage-spring and the parts of the frame to which it is attached, the interposed elastic cushions F, to absorb vibrations and prevent rumbling, as set forth.

3. The shoe-plate G, combined with the elastic cushion F and spring D, to hold said cushion in place and conceal it from sight, as set forth.

161,801. BOILER-COVERINGS. A. Leydet, Marseilles, France. [Filed Nov. 6, 1874.]

The combination of the solution of gutta-percha or india-rubber with the composition of glycerine, charcoal, sawdust, broom, hair, powdered furnace-slag, and clay, to be used for the purpose set forth.

161,802. COTTON-PRESSES. W. W. Louis, Fresserant, Tenn. [Filed Oct. 8, 1874.]



161,802.

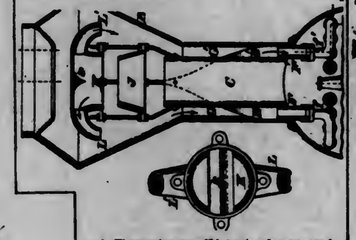
1. The combination, with the lever D and hinged arm H, of the secondary arm J, rigidly secured thereto, substantially as specified.

2. The combination, with the cable K and the lever D, of the arms H J, having pulleys I J upon their lower ends, substantially as specified.

161,803. SPARK-ARRESTERS. Matthew B. Mason, Kansas City, Mo., assignor to himself and Robt. H. Hunt, same place. [Filed Mar. 26, 1875.]

Brief.—The deflector is provided with downward-turned nozzles, which concentrate the volume of sparks, and force them in jets into conducting-tubes leading to the fire-box of the locomotive.

161,803.



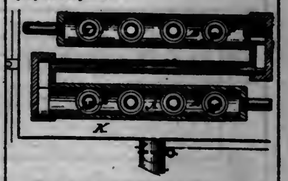
1. The spark-crown K *k*, having down-turned nozzles L L' for concentrating the products of combustion in forced jets, in combination with concentrating-chambers G G' beneath said nozzles, and conducting-tubes leading from the latter, substantially as herein described, for the purpose set forth.

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2. The combination, with the stack-shell B and central chimney C, of the cone J, the adjustable deflector K, having the lateral concentrating-nozzles L L', the helical flanges D D' E E', and conducting-pipes F *f* F' *f'* leading through two or more of the upper smoke-flues of the boiler to the fire-box, as herein shown and described, for arresting, concentrating, and carrying back the gravest emanations of the burning fuel, in the manner specified.

161,804. STEAM-RADIATORS. J. Mason, Paterson, N. J. [Filed Jan. 12, 1875.]

Brief.—The construction is designed to make effectual provision for the drainage of the water of condensation, and for the expansion and contraction of the parts without injury to the joints.



The combination, with two or more rows of steam-tubes, E F, their base-pipes A B, and the hollow connections G, of the hollow arms C C at reverse ends of the radiator, and the connecting-pipe D, substantially as and for the purposes herein set forth.

161,805. BRUSH AND MOP HOLDING DEVICES. Richard C. May, Sacramento, Cal. [Filed Dec. 28, 1874.]

Brief.—The clamp that holds the mop secures the brush in its seat, also. The arm that holds the mop along the handle carries a device for twisting it to wring it, and can be slid down the handle to be brought into use.



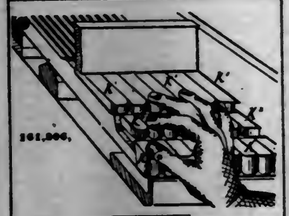
In combination with the handle A and head-block B, provided with the angle-plate, cross-bar, and spring-arm C, the T-rod *f g*, the loosely-attached arm J, provided with the tubular head *e*, and the rod *p*, substantially as and for the purpose set forth.

161,806. KEY-BOARDS FOR MUSICAL INSTRUMENTS. Martin H. McChesney, Pontiac, Mich. [Filed Oct. 21, 1874.]

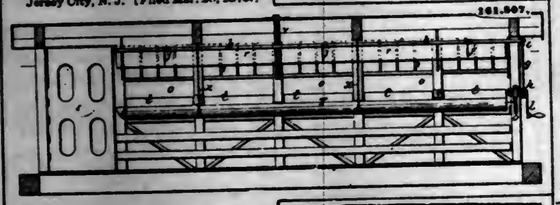
Brief.—A row of double-faced keys, arranged in a whole-tone series, have, between said double faces, an alternating row of single-faced keys, also arranged as a whole tone series, but the two series being a half-step apart.

The improved key-board herein described, consisting of a series of keys having the inclined and double faces K K' and the inclined-faced keys K'', all combined and arranged as and for the purpose described.

161,806.



161,807. BOOT-CARS. John R McPherson, Jersey City, N. J. [Filed Mar. 20, 1875.]



1. Combined with a cattle-car, longitudinal hinged troughs, to be emptied outward from the car in the act of elevating them, substantially as set forth.

2. A car-body having longitudinal openings O in its sides, in combination with hinged troughs T beneath openings O, and to operate to close them when elevated, substantially as set forth.

3. Water-sheds n within openings O in the sides of the car, in combination with hinged troughs, adapted to empty outward when elevated, substantially as set forth.

4. The flanged water sheds n, in combination with the troughs T, having overlapping flanges t at their hinge edges, substantially as set forth.

5. The troughs T, having beveled ends s, in combination with a car-body having doorways D in the sides and at the ends, as and for the purpose set forth.

6. Spark and water proof cribs C, in combination with a stock-car body, substantially as set forth.

7. The sliding rack-covers r, in combination with the cribs C, having racks s within the car, substantially as and for the purpose set forth.

8. The supply-doors or covers q of the cribs, consisting of hinged sections of the car-roof, having overlapping edges, in combination with erect flanges p on the contiguous portions of the roof, to exclude sparks ~ water, as set forth.

9. The combination, with the hinged troughs T, of apparatus for depressing them by a positive force, substantially as set forth.

10. The combination, with the hinged troughs T, of the concentric cogged sectors e, shafts n, pinions m, and hand-cranks l, for operating the same from the car-platforms, in the manner and for the purposes set forth.

11. The combination of the hand-cranks l, shafts n, pulleys h i, bands g, windlass shafts k, and cords or chains j, for raising and lowering the sliding rack-covers from the platforms, substantially as set forth.

12. The shafts n, having hand-cranks l, pinions m, and pulleys h thereon, in combination with the cogged sectors e and the bands g, pulleys o, elevated windlass-shafts k, and cords or chains j, for simultaneously operating the hinged troughs and rack-covers, as set forth.

13. The combination, with the hinged troughs T, of the stay-chains s, as and for the purpose set forth.

161,808. WHIFFLETREE-COUPLINGS. Benj. H. Merriman, New Haven, Conn., assignor of one-half his right to C. A. Scranton, same place. [Filed July 20, 1874.]

The whiffletree-coupling consisting of the plate A, with its circular flange C and threaded flange D, combined with the plate B, with its circular flange E and threaded boss F, substantially as set forth.

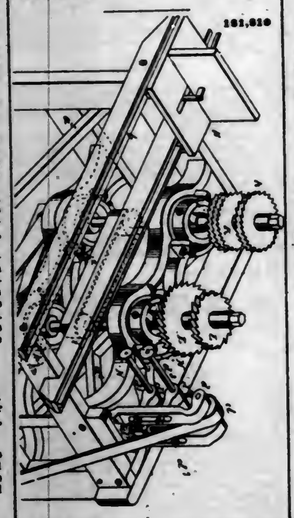
161,809.



1. As a new article of manufacture, a leather outer sole for a boot or shoe, which extends from the toe to the heel, and is cut out at the heel, so as to encompass the same, substantially as described.

2. The outer sole D, cut out at *d* so as to leave an annular rim, *f*, in combination with the wooden heel and shank B, rabbeted at *a* and grooved at *b*, the insole *c*, and the upper and counter, substantially as and for the purpose described.

161,810.



161,809. BOOTS AND SHOES. Wm. Meyer and Henry Freiburg, Quincy, Ill. [Filed Mar. 23, 1875.]

Brief.—A lift is punched from the sole at the heel portion, so that it may encircle the heel of the shoe.

161,810. MACHINES FOR RELISHING TENONS AND CUTTING WEDGES. J. H. Millspaugh, Williamsport, Pa. [Filed Feb. 9, 1875.]

Brief.—Two vertical saw-arbors carry each a series of saws, which, in connection with two horizontal arbors carrying relishing-saws, relish the tenons and cut the wedges.

1. The combination of the vertically-adjustable frames d^3, the vertically-slotted arms *d*, the pulley d^1, the shafts d^2, and the saws N, constructed and arranged substantially as described and shown.

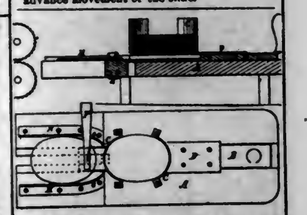
2. The adjustable arbors H and I, in combination with the gimbals *h* and slides h^1, constructed and arranged substantially as described and shown.

3. In a single machine, the combination of the adjustable arbors H and I carrying the saws K and L, the adjustable frame d^3 carrying the shafts d^2, and saws N, and carriage B, the several parts constructed substantially as described and shown.

161,811. MECHANISMS FOR FEEDING HEEL-STIFFENERS OR COUNTER-BLANKS. Stephn. Moore and Geo. F. Moore, Sudbury, Mass., assignors to Stephen Moore and H. Rogers, same place. [Filed Mar. 15, 1875.]

Brief.—The uncrimped blanks are placed in a pile in a receiver, and are moved forward singly by a reciprocating slide, which acts upon the lowermost blank in the pile at each advance movement of the slide.

161,812.

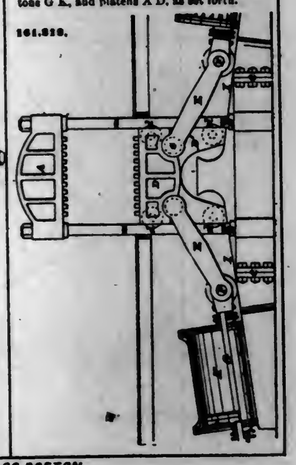


The combination of the slide B, provided with the plate D, and the spring or presser F with the table A, provided with the hopper C and the guides H H, all substantially as and for the purpose described.

161,813. PRESSES FOR COTTON-BALES. E. L. Morse, St. Louis, Mo., assignor of one-half his right to J. W. Branch, same place. [Filed Dec. 26, 1874.]

The inclined tracks J J, in combination with the push-bars E E, steam cylinders and pistons G K, and platens A D, as set forth.

161,813.

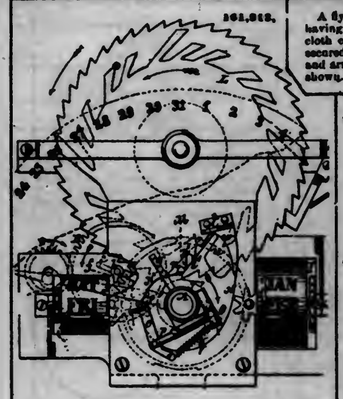


161,814.

161,814. WHIFFLETREE-COUPLINGS. Benj. H. Merriman, New Haven, Conn., assignor of one-half his right to C. A. Scranton, same place. [Filed July 20, 1874.]

The whiffletree-coupling consisting of the plate A, with its circular flange C and threaded flange D, combined with the plate B, with its circular flange E and threaded boss F, substantially as set forth.

161,812.



161,812. CALENDAR-MOVEMENTS OF CLOCKS. Thos. H. Mott, New York, N. Y. [Filed Dec. 10, 1874.]

Brief.—A notched incline, a four-year wheel with teeth of varying length, and a spring-dog with downwardly-projecting pin, act in combination, so that in the longest months all the notches are left exposed for engagement with the pin, and in the shorter months one or more of the notches are covered by the longer teeth of the wheel, to permit the pin to pass directly to the notch representing the first of the month, preparatory to a new revolution.

1. The combination, with the notched incline M, of the mutilated covering-wheel L and a monthly revolving dog or device, O, for operation of and in connection with the spindle A, which carries the index used to show the dates of the month, substantially as and for the purposes herein set forth.

2. The monthly revolving wheel F, constructed to slip, as described, in combination with the single toothed driver *f*, the spring-dog or device O, the guide N, the notched incline M, the index-spindle A, and the monthly dial I, essentially as specified.

3. The combination of the incline *t*, the curved rib *u*, and the scroll-guide N with the notched incline M and the spring-dog or device O, constructed to operate as described.

4. The toothed driver *f*, constructed to lock the wheel F, with provision for slip of the latter at the end of the month, as described, in combination with the notched incline M and spring-dog or device O, substantially as specified.

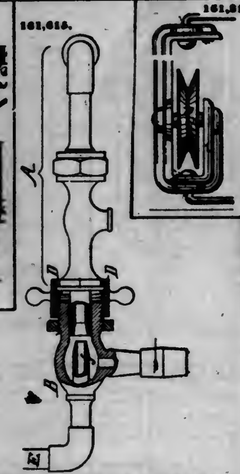
5. The combination of the monthly revolving single toothed cam or projection *f*, the ratchet-wheel K, the notched incline M, and the mutilated covering-wheel L, essentially as described.

161,814. FLY OR INSECT TRAPS. Henry G. Nelson, Prairieville, Mich. [Filed Feb. 12, 1875.]



A fly-trap consisting of the opaque shell A, having the glass-top apertures *a*, and wire-cloth cone C, resting upon and removably covered to the depressed bottom D, constructed and arranged substantially as described and shown.

161,815.



161,817.

161,815. INJECTORS. William H. Newell, Philadelphia, Pa. [Filed Mar. 6, 1875.]

Brief.—The injector consists of two main parts, coupled together by a nut, so that the adjustment of the steam-nozzle can be readily accomplished, and the injector taken apart for cleansing purposes.

1. An injector composed of two parts, A and B, combined with the coupling-nut D, substantially as and for the purpose herein described.

2. The two-part injector and coupling-nut D, in combination with steam and suction pipes E and F, arranged to yield in the manner and for the purpose described.

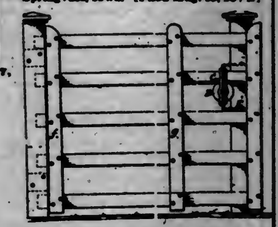
161,816. COMBINED FRUIT-PRESSES, FILTERS, AND FUNNELS. George A. Newman, Brooklyn, N. Y. [Filed Feb. 18, 1875.]



1. The lever C, hinged to the frame A, and provided with the removable plunger B, in combination with the removable perforated bowl B, fitting a recess in the supporting-frame, and the funnel F, fitting the grooves *e'* in said frame, all as and for the purpose described.

2. The combination, with the perforated bowl B, of the removable funnel F, arranged in the frame A beneath the said bowl, and the filter G, arranged within the funnel, as and for the purpose described.

161,817. FARM-GATES. Le V. W. Noyes, Springville, Iowa. [Filed Aug. 16, 1874.]



1. A gate-hanger bent rectangularly at its lower end, so as to form journal-bearings for the groove-pulley D, and at its upper end bent at right angles and provided with perforations *a a*, for the reception of bent headed bolts E E', substantially as described.

2. The hanger C, supported above and below the center of the grooved pulley D by means of the bent bolts E E', substantially as described.

161,818. MACHINES FOR TURNING CHAIN-ROUNDS. Geo. W. Parker, Gardner, Mass. [Filed Oct. 13, 1874.]

Brief.—The rounds pass into the machine in succession, and are cut to the proper length, and tenons formed upon each end, by automatically-operating mechanism.

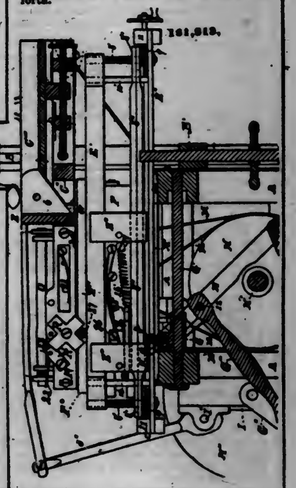
1. The combination of the feed-table proper O'''' with the side pieces O''', said feed-table and side pieces being adjustable in a horizontal plane, and operated to move simultaneously in opposite directions, for the purpose of varying the size of the feed-opening or throat, substantially as and for the purposes set forth.

2. The combination, with the vertically-adjustable frame B', of the horizontally-adjustable feed-table O'''' and side pieces O''', arranged and operating substantially as shown and set forth.

3. The combination, with rails E', of guide-bars $8''$, stock-supporting rail E', and intermediate right and left threaded adjusting-screws 5, by the rotation of which said stock-supporting rails and guide-bars are moved simultaneously in opposite directions, substantially as and for the purposes set forth.

4. The combination, with stock-supporting rails E', guide-bars $8''$, rails E'', screws 5, and shafts 10, of gears 9 and worm-gears $9'$, substantially as and for the purposes set forth.

161,818.



3. The combination of slide-plates F with the guide-pieces E'', guide-bars D'', and stock-supporting rails E', substantially as and for the purposes set forth.

6. The combination, with the slide-plates F, of the plates F' and arms F'', adjustable to and from one another, to vary the size of the stock-receiving openings between them, substantially as and for the purposes set forth.

7. The combination, with slide-plates F, plates F', and arms F'', of hinged yoke-piece b and adjusting-screw c, substantially as and for the purposes described.

8. The combination, with slide-plates F and arms F'', of springs 25 and pins or screws 26, substantially as described.

9. The combination, with the guide-rods g g and slide-plates F F, of the rods 16 and links n n' and 15, substantially as and for the purposes set forth.

10. The combination, with the slide-plates F, guide-rods g, and links n n' and 15, of the rods 16 and springs 16', substantially as and for the purposes set forth.

11. The combination, with the slide-plates F and tenoning-shafts l, of the guide-rods g, connected with the plates F, and provided with adjusting collars and screws g' g'' and arms h, connected with and adapted to impart endwise movement to the tenoning-shafts, at the times and in the manner set forth.

12. The combination, with the stock-holding plates F', of rock-shafts O, arms P P'', and adjusting-screws Q, substantially as and for the purposes stated.

13. The combination, with the adjusting-screws Q, of the slotted bearings P'' and turning bearings 18, substantially as and for the purposes set forth.

14. The combination, with the stock-supporting rails E', of the stock-holding plates F' F', plates F F, and arms F'', substantially as and for the purposes set forth.

15. The combination, with the stock-holding plates F', of the self-adjusting plates 19, substantially as and for the purposes set forth.

16. The combination, with stock-holding plates F' and self-adjusting plates 19, of springs 21, for the purposes set forth.

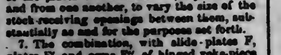
17. The combination, with stock-supporting rails E', and the sliding stock-carrying frame moving thereon, of the stock-holding plates, arranged above said sliding frame, and the star-wheels and holding-dogs, mounted on and carried by said plates, under the arrangement and for operation as set forth.

18. The combination, with sliding plates F, slide-rod G', and cranks G'', of pins or projections c, tubular sliding piece G c', rod c', pitman G''', coupling-pieces H, and hinged swinging piece H', substantially as and for the purposes set forth.

19. The combination of the laterally-projecting rod c with the plates F and sliding piece G c', substantially as described, whereby both slide-plates will be thrown forward and back the same distance each time, whatever the lateral adjustment of the sliding plates A' may be.

20. In combination with the reciprocating stock-carrying frame, the feeding, cutting-off, and tenoning mechanisms, mounted each side of the said reciprocatory frame, on frames adjustable in a horizontal plane at right angles to the path of movement of the said reciprocating stock-carrying frame, substantially as shown and described.

161,819. BALE-TIES. John W. Philp, Humboldt, Tenn. (Filed Mar. 29, 1875.)

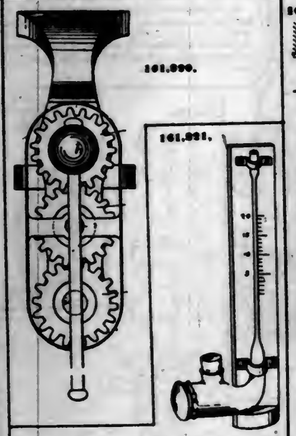


The wire bale-tie, having the coil e at the end, in combination with the link l, to hold the tie end, and be itself secured in place by the turned-up end c, as shown and described.

161,820. VISES. Matthew Fisken and William Fisken, Birmingham, England. (Filed Nov. 20, 1874.)

Brief.—The fixed jaw is formed with elongated bearings, screw-threaded in rear and plain in front, for the reception and support of the screw-rods.

The combination, with the movable jaw carrying the geared screw-rods h i, having plain cylindrical front portions h' i', as described, of the fixed jaw formed with elongated bearings, screw-threaded in rear and plain in front, for reception and support of the screw-rods of the movable jaw, all constructed substantially as shown and set forth.



161,821. SPHYGMOSCOPES. Erastus A. Pond, Rutland, Vt. (Filed Mar. 23, 1875.)

Brief.—Membrane C applied to the pulse. The vibration thereof, caused by the pulse, is communicated through the body A of the liquid to a small column, b, the vibration being thereby multiplied and rendered visible.

1. A sphygmoscope having a liquid-receptacle provided with an opening, adapted to be applied over the pulsating part or body, in combination with a terminal tube, of small diameter, communicating with said receptacle, as set forth.

2. The combination of the liquid-receptacle provided with the open end for application over the pulsating part, as described, the membrane closing said end, and the terminal tube communicating with said receptacle, substantially as shown and set forth.

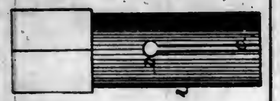
3. In combination with the liquid-receptacle of the sphygmoscope, a piston or its equivalent, as described, to regulate the normal height of the liquid column in the instrument, as set forth.

4. In combination with the liquid-receptacle of the sphygmoscope, the auxiliary reservoir, and the piston for regulating the supply of liquid from said reservoir to the receptacle, as set forth.

5. The terminal tube formed with a slender stem and enlarged ends, substantially as and for the purposes set forth.

161,822. CANNON-PINIONS FOR WATCHES. Sanford Ramey, Pataskala, Ohio. (Filed Aug. 6, 1874.)

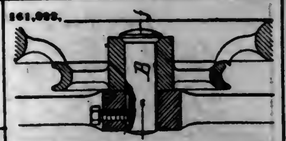
Brief.—A cannon-pinion is firmly united to the upper portion of a friction-sleeve, and the lower portion of the sleeve is split part of its length, to form a spring to clasp the arbor.



1. The combination of the arbor E, split friction-sleeve A, and cannon-pinion F, connected and operating substantially as and for the purpose specified.

2. The friction-sleeve A, with solid or unfractured head B, and having a single split, C, terminating in the cylindrical portion in an eye, D, substantially as and for the purpose specified.

161,823. JOURNALS FOR SEWING-MACHINE FLY-WHEELS. Geo. Rabbitt, Philadelphia, Pa., assignor to the American Button-Hole Overseaming and Sewing-Machine Company, same place. (Filed Feb. 16, 1875.)



The combination of the hub a of the balance-wheel, with the pin B, as fitted to the frame as to be adjustable therein, and having a conical head, f, and a longitudinal recess, h, adapted to the set-screw i in the frame, all as set forth.

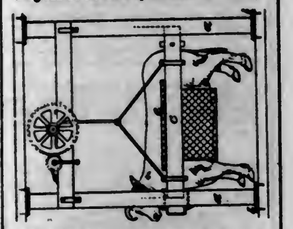
161,824. RIDING-SADDLES. Robt. Reiman, Sullivan, Ill. (Filed Feb. 15, 1875.)



A saddle constructed of metal castles A B, metal plates C C, and wood filling-pieces D D, substantially as and for the purposes herein set forth.

161,825. CATTLE-SUPPORTS. F. H. Ralph, London, England. (Filed Feb. 6, 1875.)

Brief.—The device is for use upon cars or vessels for transporting stock. The stanchions or frame can be taken down when desired, and stored away. The side strips that hold the sling can be elevated by a windlass.



The upright stanchions a, shoes b, side bars c, and rollers c, supporting the sling d, with a windlass above connected to said side bars, all combined, arranged, and operating substantially as herein set forth and shown.

161,826. TRILL-COUPLINGS. Clark Robinson, Eau Claire, Wis., assignor of one-fourth his right to Charles Desilets, same place. (Filed Jan. 28, 1875.)

Brief.—Cylindrical head of shaft-iron slips into hollow cylindrical socket. Wings protect the slot from dust. Dovies locked by slots and lugs on reduced end of socket, and on cap with octagonal periphery. Spring attached to socket presses on latter.

1. In combination with the socket A, provided with the pawl c', groove c'', and notches c''', the cover C, having the flange e, and lugs f and f', substantially as and for the purpose set forth.



2. In combination with the cover C, having the periphery formed of a series of plane faces, the spring D attached to the socket A and pressed against said faces, substantially as and for the purpose set forth.

3. In combination with the thill-iron B and the slot a, of the socket A, the concentric flanges secured to the neck b to inclose said slot, substantially as and for the purpose shown and described.

4. The combination of socket A, having slot a, neck a', groove a'', and notch a''', the thill-iron B, provided with neck b, head b', and flanges b'' and b''', the cover C, having flange e and lugs e e', the spring D, and the rubber disks E and E, substantially as and for the purpose set forth.

161,827. FERTILIZERS. Saml. Seitz, Shrewsbury Township, York County, Pa. (Filed Mar. 10, 1875.)

1. The process of manufacturing a body for fertilizers, the same consisting in scorching and drying oyster-shells so as to render the same friable, without decomposing the nitrogenous matter connected with them, as and for the purpose set forth.

2. The base or vehicle described for fertilizers, consisting of oyster-shells scorched, dried, and ground, substantially as set forth.

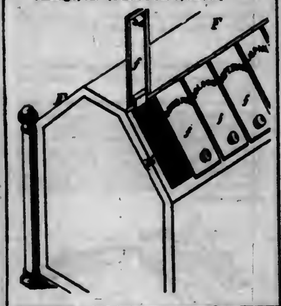
161,828. TOBACCO-HANGERS. S. C. Shelton, Asheville, N. C. (Filed Mar. 8, 1875.)

Brief.—The leaves are strung upon a wire, which is fastened to a bar beneath it, and upon opposite sides of the latter the leaves are alternately arranged to separate them.



A tobacco-hanger, consisting of the beam or bar A, and rods or wires B secured thereto, substantially in the manner and for the purpose specified.

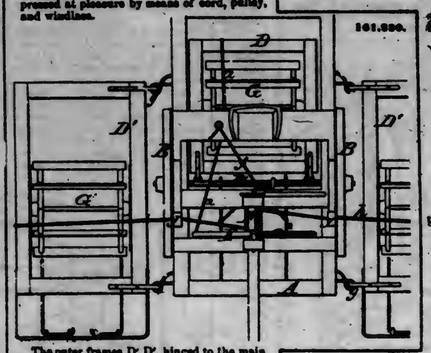
161,829. TEA-CADDIES. William T. Sherer, Chicago, Ill. (Filed Feb. 6, 1875.)



As a new article of manufacture, the beer-inbefore described caddy, containing a series of parallel compartments, G and G, inclosed upon their upper and opposite sides F and F by the sloping hinged covers f and f, substantially as and for the purpose specified.

161,830. CORNSTALK-CUTTERS. Casper B. Sights, La Harpe, Ill. (Filed Jan. 9, 1875.)

Brief.—A frame mounted on two wheels carries a revolving cutter between them, of the usual form of construction. Upon each side of the main frame is hinged a supplemental frame that carries another cutter, and these "cutrigged" frames can be elevated or depressed at pleasure by means of cord, pulley, and windlass.



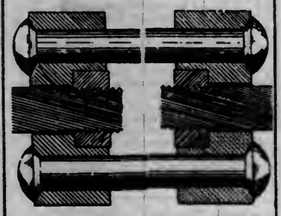
The outer frames D' D', hinged to the main frame A, and carrying the choppers G' G', in combination with the elevating devices, substantially as described, and for the purpose set forth.

161,831. PROCESSES OF PURIFYING GALVANIZERS' DROSS. Wickham B. Speer and Jos. W. Richards, Philadelphia, Pa. (Filed Mar. 23, 1875.)

The improvement in the art of separating zinc from an alloy of iron and other impurities, consisting in the application of sulphur or sulphurous-acid gas to the alloy while the latter is in a state of fusion, substantially as set forth.

161,832. TURN-BUCKLES. Geo. H. Spencer, Jersey City, N. J. (Filed Apr. 6, 1874.)

Brief.—The end or cross pieces are thick blocks of malleable cast metal, recessed to receive hardened nuts for the rods to be tied, and united by side bars of wrought metal.



1. A turn-buckle consisting of cast-metal blocks A A and connecting-bars B B, the whole forming a rigid oblong frame, as set forth.

2. The blocks A A, connected together and having sockets for the reception of nuts y y, as specified.

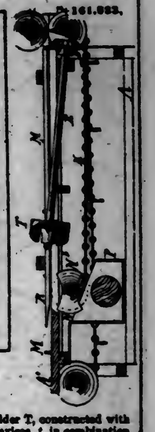
161,833. MACHINES FOR FOLDING AND PASTING COLLAR ENDS. Chas. Spofford, Boston, Mass., assignor to James H. Hoffman, New York city. (Filed Dec. 5, 1874.)

Brief.—Collar ends are pasted, turned under, and pressed, leaving button-hole flap extended.

1. The combination, in a machine for folding and pasting the ends of collars or other articles, of a carrying-table, A, carrying-chains K, pasters N, revolving folders T, folding-guides V, and compressing-rollers, substantially as described.

2. The combination of the table A', confining-frame E, revolving folders T, and pasters F, and carrying-chains, substantially as described.

3. The revolving folder T, provided with a folding device, t, one or more, having an angular or retiring side, D, arranged substantially as set forth, so that the folders can operate without touching the head ends of the advancing collar.

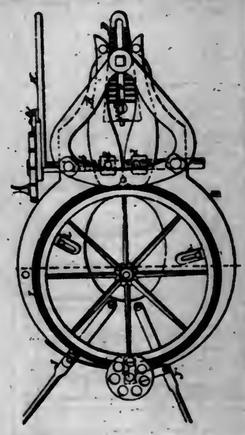


4. The revolving folder T, constructed with one or more folding devices, t, in combination with the table, having a slot, Q, and a folding-guide, substantially as and for the purpose specified.

5. The combination of the pasting-device H and folding devices T t V, with the roller compressing devices F F', substantially as described.

161,834. TIRE-SETTERS. Danl. Squier, Battle Creek, Mich. (Filed Aug. 12, 1874.)

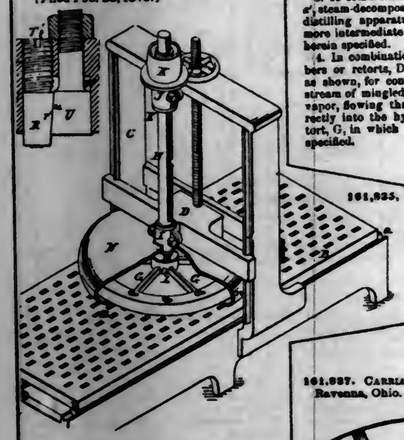
Brief.—The tire is drawn tight upon the wheel by clamps, which act all around its periphery, through the medium of an iron strap, which is attached to the clamps, and passes around the wheel.



1. The combination of the pivoted levers J J', jaws K, and bands I I, substantially as and for the purposes herein set forth.

2. The combination of the bands I I, levers C C, and wedge-slide D, said slide being operated by means of the lever E and pawl *f*, substantially as and for the purposes herein set forth.

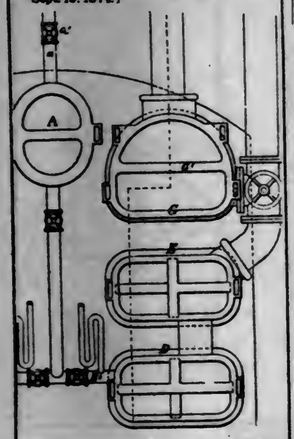
161,834. STONE-DRESSING MACHINES. J. J. Squire, St. Louis, Mo., assignor of one-half his right to Joseph W. Branch, same place. [Filed Feb. 23, 1875.]



1. The combination of rotary cutter-head G and shield W, substantially as and for the purpose set forth.

2. The combination, with a metallic cutter-head, of the holder R, with flattened side *e'*, locking-wedge U, with flattened side *u*, and set-screw T, substantially as set forth.

161,835. PROCESSES AND APPARATUS FOR THE MANUFACTURE OF GAS. Ira N. Stanley, Brooklyn, N. Y., assignor to himself and Edwd. D. White, same place. [Filed Sept. 10, 1874.]



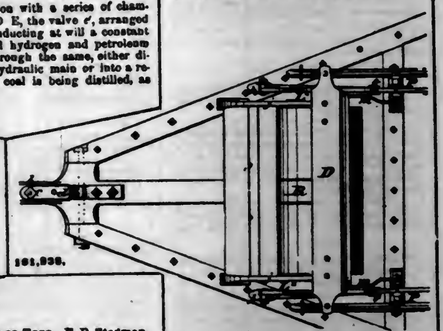
1. In the manufacture of illuminating-gas, the process of fixing the petroleum vapor and combining it with ordinary coal-gas, which consists in bearing the same to or near the temperature at which coal is distilled by conducting it successively through a series of chambers or passages moderately heated, and then conducting it through a retort in which coal is being distilled, as specified.

2. In the manufacture of illuminating-gas, the process of fixing the hydrogen gas and petroleum vapor, and combining them with ordinary coal-gas, which consists in passing the hydrogen and petroleum vapor together through a succession of passages or chambers of a gradually-increasing temperature, and finally through a retort in which coal is being distilled.

3. In combination with a controlling-valve, *e'*, steam-decomposing apparatus A, and coal-distilling apparatus G, a series of two or more intermediate connected retorts, D E, as herein specified.

4. In combination with a series of chambers or retorts, D E, the valve *e'*, arranged as shown, for conducting at will a constant stream of mingled hydrogen and petroleum vapor, flowing through the same, either directly into the hydraulic main or into a retort, G, in which coal is being distilled, as specified.

161,835.



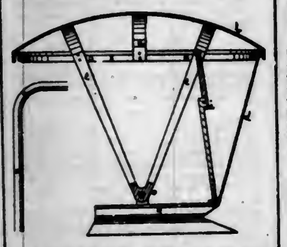
161,836.

2. The combination, in a combined harrow and roller, of vertical bars or posts *k k*, mounted directly upon the journals of the roller, rigid posts P on the harrow-frame, and pivoted connecting-links *m*, for securely supporting a driver's seat, so as to leave the harrow unweighted, in the manner set forth.

3. The hand-levers L, attached by hinges A to the harrow-frame, and fulcrumed on the journals of the roller R, in combination with posts P on the harrow-frame, having retaining-notches *i*, substantially as herein described, for elevating the harrow-frame and supporting the same in elevated position.

4. The supplemental hand-levers L', fulcrumed by attaching-bolts *a* at the sides of the seat-frame, and constructed with extended and slotted rear ends *o*, substantially as shown and described, in combination with the horizontal levers L, attached to the harrow-frame by hinges A, and fulcrumed on the journals of the rollers, for elevating the harrow from the driver's seat, in the manner set forth.

161,837. CARRIAGE-TOPS. E. P. Stedman, Ravenna, Ohio. [Filed Sept. 14, 1874.]



1. The rigid frame *c*, extending around horizontally on all sides of the top, in combination with the bows *c c*, substantially as and for the purpose set forth.

2. The combination of the cover *b* and the horizontal frame *c*, with its bottoms, on which to fasten curtains and quarters, substantially as and for the purpose set forth.

3. The combination of the prop *i*, bows *c c*, bow *a*, seat *g*, cover *b*, and frame *c*, substantially as and for the purpose herein set forth.

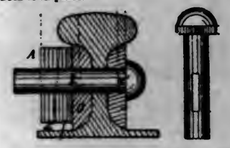
161,838. HARROWS AND ROLLERS. Allen M. Stratton, Ladoga, Ind. [Filed Jan. 26, 1875.]

Brief.—The harrow-frame is triangular, and provided with an adjustable tongue, that can be made flexible or rigid at pleasure. In the triangular space between the side bars of the harrow is mounted a sectional roller, upon the journals of which rests the driver's seat, so connected with the harrow-frame that the weight of the driver falls wholly upon the roller.

1. The tongue T, having a wedge-shaped and perforated rear end, and the drop-pin and washer *e f*, in combination with the central draft-bar *b*, draft-bolt *c*, and hasp or clevis *d*, substantially as herein shown and described, for the purpose set forth.

161,839. RAILWAY-RAIL-JOINT FASTENINGS. John B. Tapscott, Clarksville, Tenn. [Filed Mar. 12, 1875.]

Brief.—A rail-joint in which the bolt which secures the fish-plates is held in position by a double key, one part thereof having a shoulder, which takes into a slot in the bolt far enough to be prevented from rising by the overhanging edge of the fish-plate. The other part of the key is driven in beside the former, and when properly tightened it is upset to hold it in place.



In combination with the fish-bars and bolts, the key, made in two parts, A A', one having a shoulder, *c*, and one or both having an inclined face, when applied and operating substantially as and for the purposes set forth.

161,840. SEPARATING REFUSE FROM COAL. S. Thomas, Philadelphia, Pa. [Filed Jan. 23, 1875.]

Brief.—An inclined plane of slate or other stone retards slate or other refuse more than it retards coal, and, for this reason, refuse (chiefly slate) drops downward from the lower end of the inclined plane, while the coal jumps to a greater distance. One of the inclines rides on pins working in slots in frame F, and so may be placed near or far from the other incline.



1. The mode herein described of separating particles of slate and other refuse from a granular mass of anthracite coal—that is to say, by causing the mass to slide down an inclined plane of slate, marble, or other equivalent stone having a surface which has more of a retarding effect on the slaty and other refuse particles than on the coal, so that on leaving the said inclined plane the retarded particles will fall abruptly, while the coal, whose velocity has not been materially retarded, will be projected beyond the retarded refuse, all as set forth.

2. The within-described separating apparatus consisting of the adjustable frame E, with inclined planes F and G, separated from each other by an opening, *e*, the width of which can be altered by the adjustment of one or both of the planes, as specified.

3. The combination of the inclined plane F with the flexible apron *m*.

4. The combination of the inclined plane F with the curved platform I, which receives the mass to be separated before it reaches the said planes.

161,841. CORSETS. Isidor Ulman, Cairo, Ill. [Filed Mar. 11, 1874.]

The interlocking steel clasps C and C, provided with the outwardly, rearwardly, and inwardly curving hooks *c* and *c*, in combination with the corset A, having the eyeleted openings *a* and *a*, substantially as and for the purpose specified.

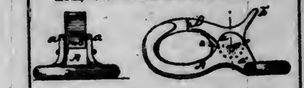


161,842.

161,843. SCREW-THREADED WIRE FOR USE IN MANUFACTURE OF BOOTS AND SHOES. Albt. Van Wagenen, Boston, Mass. [Filed Feb. 11, 1875.]

As a new article of manufacture, for use in the boot and shoe manufacture, the herein-described screw-threaded wire, made in long lengths, having a thread of slight pitch and considerable depth, as set forth.

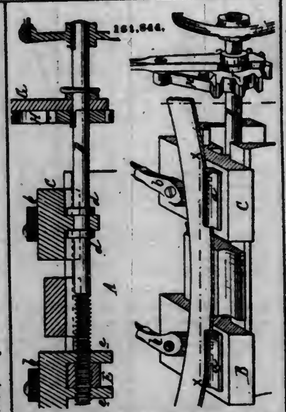
161,843. SNAP-HOOKS. Arthur J. Vaughan, Lodi, Wis. [Filed Mar. 18, 1875.]



In a snap-hook, the jaws A B, provided with the legs *a a*, chambered or recessed projection *b*, and thumb-piece *b'*, and combined with a coiled spring, *s*, arranged around the pivot in the chamber of the part B, substantially as and for the purpose set forth.

161,844. TIRE-UPSETTING MACHINES. H. S. Vinton, Berrien Springs, Mich. [Filed Nov. 17, 1874.]

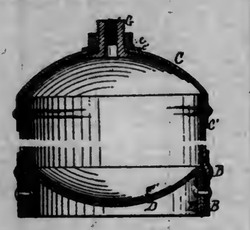
The combination, with the bed-plate A, of the stationary clamp-block B and movable clamp-block C, each having a rib, *a*, and serrated cam *b*, the screw D provided with the



legs *d d*, wheel F, pawl-lever G, reversible pawl H, and ratchet I, the lug *c* on the block C and nut E placed between the legs *e e* on the block B, all constructed and arranged as and for the purpose set forth.

161,845. SODA-FOUNTAINS. Frederick W. Wiesebrock, New York, N. Y., assignor to Henry W. Shepard and Robert Seaman. [Filed Jan. 30, 1875.]

Brief.—The outer cylinder and its ends are made of sheet-steel, and the inner cylinder of sheet-tin, the several parts being secured together by means of soldering, bead-joints, rivets, bung, and nut.



1. The outer cylinder A, constructed of steel or other suitable metal, and its end piece C, having a hoop, C', and the interior cylinder or lining F, constructed of tin, the bung G and the bead-joint C', which firmly unites the outer cylinder, lining, and flange of the end piece C and nut G', the whole being constructed, combined, and arranged substantially as described.

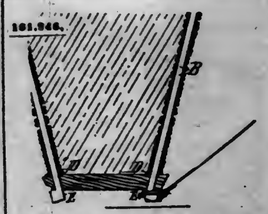
2. The cylinder A, having a base-hoop, B, secured by bead-joint B', and the tin cylinder or lining F, and its bottom F', having their lower section and flange soldered together in the groove of the bead-joint, and the bottom D having a hoop, D', and the hoop E, the whole being combined and arranged as and for the purpose specified.

161,846. BASKETS. Simon Weinstock, New York, N. Y. [Filed Jan. 14, 1875.]

1. The combination in a basket constructed of hurdle-work, and having a solid bottom, of stiffening-rods extending longitudinally through the meshes thereof, and projecting through the bottom, to form feet for the basket to rest upon, substantially as herein shown and described.

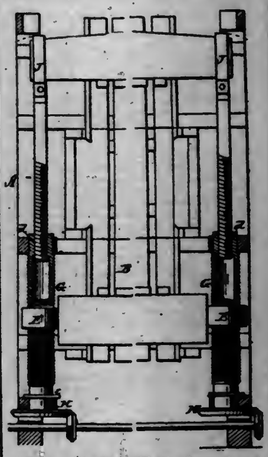
2. The combination of the stiffening-rods B, having projections E beneath the bottom of the basket, with the strap or straps F, having loops *b c*, substantially as described.

161,846.



161,847. COTTON AND HAY PRESSES. B. J. Wilson, Atlanta, Ga. [Filed Mar. 6, 1875.]

Brief.—Reciprocating followers are operated simultaneously in opposite directions by means of right and left hand screws, one being hollow, and forming receptacle for the other.



The combination, with the frame A and press-box B, of the upper follower U, hinged stirrups J J, screw-rods I I, lower follower O, nuts E E, and the hollow upright screws G G, the two followers being moved simultaneously toward each other, all constructed and operating substantially as set forth.

161,848. SHEET-METAL CANS. J. A. Wilson, Chicago, Ill. [Filed Mar. 22, 1875.]



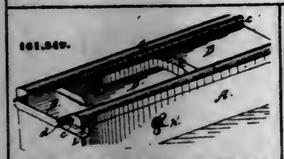
1. A can for packing food, hermetically sealed and constructed of pyramidal form with rounded corners and offset ends to support the heads, said heads being secured as shown and described.

2. The perforated plate D in combination with head B or C, provided with protector A, substantially as and for the purpose set forth.

161,849. VEGETABLE-SLICERS. Joshua J. Winne and Wm. H. Kent, Lockport, N. Y., assignors of one-half their right to Remington James and F. A. Bowdoin. [Filed Feb. 16, 1875.]

Brief.—The table upon which the vegetable is pushed against the cutter is capable of vertical adjustment, for different thicknesses of the slices, and is held horizontally at different heights by a clamp-bolt.

161,849.



1. The combination of top section B', capable of parallel adjustment, vertically-movable slotted cross-brace F, and bolt h, passing through sides A A, substantially as shown.

2. The adjustable top section B', provided with attached cross-brace F, working in grooves f f, and end pieces I, having grooves fitted over said working upon tongues i i on the ends of the sides A A, substantially as and for the purpose set forth.

161,856. CAR-COUPLINGS. John Yeagly, Fredericksburg, Ohio. [Filed Feb. 4, 1875.]



The combination of the draw-head A, having a large slot in the upper side, a narrow opening in the under side, and having ears d d, and beveled shoulder i, with the bent pin C, having a narrow elongated and inclined slot, e, and shoulder h, all constructed substantially as set forth.

161,861. COMBINED UNDER WAIST AND SKIRT SUPPORTERS. Geo. Frost and Geo. Henry Phelps, Boston, Mass. [Filed Mar. 30, 1875.]



1. In an under waist for ladies' wear, the seamless yoke A, constructed substantially as herein described and shown.

2. In an under waist for ladies' wear, the combination of the yoke A, and the body or lower front parts E E', constructed and combined substantially in the manner herein specified.

3. In an under waist for ladies' wear, the combination of the yoke A, bosom-form D, and the body or lower front parts E E', the whole combined and arranged substantially as herein specified.

4. In an under waist for ladies' wear, the combination of the yoke A, bosom-form D, body or lower front parts E E', bones l l, and lacings m, substantially as herein shown and described.

5. In an under waist for ladies' wear, the combination of the yoke A, bosom-form D, body or lower front parts E E', bones l l, lacings m, and front fastenings a a, substantially as herein specified.

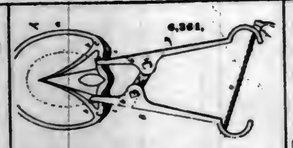
6. In an under waist for ladies' wear, the combination of the yoke A, bosom-form D, body or lower front parts E E', bones l l, lacings m, front fastenings a a, and short bones at the gore shape cut p, substantially as herein specified.

REISSUES.

9,344. HOOP-SPREADERS. T. Armstrong, Hamilton, Canada. Patent No. 136,660, dated Mar. 11, 1873. [Filed Dec. 14, 1874.]

Brief.—The device is applied to the inside of the shell of the hoof, and is capable of adjustment to bear on opposite or diagonally-opposite sides.

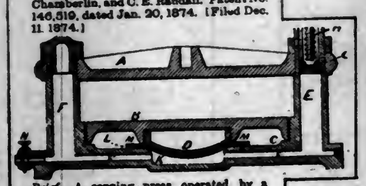
6,361.



1. The means provided for adjusting the direction of the levers, consisting of the curvilinear ends, provided with longitudinal apertures, the spring, and the tightening-rod, all combined as described.

2. The combination and arrangement of the levers b' b', middle bar c', tightening-screw d, spiral spring e, grooved washer f, hand-nut g, and thumb screws h h, as described, and for the purposes set forth.

6,365. COPYING-PRESSES. W. U. Fairbairn, Boston, Mass., assignor to himself, W. S. Chamberlin, and C. E. Randall. Patent No. 146,519, dated Jan. 20, 1874. [Filed Dec. 11, 1874.]



Brief.—A copying-press operated by a pump, or by the pressure of the water in the main.

1. In a hydrostatic press, the basin K, flexible diaphragm L, and movable plate B, in combination with each other, and with a force-pump, E, or flow of water under pressure, substantially as described.

2. In a hydrostatic press, the combination of the flexible diaphragm L, water-way G, and pump E O, substantially as described.

3. In a hydrostatic press, the combination of flexible diaphragm L, water-way G', and cock N, communicating with a source of water-supply under pressure, substantially as described.

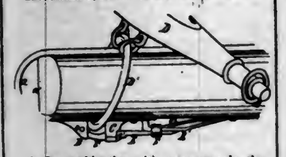
4. In a hydrostatic press, the combination of flexible diaphragm L, water-ways G G', pump E O, and cock N, substantially as described.

5. In a hydrostatic press, the combination of flexible diaphragm L, basin K, and inverted dome D, substantially as described.

6. In a hydrostatic press, the combination of piston O, screw H, and hollow standard E, substantially as described.

7. In a hydrostatic press, the combination of the base C, movable plate B, and diaphragm L, substantially as shown and described.

6,366. NECK-YOKE ATTACHMENTS. Benj. Folts, Rockford, Ill. Patent No. 85,519, dated Jan. 5, 1869. [Filed Jan. 20, 1875.]



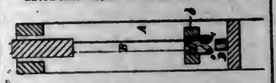
1. In combination with a wagon-pole, the lugs B C, guard E, and locking devices, to retain the free end of the guard in contact with lug C, to inclose neck-yoke ring D', substantially as set forth.

2. In combination with pole-strap A, having lugs B C, the guard E, provided with the shoulder or shoulders e', for clamping the lugs to each other, substantially as and for the purpose set forth.

3. In combination with the lugs B and C, the guard E, provided with the heel extension, substantially as and for the purpose described.

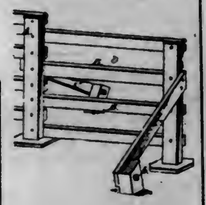
4. The combination of the lugs B C, guard E, rest or seat E', and spring e', substantially as and for the purpose described.

6,367. MACHINES FOR CUTTING THE HEADS AND BOTTOMS OF WOODEN BOXES. E. Hersey, Hingham, Mass. Patent No. 62,846, dated Mar 12, 1867. [Filed Mar. 1, 1875.]



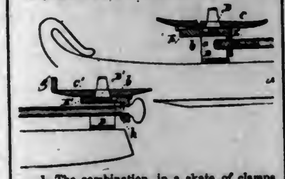
The tubular cutter C, having its cutting-edge composed of two gouge-shaped parts, c c, and arranged to operate as herein set forth, whether said cutter is made in one or two pieces, substantially as shown and described.

6,368. FARM-FENCES. Lovren B. Hogue, Sandy Lake, Pa. Patent No. 158,941, dated Jan. 19, 1875. [Filed Mar. 24, 1875.]



The fence constructed as described, and resting directly upon the surface of the ground, and having the posts or slats and rails nailed together, said fence being anchored by the alternating inclined braces and the oblique ground-stakes, substantially as set forth.

6,369. SKATES. Mary Ann Lovatt and Thos. G. Swartwout, Tarrytown, N. Y., executors of John Lovatt, deceased. Patent No. 28,495, dated May 29, 1860; reissue No. 3,190, dated Nov. 10, 1868; extended seven years. [Filed July 7, 1874.]



1. The combination, in a skate, of clamps for grasping the sole, a plate or rest for the foot, and mechanism for moving and holding the clamps, substantially as specified.

2. The clamps for grasping the heel, and the clamps for grasping the sole, combined with mechanism operating and holding both sets of clamps, substantially as specified.

6,370. PROCESSES FOR PRESERVING AND PACKING COOKED MEATS. Wm. J. Wilson, Chicago, Ill., assignor, by mesne assignments, to the Wilson Packing Company. Patent No. 149,276, dated Mar. 31, 1874. [Filed Apr. 2, 1875.]

Brief.—Meat is cooked at 212° Fahrenheit, when, bone and gristle having been removed, and the meat being preferably warm, it is compressed into the can with sufficient force to expel air and superfluous moisture, and to form a solid cake. Can is then sealed air-tight.

1. The within-described process for packing cooked meats for transportation by compressing the same into an air-tight package, so as to preserve the meat in its integrity and retain all the natural juices and nutritious qualities of the meat, substantially as set forth.

2. As a new article of merchandise, cooked meat put up in solid form, in its natural state, without disintegration or desiccation, in hermetically-sealed packages, as set forth.

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VOL. 7.—NO. 15. TUESDAY, APRIL 13, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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NOTICE.

In the new edition of the "RULES OF PRACTICE, Rules 57 and 59 have been modified.

DECISIONS OF THE COURTS.

SUPREME COURT OF THE DISTRICT OF COLUMBIA.

THE UNITED STATES EX REL. HORACE H. BIGELOW *vs.* JOHN M. THACHER, COMMISSIONER OF PATENTS.

1. An application for a patent was put in interference with a party to whom a patent had been previously issued. On the testimony in the interference case it was contended that the applicant had abandoned his invention to the public use, and the Commissioner referred the question of such abandonment back to the Primary Examiner. And it was held that mandamus would not lie to compel the Commissioner to allow the patentee to take an appeal from the decision of such Primary Examiner to the Board of Examiners-in-Chief.
2. A writ of mandamus will not be allowed against the Commissioner of Patents where the law submits the subject to his opinion. (Cartter, *Ch. J.*)
3. Where an interference is declared in the Patent Office, the examination is to be confined to "priority of invention." (Wylie and Mac Arthur, *J. J.*)
4. It is not the intention of the patent law that, on a question of interference, the Examiner in charge of interferences should consider a question of abandonment. (Wylie and Mac Arthur, *J. J.*)
5. The Commissioner of Patents may suspend, temporarily, proceedings in interferences, when the evidence used therein tends to show that the first inventor, who is also the applicant, had abandoned his invention before applying for a patent, and to refer the application back to the Primary Examiner to ascertain the fact of such abandonment. (Mac Arthur, *J.*)

OLIN, *J.*, dissenting.

STATEMENT OF THE CASE.

This is an application for a mandamus to be directed to the Commissioner of Patents, requiring him to allow the relator an appeal from a decision made by one of the Primary Examiners in the Patent Office, and arises upon the following statement of facts:

A patent was granted to Bigelow, the relator, on the 5th of July, 1870, for an improved machine to make heels for boots and shoes. On the 8th day of August, 1871, Stephen W. Baldwin made application for a patent for a similar machine; and on the 12th of April, 1872, an interference was declared between this application and the unexpired patent to Bigelow.

The Examiner in charge of interferences decided that Baldwin was the prior inventor of the machine in controversy, which decision was made in July, 1874. From this decision Bigelow took an appeal to the Examiners-in-Chief, who, in October following, confirmed the decision of the Primary Examiner by awarding priority of invention to the said Baldwin; but they called attention to the fact that the testimony before them on the interference indicated that Baldwin had abandoned his invention, and recommended that the question of such abandonment be referred to the proper tribunal for decision. Their language on this subject is: "Upon this point we are not called upon to form a decision; but we are clearly of opinion that it should be considered by the proper tribunal." This recommendation was accepted by the Commissioner, and thereupon he referred Baldwin's application back to the Primary Examiner for further examination on the matter suggested by the Board.

The order of the Commissioner on that occasion reads as follows:

"In the matter of the interference between the application of Stephen W. Baldwin and patent of Horace H. Bigelow—improvement in machine for making boot and shoe heels.

"The Examiners-in-Chief have in their decision awarded priority of invention to Baldwin, but have recommended the reference of his application to the Principal Examiner for a determination of his right to a patent, in view of certain testimony affecting the question of abandonment by reason of public use. In accordance with this recommendation, the application of Baldwin is hereby remanded to the Primary Examiner for consideration in the matter referred to above, pending which, further proceedings in the interference case are suspended."

The Primary Examiner, to whom this reference was made, upon examination of the testimony, rendered his decision, on the 8th day of November, 1874, to the effect that said Baldwin had not lost or forfeited his right to a patent by reason of a public use of the said invention more than two years before making application therefor, and, consequently, that he was entitled to a patent.

On 2d day of December, 1874, the relator rendered an appeal from the last mentioned decision of the Examiner to the Examiners-in-Chief, which appeal the Commissioner of Patents refused to allow or entertain, and he now asks the court to compel the Commissioner to allow him such an appeal.

The relator sets forth in his petition that the invention is one of great value and importance, and has been in extensive public use by him, under his letters patent aforesaid, for over a period of four years, and that, unless he can have an appeal from said decision, letters patent will be issued to Baldwin for the same invention, and that he will have no opportunity to contest Baldwin's right to a patent before the Board of Examiners-in-Chief or the Commissioner of Patents, and that he will be liable to be sued by Baldwin if he continues to use said invention. He also alleges that he is without adequate remedy unless by the writ of mandamus.

The 42d section of the patent law of 1870 enacts: "That whenever an application is made for a patent which, in the opinion of the Commissioner, would interfere with any pending application, or with any unexpired patent, he shall give notice thereof to the applicants, or applicant and patentee, as the case may be, and shall direct the Primary Examiner to proceed to determine *the question of priority of invention*. And the Commissioner may issue a patent to the party who shall be adjudged *the prior inventor*, unless the adverse party shall appeal from the decision of the Primary Examiner or of the Board of Examiners-in-Chief, as the case may be, within such time, not less than twenty days, as the Commissioner shall prescribe."

The last clause of the 41st of the printed rules of practice in the Patent Office provides that, "in the trial of interference, the questions of priority of invention and of patentability may be inquired into, as well as the questions of abandonment and public use." And the 51st of said rules contains a similar provision.

It was argued on the hearing that the rules just mentioned were unauthorized by law, and void.

These are all the facts necessary to understand the points passed upon by the court.

J. J. COOMBS and A. POLLOK, for the relator, contended:

That it had always been the practice in the Patent Office to allow an appeal by either party in a case of interference. That an interference had been declared between the application of Baldwin and the patentee; and, upon the testimony used before the Examiners-in-Chief in such case, the Commissioner had referred the subject of abandonment by Baldwin of his invention, for a period of two years before he applied for his patent, to the Primary Examiner; but it was the same case, and the same testimony was used, which had been before the Examiner-in-Chief. That whenever an interference is declared the two parties are placed in opposition to each other, and either of them may show any good reason why the other should not have a patent; and the evidence taken in the interference case being referred to the Examiner, the decision of the latter was a decision in an interference case, and the law is explicit that in the matter of interference either party may appeal from the decision; and we ask that the Commissioner shall be compelled to allow our appeal, made in this interference case on a material question involved in it, and which was decided against us. If we are right, and of that we entertain not the slightest doubt, that this decision is made in an interference case, then the law is clear that we have a right to appeal, and there is no discretion or judgment to be exercised by the Commissioner in granting it. It is the purest ministerial act that can be imagined, as will be seen by reference to the 42d section of the patent law.

MARCUS S. HOPKINS, for Commissioner of Patents:

In the course of proceedings in the interference, testimony was taken which appeared to raise the question of abandonment of the invention by Baldwin. When the Board, in the course of their investigation of the question of priority in issue between the parties, noticed this testimony, which they could not decide upon, and which, as a matter of course, the Primary Examiner had not decided upon, for the reason that when he made his decision in favor of the patentability of Baldwin's application, (except as to priority,) it had not been taken, and was not before him, they very properly recommended that it be placed before him for his consideration and decision upon it. It was new light that might be sufficient to wholly defeat Baldwin's application, and render further proceedings in interference needless. If it had been in existence or available when the Examiner originally made his examination and decision, he would then have passed upon it, and, if he had passed favorably, that would have been an end of the matter, and the interference on the issue of prority would have proceeded undisturbed. Coming before the Office, as it did, as an incident connected with an interference, and having never had consideration by the Primary Examiner, it was proper that proceedings in interference be temporarily suspended to enable it to have such consideration. It was precisely as if an alleged new reference—an old English patent, for instance—had been discovered in the course of proceedings in the interference.

The Commissioner was obliged to take notice of it, and he did so in the only lawful and proper way he could. It was not addressed to the issue in the interference, and it could not be properly disposed of in the interference. If sufficient to prove abandonment on the part of Baldwin, it might, it is true, have caused the proceedings in interference to be quashed by destroying the standing of one of the parties. And the fact that it was developed in the course of an interference is of no consequence whatever. If it had been developed elsewhere, or in any other way, it would have had precisely the same force, and would have been treated by the Commissioner in the same manner.

It is the business of the Commissioner to take cognizance of any facts coming to his notice with the force of legal evidence, from any source whatever, tending to show that an alleged invention is old, or is not useful, or has been abandoned to rightful use by the public. No matter at what stage of proceedings short of the actual execution of a patent such facts or evidence may come to his attention, or from what source, it is his duty to refer them to the proper tribunal for consideration. They are newly-discovered evidence to the Office, warranting a new hearing. But the party who may furnish such evidence or direct attention to it does not thereby become entitled to be made a party to the proceedings upon it in the Office, because the law does not contemplate such a privilege to him.

Now, the relator, Bigelow, finding from the evidence introduced by Baldwin, upon whom rested the burden of proof, that Baldwin was the prior inventor, and that he, Bigelow, must inevitably fail in the issue of priority which was to be tried, determined to interpose the obstacle of abandonment, and prevent the issue of Baldwin's patent by that means, if possible.

Baldwin, apparently not fearing such an assault, and relying upon the rebutting testimony he could and did produce, made no objection to the testimony relating to abandonment, and so it was before the Office.

But not being, as I think I must have abundantly satisfied the court, pertinent to the issue of priority of invention, which is the only issue upon which the relator, Bigelow, can have any standing as a party litigant, and referring solely to the validity of the *ex-parte* application of Baldwin, how can it give the relator a right to appeal? I submit that because he has an interest to defeat Baldwin's application, and because he has furnished the Patent Office information which he hoped would accomplish that object, are no sufficient reasons for admitting him as a party to oppose that application before the Office, by way of appeal from a decision of the Primary Examiner on Baldwin's application, favorable to Baldwin.

The Commissioner, under the law and the established practice of the Office, correctly refused to entertain such an appeal. If allowed by the court, it will be a precedent for admitting contestants in *ex parte* cases, and will greatly add to the difficulties inventors must encounter in obtaining patents, which are already great enough.

That the question of abandonment raised upon facts developed in an interference case is purely an *ex parte* one has been established by recent decisions of the Commissioner, and by the decision of this court in the case of Joshua A. Gray.

In the case of *Jenkins* vs. *Barney and Berry*, (Commissioner's decisions, 1873, p. 21,) the Commissioner said the question of abandonment is "an *ex parte* question" upon which "an appeal may be taken to the Supreme Court of the District of Columbia." * * * "The questions of abandonment and priority of invention are entirely distinct and separate questions."

At the conclusion of the argument the judges delivered oral opinions to the following effect:

CARTTER, *Chief Justice:*

A majority of the judges are of opinion that we cannot issue this writ. If the matter referred back to the Primary Examiner is a separate examination into an application for a patent, clearly Mr. Bigelow has no right to appear there. The law makes it *ex parte*, and the only person that can be heard is the applicant for the patent. If the proceedings before the Examiner are without authority, there is no appeal, because that officer has no power in the premises. You do not ask the court to require the Commissioner to take up an appeal to himself from the decision of the Examiners-in-Chief, for they have already acted. If he refused to entertain such an appeal, the writ of mandamus would be an appropriate process to compel him. The application is not made in that connection. The argument is, that an interference has been declared, and that, therefore, the decision of the Primary Examiner is in an interference case, so that the court is asked to regard an *ex-parte* application as an application in interference. There has been some discussion as to what an interference means, and there is a wide discrepancy between the counsel on that subject, one side claiming that it embraced everything that entered into the right of an applicant for a patent, and on the other side that it is only an inquiry as to who is the prior inventor; but I think that point is not involved in this question. The trouble is that you have applied for a writ of mandamus, where the law submits the subject to the opinion of the Commissioner of Patents, and that is conclusive with me that the writ cannot issue.

Mr. Justice WYLIE said:

It is a settled principle that mandamus will issue requiring an officer to perform a ministerial duty which involves no exercise of discretion under the law. The conflict of opinion which we see exhibited in this case shows that the matter in controversy is one which requires not only the exercise of discretion, but is a subject of real difficulty in regard to how the duties of the Commissioner in the premises are to be performed.

The law says that the Commissioner of Patents, when in his opinion an application for a patent interferes with any pending application, or with any other patent already granted, may declare an interference. In such case the investigation is to be confined to priority of invention. It is conceded that Baldwin was the prior inventor; but Bigelow has got the patent, and he says that Baldwin ought not to have his, because he used his invention publicly, so as to abandon it to the public, and he wants an interference to show that Baldwin has so abandoned his invention.

Baldwin was the original inventor, and he is therefore entitled to a patent, and when that issues the contest will be transferred from the Patent Office to the courts, which is the exact position the law intended the parties should occupy in cases of this kind. I have no idea that it was the intention of the law makers that on a question of interference the Office should go into this question of abandonment. It is true that the 51st rule of the Patent Office allows that to be done; but it is still a matter of discretion, even under the rule. The Commissioner may permit it, or he may not. I do not think he has any right to establish such a rule; but even if he has such right, it is discretionary with him to allow evidence of this kind in a case of interference. If he has the right to enlarge the scope of inquiry, he can as well restrict it. He has a right to dissolve the interference, or any part of it; and if the examination on the question of abandonment has gone far enough, he can stop it there. Upon the whole, I have never seen an application for a mandamus which involves so many doubtful questions, and the exercise of so much discretion in regard to the patent law. The mandamus should be denied.

Mr. Justice MAC ARTHUR said:

I am of the same opinion, although I confess it is with considerable diffidence I approach the construction of the patent law. It is well established that a mandamus will not issue to control the judgment or discretion of the officer to whom it is to be directed, and it is quite apparent to my mind that the Commissioner of Patents, in suspending temporarily the proceedings in interference, and referring Baldwin's application back to the Primary Examiner, has exercised a prudent and discreet judgment. The decision of the Examiner was not made in the interference case, and could not be made in the interference case, for the simple reason that the law directs all decisions in that proceeding to be rendered by the Examiner in charge of

interferences. He is an officer designated for the very purpose by the statute. Now, an interference had been declared by the Commissioner between these two inventors, and the Examiner in charge of interferences, and afterward, on appeal, the Examiner-in-Chief, decided that Baldwin was the prior inventor. But in the testimony used in this proceeding some circumstances were developed calculated to show that Baldwin had abandoned his invention to the public use before he applied for a patent. The Commissioner is invested with the general superintendence of the Patent Office, and the Primary Examiners seem to be placed peculiarly under his direction; and he can assign to them any duty in the examination of patents which the exigencies of the Office demand. It appears that when the suggestion was made upon the testimony in the interference case, that Baldwin had abandoned his invention, he very properly sent that question back to the Primary Examiner. Whether Baldwin abandoned his invention is a question which belongs to his original application, and the Primary Examiner should see to and determine this point. It enters into the patentability of the improvement as much as its usefulness or novelty, and these matters ought to be settled before an interference is declared or a patent issues. And if it becomes apparent at any stage of the proceeding that the invention is defective in any of these particulars, the Commissioner, by virtue of his general power of managing the business of the Office, ought to direct a suitable examiner to inquire into that fact just the same as upon an original reference of an application for the patent, and to have it determined as a preliminary or *ex-parte* question. Bigelow claims that he is a party to the question of abandonment by virtue of this interference. He might as well say that he was a party to the original application. The Commissioner and the Examiners may avail themselves of all sources of information upon an application for a patent, but no one would claim that persons who have made useful communications to these officers would have a right to become parties, in the sense of a party as we understand the term.

I am, therefore, clearly of opinion that this proceeding before the Primary Examiner was *ex parte*, and that Bigelow had no right of appeal. The only case in which he was properly a party was on the question of priority of invention. I entirely agree with my brother Wylie that priority of invention is the only question that can be heard or determined upon an interference. The statute confines the inquiry to that point, and that is the only subject in the whole patent law that can be litigated in the Office by opposing parties, unless it is in application for extension. Abandonment of an invention is, in the nature of things, an entirely different affair, and cannot be confounded with "priority of invention" without disregarding the plainest distinctions both in language and law.

Mr. Justice OLIN, dissenting, said:

I cannot concur in the enunciation of the law that a mandamus cannot issue when an officer misunderstands the law. If the law be difficult of comprehension, the court is to construe it, and if the officer does not comply with the directions of the court a mandamus will issue. I think the rule of the Patent Office authorizing the Examiner to consider the question of abandonment was right and proper. An interference was declared in which it was right to consider whether, although Baldwin was the prior inventor, he had not abandoned his invention to public use, and thereby forfeited his title to a patent. In this question Bigelow had an interest, and the evidence shows that he had, probably, a right to his patent, and that Baldwin had not, by reason of his having abandoned his invention. To get rid of that testimony a reference is made to the Primary Examiner on a question of abandonment—an *ex-parte* proceeding in which nobody can be heard but Baldwin. That is an easy way to dispose of Bigelow's interest; but it looks to me like a mere dodge. That is the way it impresses itself upon my mind.

U. S. CIRCUIT COURT, DISTRICT OF NEW JERSEY.

WILLIAM M. WELLING *vs.* THE RUBBER-COATED HARNESS-TRIMMING COMPANY, ANDREW ALBRIGHT, AND LUTHER C. VOORHEIS.

[*In equity.—Before* NIXON, *J.—Decided May*, 1874.]

Where the fair interpretation of the words employed to describe an invention or discovery includes matters not in the mind of the patentee at the time, he is as fully authorized to claim the unlooked-for as he is the anticipated results.

Hence, where a patentee describes a martingale-ring formed by enveloping a metal ring, by means of dies, with a plastic composition known as "factitious ivory," or "any similar compound," the claim being for "the ring for martingales, &c., manufactured as set forth, with a metal ring enveloped in composition, as and for the purposes specified:"

***Held*, That the patent would include the application of hard rubber to a metal ring by means of dies.**

The fact that the rubber must necessarily undergo the additional process of vulcanization does not exempt it from the control of the patent. Though not the same substance, in its essence and constituents, as the "factitious ivory," it is a similar material as regards its capability of being adapted to the purposes for which the latter is used.

The Welling patent of March 17, 1863, for an "Improvement in Rings for Martingales," construed to be for a metal ring surrounded with some plastic composition like artificial ivory, capable of being compressed, solidified, and polished by the action of dies, and which is, in fact, subjected to such action, whereby a martingale-ring is produced with an exterior surface more durable and more highly polished than had before been obtained by different processes.

Such an invention is not anticipated by rings made of ivory, or of compositions known as artificial, factitious, or imitation ivory, or of metal coated with varnish, lacquer, japan, enamel, porcelain, or metallic plating, such coatings being applied with a brush or the fingers, or fused on by heat.

A patent for a combination is infringed by the use of a similar combination, although one of the elements is omitted and another substituted for it, unless the substituted device is a new one, or performs a function essentially different, or was not known at the date of the patent as a proper substitute for the one omitted.

[*Frederic H. Betts*, for complainant.
J. C. Clayton, for defendant.]

NIXON, *J.*:

This is a suit for an alleged infringement of letters patent No. 37,941, and bearing date March 17, 1863, granted to the complainant for "a new and useful improvement in Rings for Martingales;" and the questions in issue are determined by the construction and scope to be given to the specification and claim of said patent.

The schedule annexed is dated April 8, 1862, and the complainant therein states his invention as follows:

In letters patent granted to me August 4, 1857, a composition and mode of making factitious ivory is set forth, and out of said materials I have manufactured billiard-balls, rings of various kinds, &c. My present invention does not relate to any particular composition, as that in the aforesaid patent, or any similar compound, may be employed.

The nature of my said invention consists in the employment of a metallic ring within a ring formed of artificial ivory or similar materials, for giving strength to the same, thereby producing a new article of manufacture, and one that is stronger than an ivory ring, and possesses all the beauty of appearance, and can be afforded at a very much less cost. Ivory rings—particularly such as used for martingales—require to be made out of very solid ivory in order to be sufficiently strong, and hence are quite costly.

In order to make my improved rings, I take a ring of metal such as shown at A; or said ring may be formed by punching out a washer from a sheet of metal, or in any other suitable way. I take the amount of artificial-ivory composition, and, by dies or by hand, cause the said composition to completely envelop the said ring with as much uniformity as possible, and, to give the exterior finish to the same, press and solidify the mass of composition around the ring by means of dies, and, in so doing, any plain or more or less ornamental shape may be given to the said ring or the surface thereof. My ring is thus made of the desired ornamental appearance, while great strength is attained at very little cost.

What I claim, and desire to secure by letters patent, is, the ring for martingales, &c., manufactured as set forth, with a metal ring enveloped in composition, as and for the purposes specified.

It is insisted by the defendants that, if the patent is valid at all, it must be limited to a "martingale-ring intended to imitate ivory, and made by covering a metallic ring with artificial ivory, such as is described in complainant's patent of 1857, or some similar compound." Bearing in mind the established American rule that patents are to be construed liberally, and are not to be subjected to a rigid interpretation, I think that the construction is too narrow, and does not give to the patentee all that he is entitled to under the specifications and claims of his patent. It is quite clear, indeed, that factitious ivory was the composition uppermost in his thoughts. Having the partiality of a parent for his offspring, he naturally imagined that no superior compound could be formed or used. It may be conceded that the full extent of his invention had not then dawned upon him. Men often build better than they know; but where the fair interpretation of the words employed to describe an invention or discovery includes matters not in the mind of the patentee at the time, he is as fully authorized to claim the unlooked-for as he is the anticipated results.

The specifications are not well drawn, either as to the grammatical construction of the sentences or in the use of words to clearly convey the inventor's meaning. This is not adverted to because it is supposed that bad grammar or infelicitous methods of expression will avoid a patent, but because it is the duty of the court to ascertain the nature and the scope of the invention from the sense of the words which have been used in explaining it; and the same exact rule of interpretation is not to be applied at all times, but such, in each case, as will best enable the court to arrive at the meaning intended.

It is clear that the patentee had no thought of confining himself or others to the use of the factitious ivory; for, after referring to his patent of 1857, he says: "My present invention does not relate to any particular composition, as that (factitious ivory) or any similar compound may be employed. The nature of my invention consists in the employment of a metallic ring within a ring formed of artificial ivory or similar materials, for giving strength to the same," &c. He then claims "a ring for martingales, &c., manufactured as set forth, with a metal ring enveloped in *composition*, (generally,) as and for the purposes aforesaid."

To understand and correctly interpret the patent some reference may properly be made to the state of the art. The defendant's expert, Mr. Hedrick, who seems to be an intelligent witness, says that prior to 1862 martingale-rings were made in a variety of ways, and of different materials—of ivory, of compositions known as artificial, factitious, or imitation ivory, of metal coated with varnish, lacquer, japan, enamel, porcelain, metallic plating, and compounds of rubber and gutta-percha and leather. The only known methods of applying the coatings to the iron ring were by a brush, or the fingers, or fusing onto it by heat. The ring gave the strength to the manufactured article and the coating the exterior finish.

The object of the complainant, by his invention, was to introduce an improvement upon the known methods of coating, whereby he would impart strength, durability, and greater polish to the surface, thus producing a more valuable, useful, and beautiful result. His instrumentalities were all old—an iron ring, a plastic composition, and a die; but, so far as appears in the case, they were new in combination. If his patent had been simply for a metallic ring covered with any compound capable of being molded, or with factitious ivory or similar materials, it would have been void for want of novelty. If it had been for the use of the die in pressing or solidifying plastic substances generally, it would have been, probably, anticipated in this regard in the English letters patent to Barnwell & Rollason of 1860, in which such use of dies is plainly indicated. But the invention is for a combination, and the combination is a metal ring surrounded with some plastic composition like artificial ivory, of such a nature that it is capable of being compressed, solidified, and polished by the action of the dies, and which is, in fact, subjected to such action, whereby a martingale is produced with an exterior surface more durable and more highly polished than had before been obtained by different processes of manufacture, and at greater cost.

Have the defendants infringed the patent of the complainant thus interpreted?

Mr. Albright frankly tells us what they have been doing. He is called as a witness by the complainant, and is asked to detail the process by which certain rubber rings of their manufacture are made. He says (C. R., p. 17): "We take an iron ring, sheet or sheets of rubber rolled to the proper thickness, cut from the sheet a piece in the proper form, and envelop the iron ring with the covering of rubber, pressing the edges in the form of a lap with the fingers, causing the rubber to adhere and to become a homogeneous piece or cover. * * * The ring, when covered, has this outer coating of rubber in a plastic state. The ring is then placed in an oven and vulcanized. After the ring is taken from the vulcanator after vulcanization it is of irregular form or shape. We, to make the regular form or shape desired, put it in a lathe-chuck and turn it up in the form or shape desired, or by the use of a steel die, engraved in certain form to produce a ring, with such ornamentations on the outer ring as may be desired. The seam or imitation stitch is made by impressions from the die," &c. He further states that he manufac-

sured the rings produced under letters patent bearing date October 9, 1866, February 12, 1867, February 13, 1872, and December 3, 1872; that he commenced the use of dies over two years ago to save expense in the production of the rings; that he claims to have been the inventor of the use of dies for such purpose; and that their use for shaping and ornamenting the articles is a valuable improvement.

The letters patent under which he justifies his action and claims protection have been issued or reissued to him, as inventor or assignee, several years since the date of the complainant's invention, and have been exhibited in the case. I have examined their specifications and claims with some care, and am unable to find anything in them essential to the result which is not anticipated by the Welling patent. For instance, in the specifications to the letters patent granted February 13, 1872, and reissued November 26 of the same year, he states that he takes a metallic ring, a composition of vulcanizable gum of a consistency about equal to stiff dough, rolls it into sheets of uniform thickness, and applies it to the ring, working or pressing it to the metal by the hand or otherwise. It is then placed in molds of proper shape, and vulcanized by the usual process, after which the article is ready for the action of the dies. "The dies to be used should be a very little smaller than the article to be pressed, so that they may thoroughly compress and densify the coating upon the metal. They should have cutting-edges, so as to shear off the superfluous coating, and should be provided with suitable indentations or engravings, so as to produce the desired ornamentations. * * * The dies, now being ready, are slightly heated, and the vulcanized articles are put, one at a time, in the lower die, while the upper die is pressed or dropped down upon it with great pressure. As the dies act upon the coating with equal pressure in all directions, the coating is made homogeneous, dense, hard, tough, and susceptible to high polish, and is rendered more durable and better than if it were not so pressed. The dies, at the same time, cut off the superfluous coating, apply ornamentation, if desired, and impart a considerable polish, thus doing away with much labor in 'tumbling,' 'finishing,' and 'polishing.'"

We have only to compare this description with the specification of the complainant's patent to ascertain the substantial identity of the two methods. He, also, takes a metallic ring, the necessary amount of artificial-ivory composition to form the covering, and, by dies or by hand, causes the said composition to completely envelop the ring with as much uniformity as possible, and, to give the exterior finish to the same, presses and solidifies the mass of composition around the ring by means of dies, and, in so doing, any plain or more or less ornamental shape may be given to the ring, or the surface thereof. The ring is thus made of the desired ornamental appearance, while great strength is attained at very little cost.

It will be perceived that the only change made by the defendants' patent is the substitution of a plastic composition known as rubber or gutta-percha, which necessitates the additional process of vulcanization for the plastic composition called factitious ivory; not the same substance, indeed, as to its essence and constituents, but a similar material in regard to its capability of being adapted to the purpose for which the former is used. It has not even the merit of novelty, for the English patent of Newton, granted in 1851, which was first exhibited in the case by the defendants, and, being withdrawn by them, was afterward marked as an exhibit for the complainant, clearly suggests this precise use of the material without the application of dies. In his specication he says:

When it is desired that the compound of caoutchouc or gutta-percha shall serve as a covering to the iron or other substance, a thin sheet of the compound is pressed with great care upon the iron or other substance, so as to expel all air from between the adjoining surface and to cause the most perfect union and adhesion; the coated article is bound with strips or ribbons of cloth, whereby the compound is kept in close contact with the article during the process of hardening. The combined materials thus treated will be found to possess the qualities desired, the iron or other substance giving strength, and the compound giving a hard and durable surface. In this way may be produced many articles used in and about harness or carriages, such as saddle-trees, buckles, martingale-rings, dasher-irons, &c.

It was held in a recent case in this court, (*Webster* vs. *The New Brunswick Carpet Company*, 5 OFFICIAL GAZETTE, 522,) that a patent for a combination is infringed by the use of a similar combination, although one of the elements is omitted and another is substituted for it, unless the substituted device is a new one, or performs a function essentially different, or was not known at the date of the patent as a proper substitute for the one omitted.

It would seem, therefore, that the defendants are not permitted to shield themselves from the consequences of infringement by incorporating into a patent the inventions of others, without, at the same time, so changing and adjusting the relations of the constituents thus taken as to produce a new and useful result. They have failed to show that this has been done.

But, irrespective of this view, I am of the opinion on the whole case, that the claim of the complainant's patent, fairly construed, is not to be limited to the use of factitious ivory; that it is broad enough to include the composition of rubber or gutta-percha, and that there should be a decree for the complainant according to the prayer of his bill.

U. S. CIRCUIT COURT, DISTRICT OF NEW JERSEY.

WILLIAM M. WELLING *vs.* THE RUBBER-COATED HARNESS TRIMMING COMPANY, ANDREW ALBRIGHT, AND L. C. VOORHEIS.

[*In equity.—Before* NIXON, *J.—Decided February*, 1875.]

Both the process and the product may be included in one patent; but in such case the description of the invention in the specification and claims should disclose that the inventor had both results in his mind.

Whether the Welling patent of March 17, 1863, for an "improvement in rings for martingales," which claims "a ring for martingales, &c., manufactured as set forth, with a metal ring enveloped in composition, as and for the purposes specified," is broad enough to cover the process as well as the product, and thus in effect to include terrets, buckles, and hooks for harness and carriage trimmings, as well as rings, *quære*.

An injunction having issued against the defendants because of their manufacture of rings, a motion for an attachment against them for the manufacture of *terrets, buckles, and hooks* was denied; but the master, notwithstanding, was instructed to state a separate account of such trimmings, with view to a reconsideration of the questions involved upon the hearing of the exceptions to the report.

[*F. H. Betts*, for complainant.
J. C. Clayton and *A. Q. Keasbey*, for defendants.]

[This was a motion for an attachment for an alleged violation of an injunction restraining the defendants from making, using, or vending any harness or carriage trimmings containing the invention of the plaintiff, to wit, "a ring, manufactured as set forth substantially," with "a metal ring enveloped in composition, as and for the purposes specified."

The injunction had been obtained upon proof that the defendants had made *rings* for harness by coating metal with hard rubber by the use of dies. It was now charged, upon the motion for an attachment, that the manufacture of *terrets, buckles*, and *hooks*, by a similar process, was an infringement of the patent, and therefore an infraction of the injunction.

The court denied the attachment asked for; but ordered the master to state a separate account of the terrets, buckles, and hooks made by defendants, in order to a fuller consideration of the question involved on the hearing of exceptions to the master's report.]

NIXON, *J.*:

This is an application for an attachment against the defendants for violating an injunction issued by this court, June 12, 1874, restraining them from making, using, or vending to others to be used, any harness or carriage trimmings containing the invention of the plaintiff, and secured to him by letters patent, to wit, "a ring manufactured as set forth substantially," with "a metal ring enveloped in composition, as and for the purposes specified."

The injunction followed the decree of the court, sustaining the validity of the complainant's patent, No. 37,941, for "an improvement in rings for martingales;" and the question now suggested is the scope of the said patent.

In the course of the accounting before the master, it was insisted by the defendants that the patent of complainant referred only to the use of certain compositions in the manufacture of rings for martingales, and hence that the decree compelled them to account only for the manufacture of rings; whereas the complainant claimed that all the articles used in harness and carriage trimmings which have been treated by the process described in his letters patent, such as terrets, buckles, and hooks, should be included by the master.

I have examined the bill, answer, proofs, arguments of counsel, and the opinion heretofore given in the case, and this examination has confirmed the strong impression in my mind, when this application was made, that the complainant is asking that a wider scope be allowed to the claims of his patent than has yet been distinctly given to it by the court.

I do not mean to be understood as saying that it will not admit of such scope and meaning; but that the question has not yet been presented, and that the patent has not been considered in reference to such construction.

The principal question thus far presented was, whether the complainant, in the manufacture of rings for martingales, should be confined to a composition known as factitious ivory, or whether a ring coated with hard rubber, as prepared and used by the defendants, was the infringement of the complainant's patent? That such was the view of the court is obvious from a few extracts from the opinion delivered after the final hearing:

"It is insisted by the defendants," says the opinion, "that if the patent is valid at all, it must be limited to a martingale-ring, intended to imitate ivory, and made by covering a metallic ring with *artificial* ivory, as is described in the complainant's patent of 1857, or some similar compound." * * * * * "I think that such construction is too narrow, and that it does not give to the patentee all that he is entitled to under the specifications and claims of his patent. It is quite clear, indeed, that factitious ivory was the composition uppermost in his thoughts. Having the partiality of a parent for his offspring, he naturally imagined that no superior compound could be formed or used." * * * * "It is clear that the patentee has no thought of confining himself or others to the use of factitious ivory; for, after referring to his patent of 1857, he says: 'My present invention does not relate to any particular composition, as that (factitious ivory) or any similar compound may be employed. The nature of my invention consists in the employment of a metallic ring, within a ring formed of artificial ivory or similar materials, for giving strength to the same, &c.' He then claims, 'A ring for martingales, &c., manufactured as set forth, with a metal ring enveloped in *composition*, (generally,) as and for the purposes aforesaid.' * * * * I am of the opinion, on the whole case, that the claim of the complainant's patent, fairly construed, is *not to be limited to the use of factitious ivory;* that it is broad enough to include the composition of rubber or gutta-percha; and that there should be a decree for the complainant, &c."

All that the complainant is permitted to claim, under the decision of the court as it stands, is a specific article of manufacture, to wit:

A metal ring, coated with any plastic composition capable of being compressed and solidified by the use and action of dies, whereby a ring is produced with an exterior surface more durable and more highly polished than has before been obtained by different processes of manufacture and at greater cost.

Such a construction, obviously, relates to the *product*. The complainant's patent is held to be good for the product resulting from a new combination of old instrumentalities. His claim on *this* application is understood to be for the *process*, and that the invention includes that as well as the product. Doubtless both may be covered by one patent, as was held by Judge Grier, in this court, in the case of *Goodyear* vs. *The Railroads*, (2 Wall, p. 356;) but in such a case the description of the invention in the specification and claims should disclose that the inventor had both results in his mind.

But the grave doubt here is, whether the specification and claim of the complainant's patent are broad and full enough to cover a new process as well as a new product.

It is a well-settled principle that a patentee may so limit his claim as to deprive himself of the full benefit of his invention or discovery. It was to remedy such a difficulty or omission that the privilege of surrender and reissue was granted in the patent laws. Patentees often fail to realize any substantial advantage from some of the most useful inventions, owing to their too narrow claims, until such surrender, amendments, and reissue have been made.

The complainant is entitled to be protected only in the rights which the letters patent cover and secure to him. I incline to the opinion that the specification and claim of the patent under consideration will be found too limited in their scope to admit of the construction now claimed for them by the able counsel for the com-

plainant; but, without expressing any decided conviction on the subject, I shall, at this stage of the case, deny the application for an attachment, and direct the master to proceed with the accounting.

Under the reference already ordered he may take an account—

1. Of the rings coated and finished by the defendants, according to their methods as described in the proofs.

2. Of the terrets, buckles, and hooks, as claimed by the complainant.

He will make up the two accounts separately, so that the aggregate of each may be readily distinguished; and when his report is made, the parties will have the opportunity of obtaining the judgment of the court in this new, and as yet unconsidered, construction of the specification and claim of the patent, after their views are more fully presented, as they may be, on exception to the report.

DISCLAIMERS FILED.

82,429.—Improvement in Preserving Fruit.—DAVID M. MEFFORD, of Norwalk, Ohio. Patent granted September 22, 1868. Disclaimer filed February 25, 1875. Disclaims:

"Your petitioner hereby disclaims the scalding process claimed in said patent, and all the words and paragraphs in said patent descriptive of, relating to, or introduced into said patent because of said claim therein.

"The words and paragraph which the American Fruit Company hereby disclaims are the following, to wit: In paragraph five (5) of the patent descriptive of the nature of the invention, in the first line word 'first,' and the second line the words 'and, secondly, scalding or heating them to the boiling-point,' and in the third line, the words 'and to elliminate any excess of sulphurous-acid gas which may be combined with the fruit.' Said paragraph thus amended will read: 'The nature of my improvement relates to subjecting fruits, in their raw or uncooked condition, to the action of sulphurous-acid gas, in order to prevent fermentation, although exposed to the atmosphere.' Said company also hereby disclaims all the 14th and 15th paragraphs of said patent, which are as follows, viz:

"'The heating subsequent to treatment elliminates all the gas that is not incorporated with the properties of the fruit, thus preventing the gaseous sulphurous taste, and the acid incorporated with the fruit is merged in its acid.'

"'The heating process, after the action of the sulphurous-acid gas, serves to expel the incipient elements of fermentation. It also diffuses the gas still more throughout the tissues of the fruit.'

"Said company also hereby disclaims, in the first and second lines of paragraph 20, the words 'and then subjecting it to heat in the manner set forth.' With these words omitted, the first clause of the claim will be as follows, viz:

"'1. Preserving fruit by treating or charging the same with sulphurous-acid gas.

"Said company also hereby disclaims, in the first line of paragraph 21, the words 'preparatory to its being heated.' With these words disclaimed, the second claim will be—

"'2. Charging raw fruit with sulphurous-acid gas by means of air-pumps or bellows, substantially as set forth.'"

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date April 13, 1875.]

8,260 and 8,261.—Backs of Leather Brushes.—WILLIAM H. HUMPHREY, Lansingburg, N. Y. Applications filed March 30, 1875. Term of patents 3½ years each.

8,262.—Reflector.—CHAUNCEY M. MURCH, Cincinnati, Ohio. Application filed March 20, 1875. Term of patent 7 years.

8,263 and 8,264.—Fancy Cassimero Fabric.—FREDERICK SNOW BOSWORTH, Providence, R. I., assignor to THE WEYBOSSET MILLS, same place.—Nos. 1 and 2. Applications filed March 29, 1875. Term of patents 3½ years each.

8,265 to 8,268, inclusive.—Embroidery-Patterns.—EMIL CHIRARD, New Haven, Conn., assignor to HENRY ST. JOHN, same place.—Cases R, S, T, and U. Applications filed April 7, 1875. Term of patents 3½ years each.

8,269.—Pipe.—ALEXANDER J. D. HENSZEY, Ashland, N. J. Application filed April 2, 1875. Term of patent 7 years.

8,270 and 8,271.—Oil-Cloths.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Applications filed April 5, 1875. Term of patents 3½ years each.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Certificate bearing date April 13, 1875.]

2,362.—Mowing and Reaping Machines.—ADRIANCE, PLATT & CO., Poughkeepsie and New York, N. Y. Application filed November 21, 1872.

"word 'Buckeye.'"

2,363.—Soap.—R. W. BELL & CO., Buffalo, N. Y. Application filed March 22, 1875.

"word 'DEUTSCHE.'"

2,364.—Soap.—R. W. BELL & CO, Buffalo, N. Y. Application filed March 8, 1875.

"word 'Favorite.'"

2,365.—Builders' Hardware.—CLARK & CO., Buffalo, N. Y. Application filed March 4, 1875.

"words and letters 'Clark's Pattern,' which are arranged upon and used in connection with articles manufactured by us, so as to enable the public to distinguish our goods from those of other manufactore.

2,366.—Whisky.—ALLEN H. GILLETT, Syracuse, N. Y. Application filed April 3, 1875.

"words 'GOLDEN PHEASANT.'"

2,367.—Writing-Paper.—ROBERT J. HARP, New Orleans, La. Application filed April 3, 1875.

"words 'DIXIE MILLS.'"

2,368.—Stomach-Bitters.—JAMES A. JACKSON & CO., St. Louis, Mo. Application filed August 23, 1870.

"a picture representing a woman bound by hands and feet to a rock. In the sea, which rolls at the base of the rock and touches the feet of the woman, is represented a huge hydra, or monster, with distended jaws, about to devour the woman. Above, and near the monster, a helmeted and mail-clad warrior is in the act of piercing the shoulders of the monster with a spear, the whole being an illustration of the ancient legend of Perseus rescuing Andromeda."

2,369.—Medicines.—EDWIN F. KUNKEL, Philadelphia, Pa. Application filed March 27, 1875.

"a representation of the head and bust of E. F. Kunkel."

2,370.—Corset-Steels.—LESLEY & YOUNG, Philadelphia, Pa. Application filed March 29, 1875.

"word 'VULCAN.'"

2,371.—Whisky.—THOMAS E. MOORE, Shawhan, Ky. Application filed December 21, 1871.

"the figure of a man in laboring dress, standing beside a mash-tub, the contents of which he is supposed to be stirring or breaking up with a mash-rake, the whole partly encircled by the words 'Pure Sour-Mash Copper Whisky.'"

2,372.—Whisky.—THOMAS E. MOORE, Shawhan, Ky. Application filed December 21, 1871.

"a mash-tub and rake, partially encircled by the words 'Pure Sweet Mash Bourbon Whisky.'"

2,373.—Rye-Whisky.—THOMAS E. MOORE, Shawhan, Ky. Application filed February 15, 1872.

"a sheaf of rye partially encircled by the words 'Pure Old Rye Whisky.'"

2,374.—Paper, Envelopes, and Cards.—PORTER & BAINBRIDGE, New York, N. Y. Application filed April 1, 1875.

"word 'CENTENNIAL.'"

2,375.—Medicine.—FRED SPREEN, Pittsburg, Pa. Application filed March 31, 1875.

"words 'Man's Friend; Family Gem.'"

2,376.—Jewelry.—THAYER MANUFACTURING JEWELRY COMPANY, Astoria, N. Y. Application filed April 2, 1875.

"word 'LOSAIC.'"

2,377.—Corsets.—UNITED STATES CORSET COMPANY, New York, N. Y. Application filed March 29, 1875.

"word 'Beauty.'"

2,378.—Corsets.—UNITED STATES CORSET COMPANY, New York, N. Y. Application filed March 29, 1875.

"letters 'A. A.'"

2,379.—Cutlery.—WILLIAM BROKHAHNE, New York, N. Y. Application filed April 3, 1875.

"figure of a hare, represented as running, and used in connection with the word 'Speed.'"

2,380.—Medical Compound.—EDWIN R. BURNHAM, Chicago, Ill. Application filed March 16, 1875.

"words or name 'Guarana Bitters,' in connection with the representation of a leaf."

2,381.—Preparation of Magnesia.—CHARLES H. PHILLIPS, New York, N. Y. Application filed April 1, 1875.

"words 'CREAM OF MAGNESIA.'"

2,382.—Preparation of Magnesia.—CHARLES H. PHILLIPS, New York, N. Y. Application filed April 1, 1875.

"words 'MILK OF MAGNESIA.'"

The OFFICIAL GAZETTE of the United States Patent Office is published weekly by the Patent Office. It is printed by authority of an act of Congress, which provides for its gratuitous distribution to libraries at the rate of eight for each congressional district.

The GAZETTE contains the decisions of the Commissioner of Patents, and such decisions of the courts in patent causes as are believed to possess general interest to inventors and patentees.

During the past year a complete synopsis of foreign patent laws, prepared by members of the British Legation in foreign countries, has been printed in the GAZETTE. Also an epitome of the proceedings of the Vienna International Patent Congress, with the action of that body to perpetuate itself. Matters of this character will receive further attention in the GAZETTE.

The claims of all patents granted are printed in the GAZETTE, bearing the same date as the issue of the patent, accompanied by a brief synopsis of the invention and a portion of the drawing.

The illustrations are photographic reproductions on a reduced scale of the drawings accompanying the original application, and preserve their fidelity, which was sometimes lost under the old plan of drawing or tracing and engraving.

Application for extension of patents, and the action of the Office in such cases, have their earliest publication in the GAZETTE. Disclaimers filed in the Office are nowhere else published.

Changes in the rules of practice of the Office are announced in the GAZETTE, which affords a much readier mode of communication with parties interested than to await a new edition of the Rules of Practice.

Finally, any matter believed to be of interest to inventors in their official intercourse with the Office, will receive in the GAZETTE the attention the subject warrants.

APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., March 22, 1875.

On the petition of JOHN HASELTINE, of Boston, Mass., authorized by act of Congress approved February 18, 1875, praying for the extension of a patent granted to him on the 25th day of March, 1856, for an improvement in Water-Wheels,

It is ordered that the testimony in the case be closed on the 11th day of May next; that the time for filing arguments and the Examiner's report be limited to the 21st day of May next; and that said petition be heard on the 26th day of May next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

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Taylor, J. E., Steam engine cylinder	162,120
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Witmer, T., Combined table and slicer	161,920
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Yaeger and Shaw	162,109
Young, J., Stove grate	162,136

TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED APRIL 13, 1875.

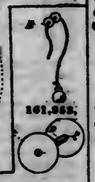
161,859. BURIAL-CASKETS. O. M. Allen, Kalamazoo, Mich. [Filed Feb. 24, 1875.]

Brief.—The covers are arranged to meet on a central line, and to be rotated away from the top over upon the outside of the side portions of the coffin. Each cover is of a form approaching to that of a quarter longitudinal section of a cylinder. Each cover has a portion at right angles at each end, which serves to pivot them upon the outside of the burial-case.

The two sections A and B of the cover, pivoted and operating on the outside of the casket, as herein described and set forth.



161,859.



161,859.

161,860. EAR-RINGS. Albt S. Baker, Somerville, Mass. [Filed Mar. 18, 1875.]

Brief.—Two plates, each provided with a tubular body, one passing inside the other, and through which the supporting-wire of the pendant passes.

As a new article of manufacture, the earring guard or re-enforce described, consisting of the head A provided with the hollow tubular body D, and the head B, provided with hollow tubular body C, substantially as and for the purpose specified.

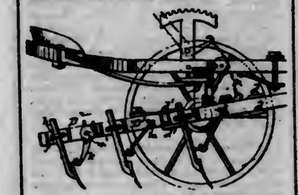
161,861. WASHING-MACHINES. Josiah R. Barnet, Elizabeth, N. J. (Filed Jan. 2, 1875.)



In a washing-machine, the beater or pounder consisting of thin slats of wood and metal, as shown and described, for the purpose specified.

161,862. CULTIVATORS. John N. Beahow, Geneva Lake, Wis. [Filed Mar. 1, 1875.]

Brief.—Two additional beams are attached to the outer sides of the main plow-beams, and made adjustable in distance.

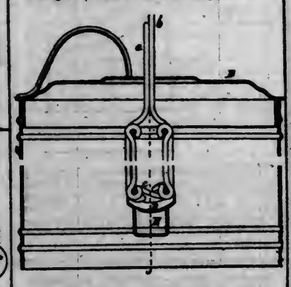


1. In a cultivator, the combination of the beams D, D', and D², hinged as described, whereby the beams D' and D² may be adjusted in relation to each other, and in relation to the beam D, all constructed as and for the purpose set forth.

2. The split tongue A, hinged beams D D, each having adjustable beams D' D², in combination with the flexible brace E, chains e e, rollers l l, and T joint a, all as and for the purpose set forth.

161,863. BROILERS. George H. Bliss, West Stockbridge, Mass. [Filed Feb. 10, 1875.]

Brief.—The air-passage prevents undue heating of the field within the drip-channel.



1. In a culinary apparatus for broiling steaks and cooking other articles, the combination of the vessel A, closed at the top by a suitable cover, and open at the bottom, and adapted to be heated upon the top of a stove or range, by being placed over an opening therein, directly over the fire, and a double-leaved folding gridiron or skeleton food-holder C supported vertically therein, in a position to admit of a free and equal access of the heat from the fire to both sides thereof, to cook both sides of the food contained therein, without turning, substantially as described.

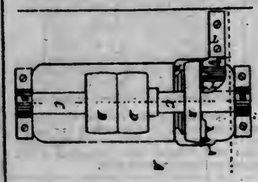
2. In combination with the bottomless vessel A, adapted to be used upon the top of a stove or range, by placing it over an opening therein, directly over the fire, and the gridiron or food-holder C, supported vertically therein, as set forth, the trough or spout D provided with the air-tube or space E beneath it, substantially as described.

3. In combination with the bottomless vessel or casing A, adapted to use upon the top of a stove or range, by placing it over an opening therein, directly over the fire, as set forth, and the gridiron or food-holder C, supported vertically therein, in position to admit of a free and equal access of the heat of the fire to both sides thereof, the detachable trough or spout D arranged to form the upper side or cover of the air-passage E, substantially as described.

4. The combination of the bottomless vessel or casing A, adapted to use upon the top of a stove or range, as set forth, the double-leaved gridiron or skeleton food-holder C, supported vertically therein, the inclined trough or spout D, projecting through the side of the casing A, and the detachable drip-pan F, suspended from said projecting spout, substantially as described.

161,867. MACHINES FOR TRIMMING AND BURNISHING THE EDGES OF BOOT AND SHOE HEELS, &c. George H. Bliss, West Stockbridge, Mass. [Filed Feb. 6, 1875.]

Brief.—The cutters are attached to the outer radial or end surface of a combined heel trimming and burnishing cylinder, whose periphery is adapted to burnish the heel-edge of a boot or shoe.



1. In machines for trimming or burnishing the edges of boot and shoe heels or soles, the burnishing and trimming cylinder or disk F, provided with a smooth periphery, and one or more curved cutters, k, projecting from its outer radial or end surface, all substantially as and for the purposes described.

2. In combination with the cutter-head E and one or more cutters, k, the curved gage-stand L, provided with the guard-lip i, all arranged and operating as and for the purposes described.

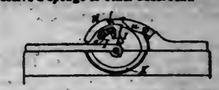
3. In combination with the cutter-head E, having a smooth periphery, and one or more cutters, k, formed upon or secured to its radial surface, with that portion of their cutting-edges next to the head equidistant with its periphery from the axis of said head, and their points or outer ends curved toward the axis, as set forth, the stand L, provided with the guard-lip i, and the adjustable guide-rest L', all adapted to operate as and for the purposes described.

4. In a machine for trimming the edges of boot or shoe heels or soles, the combination of the cutter-head E and one or more cutters, k, fitted to recesses formed in the outer radial or end surface of said head, with the outer surface of the cutting portion thereof convex to the radial face of said cutter-head, and the cutting-edge thereof radial to the axis of revolution, substantially as described.

5. In combination with the cutter-head E and one or more cutters, k, constructed and applied thereto as described, the guide-stand M, provided with the rest-arm m and the adjustable rand-guide n, all arranged and operating substantially as herein set forth.

161,868. HEEL AND SOLE TRIMMING MACHINES. George H. Bliss, West Stockbridge, Mass. [Filed Feb. 6, 1875.]

Brief.—The cutter-head is a cylinder having an outer endless cutting-edge; its periphery is employed as a burnishing-surface. Beneath is a receptacle or chamber, in which the cylinder rotates, which may be supplied with oil or coloring material, and which is adapted to receive a sponge or other absorbent.



1. The combination of the tread-guide H and spring g, arranged to operate as and for the purposes described.

2. The combination of the guide H, arranged to be adjusted parallel to the cutting-edge of the knife, and the gage-rest I, arranged to be adjusted in a radial direction toward or from the cutting-edge of the knife, as and for the purposes described.

3. In combination with a rotary cutter for trimming the edges of heels or soles, or a revolving burnishing-wheel, a receptacle for oil, blacking, or other suitable lubricating or coloring material, in which said cutter or burnishing-wheel revolves, as and for the purposes described.

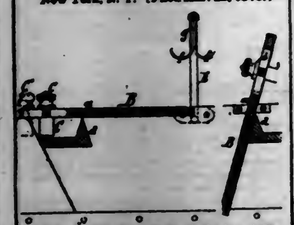
4. The combination of a revolving cutter-head or burnishing-wheel, a receptacle in which a portion of said cutter-head or burnishing-wheel revolves, and a packing of sponge or other absorbent material, which may be saturated with oil, blacking, or other suitable lubricating or coloring material, all as and for the purposes described.

5. The combination of the ring or hoop knife F, receptacle J, and shield or guard-plate K, all arranged as and for the purposes described.

6. A combined rotary cutter and burnishing-tool, having a smooth and polished exterior surface, arranged to revolve in a suitable lubricating-receptacle, and to trim, to form, and polish at the same time the edge of a boot or shoe heel or sole by revolving past it in the direction of its thickness, while the heel or sole is being fed toward said tools in the direction of its length, and parallel to the axis of motion of said cutters, substantially as described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

161,859. ANIMAL-TRAPS. Geo. W. Brown, New York, N. Y. [Filed Mar. 22, 1875.]



1. In combination with the body A and tilting covers B, the adjustable pieces C, adapted to not only regulate the balance of the covers, but also to lock them in the closed position, as herein specified.

2. In combination with the body A and tilting covers B, the stiff bail E, arranged to ship and unship in the holes *e e* and grooves *e e*, as and for the purposes specified.

3. The spring-hooks *f f*, their shanks *g* clasping the bail E, in combination with the box A, bail E, and hinged cover or covers B, as before described.

161,860.



161,862.

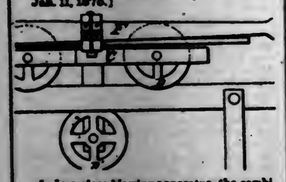


161,860. HORSESHOES. Dennis Carey, Lynn, Mass. [Filed Mar. 8, 1875.]

Brief.—The calk-tenon is T-shaped in cross-section, one part of which is even with the lower face of the shoe, so that a button pivoted to the shoe and turned over it holds the calk in place.

The calk constructed with a T-shaped tenon, and secured to the shoe B by the button *b*, substantially in the manner described.

161,861. APPARATUS FOR WORKING GLASS. Benj. F. Chase, Jonesborough, Tenn. [Filed Jan. 11, 1875.]



1. In a glass-blowing apparatus, the combination, with a mechanically-supported vibrating blowing-tube, F, of a pipe, I, communicating with a mechanical blower, substantially as specified.

2. The combination, with the blowing-tube F, arranged in and communicating with the tubular end of a horizontally-rotating rod, E, of the sectional coupling H of tube I, substantially as specified.

3. The combination, with the rod E, supporting blowing-tube F, of a transporting-carriage, G, substantially as specified, and for the purpose set forth.

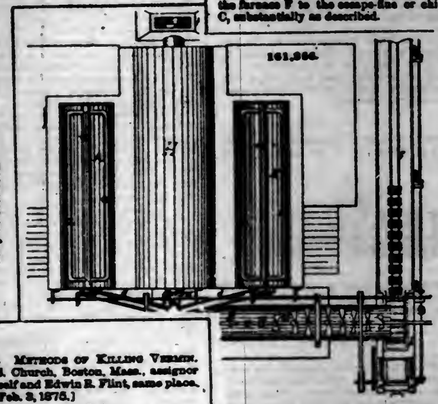
4. The combination, with the rotating rod E, supporting blowing-tube F, of the adjustable counterpoised J, substantially as specified.

5. The combination, with a blowing-tube, F, and a blast-pipe, I, communicating with a mechanical blower, of a regulating-valve, A', substantially as specified.

6. The combination, with the rod E and blowing-tube F, of the hinged plate G and spring *g*, substantially as specified.

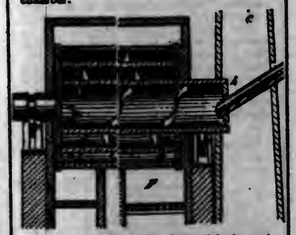
161,862. BOTTLE-STOPPERS. A. Christie, Chicago, Ill. [Filed Dec. 21, 1874.]

Brief.—A tapered stopple provided with sockets, in combination with a bottle whose diameter is less than the length of the stopple, and is provided with a collar.



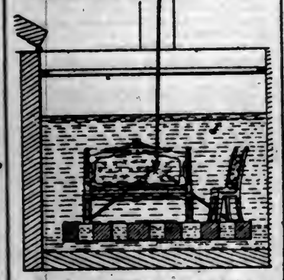
161,863. HEATERS AND DRIERS. Thomas Cook, Sing Sing, N. Y., assignor to J. R. Dos Passos and Zachariah B. Simmons, New York city. [Filed Feb. 24, 1875.]

Brief.—The material to be heated and dried is received at the open end *h* of the central chamber, and discharged at *i* of the outer chamber, while the products of combustion are received at *i* of the outer chamber, and discharged at the open end *h* of the central chamber.



In an apparatus for heating and drying pulverulent and granular substances, the combination of the furnace F, inclosing arch or jacket A, escape-flue C, and feed-chute K with the rotary cylinder H, operating within the jacket A, said cylinder being divided into several compartments, *h' h' h'*, provided with screw-threads *o o'*, and with openings *n n' i*, arranged at opposite ends of the compartments, and forming, with the said compartments, the passage through which the material to be dried passes from the feed-chute to the inside *i*, and through which, also, the smoke and products of combustion pass from the furnace F to the escape-flue or chimney C, substantially as described.

161,864. METHODS OF KILLING VERMIN. Titus S. Church, Boston, Mass., assignor to himself and Edwin R. Flint, same place. [Filed Feb. 3, 1875.]



The process of killing vermin in furniture, upholstery, or carpets, consisting in immersing the same in naphtha or other light products of distillation from petroleum or coal oil, substantially as described.

161,865. MACHINES FOR MANUFACTURING BLOCKS OF ARTIFICIAL STONE. Thomas Cook, Sing Sing, N. Y., assignor to J. R. Dos Passos and Zachariah B. Simmons, New York city. [Filed Feb. 24, 1875.]

Brief.—The pulverized stone and asphalt are heated in separate compartments, then discharged through pipes into a mixing-vessel. The mixed material then passes to the press, from which the completed blocks are conveyed to a suitable receptacle.

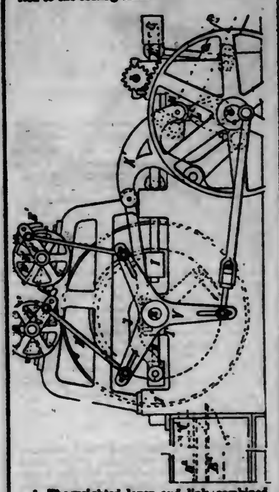
1. The combination of the furnace F, heater H, furnace F' or F'', vessel A, pipes D *d*, vessel G, agitators *e* E, and press I, with the driving mechanism, substantially as and for the purposes herein set forth.

2. The two vessels A A', provided with separate agitators *e* and discharge-pipes *d*, and heated by separate furnaces, in combination with the heater H and mixing-vessel G, and its appliances, substantially as described, for the purposes set forth.

3. The process of heating the stone, heating and stirring the asphalt, delivering the stone and the asphalt into the same mixing vessel, mixing them thoroughly therein, discharging them, thus mixed, into the press, and molding and compressing them into blocks, and delivering the blocks from the press, finished and ready for use, by the operation of machinery, as above described, and without the intervention of hand-labor at any stage, substantially as herein set forth.

161,867. PRESSES FOR FORMING CONCRETE PAVING AND BUILDING BLOCKS. Thomas Cook, Sing Sing, N. Y., assignor to J. R. Dos Passos and Zachariah B. Simmons, New York city. [Filed Feb. 24, 1875.]

Brief.—The plunger and platen are mounted upon two parallel rods, and are operated by a toggle-joint, to press the material between them within an intermittingly-rotating mold-wheel. The pressed block is received upon a rising and falling plate, upon which it is carried to the cooling-tank.



1. The weighted lever and link, combined with the crank-shaft and toggle-joint, to operate the platen and plunger upon the parallel tension-rods B B, substantially as described, for the purpose specified.

2. The moving pawls upon the rock-shaft S, adapted to move the mold-wheel intermittingly by means of an oscillating spider, V, operated from the main driving-shaft of the press, substantially as described.

3. The discharger or follower operated from the counter-shaft through the medium of connecting-arms J', double bell-crank levers K', and cams L', substantially as described.

4. The discharger or follower adapted to be withdrawn from the molds with a positive motion by means of a cam on the counter-shaft, combined with an arm on each of the bell-crank levers, substantially as described.

5. The release-lever Q, to relieve the pressure of the plunger and platen, and prevent the press from breaking when the movements of the plunger and platen are varied by a difference in the size of the blocks or the presence of any unyielding substance therein, substantially as described.

6. The release motion produced by the weighted lever and connecting-link, pivoted to each other, and connected to the toggle-joint and counter-shaft, substantially as described.

7. The weight upon the lifting-lever adapted for adjustment to regulate the pressure of the plunger and platen, substantially as described.

8. The weighted lever, suspended from the toggle-joint by means of the rod P', substantially as described.

9. The ejector-ribbon, in combination with the suspending-rod and releasing-lever, substantially as described, for the purpose specified.

10. The two feed rollers or wheels, provided with radially-projecting blades for feeding the material into the mold-wheel, substantially as described.

11. The feed-blades, having their points of projection and retraction adjustable with respect to the space between the feed-rollers, for the purpose of regulating the force of the feed into the molds, substantially as described.

12. The arrangement of the grooved cams for separately retracting the feed-blades completely within the feed-rollers, substantially as described, for the purpose specified.

13. The open-ended feed-hopper X, constructed with two parallel faces, Y Y, having sharpened upper edges extending up between the two feed-rollers, substantially as described, for the purposes specified.

14. The feed-rollers, having an intermittent rotation toward each other, substantially as described, for the purpose specified.

15. The combination of the grooved cam-plates with the feed-rollers and reciprocating blades, substantially as described, for the purposes specified.

16. The grooved cam-plates, provided with radial slots for the application and removal of the feed-blades, substantially as described.

17. The spider V upon the rock-shaft, combined with the center-shaft and rotating wheels of the feed-rollers, by the means substantially as described, for the purposes specified.

18. The carrying-plate E', adapted to receive the pressed blocks from the mold-wheel, and deposit them upon a reciprocating carrier in rear of the mold-wheel, substantially as described.

19. The feed-plate E', operated by the pivoted connecting-arms V' and the cams A' from the cross-shaft X', substantially as described.

20. The carrying-plate E', guided in its vertical movements by the upright rods T', substantially as described.

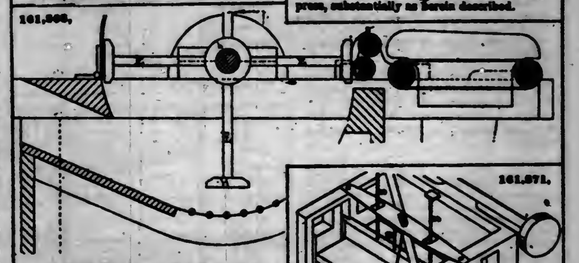
21. The carrier, composed of three reciprocating parts, D' D' D', operating as described, to feed the pressed blocks intermittingly, substantially as described.

22. The combination, with the mold-wheel, of the feeding rollers and blades, the plunger and platen, the discharger, the dropping-plate, and the carrier, substantially as described, for the purposes specified.

23. The mold-wheel and carrier adapted to rotate within reservoirs of water, substantially as described, for the purposes specified.

24. The pressing-plunger and platen, adapted to receive a stream of water within them, to prevent their pressing-faces from becoming heated, substantially as described.

161,868.

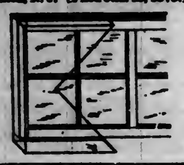


161,868. BEATERS FOR COTTON-OPENERS. John R. Crane, Lowell, Mass. [Filed May 11, 1874.]

Brief.—The beaters are attached to hubs or sleeves, which are applied loosely to the beater-shaft, and are held in proper radial position by springs attached to the shaft and beater-arms.

The yielding cotton-beater, combined with the shaft A, as an axis of rotation and an axis upon which the beater is made to yield, substantially as described.

161,869. WINDOW-GUARDS. T. H. Dibble, Trenton, N. J. [Filed Jan. 18, 1875.]



1. A window-cornice, of wire or other equivalent material, having substantially the contour, *c'*, described, and provided with the parts or pieces *c* and *b*, all united and adapted to receive an outer covering or ornamental design, in the manner substantially as described and set forth.

2. In combination with the above-described cornice, the wires *d d*, secured to the upper part thereof, and extending downward and inward, and having eyes at their ends to receive the journals of a curtain-roller, in the manner substantially as described and set forth.

161,870. METAL SWITCHES FOR KILLING INSECTS. Samuel A. Derrison, Clinton, Mass. [Filed Mar. 10, 1875.]



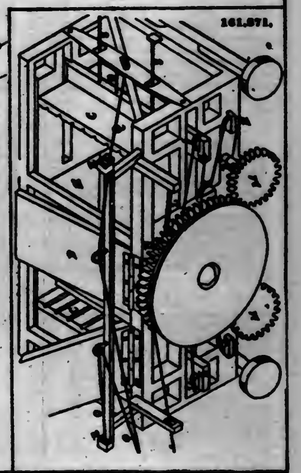
As a new article of manufacture, a switch, for killing insects, composed of fine metal wires, as specified.

161,871. HAY-PRESSES. John Dupas, San Francisco, Cal. [Filed Mar. 1, 1875.]

Brief.—The followers are operated simultaneously by ropes passing around shafts bearing pinions meshing into a spur-wheel, to the side of which the drum receiving the ropes for applying the power is secured. The followers are returned to the end of the press by a rope attached to the middle of each of the followers at the back end, and led through the end of the press and over suitable pulleys.

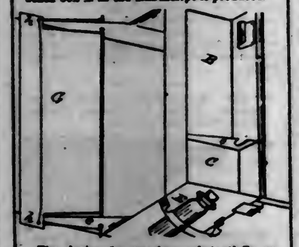
1. A press, consisting of the horizontal body A, having the two followers C C, with their guides B, in combination with the horizontal shafts F, with the gears M and K, pulleys H, I, and J, and chains G, for moving the followers toward each other simultaneously, substantially as herein described.

2. In combination with the two horizontally-moving followers F F, the ropes Q, with the pulleys R, so constructed as to withdraw the followers simultaneously to the ends of the press, substantially as herein described.



161,872. PORTFOLIOS. John Wesley Eastwood, Monroe Township, Wyoming County, Pa. [Filed Mar. 16, 1875.]

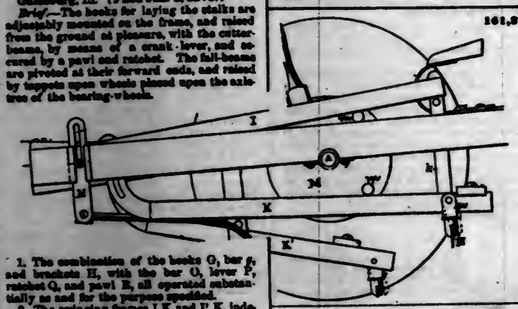
Brief.—Copies are placed upon the hinged rest G, and held by the elastic cord *g*. Blank sheets are interposed between the hinged rest and base F, and fed forward toward and beneath box A as the manuscript is produced.



The device for copying, substantially as herein described, consisting of the box A, having compartments B C, and the rack composed of the stripe H H I, writing-plate F, and the folding copy-rest G, for the purpose specified.

161,873. STALK-CUTTERS. J. Y. Bokman, Galesburg, Ill. [Filed Jan. 2, 1875.]

Brief.—The hooks for laying the stalks are adjustably mounted on the frame, and raised from the ground at pleasure, with the cutter-beams, by means of a crank-lever, and secured by a pawl and ratchet. The fall-beams are pivoted at their forward ends, and raised by supports upon wheels placed upon the eccentrics of the bearing-wheels.

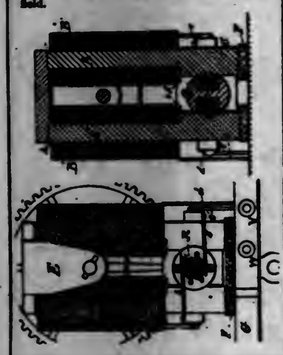


1. The combination of the hooks G, bar *g*, and brackets H, with the bar O, lever P, ratchet Q, and pawl R, all operated substantially as and for the purpose specified.

2. The swinging frames I K and I' K, independently hinged to the frame, and alternately operated by means of the impost-wheels M M, substantially as and for the purpose specified.

161,874. MAGNETO-ELECTRIC MACHINES. Moses G. Farmer, Salem, Mass. [Filed June 21, 1873.]

Brief.—Cores of magnets of cast-iron; initial magnetism therein induced by earth currents; by rotation of helixed armature currents are produced therein, which are led around cast-iron magnets, strengthening the magnetic field.



1. A dynamo-electric machine, constructed substantially as set forth, in which the electro-magnetic field is sustained solely by the magnetism produced by currents which, circulating in it, are created from the armature which rotates in this field.

2. The combination of the non-magnetic plate F, provided with legs H H', having bushings n n' thereon, the pivots P P', the armature O, the plates A A', the coils B B', and the cross-piece D, substantially as and for the purpose set forth.

3. The combination of the cross-piece D, having legs or ears E E' attached thereto, the shaft I, wheel K, the pinion L, pivot P, armature O, and commutator R, substantially as set forth.

4. The arrangement of the coils B B', armature O, segments *a a'* of the commutator-springs *b b'*, screw-cups W V, connecting wires *c c' d*, and the external wire connecting the screw-cups in one and the same electric circuit, substantially as set forth.

5. A dynamo-electric machine having the cores A A', and connecting cross-piece D of the electro-magnet, and the armature O, constructed of cast-iron, substantially as and for the purpose set forth.

161,875. MIDDLINGS-PURIFIERS. L. Gathmann, Chicago, Ill. [Filed Oct. 19, 1874.]

Brief.—The reciprocating scrapers, for keeping the meshes of the screen clear, are attached to and operated from a single vertical reciprocating bar arranged outside of the machine.

161,875.

1. The series of scrapers H H H, secured to arms G G G, which are attached to and operated by a reciprocating bar, F, outside of the machine, in combination with the screens B B' B², substantially as described and shown.

2. The combination of a series of scrapers, H H H, secured to arms G G G, which are attached to and operated by a reciprocating bar, F, outside of the machine, with the screens B B' B², carrier-boards *c c' d*, inclined boards *d d*, spouts *e e'*, contained in the vibrating frame C, and the casing A, valves B, and a ventilator, substantially as and for the purpose set forth.

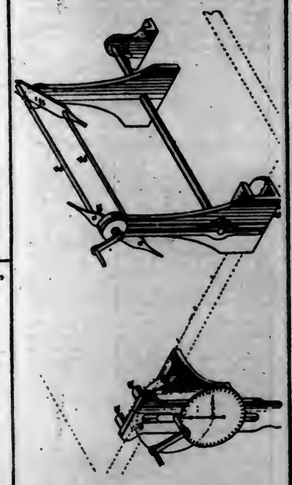
161,876. CAPS. John C. Goebel, Chicago, Ill. [Filed Mar. 15, 1875.]

The combination, with a cap, of a crimped wire ring, A, placed around the inside of the top of said cap, and supported at intervals by the crimped wire braces B, constructed and arranged substantially as described and shown, for the purpose set forth.

161,876.



161,877. CLOTH-MEASURING APPARATUS. John James Greenough, Syracuse, N. Y. [Filed Sept. 9, 1874.]



1. The frame c, supporting the measuring-wheel, by means of which the said wheel is affixed to a table or counter, with its upper part just above the level thereof, and the slide *c* connected therewith, bearing steel-rollers *c* above, and resting upon said measuring-wheel constructed and arranged as and for the purposes specified.

2. The reel composed of metal head s s and removable bars *t t*, by which the reel is collapsed, as herein described.

161,878. STOVE-PIPE SHELVES. Miles H. Harman, Andover, N. Y. [Filed Jan. 20, 1875.]



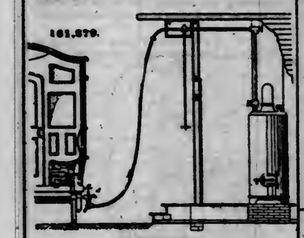
The clasp C, constructed of a piece of spring-metal, having at one end a handle, b, and at its opposite end a hinged metallic strip, D, constructed with a series of open notches, *d d*, and a handle, *c*, in combination with a shelf or tray, having a rim provided with openings *a* for the passage of the clasp in order to secure the tray to a stove-pipe, as and for the purpose described.

161,879. RAILROAD-CAR HEATERS. William B. Hayden, Columbus, Ohio. [Filed Feb. 27, 1875.]

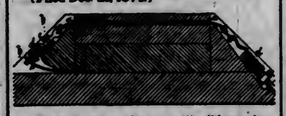
Brief.—A close vessel containing water is placed within the car. Into this, at the stations, steam from a stationary boiler is discharged until the water is brought to a temperature of 212° Fahrenheit, or thereabout.

A stove, A, supplied with a liquid and placed upon a car or other vehicle, and provided with a steam-distributing pipe leading into it, in combination with a stationary detachable and attachable steam-conducting hose-pipe, which is provided with a suitable coupling for connecting it temporarily with the steam-pipe of the stove, whereby the temperature of the liquid in the stove is raised to the proper degree by steam passed through the detachable pipes into it from a stationary boiler, substantially as described.

161,879.



161,880. BILLIARD-CUSHIONS. Frederick H. Heid and Moses Bensinger, Chicago, Ill. [Filed Dec. 21, 1874.]



The combination of the metallic ribbon *a*, inserted in a billiard-table cushion, having one end attached to a bolt, *b*, which passes through a guide-plate, *c*, and has a nut, *b'*, spiral spring *d*, and leaf-spring *e*, for preserving an equal tension on the ribbon, and the other end attached to a spiral spring, *d'*, having a nut, *f*, and screw *g* inserted through the table-cushion frame for changing the tension of the ribbon, substantially as described and shown.

161,881. BUCKETS FOR CHAIN-PUMPS. J. G. Heiderson, Keokuk, Iowa. [Filed Feb. 6, 1875.]

Brief.—The rubber disk or sucker has four holes, two of which are connected by a cut or slit, to enable the disk to be forced over the loop or link. The other two serve as leak-holes when the pump is not in operation, but when in operation they are closed by the bucket or disk below the rubber sucker.



161,881.

1. The elastic sucker I, with holes connected by a cut, T, as arranged as to pass over and close up on link E, substantially as set forth.

2. The elastic sucker I, with opening I, in combination with lower disk A, arranged so that the opening will be closed when in operation, and open when stationary, substantially as set forth.

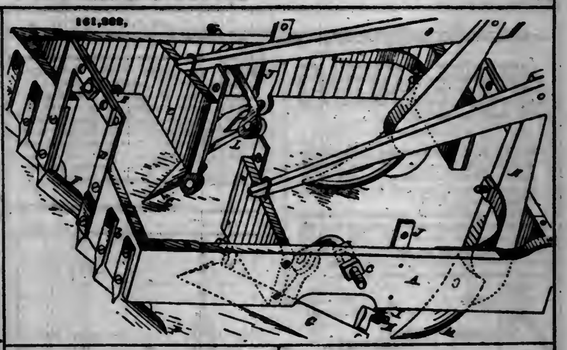
161,882. CULTIVATORS. J. T. Henderson, Woodbury, Tenn. [Filed Mar. 19, 1875.]

Brief.—A variety of cultivating devices combined in flexibly-connected frame with novel modes of adjustment.

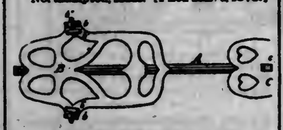
1. The combination, in a cultivator composed of two flexibly-connected sections, of a series of pulverizing-teeth, F, a pair of scrapers, G, and a pair of hilling-plows or cultivator-shovels, M, substantially as and for the purpose set forth.

2. The pivoted or adjustable scrapers G, hinged to the standards J, in combination with the adjusting-screw K, hinged to the arm I, substantially as and for the purpose described.

161,882.



161,882. SKATES. J. Dwight Kellogg, Jr., Northampton, Mass. [Filed Mar. 1, 1875.]



1. A skate composed of the runner A, risers *a*, plate B, with ears *b*, and plate C, with catch *c*, all cast in a single piece, substantially as described.

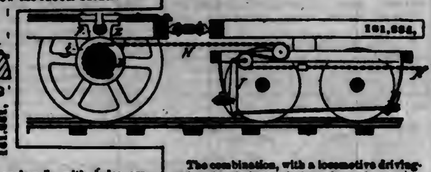
2. The adjustable clamp-jaws *b' b'*, having a toothed or serrated face and tangs, *b'*, one having a right and the other a left hand screw-thread cut thereon, in combination with the screw-tapped ears *b*, substantially as and for the purposes described.

3. The removable and adjustable clamp-jaws *b' b'*, having the serrated or toothed faces and smooth tangs, in combination with the fixed ears *b*, substantially as and for the purposes described.

161,883. CAR-BRAKES. Jas. M. Kelly, Austin, Ill. [Filed Dec. 21, 1874.]

Brief.—Brake-chain wound on spool, which may be made rigid with locomotive-axle or set free at will.

161,883.



The combination, with a locomotive driving-axle, of a chain-spool sleeved on the same, a friction-clutch at each end of said spool feathered on said axle, a lever, a rock-shaft, two eccentrics, and two ball-cranks, substantially as described.

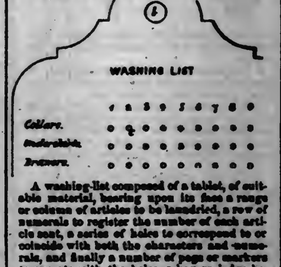
161,883.



161,884. FEED-REGULATORS FOR MILLS. S. B. Kenworthy and J. R. Vanmeter, Van Metre, Iowa; said Kenworthy assignor to said Vanmeter. [Filed Feb. 15, 1875.]

The fingers or scrapers Nos. 1 and 2 on the rotating shaft *d*, the bottom or base C, having a slot, *a*, slot-cover *b*, and valve *g*, when combined and operated substantially as and for the purposes shown and described.

161,885. WASHING-LISTS. George Lamb, Boston, Mass. [Filed Feb. 23, 1875.]

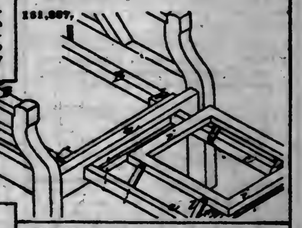


A washing-list composed of a tablet, of suitable material, bearing upon its face a range or column of articles to be laundried, a row of numerals to register the number of each article sent, a series of holes to correspond to or coincide with both the characters and numerals, and finally a number of pegs or markers to operate with the holes, a box or ledge being added to the tablet to receive these pegs, and the whole being substantially as and for purposes stated.

161,886. FOOT-RESTS FOR BAST-CHAIRS. Peter L. Lambert, Boston, Mass. [Filed Aug. 2, 1874.]

The combination, with the sliding frame *a*, adapted to be moved within a chair-seat, of the rest *f* and links *f i*, whereby the said rest may be raised and held in a horizontal position, substantially as and for the purpose set forth.

161,887.



161,888. SPINDLES FOR SPINNING-MACHINES. Joel H. Le Moyne, Boston, Mass. [Filed Feb. 20, 1875.]

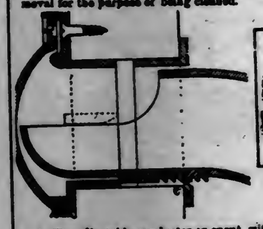
Brief.—For holding securely together the two parts of which the spindle is composed, and allowing the upper part, on which the cop is spun, to be readily detached from the lower and attached to a spindle in a loom-shuttle, constructed similarly to the upper end of the lower division of the spindle in this case.



In combination with the parts a b of a male spindle, the locking device, consisting of the shank a', projection i, springs k k, bored-out sleeve in the part b, and the check-nut k', as herein shown and described.

161,889. MILK-CONDUCTORS. Egbert Macy, Brooklyn, N. Y., assignor of two-thirds his right to Franz Samuelson, Jersey City, N. J., and Thos. M. Bristnall, New York city. [Filed Dec. 10, 1874.]

Brief.—An apparatus attached to a door, gate, or partition, in such a manner that the customer may be served with milk without being in attendance to receive it. The spout or conductor is easy of adjustment and removal for the purpose of being cleaned.



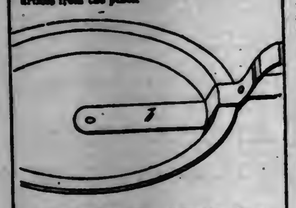
1. The adjustable conductor or spout, with compensating device, substantially as described.

2. The removable conductor or spout, in combination with the outer and inner door-plates, substantially as described.

3. The notched projection on the under side of the conductor or spout, in combination with the sharp edge of the inner door-plate, and the ribs or steps on the outer door-plate, substantially as and for the purpose set forth.

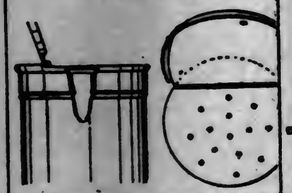
161,890. COMBINED PIE PLATES AND CUTTERS. Walter H. Manning, Boston, Mass. [Filed Oct. 1, 1874.]

Brief.—The cutter swings around the pivot, and separates the bottom of the pie or other article from the plate.



In combination with a bake-plate, the rotating knife b, substantially as and for the purpose set forth.

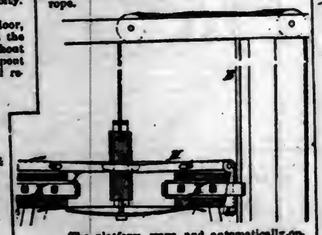
161,891. DREDGE-BOXES. H. Mather, Chicago, Ill., assignor to Frank Sturges & Co., same place. [Filed Dec. 4, 1874.]



A dredge-box provided with a perforated cap, having hinged thereto the vertically-vibrating lid C, the said cap and lid being constructed for engagement with each other, substantially as specified.

161,892. ELEVATORS. James W Meikle, Louisville, Ky. [Filed Feb 17 1875.]

Brief.—As the wedges rise and become jammed between the platform-frame and the ways for stopping descent of the platform, they push the sliding blocks at the same time inward, causing their stirrups, secured to the said blocks, to clamp or bind firmly on the ways, thus providing for greater security against accident from breaking of the hoisting rope.



The platform, ways, and automatically-operating wedges G of an elevator, in combination with the sliding blocks I and stirrups K, substantially as and for the purpose specified.

161,893. WARMING-MACHINES. S. J. Morey, Clayton, Ill. [Filed Sept. 29, 1874.]

Brief.—Within a cylinder having a door is a perforated cylinder, which has a door, and arranged to rotate, the ends being crossed by frames, and the sides by longitudinal ribs.



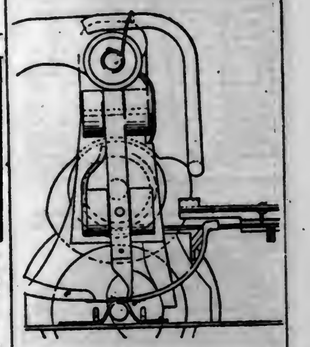
The water-tight cylinder C, with lid D, in combination with the perforated cylinder E, with lid F, cross-frame H, ribs l, spindles J and J', substantially as and for the purpose hereinbefore set forth.

161,894. REED-ORGAN ACTIONS. Peter J. O'Neill, Boston, Mass. [Filed Feb. 10, 1875.]

The lever D, having its fulcrum at one end near the front of the reed-board, and having attached to its opposite end the pallet *i*, in combination with the pallet B, by which it is operated, substantially in the manner and for the purpose set forth.

161,895. SEWING-MACHINES. C. H. Palmer New York, N. Y. [Filed Feb 25, 1874.]

Brief.—Specially adapted for straw braid sewing. The braid is beat partially around the supporting and feeding roller. The needle carries its thread through the beat material, and its loop is caught by the looper, which is so supported as to have movement in direction of the length of the needle, and also across the path of the needle. The loop is held until entered by the needle in its next movements



1. The combination, substantially as before set forth, of the holding and feeding mechanism, the loop catcher and holder, and the pendulum-plate with the needle-lever swinging in the arc of a circle, and arranged to give the needle a movement nearly parallel with the surface of the table, all operating together to form a chain-stitch single-thread seam, as set forth.

2. The combination of the adjustable gage, attached to the guide-frame above the table, substantially as described, and the guide, extending from said frame to the feed-roll, both for directing and controlling the straw-braid, as set forth.

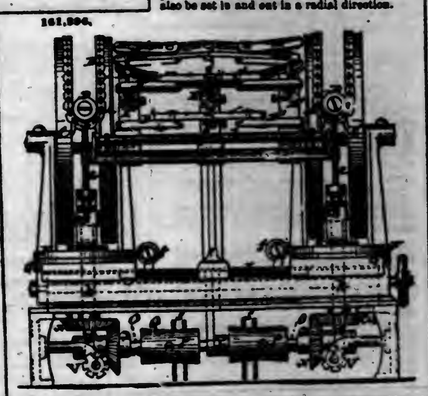
161,896. MACHINES FOR TEMPERING AND STRAIGHTENING FABRICS. Isaac B. Palmer, Middletown, Conn. [Filed Aug 16, 1874.]

Brief.—The endless selvage-holding chains are carried on diverging wheels and loose side wheels, and around front and beat guide-rolls. The feeding wheels are mounted on slides provided with turn-tables, and each is operated by independent gearing, so that they can be driven at different velocities when required. The friction-frame consists of stringers made of sliding and jointed sections, and can be expanded and contracted longitudinally, and also be set in and out in a radial direction.

161,894.



161,896.



1. The combination, with the oblique or divergingly arranged selvage-carrying wheels A A of the loose side wheels or idlers C C, the chains or bands B B and the front and back guides or rolls D E, substantially as specified.

2. The combination, with the selvage-holding chains or bands B B and the selvage-carrying wheels A A of the transverse delivery and drag-roller A', arranged at the foot of said chains, in rear of them, essentially as and for the purpose herein set forth.

3. The turn-tables F, in combination with the slides G and selvage carrying and stretching devices, mounted on or carried by said tables, substantially as specified.

4. The combination, with the turn-tables F and the slides G, of the upright shafts I, arranged to occupy a concentric relation with said tables, the pinions K, and the miter-wheels or surfaces L, attached to the selvage-carrying wheels A, substantially as described.

5. The combination, with separately-hung and independently-operating selvage-carriers on opposite sides of the machine, of means, substantially as described, for positively driving said carrying devices at different velocities relatively with each other, essentially as and for the purposes herein set forth.

6. The combination of the conical driving-pulleys Q Q with the conical secondary pulleys P P, the independent shafts O O, the belt-shifters S S, and gearing connecting the independent shafts O O with the selvage-carrying wheels A A, essentially as and for the purpose herein set forth.

7. The combination of the foot-rolls V V and their shafts U with the belt-shifters S S, the conical driving-pulleys Q Q, and the secondary independently-operating conical pulleys P P, substantially as specified.

8. The friction frame or drag constructed of stringers composed of sliding and jointed sections, substantially as described, whereby said frame may not only be expanded or contracted longitudinally, but may also be set in or out and bowed in a radial direction relatively with the selvage carrying and stretching wheels or devices, essentially as herein set forth.

161,897. HEAD-BLOCKS. Reva A. Perry, Jr., and Geo. M. Dwight, Oregon, Ill. [Filed Sept. 26, 1874.]

Brief.—A head-block in two pieces, with central groove, in which is confined a standard fixed upon the axle-plate.

1. The metallic head-block made in two pieces, A A, held together by screws B B, having a recess, C, for the spring-bolt to rest in, and having in the center a groove, J, in combination with the standard D, as and for the purpose set forth.

2. The T-shaped standard D, fitted to and working in the corresponding groove J in the head-block A, and in combination therewith, as set forth.

161,898. DAMPING-BOXES FOR COPYING-PRESSES. William J. Purcell, Rochester, N. Y. [Filed Sept. 17, 1874.]

Brief.—The pad covered with felt absorbs water from the box. The damping-cloths are spread on the pad until moistened, then spread between the sheets of a letter-book, on the side of the leaf opposite the written sheet, when the book is pressed.

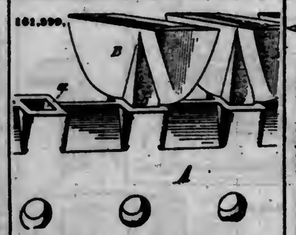


A damping-box for copying-presses lined with non-corrosive material, and having a loosely-hinged cover with projection A, a damping-pad, C, and damping-cloths D E, all constructed in the manner herein set forth.

161,899. GRATE-BARS. Geo. D. Putnam, Salem, Mass. [Filed Sept. 23, 1874.]

Brief.—The shanks of the fuel-points project into sockets in the web of the bar, which has transverse openings for admitting air. As the points are destroyed new ones can be supplied.

161,899.

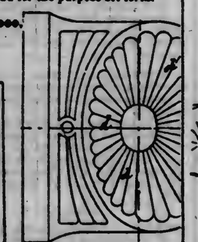


In combination with the web A, constructed with the sockets a passing through it, the points or teeth B, constructed with shanks b fitting said sockets, substantially as set forth.

161,900. BRIDLE-WINKERS. Jas. D. Reid, St. John, Canada. [Filed Aug. 6, 1874.]

A molded solid leather bridle-winker, provided with a concave cup or shield, B, ornamented on the outside, but perfectly smooth on the inside, and having the flat part c, substantially as and for the purpose set forth.

161,900.

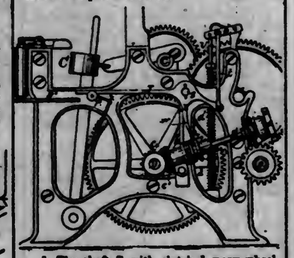


161,897.



161,901. LET-OFF MECHANISMS FOR LOOMS. E. A. Remington, Anthony, R. I., assignor to S. Colvin & Co., same place. [Filed Oct. 19, 1874.]

Brief.—By means of intermediate levers and a sliding clutch the let-off mechanism is controlled by the whip-roll, and also by the stop mechanism, and at the beat-up of the lay the sliding clutch is held in such position that no warp can be let off.



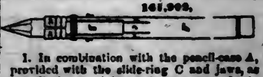
1. The shaft S, with clutch *d*, worm-wheel *c*, and eccentric *d'*, in combination with the lathe, angle-lever J, whip-roll N, and worm-gear wheel on the end of the shaft *c*, substantially as and for the purpose specified.

2. The rocker-shaft *y*, provided with arms *l* and *e'*, in combination with the lever *h*, lever J, clutch *d*, and whip-roll N, substantially as and for the purpose set forth.

3. The curved arm *e*, attached to the lathe, in combination with the lever J, clutch *d*, and whip-roll N, substantially as described, and for the purpose specified.

161,902. PENCIL AND CRAYON HOLDERS. F. D. Richards, West Medford, assignor to Ostler, Tower & Co., Boston, Mass. [Filed Jan. 27, 1875.]

161,902.

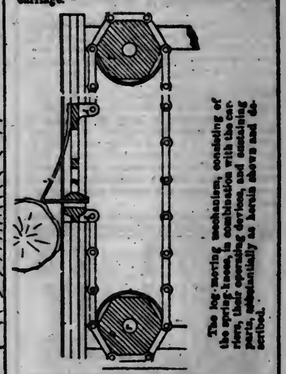


1. In combination with the pencil-case A, provided with the slide-ring C and jaws, as described, a retaining-spring, *c*, arranged substantially as explained, and constructed for holding the pencil in the case, as set forth.

2. A pencil-case, substantially as described, consisting of a tube, A, provided with elastic jaws *a b*, finger-openings D D', a slide-ring, C, and a spring, *c*, all as and arranged as explained and represented.

161,903. MACHINES FOR MOVING LOGS. Alex. Rodgers, Muskegon, Mich. [Filed Sept. 27, 1873.]

Brief.—Two or more spring-knees are attached to chains, which are put in motion by suitable gearing, thus imparting a reciprocating movement to the knees, and causing them to pass back beneath the log; then, by a reverse movement, bringing it forward to the log-carriage.



The log-moving mechanism, consisting of the spring-knees, in combination with the carriage, their operating devices, and sustaining devices, substantially as herein above and described.

161,904. HUBS FOR VEHICLE-WHEELS. G. L. Rouse and M. W. Stoddard, Cincinnati, Ohio. [Filed May 16, 1874.]

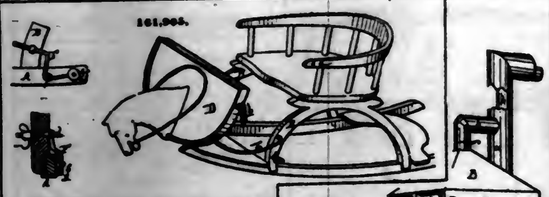


1. A wooden wheel-hub, combined with metallic bands extending over the body part of the hub, upon both sides of the spokes, and brought into close proximity with the spokes, but not impinging against the same, the wooden hub adapted to receive the metallic bands flush with the portion of its surface which is left exposed, and the metallic bands constructed to be driven securely into their place on the hub by pressure, and held there without extraneous fastening, substantially as set forth.

2. A wooden wheel-hub, combined with metallic bands, extending over the body part of the hub, upon both sides of the spokes, said bands constructed with beveled edges, and the wood of the hub adapted to receive said bands, substantially as and for the purposes set forth.

161,905. CHILDREN'S ROCKERS. Adolph Schoenings, Chicago, Ill. [Filed Jan. 29, 1875.]

161,905.



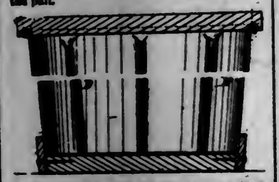
1. The swinging table D and arms E E, in combination with the seat and standards of a child's rocker, substantially as described.

2. The combination, with the rockers A of a child's rocking-horse or chair, of a pair of rollers, *f*, secured to said rockers by the bell-crank F, which has the screw-bolt S and nut *s*, and adjustable below the edges of said rockers, substantially as and for the purpose set forth.

3. The combination of the rockers A, having the adjustable rollers *f*, with the segments B, seat C, and swinging table D, constructed and arranged substantially as described and shown.

161,906. BUTTER-PAILS. C. B. Sheldon, New York, N. Y. (Filed July 14, 1874.)

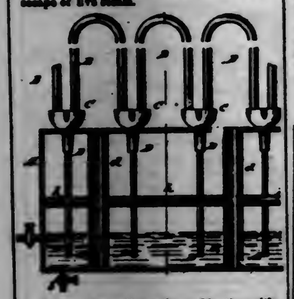
Brief.—The metallic body of the pail is made of a downward-tapered form, and strengthened by vertical ribs or corrugations, extending nearly to the top and bottom. The vessel is further strengthened by a wooden bottom and a wooden cover, which last is grooved to receive the beaded upper edge of the pail.



A butter-pail consisting of a downward-tapered metallic body, a wooden cover, and a wooden bottom, the cover and bottom adapted to fit into the body, as shown and described.

161,907. STEAM-RADIATORS. W. H. Shock, Baltimore, Md. (Filed Mar. 6, 1875.)

Brief.—The parts D, extending below the surface of the water, permit the descent of the water of condensation, while preventing the escape of live steam.



1. In a steam-radiator, the combination, with the base or box A and tubes B B, of the U-shaped connections C C, provided with the stems D D, having passages *a a*, and extending down into the box below the connection of pipe E therein, substantially as and for the purposes herein set forth.

2. The box A, tubes B B, and U-shaped connections C, with stems D, having passages *a*, in combination with vertical air-tubes *d* and pipes E and *b*, all as and for the purposes set forth.

161,908.



161,908. COOKING-STOVES. J. D. Smedley, New York, N. Y. (Filed Dec. 14, 1874.)

Brief.—The folding doors of the canopy permit access to the front and sides of the stove. When closed the same doors prevent escape of odor into the room.

1. The chamber *B*, as and for the purposes described, furnished with folding doors *c c*, substantially as specified, and for the purposes set forth.

2. The perforated partition *d*, as specified, in combination with the chamber B, as and for the purposes described.

3. In combination with the above-named chamber B, provided with surrounding doors, the shelves *e*, as and for the purposes specified.

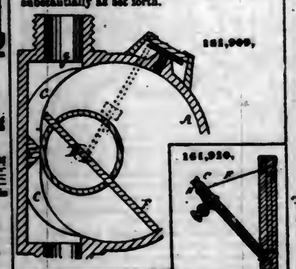
161,909. ROTARY ENGINES AND METERS. J. A. Stenberg, Chicago, Ill. (Filed Nov. 23, 1874.)

Brief.—Makes a chamber of true cylindrical form, having a cavity or recess at one side, which contains the ingress and egress apertures, and acts as a sand-trap. Within the recess is fixed a removable guide piece or pieces. The diametric wing is made of hard rubber, or material of very nearly the specific gravity of water, so that the apparatus may at no time be rotated by reason of the weight of the wing.

1. The cylindrical chamber A, constructed with the recess B at one side, to receive the guide piece or pieces C C, and the bearing-strip C', and to act as a sand-trap, substantially as specified.

2. The diametric wing F, constructed of hard rubber, or material approximately of the specific gravity of water, to avoid movement of the parts by reason of momentum or preponderance of weight on one side of the axis, substantially as set forth.

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161,910.

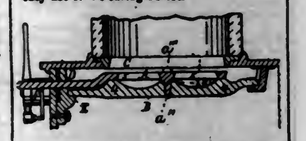
161,910. VENTILATORS. Hiram K. Stevens and C. F. Morse, Providence, R. I. (Filed Feb. 24, 1875.)

Brief.—A frame covered on one side with wire-netting, and provided with a door operated by a knob with a cord attached, for admitting more or less air.

As a new article of manufacture, a ventilator constructed substantially as described, having the combination of the door C, knob E, cord F, springs G, or their equivalents, pulley H, and butts I, all constructed and operating substantially as and for the purpose set forth.

161,911. GRATES FOR STOVES, FURNACES, &c. W. Stout, Philadelphia, Pa. (Filed Jan. 26, 1875.)

Brief.—The grate is eccentrically pivoted, and has lateral as well as vertical movement. The spur *a*''' prevents further upward movement of the grate at that point. The bearing-bar is beveled toward its upper surface, to insure free discharge of ashes, and afford easy use of a clearing device.



1. The combination, consisting of the grate A, provided with the eccentrically-fixed pivot or stem *a*''', as described, the supporting-bar B, provided with end journals rocking in the fixed bearings E and *e*', as described, and the ring C provided with the downward-projecting flange *c*', as described, the said parts being arranged to operate in the manner and for the purposes hereinbefore set forth.

2. The combination, with the upper surface of the rim of the downwardly-tilting portion of the grate A, of the raised projection *a*''', as described, for the twofold purpose of arresting the upward or return motion of that side of the grate after it has reached its normal horizontal position, and affording an open space between the rim of the grate and the under side of the ring C of said side of the grate.

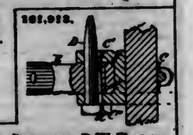
161,912. MODES OF FORMING SHEET-METAL THREADED COLLARS. Alvin Taplin, Forestville, Conn. (Filed Jan. 11, 1875.)

The improvement in the art of forming threaded sheet-metal collars which consists of first threading the blank in the flat, and afterward forming said threaded parties into a collar, substantially as described.

161,912.



161,912.

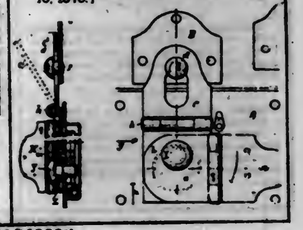


161,913. TRILL-COUPLINGS. D. W. Thomas, Galesburg, Ill. (Filed Aug. 10, 1874.)

Brief.—A tapering bolt adapted to be driven into the eye of the coupling in such a way as to draw the parts together and lock them.

In a thill-coupling, the tapering bolt D, having spline *d*, arranged to operate in combination with the shaft-iron E, jaws C', clip C, and rubber F, substantially as and for the purpose specified.

161,914. TRUNK-FASTENINGS. Isaac W. Valance, Lassingburg, N. Y. (Filed Mar. 10, 1875.)



1. In combination with the body-piece A and lid-piece B, the fastening-strap C, pivoted upon or by the cam or eccentric H, which is pivoted upon the said body-piece, and so as to turn in a plane substantially parallel to the latter, and thereby move the said fastening-strap into and out of engagement with the said lid-piece, substantially as described.

2. In combination with the body part A and lid-piece B, the fastening-strap C, mounted upon the cam or eccentric H, which is pivoted so as to turn upon the said body part, and thereby move the said fastening-strap into and out of engagement with the said lid-piece, and an adjustable stop, by which the said cam or eccentric is secured so as to retain the fastening-strap in engagement with the lid-piece, substantially as shown and described.

3. In combination with the body-plate A and lid-piece B, the fastening-strap C, mounted upon and movable by the cam or eccentric H, which is pivoted to the said body-plate, and has an arm, K, with a hinge-joint, *g*, and a staple or catch, *h*, the aperture *e* in the body-plate, and the locking-bolt J in rear of that plate, all substantially as shown and specified.

4. The combination of the fastening-strap C, having a tapering socket, *i*, therein, the eccentric H having the tapering rim *j* in the tapering socket, the arm K having a cap-piece of greater radial extent than, and secured to, the smaller side of the said eccentric, and the headed pivot-bolt I extending through the said cap-piece and eccentric, and secured to the part A, substantially as described.

161,915. JOURNALS FOR BALANCE-WHEELS. Thomas Van Dyke, New York, N. Y. (Filed Feb. 1st 1875.)

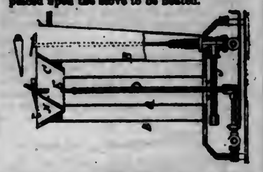


1. The fly-wheel B, mounted upon the conical stud A, in combination with the washer D and spring E, for the purpose of pressing the hub forward upon the stud, and automatically compensating for wear, as specified.

2. The hub B, reamed or rounded off at its larger aperture K, to prevent cutting or defacing the conical stud A, upon which said hub revolves, substantially as set forth.

161,916. GAS-STOVES. Ezra L. Vergueras, Chicago, Ill. (Filed Mar. 23, 1875.)

Brief.—The flow of gas and the quantity of flame are regulated by the weight of the tools placed upon the stove to be heated.

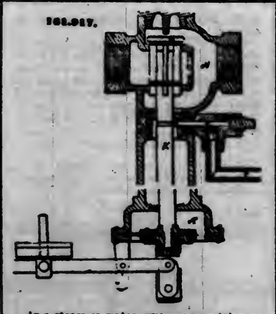


The combination of the shells B Q, pipes D G K, top O, damper-plate N, hinged plate M, and check-valve H, operated as and for the purpose specified.

161,917. STEAM OR WATER PRESSURE REGULATORS. Jos. R. Watts, Lawrence, Mass. (Filed Mar. 1, 1875.)

Brief.—A pipe is connected at one end with the orifice in the wall-tube, and at the other with the interior of the supply pipe or drum, to which the various branch pipes that supply the driers with steam are attached. Should the pressure in the service-pipe fall below the maximum, the pressure upon the column of water in the wall and the diaphragm will be lowered to such an extent that the lever partially overcomes the pressure, and raises the valve, and admits an increased amount of steam to the drum, until the maximum pressure is restored. Should the pressure exceed the proper point, steam will enter the wall and produce the reverse motion upon the valve.

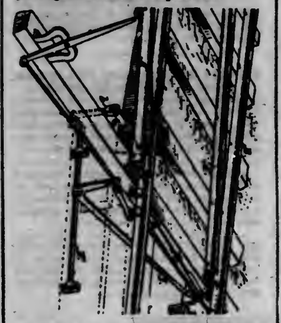
161,917.



In a steam or water pressure regulator, as described, the combination, with the regulating-valve, the field-chamber A, and the wall-tube H, of the closing diaphragm or partition *a* and the pipe *c*, leading from the distributing pipe or drum, and entering the wall-tube below the diaphragm *a*, substantially as and for the purposes set forth.

161,918. RAILWAY-SWITCHES. William A. Weant, Salisbury, N. C. (Filed Feb. 27, 1875.)

Brief.—The switch is operated by the train through a vertical plate pivoted in a slot in one of the rails, and connected by rods and bell-cranks to the movable rails. A shaft in this train of mechanism carries a locking lever-arm, which is actuated by the same movement, and serves to hold the rails in place against accidental displacement.



1. The plate E, pivoted between the two rail-sections, and having the laterally-projecting arm *a*, in combination with the rock-shaft F, vertical arm or link *b*, attached to the lateral arm of the movable plate, and the vertical arm G, connected with the switch-rails by a link, *d*, and to a switch-moving lever, H, by a rod, G', all substantially as and for the purpose described.

2. The combination of the hook K, catch-plate *i*, and disengaging-arm J with the rock-shaft F and switch-shifting mechanism, substantially as described.

161,919. CLASP-HOOKS FOR ADVERTISING DISPLAY-BOARDS, &c. Nelson C. Wilcox, Bennington, Vt. (Filed Jan. 2, 1875.)

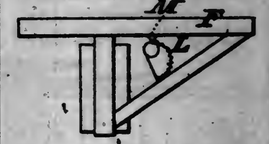
Brief.—A clasp-hook pivoted at its lower end, and actuated by a spring which encircles a curved stem near its center. The stem passes through a slot in the board or frame to which the hook is attached. The device is designed to be used as a retainer for shoe-laces and analogous articles, so that one may be withdrawn without disturbing the package.



The hook A, having the lip *m*, curved space *n*, stem *o*, and spring *i*, pivoted as shown, in combination with the slotted socket-plate B, for the uses set forth, and operating as described.

161,920. COMBINED TABLES AND SLICERS. Tobias Wilmer, Buffalo, N. Y. (Filed Nov. 29, 1873.)

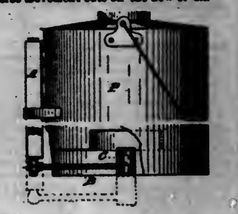
Brief.—The gage-board is kept in a horizontal position by a vertical piece sliding between guides, and adjusted by means of a notched cam, turned by a thumb-screw, which cam engages with a metal point on the under side of the gage-board, thus preventing a backward movement of the cam.



The cams L, notched as described, in combination with the downward-projecting piece M and horizontally-adjustable gage-board F, substantially in the manner and for the purpose set forth.

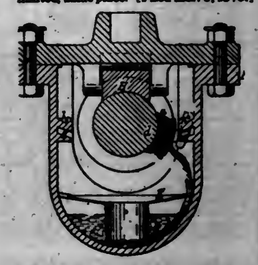
161,921. DINNER-PAILS AND LAMPS. Geo. W. Aldrich, Syracuse, N. Y., assignor of one-half his right to Wm. H. Bond, same place. (Filed Jan. 12, 1875.)

Brief.—The lamp being moved from under the pail, oil flows to it from the reservoir. A reverse movement cuts off the flow of oil.



The reservoir A, tube B, cap C, and cut-off E, combined with the dinner-pail, P, and operated and constructed substantially as described.

161,922. CAR-AXLE BOXES. Kenneth S. Austin, Birmingham, England, assignor to Souther's Railway-Axle-Box Company, limited, same place. (Filed Mar. 9, 1875.)

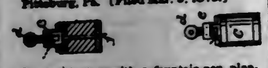


1. The projections or lugs A A on the interior sides of an axle-box, having inclined slots or grooves *g g* and notched and inclined upper faces *f f*, to receive and retain the bay A, constructed and combined substantially as and for the purposes set forth.

2. In combination with a side-lubricating pad, *a*, having lugs *e e*, the bracket hinged to said lugs, and consisting of end pieces or cheeks *c c* and lips *f f* and a bay, A, all to operate as specified.

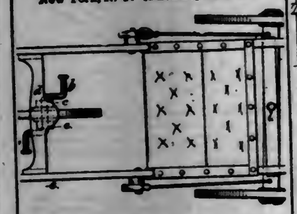
3. The combination of the notched, slotted, and inclined projections A A in the axle-box with the brackets, having cheeks *e e* and lips *f f*, the key h, and the pad *a*, to which said bracket is hinged, substantially as shown.

161,922. FOUNTAIN-PENS. Georg Baader, Pittsburg, Pa. [Filed Mar. 9, 1875.]



In combination with a fountain-pen plunger, C, having a vent-hole, *f*, the valve h, arranged on a screw-bolt, *d*, arranged in cap *e*, substantially as and for the purposes described.

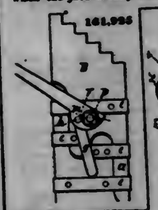
161,924. VELOCIPEDES. John J. Bally, New York, N. Y. [Filed Sept. 10, 1874.]



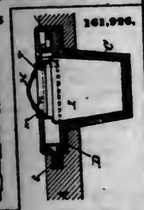
The velocipede with the sides *c* and cross-bar *d*, sustaining the jaws *e* of the front wheel *a*, having crank-arms *b*, and with the hand-wheels *h* and axle *i*, movable for steering, all combined substantially as set forth.

161,925. LIFTING-JACKS. Herman Brockmeith, St. Louis, Mo., assignor of one-half his right to Ernest Quast, Jerseyville, Ill. [Filed Dec. 4, 1874.]

The lifting-jack described, having the parts A B, with overlapping tongues *a b*, securing-links *c c*, lever C, and link *g*, the lever being provided with a limiting-shoulder, *m*, by means of which the position of the link is determined when the jack is fully raised, as described.



161,926.



161,926. INK-WELLS. Charles H. Brown, Boston, assignor of one-half his right to F. C. Anthon, Melrose, Mass. [Filed Feb. 10, 1875.]

Brief.—The "well" is let into and flush with the desk-top by a countersink formed therein. At a point upon the outer periphery of the flange of the cover an elongated lug is formed, which passes through an opening in the rim or flange of the well, and also into an orifice coincident with the former one formed in the desk-top, to secure the well, cover, and ink-pot to the desk. The device is provided with a lock and key, to secure the cover to the well, and by which, also, the whole may be removed from or finally secured to the desk.

1. An ink-well, provided with a lock, adapted to engage with and secure a suitable cover, said cover being suitably engaged with the desk that holds the ink-well, thereby locking the well and cover to the desk, substantially as and for the purpose specified.

2. An ink-well for desks, having a slotted rim and a flanged cover, the latter provided with a projection adapted to pass through said slotted rim and engage with a recess in the desk, thereby locking the well and cover to the desk, said well and cover being adapted to be locked together, substantially as described.

3. The ink-well B, having the shoulder D, slotted rim E, and locking devices *a a' d a*, in combination with the cover G, having a suitable key-hole, and having the segmental rim or flange G', projections *p p'*, projection *s*, and stud *t*, the latter engaging with a recess in the desk A, substantially as and for the purpose specified.

161,927. STEAM AND AIR BRAKES. W. L. Burt, Boston, and Geo. R. Little, Peabody, Mass. [Filed Mar. 11, 1875.]



1. In a vacuum car-brake, the combination of a metallic cylinder with flexible cylinders of nearly the same length of the metallic cylinder, and a piston, substantially as and for the purposes set forth.

2. In a vacuum car-brake, the combination of a metallic cylinder with flexible cylinders of nearly the same length of the metallic cylinder, and a rigid piston having a yielding periphery, substantially as and for the purposes set forth.

3. The combination of the metal cylinder, the flexible cylinders, and the bands or clamps *g''*, for forming the joint and holding the cylinders together, substantially as and for the purposes set forth.

4. The combination of an air-ejector, the metallic cylinder, the flexible cylinder, the piston, and brake-levers, substantially as shown and described.

161,928. REFRIGERATORS. Wm. P. Butler, Syracuse, N. Y. [Filed Feb. 15, 1875.]

Brief.—A removable water-cooler receives the drip which falls down its cover and sides onto inclined planes leading to a trough and pipe, and finally into a depending basin having a removable and perforated cover.

1. The movable tank or cooler *c*, having a convex cover, constructed as described, in combination with the ice-pan *a*, water-sheds *e e*, and trough V, substantially as specified and shown, for the purpose set forth.

2. The reservoir *r*, provided with waste-pipe *s*, and covered by the removable perforated plate *a*, forming part of the bottom of the refrigerator, constructed as described, and combined with a refrigerator, substantially as and for the purpose specified.



161,928.



161,929.

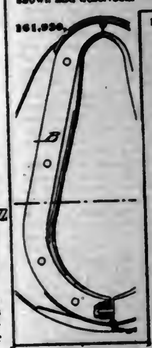
161,929. FASTENERS FOR MEETING-RAILS OR SASHES. Thos. J. Carroll, Bridgeport, Conn., assignor to J. M. Johnson and Peter Ring, same place. [Filed Feb. 8, 1875.]

Brief.—A pivoted lever swings freely between opposite guard-flanges of the two plates, the button carrying a locking-pin, which, when raised, frees the device, while an interposed spring automatically closes the lever.

The plate *c*, with its guard *c'*, the plate *d*, the lever *a*, pivoted upon the plate *d*, the spring *f*, and the locking-pin *p*, all combined and arranged to operate substantially in the manner and for the purpose set forth.

161,930. HORSE-COLLARS. Thomas Cheal, St. Paul, Minn. [Filed Dec. 19, 1874.]

A wooden horse-collar, consisting of two back pieces, C C, hinged at top, front pieces B B, beveled to receive the hames, and a padding, D, secured between the parts B C, as shown and described.



161,930.



161,931.

161,931. DENTAL ARTICULATORS. Chas. D. Cheney, Canandaigua, N. Y. [Filed Mar. 6, 1875.]

Brief.—A serrated projection upon short end of one of the jaws is held by a pin, which is forced against it by a set-screw. The second movable jaw rocks upon a journal at right angles to the line of the first-mentioned arm.

1. Combined with an articulator the serrated projection C pivoted in the slotted end of the shaft B, and the long set-screw F, for the purpose described.

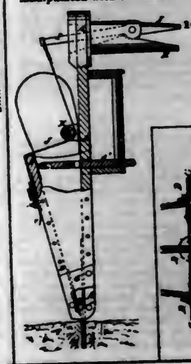
2. The jaw or plate O in combination with the pivot-rod I and basket N, for the purpose described.

3. The saddle G and collar *m*, with nick K and point L, for the purpose described.

161,932. HAND CORN-PLANTERS. John W. Cleland, Nevada, Mo. [Filed Feb. 20, 1875.]

Brief.—To the rear of the upright is attached a handle, that is grooved longitudinally to receive a lever, that is pivoted about midway of its length, and passes through and is widened at the rear to conform to the handle. To the front of the lever is fastened a cord, which passes down under a pulley and a cross, and is secured to the pivoted half of the planter, to which the seed-slide is secured. By compressing the handle the front end is raised, carrying with it the cord, the pivoted half, and the seed-slide, which is retracted by a spring.

As an improvement in hand-planters, the pivoted handle I, combined with a grooved fixed handle, H, cut away at the rear, and a cord, J, passing under the pulley K, as shown and described, to enable the planter to be manipulated with one hand.



161,932.



161,933.

161,933. TABLE-CASTERS. W. F. Collier, Worcester, Mass. [Filed Feb. 6, 1875.]

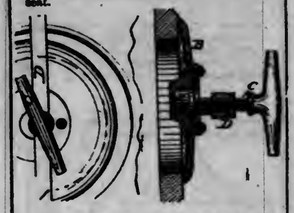
1. The combination, with the ring or handle B, legs A, bottle-rings C, and clamping-plates *a*, of the separate and independent combined rosette and tongue-piece D, substantially as and for the purposes set forth.

2. The combined rosette and tongue-piece D, provided with a hole, 2, and consisting of the tongue marked *b*, cam *c*, and notched rosette *d*, substantially as shown and described, and for the purposes set forth.

3. The combination, with the bottle-rings C, clamping-plates *a*, and legs A, of the separate and independent connecting-tongues *b*, substantially as and for the purposes set forth.

161,934. MAN-HOLE COVERS FOR STEAM-BOILERS. Henry Collinson, Boston, Mass., assignor of one-half his right to J. B. Kendall, same place. [Filed Mar. 13, 1875.]

Brief.—The cover is moved eccentrically in closing, to remove any matter adhering to the seat.

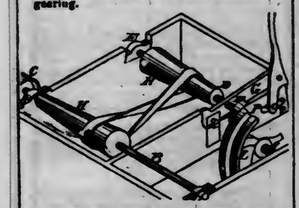


1. In combination with a seat or bearing, A, a plate or cover, B, fitting against the face of the same, and having a sliding and rotating movement, substantially as shown and described.

2. In combination with the flat seat A and the plate or cover B, the screw C, or its equivalent, mounted in a support, D, and provided with the eccentric head seated in the center of the plate, substantially as shown and described.

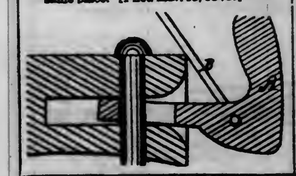
161,935. CIRCULAR-SAW MILLS. Frank M. Covell, Los Gatos, Cal. [Filed Nov. 26, 1874.]

Brief.—The speed of the feed-pinion is regulated by a pair of cone pulleys, which impart motion to it through the agency of frictional gearing.



In combination with the pulleys K and L, mounted upon one shaft, and the movable shaft D, with its pulley F, the cone-pulleys H H, the arm G, pivoted as shown; together with the lever O, with its pin Q, moving in the slot P, substantially as and for the purpose herein described.

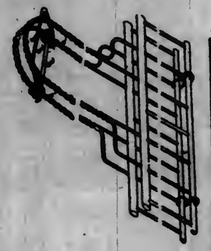
161,936. CAR-COUPLINGS. Warren Dorr, Gardner, Me., assignor of part of his right to Joseph L. Mitchell and G. W. Colburn, same place. [Filed Mar. 16, 1875.]



The railway-carriage coupling, consisting of the link B and the slotted hook A, combined to operate with a draw-bar and pin, all essentially as set forth.

161,937. BROILERS. Geo. D. Dudley, Lowell, Mass., assignor to Edward P. Woods, Daniel Sherwood, and Cyrus H. Latham. [Filed Feb. 26, 1875.]

Brief.—The loop secures the sections in whichever direction they may be folded.



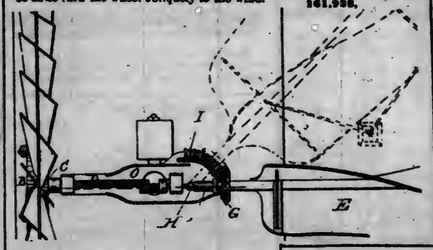
1. The reversible slide D, in combination with the broiler-handles, the slide being constructed with eyes or guides *g*, which are movable as one handle, and a bail, *b*, moving over and securing the opposite handle, substantially as described.

2. The reversible slide, in combination with the broiler-handles, and having a bar, B, connecting its guides *g*, substantially as described.

3. In combination with the swinging reversible slide having eyes or guides *g*, and a bail, *b*, for securing one handle to the other, as set forth, broiler-handles of equal length, substantially as described.

161,938. WIND-WHEELS. Charles T. Edwards and Geo. H. Huntoon, Moline, Ill.; said Huntoon assignor to said Edwards. [Filed Feb. 26, 1875.]

Brief.—The wheel is provided with a spiral tail-vane, arranged so that it will be rotated by a strong wind, and caused to swing laterally, so as to turn the wheel obliquely to the wind.



1. In combination with a rotating frame, O, having a wind-wheel mounted on its forward end, a spiral vane, E, arranged substantially as shown, so that the force of the wind will cause it to rotate about its longitudinal axis, and at the same time swing laterally.

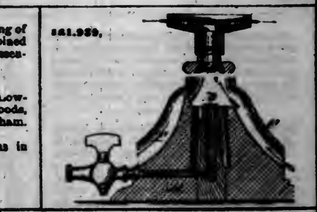
2. In combination with the frame O, provided with the post H and pinion I, the spiral vane, provided with the pinion G and the weight J, as shown.

161,939. GAS-BURNERS FOR HEATING PURPOSES. Anatole Ehret, San Francisco, Cal. [Filed Jan. 25, 1875.]

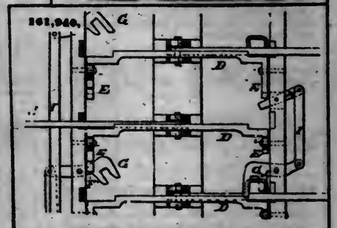
Brief.—The mixing-chamber has a small neck surmounted by a chamber having side perforations.

As an article of manufacture, the heater A B C D E F, constructed substantially as and for the purpose specified.

161,939.



161,940.



161,940. APPARATUS FOR OPERATING AND LOCKING SWITCH-SIGNALS. S. H. Finch, New York, N. Y. [Filed Mar. 1, 1875.]

The locking-bars D, latches G and H, bars I, and levers B C, in combination with a suitably-constructed frame for the purposes described.

161,941. GAS-REGULATORS. M. C. Fisher, Philadelphia, Pa. [Filed Mar. 10, 1875.]

Brief.—For filtering gas as well as regulating its flow.

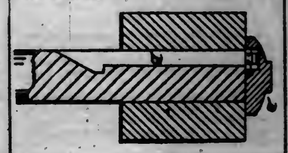
The wire D, with its circular end B and spiral C, the said spiral being wrapped with raw cotton, wool, or other porous material, in combination with a section of gas-pipe, substantially as and for the purpose herein shown and described.

161,941.



161,942. FASTENINGS FOR TOOL-HANDLES. William M. Fisk, Lancaster, Pa. [Filed Jan. 30, 1875.]

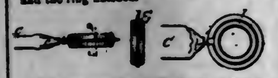
Brief.—The tool is attached to the handle by means of a fastening-bar, provided at its upper end with a button for engaging with a recessed cap, and a spring for preventing the cap from turning, and at its lower end with a shoulder, which fits in a suitable notch in the handle. The tool is locked in position by turning the cap around and parallel with the eye, so that the button will enter the recess in the cap.



The combination, with a tool and handle constructed substantially as described, of the shouldered bar B, the mortised and recessed cap D, the button E, having shoulders H, and the spring F, all constructed and arranged substantially as and for the purpose specified.

161,942. BLANKS FOR SPINNING-RINGS. Sullivan Forehand and H. C. Wadsworth, Worcester, Mass. [Filed Feb. 20, 1875.]

Brief.—In finishing the blank up into a double ring, the central web *b* is punched out, and the rest of the blank finished off, retaining the flange *f* as a support to the ring in the spinning-frame. When a single ring is to be made, both the web and flange are removed and the ring finished.



A spinning-ring blank, C', having a flange, *f*, and made from a single bar of metal, C, substantially as shown and described.

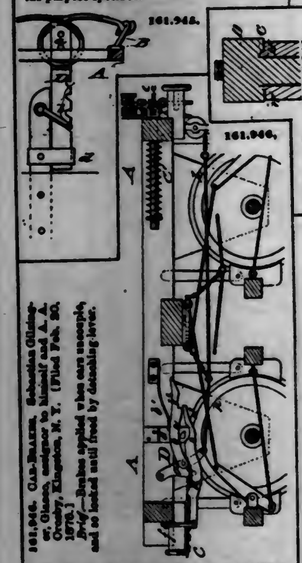
161,944. COMPOSITIONS FOR PRESERVING FOOD. W. C. Dunn, Washington, D. C., administrator of Henrik Gahn, deceased, assignor to C. G. Am Ende, Hoboken, N. J. [Filed Oct. 14, 1874.]

The composition of boracic acid and alum, as and for the purpose described.

161,945. WAGON-SEATS. Sebastian Gilsinger, Glasco, assignor to himself and A. A. Crosby, Kingston, N. Y. [Filed Feb. 20, 1875.]

The combination, with seat A and supporting-standards D D, of the spiral springs C C and corner-rods B, all substantially as and for the purpose specified.

161,946.



161,946. CAR-BRAKES. Sebastian Gilsinger, Glasco, assignor to himself and A. A. Crosby, Kingston, N. Y. [Filed Feb. 20, 1875.]

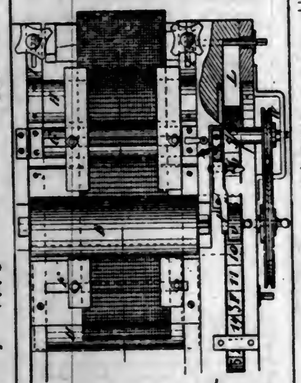
Brief.—Brakes applied when cars uncouple, and so locked until freed by detaching lever.

1. The combination of the recessed locking rear link, spring, stop on the supporting-standard, brakes, and shortened main link, substantially as and for the purpose set forth.

2. The detaching and braking mechanism *a*, *b*, *b'*, *b''*, *d*, *e*, *e'*, and *f*, and connecting-chains, in combination with the car-brakes for applying the same on the separation of cars, substantially as set forth.

161,947. CLOTH-MEASURING MACHINES. Joseph S. Gold, Washington, C. H., Ohio. [Filed Oct. 17, 1874.]

Brief.—The measuring-roller is extended into a tape-chamber, where a tape-measure is so arranged that as much of it is wound from one roll to another as there is cloth measured.

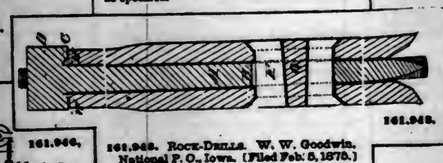


1. The combination, with stationary tension G, of the tension H, having slotted projection I and screw K, as and for the purpose described.

2. The combination of the extension of the cloth-roll through the tape-chamber L, the tape C, and the pressure-roller O, substantially as specified.

161,948. ROCK-DRILLS. W. W. Goodwin, National P. O., Iowa. [Filed Feb. 5, 1875.]

The blade A, having collar D, socketed at C, and combined with trimmers having tenons E, substantially as and for the purpose specified.



161,949. NUT-LOCKS. William C. Gould, New York, N. Y. [Filed Aug. 11, 1874.]

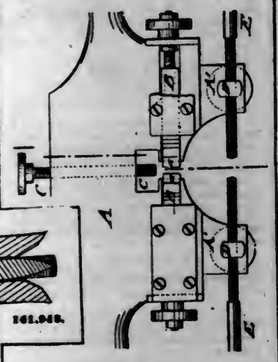
Brief.—A recess is formed in the washer by the side of the nut, and a plate placed therein having projections, which prevent the nut from turning backward.



The combination of the washer *c*, having the recess *b*, with the locking-plate *e*, slitted and turned up, as shown at *d*, for locking a nut at several points of its revolution, substantially as described.

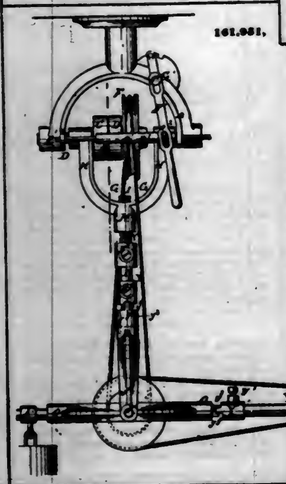
161,950. SAW-SETS. Robert J. Granville, Astoria, Oreg. [Filed Mar. 1, 1875.]

Brief.—The teeth of the saw are alternately set in opposite directions, the degree of set being determined by the screws E E.



A saw-set constructed of main piece A, symmetrically-adjustable tooth-guiding slide-jaws B, and set-screw C, and adjustable set-screws E, defining amount of set of teeth, the whole being arranged and operated substantially in the manner and for the purpose set forth.

161,951.



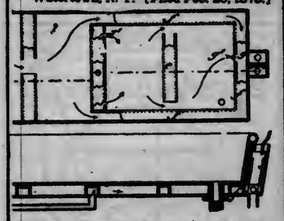
161,951. EMERY GRINDING-MACHINES. E. William Gunn, New Woodstock, and Geo. D. Wells and Harrison Wells, Brieville, N. Y. [Filed Jan. 26, 1875.]

1. The combination, with the yoke specified, of one or more connecting-rods, having a right-hand screw-thread on one end, and a left-hand screw-thread on the other, as shown and described.

2. The combination of the adjustable collars Y, and the toes or projections and notches *y'* *y²*, with the screw-rods I P, either or both, and the pivoted yoke, substantially as herein shown and described.

3. The combination of the adjustable yoke-handle V W, provided with pivots and a stop-pin, the nut-handle X, and the lugs U, provided with pivot and stop-pin holes, with the yoke Q, that carries the emery-wheel, substantially as herein shown and described.

161,952. MILK-COOLERS. Daal Gurnsey, Watertown, N. Y. [Filed Feb. 20, 1875.]

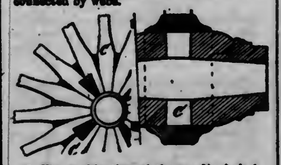


1. In milk-coolers, the water tank or vat, provided with a bottom tube, connecting the entrance-chamber of the water with any lateral issuing-channel at the central part of the vat, for distributing the cool water simultaneously over separate sections of the same, substantially as shown and described.

2. The end channel *f* of the vat, provided with apertures *f'*, for conveying water of section supplied from the central issuing-channel to exit-aperture, as specified.

161,953. WHEELS FOR VEHICLES. B. Hall, Wallingford, Conn. [Filed Feb. 19, 1875.]

Brief.—The wood part is in two sections, connected by webs.

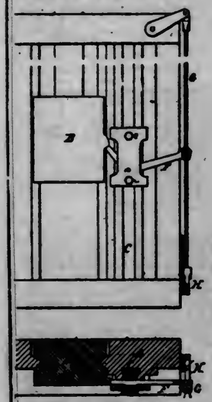


1. The combination of the wooden hub A, webs *c*, and clusters of spokes C, substantially as and for the purpose set forth.

2. The combination of the wooden hub A, webs *c*, clusters of spokes C, and mortise-ring B, substantially as and for the purpose set forth.

161,954. DROP-HAMMERS. H. Hammond, Hartford, Conn. [Filed Oct. 26, 1874.]

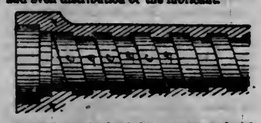
Brief.—The block, to which the catch or trigger for holding and releasing the hammer is pivoted, fits in a dovetailed groove, and is adjustable to different heights, to vary the distance the hammer shall fall.



The dovetailed block D and groove C, in combination with the lever F, the connecting-rod G, and the lever-treadle H, the whole forming an adjustable device for releasing the drop B at any desired height, substantially as herein described.

161,955. CARRIAGE-AXLE BOXES. H. Hammond, Hartford, Conn. [Filed Oct. 8, 1874.]

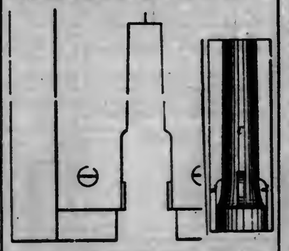
Brief.—To secure an even wearing-surface, and even distribution of the lubricant.



A carriage-wheel axle-box, constructed with an internal spiral, B, of steel or other hard metal, forged into a wrought-iron casing, A, substantially as and for the purpose described.

161,956. SHEARING-DIES FOR CARRIAGE-WHEEL BOXES. H. Hammond, Hartford, Conn. [Filed Sept. 21, 1874.]

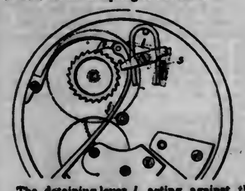
Brief.—The dies are so formed as to shear off the entire tin, with the exception of two small portions, which are left upon the box to prevent it from turning within the hub.



The herein-described dies for shearing wheel-boxes and forming the projections *d*, substantially as specified.

161,957. WATCH-SPRING EQUALIZERS. C. Hanson, Huddersfield, England. [Filed Feb. 24, 1875.]

Brief.—A spring-pawl, acting through suitable mechanism upon a lever, presses it upon the barrel with greatest force when the spring is fully wound, the pressure being gradually diminished as the spring is unwound.



The detaining-lever *i*, acting against the spring-barrel, in combination with the spring-arm *f*, pawl *e*, and stud *s*, substantially as set forth.

161,958. BRICK-SHAVES. D. Harrington, Southbridge, Mass. [Filed Mar. 20, 1875.]

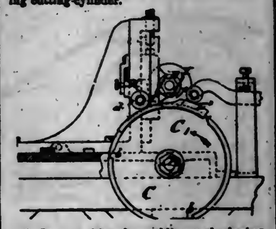


1. The combination, with the frame part A, knife-supporting parts A' A', and return handle parts B' B' of knife-edge adjusting-pieces *b* and holding-screws *a* *c*, substantially as shown and described.

2. The combination, with the notched ends of knife C, of the return handle ends B' B', and holding-screws *a* *c*, whereby the knife C can be reversed, and securely held for grinding its edge C', substantially as and for the purposes set forth.

161,959. MOLDING-MACHINES. Jno. Hartsheim, New York, N. Y. [Filed Jan. 28, 1875.]

Brief.—The material is secured upon a rotating carrier, and the desired form given to the molding by a vertically-adjustable rotating cutting-cylinder.

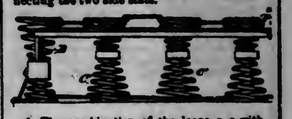


1. In a machine for molding and planing wood having carved inner and outer edges, the combination of the perpendicular rotary feed-drum O, carrying the projecting feed-lugs *b* *b* on its periphery, with the parallel rotary cutter-head I, and with the parallel friction-roller *d* in front of, and the friction-roller *e* behind, the cutter-head, all arranged to operate substantially as herein shown and described.

2. The sickle-plate J, combined with the rotary feed-drum O on the circular-feed planing and molding machine, substantially as and for the purpose herein shown and described.

161,960. BED-BOTTOMS. Geo. J. Henion, Dubuque, Iowa, administrator of John B. Henion, deceased; said administrator assignor to himself and M. M. Cady, same place. [Filed Oct. 13, 1874.]

Brief.—The ends of the wires of the large portion of the upper springs are formed into hooks, which are connected by loops embracing the second coil of the spring. Lateral expansion is prevented by transverse bars, connecting the two side slats.

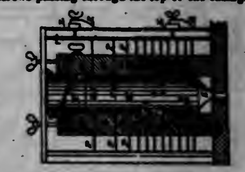


1. The combination of the loops *a* *a* with the springs B B, the parts being tied together, as described.

2. The combination of the lower frame, the intermediate springs O' C', and the independent bars A, united by the bars C, interlocked springs, and loops, as described.

161,961. MEAT-CUTTERS. J. H. Hollinger, Lancaster, Pa. [Filed Jan. 9, 1875.]

Brief.—Rectangular knives are held against shoulders on the interior faces of the casing by followers and clamps, and are separated by means of intermediate blocks, gradually decreasing in thickness from top to bottom, set between flanges, and compressed by set-screws passing through the top of the casing.



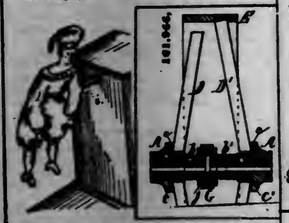
The combination of a vertical series of alternating, graduated, right-angled blocks, O, and knives F, when set against and between flanges or shoulders Q *d*, formed on the inner faces of the two parallel sides A of the case, which are prolonged on the sides of the central shaft, to form right-angled open chambers for the reception of the follower or cut piece M, clamps L, catches K, and lugs J, the whole substantially mounted, connected, and arranged as and for the purpose specified.

161,962. UMBRELLAS. William D. Horton, Nashville, Tenn. [Filed Feb 20, 1875.]



The combination, with an umbrella frame and cover, of the top or cap E, and rubber collar d, arranged to operate substantially as described, to give a yielding pressure on the center of the cover for the purposes herein set forth.

161,963. TOY GYMNASTS. WM. L. Hubbell, New York, assignor to Raymond Jenkins, Brooklyn, N. Y. [Filed Mar. 16, 1875.]



1. The toy gymnast or figure, made with arms, connected to each other, and passing loosely through through the figure, in combination with a shaft attached to one of the arms near the elbow, and which acts to raise the figure and turn it over, as set forth.

2. The shaft *i*, attached at or near the elbow of the toy figure, in combination with the pinion *n*, segmental gear *t*, link *s*, crank *r*, and its actuating gearing, substantially as set forth.

161,964. STEAM-BOILERS. Fayette Hungerford, Rochester, assignor to A. C. Stearns, Corning, N. Y. [Filed July 27, 1874.]

Brief.—The detachable hollow head, provided with a hollow door, is attached to the rear end of the boiler. Through pipes which connect them, and by which the head is secured to the boiler, and the door is hinged, circulation of the water in the boiler is maintained.



1. The combination, with the boiler A, of the detachable hollow head H, provided with the hollow door K, having condducting-pipes extending from the same through the hollow head and into the boiler, substantially as and for the object specified.

2. The removable water-head H, provided with the offsets *e e*, abutting against the boiler, whereby the fire-space B is formed between said water-head and the fires G, in combination with the pipes I, for producing the circulation between the water-head and boiler, substantially as and for the purpose described.

3. The combination, with the water-head H, of the water-door K, pipe-elbows *h h*, nuts *l l*, and sockets *m m*, for the purpose specified.



161,965. DOORS. William C. Hurd, Watertown, Conn. [Filed Mar. 13, 1875.]

A wooden door containing between the exterior surfaces of the sashing a sheet of chilled iron, substantially as and for the purpose specified.

161,966. HARVESTER-WHEELS. Martin L. Kellar and James Mickel Kellar, Luzerne, Iowa. [Filed Jan. 7, 1875.]

In combination with the hubs A and A', having stems *b* and *b'*, nut G, spokes D D', and felly E, substantially as and for the purpose set forth.

161,967. BUCKETS FOR CHAIN-PUMPS. W. H. Kelly, Terre Haute, Ind. [Filed Sept. 18, 1874.]

Brief.—The conical core is provided with a jacket made larger than the bore of the pump, and extending beyond the core or holder. Wedge-shaped leak-passages are formed in the jacket, through which the water passes when the pump is not in operation.

In chain-pumps, the holder B, as constructed, in combination with conical jacket A, having wedge-shaped leak-passages *d*, substantially as and for the purposes described.



161,968.



161,968. METAL-PUNCHES. De L. Kennedy, New York, N. Y. [Filed Oct. 22, 1874.]

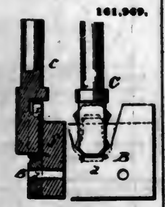
Brief.—A shear-cut is produced by giving a spiral direction to the cutting-edge of the punch.

The herein-described punch, constructed with a cutting-edge extending from the point A in a spiral direction to B, and from the salient point of the spiral to the longitudinal center, as and for the purpose set forth.

161,969. DIES FOR FORMING BEZELS OR METALLIC BACKS FOR JEWELRY. C. Knapp, New York, N. Y. [Filed Mar. 20, 1875.]

Brief.—A blank of the desired outline is stamped from a plate, and at the same time a rim turned up. The edges of the rim so formed are bent inward by the dies claimed, the upper die C having a projecting flange that carries the rim down into a groove in the lower die. A part only of the rim is operated upon at once.

161,969.

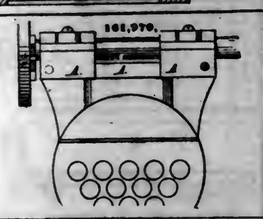


The combination of the die B, having the face-plate *d*, and the rabbet *c* on the edge of said face-plate *d*, with the punch C, which has the lower bending-lip *f* and the upper lifting-lip *f'*, substantially as and for the purpose described.

161,970. POTABLE STEAM-ENGINES. F. F. Leadle, Lancaster, Pa. [Filed Oct. 1, 1874.]

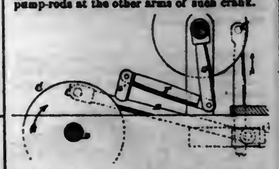
In a portable steam-engine, the water-reservoir A, located between the boiler and the crank-shaft, and supporting the bearings of the latter, substantially as and for the purpose specified.

161,970.



161,971. PITMAN-CONNECTIONS FOR PUMPS. James M. Langley, Double Bridges, Tenn., assignor of one-third his right to J. C. Sawyer, same place. [Filed Mar. 13, 1875.]

Brief.—A stud on the side of the connecting-rod of the power is linked to an arm of a bell-crank on a shaft, which works a series of pump-rods at the other arms of such crank.



The combination of the stud *b'*, the pitman F, and arm G with the crank C and pitman B, operated by the piston-rod A of the engine, and with the rock-shaft H and crank I, that operate the pumps, substantially as herein shown and described.

161,972. LOOM-SHUTTLES. J. H. Le Moyne, Boston, Mass. [Filed Mar. 8, 1875.]



The combination of the loom-shuttle *a*, hinged head *b*, shank *d*, nut *g*, and the detachable spindle *f*, as herein shown, and for the purpose set forth.

161,973. TELL-COUPLINGS. Henry A. Luttgens, Paterson, N. J. [Filed June 4, 1874.]

Brief.—A coupling-box and axle-clip forming a continuous band around the axle; a packing-cover hinged within the coupling-box, and a hooked shaft-iron.



1. The coupling-box B in combination with axle-clip C D, forming a continuous band and clamp around the axle A, secured by a single bolt at the rear of the axle, as set forth.

2. Packing-cover *h*, interposed between thill-iron E and packing *h*, in combination with projection *i*, axle A, and bottom web B of coupling-box B, substantially as and for the purpose described.

161,974. JACK-SCREWS. C. K. Marshall, Vicksburg, Miss. [Filed Sept. 17, 1874.]

Brief.—The nut within which the screw revolves is made of sections, and is adjustable, so that the screw can be lifted without turning it backward.

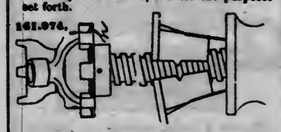
1. In the lifting-jack, a divided or sectional nut, *f f*, Fig. 2, attached by elastic connections to the cylinder *d d*, Fig. 1.

2. The combination of the divided nut, shown also at *b b*, Fig. 1, springs *c c* and *d d*, and screw P P, Fig. 1.

3. The ratchet *e*, in combination with the lever-head *i*, having a yoke to fit the trunnions or upon the shaft of the screw, or its equivalent, Fig. 3.

4. The combination of the nut *f f*, Fig. 2, screw P, ratchet *e*, lever *i*, and barrel A, substantially as described, and for the purposes set forth.

161,974.



161,975. SPIKES. C. K. Marshall, Vicksburg, Miss. [Filed Sept. 17, 1874.]

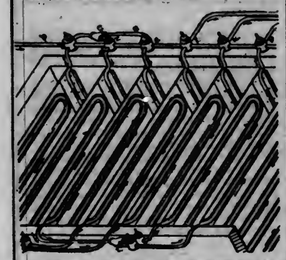
Brief.—The body of the spike is thicker from front to back than from side to side, and is bent in curves from front to back, and vice versa. It is also gradually increased in thickness from a point about one and three-quarter inch from the head to the head at the back, this increase being beveled off at the front.



An improved spike for railroad cross-ties and other purposes, as set forth in the foregoing description and the drawings annexed.

161,976. ICE MANUFACTURES AND MACHINES. S. B. Martin and J. M. Beath, San Francisco, Cal. [Filed July 6, 1873.]

Brief.—The pipe feeding the gas to the refrigerating-coils has two branches to feed each successive pair of refrigerating-coils. The condensed fluid is returned at will into any one or more of the coils by use of a two-way cock, in order to detach the ice.



1. The described method of distributing the fluid through the congealer—that is, by branching or doubling the pipe as the vapor increases in volume—for the purpose of preventing the pipes from clogging, as described.

2. The combination, with the pipe *p*, of the two-way cocks *q r s t u v w*, as and for the purpose described.

161,977. WATER-CLOSET VALVES. Geo. R. Moore, Philadelphia, Pa., assignor of one-half his right to Richard McCambridge, same place. [Filed Dec. 31, 1874.]

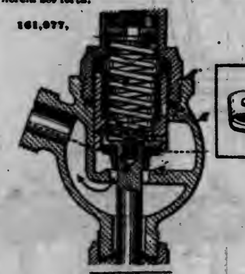
Brief.—When the main valve is opened, the automatic valve opens to allow the water in the retard-chamber to flow out. When the valve closes, the two forces coact—viz., the pressure of the spring and the re-establishing water-force—in filling the retard-chamber. The time in which the main valve closes is regulated by increasing or diminishing the tension of the spring. To prevent leakage around the screw the spring-seat is provided with packing.

1. A retard-valve, having in combination with the retard-chamber E, and spring G, located within the retard-chamber, a regulating-screw H, as and for the purpose herein set forth.

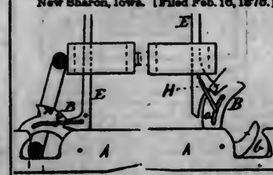
2. The small chamber *n*, furnished with the valve *f*, and the spring *k*, all in combination as and for the purpose herein set forth.

3. The movable spring-seat O, with annular water-tight packing within the valve-case A, in combination with the spring G, screw H, and retard-valve, as and for the purpose herein set forth.

161,977.



161,978. CAR-COUPLINGS. D. C. Morris, New Sharon, Iowa. [Filed Feb. 16, 1875.]



The bumper-heads A, provided with a transverse groove, *b*, and longitudinal aperture *c*, the locking device B, provided with aperture *c*, the rod E, provided with a leg, *a*, and the link H, all combined to set together, as described.

161,979. MILK-COOLERS. A. P. Myers, Prattsville, N. Y. [Filed Mar. 13, 1875.]

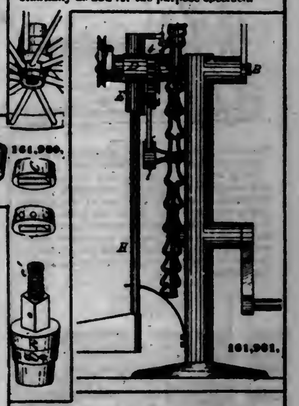
1. In milk-coolers, the water tank or vat, provided with a longitudinal rubber-lined partition-strip, extending nearly the full length of the same, and vertically along the partition-wall of the water-chamber, in combination with the milk-pan seated thereon, for securing the regular flow of water from the entrance section to the exit section, substantially as and for the purpose set forth.

2. The combination of the flanged elastic sleeve or thimble E with the water-pan A, having a short tube, *h'*, and the milk-pan C, provided with a bottom exit-tube, *h*, as and for the purpose described.

161,980. WHEELS FOR VEHICLES. George Nelson, Livingston, assignor of one-half his right to Henry C. Pedigo, Woodville, Tex. [Filed July 27, 1874.]

Brief.—The spokes are dished in opposite directions, and the hub is easily taken apart for repairs.

The combination of the sets of spokes *a* and *b*, part O *o o'* of the hub, elastic washer or ring E, and adjustable socketed ring B, substantially as and for the purpose specified.

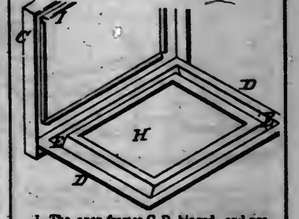


161,981. HARVESTER-RAKES. A. Palmer, Rochester, N. Y. [Filed Aug. 6, 1874.]

Brief.—The rake has two separate movements, one on a horizontal axis and the other at right angle to it, to give a rotating and a sweeping movement to said rake.

The combination of the rake-arm H, lever J, link *i*, ear *p*, sleeves D and E, wheel F, segment *b*, lever *k*, arm *d*, and detent I, for producing an alternate sweeping and rotating motion in the rake, substantially as herein described.

161,982. DRAWING-BOARDS. W. B. O. Peabody, Boston, Mass. [Filed Jan. 5, 1875.]



1. The open frames C D, hinged, and provided, respectively, with grooves E and projections I, substantially as and for the purpose set forth.

2. In combination with the frames C D, having grooves E and projections I, the removable board H, substantially as specified.

3. The hinged frames C D, with grooves E and projections I, the frame C being provided upon its upper surface with measuring-scales, as and for the purpose set forth.

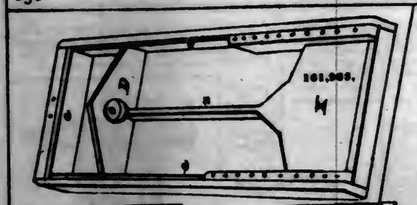
4. The hinged frames C D, with measuring-scales, grooves E, projections I, and the removable drawing-board H, all constructed and arranged substantially as shown and described.

161,983. GAME APPARATUS. D. J. Pierce, New Haven, Conn., assignor of one-half his right to C. A. Scranton, same place. [Filed Mar. 5, 1875.]

1. The game-board herein described, having the pieces *a x a*, the bottom piece X *x*, and the cross-piece D, provided with the hole *c*, all substantially as and for the purpose set forth.

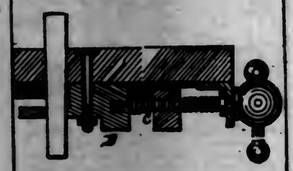
2. A game-cue, consisting of the slotted cylinder *m*, rod *n*, provided with the finger-piece *o*, and piece *p*, and spiral spring, all said parts being constructed and arranged to operate in the manner described.

161,986.



161,986. BENCH-VISES. James M. Peers, Barnett, Wis. [Filed Mar. 6, 1875.]

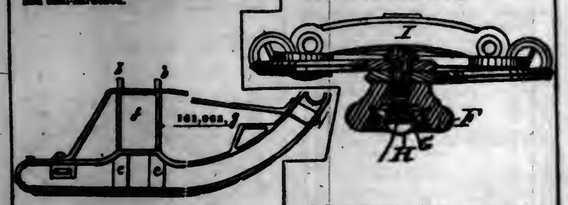
Brief.—Suitable articles may be clamped and held upon the face of a carpenter's bench by means of a pin in the top of the bench, and a corresponding pin in the inner end of a closely-fitting slide, adjustable in an opening in the top of the bench by a screw upon a sliding plate operating in guides secured to the under side of the top of the bench, below the aforesaid opening.



The clamping device for work-benches, consisting of the frame A, slide B, and screw C, constructed and arranged to operate substantially as shown and described.

161,986. SLED-RUNNERS FOR VEHICLES. Thomas W. Porter, Revere, Mass. [Filed July 29, 1874.]

Brief.—Cast-metal runners with bar-bolts inserted therein, and held by the metal melted around them; also a projection cast thereon and chill-hardened.



1. A cast-metal sled-runner, provided with the wrought-iron bar-bolts *b b*, substantially as described and shown.

2. A cast-metal runner in which the bolts *b b* are inserted and secured in the bosses *c c* by means of flowing the melted metal around and clutching it upon the bolts, as described.

3. A cast-metal runner formed to receive the wheel in rest *i*, and with apertures *l l*, in which to insert the clamping-bars, whereby the wheel is secured in position by clamps connecting with the runner directly beneath the wheel-rest, as set forth.

4. A cast-metal hub-runner formed with the raised part *n* for the support of the axle, substantially as described and shown.

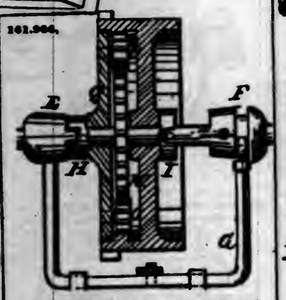
5. The incurvible box *o*, in combination with a hub-runner, substantially as described and shown.

6. The bracket *p*, formed as part of the runner, substantially as and for the purpose specified.

7. The coupling *f*, formed to receive the bar *e* and the bar-bolts *b*, substantially as described and shown.

8. A cast-metal runner having the chill-hardened projection *h* formed thereon, as and for the purposes specified.

161,986.



The combined feed, loose, and reversing pulley or wheel herein described, consisting of the shell or wheel D, having a clutch, I, and inner gear or friction surface E, the independent face-plate Q, carrying gear or friction wheels O, and provided with the notched hub or clutch H, all combined with the shaft *A*, fixed gear or friction wheel M, the sliding clutches E F, and the shifting mechanism G G', as and for the purpose specified.

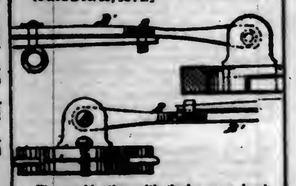
161,987. CHILDREN'S CARRIAGES. Oscar G. Stretton and Baxter B. Noyes, Greenfield, Mass. [Filed Oct. 16, 1874.]

1. In combination with the screw or bolt E and the thumb-nut F, the head or nut G, applied as and for the purpose set forth.

2. In combination with the recessed nut F, the cap or cover H, mounted therein, as and for the purpose described.

3. In combination with the standard or base C of a carriage-top, the detachable base-plate I, substantially as and for the purpose described.

161,988. HORSE-YOKES. Burke Stratton and George Olmsted, Hazardville, Conn. [Filed Dec. 10, 1874.]



The combination, with the hames and collars, of the yoke B B with the adjusting-bars B' B', substantially as and for the purposes herein described.

161,989. CAR-TRUCKS. Wm. Swarthout, Quincy, Ill. [Filed Jan. 2, 1875.]

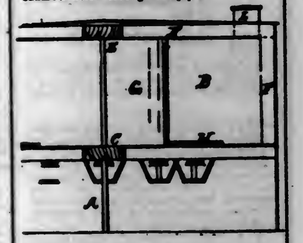
Brief.—Box for inner ends of divided axles provided with separated plate and bearings, upheld by transverse trusses, and so constructed that the apparatus can easily be taken apart.



The box I, having openings *i' i'*, plate J, and brasses *a a*, in combination with the axles B', substantially as and for the purpose set forth.

161,990. DRYING APPARATUS. Samuel T. Swasey, Salem, Mass. [Filed Mar. 20, 1875.]

Brief.—The fan-wheels force air into the space occupied by the distributing-fan. The upper gets a supply of air from the hot-air chamber below through the pipes



1. A drying apparatus consisting of heated-air chambers A B, fan-wheels C E, and pipes F, in combination with the ventilators L, substantially as described.

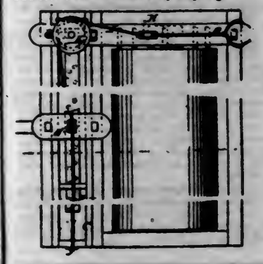
2. A drying apparatus consisting of chambers A B, fan-wheels C E, pipes F, and distributing-fan G, in combination with the ventilators L, substantially as described.

3. In a drying apparatus, the revolving frames H, in combination with the distributing-fan G, substantially as herein set forth.

4. In a drying apparatus, the revolving frames or platforms H, distributing-fan G, fan-wheels C and E, pipes F, and ventilators L, arranged in combination with the heated-air chambers A B, substantially as, in the manner, and for the purpose described.

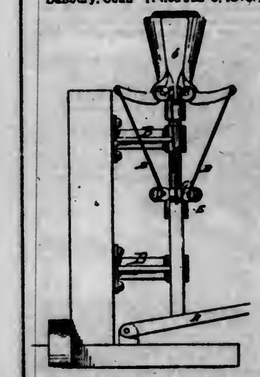
161,991. SEED-SOWERS. John W. Talley, Paxton, Ill., assignor to himself and T. W. Buell, same place. [Filed Jan. 20, 1875.]

Brief.—To a lever, whose lower end is struck by tappets on the roller, is attached a connecting-cord, which, passing around a pulley, imparts reciprocating movement to the transverse seed-slide by means of an intermediate lever, whose lower end engages with the slide. The seed-slide is retracted by a spring.



The combination, with the seed-slide and roll having end tappets, of the cord connected levers G H, intermediate pulley L, and vertical end spring U, as and for the purpose specified.

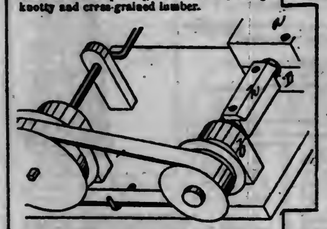
161,992. MACHINES FOR STRETCHING THE TIPS OF HAT-BODIES. FRANCIS C. TAYLOR, Danbury, Conn. [Filed Jan 5, 1875.]



The expanding jaws *b*, provided with recesses *a*, and spring *d*, and arms *b'*, the same being pivoted to the support C, and connected to the sliding support E by rods D, the hangers B B, rods O, and foot-lever R, combined to operate substantially as specified.

161,993. PLANING-MACHINES. Daniel L. Toppan, Somerville, assignor to himself, David C. Meloon, and Hopkins H. Meloon, East Cambridge, and Gardner B. Chapin, Medford, Mass. [Filed Feb. 23, 1875.]

Brief.—A simultaneous lateral and rotary motion is imparted to the cutter-shaft, causing the knives to revolve in constantly-changing vertical planes, by means of a friction-roller provided with a stud, which gears in a cam groove in one of the bearings of the cutter-shaft, for preventing the knots from being removed and displacing the fibers in planing knotty and cross-grained lumber.



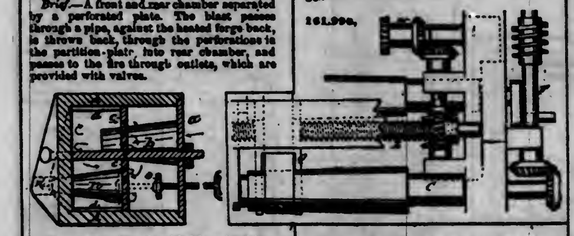
The cutter-shaft B, provided with the stud *e*, in combination with the boxes *c c*, provided with cam grooves *c c*, and bearing *b*, substantially as described.

161,994. LET-OFF MECHANISMS FOR LOOMS. John Turner, Lonsdale, R. I. [Filed Oct. 24, 1874.]

Brief.—The let-off motion is graduated positively by means of cone-pulleys and a slowly-shifting belt, the belt-shifting block being operated by a rotating screw-shaft driven by the warp-beam.

The combination, with the belt-shifting screw L and the driving-shaft C, of the intervening shafts F H M, connected and arranged as shown and described, for the purpose specified

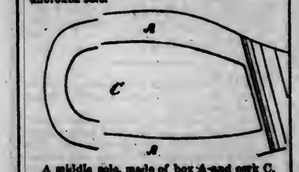
161,995.



The improved blacksmiths' forge-back herein described, consisting of the chamber A, having a beveled projecting front, the cover *a*, having attached thereto the inward-projecting inlet-tube *b*, the intermediate perforated plate *c*, having attached thereto the outlets *s s*, the valve *e*, and bolts *e e*, constructed and operating substantially as described, for the purpose specified.

161,996. CONE SOLES FOR SHOES. Charles Thackeray, New York, N. Y., assignor to Barrows & Boyd, same place. [Filed Mar. 6, 1875.]

Brief.—The rim or box is secured to the cork by adhesive substance, forming a single unbroken sole.



A middle sole, made of box A and cork C, the former in one piece and surrounding the latter, as shown and described.

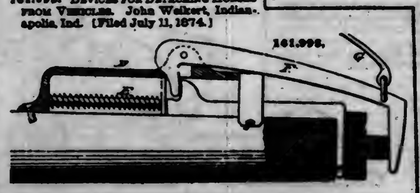
161,997. CLAMPS FOR VEHICLE-WHEELS. D. H. Tuxworth, Baltimore, Md. [Filed Jan. 27, 1875.]



The clamp, consisting of the piece A, having the double pair of ears B B', clamp-pieces C C, and screws D D, all combined as and for the purpose set forth.

161,998. DEVICES FOR DETACHING HORSES FROM VEHICLES. John Wallcott, Indianapolis, Ind. [Filed July 11, 1874.]

161,998.



The detaching device composed of the elements C D E F G, combined to operate substantially as set forth.

161,999. CHECK-VALVES FOR AIR-COMPRESSORS. Edwd. S. Winchester, Boston, Mass. [Filed Mar. 13, 1875.]

Brief.—The valve-stem and guide are constructed in telescopic sections, with a spiral spring interposed between them. The valve-head has a depending flange, to prevent oil from dripping upon the sliding joint.



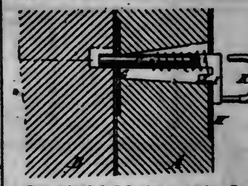
1. The valve-head *c*, provided with the tubular stem *b*, constructed to work upon the outside of the guide or stud *d*, substantially as and for the purpose set forth.

2. In combination with the valve-head *c*, arranged to seat itself within an opening, as shown, the depending flange or rim *c* to deflect the drip or sediment, and prevent it from coming in contact with the bearing-surface of the guide *d*, as set forth.

3. The combination of the valve-head *c*, provided with the tubular stem *b*, and the tubular guide *d*, with the spring *a*, all constructed and arranged to operate substantially as shown and described.

162,000. SASH-FASTENERS. Ira D. Woolf, Oneonta, N. Y. [Filed Mar. 13, 1875.]

Brief.—Sufficient play being given in mortising the sash, the stop-leg slips down into the recess and locks the spring-bolt; but when retracted and pressed slightly downward, again locks the bolt in withdrawn position.



The spring-bolt C, having a stop-leg, J, cap I, finger-piece K, and plates G and H, in combination with a suitably-recessed window-sash, for the purpose described.

162,001. CHAIRS. Benj. F. Allen, Boston, Mass. [Filed Apr. 10, 1874.]

A socket-and-tenon joint, substantially as described, for the manufacture of chairs and other articles, the socket being formed with two of its sides parallel, but widening in a transverse direction, so as to form an oval at its bottom, for the purpose set forth.

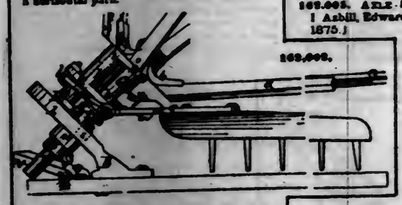
161,998.

162,001.



162,002. HARVESTER-RAKES. John F. Appleby, Mazomanie Wis., assignor of one-half his right to E. D. Bishop, same place. [Filed Sept. 4, 1874.]

Brief.—The rake is pivoted to a sleeve in the inclined reel shaft, the sleeve having an intermittent motion, whereby the rake rotates with the reel, and also sweeps the platform in a horizontal path.



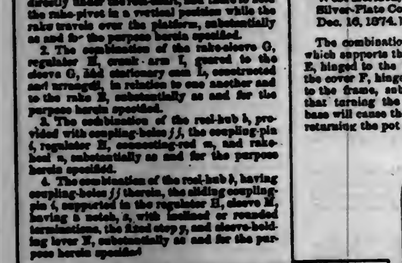
162,002.

1. In combination with the reel C, reel shaft D, and rake F, arranged to have the inclinations in relation to one another and to the platform substantially as herein set forth, the rake-carrying sleeve G, constructed as described, and arranged to have its revolving motion intermitted when its rake-bearing is directly under the reel-shaft, and there to hold the rake-pivot in a vertical position while the rake travels over the platform, substantially as and for the purpose herein specified.

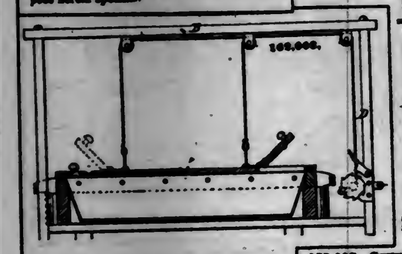
2. The combination of the rake-sleeve G, regulator H, crank-arm I, geared to the sleeve G, fixed stationary cam L, constructed and arranged, in relation to one another and to the rake D, substantially as and for the purpose herein specified.

3. The combination of the reel-hub *b*, having coupling-holes *jj* therein, the coupling-pin *i*, regulator H, connecting-rod *m*, and rake-head *n*, substantially as and for the purpose herein specified.

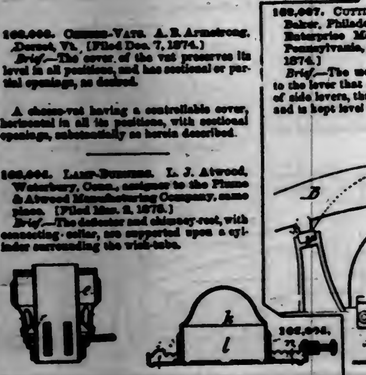
4. The combination of the reel-hub *b*, having coupling-holes *jj* therein, the sliding coupling-pin *i*, supported in the regulator H, sleeve K, having a notch, *s*, with inclined or rounded terminations, the fixed stop *y*, and sleeve-holding lever F, substantially as and for the purpose herein specified.



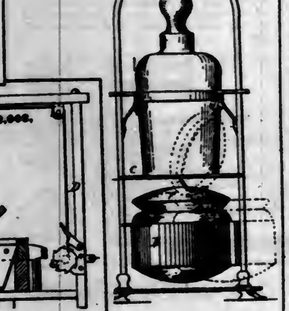
162,003.



162,004.



162,006.



162,005.



The cylinder *e*, surrounding the wick-tube, and extending nearly to the top of the same, and containing the air-distributer, in combination with the removable cylinder *l*, deflector *k*, and chimney-holder *n*, which are supported, when in place, upon the upper end of the cylinder *e*, substantially as specified.

162,005. AXLE-SKEINS FOR WAGONS. R. I. Ashill, Edwardsport, Ind. [Filed Feb. 4, 1875.]

The skein A, having exterior oil-reservoir, B, exterior longitudinal groove *b*, and exterior cross-groove *d*, all substantially as set forth.

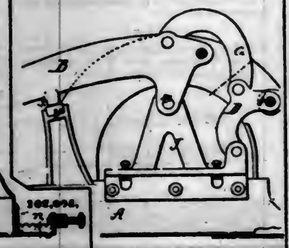
162,006. TOILET-CASTERS. S. Wm. Babbitt, West Meriden, Conn., assignor to Wilcox Silver-Plate Company, same place. [Filed Dec. 16, 1874.]

The combination, in a caster, of the base which supports the bottle or bottles, the pot E, hinged to the frame below the said base, the cover F, hinged to the pot, and connected to the frame, substantially as described, so that turning the said pot from beneath the base will cause the opening of the cover, and returning the pot will close the cover.

162,006.

162,007. CUTTING-INSTRUMENTS. John G. Baker, Philadelphia, Pa., assignor to the Enterprise Manufacturing Company of Pennsylvania, same place. [Filed Dec. 24, 1874.]

Brief.—The movable knife is so connected to the lever that operates it, and to a system of side levers, that the former has a draw-cut, and is kept level at all times.



162,007.

162,008. CHURN-VATS. A. B. Armstrong, Dayton, Va. [Filed Dec. 7, 1874.]

Brief.—The cover, of the vat preserves its level in all positions, and has sectional or partial openings, as desired.

A churn-vat having a controllable cover, horizontal in all its positions, with sectional openings, substantially as herein described.

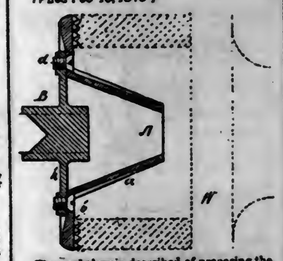
162,009. LAMP-BURNERS. L. J. Atwood, Waterbury, Conn., assignor to the Plume & Atwood Manufacturing Company, same place. [Filed Mar. 2, 1875.]

Brief.—The deflector and chimney-rest, with connecting-collar, are supported upon a cylinder surrounding the wick-tube.

162,009.

The combination of the knife *i*, the operating lever B, pivoted to the knife and to the frame, the radius-arm D, also pivoted to the knife and frame, and the connecting-rod G, pivoted to the said operating-lever and to the radius-arm, all substantially as and for the purpose described.

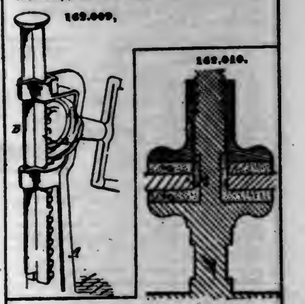
162,009. MANUFACTURE OF IRON MILL-BURRS. John B. Baker, Philadelphia, Pa., assignor to the Enterprise Manufacturing Company of Pennsylvania, same place. [Filed Feb. 16, 1875.]



The mode herein described of preparing the hard-metal burr of a grinding-mill for attachment to the mill-spindle—that is to say, first securing the burr to a soft-metal hub, B, and then boring the latter while the burr is confined to a chuck of a lathe or bed of a drilling-machine adapted to the grinding-surface of the said burr, all as set forth.

162,009. CARRIAGE-JACKS. Jno. G. Baker, Philadelphia, Pa., assignor to the Enterprise Manufacturing Company of Pennsylvania, same place. [Filed Mar. 4, 1875.]

The within-described carriage-jack, consisting of the stand A and its guides *a a'*, the lifting-bar B and its rack adapted to the said guides, the inclined shaft, adapted to a bearing on the stand, and carrying an inclined disk with a spiral rib adapted to the teeth of the rack, all as set forth.



162,009.

162,010.

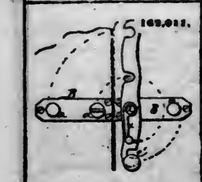
162,010. ELASTIC ARBORS. S. Bannister, Kalamazoo, Mich. [Filed Oct. 17, 1874.]

1. The grooved arbor A, provided with an elastic bearing, *b*, to receive a wheel or a saw, as described.

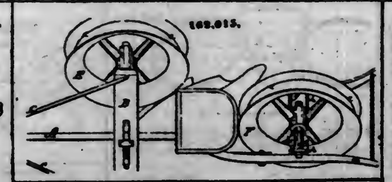
2. The collar or flange *b'*, formed in one piece with the elastic bearing *b*, which is permanently applied on arbor A, in combination with the removable collar *b'*, as and for the purposes described.

162,011. FASTENERS FOR DOORS AND SHUTTERS. Daniel W. Barr, Reading, Pa. [Filed Sept. 23, 1874.]

Brief.—A latch-bar is pivoted to one of two horizontal plates, each of which has a button or projecting stud near its outer end. The latch-bar is notched at its upper end, and alternately near the edge at its lower end, the bar swinging over and double-locking when in closed position.



162,011.



162,015.

The combination, with the doors or shutters A A, of the two plates B B, each provided with a button-bolt, *a*, near its outer end, and the latch-bar C pivoted to one end of the plate, and provided with a notch, E, at its upper end, and a notch, E', at its lower edge, near the other end, substantially as set forth.

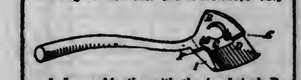
162,012. WAGON-BRAKES. W. H. Bartows, Iron Hills, Iowa. [Filed Jan. 9, 1875.]



1. In an automatic wagon-brake, the draft-pole H having slots *f* for the play of the rod J, and connected to the vibrating lever G by rod A, in combination with the rod E, adjustable plate F, brake-bar levers C C', and brake-bar D, substantially as set forth.

2. In combination with the slotted draft-pole H, levers C C', brake-bar D, and its operating mechanism, the hooks *d d*, and staples *d' d'*, whereby the brakes are inoperative in backing, substantially as set forth.

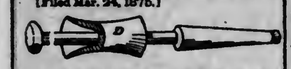
162,013. WELT-KNIVES. Wm. R. Barton, Georgetown, Mass. [Filed Mar. 16, 1875.]



1. In combination with the head-stock B, provided with the finger I and guard J, the clamp or holder G provided with the lip F, all substantially as and for the purpose described.

2. In combination with the head-stock and clamp, the knife D, provided with the flange E, and having a curved cutting-edge, K, and point *i*, all substantially as set forth.

162,014. PEG-CUTTER HANDLES. Wm. R. Barton, Georgetown, assignor of one-third his right to C. H. Barton, Cambridge, Mass. [Filed Mar. 24, 1875.]



A peg-cutter handle provided with the sliding rest D, substantially as and for the purpose specified.

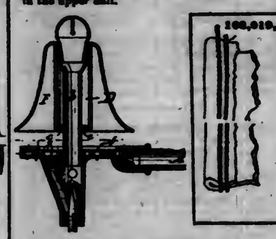
162,015. PLOWS. Benjamin S. Benson, Baltimore, Md. [Filed Jan. 16, 1875.]

Brief.—Two oblique-grooved wheels. One, upon the axle, runs up on the land side of the preceding furrow. The other, set in rear of the plow, rides upon the land edge of the present furrow, and relieves the plow of sliding friction of the land-side.

1. The combination, with a plow, of an inclined wheel, provided with a circumferential groove that receives and runs upon the projecting edge of the unplowed ground, substantially as and for the purpose described.

2. The combination, with the plow-beam A and the axle B, of the inclined grooved wheel E, for the purpose of regulating the furrow, substantially as described.

3. The combination, with a plow, having a detachable heel-piece, of the rear wheel F, inclined to the vertical plane, and constructed as described, with a circumferential groove for the purpose of lightening the draft and rendering the plow self-guiding, substantially as described.



162,015.

1. In a rack and snail striking mechanism, the combination of the snail A, stop-pin *a*, rack B, cam-pin *b*, and cam D, all operating together substantially as described, and for the purpose set forth.

2. The combination of lift-lever E, hollow shaft *m*, dog F, and lift-pin *h*, the lever E being arranged upon the front or exterior of a front plate, C provided with opening *k*, the dog F and lift-pin *h* being upon the inside or interior of said plate, the dial-wheels being thereby removed from out of the way of the rack and snail, substantially as described.

162,016. VAPOR-BURNERS. Jos. Benson, South Boston, Mass. [Filed Feb. 8, 1875.]

Brief.—The chambered disk is in two parts, and the chambers are formed by depressions in the upper half.

162,016.

1. The combination, with the tube *b* and surrounding chamber D, having the supplementary holes *c* at its bottom, of the chambered disk E, communicating with the naphtha feed-tube, substantially as described, whereby jets are caused to play against the upper surface of the chambered disk, as and for the purpose set forth.

2. The combination, with the outer chamber F, having the vent-holes *f*, of the tube *b* and its surrounding chamber D, having its lower portion provided with the jet-holes *c*, as and for the purpose described.

162,017. DOOR-BOLTS. William H. Bryce, Hartford, Conn. [Filed Dec. 7, 1874.]

Brief.—A sliding bolt is provided with a recessed spring, which carries an upwardly-projecting spur, for locking the bolt in position. This concealed spring is operated by a presser-pin, which comes up alongside of the clamp-guide, and apparently forms a portion thereof, the construction disguising its locking capabilities.

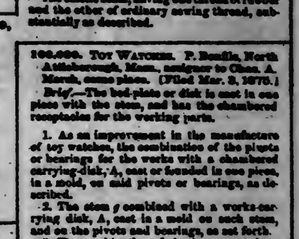


The combination of the plate *b*, guides *d c*, and bolt *c*, locked in position by the concealed spring *g*, bearing the spur *i*, and operated by the presser-pin *e*, all substantially as shown and described.

162,018. CLOCK STRIKING MECHANISM. Gilbert H. Blakesley, Bristol, Conn. [Filed May 26, 1874.]



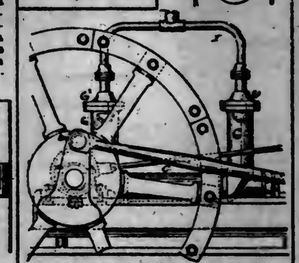
162,019.



162,020.



162,021.



162,022.

162,019. ELASTIC SEAMS FOR GARMENTS. Helen A. Blanchard, Boston, Mass. [Filed Mar. 11, 1875.]

The elastic seam, having one thread of rubber and the other of ordinary sewing thread, substantially as described.

162,020. TOY WATCHES. P. Bonfils, North Attleborough, Mass., assignor to Chas. A. Marsh, same place. [Filed Mar. 3, 1875.]

Brief.—The bed-plate or disk is cast in one piece with the stem, and has the chambered receptacles for the working parts.

1. As an improvement in the manufacture of toy watches, the combination of the pivots or bearings for the works with a chambered carrying-disk, *A*, cast or founded in one piece, in a mold, on said pivots or bearings, as described.

2. The stem *g* combined with a works-carrying disk, A, cast in a mold on such stem, and on the pivots and bearings, as set forth.

3. The combination of the bars or springs *p q r*, as described, with works-carrying disk A, cast in one piece, and provided with wheel pivots and bearings, arranged therein as specified.

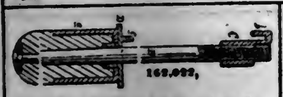
162,021. AIR-PUMPS. Wm. H. H. Bowen, Franklin, Ky. [Filed Mar. 4, 1875.]

Brief.—The vertical cylinders have a quarter-circle connection with the main horizontal cylinder. The caps containing the check-valves are conical in form. Both features avoid "pounding" by the columns of water.

The main cylinder G, provided at each end with cylinders G', curved or turned upward on a true circle, and having cone-shaped top G', in combination with valves *e* and *d*, pipes I H, and plunger J, all constructed as and for the purpose set forth.

162,022. HANDLES FOR CROSSCUT-SAWS. William J. Boynton, Battle Creek, Mich. [Filed Jan. 30, 1875.]

Brief.—The saw is attached to the handle by means of a hooked rod, adjustable upon a screw-threaded tang, in connection with an oval slip-plate secured on the tang above the rod, and provided with one or more ribs. The saw is clamped firmly in place by rotating the handle.



No. 162,022.

The nut C having the hook *b*, and the clip-plate D having the rib *c*, in combination with the screw-tang B, handle A, and ferrule *a*, constructed and arranged substantially as described and shown.

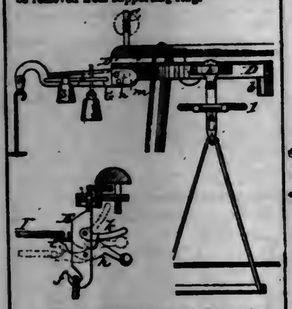
162,023. BALE-TIES. Maurice T. Brown, Tyler, Tex. [Filed Mar. 17, 1875.]



A bale-tie fastening consisting of the locking device D, riveted projection *c* at one end, and key-bit projection *c* at the other, in combination with the tie-ends A A', slotted as described, substantially as set forth.

162,024. SCALES. Henry T. Budge, Cedar Falls, Iowa. [Filed Feb. 24, 1875.]

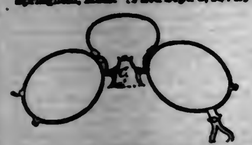
Brief.—Can be used as ordinary platform-scale or sack-scale, the edges of sack being folded over the ring I, and held in position by lever A and locking-piece K. After weighing is completed the lock-piece is raised, and lever returns to original position, allowing sack to be removed from supporting-ring.



1. The combination of the slotted pendant E with hook *f*, weighted lever A, with toothed bar *i* and ring I, and lock K, all constructed and arranged to operate substantially as and for the purposes herein set forth.

2. The combination of the circle-beam D, with extension D', having ears *m m*, the folding beam G, with slot *n* and hooks *f*, rod *p*, and poise *s*, substantially as herein set forth.

162,025. EYE-GLASSES. Saml. D. Burbank, Springfield, Mass. [Filed Sept. 8, 1874.]



1. The above-described separate bearings *a* and *a'*, with the depression between them, substantially as and for the purposes set forth.

2. The above-described yoke-formed nose-piece C, substantially as set forth.

162,026. EYE-GLASSES. Saml. D. Burbank, Springfield, Mass. [Filed Apr. 9, 1875.]

The self-adjusting nose-piece C, pivoted at or near its center, or vibrating in a single plane, substantially in the manner and for the purposes set forth.



No. 162,026.

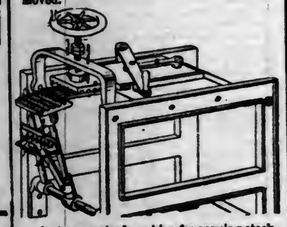
162,027. CARRIAGE-SPRING ATTACHMENTS. Charles S. Caffrey, Camden, N. J. [Filed Jan. 4, 1875.]



The combination of the cylindrical bearing B with the side bar of a wagon, square bolt C, flanged thimbles D E, and the body-supporting cross-spring A, having flanged end head *c*, substantially as and for the purposes set forth.

162,028. MACHINES FOR RE-ENFORCING STOCKING-HEELS. Augustus C. Carey, Malden, Mass. [Filed June 15, 1874.]

Brief.—The stocking-heel is placed between the crimping-plates, which, being brought together, press it in ridges. The gang of needles is then passed through and across the ridges, and a single yarn passed through all the eyes. The yarn between the needles is then drawn down and looped upon the pins below, thus obtaining a sufficient quantity for running through the heel. The loops are then removed from the pins by the disengaging-plate, and the needles drawn back, carrying the yarn through the heel. The yarn is then cut at the needle-eyes, and the stocking removed.



1. An organized machine for running stocking-heels, comprising the combination, with crimping devices adapted to hold and crimp the fabric in ridges, as described, of a gang of reciprocating needles, moving in fixed guides in the plane of the needle-passages in the crimping devices, substantially as and for the purposes set forth.

2. The combination, with the reciprocating gang of needles, moving in fixed guideways, and the crimping devices, operating together as described, of means, substantially as specified, for obtaining a measured supply of thread for each needle.

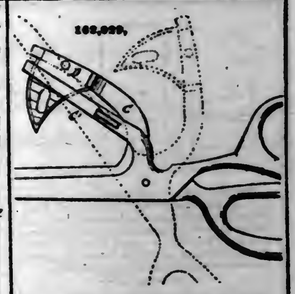
3. In combination with the vertically-adjustable upper crimping-plate, the lower vibratory crimping-plate, its supporting-standard, and rock-shaft, substantially as shown and set forth.

4. In combination with the crimping-plates and reciprocating needles, the looping-pins and their supporting-plate, for operation substantially as shown and set forth.

5. In combination with the looping-pins and their supporting-plate, the perforated loop-disengaging spring-plate, arranged and operating substantially as shown and set forth.

162,029. COMBINED SHEARS, BUTTON-HOLE CUTTERS, &c. Phebe L. Carter and James W. Rhoades, Clyde, Ohio. [Filed Feb. 23, 1875.]

Brief.—Two supplemental arms or blades spring from the ordinary blades of a pair of shears. One of these supplemental arms carries a triangular button-hole cutter, which passes through a slot formed by a spring-arm and the lower supplemental arm. The end of the triangular cutter has an eye-hole for tying carpet-rags.

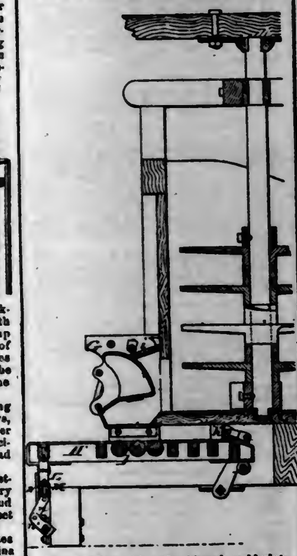


No. 162,029.

In combination with a pair of shears or scissors, the arm C, with slotted knife-blade D, and the arm C', with spring-arm E, substantially as and for the purposes herein set forth.

162,030. BRICK-MACHINES. Jas. F. Clark, Morenci, Mich. [Filed Mar. 27, 1875.]

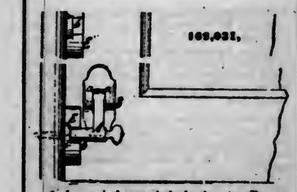
Brief.—Mold-box table hinged and capable of being pressed up by toggle-joint against clay-box, so that surplus clay is scraped off mold as it is forced from beneath clay-box.



In a brick-machine, the hinged mold-platform H', spring I, bar M, toggles *n n'*, shaft O, and lever P, combined substantially as specified.

162,031. SASH-FASTENERS. Jno. K. Clark, Buffalo, N. Y. [Filed Mar. 4, 1875.]

Brief.—An angular gravitating latch is hinged by gudgeons in a slotted socket-piece, in such manner as to allow of reversing the latch, so that it can be used on either side of the sash. This latch is combined with a peculiar stop, having double inclines and suitable recess, and attached by a single screw to the window-frame; the construction permitting the latch to slide up and down over the inclined sides of the stop, while it drops in gear with the recess, to lock the sash automatically in desired position.

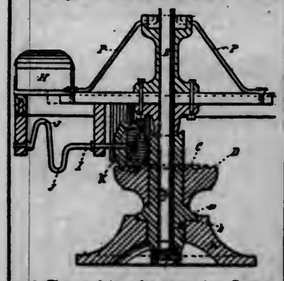


No. 162,031.

1. In a window-sash lock, the stop E, provided with double inclines, and with a recess, *b*, attached by a single screw, or its equivalent, substantially as shown and described.

2. The combination of a reversible angular gravitating latch, A, having gudgeons *a*, with a slotted or recessed socket-piece, B, substantially as and for the purposes specified.

162,032. ROUNDABOUTS. John C. Clime, Philadelphia, Pa., assignor of two-thirds his right to J. C. Clime and Joseph Ling, same place. [Filed Jan. 9, 1875.]

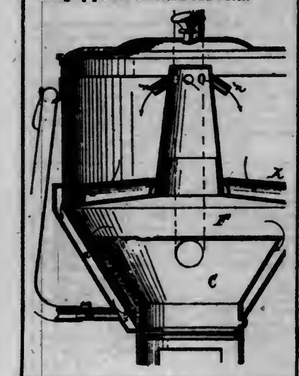


1. The revolving pleasure-carriage G, permanently connected with the upper end of the revolving shaft E, in combination with the base A, having a central hub, B, in which the lower end of the shaft E revolves, the said hub being provided with a bevel-gear wheel, C, having a circular railway, D, cast therewith for the support of the carriage, substantially as set forth.

2. The combination of the revolving pleasure-carriage G, having shafts I, provided with treadles J and pinions K, with the bevel-gear wheel C and circular railway D, substantially as and for the purpose set forth.

162,033. STEAM COOKING AND WASHING APPARATUS. William Cooper, Ypsilanti, Mich. [Filed Feb. 18, 1875.]

Brief.—The furnace is fed through a door in the smoke-pipe. Steam for heating or cooking food is conducted away as desired. Communication between the two chambers is kept up through pipes for the steam and water.



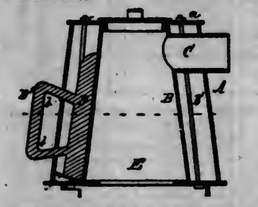
1. The combination of the boiler F and its pipe G, as arranged with the fire-chamber C, and the pipe D with feed-door E, all constructed as and for the purpose specified.

2. The pipe H, as constructed, and the hose L, in combination with the pipe G of the boiler, as and for the purpose set forth.

3. The combination, with the boiler F, fire-chamber C, pipe D, and pipe G, of the vessel J, perforated removable diaphragm K, and the removable pipe M, having downward-projecting tubes *n*, and the connecting-pipe *o*, all constructed substantially as and for the purpose set forth.

162,034. FLAT-IRON HEATERS. W. Cooper, Ypsilanti, Mich. [Filed Feb. 18, 1875.]

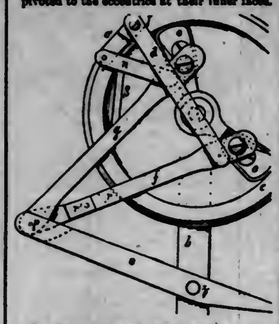
Brief.—The top, being flat, and without an exit-pipe, may be used for warming the irons or other articles.



The combination of the casing A, having notches *b b* and hinged doors C C, the inner polygonal tapering shell B, air-chamber B', inclines G, grate K, pipe C, extending through the side of the body, and removable cap F, all constructed substantially as and for the purpose set forth.

162,035. CLUTCH MECHANISMS FOR OPERATING TREADLES. Alonzo W. Oram, Litchfield, assignor of one-half his right to H. O. Goodrich, Jerseyville, Ill. [Filed Dec. 17, 1873.]

Brief.—To the axis of the flanged motor-wheel are secured radial arms, to the outer extremities of which are pivoted eccentrics, that are connected to the treadle by pitman-arms, pivoted to the eccentrics at their inner faces.



The flanged wheel *c*, radial arms *f f*, eccentrics *e e*, treadle-levers *f g*, arms *d*, *n*, and *o'*, and spring S, the whole being so combined and arranged as to prevent the striking or meeting of the dogs, substantially as described.

162,036. NUT-LOCKS. Reuben Cramer, Pittsburg, Pa. [Filed Mar. 2, 1875.]

Brief.—The locking-plate embraces two bolts, and is provided with a Z-shaped slit, extending from one nut to the other, the raised portions forming stops.



The plate A, provided with openings C and a Z-shaped cut through it, in combination with the bolts, nuts, and fish-bars of railway-joints, substantially as herein described, and for the purpose set forth.

162,037. POURING-LIPS FOR SHEET-METAL MEASURES. Allan Cummings, New York, N. Y. [Filed Feb. 16, 1875.]

Brief.—Dispenses with the usual channel or groove between the pouring-lip and the body of the measure, and returns into the measure the liquid which ordinarily collects in this channel or groove.

The pouring-lip *a* and body *b*, made of the same piece of sheet metal, said body *b* extending within or forming the measure, as set forth, so as to avoid a joint at the inner surface of the lip and measure, as and for the purposes specified.



No. 162,037.

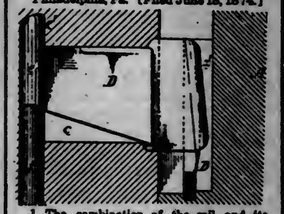
No. 162,038.

162,038. BLOCK-LOCKS FOR SHOE-LASTS. Frederick J. Davis, Newport, Vt. [Filed Feb. 20, 1875.]

Brief.—The spring in which the tumbler is journaled permits the last-block to be vertically adjusted without detachment.

In combination with the last A and block B, the tumbler D, journaled in the spring C, and having its upper portion twisted out of line with the lower portion, the hook E, springs G G, and pin F, all constructed and arranged to operate as set forth.

162,039. BEDSTEAD-FASTENINGS. E. Deets, Philadelphia, Pa. [Filed June 18, 1874.]



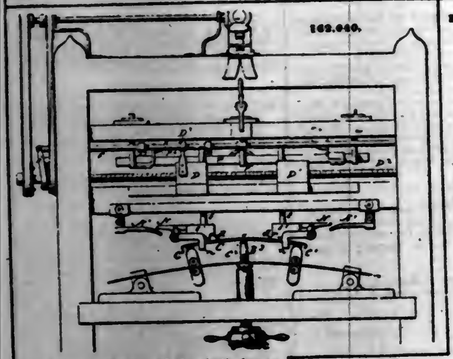
1. The combination of the rail and its flanged projection D, and the post A, having a recess, *a*, a chamber, *a'*, constructed at the front and forming a continuation of the recess, and a casting, B, fitting the chamber, and provided with inclines *m m* and flanges *b b*, all as and for the purpose described.

2. The rail, having a mortise, *c*, and a recess extending above and below the mortise, at right angles thereto, in combination with the casting D, extending into the mortise and having a projection, *c'*, which is maintained within the upper portion of the recess by a plug, *f*, fitting the lower portion, as set forth.

162,040. MACHINES FOR SETTING CARRIAGE-SPRINGS. Thomas B. De Forest, Birmingham, Conn. [Filed Jan. 7, 1875.]

Brief.—A pair of elastic bars, the ends of which are supported in sliding carriages, and a former, which has its ends supported in the heads. The curvature of the bars, and thereby the curvature of the former, may be increased or diminished by the raising or lowering (by a screw) of the central spindle, upon which they rest. Sliding carriages, movable toward and from each other by a right-and-left-hand screw, carry spindles, the lower ends of which terminate in heads provided with fingers. When the carriages are at their extreme central positions, the fingers are lowered, and, the clevis being shipped, are made to escape along the "back," resting upon the former as the carriages recede.

162,640.



1. The combination of the elastic bar or bars B, secured at both ends, the heads C^1, for holding the ends of the former, and the central adjusting-spindle B^1, substantially as and for the purpose specified.

2. The combination of a former, supported at both ends, the central adjusting-spindle B^1, and the auxiliary adjusting-spindle C^1, substantially as and for the purpose specified.

3. In combination with a former to support the part of the spring to be set, the fingers *d*, having a reciprocating movement from the center to bend the part of the spring to be set down upon the former, substantially as described.

4. The combination of the former, the fingers *d*, the spindles E, and the locking-arms F^2, to hold the said fingers down upon the spring at its extremes, substantially as described.

5. The combination of the carriages D D^1, the spindles E, each carrying one of the fingers *d*, the said fingers having a vertical movement independent of said carriages, and the right and left hand leading-screws D^2, substantially as described.

6. The combination of the former, the fingers *d*, the spindles E, the lifting-bar P, and lever P^3, whereby both fingers are simultaneously raised or lowered, substantially as described.

7. The combination of the former, the fingers *d*, the spindles E, the lifting-bar P, lever P^3, and pawl R, substantially as and for the purpose described.

8. The combination of the fingers *d*, the spindles E, the lifting-bar P, and the incline S on the shifting-bar F, substantially as described.

9. The combination of a former, the fingers *d*, and the side or guiding fingers *e*, substantially as described.

10. The combination of a former, the fingers *d*, side fingers *n*, and the stationary inclines F^1, for automatically raising the side fingers *e*, substantially as described.

11. The herein-described automatic pinching, consisting of a pair of jaws, one or both of which have a reciprocating movement, combined with a mechanism, substantially such as described, for imparting automatically such reciprocating movement to the said jaw or jaws.

12. In combination with a former for setting carriage-springs, automatic pinchers, substantially such as described, for giving the set to the spring, substantially as specified.

162,641. FIRE-EXTINGUISHERS. Christopher L. Delmage, Woonsocket, R. I. [Filed Dec. 12, 1874.]

Brief.—A transverse slit is cut in the radial nozzle, on opposite sides thereof, the slits being oblique to the length of the nozzle, and inclining outward from the head, whereby the leverage of the ejecting-nozzle is increased, and a fan-shaped sheet of water is thrown. Slots are cut in the closed end of the nozzle, whereby a number of sheets of water is thrown during the rotation of the head into every part of the room.

In a fire-extinguisher, the combination, with a rotating head, A, of the radial arms or nozzles C, having spaced transverse partitions *c*, forming flat water-passages *f*, and oblique slits *n* in their ends, substantially as specified.

162,641.



162,642. BLEACHING JUTE FOR PAPER-PULP. George W. Dubuisson, Tom's River, N. J. [Filed Sept. 29, 1874.]

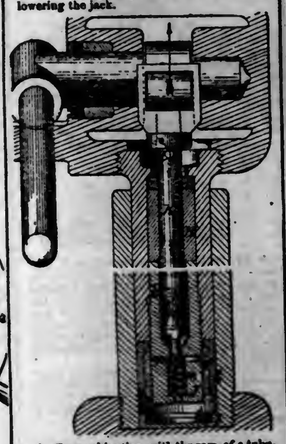
Brief.—Submits jute to the action of salts of potash, under low steam-pressure, from eight to twelve hours. Eight pounds potash to one hundred pounds jute are proportions mentioned.

1. The method or process herein described of disintegrating the fibers of jute, gunny, and manila, and preparing them for bleaching by the use of potash, substantially as specified.

2. The method herein described of repeatedly using the potash solution in the treatment of jute, gunny, and manila after such solution is restored by leaching through leached ashes, substantially as specified.

162,644. HYDRAULIC JACKS. Enoch M. Dudgeon, San Francisco, Cal. [Filed Dec. 30, 1874.]

Brief.—Contained within the ram is a tubular pump-plunger and valves, operating to pass the water below the ram by the reciprocating action of said plunger. The plunger is made to trip the lower valve, to return the water to the upper portion of the ram when lowering the jack.



1. The combination, with the ram, of a tubular pump-plunger, contained within the ram, whereby the operating fluid is passed through said plunger to opposite ends of the ram, as required.

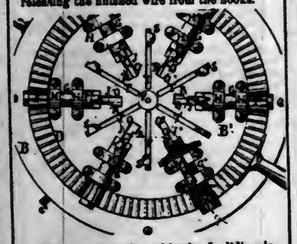
2. The combination, with the hollow pump-plunger K and pump-barrel E, within the ram, of the valves L M, the pump chamber or space *k*, and the apertures or passages *o i l n*, substantially as specified.

3. The hollow pump-plunger K, constructed to extend below or through the bottom of the pump-barrel, in combination with the lower valve M, essentially as and for the purpose herein set forth.

4. The combination of the lower valve-box J, with its valve M and one or more passages *n*, the nut or screw coupling F, the packing G, the pump-barrel E, and the shell C of the ram, essentially as described.

162,643. MACHINES FOR TWISTING WIRE. A. de Mestre, Bordeaux, France. [Filed Sept. 20, 1874.]

Brief.—Hooks attached to the inner ends of radial shafts first receive the wire, giving it the form of a hexagon. Levers whose ends extend upward through the plate, being operated from below, and which move in radial slots in said plate, intermediate to said hooks, bend inwardly the portions of the wire between the hooks, giving it the form of a star. The rotation of the hooks by their shafts and pinions twists the portions of doubled wire thus formed. By a ring beneath the master-wheel, and a system of levers attached thereto, the hooks receive a motion sidewise, when the twisting is completed, the shanks of the hooks having hinge-joints for the purpose, so releasing the finished wire from the hooks.



1. The combination of hooks J, sibling in radiating shafts G, with levers S, moving in radiating slots T, and with a master-wheel, D, constructed and operating substantially as shown and described.

2. The grooved shaft G^2 and hook J^2, composed of pins O O, in combination with hooks J, shafts G, slides F F^2, jaws N^1, pinions F F^2, and master-wheel D, substantially as set forth.

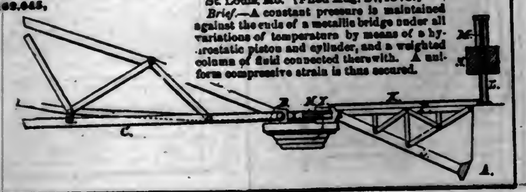
3. The combination of jaws N^1 with the grooved shaft G^2 and hook J^2, substantially as specified.

4. The combination of the ring *d*, carrying friction-rollers *c*, with a treadle, Y, levers S, hooks J J^2, and radiating shafts G G^2, substantially as described.

5. The ring *d* and levers *f*, in combination with slides F, hooks J, hinged shanks I, and recesses R in the guide-slots Q, substantially as set forth.

162,645. IRON RAILROAD. James B. Eads, St. Louis, Mo. [Filed Aug. 27, 1873.]

Brief.—A constant pressure is maintained against the ends of a metallic bridge under all variations of temperature by means of a hydrostatic piston and cylinder, and a weighted column of fluid connected therewith. A uniform compressive strain is thus secured.



1. The combination of the metallic chord C, skew-back D, plunger H, cylinders I and L, weighted piston M N, and abutment A, all substantially as herein set forth.

2. In combination with the chord C, skew-back D, plunger H, cylinders I and L, pipe K, weighted piston M N, and abutment A, the struts O, substantially as and for the purpose set forth.

162,646. ORNAMENTAL WOOD FLOORING-TILES. Robert Fenn, Rochester, N. Y., assignor to George H. Mellen, same place. [Filed Aug. 4, 1874.]

Brief.—A composite log is formed by gluing together planks and strips of differently-colored woods, and the tiles are formed by sawing the log perpendicularly to the grain, so that the end of the grain forms the wearing-surface.



A wood-tile for floors and other purposes, formed by cutting slices of wood from the composite log across the grain, and then attaching together the slices by gluing or otherwise, so that when laid the end of the grain will be presented to the surface, as set forth.

162,647. CONVERTING CAST-IRON ARTICLES INTO STEEL. Stanley G. Flagg, Philadelphia, Pa. [Filed Sept. 23, 1874.]

Brief.—Uses charcoal, iron scales from rolling-mills, and chloride of ammonium in converting iron into steel by cementation.

The process of converting cast-iron objects into steel by subjecting them to heat while they are enveloped in a composition of scales or other particles of iron, charcoal, and sal-ammoniac, as set forth.

162,648. LEAD-HOLDERS FOR DIVIDERS. Samuel L. Fox, Philadelphia, Pa. [Filed Dec. 8, 1874.]

Brief.—A split tube for holding the lead crayon, and adapted to be secured in the clamp ordinarily attached to one of the divider-legs.



The lead-holder for drawing-dividers, herein described, consisting of a split metallic tube having a tapering point terminating in a shoulder, *c*, said lead-holder constituting a new article of manufacture, substantially as set forth and illustrated.

162,649. EXTENSION-TABLE SLIDES. J. O. Frost, Towanda, Pa. [Filed Mar. 12, 1875.]



The plate A, having hooks *a*, tongue *b*, and dovetail-extension *c*, in combination with the frame-pieces B, having holes *e*, in which said dovetail-extensions are fastened by plugs, substantially as and for the purpose described.

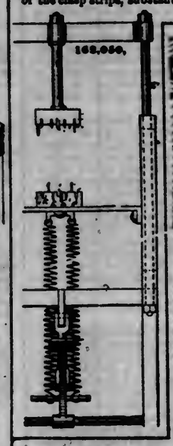
162,650. MANUFACTURE OF CORSETS. Chas. Gabrea, New York, N. Y. [Filed Dec. 1, 1874.]

1. The described method of making woven corsets, or for preparing them for the reception of the clasp-strips, the same consisting in starching and pressing the corset as it comes in a single piece from the loom, and then dividing and creasing it, as herein set forth, for the object specified.

2. The combination, with a single pair of dies, of knives for cutting the woven corset in two, and of blades for creasing the corset sections or halves, substantially as specified.

3. The combination, with the dies, of attached creasers to form the folds and cutters for puncturing the holes for the eyes and buttons of the clasp strips, substantially as described

162,650.



162,651.



162,651. CAR-AXLE BOXES. Jas. P. Gorton, Jersey City, N. J. [Filed Feb. 16, 1875.]

Brief.—Bearings attached to axle-box by dovetail connection between box and flange on bearing. Lubricant applied from outer face through perforations in protecting-plate, flange, and packing.

1. The bearing-blocks C C, provided with perforated flanges *a a*, having dovetailed slots, in combination with the dovetailed legs *b b*, formed on the inside of the journal-box, substantially as and for the purposes set forth.

2. The combination of the journal box A with interior dovetailed legs *b b*, the bearing-blocks C C, having perforated flanges *a a* with dovetailed grooves, the journal B, plate D with inclined grooves *d*, and the disk D', all substantially as and for the purpose set forth.

162,652. COMBINED QUARTER-BOOTS AND TOE-WEIGHTS FOR HORSES. J. P. Gilbert, New York, N. Y. [Filed Feb. 18, 1875.]



1. The combination of the quarter-boot B, constructed as described, the strap C, having its rear portion of double thickness and tapering upward, the toe-clip E, provided with the loop *e'* and downwardly-projecting hook or spur *e''*, and the straps *f* and *g*, substantially as and for the purpose herein shown and set forth.

2. The combination of the toe-weight or weighted pad H, provided with the spur *h'* and downwardly-projecting hooks *h''*, and the strap C, constructed as described, substantially as and for the purpose herein shown and set forth.

3. The combination of the quarter-boot B, the toe-weight H, the strap C, and the straps *f* and *i*, forming a combined but detachable quarter-boot and toe-weight, substantially as herein shown and described

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162,653. RAIN-WATER CUT-OFFS. Mathias Gmeiner, St. Louis, Mo., assignor to himself and Henry Pins. [Filed Feb. 23, 1875.]

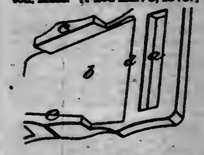
Brief.—In a spout is pivoted a trough in such a manner that a portion of it will project beyond the opening in the spout. To the trough is pivoted a bent piece of sheet-iron, which controls the upper part of the opening in the spout. The trough and bent piece operate conjointly to open and close the face-opening in the spout.



1. A rain-water cut-off, being a discharge-trough, B, and top slide C arranged to operate in a spout, in the manner herein shown and described, and for the purpose set forth.

2. The discharge-trough B, top slide C, pivoted with relation to each other, as herein shown and described, in combination with a spout, A, having face-opening *a* and inner spouting *c'*, to operate as and for the purpose set forth.

162,654. BALE-TIES. J. M. Goldsmith, Boston, Mass. [Filed Mar. 6, 1875.]



1. In a bale-tie, the combination, with a strap-iron binder having a trapezoidal end, *c*, of the plate A, having slot *a*, recess *b*, and lateral lugs *c*, substantially as specified.

2. The buckle-plate A, having a rearwardly inclined slot, *a*, recess *b*, and lugs *c*, adapted for use substantially as and for the purpose specified.

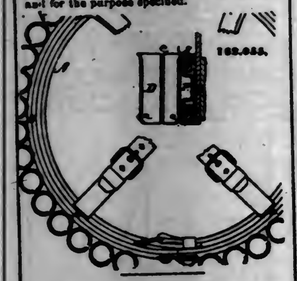
162,655. CARTRIDGE BELTS AND HOLDERS. Nathaniel S. Goss, Neosho Falls, Kans. [Filed Mar. 1, 1875.]

1. The combination of the strips *d d* with the metallic sockets D, arranged to form a groove for the reception of slides attached to an inner belt, upon which the outer rotates, whereby an economy in the amount of leather required is secured, substantially as described, and for the purpose specified.

2. In a revolving cartridge-belt, the slides P, attached to an inner belt and extending outwardly, so that they shall fit into a groove on the under side of the outer or rotating belt, and be inclosed or covered, whereby the danger of injury to the clothes of the wearer is obviated, substantially as described, and for the purpose specified.

3. The metallic cartridge holder D, having the slot *c* and groove *a*, substantially as described, and for the purpose specified.

4. In a revolving cartridge belt, the combination of the belt B, having the stripe *i i*, forming a groove, and the belt A, having the clasps P, arranged substantially as described, and for the purpose specified.



162,055.

162,056. MODES OF MAKING MOLDS FOR CASTINGS. C. Greener, Somerville, Mass., assignor to the American Art Foundry, same place. [Filed Aug. 21, 1874.]

The process, substantially as herein described, of constructing molds for casting metals by the application to the patterns of the inner material of the mold, in a soft, wet state, drying the same by the application of an absorbent material and the subsequent application of the more dry and plastic coat or mantle, substantially as set forth.

162,057. ELECTRIC ANNUNCIATORS. Elisha Gray, Chicago, Ill. [Filed Sept. 24, 1874.]

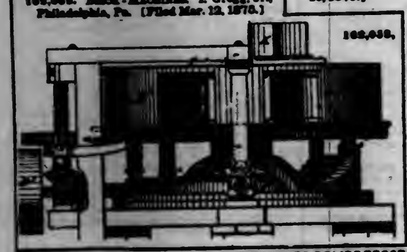
Brief.—The spindles carrying the pointers have attached to them, on the inside of the case, irregularly-shaped arms having two projections. In restoring the pointers to their normal position, one of these projections catches upon a hook-shaped arm extended from the armature, and the other serves to push the armature away from its pole, across the face of which it vibrates.



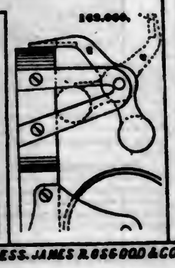
1. The armature D, provided with the hooked levers D', in combination with the tilting piece G, rigidly connected to the index, and constructed and arranged substantially as shown and described, to be struck by the restoring mechanism, to strike the said armature, and to be engaged by the said lever, as and for the purpose set forth.

2. The combination of the pivoted armature D, provided with the hooked lever D', the tilting piece G, rigidly attached to the spindle or sleeve of the index, and the sliding bar H, provided with the extensions *h h*, the piece G being constructed and arranged to be struck by the said extensions, to strike the said armature, and to be engaged by the said lever, all substantially as and for the purposes specified.

162,058. BRICK-MACHINES. I. Gregg, Jr., Philadelphia, Pa. [Filed Mar. 12, 1875.]



162,058.



162,059.

1. The mode, substantially as described, of manufacturing bricks, the same consisting in supplying the clay to the mold, removing the surplus portion, then automatically subjecting the clay within the molds to a series of successive increasing pressures, and finally discharging the finished brick from the mold, the various steps being effected in connected progressive movements of the mold, in the manner substantially as described.

2. The combination, in a brick-machine, of an intermittently-revolving mold-table, a stationary pressure-plate, and a series of intermittently rotating pressure-cams, substantially as set forth.

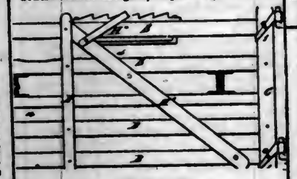
3. The combination, with the mold-carrying table and its gear-wheel of a brick-machine, of a series of shafts carrying gear-wheels and cams, substantially as described, whereby motion is imparted to the mold-table, and successive increasing pressures exerted upon the clay in the mold as the follower of the mold is successively acted upon by the cams, as specified.

4. The combination, in a brick-machine, of the intermittently-revolving mold-table, the mold-boxes and their followers, the inclined segmental bearing-pieces, the cam-yokes interposed between the bearing-pieces, and a series of rotating cams for operating the cam-yokes, substantially as set forth.

5. The combination, in a brick-machine, of a driving-shaft, which communicates an intermittent rotating movement to the mold-table, with a series of continuously-rotating cam-shafts, which impart successive increasing pressure to the clay in the molds during the intervals of rest of the mold-table, substantially as set forth.

162,060. FARM-GATES. Michl. Gunsheman, New York, N. Y. [Filed Nov. 25, 1874.]

Brief.—The latch end of the flexible gate is elevated by a lever, which is pivoted at its lower end to the lower rear end of the gate, and extends diagonally forward to and against a batten thereon. A loop attached to the upper end of the pivoted lever engages with a rack on top of the gate, to hold the gate in an elevated position, or may be swung over the upper end of the batten, to prevent small stock from raising the gate. Extending from the socket part of the hinges are downwardly-inclined side pieces, which clasp the rear vertical bar beneath the top and bottom horizontal bars of the gate, respectively.



1. The bead-hinges F, formed with upwardly and rearwardly inclined side pieces *f*, in combination with the battens C and rails B of a farm-gate, substantially as herein specified.

2. The combination of the pivoted diagonal bar or brace H^1, loop H^2, rack H, and battens or steps D, substantially as described and shown.

162,061. SAFETY-STEPS FOR CARS. John A. Hosen, Philadelphia, Pa. [Filed Jan. 16, 1875.]

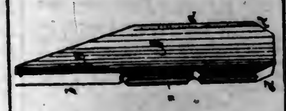
162,061.

162,062.

The combination of the supporting-plates with the lever *a*, pivoted thereto, and provided at one end with a step, and at the other end with a retracting-weight, for automatically raising the step and lever out of the way when not in use, all substantially as set forth.

162,063. SAW-TEETH. Wm. P. Hale, Port Huron, Mich. [Filed Feb. 12, 1876.]

Brief.—The front edge of the tooth is spread and sharpened, so as to plane the lumber.

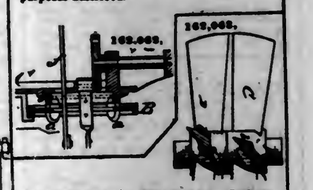


The insertable saw-tooth A B, provided with grooves *a a*, projecting flanges *b b* along the front or cutting edge, and miter corners *d d* at the heel, constructed substantially as shown and described, as and for the purpose set forth.

162,064. WINDMILLS. Jos. Hall, Ligonier, Ind. [Filed Dec. 10, 1874.]

Brief.—The turn-table is mounted upon conical anti-friction rollers, which impinge against a beveled track of circular form, applied to the bottom of the turn-table; the construction being such as to prevent displacement of the turn-table, and allow it to rotate with very little friction.

In a windmill, the turn-table C, having a beveled track, *b*, shouldered at *t*, in combination with the conical anti-friction rollers a and annular supporting-bracket B, as and for the purposes described.



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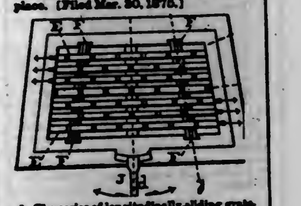
162,066. SCREW-PROPELLERS. Jackson Harrington, Groton Bank, Conn., assignor of one-half his right to Franklin F. Remyon. [Filed Dec. 19, 1874.]

1. A propeller-wheel consisting of two separate and independent hubs, each provided with a series of radiating blades set at an angle, and so arranged that the edge of the forward blades shall be in advance of the rear ones, substantially as herein shown and described.

2. The blades C C, constructed, as described, with the inclined sides *b d*, of unequal length, and bevel *f*, as herein set forth.

3. The blades D D, constructed, as described, with inclined side *b*, concave side *d'*, and bevel *f*, as herein set forth.

162,067. FURNACE-GRATES. Chas. H. Harrison, Philadelphia, Pa., assignor of one-half his right to Wm. H. Harrison, same place. [Filed Mar. 30, 1875.]



1. The series of longitudinally-sliding grate-bars B and stationary bar C, in combination with the transversely-arranged operating-lever *J*, substantially as and for the purpose set forth.

2. The outer bed-plate A, in combination with the inner bed-plate B, formed with pendent sockets D, the supports F, suspended in said sockets, and sliding grate-bars E, removably fitted to said supports, substantially as and for the purpose set forth.

3. The combination, with the grate-bars E and bed-plate B, of the grooved supports F and center bar G, cast together and made removable, said center bar forming the axis of the operating-lever J, substantially as and for the purpose set forth.

4. The lever J, jointed to the sliding bars E, fitted at its rear end *e* in the slot *b* of the inner bed-plate, and projecting at its forward end *d* between the outer and inner plates, and in front of said plates, substantially as and for the purpose set forth.

5. The grate consisting of the outer bed-plate A, with ledges C, the inner bed-plate B, with grooved supports F, sliding grate-bars E, center bar G, and oscillating lever J, substantially as and for the purpose set forth.

162,068. ANTI-FRICTION METALS. Thomas Harrington, Philadelphia, Pa., assignor of one-half his right to Jos. J. Solomon and Andrew J. Loesher, same place. [Filed Mar. 16, 1875.]

The hard anti-friction metal consisting of tin, nickel, zinc, copper, and plumbago or pure carbon, substantially as and for the purpose set forth.

162,069. VISES FOR BEER-BARRELS. Jos. Hindemeyer and Edwd. Reinkampen, Philadelphia, Pa. [Filed Jan. 11, 1875.]



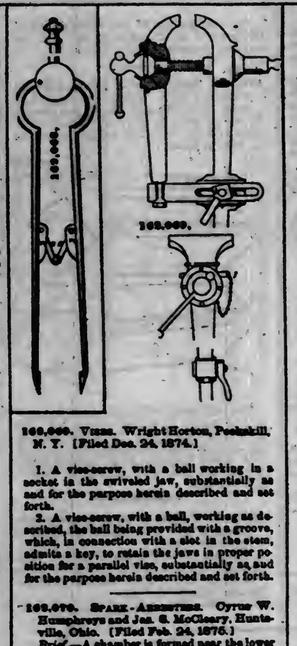
1. The vent apparatus, consisting of the body A, having the vertical stem B and cocking E, and surmounted by the cap D containing the check-valve *d'* and air-passage *d''*, said cock-spring being constructed and arranged as shown, to close and open communication between the cap and stem, substantially as described.

2. A vent for beer-barrels, having a check-valve to prevent the escape of liquor, and a cock to regulate the flow of air, substantially as shown and described.

162,070. SPARK-ARRESTERS. Oyrus W. Humphreys and Jas. S. McCleary, Huntsville, Ohio. [Filed Feb. 24, 1875.]

Brief.—A chamber is formed near the lower end of the uptake, in which is placed a flaring-mouthed pipe, carved to pass through the side of said uptake, by which means the sparks are trapped and conveyed to a receptacle.

The combination of the stack A, having a catch-chamber at or near its lower end, and constructed above the same, the catch-funnel F, arranged within the catch-chamber, and the spark-pipe P, extending from the central apex of the catch-funnel by an easy curve, substantially as herein illustrated and described, for the purpose specified.



162,069.

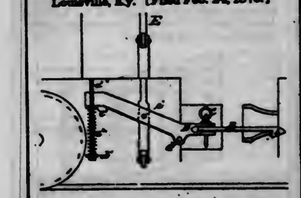
162,070.

162,071. VISES. Wright Horton, Peekskill, N. Y. [Filed Dec. 24, 1874.]

1. A vise-screw, with a ball working in a socket in the swiveled jaw, substantially as and for the purpose herein described and set forth.

2. A vise-screw, with a ball, working as described, the ball being provided with a groove, which, in connection with a slot in the stem, admits a key, to retain the jaws in proper position for a parallel vise, substantially as and for the purpose herein described and set forth.

162,072. CAR-COUPLINGS. Chas. Holmes, Louisville, Ky. [Filed Feb. 24, 1875.]



1. The combination, with hook B, of the lever D, pivoted at *d*, and upheld at its rear end by spring-support, as and for the purpose set forth.

2. The combination, with lever D, of the push-bar B, having cross-rod *d'*, supported by springs *d''*, as and for the purpose specified.

3. The combination of the hook B, lever D, push-bar B, and hand-levers F G, to enable the hook to be uncoupled from the car from either side thereof.

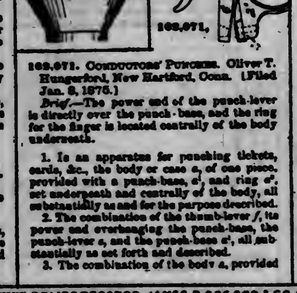
162,073. FIRE-TRUCKS. Lucien Holmes, Tallahoma, Tenn. [Filed Feb. 24, 1875.]

Brief.—The bars limit the opening of the tongs. They are guided by the cam.

In combination with the legs of the tongs, the bars B B, pivoted together and to the cam B B, formed on the legs, as shown and described.



162,074.



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162,074. MARINE GRAIN-VESSELS. Wm. Inglis, Bolton, England, and James Inglis, Montreal, Canada. [Filed Jan. 9, 1875.]

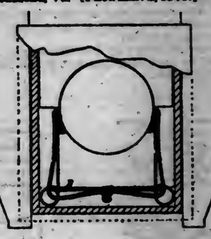
In combination with the boat or raft E, the disconnected and independently-floating tanks or bins A, held separated, so that the immersed portion of each will be surrounded by water on all sides, substantially as and for the purpose specified.

162,075. STEP-LADDERS. Jacob L. Isaacs and Richd. Halliday, St. Louis, Mo. [Filed Feb. 23, 1875.]

Brief.—Loops or bearings are secured to the top and rear of the ladder, and a series of loops are secured to the supporting prop, so that when they are brought alongside of the loops on the ladder proper, they can be secured together by passing a bar through them, thus adjusting the prop supports to any inequalities of surface. The top step is provided with a sliding section, on which hooks for securing buckets, paint-pots, &c., are attached. The stay ropes are secured to the supporting-props, and pass through loops on the under side of the lower step, which can be drawn through the opening in the side rail and secured to hooks.

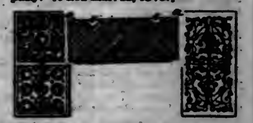
1. The hook support B, having journal-bearings *d*, in combination with connecting-bar *b'* and journal-bearing *a* of a ladder, as and for the purpose set forth.

162,076. CAR-AXLE BOXES. J. D. Imboden, Richmond, Va. [Filed Mar. 2, 1875.]



As an article of manufacture, the detachable spring-frame B, for the purpose of holding a lubricating-fabric pressed against a car-axle journal, as set forth.

162,077. DOMICS. Chas. M. Hyatt, Albany, N. Y., assignor to the Embossing Company. [Filed Mar. 13, 1875.]



1. A domice, the spots *c* of which are provided with raised rims, substantially as described.

2. A domice provided with a raised rim, *c*, raised cross-bar *b*, and raised rims round its spots *c*, all as shown and described.

3. A domice, provided on its face with arabesques or other embossed ornamental lines or figures between and around its spots, substantially as shown and described.

4. A domice, provided on its back or sides with embossed ornamental lines, substantially as described, for the purpose specified.

162,078. CAR-AXLE BOXES. J. D. Imboden, Richmond, Va. [Filed Mar. 2, 1875.]

As an article of manufacture, the detachable spring-frame B, for the purpose of holding a lubricating-fabric pressed against a car-axle journal, as set forth.

162,079. MARINE GRAIN-VESSELS. Wm. Inglis, Bolton, England, and James Inglis, Montreal, Canada. [Filed Jan. 9, 1875.]

In combination with the boat or raft E, the disconnected and independently-floating tanks or bins A, held separated, so that the immersed portion of each will be surrounded by water on all sides, substantially as and for the purpose specified.

162,080. STEP-LADDERS. Jacob L. Isaacs and Richd. Halliday, St. Louis, Mo. [Filed Feb. 23, 1875.]

Brief.—Loops or bearings are secured to the top and rear of the ladder, and a series of loops are secured to the supporting prop, so that when they are brought alongside of the loops on the ladder proper, they can be secured together by passing a bar through them, thus adjusting the prop supports to any inequalities of surface. The top step is provided with a sliding section, on which hooks for securing buckets, paint-pots, &c., are attached. The stay ropes are secured to the supporting-props, and pass through loops on the under side of the lower step, which can be drawn through the opening in the side rail and secured to hooks.

1. The hook support B, having journal-bearings *d*, in combination with connecting-bar *b'* and journal-bearing *a* of a ladder, as and for the purpose set forth.

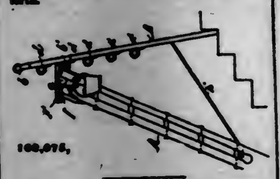
2. The combination of the ladder A, having the movable plate a, journal-bearing a, with connecting-bar b', journal-bearing b or d, and hook support B, to operate as and for the purpose set forth.

3. The cord attachment E, when united to the hook support, and arranged to pass through staples a, and hinged to side hooks c', in the manner herein shown and described, and for the purposes set forth.

4. In combination with the top f of a ladder, the sliding top F, hand f', to operate as and for the purposes set forth.

5. In combination with the top f of a ladder, the sliding top F, its hand f', and hooks f', as and for the purposes set forth.

6. The sliding top F, hand f', hooks f', movable plate a, in combination with the top f of a ladder, to operate as and for the purposes set forth.



160,076.

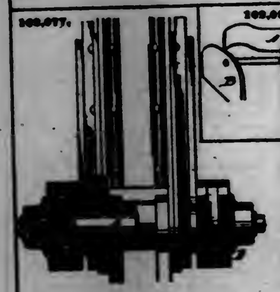
160,076. VAPOR-BURNER. Jno. Q. Jayson, Cincinnati, Ohio, assignee of one-half his right to S. B. Meyer, same place. [Filed Apr. 5, 1875.]

Brief.—The disk, and hems upon the top of the bowl, cause the same to form the heating-chamber.



The combination, with the mixing and conducting tube I, of the disk A beneath the tip bowl B, having the jet-orifices D therein, and the cup C, surrounding and inclosing the jet-orifices, said parts being constructed substantially as herein shown and specified, and operating to form the supply-chamber of the vaporizing-jets or burners, and to deflect and shield the latter, and to prevent these jets from leaping into contact with the main flame, in the manner herein set forth.

160,077.



160,077. CONSTRUCTION OF IRON TRUSS-BRIDGES. Charles Kellogg, Altoona, Pa. [Filed Dec. 2, 1874.]

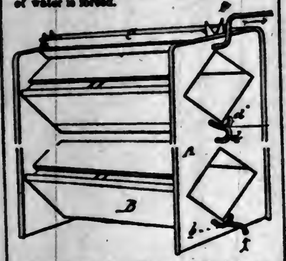
Brief.—The bolts for securing the parts of the wrought-iron truss together, instead of being screw-threaded on their ends, in the usual way, whereby the threads are liable to be cross-battered and injured by driving, are simply tapered, and the hollow cap-nut is attached by a set-screw working into the end of the tapered bolt.

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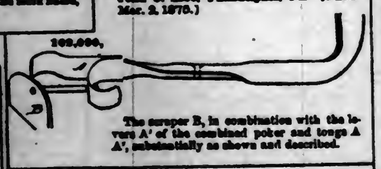
The spike herein described, having its end A outwardly increasing in width, the front or face B rounded, and the back C made narrow, as than the front, substantially as shown and described, and for the purposes set forth.

160,079.



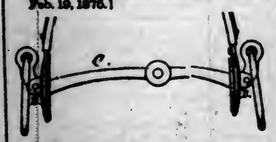
The combination of the standards A A, perforated trough C, inclined vessels B B', and connecting-pipes b c d d', whereby liquor passing downward on the outsides of the vessels B B' is cooled by water forced upward within and through said vessels, as and for the purpose set forth.

160,080.



The scraper B, in combination with the lever A' of the combined poker and tongs A A', substantially as shown and described.

160,081.

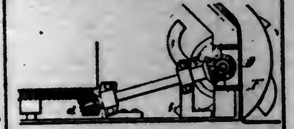


160,081. BRIDLE-BIT. Hiram Lockard, Newark, N. J., assignor of one-half his right to Thos. Agens, same place. [Filed Feb. 19, 1875.]

1. In a bridle-bit, the nose-band A, having the lips D of its cheek-pieces secured to the mouth-piece C, substantially as and for the purpose specified.

2. The mouth-piece, with the lever-arms E, in combination with the cheek-pieces of the nose-band, substantially as set forth, and for the purpose named.

160,082.

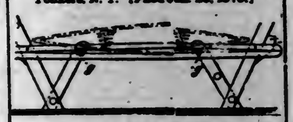


160,082. MOWING-MACHINES. Wm. Leavy, Philadelphia, Pa. [Filed Jan. 26, 1875.]

1. The combination, in a mowing-machine, of the revolving cutters f and a plate or guard, one portion, D, of which is above the cutters, while the end D' extends beyond the cutters at one side and toward the rear, so as to deflect the grass or grain to such side as soon as severed, all as set forth.

2. The guard for mowing-machines, consisting of the bent plate D D', projecting end E, and inclined flange F, all as specified.

160,083.



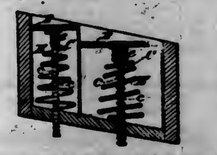
160,083. COT-BEDSTEADS. Stephn. G. Lamb, Yonkers, N. Y. [Filed Jan. 22, 1875.]

1. The combination, in a folding cot, of the side bars, each constructed of two swing-plates, connected at their ends and separated in their center to form springs, and the end cross-bars connecting the side plates together, substantially as described.

2. The combination, with the side plates of a cot connected together by the end cross-bars, of the head and foot board sections, and leg-sections, connected together at their lower ends, and adapted to support the side plates in an elevated position, or be brought in a line parallel to the side plates, substantially as and for the purposes described.

3. The leg-sections C D, having their upper rounds extended beyond the sections, as at g, in combination with the side spring-plates, between which the extensions of the rounds are placed, substantially as described.

160,084.



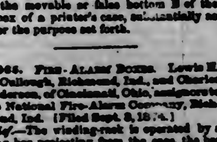
160,084. PRINTERS' TYPE-CASES. Lorden A. Martin, San Francisco, Cal. [Filed Dec. 26, 1874.]

Brief.—The false bottoms are arranged to slide vertically in deep boxes of the case, being supported on spiral springs, the upper ends of which are closely coiled to screw upon threaded mandrels, which are attached to the said bottoms, and work through guide-holes in the stationary bed of the case. The tension of the springs and the height of the bottoms are adjusted by screwing the springs higher or lower upon the mandrels.

160,085.

The mandrel C, with the spiral thread or groove a a and spring E a, in combination with the movable or false bottom B of the type-box of a printer's case, substantially as and for the purpose set forth.

160,086.



160,086. FIRE-ALARM BOXES. Lewis H. McCullough, Richmond, Ind., and Charles Anderson, of Cincinnati, Ohio, assignors to the National Fire-Alarm Company, Richmond, Ind. [Filed Sept. 8, 1874.]

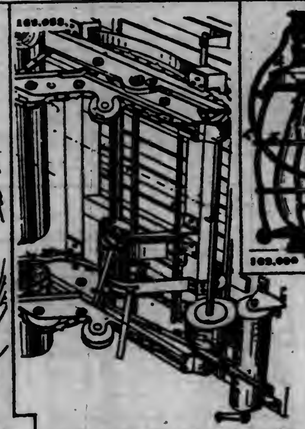
Brief.—The winding-rack is operated by a sliding bar projecting from the case, the bar having in its side a notch, in which engages a pin on an arm pivoted to the rack-bar. When the pressure is removed from the sliding bar the pin is thrown out of engagement by a spring bearing against its arm, and cannot again engage until the rack-bar has returned to its normal position, and a pin in the path of the arm throws it to one side.

160,085.



The combination of the concealed winding-rack A, spring E, arm D d, fixed finger D', posts G and H, and notched slide-rod C c, substantially as and for the purpose specified.

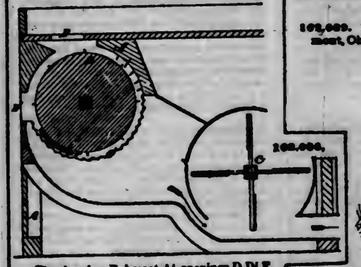
160,086.



160,086. COTTON-CLEANERS. George W. McAnulty, Pleasant Plains, Ark., and W. L. Orewson, Memphis, Tenn. [Filed Feb. 5, 1875.]

Brief.—Cotton introduced at the top of the machine is picked by the teeth on the cylinder and breast, and discharged clean at the front, the dust being drawn through the screen by the fan, and discharged at the rear through a spout.

160,087.



The thresher B, breast A', openings D D' F, and screen C', combined, as described, with the suction-fan C and dust-spout D', as and for the purpose specified.

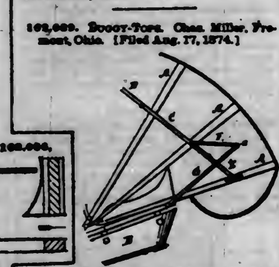
160,087. METALLIC FASTENINGS FOR SOLES OF BOOTS AND SHOES. Gordon McKay, Cambridge, Mass. [Filed Feb. 27, 1875.]



1. A blank, composed of nails united by thin webs and grooved longitudinally near the points of such nails, as at c, substantially as described.

2. In a nail or metallic fastening the groove c, in combination with a nail-point, made symmetrically tapering on the sides that are at right angles, or nearly so, to the side in which the groove c is made.

160,088.



160,088. CIRCULAR-SAW MILLS. Jas. W. Miles, Hubbardston, Mich. [Filed Jan. 22, 1875.]

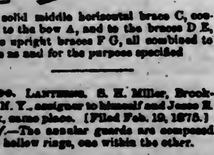
Brief.—The log is turned by means of a toothed chain running over suitable pulleys upon the head-block, and put in motion by frictional gearing.

160,089.

160,089. SCOOT-TOPS. Chas. Miller, Fremont, Ohio. [Filed Aug. 17, 1874.]

The solid middle horizontal brace C, connected to the bow A, and to the braces D E, and the upright braces F G, all combined to operate as and for the purpose specified.

160,090.



160,090. LANTERNS. S. H. Miller, Brooklyn, N. Y., assignor to himself and Jesse R. Folk, same place. [Filed Feb. 19, 1875.]

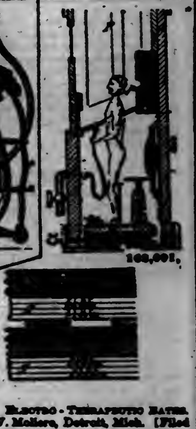
Brief.—The annular guards are composed of two hollow rings, one within the other.

1. The combination, with the cap or ring C, having a flange, b, and rigidly supported at the top of the shade of a lantern by vertical wires F, of the ventilating cap G hinged to said cap or ring, and provided with the spring catch H, constructed with the hollow A and bead g, for engaging with the fixed cap or ring, substantially as and for the purpose described.

2. The combination of the lantern-body, having the hinged lid G and the cap-ring C, provided with a bead, b, and series of notches d, with the uprights F, having the hooked ends e passing through the notches in the cap-ring, for engaging with the bead b, as and for the purposes described.

3. The annular guards E, constructed of a hollow outer ring having its joint concentric with its circumference, and an inner ring inclosed by the outer ring, substantially as described.

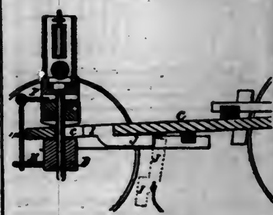
160,091.



160,091. ELECTRO-THERAPEUTIC BATHS. James W. Mallers, Detroit, Mich. [Filed July 29, 1874.]

The combination of the metallic-lined chamber A, having a lid composed of the sections M N O, slide P, coiled pipe F, and electric pile-plates s, substantially as herein shown and described.

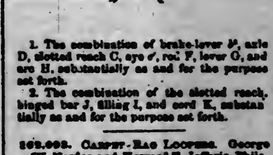
160,092.



160,092. WAGON-BRAKES. Lewis R. Morgan, West Liberty, W. Va. [Filed Mar. 6, 1875.]

Brief.—Ordinary brake operated automatically by sliding perch. The action is unaffected by the turning of the front axle. A sling may be raised into the slot, so as to lock the perch and brakes; but, normally, gravity keeps it below and out of the way.

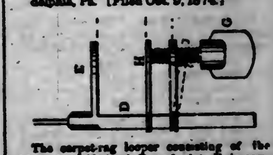
160,093.



1. The combination of brake-lever b^1, axle D, slotted reach C, eye c', rod F, lever G, and arc H, substantially as and for the purpose set forth.

2. The combination of the slotted reach, hinged bar J, filling I, and cord K, substantially as and for the purpose set forth.

160,094.

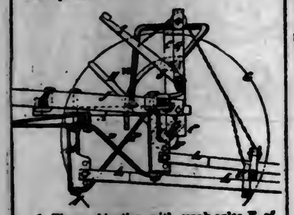


160,094. CARPET-RAG LOOPERS. George W. Naylor and Howard T. Jaffaris, Philadelphia, Pa. [Filed Oct. 9, 1874.]

The carpet-rag looper consisting of the blade A, rigid shank D, and plate E, in combination with the sliding plate F, carrying the short screw G, and the sliding plate H, the two plates F H adapted to slide on the shank D, and all constructed, arranged, and operating substantially as and for the purpose set forth.

162,094. GANG-PLOWS. Thos. M. Nichol, Sparta, Ill. [Filed Oct. 24, 1874.]

Brief.—The arched axle is secured between double frame-bars, and on either side short bars bent at right angles branch from it and extend downward. Between these the blocks forming crank-axles are journaled, having rigid levers. Upon blocks sliding upon cross-bars, other blocks are pivoted to receive the plow-beams, and permit the requisite motion to the plows.



1. The combination, with crank-axles F, of the bent bar G, leg plates D, and bolts E, as and for the purpose described.

2. The combination, with the swiveled plow-beam holders or blocks M, of blocks O and braces P, having a lateral adjustment, as and for the purpose set forth.

162,096. GIG-SADDLES. Andw. Ortmayer, Chicago, Ill. [Filed Mar. 6, 1875.]



In a gig-saddle, the combination, with the metal jockey, of the skirts A A, provided with pockets F F, to secure the plates a a, the said plates each having a screw-threaded hole for the reception of the turret-ring bolts, substantially as described and shown.

162,098. BED-BOTTOMS. Madison R. Owens and Geo. Chamberlin, Chase, N. Y. [Filed Jan. 7, 1875.]

Brief.—The pivoted spring can be turned upon its pivot, and its free end adjusted to any point under the cross-bar, to resist unequal pressure on the bed-bottom.



The springs A A and pivoted spring B, in combination with the cross-pieces b b and c c, substantially as and for the purpose set forth.

162,097. WRINGER-DRIERS FOR CHAIRS. J. A. Park, Lansing, and Wm. Woodhouse, Mason, Mich. [Filed Apr. 2, 1875.]

1. A desk divided into compartments, and provided with a connecting device folding therewith, whereby it can be attached to a chair, substantially as set forth.

2. In a desk attachment for chairs, the desk-box A, divided into suitable compartments, and provided with the hinged top C, stationary top B, and sliding paper-holder D G, substantially as and for the purposes herein set forth.

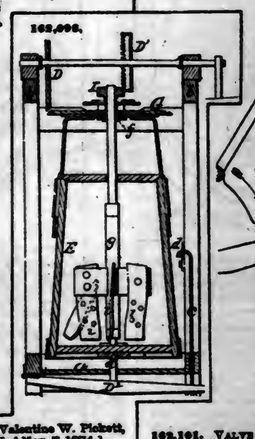
3. The combination of the perforated arm H, hinged brace I, provided with the pivots h h, and a casting, J, provided with the holes or sockets i i and pin m, substantially as and for the purposes herein set forth.

4. The combination, with a desk, A B C, of the perforated arm H, hinged brace I, provided with the pivots h h, and a casting, J, attached to a chair, and provided with the holes or sockets i i and pin m, and a brace, L, for supporting the desk, substantially as and for the purposes herein set forth.

162,097.



162,098.



162,102. CHURNS. Valentine W. Pickett, Baldwin, Iowa. [Filed Nov. 7, 1874.]

The lever D', having the stud d', and connected with the lever d, by the rod e, in combination with the churn E, provided with plates I, and bevried wheel G, and gear-wheels D D', whereby the dasher and churn may be made to revolve in opposite directions, or the dasher only be made to rotate, substantially as described.

162,099. HINGE-JOINTS FOR SCHOOL-DESKS. Chas. H. Presbrey, Sterling, Ill., assignor to the Sterling School-Furniture Company, same place. [Filed Feb. 12, 1875.]

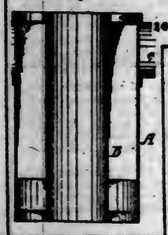
Brief.—The tapering bearing for the seat-arm is formed on the bolt, thereby dispensing with the ordinary trunnion formed on the seat-arm.



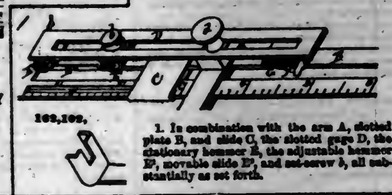
The tapering bolt D, having the screw h, in combination with the part B of the standard, the seat-arm C, washer E, and nut i, all substantially as set forth.

162,100. RADIATORS. Jesse Reynolds, Philadelphia, Pa. [Filed Apr. 9, 1874.]

Brief.—The smoke passes through the flues formed by the vertical plates between the outer and inner casing. The air to be warmed rises through the open flue formed by the inner casing.



162,100.

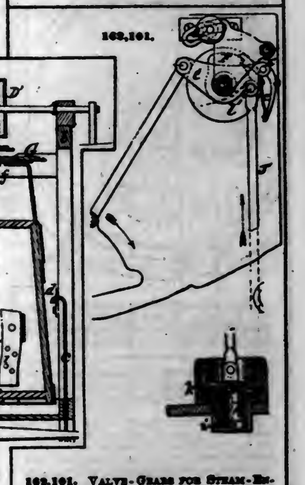


162,102.



The combination, in a radiator, of an inner casing, B, open at both ends, an outer casing, A, forming, with the inner casing, a chamber for the passage of the products of combustion, an inlet-pipe, c, and outlet-pipe d, and a series of partitions arranged between the casings, to direct the gases in a circuitous course from the inlet to the outlet, all as set forth.

162,101.



162,101. VALVE-GEARS FOR STEAM-ENGINES. Geo. H. Reynolds, New York, N. Y., assignor of one-half his right to C. E. Delamater and G. H. Robinson, same place. [Filed Mar. 4, 1875.]

Brief.—A spring-pawl is pivoted between two levers, which are actuated by the rock-shaft. The pawl operates the valve-stem, and is tripped at the proper time to cut off steam by an adjustable pin. A vacuum under the dash-pot is used instead of a weight.

1. The combination of the pair of connected levers U C, arranged loosely upon the valve-stem D, the hook E, carried by and between the pair of levers, and the cam or notched plate F, connected with the valve-stem between the levers, substantially as described, and for the purposes set forth.

2. The combination, with the hook-carrying lever or levers C, of the stud l, connected with the plunger-rod J of the dash-pot, substantially as described, whereby in case of the valve sticking it is started in its closing motion by a positive motion from the engine, as specified.

3. The dash-pot H, of different diameters, as described, and provided with an air-inlet, K, and aperture i, leading to the condenser, in combination with the plunger I, of different working diameters to correspond with the dash-pot, substantially as shown and described.

162,103. SEWING-MACHINE HEMMERS. J. W. Roberds, Richmond, Va. [Filed Jan. 20, 1875.]

Brief.—Improvement on Patent No. 158,976. An adjustable extension attachment used for hemming, or for putting on binding or trimming of different widths, either plain or raw edge.

162,103.

1. In combination with the arm A, slotted plate B, and slide C, the slotted gage D, the stationary hammer E, the adjustable hammer F, movable slide F', and set-screw b, all substantially as set forth.

2. The combination of the arm A, the slotted plate B, having holes x y, the slotted adjustable gage D, the hammer E, having test i, and the hammers G¹ H, arranged as described, whereby either of the hammers may be brought in proper position for use, all substantially as set forth.

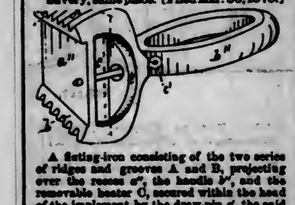
162,105. CAR-COUPLINGS. A. H. Bowley, Corning, N. Y. [Filed Feb. 13, 1875.]



1. The vertically-vibrating bifurcated uncoupler D, recessed into the floor of a draw-bar, in combination with hook J, link L, and spring-plate F, substantially as specified.

2. The vertically-vibrating bifurcated uncoupler D, to be operated by rod E e', in combination with connection f and brake-rod G, substantially as specified.

162,104. PLUTING-IRONS. Chas. C. Savery, Philadelphia, Pa., assignor to Purves & Savery, same place. [Filed Mar. 30, 1875.]



A fatting-iron consisting of the two series of ridges and grooves A and B, projecting over the recess a'', the handle b'', and the removable bezel C, secured within the head of the implement by the draw-pin c', the said parts being constructed and arranged to operate in connection with any suitably-constructed bearing-plate, for the purpose specified.

162,106. PIANO-STOOLS. S. S. Schindler, West Meriden, Conn. [Filed Dec. 16, 1874.]



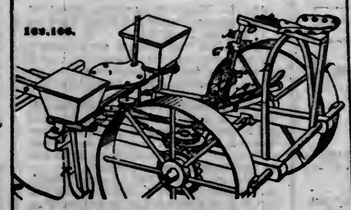
The combination of the seat C, center screw D, principal nut B, and auxiliary nut E, provided with radial projection F, substantially as and for the purpose specified.

162,108. CORN-PLANTERS. Levi Scofield, Grand Haven, Mich., assignor of one-half his right to Justin R. Wait, same place. [Filed Oct. 17, 1874.]

Brief.—Main frame and seeder-frame pivoted together. Toothed seed-disks operated by endless chain, reciprocating bar, and hand-lever. Machine convertible into a corn-drill by lengthening the chain, and connecting it to the driving-wheels by gearing, the reciprocating bar being meanwhile fixed in position. The frames are connected by a compound coupling, and the pressure of the runners regulated by a spring device. The seed-tubes and conductors allow the seed to be examined by the attendant.

1. The compound coupling for connecting the runners and their attachments to the main frame of the machine, consisting of the long eyebolts W, jointed to the runner-beam, and pivoted to the inner faces of the side bars R, after passing through the guide-loops X thereon, substantially as described, for the purpose specified.

162,106.



2. The lifting-levers Z, combined with the front seat-leg by means of an adjustable pivot-bar, to regulate the depth at which the seed shall be planted, substantially as described, for the purposes specified.

3. The spring B³, supported upon the front seat-leg by the adjustable pivot-bar of the lifting-levers, for the purpose of insuring a uniform action of the spring when the runners are set for either deep or shallow planting, substantially as described.

4. The adjustable foot-bar F', in combination with the reach-rod, substantially as described, for the purposes specified.

5. The combination of the adjustable lifting-levers and spring with the front seat-leg, the hounds, and the reach-rod, substantially as described, for the purposes specified.

6. The combination of the adjustable lifting-levers and pivot-bar, arranged to raise the runners of the machine, and the adjustable foot-bar and reach-rod, arranged to press them down upon the ground, substantially as described.

7. The arrangement of the adjustable pivoted catch G' on the seat-leg, for automatically engaging with the sliding reach-rod, to hold the runners out of contact with the ground, substantially as described.

8. The sliding bar and the endless chain, combined with the toothed seed-plates of a corn-planter, substantially as described, for the purposes specified.

9. The sliding bar, the stops S', and the endless chain, combined with the toothed seed-plates of a corn-planter, substantially as described, for the purposes specified.

10. The sliding bar, the endless chain, and the brush-plate T', combined with the toothed seed-plates and pivoted seed-conductors, substantially as described, for the purposes specified.

11. The notched brackets T', adapted for adjustment upon the sliding bar, to compensate for variations in the castings and facili tate their fitting together, substantially as described.

12. The combination of the sliding bar, the adjustable brackets, and the stops with the seed-plates, the endless chain, and the seed-conductors, substantially as described, for the purposes specified.

13. The spring cut-off, consisting of the bar D' and plate d', screwed or bolted together within the hopper, with the pivoted spring-plate f' between them, the bar D' being formed with an enlarged center, a flat arm, b', and a curved arm, g', and the plate d' being formed with an inverted cup to receive the spring of the plate f', substantially as described, for the purpose specified.

14. The metal plates F' and X', constructed and arranged together so as to form openings on opposite sides under the bottom plate of the hopper for the passage of the chain, substantially as specified.

15. The open-backed seed-tube R, formed by the upper chocks, the runners, and the back plates, substantially as described, for the purpose specified.

16. The back plates F', constructed with the curved side wings D', substantially as described, for the purpose specified.

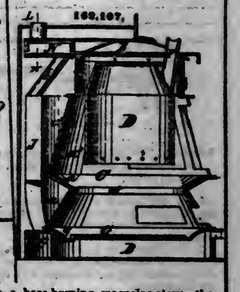
17. The planetary seed-selector constructed with the double parallel channels and the lower compartments or holding-chambers g', substantially as described, for the purposes specified.

18. The seed-conductor combined with the seed-tube and its side wings, to form the open lower drop, substantially as described, for the purpose specified.

162,107. MAGAZINE FIRE-PLACE STOVES. Samuel B. Sexton, Baltimore, Md. [Filed Jan. 16, 1875.]

Brief.—The surrounding flange forms a portion of the fuel-bearing surface.

162,107.

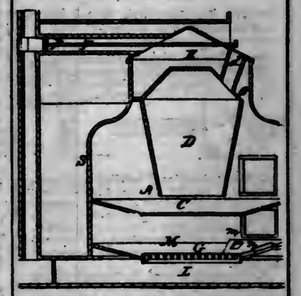


1. In a base-burning magazine-stove, the combination of the horizontally-contracted walls a a', the magazine D, the grate G, the surrounding flange g, and the two rows of illuminating-windows, one above and one below the contracted part of the wall, substantially as and for the purposes specified.

2. In a fire-place heater, the combination of the hinged doors c c with the top E and surrounding face-plate K, said doors being arranged to shut over and close the angular spaces between the plate r', the top, and the face-plate, substantially as and for the purpose specified.

162,109. MAGAZINE FIRE-PLACE STOVES. Samuel B. Sexton, Baltimore, Md. [Filed Dec. 3, 1874.]

Brief.—The coals spread out both upon the plate which surrounds the grate and upon the overhanging plate.



1. The grate G and flat or slightly-inclined surrounding flange M, combined with the overhanging flange C and double row of windows W W', substantially as described, for the purposes specified.

2. In a base-burning stove, the combination of the suspended magazine D, the flat or dishing surface G M, which mainly supports the weight of the burning coals, and allows them to spread out nearly or quite to the walls of the stove, the dishing-flange C, projecting inward from the walls of the stove slightly below the level of the lower end of the magazine, for the purpose of supporting the weight of a portion of the coals at the upper part of the incandescent mass, and allowing them to spread out at that point nearly or quite to the walls of the stove, and the double row of illuminating-windows, one above and the other below the flange C, substantially as and for the purposes described.

162,109. HAT-HOLDERS FOR SEATS. Chas. Shaw and B. Yeager, Henry, Ill. [Filed Mar. 15, 1875.]

1. A hat-holder made of wire, and arranged under a seat, to be thrown out and in as required, and held in each position by the spring of the wire, substantially as herein set forth.

2. The wire hat-holder E, formed with arms a a, having its ends b bent at right angles and inserted in the plates D D, attached to the vertical rod C, under a seat, all substantially as and for the purposes herein set forth.



162,109.

162,110. TOY GUNS. Saml. J. Shaw and H. Eugene Smith, Marlborough, Mass. [Filed Mar. 9, 1875.]

1. In combination with a toy pistol or gun, the game-target *c* attached to the weapon and arranged to fall or be hit as every shot, substantially as described.

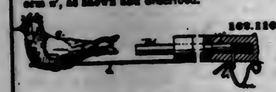
2. The detachable game-target *c*, in combination with the weapon, constructed substantially as described, and provided with the supporting-arms *b*.

3. In combination with the toy weapon described, the hollow arm *b'*, and the extension-arm *f*, substantially as and for the purpose set forth.

4. The combination of the hollow arm *b'*, the coiled spring, and the extension-arm *f*, with the sleeve *d* and the trigger *m*, as shown.

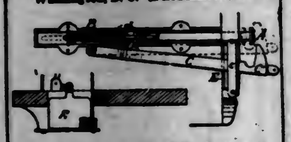
5. The combination of the game-target, provided with the heel arm *n'*, with the muzzle of the gun, having the slot *o*, for supporting the game in an upright position, as described.

6. In combination with a toy gun or pistol, the game-target *c*, provided with the extended arm *n'*, as shown and described.



162,110.

162,111. CAR-COUPLINGS. Wm. G. Smoot, Washington, D. C. [Filed Mar. 23, 1875.]



1. The combination of a sliding bumper, A, operated by a spring, B, with a coupling-stem, C, pivoted to the bottom of the car, substantially as and for the purpose set forth.

2. The combination of the coupling-stem C, pivoted at *a*, with the vertically-sliding lock-plate E, substantially as and for the purpose set forth.

3. The combination of the vertically-sliding lock-plate E with the bent lever F and the coupling-stem, substantially as and for the purpose set forth.

4. The combination of the sliding bumper, operated by the spring B, and having the downward-projecting arms *a a*, with the coupling-stem C pivoted at *a*, and the vertically-sliding lock-plate E, operated by the bent lever F, all to operate substantially as and for the purpose set forth.

162,112. WASHING-MACHINES. Jacob W. Spangler and Benjamin F. Reich, York, Pa. [Filed Dec. 19, 1874.]

Brief.—Two wash-boards are pivoted to hinged levers, one of them being connected to a rubber cushion by bolts and nuts at the side of the tub, and the other operated by a lever.

1. The combination, with the wash-board D, the hinged levers G, provided with fulcrums *h*, the stationary recessed plates H, rubber springs I, bolts *d*, and nuts *f*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

2. The combination, with the wash-board C, of the bifurcated lever E, support J, and end bars K K with caps *h h*, all substantially as and for the purposes herein set forth.

162,113. GROSS-PIECES FOR COOKING-STOVES. Watson Stout, Philadelphia, Pa. [Filed Mar. 20, 1875.]

Brief.—Air circulates through the slotted tube.



1. The hollow slotted shield B, open at its ends, and secured to the bottom of the slotted bridge A, substantially as described.

2. The shield B, slotted at *c c* and recessed at *f f*, in combination with the screws *d d* and nuts *e e*, and the bridge A, substantially as described.

162,114. MATCHING-CUTTERS. A. Strutt, Cincinnati, Ohio, assignor to J. A. Fay & Co., same place. [Filed Nov. 12, 1874.]

Brief.—For reducing the number of bits usually accompanying a planing-machine, the bit is formed of a single piece of steel, provided with a tonguing-cutter at one end, and a grooving-cutter at the other, and grooves running throughout its mid-length only. The entire bit is of no greater length than the ordinary single-edged bit.



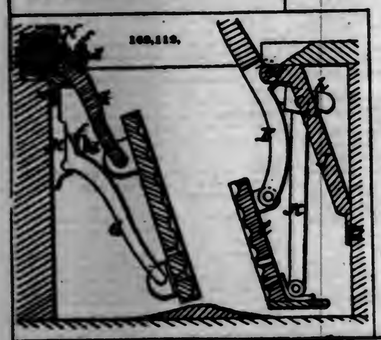
A cutting-bit, having cutting-edges at both ends, and grooves extending from the opposite ends to the middle of the bit, substantially as and for the purpose specified.

162,115. GANG-PLOWS. J. A. Sutherland, Elmwood, Ill. [Filed Dec. 5, 1874.]

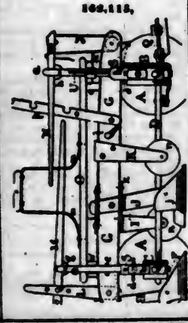
Brief.—The plow-frame is vertically adjustable, and is supported upon four wheels, the axle-tree of the forward pair being longer than the hind one. The wheels are all vertically adjustable.

1. In a four-wheel gang-plow the axle-trees B C, having standards *a*, provided with pins *d*, in combination with bolsters T *w* and adjustable plow-frame G, constructed to operate substantially as and for the purpose set forth.

2. The combination of the adjustable plow-frame G, carrying the plows J J, and coulters I K, seat-frame O, bolsters T *w*, bolt-rods E F, springs *f f*, standards *a a*, pins *d*, and axle-trees B C, substantially as and for the purposes set forth.



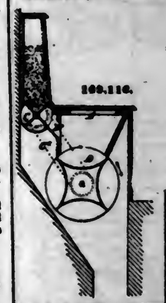
162,115.



162,116. EARTH-CLOSETS. Millington H. Synge, United Service Club, Pall Mall, England. [Filed Apr. 9, 1873.]

Brief.—In connection with a measuring-instrument for supplying a deodorant, a series of intercepting pans applied to a closet, and capable of receiving an intermittent axial motion, by means of which empty pans are brought in succession into position, and when filled are caused to discharge their contents into a receptacle below.

The combination of the rotating pans with the measuring instrument for supplying the charcoal or other deodorant to the pans, as the same are brought up into position for use, substantially as specified.



162,116.



162,117.

162,117. BOTTLES. Thomas W. Synnott, Wenonah, N. J. [Filed Mar. 20, 1875.]

The pear-cut B, formed on the inner face of the collar portion of the neck of the bottle, and extending from near the upper outer edge *c* of the collar to the inner face *b* of the neck, thus leaving unbroken both the upper edge *a* and the outer periphery of the collar, substantially as and for the purpose set forth.

162,118. FLOUR AND SUGAR PACKERS. S. Taggart, Indianapolis, Ind. [Filed Mar. 24, 1875.]

1. The combination, with the barrel-support, of the double spur-sector C, the racks *r r'*, the vertical slide D, the cam-lever E, or its equivalent, arranged and operating substantially as described, for raising, supporting, and lowering a sliding barrel-lifter, in the manner set forth.

3. The rubber-gasket *t*, applied to the abutment-flange *u* of the barrel tube or funnel, and held in a groove, so as not to be accidentally displaced, substantially as herein described, for forming a tight or complete joint at the top of the barrel during the packing operation.

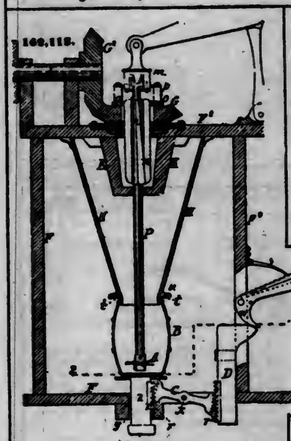
3. A packing-auger, constructed in two sections, each having a blade and an attaching hub or collar, with shoulders *q* complete in themselves for locking the sections together on the packing-shaft, substantially as herein illustrated and described, for the purpose set forth.

4. The combined support and shield or case K, constructed and operating in combination with the packing-shaft P, and its winged clutch section *a*, substantially as described, to form an inclosed bearing for the latter, and to exclude floating flour from the bearing of its driving-wheel.

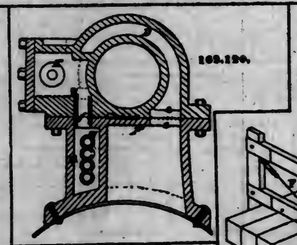
5. The swinging fulcrum-post Q, having a pivot at each end, in combination with the walking-beam M, packing-shaft P, and brake-rod R, for permitting the former to yield horizontally, so as to avoid binding or undue friction between the packing-shaft and the weighing or pressure-controlling brake in the manner set forth.



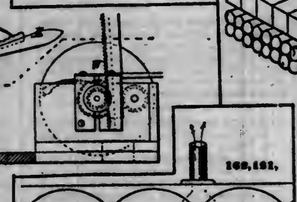




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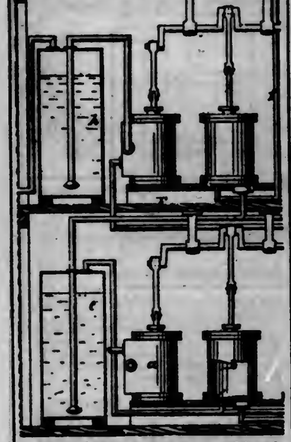


162,120.



162,121.

162,119. APPARATUS FOR PRESERVING MEAT, FISH, AND VEGETABLES. Augustus H. Tait, Jersey City, N. J. [Filed Nov. 13, 1874.]



An apparatus for preserving meat, fish, and vegetables, composed of one or more air-pumps, *b b'*, tanks *c c'*, each containing a quantity of salt water, one or more expansion air-cylinders, *d d'*, air-pumps *e e'*, and drums *h h'*, each containing crude pyroligneous acid, the air escaping from these drums being passed through the provision-chambers O O, all combined and operating substantially in the manner and for the purpose herein shown and described.

162,120. STEAM-ENGINE CYLINDERS. Jos. R. Taylor, Westminster, Md., assignor to the Taylor Manufacturing Company, same place. [Filed Mar. 12, 1875.]

Brief.—The top of the dome and bottom of the cylinder are covered with plates having corresponding apertures, which diminish the strain on the bolts.

The steam-dome A, having a top, F, provided with an opening, *e*, in combination with a steam-jacketed cylinder, having a bottom plate, *d*, and a corresponding opening, *c*, substantially as and for the purpose described.

162,121. PLATENS FOR LEVER AND TOGGLE PRESSES. John F. Taylor, Charleston, S. C. [Filed Feb. 24, 1875.]

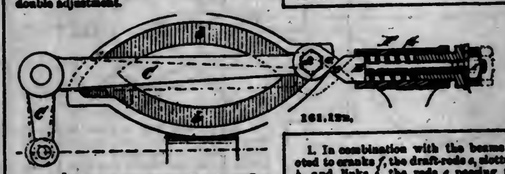
Brief.—The stationary platen is made adjustable by being composed of two parts, the fixed part containing cylinders and water-ways, and the adjustable part carrying rams.

1. In a progressive-lever or toggle-arm press, one of the platens composed of two parts, one part having cylinders and water-ways, the other part having rams or plungers, with suitable packing.

2. The herein-described method of regulating the space between the platens of lever or toggle-arm presses, by forcing water in or letting the same out from between the stationary and movable parts of a compound platen, substantially in the manner and for the purpose described.

162,122. STEAM-PUMPS. John Tennyman, Dayton, Ohio, assignor to P. Smith. [Filed Nov. 9, 1874.]

Brief.—The cam, near the termination of the stroke, brings the end of the lever against the end of the plunger, and forces it just past the center. The retraction of the spring moves the lever and its valve sufficiently to partially open the steam-port for the return stroke, and enable the cam to return and carry the stud in the opposite groove. The spring has a double adjustment.



162,122.

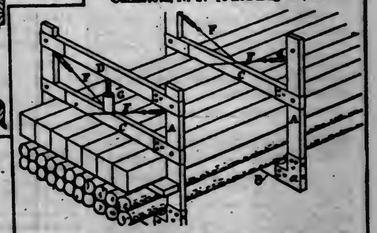
1. The combination of cam *D b*, lever O *c*, plunger E *e*, and spring G, substantially as and for the purpose specified.

2. In combination with the plunger E *e*, valve-moving lever O *c*, and fixed support F, the adjustable head *f*, adjustable nut *l*, and spring G, operating substantially as and for the purpose specified.

162,123. COMPOUNDS FOR FIRE-BRICKS. Hugh M. Thompson, St. Louis, Mo. [Filed Sept. 1, 1874.]

The combination of tripoli with either fire-clay, or plumbago, or steatite, or asbestus, or coke, or all of said-named ingredients, substantially as and for the purposes set forth.

162,124. RAFTING-CRIBS. Chas. W. Tobey, Canastota, N. Y. [Filed Aug. 20, 1874.]



1. A raft-crib having an under beam, B, and upright posts A, and adjustable beam C, substantially as and for the purposes described.

2. In combination with the raft-crib A B C, the adjustable brace-beam D, substantially as and for the purposes described.

162,125. COTTON-GIN RIBS. Brannon R. Trammell, Clough's Store, Ala. [Filed Nov. 21, 1874.]

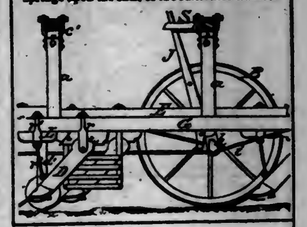
Brief.—The plates, which are attached to the wearing-surface of the ribs, fit in recesses on the face of the ribs, and have side flanges turned downwardly into spaces formed on the sides of the ribs.



The combination of the rib A, having top set-off *a* and side grooves *a' a'*, and the detachable metallic plate B, having the downward-projecting ears *b b*, all substantially as set forth.

162,126. SULKY-PLOWS. Lorenzo W. Free, Talladega, Ala. [Filed Feb. 27, 1875.]

Brief.—Draft and lifting devices; also springs upon the ends of the cultivator-frames.



162,122.

162,123. COMPOUNDS FOR FIRE-BRICKS. Hugh M. Thompson, St. Louis, Mo. [Filed Sept. 1, 1874.]

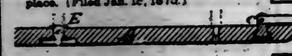
1. In combination with the beams E, pivoted to cranks *f*, the draft-rods *o*, slotted arms *h*, and links *i*, the rods *o* passing through slotted standards *S* of caster-wheels *d*, substantially as described.

2. Plow-standards D, having rounded ends *a*, secured to their beams by means of studded blocks *p l*, clips *p r'*, and rods *r'*, substantially as described.

3. Springs *g*, applied to the ends of plow-beams E, as and for the purpose described.

4. The levers J, having lifters *l l'* on their lower ends, and connected to arms *n* on cranks *f*, in combination with the plow-beams E, pivoted to said cranks, substantially as described.

162,127. SEWING-MACHINE COVERS. Ruel W. Whitney, Cleveland, Ohio, assignor to Wilson Sewing-Machine Company, same place. [Filed Jan. 12, 1875.]



1. The cover of a sewing-machine table, secured thereto by hinges C D C D, inserted through said table and attached to the cover, substantially as shown and described.

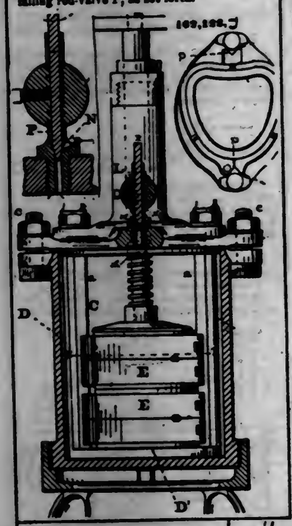
2. The combination of cover B, table A, and a hinge composed of stud C and bar D, substantially as described.

162,128. DENTAL POTS. Charles A. White, Philadelphia, Pa. [Filed Dec. 21, 1874.]

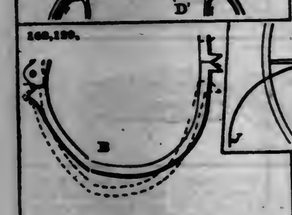
1. The flask-carrying frame C, suspended from the top plate of the dental pot by means of the nuts B', substantially as and for the purpose set forth.

2. The combination, with a dental pot, of the flask-carrying frame C, having its side bars D formed with tongues or grooves a, for engagement with the flask, substantially in the manner and for the purpose set forth.

3. The combination, with a dental pot, of the safety-valve L, constructed of the stem M, formed with a vertical opening, M', with lateral extension N, and automatically rising and falling rod-valve P, as set forth.



162,129.



162,129. DENTAL FLASKS. Chas. A. White, Philadelphia, Pa. [Filed Mar. 18, 1875.]

1. The combination, with a dental flask, A, of the jointed or hinged walls B B, substantially as and for the purpose set forth.

2. The lock D, in combination with the jointed parts B B, formed with projecting pieces O C, substantially as and for the purpose set forth.

3. The removable overflow-frame F, in combination with a dental flask, substantially as and for the purpose set forth.

162,127.

162,130. SPICE-BOXES. Wm. A. Wicks, Baltimore, Md. [Filed Feb. 20, 1875.]



162,130.

The perforated top B, having the finger-ridges c, and its sides turned down between the cut points b, as shown, in combination with the perforated box-top A, having the slots a, admitting of the entrance and sliding movement of the turned-down parts of the top B, substantially as specified.

162,131. PORTABLE COMMODES. Isaac S. Williams, Philadelphia, Pa. [Filed Mar. 11, 1875.]

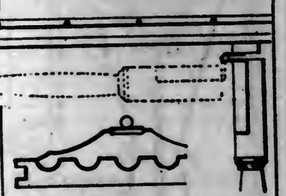
Brief.—A commode which can be readily folded into a small compass. There is a supporting-frame, which consists of three legs, to each of which an arm is secured by hinges. The top is made in two parts, hinged together on the under side. There are three holes for receiving the upper ends of the three legs.



The combination of the supporting-frame, consisting of the legs A and arms B, hinged together as described, with the top D, made in two parts, hinged together, as specified.

162,132. IRONING-TABLES. Eli J. Wolfrom, Washingtonville, Ohio, assignor to himself and Marie E. Whiteside, Marengo, Ill. [Filed Dec. 16, 1874.]

Brief.—On the edge of the board are grooves, over which the ironing cloth or blanket is spread, and strips of wood are placed in the grooves, which are held by an elastic band.

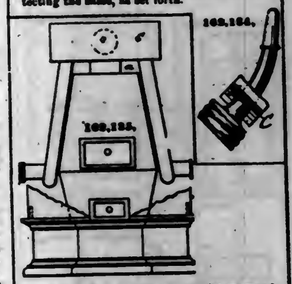


162,132.

In an ironing-board having grooved edges, the combination, with the accompanying elastic band, of solid non-compressible border strips, for the purpose of affording greater frictional resistance for securing the cover, and to prevent the wrinkling of the same, substantially as described.

162,134. OIL-CANS. Abiel Wood, Brooklyn, N. Y. [Filed Jan. 4, 1875.]

An oil-can provided with a removable spout and a rigid handle, C, the body of which is constructed with an opening, *d*, substantially as described, whereby the said spout can be removed from its nipple and inserted into the opening in said handle, for retaining and protecting the same, as set forth.



162,134.

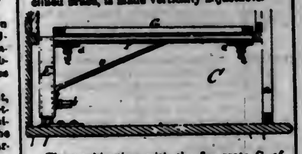
162,135. HEATING-FURNACES. W. R. Wood, Baltimore, Md. [Filed Feb. 20, 1875.]

Brief.—The products reach one apartment of the circular chamber through the central pipe, and, entering the return draft-pipes from the same apartment, are conducted into and through the other apartment.

In a portable or stationary heating-furnace, the drum C, divided by the partition *b* into two compartments, as shown, in combination with the return draft pipe or pipes, substantially as specified.

162,136. GRATES FOR STOVES. J. Young, Brooklyn, N. Y. [Filed Apr 2, 1875.]

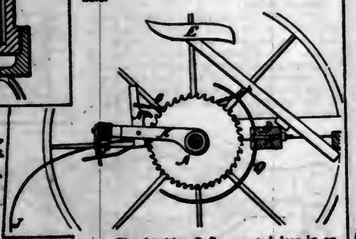
Brief.—But a single support is used, and on this the tilting grate, supported by the inclined brace, is made vertically adjustable.



The combination, with the fire-grate C, of a single standard, D, sleeve or slide E, supporting-rod F, brace *c*, and set-screw *b*, substantially as and for the purpose above and described.

162,139. HORSE HAY-RAKES. J. B. Wismer, Friendship, N. Y. [Filed Aug. 1, 1874.]

Brief.—A ratchet-wheel is attached centrally on a rake-head axle, and shielded by a concentric guard, which serves also for an adjustable stop or dumping-tappet, the teeth being raised by locking them with the revolving axle.



1. The thimbles S S, mounted loosely on the axle, and provided with the grooved U-shaped ribs T, having legs V V, in combination with the rake-teeth J and bolts U, substantially as described, and for the purpose set forth.

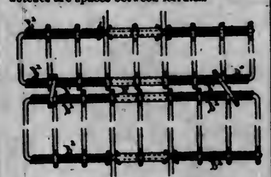
2. The combination of a hooked detent, connected to the lifting-bar, with the ratchet-wheel on the revolving rake-axle, and the adjustable tripping device on the frame of the rake, substantially as described, for the purpose specified.

3. The curved plate Q, adapted to form a guard for the ratchet-wheel, and an adjustable trip for the lifting device, substantially as described.

REISSUES.

6,271. WIRE TOASTERS OR BROILERS. Saml. Ayres and H. J. Chamberlin, Worcester, assignors, by mesne assignments, to E. F. Woods, D. Sherwood, and C. H. Latham, Lowell, Mass. Patent No. 44,500, dated Oct. 11, 1864. [Filed Mar. 31, 1875.]

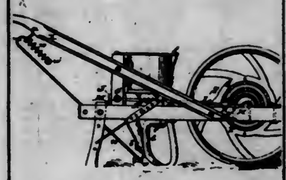
Brief.—The shouldered depressions or notches are spaces between ferrules.



The broiler ends B', having shouldered depressions, with which the bars A are combined, and secured in position, substantially as described.

6,272. CORN-PLANTERS. James Campbell, for himself, and James A. Campbell, Harrison, Ohio, administrator of Wm. Campbell, deceased, (assignee of one-half interest.) Patent No. 133,190, dated Nov. 19, 1872. [Filed July 16, 1874.]

Brief.—Pilot marking-wheel, shield-brace upon furrow-tooth, spring pull-rod, adjusting-nut, and hand-strap for operating hiller-valve. Floating wire for guiding loose grain back into the seed-box.



1. In a corn-drill, mounted upon and guided by a front driving pilot-wheel, the shield-brace E, with its hook F rigidly secured to the furrow-tooth, and the frame of the planter between the tread of the driving-wheel and the seed-tooth, as and for the purpose described.

2. The furrowing-tooth A, with forwardly-projecting head or lip A', and constructed with a continuous transverse curvature, as herein described, to render the head elastic, and to improve its hold, and to strengthen the angle of the tooth, as set forth.

3. The shield and brace E, constructed with the hook F and screw-shank G, and the collar or shoe H and nut I, in combination with the furrowing-tooth A, as herein shown and described, for stiffening and bracing the same, as set forth.

4. The direct pull-rod W, spring *w*, adjusting-nut *w'*, and hand-strap Y, combined and arranged, as set forth, for operating the hiller-valve B'.

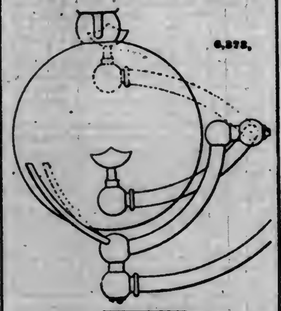
5. In combination with the seed-box, the floating wire T, for reconducting grain into the box, substantially as herein set forth.

6,273. LENS ATTACHMENTS FOR GAS-BURNERS. Montgomery C. Meigs, Washington, D. C. Patent No. 150,190, dated Jan. 26, 1875. [Filed Mar. 11, 1875.]

Brief.—By means of the lens and adjustable burner the light can be concentrated at various points, as desired.

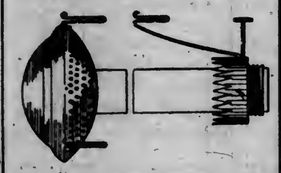
1. The combination of a supplementary bracket, adapted to be mounted on an ordinary gas-burner, gas-branch, or gas-pipe, a glass lens-shaped bottle mounted on the supplementary bracket, and adapted to contain transparent liquid, and a burner also mounted on said bracket, these members being constructed and operating substantially as set forth.

2. The supplementary bracket, provided with a coupling adapted to fit on an ordinary gas-burner, gas-branch, or gas-pipe, a support for a dioptric lens, and a burner, adjustable both vertically and horizontally, combined, substantially as and for the purpose set forth.



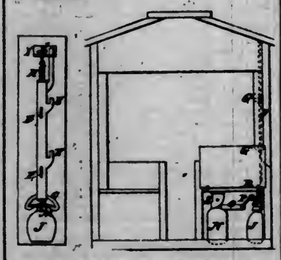
6,273.

6,274. LAMPS. Samuel C. Moore, Boston, Mass., assignor, by mesne assignments, to the Benedict & Burnham Manufacturing Company, Waterbury, Conn. Patent No. 83,674, dated Nov. 10, 1868. [Filed Aug. 28, 1873.]



The connected air-distributing plate and cap, or deflector, and the chimney-rests or supports forming rests for the lower edge of the chimney below the air-distributing plate, in combination with an elastic device for supporting the chimney laterally at or near the periphery of the connected deflector and air-distributing plate, substantially as specified.

6,275. SAFETY PASSENGER-CARS. James T. Worley, Cleveland, Ohio. Patent No. 122,206, dated Dec. 26, 1871; reissue No. 6,020, dated Aug. 18, 1874. [Filed Mar. 23, 1875.]



1. In combination with a railroad-car, mechanism to open the doors or windows therein automatically, when the car is thrown out of its proper position, for the purpose specified.

2. In combination with a railroad-car, mechanism to open the doors or windows therein automatically upon the upper side of the car, when the latter is thrown or tipped over, for the purpose specified.

3. In combination with a railroad-car a weight adapted to open the doors or windows automatically, when the car is thrown out of its proper position, for the purpose specified.

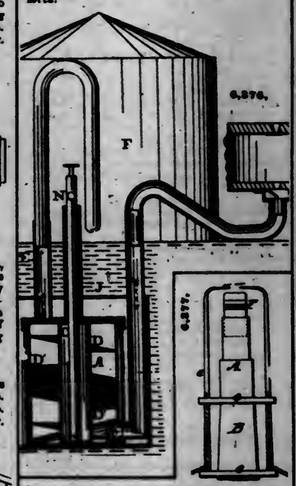
6,276. CARBURETING APPARATUS. E. J. Fraser, San Francisco, Cal., assignor to S. A. Stevens, Philadelphia, Pa. Patent No. 67,971, dated Aug. 20, 1867. [Filed Mar. 11, 1875.]

Brief.—The carbureter-tank is placed within a larger tank under ground. A cylinder for warm water extends vertically through the center of the carbureter. Spiral passages provided with transverse curtains of wire-gauze pass around the water-cylinder.

1. The vessels A and B, the water-cylinder C, the plate-coil D, and the retarding-curtains D', constructed and combined substantially as shown and described, for the purposes set forth.

2. In combination with the vessels A and B, water-cylinder C, plate-coil D, and retarding-curtains D', the air-pipe G, substantially as and for the purposes described.

3. The combination of an air-forcing apparatus, an air-pipe, a carbureting-vessel, and a delivery-pipe, said air-forcing apparatus and said carbureting-vessel being separated by impervious material, through which said air-pipe, to connect the last-mentioned two parts, is passed, said carbureting-vessel being located by itself in a vault under ground, outside the place of delivery of the carbureted air, said delivery-pipe being passed from said carbureting-vessel through the ground to the place of delivery of the carbureted air, in the manner and for the purposes substantially as set forth.



6,276.

6,276.

6,277. LIGHTING GAS BY ELECTRICITY. S. Gardiner, Jr., Washington, D. C. Patent No. 45,241, dated Nov. 29, 1864. [Filed Feb. 23, 1875.]

Brief.—For insulating the platinum coil and the conducting-wires.

1. A tip of lava or other non-conducting material, in combination with an apparatus for lighting gas by electricity.

2. In apparatus for lighting gas by electricity, a non-conducting pillar-burner, whereby the conducting-wires are isolated from the gas-fixtures.

3. The combination, in a burner for lighting gas by electricity, of a non-conducting burner-pillar, B, with a lava tip, F, substantially as and for the purpose set forth.

4. The combination, in apparatus for lighting gas by electricity, of the lava tip with the conducting-wires *e e* and their supporting-insulators *c c*, substantially as described.

5. The combination, in a burner for lighting gas by electricity, of a lava tip with a platinum coil and a metal pillar, substantially as and for the purpose herein set forth.

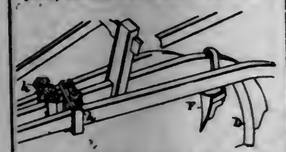
6. The combination, in a burner for lighting gas by electricity, of a non-conducting pillar, B, with a lava tip, D, and an intervening metallic pillar or nipple, A, substantially as and for the purpose herein set forth.

6,378. REFINING SUGARS. F. O. Matthiessen, New York, N. Y. Patent No. 160,926, dated Mar. 16, 1875. [Filed Apr. 8, 1875.]

The improved process of refining sugar herein described, which consists, in addition to the ordinary boiling of the clarified sugar liquor in the vacuum-pan, in dividing the hot sirup and crystallized sugar discharged from the vacuum-pan into small masses or thin layers, and subjecting such small masses or thin layers to a process of gentle evaporation in ovens, prolonged until sufficient water has been expelled from the material operated upon to convert it into a granular mass, as set forth.

6,379. CULTIVATORS. Reuben M. Melton, Criglersville, Va. Patent No. 24,227, dated May 31, 1859; reissue No. 4,876, dated Apr. 16, 1872; extended seven years. [Filed Jan. 4, 1875.]

Brief.—The beams are adjustable laterally by means of links, and by slides keyed to the beams, which are curved and receive adjustable plows. A colter of novel form is attached to the center beam, and serves to steady the plows, and hold them to their work.



1. The adjustable links A and adjustable slides *c*, constructed substantially as described, and arranged to operate with, and for the purpose of adjusting the distance between, the plow-beams, as set forth.

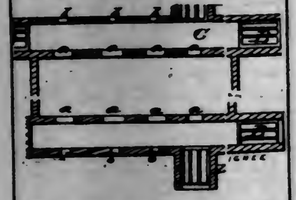
2. The shovels F, freely adjustable to any point up or down on the curved beams, so as to run deep or shallow or at different depths, as set forth.

3. The colter attachment D, constructed substantially as described, and adjustable up or down the curved beams, for the purpose specified.

4. The colter attachment D and shovels F, operating in combination with the curved beams, substantially as and for the purpose specified.

6,380. BRICK-KILNS. Stephen D. Rader, Williamsport, assignor, by mesne assignments, to H. V. Winegard, Philadelphia, Pa. Patent No. 66,943, dated June 18, 1867. [Filed Mar. 27, 1875.]

Brief.—The combustion-chamber is outside of the body of the kiln, and separated therefrom by a wall provided with passages.



1. The combination, with the kiln A, of the furnace B and the air-combustion chamber C, arranged substantially as specified.

2. A combustion-chamber, C, provided with passages *c*, leading into the burning-chamber of the kiln, in combination with a furnace, substantially as described.

3. A combustion-chamber, C, provided with air inlets and passages *c*, in combination with a furnace, substantially as described.

6,381. MOWING-MACHINES. John P. Manny, Rockford, Ill. Patent No. 18,510, dated Oct. 27, 1857; extended seven years. [Filed Apr. 7, 1875.]

Brief.—Devices for simultaneously lifting both ends of the finger-bar.

1. The combination, in a harvester, of a carrying-frame, a cutter-bar flexibly connected therewith through the medium of a supplementary frame arranged below such carrying-frame, and vertically adjustable relatively thereto, and a lever mounted upon or supported by such cutter-bar, the combination being constructed to operate substantially as described, so that the driver from his seat may raise and lower the cutters at will while the machine is in motion.

2. The combination, in a harvester, of a carrying-frame, a supplementary frame vertically adjustable relatively thereto, and supported therefrom by flexible connections, a cutter-bar hinged to such supplementary frame, and a lever mounted upon or supported by the cutter-bar, the combination being constructed to operate substantially as described, so that the driver from his seat can raise and lower the cutters at will while the machine is in motion, and so that the cutters will rise and fall automatically in passing obstructions.

3. The combination, in a harvester, of a grain-wheel, an adjustable support for such wheel, having free vertical movement relatively to the cutter-bar, and lifting devices located near the driver's seat, and connected, by flexible connections at the divider end of the cutter-bar, with the grain-wheel support, substantially as described, so that the driver may thereby raise and lower the outer end of the cutter-bar while the machine is in motion.

4. The combination, substantially as described, of a grain-wheel, a lever for supporting such wheel, pivoted forward of the line of the cutter-bar, and a rod, cord, or chain passing in rear of the cutters, and connected with a lever near the driver's seat, so that the driver can regulate the outer end of the cutters while the machine is in motion.

6,382.



6,382. HARVESTERS. John P. Manny, Rockford, Ill. Patent No. 17,796, dated July 14, 1857; reissue No. 3,561, dated Aug. 3, 1869. [Filed Mar. 18, 1875.]

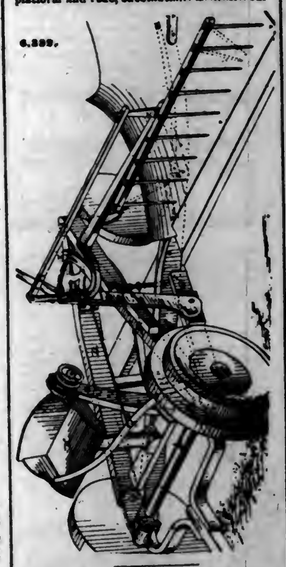
1. The combination, in a combined reaper and mower, of two main wheels, a carrying-frame, a finger-beam projecting laterally at the side of the carrying-frame and the path of the main wheels, a hinge-connection between the finger-beam and the carrying-frame, for the purpose hereinbefore described, a grain-platform attached to the finger-beam, a rake moving over the platform in a curved path, and a cam-guide for regulating the movements of the rake, such cam-guide and rake vibrating in unison with the vertical movements of the finger-beam and platform, so as to preserve the relative adjustment of the rake and platform, substantially as and for the purpose described.

2. The combination, in a combined reaper and mower, of two main wheels, a carrying-frame, a finger-beam projecting laterally at the side of the carrying-frame and the path of the main wheels, a hinge-connection between the finger-beam and the carrying-frame, for the purposes hereinbefore described, a grain-platform attached to the finger-beam, a rake moving over such platform in a curved path, and conforming automatically to the vertical movements of the same, and a lever pivoted on the carrying-frame, by means of which the driver may at will change the height of the finger-beam and its connected parts, in either mowing or reaping, from his seat, and without stopping the machine, substantially as and for the purposes described.

3. The combination, in a harvester, of a carrying-frame, a finger-beam vertically adjustable relatively thereto while the machine is in motion, a grain-platform attached to such finger-beam, and a sweep-rake moving over such platform in a curved path, and conforming automatically to its different elevations, the combination being and operating substantially as set forth.

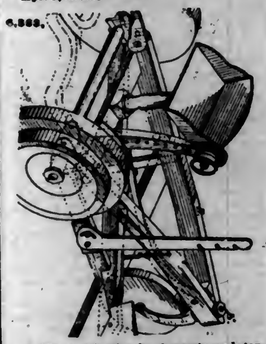
4. The combination, in a harvester, of a carrying-frame, a finger-beam and platform connected with the carrying-frame by a hinge-connection, mechanism for suspending the finger-beam from the carrying-frame at different heights, a rake moving over the platform in a curved path, and a cam-guide for regulating the movements of the rake, such cam-guide and rake vibrating in unison with the vertical movement of the finger-beam and platform, so as to preserve the relative adjustment of the platform and rake, substantially as described.

6,383.



6,383. HARVESTERS. John P. Manny, Rockford, Ill. Patent No. 17,779, dated July 14, 1857; reissue No. 3,526, dated June 29, 1869; extended seven years. [Filed Apr. 9, 1875.]

6,383.



1. The combination, in a harvester, substantially as and for the purpose described, of two main wheels mounted upon the main axle, a main frame carrying the driver's seat and supporting the finger-beam when raised from the ground, a finger-beam projecting laterally at the side of the carrying-frame, and the path of the main wheels, a platform and reel-supports connected with such finger-beam and partaking of its vertical movements, and a hinge-connection between the finger-beam and the carrying-frame, whereby the finger-beam and its connected parts may be lifted to and held at any desired height in reaping.

2. The combination, substantially as set forth, in a two-wheeled harvester, of a laterally-projecting finger-beam vibrating about the main axle, with reel-supports and a platform, both vibrating in unison with the finger-beam.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 16. TUESDAY, APRIL 20, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, DISTRICT OF MASSACHUSETTS.

CHANDLER NEEDHAM *vs.* NATHAN WASHBURN *et al.*

[*In equity.—Before* CLIFFORD *and* LOWELL, *J. J.—Decided October* 1874.]

Patents granted by the Commissioner pursuant to the provisions of the statute relating thereto offered a *prima facie* presumption, when introduced in evidence, that the patentee is the original and first inventor of what is therein described as his invention or discovery.

Whether, in a suit brought against the respondents *as copartners* but in which the proofs fail to show a partnership, but do show that the respondents with others were organized into a corporation, with the same name as the alleged copartnership, it would be competent for the court to enter a decree against the *corporation, quære.*

In such case the court will not delay the hearing of the cause; since the defect, if it be one, may be cured by an amendment.

Car-wheels having been made by placing a heated tire of cast-steel in a mold, and then pouring in molten cast-iron *at the center of the mold*, thus producing a weld or union between the iron and the steel, it did not require invention, and was not patentable to introduce the molten iron through openings or "sprues" *just inside the heated rim or tire.*

Nor can it make any difference that a *series* of such openings or holes are used, instead of a *single* opening.

It being a matter of common knowledge among mechanics that iron, or iron and steel, may be successfully welded without flux, there is no invention in simply omitting, in the casting of car-wheels, the flux previously used between the steel tire and the molten iron which forms the body of the wheel.

Much reason exists for holding that the second feature in the claim of the patent, which is for "The process or mode above described for making a combined cast-steel and cast-iron car-wheel, whereby the cast-iron is introduced through a series of holes into the mold directly upon the inner *unfluxed* surface of the cast-steel tire, and a perfect union and weld of the metals are produced" is invalid, because not embraced in the description, in the body of the specification, of the method used by the complainant.

The patent in question pronounced invalid.

[*James B. Robb*, for complainant.
A. K. P. Joy, for defendants.]

Opinion of the Court by Mr. Justice CLIFFORD.

Letters patent may be granted for the invention or discovery of any new and useful art, machine, manufacture, or composition of matter, or of any new and useful improvement of the same, upon the conditions specified in the patent act. Unless the thing claimed as the invention is new and useful, the claim is wholly without merit, as that is the primary and indispensable condition annexed to the right to claim the protection which the patent act is intended to secure. Application in writing must be made to the Commissioner, and the requirement is that the applicant shall file in the Patent Office a written description of the invention or discovery, and of the manner and process of making, constructing, compounding, and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same. (16 Stats. at Large, 201.)

Patents granted by the Commissioner, in pursuance of those conditions, afford a *prima facie* presumption when introduced in evidence that the patentee is the original and first inventor of what is therein described as his invention or discovery. Such a presumption, however, may be controlled by evidence of a prior knowledge or use by others in this country, or that the invention or discovery had been described in any printed publication, before his invention or discovery thereof, in this or any foreign country; or that it had been in public use or on sale for more than two years prior to his application for a patent.

Damages are claimed by the complainant for an alleged infringement by the respondents of certain letters patent granted to him, in which it is represented that he is the original and first inventor of a certain new and useful improvement in casting car-wheels, as more fully described in the specification of the letters patent. Process was served, and the four persons named as respondents in the bill of complaint appeared and filed separate answers. They are described in the bill of complaint as copartners, under the name of the N.

Washburn Steel Tire Works, and the charge is, that the respondents, without consent, and in violation of the complainant's exclusive rights, have made, sold, and used a large number of said patented car-wheels, in infringement of the exclusive rights secured to the complainant by said letters patent. Appearance was entered by each of the respondents, and they severally set up the following defenses:

1. That they are not, and never were, copartners doing business at Worcester, as alleged in the bill of complaint.

2. That the complainant is not the original and first inventor of the improvement.

3. That the alleged improvement was well known and in public use by various persons, and at various places, before the alleged invention thereof by the complainant.

Proof to show that the respondents are copartners is entirely wanting; but inasmuch as that defect, if it be one, may be removed by a proper amendment, the court is inclined to examine the merits of the controversy.

Before doing so, however, it may be well to examine the proposition of the complainant, that he is entitled to a decree against the respondents as individuals, even though he has utterly failed to prove that they are copartners as alleged. Partnership is certainly not proved. On the contrary, the respondents offer proof tending to show that they are a corporation duly established under the laws of the State in which their business is transacted; but the complainant denies that proposition, and insists that, as they were never duly incorporated, he may well maintain the present suit against them as individuals.

Besides the claim for damages, the complainant also prays for an account of gains and profits, and also for an injunction. Having sued the respondents as a partnership, it may be doubtful whether it would be competent for the court to enter a decree against the corporation; but as that defect, if it be one, may be cured by an amendment, the court will proceed to examine the merits of the controversy. *Goodyear* vs. *Phelps*, 3 Blatch., 91; *Poppenhusen* vs. *Falke*, 4 id., 494.

Taken as a whole, the proofs in the case show to the satisfaction of the court that the persons sued as partners were with others organized as a corporation, in November, 1869, under the general statutes of the State, by the corporate name set forth in the pleadings; and it appears that all the corporators were made directors, and that the business of the corporation was conducted by the directors. Opposed to this is the uncontradicted proof that no certificate setting forth the corporate name and purpose of the association was ever filed with the Secretary of State; but the better opinion is that the statutes of the State in force at the time the organization was made did not contain any such requirement, and consequently that the organization is not rendered illegal by that omission. (Gen. Stats. 341.) Such a requirement was enacted the next year, but the new provision is not retroactive. (Supp. Gen. Stats., 806.)

The principal defenses upon the merits are as follows: 1. That the alleged improvement is not new in the sense of the patent law, because the patentee was not the original and first inventor of it, and because the process was well known and in public use long before the date of the supposed invention. 2. Because the respondents have never infringed the patent as alleged.

Both of these defenses make it necessary to ascertain what the invention is when the patent which secures it is properly construed. Enough may be learned from the description given by the patentee in the specification of the process which he pursues to manufacture the patented car-wheel, when weighed in connection with the claim of the patent, to furnish a satisfactory answer to the inquiry as to the true nature and scope of the alleged improvement.

His first step, as pointed ont in the specification, is to cast a suitable quantity of steel to form the tire of the wheel into an annular ingot, about fifteen inches in diameter, with an opening at its center of the diameter of four inches. He then hammers the ingot upon an anvil by means of a steam-hammer, by which its diameter is extended to eighteen inches; and he gives a description of the anvil which he uses, and of the manner of conducting the hammering. Forming-rolls are then employed, by which the ingot is enlarged to the proper size and shape to form the tire of the wheel. Having formed the tire, he then places it in a heated furnace and heats it to a bright cherry red, when it is taken from the furnace, and, having removed every foreign substance from its surface, he places it within the mold in which the body of the car-wheel is to be cast, said mold having previously been formed and prepared for the purpose. Care, it is said, should be taken that the heated tire should be properly adjusted in the mold; and, when that is accomplished, the direction is that the flask shall be immediately closed, and the molten iron be poured into the mold, which, as it comes in contact with the highly-heated steel, fuses the surface of the latter, thereby forming a perfect union between the two, and, as the metal cools, the body of the wheel and the tire are welded into one solid mass. Extended remarks upon that part of the described process is unnecessary, as nothing there described is embraced in the claim of the patent, and if it had been, it would not have benefited the complainant, as every part of the process there described is substantially the same as that set forth in the patent granted to Zadoc Washburn, which was introduced in evidence, and is of prior date.

Two matters are then introduced into the specification of the patent in question, which, it is insisted, distinguish it from the invention of Zadoc Washburn, which, it is admitted, is the older of the two: 1. That the molten iron is introduced into the mold through a series of openings at the rim of the wheel, just inside the tire, and that it flows from thence to the center, carrying away from the inner surface of the steel tire all dirt and dust, if any, which might otherwise prevent the welding of the parts. 2. Nothing is expressly set forth under the second head as a matter pertaining to the described improvement, but the patentee points ont what he represents as a defect in the process of the other patent, which is that the cast-iron, instead of lying still in the mold and forming a perfect weld, is agitated and caused to bubble by the gas generated by the molten iron as it comes in contact with the flux used in the process, whereby, as he states, the perfect and desired union of the iron and steel is prevented. Everything described in the patent to Zadoc Washburn is disclaimed by him in express terms. What he claims is the described method of introducing the molten cast iron into the mold, through a series of holes, directly upon the inner unfluxed surface of the cast-steel tire, by which a perfect union and weld of the metals are produced.

Car-wheels manufactured by first forming a rim of cast-steel, and then heating and placing it in a mold previously prepared for the purpose, and by pouring molten cast-iron into the mold to complete the manufacture of the wheel, by the union or weld between the two, into one solid mass, are certainly old. Nor is that proposition denied. Nothing, therefore, but a new and useful improvement in the method or process of such a manufacture can be regarded as the proper subject of a patent. Doubtless it may be true that the molten iron was formerly poured into the mold at the center of the mold, and it may be that it is better to construct the openings in the mold for the purpose—whether they are called by that name or are called "sprues" or conduits—just inside the inner surface of the heated rim when placed in the mold; but the court is not satisfied from an examination of the product, or from any evidence in the case, that such a change, without more, (even if new, which is not admitted,) is the proper subject of a patent, as it is scarcely possible that it could have required any invention to make it. Changes of the kind are nothing more than common knowledge and experience would suggest, and every workman, whether skilled in the art or not, would know how to apply the suggestion. Nor can it make any difference that the patentee uses a series of such openings or holes in his method or process, as the proofs are full and satisfactory that a series of holes had been used in making such castings at a much earlier period than the date of the complainant's invention, and on several occasions, as appears by the testimony of an unimpeached witness.

2. Suppose that is so, still it is insisted by the complainant that his method or process is new and useful, because he does not use flux in making the described weld; which, as he insists, distinguishes his method or process from the invention described in the Zadoc Washburn patent, and from all others known at the date of his invention. Much reason exists for holding that the second feature of the claim is invalid, because not embraced in the description of the method or process used by the complainant, as required by the act of Congress; but, inasmuch as the alleged invention consists merely in omitting an ingredient often employed in welding steel and iron, or two pieces of iron, the court is not inclined to rest the decision entirely upon that ground. Nor is it at all necessary to do so, as the court, in view of the facts and circumstances of the case, is of the opinion that it is matter of common knowledge, that iron, or iron and steel, may be successfully welded with or without the use of flux, and that such knowledge has existed among mechanics accustomed to work at the ordinary forge, for a very long period, whereof the memory of man runneth not to the contrary. Axes, scythes, hoes, and other farming utensils were formerly made on the common anvil; and it is believed that mechanics formerly engaged in manufacturing such articles knew full well that flux was often omitted in effecting a weld of iron, or iron and steel. Horseshoes were made in the same manner, and many larger articles, such as plowshares, and mill-cranks. Differences of opinion, it is known, have at times existed among mechanics of that class upon the subject; some maintaining that flux was useful and even necessary, and others maintaining the opposite opinion with equal earnestness and confidence. All of these suggestions, it is believed, are supported by common experience and knowledge, but it is not necessary to go out of the record to find convincing proof to the same effect. Even the complainant, in his deposition filed in the Patent Office, testified in his cross-examination, that he was aware that iron and steel had been so welded, and, when asked if he knew as matter of fact that iron and steel had for a long time been welded with and without flux, stated that it was said to have been so welded for a long time. Support to that view is also derived from one of the respondent's witnesses, in which he says that in making four or five car-wheels, they used four sprue-holes, and that some of them were made with flux, and some without; which statement is also confirmed by other witnesses.

Having come to the conclusion that the alleged improvement is not new or patentable, it is not necessary to examine the question of infringement.

Bill of complaint dismissed with costs.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date April 20, 1875.]

8,272.—Stoves.—BENJAMIN M. ANTHONY, Detroit, Mich., assignor to MICHIGAN STOVE COMPANY, same place. Application filed April 6, 1875. Term of patent 7 years.

8,273.—Oil-Cloths.—JOSEPH BARRETT, New York, N. Y., assignor to SAMUEL W. DUNN. Application filed March 15, 1875. Term of patent 3½ years.

8,274 and 8,275.—Breastpin.—LEONARD S. BEALS, Astoria, N. Y.—Cases A and B. Applications filed April 9, 1875. Term of patents 7 years each.

8,276.—Dish of Pottery-Ware.—JONATHAN COXON, Trenton, N. J., assignor to GREENWOOD POTTERY COMPANY, same place. Application filed April 15, 1875. Term of patent 3½ years.

8,277.—Coffin-Screws.—NEHEMIAH HAYDEN, Essex, Conn. Application filed March 27, 1875. Term of patent 7 years.

8,278.—Badge.—HENRY C. LEES, Philadelphia, Pa. Application filed March 29, 1875. Term of patent 7 years.

8,279.—Hitching-Posts.—LOUIS SCHAEFER, Cleveland, Ohio. Application filed March 4, 1875. Term of patent 3½ years.

8,280.—Picture-Mounts.—RALPH TRAUTMANN, New York, N. Y. Application filed March 2, 1875. Term of patent 7 years.

8,281.—Vase.—WILLIAM TWEEDDALE, Brooklyn, N. Y. Application filed March 20, 1875. Term of patent 14 years.

8,282.—Pitcher.—HERMAN VASSEUR, Wallingford, Conn., assignor to SIMPSON, HALL, MILLER & CO., same place. Application filed March 9, 1875. Term of patent 3½ years.

8,283.—Spoons or Forks.—CHARLES WITTECK, New York, N. Y. Application filed March 13, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date April 20, 1875.]

2,383.—Sheet-Metal Cans and Boxes.—THEODORE W. BURGER, Plainfield, N. J. Application filed April 5, 1875.

"a series of numerals in regular order or succession, from '1' to '31,' inclusive, arranged in circular form, and concentric with the names of the months of the year, arranged also in regular series and succession, and on a circular line."

2,384.—Medical Compound.—EDWIN R. BURNHAM, Chicago, Ill. Application filed March 16, 1875.

"'Eucalyptus Bitters,' in connection with the representation of a leaf."

2,385.—Soap.—WILLIAM CONWAY, Philadelphia, Pa. Application filed April 9, 1875.

"a picture representing a log of wood, upon which are inscribed the words 'WOOD ASH.'"

2,386.—Medicine.—WILLIAM M. CLARKE & CO., Boston, Mass. Application filed April 5, 1875.

"'CEPHALOGENE.'"

2,387.—Shirts.—E. JENNINGS & CO., Chicago, Ill. Application filed March 22, 1875.

"'E. Jennings & Co., Oriental Shirts.'"

2,388.—Watch-Movements.—L. & M. KAHN, New York, N. Y. Application filed April 8, 1875.

"an eagle with outspread wings, above which a band is arranged containing the words 'Trade Mark.' Radiating lines are arranged in the background, representing rays of light."

2,389.—Refined Lard.—A. & J. M. MOSES, New York, N. Y. Application filed April 3, 1875.

"the figure of the Goddess of Liberty."

2,390.—Lard.—GEORGE C. NAPHEYS & SON, Philadelphia, Pa. Application filed April 12, 1875.

"the picture of a pail, shaped like a section of an inverted cone, being broadest at the top, and tapering downward to a less circumference at the bottom, on the side of which is a disk bearing the inscription 'Geo. C. Napheys & Son, Pure Leaf Lard, Pail Patented April 23rd, 1872, Philadelphia.'"

2,391.—Petroleum.—POWER BROTHERS & CO., London, England, and WILLIAM H. POWER & CO., New York, N. Y. Application filed April 10, 1875.

"'SILVER LIGHT.'"

2,392.—Medicine.—JOHN HARVEY RUTTLEY, San Francisco, Cal. Application filed April 9, 1875.

"a portrait of myself, as shown in the fac-similes, in conjunction with the words 'Dr. Ruttley's Great Remedies.'"

2,393.—Jams, Jellies, Marmalades, and Preserved Fruits.—PHILIP J. RITTER, Philadelphia, Pa. Application filed April 7, 1875.

"'Pomona.'"

2,394.—Smoking-Tobacco.—J. P. SARRAZIN, New Orleans, La. Application filed April 6, 1875.

"'Delight.'"

2,395.—Smoking-Tobacco.—J. P. SARRAZIN, New Orleans, La. Application filed April 6, 1875.

"'Ne Plus Ultra.'"

2,396.—Smoking-Tobacco.—J. P. SARRAZIN, New Orleans, La. Application filed April 6, 1875.

"'The Perfumes of the South Smoking Tobacco.'"

2,397.—Smoking-Tobacco.—J. P. SARRAZIN, New Orleans, La. Application filed April 6, 1875.

"'THE RELIANCE.'"

2,398.—Stoves.—THE SUMMER KING STOVE COMPANY, Pittsburg, Pa. Application filed April 5, 1875.

"'SUMMER KING STOVE.'"

2,399.—Copyable Printing and Writing Inks.—FRANCIS DE B. BERTOT, New York, N. Y. Application filed April 14, 1875.

"an English shield, shaded by perpendicular lines, divided by a central band of white into two fields, the upper one having two rings equidistant from the center, and the lower one a single central ring. The band bears a marching lion, and on each side of the same four *fleurs de lis*, placed two above and two below, not in the same perpendicular, the whole surmounted by a marching lion, bearing in his mouth a flying scroll with the following device: '*Noli irritare leones*,' and encircled by a laurel wreath."

2,400.—Black Silk Dress-Goods.—A. DE GREIFF & CO., New York, N. Y. Application filed April 12, 1875.

"the figure of an elephant."

2,401.—Coffees, Teas, and Spices.—D. FOCHT & CO., Philadelphia, Pa. Application filed April 10, 1875.

"the letters 'D. F. & Co.,' arranged in a monogram, and inscribed on a disk of solid color."

2,402.—Distilled Spirits.—FAHRENBERG & WORKUM, Cincinnati, Ohio. Application filed March 29, 1875.

"words 'CYRUS NOBLE.'"

2,403.—Starch.—GLEN COVE STARCH MANUFACTURING COMPANY, New York, N. Y. Application filed March 6, 1875.

"the figure of a package of starch in the form in which we put it up for market, the figure being a perspective view, showing two sides and the top; the color of one side and the top being yellow with a blue border, and the other side being all in blue."

2,404.—Preparation of Corn-Flour.—GLEN COVE STARCH MANUFACTURING COMPANY, New York, N. Y. Application filed April 10, 1875.

"word 'MAIZENA.'"

2,405.—Rasps and Files.—HELLER & BROTHERS, Newark, N. J. Application filed April 5, 1875.

"the figure of a horse and a man with a hammer in his hand in the act of nailing a shoe on the horse, and the words 'Heller & Bros.'"

2,406.—Soap.—LINCOLN MANUFACTURING COMPANY, Providence, R. I. Application filed April 6, 1875.

"words 'Fruit of Industry.'"

2,407.—Gloves, Embroideries, and Ribbons.—PASSAVANT & CO., New York, N. Y. Application filed April 10, 1875.

"'Bon Marché.'"

2,408.—Toys.—RAYMOND JENKINS, Brooklyn, N. Y. Application filed April 6, 1875.

"'Jubilee.'"

2,409.—Corsets.—SIGISMUND KLEINBERGER, New York, N. Y. Application filed April 10, 1875.

"THE SANITARY."

2,410.—Preserved Fish.—THE EAGLE PRESERVED FISH COMPANY, New York, N. Y. Application filed April 10, 1875.

"the figure of a double-headed eagle."

COPIES OF SPECIFICATIONS AND DRAWINGS.

Persons desiring copies of all specifications and drawings of any particular class of patents can purchase them at the rate of ten cents each, and have them mailed, free, to their address, as soon as possible after the patents are issued, by leaving a deposit of not less than three dollars with the Commissioner of Patents. The index of classes for subscribers, date of September, 1871, is furnished gratis to any applicant.

In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

Copies of the specifications and drawings of design patents will be furnished by the Patent Office at the cost of making them. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., March 22, 1875.

On the petition of JOHN HASELTINE, of Boston, Mass., authorized by act of Congress approved February 18, 1875, praying for the extension of a patent granted to him on the 25th day of March, 1856, for an Improvement in Water-Wheels,

It is ordered that the testimony in the case be closed on the 11th day of May next; that the time for filing arguments and the Examiner's report be limited to the 21st day of May next; and that said petition be heard on the 26th day of May next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

INDEX OF INVENTIONS PATENTED APRIL 20, 1875.

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Furnace door, J. Ashcroft	149	162,335
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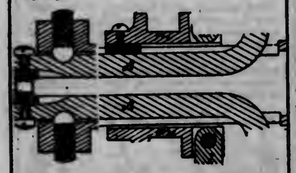
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED APRIL 20, 1875.

162,137. CHUCKS FOR SCREW-THREADING. Walter Aiken, Franklin, N. H. [Filed Feb. 27, 1875.]

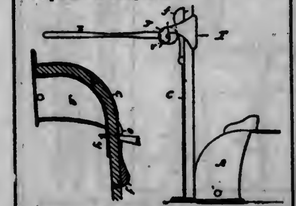
Brief.—Improvement on Letters Patent No. 149,620. Levers are bent as as to extend laterally out of the spindle, and are operated by a sliding sleeve and toggle-connection. Front ends of levers are held up against the rounded ends of the pivot screws by a U shaped spring.



In combination with the jaw-levers A A, bent and extended laterally at their rear parts out of the spindle B, substantially as represented, the tubular slide m and the toggles l l, arranged with the spindle, and in advance of the bent portions of the jaw-levers, and connected together and therewith, all as set forth.

162,138. BENDING WOOD. Saml. R. Bailey, Bath, Me., assignor to Edward A. Gillett, Boston, Mass., and Oscar S. Gillett, Buffalo, N. Y. [Filed Apr. 6, 1875.]

Brief.—The timber is kept heated while in the process of being bent.

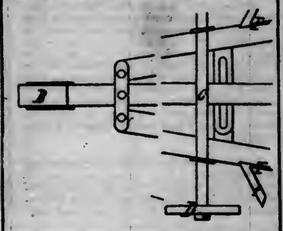


1. The hollow former A having the shoulders p p, and adapted to be heated, as described, in combination with the strap C having the tapering block f, and shoulders a, and clamp F, constructed, and lever L all constructed to operate substantially as described.

2. The strap C having shoulders a a, in combination with form A, shoulders p p, and prongs or keys g, substantially as and for the purpose specified.

162,139. BRAN-HARVESTERS. William C. Barber and George Amis, Knowlesville, N. Y. [Filed Oct. 8, 1874.]

Brief.—The ordinary cultivator frame is provided with cutters, the blades of which project in a horizontal position. Said frame is also provided with carrying-wheels, which govern the depth of cut of the blades.



The combination, substantially as herein shown and described, of the frame A, single front guide-wheel B, cutters F F, and a pair of rear guide-wheels, D D, as and for the purpose set forth.

162,140. PROCESSES FOR TANNING HIDES. George A. Bartenbach and Chas. Richter, Detroit, Mich. [Filed Feb. 1, 1875.]

Brief.—Tanning solution: Alum, salt, sulphuric acid, wheat-bran, sulphur, terra-japonica, and mucilage. Dubbing composed: Fish-oil, tallow, linseed-oil, and soda.

1. In the manufacture of leather from hides or skins, the solutions composed of the ingredients named, in about the proportions specified.

2. The manufacture of leather from hides or skins by the application of the solutions named, substantially in the manner shown and described.

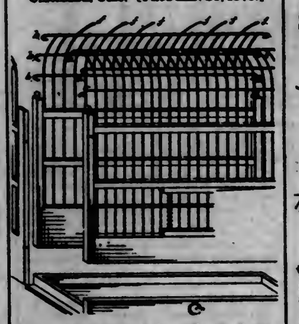
162,141. GAME-BOARDS. George Bayles, New York, N. Y. [Filed Mar. 17, 1875.]

Brief.—The game consists in the success or failure of erecting a structure upon the sensitive platform.



The combination, in a game-board, of the base A, the spring c, and the sensitive or oscillating platform b, substantially as and for the purpose described.

162,142. BIRD-CAGES. Herman Belmer, Cincinnati, Ohio. [Filed Mar. 30, 1875.]



1. A bird-cage made in sections, and provided with wires f and hooked ribs a b, for use in securing the same together, substantially as described.

2. A sectional bird-cage, having its parts secured together by projecting wires and hooks on its sides, and fastening devices passing through its sides into its ends, and through its bottom into its sides and ends, as specified.

162,143. MILLSTONE-BALANCES. Solomon Bernheisel, Green Park, Pa. [Filed Aug. 20, 1874.]

Brief.—Balance-weights, as constructed, can be reversed to throw their preponderating ends either at the top or bottom of the stone.

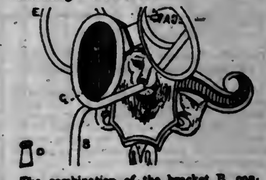
The transversely or horizontally grooved tapering balance-weights A a, substantially as and for the purpose specified.

162,144.



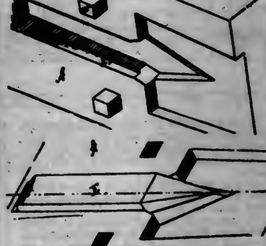
162,144. SIGNS. Francis Billingham, New York, N. Y. [Filed Aug. 27, 1874.]

Brief.—A sign is mounted upon the top of a gas-bracket, and light reflected thereon by its hinged covers, which, when closed upon the sign, may be used upon their outsides for advertising in the daytime.



The combination of the bracket B, constructed substantially as described, and provided with a burner, D, with the sign or signs C and the covers E, lined with a reflecting surface, substantially as and for the purpose specified.

162,145. CASTING SHOVEL-BLANKS. Edwd. Binns and Elmore A. Barnes, Pittsburg, Pa. [Filed Feb. 15, 1875.]



1. A cast shovel-blank having those parts of the casting which correspond to the straps united at their outer ends, forming a loop, substantially as specified.

2. In combination with the molds A A, having shoulders or ledges b' b', a destructible pointed core, B, supported within the mold and above the bottom thereof, substantially as and for the purpose specified.

162,146. MANUFACTURE OF SHOVELS. T. J. Blake, Pittsburg, Pa. [Filed Feb. 18, 1875.]

Brief.—The socket is opened by a properly-shaped mandrel driven therein, and the straps, at their junction with the body of the shovel, are set down and the socket properly formed upon the mandrel by means of dies.

1. The improvement in the art of manufacturing a cycle herein described, and consisting in setting up and shaping the socket and straps, while heated, by means of suitable dies and a mandrel, substantially as specified.

2. The combination of the dies or swages A B, and the mandrel C, substantially as and for the purpose specified.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

160,146.



160,147.



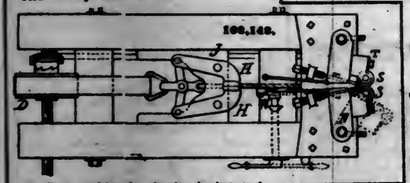
160,147. JELLY-PRESSES. W. W. Bostwick, Cincinnati, Ohio. [Filed Mar. 30, 1875.]

In a jelly-press, the collar *g* and projections *e* on the journal *f*, and the handle B, in combination with the piston A, having an upwardly-projecting collar centrally arranged on it, and a soft-metal ring, D, fitted in a recess formed in the piston, substantially as and for the purpose set forth.

160,148. MACHINES FOR SHAVING BASKET-STUFF. Reuben J. Brooks, Jr., Rutland, Mass. [Filed Dec. 11, 1874.]

Brief.—The material is, by suitable mechanism, drawn between knives secured in pivoted and adjustable frames.

160,148.



1. In a machine for shaving basket-stock, the adjustable shaving mechanism described, consisting of the knife Q, roll S, and their adjusting-holder N, substantially as above set forth.

2. The pivoted knife-holder N, in combination with the lever W and connection therewith, as above set forth.

3. The combination of the holder N, adjustable knife Q, elastic roll S, and the guard-plate T, when constructed and operating in the manner and for the purposes above set forth.

4. The combination of the shaving mechanism described, consisting of the knife Q and its holder N, and the drawing mechanism, consisting of the sliding jaws H H and the drum D, substantially as set forth.

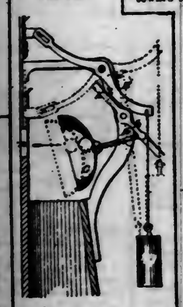
5. The combination of the shaving mechanism, the drawing mechanism, and the retaining mechanism, consisting of the springdrum M and connection L, making the machine automatic, when constructed and operating substantially as above set forth.

160,149. TARGETS. Charles Buckner, Jr., San Francisco, Cal., assignor of one-half his right to J. E. A. Ludwig, same place. [Filed June 10, 1874.]

Brief.—Upon a ball passing through the opening in the target, a bell is sounded and the figure of an imp shot up into view.

The target herein described, consisting essentially of the board A, figure D, opening n, sliding figure I, lever L A, and gong G, all combined and arranged to operate substantially as and for the purposes set forth.

160,149.



160,150. GAS-STOVES. Charles Burnham and Jos. G. Taite, Philadelphia, Pa. [Filed Mar 24, 1875.]

Brief.—The draft of air through the aperture to the base of the drum throws the flame toward the reflector



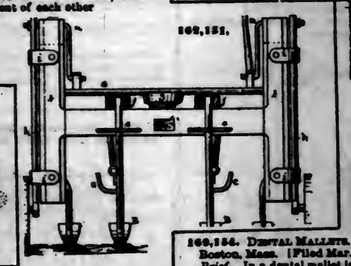
1. The gas-stove described, having the base A, reflector B, and gas-ring D, constructed and arranged as described.

2. The combination of the reflector and gas-ring with the radiating-drum C, as described.

160,151. PLOWS. Clement L. Carter, Union City, Ind. [Filed Jan. 12, 1875.]

Brief.—An upright frame with crank and lever for raising it upon the wheels. Middle standards pivoted at their centers, and vibrated independent of each other

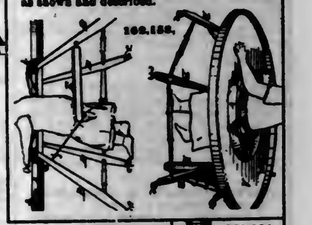
160,151.



160,152. BABY-WALKERS. Irving D. Clark, Gloversville, N. Y. [Filed Mar. 2, 1875.]

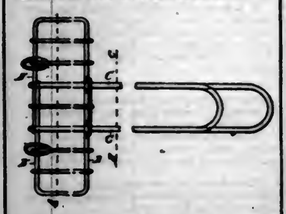
The walking table consisting of the platform A, supported on five or more legs, B, having casters *c*, and provided with the central opening A' and the inner and outer guards or rims *a* and *b*, in combination with the flexible waist-holder D and the swinging seat E, constructed and arranged to operate substantially as shown and described.

160,152.



160,153. PLOWS. Henry J. Chamberlin, Worcester, Mass. [Filed Mar. 29, 1875.]

Brief.—The frame is made of one piece of flattened wire, and is notched at the ends in the body of the wire, to hold laterally the cross-wires which are bent around it.



1. The combination of the wheels *g*, having long stub-axles *h*, with the frame, having the vertical slotted posts *k* and guides *i*, and with the cranks *n*, rock-shaft *o*, and lever *l*, as shown and described.

2. The combination of the inner standards B, pivoted at their middle to a rigid support, having the arms *ff* and the stirrups *e*, with the loops *c* and the swinging seat-bar S, substantially as shown, and for the purposes set forth.

160,154. DENTAL MALLETS. J. T. Codman, Boston, Mass. [Filed Mar. 30, 1875.]

Brief.—In a dental mallet in which reciprocating motion is produced upon the mallet-plugger by a cam and rotating shaft, pressure upon the end of the tool varies the power of the blow.

The combination, in a dental mallet or plugger in which rotary is converted into a reciprocating motion, and in which the blow is effected by means of a spring upon a plunger or driver, of an arrangement whereby the force of the spring is varied in accordance with end pressure upon the tool, substantially as described.

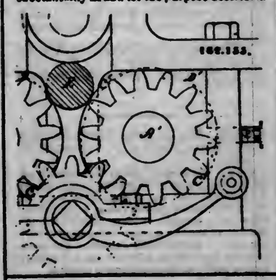
160,155. ROLLS FOR ROUNDING AND SMOOTHING METALLIC RODS AND BARS. Thomas B. Cook, Cleveland, Ohio. [Filed Mar. 6, 1875.]

Brief.—A pair of cylindrical rolls, each having two plain-surface sections, alternating with two spirally-grooved sections extending from one end to the other, and so arranged in relation to one another that the bar to be rounded, lying between and parallel to the axes of the rolls, will be operated on constantly by the ridges or ribs of the one roll and a plain surface of the other, and, in virtue of the spirality of the ribs, be gradually drawn through and finally discharged from the rolls.

1. A device for the straightening, rounding, and smoothing of bars of metal, consisting of rolls A A', provided with alternate worm-grooves C C' and smooth surfaces D D' substantially as and for the purposes described.

2. In a device for rounding, smoothing, and straightening metallic bars, grooves C, constructed in worm or screw thread form, whereby the bar is automatically fed to the rolls, substantially as and for the purposes described.

160,155.



160,156. PROPELLING AND STEERING APPARATUS FOR VESSELS. Jerry Dorman and Thos. G. Good, Georgetown, D. C. [Filed Jan. 22, 1875.]

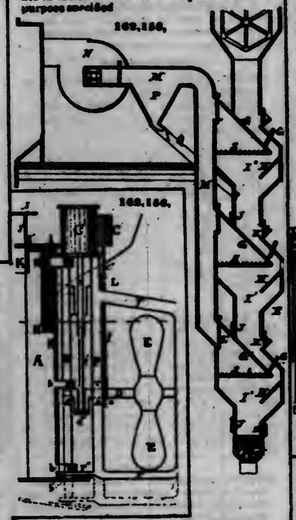
1. The combination, in an apparatus for propelling vessels, of a bar or plate hinged to the under side of the vessel, an automatically-moving vertical shaft, the lower end of which rests upon said hinged bar, and a propelling-cylinder, which is connected to and moves with said shaft, the parts being arranged to operate substantially as and for the purpose set forth.

2. The herein-described arrangement of mechanism for elevating the propeller and engine, and for allowing of the independent automatic rising of said propeller and engine, substantially as set forth.

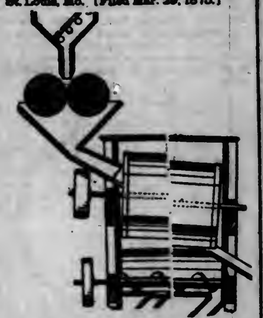
3. The combination of the propeller-shaft D and the perforated movable vertical shaft, their arrangement with reference to each other being such as is described.

3. The combination, with the fan and air-pipe M, leading to the dust-room, and communicating with the series of separating-chambers forming the air-leg, of the settling-chamber P, all constructed and arranged to operate in the manner substantially as and for the purposes specified

160,156.



160,157. PROCESSES OF MANUFACTURING MIDDLINGS-FLOUR. Robert L. Downton, St. Louis, Mo. [Filed Mar. 29, 1875.]



The herein-described process of manufacturing middlings-flour by passing the middlings, after their discharge from a purifier, through or between rolls, and subsequently bolting and grinding the same, for the purposes set forth.

160,158. MIDDLINGS-PURIFIERS. Robert L. Downton, St. Louis, Mo. [Filed Mar. 24, 1875.]

1. The combination of the graded reel or bolt A, clothed with different grades of cloth, and two or more separating air-legs, each air-leg consisting of a series of separating-chambers, having at the bottom an inclined passage for the purpose of conducting the material away from the currents of air, and introducing the material at a point above the air-inlet in each successive chamber for reparification.

2. The combination, with the separating-chamber I', of the perforated equalizing-partition S, substantially as set forth.

4. The combination, with the graded reel or bolt A and sets of separators or air-legs E E', each having a series of separating-chambers, of the pipes M, fans F F', and separate dust-rooms O O, all constructed and arranged to operate substantially in the manner as and for the purpose set forth.

5. The combination, with the inclined board or plate G, of the slide G', to partially close the passage or space between the chambers I', substantially as and for the purpose set forth.

6. The combination, with separating-chamber I', of the air-openings J K at opposite sides and in the lower portion of said chamber, spreading board or plate H, and equalizing partition or board S, all substantially as and for the purpose set forth.

160,159. FILES FOR BAR-IRON. William F. Durfee, Milwaukee, Wis., assignor of one-half his right to James John Hagerman, same place. [Filed Mar. 16, 1875.]



1. A file for the manufacture of bar-iron, composed of railroad-bars, arranged in combination with other bars and scrap-iron, substantially in the manner and for the purpose hereinbefore described.

2. The peculiar combination of staples, or their equivalents, for holding the pile together, arranged substantially in the manner and for the purpose before described.

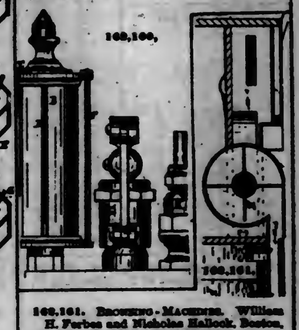
160,160. LUBRICATORS FOR STEAM-ENGINES. James Farran, Cleveland, Ohio. [Filed Oct. 28, 1874.]

Brief.—The oil passes from the glass reservoir into the chamber D, and through valve J into the sub-chamber I, where, by the lifting of the handle of the pump, the oil will be ejected from the apparatus, and injected into the cylinder.

1. The reservoir A, consisting of the glass cylinder E, cap E, base C, rods F, and stopper E', in combination with the chamber D and pump O, in the manner as described, and for the purpose set forth.

2. The combination of the reservoir A, chamber D, chamber I, valve J, pump O, and condenser K, having a valve N, in the manner substantially as described, and for the purpose set forth.

160,160.



160,161. BRONZING-MACHINES. William H. Forbes and Nicholas Hallock, Boston, Mass. [Filed Mar. 19, 1875.]

1. The perforated table, in combination with the exhaust-fan and condensing-reservoir F, substantially as set forth.

2. In combination with a bronze-printing machine, the exhaust-fan E and condenser F, provided with the tubes *a a*, and water or other liquid, substantially as and for the purpose described.

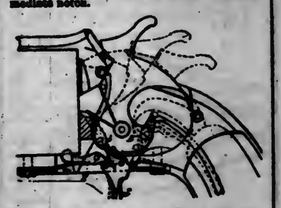
3. The reservoir or condenser F, constructed with the perforated diaphragm *i*, and pipes *a a*, as specified.

4. The process herein described of preserving waste bronze-powder by forcing the air containing it through water, substantially as described.

160,162. REVOLVING FIRE-ARMS. Sullivan Forehand and Henry C. Wadsworth, Worcester, Mass. [Filed Mar. 10, 1875.]

Brief.—The cylinder locking and releasing mechanism is so arranged that the cylinder is locked when the rear is in the half and full cock notches, and released when in the intermediate notch.

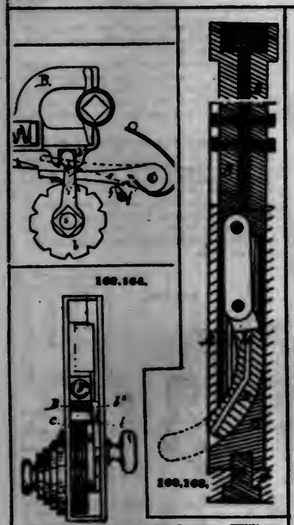
160,162.



The combination, with tumbler B and cylinder G, of safety-notch h, trigger D, finger A, locking-lever E, and springs I and m, substantially as and for the purposes set forth.

160,163. EXPANDING BITS FOR ENLARGING BLAST-HOLES. Gideon Frisbee, Reading, Pa. [Filed Nov. 21, 1874.]

In a continuously-rotating expanding-drill, constructed substantially as specified, the combination of the bit D perforated with the water-hole H, with the diamonds inserted in the cutting end of the bit, substantially as shown and described.



160,164.

160,165.

160,164. COMBINATION-LOCKS. William Gilliam, Syracuse, N. Y. [Filed July 13, 1874.]

1. The tubular dials *a a'*, provided with numbers upon their outer flanges, and with the numbered grooves *c* upon their inner ends, in combination with the notched numbers *b*, provided with spurs *d*, substantially as set forth.

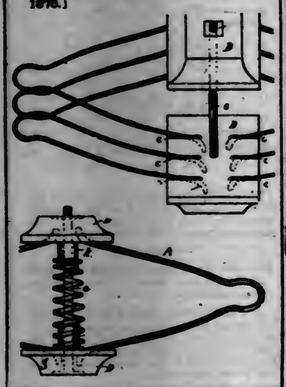
2. The bolt E, provided with the stop-arm *h*, arranged to pass above the cheek-bars when spurs *n* enter the notches *i* in the tumblers, and to pass below the cheek-bars when they are raised, as in dotted lines in Fig. 1, substantially as set forth.

3. A cheek-bar, *c*, provided with spur *n* and notch *o*, in combination with the shaft *f'*, provided with lip *f*, substantially as set forth.

4. The combination of the arm A, the lip *b'*, and the cheek-bars *c*, whereby the arm A serves as a guide to insure that the cheek-bars shall enter behind flange *b'*, substantially as set forth.

5. The combination of the shaft *f'*, provided with the lip *f*, the cheek-bars *c*, and the arm *h* on bolt E, whereby said cheek-bars may be lifted and suspended above arm *h*, so that bolt E may be operated as an ordinary latch-lock, substantially as set forth.

160,166. SPRINGS FOR VEHICLES. Geo. F. Godley, Philadelphia, Pa. [Filed Mar. 4, 1875.]

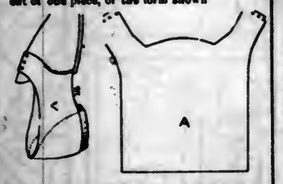


1. A spring for cars and other vehicles, composed of a series of doubled or retroverted rods or bars, A, the ends of which are lodged in grooves or recesses *c c* in the plates D D, the latter being held by a bolt or bolts, *e e*, as set forth.

2. In combination with the retroverted rods or bars A, recessed plates D D, and bolt or bolts *e*, the central auxiliary springs, substantially as shown and described.

160,166. SHOES. Laban Heath, Boston, assignor of one-fourth his right to Jas Hill, Stoughton, Mass. [Filed Mar 18, 1875.]

Brief.—The quarters and vamp portion are cut of one piece, of the form shown

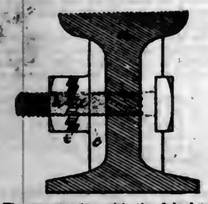


1. As a new article of manufacture, a shoe having the quarters A cut in one piece, as shown in Fig. 3, and molded or crimped to fit the shape of the foot and form the shank *n*, substantially as and for the purpose specified

2. As a new article of manufacture, a shoe having the quarters A cut in one piece, as shown in Fig. 3, and molded or crimped to fit the shape of the foot and form the shank *n*, and provided with the metallic shank-piece C, substantially as and for the purpose set forth.

160,167. NUT-LOCKS. Charles L. Holland, Ipswich, Mass., assignor of one-half his right to J. J. Sullivan, same place. [Filed May 27, 1874.]

Brief.—Radial serrations are made on the fish-plate, or on a washer rigidly attached to it, and also on the adjacent face of the nut, with an elastic washer between.



The combination with the fish-plate *e* or washer *f*, provided with the rigid serrations or teeth *a*, of the bolt *d*, serrated nut *h*, having its teeth cut in opposite directions from those on the fish-plate, and the elastic washer *i*, arranged between the nut and serrations on the fish-plate or washer, as and for the purposes described.

160,168. STEAM-TRAPS. Geo. M. Hopkins, Albion, N. Y. [Filed Feb. 21, 1874.]

Brief.—The valves are set open when the expansion-tube is cold, thus allowing water of condensation while moderately cool to pass out. When the tube is expanded by hot water or steam, it will move the lever, which will depress the springs, and close the valves more or less. When steam is shut off from the pipes which the trap drains, the cylinder will retain heat sufficiently long to allow the water to pass out without freezing.



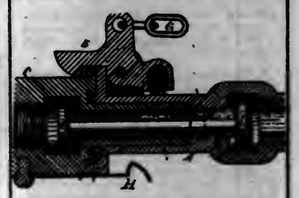
1. In combination with the pipe G and the expansion-tube E, the independent intermediate cylinder A, whereby the trap is adapted to retain heat, substantially as and for the purpose set forth.

2. The combination of the valves C and F, tube B, and cylinder A, substantially as specified.

3. The combination of the levers E E', screws *e e'*, springs D D', valves C and F, rods *b b'*, and expansion-tube B, substantially as shown and described.

160,169. PIPE OR HOSE COUPLINGS. Geo. M. Hopkins, Albion, N. Y. [Filed Feb. 21, 1874.]

Brief.—The coupling is for hose used in operating the brakes or in heating cars by steam. A catch on one part engages with a section of a screw thread on the other, being held in place by a spring. In case of accident the catch is tripped by a chain connecting it with the car. A spring-catch on one of the parts sustains the coupling after the catch is tripped until a slight additional force is applied.



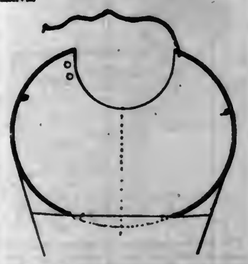
1. The combination of the part A, catch E, part C, cam D, and chain G, substantially as specified.

2. The combination of the parts A and C and spring H, when arranged to operate in the manner specified.

3. The combination of the parts A and C, catch E, chain G, cam D, spring-catch H, and valves I I', substantially as shown and described.

160,170. DENTAL BIBS. Rollin Horton, Cleveland, Ohio. [Filed Mar. 26, 1875.]

Brief.—A rubber pouch, held in place by inserting bent wires in a sheet of rubber, is secured underneath the mouth to catch the saliva.



A dental bib consisting of the pouch *a*, with the upper portion thereof formed to extend over the chest and under the chin, and made of gum-elastic or its equivalent material, and having a wire or spring, B, secured to the edges thereof, and provided with suitable means for fastening it under the chin, substantially as and for the purpose herein described.

160,171. LAMP-BRACKETS. H. G. Hubon, Salem, Mass. [Filed Feb. 26, 1875.]

Brief.—The socket is for the insertion of a support for a reflector.

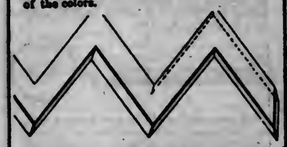
A lamp-bracket constructed with a holder, A, having an opening, *a*, in one side, a shaft or arm, B, provided with a reflector-socket, *b*, and a screw-shank, C, provided with a flange, *c*, all substantially as herein specified.



160,171.

160,172. APPARATUS FOR LAYING CEMENT PAVEMENTS IN BLOCKS. J. Burrell Hurlbut, Chicago, Ill., assignor of one-half his right to William P. Dickinson, same place. [Filed Nov. 21, 1874.]

Brief.—The block is beveled in opposite directions, on alternate sides, while plastic, thus forming a secure key to prevent deviations from a plane upper surface. A forming-frame is used for this purpose, of zigzag form, with parallel beveled faces, so that when reversed it forms the required bevel of the blocks. An elastic parting-strip is also used for lining off the edges and preventing the intermingling of the colors.



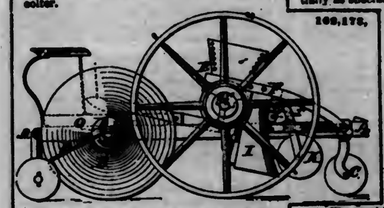
1. The forming-frame, when made with beveled edges, and reversible, substantially as described.

2. The parting-strip, having the depression *f* and pliable strip *g*, forming the spring-edges *h*, as described.

3. The block or stone, formed substantially as described, with its opposite edges beveled in opposite directions, for the purpose specified.

160,173. CORN-PLANTERS. Chas. Hutchins, Carthage, Mo. [Filed June 22, 1874.]

Brief.—To the swinging frame pivoted to the front of the main frame is attached a hollow plow having a pivoted lever, the upper end of which is struck by a second lever actuated by projections on the axle that rotates the seeding-wheels for dropping the seed. At the front are a caster-wheel and a revolving colter.

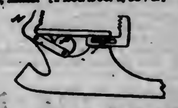


160,173.

1. In combination with the swinging frame E, attached to the main frame A by means of the arms F, the vertically-adjustable hollow plow I, attached to the pivoted swinging frame B by the connection I', and to the main frame A by the pivoted swinging bar I', provided with the dropping mechanism M N and revolving cutter K, all constructed, arranged, and adapted to operate as and for the purposes described.

2. The combination and arrangement of independently vertically-adjustable plows I I' I', swinging frame F, carrying the seeding mechanism L M, revolving cutter K, and main frame A, provided with the caster C, substantially as and for the purposes described.

160,174. SEATS. L. S. Ingraham, Florence, Mass. [Filed Dec. 1, 1874.]



The hinged heel-clamp H, operated by the eccentric F, hinged thereto, and recessed within the blade, as shown and described.

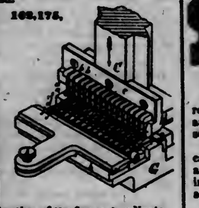
160,175. MACHINES FOR PUNCHING THE EYES OF MACHINE-NEEDLES. Samuel C. Kingman, Bridgeport, Conn., assignor to Wheeler & Wilson Manufacturing Company, same place. [Filed Feb. 15, 1875.]

Brief.—Spring presser-feet reach the needles before the punches do, and serve to press them firmly upon their respective dies. The punches and dies are secured in their respective places by keys or wedges. Back of the series of dies is a gage-bar provided with a series of holes, in which the points of the needles held in the clamp are placed.

1. In a machine for punching the eyes of sewing-machine needles, the series of two or more punches, *a a*, series of two or more tapering keys, *b b*, punch-seat H, series of two or more dies, *c c*, series of two or more tapering keys, *f f*, die-seat G, and adjustable gage-bar *h*, with the clamp *i*, all constructed, arranged, and operated for the purpose of punching the eyes of a series of two or more sewing-machine needles, substantially as and in the manner and for the object set forth.

2. In a machine for punching the eyes of sewing-machine needles, the series of two or more springs, *d d*, secured to the bottom of the reciprocating punch-seat H, in combination with the series of two or more needle-eye punches, *a a*, and tapering keys *b b*, for the purpose of pressing the series of two or more needles firmly upon the series of two or more dies, *c c*, during the operation of punching the eyes in said needles, constructed and operating substantially as specified.

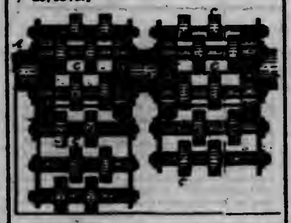
3. In a machine for punching the eyes of sewing-machine needles, in combination with the series of two or more needle-eye punches, *a a*, and the series of two or more needle-eye dies, *c c*, the adjustable gage-bar *h*, secured to the front edge of the die-seat G, for the purpose of gaging the series of two or more needles and clamp *i*, to a proper position with respect to the series of two or more dies, *c c*, and punches *a a*, during the operation of punching the eyes in said needles, substantially as specified.



160,175.

4. The combination of the frame A, adjustable gibs B B', slide C, shaft D, cam E, lever F, die-seat G, punch-seat H, series of two or more punches, *a a*, series of two or more tapering keys, *b b*, gage-plate *c*, series of two or more springs, *d d*, series of two or more dies, *e e*, series of two or more tapering keys, *f f*, gage-bar *g*, gage-bar *h*, with the clamp *i*, all constructed, arranged, and operated substantially as and for the object set forth.

160,176. LOOM PATTERN-CHAINS. Lemuel J. Knowles, Worcester, Mass. [Filed Mar. 20, 1875.]



1. The combination, with shaft A and hub pieces B, of the pocket-blades *b*, substantially as and for the purposes set forth.

2. The combination, with shaft A and pocket-blades *b*, of the pattern wheels or rolls C, fitted loosely upon their shafts D, substantially as and for the purposes set forth.

160,177. CAR-BRAKES. Cornelius Lagowe and Richard J. Wynkoop, Paterson, N. J. [Filed Dec. 1, 1874.]

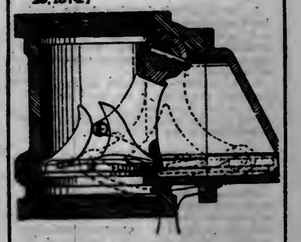


160,177.

1. The brake-wheels C located upon the axle B, between the wheels A A, in combination with the brake-strap shoe D, lever D', and a connecting-rod, H', substantially for the purpose set forth.

2. The combination of the brake-wheels C C, one upon each axle B, and the brake-strap shoe D D, levers D' D', pivoted to the bar G, and connecting-rod H, to communicate movement from one to the other of said levers, as set forth.

160,178. VALVES. Henry S. Lansdell and John S. Long, Brooklyn, N. Y. [Filed Dec. 29, 1874.]



1. In combination with a sliding valve, a rock-shaft arranged within the valve-chamber, and operating both to open and close the valve, substantially as set forth.

2. In combination with the sliding valve, a cam or lever-arm, or the equivalent thereof, arranged upon the rock-shaft and operating in connection therewith, substantially as described, to force the valve to its seat.

3. The combination of the rock-shaft, arranged within the valve-chamber, the lever-arm attached to said shaft, and the slot in the back of the valve, in which the lever-arm moves in opening and closing the valve.

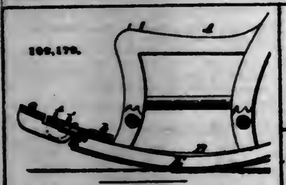
4. In combination with the lever-arm, the slot in the back of the sliding valve, when the same is curved or otherwise constructed, substantially as described, to aid in starting the valve away from its seat the moment it begins to open, substantially as and for the purpose set forth.

160,179. ROCKING-CHAIRS. Adolph List, Boonville, Ind. [Filed Mar. 23, 1875.]

1. In combination with the rocking-chair A B, the blind rockers E, secured to the rear ends of the rockers B, and provided at the front end with blind foot-stool *a*, as and for the purposes described.

2. In combination with the blind rockers E and blind foot-stool *a*, the foot-stool or rest *b'*, hinged to the ordinary rest *b*, and provided on its top with a heel-step, *b'*, as and for the purposes described.

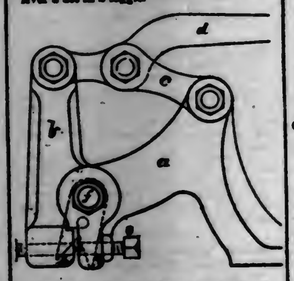
3. The self-rocking chair, consisting of the rocking-chair A B, hinged blind rockers E E', blind foot-stool *a*, and hinged foot-stool *b' b''*, all constructed, arranged, and adapted to operate substantially as and for the purposes described.



No. 162,179.

162,179. CLAMPING DEVICES. James B. Maxwell, Hamilton, and Charles A. Scott, Cincinnati, Ohio; said Maxwell assignor to said Scott. [Filed Oct. 19, 1874.]

Brief.—The link *c* and the small end of the lever *d* act as a toggle.



1. The improved clamping device herein described, consisting of frame *a*, carrying a jaw, *g*, the lever *b*, carrying a jaw, *h*, and pivoted at *f* to the frame *a*, the lever *d*, and link *c*, all combined and operated substantially as set forth.

2. The improved clamping device herein described, consisting of the frame *a*, link *c*, levers *d* and *b*, and jaws *g* and *h*, in combination with the countervailing devices *e e*, as and for the purposes set forth.

162,181. PUMPS. Reuben A. McCauley, Baltimore, Md. [Filed Mar. 18, 1875.]

Brief.—Valve-seats and valves are inclined to the axis of the cylinder, and enveloped in a projecting elastic tubing, which assists in insuring a tight valve. Operating mechanism is partly within and partly outside of the enlarged chamber, the ends of the fulcrum-shaft only passing through the walls of it, and they being suitably packed.

1. In a pump, the chamber B, adapted to allow within it the operation of the mechanism forming the means of connection between the hand-lever and piston, substantially as herein specified.



No. 162,181.

2. The arms *d*, links *c*, and piston D, placed within the barrel A and chamber B of the pump, combined with the shaft *e* and forked lever *f*, substantially as and for the purposes set forth.

3. The piston D, and valve-seats E and valves *g*, in combination with the flexible tubular extension-pieces G, substantially as and for the purposes set forth.

162,182. PAPER-FASTENERS. G. W. McGill, New York, N. Y. [Filed Oct. 9, 1874.]

The fastener herein shown, made of a single strip of metal bent into a T shape, with its shanks *d d* at obtuse angles from its head, so that they will bridge the center hole and must above it at their points, in the manner and for the purposes herein set forth and described

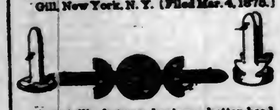


No. 162,182. No. 162,183.

162,182. METALLIC PAPER-FASTENERS. G. W. McGill, New York, N. Y. [Filed Sept. 12, 1874.]

The within-described metallic fastener, formed of the two blanks *a b c b* and the cap or shell *e*, bent and connected together as herein shown and described, the ends of the shanks *b b* of the blanks being in close parallel contact, and pointed so as to make only a single hole in the articles it is designed to connect, substantially as described.

162,183. METALLIC FASTENERS. G. W. McGill, New York, N. Y. [Filed Mar. 4, 1875.]



A metallic fastener, having a button-head with folded or struck-up edge, and constructed in other respects substantially as herein set forth and described, for the purposes specified.

162,184. SUPPORTING RINGS OR FASTENERS. G. W. McGill, New York, N. Y. [Filed Jan. 20, 1875.]



As an improved article of manufacture, my said suspending-fastener, stamped with an integral head from a single piece of metal, and bent and swaged into the form substantially as herein represented, the same being as and for the purposes herein set forth.

162,185. CAR-WHEELS. William A. Miles, Copake Iron-Works, N. Y. [Filed Dec. 29, 1874.]

1. As a new article of manufacture, a car-wheel, consisting of three parts, a central portion, B, a tire, A, and an intermediate metal welding portion uniting the main portions to form a single solid structure, substantially as described.

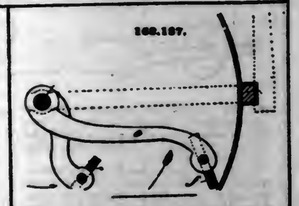
2. A car-wheel, having the tire A and body B, with corresponding recesses, and an intermediate uniting metal, filling said recesses, substantially as described.



No. 162,185. No. 162,186.

162,186. DOUGH-MIXERS. Elbridge G. Morrison, Haverhill, Mass., assignor to himself and R. Morrison, Raymond, N. H. [Filed June 10, 1874.]

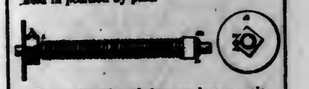
In a dough-mixer having mechanism, substantially as described, for giving the mixing-stirrers movement in opposite directions, the stirrers *e f*, the first of which is set at an angle, the edge nearest the axis being advanced in the direction of rotation, for the purpose of throwing the dough from the center, and the second at an angle with the edge farthest from the axis advanced in the direction of its rotation, for the purpose of throwing the dough to the center, substantially as described.



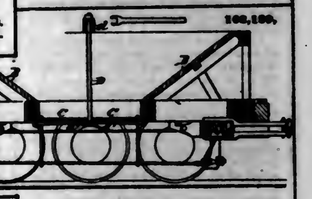
No. 162,187.

162,187. WARP-BEAMS FOR LOOMS. Edwin Chadsey, Norwich, Conn. [Filed Oct. 2, 1874.]

Brief.—The tension of the spiral spring arranged around the shaft of the warp-beam, to regulate the tension on the warp, is adjusted by means of a sliding angular collar, held in position by pins.



The combination of the warp-beam *a*, spindle *c*, frictional plate *g*, rigid collar *h*, spring *i*, movable angular collar *k*, and pins *n n*, whereby the tension of the spring can be increased and diminished at will, substantially as set forth.



No. 162,189.

162,189. ORE-CARS. Elizabeth A. Pierce, Escanaba, Mich., administratrix of Silas L. Pierce, deceased. [Filed Jan. 6, 1875.]

The combination of the body, having the sides, inclined ends B B, and the central discharge-opening, with the outwardly-swinging discharging-doors C C, the revolving supporting-rod D, and the central wheels, whereby the car is adapted to carry a heavy weight steadily, and discharge the same through a central opening without interfering with the central supporting-wheels, as described.

162,190. BAGGAGE-TRUCKS. T. W. Porter, Boston, Mass. [Filed Sept. 29, 1874.]

Brief.—A cast-metal ribbed platform, malleable-iron brackets, and wrought-iron center for pole; a cast-metal coupling, two pivoted axles, and locking-tongues.



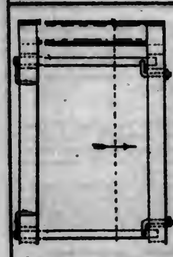
1. The cast-metal ribbed bed *c*, substantially as described and shown.

2. The cast-metal hand-crab *e*, substantially as described and shown.

3. The cast-metal hinged bracket *s*, substantially as described and shown.

4. The part *f* of the cast-metal coupling, formed with its king-pin *l*, in combination with the part *h*, formed with its socket to receive pin *l*, and with the radial brackets *i*, whereby it is bolted to the top or bed, substantially as shown.

5. A baggage-truck, having the two pivoted axles *a*, and the locking-poles *n*, substantially as described and shown.

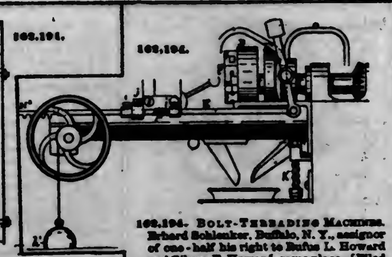


No. 162,191.

162,191. LOOM HEDDLE-FRAMES. Frederic S. Pratt, Worcester, Mass. [Filed Feb. 10, 1875.]

1. In combination with the heddle-bar and harness-frame, the fastening device, consisting each of a screw-threaded shank and a hook proper standing at right angles or thereabout to said shank, the shank adapted for attachment to the harness-frame, and serving as the axis on which the hook can swing to engage with or be disengaged from the heddle-bar, substantially as shown and set forth.

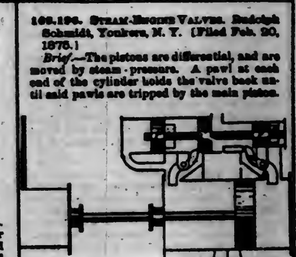
2. The combination, with the heddle-bar and harness-frame, of heddle-bar fastening-hooks capable of vibratory movement upon an axis or pivot, and adjustable, one or both, laterally, or in the direction of the length of the heddle-bar, to secure the proper tension of the same, substantially as shown and set forth.



No. 162,194.

162,194. BOLT-THREADING MACHINES. Richard Schlenker, Buffalo, N. Y., assignor of one-half his right to Rufus L. Howard and Gilbson F. Howard, same place. [Filed Oct. 10, 1874.]

Brief.—The die-brackets are pivoted in the head, and are formed with side projecting stubs. A number of bevel-pointed pins are carried by the movable head, which, when moved forward, forces said pins over the stubs, thereby locking the dies in position. An adjustable stop on a rod attached to the lever that operates the pin-head gages the length of bolt to be cut. When a bracket on the bolt-carriage strikes said stop, the lever attached to the pin-head is operated, the head and pins moved back, and the dies allowed to be thrown open (to release the bolt) by the springs which press against them.



1. The fixed die-head B, having the pivoted brackets F', carrying the dies F and springs *r*, operating in combination with the movable head F', having pins *t*, substantially as and for the purpose specified.

2. The combination of the heads B and F', crank-rod E, bolt-holder and carriage C, rack-bar H', and pinion shaft and wheel H, all operating substantially as and for the purposes specified.

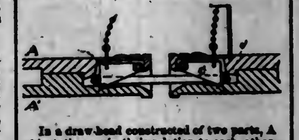
3. The rod E, having the collars *i P* and spring *P'*, operating in combination with the brackets *j* on carriage C, and with the wheel H, having screw *h* and weight and cord *h'*, substantially as and for the purpose specified.

162,195. STEAM-ENGINE VALVES. Rudolph Schmidt, Towkers, N. Y. [Filed Feb. 20, 1875.]

Brief.—The pistons are differential, and are moved by steam-pressure. A pawl at each end of the cylinder holds the valve back until said pawls are tripped by the main piston.

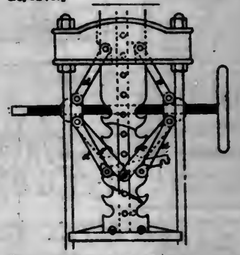
The pawls placed inside the main ports of an engine-cylinder, in combination with a distributing-valve which is actuated by the pressure of a motive fluid, and is locked and released by the pawls, substantially as and for the purpose set forth.

162,197. CAR-COUPLINGS. G. C. Schow, Chicago, Ill. [Filed June 18, 1874.]



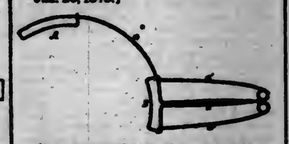
In a draw-head constructed of two parts, A A', stationary in their relation to each other, the horse-shoe-formed brass on shoulder *a*, cast in one piece with the top A, and projecting into a corresponding recess in the bottom part A', substantially as and for the purpose set forth.

162,198. OIL AND OTHER FEEDERS. Alfred Shedlock, New York, N. Y. [Filed Mar. 20, 1875.]



In a toggle-lever press, the links *c c*, controlled by the cam-cards or followers, in combination with the toggle-levers *d d*, substantially as and for the purpose hereinbefore set forth.

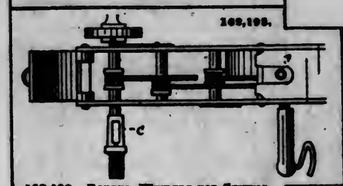
162,199. PLATE-LIFTERS. Daniel M. Skinner, Sandwich Centre, N. H., assignor to himself and Ezra Gould, same place. [Filed Jan. 20, 1875.]



As a new manufacture, the new plate-lifter, substantially as described, consisting of the jaws A A, and their shanks and handle parts *a a'*, in combination with the intermediate shank-clasp and plate-supporter B, all being composed of wire, bent substantially as specified.

162,192. GUARDS FOR HATCHWAYS. Richard Schlenker, Buffalo, N. Y., assignor of one-half his right to Rufus L. Howard and Gibson F. Howard, same place. [Filed Dec. 15, 1874.]

Brief.—The gate or guard is hung in ways by ropes, which pass over pulleys over hatch-shaft. Two upright posts attached to the car impinge against friction-wheels on the horizontal shaft, which rotate said shaft, and thus elevate the guard. The friction-wheels are provided with ratchets and pawls, set on opposite sides of the shaft, so that as the car ascends, one of the wheels will revolve freely on the shaft, the other wheel revolving the shaft and elevating the guard, and vice versa when the car descends.

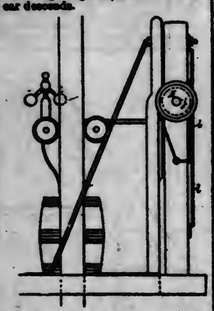


No. 162,193.

162,193. BOBBIN-WINDERS FOR SEWING-MACHINES. Henry H. Rhodes and Charles C. Redmond, San Jose, Cal., assignors of one-half their right to H. S. Lamphin and R. M. Gibson, same place. [Filed Dec. 15, 1874.]

Brief.—The shaft on which the bobbin-clutch is located is operated by a train of clock mechanism.

A bobbin-winder constructed as described, and consisting essentially of the bobbin-clamp C and spool-holder F, in combination with the train of clock mechanism, substantially as and for the purpose set forth.



1. The door or gate *i*, operated by means of the shaft *j*, rubber rollers and ratchets *m m'*, and pulleys K, substantially as and for the purpose specified.

2. The combination of an elevator-platform, having uprights *l*, with rollers *n n'*, shaft *j*, and pulleys K, and with the sliding door or gate *i*, substantially as and for the purpose specified.

162,899. STEAM DROP-PERFORMER. William H. H. Sisson, Newark, N. J. [Filed July 29, 1874.]

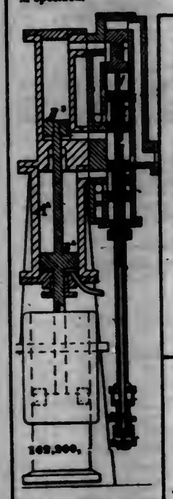
Brief.—The height the drop is raised is regulated by a bar which is inserted in holes in the frame. Said drop is attached to a rod having two pistons working in separate cylinders, and controlled by valves operated by a lever. By means of said valves steam is admitted under the small piston to raise the drop, and on top of both pistons when a heavy stroke is desired.

1. The adjustable cross-bar or stop D, in combination with a steam-drop, and with devices for admitting steam under the piston and its free discharge, as herein specified.

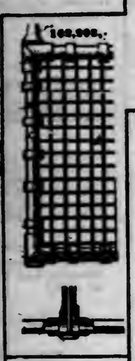
2. The adjustable valve J, in combination with the valve I and suitable steam-passages, and with the piston B' and connected drop, as herein specified.

3. The adjustable valve K and piston B', in combination with the valve I, piston B', and suitable steam-passages and connected drop, as herein specified.

4. The combination of the three valves I J K, and their several adjustments, with the single operating-lever E, and with the two pistons B' B', and a drop, B, operated thereby, all substantially as and for the purposes herein specified.



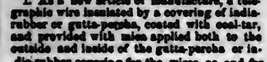
162,899.



162,901.



162,900. INSULATED TELEGRAPH-WIRE. Wilson Strickler, Lebanon, Pa. [Filed Aug. 22, 1874.]

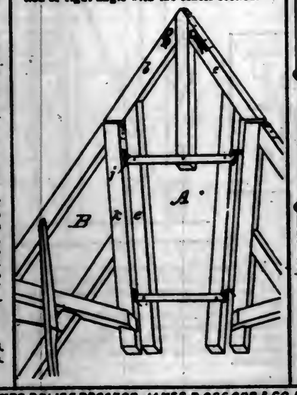


1. As a new article of manufacture, a telegraphic wire insulated by a covering of india-rubber or gutta-percha, coated with coal-tar, and provided with mica applied both to the outside and inside of the gutta-percha or india-rubber covering for the wires, as and for the purpose set forth.

2. The method herein described of insulating a telegraphic wire, consisting of the application of mica around the wire, and then encompassing the wire and mica with a covering of india-rubber or gutta-percha dipped in coal-tar, to which mica is then applied, the coal-tar performing the double functions of closing the pores of the covering and causing the retention of the mica in place, as set forth.

162,902. BARROWS. Chas. W. Stromboek, Syracuse, Ind. [Filed Mar. 15, 1875.]

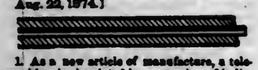
Brief.—The side pieces of the center section converge rearwardly. The side pieces of the head form shoulders, against which the wings abut. The wings are attached to the center section by spindle-hinges, so that they can be removed when raised to the position of right angle with the center section.



162,903. FRAMES FOR OPEN-WORK SIGNS AND BANNERS. Eli F. Southward, Boston, Mass. [Filed Mar. 20, 1875.]

In combination with a net-work sign or banner, provided on its edges with rings or ferrules, a jointed frame formed of metallic tubing with threaded ends, united by screw-couplings, substantially in the manner and for the purpose described.

162,904. INSULATED TELEGRAPH-WIRE. Wilson Strickler, Lebanon, Pa. [Filed Aug. 22, 1874.]



1. As a new article of manufacture, a telegraphic wire insulated by a covering of india-rubber or gutta-percha, coated with coal-tar, and provided with mica applied both to the outside and inside of the gutta-percha or india-rubber covering for the wires, as and for the purpose set forth.

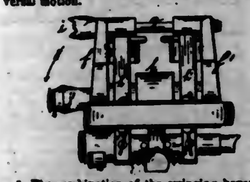
2. The method herein described of insulating a telegraphic wire, consisting of the application of mica around the wire, and then encompassing the wire and mica with a covering of india-rubber or gutta-percha dipped in coal-tar, to which mica is then applied, the coal-tar performing the double functions of closing the pores of the covering and causing the retention of the mica in place, as set forth.

162,905. HARROWS. Chas. W. Stromboek, Syracuse, Ind. [Filed Mar. 15, 1875.]

Brief.—The side pieces of the center section converge rearwardly. The side pieces of the head form shoulders, against which the wings abut. The wings are attached to the center section by spindle-hinges, so that they can be removed when raised to the position of right angle with the center section.

162,906. MACHINES FOR EDGE-SETTING SOLES OF BOOTS AND SHOES. Benjamin J. Tayman, Philadelphia, Pa., assignor of one-half his right to Jas. B. Boney, same place. [Filed Jan. 27, 1875.]

Brief.—The operating devices are mounted upon an angular base, which is supported upon the end of a swinging horizontal arm, so that the supporting-frame is provided with universal motion.



1. The combination of the swinging bars A A', slotted standards f f', eccentric shaft f, and eccentric pulley h, on said shaft, for imparting a reciprocating motion to the burnishing-iron, and for keeping the tension of the driving-belt uniform, substantially as set forth.

2. The combination of the ring b, and standards f f', with their annular base c, forming a frame for supporting the other operating parts of the tool, substantially as set forth.

3. The crescent-shaped guard p, rods q q', and springs r r', in combination with the hollow shaft m, and burnishing-iron n, in the manner and for the purpose substantially as set forth.

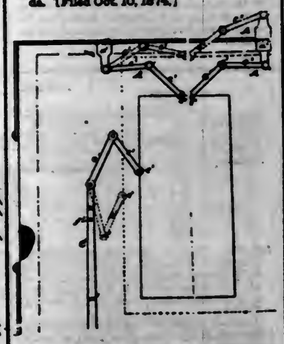
4. In combination, the removable burnishing-iron n, crescent-shaped guard p, hollow perforated shaft m, and gas-pipes, arranged to heat both the iron and guard, all substantially as shown and described.

5. The sleeve-cloth o', in combination with the basket a, and arm w, provided with space o', in the manner and for the purpose substantially as set forth.

6. The combination of the milling-wheel s, nut and lip t, and the rotary heel-seat-burnishiron f, arranged on a common shaft, in the manner and for the purpose substantially as set forth.

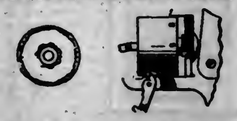
7. The projection p' on the crescent-shaped guard in combination with the burnishing-iron n, to form a bead on the outer edge of the sole, substantially as set forth.

162,907. FEED-GAGES FOR PRINTING-PRESSES. James Turner, Montreal, Canada. [Filed Oct. 10, 1874.]



A printing-gage, A B C, provided with one or more points, d f, and composed of the jointed adjustable arms d' d', pivoted to the stationary part d', having the flange b', for attachment to the platen of a printing-press, in the manner and for the purpose substantially as specified.

162,908. REVOLVING FIRE-ARMS. Rollin White, Lowell, Mass. [Filed Feb. 4, 1875.]



1. The combination, substantially as described, of a revolving cylinder, an extractor for withdrawing cartridges therefrom, and a lateral abutment, for the purposes set forth.

2. In a fire-arm, a revolving cylinder, a central extractor or abutment, and an annular movable abutment or extractor, when combined for operation substantially as described.

3. The combination, in a revolving fire-arm, of a frame having projecting therefrom a hollow fixed or non-rotating centrally-arranged cartridge-extractor, a revolving chambered cylinder, and a lever for drawing or starting the cylinder away from the recoil shield and extractor, substantially as shown and described.

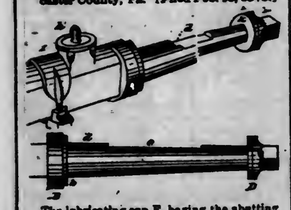
4. In a revolving fire arm, having a non-rotating central cartridge-extractor, the combination therewith of a cam for successively starting the cartridge as the cylinder revolves, substantially as set forth.

5. The combination, in a fire-arm, of a revolving cylinder, a toggle-joint, and a hinged barrel, adapted to withdraw the cylinder directly away from an extractor fixed to the recoil-shield, substantially as set forth.

6. In combination with a revolving and sliding cylinder provided with shoulders or notches, a hook and lever or swinging barrel for starting the cylinder, substantially as specified.

7. In combination with a revolving cylinder and hinged or swinging barrel, the catch-lever H, adapted to operate as a means of starting the cylinder, the construction and operation being substantially as described.

162,909. CARRIAGE-AXLE LUBRICATORS. John M. Witmer, Manor Township, Lancaster County, Pa. [Filed Feb. 16, 1875.]



The lubricating-cup F, having the abutting side flanges, which gives the device an extended flat base, to set directly upon the axle-bar A, to which it is secured on one of its projecting flanges, f, by an ordinary clip, I, the other end by inserting the tube G through the collar B, all constructed and combined substantially as and for the purpose set forth.

162,910. ATTACHMENTS FOR PLOWS. Elisha N. Yardley, Tonganoxie, Kans. [Filed Oct. 27, 1874.]

Brief.—The wheel slides in the previous furrow, and the horizontal weed-turner, pressing upon the surface, turns down the stubble, &c.

The bent drag-bar H, pivoted to the plow-beam A, point K, and loop L, constituting a plow attachment, for the purpose specified.



162,910.

162,911. BUCKLES. Banker C. Young, Boston, Mass. [Filed Jan. 12, 1875.]

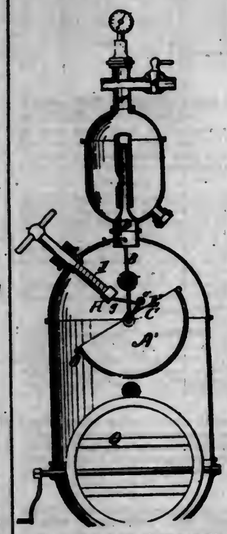


1. The described buckle attachment, consisting of the base-plate f and the perforated projection g, arranged as specified—that is, so that the said part g shall be at or in close proximity to the edge of the base-plate, and transversely to the direction of the strain of a buckle, when the said attachment may be in use, and in connection with said buckle, as set forth.

2. The buckle provided with the hook, in combination with the plate f and staple g, arranged as described.

162,912. SODA-WATER GENERATORS. Jas. Anderson, Allegheny, Pa. [Filed Mar. 20, 1875.]

Brief.—An acid-chamber supported by a bail in the generator, and provided with a rod, ball and-socket joint, and screw-stem, for gradually tilting the same and holding it in any desired position.



The acid-chamber A', supported by the ball B in the generator, and provided with the rod g, ball-and-socket joint H, and screw-stem I, substantially as described, and for the purpose set forth.

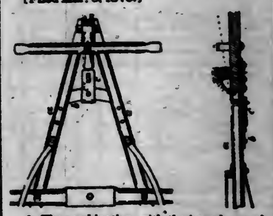
162,913. GRAIN-SCOURERS. M. D. Beardslee, St. Louis, Mo. [Filed July 21, 1874.]

Brief.—Cylindrical case or shell can be adjusted equally or unequally on each side of the scouring-cylinder, for giving a greater or less space where required.



162,913.

162,914. WAGON-TONGUE ATTACHMENTS. William M. Bernhard, Morristown, Ohio. [Filed Mar. 3, 1875.]

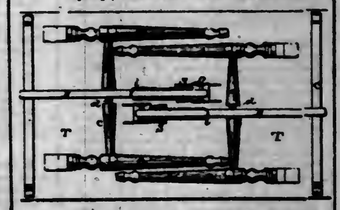


1. The combination, with the hounds a and tongue d, of the draft-bar b, bosses c, and bar e, as and for the purpose set forth.

2. The combination of the straight hound a with the tongue d, hinged to bar b in rear of the bevoled end of said hounds, as and for the purposes specified.

162,915. FOLDING TABLES. John Bradfield, Grand Rapids, Mich. [Filed Sept. 30, 1874.]

Brief.—Two saddle-blocks are fastened to the under side of the table, and to each one is pivoted a locking-brace. Secured to the under side of the table by these blocks are two springs, which bear on the locking-braces.



1. The blocks D, having the braces B pivoted to them, and serving as a means of holding the springs in position, substantially as shown.

2. The combination of the top T, cross-pieces C, folding legs a, cross bars c, having notches d, blocks D, springs S, having points g and loops f, and braces B, having notches j, substantially as set forth.

162,916. MANUFACTURE OF GLASSWARE. Charles W. Brockunier, Bridgeport, Ohio. [Filed Mar. 27, 1875.]

162,916.



1. A pivoted or divided mold for pressing glassware, having, in combination with the bowl-cavities, longitudinally ribbed handle-cavities a a, substantially as set forth.

2. A pressed bowl and pressed longitudinally-ribbed handle, the ribs tapering from either end or both ends of the handle to or toward the bow or curve, substantially as set forth.

160,917. DOOR-CHECKS. Geo Burt, Denver, Colo. [Filed Mar. 13, 1875.]

Brief.—The claim sufficiently points out the invention; a hinged bolt or pin passing through the jaws and hooked plate of a portable door-fastener, to lock the device securely in position.

The hinged bolt E, in combination with and passing through the jaw C and the plate A, which plate works upon the rivet D, and terminates in a curved hook, B, all substantially as described and shown, for the purposes herein before set forth.



160,917

160,918. WOOD PAVEMENTS. John Carr and M. D. Phillips, Grand Rapids, Mich.; said Phillips assignor to said Carr, and said Carr assignor of one-half his right to Wm. Carr. [Filed May 6, 1874.]

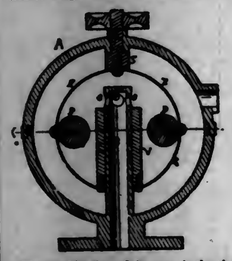
Brief.—A wood pavement in which the blocks are set in an inclined position, and rest upon a concrete foundation, the interstices between the blocks being filled with a fire and water proof mixture of water-lime, fine sand, shellac, and water, and the top surface covered with a solution of water-lime and water.



The combination of the foundation, made and laid substantially as above described, with a superstructure of blocks of wood prepared by soaking, as above stated, and of the general shape above described, laid in the mode above described, with the grouting composed of water-lime, fine sand, shellac, and water, as above stated, in the interstices between said blocks, with the solution or mixture of water-lime and water poured upon the surface of said blocks after they are thus laid or placed in position, as above described.

160,919. GOVERNORS. Daniel L. F. Chase, Somerville, assignor of one-half his right to Lorenzo B. Chase, Watertown, Mass. [Filed Apr. 1, 1875.]

Brief.—A tubular valve is fitted to a hollow stand-pipe, the upper end of which is provided with steam-inlet ports. The valve is raised and lowered by the centrifugal action of weights secured to a spring.



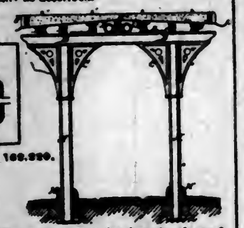
The combination of the case A, the shaft S, the spring E E E E, the balls D D, the valve V, and the tube B, with its ports O, the whole being arranged substantially as described, and for the purposes specified.

160,920. ELEVATED RAILWAYS. John B. Church, Scarborough, N. Y. [Filed Feb 23, 1875.]

Brief.—An elevated railway supported upon parallel rows of columns, the cross ties of which have a pitch from the center to each side, to give proper drainage to the roof, said ties and metal roof resting upon longitudinal girders, the tops of which are beveled to correspond with the pitch of the roof. Extending from column to column, and around each, is a stone curbing.

1. The curb or stone masonry along and around the base of the columns, in combination with the columns supporting an elevated railway, substantially as described.

2. In combination, the tiers of parallel columns A A, the cross-beams B B, the longitudinal girders D D, the roof E E, and the cross-ties F F, forming a support for the tracks of elevated railways, constructed substantially as described.

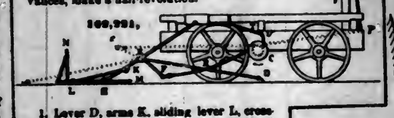


160,920.

3. The cross-tie F F, fitted to the slope of the roof E E, supported by the longitudinal girders D D in an elevated railway, substantially as described.

160,921. HAY-LOADERS. Pascal L. Craig, East Troy, assignor of one-half his right to H. C. Stratton, Coldwell's Prairie, Wis. [Filed Aug. 14, 1874.]

Brief.—A rake which slides in rear of the wagon to be loaded is elevated and caused to deposit its load by arms or levers, one on each side, which, at the will of the operator, take into the ground, and, as the wagon advances, make a half revolution.



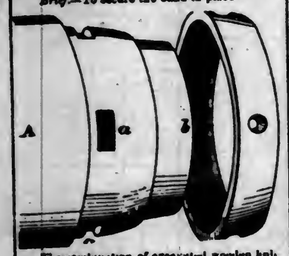
160,921.

1. Lever D, arms K, sliding lever L, cross-bar I, and teeth M, in combination with wheel O and rope R, substantially as described.

2. The combination of rope T, slide S, and wheel C, substantially as described.

160,922. WHEELS FOR VEHICLES. J. Curtis, Oldenmant, Ohio. [Filed Oct. 12, 1874.]

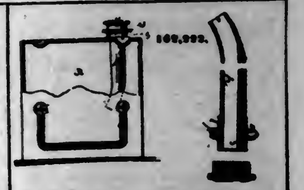
Brief.—To secure the band in place



The combination of elevated wooden hub A a and bands B, having openings b to receive fusible-metal plugs C, as set forth.

160,923. NOZZLES FOR OIL-CANS. William Dee, Reno, Pa. [Filed Feb. 23, 1875.]

Brief.—The screw-nozzle is reversed for transportation, and a screw-cap applied.

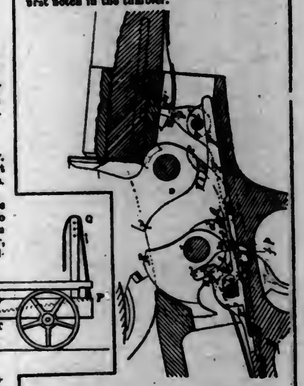


160,923.

In cans for the transportation of oil, the combination of the can a, reversible nozzle A, provided with the internal air-tube 3, threads f, and flange e, with the screw-cap B for closing the end of the nozzle, substantially as shown and described.

160,924. BREECH-LOADING FIRE-ARMS. Frank W. Freund, Denver, Colo. [Filed Mar. 19, 1875.]

Brief.—By means of the combinations claimed the breech cannot be opened while the hammer is at full-cock, and when the hammer is fully down it cannot be fully cocked until the breech has first been opened; and the firing-pin is securely locked in a retracted position after the breech is closed, until the sear is disengaged from the notch in the locking-slide, or the hammer is let down past the first notch in the tumbler.



1. The check f of the slide or part F, in combination with the hammer, for the purpose of preventing the full-cocking of the hammer, substantially as and for the purpose described.

2. The projection k of the slide or part F, in combination with the hammer, having a projectide, m, for moving the slide back, substantially as and for the purpose described.

3. The projection l of the slide or part F, in combination with the breech-block, for the purpose of moving the slide forward to set the check, or to withdraw the firing-pin when the breech is open, substantially as and for the purpose described.

4. The sear-notch p of the slide or part F, in combination with the auxiliary sear q, and the hammer-trigger, substantially as described.

5. The combination of the projections l and k of the slide or part F, with the breech-block and hammer, for the purpose of moving the slide forward and backward, substantially as described.

6. The stop r of the slide or part F, suitably combined with the firing-pin, for preventing the firing-pin moving forward when the breech-block is fully closed, and while the part F is locked, substantially as described.

7. The lever A, in combination with the hammer, for fastening the breech block when the hammer is full-cocked, substantially as described.

8. The combination of the lever A and the breech-block, for preventing the full-cocking of the hammer while the breech-block is open, or only partly closed, substantially as described.

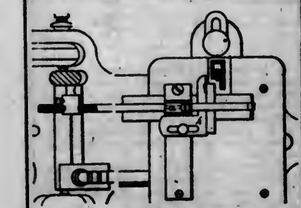
9. The firing-pin, combined with and operated by the hammer and breech-block, and suitable means for withdrawing said pin, so that it is retracted when the breech-block is in any position in which the firing-pin might be brought in contact with the cartridge, and when the hammer is in any position except in contact with the firing-pin, substantially as described.

10. The combination of a hammer, a breech-block, a movable intermediate part, F, having suitable projections, and a lever, A, whereby the hammer is prevented from being cocked when the breech-block is open, and the breech-block prevented from being opened when the hammer is cocked, substantially as herein described.

11. A vibrating lever, H', combined with a cartridge-shell extractor, having separated lugs or shoulders s^1 s^2, for producing a sudden percussive blow upon the extractor, substantially as described.

160,925. TUCK-MARKERS. HARRY C. Goodrich, Chicago, Ill. [Filed Dec. 8, 1874.]

Brief.—A non-flexible bar pivoted in the center is operated from the needle-arm. The upper marker, adjustable in the bar, is set eccentric, and by turning it around on its axis the amount of stroke, vertically, is adjusted.



1. The pivoted bar r, in combination with the plate a, and the rear link or rod connected directly with the bar and forming an extension thereof, substantially as and for the purpose specified.

2. The combination, in a sewing-machine tuck-marker, operated by a non-flexible bar, r, of the separately-adjustable grooved disk or plate b, and the blade p for adjusting the length of the stroke between the two, substantially as described.

160,926. TUCK-MARKERS. HARRY C. Goodrich, Chicago, Ill. [Filed Dec. 8, 1874.]

Brief.—A reciprocating rod attached to the needle-arm, and adjustable lengthwise by a screw on its end, passes through a loop formed by raising part of the main plate of the attachment. The upper marker is formed on the end of a spring-plate, and the beveled end of the reciprocating rod operates against an incline on the plate, and presses the markers together. The height of the rod is regulated by a screw in the top of the loop.



1. In a tuck-creaser, the rod E, in combination with the incline f and plate c, constructed and operating substantially as and for the purposes specified.

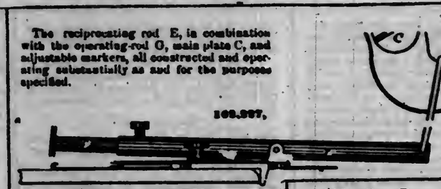
2. The main plate D, in combination with markers e g, incline f, plate c, and rod E, all constructed and operating substantially as and for the purposes specified.

3. The rod E, in combination with the incline f, plate c, and adjusting device m, substantially as and for the purposes specified.

160,927. TUCK-CREASERS. HARRY C. Goodrich, Chicago, Ill. [Filed Dec. 8, 1874.]

Brief.—The rod is screwed fast in a head on the rock-shaft, and is operated by a lever from the needle-bar. In its reciprocation the rod presses on the incline of the spring-creaser, and forces it down on the blade. The amount of pressure on the incline is regulated by screwing the rod backward or forward.

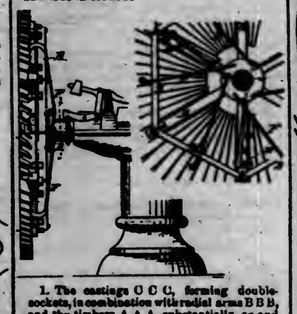
The reciprocating rod E, in combination with the operating-rod O, main plate C, and adjustable markers, all constructed and operating substantially as and for the purposes specified.



160,927.

160,928. WINDMILLS. MYRON GORE, Ottawa, Ill., assignor to Wm. Stormont, same place. [Filed Feb. 6, 1875.]

Brief.—The castings are formed of double sockets, in combination with the radial arms and timbers; also, the levers and springs, in combination with the brace collars, the rods and fans in sections



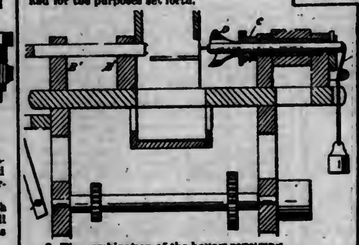
1. The castings O C C, forming double-sockets, in combination with radial arms B B B, and the timbers A A A, substantially as and for the purposes described.

2. The levers L L L, and springs M M M, in combination with the loose collar D, the rods F F F, and the sections K K K, substantially as and for the purposes described.

160,929. GAGE-LATHES FOR TURNING WOOD. Felix Goulet, Island Pond, Vt. [Filed Oct. 3, 1874.]

Brief.—The blanks are placed in a hopper, from which they are carried by a reciprocating center into a hollow cutter, which gives them the desired form. They are then pushed out of the cutters by a rod, which reciprocates within it, and fall from the lathe through an orifice in the bottom of the hopper.

1. The combination of the hollow revolving shaft C, hollow cutter-head D, with cutters a, and the reciprocating center mandrel b, operated by the weighted cord d, substantially as and for the purposes set forth.



2. The combination of the hollow revolving shaft C, hollow center-head D, reciprocating center mandrel b, and reciprocating spar-mandrel f, substantially as and for the purposes herein set forth.

160,930. BARREL-HEAD ADJUSTERS. Hiltu J. Granger, Brooklyn, and H. S. Smith, Southfield, N. Y. [Filed Jan. 9, 1875.]

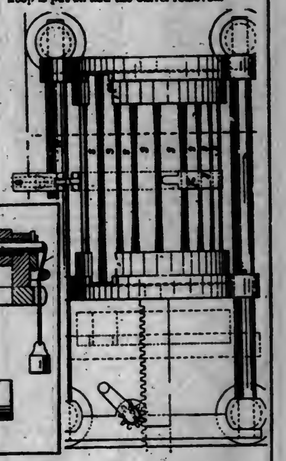
Brief.—The different pieces of which the head is composed are retained in their proper relation to each other, and held in position while the hoops are being forced upon the barrel.

160,930.

The combination of two or more plates capable of being applied to the head-pieces of a barrel, and connected by guiding-bolts, substantially such as described, with expanding-springs, substantially as and for the purpose set forth.

160,931. BARREL-STAVE ADJUSTERS. Hiltu J. Granger, Brooklyn, N. Y. [Filed Feb. 27, 1875.]

Brief.—Two heads, provided each with an annular groove of the same diameter as the barrel to be formed, are placed at the length of the staves apart. Staves are then introduced until the grooves are filled, when a truss-hoop is put on and the barrel removed.



1. A barrel-stave adjuster consisting of two disks, one of which is capable of receiving a sliding motion toward and from the other, both disks being provided upon their opposed faces with annular grooves of prescribed diameter, each of which grooves has an opening in its outer wall to admit of the insertion of staves, for the purpose of facilitating the selection of the quantity of staves required for a barrel and their arrangement in a cylindriform position, all constructed and operating substantially as herein shown and described.

2. A central truss, as herein described, consisting of flexible ribbons of steel or other material, provided with a device for hooking or clasping their loose ends together, and connected at their opposite ends with a pair of jointed levers or hooks, for tightening them when clasped around the staves, and for holding the staves in their cylindriform position when extricated from the adjusting-grooves, substantially as and for the purposes set forth.

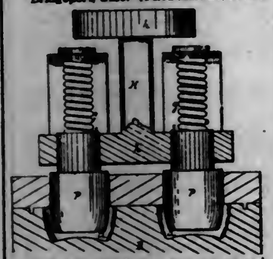
3. The combination of the stave-measuring and adjusting grooved disks herein described with an adjustable central truss or clamping-band, provided with the levers or hooks g^1 and g^2, for holding the staves in a cylindriform position, substantially as set forth.

169,822. TIRE-TIGHTENERS. John T. Hall, Morrisonville, Ill. [Filed Jan. 26, 1875.]



The tire-tightener composed of the plate a, provided with the horizontal inwardly-projecting plates b, the fixed arm c, and the adjustable arm c^1, having the triangular foot or projection c^2 and flanges c^3 and wedge d, having recess d^1, all combined to operate as and for the purpose set forth.

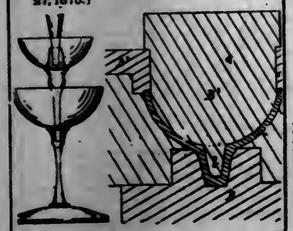
169,823. GLASS-MOLDS. John H. Hobbs, Wheeling, W. Va., and C. W. Brockunier, Bridgeport, Ohio. [Filed Mar. 27, 1875.]



1. A glass-mold having two or more cavities for the pressing therein of articles of glassware, and a corresponding number of plungers operated simultaneously at each stroke of the machine, in combination with a yielding device arranged in connection with the plunger or some movable part of the mold-cavity, substantially as set forth, whereby provision is made for the excess of material in the fuller cavities, and for the completion of the pressing stroke where the material is less.

2. Two or more plungers, P, carried on and guided by a single head, H, in combination with springs acting on each independently of one another, substantially as set forth.

169,824. MANUFACTURE OF PRESSED-GLASS FLOWER AND FRUIT STANDS. John H. Hobbs, Wheeling, W. Va., and C. W. Brockunier, Bridgeport, Ohio. [Filed Mar. 27, 1875.]



1. A pressed-glass dish having a pressed socket in or on the inside bottom thereof, substantially as set forth.

2. A fruit or flower stand built up of a series of two or more sections of pressed glassware, united by a pressed pin-and-socket joint, substantially as set forth.

3. The plunger P, having a projection, b, thereon, in combination with a recess in the mold-bottom, for the pressing of a socket in the bottom of the pressed article, substantially as set forth.

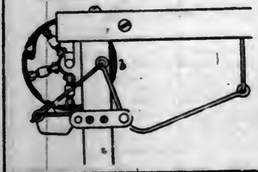
169,825. BURGLAR-ALARMS. Lafayette M. Johnson, Forest City, Mo. [Filed Jan. 27, 1875.]

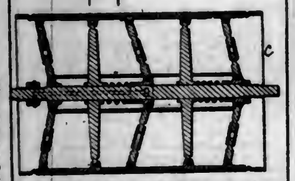


1. In combination with a door-check having a yielding arm, with a wheel or roller moving on the floor, a burglar-alarm removably attached thereto, for the purpose herein set forth.

2. The combination of the plate E, bell G, wheel H, with projections y, oscillating block h, with arms m n, hammer p, and spring i, substantially as and for the purposes herein set forth.

169,826. PAPER-TUBE MACHINES. John F. Jones, Marcellus Falls, N. Y. [Filed Nov. 28, 1874.]

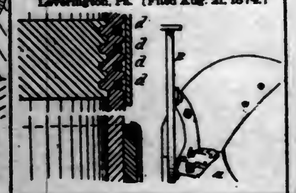




1. The process of forming paper tubes, either bolging or straight cylinders, by first compressing the pulp from the paper-machine, and then, while green, conveying it to the molds, upon which it is wound in suitable form, and the layers, as they are wound on, saturated on the mold to make them plastic, so as to form a homogenous mass of layers, as herein described.

2. The expanding and contracting mold or cylinder b, around which the tubes are formed with expanding and contracting arms at its center and at both ends, operated as herein described, so as to vary the diameter independently at its center and end, in combination with a jacket, c, as and for the purposes specified.

169,827. PAPER BARRELS. Nice Keely, Leverington, Pa. [Filed Aug. 21, 1874.]

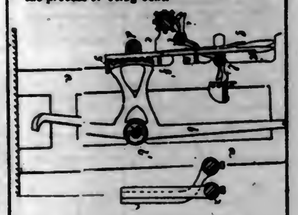


1. A manifold paper-body cask, or similar vessel, provided with molded internal and external screw-threads, as and for the purposes set forth.

2. A cask, barrel, or other vessel constructed of a paper body or shell provided with heads a, and the described ribs or threads, corresponding grooved or threaded heads B, and wire d, as and for the purposes set forth.

169,828. BENDING WOOD. Saml. R. Bailey, Bath, Me., assignor to Edward A. Gillett, Boston, Mass., and Oscar S. Gillett, Buffalo, N. Y. [Filed Apr. 5, 1875.]

Brief.—The timber is kept heated while in the process of being bent.



1. In combination with the elevator and depressor bars g g', the arms f f' and the harness-actuating levers b b, provided with the horizontal arms c and geared segments, for the purpose of closing the shed at each revolution of the crank-shaft, the whole constructed, arranged, and operated in the manner herein set forth.

2. The combination of the elbow-levers i i' l, springs k, pattern-chain h, and jack-bars, all arranged and operating together in the manner herein described.

3. The combination of the harness-actuating levers b, provided with a horizontal arm, c, terminating in a geared segment, and sliding jack-bar g, provided with a rack adapted to gear with the arm c, all arranged and operating together in the manner and for the purpose herein set forth.

169,829. BURGLAR-ALARM. William W. Kennoch, New York, N. Y., and Ezra T. Gilliland and Jas. F. Gilliland, Cincinnati, Ohio. [Filed Oct. 26, 1874.]



The combination of cartridge-socket C, hinged hammer B, link d, and spring D, arranged and operating substantially as set forth, whereby greater delicacy of adjustment is secured, and a very slight movement of the door or window will suffice to trip the hammer.

169,830. PLOWS. Jno. Lane, St. Louis, Mo., assignor to Hapgood & Co., same place. [Filed Jan. 14, 1875.]

Brief.—Devices for securing the parts of the plow together.

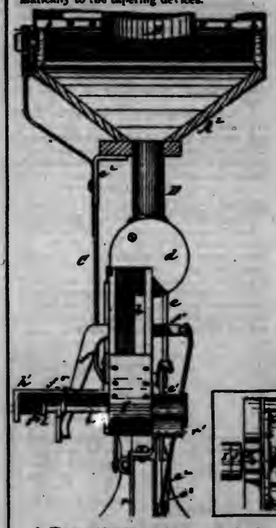


1. The land-bar B, with support C and shoulders Z Z', in combination with the standard D, secured to the back of the mold-board and ending against the shoulder Z', and removable therefrom, and secured to the land-bar with a bolt at e, arranged as and for the purpose shown.

2. The frog E, bent to the curve of the mold-board, and twisted to the axis of the standard, in combination with the wide support W, covering the line of junction, as shown, substantially as and for the purpose set forth.

169,831. MACHINES FOR TAPERING CORKS. James M. Lane, Rockland, Mass. [Filed Feb. 6, 1875.]

Brief.—The corks are thrown into a hopper, from which they are passed singly and automatically to the tapering devices.



1. The combination, with the chute h, of a box, d^1, for automatically receiving and delivering a cork to the chute, substantially as described.

2. The combination, with the holder A^1 for the corks, of a box, d^1, for receiving and delivering a single cork to a chute, h, substantially as described.

3. The combination of a chute and plunger, f^1, with cork-presenting mechanism $r r'$, substantially as described.

4. In combination, a holder, A^1, for the corks, an agitator, B, a pipe, D, and a box, d^1, for receiving and delivering a cork to a chute, h, substantially as described.

5. The combination, with the box d^1 and the pipe D, of the projection e', to close the end of the pipe when the box is moved, substantially as described.

6. The combination, with the box d^1, of the hinged side, adapted to be opened and closed, substantially as described.

7. The combination, with the box d^1, of the chute e d^2 d^3, lever d^4, and spring d^5, substantially as described.

8. The combination of the plunger f^1 and its spring, with the lever f^4 and pivoted arm, all adapted to operate the plunger, substantially as described.

9. The combination, with box d^1 for selecting a single cork, of a chute, h, a plunger, f^1, to remove the cork from the chute h, and a cork-presenter, $r r'$, to receive the cork and present it to a tapering mechanism, all substantially as described.

169,832. REFINING SUGARS. Franz O. Matthiessen, New York, N. Y. [Filed Apr. 8, 1875.]

The improved process of producing free-grain coffee-sugar herein described, which consists in cooling and hardening the sugar-mass discharged from the vacuum-pan, and then disintegrating it by mechanical means, and subjecting it to gentle heat to cause until nearly all the water it contains is evaporated, and it acquires the condition of free-grain coffee-sugar, as set forth.

169,833. REFINING SUGAR. Franz O. Matthiessen, New York, N. Y. [Filed Apr. 12, 1875.]

The improved process of refining sugar herein described, which consists, in addition to the ordinary boiling of the clarified sugar-liquor in the vacuum-pan, in dividing the hot syrup and crystallized sugar discharged from the vacuum-pan into small masses or thin layers, and subjecting such small masses or thin layers to a process of gentle evaporation, conducted in the open air, and prolonged until sufficient water has been expelled from the material operated upon to convert it into a granular mass, as set forth.

169,834. PROCESSES OF REFINING SUGAR. Franz O. Matthiessen, New York, N. Y. [Filed Apr. 12, 1875.]

The improved process of refining sugar herein described, which, in addition to boiling the clarified sugar-liquor in the vacuum-pan and disintegrating the product discharged from the vacuum-pan after it is cooled and hardened, consists in subjecting the cold disintegrated sugar-mass to gentle heat applied in the open air, as set forth.

169,835. PROCESSES OF REFINING SUGAR. Franz O. Matthiessen, New York, N. Y. [Filed Apr. 14, 1875.]

The improved process of refining sugar herein described, which consists in subjecting divided masses or thin layers of the syrup and crystallized sugar, produced by boiling the clarified sugar-liquor in the vacuum-pan, to gentle heat, and a consequent drying operation, conducted partially in vacuo and partially in the open air, substantially as and for the purposes set forth.

169,836. SPINNING-MACHINES. C. S. Mattison, St. Louis, Mo. [Filed Oct. 10, 1874.]

Brief.—Differential motions are given to the bobbin and fler by the devices of the first clause of the claim, and the material spun is guided, so as to be wound on the bobbin in overlapping conical layers, by the devices of the second and third clauses.

1. The combination of the wheels C, F, and G, when the wheels F and G vary as to the number of teeth, and are connected, respectively, with the bobbin and fler-frame, so as to give positive rotation to both and at different speeds.

2. The combination of cog-wheels O and P, a shaft, Q, with cog-barrel or wheels Y and W, crank T, rod S, and lever R, substantially as and for the purpose set forth.

3. The combination of the cog wheels O and P, screw-shaft Q Q', thread-carrier a b, with split nut engaging the shaft, wheels W and Y, crank T, rod S, and lever R, all constructed and operating substantially as and for the purpose set forth.

169,837. MINCING-MACHINES. J. A. Miller, Providence, R. I. [Filed Mar. 26, 1874.]

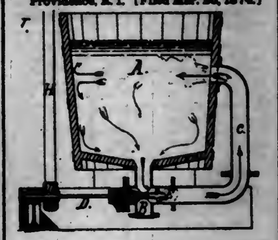
Brief.—The meat is driven to the knives by a rotating wheel having concavities in its periphery. The knives are situated over the wheel, and a pivoted stripper causes the meat to leave the wheel and pass through them.



1. The combination of the fluted cylinder A and abutment B with the knives C, arranged as and for the purpose described.

2. The knives C, having holes near their ends, arranged substantially as shown, so that when placed together these holes form steam-passages, so that the knives may be heated, substantially as and for the purpose herein set forth.

169,838. MACHINE-MACHINES. J. A. Miller, Providence, R. I. [Filed Mar. 26, 1874.]



The pipe B, connected with the bottom of a washing or mashing tub or tank, in combination with the propeller E, revolving within the pipe B, the other end of said pipe being connected, by the pipe C, with the tub or tank, so that the contents of the same will be subjected successively to the scrubbing, mashing, and mixing action of the propeller, substantially as and for the purpose herein set forth.

169,839. NECK-YOKES. Charles R. Moon, Wolcottville, Ind. [Filed Sept. 26, 1874.]



1. A boldback consisting of the plates C and D, and the part E, adapted to be so connected with the yoke A that the boldback can move freely to the right or left, as may be required, substantially as specified.

2. A boldback consisting of the plates C and D, each having an eye, a b, the part E, and plate or clip F, combined to operate as and for the purposes set forth.

169,840. FIRE-SHIELDS. Thomas T. Moore, Chicago, Ill. [Filed Mar. 26, 1875.]

Brief.—A fire-shield composed of a series of metal plates, the ends of which are adapted to interlock each into the other, and so arranged as to admit of being suspended from the ridge or gable.



1. The portable fire-shield, consisting of the plates C, interlocked one into the other, and suspended from the building, as specified.

2. In combination with the lip *a* of the plate, the lug *e*, adapted to pass through mortise *d* in the plate, whereby the several plates are secured in line one with the other, laterally, as specified.

162,851. INTERFERING-PADS FOR HORSES. Henry S. Nichols, Lynn, Mass. [Filed Mar. 3, 1875.]



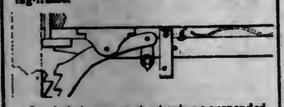
1. In a horseshoe provided with the heel-recess *a* and the elastic cushion B, having a tenon or projection, *b*, to enter such recess, the said elastic cushion arranged to project in rear of or beyond the heel of the shoe, as and for the purpose specified.

2. The elastic cushion B, provided with the projection *b*, and with the corn-reliever *d*, constructed and arranged with such projection as represented.

3. The elastic cushion, provided with the range of teeth in its outer edge, and extended over the upper surface of the shoe, and beyond its outer edge, and provided with a projection, *b*, extended into a corresponding recess or mortise in the shoe, all being as shown and described.

162,852. SAFETY-CATCHES FOR ELEVATORS. Francis B. Perkins, Boston, Mass., assignor to Whittier Machine Company, same place. [Filed Mar. 27, 1875.]

Brief.—The suspending-ropes are attached to the ends of a bar, which has a loose vertical motion in straps beneath the platform. On the breakage of either rope, the bar becomes a lever, acting on one of two arms on a rocking shaft lying parallel to it. These arms extend into links suspended from the ends of pawl-levers, which lock into a vertical line of ratchet-teeth on each side of the guiding-frame.



In a hoisting apparatus having a suspended platform or car, the combination of the lifting-bar with the rocker-shaft, and its levers connected to detaining-pawls, all adapted to operate, as set forth, with suspensories, either intact or broken.

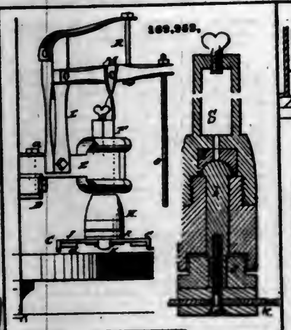
162,853. MACHINES FOR GRINDING MARBLE AND TILE. Norman W. Robinson, Frank W. Smith, and Henry Campbell, Burlington, Vt. [Filed Nov. 10, 1874.]

Brief.—The marble is placed upon a horizontally-rotating grinding-wheel. It is kept from revolving with it by an elastic frame-work, capable of receiving horizontally upon its own axis. A system of rubber and metallic springs keeps the marble uniformly adjusted, under pressure, to the grinding-wheel.

1. In a stone-grinding machine, the combination of the spindle I with the disk J and rubber disk K, and spring-arms *s*, substantially as and for the purposes herein set forth.

2. The construction and arrangement of the socket H, with the spindle I, disk J, and the slide F, substantially as and for the purposes herein set forth.

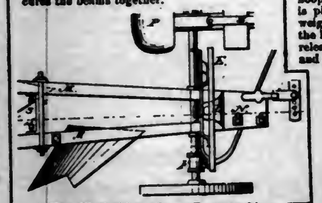
3. The combination of the adjustable arm H, the slide F, post L, lever M, spring Q, and connections O, N, and R, substantially as and for the purposes herein set forth.



162,853.

162,854. GANG-PLOWS. Loring O. Rockwood, Ottawa, Ill. [Filed Feb. 4, 1875.]

Brief.—A sliding oval frame is secured to the axle with its sides in a vertical position. It carries three levers, which, respectively, elevate the plow-beams, "wing" the plows, and deflect the tongue. A novel clamp secures the beams together.



1. The elliptical lever-frame E, secured in a vertical position upon the axle A, and adjustable upon it by the slide K and the collars I I, substantially as and for the purpose set forth.

2. The elliptical frame E, in combination with the lever J, the lever D, and the lever X, in the manner and for the purposes set forth.

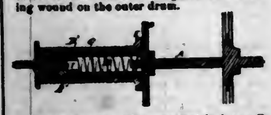
3. The elliptical frame E, in combination with the plow-beams M M, the slotted plates N N, the gage-piece or devis R, the balance-lever Q, the sway-rod S, the sleeve F, and the brace-rod T, in the manner and for the purposes set forth.

4. The solid clamp O, having the ends cut away to receive and secure the plow-beams M M to each other, with set-screws *s s s s* passing through the flanged inner ends, and impinging against the inside of the plow-beams, to adjust their relative position, in the manner and for the purposes set forth

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162,855. AIR-PUMPS FOR CARBURETERS. Herman Seytar, Cambridge, Mass. [Filed Feb. 6, 1875.]

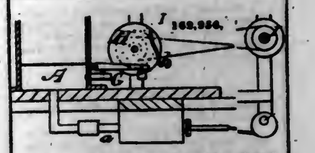
Brief.—A sustaining-spring is placed within the inside drum, for continuing the motion of the blower while the weighted cord is being wound on the outer drum.



The combination of the concentric drums G B with the pawl and ratchet E F, the concentric spring D, ratchet and pawl B C, all applied to and combined with the end of shaft A, outside the case of a rotary air-pump, substantially as and for the purpose described.

162,856. PUMPS FOR HYDRAULIC PRESSES. Daml. C. Starks, Hermitage, N. Y. [Filed Mar. 10, 1875.]

Brief.—The smaller plunger is thrown in gear before the larger plunger has completed its stroke, and both plungers then operate together at unequal speed, to complete the movement. A safety-valve is arranged so as to blow off at any desired pressure.

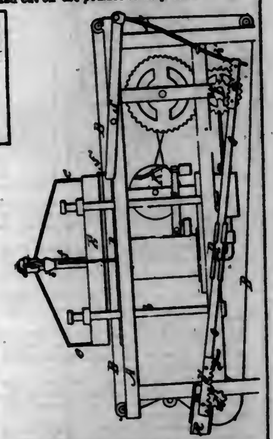


1. In a hydraulic pump, the combination of two plungers, C D, of unequal size, the operating cams *b b*, and the automatically-operating clutch *d*, whereby the smaller plunger is thrown in gear before the larger plunger has completed its stroke, and both plungers then operate together at unequal speed to complete the movement, substantially as herein set forth.

2. The combination, with the cylinder A, of the safety-valve G, face-plate H, with cam *h*, and cone-pulleys I I, with their connecting-belt run by gearing from the main shaft, substantially as and for the purposes herein set forth.

162,857. CIDER-PRESSES. Daml. C. Starks, Hermitage, N. Y. [Filed Jan. 28, 1875.]

Brief.—An intermittently-revolving endless apron passes the entire length of the top frame between the press-plates. A metal hoop surrounds the upper plate. On a shaft is pivoted a cam-headed lever, carrying a weight on its outer end. A rod is attached to the lower press-plate, which lifts the weight, releases the lever, and allows the hoop to drop and cut off the pomace to be pressed.



1. In combination with the stationary press-plate C and movable press-plate D, the automatically-operating hoop E, for the purposes herein set forth.

2. The combination of the hoop E, rods *c*, sleeve *d*, shaft *f*, and eccentric lever *h* with weight *i* and trip-rod *v*, all substantially as and for the purposes herein set forth.

3. The combination of the sliding rack-bar O, pivoted box P, slotted box R, spring *o'*, hook *p'*, pinions *w x'*, lever S, and arm *y'*, all substantially as and for the purposes herein set forth.

162,858. TOY PISTOLS. Augustus R. Taylor, New Britain, Conn. [Filed Mar. 13, 1875.]



1. In a toy pistol, the combination of the cylinder B, provided with the slot or cavity *b*, the plunger *d*, spring *c*, and hammer D, all substantially as and for the purposes herein set forth.

2. In a toy pistol, the slotted revolving jacket or casing G, in combination with the cylinder B, plunger *d*, and hammer D, substantially as and for the purposes herein set forth.

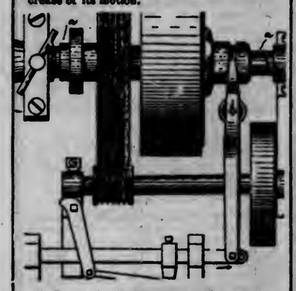
162,859. KEY-FASTENERS. J. Thornton, Cleveland, Ohio. [Filed Feb. 17, 1875.]



A key-fastener consisting of one piece of wire, bent as described, having a spring-stem, C, formed by the return of the wire, and provided with a guide-loop, A, at one end thereof, and at the opposite end with a spring-hook, B, extending from the said stem C, in combination with a door-key, substantially as herein set forth.

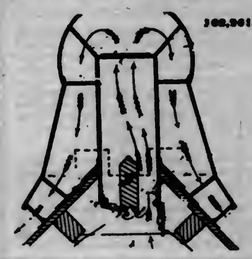
162,860. OPERATING PAPER-CALENDERING ROLLS. N. H. Whitten, Holyoke, Mass., assignor to Holyoke Machine Company, same place. [Filed Mar. 17, 1875.]

Brief.—On the roll-shaft a loose belt-pulley has motion given to it by a lever and friction-clutch, a parallel belt-shaft being simultaneously thrown out. On this latter shaft there is a friction-groove pinion, operating a similar wheel on the former, for the purpose of gradually reducing or permitting an increase of its motion.



1. In a calendering-machine, the combination, with the shaft driving the calendering-rolls, its friction belt-pulley or friction-clutch and friction-wheel, of a friction-pinion on an independently-rotated shaft, the friction belt-pulley or clutch and friction wheel and pinion being adapted to alternately operate the calendering-rolls at different speeds, substantially as set forth.

2. The combination, with shaft *s* of the calendering-machine, its friction belt-pulley or clutch, and friction-wheel, of the independently-rotated shaft, its friction-pinion, and mechanism, substantially as described, to operate for engaging and disengaging the parts, substantially as and for the purpose set forth.



162,861.

162,861. RIDGE-VENTILATORS. James S. Wightman, New York, N. Y. [Filed Nov. 17, 1874.]

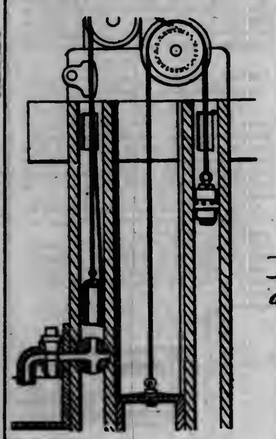
Brief.—This ventilator extends the whole length of the ridge of a roof, and the circulation of air is controlled by valves that are operated by means of springs.

2. The combination, substantially as hereinbefore set forth, of the storm-shield, the interior cap, the wire-gauze, the ridge-pole, the pads, and the automatic valves.

3. The combination, substantially as hereinbefore set forth, of the interior cap, the automatic valves, and the springs and cords for operating these valves.

162,862. HYDRAULIC ELEVATORS. Cyrus W. Baldwin, Chicago, Ill. [Filed Feb. 19, 1874.]

Brief.—The working-piston is balanced by the carriage. The cord of the graduating-piston being rove to a drum of less diameter than the pulley over which passes the cord of the working-piston, (the drum and pulley being upon a common axis,) the downward draft of the latter piston overcomes that of the former, when the water is let off at the side cock. In this case the water discharges from the working-cylinder only. It also, from the same cylinder, follows up the graduating-cylinder below its piston by the natural counter-balance of the two columns. This secures the minimum power of the device, and its minimum expenditure of water. By opening wide the valve in the graduating-piston, its resistance to the working-piston is diminished, thereby increasing the working power of the latter to its maximum, with the maximum expenditure of water. These two effects may be graduated by graduating the width of the opening of the valve in the graduating-piston.



1. The combination, with the two communicating upright cylinders, of the lifting-piston in the one cylinder and the water-escape in the other cylinder, located with respect to the lifting-piston, substantially as shown and described.

2. The combination, with the main cylinder and graduating cylinder, of the lifting-piston, water-escape, and graduating valve-piston, for joint operation, as shown and set forth.

3. The combination, with the graduating cylinder, of the escape, the escape-cock, and the graduating valve-piston, arranged and operating as shown and set forth.

4. The graduating piston and its valve, in combination with the escape-cock and the valve-cord, and intermediate mechanism, by which said valve and cock are connected and operated, substantially as set forth.

5. The combination, with the water-supply reservoir, the main cylinder, the lifting-piston, and the elevator-car, of the escape, the escape-cock, the graduating piston, and its valve, for joint operation, as shown and set forth.

6. In combination with the main and graduating cylinders, elevator-car, and lifting-piston, the graduating piston, provided with a valve opening upward, and arranged to rise in the graduating cylinder when the car rises, substantially as shown and set forth.

162,863. APPARATUS FOR COLLECTING THE RAYS OF LIGHT AND HEAT. P. Balestrieri, Rome, Italy. [Filed Mar. 20, 1875.]

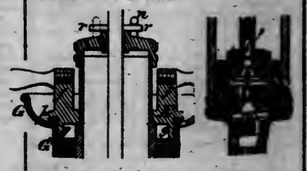
Brief.—A line, A A', is drawn perpendicular to O B (assumed axis of collector) at point O. This line is divided into equal divisions, and such divisions laid off on axis, and the corresponding points joined by right lines. Right lines are also drawn from same to divisional points on perpendicular. The line A A' is revolved about point O, and generates a plane. The lines 1c, 2b, &c., comprised between any two successive radiuses, will at same time generate right segments of cones, having a common axis, O F, and their bases in the same plane perpendicular to the axis. The segments thus generated constitute the armillary collector, and their surfaces are the reflecting-surfaces.



The armillary-photo-thermo collector, consisting of conical concentric rings *a*, *b*, *c*, *d*, &c., arranged and constructed upon the principles herein described, and made with reflecting-surfaces on their inner sides, substantially as and for the purposes specified.

162,864. AIR-PUMPS. George H. Barker, Waverly, N. Y. [Filed Oct. 2, 1874.]

Brief.—By means of the screw-thread upon the lower part of the cap the pump is attached to the reservoir. A small quantity of liquid is put in the cup to effectually seal the joints. By means of the hooks and pins the piston is held down when desired.



1. In an air-pump for a fire-annihilator, the combination of nut E and cap G, pocket as described, with the pump-barrel A, as specified.

2. The hooks *n n* and pins *r r*, combined with the piston-rod E and the pump-barrel A, as described

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162,865. POCKET-KNIVES. G. P. Benedict, Mount Carmel, Conn. [Filed Jan. 6, 1874.]

Brief.—The handle is struck up from a single piece of sheet metal, in the usual way, and has a free spring dropped within. An offset is struck up at each end, against which the blade impinges when open, instead of against the end of the spring itself, as is usual in such knives.



1. A pocket-knife composed of the combination of the handle A, made from a single piece of sheet metal, with the shoulders *f f* to hold both spring and blades, spring K, and blades B and D, constructed substantially as and for the purpose described.

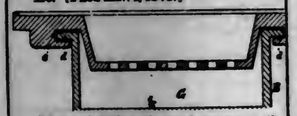
2. The detachable separator for separating the blades, constructed and operating substantially as described.

162,266. SLED-RUNNERS. Robert B. Bird, Madison, Wis. [Filed Jan. 21, 1875.]



The combination of the sliding tube E and K, and the slots U and I, as and for the purpose set forth.

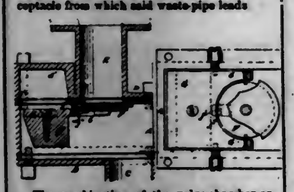
162,267. DETACHABLE ASH-PANS FOR STOVES. Albert T Bleyley, Conception, Mo. [Filed Mar. 1, 1875.]



The combination of grated fire-box A U, having grooves *c c*, and the subjacent ash-pan B G, having flanges *d d*, as and for the purpose specified.

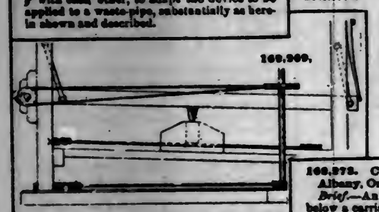
162,268. AUTOMATIC CLOSING ATTACHMENTS FOR WASTE-PIPES. F. P. Bourne, Brooklyn, N. Y. [Filed Mar. 6, 1875.]

Brief.—To the rear end of the plate a weight is attached, sufficient to hold the valve firmly against its seat. Directly above the weight is formed a recess or chamber, into which the weight rises when the valve is opened. This device is attached to the waste-pipe at a convenient distance below the sink or other receptacle from which said waste-pipe leads



The combination of the valve-chamber or box A, the bottom plate B, the chambered top plate D *d'*, the pipes C E, the pivoted valve F, the pivoted valve-plate G, and the weight *f'* with each other, to adapt the device to be applied to a waste-pipe, substantially as herein shown and described.

162,269.



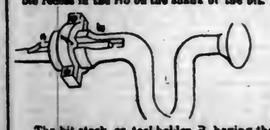
162,270. NUT-LOCKS. Sterne Bruneon, Benton Harbor, Mich. [Filed Dec. 16, 1874.]



A nut-lock consisting of the catch *g*, having both its ends beveled upon the same plane, and placed in a recess which is large enough to allow it to assume an inclined position when the nut is being screwed on, and a vertical position when the nut is being unscrewed, substantially as shown and described.

162,271. BIT-STOCKS. Elbert R. Charles, Petaluma, Cal. [Filed Feb. 16, 1875.]

Brief.—The bit is attached to the stock by a longitudinal rib upon its shank, which fits into a corresponding groove in the socket of the holder. The bit is secured in position by an adjustable ring upon the outer part of the holder, said ring having a projection upon its inner surface, which engages with a suitable recess in the rib on the shank of the bit.



The bit-stock or tool-holder *B*, having the hole *c* with its groove *d*, and annular groove with its ring *f*, said ring having a projection, *e*, moving in the transverse slot *i* in combination with a tool, E, having the rib *e* with its transverse recess *s*, all combined and arranged substantially as and for the purpose described.

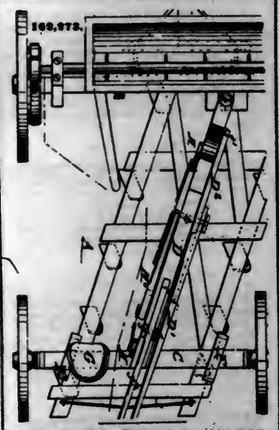
162,272. DOOR-LATCHES. John A. Colby, Springfield, Mass. [Filed July 7, 1874.]

1. The swinging catch B, rigidly held to the frame A by the pawl-lever D to allow it to be retracted by sliding with the frame upon contact with the lamb-casing of the door, while freed by the sliding of stem W to permit it to be swung within the case by the movement of the door in opening, substantially as shown and described.

2. The cover *s*, sliding in place and held by the coil-spring *y'* from frame A, for the purpose shown and described.

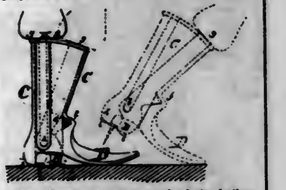
3. The sliding frame A, having the swinging catch B pivoted thereto, in combination with the springs *w* and *y'*, all being arranged within the case and operating substantially as described.

162,273.



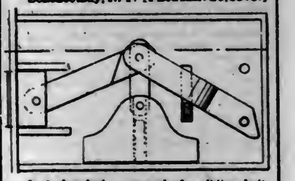
162,274. NAIL-EXTRACTORS. Macchil D. Converse, Jersey City, N. J. [Filed Jan. 20, 1875.]

Brief.—The extractor is made of two pieces of metal, one of which consists of a hollow shank provided with a fixed jaw and fulcrum-piece, and the other of a shaft provided with a jaw capable of a vibratory and vertical movement within and through said hollow shank. The edges of the jaws that rest upon the floor are provided with short prismatic projections.



A nail-extractor composed of the hollow shank C, provided with the jaw A and fulcrum D, and of the shaft B, provided with the jaw B, capable of both a vibratory and a vertical movement within and through the hollow of said shank, substantially as and for the purpose shown and described.

162,275. DOOR-LATCHES. Jonas H. Crane, Schenectady, N. Y. [Filed Mar. 20, 1875.]



1. A door-lock composed of a sliding bolt with pivoted and weighted toggle-levers and lateral operating thumb-lever, when arranged and constructed substantially as and for the purpose set forth.

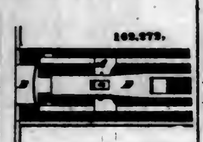
2. The combination of the lateral thumb-lever, swinging in guide-slots of the casing, and having the bottom projection, with the grooved outer seat part, substantially as specified.

162,276. MIDDLINGS-PURIFIERS. Simeon Crittenden and James Waters, Chatfield, Minn. [Filed Mar. 1, 1875.]

Brief.—Blast is directed upward and distributed equally in sharp jets against the bolting-cloth by the graduated and zigzag plates, for raising the fine impurities therefrom, which are carried off by the suction-blast.

162,269.

162,273.



162,269. MIDDLINGS-PURIFIERS. J. Brown, Buffalo, N. Y. [Filed Aug. 26, 1874.]

1. The combination, with a screen, of the endless belt *h*, and a brush-frame secured to the endless belt by a coupling capable of a free lateral movement relative to the brush-frame, so as to permit the coupling to pass around the pulleys with the endless belt, and thereby impart a reciprocating movement to the brush, substantially as hereinbefore set forth.

2. The combination, with the screen, brush-frame, and endless belt, of the groove *t*, and shuttle or sliding coupling *h' i*, substantially as and for the purpose hereinbefore set forth.

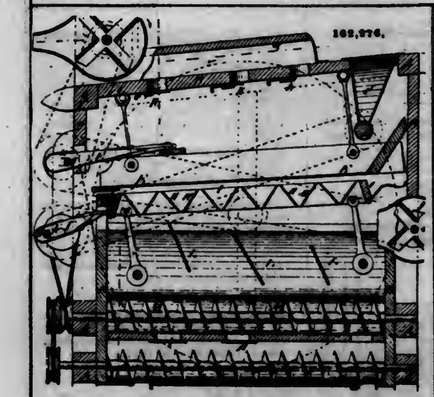
162,273. CULTIVATORS. Amos B. Colver, Albany, Oreg. [Filed Jan. 30, 1875.]

Brief.—An angular plow-frame suspended below a carriage having four wheels, and sliding up or down in guides. By a peculiar system of levers and connecting-rods, every part of the frame is uniformly raised and locked above the ground.

1. As an improvement in cultivators, the combination of the obliquely-arranged plow-frame A, sliding on front king-bolt *b*, and by rear guide-frames F on the rear axle, with the supporting main beam D, and operating lever D' L', and frame connecting-rods, for raising and lowering the plows as required, substantially in the manner and for the purpose set forth.

2. The combination of sliding plow-frame A with main beam D, and pivoted supporting-hooks H operated by spring-acted lever H', for locking plow-frame in raised position, substantially as set forth.

162,276.



162,281.



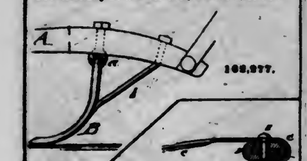
1. The combination of the vibrating frame I and the zigzag plates H, having narrow openings between their top and bottom edges, with the fan-blower P and the bolt E, substantially as herein shown and described.

2. The series of graduated plates L, in combination with the fan-blower P, the frame and plates I H, and the bolt E, substantially as herein shown and described.

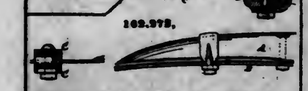
162,277. VISE-RAKES. J. W. Dunn, Corpus Christi, Tex. [Filed Feb. 13, 1875.]

Brief.—A U-shaped bar, having the ends sharpened and bent forward, is secured to the under side of the beam by an eyebolt, and braced from each branch rearwardly to the beam. The guiding-handles are secured to the rear end of the beam.

The combination, with beam A of the fork B B, pivoted in beam-eye *a*, and provided with braces *b b*, all constructed and arranged substantially as and for the purpose specified.



162,278.



162,278. CARRIAGE-SPRINGS. William F. Dunnenberry, New York, N. Y. [Filed Feb. 5, 1875.]

1. The combination, with a side spring, B, cross-spring C, and rubber spring D, of a single bolt, E, as and for the purpose specified.

2. The combination of the rubber blocks D, with the ends of the cross-springs C, and the ends of the steel springs B of the side bars A B, substantially as shown and described.

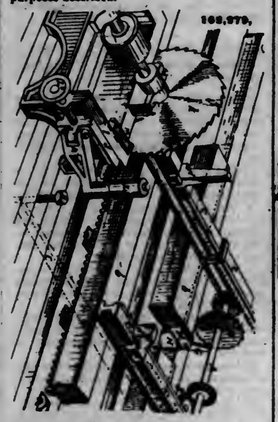
162,279. CIRCULAR-SAW MILLS. Chester M. Fairbanks, Lebanon, N. H., assignor to Lane Manufacturing Company, Montpelier, Vt. [Filed Aug. 20, 1874.]

Brief.—The gage roll swings vertically, and, when in its working position, is held rigidly by two projecting flanges upon the sliding carriage, to which it is attached.

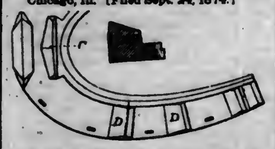
1. The projections b^2 and c^2 on sliding box J, in combination with the vertical and swinging gage-roller L, as a means of holding the gage-roller truly in position, and preventing displacement thereof, substantially as described.

2. The sliding box J, having projections b^2 c^2, and the leg c^3, to which the horizontal arm K, that carries the gage-roller L, is pivoted, in combination with the stationary slides I I, carrying the horizontal roller M, as and for the purposes described.

162,279.



162,280. HORSESHOES. J. D. Felthousen, Chicago, Ill. [Filed Sept. 24, 1874.]



1. A horseshoe provided with supplementary calks shorter than the toe and heel calks, and having their edges inclined to the plane of the shoe, substantially as and for the purposes specified.

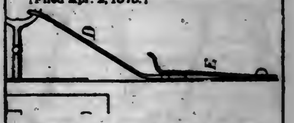
2. Having a projecting rib around the inside of the shoe, in combination with the supplementary calks C and D D, substantially as and for the purposes set forth.

162,281. JOINERS' CLAMPS. D. A. Fisher, Jr., Washington, D. C. [Filed Mar. 30, 1875.]

Brief.—In joiners' clamps a central purchase is obtained on wood of varying thickness by means of a sliding nut adjustable in vertical guideways, which are rigidly attached to the front of the bed of the clamp, said nut being attached to, and operated by, a regulating screw arranged at right angles to the main clamping-screw. The nut is secured at the desired height by a thumb-nut operating upon the regulating screw.

The combination of the bed A, support B, clamping-screw D, and block E with an adjustable nut, C, and screw, F, constructed as shown, and for the purpose described.

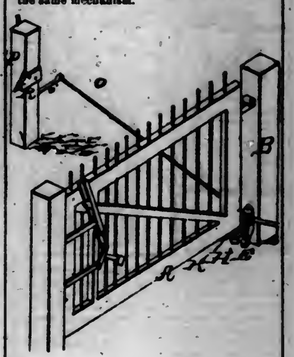
162,282. KEY-FASTENERS. Robert F. Gibson, Cleveland, Ohio, assignor of one-half his right to Franklin N. Clark, same place. [Filed Apr. 2, 1875.]



The tag D and the spring-catch E, in combination with the key C, for fastening the key in the lock, substantially in the manner and for the purpose set forth.

162,283. AUTOMATIC GATES. Cyrus E. Gillespie, Edwardsville, Ill. [Filed Mar. 18, 1875.]

Brief.—Operated by a system of levers, which is connected with the bottom hinge. This hinge is formed of three parts, one of which, having a rounded V-shaped groove in its upper side, is attached to the post. At the outer end of this part is a vertical hook, upon which a slotted lever works. Attached to the foot of the gate is a plate, with a hook projecting downward, which works in the slot in the lever. Motion being given to this slotted lever by the system of levers, the foot of the gate is drawn out, the front raised, and the gate allowed to swing open. It is closed by the same mechanism.



1. The lower hinge, consisting of the bracket E, lever H, and hook K', combined and operating substantially as described.

2. The upper hinge, consisting of the eye L, hook M, provided with the notches *m*, and the key N, combined and operating substantially as described.

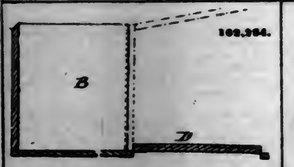
3. The bracket E, lever H, hook K, rod *o*, arm *o'*, shaft *o''*, post P, arm *o'''*, and lever Q, combined and operating substantially as set forth.

4. The gate A, post B, bracket E, lever H, hook K, leverage O, post P, and fastening H, combined and operating substantially as described.

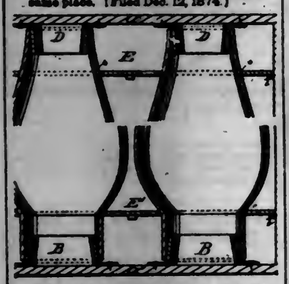
162,284. CIGAR-BOXES. Carl Giucd, New York, N. Y. [Filed Feb. 20, 1875.]

A cigar-box made with a hinged back, D, and with the lid E hinged to the hinged back, the back being grooved to receive tenons that project from the rear ends of the sides B B, all substantially as herein shown and described.

No. 162,264.



162,265. BOXES FOR PACKING LAMP-CHIMNEYS. Noah Harris, North Grove, Ind., assignor of one-half his right to Hiram Stout, same place. [Filed Dec. 12, 1874.]



A box for packing lamp-chimneys, having the perforated diaphragms E E', rests *d*, and cups D B, substantially as described.

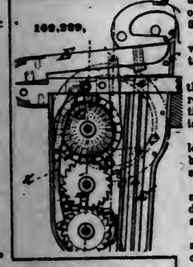
162,266. WICK-RAISERS. Henry C Hart, Adrian, Mich. [Filed Jan. 12, 1875.]

Brief.—The shaft bearing the worm-wheel is turned by means of the hand-wheel attached to its lower end.

No. 162,266.



No. 162,269.



1. The combination, with the ordinary wick-raising device, consisting of the shaft *a* and toothed wheels *b b*, of the toothed wheel *d*, arranged within the oil-chamber, and the worm *c*, attached to a vertical shaft passing down through the bottom of the oil-chamber, and operated from below the same, substantially as herein set forth.

2. The combination of the oil-chamber A with the wick-raising mechanism, substantially as shown and described, all arranged and operating so that the wick-raising mechanism is placed within and below the top of the oil-chamber.

3. The combination, with the oil-chamber A, wick-tube B, and wick-raisers *b b*, of the toothed wheel *d*, worm *c*, shaft E, stuffing-box *f*, and hand-wheel G, all constructed and arranged to operate within the oil-chamber, substantially as and for the purposes herein set forth.

162,267. NECK-TIE HOLDERS. M. A. Head, Carthage, Ill. [Filed Mar. 23, 1875.]

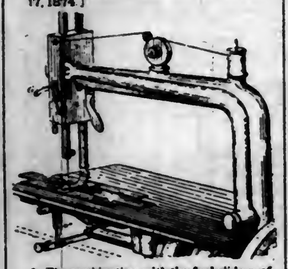
1. The combined neck-tie holder and badge-holder, consisting of the shield E and the hinged clasp I, having the slots V, or equivalent fastening device, as set forth.

2. In combination with a neck-tie, a badge-holder, consisting of the clasp I, when provided with slots V or equivalent devices for holding the badge, as set forth.

No. 162,267.



162,268. SEWING-MACHINES. George W Hoffman, Monroe Centre Ill. [Filed Sept 17, 1874.]



1. The combination, with the feed-slide *p*, of the pivoted elbow-lever S, for giving the vertical movements, and the lever *o'*, for giving the reciprocating movements, to said slide, all arranged and operating as described.

2. The slotted take-up lever G, constructed as described, in combination with the ribbed pivoting disk *g* and spring *g''*, arranged and operating as set forth.

162,269. CONDUCTORS' PUNCHES. Henry Johnson, Washington, D. C. [Filed Mar. 16, 1875.]

1. In a conductor's punch, the double-crown ratchet-wheel G, having teeth *j j'*, adapted to sound an alarm, prevent a premature or fraudulent alarm, and actuate the dial mechanism of a registering device, substantially as specified.

2. The combination, with a registering device in a bell-punch, of the separate and detached dial-plate M, substantially as specified.

3. The slotted storing-tube E' for receiving the clippings, and adapted to be placed in and removed from the clipping-box, in combination with a punch and its actuating mechanism, substantially as specified.

4. The combination of a vibrating thumb-lever cam, D, metallic arm E, and a wooden handle, *b*, rigidly secured to the punch-frame, substantially as specified.

5. The detachable lid or cover L, in combination with a dial-case, a clipping-box, and a detachable dial-plate, H, substantially as specified.

6. The ejector-spring *s*, in combination with a detachable cover, L, and plate H of the dial-case, substantially as specified.

7. The spring-pawl *o*, in combination with a ratchet-wheel, G, adapted to be intermittently rotated by suitable mechanism, and a spring-hammer, K, for the purpose of preventing a premature or fraudulent alarm, substantially as specified.

8. The intermittently-rotated crown-ratchet G, in combination with an overlying hammer-spring, K, having a beveled tooth, *u*, engaging with the teeth of the said wheel, substantially as specified.

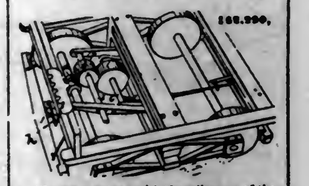
9. The combination of a needle, F, having an enlarged pointed head, *i*, for perforating the clippings and allowing them to slide down the shank of the needle, in combination with a mechanically-actuated punch, substantially as specified.

10. The spring-secured arm E, having a punch bar or blade, in combination with a thumb-lever cam, D, for actuating the alarm and the registering mechanism, substantially as specified.

11. A double-crown ratchet, adapted to be intermittently rotated, and a pawl, in combination with an alarm mechanism, a push-bar for operating the said ratchet, and a spring for holding the push-bar to its engagement therewith, whereby a sharp clicking sound is produced both before and after the alarm, substantially as specified.

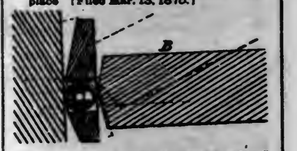
162,270. CAR-BRAKES. Dwight D. Kimel, Bement, Ill. [Filed Nov. 23, 1874.]

No. 162,270.



The combination, with the rollers *a c* of the loose roller *b* on shaft J, one end of which is attached to the bar *c'*, the other end passing through a perforation in the pivoted lever *c*, to the outer end of which the engaging-arm *h* of the rack bar is attached, substantially as and for the purpose set forth.

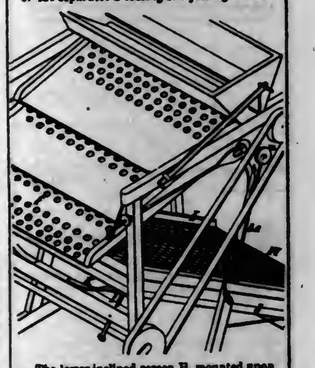
162,271. THROAT-GEARS FOR GAFFS. Chas. B Kingston, Worcester, Mass., assignor of one-third his right to E. W. Stone, same place. [Filed Mar. 13, 1875.]



The combination, with the mast A, and gaff B, of a flat-bearing surface and a bearing-roll, arranged in such relation to each other that the operation of "peaking" the gaff or elevating its rear end will transfer the pressure or strain at the throat from the bearing-roll to the flat bearing-surface, and vice versa, for the purpose set forth.

162,272. GRAIN-SEPARATORS. E. Knapp, San Francisco, Cal. [Filed Mar. 10, 1875.]

Brief.—Devices for giving the lower screen of the separator a tossing and jarring motion.



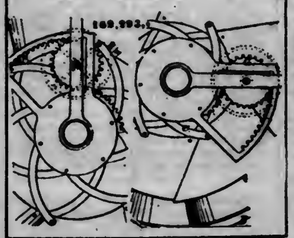
The lower inclined screen H, mounted upon springs K K, and having the screws *i*, or equivalent stop, in combination with the rods M and cam *p*, for imparting to said screen an up-and-down motion and jar, when the jar is produced at the termination of the stroke or motion, substantially as and for the purpose described

162,273. WATER-WHEELS. Fredk. Kring, Johnstown, Pa. [Filed Dec. 5, 1874.]

Brief.—The gates rest horizontally upon the wheel-case, and the weight of the water insures a close joint. The ends of each gate overlap the two adjoining gates, and thus form sliding joints between them.

The series of horizontal gates A, resting and sliding upon the wheel-case B, said gates overlapping each other, and being opened by moving radially inward, substantially in the manner and for the purpose set forth.

No. 162,273.

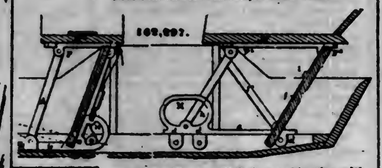


In a washing-machine, the combination of the semi-cylindrical vibrating suds-box C, suspended on trunnions or pivots D, and having the hand-lever E attached to its sides, and the removable vertically adjustable rubber F, having arms G provided with guide-pins H and the vertical open-grooved extensions B of the frame A, all arranged as shown and described, to operate as specified.

162,274. JUMP-SEATS FOR CARRIAGES. C. K. Mellinger, Harrisburg, Pa., assignor of one-half his right to Jacob Reinoehl and Lehman & Bergel, same place. [Filed Jan. 6, 1875.]

1. A panel, in combination with the jump-seat supports, having a common motion with, and being retained in position by, said supports, as and for the purpose set forth.

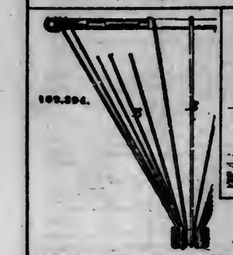
No. 162,274.



2. The sill-irons H S, in combination with the supports A B', the bolts *g g' g''*, and seat-irons F, all constructed to operate as and for the purpose set forth.

3. The sill-irons K *e d*, in combination with the supports D' *l f*, and the seat-irons F' F'', all constructed to operate substantially as and for the purpose set forth.

No. 162,275.



162,275. FILTER-RACKS. Moritz Leiner, New York, N. Y. [Filed Nov. 7, 1874.]

Brief.—A rack made adjustable by means of a rubber tube, which connects the wires at the top, and a rubber band connecting them at the bottom.

1. A filtering-rack, made so as to be adjustable as to diameter, substantially as described.

2. A filtering-rack consisting of the wires B, flexible tube C, and flexible band D, arranged substantially as shown as described.

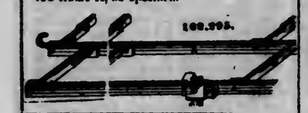
162,276. HARROWS. J. McPherson, Housesville, N. Y., assignor to Deborah McPherson and J. M. House, same place. [Filed Feb. 26, 1875.]

Brief.—The harrow-frame is made of iron. The teeth are each secured to the frame by a device fully described in the first claim.

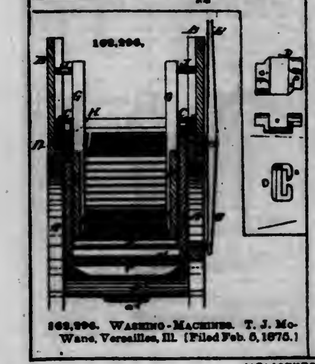
1. The hasp or harrow-tooth fastener D, having a tooth-seat, *c*, and hooks *a a* at diagonal corners, the forward one resting upon and embracing the bar A in front of the tooth, and the rear hook clasping the rail beneath and behind the said tooth, as described.

2. The hasp D, in combination with the harrow-frame A, as specified.

No. 162,276.

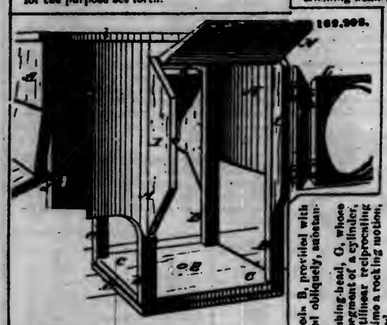


No. 162,277.



162,277. WASHING-MACHINES. T. J. McWane, Versailles, Ill. [Filed Feb. 6, 1875.]

No. 162,278.



162,278. SHIRT-PROTECTORS. Marmaduke H. Macdonald, Wabash, Ind. [Filed Mar. 6, 1875.]

Brief.—Improvements on Patent No. 156,724, January 12, 1875.

1. The combination of the second bottom D, and the pivoting-screw E, with the case A B C, substantially as herein shown and described

2. The combination, with the case A B C, having its sides cut away or open at the bottom, of the flap N, hinged near the top thereof, the door L, and hinged pieces I, all constructed and arranged as shown and described, for the purpose specified.

162,279. CURRY-COMBS. A. F. Migeon, Wolcottville, Conn. [Filed Feb. 27, 1875.]

Brief.—Projecting from the back of the comb, upon the side opposite from the handle, is a rest for the fingers in grasping the comb.



The combination, with a curry-comb, of a grasping-piece *c* at the back of the comb, and at the opposite side to the handle *a*, for the purposes and as set forth.

162,280. FASTENINGS FOR POCKETS. David Neustadter, San Francisco, Cal. [Filed Mar. 6, 1875.]



A re-enforce for pockets in garments, consisting of the strap *b*, sewed to the inside of the flap of the pocket, and having its ends *c* bent inward and sewed to the back of the pocket, substantially as described, whereby the whole flap is strengthened, and at the same time the points of juncture are re-enforced, as specified.

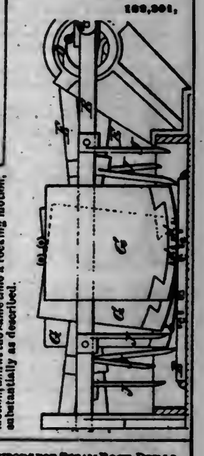
162,281. ORE-CRUSHERS. Geo. E. Noyes, Washington, D. C. [Filed Mar. 13, 1875.]

Brief.—The crushers are given a reciprocating motion by means of shafts connecting with the eccentrics. The rakes serve to feed the ore to the crushers, and, to facilitate the grinding, both the crusher-heads and the bed are furnished with oblique rifles.

1. The rings D, provided with wrist-pins *a* eccentric to their axes, in combination with the rods E, slotted standards F, and crushing-heads G, whereby a rectilinear reciprocating, and also a rocking-motion is given to the heads, substantially as described, and for the purpose set forth.

2. Rakes or feeders J, combined with one or more reciprocating and rectilinear reciprocating crushing-heads, G, substantially as described.

No. 162,281.

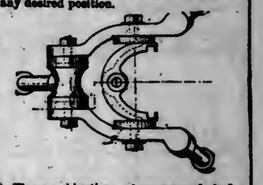


3. The heads G and bolts B, provided with the grooves *c d*, arranged obliquely, substantially as described.

4. A self-feeding crushing-bowl, G, whose base has the form of a segment of a cylinder, said bowl having a rectilinear reciprocating motion, and at the same time a rocking motion, substantially as described.

162,282. TRIPODS FOR STEAM ROCK-DRILLS. George B. Nutting and Joseph C. Githens, New York, N. Y. [Filed Apr. 8, 1875.]

Brief.—The cylinder-carriage is provided with conical trunnions, and the yoke with compensating-nuts, to readily secure the drill in any desired position.



1. The combination of a grooved bed, mounted upon trunnions, with a yoke supported upon two fixed extensible legs, and one

pivoted extensible leg, for the purpose of facilitating the adjustment of the drill-cylinder at variable elevations, and at variable angles, substantially as described.

2. A yoke provided with bearings for the trunnions of a drill-cylinder bed in combination with two fixed legs and one movable leg, the latter pivoted in double conical-face bearings by means of a screw bolt and nut, for the purpose of securely holding the movable leg in prescribed position, substantially as set forth.

3. The combination of a drill-cylinder bed with two horizontal trunnions having conical-face bearings, each provided with a screw-bolt and nut, for the purpose of securely holding the cylinder-bed in prescribed position, substantially as set forth.

162,203. LAMP-BURNERS. James Pigot, Brooklyn, N. Y. (Filed Feb. 20, 1875.)

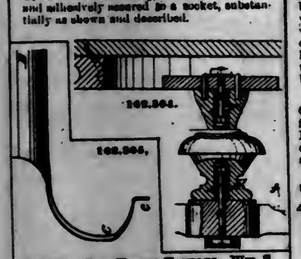
Brief.—The tube-extension forms a partition in the base of the burner-tube, one edge of which is embraced by the wick



The combination of U-spring F and air-tube extension D, as and for the purpose specified.

162,204. TABLES. Louis Postawka, Cambridgeport, Mass. (Filed July 3, 1874.)

A fastening for table-standard legs, stand A consisting of a beaded and end-threaded bolt, G, and a tubular filling, H, which is let into and adhesively secured to a socket, substantially as shown and described.



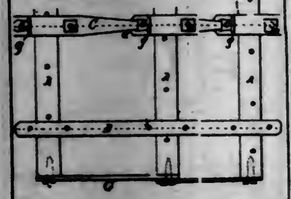
162,205. TEA-KETTLE HANDLES. Wm. S. Potwin, Chicago, Ill. (Filed Mar. 9, 1875.)

Brief.—A tubular open-ended handle.

As a new article of manufacture, a tea-kettle handle consisting of the large hollow part B, open at both ends, and of the slender corrugated parts C C, provided with the parts *c c*, all made in one continuous piece, substantially as specified.

162,206. HARROWS. Geo. H. Pounder, Fort Atkinson, Wis. (Filed Mar. 19, 1875.)

Brief.—The bars that carry the teeth are round, and are secured together by hinged links and clamps, so that the teeth may be placed and held at any desired angle. By securing longitudinal bars near the ends of the teeth-bars, the harrow can be changed from a flexible to a rigid one.



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1. The coupling-plates C, with clasps D, and bolts *c*, in combination with bars A, substantially as described, for the purpose specified.

2. The bars B and clasps E, in combination with round bars A, substantially as described, and for the purpose specified.

3. The parallel bars A, having hinged couplings C at their center, in combination with the check-bars G or their equivalent, substantially as described, for the purpose specified.

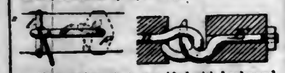
4. The hinged plate C with its slot *c*, in combination with the clasp D with its triangular point *g*, substantially as described, for the purpose specified.

5. The round bars A, in combination with bars B, couplings C, clasps D, check-bars G, and bar A, substantially as described, for the purpose specified

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162,207. HAY AND GRAIN ELEVATORS. T. Powell, Stockton, Cal. (Filed Sept. 26, 1874.)

Brief.—Two sections of netting, each stretched on two parallel bars, the inner ones of which connect by a series of hooks, terminating in one, locking in the contrary direction, and detached by a crank forming part of the hook, actuated by a jerk-rope.

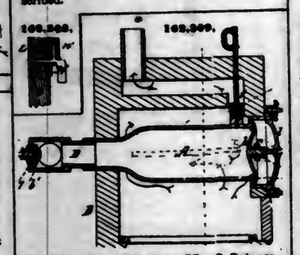


The sections A A, provided with hooks and eyes D E and swivel-hook F, having crank G, catch I, and trip-cord H, all arranged as shown and described.

162,208. CHURNS. Benj. F. Price, Mount Sterling, Ill., assignor to himself and A. A. Hill, same place. (Filed Mar. 6, 1875.)

Brief.—Consisting in connecting the pitman to the dasher-shaft by a flexible joint formed of two plates attached to the pitman, and embracing the head of the dasher-shaft, through which plates and the shaft passes a pin provided with a toe, which passes under a small catch-plate, the handle of the pin being made heavy, so as to hang down, thus holding the toe under the catch-plate while the churn is being operated.

In a churning apparatus, the dasher-shafts O O and crank-rods K K, connected by the flexible joint or coupling formed of the plates L M, pins N, having toes *n* and weighted or drop handles, all combined as shown and described.



162,209. GAS-RETORTS. Silas S. Putnam, Boston, Mass. (Filed Mar. 4, 1875.)

Brief.—An interior cover may be tightened without removing the outer lid. The supporting-flanges of the retort and a horizontal partition in the furnace make detaining-flues for the products of combustion lengthwise of the retort. The oil-feeding pipe enters a clay-lined socket. The scraper-rod is packed by a disk, *d'*, into which the rod is screwed.

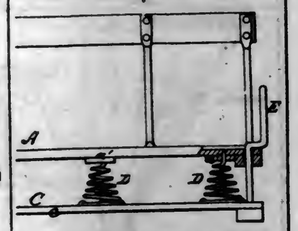
1. The retort A, with its wings *b*, in combination with the casing B, passages *c c*, formed at the opposite ends of the retort, by contracting the wings *b b*, and one or more flues, substantially as and for the purpose set forth.

2. The retort A, constructed in the form of a bottle with its outlet at the neck or contracted portion, and provided with the inner head *h*, in combination with the wings *b b*, passages *c* and *c*, outlet-pipe D, and condenser G, substantially as and for the purpose set forth.

3. The inner head *h*, provided with a central stud, *q*, and secured within the mouth of the retort A by the brace *s*, hollow screw *p*, and projections *r*, in combination with the outer head *l*, having a central screw *t*, which bears against the stud *q*, whereby a pressure may be exerted on the inner head to tighten it, without removing the outer head, substantially as described.

4. The scraper *b'*, with its rod *c'*, screw 15, and beveled disk *d'*, in combination with the screw-plug *d''*, provided with a beveled seat, 17, and with the outlet-pipe D, substantially as described, for the purpose set forth.

162,210. VEHICLE-SEATS. R. Sakestraw, Wyoming, Ill. (Filed Aug. 29, 1874.)



1. In a spring-seat for vehicles, the U-shaped seat-arm E at each side of a seat, A, its legs passing loosely through the seat, and their ends rigidly secured to the spring-frame C, all combined substantially as and for the purpose set forth.

2. The notch *e* of the U-shaped vehicle seat-arm E, in combination with the springs D and the seat A, substantially as and for the purpose specified.

162,211. HYDRAULIC HOISTING APPARATUS. Ferdinand Rochow, Brooklyn, N.Y. (Filed Mar. 17, 1875.)

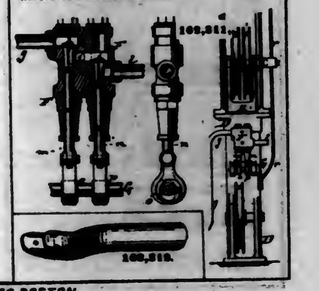
Brief.—Valve mechanism of the elevator-press can be operated from the carriage. An accumulator interposed between the pumping-engine and the elevator-press, by combination with a balanced valve, controls the motive power which operates the engine, so that when the accumulator is full, or nearly so, the engine is stopped, and the converse.

1. The accumulator A, having the weighted plunger B working in the chamber *f*, provided with pipes *e g g*, in combination with the balanced valve C, which, when raised, closes the passage *d*, substantially as and for the purpose specified.

2. In combination with a hydraulic press, the valve-chamber F, containing the valves *h i*, and connected with the pipes *g* and *l* and opening *j*, substantially as specified, the valves *h i* being arranged above lifting-pins *m n*, as and for the purpose set forth.

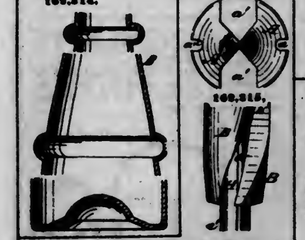
3. The combination of the crank-shaft G, carrying eccentrics *o* and *p*, with the lifting-pins *m n*, valves *h i*, and with the cylinder D of a hydraulic press, substantially as set forth.

4. The rod *r*, carrying the stop *s*, and connected with the crank-shaft G, that controls the valves *h i*, in combination with a sleeve or projection, *t*, on the reciprocating frame on the hydraulic plunger E, substantially as herein shown and described.



162,212. BOTTLES. Lewis F. C. Schmidt, Pittsburg, Pa. (Filed Oct. 24, 1874.)

The tapering bottle A, having a corrugation, C, of the same diameter as the widest part of body, and arranged just below the neck B, as and for the purpose described.

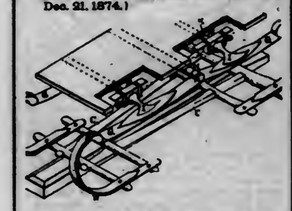


162,213. BOWLS. Chas. H. Sayre, Utica, assignor to himself and Albert B. Parker, New York, N. Y. (Filed Mar. 25, 1875.)

Brief.—A tube of iron or other suitable metal is split at one end, flattened and bent to the desired curve, and the blade of the shovel is inserted into the slit, and secured by rivets or otherwise. The wooden handle is steamed and driven in while soft.

The handle-socket for a shovel or spade, made entirely of an iron or steel tube bent to the curved shape required, and slotted and spread at one end to fit the surface of the blade, and attached to such blade, as set forth.

162,214. CARRIAGES. Francis Schertz and Frank F. Doland, Sacramento, Cal. (Filed Dec. 21, 1874.)



1. The C-springs D, in combination with the side springs G G, substantially as and for the purpose set forth.

2. The supporting shafts or bars *h h*, secured to the springs C, and passing through the adjustable cushions M upon the wagon-bed, in combination with the springs G and C, substantially as and for the purpose herein described.

162,215. BOTTLES. Lewis F. C. Schmidt, Pittsburg, Pa. (Filed Oct. 24, 1874.)

The tapering bottle A, having a corrugation, C, of the same diameter as the widest part of body, and arranged just below the neck B, as and for the purpose described.

162,216. DRILLS FOR DRILLING METAL. J. B. Shaw and Simeon H. Lucas, Chicago, Ill. (Filed Feb. 5, 1875.)

Brief.—Owing to the peculiar form of the grooves *a'*, the chips are caused to break in pieces, and thus prevent the drill from being choked. Small grooves, for conducting oil, are formed in the sides of the drill.

1. The drill A, provided with the peculiar grooves *a'*, formed in its opposite sides, substantially as herein shown and described.

2. An improved drill formed by the combination of the inner part or drill A, provided with the grooves *a'* and *a''*, and the outer part or case B, provided with spiral shoulders *b'*, substantially as herein shown and described.

162,217. SPRING BED-BOTTOMS. George L. Sheppard, Columbus, Ohio. (Filed Mar. 18, 1875.)

Brief.—The bent elastic top strips straighten out under pressure, and thus reduce the tendency to bend the side bars of the frame, and to press down the adjacent springs. They are attached to the top coils of the springs by the rings and the wires, which pass over the rings, and are bent around them and the strips

162,218. SHOVELS. Chas. H. Sayre, Utica, assignor to himself and Albert B. Parker, New York, N. Y. (Filed Mar. 25, 1875.)

Brief.—A tube of iron or other suitable metal is split at one end, flattened and bent to the desired curve, and the blade of the shovel is inserted into the slit, and secured by rivets or otherwise. The wooden handle is steamed and driven in while soft.

The handle-socket for a shovel or spade, made entirely of an iron or steel tube bent to the curved shape required, and slotted and spread at one end to fit the surface of the blade, and attached to such blade, as set forth.

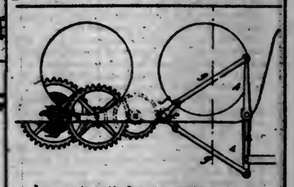
162,219. WRENCHES. H. R. Sloat, Sloatsburg, N. Y. (Filed Feb. 9, 1875.)

Brief.—The movable jaw is forced snugly against the nut by means of an independent cam-lever operating against the end of the spindle of the adjusting-screw.

In combination with the movable jaw and screw-spindle of a monkey-wrench, the cam *e*, provided with a separate handle, *h*, for operating and locking it, substantially as and for the purpose specified.



162,220. AUTOMATIC FANS. L. D. Stamps, Galveston, Tex. (Filed Feb. 13, 1875.)



In an automatic fan, the combination of the cranks *f*, links *g*, arms *h*, rock-shaft and crank *i*, vertically-adjustable rod *l*, fan-shaft *m*, and vertically-adjustable fan D, substantially as described, for the purpose set forth.

162,221. WATCH-CASES. Francis Steffany, Brooklyn, N. Y. (Filed Jan. 11, 1875.)

In stem-winding watches, the cap *a*, cut out in the center as described, and provided with the ring *c*, having an inward and upward extension on the inside of the cap, in combination with the bezel *e*, whereby material is saved, and the recess formed for the insertion of one or two pictures, all as and for the purpose specified.



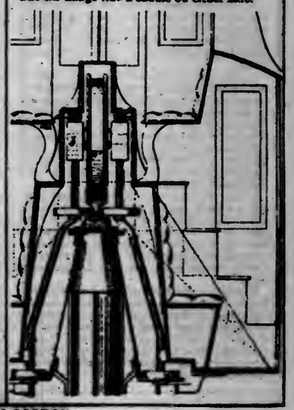
162,222. COTTON-SEED DRILLS. Henry Stockler, Jr., New Iberia, La. (Filed Mar. 6, 1875.)

Brief.—The dropping-wheel is pierced with holes near its periphery, each pair of which receives a wire bent across the edge of the disk, and leaving both the ends projecting as teeth to agitate the seed.

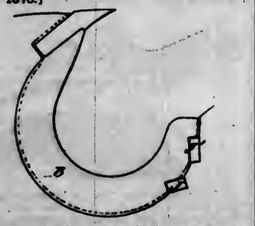
In a seed-planter, the dropping-wheel, provided with a series of holes near its edge, and the wires K inserted therein, and their ends projecting, as shown and described.

162,223. CARS FOR ELEVATED RAILWAYS. Roy Stone, Vandalia, N. Y. (Filed Mar. 20, 1875.)

Brief.—Double tier of seats, so arranged above one another as to maintain the equilibrium. Spring flexible bearings for single running wheel, with side guiding-wheels for pressing against either side of the single rail. The car hangs like a saddle on either side.



162,224. SAW-SETS. Benjamin Smith, Norwich, N. Y. (Filed Jan. 16, 1875.)



The saw-plate A and tooth-wedge B, provided with openings J J', arranged with the joint of wedge and plate diagonally, one portion in the wedge and the other in the plate, to allow the said wedge to be tightened against or loosened from the teeth by keys, in the manner specified.

1. In a car for elevated single-rail road, the combination of a lower tier or tiers of seats, near its center, with a similar tier or tiers vertically above the lower tier or tiers, substantially as and for the purpose set forth.

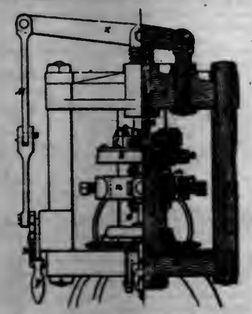
2. In a car for elevated single-rail ways, the combination of side platforms, communicating end stairways, and a central stairway at station side for giving ready access to the upper and lower tiers of seats, as set forth.

3. A saddle-car having two wheel-casings and enclosed base-supports, in combination with spring-supporting trucks, substantially as and for the purpose set forth.

4. In the car supporting truck adapted to shape of girder, the combination of top wheel, having flexible bearings, with upper guard and lower guiding wheels, substantially as and for the purpose set forth.

162,324. MACHINES FOR THE MANUFACTURE OF WATCH-CASES. Charles Louis Thiery, Boston, Mass. [Filed Mar. 26, 1875.]

Brief.—On the rotating disk are arranged four rolls, of which the carriages severally are adjustable radially and vertically. The cup-shaped blank is clamped by the dies. Two of the rolls roll on the edge of the cup and upset and thicken the metal, while the other two mold the metal against the former-die. All the devices operate automatically, except the plunger that carries the former-die.



1. The means, substantially as herein described, whereby, with the descent of the series of rollers about the mold and plunger, in the act of reducing the blank to shape, one or all rollers shall be automatically advanced or fed inward toward the axis of the plunger, essentially in manner and for the purposes stated.

2. The mechanical details herein shown for effecting the advance or feeding of the horizontal rollers *a b*, the same consisting of the horizontal annular ledge or ring *m*, the beam *n*, and feed-screw *o*, actuating the bars *k*, &c., which support the roller-carriers, substantially as and for purposes stated.

3. The mechanism herein shown for elevating and depressing the plunger or male die *l*, the same consisting of the lever K, jointed or flexible pitman M, ratchet-wheel N, and hand-lever P, substantially as and for purposes stated.

4. The combination of the tilting beam *n* and annular bearing or ring *m* with the roller-bars in such manner that as the beam departs from a horizontal plane in one or the other direction, in the act of raising and lowering the rollers, the ledge or ring *m* shall preserve a horizontal position, and constitute a roadway for the anti-friction rollers *r s*, &c., to travel upon or against, substantially as and for purposes stated.

5. The combination of the sliding bar *f* playing in suitable guides and carrying the roller *a*, and the variable or expansible wedge *i*, the latter being connected at its lower end to the slide-bar *k*, which bar, in turn, is connected with the annular head *m*, and the whole operating substantially as and for purposes stated.

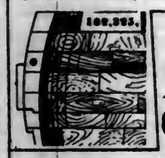
6. The means herein shown of advancing or feeding the swaging-roller *d*, the same consisting of the bar *d'* sliding in the bar *c'*, and with its inclined faces or steps *g' h' i'*, and the dog or cam *P*, pivoted to a suitable support or abutment, and the whole carried by the carriage R, and operating substantially as and for purposes stated.

7. The means herein shown of advancing or feeding the roller *b*, the same consisting of the bar *r'*, carrying such roller, and secured to the plate *o'* by the post *t'*, and the yoke *y'*, with its sloping steps or grades *o'*, actuated by the ribs *d'*, the whole being substantially as and for the purposes stated.

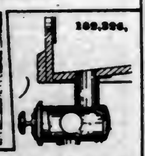
162,325. CRUCIBLE-MOLDS. J. C. Wallace, Pittsburg, Pa. [Filed Mar. 19, 1875.]

1. The mode of preparing crucible molds for use in molding, by sprinkling a light layer of plumbago dust on the moistened molding-face of the mold, substantially as and for the purposes set forth.

2. A wooden crucible-mold, built up of small pieces, substantially as set forth.



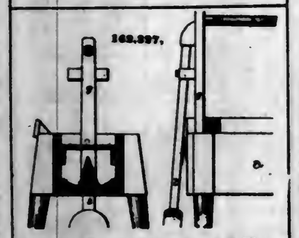
162,325.



162,326.

162,326. CUT-OFFS FOR SHOT-BOXES. R. C. Wey, Hiawatha, Kans. [Filed Jan. 30, 1875.]

In shot-boxes, the discharge-valve or cut-off attached to the perforated hopper-bottom, and consisting of an outer guide-casing with spout, and an inner turning and sliding re-versed tube, adjusted by lug and guide-slot to the open and closed position of the valves, substantially as shown and specified.



162,327.

162,327. WASHING-MACHINES. A. B. Worden, Smyrna, Del. [Filed Oct. 31, 1874.]

Brief.—Weighted levers are pivoted to the outside of the tub, and are connected at their upper ends to bars, to which the beater is attached.

In a washing-machine, the combination of the levers 2, pivoted upon the end of the box *a*, and having a weight secured to each end, in combination with the arm *h*, bars *g*, and washer *c*, substantially as shown.

162,328. PITMAN-HOLDERS FOR HARVESTING-MACHINES. Cyrenus Wheeler, Jr., Auburn, N. Y. [Filed Mar. 19, 1875.]

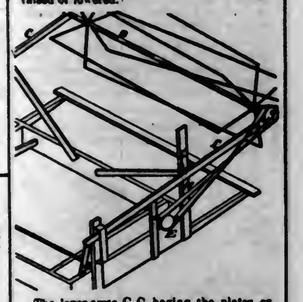


1. The combination, with the reciprocating knife-head, of the latch D, pivoted to and vibrating with said head, and operating to hold the pitman connected therewith, substantially as described.

2. The latch D, pivoted to the reciprocating knife-head, in combination with the spring bolt or pin E, arranged and operating substantially as described.

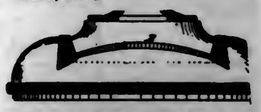
162,329. REELS FOR HARVESTERS. Fredk. Wyman, San Buenaventura, Cal. [Filed Feb. 2, 1875.]

Brief.—Arrangement of devices whereby the belt which drives the reel will preserve nearly a uniform tension when the reel is raised or lowered.



The lever-arms C C, having the plates or arms H attached thereto, and pivoted to the standards at a sufficient distance below the lever-arm to approximately preserve the arc of a circle drawn on a radius from the center of the pulley E to the outer end of the lever-arm, substantially as and for the purpose described.

162,330. MANUFACTURE OF GLASSWARE. Adolphus A. Adams, Pittsburg, Pa. [Filed Mar. 2, 1875.]



A glass cover for nappies, bowls, and similar articles, having a rest, B, formed thereon or attached thereto, substantially as and for the purpose specified.

162,331. TRAPS FOR BASINS, &c. Fredk. Ades and James Foley, Brooklyn, N. Y. [Filed Mar. 23, 1875.]

Brief.—The body is made with openings for the reception of the connecting pipes, the ends of which are slipped into the body, and then soldered in place.

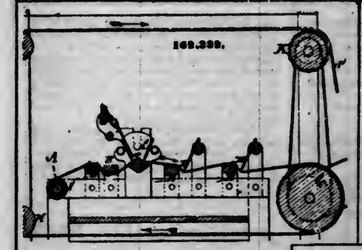


As a new article of manufacture, a trap body with the openings for the reception of the ends of the connecting-pipes, which pipes form the dams in the trap, when soldered to place in such body, as specified.

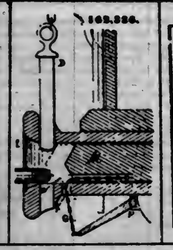
162,332. MACHINES FOR COATING FABRICS. Luther L. Allen, Monmouth, Me., assignor to Eastern Manufacturing Company, Bliss-both, N. H. [Filed July 30, 1874.]

Brief.—Cloth passes over stretchers, through trough which applies coating; then goes under scrapers, over a card-covered roll, which draws it then back under and up over the machine to card-covered delivery-roll.

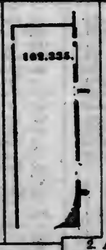
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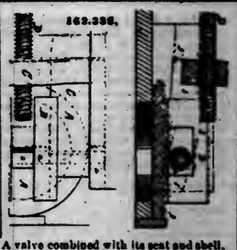
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The combination, with the feed-roll A, grooved bar B, hopper C, and scraper D of a machine for coating fabrics, of the card-clothed roll for receiving the fabric from the coating device, the lower and upper rolls H and I for receiving the fabric from the roll G, and the card-clothed roll K, arranged above the roll G, for delivering the coated fabric in an elevated position to the carrier of a drying apparatus, substantially as described, for the object specified.

162,333. FURNACE-DOORS. John Ashcroft, Brooklyn, N. Y., assignor of one-half his right to Edwd. H. Ashcroft, Boston, Mass. [Filed Jan. 20, 1875.]

1. A hollow door provided with an inner curved plate, B, which serves as an air-deflector, substantially as shown and described.

2. The combination of a hollow furnace-door, the inner plate of which constitutes an air deflector, with a middle leaf or flap, which serves to admit the required amount of air to the fuel, substantially as set forth.

3. In combination with a hollow furnace-door, the lower leaf or flap, the same arranged to project downwardly beyond the end of the inner curved plate, substantially as and for the purpose set forth.

162,334. FURNACE-DOORS. John Ashcroft, Brooklyn, N. Y., assignor of one-half his right to Edwd. H. Ashcroft, Boston, Mass. [Filed Dec. 5, 1874.]

Brief.—Air is admitted to the surface of the fuel by means of a swinging door. A hood inside and immediately under the doorway, and a deflector attached to the inner wall of the furnace, and below the hood. Said door is manipulated, to admit the required amount of air, by devices enumerated in the claim.

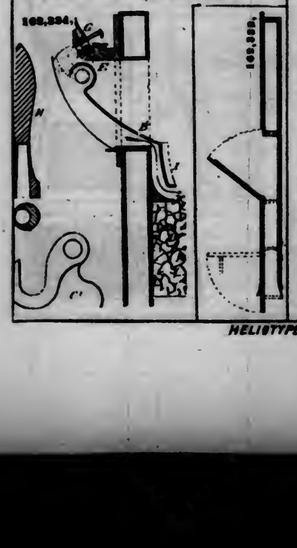
1. The combination of the hood I and the deflector K, substantially as and for the purpose set forth.

2. The combination of the door B, the hood I, and the deflector K, substantially as shown and specified.

3. The brackets having the projecting flanges O', substantially as and for the purpose set forth.

4. The combination of the rock-shaft E, the brackets C, the pivoted hook G, and door B, substantially as and for the purpose set forth.

5. The combination of the eccentric handle H, pivoted hook G, and rock-shaft E, substantially as and for the purpose set forth.



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162,335. FURNACE-DOORS. Edwd. H. Ashcroft, Boston, Mass., assignor of one-half his right to John Ashcroft, Brooklyn, N. Y. [Filed Mar. 9, 1875.]

Brief.—The front shell of the door is provided with a slide, perforated to register with corresponding perforations in said shell. The air passing through the perforations impinges against the inner wall, and is heated. Passing downward, it is deflected upon the surface of the fire.

1. A door for steam-generators and other furnaces, having within it a chamber closed at all points, except its lower end, against the egress of air, and a deflector for directing the air upon the fuel within the furnace, substantially as and for the purpose set forth.

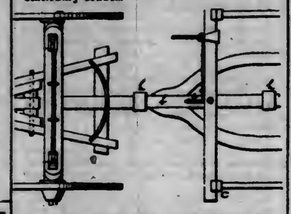
2. The combination, in a furnace-door, of a chamber within such door, a perforated slide for controlling the admission of air to said chamber, and a deflector for giving direction to the air as it emerges therefrom, the parts being constructed and arranged substantially as and for the purpose set forth.

162,336. CAR-COUPLINGS. Owen T. Baker, Wamego, Kans., assignor of one-half his right to Oscar M. Gay, same place. [Filed Mar. 11, 1875.]

The combination of the draw-head I, having an opening, *x*, in its under side, the follower M, having the bottom groove *e*, and chain O, the crank-lever F, extending up the side of the car, and the pin D, all substantially as set forth.

162,337. WAGON-BRAKES. Owen T. Baker, Wamego, Kans., assignor of one-half his right to Oscar M. Gay, same place. [Filed Mar. 12, 1875.]

Brief.—In descending hill wagon-reach slides forward, bringing rear wheels against stationary brakes.



The combination of the reach, having the slot at its front end, with the bar *b* upon the same, the brake bar *c*, and keepers *h*, the reach and bar *b* being connected together and to the wagon by the king-bolt, substantially as set forth.

162,338. STOP-COCKS. Fiskehas Ball, Worcester, Mass. [Filed Nov. 21, 1874.]

1. A valve combined with operative mechanism, wherein the former, through the instrumentality of grooves in the walls of its chamber, on being opened, is first lifted from its seat in a line at right angles to the plane of the latter before it is moved in a line parallel therewith, and, on being closed, is first moved in a line parallel with the plane of its seat until it has fully covered the latter, and is then slowly forced home thereto by a lateral movement at right angles to the former, and there held, in the manner substantially as and for the purposes set forth.

2. A valve combined with its seat and shell, wherein the valve is raised from and forced home to its seat at no expense of rolling friction between the valve and its support, substantially as set forth.

3. The combination of the spider-frame C, spindle *e*, and friction-rolls *c c* with the rolls *a a*, grooves *f f*, and double inclines *f' f'* in the walls of the valve-chamber, or their equivalents, substantially as described, the whole operating in the manner substantially as and for the purpose set forth.

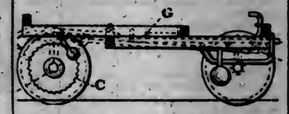
4. The combination of a spider-frame, C, with the disk A and yoke B, substantially as set forth.

5. The combination of the spider-frame C and its sets of friction-rolls *a a* and *c c* with the disk A and yoke B, all operating in the manner substantially as and for the purposes set forth.

6. The combination of the screw D with the frame C and valve-disk A, the two latter being looped together, in the manner and for the purpose substantially as set forth.

162,339. CAR-STARTERS. H. W. Balts, Sr., Philadelphia, Pa. [Filed Mar. 30, 1875.]

Brief.—Operated by draft on sliding rods provided with elastic buffer. A spring-bar locks the parts, which are liberated and put in condition for action by a parallel rod rotating on its longitudinal axis, and provided with curved arms.



1. The locking-bar P, in combination with the sliding bar E, pawl D, and ratchet C, substantially as and for the purpose set forth.

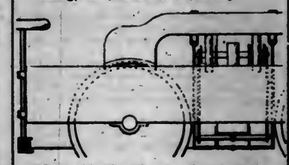
2. The elastic buffer G, in combination with the sliding bar E and beam F of the truck, substantially as and for the purpose set forth.

3. The oscillating rod H, having transverse arm J, in combination with the hinged pawl D and ratchet C, substantially as and for the purpose set forth.

4. The oscillating rod H, having transverse arm T, in combination with the locking-bar P and sliding bar E, substantially as and for the purpose set forth.

5. The oscillating rod H, having transverse arms J T, in combination with the hinged pawl D and locking-bar P, substantially as and for the purpose set forth.

162,340. CAR-BRAKES. Abel Barker, Wyoming, Pa. [Filed Jan. 27, 1875.]

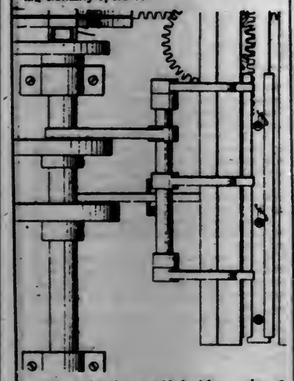


The combination of a car-body, a vertically-movable support therefor, and brakes with connecting mechanism, whereby the pressure of said brakes upon the wheels is regulated by the weight of said car-body, and a correspondence is maintained between such pressure and weight as the latter is increased or diminished, substantially as and for the purpose specified.

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162,841. FEEDING MECHANISMS FOR PAPER-BOX MACHINES. E. B. Beecher, Westville, Conn. [Filed Feb. 2, 1875.]

Brief.—The "four-motion" feed-bar is provided with pins, which enter the perforations in the strip, and feed it a definite distance. The lateral reciprocation of the bar is caused by the double-gear wheel, which is given an alternate rotary motion by the rack-bar connected with the main shaft. The vertical reciprocation of the bar is produced by a lever and cam on main shaft, the clamping-bar being similarly operated.



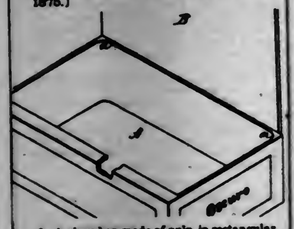
1. A feeding-bar provided with a series of independent pointed feeding-pins at regular distances apart, adapted, substantially as described, to feed a perforated box-blank strip, as set forth.

2. The combination of the vertically and longitudinally reciprocating feeding-bar, having the rack, with the gear-wheel, having the broad-faced periphery, as and for the purpose described.

3. The guiding-table formed in two separate parts, with an intermediate space, in combination with the feeding-bar and the presser-bars, as described.

4. The combination of the rack mechanism, intermediate double-gear wheel, the feeding-bar, and the vertically-moving supporting-bar, as described.

162,842. PAPER CIGAR-BOXES. George A. Builder, Philadelphia, Pa. [Filed Feb. 26, 1875.]



1. A cigar-box made of pulp, in rectangular form, and having interior rounded corners a a for strengthening the same, substantially as set forth.

2. The combination of the pulp cigar-box A, lid B, and one or more paper flaps, C, having mucilage or other adhesive substance thereon, for the purpose herein set forth.

162,843. MOLDING-MACHINES. John H. Steinfeldt, Philadelphia, Pa. [Filed Jan. 11, 1875.]

Brief.—The revolving cutter-spindle is placed within a hollow column, which forms the stand for the machine, and carries the vertically-adjustable table.

1. A molding and shaping machine, having a single central pedestal or column, and an adjustable work-table, substantially as described.

2. The molding and shaping machine, consisting of the central hollow column or pedestal C, inclosed central shaft B', cutter I, and adjustable work-table B, combined substantially as shown and described.

3. The spindle K, having a tapering shank, *k*, and an annular flange, k^2, in combination with the shaft B', having a correspondingly-tapering socket, k^1, and the nut g^1, substantially as shown and described.

4. The cutter-head I, having swiveled cutters M M, and studs or stops *n n*, substantially as and for the purpose specified.



162,844. MAGAZINE-STOVES. Reinard Blum, Champaign, Ill. [Filed Mar. 6, 1875.]

Brief.—The magazine is vertically adjustable. The draft may be made either direct or indirect by means of the dampers in the base.

1. The combination, in a stove, of the base A, lower section C, exit-pipe D thereto, the director E, and the damper F', both the director and the damper being independently-acting, substantially as set forth.

2. The combination of the section C, enlargement or belly H above the same, and having the inclined notched supports d d, and the perforated detachable fire-bottom I resting thereon, all substantially as set forth.

3. The combination, with the enlargement H, of the sliding mica doors J, having interior concave screens *f*, as and for the purposes set forth.

4. The combination of the sunken top N and collar O, having grooves, as described, with the cylinder or magazine P having exterior spirals or worm-screw, as and for the purposes set forth.

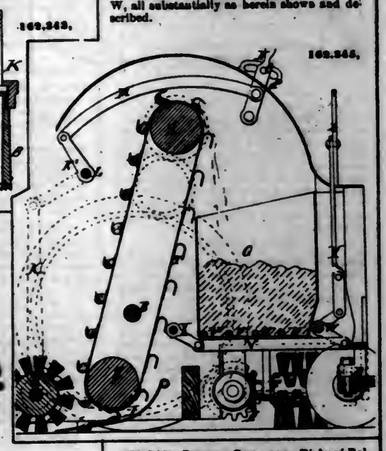
5. The combination of the rim R, having elongated bearings *h h*, and the cover S, having the projecting journals *i i*, with the cylinder P of a magazine-stove, all as set forth.

162,845. STREET-SWEEPING MACHINES. William M. Blume, Brooklyn, N. Y. [Filed Mar. 4, 1875.]

Brief.—A street-sweeper in which are combined a longitudinal rotating gutter-brush, the ordinary street-brush, a curved dirt-receiving pan, an endless dirt-elevator, and a dirt-receptacle provided with a hinged slat bottom. The slats rest upon horizontal bars, which are controlled by bell-cranks attached to a vertical lever, which, when released, allows the weight of the bars, together with the pressure of dirt on the slats, to cause the discharge of the contents.

1. The continuously-revolving gutter-brush F at the front of the machine, arranged at right angles to the rear main brush, in combination with the curved plate I, arranged in front of the main brush, for receiving the dirt, the elevating mechanism, and the dirt-receptacle Q, having a bottom constructed of hinged slats, all substantially as herein shown and described.

2. The combination of the main brush, the elevating mechanism, and the dirt-receptacle, having a bottom constructed of hinged slats, with the hand-lever Z, arm V, and bell-crank W, all substantially as herein shown and described.



162,846. BOTTLE-STOPPERS. Richard Bollerman and Dominik L. Bollermann, New York, N. Y. [Filed Apr. 2, 1875.]

Brief.—A metallic bottle-shell between the mouth of the bottle and the lid. The lid is fastened on one side by a hinge-joint, on the other by a button having a thumb-bar at each end. Between the bottle-shell and the lid there is an india-rubber flap-valve, opening downward.

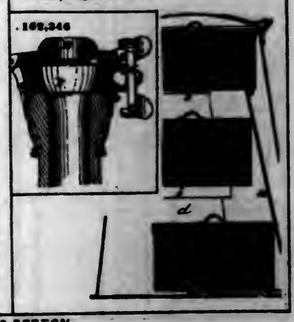
1. In a bottle-stopper, the combination of the flap-valve C and hinged plate D, which is adapted to be fastened on the mouth of a bottle, and is provided with an inlet-hole, E, substantially as described.

2. In combination with the plate D and flap-valve C, the shell F, adapted to be fastened on the mouth of a bottle, substantially as described.

3. The thumb-button H, provided with one or more inclined lips, *f*, in combination with the shell E and plate D, substantially as described.

162,847. COFFEE-POTS. Jacob Boyers, Huntington, Ind. [Filed Mar. 8, 1875.]

Brief.—Each one of the percolators is, in its turn, charged with fresh coffee, and, when all are full, emptied in turn.



1. The combination, with the boiler, of a series of separate percolators, c, for the coffee, arranged one above the other from the bottom to the top of the boiler, and having the spaces *d* between them, substantially as and for the purpose herein set forth.

2. The combination, with the boiler and the percolators c, of a curved stand-plate, a, and shelves *b*, substantially as and for the purpose herein set forth.

162,848. BRIDLE-BITS. August Buermann, Newark, N. J. [Filed Nov. 18, 1874.]

The within-described bridle-bit, consisting of the mouth-piece *a*, the outer disk *b*, the ring-head or holder *c*, the cheek-piece *d*, and the inner disk *e*, arranged and connected substantially as shown, and for the purpose set forth.



162,849. SHOT-CHARGERS. G. A. Capewell, Woodbury, Conn. [Filed Mar. 19, 1875.]



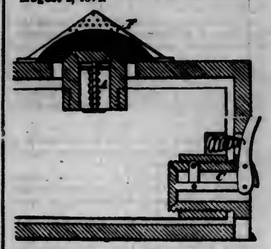
1. In a shot-charger, the gate-cylinder B, with the grooves *n* formed therein by depressions, substantially as described.

2. The gate-cylinder B of the shot-charger, constructed complete from a single piece of metal, substantially as described.

3. In a shot-charger, substantially such as described, a depression, E, in the barrel, to receive and locate the gate-cylinder, substantially as set forth.

162,850. VESSELS FOR INFLAMMABLE LIQUIDS. Milton Chase and Alonzo W. Chase, Haverhill, Mass. [Filed Jan. 30, 1875.]

Brief.—Improvement on Patent No. 152,703, August 4, 1874.



1. The combination of the vessel B, having the detachable covering D, composed of a non-conducting material, and the safety-valve A, substantially as described, and for the purpose specified.

2. The combination of the vessel B, having the detachable covering D, composed of a non-conducting material, the safety-valve A, and spring-faucet C, the whole being constructed and arranged substantially as described, as and for the purpose specified.

3. A carrier for transporting inflammable liquids, consisting of the vessel B, having a cooling, D, of some suitable non-conducting material, wire-gauze shield F, safety-valve A, and spring-faucet C, the whole being constructed and arranged to operate substantially as described.

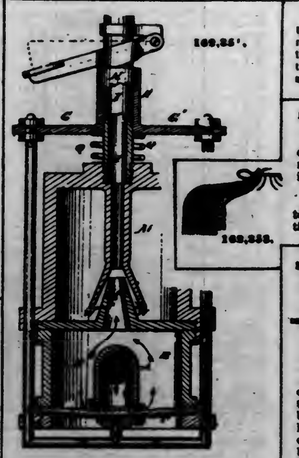
162,851. HYDRANTS. Harvey H. Clover, (deceased,) Cincinnati, Ohio; C. S. Clover, administrator, Bay City, Mich. [Filed Aug. 10, 1874.]

Brief.—After the flow of water from the hydrant has been stopped, the water remaining in the discharge-pipe is withdrawn therefrom into a receptacle provided therefor. A flexible diaphragmic valve is employed to cut off the supply of water.

1. The combination of the inlet-pipe A, flexible diaphragmic valve C, disk D, inclined E F F' G G' H, spring Q, lever K, suitably-fulcrumed water-chamber B, and discharge-pipe, for the purposes mentioned.

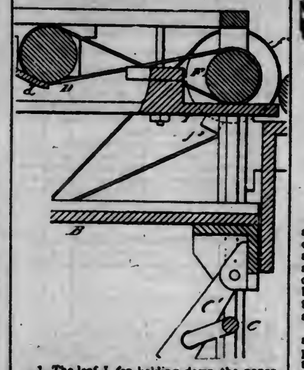
2. The vacuum-chamber M, combined with the conical nozzle T, nozzle W, and discharge-pipe I, substantially as and for the purposes mentioned.

3. The combination of the flexible diaphragmic valve C, combined with mechanism whereby it will cut off the supply of water to the hydrant, and the inlet-pipe A, chamber B, nozzles T and W, chamber M, discharge-pipe I, substantially as and for the purposes set forth.



162,852. PAPER-FEEDING MACHINES. David Colbeck, Philadelphia, Pa. [Filed Feb. 20, 1875.]

Brief.—The paper lies on a bank, which is lifted intermittingly by crank. The top sheet is drawn off by a pad hung at one end to a revolving shaft.



1. The leaf I, for holding down the paper and preventing the advance of more than a single sheet at once, said leaf having a central longitudinal slot, in combination with the rotary feeding-finger d, substantially as described and shown.

2. In combination with the table B and finger-shaft D of a paper-feeding machine, the shafts F and G and pulley C, the cross-bands *f*, *f'*, and *g* commencing a fast motion to the shaft D and a slow motion to the shaft C, as set forth.

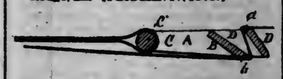
3. In combination with the crank-shaft C, table B, and shaft D, the roller *f'*, having the ridge *f''*, for stopping the upward motion of the table while the top sheet is being drawn through by the roller E, substantially as described.

162,853. TOBACCO-PACKAGES. J. D. Culp, Gilroy, Cal. [Filed Jan. 10, 1874.]

Brief.—The sack is knit on account of its elasticity. Owing to its being thus made it will not burst in being filled with tobacco, and having it pressed in it.

As a new article of manufacture, elastic tobacco-sacks made of knit fabrics, substantially as herein set forth and described.

162,854. BALE-TIES. John W. Deyo, Baton Rouge, La. [Filed Mar. 17, 1875.]



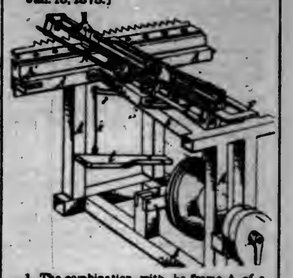
The tie-plate A, having an oblong central opening, and which is divided by an oblique tongue, B, into two slots, C D, and having bearing-walls C' D', the bearing-surface of the latter being formed so as to provide a beveled edge, *d*, and the lower section of the tongue being also beveled, as shown at *b*, and having its bearing projecting beyond the vertical line of the bearing of the edge *d*, so as to operate substantially as described, as and for the purpose specified.

162,855. PLASTERERS' TROWELS. Charles Denton, Philadelphia, Pa. [Filed Feb. 16, 1875.]



A plasterer's trowel having a blade enforced by a central longitudinal rib, *e*, adapted to the frame B of the handle, all substantially as set forth.

162,856. SAW-FILING MACHINES. Thomas Doyle, Bridgeport Centre, Mich. [Filed Jan. 16, 1875.]



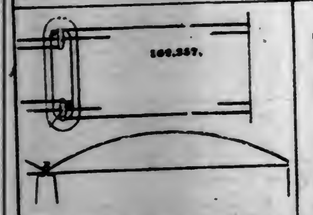
1. The combination, with the frame A of a saw-filing machine, of the bed-plate E, pivoted at a to said frame, and having a radial adjustment thereon to give the teeth the proper angle, and carrying the filing-frame F, pivoted in the lugs *b*, and adjustable at any angle by set-screws *c* rising through said bed-plate, to give the teeth the required bevel, all substantially as and for the purpose set forth.

2. The bars M M', with their clamp-screws, and the feed-bar N, bracket *i*, lever *j*, cord k, pallet *m*, spring *n*, and treadle *l*, in combination with the frame and girt A', for feeding forward said clamping-bars M M', the several parts being constructed and arranged substantially as described.

3. The bar O, conical bolt *o*, clamp-bar P, and cord *q*, in combination with the frame, the guide pulleys, and the treadle, for clamping a circular saw, substantially in the manner described.

162,857. IRON BEDSTEADS. James B. Eads, St. Louis, Mo. [Filed Aug. 1, 1874.]

No. 162,357.

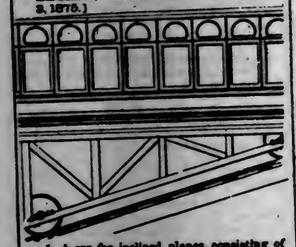


1. In combination with the tenoned new piece C of bow-string or similar girders, the disks O O or levers D D, fulcrumed in or to the skew-back or arch-rest, as set forth, for the purposes of compensating for the effects of temperature, and for distributing the strains from load and wind pressures, as described.

2. The combination of skew-back or arch-rest I, disks O O, and links or connecting-bars M M, all constructed substantially as and for the purpose set forth.

3. In combination with the disks O O, the connecting shaft or tube R, extending transversely to the bridge, and connecting the disks together upon the opposite sides of the span, to prevent said disks turning in opposite directions, for the purpose set forth.

No. 162,358. CARS FOR INCLINED PLANES. Jos. Barnshaw, Cincinnati, Ohio. (Filed Feb. 3, 1875.)



1. A car for inclined planes, consisting of compartments, side by side, upon a common truss, one compartment, C, being provided with seats, and the other compartment provided with rail-plates c, and adapted for vehicles or live stock, substantially as and for the purposes set forth.

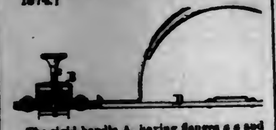
2. In a car for inclined planes, the combination, with the compartment C, of the compartment D, provided with folding seats c c, for converting it into a passenger-car, substantially as set forth.

No. 162,360. WASHING-MACHINES. John A. Eberly, Eaststown, assignor of one-half his right to Martin Ehrley, Blairstown, Pa. (Filed Nov. 4, 1874.)

Brief.—Within the tub is a detachable disk with radiating rubbers, held by notches and lugs, and above these is a similar reciprocating disk.

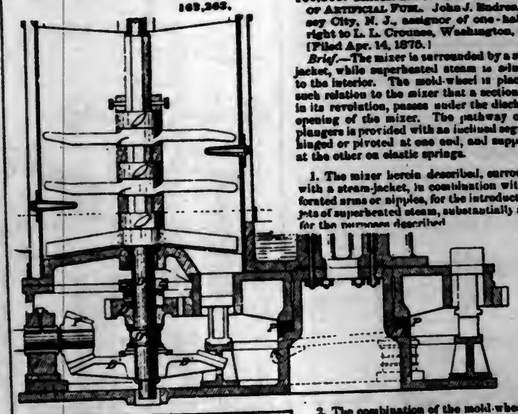
The disk F, having V-shaped radiating rubbers, and the disk C, provided with notches O O, in combination with the lugs P, tongues L L', latch M, and turn-button N, all substantially as and for the purpose described.

No. 162,361. SHAWL-STRAP HANDLES. Henry Edwards, Brooklyn, N. Y. (Filed July 30, 1874.)



The rigid handle A, having flanges a a and straps C attached thereto, in combination with a guide, B, follower C, and set-screw c, substantially as described.

No. 162,363.



No. 162,365.

MACHINES FOR THE MANUFACTURE OF ARTIFICIAL FUEL. John J. Endres, Jersey City, N. J., assignor of one-half his right to L. L. Crounse, Washington, D. C. (Filed Apr. 14, 1875.)

Brief.—The mixer is surrounded by a steam-jacket, while superheated steam is admitted to the interior. The mold-wheel is placed in such relation to the mixer that a section of it, in its revolution, passes under the discharge-opening of the mixer. The pathway of the plungers is provided with an inclined segment, hinged or pivoted at one end, and supported at the other on elastic springs.

1. The mixer herein described, surrounded with a steam-jacket, in combination with perforated arms or nipples, for the introduction of jets of superheated steam, substantially as and for the purposes described.

2. The combination of the mold-wheel, supporting-pivot, and rings F, substantially as and for the purposes set forth.

3. The pressure-plate provided with water-circulation compartments, substantially as described.

4. The inclined segment, in combination with an elastic support, substantially as and for the purpose described.

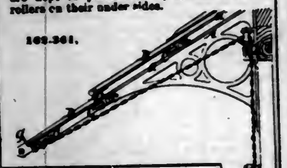
5. The plungers provided with metal plates or rollers in their side faces, for the purpose of lessening the friction and binding, substantially as and for the purposes set forth.

6. The mixer, constructed as specified, in combination with the mold-wheel, pressure-plate, stationary ring, and adjustably-inclined segment, substantially as and for the purposes described.

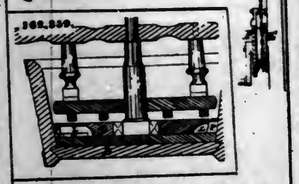
No. 162,364. AWNINGS. John Eller, Jersey City Heights, N. J. (Filed Mar. 4, 1875.)

Brief.—The cord or chain is attached to the outer plate. The plates are adjustable in parallel slots or grooves in the brackets, and are kept in place laterally by anti-friction rollers on their under sides.

No. 162,361.



No. 162,359.



1. The combination of the bracket A, constructed with the parallel guide-grooves a a, and rigid plate B', and the sliding plates adapted to the grooves in the bracket, and the outer plate having the vertical catch g, all substantially as described.

2. The combination, with the movable plates B of an awning, and the bracket A, of the anti-friction rollers C, which bear against the sides of the lateral brackets A and prevent lateral movement of the plates, substantially as and for the purpose described.

No. 162,366. ARTIFICIAL FUEL. John J. Endres, Jersey City, N. J., assignor of one-half his right to L. L. Crounse, Washington, D. C. (Filed Mar. 1, 1875.)

1. The process herein described, of manufacturing fuel from the culm or dust produced in the mining, breaking, screening, or transporting of anthracite or semi-bituminous coal, which process consists in combining, fusing, and agglomerating the same with coal-tar pitch or bitumen under high heat and pressure, as herein set forth, and molding and pressing the same into any desired shape or form for transportation and use.

2. The fuel herein described, consisting of screenings, culm, or dust, combined, fused, and agglomerated with coal-tar pitch bitumen, as herein set forth, and forming a fuel which, when subjected to the action of combustion, retains its given shape, and consumes gradually like natural coal, substantially as and in the manner herein described.

No. 162,364. LADDERS. Irving Erskine and C. Erskine, Bowling Green, Ky. (Filed Dec. 12, 1874.)

Brief.—The top section is pivoted to the upper round of the lower section, and is secured in an extended position by metallic slides or clips. The top ends of the side rails of the lower section are notched to receive a cross-bar, on which there is secured a hook for painters' use. A detachable step is secured to the ladder by hooks which engage with the side rails.

1. The combination, with the ladder A a, and the ladder B hinged thereto, of the metallic slides C, substantially as specified.

2. The combination of the cross-bar E, having hook A, with the rails A of the lower ladder having notches d, substantially as specified.

3. The combination, with the upper ladder B, of the detachable step E', having hooks i adapted to be engaged over the rails B of the said ladder, substantially as specified.

No. 162,364.



No. 162,365.



No. 162,365. STOVE-PIPE SHELVES. Royal D. Farr, East Middlebury, Vt. (Filed Sept. 20, 1874.)

Brief.—The shelf is cut out so as to partially encircle the stove-pipe, and is provided with lugs around the opening thus made, to prevent the shelf tipping. A bail is secured in holes cut in the shelf, and passes around the pipe above the shelf, whereby the latter is secured in position at any given point by its own gravity.

1. The shelf B, provided with holes a b, in combination with rod d, and bail C, all as and for the purpose set forth.

2. In a stove-pipe shelf, the shelf B, provided with lugs a a, and holes b b, bail C, and rod d, all arranged as and for the purpose set forth.

No. 162,366. STEAM-INJECTORS. David Fergus, Philadelphia, Pa. (Filed Oct. 3, 1874.)

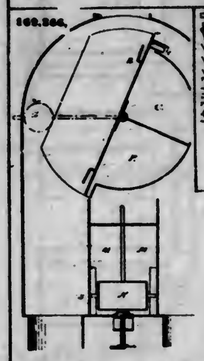
Brief.—The check-valve is placed within the swivel, to permit the detachment of the injector without escape from the boiler, without the necessity of an extra section for the valve. The plug opening into the overflow has an opening in each side, controlled by flap-valves, which open by slight pressure, to allow the escape of water, and so readily closed to prevent the admission of air.

1. In combination with a swivel, B, a check-valve located within such swivel, substantially as shown and described.

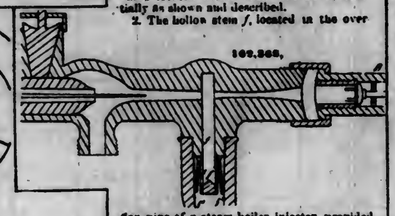
2. The hollow stem f, located in the over-flow-pipe of a steam-boiler injector, provided with a flap-valve or valves f^1 f^2, for closing the lateral openings f^3, substantially as shown and described.

3. In combination with the hollow stem f, located in the overflow-pipe of a steam-boiler injector, the beveled plug G, for dividing the overflow, substantially as shown and described.

No. 162,366.



No. 162,365.



No. 162,366. AUTOMATIC RAIN-WATER CUT-OFFS. Thomas C. Fawcett, St. Clairsville, Ohio. (Filed Feb. 2, 1875.)

Brief.—A portion of the first of the rainfall is diverted from its passage to the waste-pipe into a cup, where it collects until, by its weight, the trough or conductor is reversed to direct the water into the cistern, the time being regulated by an adjustable weight. A float locks the conductor in this position until the rain is over, when the water escaping from the float-chamber causes the float to fall and release the conductor, which then, by the weight of the water accumulated in a cup the counterpart of the first cup, is caused to assume its original position.

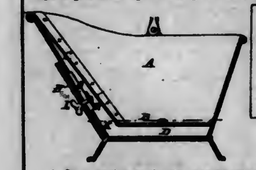
1. An improved rain-water cut-off, provided with revolving trough, cups, an adjustable weight, float, and water-chamber, by which the cut-off proper is rendered self-operating, substantially as and for the purpose set forth.

2. A revolving trough E, constructed as described and provided with cups C and P, the adjustable weight O, and brackets B B, combined to operate substantially as and for the purposes set forth.

3. In combination with the projection O of a revolving trough, the float N, arranged in chamber M, as described, to operate substantially as and for the purpose set forth.

No. 162,367. COAL-SCUTTLES. Henry Feldmeier and E. Stoeppelwerth, St. Louis, Mo. (Filed Feb. 12, 1875.)

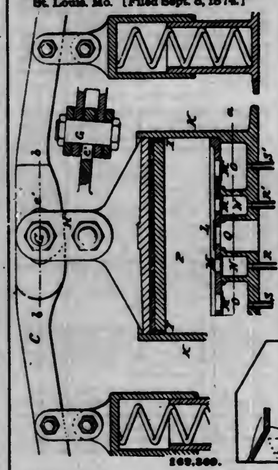
Brief.—The dust sifting through the perforated bottom can be removed through the opening in front upon raising the slide.



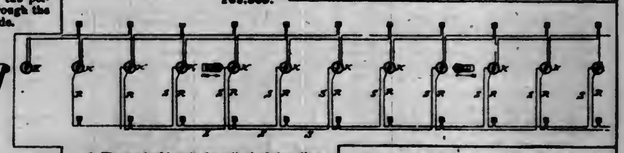
1. In a coal-scuttle, the combination of a perforated false bottom, B, plate or partition C, and sliding gate H, as and for the purpose set forth.

2. The combination of the coal-scuttle A, false bottom B, partition or plate C, chamber D, having discharge-aperture K, sliding gate H, and set-screw L, as and for the purpose set forth.

No. 162,369. RAILWAY-SIGNALS. Henry Flad, St. Louis, Mo. (Filed Sept. 8, 1874.)



No. 162,369.



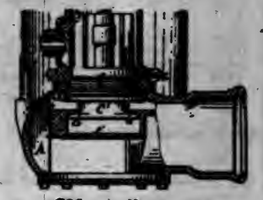
1. The method herein described of signaling, whereby overlapping signals at a distance from the train are reversed, while other signals, between the former signals and the train, remain at rest, to be reversed in their turn, all substantially as and for the purpose set forth.

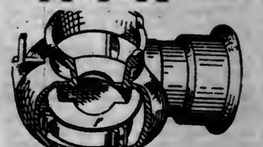
2. The combination of signals T T, pipes R S, and lever C with the air-pump K K, divided into two or more chambers, N O P, by diaphragm L, having valves M, and the chamber or chambers N O, in communication with the pipes R S, all substantially as and for the purpose set forth.

1. In combination with the pipes R S and cylinder U W, the piston W, spindle X, head Y, cam-groove d e, and stud Y, substantially as and for the purpose set forth.

No. 162,370. STREET-HYDRANTS. Jas. Flower, Detroit, Mich. (Filed Jan. 22, 1875.)

Brief.—An auxiliary valve is placed in a chamber under the seat of the hydrant-valve, which latter is provided with a hook or a pair of hook lugs at the bottom, to engage with the said auxiliary valve, such engagement being effected by a partial rotation of the hydrant, while the auxiliary valve is only allowed to move vertically by guides in the chamber.



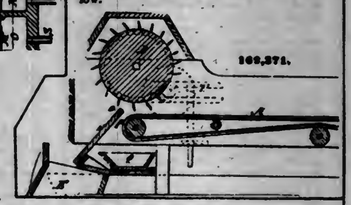


The combination, with the chamber A, of the valve C having the part C' which is provided with studs h for locking it with the valve F, substantially as described.

No. 162,371. COTTON-GIN FEEDERS. Frederick William Flynn, Germantown, assignor to himself and Wm. H. Lockwood, Collierville, Tenn. (Filed Nov. 21, 1874.)

Brief.—The apron which delivers the cotton from the feeder to the gin is hinged at its top, to allow its lower end to swing freely, and accommodate itself to the position of the breast of the gin. It is located between the carrier and the end of the hood, so as to leave a space for the passage of trash into a receptacle below.

No. 162,371.

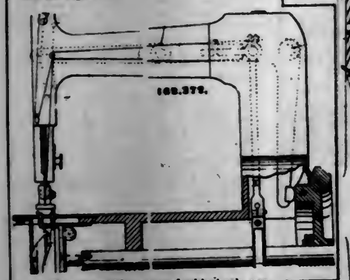


The apron N, hinged at O, and arranged with respect to carrier A, breast E, and receiver Q, as and for the purpose set forth.

No. 162,372. SEWING-MACHINES. J. L. Follett, New York, N. Y. (Filed Feb. 12, 1875.)

Brief.—The revolving hook is constructed so as to be revolved in either direction, which it does at a regular and uniform rate of speed, making but one revolution to each descent of the needle, which also moves at a regular and uniform speed. A take-up, acting in connec-

tion with such devices, takes up the slack of the thread, and completes each stitch before the commencement of the next succeeding one. The feed-plate is attached to a disk that is mounted upon an eccentric, and receives an up-and-down and back-and-forward movement from the same. A portion of the goose-neck is removable, to admit of easy access to the adjustable rod, which connects the vibrating lever (that operates the needle-bar) with the driving-shaft.



No. 162,272.

1. The reversible rotary double hook, constructed and operating as herein shown and described.

2. The reversible rotary double hook, in combination with the revolving bobbin, stationary bobbin-case supported against said hook, and bobbin-thread tension carried by said case, for joint operation, as shown and set forth.

3. The reversible rotary double hook, in combination with the revolving bobbin, the stationary bobbin-case, and the adjustable bobbin-holder, substantially as shown and set forth.

4. The reversible rotary double hook, revolving bobbin, stationary bobbin-case, and bobbin-thread tension, in combination with a needle, which, on its down-stroke, enters between the stationary bobbin-case and the rotating hook, for joint operation, as shown and set forth.

5. The reversible rotary double hook, revolving bobbin, stationary bobbin-case, bobbin-thread tension, and reciprocating needle, operating together as herein specified, in combination with a reversible feed, substantially as set forth.

6. A reversible draw-feed, attached directly to and deriving its movements from a disk mounted on and positively operated by a rotating eccentric, from which it derives an up-and-down and to-and-fro movement, substantially in the manner shown and set forth.

7. In combination with the feed-carrying disk or plate, and eccentric for operating the same, the feed proper pivoted to the said disk, so as to follow its up-and-down movement, and receiving between arms adjustable nearer to or farther from one another a pin or stud, which is attached to said disk, and imparts to the feed proper a to-and-fro movement, substantially as set forth.

8. The combination, in a lock-stitch machine, of a rotary hook and a straight needle, both of which have regular and uniform movement, as described, with a take-up, arranged and operating as described, to take up the slack of one stitch and complete the same before the next stitch is commenced, substantially as and for the purposes set forth.

9. The vibratory take-up and its spring, in combination with the needle-bar lever, arranged to operate said take-up at the times and in the manner substantially as shown and described.

10. In combination with the bobbin-case, the bracket-holder for the same, and the removable cloth-plate section carrying said holder, substantially as shown and set forth.

11. The removable cloth-plate section, in combination with the bobbin-case holder attached to and adjustable on said section, as and for the purposes set forth.

12. The cover or case incasing the sides and back of the standard and its appurtenances, and hinged to the machine, substantially as shown and set forth.

13. In combination with the vibratory needle-bar lever and its driving crank or eccentric, the intermediate connecting-rod, adjustable in length, for the purpose of adjusting the stroke, substantially as herein and set forth.

162,272. PISTOL-GRIP ATTACHMENTS FOR THE STOCKS OF FIRE-ARMS. Frank W Freund, Denver, Colo. [Filed Mar 10, 1875.]



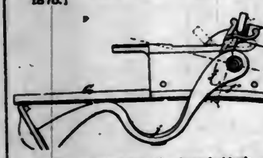
No. 162,272.

1. A pistol-grip consisting of a hand portion and a separate butt portion, substantially as described.

2. A pistol-grip having the metallic part, as at C, struck up from thin or sheet metal, substantially as described.

3. A trigger-guard provided with an adjustable head or screw, *m*, in combination with a trigger-plate having a slot, *p*, and shoulder *p'*, substantially as and for the purpose described.

162,274. GUARD-LEVERS AND MEANS FOR OPERATING THE BREECH-BLOCK OF BREECH-LOADING FIRE-ARMS. Frank W Freund, Denver, Colo. [Filed Mar. 19, 1875.]



1. The combination of a breech-block, an operating-lever, and an intermediate connecting device, the lever and connecting device being applied outside of the frame of the arm, substantially as described.

2. A guard-lever having its rear end constructed in the form of the lower part of a pistol-stock, substantially as described.

3. The slide F, constructed with the projections or arms *f'* *f'*, with a play-space between, adapted to operate the breech-block, substantially as described.

4. The cap-spring D, in combination with the pin *d* and slide F, substantially as and for the purpose described.

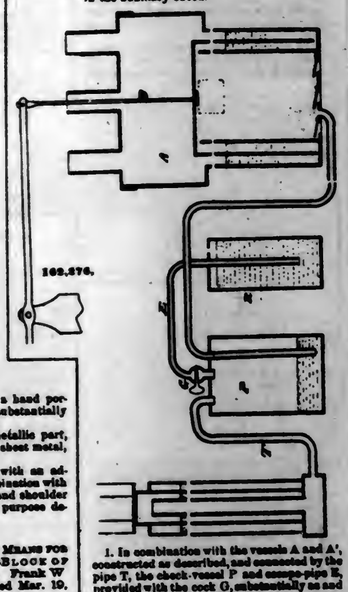
162,276. AXLES FOR VEHICLES. Samuel T. Gamwell, Wayland, Mich. [Filed Jan. 20, 1875.]



In combination with the axle A, hub E, and skein B, the rod C, secured at one end to the lug *d*, and having a flange, A, and screw *i* at the outer end, and the nut G, all constructed substantially as set forth.

162,276. RAILROAD-SIGNALS. Jas Gordon, San Francisco, Cal. [Filed Oct. 15, 1874.]

Brief.—By means of the check vessel and the auxiliary check, the signal and air vessels may be adjusted with relation to each other through the medium of the column of water in the auxiliary check.



No. 162,276.

1. In combination with the vessels A and A', constructed as described, and connected by the pipe T, the check-vessel P and escape-pipe E, provided with the cock G, substantially as and for the purpose set forth.

2. In combination with the vessels A and A', constructed as described, and connected by the pipe T, the check-vessel P and escape-pipe E, and auxiliary check F, substantially as and for the purpose described.

162,277. PROCESSES FOR MANUFACTURING LUBRICATING-OILS. Thos. J. Gordon and Delos H. Bumpus, Rossville, Pa. [Filed Sept. 29, 1874.]

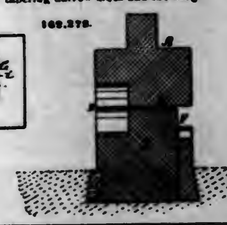
Brief.—Deodorizes and refines crude petroleum by passing it through anhydrous pulverized clay.

The within-described process of decolorizing and refining petroleum by filtration through anhydrous pulverized clay, or anhydrous pulverized clay and sand, substantially as described.

162,278. DEVICES FOR FORGING FILE BLANKS. Theodore L. Grover, Brooklyn, E. D., N. Y., assignor to Bertrand Clover, New York city. [Filed Oct. 10, 1874.]

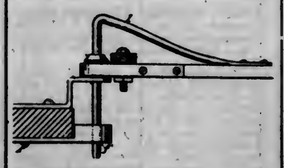
Brief.—A pair of dies provided with reduced or contracted parts, for drawing the bars down to form the blanks; parts E for smoothing and finishing the wide sides; and a recess, F, formed by the detachable piece G, for tapering narrow sides and the tang.

No. 162,278.



The dies A B, provided with drawing-faces D D, smoothing-faces E E, and tapering recess F, as and for the purpose specified.

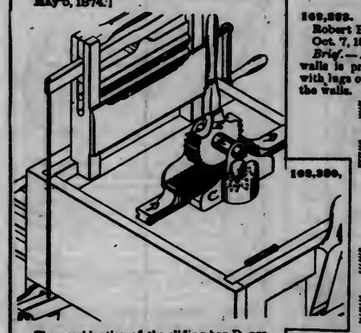
162,279. STREET-CAR POLE-COUPLINGS. James S. Hagerty, Baltimore, Md. [Filed Mar. 31, 1875.]



1. The combination, with platform and coupling-pin, of the two plates M F, as and for the purpose described.

2. The bent rod I, attached to upper side of pole, and resting upon the head of coupling-pin, all combined as and for the purpose specified.

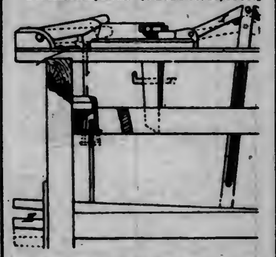
162,280. WASHING-MACHINES. James W. Hampton, Mount Pleasant, Iowa. [Filed May 6, 1874.]



No. 162,280.

The combination of the sliding bar D, provided with cog-teeth upon its top and side, and grooved longitudinally on each edge, the box C, with groove and tongues on each side thereof, which take into the grooves in the bar D, the cog-segment E, with handle F, and mounted upon the shaft *a*, and the pinion G, all substantially as set forth.

162,281. MACHINES FOR MAKING BOX-TOES FOR BOOTS AND SHOES. Geo. S. Heaton, Portsmouth, N. H. [Filed Feb. 16, 1875.]



1. The carriage D, provided with the cap-plate H, in combination with the elbow-lever I, foot-lever B, hand-lever P, and spring T, all substantially as and for the purpose set forth.

2. The adjustable block G, in combination with the elbow-lever I, carriage D, and spring T, for adapting the machine to mold different styles of box-toes, substantially as set forth.

162,282. RAIN-WATER CUT-OFFS. Jacob F Hess, Massillon, Ohio, assignor to himself and Leonard Hess, same place. [Filed Mar. 23, 1875.]

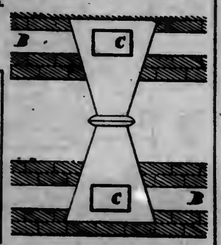
Brief.—There are two pipes—one for the waste and the other for the eastern water—which are united in a common neck. The upper edge of the neck is rounded in, and has the collar soldered in it, and a slot with end notches is cut around one half of the neck. The cut off consists of the cylindrical part, which fits up between the neck and collar, and has the sloping lower end, by which the water is deflected. It is operated by an arm, which is secured to the part, and extends out through the slot in the neck.



The two-pipe case A B C, having the slot E made in its side and below its upper edge, in combination with the revolving cut-off F H, having the arm G extending through the slot E, and serving as the support for said cut-off in the case, substantially as and for the purpose herein specified.

162,283. CRAMPS FOR HOLLOW WALLS. Robert Hinvest, New York, N. Y. [Filed Oct. 7, 1874.]

Brief.—A cramp for connecting hollow walls is provided with holes, which engage with lugs on longitudinal stay-bars secured in the walls.



No. 162,283.

A cramp for walls, constructed with openings or recesses to receive the lugs C of the stay-bars B, combined for operation and adaptation substantially as described.

162,284. PAVIORS' RAMMERS. Geo. Hitchcock, Philadelphia, Pa., assignor to Wm. Everham, same place. [Filed Mar. 20, 1875.]

A paviour's rammer having a solid metal head, B, on which are formed wedge-shaped projections *a*, and a central stem, *b*, all being constructed for attachment to the wooden body A, substantially as and for the purpose herein set forth.

No. 162,284.



No. 162,285.



162,286. CARPET FASTENER. Samuel Horner, Jr., Philadelphia, Pa., assignor to himself and Robt. Horner, same place. [Filed Mar 13, 1875.]

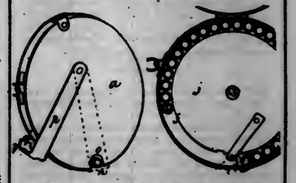
A damask or other fabric in which the entire number of figuring warp-threads are carried to the back of the fabric, at intervals in order to allow the thick weft or filling threads to be brought to the surface, all substantially as and for the purpose set forth.

162,286. METALLIC WASHERS. Moses G. Hubbard, Minneapolis, Minn. [Filed May 22, 1874.]



A square elastic washer curved in one direction only, said curve extending diagonally across said washer, substantially as and for the purpose specified.

162,287. CAP-BOXES. Anton Hunkamp, Montague, Mich. [Filed Nov. 28, 1874.]

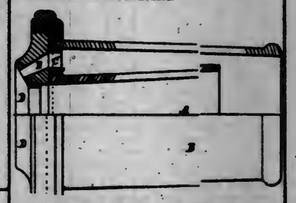


1. The eccentrically-pivoted hasp slide-piece *p q*, carried by the hinged cover *a*, in combination with the priming-exits *a e* and said cover, as and for the purpose described.

2. The combination of the dog *l* of the carrier-lid *j* with seat-stop *k* of the inner periphery of the box, for the purpose of holding the cap-carrier while the caps are being placed in the box, as described.

162,288. COMPOUND HOSE-PIPE NOZZLES. Chas. L. Jones, Wakefield, Mass. [Filed Dec. 7, 1874.]

Brief.—The combination, in a hose-nozzle, of a central tube and an exterior tube, with discharge-openings, controlled by a valve and set at an angle, so that the water discharged from them shall impinge the central stream as it issues from the main nozzle.



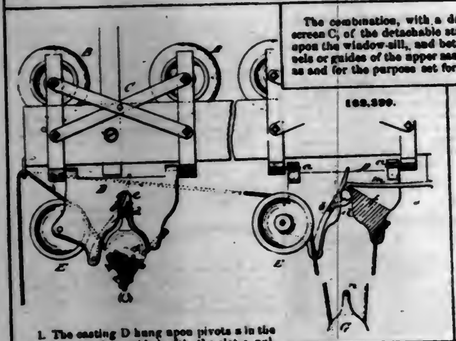
1. The combination, in a hose-nozzle, of a central tube, constituting the main discharging-nozzle, and an exterior tube, provided with discharge-openings, controlled by a valve and set at an angle, so that the water discharged from them shall impinge the central stream as it issues from the main nozzle, all shown and set forth.

2. A nozzle composed of the two tubes A and B, united at their outer ends, and provided with the gate D and ports C and E, substantially as and for purposes stated.

162,289. HAY-ELEVATORS. Justus Jones, Bartonville, N. Y. [Filed Mar 15, 1875.]

Brief.—A carriage on an overhead track has suspended to it a casting, to one end of which the hauling-rope is attached, then passed through the fall-block, and over a pulley on the other end. An upward extension of the block, on reaching the casting, strikes, passes, and becomes hooked to, a hauling lever, releasing also a spring-catch.

The combination, with a distended net or screen C, of the detachable strip H, arranged upon the window-sill, and between the channels or guides of the upper sash, substantially as and for the purpose set forth.



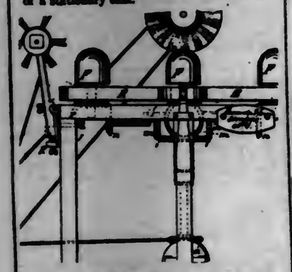


1. The casting D hung upon pivots a in the carriage c, and provided with the slot e, pal lay E, and arm b, with hook d, substantially as and for the purposes herein set forth.

2. The combination of the carriage B C, casting D, pulley E, arm b with hook d, incline f, latch m, rope k, had pulley-block U, with loop s, all constructed substantially as and for the purposes herein set forth.

102,390. HAT-BRUSHING MACHINES. Alex. S. Joyce, Yonkers, N. Y. (Filed Mar. 20, 1875.)

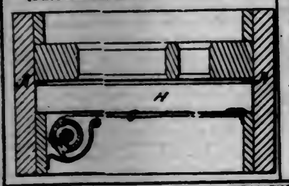
Brief.—The bodies are "brushed up" upon blocks mounted on a table, rotating in unison with each other, and held in contact with rotary brushes of different shapes, positioned at intervals around the frame. The table rotates intermittingly by frictional contact with the bloek-gears. When the table is locked all the blocks revolve, save one, which is thrown out of gear by its spindle riding on top of a stationary cam.



1. The horizontal frame E, carrying the blocks F, and system of bevel-gears s s r, actuated by the gear t, in combination with the cylindric brush C, and conavo-conic brush D, the whole arranged for operation, substantially as and for the purpose specified.

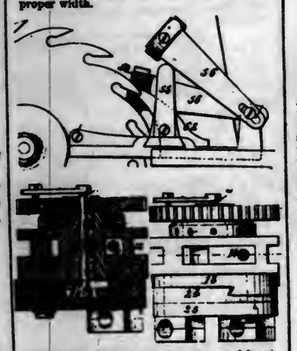
2. The fixed cam G, arranged in relation to the axial stems of the blocks F, capable of a vertical movement in the intermittently-rotating frame E, whereby one of the said blocks is automatically lifted out of connection with its actuating-gear, while the rotatory movement of the others is continued, substantially as and for the purpose set forth.

102,391. WINDOW-SCREENS. J. Knowles, Graniteville, Mass., assignor of one-half his right to J. Henry Knowles, same place. (Filed Jan. 16, 1875.)



102,392. SAW-SHARPENING MACHINES. J. L. Knowlton, Sharon Hill, Pa. (Filed Feb. 5, 1875.)

Brief.—A rotary grinder mounted upon a reciprocating slide in a composed head. The slide is adapted to be set at any angle, the reciprocating movement of the grinder being designed to give the desired form to the tooth. Two pivoted swinging arms carrying files are arranged to dress off the sides of the teeth to proper width.



1. A grinding-wheel, 30, reciprocated longitudinally of the saw-tooth simultaneously with its rotation transversely of the tooth, by means of a slide having the bearings of the grinding-wheel thereon, in combination with a guide, 23, adapted to be set at different angles, so as to make the line of reciprocating movement coincident with the surface to be ground, substantially as herein shown and described.

2. The adjustable compound head 13 24 25, constructed and employed substantially as described, in combination with the grinding-wheel 30 and its shaft 29, to provide for the adjustment of the said wheel to operate upon the front or back of a saw-tooth of any form or size by a combined rotary and sliding movement.

3. The vibrating and sliding arms 56, carrying files or grinding-tools 59, and guided by gages 55, for the purpose of dressing and truing the sides of saw-teeth, as explained.

4. The combination of the rest 62, guides or gages 53, vibrating arms 56, and grinding-tools 59, substantially as shown, for the purpose set forth.

102,393. PEN-HOLDERS. Julius Larra, New York, N. Y. (Filed Mar. 17, 1875.)

Brief.—The inner tube is rigidly attached to the pen-handle, while the outer one slides freely over it, to eject the pen, the heel of which abuts against the projection. The tubes are united by a stud rigidly attached to the outer one, and working in slots in the inner one.

The outer tube B, constructed with the inwardly extending projection b', and provided with the pin K, in combination with the inner tube C, constructed with the slots c' c', within which the pin K is arranged, and the slot c' within which the projection b' on the outer tube projects for disengaging the pen in the manner herein shown and described.

102,394. PROCESSES OF REDUCING ASPHALTUM TO A LIQUID. Archibald K. Lee, Galveston, Tex., assignor of one-third his right to J. B. McClintock. (Filed Mar. 8, 1875.)

The herein-described process of reducing asphaltum to a liquid, and holding the same in a fluid condition without heat or the use of dead oils, but through the action alone of a product obtained by the redistillation of the spirits of turpentine, and in then separating from the same the water, acids, and all resinous substances, and in then concentrating and rectifying the same, substantially as and for the purpose specified.

102,395. SPOUTS FOR SHEET-METAL POTS. Philip Lennon, Newark, N. J. (Filed Oct. 26, 1874.)

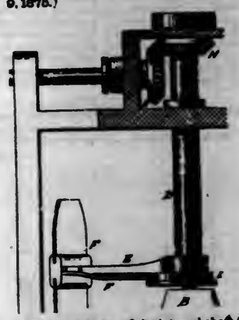
Brief.—A projection at the top of the base of the strainer engages with the slot in the spout.



1. The combination of the discharge-nozzle A and the socket B, to form a spout for the vessel, the socket communicating at one end with the interior of the vessel, and contracted at its other end to form a seat for the spout, the parts being soldered together substantially as herein shown and described.

2. The strainer C, constructed with a tubular shank and loop, c, in combination with the spout A, having the steadying and guiding slot d, substantially as described.

102,396. STEERING-PROPELLERS. William H. Mallory, Bridgeport, Conn. (Filed Mar. 9, 1875.)



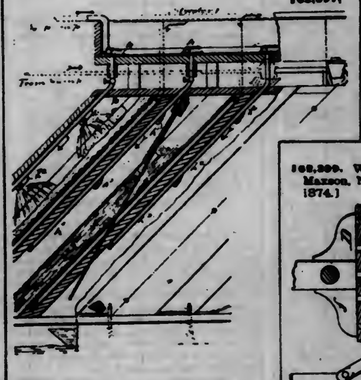
1. The combination of the internal shaft C, supported in the step B at its lower end, the external shaft D, carrying the arms E, hinged to their respective blades, and the eccentric or cam I on the said shaft C below the arms E, with a connection from the said eccentric to each of the blades, substantially as described.

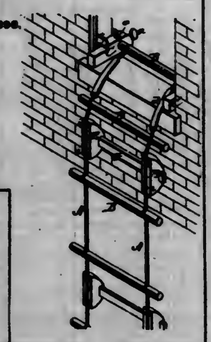
2. In combination with the internal shaft C, supported in the step B at its lower end, the external shaft D, carrying the arms E, hinged to their respective blades, and the eccentric or cam I on the said shaft C below the arms E, with a connection from the said eccentric to each of the blades, the case N inclosing the driving-gear H H, substantially as and for the purpose described.

3. The herein-described propeller-blade, consisting of the head R, slotted for connection to the arm and eccentric rod, and the parts F F, inserted in grooves r in the said head, substantially as set forth.

102,397. ICE-MACHINES. Saml. B. Martin, San Francisco, Cal. (Filed June 20, 1874.)

Brief.—It is intended that no more water than can be frozen shall be sprayed upon the freezing-plates. The refrigerant passes through the pipe-coils along the bottom of each compartment, and behind the freezing-plates, or, by a two-way cock, may be directed by any designated coil. By pipe E the refrigerant cools the water to be frozen. This pipe enlarges in diameter as it advances from the pump. Water is admitted from G into shallow bottom of the troughs to loosen the ice. This water and any accidental excess of sprayed water fall into the trough, whence the ice cakes are finally floated.





1. The process described, consisting essentially in spraying water upon freezing-surfaces, inclined from the vertical, for the purpose of retarding the movement of the water and causing it to spread, by the action of gravity, in thin films over the plate, substantially as described.

2. The series of contiguous congealing-chambers, operating independently, but united to form a single series, substantially as described.

3. The combination of the trough-like frames, with ceilings and doors for the purpose of making close congealing-chambers, substantially as described.

4. The combination of the inclined troughs, the trough-like freezing-plates, and the refrigerating coil, substantially as described.

5. In combination with the freezing-chambers, the canal provided with doors, as described.

6. The combination of a freezing-plate inclined from the vertical, as described, with a suitable spraying apparatus, substantially as set forth.

7. The combination of the eye-bolt, the tackle-block, and suitable connecting-tackle, as and for the purpose described.

8. The combination of the upper tank, the series of valves h h, and the series of independent spray-pipes h^1 h^2 h^3, as described.

9. The machine described, consisting of the following elements: an upper and lower tank, an intermediate series of close freezing-chambers, a system of cooling-pipes, and a water-space for detaching purposes, combined substantially as set forth.

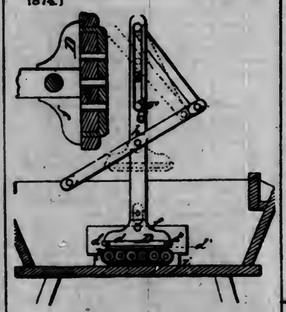
102,398. FIRE-ESCAPES. Elisha Masterson, Norwich, Conn., assignor of one-half his right to O. G. Bailey and T. H. Browning, same place. (Filed Oct. 10, 1874.)

Brief.—Adjustable arms provided with a set-screw are attached to the top round of the ladder, and hold the ladder firmly in the window. The blocks for holding the ladder from contact with the wall of the house are adjustably attached to the ropes.

1. The combination of the ropes A A, rounds B B, and the laterally-adjustable arms C C, with set-screws s s, substantially as and for the purposes herein set forth.

2. The combination, with the fire-escape A B, of the semicircular blocks E E, with cross bar G, adjustable upon the ropes, substantially as and for the purposes herein set forth.

102,399. WASHING-MACHINES. Erwin W. Manzon, Nicholson, Pa. (Filed Oct. 24, 1874.)



The rubber D, consisting of the rigid perforated portion d, with parallel edges, the perforated covering d^2, the strips d^3, and cleats f, as and for the purpose set forth.

102,400. BIRD-CAGES. John Maxheimer, Brooklyn, N. Y. (Filed Feb. 6, 1875.)

In a bird-cage, the combination of the perforated horizontal wire B with the upright wires A A, which are drawn through the horizontal wire, and then bent or crimped above and below the same, to form shoulders for holding the horizontal wire in place, substantially as herein shown and described.

102,401. STEAM-ENGINE GOVERNORS. G. L. McCahan, Baltimore, Md. (Filed Dec. 11, 1874.)

Brief.—The governor-stem is divided into two parts, connected by a spring, so that the valve-part of the rod may be moved to open and close the valve without affecting the governor.



1. In a steam-engine governor, the valve-stem provided with a compressible coupling or connection, enabling the valve to be elevated independently of the position of the stem operated upon directly by the governor-balls, substantially as and for the purpose set forth.

2. The upper and lower cross-heads D and E, rods b, springs b', and lever F, combined as elements in a governor, substantially as herein specified, and for the purpose set forth.

102,402. PUMPS. Eugene McCoy and O. M. Harper, Owatonna, Minn. (Filed Dec. 5, 1874.)

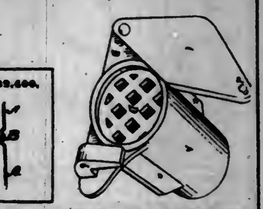


1. In combination with the cylinder, the hollow piston having its inner lower edges beveled and the conical valve adapted to slide on a portion of the piston-rod extended through and below said piston, substantially as and for the purpose set forth.

2. The submerged pump hereinbefore described, consisting of cylinder A, piston B B', conical sliding valve C, and elbow D, communicating with said cylinder by aperture G, provided with check-valve H, all constructed and combined in manner and for the purposes set forth.

102,403. SEWER INLET-TRAPS. J. McGuire, New Haven, Conn. (Filed Sept. 26, 1874.)

Brief.—A cast cylinder with flanges on its outside, for the purpose of fastening it to the wall of the vault; also a flange on end of cylinder, to which is pivoted a gate for closing the grated aperture of cylinder



The sewer inlet-trap herein described, consisting of the cylinder A, having the flanges a a, and the flange B, on which is cast the guide b of the gate C, pivoted to the flange B, and of the grating D, as and for the purpose set forth.

102,404. PASSE-PARTOUT BASES FOR GILDING. Hugh McHugh, New Bedford, Mass. (Filed Jan. 21, 1875.)

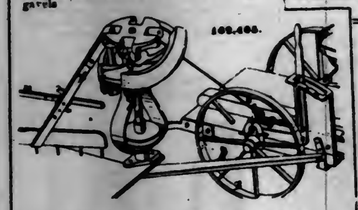
Brief.—The composition is mixed in two sub-compounds, which are mixed at the time of using

1. The herein described composition for molded panel-mats, passe-partout panels, and like articles requiring to be mat-gilded or burnished, consisting of glue and gilders' whiting combined with oil, resin, and paper pulp, substantially in the proportions set forth.

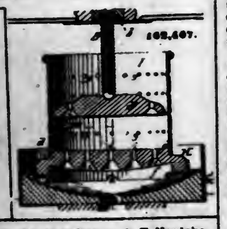
2. The herein-described composition for molded articles requiring to be mat-gilded or burnished, consisting of glue, gilders' whiting, oil, resin, paper-pulp, and clam, taken in the proportions substantially as stated.

162,405. HARVESTER-RAKE. J. H. Myers, Rochester, N. Y., assignor to Hubbard Harvester Company, Minneapolis, Minn. [Filed Feb. 16, 1875.]

Brief.—The rake switch trip is operated automatically by mechanism which may be adjusted to graduate the distance between the gavels.



162,406.



162,407.

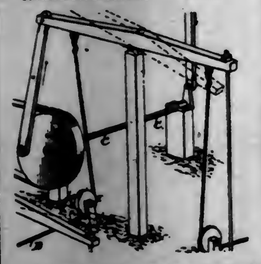
1. The spring cam-arm *b*, actuated by the rake-reller, as described, for opening the switch or gate in the cam-track, causing the arm to act as rake-arms, in combination with the weighted or spring latch *d* for holding the cam-arm away from the switch or gate when it is desired that the rake-heads shall act as gatherers only, substantially as described.

2. The combination, with the rake-tripping devices, of an index-arm or lever, controlled by the driver on the machine, for setting said tripping devices, to cause the rake automatically to discharge the gavels at any desired regular distances apart, substantially as described.

3. The adjustable bearers *m*, applied to the rake-arms, above and in front of the rake-heads, and set obliquely to said heads, substantially as and for the purpose set forth.

4. The angular clasp or socket-piece *n*, with its spur or finger *n'*, and single through-bolt, in combination with the rake-arms and the adjustable bearers *m*, for uniting said bearers to the rake-arms, as described.

162,408. MEANS FOR PUMPING WELLS. A. B. Nickerson and Levi C. Streeter, Allegheny Township, Venango County, Pa. [Filed Nov. 30, 1874.]



As a means of pumping two or more wells simultaneously by a single engine, the combination of the shaft C C, having cranks at each end, as described, with the ropes D and F, said cranks and ropes being connected to the walking beams of the several wells, in such manner that said walking-beams are caused to move in different directions from one another, thereby balancing each other, and equalizing the strain on the engine during the entire revolution of the band-wheel A, as herein specified.

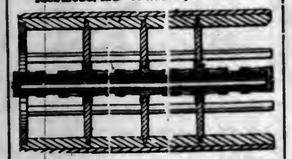
162,407. LARD AND CHEESE PRESSES. A. J. Noe, Mitchell, Ind. [Filed Dec. 19, 1874.]

1. The cylinder bottom H, constructed as described, provided with circular shoulders *d*, recess *f*, with channels *e*, and holes *i i*, in combination with the pan G, having concave bottom with central opening *g'* and plug *g g*, substantially as and for the purpose herein set forth.

2. The combination of the pan G, cylinder bottom H, having shoulder *d*, recess *f*, channels *e*, and holes *i*, the perforated cylinder I, and perforated follower J, all substantially as and for the purposes herein set forth.

3. The combination of the frame, consisting of the bottom piece A, side pieces B B, and cross-piece C, constructed out *b*, screw D with hand-wheel E, perforated follower J, perforated cylinder I, perforated bottom H, and pan G, all constructed and arranged to operate substantially as and for the purposes herein set forth.

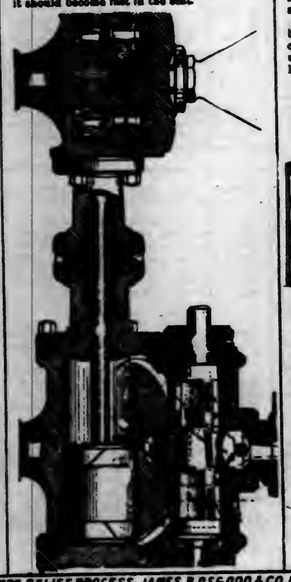
162,409. SOLTING-REELS. A. B. Nordyke, Richmond, Ind. [Filed Sept. 6, 1873.]



A bolt-reel for a flouring-mill, combining in its construction a tubular shaft and adjustable spiders with tapering flexible hubs attached by rings, and receiving wooden arms carrying the cloth-bars, substantially as set forth.

162,409. STEAM-PUMPS. J. North, Southington, Conn. [Filed Feb. 27, 1875.]

Brief.—The pump-valves are on each side of the cylinder, and have separate passages. The two cylinders are joined by tubular extensions, which form a packing for the piston-rod. The steam-valve is oscillated by an auxiliary transverse steam-valve, and has a projecting stem, by which it may be turned if it should become fast in the seat.



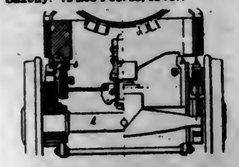
1. The combination of an oscillating steam-valve with a steam-moved piston-valve, extending transversely to the steam-valve and fitted into an auxiliary cylinder, the ends of which communicate with the main cylinder, substantially as shown and described.

2. The combination, with a steam-moved piston-valve, of an oscillating valve which may work in glands, provided with a stem extending through the steam-chest to allow of the oscillating valve being turned within its seat by means of a wrench or other device.

3. The combination of a tubular connection with the steam-cylinder and pump-cylinder of a direct-acting steam-pump, said connection being made in sections which are drawn together, and when drawn together form a tight joint on the piston-rod, substantially as and for the purpose described.

4. The double-acting pump-cylinder having two induction and two eduction ports located each side, and nearly on line with the center of the pump-cylinder, all said ports having separate passages, one from the other, substantially as set forth.

162,410. LOCOMOTIVE RUNNING-GEARS. Franz Seraph Wenzel Nowotny, Dresden, Saxony. [Filed Feb. 13, 1875.]



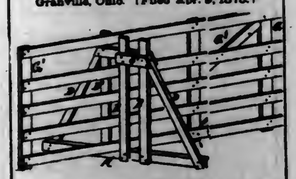
1. A locomotive provided with a fore truck having a single axle, *k*, to turn upon a king-bolt, *g*, which is the sole means of connecting the truck to the frame of the engine, all as set forth.

2. The combination of the fore truck, having a single axle to turn on a central king-bolt, *g*, which is the sole means of connecting the truck and frame; and bearings at opposite sides of the bolt, to retain the truck in its vertical position without interfering with its limited movement upon the bolt, as set forth.

3. The bearings *h*, consisting of curved and inclined faces *x y*, adapted to corresponding faces of bearing-blocks *i'* upon the frame of the engine, as set forth.

4. The combination of the truck, the king-bolt *g*, and a bearing, *h*, confined to the truck, capable of an oscillating movement in one or more directions, and recessed to receive the king-bolt, substantially as set forth.

162,411. FARM-FENCES. Thos. W. Owens, Granville, Ohio. [Filed Apr. 9, 1875.]



1. The combination, with the sill A, parallel uprights B B, and cap-pieces C, of the braces D D, fastened to the sill and let into the uprights, so as to form the two bearings *a b*, substantially as herein set forth.

2. The post formed of the parts A, B, D, and C, and the auxiliary upright B', placed on the opposite side of the sill A, in combination with the panels formed of the horizontal boards E, and battens G G' G², and arranged to slide and turn in the post, substantially as herein set forth.

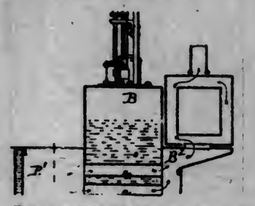
162,412. KNITTING-MACHINE NEEDLES. S. Peberdy, Philadelphia, Pa. [Filed Apr. 7, 1875.]



A knitting-machine needle having at the end a hook, *a*, and a lever, D, hung, near its inner end, loosely to the said hook, all substantially as and for the purpose set forth.

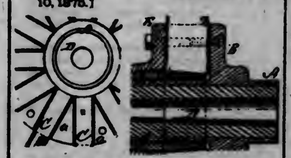
162,413. COOKING-STOVES AND STEAM-HEATERS. Thomas Perkin, Sarnia, Canada. [Filed Mar. 6, 1875.]

Brief.—Suitable attachments to the steam-chamber being made, the power may be applied to any convenient purpose.



The combination, with the base-plate A, of the boiler B, having tubes *a*, smoke-box B', oven C, and double-walled fire-box B', forming a water-leg, and having its top adapted to culinary operations, substantially as described and shown.

162,414. WHEELS FOR VEHICLES. Alvah A. Philbrick, Coldwater, Mich. [Filed Nov. 10, 1875.]

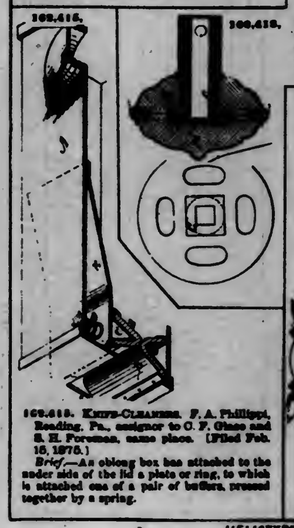


1. The sand-band G, extended to form a tapering screw-thimble at its inner end to enter between the hub-barrel and inner ends of the spokes for expanding the spokes, as set forth.

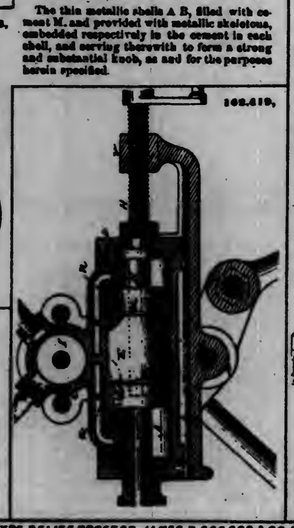
2. The combination of the barrel A, provided with band B having V-shaped projections *c*, the spokes C, back band E, and combined sand-band and screw-thimble G, all substantially as and for the purposes set forth.

162,415. KNIFE-CLEANERS. F. A. Philippi, Reading, Pa., assignor to C. F. Glass and S. H. Foreman, same place. [Filed Feb. 16, 1875.]

Brief.—An oblong box has attached to the under side of the lid a plate or ring, to which is attached one of a pair of buffers, pressed together by a spring.



162,416.



162,417.

The combination of the box A, with opening *c*, flanged forms C C, with rubbers B B, spring or springs D, and plate E, all substantially as and for the purposes herein set forth.

162,416. STAIR-RODS. Ansell W. Porter, Syracuse, N. Y. [Filed Mar. 29, 1875.]

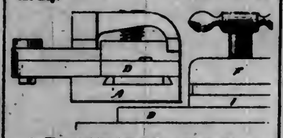
Brief.—A triangular stair-rod is fitted at either end with loops or clasping-plates, which terminate in V-shaped flaps bent inward, the whole attached by a single screw. There is also an intermediate clasping-plate with attaching-screw, which serves to hold the rod more firmly in position.



The combination of the triangular rod or bar A and the plates B B, having lips or or flanges *b b*, formed with the V-shaped flaps or wings C C, and with or without one or more intermediate plates, D, and the attaching screws *c c*, all substantially as set forth.

162,417. DEVICES FOR SHAPING PIANO-KEYS. Milon Pratt, Deep River, Conn., assignor to Pratt, Read & Co., same place. [Filed Mar. 9, 1875.]

Brief.—The material is held to a pivoted clamp attached to a reciprocating table passing by a rotating cutter, which gives form to the key.



1. The combination of the reciprocating carriage D and pivoted clamp F I, substantially as and for the purpose described.

2. The combination of the bed A, reciprocating carriage D, pivoted clamp F I, and lever F, constructed and operating substantially as described.

162,418. DOOR-KNOBS. Christn. Rebstock, Bridgeport, Conn., assignor to David W. Sherwood, C. R. Brothwell, and Christn. Rebstock. [Filed Mar. 4, 1875.]

The thin metallic shells A B, filled with cement M, and provided with metallic skeletons, embedded respectively in the cement in each shell, and serving therewith to form a strong and substantial knob, as and for the purposes herein specified.

162,419.

162,419. ROCK-DRILLS. Geo. H. Reynolds, New York, N. Y., assignor to himself and C. H. Delamater, same place. [Filed Jan. 29, 1875.]

Brief.—A dash-pot is formed on the outside and at each end of the valve-cylinder to contain the valve. The drill is moved forward and rotated by the same movement of the feed-screw. The induction-ports are at some distance from the end of the cylinder, to contain the main piston. A passage in the piston admits steam to start it.

1. The air dash pots J J, constructed on the exterior of the heads of the valve-cylinder C, and with their contained pistons operating inwardly to effect compression, whereby a stuffing-box for the valve-stem in either cylinder-head is dispensed with, and said stem may readily be operated by hand when required, substantially as specified.

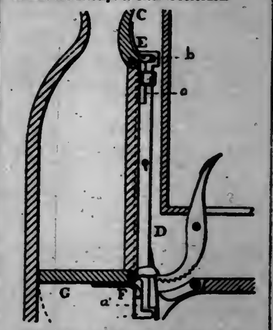
2. The combination of the parts or passages *b b'*, *d f'*, and *f f'*, the reciting drill-cylinder A, the drill-piston E, the piston-valve I, and the cylinder C, essentially as shown and described.

3. The combination of the screw feeding and rotating shaft H, connected with and feeding the cylinder A, and leaving the piston E free to turn with, but sliding on, said shaft, and the nut or screw box *v*, substantially as specified.

4. The combination, with the cylinder A, having its ends extended beyond the ports *b b'*, of the grooves *u* and perforations *s* in the ends of the piston E, essentially as and for the purposes herein set forth.

162,420. PANE-BOXES. B. Miles Reppert, Philadelphia, Pa. [Filed Jan. 26, 1875.]

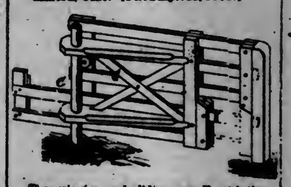
Brief.—Depressing the trigger first closes the upper leaf, then opens the lower one, and on the release of the trigger the lower leaf is first closed, then the upper one opened. Inverting the pane-box operates the "tell-tale," so that the attempt to steal is recorded.



1. The upper and lower leaves C G and arms E F, in combination with the sliding bar D, formed with the slots *a a' b b'*, substantially as and for the purpose set forth.

2. The combination, with a pane-box, of a tell-tale constructed of a continuously-rotating index, H, oscillating arm F', ratchet L, and pawl P, and operating as set forth.

162,421. FARM-GATES. George O. Ross, Marion, Ohio. [Filed Apr. 13, 1875.]



The swinging and sliding gate E, with the independently-sliding section F, in combination with the swinging frame G, hinged upon the hollow posts C, all substantially as set forth.

162,492. METHODS OF ENLARGING THE ENDS OF METAL BARS. George H. Sellers, Wilmington, Del., assignor to W Sellers and John Sellers, Jr., Philadelphia, Pa. [Filed Dec. 7, 1874.]

Brief.—The end of the bar to be thickened and expanded is, with a block or section of bar placed on it, heated, and the two pieces welded together by dies A B, and there, while yet confined in the die, is upset by a punch working within the die against the extremity of the thickened end, to expand it laterally to the desired breadth.



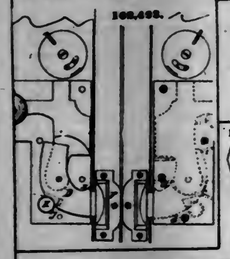


162,496.

The method of piling a rectangular bar, welding the pile between compressing-dies, and, without opening the dies, upsetting the welded metal, substantially as set forth.

162,493. LOCKING-LATCHES. C. Seymour, Charlottesville, Va. [Filed Mar. 9, 1875.]

The key having leg *i*, the tumbler K, having leg *j* and T-shaped slot *a*, the barrel L, having T-shaped slot *a'*, and the curved bolt D, having notch *h* and depression *i*, all combined and arranged substantially as and for the purpose described.



162,494.

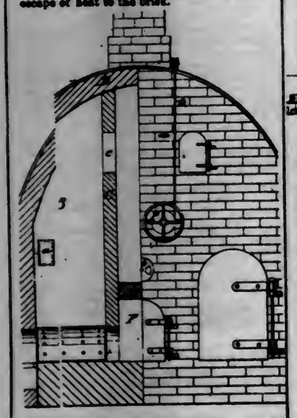


162,494. SEAMS FOR LEATHER-WORK. S. W. Shorey, Boston, Mass. [Filed Aug. 17, 1874.]

The metallic fastenings of a seam or stay, the ends of which are united by solder, substantially as specified.

162,495. BRICK-KILNS. Peter Edwd. Smith, Lincomb, Iowa. [Filed Mar. 20, 1875.]

Brief.—The hollow wall contains a smoke-flue and hot-air chamber in contiguity. The detachable fire-boxes are perforated to allow escape of heat to the brick.



1. In the brick-kiln, as herein described, the transverse wall B, with dampers a and hollow wall C, containing flues F leading to a common chimney, and provided with dampers I, all combined and arranged substantially as and for the purpose described.

2. The detachable fire-boxes I', in combination with the stationary fire-boxes I in the wall X, and the hollow wall C, provided with flues F and dampers I, substantially as and for the purpose described.

162,496. SEWING STRAW BRAID. Wm. F. Sprague, Foxborough, Mass., assignor of one-half his right to L. Pond, same place. [Filed Feb. 20, 1875.]

As a new article of manufacture, strips of straw braid sewed together by their edges without lapping, as shown and described.

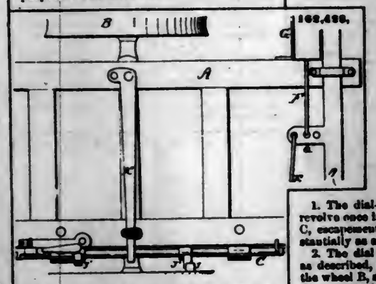
162,497. TAPS AND FAUCETS FOR BARRELS. A. C. Springer, San Francisco, Cal. [Filed Apr. 2, 1875.]

Brief.—The faucet is introduced bottom up, and the collar screwed down. A half-turn is given to the faucet, which places it in position for drawing, which turn, from the rapid pitch of the screw upon the plug, opens the passage, and at the same time forces the elastic ring against the projection in the bush and prevents leakage. The passage can be opened and closed without removing the faucet.



1. The cock or faucet constructed with the cylindrical portion E, and provided with the elastic ring G fitting the tube A, in combination, with the plug *c*, having two or more threads, as shown, and the shoulder *b*, working in the tube A, the whole operating substantially as herein described.

2. The tube A, with its peculiarly constructed screw-plug *c*, in combination with the faucet or cock having the securing or holding collar F, through which the cock moves loosely, as shown, and the elastic packing-ring G, the whole operating substantially as and for the purpose herein described.



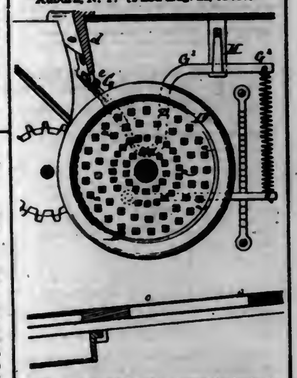
162,498.

162,498. CORN-PLANTERS. John Stoll, Lincoln, Ill. [Filed Sept. 23, 1874.]

Brief.—To the side of the frame is supported the longitudinal shaft, provided near each end with lugs. Upon the inside of the bearing-wheel, and to one of the spokes, is secured a lug, which coincides with the projection on the shaft, and imparts to it a partial rotary motion. The front end of the shaft is bent at right angle to its length, and has holes, into one of which the end of the connecting-bar passes, for communicating motion to the adjustable seed-slide.

The combination, with the frame A and wheels B, having lug J, of the sliding and partially-rotating shaft C, with bow X, lugs J', perforated crank-arm C', adjustable rod K, sliding plate D, with central projection *e*, rod F, box G, all constructed substantially as set forth.

162,499. CORN-SHELLERS. Wm. Stover, Auburn, N. Y. [Filed Aug. 21, 1873.]



The combination, with the toothed wheels E and toothed wheel D, of the toothed jaws G, having the arms G^2 connected to the cross-bar *d* by an adjustable hinge, *e*, for adjusting said jaws vertically, substantially as and for the purpose described.

162,500. CLOCKS. Robt. H. Strong, Galesburg, Ill., assignor of one-half his right to Clinton S. Halsey, same place. [Filed Jan. 2, 1875.]

Brief.—A main drive-wheel, carrying a dial indicating fractions of an hour, gears with a pinion on the escapement, and is thus revolved once in each hour. A tappet in this dial acts on pins in a horizontal dial, indicating hours, moving it one space at each revolution of the main wheel.



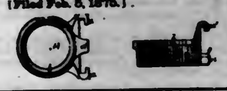
1. The dial-carrying wheel B, arranged to revolve once in each hour by means of spring C, escapement D E, and pendulum F, substantially as and for the purpose specified.

2. The dial G, constructed and graduated as described, secured to and operating with the wheel B, substantially as and for the purpose specified.

3. The horizontally-rotating dial I, constructed as described, and provided with projecting pins *i*, combined with the dial G, having a tappet, J, the wheel B, escapement D E, and pendulum F, substantially as described, and for the purpose specified.

4. The dial I, wheel B, dial G, escapement D E, pendulum F, spring C, and supporting-standard A, when arranged substantially as described, and for the purpose specified.

162,501. CARTRIDGE-LOADING IMPLEMENTS. Thos. L. Sturtevant, Framingham, Mass. [Filed Feb. 5, 1875.]



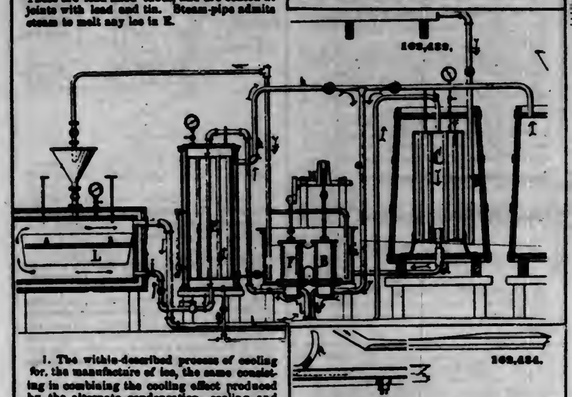
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1. The instrument herein described, consisting of the ring or short cylinder A, provided with rabbet *b* and hooks *a a* or *a a' a'*, or their equivalents, the whole being combined and operating substantially as and for the purposes stated.

2. As an instrument for supporting cartridge-shells while the latter are being loaded, the ring or cylinder A, with its rabbet *b*, substantially as and for purposes stated.

162,502. ICE-MACHINES. Augustus H. Tait, Jersey City, N. J. [Filed Dec. 28, 1874.]

Brief.—One pump condenses and circulates the condensible gas or liquefiable vapor. Another frame operates likewise on common air. The air, while compressed, is cooled by the expanding gas or vapor in the central chamber. These are lead-lined tubes, and are coated at joints with lead and tin. Steam-pipe admits steam to melt any ice in E.



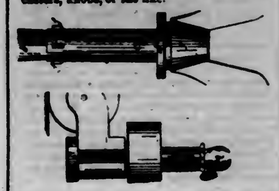
1. The within-described process of cooling for the manufacture of ice, the same consisting in combining the cooling effect produced by the alternate condensation, cooling, and expansion of the vapors from a liquid having a low boiling-point, such as sulphite of carbon, with the cooling effect produced by the alternate compression, cooling, and expansion of atmospheric air, substantially in the manner herein shown and described.

2. The within-described process of cooling for the manufacture of ice, the same consisting in combining the cooling effect produced by the alternate condensation, cooling, and expansion of a condensible gas, such as sulphurous acid, with the cooling effect produced by the alternate compression, cooling, and expansion of atmospheric air, substantially in the manner herein shown and described.

3. The gas-generator A, pump B, and compression-cylinder C, surrounded by water-tank D, for compressing and reducing the gas to a liquid state, in combination with the expanding-cylinder E, pump F, and the freezing-chamber L, substantially as described, for the purpose specified.

162,503. FASTENINGS FOR CASTERS. Knobs, &c. Jacob Thienes, Fredrick Thienes, and Charles Schuster, Brooklyn, N. Y. [Filed Mar. 19, 1875.]

Brief.—A self fastening attachment is formed by means of a conical or bulbous shaped head, which is drawn into a slit sleeve or outwardly-yielding socket, the sides of which have suitable catches or projections, for pressing into the wood. The rod carrying this enlarged head is screw-threaded, and provided at the other end with a flange and nut screw, the whole readily adapted for the fastening of casters, knobs, or the like.



The combination of the rod *a*, screw-threaded at one end, and having a bulbous or enlarged head, *b*, at the other, slit sleeve *c*, catches or projections *f*, flange *d*, and nut-screw *g*, for attaching and fastening the frame-work of a furniture-caster, for fastening knobs, or other analogous uses, all substantially as described and shown, for the purposes set forth.

162,504. RAILWAY-SWITCHES. B. A. Trapp, Davenport, Iowa. [Filed Apr. 2, 1875.]

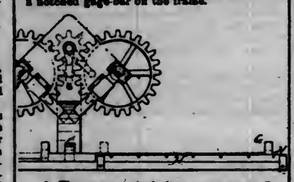
Brief.—In a railway-switch in which spring-rails are employed, the forward ends of the foot or inner flange of said rails are bent inward, and, in connection with similarly-formed inward projections from the main-track rails, act as guards, to prevent the rising of the forward ends of the spring-rails.

162,504.

The railway safety-switch consisting of the tongues E, springs D, main rails A, having the bottom flanges cut and bent inwardly at *d*, and the spring-rails C, having their bottom flanges extended at *f*, all combined and arranged substantially as shown, and for the purpose described.

162,505. MACHINES FOR PERFORATING TUBES FOR TUBE-WELLS. Chas. L. Travis, Minneapolis, Minn., assignor to the Star Manufacturing Company, same place. [Filed May 12, 1874.]

Brief.—The end walls of the feed-carriage are made concave, to conform to the shape of the tube. The carriage can be held at any desired point by a latch, which engages with a notched gage-bar on the frame.

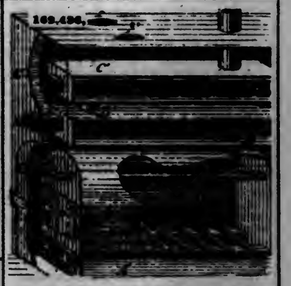


1. The concave bed-plate or support G', for automatically centering the tubes, in combination with the obliquely-acting punch cutter or cutters A, for perforating said tubes, substantially as and for the purpose set forth.

2. The combination, with the self-centering bed-plate or support G' and the obliquely-acting punches A, of the carriage G, for adjusting the tubes, as described.

162,506. HOT-AIR FURNACES. George B. Wallis, Owatonna, Minn., assignor of one-half his right to Searle & Dynes, same place. [Filed Mar. 23, 1875.]

Brief.—Air admitted to the hot-air chamber is heated by entering through pipes running through the combustion-chamber and the smoke-drum.

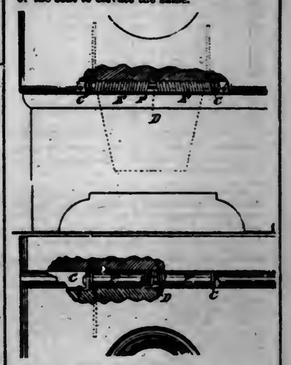


162,506.

The hot-air furnace herein described, consisting of the heater A A' and drum O O', with their connecting-pipes, and the air-tubes or pipes D and E E' E'', constructed and combined substantially in the manner and for the purposes set forth.

162,507. SELF-RAISING SEATS FOR WATER-CLOSETS. Jas. E. Walter, Baltimore, Md. [Filed Mar. 27, 1875.]

Brief.—Two hinges having a common pintle, upon which, between the hinges, two parts of a spiral spring are wound in opposite directions from the middle, the central parts of the spring being secured to the frame-work of the seat or closet, and the two extreme ends of the spring being inserted in holes in the edges of the seat to elevate the same.



1. The combination of the hinges C, a common pintle, D, and the portions E E of the spiral spring, wound in opposite direction from the middle, and attached to the seat at the ends, and to the frame-work at the center, or vice versa, substantially as and for the purpose described.

2. The combination of the hinges C, a common pintle, D, the spiral springs E E, and the sheet-metal casing F, substantially as and for the purpose described.

162,508. CLOTH WINDING AND MEASURING MACHINES. Jas. Wayland, New York, N. Y., assignor to himself and T. M. Brintnall, same place. [Filed Feb. 24, 1875.]

1. The cloth-clamping and winding device, consisting of the slotted bar K, finger L, set-screws *l*, eccentrically-slotted disk M, and shaft H', substantially as shown and described.

2. The jaws G G, pivoted at their centers to a head on the shaft H, in combination with the sliding sleeve J and revolving conical wedge I, attached to the said sleeve, substantially as and for the purpose described.

3. The combination, with the sleeve T and shafts H H', of the brake N, consisting of a divided bar attached at one end to a support upon the said sleeve, and provided at its outer end with a set-screw, substantially as described.

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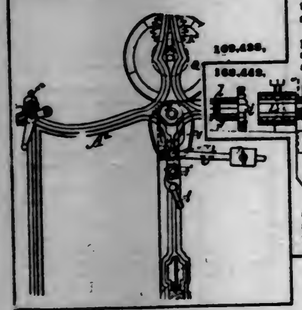
4. The combination of the tube or shaft F, detachable centers F', rods F², adjustable bezes A', cords or chains c', shaft T, ratchet f', and pawl f², substantially as and for the purposes described.

5. The combination of the shaft T, provided with cams t, the arm or lever U, attached to the said cam-shaft, and provided with an adjustable weight, u, and the vertically-adjustable tension-bar B, and the tension-roller P, substantially as and for the purpose described.

6. The adjustable guides V, sliding on the shaft T, and surrounding the roller P, and tension-bar S, substantially as shown and described.

7. The drum Q, journaled in adjustable tail-stocks hangers q, in combination with the shaft of the drum, having a tooth, r, the slotted double pointer or index R, and the toothed wheel R', substantially as and for the purpose described.

8. The drum and its axis or shaft, in combination with the tape-reel mounted on said axis or shaft of the drum, as and for the purpose described.

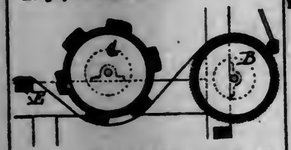


169,439. COMBINED MANGLE AND IRONING-TABLE. Francis Way, Springfield, Ohio. [Filed Apr. 12, 1875.]

In combination with the mangle and ironing-board constructed as shown, the pivoted supporting-frames D d and E e, the brace-rods F and F, and the brace-bar G, substantially as and for the purpose specified.

169,440. MACHINES FOR POLISHING OIL-CLOTH. J. Webber, Jr., Elizabeth, N. J., assignor to Eastern Manufacturing Company, same place. [Filed July 30, 1874.]

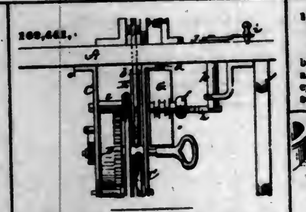
Brief.—A revolving cylinder covered with pumice-stone rubs the fabric as it is drawn along by the card-roller.



In a machine for polishing enameled cloth and other fabrics, the combination of the take-up cylinder B, polishing-cylinder C, brake or rollers C D, and stretching-bars E E E', substantially as and for the purpose shown and described.

169,441. POWERS FOR RUNNING SEWING-MACHINES. James K. Welter, Springfield, Ill., assignor of three-fourths his right to John F. Pritchard and Nat. Covington, same place. [Filed July 24, 1874.]

In combination with the clock-work D, and cross-shaft E having fan G and pulley f, I claim the vertical shaft h, provided with the spring h as its lower end, held in place by the brackets hl, and connected to the lever I upon the sewing-machine table, which lever has a pointer, i, and is adjusted by means of the perforated dial J, all substantially as set forth.



169,442. PHOTOGRAPH-BURNISHERS. Emile R. Wenton, Bangor, Me., assignor to J. F. Bass, same place. [Filed Jan. 18, 1875.]

1. A burnishing-tool made from Franklinite iron or cast-iron containing a large proportion of manganese.

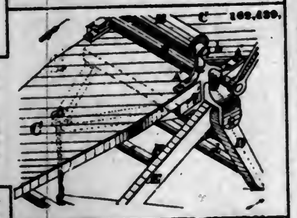
2. A burnishing-tool plate thickened at its front edge and gradually diminishing in thickness toward the rear and sides, as shown.

3. A burnishing-tool plate provided with a tail-piece, having the slots *d f f* therein, as and for the purposes specified.

4. In a burnishing-machine, a feed-roll, *l*, provided with a diagonal groove, *l*, extending around its arbor, in combination with the screw *o* in its supporting standard, as shown.



5. The feed-roll *l*, provided with groove *l* and screw *o*, in combination with a groove, *c*, and set-screw *p*, as and for the purposes set forth.



169,443. BRACKETS FOR SUPPORTING SHELVES. Wm. Hall, Jr., Cincinnati, Ohio. [Filed Jan. 18, 1875.]

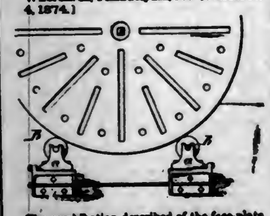
Brief.—The bracket is made of a single piece of metal, and has a hook at its upper end, and a lip at its lower end, which is bent at right angles to the bracket, and has a hole through it for the reception of a screw.



169,444. PIANO-FORTE PEDAL ATTACHMENTS. Lorrain C. Whiting, East Saginaw, Mich. [Filed Dec. 30, 1874.]

The combination of the base-block C, the foot-rest D, pivoted thereto, the screw-rod E, and clamp-nut F, all constructed and arranged substantially as and for the purposes set forth.

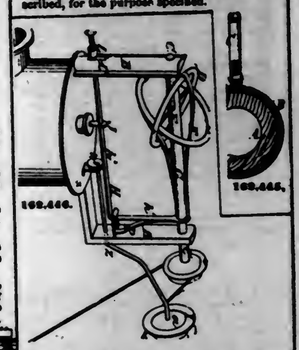
169,444. METAL-TURNING LATHES. Thos. Wilbraham, Philadelphia, Pa. [Filed Dec. 4, 1874.]



The combination described of the face-plate of an ordinary lathe with adjustable supporting-pulleys B B, for the purposes specified.

169,445. BULL'S-EYES. Wm. W. Wilcox, Middletown, Conn. [Filed Dec. 24, 1874.]

The combination, in a bull's-eye, of a wooden body, A, having a central groove or seat, and a surrounding strap, B, constructed with an eye, C, substantially as herein shown and described, for the purpose specified.



169,446. GOVERNORS FOR STEAM-ENGINES. James D. Willoughby, Washington, D. C. [Filed Mar. 27, 1874.]

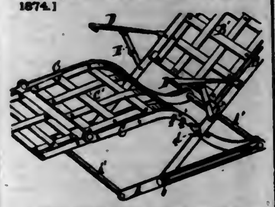
1. The rings D D, in combination with the spring-arms F F and sleeve G, substantially as and for the purpose set forth.

2. The pivoted elbow-lever H, consisting of the arms *h' h²*, in combination with the valve K and sleeve G, whereby a horizontal motion, given by the centrifugal device to the arm *h'* produces a vertical motion in the arm *h²* and valve K, substantially as and for the purposes set forth.

3. The pendent weight M, of varying resistance or force, in combination with the arm *h²* of the elbow-lever H, and spring F, substantially as described, and for the purposes set forth.

4. The adjustable-nut or sleeve *L'*, in combination with the arm *h²* and slot *L²*, substantially as and for the purpose set forth.

169,447. ADJUSTABLE IRON CHAIRS. Geo. Wilson, New York, N. Y. [Filed Nov 7, 1874.]



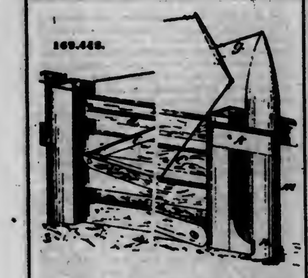
1. The combination, with the slotted frame A A', of the back-frame B, provided with the bar *d'*, and seat-frame C, having the notches *e*, for adjusting the inclination of said back-frame, substantially as described.

2. The combination of the slotted frame A A', the back-frame B, provided with the bar *d* and the arm-rests D, having jointed braces E, constructed with stops *e e'*, and the seat-frame C, having the notches *e* and foot-rest C', substantially as described and shown.

169,448. FARM-GATES. John N. Wilson, Carthage, Mo. [Filed Sept. 28, 1874.]

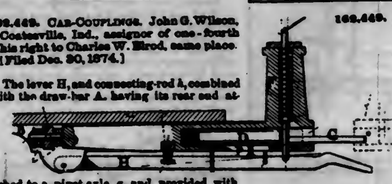
Brief.—The pin being thrown to the outer end of the slot forces down the lever, and by means of the wire draws down one end of the arm, the other end thereof being forced upward, which, by means of the wire, raises the outer end of the gate, and vice versa. When the pin is thrown to the inner end of the slot, the gate will descend, and its front end rest on the ground or in the leach, thus freeing the post from strain.

169,448.



The combination, with a gate, a, and inner gate-post m, of the lever d, arm c, with pin *b* passing through a slot, *a*, the wires *c b*, bar *f*, and wire *g*, all substantially as and for the purposes herein set forth.

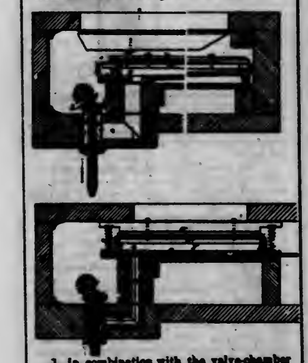
169,449. CAR-COUPLINGS. John G. Wilcox, Centerville, Ind., assignor of one-fourth his right to Charles W. Bird, same place. [Filed Dec. 30, 1874.]



The lever H, and connecting-rod *h*, combined with the draw-bar A, having its rear end attached to a pivot-axle, *a*, and provided with the usual spring sliding block D and guard F, constructed to operate substantially as set forth.

169,450. PNEUMATIC ACTIONS FOR ORGANS. Thomas Winans, Baltimore, Md. [Filed Mar. 26, 1875.]

Brief.—Special construction of ping-valve, to prevent leakage. The spiral springs, for keeping the valves in place, are secured within the wind-chest to a shaft having its bearings in the sides of the wind-chest, the tension of the springs being made adjustable from the outside through the said shaft.



1. In combination with the valve-chamber and the air-passage to the pneumatic device, the double-ping valve, arranged to play in said chamber, and so formed that the distance between the interior opposite faces of its heads at their outer edges shall not practically exceed the distance between the induction and eduction openings of the valve-chamber, substantially as shown and set forth.

2. The double valve, consisting of two heads, adapted to fit in the valve-chamber, a cylindrical intermediate connecting-stem, and a flange or disk of larger diameter applied to the outer face of the eduction or exhaust head, substantially as set forth, with or without a like flange or disk on the exterior opposite face of the induction-head.

3. The hollow or tubular valve-stem, in combination with the valve-operating spring contained in said stem, substantially as set forth.

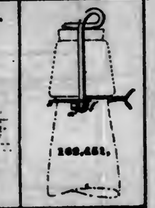
4. In combination with the ping-valve, the tubular central stem, prolonged below the outer head, and the valve-operating spring, received and secured in said stem, substantially as set forth.

5. In combination with the valve-operating spring or springs, a tension-regulating shaft, by whose rotation the tension of the spring or springs can be increased or decreased at will, substantially as and for the purpose set forth.

6. The pneumatic valve-lifter, for operating the pallets of slider sound-boards, consisting of an oblong case or frame, whose top is formed of a flexible diaphragm and piston disks or plates, as described, adapted to engage the pallet, and to operate the same, substantially as set forth.

7. A pneumatic valve-lifter, consisting of a case or frame, formed with an aperture in its bottom for air admission and exhaust, and closed at its top by a flexible diaphragm embraced between two piston disks or plates, the outer one of which carries or engages with the air-admission pallet or valve, or constitutes in itself the pallet or valve, substantially as set forth.

169,449.



8. The case or frame of the pneumatic valve lifter or worker for slider sound-boards, formed of metal, so that it will, by its weight, make a tight joint with the air-duct, whereby other fastenings can be dispensed with, and the ready removal and replacement of the device is provided for, substantially as set forth.

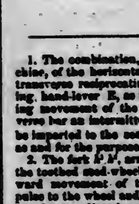
169,450.

169,451. WIRE FASTENINGS FOR BOTTLE-STOPPERS. Henry W. Yerington, Oceanic, N. J., assignor to Rowland C. Anthony, New York city. [Filed Aug. 1, 1874.]

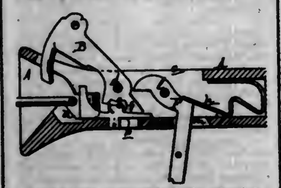
Brief.—The loops are below the neck-wire. The arms are first bent inward and then backward, so that in one direction of the movement of the ball they act as stops to prevent the ball from moving beyond a given point in that direction, while in the opposite direction they allow the ball free motion to swing backward only.

In combination with the loops *b'*, made on the under side of the neck-wire, the bends *a²* on the arms of the ball-wire, so that while the ball is free to swing in one direction the bent ends coming against the neck-wire prevents it from swinging in the other and wrong direction in relation to the plunger, substantially as described and represented.

169,451.



169,452. CAR-COUPLINGS. Saml. T. Young, Howell, Mich. [Filed Mar. 6, 1875.]



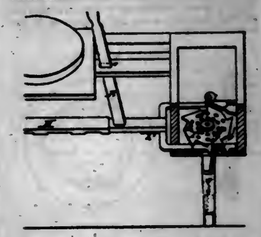
1. The combination, with the draw-head A, having the shoulder *a* and slots *b b*, of the dog B, pivoted at *d*, and having the leg *f* and notch *g*, and the tumbler C, provided with raised head *j*, head A, and lug *i*, substantially as described and shown.

2. The bell-crank lever F hung in the back part of the draw-head A, in combination with the leg *f* of the dog B, substantially as and for the purpose set forth.

REISSUES.

6,884. SEED-PLANTERS. George W. Brown, Galesburg, Ill. Patent No. 46,613, dated Feb. 28, 1865. [Filed Jan. 6, 1875.]

Brief.—The man who operates the planting mechanism is seated upon the front pivoted frame, and works the rotating seed-disks intermittingly by means of a hand-lever, through a forked transverse bar. The valves in the seed-tubes are also operated from the transverse bar.



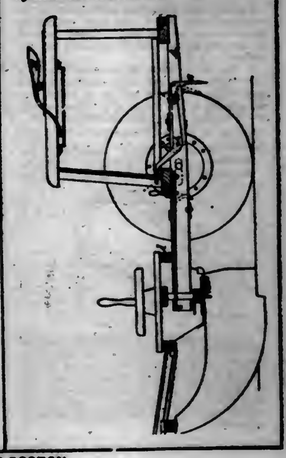
1. The combination, in a seed-planting machine, of the horizontal rotating wheels I' P, transverse reciprocating bar H, and operating hand-lever E, so that by the reciprocating movement of the hand-lever and transverse bar an intermittent rotary motion will be imparted to the seed-wheels, substantially as and for the purpose specified.

2. The fork *h' h'*, arranged to operate with the toothed seed-wheels I' P, so that the forward movement of the fork will give impulse to the wheel and turn it to a certain extent in one direction, and the return movement of said fork will give a similar impulse to said wheel, and in the same direction as received from the forward motion of the fork, thus turning the wheel intermittently, and always in the same direction, substantially as described, and for the purpose specified.

3. The combination, in a seed-planting machine, of a horizontally-rotating seed-wheel in the hopper, and valve in the seed-tube, transverse reciprocating bar, and operating hand-lever, all substantially as and for the purpose specified.

6,885. SEED-PLANTERS. George W. Brown, Galesburg, Ill. Patent No. 46,613, dated Feb. 28, 1865. [Filed Jan. 6, 1875.]

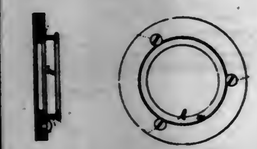
Brief.—The bearing-wheels of the machine have concave rims, which serve to cover the seed, and are kept free from adhering soil by convex scrapers, to be operated, respectively, by either foot of the driver.



In combination with a seed-planting machine carried on wheels, scraper G G'', arranged to be independently or simultaneously forced against the supporting-wheels by the driver's feet and released, substantially as and for the purposes specified.

6,889. SPINNING-RING. Wm. T. Carroll, Worcester, assignor to Geo. Draper and Wm. F. Draper, Hopedale, Mass. Patent No. 80,026, dated Apr. 20, 1869. (Filed Mar. 17, 1875.)

Brief.—The ring has two races, so that it may be reversed when one race becomes worn. Three screws, overlapping the unused race, confine the ring to the top of the rail or to a recess thereon.

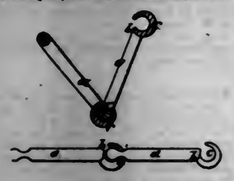


1. A spinning-ring composed of an annulus and two connected races, substantially as described.

2. The combination of a ring having two races with a ring-rail, and with holding devices carried by the rail, to operate in connection with the lower or unused race, and confine the ring to the rail and about the spindle-receiving passage through the rail, substantially as and for the purposes described.

3. The double-raced spinning-ring, combined with a ring-rail having spindle-receiving openings, and arranged within a casket at the top of the ring-rail, substantially as described.

6,887. DRIVE-CHAIN. Wm. Dana Ewart, Belle Plaine, Iowa. Patent No. 154,594, dated Sept. 1, 1874. (Filed Dec. 15, 1874.)



1. The combination, in a drive-chain, of the coupling-hooks O and side bars sufficiently small close to the end bars to pass through the opening of the hook O, as shown and described.

2. The combination, in the open link of a drive-chain, of the end bar *b*, provided with a coupling-hook, and the end bar *b'*, adapted to be coupled to the hook of a corresponding link to form a chain, substantially as shown.

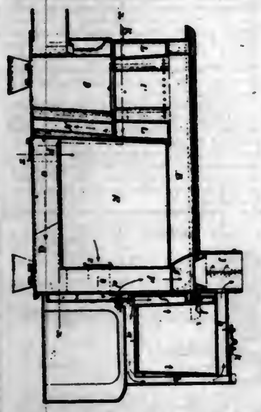
6,888. HEEL-STIFFENING. James W. Hatch, Rochester, N. Y. Patent No. 120,320, dated July 10, 1872. (Filed Mar. 27, 1875.)



As a new article of manufacture, a crimped heel-stiffener, substantially as described, turned inward at *b*, and bent and cut to form a well-defined cant ready for lasting, and with the flange of the stiffener crimped at back and sides, or wherever the flange is not notched and the cant is curved inwardly, substantially as described.

6,890. COOKING-STOVES. James R. Hyde, Troy, N. Y. Patent No. 150,048, dated Apr. 21, 1874. (Filed Mar. 23, 1875.)

Brief.—Air is taken from a heating-chamber adjacent to the fire-box, through flues at the side of return-flues in the bottom of a cooking-stove, to the reservoir-space, and also through the oven to the same locality. It can, however, if desired, be discharged into the rear vertical smoke-flues. From the reservoir-space it may be discharged either into the room or smoke-pipe.



1. In a cooking-stove which has a heating-chamber, L, around the fire-box, the combination of the oblique flues N, connected with two flues, O, located under the oven externally to the smoke-flues G, and the hot-air chamber or flue *a* in the rear of the descending and ascending smoke-flues F, and the valves *c* and *d*, substantially as and for the purposes described and set forth.

2. In a cooking-stove which has a heating-chamber, L, the hot-air flues N, connected with the flues O, located under the oven, and next to the outside of the stove, the chamber or flue *a*, having the valves *c* and *d*, in combination with the ordinary vertical and horizontal smoke-flues, and a water reservoir attached to the rear end of such stove, substantially as and for the purposes described and set forth.

3. In a cooking-stove which has a heating-chamber, L, around the fire-box, the flues N, O, and *e*, and valves *c* and *d*, in combination with a water-reservoir, or reservoir and warming-closet, attached at the rear end of such stove, and having the flues *a b b'*, the spaces *f*, substantially as and for the purposes described and set forth.

4. In a cooking-stove, the combination of a water-reservoir attached thereto and a connecting-duct leading from the oven into a space or flue under or about such reservoir, for the purpose of conducting heated air from such oven to, under, or about such reservoir to heat the same, substantially as and for the purpose described.

5. A cooking-stove in combination with an inclosed reservoir attached thereto, having the spaces *f* between the water tank or lining *t* and the outside casing thereof, and a connecting-flue from such stove to such reservoir, through which heated air may pass from such stove to, under, or about said reservoir, and into the smoke-pipe or flue at the rear part of said stove, substantially as and for the purposes described and set forth.

6. The combination of the oven E, having the valved duct P, leading from the bottom of the stove into the oven, with the valved duct *a*, leading from the oven into the chamber or flue *a*, and to and into a space or flue in, under, or about a water-reservoir, substantially as and for the purposes described and set forth.

7. The oven E, having the valved duct P leading from the bottom of the stove into said oven, the valved duct *a* leading from said oven into the flue *a*, in combination with the chamber L and flues N, O, and *e*, substantially as and for the purposes described and set forth.

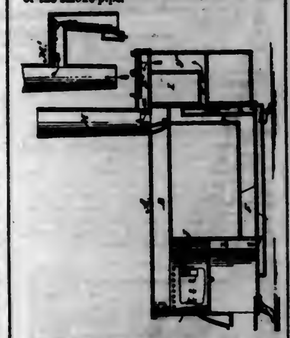
8. The stove-top A, provided with recess *a* for A in the rear projecting parts *A*, in combination with the reservoir having the projecting bearing-pieces *m* attached thereto, whereby the combined reservoir and warming-closet are suspended at and against the rear end of the stove substantially as and for the purposes described and set forth.

9. In combination, a cooking-stove and an inclosed reservoir arranged at the rear of said stove, the flue *a*, flue *e*, and the spaces *f*, the flues *b* and *b'*, and either with or without the valved opening *k* into the flue *b'*, substantially as and for the purposes described and set forth.

10. In combination, a cooking-stove having an inclosed reservoir attached thereto, and having a space between the water-tank and the outside casing, through which may pass a current of heated air from said stove to, under, or about said reservoir, and at will either into the smoke flue or pipe, or into the room through a valved opening at or near the top part of the reservoir, substantially as and for the purposes described.

6,891. RESERVOIR COOKING-STOVES. Jas. R. Hyde, Troy, N. Y. Patent No. 120,720, dated Mar. 11, 1873. (Filed Mar. 17, 1875.)

Brief.—Air is taken from a heating-chamber adjacent to the fire-box, through a flue at the bottom of the stove, into a flue or chamber in the rear of the ordinary diving-flues, from which it may at will be discharged either into said diving-flues, or into a flue between the reservoir and warming-closet. From the latter it may be admitted either into the room or the smoke-pipe.



1. The combination of the flues *b* and G, heating-chamber in rear of the fire-box, and the aperture *a* for the admission of air from the room into such heating chamber, substantially as and for the purposes described and set forth.

2. The combination of the flues *b* and G, with the vertical flue *g*, and the opening *r* in the back plate of the stove, substantially as and for the purposes described and set forth.

3. The combination of the vertical flue *g*, next the back plate of the stove, and having a valved opening at or near the top part thereof, with a valved opening *r*, in the back plate of said stove, for the purposes substantially as described.

4. The combination of the heating-chamber in front of the oven, and next the fire-box, the aperture *a*, with the flue *g*, opening *r* in the back plate, sliding damper or valve *m*, with the opening *s* therein, and having the top part of said damper projecting inward, to cover the top part of flue *g*, substantially as and for the purposes described and set forth.

5. In combination, a stove having a water-reservoir attached thereto, which reservoir has hot-air flues, through which a current of heated air may pass from such stove, to and around said reservoir, and either into the smoke flue or pipe of such stove, or through a valved opening at or near the top part of such reservoir, for the purposes substantially as described and set forth.

6. The combination of the heating-chamber at the fire-box, the flues *b*, G, and *g*, opening *r*, in the back-plate damper or valve *m*, with a water-reservoir, I, having the flues *g'* and *g''*, substantially as and for the purposes described.

1. The combination of the flues *g'*, *g''*, and *g'''*, with the valved opening *e*, and flue *g*, substantially as and for the purposes described and set forth.

2. The combination of the smoke-flues P and F, the hot-air flue *g*, opening *r* in the back plate of the stove, with a reservoir, I, having a flue on two or more sides thereof, through which may pass a current of heated air, substantially as and for the purposes described and set forth.

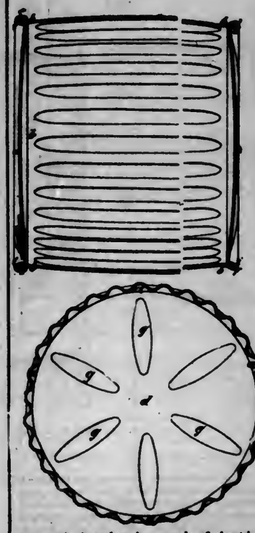
3. In combination, the water-reservoir I, and warming-closet I', arranged at the rear end of a cooking-stove, with the hot-air flue *g'* at the bottom of the reservoir, through which heated air may pass from such stove, substantially as and for the purposes described.

10. In combination, a water-reservoir and warming-closet for a cooking-stove, having hot-air flues through which may pass a current of heated air from such stove, said reservoir and warming-closet being mounted together, forming one article or whole, made capable of being attached to the top part or plate, and suspended at and against the rear end of such stove, or detached therefrom when desired, without the use of screws, screw-bolts, lugs, or hooks and eyes, substantially as and for the purposes described and set forth.

11. The combination of a water-reservoir, arranged at the rear part of a cooking-stove, which has a heating-chamber at the fire-box, into which air from the room may be admitted, and a duct (separate and distinct from the smoke-flue) through which to convey a current of air (heated in said chamber) to, into, and through a flue, under or about such reservoir, and into the smoke flue or pipe, substantially as and for the purposes described.

12. The combination of a cooking-stove with a water-reservoir attached thereto, which has a flue on two or more sides thereof, into and through which a current of heated air may pass from such stove to and through a valved opening, at or near the top part of such reservoir, into the room, substantially as and for the purposes described.

6,891. METALLIC VESSELS. Wm. B. Smith, Pittsburg, Pa. Patent No. 26,014, dated Apr. 24, 1860; extended seven years. (Filed Jan. 7, 1875.)



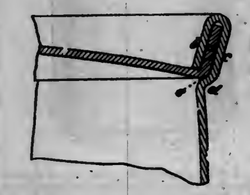
A cask, barrel, or keg, made of sheet-iron, having its sides corrugated longitudinally, in the manner described, to produce a bilge, and have the parts near the heads plain, and united with the heads by lap-joints, which extend beyond the heads in the form of a chine, as herein described.

1. The pump-cylinder F, in open communication, at or near its top, with the air-chamber J, above the discharge-valve P, and in communication below, by a channel or passage, with the under side of said valve, in combination with the pump-plunger and induction-valve O to the inlet-passage of the pump, substantially as specified.

2. The removable valve-plate N, with its induction and eduction or discharge valves O and I', inlet-passages L', and outlet Q, in combination with the induction channel or passage L, and eduction nozzle or nozzles M, arranged above in a fixed portion of the main frame, essentially as described.

3. The combination of the main frame, the steam-cylinder, the pump cylinder, the air-chamber, and the bearings for the crank-shaft, all arranged substantially as specified.

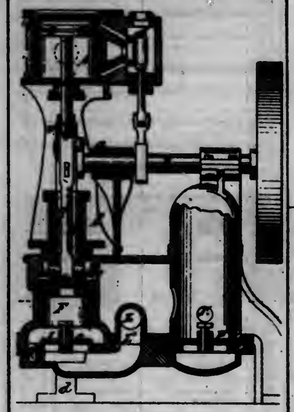
6,892. METALLIC VESSELS. Wm. B. Smith, Pittsburg, Pa. Patent No. 26,014, dated Apr. 24, 1860; extended seven years. (Filed Jan. 7, 1875.)



A metallic vessel having the heads constructed with a flange, *a*, and the body with an offset shoulder, *c*, and overlapping extensions *c b*, forming a chine, substantially as described.

6,893. STEAM-PUMPS. William Wright, New York, N. Y., assignor to the Valley Machine Company, Easthampton, Mass. Patent No. 100,702, dated Mar. 8, 1870. (Filed Mar. 26, 1875.)

Brief.—As the water is forced through the exit-valve by the descent of the piston, a portion of it enters the upper part of the cylinder, and is ejected by the next ascent of the piston. A bottom plate, which is removable, contains the valves and water-passages.



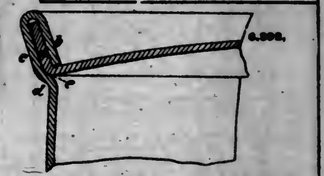
1. The pump-cylinder F, in open communication, at or near its top, with the air-chamber J, above the discharge-valve P, and in communication below, by a channel or passage, with the under side of said valve, in combination with the pump-plunger and induction-valve O to the inlet-passage of the pump, substantially as specified.

2. The removable valve-plate N, with its induction and eduction or discharge valves O and I', inlet-passages L', and outlet Q, in combination with the induction channel or passage L, and eduction nozzle or nozzles M, arranged above in a fixed portion of the main frame, essentially as described.

3. The combination of the main frame, the steam-cylinder, the pump-cylinder, the air-chamber, and the bearings for the crank-shaft, all arranged substantially as specified.

6,894. FAUCETS. John G. Bickel, Buffalo, N. Y., assignor, by mesne assignments, to J. Lefferdorf and Jacob Davis, same place. Patent No. 49,698, dated May 24, 1864. (Filed Jan. 14, 1875.)

1. In a beer-faucet, the combination with a chamber, of a plug, serving to control the flow of liquor, and a piston serving as a plunger, when both are formed of one continuous piece of metal, and capable of a combined rotary and reciprocating movement, substantially as described, and for the use and purpose set forth.



6,895.

2. The combination, with the chamber B, constructed in one piece with the body A, of the plug C, upper stem C', cross-handle G, lower stem E, and a squirting-cylinder, D, when the said plug C, upper stem C', and lower stem E are formed of one piece of metal, and capable of a combined rotary and reciprocating movement, substantially and described, and for the use and purpose set forth.

3. The combination, with the body A, of the chamber B, when the said chamber is formed in one piece with the body A, substantially as described.

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6,896. HARVESTERS. John H. Heward, St. Paul, Minn., assignor to himself and W. S. Goodhue. Patent No. 104,290, dated June 14, 1870. (Filed Mar. 24, 1875.)

Brief.—The driver's seat is adjustable on the grain side of the driving-wheel, for counterbalancing the weight of the binders upon the stubble side of said wheel.

1. An elevator for conveying the grain to a receptacle at the outer side of the machine, in combination with a yielding apron held or pressed toward the elevator by springs which allow it to yield to the varying bulk of the grain, substantially as described.

2. The adjustable longitudinal bars or supports K', in combination with the binders' platform, substantially as described.

3. The binders' platform K, in combination with a box or receptacle for the shattered grain, supported upon said platform, and the curved or inclined shield J, covering the outer face of the driving-wheel, and conducting the shattered grain into the receptacle or box, substantially as set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

4. The arrangement of the longitudinally adjustable bars or reel-supports M M', in combination with the overhung reel for adjusting the angle of rotation of the reel to the line of the cutters, as set forth.

5. The adjustable driver's seat, mounted on the bars H H', substantially as described, for giving both a lateral and longitudinal adjustment to said seat, as set forth.

6. The combination, with a binders' platform or support at the outer or stubble side of the main frame, and in the described relation to the raking and elevating mechanism, of an adjustable driver's seat arranged at the grain side of the drive-wheel, and in the same transverse vertical plane with said binders' platform and raking mechanism, whereby the machine may be balanced, substantially as described.

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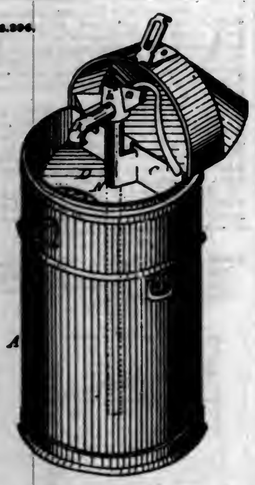


6,896. STAMP OIL-CANS. John D. Gray, Cincinnati, Ohio. Patent No. 100,858, dated Mar. 1, 1870. [Filed Jan. 27, 1870.]

Brief.—A sunken cover of the entire mouth of the can has means for holding the pump. A socket in its bottom, with a pin on the inside of the can, guides the cover into position. The pump is screwed into its support.



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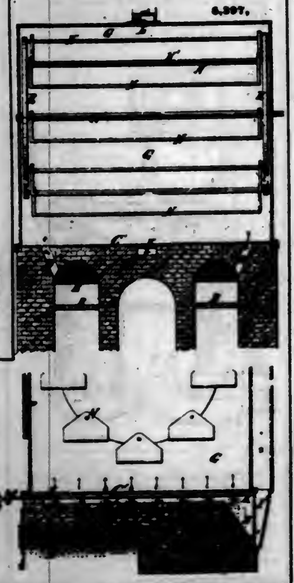
1. The oil-tank A, provided with a removable sunken top compartment having provision for the oil-drawing device, and adapted to be set into the mouth of the can, substantially as described.

2. The combination, with an open-mouthed oil-can and removable top, of a stand-pipe, J, rising from the top, and provided with interior screw-threads, and a pump-barrel, K, screwing into said pipe, as herein set forth.

3. The combination, with an open-mouthed oil-can and a removable top, of a lever-pump arranged with the top, substantially as herein set forth.

4. The pin H, in combination with the removable depressed top, having the socket I, as and for the purpose set forth.

6,897.



6,897. BAKERS' OVENS. Duncan McKenzie, Brooklyn, N. Y. Patent No. 99,190, dated May 1, 1860; reissue No. 3,920, dated Apr. 19, 1870; extended seven years. [Filed Apr. 6, 1875.]

1. The combination of the following elements, to wit: a furnace or fire-place, (one or more,) a baking-chamber arranged above such furnace or fire-place, and in direct communication therewith, and a rotating reel located within said baking-chamber, and provided with gravitating pans or shelves, arranged or hung around the shaft of said reel from rods attached to the end plates or arms thereof, substantially as and for the purpose described.

2. A system of flues communicating between the fire-places and the interior of the oven directly through the floor or bottom of the latter, substantially as herein described.

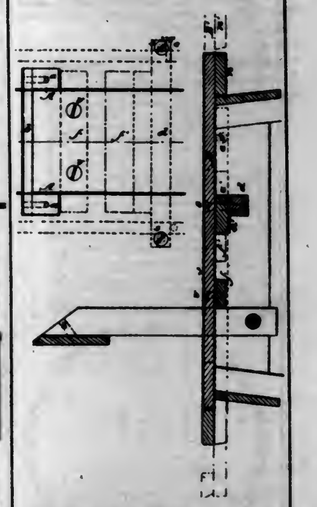
3. The combination of the flues D, escapes K K, and flue I in the lower part or floor of the oven C, for the purpose herein shown and described.

4. The flue I, having its rear end constructed with an enlargement and downward extension, in combination with the flue I', substantially as set forth.

5. The combination, with the oven C, of the flues I' I' I D and the dampers K K and L, as and for the purpose herein shown and described.

6,898. EXTENSION WASH-BENCHES. Samuel Wiswall, Hyde Park, Vt., assignor, by mesne assignments, to the Bailey Washing and Wringing Machine Company, Woonsocket, R. I. Patent No. 20,271, dated Oct. 5, 1858; reissue No. 4,067, dated Aug. 9, 1870; extended seven years. [Filed Feb. 10, 1875.]

Brief.—The bench has a sliding extension at each end, and standards for the attachment of a wringer.



1. A wash bench provided with upright standards, adapted to receive and support wringing-rolls and extension shelf or shelves, substantially as and for the purpose set forth.

2. A wash-bench, provided with upright standards connected by a cross-board and adapted to receive a clothes-wringer, substantially as described.

3. As an article of manufacture, a wash bench provided with upright standards, adapted to receive and support a clothes wringer, substantially as described.

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OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 17. TUESDAY, APRIL 27, 1875. PRICE { $5,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

SAMUEL C. MOORE.—*Interference.*

[*Appeal from the decision of the Examiners-in-Chief in the matter of the interference between the patents of Philander Baker and L. J. Atwood and the reissue application of Samuel C. Moore, for* "IMPROVEMENT IN LAMP-BURNERS."—*Decided March* 30, 1875.]

An invention which consists of a combination of elements is not complete until all the elements are combined.

The date when that is accomplished is the date of the invention.

THACHER, *Commissioner:*

The subject-matter of this interference is set forth in Moore's claim, and consists of a "connected air-distributing plate and cup or deflector, and the chimney rests or supports forming rests for the lower edge of the chimney below the air-distributing plate, in combination with an elastic device for supporting the chimney laterally at or near the periphery of the connected deflector and air-distributing plate."

The issue hinges upon the question who was first to invent and employ "the elastic device" mentioned in the claim. The evidence clearly shows that, in respect to the other features, Atwood was much earlier than his competitors.

Baker is practically out of the case, as he took no testimony, and his record date confines him to October 8, 1867, a period subsequent to the completion of the invention by both Atwood and Moore. The contest is, therefore, between the two last named.

The object of the elastic device is to render chimneys of various diameters self-adjusting. Atwood shows this device in the shape of a coiled spring connected to and extending entirely around the periphery of the air-distributing plate. Moore, in his model, shows the device constructed of elastic wire springs, extending upward from the screw-cup of the lamp, and bent so as to not only form rests for the chimney, but also to give a lateral pressure to both its inner and outer surfaces.

In his preliminary statement Atwood carries back the date of his experiments in this line to the year 1862. He therein says: "Deponent also, during that time, took a burner that was made, in 1859 and 1860, by Holmes, Booth, and Haydens, known as the 'Excelsior Screw-Burner,' in which the shell had large holes, and there was a fine foraminous plate within the shell and around the wick-tube, and cut off the shell at the large perforations and foraminous plate directly to the wick-tube, near the upper end, and then spun up a rather flat deflector and soldered to the edges, pendent hooks, into which the chimney was received, so that the chimney passed down below the air-distributer and deflector, and contained all the features of relative arrangement that deponent understands to be now in controversy. This burner was made and practically used in the latter part of the year 1862."

In evidence he introduces this burner, or one of the same construction, which is marked "Exhibit B." Now, this "Exhibit B," and also his "Exhibit C," made several years later, both of which Atwood insists embraced substantially the subject-matter in controversy, fail in one essential particular to meet the requirements of the present issue. They have not an elastic device for properly adjusting lamp-chimneys of different diameters to the periphery of the deflector and air-distributing plate.

In the exhibits named the chimney-rests are brass and wire hangers, and, although yielding to the press-

ure of the outer surface of chimneys of sufficiently large diameter, they do not afford any lateral support to the interior of chimneys, whether of large or small diameters, but leave the inner surface of the chimney to impinge upon the hard unyielding edge of the deflector. It is as much the object of the elastic device to accommodate itself to the pressure of the inner surface of the chimney as to its outer surface, and to chimneys of small as well as large diameters. Atwood's Exhibits B and C are entirely wanting in these characteristics.

The only elastic device mentioned or produced by Atwood which accomplishes the purposes of that in controversy is the coiled spring woven into the edge of the deflector. It is only necessary, therefore, to ascertain when he combined that feature with the others which enter into the construction of the burner claimed, to determine the date of invention on his part.

In his preliminary statement Atwood alleges "that in the lamp-burner made by deponent in 1862, as aforesaid, a difficulty was experienced from the fact that the varying sizes of chimneys left more or less space between the interior of the chimney and the metal deflector; hence uniformity of flame could not be depended upon. This was cured by the coiled spring of the said 'Comet burner,' and a second difficulty existed of obtaining easy access to the wick for trimming and lighting. This difficulty was overcome by the tapering coupling shown in the patent of January 21, 1868. Hence deponent, as soon as he had developed these two features in connection with the 'Comet' burner, was able to complete the burner now in question."

Upon cross-examination, when asked when he completed the invention of the "Comet" burner, he replied: "I should think about July or August, 1867;" and he also gives the same answer when asked as to the time when he first put a coiled spring on the periphery of a deflector, adding, however, that previous to that time he had "tried to use the coiled spring in other forms." But none of the other forms which he describes are like the one now in dispute, either in arrangement or results.

The date of the discovery of the device in dispute by Atwood must, therefore, be regarded as July or August, 1867.

Moore swears that he completed this invention in the month of April, 1867; that at that time he made two models, one of which accompanied his application for a patent filed in the following October, and the other was used practically at various times down to that date and then thrown aside, and cannot now be found. It has been questioned on the part of Atwood whether Moore's model correctly represents the subject-matter of this controversy. After careful inspection of that portion of his model heretofore described, in which elastic springs extend upward from the screw-cup, I am clearly of the opinion that it performs the functions now claimed for it.

Moore's testimony agrees with the allegations of his preliminary statement, is clear and positive, and, in the absence of any contradictory proof, I regard it as conclusive in establishing priority over Atwood by several months.

The decision of the Examiners-in-Chief is reversed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, EASTERN DISTRICT OF PENNSYLVANIA.

THE UNION PAPER-COLLAR COMPANY *vs.* HENRY J. WHITE.

[*In equity.—Before* McKENNAN, *Cir. J.—Decided April*, 1875.]

The first claim of the reissued patent of Walter Hunt, of October 22, 1872, (original July 25, 1854,) which is for "a shirt-collar composed of paper and muslin, or its equivalent, so united that the muslin will counteract the fragile character of the paper," construed to be for "a shirt-collar composed of paper and muslin, or its equivalent, united by paste, glue, or other appropriate sizing, by means of which union the fragility of the paper is re-enforced by the fibrous strength of the muslin, and the necessary cohesiveness of the fabric thus secured.

Although paper and muslin or linen cloth were before united and used for maps, &c., this was not analogous to the use Hunt made of these materials, nor in any wise suggestive of his invention.

He produced a new device by giving a new form to an old substance, and, by suitable manipulations, making its peculiar properties available for a use to which it had not before been applied. This involved invention, and, in view of the great practical benefits resulting from it, invests the product with special patentable merit.

Notwithstanding the fact that the patent has been reissued seven times, the law presumes that the last patent was granted to correct accidental or inadvertent mistakes in the original. The only test of the validity of the Commissioner's action is whether he has allowed a reissue for a different invention from that covered by the original patent, or for what was not therein described, claimed, or indicated.

The claim for "a shirt-collar composed of paper and muslin, or its equivalent, so united that the muslin will counteract the fragile character of the paper," is not for the mere effect resulting from the union of paper and muslin, nor for the fabric thus produced, nor for the special mode of preparing it; but it covers the use of it for making collars, where its constituents are incorporated with each other, so that the textile strength of the one is made available to re-enforce the fragility of the other.

The original patent described a *standing* collar composed of cloth with paper on *both* sides; but both the invention and the claim are more comprehensive than this, and include a collar with paper on *one* side only, and this, too, when the collar is *turned over*, so as to expose the cloth surface only to observation.

The patent is not infringed by collars of paper with a simple cloth re-enforcement at the button-holes.

Characteristic resemblance is the fairest test of substantial identity.

[*George Harding*, for complainant.
J. J. Coombs and *E. Wetmore*, for defendant.]

McKENNAN, *Circuit J.*:

The complainants are the owners, by several mesne assignments, of a patent granted to Walter Hunt on the 25th of July, 1854, for a new article of manufacture, consisting of a collar made out of paper and muslin, so combined, formed, and manipulated as to adapt it to use as such. This patent was duly extended for seven years from the date of its expiration, and was reissued on the 22d of October, 1872, No. 5,109. The validity and infringement of this reissued patent are the subjects of this contention.

I do not think the legal presumption that Hunt was the first and original inventor of the article of manufacture for which he obtained a patent is at all shaken by the proofs in the cause. It is true that paper and muslin or linen cloth were before united, and used as a fabric for maps, &c.; but this was not analogous to the use to which Hunt adapted them, nor was it in any wise suggestive of his invention. He was the first to discover the adaptability of this material to a use not cognate to any to which it had before been applied, and, by appropriate manipulation, to give it a useful and practical form. He thus not only supplied the public with a new article of manufacture, but he demonstrated unknown susceptibilities of the material out of which it was made. This is something more than the mere application of an old thing to a new purpose. It is the production of a new device by giving a new form to an old substance, and, by suitable manipulation, making its peculiar properties available for a use to which it had not before been applied, thereby distinguishing it from all other fabrics of the class to which it belongs. This seems to me to involve an exercise of the inventive faculty, and, in view of the great practical benefits resulting from it, to invest the product with special patentable merit.

The patent in controversy is the seventh reissue of Hunt's original patent. This multiplication of reissues is, of itself, suggestive of a purpose to cover intervening improvements, and some phrases in the specification of the last reissue may, not without semblance of reason, be treated as having that significance. It is difficult to suppose that so many reissues, with considerable intervals of time between them, were necessary to correct accidental or inadvertent mistakes in the specification and claims of the original patent. And yet the correction of these is the only legitimate purpose of a reissue. This practice has been strongly disapproved by the Supreme Court on more than one occasion.

In *Carlton* vs. *Boker*, 17 Wall., 471, Mr. Justice Bradley remarks:

> We think it proper to reiterate our disapprobation of these ingenious attempts to expand a simple invention of a distinct device into an all-embracing claim, calculated by its wide generalizations and ambignous language to discourage further invention in the same department of industry, and to cover antecedent inventions.

Whatever reason there may be to suspect that the motive of the patentee was to give undue elasticity to his patent, still the law presumes that the reissue was granted to correct an inadvertent omission in the original, because it commits to the Commissioner of Patents the conclusive determination of that question, and the only test of the validity of his action is whether he has allowed a reissue for a different invention from that covered by the original patent, or for what was not therein described, claimed, or indicated.

The claim in the reissue which, it is urged, avoids it is as follows:

> A shirt-collar composed of paper and muslin, or its equivalent, so united that the muslin will counteract the fragile character of the paper.

Construing this in connection with the specification, its obvious import is that the patentee sought to secure as his invention a shirt-collar composed of paper and muslin, or its equivalent, united by paste, glue, or other appropriate sizing, by means of which union the fragility of the paper is re-enforced by the fibrous strength of the muslin, and the necessary cohesiveness of the fabric is thus secured.

Now, is not this described, or at least clearly indicated, in the original patent? In that patent the nature and distinguishing qualities of the invention are thus stated:

> Attempts have been made at various times to manufacture shirt-collars of paper; but they have never been extensively introduced, nor has anything lasting or beneficial resulted therefrom, on account of the fragile nature of the material, which rendered it liable to be easily broken and defaced, while it was liable to be quickly soiled and entirely destroyed if exposed to either rain or perspiration. The object of my present invention is to produce a shirt-collar that shall not be easily broken, while it shall have sufficient elasticity to bend to the motions of the head, that shall possess the beauty and whiteness of the most carefully dressed linen collar, and at the same time shall preserve itself unsoiled for a much greater length of time, and shall cost originally less than the washing and dressing of a linen collar; and my invention consists in making the collars of a fabric composed of both paper and cloth, and in subsequently polishing the same by enameling or burnishing, or in any suitable and efficient manner.

This statement distinctly identifies the subject of the first claim of the reissued patent. The invention to which it refers is said to be a shirt-collar consisting of paper and muslin, the qualities of which are cheapness of cost, smoothness of surface, flexibility, cohesiveness, and impermeability to moisture. It is not expressly declared that muslin is combined with paper to "counteract the fragile character" of the latter; but this is so distinctly indicated as to be equivalent to a direct expression of it. A substitute for paper collars is proposed, which are stated to be mainly objectionable on account of the fragile character of the material out of which they are made. This infirmity the inventor proposes to cure by the addition of a textile material, which obviously has no other function or object; and, in describing the mode of carrying his invention into effect, he directs how the paper and muslin are to be combined to secure for the fabric the necessary and desired qualities. Clearly this distinctly indicates, and is broad enough to cover, "a shirt-collar composed of paper and muslin, so united that the muslin will counteract the fragile character of the paper."

But it is urged that the contested claim is merely for an abstract result, and is, therefore, void. Certainly it is the settled law that a mere principle, or result, or mode of operation is not patentable. So, therefore, in *O'Reilly* vs. *Morse*, 15 How., 62, the eighth claim of Morse's patent was adjudged to be void because it sought to appropriate the use of electro-magnetism for marking or printing characters at a distance, independently of the means by which this natural agency was thus utilized; and in *Burr* vs. *Duryee*, 1 Wall., 31, it was held that a mode of operation, irrespective of the mechanism by which it was effected, would not be patentable.

Is the claim in this patent obnoxious to this objection? In one sense it is for a result, but only in the sense in which any fabric or device is the result of the means employed to produce it. It is not for the mere result of a union of paper and muslin in a shirt-collar, independent of the corporeal substance which embodies it; but it is for a thing fabricated in a given form, for a specific purpose, and out of materials so united that the combined fabric is impressed with the peculiar qualities which belong to each of its constituents. A collar made of these materials in mere juxtaposition is not within the range of the patentee's conception; but when they are incorporated so as to constitute substan-

tially a single fabric, and are used for the purpose for which he was the first to discover their adaptability, it is an invasion of his right.

The claim, then, is not for the mere effect resulting from a union of paper and muslin, nor for the fabric thus produced, nor for the special mode of preparing it; but it covers the use of it for making collars, where its constituents are incorporated with each other, so that the textile strength of the one is made available to reenforce the fragility of the other. And such original application of it to the production of a most useful article the inventor can lawfully claim to appropriate.

Does the defendant infringe this patent?

Hunt's invention consists of two elements or parts: First, of a collar, with reference to the materials out of which it is made, and their union, so as to secure certain qualities; and, second, of the subsequent manipulation of this collar, by which a smooth surface is given to it, and it is rendered impervious to moisture.

The defendant manufactures and sells shirt-collars made of muslin or linen cloth pasted to a sheet of paper. Fundamentally they are the same with the collar described in Hunt's patent, because they are composed of muslin (or its equivalent) and paper, so united as to utilize the same properties contemplated by Hunt in the union of the same elements. But it is sought to differentiate them, for the reasons that the defendant attaches a sheet of paper to but one side of the cloth, and that the collar is turned down with the cloth surface only burnished and exposed to view.

The first reason rests upon an undue limitation of the scope of Hunt's invention. In his original patent, in explaining a mode of carrying his invention into practice, he describes a collar with paper on both sides of the cloth. Although he does not limit himself to any form of collar, yet the description is evidently applicable to the standing collars then in fashion, and the double coating of paper was suggested as best adapted to collars of that class. But, as has already been said, his invention was more comprehensive than this, and it was clearly indicated in his original specification. It is appropriately claimed in the reissued patent in controversy, the authorized purpose of which was to protect it fully. Clearly the terms of that claim are broad enough to embrace the collars made by the defendant; but, at any rate, I do not think a double coating of paper on one side of the cloth changes the identity of the fabric described by Hunt. It is still composed of the same constituents, so united as to embody the same properties which he first proposed to utilize, and the difference is only apparent and formal. Characteristic resemblance is the fairest test of substantial identity.

Nor is there any better foundation for discrimination in the fact that the defendant's collars are turned down and the cloth surface only is exposed to observation. Hunt's patent is not limited to any particular form of collar, and the polishing of the cloth surface pertains exclusively to the manipulation of the collar, after it is made, to fit it for use. It does not, in any sense, change the fundamental character of the fabric out of which it is formed, and therefore does not affect the applicability of the first claim of the reissue.

The defendant also manufactures collars entirely of paper, with patches of muslin pasted around the button-holes to give additional strength at these points; and these are claimed to infringe the patent. I do not think so. Hunt did not contemplate any such restricted combination of paper and muslin. His collar was composed, throughout its whole body, of paper and muslin, and this was necessary to secure and embody the properties which he intended to make available. Nor could he successfully claim such a device. He did not invent paper collars, nor the application of cloth to button-holes to strengthen them. Such re-enforcement had been long before applied to button-holes, in leather curtains, sails, and other fabrics. It was merely, therefore, the application of an old device to an analogous and well-known use, for which no one could obtain a patent.

The complainants are entitled to an injunction, to continue in force until the 25th day of July next, when the patent will expire, and to an account, and a decree will be entered accordingly.

IN MEMORIAM.

U. S. PATENT OFFICE,
Washington, D. C., April 24, 1875.

Hon. S. H. HODGES, who died on the 20th of this month, was appointed Commissioner of Patents by President Fillmore in the fall of 1852, and remained as such until the incoming administration of President Pierce.

In 1861 he was appointed a member of the Board of Examiners-in-Chief, and remained its senior member until his death.

Of the many excellent qualities of the deceased, his eminent learning, his patience, his courtesy, and deep sense of justice were the most remarked.

Out of respect to his memory the Patent Office was closed at 12 m. the 23d of this month by order of the Commissioner of Patents.

At a meeting of the Examiners and employés of the Office, at which the Commissioner of Patents presided, the following resolutions were passed, expressive of the high sense entertained of the worth and talents of the deceased:

Resolved, That we recognize in the death of our late associate, Hon. S. H. Hodges, a grievous loss, both to the Office and to ourselves personally. His long connection with the Bureau as Commissioner and Examiner-in-Chief, his large experience in its affairs, his laborious habits, his accurate and careful observation, his just and impartial judgment and unswerving integrity, all combined to make his services invaluable. Our personal connection with him has been made pleasant by the kindness of his disposition and by our confidence in him as a man—upright and beyond reproach. His removal from us by death is no ordinary event. We grieve that we shall enjoy his society and counsels and see his venerable form no more. The memory of his character and example as a true and faithful man we shall cherish as sacred, and the best legacy that man can leave to men.

Resolved, That we deeply sympathize with his family in their affliction, and in testimony of our respect and sympathy forward them a copy of these resolutions, and will attend the funeral in a body.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date April 27, 1875.]

8,284.—Pickle and Preserve Jars.—CHARLES A. DU VIVIER, Summit, N. J., and EDWARD DU VIVIER, New York, N. Y. Application filed April 17, 1875. Term of patent 7 years.

8,285.—Medal.—THOMAS R. HARTELL, Philadelphia, Pa. Application filed April 3, 1875. Term of patent 3½ years.

8,286.—Glassware.—GEORGE E. HATCH, East Cambridge, Mass. Application filed March 3, 1875. Term of patent 3½ years.

8,287 to 8,289, inclusive.—Show-Cases and Stands.—JOSEPH LEHNBEUTER, St. Louis, Mo., assignor to C. CLAES & Co., same place.—Cases A, B, and C. Applications filed April 14, 1875. Term of patents 7 years each.

8,290.—Beer-Mug.—JOHN ERNEST MILLER, Pittsburg, Pa. Application filed April 10, 1875. Term of patent 3½ years.

8,291.—Goblet.—JOHN ERNEST MILLER, Pittsburg, Pa. Application filed April 10, 1875. Term of patent 3½ years.

8,292.—Toy.—JOHN STIDHAM, South Oil City, Pa. Application filed April 3, 1875. Term of Patent 7 years.

8,293 to 8,297, inclusive.—Street-Lamp Posts.—WILLIAM TWEEDDALE, Brooklyn, N. Y.—Cases B, C, D, E, and F. Applications filed April 10, 1875. Term of patents 7 years each.

8,298 to 8,300, inclusive.—Breastpin and Pendant.—LEONARD S. BEALS, Astoria, N. Y.—Cases A, B, and C. Applications filed April 9, 1875. Term of patents 7 years each.

8,301.—Dress-Trimmings.—SAMUEL BERNSTEIN, Mount Vernon, N. Y. Application filed April 9, 1875. Term of patent 7 years.

8,302.—Drinking-Vessel.—M. DANIEL CONNOLLY, Philadelphia, Pa. Application filed April 23, 1875. Term of patent 3½ years.

8,303.—Picture-Frame Molding.—HERMAN S. SEARLE, Rochester, N. Y., assignor, by mesne assignments, to ELLA R SEARLE, same place. Application filed April 2, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date April 27, 1875.]

2,411.—Commercial Note-Paper.—JAMES LEACH, Passaic, N. J. Application filed April 15, 1875.
"words 'Beecher Mills Commercial Note.'"

APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., March 22, 1875.

On the petition of JOHN HASELTINE, of Boston, Mass., authorized by act of Congress approved February 18, 1875, praying for the extension of a patent granted to him on the 25th day of March, 1856, for an Improvement in Water-Wheels,

It is ordered that the testimony in the case be closed on the 11th day of May next; that the time for filing arguments and the Examiner's report be limited to the 21st day of May next; and that said petition be heard on the 26th day of May next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

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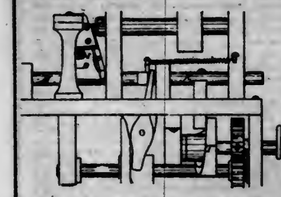
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED APRIL 27, 1875.

162,456. MACHINES FOR POINTING AND THREADING SCREW-BLANKS. W. Allen, Franklin, N. H. [Filed Mar. 16, 1875.]

Brief.—The rock-shaft which carries the cutter-holder is made separate from, but abuts against, a like shaft. The shaft E is caused to move away from the shaft K with a slow movement by a cam and lever, the necessary compound motion of the cutter-holder upon said shaft being effected by the usual former. Just prior to the completion of the pointing operation, the shaft K will be advanced to meet the rock-shaft by the cam, and both shafts will thereafter be caused to move simultaneously back and forth until the blank is threaded.



For effecting the pointing and threading of a screw-blank by a single tool and a former, to co-operate as explained, the combination of the separate slide or shaft K and the rotary threading-cam T, applied as described, with the tool-carrier D in its shaft E, the retractive spring V, the lever N, and the pointing-cam O, all being arranged substantially in manner and to operate as specified.

162,464. COAL-HODS. U. D. Alexander, Chicago, Ill., assignor to Margaret Alexander, same place. [Filed Feb. 16, 1875.]

Brief.—Flanges upon body, bottom, and hoop are clasped together within the hod.

1. The combination, in connection with a bottom piece, of the body A having the inwardly-turned lower edge *d*, and of the hoop O having therein the inwardly-sunken groove *f*, the said edge being clasped in the said groove, substantially as shown and described, and for the purposes set forth.

2. The combination of the body A having the inwardly-turned lower edge *d*, the bottom piece B having the downwardly-turned or rolled edge *e*, and the hoop O having therein the inwardly-sunken groove *f*, the edges *d* and *e* being clasped in the groove *f*, all substantially as shown and described, and for the purposes set forth.





162,465. CURRY-COMBS. John H. Barringer, Lincoln, Nebr., assignor to M. J. Cassell, same place. [Filed June 20, 1874.]

Brief.—The tang, being turned at a right angle to the handle, is again turned to receive the carry-comb, which is so held at its far end by a screw-nut as to prevent its turning, but by rotating the screw-nut may be received so as to bring into use another set of comb-blades on the reverse side.

In a carry-comb, the combination of the shouldered shank B, the series of comb-plates, the inner one being recessed for the reception of the shoulder *e* of shank B, and nut *g*, substantially as described.

162,466. HOLDBACK-IRON. Alma Bedford, Coldwater, Mich. [Filed Nov. 27, 1874.]

A holdback-iron cast in one piece, and having countersunk screw-holes in its ends, and provided with an oblique bearing for the breech-strap, substantially as and for the purpose set forth.



162,467.



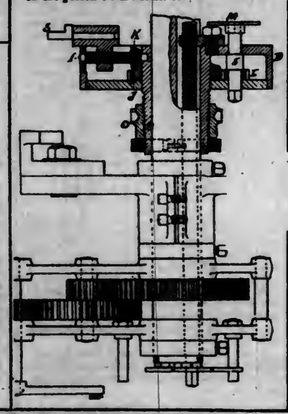
162,467. COMBINED HAY TUMBLERS AND RAKES. George W. Bishop and David B. Sherman, Charleston, Va.; said Bishop assignor to F. Barney, same place. [Filed Apr. 6, 1875.]

Brief.—Two sets of rake-teeth are placed in one head, at an angle of about one hundred and five or ten degrees from each other. The handle is inserted behind one set of teeth at an angle of about fifteen or twenty degrees. The operator shoves the rake before him with that set of teeth upon the ground that have the greatest angle with the handle.

As a new article of manufacture, the combined hay tumbler and rake, consisting of the head B, having the two rows of teeth C and D arranged therein at suitable angles with each other, and a handle, A, substantially as described and shown.

162,468. MACHINES FOR SCORING OUTLINESS. John C. Chapman, Passaic, N. J. [Filed Sept. 14, 1874.]

Brief.—Improvement on Letters Patent No. 37,384. The hub of the rear bearing is conical and split, and is clamped upon the bar by a conical nut, a set-screw being provided in said nut for the purpose of taking up lost motion. The head is clamped upon the bar by a nut, and is provided with three tool-holders, each of which is mounted upon the screw-threaded shaft of a pinion. The pinions are simultaneously revolved by a bevel-gear, which is operated through the medium of the pinion on the shaft S.



1. The bevel-head D, having a slotted tapering hub and slotted face, in combination with the nut O, as described, for the purpose set forth.

2. The set-screw E and cap or nut O', in combination with the bearing C, and bar A, all constructed and operated as described, for the purpose of taking up any longitudinal motion of the bar and head, as set forth.

3. The pinion L and spur-wheel M, in combination with the gear J, pinion K, screw *l*, tool-holders 3, and pieces S, all constructed and operated substantially as and for the purpose set forth.

4. The bearing C, constructed as described, in combination with conical nut O' and set-screw E, substantially as and for the purpose set forth.

162,469. PROTECTORS FOR STONEWARE JARS. Denison S. Chesebro, Geddes, N. Y. [Filed Nov. 21, 1874.]



The stone-ware-jar protector, consisting of a wooden cover, *c*, constructed as herein described, and projecting over the rim of said jar, and attached thereto by means of rigid metal hooks *e* affixed to said cover, extending over the top thereof, and bent down around projections or lugs *b*, having inclined planes on their under sides formed on the jars, the whole being arranged and combined as and for the purposes specified.

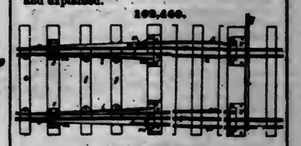
162,470. RAILWAY-SWITCHES. H. Cook, Norwich, Conn. [Filed May 1, 1873.]

Brief.—A railroad-switch in which two stationary frog-plates are employed, in connection with movable switch-rails placed between the main-track and turn-out rails; also, four safety-rails may be interposed between the frogs and movable switch-rails.

1. The arrangement and combination of the two duplex frogs *a b a b*, and guides *i i*, as described, the four-rail switch r^1 r^2 *t t*, and the main and turn-out rails r^3 r^4 r^5 r^6.

2. The arrangement and combination of the two duplex frogs *a b a b*, and guides *i i*, as described, the four safety-rails *c d c d*, the four-rail switch r^1 r^2 *t t*, and the main and turn-out rails r^3 r^4 r^5 r^6, all being substantially as shown and explained.

162,470.



162,471. METALLIC ROOFING. Geo. Crowl, New Lisbon, Ohio. [Filed Mar. 22, 1875.]

Brief.—The metallic sheets are slightly corrugated, but not so as to interfere with the bending over of the upper and lower ends for engaging with the tiles above and below. One side is bent up at a right angle, and the other bent over to form a hook for clasping over the portion so bent.



HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

1. A metallic roof-plate, A, having corrugations *a*, formed therein at intervals from each other, and at such slight height as not to prevent the bending of hooks at the ends of said plates, after the corrugations have been formed therein, as is herein specified.

2. A metallic roof-plate having light corrugations *a a* formed therein at intervals from each other; a hook, D, turned at its upper end, with ears *d d* left at its sides; lip B and hook C, turned at its sides; and a hook, E, turned at its lower end, between said lip and hook, substantially as and for the purpose specified.

3. A metallic roof combining the following features of construction, to wit: light corrugations at intervals in the plates; vertical plate-seams formed by uniting the lip and hook of adjacent plates; flat cross-seams formed by central upper hook of a plate, and a transverse lower hook of the next plate above; and a ridge-joint formed by hooking together the ridge-plates in the plane of one side of the roof; the several parts being constructed, arranged, and secured on the roof, substantially as and for the purpose specified.

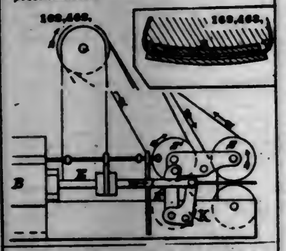
162,460. MECHANICAL MOVEMENTS. Parley M. Cummings, Lyons City, Iowa. [Filed Jan. 19, 1875.]

Brief.—Steam being introduced in the cylinder, the piston-rod is moved, thereby operating the valve in steam-chest, rocking the lever backward and raising roller, and depressing roller, bringing it in contact with friction-plate, when, by means of cylinder, the friction-plate is moved, revolving roller.

1. In combination with cylinders A B, pistons E E', friction-plate J, and friction-rollers S S', the rocking devices, consisting of bar K, connecting-bar *m*, and plate P, substantially as and for the purposes described.

2. In combination with cylinders A B, pistons E E', friction-plate J, rollers S S', and rocking devices K, *m*, and P, the drums or pulleys A^1 A^2, substantially as and for the purposes described.

162,462. 162,462.

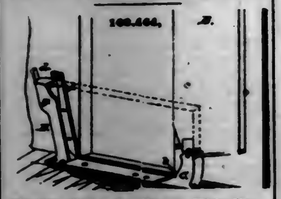


162,463. BENDERS OR FORMERS FOR USE IN MAKING BOOTS AND SHOES. Johns Hand, Rochester, N. Y., assignor to B. Tremaman, same place. [Filed Apr. 6, 1875.]

Brief.—A former or false inner sole for use in stitching single-soled shoes is constructed of one thickness of leather and one of rubber.

In the manufacture of single-soled boots and shoes, the former or inner sole herein described, composed of one thickness of leather and one of rubber, to which the upper is lasted or secured, as herein shown and described.

162,464. B.



162,464. GRAIN-CAR DOORS. Elisha Fee, Colfax, Iowa. [Filed Dec. 26, 1874.]

1. The corner-brace and door-fastening C, having the curved and beveled shoulder *b* and vertical projection *c*, substantially as and for the purposes shown and described.

2. The vertically-grooved corner-brace and door-fastening D, having the swell or chamber *g* and the vertical spring *d*, carrying the bolt *f*, in combination with the vertically-swinging door B, having a notch in its front edge, substantially as and for the purposes shown and described.

3. The combination of the door B, having rounded lower corners, and the corner-braces and fastenings C and D, substantially as and for the purposes specified.

162,465. AUTOMATIC AIR-BRAKES FOR RAILWAY AIR-BRAKES. Walter J. Ford, Adrian, Mich., and George Westinghouse, Jr., and Thomas W. Walsh, Pittsburg, Pa. [Filed Apr. 2, 1875.]

Brief.—When the brake-cylinder is being charged, air enters a reservoir through a port from the supply-pipe, and an equal pressure is maintained in the pipe and reservoir. When it is desired to release the brakes, air is allowed to escape from the supply-pipe, thereby forming an excess of pressure in the reservoir, that operates to raise an intermediate valve, and allow air in the supply-pipe to readily escape through radial ports in the neck of the reservoir.



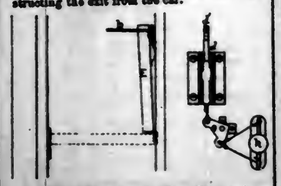
1. In combination with a brake-pipe or cylinder, an air-reservoir, B, arranged to be charged with compressed air while the brakes are being applied, an intermediate valve to be opened by the back pressure of the air in such reservoir when the brakes are being released, and an air-escape port or ports for the escape of the air on the opening of the valve, such valve being opened against the pressure of the escaping air, substantially as set forth.

2. As an attachment for the brake-pipe or cylinder, the piece A, containing a chamber, *a*, with valve U at one end, a reservoir, B, at the other, a communicating charging-port, and an intermediate escape-port, substantially as set forth.

3. In combination with the brake-pipe or cylinder, the reservoir B and air-charging port, a valve, C, arranged intermediate between the reservoir and another wise unobstructed source of supply, and closing the escape by air-pressure simultaneously with the application of the brakes and the charging of the reservoir, substantially as set forth.

162,466. HATCHWAY-GUARDS. J. C. Foster, Lynn, Mass. [Filed Mar. 9, 1875.]

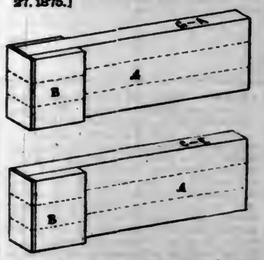
Brief.—A guard-bar hinged to the side of the door is released from its vertical fastening, and drops to a horizontal position when the door is opened from the outside. When the door-knob is turned and the door opened from the inside, the catch that releases the guard-bar is depressed by means of rods and a bell-crank lever, so as not to engage with the spring that sustains the bar in its vertical position, thus preventing the bar from obstructing the exit from the car.



1. The combination of a bar with a swinging door, and intervening mechanism, substantially as described, whereby the bar is dropped when the door is opened from the outside, as specified.

2. The combination of a bar, E, latch *h*, catch *d'*, bell-crank *g*, and knob *h*, all connected and operating substantially as and for the purpose set forth.

162,467. BLANKS FOR ORGAN-KEYS. Levi K. Fuller, Brattleborough, Vt., assignor to J. Estey & Co., same place. [Filed Jan. 27, 1875.]



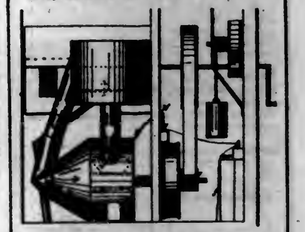
1. As an improvement in the manufacture of keys for organs, pianos, and similar keyboard instruments, the process herein described, consisting essentially in forming the blank from which to construct each key with its top and bottom faces corresponding in shape to the face of the keys, and of a depth to allow of two or more keys being cut therefrom, by dividing it in a plane parallel to the faces of the same, substantially as and for the purpose specified.

2. The method of constructing a key-blank for organs and similar instruments, by making the body of the blank A of the width desired for the rear end of the key, and securing the cheeks B B to the side or sides thereof, to give the proper width to the key at the front end, substantially in the manner shown, and for the purposes set forth.

3. The blank for the sharp or black keys, having a thickness equal to the thickness required in the key, and grooved, as at *a*, at the rear end, when constructed substantially in the manner shown, and for the purposes described.

162,468. REFRIGERATORS. E. W. Giddings, Johnstown, Pa. [Filed Apr. 12, 1875.]

Brief.—A fan, driven by clock-work or hand, sends air down through the ice, and expels it through channel into the cooling-chamber. An adjustable red sets one wire of a battery at any desired elevation in the mercury-tube of a thermometer. When that temperature is reached in the cooling-chamber, a circuit is established, the armature which has been braking the fly-wheel is lifted from the fly-wheel, and the fan-wheel is permitted to act.



1. In a refrigerating-chamber, the combination of the thermometer I, screw-rod *h*, nut *i*, and wire *c*, substantially as shown.

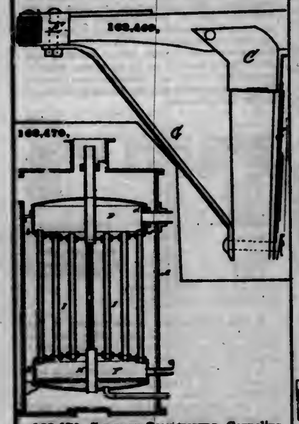
2. In a refrigerating-chamber, the combination of an adjustable circuit-closing device, a battery, and a starting and stopping mechanism, whereby the temperature can be regulated at will to suit various articles, as specified.

3. The combination of the thermometer I, platinum wire *c*, adjustable rod *h*, electric wires *f g*, battery M, and electro-magnet N, all arranged as described, with a refrigerating-chamber, an automatically-operating suction-fan therein, and a stopping and starting mechanism therefor, substantially as and for the purposes herein set forth.

162,469. SLEIGH-KNEE. Myron Glenbrook, Batchellerville, N. Y. [Filed Mar. 27, 1875.]

In a sleigh-knee, the combination of the fastening-strips *b b*, having the strengthening-web D and socket C, and the brace-rod G and socket E, substantially as shown and described.

162,469. C.



162,470. SURFACE-CONDENSERS. Cornelius Godfrey, Huntington, N. Y. [Filed Sept. 21, 1874.]

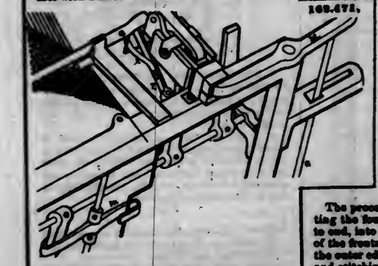
1. A surface-condenser, in which the steam-tubes are rigidly secured to the steam-chamber and vacuum-chamber, and wherein provision is made for the expansion of the tubes by means of a sliding or expansion joint between the steam-inlet pipe and the steam-chamber, substantially as specified.

2. In a surface-condenser, the combination and arrangement, substantially as shown and described, of the steam-chamber D, vacuum-chamber F, upright tubes I, connecting said chambers, water-inlet B, water-outlet O, pipe J, and shell A, for the purposes set forth.

3. The tube H, passing upward through the chamber F, in combination with the water-passages *b b'*, inlet B, and outlet O, as and for the purpose set forth.

162,471. STOP-MOTIONS FOR LOOMS. Saml. Greenwood and Jas. Templeton, Lowell, Mass. [Filed June 24, 1874.]

Brief.—To stop the loom when the breaking or tangling of a warp-thread causes a knot or bunch to be made on the surface of the fabric, a notched plate is arranged to reciprocate in front of the temples, and is so connected with the shipper-lever as to release it when the plate is stopped by coming in contact with a knot or bunch.



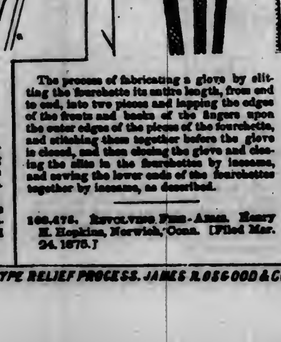
1. In combination with the stopping mechanism of a loom, the lever I and the sliding notched plate Q, adapted to reciprocate on the surface of the fabric, as and for the purpose set forth.

2. The combination of the lever W, the crank U, spring-rod V T, the plate Q, the lever I, the lever M, and the shipper O, as and for the purpose herein described.

162,472. CRIMPING-MACHINES. A. Hecht, New York, N. Y. [Filed Jan. 4, 1875.]

The combination, in a machine for crimping or finishing trimmings which have been gathered or plaited and stitched on both edges, of the crimping irons or dies D and H, formed, respectively, with the two faces *a* and *a'* and *n* and *n'*, arranged about at right angles with each other, respectively, and provided, respectively, with the prominences *x x'* and *y y'*, which are in a line with spaces between the prominences on the other face of the same die, and constructed to form the triangular spaces *f* and *g*, arranged to operate as specified.

162,472. 162,472. 162,472.



162,472. GUN-LOCKS. Lewis L. Hepburn, Ilion, N. Y. [Filed Apr. 3, 1875.]

1. The stirrup S, provided with the two bearings *a* and *b*, in combination with the tumbler T, said parts being constructed to operate substantially as described.

2. The combination, in a gun-lock, of a tumbler, with a stirrup arranged to bear alternately on opposite sides of the axis of said tumbler, substantially as and for the purpose set forth.

162,474. MANUFACTURE OF GLOVES. Geo. S. Hewitt, Johnstown, N. Y. [Filed Mar. 4, 1875.]

162,474.

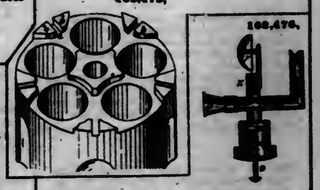


The process of fabricating a glove by slitting the fourchette its entire length, from end to end, into two pieces and lapping the edges of the fronts and backs of the fingers upon the outer edges of the pieces of the fourchette, and stitching them together before the glove is closed, and then closing the glove and closing the slits in the fourchettes by inseams, and sewing the lower ends of the fourchettes together by inseams, as described.

162,475. REVOLVING FIRE-ARMS. Henry H. Hopkins, Norwich, Conn. [Filed Mar. 24, 1875.]

A cylinder for a revolver fire-arm, provided with safety-notches *a* in the projection *b* on the end face of the said cylinder, the said projections being formed as described, so that the hammer of the fire-arm falling upon such projections will not, in practice, force the metal of the projection inward into the spaces intended for the periphery of the cartridge-head, or form a burr or roughness that will interfere with the revolution of the cylinder in the frame or stock of the fire-arm, as specified.

162,475. 162,476.

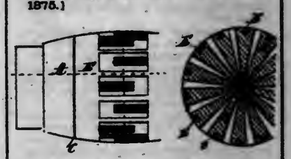


162,476. SPEAKING-TUBES. Benj. Howard and Jesse Beadle, Shickshinny, Pa. [Filed Apr. 2, 1875.]

Brief.—The piston or hammer is thrown against the bell, to give a signal at the other end, by operating the piston on the air-cylinder.

An alarm attachment for speaking-tubes, consisting of the combination of the speaking-tube A, cylinder C, piston-rod D, valve E, and bell or gong F, substantially as shown.

162,477. VEHICLE-WHEEL HUBS. John H. Hyman, Tippecanoe, Ohio. [Filed Jan. 14, 1875.]



The bob A, having grooves C and D filled with metal E, all combined substantially as and for the purpose set forth.

162,478. CANS. Tryon J. M. Jewell, New York, N. Y., assignor of one-half his right to Nathan Seeley and George I. Stevens, same place. [Filed Feb. 16, 1875.]

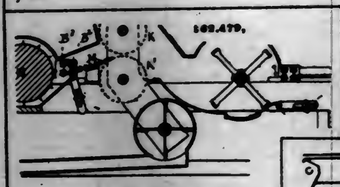
Brief.—The wire, with each end projecting, is arranged in a groove formed in the flange of the cover, which construction facilitates the application of the cover to the can.



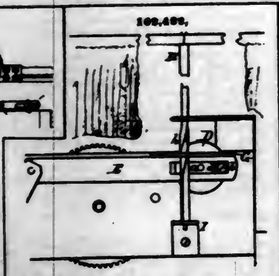
The can-cover B, constructed with the groove *a*, in combination with the free wire C, projecting from the cover at both ends, and arranged to cover the sheet metal by tension upon either end, substantially as and for the purpose set forth.

162,479. MACHINES FOR CLEANING COTTON. Saml. D. Keene, Providence, R. I. [Filed Sept. 19, 1874.]

Brief.—After the cotton passes through compressing-rollers to a revolving beater, which breaks the cotton-motes and dirt tangential down, the motes and dirt falling clear of a longitudinally-adjustable mote-board, it is carried, assisted by a current of air, to condensing-cylinders, thence over a toothed lattice-work and through compressing-rollers situated above a vertically-adjustable mote-board, which further separates the motes from the cotton, as the latter is conveyed down an incline, and combed by a revolving toothed drum.



No. 162,479.



No. 162,482.

1. The combination of a beater and drawing-rolls, driven at different speed, with an adjustable mote-board, all operating together, substantially as described, and for the purpose set forth.

2. The combination of the condensing-rolls K K' and the drawing-rolls B' B' with the grill M and the combing-cylinder N, all operating together, substantially as described, and for the purpose set forth.

162,480. GLASS-MOLDS. William C. King and August Sperber, Pittsburg, Pa., assignors to King, Son & Co., same place. [Filed Feb. 27, 1875.]

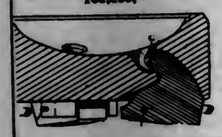
1. A glass-mold having a part of the working-face of its cavity, intermediate between its upper and lower ends, hinged or pivoted, each part swinging into position preparatory to pressing, and swinging out or back to permit the discharge of the article pressed, substantially as set forth.

2. In combination with a glass-mold, a series of pivoted or hinged mold-sections, each of which, swinging in a vertical plane, carries an extension, *e*, for forming, when in position for pressing, a re-entrant part of the article to be made, and by swinging clear of such position, leaving an open path for the discharge of the part so formed, substantially as set forth.

3. The mode of closing up and holding in place the movable parts of the cavity of a glass-mold, by resting the mold on such movable parts or some extension thereof outside the pivoting-point, whereby an increased tightness of joint shall be secured by increased pressure, substantially as set forth.

4. The arrangement of the hinged mold-sections D, whereby they will automatically close the cavities they help to form when the mold is set in position for pressing, substantially as set forth.

No. 162,480.



162,481. CARTRIDGE-BOXES. James Lee, Milwaukee, Wis. [Filed Apr. 12, 1875.]



No. 162,481.

1. A cartridge-box, consisting of the case A, curved edgewise to permit the cartridges to fit therein in a compact row, with their heads overlapping, as shown, and curved sidewise to adapt it to the person or to the gun, substantially as described.

2. The box A, having its lower end I curved laterally, and provided with the mouth or opening *d* for withdrawing the cartridges, as described.

3. The box, provided with the hooks *c* and the catch *a*, or its equivalent, for attaching it to another box or to the belt, substantially as set forth.

4. The curved box A, provided with the swing *b* for feeding forward the cartridges, and the spring-catch *r* for preventing the accidental expulsion of the same, substantially as described.

162,482. AUTOMATIC FLY-BRUSHES. Saml. L. Long, Kettleberg, Ill., assignor of one-half his right to W. D. Smith. [Filed Mar. 20, 1875.]

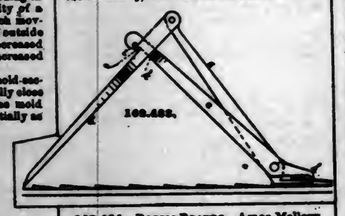
1. In a fly-brush operated by clock-work, a spiral shaft, upon which the brushes are secured, in combination with a reciprocating lever, for imparting to said shaft a reciprocating rotating motion, substantially as herein set forth.

2. The combination of the revolving disk D, with crank-pin *b* and box *d*, the pivoted slotted lever E, with slotted flange G, and the shaft H, having spiral part *h*, substantially as and for the purpose herein set forth.

162,483. SHINGLING-BRACKETS. Addison Lovejoy, South Paris, Me. [Filed Sept. 19, 1874.]

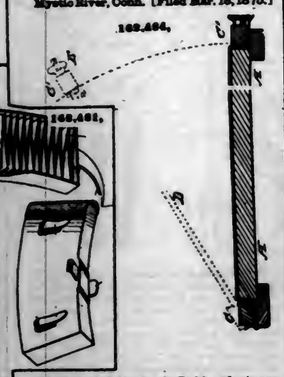
The staging-support composed of the slotted pointed double arm *b*, arms *c* and *e*, the bifurcated slipper *h*, the arm *e*, having the shoulder *k* and hook *i*, and the arm *h*, having the shoulder *j*, all as herein described.

No. 162,483.



162,484. BOSOM-BOARDS. Amos Mallory, Mystic River, Conn. [Filed Mar. 16, 1875.]

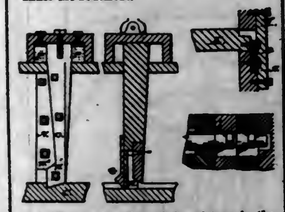
No. 162,484.



The bars C C' and rods D, hinged at one end, and the rods provided with the longitudinal pressing-springs *a a*, and set-screws E, exerting a pressure at both ends of the board A, and the bars B B', all as and for the purpose specified.

162,485. STEAM-ENGINES. John M. Marty, La Crosse, Wis. [Filed Apr. 14, 1875.]

Brief.—The piston-rods are provided with link-connections, to prevent a shock on the piston when the revolving piston strikes the abutment. The inclines on the slide on the abutment and on the stationary piece serve to press the abutment down, and the packing against the middle wall of the cylinder. The projection on the steam side of the abutment receives the blow given by the piston when it passes the former, and the adjustable piece on the opposite side packs the piston as it passes under the abutment.



1. The combination of the pistons in the tube H, provided with link-connection, the abutment E, and pistons B' B', substantially as and for the purpose specified.

2. The combination of the abutment E, bar I, and packing F, substantially as and for the purpose specified.

3. The combination of the abutment E, slide O, having incline W', and stationary piece N, having corresponding incline W, substantially as and for the purpose specified.

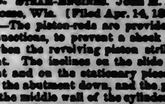
4. The combination of the abutment E, projection Q, and packing R, substantially as and for the purpose specified.

5. The combination, with packing-strips having a portion of their inner periphery inclined, as set forth, of the adjustable automatic valve, the same consisting of a spindle provided with adjustable cones, substantially as shown and described.

6. The combination, in a rotative engine, of the adjustable cam M', stationary M', and the valves which control the steam-ports, substantially as and for the purposes set forth.

7. The combination of the runner B with packing-rings C C' and set-screws, the said packing-rings being supported by flanges formed solid with the sides of the casing, and serving to pack the inner periphery of the runner, and also forming a portion of the casing of the annular steam-chest, substantially as shown and described.

162,486. FASTENINGS FOR HASPS. W. McConway, Pittsburg, Pa., assignor to himself, John J. Torley, John Heath, and W. Dilworthy, Jr., same place. [Filed Mar. 9, 1875.]



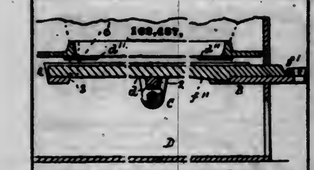
1. The combination of a hasp, B, and headed bolt *a*, the hasp having an outwardly-swinging motion independent of the motion of the door, substantially as and for the purposes set forth.

2. A headed bolt, *a*, having a bolt or curved neck embrace the door or other structure in which it is inserted, and at its inner end a fastening device not self-detaching nor detachable from the outside, substantially as and for the purposes described.

162,487. GRATES FOR RANGES AND STOVES. William L. McDowell, Philadelphia, Pa. [Filed Mar. 16, 1875.]

Brief.—The grate has a slightly rising and falling, as well as a forward and backward, movement.

1. The combination, in a range, stove, or furnace, substantially as described, of the rock-shaft C, with the grate A B, provided with a special handle, *b'*, projecting through the front plate of the base or ash-pit D, for purposes set forth.



No. 162,487.

1. In a potato-digger, the frame C, with its inverted U-shaped rear end arranged to form the standard or leg *a*, and plow or shoe F, in combination with the longitudinal shaft I and radial wheel L, all combined and arranged to operate substantially as and for the purpose specified.

2. In combination with the plow F and wheel L, the guard D, with its downward-projecting bars or fingers *b c c*, substantially as and for the purpose described.

162,488. PORTABLE BROOM-HEADS. R. J. Merrick, Rochester, N. Y., assignor to himself and Bemanjah G. Merrick. [Filed Jan. 10, 1873.]

Brief.—The wings of the head are pivoted at the sides, so that the wedge-shaped handle forces their lower ends together to grasp the broom-corn. A device for fastening the broom and holding the corn to the wings is attached to the latter.

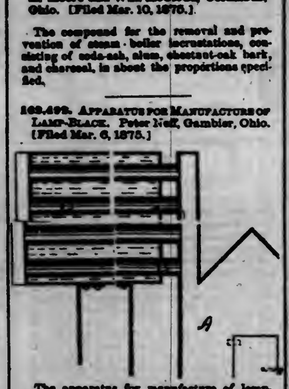


The corn-band C, screw D, wire-stiffener G, and the retainer E, constructed of a metallic plate or sheet bent double, and having the blade *g g* turned to fasten the headed nails or teeth *h h*, the whole combined with the wedging-handle A, and pivoted jaws B B, in the manner and for the purpose specified.

162,489. COMPOUNDS FOR REMOVING INCRUSTATIONS IN STEAM-BOILERS. George A. Moore and Wm. McCloud, Columbus, Ohio. [Filed Mar. 10, 1875.]

The compound for the removal and prevention of steam-boiler incrustations, consisting of soda-ash, alum, chestnut-oak bark, and charcoal, in about the proportions specified.

162,490. APPARATUS FOR MANUFACTURE OF LAMP-BLACK. Peter Neff, Gambier, Ohio. [Filed Mar. 6, 1875.]



The apparatus for manufacture of lamp-black, consisting of the combination, with a suitable burning-chamber, A, of a water-tank having two or more flues, C, communicating with said burning-chamber, whereby the products of combustion may be divided up, substantially as and for the purpose described.

162,491. COMPOUNDS FOR REMOVING INCRUSTATIONS IN STEAM-BOILERS. George A. Moore and Wm. McCloud, Columbus, Ohio. [Filed Mar. 10, 1875.]

The compound for the removal and prevention of steam-boiler incrustations, consisting of soda-ash, alum, chestnut-oak bark, and charcoal, in about the proportions specified.

162,492. APPARATUS FOR MANUFACTURE OF LAMP-BLACK. Peter Neff, Gambier, Ohio. [Filed Mar. 6, 1875.]

The apparatus for manufacture of lamp-black, consisting of the combination, with a suitable burning-chamber, A, of a water-tank having two or more flues, C, communicating with said burning-chamber, whereby the products of combustion may be divided up, substantially as and for the purpose described.

162,493. HAND CORN-PLANTERS. Harrison Osborn, Richmond, Ind., and T. T. Kendrick, New York, N. Y. [Filed Apr. 13, 1875.]

Brief.—To a handle are adjustably attached two planters. Within the tube are fastened two curved springs, the upper one dividing the delivery-chamber into two compartments, holding the seed previously dropped, until the plunger descends to fill the seed-pocket, when the seed falls onto the lower spring that forms the bottom, and is forced out by the downward stroke of the descending plunger. To the planter, near its top, is pivoted a hopper, having its inner upper edges flared to engage with vertical indentations to hold the hopper when closed.

1. Two or more hand corn-planters, adjustably secured to a handle and arranged to plant two or more hills of corn in a single row at one and the same time, substantially as described.

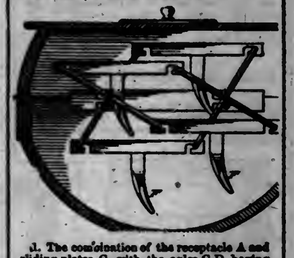
2. The curved lateral spring *a*, located within the grain-tube of a corn-planter, and dividing it into an upper and a lower chamber, in combination with a plunger, F, having a seed-cup, N, substantially as and for the purposes set forth.

3. The curved lateral springs *a b*, secured one above the other, within the grain-tube of a corn-planter, in combination with the plunger F, having the seed-cup N, substantially as and for the purposes set forth.

4. In a hand corn-planter, the hinged hopper I, provided with the inner upper flaring edges, in combination with the vertical indentations J, substantially as and for the purposes set forth.

162,494. CHURNS. Adam Cox, Oswego, N. Y. [Filed Mar. 19, 1875.]

Brief.—Two removable crank-shafts fit into the ends of slotted bars, in which paddle-dashers are fixed, and so arranged that as the shafts rotate the paddles will alternately dip into the cream at one side of the churn, even to the other, and arise therefrom.



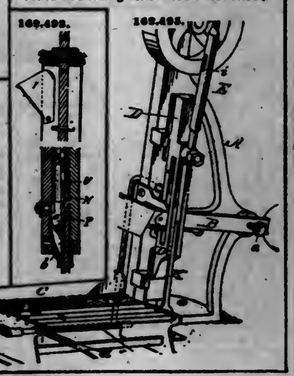
1. The combination of the receptacle A and sliding plates G, with the axles C D, having throw-cranks arranged as shown and described, and connected by cross-pieces L with dashers F, attached as and for the purpose set forth.

2. In a churn, the combination with the axles C and D, provided with throw-cranks, as described, of the cross-pieces L, and dashers F, as set forth.

162,495. MACHINES FOR CUTTING MEAT FOR PACKING. William Pitt, Baltimore, Md., assignor of one-half his right to Chas. A. Vogeler and Adolph C. Meyer, same place. [Filed Mar. 22, 1875.]

Brief.—Before the stroke is finished the knife is released, and finishes the stroke by its momentum. The knife only operates when the workman causes the dog or catch in the machinery to engage with the knife by working a treadle under the chopping-table. When the meat is thick, the knife is not disengaged, but carried through to the end of the stroke.

No. 162,495.



1. In combination with the pivoted counterbalanced knife B, the vertical slide D provided with the dog H, which may be caused to engage with and operate the knife.

2. In combination with the pivoted knife B, the slide D provided with the dog H and spring e, and the rock-shaft I, provided with the arm c and treadle d, as shown and described.

3. In combination with the knife B slide D and dog H, the spring-arm K or its equivalent.

4. In combination with the bed or table C, and the slide D, arranged to lift the knife at its inner end, the knife B provided with the knuckle-joint and spring, as and for the purpose described.

5. The combination of a vertically-moving knife, and a bed or table provided with rollers m, and a removable wooden block to receive the blow of the knife, substantially as described.

6. The combination, substantially as shown and described, of a movable knife, and an actuating mechanism, which starts the knife with a positive motion, and then releases the same and permits it to finish its stroke by its momentum, as set forth.

7. The combination of a vertically-moving knife with an operating mechanism, arranged so that while the mechanism has a continuous movement, the knife will be operated only when it is caused to engage therewith by the attendant, substantially as and for the purpose set forth.

162,496. STOVE-PIPE DRUMS. E. W. Prior, Cambridge, Vt. [Filed Feb. 17, 1875.]

Brief.—The cavity in the centrally-located air-heating chamber receives the smoke directed from the sliding section of pipe, which acts as a damper.

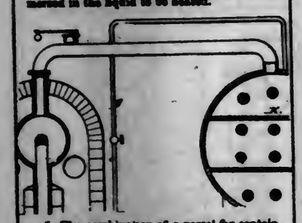


1. In a stove-pipe drum, the hot-air chamber B, surrounded by fire-chamber a, and having the chamber C and hot-air openings b^{iv}, in combination with the induction-pipe A^{ii} and exit-pipe A^{iii}, constructed and arranged with relation to each other, substantially as described.

2. In a stove-pipe drum, the combination of the hot-air chamber B, chamber C, induction-pipe A^{ii}, and exit-pipe A^{iii}, with the cylindrical sliding damper O, substantially as described.

162,497. STEAM-GENERATORS. D. Bonshaw, Hingham, Mass. [Filed Apr. 6, 1874.]

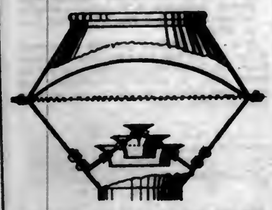
Brief.—Superheated steam is kept circulating through a system of pipes which are immersed in the liquid to be heated.



1. The combination of a vessel for containing a liquid which it is desired to evaporate with a system of submerged pipes, connected with a steam-superheating apparatus arranged in relation thereto, so as to establish and maintain a constant current of superheated steam from the superheater into one end of the system of pipes, while constantly withdrawing the cooler steam from the other end of the system of pipes, whereby a prescribed quantity of steam is maintained in continuous circulation, substantially as described, and for the purpose set forth.

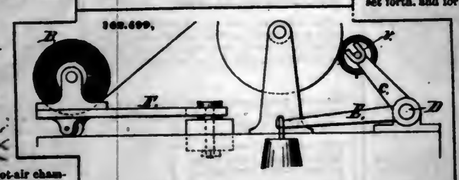
2. The combination of a superheating apparatus, provided with a safety-valve and connected with the pipes N and P, and arranged in relation to a steam generator or boiler, substantially as shown and described, with the inlet-pipe g leading from the steam-space G to the pipe C, for the purpose of facilitating the regulation of the quantity of steam maintained in circulation, substantially as described.

162,498. SPARK-ARRESTERS. C. G. Roberts, Jersey City, N. J. [Filed Oct. 26, 1874.]

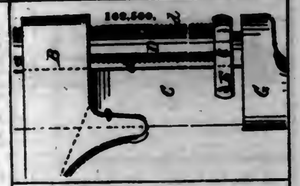


A spark-arrester, consisting of a series of inverted sections of cones, one above the other, in which the greatest diameter of its lower section exceeds the diameter of the smoke-pipe, and the greatest diameter of each succeeding section exceeds the smallest diameter of the section immediately below it, and whose top section is a cone, with the same relation existing between its greatest diameter and the smallest diameter of the section immediately below it, substantially as described.

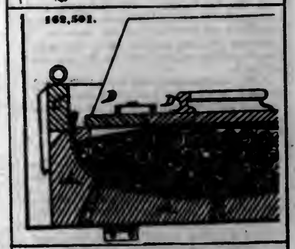
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162,502. SAFETY-VALVE. Hiram Stevens, New Haven, Conn. [Filed Feb. 6, 1874.]

Brief.—The adjusting-nut is provided with one or more vertical grooves, into which enters a removable pin, arranged to be locked in position, thereby securing the valve adjustment from interference.

The nut C, provided with the grooves a, in combination with the locking devices herein set forth, and for the purpose specified.

162,502.



162,499. MACHINES FOR WETTING PRINTING-PAPER. George Bonquist, New York, N. Y., assignor to the Bullock Printing-Press Company. [Filed July 22, 1874.]

Brief.—The web of paper is led to the damping-cylinder from a roller held in a frame pivoted so that either end of the roller shall yield to allow the smooth passage of the paper, one margin of which may be shorter or longer than the other. It is then wound upon a roller leaning against the damping-cylinder, being borne on arms from a shaft, from which extends another arm carrying a weight, by which is adjusted the pressure of the winding-up roll against the cylinder.

The combination of the large cylinder A, the shaft D, with its arms s c, the roller v, journaled in the upper ends of said arms, the lever E, with its weight e, and the roller B, mounted on a pivoted frame, F, all constructed and arranged to operate substantially as described.

162,500. WRENCHES. Julius Rost, Allegheny, Pa. [Filed Sept. 28, 1874.]

The screw-rod D, with the threads d d cut upon its opposite sides with intermediate plain surfaces, and with its arm B, in combination with the head A, head B, rod C, and heel G, in the manner and for the purpose herein described.

162,501. UPHOLSTERING APPARATUS. C. F. A. Starcke, Chicago, Ill. [Filed Dec. 4, 1874.]

The combination of the mold A, the removable frame C, for extending the depth of the mold, and the presser D, having therein the removable part D', to admit of the manipulation of the filling without removing the part D', substantially as and for the purpose specified.

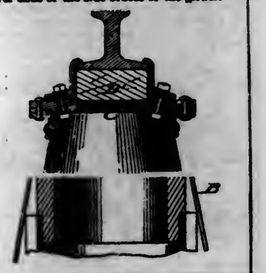
162,503. ROOFING COMPOSITIONS. Basile St. Jean, Manchester, N. H. [Filed Apr. 3, 1875.]

Brief.—A roofing composition consisting of one part sifted coal-ashes, one part sifted sawdust, and two parts coal-tar. Applied to roofing-felt. A coating of gravel is then applied as a top dressing.

The above-described composition of matter as a roofing material, to be used in combination with roofing-paper and gravel, substantially as and for the purposes set forth.

162,504. ELEVATED RAILWAYS. Roy Stone, Vandalia, N. Y. [Filed Mar. 20, 1875.]

Brief.—An elevated railway in which the central elevated bearing-rail is supported upon a wooden stringer, which rests upon the top chord of a trapezoidal lattice truss-girder, provided with a guide-rail on each side at the lower ends of the side braces of the girder.

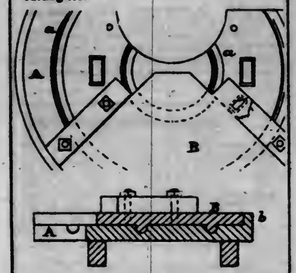


1. The combination of the bearing-rail with the trapezoidal truss-girder, having its top chord C secured to and connecting its sides B B, as shown and described.

2. The top bearing-rail, seated on a timber-combine, and secured by base-binding angle-rails to the top chord, substantially as shown and described.

162,505. MACHINES FOR ROUNDING THE CORNERS OF SLATE-FRAMES. Abraham Stroh, Manch Chunk, Pa. [Filed Mar. 16, 1875.]

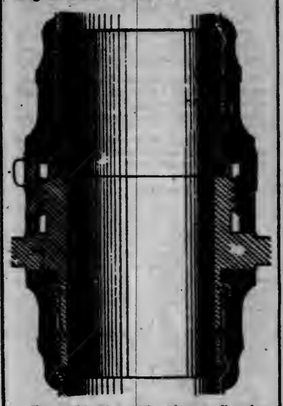
Brief.—The corners of slate-frames are rounded by means of a segmental bed-plate provided with a flange at its outer edge, and upon its face with one or more grooves upon lines of circles with a common center, and a vibratory or laterally-moving plate, (upon which the slate-frame is placed,) provided upon its under side with corresponding ridges or projecting rings, in connection with a suitable cutting-tool.



The bed-plate A, provided with one or more grooves, a, and shoulder b, in combination with the plate B, provided with one or more rings, c, constructed to operate as shown.

162,506. HOSE-COUPLINGS. T. L. Summers, Boston, Mass. [Filed Oct. 24, 1874.]

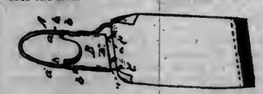
Brief.—The external band, which connects with the internal or male shank by means of an internal flange and radial studs, is made in two parts, the clamping part screwing into the other, by which the engagement of the flange and studs is made firmer.



The combination, with either coupling-ring extended to form a tail having an annular end rib, c, adapted to be introduced into the end of the hose-section, of an outer inwardly-threaded collar engaging with the coupling-ring near its joint end, and an outwardly threaded end collar having an annular interior end groove adapted to secure the hose-section on said rib when said end collar is screwed into said outer collar, substantially as specified.

162,507. METALLIC LOOPS FOR COATS. F. W. Tilton, New Bedford, Mass. [Filed Jan. 16, 1873.]

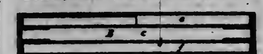
Brief.—A piece of spring-wire is bent in U shape, and hooks are formed on the free ends. A recessed guard or apron is arranged to slide upon the wire, and covers the points of the hooks after an article is attached. The edges of the guard may be slotted, and the wire correspondingly bent, so that it will spring into the slots.



1. The U-shaped hook or loop A, constructed from a single piece of spring metal, each of its branches or arms having a hook, C, in combination with the sliding guard B, having the apron or flange E, for preventing the displacement of the suspended article and protecting the points of the hooks, substantially as described.

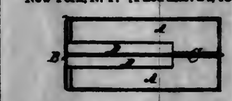
2. In combination with the spring hook or loop A, constructed with the shoulders a' a', the guard B, having the slots b', and apron or flange E, substantially as and for the purpose described.

162,508. PAPER BOXES. Jas. W. Turner, Boston, Mass. [Filed Mar. 15, 1875.]



As a new article of manufacture, the photograph positive and negative holder, having its inner case or drawer B made or provided with the three chambers c e f, arranged as described, and with the intermediate chamber open at one end or side, as stated.

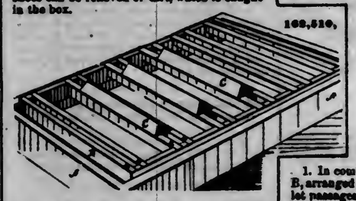
162,509. PAPER BOXES. Willy Wallach, New York, N. Y. [Filed Mar. 24, 1875.]



As a new article of manufacture, a box consisting of two divisions or boxes, A A, connected to a back piece, B, by means of suitable hinges a a, having a central board, C, firmly attached to the back B, provided, on both sides, with partitions or pockets D D, in the manner and for the purpose substantially as herein specified.

162,510. FOOT-MATS. Andrew Weaver, Dubuque, Iowa, and Peter W. Cornelius, Minneapolis, Minn. [Filed Mar. 6, 1875.]

Brief.—Inside a box is supported a removable frame, having slats extending across it, and in the slots between the slats are inserted removable rubber scrapers, upon which the shoes can be relieved of dirt, which is caught in the box.



The box A, frame B, and slats c c, in combination with the rubber cleaners C, provided with the tongues d, substantially as and for the purpose set forth.

162,511. STOVE-PIPE DAMPERS. Harison H. Wilson and William H. Robb, Wabash, Ind. [Filed Feb. 8, 1875.]

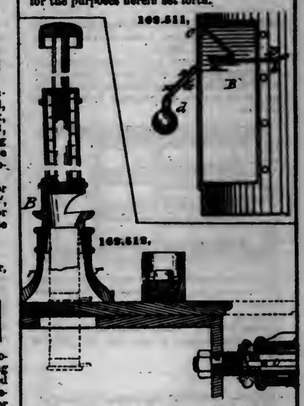
Brief.—The smaller wing prevents the larger from rising above a horizontal position.

1. A stove-pipe damper consisting of an upper smaller wing, C, and a main wing, D, provided with a curve, b, as and for the purposes herein set forth.

2. The combination of the stove-pipe A, half-bor B, rod a, two-winged damper C D, substantially as and for the purposes herein set forth.

3. In combination with the two-winged damper C D, hung upon the rod a, the handle G, provided with notches n, and the movable weight d hung thereon, substantially as and for the purposes herein set forth.

162,511.



162,512. CARTRIDGE-LOADING DEVICES. Friedrich Wohlgemuth, New York, N. Y. [Filed July 3, 1874.]

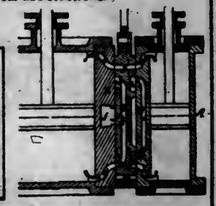
1. A cartridge-charger consisting of a tube, B, made with an opening in the side, by which to charge the cartridge, combined with a cap (screwed in the top thereof) and a rammer, fitted with a conical head, (screwed on the end,) to fill a correspondingly-shaped hole in said cap, by which the rammer is held up by the friction of the cone in the hole of said cap.

2. The tube r, in which the cartridge-case is held, in combination with a base-piece, fitted with a sliding section to admit and support or discharge the cartridge, as shown in Fig. 1 of the drawing, and as described herein.

162,513. VALVES FOR COMPOUND ENGINES. Walter Wright, Tapleyville, Mass. [Filed Mar. 24, 1875.]

Brief.—A single valve, having two faces inclined to each other, admits live steam to the small cylinder, exhausts it into the low-pressure cylinder, and exhausts from said cylinder into the atmosphere. The valve is held to its seat by a bar and set-screws.

162,513.



1. In combination with the two cylinders A B, arranged and provided with inlet and outlet passages and ports a e', d d', e, f, and e', as described, a depressed parallel-faced valve, F, arranged between each two cylinders, and provided with the open chambers h h', the transverse passages g g', and the connected ports i h h', all being to operate as specified.

2. The combination of the bearing or support rail I and its adjusting-screws m with the wedge-shaped valve F and the two cylinders A B, arranged and constructed substantially as specified.

160,514. VARNISHING OR COATING FOR PRINTERS' INKING-ROLLS. Benj. F. Allen, Boston, Mass. [Filed Apr. 9, 1875.]

Brief.—The roll is washed and coated with the varnish. The coating can be renewed as often as necessary.

The process herein described for renewing the surfaces of printers' rollers by a coating of varnish consisting of boiled oil, soap, and resin, substantially as and for the purpose set forth.

160,515. MACHINES FOR LAYING PIPES WITH CEMENT. Michael Allen, Natick, Mass. [Filed Dec. 17, 1874.]

Brief.—The pipes, being placed vertically on a frame and filled with cement, have passed upward through them plungers of less diameter, on a slide reciprocated by racks and pinions.



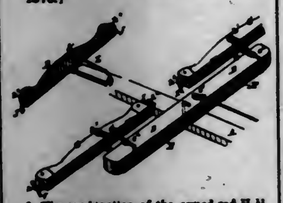
In a machine for lining pipes with cement, the combination of the reciprocating rack-frame G H, working in guides attached to frame A, cog-wheels I I, and shaft J, with pinions L L, for rapidly operating the forms D D, substantially as and for the purpose herein set forth.

160,516. COMBINED BLOTTERS, PAPER-CUTTERS, AND RULERS. Frank B. Angell, Los Angeles, Cal. [Filed Nov. 14, 1874.]



The paper-cutter rule A, having two cross-slots, D D, at one end, and a single cross-slot at the other, to admit of receiving the blotting-paper, in the manner described.

160,517. HOOKS-DETACHING. Amos Barker, Nebraska City, Nebr. [Filed Jan. 30, 1875.]

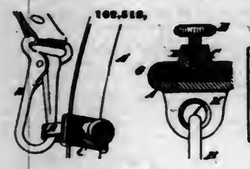


1. The combination of the armed rod H h^1 h^2, and the pivoted half-circle hooks, with the double-trees, substantially as shown and described.

2. The combination of the armed rod H h^1 h^2, the pivoted half-circle hooks I, and the cords or chains G, with the single-tree C, substantially as shown and described.

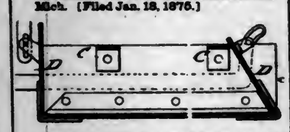
3. The combination of the armed rod H h^1 h^2, the armed rods H h^1 h^2, the cords or chains G, and the cord F, with the double-tree E, and the single-tree C, substantially as shown and described.

160,518. HITCHING DEVICES FOR HORSES. Charles H. Bunnah, Holyoke, Mass. [Filed Mar. 12, 1875.]



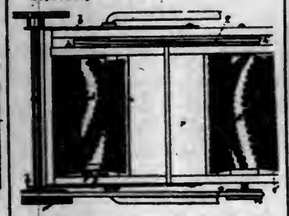
The sliding lock C, consisting of hub D, screw E, mortise F, plate G, and perforated extension H, the whole being adapted to be used with strap A and snap B, in the manner described.

160,519. LOCOMOTIVE ASH-PANS AND DAMPERS. Walter W. Beach, Saconawbe, Mich. [Filed Jan. 18, 1875.]



The dampers D D, hinged to the bottom ends of ash-pan, longer than fire-box, and folding inwardly between the sides or braces C, thus always preventing escape of fire, while they are allowed to fold under the bottom, and permit the pan to be cleaned without removal.

160,520. CARPET-SWEEPERS. Frank M. Beckford, Haverhill, Mass. [Filed Mar. 20, 1875.]



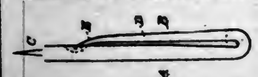
1. The combination, with the box A, of the driving-wheels O O', their axle a, and the pendulous arms or levers b b, the whole being arranged substantially as and for the purpose set forth.

2. In a carpet-sweeper, the combination, with the case A, of the two brushes c c', arranged as described, and provided with actuating mechanism, substantially as set forth.

3. In a carpet-sweeper, substantially as specified, the combination, with the case A and the brushes c c', of the removable duplex dust-receptacle, constructed and arranged substantially as shown and described.

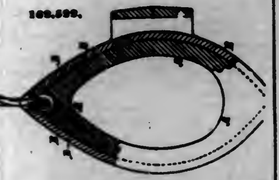
4. The improved carpet-sweeper, consisting of the box A, self-adjusting driving-wheels c c', provided with actuating mechanism, as described, and the duplex dust-receptacle, the whole being combined and arranged substantially as set forth.

160,521. FEED-TAG NEEDLES. L. B. Benton, Milwaukee, Wis. [Filed Jan. 18, 1875.]



In a needle constructed substantially as described, the recess F for the reception of the point E, and the portion D made wider than the portion C at the line A B, substantially as shown and described, for the purpose set forth.

160,522. TELL-LOCKS. Frank S. Berry and G. F. Alexander, New Sharon, Me. [Filed Feb. 18, 1875.]



The combination, with body A, strap B, and buckle C, of the perforated plate D, securing buckle to body, and itself covered by strap, substantially as shown and described, for the purpose specified.

160,523. CARBURETTERS. Dana Bickford, New York, N. Y. [Filed Apr. 6, 1875.]

Brief.—The open-work basket, holding the absorbent material, is attached to the floating bell, and is suspended by a coil-spring extending from the top of the carbureting-chamber.



1. The combination of the floating bell open at its bottom, the open-work cage or basket surrounding the same for holding the absorbent material, and the inlet-tube H, extending from the top of the carburetor to the top of the bell, as and for the purposes set forth.

2. The combination, with the float D and its bell C and gas-inlet, of the open-work lining B and absorbent G, for the purposes set forth.

3. In combination with the bell or basket, a spring or springs, exerting a gentle lifting action on the bell or basket, for the purpose set forth

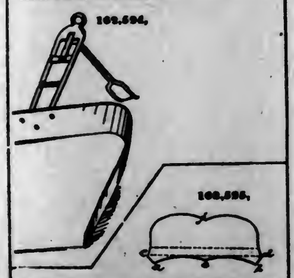
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160,524. DUST-PANS. Francis D. Bliss, New Haven, Conn., assignor of one-half his right to O. W. Tuttle, same place. [Filed Mar. 31, 1875.]

Brief.—A supporting-brace which may be inclosed in or folded under the handle, and held in folded or extended position by a spring.

1. A dust-pan provided with a leg or brace, which is attached to the handle by a pivoted connection, and arranged to fold within or parallel with the handle, substantially as described.

2. The combination, in a dust-pan handle, of a leg or brace and a double-acting spring, substantially as described.

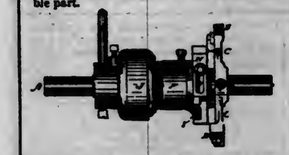


160,525. STIFFENERS FOR BOOTS AND SHOES. Guillaume Belvin, Montreal, Canada. [Filed Feb. 5, 1875.]

A stiffener for boots and shoes, provided with the different parts a b c d e f, the whole substantially as and for the purpose hereinbefore described.

160,526. CUTTER-HEADS. Martin Buck, Lebanon, N. H. [Filed Nov. 2, 1874.]

Brief.—For cutting grooves, slots, or mortises of different widths, an adjustable and expansible cutter-head is formed in two parts, each provided with a suitable number of adjustable cutters, one part being stationary on the shaft, and the other adjustable to or from said part, by means of a swiveled nut operating upon a screw-sleeve on the adjustable part.



1. In an expansible cutter-head, the combination of the swiveled screw-nut J and screw-sleeve F, carrying the cutter-arms G, constructed and operating substantially in the manner described and specified.

2. The combination of the shaft A with sleeve B, provided with arms C, screw-sleeve F, provided with arms G, and the screw-nut J, constructed and operating substantially in the manner described and specified.

160,527. SEED-PLANTERS. William V. Burgess, Baxter Springs, Kans. [Filed Mar. 12, 1875.]

Brief.—Upon a shaft revolving within the closed cylinder are two seed-wheels, that are laterally adjustable beneath the hoppers, to increase or diminish the quantity of seed to be sown, or close the cups entirely. Motion is imparted to the shaft by a cog-wheel gearing with a similar wheel on the bub of one of the bearing-wheels.



In combination with the closed cylinder I, hoppers f^1, and dropping-cylinders H H^1, the gear-wheels f g, shaft A, short arm m, supporting-plate n, bent lever K, and guide-rod s, the whole combined to operate as and for the purpose specified.

160,528. ROCK-DRILLS. Charles Burleigh, Fitchburg, Mass. [Filed Apr. 23, 1874.]

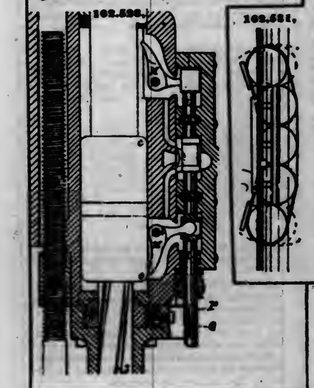
Brief.—A bent tappet is placed in the induction-port at each end of the cylinder. Said tappets are raised by the beveled ends of the piston, and operate the valve. The back cylinder-head forms a bearing for the turning-bar and ratchet, and is closed to the atmosphere.

1. The combination of a series of horizontal tubes, divided longitudinally and transversely into compartments, and vertical tubes arranged in groups or series corresponding with said compartments, substantially as and for the purpose set forth.

2. The combination, with the horizontal or bottom portion of floating docks or ..., of vertical tubes divided into compartments for water and for storing air under pressure, communicating by valves, as and for the purpose set forth.

3. The combination of horizontal tubes, vertical tubes arranged in groups at the corners of the horizontal tubes, and short intermediate side tubes, as and for the purpose set forth.

4. The combination, with the central horizontal portion of floating docks or pontons, of hinged or self-adjusting outer tubes, substantially as and for the purpose set forth.



160,529. PORTABLE TOILET WATERS AND EXTRACTS. A. Gibbs Campbell, Paterson, N. J. [Filed Mar. 6, 1875.]

As an improved article of manufacture, a compound for the production of toilet waters or extracts by, lixiviation with alcohol, the compound consisting of a mixture of carbonate of magnesia with one or more fragrant attars.

160,530. HATS. John Case, Alexandria, (Frenchtown P. O.,) N. J. [Filed Mar. 6, 1875.]

The combination of the outer conical or hemispherical portion A and flat-topped inner part B, the same being united at the point shown, whereby the spaces C and D are formed, as shown and described.



160,531. FLOATING DOCKS AND PONTONS. Josiah L. Clark and Jno. Standfield, Westminster, England. [Filed Sept. 11, 1874.]

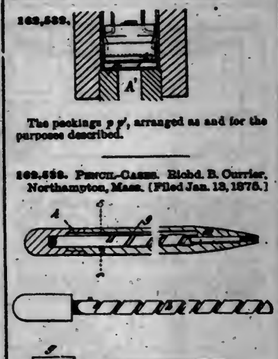


1. The combination of the boat levers M, with the annular cam-surfaces s s on the piston, said levers moving laterally thereto, as described, and the valve, where said levers are arranged within the air-passages which lead from the valve into the cylinder, substantially as described.

2. The closed back cylinder-head formed with a closed bearing for the back end of the piston-bar, and a recess for the turning-ratchet, constructed and operating substantially as described.

3. The lever Q provided with a spring, S, to hold the same in a central position in combination with the valve-rod having an elongated slot P, substantially as described.

160,532. PENCIL-CASES. Richd. B. Currier, Northampton, Mass. [Filed Jan. 13, 1875.]

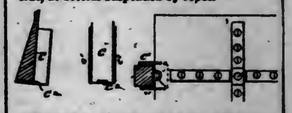


1. In a pencil-case, the combination of the spiral b and splined follower g, the latter form 1 to grasp the end of the lead, both operating together to retract or extend the lead by the movement of the head e, as shown and described.

2. The combination of the stud s, stop x, channel h, and groove o, constructed in the manner as and for the purpose set forth.

160,533. SAFETY APPARATUS FOR LIFTS OR HOISTS. Henry A. Davis, London, England. [Filed Feb. 6, 1875.]

Brief.—Should the hauling-rope break, the platform would drop onto a wedge at each side, at bottom suspended by ropes.



The wedge c, having a tooth, c^1, and flanges c^2, or other suitable guides, as herein set forth, and for the purpose specified.

160,534. DEVICES FOR FELLING TREES. C. C. Curtis, Coos, N. H. [Filed Mar. 20, 1875.]

Brief.—A pole is placed with its upper end against a tree, its lower resting upon an inclined platform, one end of which may be raised by a screw, causing the pole to push against the tree.

A device for controlling the falling of cut or sawed trees in any required direction, being composed of a spiked detachable pole, a hinged inclined supporting-piece, with seats or recesses for the same, an intermediate supporting-collar with hinged brace-rods, and of an elevating mechanism to raise the inclined piece and force the pole against the tree, substantially as specified.

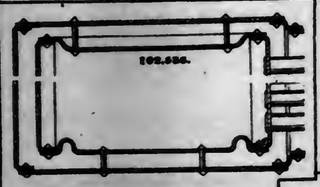
160,535. SAFETY APPARATUS FOR LIFTS OR HOISTS. Henry A. Davis, London, England. [Filed Feb. 6, 1875.]

Brief.—Should the hauling-rope break, the platform would drop onto a wedge at each side, at bottom suspended by ropes.

The wedge c, having a tooth, c^1, and flanges c^2, or other suitable guides, as herein set forth, and for the purpose specified.

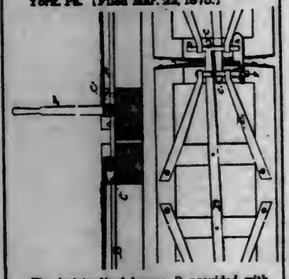
160,536. STEAM-BOILER FURNACES. Walter Dawson and James Hughes, Scranton, Pa. [Filed Apr. 3, 1875.]

Brief.—The portions of the inner walls of the furnace adjacent to the joints are bulged inward, forming a partial shield, to prevent the flame coming in direct contact with and burning out the rivets.



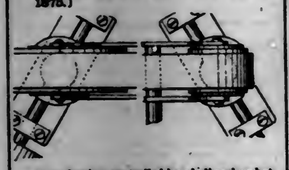
A fire-box or furnace of a steam-boiler, having the side sheets bulged or projected inward, substantially as seen in the drawing, for the purposes described.

162,537. CAR-COUPLINGS. Abram Dehuff, York, Pa. [Filed Mar. 22, 1875.]



The longitudinal braces B, provided with ends C, locking upon the cross-bars D, in combination with the springs E, handle or lever F, and pivoted latch A, substantially as and for the purposes set forth.

162,538. MECHANICAL MOVEMENTS. James B. Dever, Goshen, Ind. [Filed Mar. 29, 1875.]



A mechanism controlled by a ball and socket on a revolving shaft, by means of which pulleys, gearing, all kinds of wheels, and other mechanical movements may be actuated, substantially as shown and described.

162,539. PRESERVING MEAT. Edward A. Duncan, Washington, D. C., assignor of one-half his right to J. Halley, Boise City, Idaho. [Filed Feb. 16, 1875.]

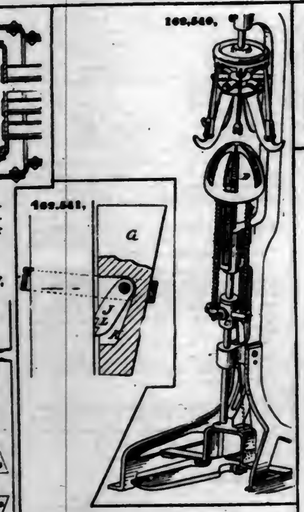
The process of preparing flesh or meat by first separating it into pieces of a pound each; more or less, then treating with a hot-water bath, as glue, and incorporating into the mass nitrate of potash and chloride of sodium, then grinding the mass into a fine pulp, and after thoroughly drying said pulp, pressing the same into suitable molds, substantially as and for the purpose described.

162,540. HAT-STRETCHING MACHINES. R. Hahnemayer, Yonkers, N. Y. [Filed Mar. 29, 1875.]

Brief.—After the hat-body is stretched, the "former" recedes to and retires within the peripherial limits of stripper D, thus leaving the body on the stripper wholly cleared from the former, free to be received upon the stripper to a different point, so as to admit of a repetition of the stretching operation.

In a hat-stretching machine, a skeleton or ribbed former, in combination with a clearer or stripper, substantially as described.

162,540.



162,541.

162,541. SCAFFOLD-CLAMPS. William C. Fellows, Toledo, Ohio, assignor to himself and C. Whittingham, same place. [Filed Jan. 4, 1875.]

Brief.—A serrated pawl is introduced within a scaffold-clamping support for additional security against slipping.

The combination of band F, having notches f, recessed key G, and key-pivot H, having end-ratcheted arm J L, all constructed and arranged, as shown and described, to form an adjustable scaffold-bracket.

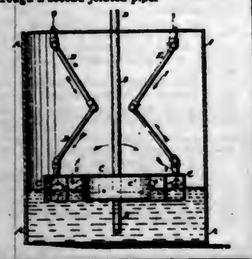
162,542. CONSTRUCTION OF WATCH-MOVEMENTS. James E. Flynt, Duluth, Minn. [Filed July 11, 1874.]



A watch-movement in which motion is communicated from the mainspring-barrel to the escapement-wheel through a single pinion and wheel, said wheel being of nearly the circumference of the pillar-plate, and arranged between the face and the pillar-plate.

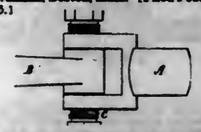
162,543. CARBURETING GAS-MACHINES. E. Porter, New York, N. Y. [Filed Feb. 5, 1875.]

Brief.—The gas or air passes through a jointed pipe to the float, where it passes through an annular chamber open at the bottom to the hydrocarbon fluid, and then escapes into the tank. In order to pass to the burners, the enriched vapors must enter and pass through another annular chamber of the float, from which it passes out of the tank through a second jointed pipe.



The combination, with tank A and two pipes, D E, jointed as described, of the float C, having holes 1 2 3 4, air-chamber c^1, and bottom open passages c^2 c^3, all constructed and arranged substantially as set forth, whereby the air is entered through pipe D, passes through hole 1 into passage c^2, thence through hole 2 into upper part of tank, thence through hole 3 into passage c^3, and thence through hole 4 into a jointed discharge-pipe, E.

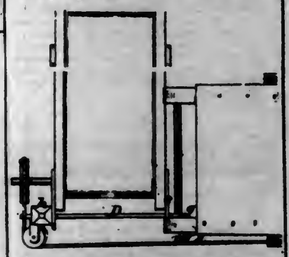
162,544. THILL-COUPLINGS. O. B. Franklin, Guilford, Vt., assignor to himself and Ira B. Franklin, Boston, Mass. [Filed Feb. 3, 1876.]



The combination of the duplex left and right threaded screw-bolt C and the duplex right-threaded screw-nut D with the clip A and the arm B, all provided with conical bearings, substantially as set forth.

162,545. STRAW-CARRIERS FOR THRASHING-MACHINES. George Gentzel, Spring Mills, Pa. [Filed July 23, 1874.]

Brief.—The carrier is adapted to deliver the straw in rear of the machine, or at either side, as may be preferred.



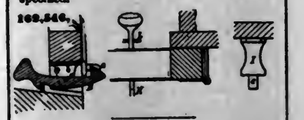
The movable supporting-rod D, provided with the hook g and leg or support A, in combination with the straw-carrier B and thrashing-machine A, substantially as and for the purpose herein specified.

162,546. SHUTTER-FASTENERS. Henry H. Ham, Jr., Portsmouth, N. H. [Filed Mar. 24, 1875.]

Brief.—A suitable catch attached to the wall or side of the house is formed with an outwardly-projecting tenon, and the frame or carrier of a gravitating-latch, secured to the under part of the shutter, is provided with a corresponding mortise, into which the tenon enters, thus securely locking the device.

The combination of the catch I, and its tenon e, applied to the front of a building, with a gravitating-latch, H, and its carrier G, provided with the mortise h, and fixed to a shutter or blind, all being substantially as specified.

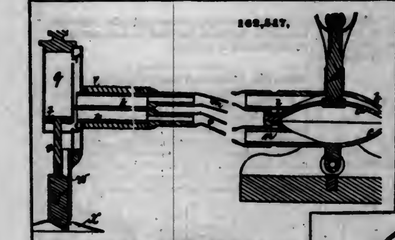
162,546.



162,547. CLOTH-CUTTING MACHINES. Chas. F. Harlow, Boston, Mass. [Filed Aug. 5, 1874.]

Brief.—The knife, which is pushed by hand against the cloth in any desired direction, is attached to a piston operated by an air-engine, consisting of a flexible diaphragm, secured at the edge between a pair of concave metal disks, each of which is connected to the piston-cylinder by a flexible tube. The diaphragm is moved up and down to compress and rarefy the air by means of an eccentric.

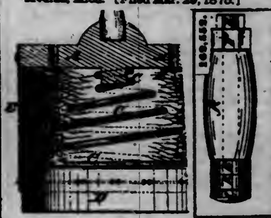
162,547.



1. A machine for cutting cloth or other textile and fibrous materials, consisting of the laterally-adjustable flexible diaphragm e, hollow case b c, pipes f m k and e o p, the handle l, cylinder q with its piston f and rod p, the cutter v with its guide w and slotted foot-plate x, as and for the purpose herein set forth and described.

2. The mechanism, as herein shown, for the transmission of a reciprocating motion, consisting of a laterally-adjustable flexible diaphragm, e, hollow case b c, pipes f m k and e o p, the cylinder q with its channels r s, and movable piston t, as herein shown and described.

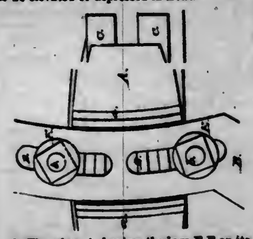
162,548. CLOTHES-POUNDERS. Chauncey B. Hart, Fairport, N. Y., and Geo. W. Hart, Medina, Mich. [Filed Mar. 29, 1875.]



An improved atmospheric clothes-washer, formed by the combination with each other of the disk or head A, provided with a handle, B, and one or more downwardly-opening valves, F, the coiled spring C, the band or ring D, and the flexible connecting-band E, substantially as herein shown and described.

162,549. PLOWS. C. A. Hege, Salem, N. C. [Filed Mar. 17, 1876.]

Brief.—A plate having lugs upon its back to enter the plow-beam, and a channel with vertical slots on its face to receive the standard, both being corrugated concentrically across their surfaces, to allow the plow-beam to be elevated or depressed in front.

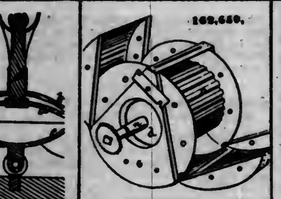


1. The plate A, having the lugs F F on its back, and concentric horizontal grooves O between curved vertical flanges a a on its face side, as and for the purpose set forth.

2. The standard B, of the shape described and shown, having the horizontally-eccentric grooves K and the curved vertical slots D, as set forth.

3. The combination of the plate A, standard B, cuff A, beam H, and wedges c c, all constructed and arranged, as and for the purpose set forth.

162,550. WASHING-MACHINES. William H. Hillson, Oshkosh, Wis. [Filed Oct. 21, 1874.]



The combination of the two cylinders c d and e f with the roller l, spiral spring k, the shaft s, and the case c b, substantially as described, and for the purposes set forth.

162,551. COMBINATION-LOCKS. Saml. Hipp, T. Wehagen, and Chas. Nickel, Cleveland, Ohio. [Filed Mar. 25, 1875.]

1. The spindle G, carrying-wheel D, springs e d, and nut L, in combination with the notched tumbler-wheels C E, dents o f, and frame F, in the manner substantially as described, and for the purpose set forth.

2. Index-wheel H, spindle G, wheels C D E, nut L, and frame F, in combination with the catch O, provided with shoulders P P, substantially in the manner as described, and for the purpose set forth.

162,550.



162,551.



162,552. WAGON-BOLTS. J. W. Hollenbeck, Aurorsville, Wis. [Filed Mar. 11, 1875.]

Brief.—By pressing bolt through sleeve and washer as far as the spring will permit, the feathers are liberated from the depressions in which they usually rest. The bolt may then be turned until the feathers come opposite the slots in the washer, and then easily withdrawn.

The lugs d on the end of bolt B, in combination with the washer F, with slots g and recesses h, and spring E and clip A, substantially as described.

162,552.



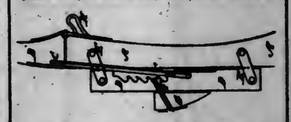
162,553. UMBRELLA-SUPPORTS FOR VEHICLES. Alex. J. Hood, Warren, Ill. [Filed Mar. 1, 1875.]

1. The grooved arm D and band F, in combination with clip E and disk C, as and for the purposes described.

2. The wrenches H and G', in combination with an umbrella-holder, as and for the purposes described.

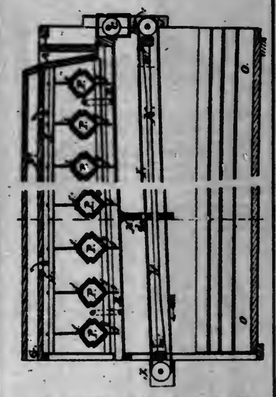
162,554. WAGON-JACKS. Wm. H. Horn, Santa Cruz, Cal. [Filed Mar. 6, 1875.]

Brief.—A bar, with ratchet-teeth on its back, works on links parallel to, and in front of, the post. A rod on each side attaches it by the middle to a lever hinged to the top of the post, which, in passing over its center of motion, brings also the extremity of the rods. A block in front of the bar is vertically adjustable by an embracing link and the ratchet.



An improved wagon-jack, formed by the combination of the standard A, the hinged lever B, the pivoted link or loop C, the sliding toothed bar D, the link F, the adjustable block G, and the stop H with each other, substantially as herein shown and described.

162,555. MIDDLINGS-PURIFIERS. Jarvis W. Houghtalin, Fairbury, Nebr. [Filed Apr. 22, 1874.]



1. In a middlings-purifier, the combination, with the screen, of the adjustable expansion-valves F, when constructed and arranged to operate substantially in the manner as and for the purpose specified.

2. The combination, with the screen or bolt of a middlings-purifier, of the brush H, provided with an abutment or bearing, substantially as described, and an endless belt, provided with a projection for imparting an intermittent reciprocating motion to the brush, for the purpose specified.

3. The belt I, provided with lug d, passing over pulleys J J in one direction, in combination with inclined planes w w', plate I, and brush H placed vertically or horizontally, as fully set forth.

162,556. CAR-BRAKES. Solon G. Howe, Detroit, Mich., assignor to himself and J. W. Cheney, same place. [Filed Feb. 20, 1875.]

1. The car-brake constructed of double shells, keyed to the axle, and sliding friction-cones fitting therein, and to be operated by

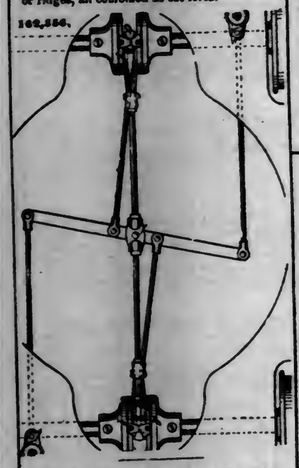
wedge-bail and spring-braces with intermediate lever-connection from the brake-wheels of the car, all combined substantially as and for the purpose set forth.

2. The sliding friction-cones, provided with friction-rollers at upper and lower parts, in combination with the sliding wedge-bail to act thereon, for pressing the levers against the shells, as set forth.

3. The combination of the center-pin of the upper friction-rollers of the cones, having oil-channel throughout its length, with the axle, for lubricating axle, cones, and rollers, substantially as described.

4. The spring-braces attached to tapering spring-brace block, having binding side flanges or ridges, all combined as set forth.

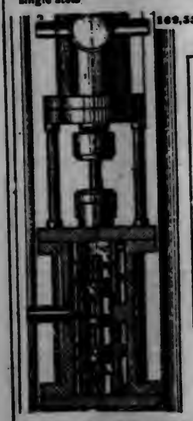
162,556.



162,557. STEAM PUMPING-ENGINES. Chas. H. Hudson, Chicago, Ill. [Filed Jan. 18, 1875.]

Brief.—The valve is operated by steam from the main cylinder. The eduction-pump valves open toward each other, and are guided by a single stem

162,557.



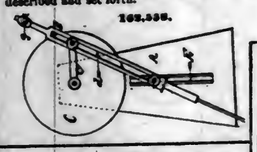
1. The three-disk valve J', having a stem extension at each end, the separate passages M M', through which induction and exhaust alternate, the chamber L', and the common parallel exhaust-passage m, communicating with said chamber by means of openings f f' of different sizes, all combined and arranged as shown and described, to operate as specified.

2. The water-eduction valves T T, having their stems extended, and one of them made tubular to receive the other, and the spring V encircling the same, as shown and described, for the purpose specified.

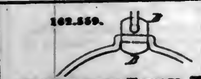
162,558. AUTOMATIC FANS. W. W. Hunting, Aiken, S. C. [Filed July 30, 1874.]

The clock-work A B C e, with a vibrating pendulum, D, having a slot, *d*, for the crank *e*, and a movable fulcrum, *d'*, adjusted in the ways E, the said pendulum carrying on its lower end a fan, F, and on its upper end an adjustable counter-weight, G, all constructed and arranged to operate in the manner herein described and set forth.

162,558.



162,559.



162,559. LANTERN-HANDLES. Theo. James, North Adams, Mass. [Filed Mar. 12, 1875.]

Brief.—The block turns on the bail, and the ring slides through the block.

The combination of the swinging and sliding block B with the bail C and ring A, substantially as herein described, for the purpose set forth.

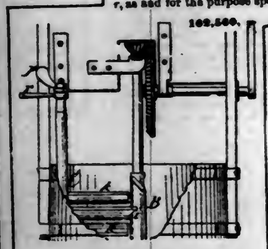
162,560. CHURNS. Melvin Jinoks, Wallace, assignor of one-half his right to F. M. Conley, Cohocton, N.Y. [Filed Sept. 21, 1874.]

Brief.—A revolving vertical dasher, its arms passing through the arms of a vertical shaft at the periphery, this side shaft movable upon its axis, so as to regulate the extent of influence of the revolving and fixed arms upon the mass in the different stages of the work.

1. The combination, with the revolving dasher B, of the breaker C, located on one side of the churn, and adjustable to different positions on its axis, as shown and described, and for the purpose specified.

2. The combination, with the breaker C, of the tenon-bearing *m*, thumb-nut *p*, and handle *r*, as and for the purpose specified.

162,560.



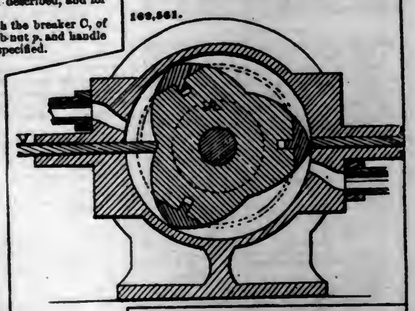
162,561. ROTARY ENGINES. Diodorus S. Jones, Shamokin, Pa., assignor of one-half his right to William H. Douty, same place. [Filed Mar. 19, 1875.]

Brief.—The slides are connected by intermediate levers to the rod carrying the tappet-plates which operates the valves.

1. The combination of the piston A, slides E E', and their connections, with the rod P, plate Q, tappets S, and teeth R and rods X, substantially as set forth.

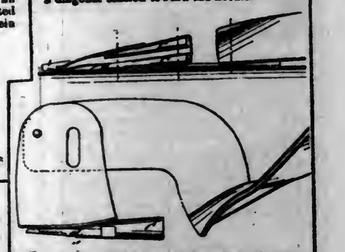
2. The auxiliary steam-chests W W', provided with the cut-off valves V V' and ports *f f' f'' f'''*, in combination with the rods X, tappets S, teeth R, and rod P, substantially as shown and described.

162,561.



162,562. BINDING ATTACHMENTS FOR SEWING-MACHINES. H. C. Jones, Brooklyn, N. Y. [Filed Mar. 12, 1875.]

Brief.—The lower guide-scroll of the binder has a tongue extending forward, that bears upon the binding and guides it, too. Attached to the upper scroll is a serrated spring, that bears upon the upper binding and holds it when the presser-foot is raised, and also gives a diagonal tension toward the needle.



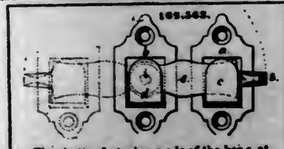
1. The binding attachment to sewing-machines composed of adjustable spiral rear guide and double tapering front guide, with fold-controlling tongue and serrated spring-arm, substantially in the manner and for the purpose set forth.

2. The combination, with the double tapering front guide, provided at the front end of the lower scroll with shorter side extension and forward-extending arm or tongue, of a serrated-top spring-arm, arranged on the upper scroll, substantially as and for the purpose described.

162,563. SHUTTER-FASTENERS. A. D. Judd, New Haven, Conn. [Filed Nov. 26, 1874.]

Brief.—A swinging bar, formed with projecting thumb-piece, is attached and swings upon its rivet, in such manner that the bar can be turned entirely over to the right or left, engaging with the hook upon the opposite plate, from which it cannot be drawn out laterally, on account of its projecting thumb-piece, the construction making it readily reversible.

162,563.



The shutter-fastening made of the bar *a*, attached at one end behind the hook *d* of the plate *b*, and swinging into the hook *c* of the plate *a*, and having the thumb-piece *e*, projecting at the outer end of the said bar *a*, substantially as and for the purposes set forth.

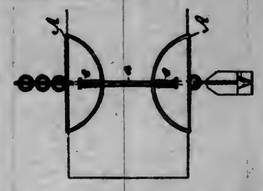
162,564. CURTAIN-FIXTURES. R. M. Judd, Brooklyn, N. Y. [Filed Nov. 26, 1874.]



The roller end *c*, made with elliptical recesses placed diagonally as specified, in combination with the fastened axis, stops *i* and spring curtain-fixture, substantially as set forth.

162,565. TICKET-CLASPS. Alphonso Le Roy and William M. Hunting, Little Falls, N. Y. [Filed Apr. 5, 1875.]

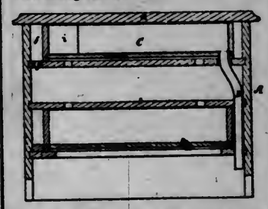
Brief.—Two bow-shaped flanged clamps, united by a rod, provided with springs, interposed between the headed ends of the rod and the bowed portion of the clamps. It is also provided with a guide, consisting of a tube and rod working within each other, the former attached to the upper clamp, and the latter to the lower clamp.



A ticket-holder consisting of the two clamping frames A, united by the rod *e*, having the springs *c* arranged thereon, with the pin P attached, all being constructed to operate substantially as described.

162,566. COMBINED PASTRY-TABLES AND REFRIGERATORS. Henry Magee, South Boston, Mass. [Filed Mar. 24, 1875.]

Brief.—The ice-box pivoted on its drip-pipe turns horizontally in and out beneath the stone cover of the commode. Air passes from the ice-box into adjacent chamber, and downward through the case.



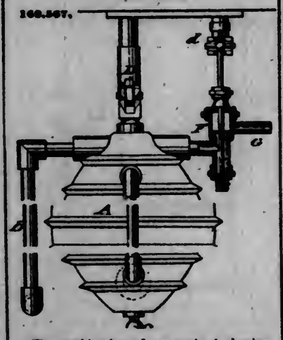
1. The ice-holder C, and its vertical pivotal drip-pipe D, fastened together, and applied to the partitioned cabinet A, viz, so that the pipe shall turn with the ice-holder therein, and answer the purposes of a pivot thereto.

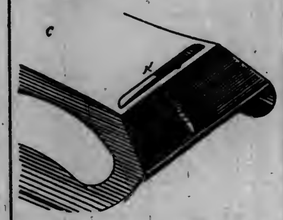
2. In combination with the stone top *a* and the ice-holder C, curved on one end *i*, as shown, the cabinet A, provided with one or more passages or holes, *g*, leading from the space *f*, contiguous to such end, to the compartment next beneath that in which the ice-holder is placed, all being as represented.

162,567. STEAM-TRAPS. James M. Meherg, Montreal, Canada, assignor to R. Patton, same place. [Filed Mar. 1, 1875.]

Brief.—When a sufficient amount of condense-water has accumulated in the trap to overbalance the counter-weight, the trap falls, causing the valve-seat to recede from the stationary valve, and allowing steam to enter the trap and force water to the boiler.

162,567.





1. The frame A, having the handles B and horizontal surface or base C, substantially as shown and described.

2. The combination of the clamp H, having the ledge L, screw I, and file-cut knife E, with the inclined part D, substantially as specified, and for the purposes set forth.

162,568. PIANO-STOOLS. Thomas Miller, Boston, Mass. [Filed Sept. 10, 1874.]

Brief.—The stool-top is pivoted to a central standard, and also to three supporting-arms, two of which are pivoted to a sleeve encircling the standard, and the other arm has a spring-catch connection at its lower end with said sleeve. A lower sleeve bearing a pawl, which engages with a ratchet on the standard, also turns with the standard on the leg-frame.

162,569.



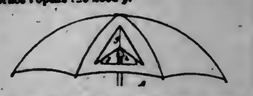
1. The combination, with the seat A and hinged standard C, of the hinges K K N, braces I I J, and collar M, substantially as and for the purpose specified.

2. The hinged brace J, provided with the spring O and rack R, in combination with pin P and projecting piece M', substantially as and for the purpose specified.

3. The combination of the socket B, tube E, sleeve F, pin F', and standard C, as and for the purpose specified.

162,570. UMBRELLAS. Hosea B. Mitchell, Boston, Mass. [Filed Nov. 13, 1874.]

Brief.—When the umbrella is raised the brace *i* opens the hood *g*.



1. An umbrella or a parasol, A, provided with one or more lookout openings or holes, *f*, and with a folding hood, *g*, to each, all being arranged substantially as and for the purpose as specified.

2. The combination of the hood-expander *h* and its brace *i* with the umbrella or parasol A, provided with the lookout-opening *f* and its hood *g*, all being arranged and applied substantially in manner and to operate as set forth.

162,571. ASH-SIFTERS. W. Montgomery, Chicago, Ill. [Filed Feb. 13, 1875.]

Brief.—On one side of the sieve is a channel, through which cinders are passed to the ash-box below, after the sifting is completed.

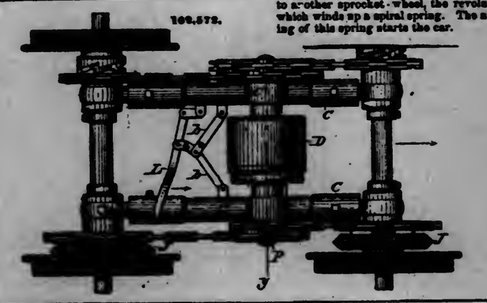


The spout or channel F in the sifter C D, communicating with the ash-box A, substantially as and for the purpose herein shown and described.

162,572. CAB-STARTERS. C. F. Murdock, Detroit, Mich. [Filed Apr. 19, 1875.]

Brief.—Laterally-sliding bars force a V-shaped brake-block against inner side of wheel. To the block is rigidly attached a sprocket-wheel, which is connected by a chain to another sprocket-wheel, the revolution of which winds up a spiral spring. The unwinding of this spring starts the car.

162,572.



1. The combination of concave flange J, the friction-blocks c, pivoted levers f, and laterally-sliding disk, all substantially as and for the purpose set forth.

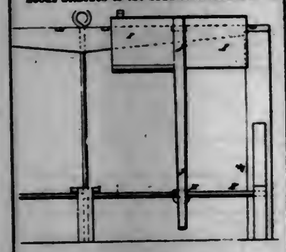
2. The combination of the bars C, capable of lateral motion with the levers L and A, car-axles, brake, and clutch, substantially as set forth.

3. The shaft P, in combination with the drum D, spring A, and friction-clutch for preventing the spring from unwinding, all substantially as set forth.

4. The combination of the sliding bars C, with the sprocket-wheels and chains, the drum, with its spring and clutch, the friction brakes and clutches, and the axles and wheels of a car, all substantially as and for the purpose set forth.

102,572. HOD-ELEVATOR. Wm. Murphy, New York, N. Y. [Filed Nov. 21, 1874.]

Brief.—Rods are attached to the inner sides of the frame-work of the elevator, to receive hooks attached to the handles of the hods.



1. The rods F, attached to the frame-work of the elevator in such positions as to be over the inner part of the side bars of the base of said elevator-frame, to receive the hooks K, attached to the handles J of the hods I J, substantially as herein shown and described.

2. The hooks K, attached to the handles J of the hods I J, and, whether stationary or swiveled, to adapt the hods to be hung upon and supported by the rods F, attached to the frame-work of the elevator, substantially as herein shown and described.

102,574. MILK-COOLER. H. S. Nurrey, Ames, N. Y. [Filed Jan. 20, 1875.]



In milk-coolers the outlet-tube C, consisting of annular socket $g\,g'$, flanged collar $h\,h'\,h''$, threaded and flanged tube i, and the screw-cap extending up inside of pan, in combination with a bottom-perforated water-tank and milk-pan, A B, as shown and described, whereby the cover-cap and binding-tube may be more readily removed.

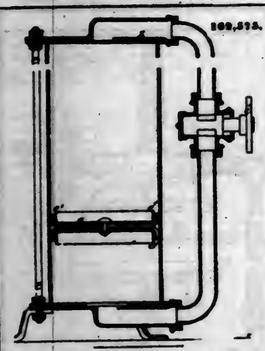
102,575. LIQUID-MEASURER. R. A. Prentice, London, England. [Filed Dec. 16, 1874.]

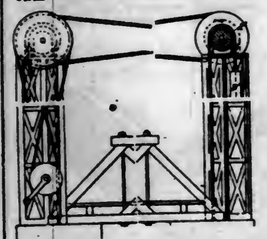
Brief.—A cylinder with the passages f at each end, for allowing liquids to enter and pass out through the four-way cock by the pressure of the piston, which is moved from end to end by the liquid, which enters at the ends alternately, whereby a certain known quantity is measured.

The arrangement, substantially as described, of apparatus to be used in drawing off water and other liquors, and in measuring the quantities drawn off, such apparatus consisting of a cylinder or vessel, with inlet and outlet passages, and a piston, which, when at rest at the end of the stroke, is held by the pressure upon it up to a surface, and so closes the way to the outlet independently of any packing with which the piston may be provided, to keep it approximately water-tight as it traverses from end to end of the cylinder or vessel in which it operates.

102,576. LIFT-BRIDGE. Andrew J. Post, Jersey City, N. J. [Filed Aug. 26, 1874.]

Brief.—A vertically-sliding bridge, guided by columns at its four corners, operated by flexible connecting-belts extending across the towers, driven by a windlass and crank. Counterbalancing-weights are arranged in the towers, and connected to the bridge. Safety-gates are operated by the same shafts and belts.



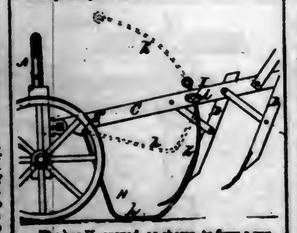


1. The flexible connecting belt or belts J, extending across between the towers on the opposite sides of the canal, in combination with the lifting bridge M, balancing cords or chains $b'\,b''$, and the power applied at the base of one of the towers, all substantially as herein specified.

2. In combination with the lifting bridge M, the safety-gates G H, operated by the same shafts, $b\,c$, which operate the bridge, as and for the purposes herein specified.

102,577. CULTIVATOR. Wm. H. Robertson, Buda, Ill., assignor of two-thirds his right to Bailus Ford and A. H. Gunn, same place. [Filed Jan. 6, 1875.]

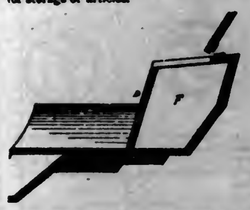
Brief.—A curved bar or rod is hinged to the front end of the beam. Its rear arm passes through a keeper, and is held by a set-screw. It may be let down to serve as a runner for transporting the plows.



The bar H, curved, as shown, to form a runner, A, and an adjusting-handle, h', arranged to operate with the plow-beam C, symbolt I, axle A, and wheels B; substantially as described, and for the purpose specified.

102,578. WAGON-BODIES. Saml. Rowell, Amesbury, Mass. [Filed Feb. 4, 1875.]

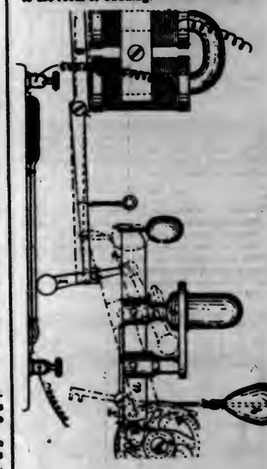
Brief.—Body extended back to form box for storage of articles.



In a carriage-body, the combination of the seat-back D with the body-back, extended beyond it and forming box F, substantially as set forth.

102,579. ALARMS AND FIRE-EXTINGUISHERS. Solomon Sanderson, Huddersfield, England. [Filed Apr. 14, 1875.]

Brief.—When the thermometer takes effect by undue heat, the mercury rises and comes in contact with one end of the circuit-wire, the other end being in contact already. The armature of the magnet is drawn down, and the percussion-lever falls, striking the horizontal lever and releasing the wheel, which allows the weight to descend and opens the valve, admitting steam or other suitable fluid to the room or building.



The cock or valve J', weighted lever a, wheel K, and weight q, in combination with the holding-catch T, percussive lever I, and lever N, moved by or through the expansion of a thermostat, substantially as and for the purposes set forth.

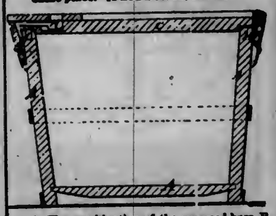
102,580. CORSETS. H. A. Schandevyl, East Saugus, Mass. [Filed Feb. 2, 1875.]

1. In combination with the two portions A A' of a corset, provided with a shoulder-strap, C or C', to each of them, as set forth, the two intermediate crossed straps D D', arranged above the said portions A A', and applied so as to connect the said two shoulder-straps, in manner as set forth, or cause each of them to be connected with both of said portions A A', all substantially as specified.

2. The two corset shoulder-straps C C, provided with the oblique connecting-straps D D', arranged and connected with them as described.



102,580. BUTTER-PACKAGE. H. B. Scott and Dennis W. Granger, Franklin, N. Y., assignors to themselves and A. J. Dibble, same place. [Filed Dec. 12, 1874.]



1. The combination of the recessed bars E and spring-catches G with the box A, recessed cover C, and bars F, substantially as herein shown and described.

2. The combination of the sliding bolts H with the spring-catches G, the recessed cover C, and the bars F, substantially as herein shown and described.

3. The combination of the rubber blocks I with the edge of the box A, and with the recessed cover C, the spring-catches G, and the sliding bolts H, substantially as herein described.

102,582. MAGAZINE FIRE-ARMS. Fredk. M. Shinn, Leroy, Kans. [Filed Aug. 10, 1874.]

Brief.—The chambers of the revolving cylinder are open at the sides, and receive the cartridges from the magazine under the barrel. The ratchet which rotates the cylinder is attached to the ejector, which works vertically in a guide in rear of the cylinder, and is operated by a projection on the guard-lever when the breech is opened. A gate is hinged beneath the cylinder-chamber, to prevent the cartridges dropping out during the rotation of the cylinder.

1. The combination of the ejector with the revolving chambered cylinder, having openings in the sides to the chambers.

2. The combination of the guard and its projection X with the ejector, in the manner described.

3. The combination of the mainspring, the lever N, the presser T, and rock-lever U, to hold the guard in position, as specified.

4. The pawl Y for turning the cylinder, connected to the ejector to be operated by the action of the projection X of the guard, substantially as specified.

5. The magazine-openings b in the breech, and the door a d for closing them, arranged and combined substantially as specified.

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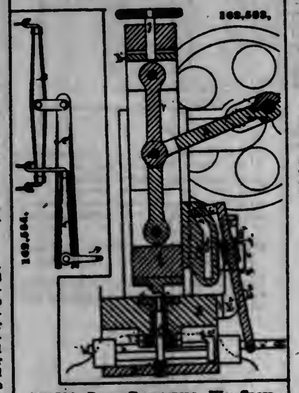
1. The adjustable connection B^1 and its screw g, in combination with toggle-bars P and R, and hammer-head D^1, and its die c, and with the side hammers M by means of arms L and toggle levers o n p, substantially as described.

2. The adjustable slide and pawl-operating mechanism, consisting of the cam E^1 with the cam-groove g^1, the rocking-lever D^2, having ears d^1, carrying a roller-stud, 4, in the said cam-groove, and connected to the slide b by a link, d^2, and a stud, 4, and adjustable to vary the motion of the slide by a box, g^1, on the latter, and by similar boxes n on horns E^2, and with stops e^1 in the slide and the horns, substantially as described.

3. The stops e^1, in combination with the adjustable clamping-boxes g^1 and n, and with the lever D^2, and horns or supports E^2, substantially as described.

4. The spring-dog g^1, having a spring, f^1, in combination with the slide b, pawl n, and ratchets f and A, and die-socket d, and operating substantially as described.

102,583. DRAFT-EQUALIZERS. Wm. Snow, Waverly, Ill., assignor to himself and Jos. H. Challiss, same place. [Filed Nov. 30, 1874.]



The combination, with the bar A and the single-trees B attached to its ends, of the single-tree C, pivoted upon the middle portion of said bar by means of clevis D, and the traces arranged to produce a three-horse equalizer, as set forth.

102,585. FIRE-EXTINGUISHERS. Joan H. Steiner, Albany, N. Y. [Filed Apr. 10, 1875.]

Brief.—A case containing supply to renew a fire-extinguisher. Two of the tubes contain alkaline solution, and two contain the necessary acid.

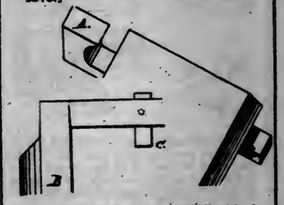
A case, substantially such as described, for containing chemicals, and adapted to be used in connection with a fire-extinguisher, as set forth.



102,586. MODES OF INLAYING JET WITH METAL. Wm. Stephens, New York, N. Y. [Filed Oct. 31, 1874.]

The process of inlaying jet with metal, consisting in the application of a guard-plate perforated with the desired design to the article of jet, the bursting of a matrix in the jet by heated dies, which are passed through the guard-plate perforations, and the application of cement and an ornamental device immediately after the removal of said instruments, all substantially as set forth.

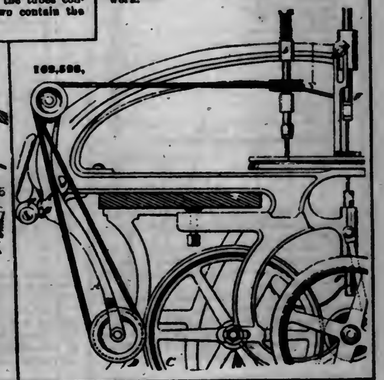
102,587. IRONING-TABLES. Geo. H. Thompson, Georgetown, D. C. [Filed Apr. 12, 1875.]



The combination of the board B with the extended notched cross-pieces A A and the frame B, with a broadside beveled or rounded upon its outer edge, with the buttons C and D, substantially for the purpose set forth.

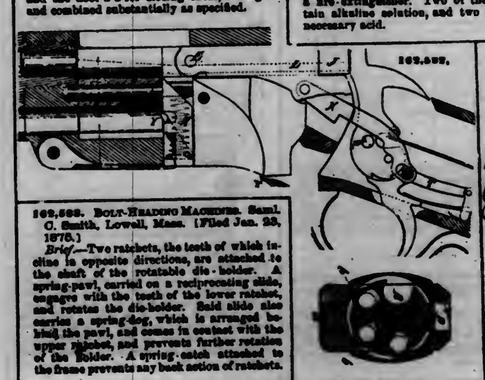
102,588. SCROLL-SAWING MACHINES. Chas. N. Trump and Saml. N. Trump, Wilmington, Del. [Filed Jan. 18, 1875.]

Brief.—A boring device is attached to the machine for the purpose of facilitating the work.



102,589. BOLT-HEADING MACHINES. Saml. C. Smith, Lowell, Mass. [Filed Jan. 23, 1875.]

Brief.—Two ratchets, the teeth of which incline in opposite directions, are attached to the shaft of the rotatable die-holder. A spring-pawl, carried on a reciprocating slide, engages with the teeth of the lower ratchet, and rotates the die-holder. Said slide also carries a spring-dog, which is arranged behind the pawl, and comes in contact with the upper ratchet, and prevents further rotation of the holder. A spring-catch attached to the frame prevents any back action of ratchets.



1. The combination of clamp S, screw T, bar U, having faces W, and nut V, as and for the purposes set forth.

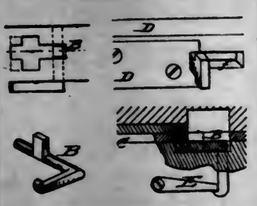
2. The lever E and eccentric F, in combination with piece A, having pin G, pulley D, and wheel C, all as and for the purposes specified.

162,890. RAILWAY-RAIL-JOINT FASTENINGS. G. C. Vail, Madison, Ind. [Filed Oct. 13, 1874.]



The improved fastening for railway-rail joints, consisting of the fish-plates B B, perforated with rectangular holes, having their upper or lower faces beveled, as at *a a*, in combination with the wedges C C, beveled or tapered, as described and shown, and driven in back to back, one above the other, as shown, the points *b b* being bent or clinched over the heads, all substantially as specified.

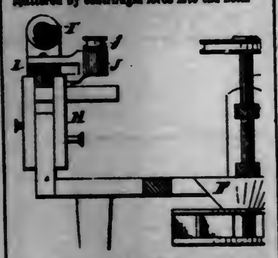
162,891. VESSELS-SEAT LOCKS. Albert B. Van Horn and Jos. Wideman, Sebewaing, Mich. [Filed Mar. 13, 1875.]



The combination, with a T-shaped lug attached to and projecting from the recessed seat block or riser D, of the pivoted dog B and pawl or locking device E, both attached to the side board A, as shown and described.

162,892. GRAIN-DISTRIBUTERS. J. Walker, New York, N. Y. [Filed Mar. 19, 1875.]

Brief.—A wheel in a vertical axis with a hopper is suspended in the hatchway of a ship. Rotation being given by belting passed over adjustable pulleys, the grain received is scattered by centrifugal force into the hold.



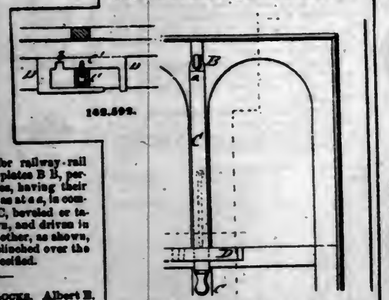
1. The combination of the movable and pivoted frames H I J, as and for the purposes described.

2. The adjustable and removable framework or support C C, for supporting the shaft D, in combination with the wheel E, substantially as described.

3. The device or mechanism herein described for distributing grain in the holds of ships, consisting of the wheel E, hopper F, frame C C, frames H I J, and pulley G F J, all constructed, arranged, and adapted to operate as and for the purposes described.

162,893. HAIR-FASTENERS. J. S. Wallace, Philadelphia, Pa. [Filed Mar. 1, 1875.]

Brief.—A pendent rod pivoted to a projecting bracket near the top of the upper sash, for raising and lowering the same, plays in a suitable guide or socket attached to the meeting-rail, and may be detached through a suitable recess. There is also a spring, similar to that commonly used in umbrella-sticks, attached to the pendent rod, which serves to fasten down the meeting-rail of the lower sash.



162,893.

The combination of rod C, hung to bracket B, and having spring C', with the guide or socket D, attached to upper cross-piece of the lower sash, and having an opening, *d*, and notched recess *b*, all constructed and arranged substantially as and for the purpose specified.

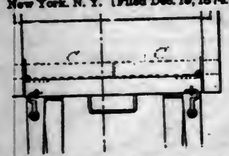
162,894. LAMP-EXTINGUISHERS. M. Waterbury, Mason City, Iowa. [Filed Mar. 6, 1875.]

Brief.—The horizontal lever is provided with two arms, connected, respectively, with weighted cap and safety-ball.



The combination, with a lamp-burner, of the hinged extinguisher-cap J, a weight, M, attached thereto by an arm; the link I, the rod G having arms H F, the ball-weight A, its chain, and a bracket-support, as shown and described, to operate as specified.

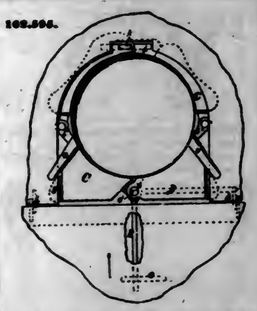
162,895. NURSERY-CHAIRS. C. A. Watson, New York, N. Y. [Filed Dec. 19, 1874.]



As a new article of manufacture, a nursery-chair constructed of a seat-board with central apertures, supported on hinged legs, and provided with hinged side boards hold open by a removable brace-piece, combined substantially in the manner and for the purpose set forth.

162,896. STOVE-PIPE SHELVES. Charles R. Woodruff, Carlton, N. Y. [Filed Feb. 16, 1875.]

Brief.—The collar or clamp is provided with jointed links, the rear sections interlocking and fastened with a wedge-shaped key, whereby the collar adapts itself to pipes of different shapes and sizes.



162,896.

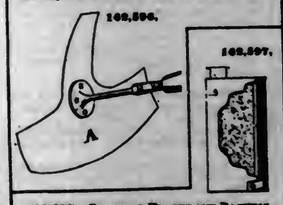
1. In a stove-pipe shelf, the collar or clamp C, provided with joint *i*, links *l*, and key *k*, for the purpose of adapting the clamp to pipes of different size, as described.

2. In a stove-pipe shelf, the collar or clamp C, provided with joints *i*, *i'*, and *i''*, the rear sections terminating in slotted interlocking links *l*, in combination with the key *k*, for the purpose of adapting the clamp to pipes of different shape, as described.

162,896. HOES. Allen S. Acker, Lockport, N. Y. [Filed June 29, 1874.]

Brief.—The hoe has a wide blade upon one side, and a narrow one upon the other, with a cutting-edge upon all sides. The shank of the handle has a tapering screw, that enters the handle. By turning the screw into the handle it is constantly tightened.

The hoe described, composed of the blade A, having six cutting sides, the shank B, having a boss at one end, by which it is secured to the blade, and a screw-thread at the other end, by means of which it is secured to the handle, substantially as described and shown.



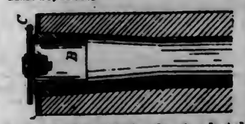
162,896. **162,897.**

162,897. COMBINED FLASKS AND PACKING-BOXES. Thomas R. Almond, Fitchburg, Mass. [Filed Feb. 23, 1875.]

Brief.—For containing traveler's lamp-stove and liquid fuel therefor.

The combined flask and box A B, having two or more compartments, one for containing liquids, and one for containing the apparatus in which said liquid is to be burned, for the purposes herein specified and set forth.

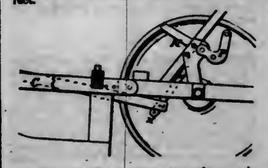
162,898. PUMP-VALVES. Ralph V. Bailey and Thos. B. Bailey, Mendota, Ill. [Filed Mar. 26, 1875.]



In combination with the plug A, adapted to fit the lower portion of a pump-barrel, having on its inside the metallic ring B, forming a part of the bore of said plug, provided with the flanges *b* and a web extending across its top, to which a flexible flap, C, is secured at the intersection of said web, its outer edge resting on the metallic flanges, substantially as described and shown, for the purposes set forth.

162,899. SEEDING-MACHINES. Joseph O. Barlow, Quincy, Ill., assignor to the Vandiver Corn-Planting Company, same place. [Filed Sept. 15, 1874.]

Brief.—The wheel and runner frames being flexibly connected, the runners are elevated or depressed by a connecting-rod attached to the rear end of the tongue, and its opposite end to a double crank-lever fastened to the standard of the driver's seat, to be operated by his foot.



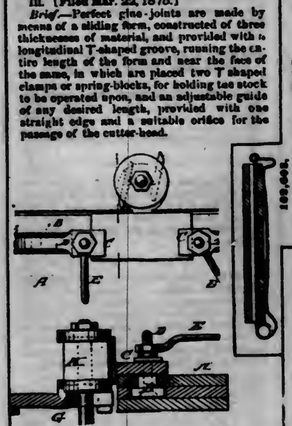
1. In a seed-planter, having two frames pivoted together, one supported by wheels, and the other having the furrowing mechanism, the crank-shaft M, having the levers N and P, substantially as and for the purpose set forth.

2. In a seed-planter, having the pivoted frames, the combination of the pitman H, crank-shaft M, and levers N and P, as and for the purpose expressed.

3. In a seed-planter, having the pivoted frames, the crank-shaft M L, lever N, bent lever P, and foot-rests *m* and *l*, constructed and arranged substantially as specified.

162,900. MACHINES FOR MAKING GLUE-JOINTS. Orsmel C. Baynes, Champaign, Ill. [Filed Mar. 22, 1875.]

Brief.—Perfect glue-joints are made by means of a sliding form, constructed of three thicknesses of material, and provided with a longitudinal T-shaped groove, running the entire length of the form and near the face of the same, in which are placed two T shaped clamps or spring-blocks, for holding the stock to be operated upon, and an adjustable guide of any desired length, provided with one straight edge and a suitable orifice for the passage of the cutter-head.



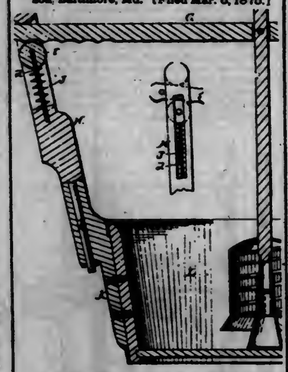
The combination of the sliding form A, provided with T-shaped groove *a*, clamps B C D E, and the guide G, all constructed substantially as and for the purposes herein set forth.

162,901. ESCRITOIRES. Alden Batchelder, Reading, Mass. [Filed Apr. 2, 1875.]



As my improvement in the escritoire, the cylindrical segment *k* combined with the lid *a*, and arranged with its pivots *l l*, and the chamber bottom or shelf *s*, all substantially as specified.

162,902. WASHING-MACHINES. J. W. Batson, Baltimore, Md. [Filed Mar. 6, 1875.]



The combination, with a circular tub, L, of the support K, attached to the exterior thereof, the standard H swiveled thereto, and provided with the bearing-block I, which slides in the slotted standard H, spring J, and rod *d*, and the corrugated lever G, connected to a rounder-stem, *a*, all substantially as set

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162,903. HAIR-CURLING DEVICES. Chas. W. Baxter, Camden, N. J. [Filed Apr. 10, 1875.]

A hair-carrier, composed of a tube, A, and spring-retainer B, constructed and applied to the tube, all substantially as and for the purpose set forth.

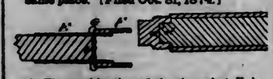
162,903. **162,904.**

162,904. SPRING BED-BOTTOMS. H. Beach, Warsaw, Ill. [Filed Dec. 31, 1874.]

Brief.—The bed-bottom is stretched or tightened as the spring-bars are forced down into the inclined seat-irons. The spring-loops hold the slats in place on the wire rods.

The combination of the spring-bars A, inclined seat-irons B, wire rods C, slats D, and the holding-loops E, substantially as and for the purpose set forth.

162,905. SOCKET-JOINTS FOR WHIP-CANES. John A. Beckler, Philadelphia, Pa., assignor of one-half his right to Wm. Mitchell, same place. [Filed Oct. 31, 1874.]

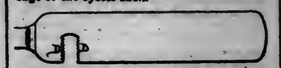


1. The combination of the tip-socket E, internally-threaded connecting tube or ferrule F, and butt-socket D, said tip-socket having its end inclosed by the combining-tube, and said butt-socket being constructed with a threaded neck, *d*, and a tenoned end, *d'*, the former fitting the threaded portion of the connecting-ferrule, and the latter entering the inclosed end of the tip-socket, substantially as shown and described, and for the purpose set forth.

2. In a whip-tip having the end of its core inserted in a tubular socket, E, and the latter covered by the braiding, the ring G, protecting the end of said braiding, in combination with the connecting-ferrule F and butt-socket D, constructed substantially as shown and described.

162,906. OYSTER-KNIVES. C. W. Berger, Philadelphia, Pa., assignor to E. Brunner and A. B. Clarke, same place. [Filed Oct. 9, 1874.]

Brief.—Jaws with inclined serrated faces are formed in the handle, and of the same piece with it, to take hold of and break off the edge of the oyster-shell.



The oyster-knife having serrated jaws D in its handle, substantially as and for the purpose set forth.

162,907. ROTARY PAPER-CUTTERS. C. G. Biedinger, Cincinnati, Ohio. [Filed Mar. 29, 1875.]

Brief.—Blade on upper cylinder encounters beveled gullies on lower blade, and forces the blade sidewise against a spring, which holds the two together to make a shear-cut. On the completion of cut the upper knife strikes a pivoted lever, which holds the lower knife back against the spring, and prevents friction between the two after the cut is made.

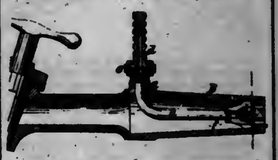


1. The roll A, carrying the fixed radially-disposed blade *a*, in combination with the roll B, provided with the radially-disposed blade *b*, which has side guides *b'*, and rests against springs C, permitting it to move laterally, substantially as and for the purpose specified.

2. The combination of roll A, provided with blade *a*, roll B, carrying laterally-moving blade *b*, spring C, and compressing-lever D, substantially as and for the purpose specified.

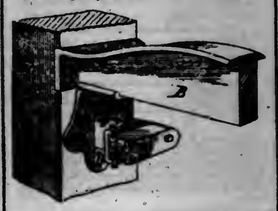
3. The combination of roll A, provided with blade *a*, roll B, carrying laterally-moving blade *b*, guides *b'*, spring C, and compressing-lever D, substantially as and for the purpose specified.

162,908. FAUCETS. John G. L. Boettcher, Brooklyn, N. Y. [Filed Mar. 24, 1875.]



The combination, with the screw-threaded projection *e* on the shank B, of the corrugated nipple *d*, the coupling-nut *c*, connecting the nipple with the projection, the vent-pipe *c*, and the valve *g*, all constructed substantially as shown and described.

162,909. CHEESE AND WINE PRESSES. Jas. S. Bogle, Springfield, Ohio, assignor to Thomas, Ludlow & Rodgers, same place. [Filed Apr. 6, 1875.]



1. The brackets D D, having lugs *d d* attached to the posts of a fruit-mill, substantially as and for the purpose specified.
2. In a fruit-mill frame, the brackets D D, provided with flanges *d' d'*, substantially as and for the purpose specified.
3. In combination with the posts A A and press-beam B, the brackets D D, acting as braces to the mill and supports for the grinding-frame, substantially as described.

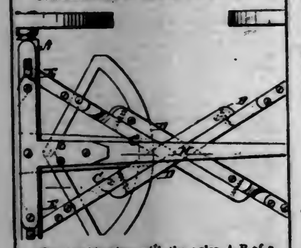
162,610. THILL-COUPLINGS. Henry K. Boswell and David Immel, Cincinnati, Ohio. [Filed Mar. 25, 1875.]

Brief.—Thill fastened by detachable pin, ordinarily held in place by spring.



1. The combination of socket A a B, coupling-pin G, and spring H, for attachment of the shanks C c D or N a O, substantially as set forth.
2. In combination with the socket A a B, and the coupling-pin G, the ring or staple *h*, shanks C c and N a O, as set forth.

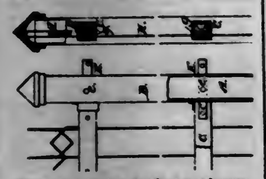
162,611. WAGON-COUPLINGS. R. Bowman, Terre Haute, Ind. [Filed Mar. 30, 1875.]



The combination, with the axles A B of a four-wheeled wagon, of the cross-couplings C D C D, made adjustable and connected to the axles by means of connections E E, substantially as and for the purposes set forth.

162,612. IRON-CLAD FENCES. J. A. Bowyer, Huntsburg, Ohio. [Filed Mar. 8, 1875.]

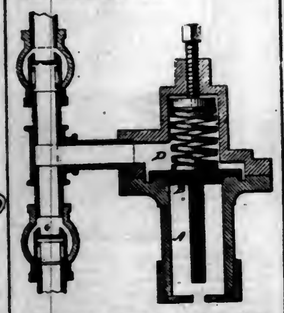
Brief.—Posts and stringers are of wood incased by sheet metal. The metal coverings of the stringers are extended on one side, and embrace metal strips, which are secured to the sides of the interior wooden rails, thus forming longitudinal spaces for the wire pickets, which extend through the metal coverings.



The posts A having the sheet metal covering B, the rails C with their covering D and strip *g*, the metal pieces E E, and the pickets H, the whole constructed and combined as shown and described, and for the purpose set forth.

162,613. WATER-ELEVATORS. Abel Breer, Saugatuck, assignor of one-half his right to F. L. Smith, New Haven, Conn. [Filed Mar. 9, 1875.]

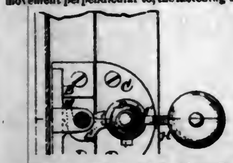
Brief.—Steam is admitted to the chamber below the valve in a small jet. When the pressure counterbalances the spring-pressure, the valve suddenly rises, steam escapes, expels the water before it is condensed, (the valve having reseated,) producing vacuum, and refilling the pipes from below. Process automatically repeats itself.



The steam-chamber A, provided with the inlet C, and combined with the piston B, chamber D above, the inlet and outlet valves to and from said chamber D, and the counter-balance upon the said piston, substantially as described.

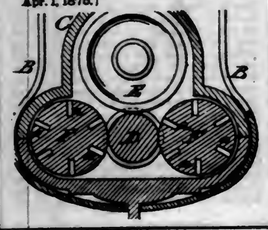
162,614. FASTENERS FOR THE MEETING-RAILS OF SASHES. Elias K. Brockeridge, West Meriden, Conn. [Filed Mar. 17, 1875.]

Brief.—The details of construction are sufficiently pointed out in the claims, and constitute the invention; the locking-lever moving with, but having likewise an independent movement perpendicular to, the fastening-arm.



1. The combination, with the plates C and E, of the fastening-arm G, the locking-lever H, moving with said arm but having an independent movement perpendicularly thereto, and the spring-arm *w*, substantially as shown and described.
2. The combination, with the base-plate C, of the lip or stud *h'*, on the lever H, serving as a fulcrum for the latter, substantially as shown and described.
3. The combination of the notches or holes in the plate C, and the projection *h'* on the lever H, substantially as described.

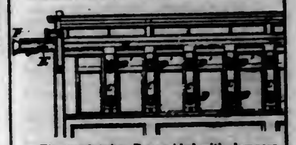
162,615. CAR-AXLE BOXES. Russell Brewer, New York, N. Y., assignor of part of his right to C. M. Morrison, A. J. Dunning, and W. A. Sherwood, St. Louis, Mo. [Filed Apr. 1, 1875.]



1. The car-axle box C in combination with a strap-frame, B, and pivots *b b'*, which allow said box to oscillate horizontally, as and for the purpose set forth.
2. The combination of bearing-roller E with journal D below it and rollers F F on opposite sides of said journal, and having the oil-cups *a* in their peripheries, the end roller *h*, and bearing *g*, substantially as and for the purpose set forth.
3. The roller *h* in combination with journal D and bearing *g*, substantially as and for the purpose set forth.

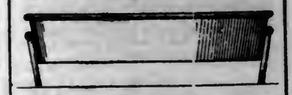
162,616. VENTILATING CARS AND BUILDINGS. Johnson Briggs, Toronto, Canada, assignor of one-half his right to Wm. S. Finch, same place. [Filed Feb. 1, 1875.]

Brief.—A trunk-tube running the whole length of the car, provided with dampers and air-catches furnished with a covering of metallic or textile mesh-work, and connecting with a series of branch pipes having registers.



The trunk-tubes B provided with dampers F, and air-catches F, furnished with a covering of metallic or textile mesh-work, and connecting with a series of branch pipes, C, having suitable registers D, the whole arranged and applied to a car, building, &c., in the manner and for the purpose set forth.

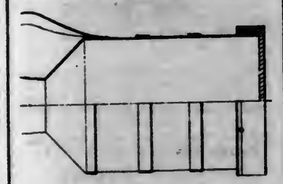
162,617. BAKE-PANS. A. Brightman, New Bedford, Mass. [Filed Apr. 9, 1875.]



A baking-pan provided with handles constructed to be converted into feet for the pan, whereby the latter may be supported by said handles in an elevated position above the stove, substantially as and for the purpose described.

162,618. CANS. Francis D. Brodhead, Boston, Mass., assignor to himself and Albt. F. Lauten, same place. [Filed Mar. 6, 1875.]

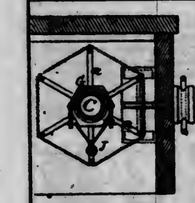
Brief.—The removable bottom is cup-shaped, and its rim constructed with oblique internal grooves, that match with projecting studs arranged on the outer periphery of the head attached to the lower edge of the can-body.



A can, formed with a breast and contracted mouth at one end, and provided at the opposite end with a separate and removable bottom that fits and connects with the can-body, substantially in the manner and for the purpose set forth.

162,619. SCREW-PROPELLERS. John Collie Browne, London, England. [Filed July 16, 1874.]

The combination of the two sets of blades or independent screws *a* and *b*, having the like faces of the blades arranged in reverse order, substantially as shown and described.





162,620. MIDDLINGS-PURIFIERS. S. M. Brue, Martinsburg, W. Va. [Filed Apr. 3, 1875.]

Brief.—Shield covering upper portion and sides of perforated reel-shaft prevents any of the flour carried up by the ribs of reel in its revolutions from falling on the shaft, and being drawn off through the perforations thereof by the suction-blast.

1. The combination, with a hollow perforated reel-shaft, of a shield, G, arranged to overlap the upper portion of the shaft, substantially as described.
2. The combination, with a perforated reel-shaft, C, and a shield, G, of weights J, substantially as and for the purpose set forth.
3. The enlargements *c' c'* at the ends of the hollow perforated reel-shaft C, in combination with the loaded shield G, substantially as described.

162,621. WEATHER-STRIPS. Gustav Burkhardt and Charles E. Harden, Homer, Ill. [Filed Mar. 9, 1875.]

Brief.—The weather-strip proper is so pivoted to a metallic strip attached to the door that by the opening of the door, and releasing it from the pressure bar or strip, the back portion will fall, thus elevating the front edge without the use of springs.

1. In a weather-strip, the plate B, hung to the inclined plate A, fastened to the door, and having the upwardly-curved portion *d*, substantially as and for the purpose set forth.
2. The plate B *d*, in combination with the inclined plate A and inclined projection *c*, substantially as and for the purpose set forth.



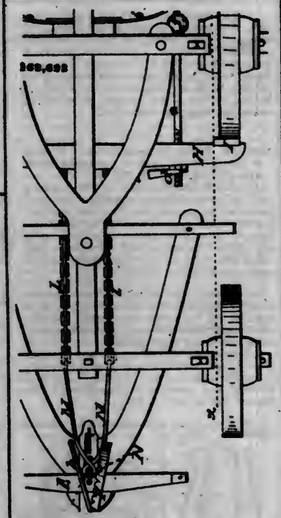
162,622. BROOM-HANGERS. Jacob Cain, Altoona, Pa. [Filed Oct. 16, 1874.]

Brief.—The holding-ring has a central biting-edge, formed by double bevels on a portion of its inner periphery, and angular biting-edges on the remaining opposite portion of said ring. It is also provided with a tangential pivot-arm, whereby broom-handles of different sizes are securely suspended in a vertical position.

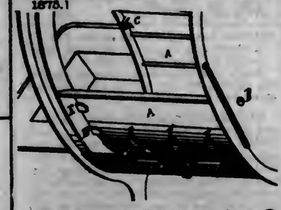
The broom-hanger consisting of the eye or ring A, having the central biting-edge *b*, formed by double bevels on one side, the angular holding-edges *c* on the opposite side, and provided with the tangential pivot-arm B, substantially as herein set forth.

162,623. WAGON-BRAKES. Jacob C. Carhart, Ashurstville, assignor of one-half his right to J. D. Skinner, Martin's Creek, Pa. [Filed Mar. 20, 1875.]

1. The combination of the brake-bar H, adjustable connecting-rods *d e*, and springs *b f*, substantially as and for the purpose set forth.
2. The combination of the brake-bar H, chain or chains L L, clevis M, and whiffletree B, substantially as and for the purpose set forth.
3. The combination of the lever F and ratchet-bar P with the whiffletree B, clevis M, chain or chains L L, and brake-bar H, substantially as and for the purpose set forth.

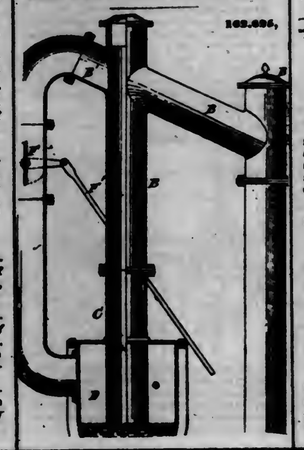


162,624. HEATING-STOVES. Chauncey H. Castle, Quincy, Ill., assignor to Comstock, Castle & Co., same place. [Filed Jan. 23, 1875.]



The plates A provided with the flanges F and F', in combination with a stove having apertures of a suitable size to permit the removal of the plates, and provided with the cars E and C, and the plates held in position by the bolts B.

162,625.



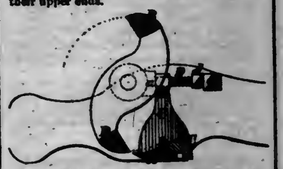
162,626. GAS APPARATUS. J. D. Caldwell, Georgetown, D. C. [Filed Apr. 12, 1875.]

Brief.—Utilizes the nozzle of the bridge to aid in forming a direct conduit for the gas from the retort into the hydraulic main without passing through the liquid seal.

The combination, with the dip-pipe C and bridge B, having nozzle B', of the branch pipe, leading from said nozzle to the upper portion of the main D, and controlled by a valve, F, substantially as and for the purpose specified.

162,627. LAWN-MOWERS. Thos. Coldwell, Newburg, N. Y. [Filed Apr. 10, 1875.]

Brief.—The cutter-bar is attached to vertical arms pivoted to the sides of the frame, and adjustable by screws passing through their upper ends.



In combination with the reversing wiper B, the cutter-bar C provided with the vertical pivoted arms C' and C', and the screws D and D fitted within said arms, and extending between the legs *a* and *c*, substantially as and for the purpose specified.

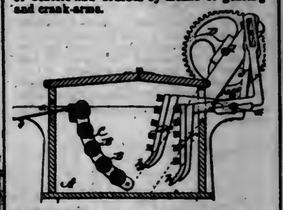
162,627. SOLUTIONS FOR ELECTROPLATING. Henry G. Coyle, West Meriden, Conn., assignor of one-half his right to C. H. Shaw, same place. [Filed Apr. 12, 1875.]

Brief.—The article to be plated and the tin are suspended in the bath, and the battery applied in the usual manner.

The herein-described solution for electroplating, consisting of muriate of tin, sulphate of ammonia, sulphuric acid, aqua ammonia, arine, and water, in the proportions substantially as specified.

162,628. WASHING-MACHINES. T. Crumbling, East Prospect, Pa. [Filed Feb. 4, 1875.]

Brief.—An inclined set of rollers pivoted near the bottom of the tub. The upper end, being adjustable, is operated upon by a series of beaters and brushes by means of gearing and crank-arms.



The combination of the box A, having the adjustable frame C, with rollers B B, crank-shaft G, bars I, with slotted arms J J, and the arms K K, with brushes L L, and the curved and corrugated ends A A, all constructed and operating substantially as set forth.

162,629. SINGLE-TREE HOOKS AND CLIPS. Marshall S. Curtiss, Berryville, Ill., assignor of one-half his right to William Wilcox, same place. [Filed Feb. 3, 1875.]



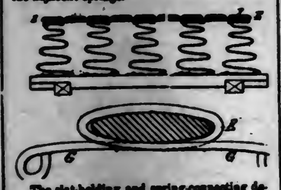
The combination of single-tree A with a hook having cross-piece *c*, returned clasps *d e*, and bolt *d*, and with a clip having similar clasps *f f*, and bolt *g*, substantially as and for the purposes set forth.

162,620. ELECTROPLATING WITH NICKEL. H. P. Dechert, New York, N. Y. [Filed July 14, 1874.]

In electroplating with nickel, an electroplating-bath composed of a solution of chloride of calcium and chloride of nickel, substantially as and for the purpose set forth.

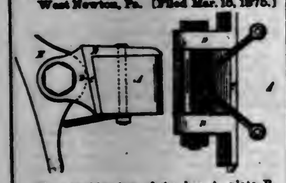
162,621. SPRING BED-BOTTOMS. Edward B. Dodge, Peterborough, N. H. [Filed Dec. 4, 1874.]

Brief.—The connecting device claimed alternately rests upon and between the springs, and the intermediate ones connect the tops of the adjacent springs.



The slat-holding and spring-connecting devices E, F, G, and H, substantially as shown and described.

162,622. WAGON-BRAKE. I. N. Downs, West Newton, Pa. [Filed Mar. 16, 1875.]

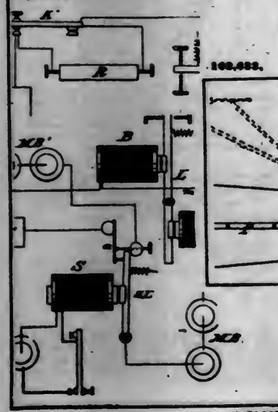


The combination of the bar A, plate B, flange C, ears D, metallic block or brake E, and V-shaped stop *d*, substantially as set forth.

162,623. DUPLEX TELEGRAPH. Thos. A. Edison, Newark, N. J., assignor to himself and Geo. Harrington, Washington, D. C. [Filed Apr. 26, 1873.]

1. The armature-lever L, pivoted between the magnets A and B, and operated by an increase and decrease in the tension of the line-current, in combination with the key K' and rheostat R, for the purposes set forth.

2. The armature-lever L, flexible-spring contact c, and batteries M B and M B', arranged substantially as set forth, and for the purpose specified.



162,624. PAPER-TUBE MACHINES. Charles P. Edwards and Wm. F. Edwards, Summit, N. J. [Filed Jan. 20, 1875.]

Brief.—The pulp is taken from the tapering mold in the vat onto the segmental belt, supported on the tapering carrying-rolls, and conveyed to the tapering formers, which are brought into action alternately. The outer edge of the segmental belt or apron is provided with a flange, which runs between guide-rollers, to hold it in position.

1. The combination, with the endless segmental apron and its supporting tapering rollers, of the tapering mold and one or more forming-rollers, all constructed to operate substantially as and for the purpose specified.

2. The strengthening-flange on the outside edge of the curved apron, in combination with the guide-rollers and a guide-rail, all constructed and operating substantially in the manner shown and described.

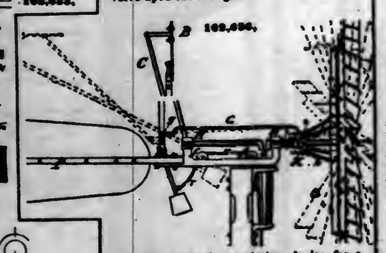
162,625. CALENDERING-MACHINES. Wm. F. Edwards and Charles P. Edwards, Summit, N. J. [Filed Oct. 7, 1874.]

Brief.—For calendering paper dishes, &c., the calender-roll both swings and slides into parallelism with the dish.

The combination, with the shaping-roller G and the calendering-roller K, mounted in a vibrating frame, D, for adjusting the calendering-roller with respect to the shaping-roller, of a horizontally-sliding supporting-frame, connected with the vibrating frame, for regulating or adjusting the distance between the shaping and calendering rollers, substantially as and for the purpose herein described.

162,626. WINDMILLS. Chas. H. Eggleston and W. M. Phelps, Marshall, Mich., assignors of one-half their right to C. S. Crane, same place. [Filed Oct. 6, 1874.]

Brief.—A weight is so adjusted as to hold the standard and its vane upright against a breeze of ordinary force. When the wind is heavy, the vane, standard, and rod are oscillated backward, carrying with them the rod and sliding collar, and, by means of the links, causing the sections of the wheel to revolve upon their hinges.



1. An automatic regulating device for a windmill, consisting of a vane, B, hinged upon a weighted hinged standard, D, and tilting rod C, when constructed and operated in the manner and for the purpose substantially as shown and specified.

2. The combination of the vane B, tilting rod C, and weighted hinged standard D, with the connecting-rod G, sliding collar K, links *h*, arms Q, and sections A, when constructed and operated in the manner and for the purpose substantially as shown and specified.

162,627. STRAW-CUTTERS. R. W. Fawcett, Salem, Ohio. [Filed Apr. 12, 1875.]



1. In a feed-cutter, the combination of the upper yielding feed-roller E, the racks *f f*, forming bearings for the axle of the roller, and the segmental gears *e e* attached to a shaft, *i*, and meshing with said racks, substantially as and for the purposes herein set forth.

2. The combination, with the feed-rollers E and G, the gear-wheels *k l*, arranged on their axles to overlap each other, and the intermediate wheels *m* and *n*, all constructed substantially as and for the purposes herein set forth.

3. The combination, with the driving-shaft *d* and its pinion *p*, of the adjustable arm or plate I, carrying two or more concentric gear-wheels, *j*, and two or more concentric gear-wheels, K, secured on the journal of the lower feed-roller G, substantially as and for the purposes herein set forth.

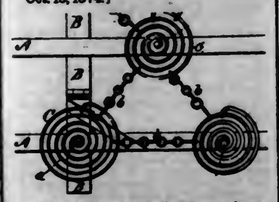
162,628. NECK-TIES. Jacob H. Fleisch, New York, N. Y. [Filed Apr. 16, 1875.]



1. The combination, with a bow or scarf, of a tie, G, rendered retractable entirely within the bow or scarf, by means of a spring concealed within said bow or scarf, substantially as and for the purposes herein set forth.

2. The combination of the casing D, spool E, tie G, and spring *h*, arranged within a bow or scarf, substantially as and for the purposes herein set forth.

162,629. FOLDING SPRING BED-BOTTOMS. Edwin P. Fowler, Brooklyn, N. Y. [Filed Oct. 16, 1874.]



The bed-bottom composed of the metal bars B, having their ends formed into hinge-butts, which are connected by a wire, the wooden slats A attached directly to the center of each section B, and having the spiral springs C C arranged in alternate order and coupled together by the links *b b*, all as and for the purpose set forth.

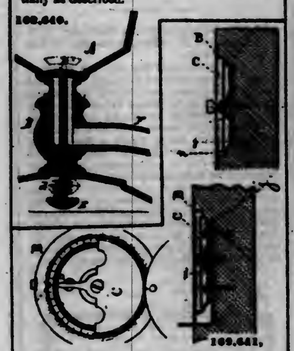
162,630. DRINKING-CUPS FOR INVALIDS. Wm. W. Fowler, Guilford, Conn. [Filed Mar. 27, 1875.]

Brief.—A cup has a hollow standard furnished with a spring-valve and thumb-piece, and a lateral tube, from which the patient can drink whenever the valve is raised.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

The herein-described drinking-cup, consisting of the bowl A, the tubular stem B upon the base C, the valve D to close the passage from the bowl to the stem, the head E, the spring *d*, and the transverse tube F, substantially as described.

162,640.

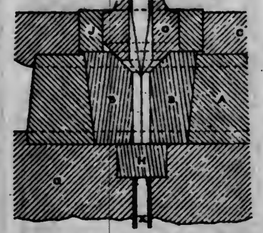


162,641.

162,641. COMBINED LEVELS, PLUMBS, &c. John B. Fraley, Philadelphia, Pa. [Filed Aug. 5, 1874.]

The universally-swinging protractor C, in combination with the dished plate B, having a chamber, *f*, graduated shoulder *n*, and raised bearing or spring *m*, substantially as and for the purpose set forth.

162,642. ART OF MANUFACTURING WOOD-SCREW BLANKS. John Pearson, Birmingham, England. [Filed Oct. 14, 1874.]



1. As an improvement in the art of forming heads upon screws and screw-blanks, first upsetting the end of the wire rod or blank in a flaring or cone-shaped recess or cavity in the face of the die-block by means of a punch chamfered externally to correspond to the wall of the said recess, and having at its extremity a flaring, conical, or conoidal cavity, and then subjecting the upset head, while still in the die in which it was formed, or in another die like it, to the action of another punch, that, entering by its point into the apex of the conical or conoidal head, shall, at the same time, force the metal laterally outwardly all around, to, and against the wall of the flaring or conical die-block recess, produce the cavity, nick or nicks, and fasten or shape the extremity or outer surface of the screw-head, substantially as described.

2. The combination of the punch D and die B B, constructed and arranged as shown in Fig. 3.

3. The combination, substantially illustrated in Fig. 7, of the parts marked P, O, J, C, A, B, H, G, and X, arranged for joint operation, as and for the purposes set forth.

4. In combination with the herein-described parts marked C, J, A, B, H, G, and X, the punch E, constructed substantially as and for the purposes set forth.

162,643. SOLE-FASTENINGS. Louis Goddu, Winchester, assignor to the American Cable-Screw-Wire Company, Boston, Mass. [Filed Apr. 7, 1875.]



1. A continuous length or integral wire or rod of distinct nails or pegs having heads *s* and clinching-points, and adapted to be penetrated where the different nails are joined in the wire-length before or after they are driven, substantially as herein illustrated and set forth.

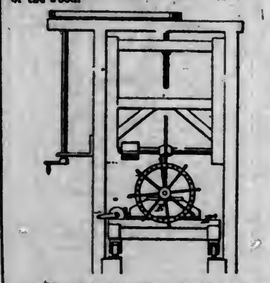
2. A continuous wire of distinct nails or pegs having heads *s* and blunting-points, formed by coincident indentations in the sides of a wire or rod, and corresponding to the heads and points of such nails, and with angles of taper on two or more sides, substantially as herein set forth.

3. A continuous length or integral wire, on which coincident indentations are formed, of lengths equal to that of the nail blade or tang, to form annular sections *s*, whereby to serve as the means of feeding and determining the proper lengths of the pegs, and no more, substantially as herein set forth.

4. A continuous length or integral wire of distinct nails or pegs having transverse roughening corrugations, curves, or threads *o*, applied to the coincident indentations of the wire, which form the tangs or blades of each nail, as herein set forth.

162,644. MACHINES FOR MAKING HOOPS. Geo. V. Griffith, Huntington, Ind. [Filed Aug. 1, 1874.]

Brief.—The log is suspended between centers upon a reciprocating carriage, and the lumber cut by vertically-adjustable circular saws, which cut into the log radially, thus causing each cut to be parallel with the fiber of the wood.



1. The method of sawing planks for forming barrel and other hoops, as herein set forth and shown.

2. The combination of the carriage A, frames E F, centers D D', perforated hand-wheel F, and spring-catch E' with each other and the adjustable saw, substantially as described, for the purpose specified.

162,645. BIRD-CAGES. Gottlob Gunther, New York, N. Y. [Filed Feb. 24, 1875.]

Brief.—The removable feed and water cup screens are constructed with an inclined bottom, to direct the scattered food inside the cage.



The combination, with a bird-cage having removable feed cup or cups B arranged in its sides, as described, of the removable screens C, having an inclined bottom, A, and arranged over the feed-cups, as and for the purpose described.

162,646.

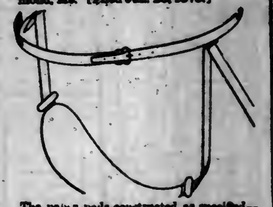


162,646. NON-EXPLOSIVE LAMP COLLARS AND FILLERS. Jas. A. S. Sanford, Chicago, Ill. [Filed Mar. 31, 1875.]

1. The hinged cap C, having the elastic stopper D, in combination with the ordinary collar of a coal-oil lamp, having vertical slots and horizontally-perforated holes, which receive the nail stoppers for the purpose of forming an inlet for the oil and a safety-valve for the lamp, substantially as described.

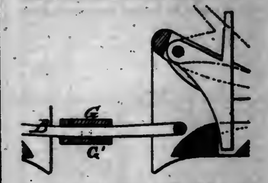
2. The supplemental collar E, consisting of the conical plates F F', forming a closed chamber, which opens into the oil-receptacle, in combination with the hinged caps C and elastic stoppers D, substantially as and for the purpose described.

162,647. LADIES' PAPER TOWELS. Joseph H. Hatch, Melrose, Mass., assignor of one-half his right to Jos. W. Spaulding, Richmond, Me. [Filed Jan. 23, 1875.]



The paper pads constructed as specified—that is, of layers of soft and flexible paper that shall be a ready absorbent of moisture, with a layer upon one side that shall be impervious to moisture, for the use of females during menstruation, in connection with the common towel or elastic belt and strap.

162,648. CAR-COUPLINGS. Wm. G. Hawkins, Pavilion, Mich., assignor of one-half his right to A. A. Holcomb and G. M. Gates, same place. [Filed May 20, 1874.]



In a car-coupler, the metallic sliding gut, consisting of the plates G G' united together by the rivets *h h*, in combination with an open link, B, substantially as and for the purpose set forth.

162,649. WOOD-PLANING MACHINES. I. M. Hills, New Haven, and Edwin Allen, Norwich, Conn.; said Allen assignor to said Hills. [Filed Aug. 26, 1874.]

Brief.—The surface of the wood is dressed by means of an adjustable cutting-stock, provided with one or more cutters of any desired form, mounted upon a longitudinally-reciprocating carriage, which is arranged between suitable guides, in connection with vertically-adjustable clamps, for holding the work upon a bed which is adjustable to different inclinations, and also adjustable vertically and laterally. Adjustable arms operating upon suitable inclines automatically vary the extent of movement of the carriage, and two stationary cutters, forming a pair of shear-blades, prevent the long shavings from becoming entangled with the mechanism of the machine.

1. A reciprocating carriage, B, carrying the cutter-stock L, made adjustable in said carriage, in the manner substantially as set forth, combined with the work-table L', substantially as described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

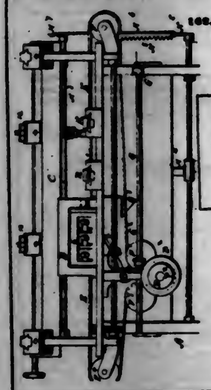
2. In combination with the reciprocating carriage B, cutter-stock L, and work-table L', the inclined G^1 G^2, the cloth D^1, and pulleys D D^1, substantially as and for the purpose specified.

3. In combination with the reciprocating carriage B, cutter-stock L, and work-table L', the clamp M, made adjustable vertically and transversely, substantially as specified.

4. In combination with the reciprocating carriage B, cutter-stock L, and work-table L', the stops k, the inclined groove r, and the connections between said grooves and stops, substantially as and for the purpose of automatically operating said stops.

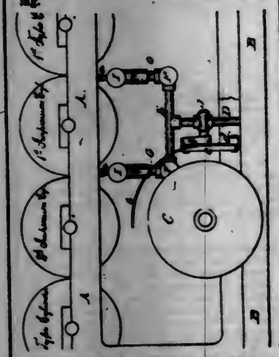
5. In combination with the reciprocating carriage B, cutter-stock L, and work-table L', the shear-cutters T T', substantially as and for the purpose specified.

No. 162,649.



No. 162,650. PRINTING-PRESSES. Jas. Hinchcliff, Bromley, England, assignor to R. Hoe & Co., New York, N. Y. [Filed Oct. 13, 1873.]

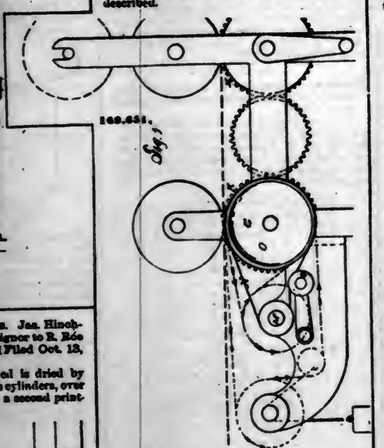
Brief.—The web once printed is dried by gas-jets interposed between the cylinders, over which it passes on its way to a second printing.



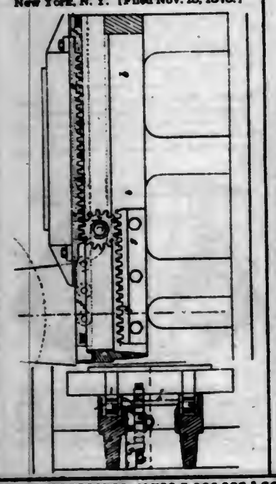
1. The combination, with two or more type and impression cylinders, whereby a web is printed on opposite sides, of a series of gas-burners, which direct heat upon said web at a point between the first type and first impression cylinders, or between the first and second impression-cylinders, whereby the ink is dried to prevent its offsetting, substantially as described.

2. In a printing-press having impression and type cylinders, the combination of the slitted gas-tubes I I with the shipper s, cock J in pipe D, and connecting-rod r S for shutting off the gas supply simultaneously with the stopping of the press, substantially as described.

No. 162,651.



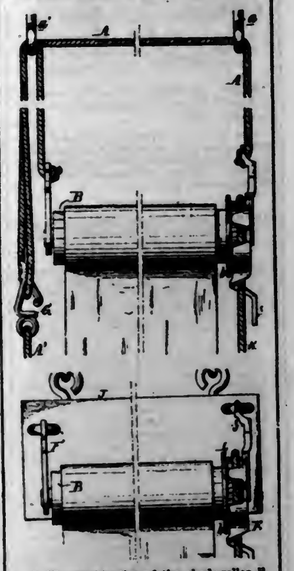
No. 162,652. PRINTING-PRESSES. R. M. Hoe, New York, N. Y. [Filed Nov. 13, 1873.]



The rack e on the bed, pinion e' fixed to one roller-frame, and stationary rack g, in combination with the rods f, by which two or more roller-frames are attached together, so as to move in unison, substantially as described.

No. 162,653. WINDOW-SHADE FIXTURES. L. C. Hoffmeister, Jr., Philadelphia, Pa. [Filed Mar. 31, 1874.]

Brief.—The ends of the cord are attached to the opposite ends of the roller. The cord passes through eyes at the top of the window-frame. When it is desired to hold the roller in a certain position, the looped portion of the cord is wedged into a suspended V-shaped hook, the other end of which is formed with a ring or eye, through which passes a cord that is made fast to a stationary stud on the frame. The roller-pulley rests in connection with a bracket, which is provided with a lip, over which the cord for rolling up the curtain passes, and between which and the pulley the cord is compressed by the weight of the roller. The pulley has a flange on one side only. It also has an internal conical projection, adapted to the center of the end of the shade-roller.



1. The combination of the shade-roller B, the continuous looped suspension-cord A, attached to the opposite ends of the said roller, and adapted to eyes or pulleys a and a' at the top of the window-frame, and the V-shaped hook or eye O, into which the looped portion of the cord can be wedged, for the purpose of maintaining the roller in a horizontal position, all substantially as specified.

2. The combination of the roller-pulley L and bracket E, having a lip over which the cord passes, and between which and the pulley the cord is compressed by the weight of the roller and its attachments, substantially as described.

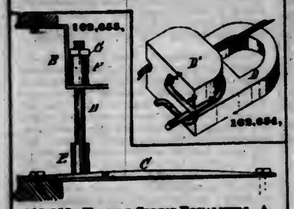
3. The within-described shade-pulley, having a flange, b, at one edge only, and a toothed or serrated periphery, in combination with the fixture or attachment E, which, in connection with the said single flange b, will retain the curtain-cord on the periphery of the roller.

4. The recessed shade-pulley L, having an internal conical projection, adapted to the center of the end of the shade-roller, for the purpose specified.

No. 162,654. BALE-TIES. Joseph J. Holloman, Humboldt, Tenn. [Filed Apr. 12, 1875.]

The combination, with a wire having horizontal hook B on one end, and at an angle thereto, on the other end, a vertical hook, C, of the grooved plate D D' having hole d', as and for the purpose described.

No. 162,655.



No. 162,656.

No. 162,655. VEHICLE-SPRING EQUALIZERS. A. S. Hopson, Plainview, Miss. [Filed Mar. 9, 1875.]

The combination of the elliptic spring A, curved brace B, of the form shown, the lower brace C, guide-rod D, and springs E F, all constructed to operate as specified.

No. 162,656. DARNING-MACHINES. O. S. Hosmer, Boston, Mass., assignor to C. Carpenter and Edwin Strain, trustees, same place. [Filed Nov. 4, 1874.]



1. In machinery of the kind herein specified, the combination of the following elements, namely, ribbed die-plates, which clamp in ridges the fabric placed between them, reciprocating needles, which move in the plane of needle-passages, between the plates, and tension mechanism, substantially as described, arranged for operation, with said plates and needles, substantially as set forth.

2. In organized machinery of the kind herein specified the combination, with the ribbed clamping-dies and the needles which reciprocate between said plates, of the cutter, substantially as specified, which severs the yarn after the withdrawal of the needles from the fabric, substantially as set forth.

3. A needle having one boundary of its eye reduced to a sharp edge for cutting the yarns, substantially as and for purposes stated.

4. The guide-plate through which the needles pass, having its faces arranged at an angle to, or obliquely with, the path of movement of the needles, in order that but one yarn may be severed at a time, or the series of yarns in succession, substantially as and for purposes stated.

5. The combination, with the guide-cylinders or plungers, of a lock, substantially as described, to lock the same in position, and prevent breaking of the needles, substantially as set forth.

6. In combination with the stem of the plunger, the notched disk n and bolt k, substantially as and for purposes stated.

7. The arrangement of the teeth of the plunger, substantially as herein described, whereby the yarns are caused to travel or be laid in a path similar to the saw-teeth, substantially as and for purposes stated.

8. The combination, with the reciprocating needles, of the plungers or dies, adjustable to and from each other to vary the distance between them, substantially as and for the purposes set forth.

9. The combination of the tubular sleeve I with one of the plungers and its shaft, as a means of adjusting the height of the plunger, substantially as and for purposes stated.

No. 162,657. SOLDERING-IRON HEATERS. John S. Hill, Cincinnati, Ohio. [Filed July 8, 1874.]

Brief.—The hollow end of the soldering-iron tip is provided with a screw-thread, by which it is attached to the gas-supplying apparatus, and has apertures for emission of flame. Gas is derived from oil contained in a portable vessel, which oil is forced up to the burner by means of an air-pump conveniently attached to said vessel.

No. 162,657.



The combination, in a portable soldering-iron heater, of the reservoir A, air-pump B, generator I, and soldering-iron T, constructed to operate in the manner and for the purpose specified.

No. 162,658. TEA AND COFFEE POTS. James B. Hutchinson, Cambridge, and G. W. Fairfield, Boston, Mass. [Filed Feb. 20, 1874.]



1. In a duplex vessel, a divided spout provided with a two-way cock at or above the level of the liquid in said vessel, substantially as described.

2. The combination of the divided spout and two-way cock, provided with lever F and guide J 1, substantially as described.

No. 162,659. REFRIGERATING-TANKS FOR ICE-MACHINES. Augusto Jas, New Orleans, La., assignor of one-half his right to A. C. Janis, same place. [Filed Apr. 2, 1875.]

Brief.—The refrigerating vapor passes around each cell in each range, and successively through the ranges. Ice-molds may be placed in the cells; or the latter being very smooth, or having been greased, the water to be frozen may be placed in them. The water may be deprived of air, preparatory to being frozen, by boiling it.

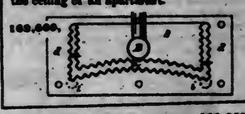


The herein-described refrigerator for ice-machines and analogous apparatus, consisting of a lower box divided into distinct and separate ranges of compartments or receptacles, in combination with an upper plate-supporting cells fixed to said plate, and corresponding in numbers to the compartments, the said parts fitting together, as described, and when so fitted together forming a serpentine passage for the refrigerating vapor or gas, which is thereby caused to pass through the successive compartments of the successive ranges, substantially as set forth.

No. 162,660. APPARATUS FOR COOLING AND CIRCULATING AIR IN BUILDINGS. Augusto Jas, New Orleans, La., assignor of one-half his right to A. C. Janis, same place. [Filed Apr. 6, 1875.]

Brief.—The volatile fluid passes (in a circuit from and back to the condenser and cooler, &c., not shown) through the hollow bottom of a brine-trough. Air is forced through tubes L^1 in the brine, the whole to be placed near the ceiling of an apartment.

No. 162,660.

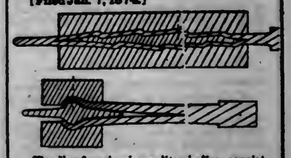


1. In apparatus for ventilating and cooling buildings and other structures, the combination of a refrigerant-conduit, a surmounting trough, and an air duct or pipe arranged within the trough, for operation substantially as shown and set forth.

2. The cooling-trough, designed to contain a liquid congealable at a low temperature, and provided with a concave-convex double bottom, which constitutes the conduit for the refrigerating agent, substantially as set forth.

3. The trough-sections, constructed substantially as described, and provided with end plates or flanges, by which the said sections may be fitted and secured together end to end, substantially as and for the purposes shown and set forth.

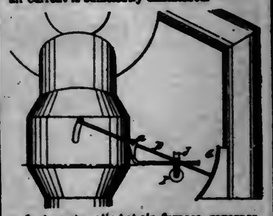
No. 162,661. DIES FOR CRIMPING THE HALVES OF SPLIT SPINDLES. Henry M. Johnson, Lowell, Mass., assignor to Bert A. Tidmarsh, C. C. Pickering, and B. Lamson, same place. [Filed Jan. 7, 1874.]



The dies for crimping split spindles, consisting of the loose central die provided with transverse ribs, and the two outer dies, having grooves or depressions corresponding to the ribs of the central die, substantially as described.

No. 162,662. AUTOMATIC GOVERNORS FOR HOT-AIR FURNACES. Solomon Kepner, P tstown, Pa. [Filed Apr. 12, 1875.]

Brief.—A damper is opened by the impulse of a current of hot air on a valve or disk in the hot-air flue attached to one end of the pivoted lever. The other end is weighted to close the damper when the force of the hot-air current is sufficiently diminished.

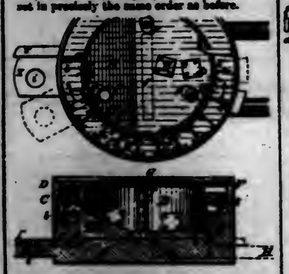


1. An automatic hot-air furnace governor, consisting of a pivoted lever, a valve contained in the hot-air flue and attached to said lever, and a damper attached also to said lever, which opens and closes communication between the outside air and the smoke-pipe or fire-box, all combined substantially as and for the purpose described.

2. The combination of the graduated lever D, the valve B, damper G, the pulley J, and weight I, substantially as and for the purpose described.

160,666. INDICATOR-LOCKS. J. H. Kimmins, Salem, Mass. [Filed Jan. 7, 1875.]

Brief.—A series of cubes having figures on their faces are conveyed, one at a time, from a chamber within the lock, into a path or space, where they are held, exposed to view, until the lock is unlocked. In unlocking, the cubes are all forced back into the inner chamber, and cannot, except by mere chance, be reset in precisely the same order as before.



1. An indicator-lock, substantially as hereinbefore described, provided with a series of cubes having suitable numerals or other symbols on the several faces of each, substantially as and for the purposes set forth.

2. The combination of base-plate A, jacket O O', chamber B, and cubes K, substantially in the manner and for the purpose set forth.

3. The cubes K, engraved, stamped, or otherwise marked in their corners with numerals placed diagonally, and combined and used with an indicator-lock, substantially as and for the purposes set forth.

4. The device herein described, consisting of base-plate A, chamber B, jacket C, loop H, projections I I', glass F, cap G, and cubes K, all combined and operating substantially in the manner set forth.

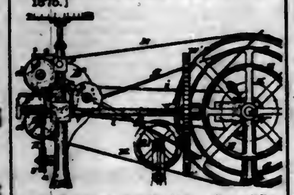
160,664. GAME-BOARDS. Victor Klobasser, Washington, D. C. [Filed Mar. 6, 1875.]

Brief.—Embodying in a game-board historical facts grouped radially about a center, and arranged with numbers, fortunate and otherwise, regulated by dice-throwing or the like.



The within-described game-board, having upon its face two concentric circles, B C, with radial lines a a between them, forming one hundred spaces, b b, in which are marked in succession the years from 1776 downward, with a notable event for each year marked in the proper space, substantially as herein set forth.

160,665. SEWING-MACHINES. Jas. Laing, Dundee, North Britain. [Filed Jan. 29, 1875.]



1. The sewing-mechanism, substantially herein described, consisting of the needle e, tube or barrel I, belt H, and supporting-pulleys f, in combination with work-feeding mechanism.

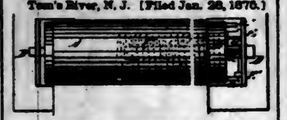
2. The combination of the needle e, tube I, thread-barrel J, belt H, and supporting-pulleys f, with mechanism for advancing and retracting the thread-barrel, as set forth.

3. The combination of the screw-rod K, pulley L, catch t, and spring g, with the thread-barrel J, and drag t.

4. The combination of the catch t and knife 13, with the barrel J and needle e, for finishing the stitches.

5. The combination of the arms 1 and 4, spring 8, and the striker 8, on the rod r, with the hook eye needle a.

160,666. CURTAIN-FIXTURES. R. B. Lake, Tom's River, N. J. [Filed Jan. 26, 1875.]



In combination with a certain roller having studs projecting at different radial distances from its end, or from an attachment thereto, a separate pawl or dog, constructed and arranged substantially as described, so that when the roller turns slowly said pawl will ride upon the innermost studs, but when said roller is turned rapidly will be projected outward by them, and be caught by one of the outermost studs, as and for the purpose described.

160,667. CHEESE-MAKING. Amos L. Lourbee and Josiah M. Jocelyn, Little Valley, N. Y. [Filed Jan. 16, 1875.]

Brief.—Scored milk and buttermilk, warmed to about 80° Fahrenheit, are treated with an alkali, and then heated to 85° or 90°, when they are converted into cheese in the usual manner, the alkali neutralizing the acid in the milk, and saponifying the grease or cream.

The process described of manufacturing sweet cheese from sour milk, substantially as specified.

160,668. APPARATUS FOR COOLING AND AERATING WATER. William A. Lightbody, Brooklyn, N. Y. [Filed Feb. 27, 1875.]

Brief.—Steam doing as an injector lets the condenser make a partial vacuum in filter B. The filtered and cooled water is pumped into D, where, in partial vacuum, it is further cooled, and is aerated. It is then transferred to the surrounding tank D, or to tank E, for use.

1. The condenser A, filter B, cooler D, air-pump G, air-pipes C and C', water-pipe d, and air-pipe g, all constructed and combined to operate as described, whereby steam is condensed, and the resulting water, filtered under a partial vacuum, is thereby somewhat cooled, and immediately forced into a vacuum-cooler, where the cooling operation is continued and the water aerated, substantially as specified.

2. The filter B, vacuum-cooler D, tank H, water-pipes d, e, and f, air-pump G, and force-pump F, all combined to operate as specified, whereby a certain portion of the filtered water is forced into the said cooler D, and the surplus forced into the tank H, substantially as described.

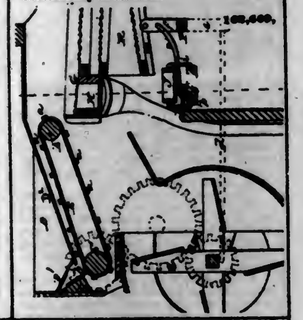
3. The vacuum-cooler D, placed within and surrounded by the tank E, the force-pump F, and pipes a and b, whereby water, as it is cooled in the said cooler, is transferred to the said tank, and there kept cool, ready for use, by contact with the said cooler, substantially as described.

160,669. GRAIN-SEPARATORS. J. B. Lobdell and M. F. Bartlett, Battle Creek, Mich. [Filed Jan. 16, 1875.]

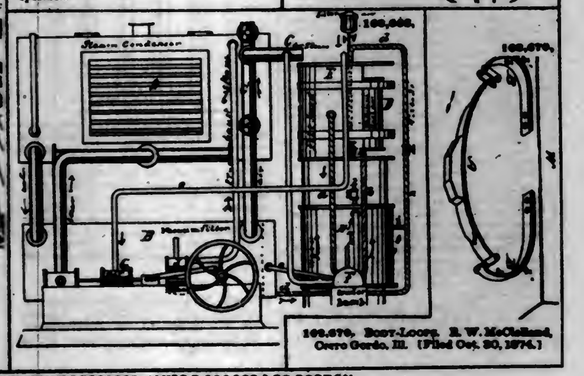
Brief.—Arrangement of feeding and discharging devices in a "thrashing-mill."

1. The slotted mullens bolt B, arranged close beneath the inclined side D' of the hopper D, and parallel therewith, for the purpose of evening and regulating the feed of the grain to the screens, as set forth.

2. The combination of the vibrating spout J, made in step form and carried on vibrating rods f, the loose connections m n, elbow-lever p, and arm f, all constructed and arranged substantially as set forth.



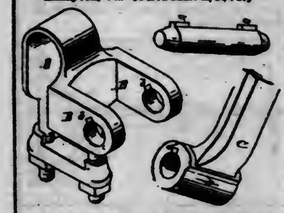
160,670. BODY-LOOPS. R. W. McClelland, Cerro Gordo, Ill. [Filed Oct. 20, 1874.]



1. The spring body-loop B, composed of a single piece of steel bent or folded back on itself to form two leaves, b b', the folded portion being adapted for attachment to the wagon-body, substantially as described.

2. The loops B B, having leaves b b', in combination with the spring A and wagon-body W, substantially as and for the purpose specified.

160,671. TRILL-COUPLINGS. M. McDevitt, Hampton, Va. [Filed Mar. 2, 1875.]



The combination of the clip A, having parallel perforated ears B B, with slots b, the thill-iron C, with perforated eye D, having also slot b, and the fastening-bolt, provided with the two feathers a a, substantially as and for the purposes set forth.

160,672. BALE-BAND TIGHTENERS. Danl. R. McGarrah, Rosemond, Ill. [Filed Mar. 2, 1875.]



The band-tightener having toe L, helve or handle C, opening E, and clamping eccentric roller F, all combined and constructed substantially as and for the purpose set forth.

160,673. PERCOLATORS. Geo. McPherson, Chicago, Ill. [Filed Apr. 2, 1875.]

Brief.—A faucet controls the supply of air, and an air-forcing pump increases it indefinitely. The faucet has a V-shaped opening, to graduate the supply of air more minutely. Above the faucet is a funnel. Two perforated diaphragms extend across the body of the percolator, one movable, the other permanent.



1. The combination, with a percolator, of a suitable faucet, provided with depressions h h, for controlling and regulating the admission of air, substantially as and for the purpose set forth.

2. The percolator, provided with the air-tight-fitting cap B, faucet-shell A, and plug E, the latter provided with orifice j and depressions h h, substantially as and for the purpose set forth.

3. In combination with the closed-top percolator A B, the faucet shell and plug C E, the latter provided with the long handle F, substantially as and for the purpose specified.

4. The combination, with a percolator, of the faucet, substantially as herein described, provided at its top with a funnel, for the purpose specified.

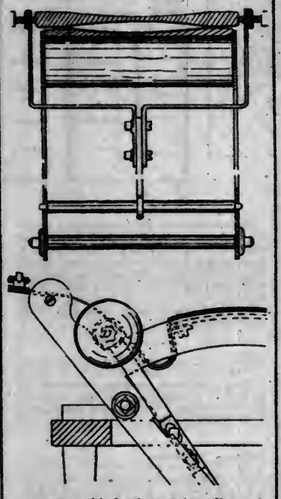
5. The combination, with a percolator provided with closed top B, faucet E, and depressions h h, of a suitable pump or air-compressing apparatus, substantially as and for the purpose specified.

6. In combination with the percolator, provided with the closed top B and faucet E and funnel D, the removable nipple G, for the purpose set forth.

7. The percolator herein described, consisting of the body or shell A, perforated diaphragm b, perforated weight c, air-tight cap B, shell C, faucet E, the whole combined to operate as specified.

160,674. MACHINES FOR BUNCHING AND WRAPPING CIGARS. Bernhard H. Meyer, New York, N. Y. [Filed May 29, 1874.]

Brief.—The bed of the machine and the roller are both concave, to compress one or both ends of the cigar-bunch.



A segmental bed and traversing roller, each concaved centrally to give form to the cigar as it is rolled on the periphery of said segment, in combination with the apron, as and for the purpose set forth.

160,675. COMPOSITIONS FOR TILES. Wm. G. Monk, Brooklyn, N. Y. [Filed Nov. 11, 1874.]

1. The composition of sulphur, sand, and carbonate of lime, with sal-ammoniac, or equivalent flux, introduced for the purpose, and substantially as set forth.

2. In a compound of sulphur and sand, the mode herein specified of preparing the sand by moistening it with a solution of sal-ammoniac, or equivalent flux, substantially as set forth.

160,676. FRICTIONAL ELECTRICAL MACHINES. Geo. M. Mowbray, North Adams, Mass. [Filed Nov. 30, 1874.]

Brief.—Hard-rubber cylinder surrounded by two semi-cylindrical condensers. Machine discharged by reversing the crank, as in the Smith patent, No. 93,562, August 10, 1869, with the addition that a partial reversal breaks the connections from the rubber and the collector to the condensers. Other features explained by claims.

1. The arrangement of a frictional exciting-surface between two curved dielectrics, both of these curved dielectrics having on each surface, respectively, metal armatures with sufficient marginal insulation to form a condenser, the inside surface of one of them so situated during excitation as to receive electricity from the rubber, while the inside surface of the other curved dielectric simultaneously receives electricity from the collector, and withal the inner surface or armature of each one being in connection with the outer surface or armature of the other, substantially as described.

2. The accumulator or Leyden jar, of any preferred shape, built up of sheet hard rubber and metal plates, insulated from external influence by other sheets of hard rubber, and enveloped in pure sheet rubber, substantially as described.

3. An electric rubbing-cushion, formed of two distinct surfaces, the one resinous, to receive the amalgam and excite electricity, the other flannelous, felted, or velvety, to cleanse and polish the exciting-surface with the usual oiled or varnished silk flap, substantially as described.

4. The combination of an exsiccator, composed of a material capable of absorbing moisture from the atmosphere, packed in a permeable envelope, with a frictional electric machine in a water-tight case, substantially as described.

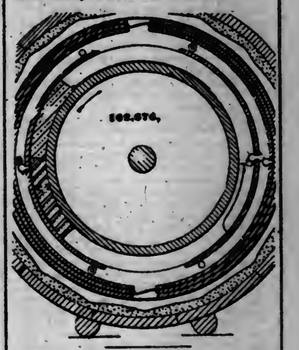
5. The oscillating cylinder, independent of the condenser, which is stationary, composed of two disks, each having a slot cut out of its periphery for about sixty degrees, carrying two semi-cylindrical sheets of hard rubber, there being affixed to one of these the rubbing-cushion and its connecting-hook, to the other a knob projecting through it, this oscillating cylinder admitting of a determinate limited motion from the rotation of the exciting-surface, the range of oscillation being determined by the collecting-rod, which is stationary, and passes through the slots of the disks, serving a triple purpose, viz: First, isolating the condenser from the rubber collector and feed wires when it receives a thirty-degree reverse motion; second, discharging the battery through the leading and return wires when this reverse motion is continued to sixty degrees of a circle; and, third, conducting the charge from the rubber and from the exciting-surface to the condenser by a forward motion of sixty degrees, substantially as described.

6. The graduated test-gage, with sliding or movable standard and connections for terminal wires, substantially as described, and for the purposes set forth.

7. The hard-rubber shaft of a frictional electric-machine, with sunken socket for crank, substantially as described, and for the purposes set forth.

8. The elastic-wire connections between the knobs moving and the fixed knobs of a frictional electric-machine, for the purpose of cushioning violent movement, substantially as described.

9. The combination of a rotating exciting-surface, an independent oscillating frame, carrying a rubber and connecting-knobs, with a stationary collector and a stationary condenser, all inclosed in a water-tight case or keg, substantially as described.

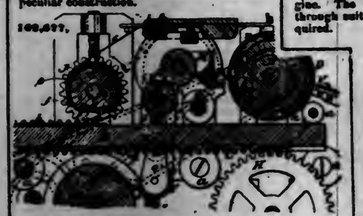


160,677. PLATE-PRINTING PRESSES. Robt. Neale, Brooklyn, N. Y. [Filed Nov. 10, 1874.]

Brief.—The plate is secured to a horizontally-reciprocating table, to a rack on which motion is communicated through gear-wheels connected with a series of pinions carried in a frame swinging on the driving-shaft, which frame, acted upon by cams on the nearest connecting gear-wheel, is so swung that the motion is given to that wheel from the continuously-revolving shaft through one and through two pinions alternately. The impression is made by a D stop-cylinder, which has applied

to it a bolster, by which the impression-surface is defined with relation to the printing-surface of the plate. The griper-plate extends across the cylinder, and is adjustably secured to arms pivoted to the heads thereof. The inking-rollers are drawn down to the plate in its forward movement by a projection on the bed acting on pallets pivoted to their frame, which pallets are inactive in the opposite movement of the bed. The plate is cleaned by a continuously-revolving elastic leather-covered cylinder of peculiar construction.

160,677.



1. In a plate-printing machine, in which the printing-roller is constructed with a flattened-surface section, the combination, with the printing-surface, of a shell-bolster, *c*, for defining the bounds of the impression, substantially as herein set forth.

2. The combination, with the impression-cylinder, of the shell bolster *c*, and continuous griper *f*, carriated for conjoint action, substantially as herein described.

3. The combination, with an elevated table having an adjustable rabbet-rest, K *l*, for the sheet, and a laterally-adjustable plate, *t*, on said rabbet, of the griper *f* and the printing-roller, whereby the sheet is held upon the rabbet-rest, which thereby gages its relation to and insertion beneath the griper, and thus provide for the feeding of different-sized sheets to said griper, as herein set forth.

4. The combination of the adjustable griper-plate *f* with the arms *f'*, whereby the plate is carried and made adjustable upon said arms, in the manner and for the purpose herein set forth.

5. The combination, with the driving-gear wheel J of the printing-roller and the carriage-rack *l*, of a hinged push-arm, *k*, carried by said gear-wheel, substantially as and for the purpose herein set forth.

6. The combination, in a plate-printing machine, in which the carriage with its plate has a reciprocating motion, and is provided with side bars E E, of the swinging pallets Q Q', and the inking-roll R, upon the pivoted frames O P whereof the pallets are mounted, and operate to bring the inking-roll into action upon the engraved plate, substantially as herein set forth.

7. The combination, with the cleaning-cover *o* of the perforated rims *q*, of the cylinder-disks, having circumferential grooves, and the interlocking *p* for said cleaning-cover, substantially as and for the purpose herein set forth.

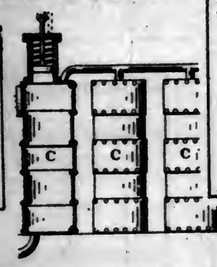
8. The combination, in a plate-printing machine, of the plate-carriage B, having a reciprocating motion, and a swinging frame, W, carrying pinions *w x z a*, three of which have a swinging movement with said frame upon the driving-shaft, and the lever-arm 7 of said frame, with the carriage-rack G and intermediate gear-wheels H S Y, the last gearing with the pinion *z a*, and operated by cams to disengage the intermediate gear-wheels from the driving-shaft, to stop the machine to operate by hand-power, or to continue the operation for power-work, as herein set forth.

9. The combination, in a plate-printing machine, of the swinging pinion carrying-frame W, supported on the driving-shaft, and provided with the lever-arm 7, with the cam *c* carried by the intermediate gear-wheel T, connecting with the carriage-rack, whereby the lower pinion *z* is automatically disengaged from the intermediate gear to stop the machine and render its movement intermittent by the lever-arm 7, substantially as herein set forth.

10. The combination, in a plate-printing machine, of the pivoted pinion-frame W, carried by the main shaft, and a spring-catch, Z, of the adjustable cam *c*, and the cam 9 upon the intermediate gear-wheel, operating in conjunction with the intermediate gear to change the position of the upper and lower pinions, to render the movement of the plate-carriage continuous for steam-power, as herein set forth.

160,678. MEANS FOR TRANSMITTING THE POWER OF STATIONARY ENGINES THROUGH THE MEDIUM OF COMPRESSED AIR. Thos. H. Neal, Philadelphia, Pa., assignor of one-half his right to M. F. Richardson, same place. (Filed Oct. 24, 1874.)

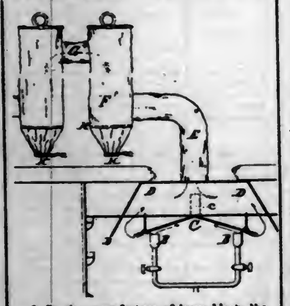
Brief.—The air-holder consists of a series of cylinders arranged in an upright position, and separated from each other, for convenience in repairs, &c., and provided with a governor for controlling the speed of the pumping-engine. The air is drawn from the holder through suitable connecting-pipes as it is required.



The combination, with a stationary pumping-engine, a system of piping, F, along a carriage-route, and communicating attachments G, of an air-holder, B, consisting of a series of cylinders, C C, extending vertically, separated from each other, and provided with a governor for automatically controlling the speed of the pumping-engine, all as set forth, and for the purpose described.

160,679. LAMP-BLACK APPARATUS. Peter Neff, Gambier, Ohio. [Filed Apr. 17, 1875.]

Brief.—Into such apparatus introduces the surface G, for receiving the first formed of the lamp-black. C may have openings or pipes directly to D.



1. In the manufacture of lamp-black, the domes or surfaces C, located over the burning carbonaceous matter, in combination with the flue or flues D and canvas or woolen bags F, substantially as and for the purpose described.

2. The combination, with the surfaces C, canopy flue or flues D, and bags F, of burners located beneath the said surfaces C, and means for feeding the said burners with oil or gas, substantially as and for the purpose described.

3. The combination, with the surfaces C, flue D, and canvas or woolen bags, of the burners B and openings *a*, substantially as and for the purpose described.

160,680. SPRING BED-BOTTOMS. Jared R. Newman, Franklin, Pa. [Filed Feb. 20, 1875.]

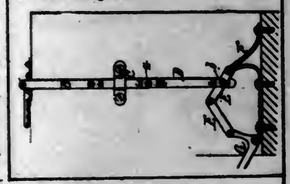
Brief.—By means of the adjustable blocks, which permit the positions of the free ends of the springs to be changed, the bow or arch of the slats can be regulated.

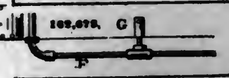
In a bed-bottom, having arched slats C, supported by springs B, the grooved blocks *b* and adjustable blocks *c*, combined as described.



160,681. MECHANICAL MOVEMENTS. John A. Norvell, Kalamazoo, Mich. [Filed Nov. 7, 1874.]

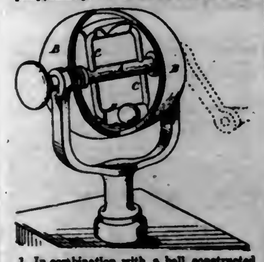
Brief.—Two vibrations of the bell-crank lever are produced by one revolution of the cranked driving-shaft.





The herein-described mechanical movement, consisting of the pitman B, plunger C, connecting-rod D, toggle-levers E E', bell-plate F, and bell-crank G, in combination with a cranked driving-shaft, substantially as described.

160,682. REVOLVING CHURN-BELLS. Wm. H. Nichols, East Hampton, Conn., assignor to Bevin Brothers Manufacturing Company, same place. [Filed Mar. 29, 1875.]

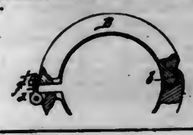


1. In combination with a ball constructed to be rotated by wheels or by a suitable handle, cups or cents located at or near the inner periphery of the same, for catching and holding a loose ball or clapper after the striking operation, substantially as herein described, for the purpose set forth.

2. The combination, with the open-mouthed cups or shells B B, constructed to be rotated by wheels or by a suitable handle, of the revolving shaft or axis A, the arms C projecting from the same, and the clapper or ball-retaining cents or cups at the ends of said arms, substantially as herein described.

160,683. CLAMPS FOR CEMENT. G. Clark-Nichols, Binghamton, N. Y. [Filed Dec. 5, 1873.]

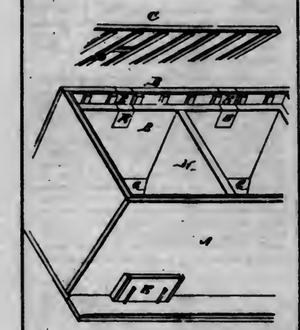
Brief.—The clamp is made of two semicircular parts. The end of one of the parts is slotted and provided with a hook. The end of the other part is also provided with a hook, which fits into the slot, and engages with the hook of the other. The opposite ends of the parts are secured by a pivoted eyebolt and nut.



In the manufacture of cement water and gas pipes, a ring or clamp made in two semi-circular parts, A and B, and provided with hooks *a b*, slotted ears *d d*, pivoted eyebolt *f*, and nut *i*, substantially as and for the purposes herein set forth.

160,684. LIME-KILNS. David G. Ormsby, Pewaukee, Wis. [Filed Apr. 6, 1875.]

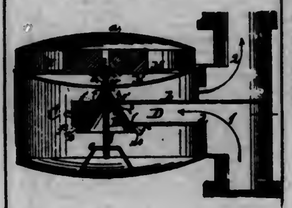
Brief.—The bin is designed to exclude air from quicklime, and allow its easy introduction or removal.



The bin A, provided with double walls and roof, filled in with slaked lime and ashes, the outer wall being covered with roofing-felt on the inside, the whole provided with hatches D, and doors E F and F F, for filling with lime and removing the same, substantially as herein set forth and described.

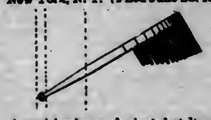
160,685. GAS-REGULATORS. Robt. M. Potter and William W. Thomas, Jersey City, N. J. [Filed Mar. 17, 1875.]

Brief.—An internal chamber with valve-seats in its top and bottom, and a conical valve adapted thereto,



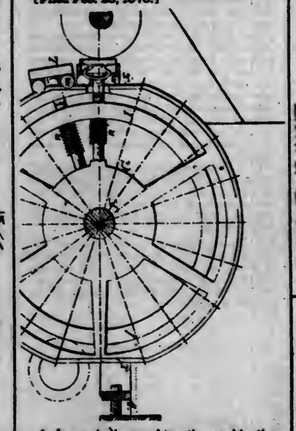
The combination, in a gas-regulator having an enlarged gas-chamber, C, and a diaphragm, H, of the inlet-chamber D, constructed at its top and bottom with valve-seats *f' f'*, and arranged horizontally within the gas-chamber, and the conical valve E, arranged within the inlet-chamber and connected with the diaphragm, all substantially as described.

160,686. BAND-COMBS. Henry A. Prouty, Worthville, assignor, by mesne assignments, to J. W. Britton, and I. W. Britton, New York, N. Y. [Filed June 26, 1873.]



A semicircular comb pivoted at its ends to the sides of an ordinary semicircular comb near its ends, substantially as herein shown and described.

160,687. GRINDING-MACHINES. William J. Keegan, Pottstown, assignor to Boyer's Ford Iron Foundry, Philadelphia, Pa. [Filed Feb. 23, 1875.]

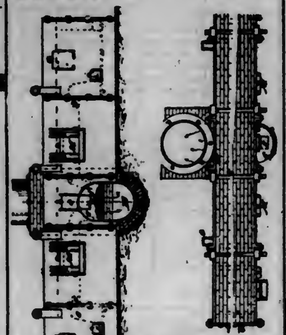


1. In a grinding-machine, the combination of the following elements, namely: a revolving grinding or polishing disk or disks, ways partly circular and partly straight, and a series of yielding carriages for receiving and retaining the objects to be ground, guided by the said ways, and carried by a wheel revolving in a course concentric with the circular portions of said ways, all substantially as set forth.

2. The combination of the revolving hub G and ring I, and their spring-rods K, hinged to the carriages L, with the ways H and H', and one or more grinding or polishing disks.

160,688. HEATING-FURNACES. Craddock Rees and Thomas Johns, Ironton, Ohio. [Filed Feb. 19, 1875.]

Brief.—The products of combustion pass from the middle of the double furnace by an exit-flue, which descends on the side of the furnace where the working-doors are, and passes across beneath the middle of the hearth to the stack. The hearth is thus most highly heated on the side where the doors are. The draft in the main flue is regulated by slide *d* in small flue H.



1. In a smelting-furnace, having a fire-place at both ends, the central flue E running transversely under the furnace, and opening into the same at the side in which the doors M are arranged, all substantially as and for the purpose specified.

2. The combination of the fine-door *d* with the main smoke-outlet E, substantially as and for the purpose specified.

160,689. REFLECTOR-LAMPS. J. Bottcher, Chicago, Ill. [Filed Mar. 20, 1875.]

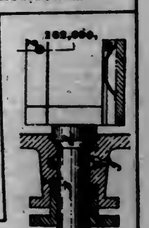
Brief.—The upper reflector directs light upon the lower one, which surrounds the lamp, from whence it is reflected to any desired point.

The combination of the corrugated reflector B, as described, with the flame A, and corrugated refractor E placed over said flame, substantially as described and shown.

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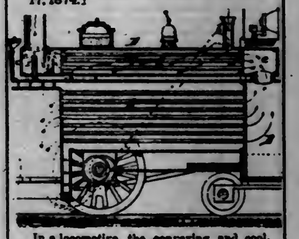
160,690. VALVES FOR STEAM-ENGINES. G. H. Reynolds, New York, N. Y., assignor of one-half his right to C. H. Delamater and G. K. Robinson, same place. [Filed Mar. 4, 1875.]

Brief.—The oscillating valve is placed on a web which is formed on the stem. The valve is adjusted to its seat by springs between the web and the bottom of the slot in the valve.

1. In a rolling or oscillating valve, the combination of continuously circular heads *O O*, with the slotted portion C, loosely fitting stem B, and filling-piece *b*, substantially as and for the object specified.

2. The combination of the filling piece or strip G, with the slotted portion C of the body of the valve, the bolts *h*, and the loosely fitted stem B, essentially as specified.

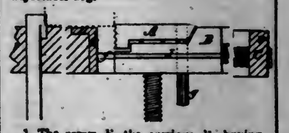
160,691. SPARK-ARRESTERS. William H. Richardson, Cincinnati, Ohio. [Filed Oct. 17, 1874.]



In a locomotive, the conveying and cooling apparatus E F G *a*, having air induction and eduction openings *a b*, to admit of a natural circulation of air through it, the apparatus being supported horizontally on top of the boiler, connecting at its forward end with the smoke-box B, and terminating at its rear end in the chimney C, all substantially as and for the purpose specified.

160,692. BRICK-VISES. Pierre Bimbold, San Antonio, Tex. [Filed Dec. 7, 1874.]

Brief.—The vise-screw carries a vertically-adjustable dog.



1. The screw E, the carriage B, having tongue J, and the frame or box D, having grooves *f*, all combined and arranged substantially as and for the purpose described.

2. The carriage B, clamping-block A, the screw F, and the guide-pin *g*, all combined and arranged substantially as and for the purpose described.

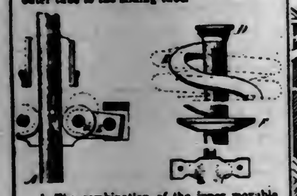
162,692. PISTON-PACKINGS. J. H. Rollings, Brooklyn, N. Y. [Filed Sept. 16, 1874.]



The combination, substantially as hereinbefore set forth, of the auxiliary cylinder with its piston, having a V-shaped end, and split ring provided with V-shaped projections, each side of said opening, as described, so arranged that the ring may be spread endwise by the said piston acting in lines perpendicular to the circumference of the ring, for the purposes set forth.

162,694. ESTERGHOT-GASALIERS. Edwin Bunnell, New Haven, Conn. [Filed Jan. 12, 1875.]

Brief.—The upper end of the flexible tube is connected with the gas-supply, and the lower end is attached through the slot in the outer tube to the sliding tube.



1. The combination of the inner movable tube A, the slotted outer tube B, and the flexible conducting-tube E, substantially as and for the purpose specified.

2. The combination of the inner movable tube A with the slotted tube B, flexible conducting-tube E, and pan F, substantially as and for the purpose specified.

3. The combination of the inner movable tube A, outer tube B, and cams L L, each carrying a roll, a, in its face, substantially as and for the purpose specified.

162,695. METHODS OF ELEVATING VESSELS FOR TRANSFERRING GRAIN. Jno. J. Safely, Ottumwa, Iowa. [Filed Oct. 5, 1874.]

Brief.—The elevating floating-dock has air-compartments, within which steam-engines operate vacuum-pumps, to effect the elevation of the dock and laden boat to the required height above the water. The dock-surface is provided with conduits, through which grain is received into bin-chutes, with which the conduits are brought to a level.

1. The method herein described of transferring grain, coal, &c., and other like material, from boats, by elevating the laden boat upon a floating-dock, and effecting the transfer through valved openings in the boat's bottom, and through corresponding side conduits in the raised floating-dock, to the place of transfer.

2. A floating-dock constructed for elevating laden vessels, to effect the transfer of their contents, having combined therein a steam boiler or boilers, vacuum-pumps in the water-compartment connected with said boiler or boilers, conduits or chutes opening at top of the dock to receive the contents from bottom openings in the boat, and at the sides of said dock, to deliver the contents where desired, with suitable gates by which to let in and shut off the water from said floating dock, and air-bearing compartments, the several parts co-operating to effect the object stated.

3. A floating-dock and a laden boat thereon, elevated by the displacement of the water directly through the bottom of its water-filling compartment, substantially as described.

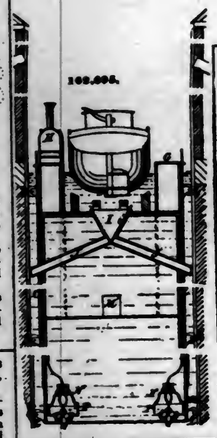
4. The combination of a floating-dock, constructed and operated substantially as described, with elevators or elevated bins, constructed for use on one or both sides of said dock, and having conduit communication therewith, substantially as and for the purpose specified.

5. The method herein described of elevating the floating-dock and the laden vessel thereon, to bring the dock-conduits at a height to form a junction with the elevator or bin-conduits without regard to the combined weight of the dock and the vessel.

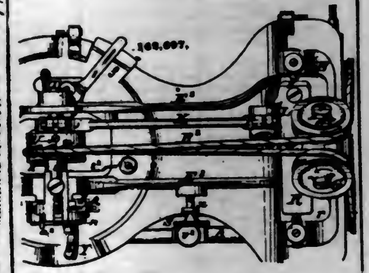
6. A floating-dock divided into upper and lower water-compartments, in combination with air-buoying compartments, vacuum-pumps, arranged and operated to displace the water from the lower compartment, and gates to let out the water from the upper compartment when its floor has reached a level above the outer water, whereby the dock is quickly elevated by the combined free outlet and forced displacement of the water therefrom.

7. The combination of the guides and rollers upon the elevated bins and the dock sides, to maintain the conduits of the latter in vertical range with those on the bins, to affect their junction when the dock has reached its proper height.

8. The combination, in a floating-dock constructed with dock-conduits for the transfer of grain from boats, of the air-tight buoying-compartments G, and the valved compartments E and F, substantially as and for the purpose set forth.



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2. The combination of the wooden sides or pieces E, projecting beyond the sides of the furnace, and having grooves for the reception of the ends of the pans, the pans each provided with an opening in each end into the outside passages, the continuous outside passages, the lap-joint between the pans and the cross-rods, having heads and screw-nuts, all combined to form an evaporator composed of a series of pans communicating with each other, or with any one on the series, and the whole constructed without the use of solder or rivets, substantially as described.

162,697. SEWING-MACHINES. Albert E. Schmidt, Hamburg, assignor to the Hamburg American Sewing-Machine Manufacturing Company, limited, Berlin, Germany. [Filed Sept. 21, 1874.]

1. The hollow base, having longitudinal hinges *y*, the standard or post V, and the recess Z, to accommodate a hand driving-wheel at the right-hand end of the machine, substantially as herein described.

2. The combination, in a hand sewing-machine, of the close-bottomed hollow metallic base B, having a recess or orifice, Z, at its right-hand end, and a cap-plate, C, hinged at its front edge, the post or standard F on the cap-plate at its right-hand end, and the vertical transverse driving-wheel D, supported by the latter, substantially as herein shown and described, for inclosing, protecting, and conveniently operating the converting and transmitting mechanism, in the manner set forth.

3. The combination, in a hand sewing-machine, of the oblique guide-palleys G G², the pulley U, having a serrated groove, *v*, and the grooved pulley-flange *d*, arranged immediately above the guide-palleys, to provide for rotating a transverse horizontal shaft, beneath the cloth-plate at the left-hand end of the machine by a driving-wheel, D, on a longitudinal shaft at the right-hand end of the machine, through the medium of a band or belt, B², in the manner set forth.

4. A bobbin-holder, X, having a hinged retaining-ring, *a*, a spring locking-catch, *b*, and an opening-spring, *c*², operating automatically when the catch is tripped, said parts being constructed and combined substantially as herein shown and described.

162,698. MACHINES FOR SHAPING TOBACCO-PIPE BOWLS. John Schneider and Leonard Ulbing, Philadelphia, Pa., assignors to V. Grottenthalen, same place. [Filed July 21, 1874.]

Brief.—The bowl is supported upon a holder capable of adjustment in various directions, and applied to the face of a revolving serrated disk, which removes the superfluous material.

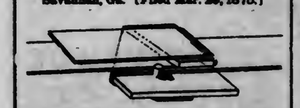
1. The combination of the rotating cutter E, having at one side a flat cutting-face, and a carrier, M, provided with appliances for holding the bowl of a pipe, and adjustable, as described, so that the said bowl may be presented at any desired angle to the cutting-face.

2. The combination of the carrier M and its spindle M with the slides I and O and plate B.

3. The within-described chuck, consisting of the tapering end *i* of the spindle M, sleeve *e*, split throughout a portion of its length, and a key, *h*, passing through both sleeve and spindle, all as set forth.



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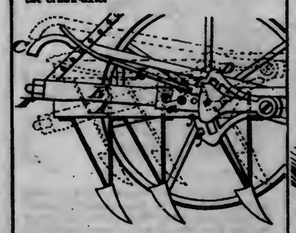
1. A bale-tie fastening formed of a double plate, open at one side and both ends, and provided with a laterally-extended base portion, carrying a stop-pin or stud, substantially as described.

2. A plate of metal constructed so as to form a rounded back and sides, about in parallelism, one of the sides being of a width greater than the other, and having an oblique end, upon which is placed a shouldered stud or flat-headed rivet, to permanently secure one end of the band to the plate, and prevent lateral displacement of the free end of the band when sprung into position, substantially as described.

3. In combination with the double plate, a stud or stop formed and placed so as to secure one end of the band permanently to the plate without affecting the strength of the band, and to securely hold the other end after it has been sprung into position.

162,700. CULTIVATORS. Eli Shupe, Middletown, Mich. [Filed Mar. 13, 1875.]

Brief.—The crank-axles project forward, and are pivoted to the front end of the inner frame, which is manipulated by a handle. The outer frame turns upon the same pivot, and has a vertically-slotted plate on each side, in which the projecting spindle slides, the frame being elevated by a lever and spring-stop upon the crank-axle.



1. The frame A, having *d* draft-pole, B, and a handle, C, secured to it, in combination with the arms E and foot-bar F, pivotally connected to said frame, and with segments D J, spring-latching arms K, and wheels N, substantially as described.

2. In combination with the handle C on frame A, the slotted standard G and its pin *p* on the foot-bar F, substantially as and for the purposes described.

162,701. CIGAR-MOLD FASTENINGS. Sigmund Simonson, Bridgeport, Conn. [Filed Oct. 31, 1874.]

Brief.—The catch upon one half of the mold is caused to embrace a lug upon the other half, when the molds are brought together by a spring under the catch. The catch is drawn from over the lug by hand to open the molds, which raises a cam part of the same, that forces the molds apart.

A cigar-mold having combined therewith the hooked lever *a b* and spring E on one part, and the lug D on the other part, substantially as and for the purpose specified.

162,702. LATCHES FOR GATES, &c. Wm. D. Skidmore, Mount Vernon, N. Y. [Filed Apr. 9, 1875.]



A gate-fastening constructed of the bifurcated latch-bar A, in combination with a catch, C, having the inclined surfaces *d d*, recess *d*, and protuberance *e*, substantially as described.

162,703. GAS-REGULATORS. Danl. Sloan, New York, N. Y. [Filed Mar. 13, 1875.]

Brief.—The valve is controlled in its movements by the shoulders.

In a gas-burner, the combination of the valve *c*, provided with a shoulder, *g*, the conical check or nipple *d*, the tubular body *b*, and the burner-tip *e*, all constructed and operating substantially as shown and described.

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162,704. GAS-REGULATORS. Danl. Sloan, New York, N. Y. [Filed Mar. 13, 1875.]

Brief.—A tubular set-screw supported by a cross-bar as a guide for the valve-stem.

The combination, in a gas-regulator, of the valve-casing A, having the conical nipple B, and the cross-bar *a*, arranged above the same, the perpendicular valve *c* arranged over said nipple to create a tapering chamber between the two, and having the guide-stem *b* projecting upwardly from its upper top, and the tubular set-screw E, projecting down through the said cross-bar of the valve-casing, all substantially as and for the purposes specified.

162,705. STRAINERS FOR WASH-BASINS AND BATH-TUBS. Jas. D. Smith, Washington, D. C. [Filed Dec. 23, 1874.]

Brief.—A removable strainer adapted to fit within the waste-pipe below the boss of the plug, whereby any accumulations of matter may be gathered and removed.

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As a new article of manufacture, a strainer for wash-basins or bath-tubs, consisting of a perforated cup adapted to be dropped within and removed from the waste-pipe, and being of such length as to readily admit of the insertion of the ordinary plug within the upper end of the waste-pipe, substantially as and for the purpose set forth.

162,706. BAND-CUTTERS FOR THRASHING-MACHINES. Peter A. Sommers, Cassnovia, Ill. [Filed Apr. 16, 1875.]

Brief.—Knives provided with adjustable guard; device for throwing knives into and out of gear, and securing them within the guard.

1. In a band-cutting attachment for thrashing-machines, having rotating knives upon a shaft, the guards G, provided with slots *a a*, tapering curved fronts *g*, and slotted ears *b b*, whereby they may be adjusted forward or rearward, substantially as set forth.

2. The combination of the shaft D, its curved



cutters *c c*, slotted adjustable bearing-arms F, and the slotted adjustable guards G, substantially as set forth.

3. The tilting lever H, provided with the downwardly-inclined prongs *e e*, in combination with the clutch-pulley A, the shaft D, notched collar *d* of the bearing-arm, and the sliding flanged clutch *e d*, all substantially as set forth.

162,707. SEATERS. William F. Spencer, Richmond, Ind. [Filed Jan. 19, 1875.]



1. A settee made in sections A A, so as to form a continuous seat when placed in a straight line, the sections being pivoted or hinged together at or near their forward edges, only so that they may be freely adjusted to assume any desired continuous curve, or be set at any desired angle with relation to each other, substantially as and for the purpose specified.

2. The pivoted plates B, having slots *b* and the buttons or pivot-bolts C attached to the settee sections A A, at or near the front edge of the seat-frames, substantially as and for the purpose specified.

162,708. CHAIR-SEATS. Wm. F. Spencer, Richmond, Ind. [Filed Jan. 19, 1875.]

1. A cushion made in sections or separate pieces A, secured to or between slats B, substantially as and for the purpose specified.

2. The cushions A, secured to slats B, in manner substantially as described, and arranged upon suitable standards or supports to form a cushioned seat, substantially as set forth.

3. The cushions A, secured to slats B, or other suitable backing or support, and arranged upon suitable standards or supports, with open spaces between the cushions for the passage of air, substantially as and for the purpose specified.

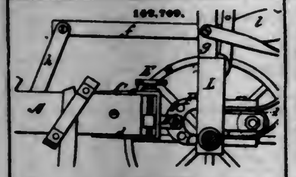
162,709. GANG-PLOWS. E. J. Bourgue, Cantagne, N. Y. [Filed Jan. 2, 1875.]

Brief.—Slotted loops are secured to the front ends of the plow-beams, and are coupled to other loops which encircle the axle. Both run upon crank-screws, by which the former adjust the plow-beams vertically, and the latter to or from land.

1. The combination, with the loops F laterally adjustable on axle G, and the supporting-legs J, of the adjusting-screw S, substantially as specified.

2. In a gang-plow the combination, substantially as described, of the clip-loops F, extending rearwardly from the axle G, the slotted loop *e* secured upon the front ends of the plow-frames, the adjustably-connecting links D, and the vertically-adjustable screw E, all operating substantially as and for the purpose set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON



160,709. CARPENTERS' PLANES. Elliot G. Storke, Auburn, N.Y. [Filed Jan. 6, 1875.]

Brief.—The cutting-bit can be adjusted as desired by means of a casting-lever, provided upon its forward part with an upward globular projection, and with journals, which rest in fulcrum-bearings on the front of the standards, which support the upper end of the bit, and a recessed screw-head attached to the under side of the cap. A metal fastener adjustable in grooves in the interior sides of the plane-body by means of lugs, and operated by a set-screw, secures the bit in position. The front of the plane-body is provided with an adjustable metallic throat-piece, for keeping down the grain and preventing wear from the friction of the shavings.



1. The casting-lever E, provided with journals which rest in fulcrum-bearings C on the front of the plane-iron standards B, and have lateral play in said bearings, substantially as shown and described.

2. The combination, with the countersunk or recessed screw-head of a double plane-iron, of the journaled casting-lever engaging with its shorter arm the recessed screw-head, substantially as herein shown and set forth.

3. The metallic section or throat-piece I applied to and movable and adjustable upon the upper face of the plane-body, as described, and formed with a vertical portion, K, projecting downward through the plane body to form the front of the throat, substantially as set forth.

160,711. ROTARY ENGINES. Wm. R. Stott, Scranton, Pa. [Filed Feb. 17, 1875.]

Brief.—The rotary center-block is provided with a transverse slot and lateral radial extension, in which the valve of corresponding structure works. The arms of the valve are provided with wheels having hubs, which operate in a cam-groove. The abutment is provided with chambers and steam-channels, to balance it and the rotary center.



1. The combination of the fixed cylinder, having a rabbeted concave surface, with the rotary center A, plates D D, and flanges e, substantially as and for the purpose described.

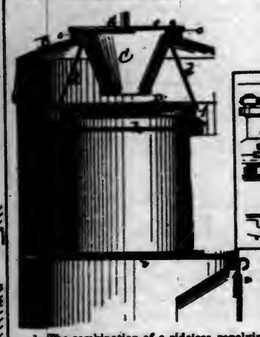
2. The rotary center-block A, having the side flanges d' d', the hub a, the recesses d' d', the transverse slot c, and the lateral radial extensions d' of said slot, all arranged substantially as and for the purposes set forth.

3. The valve V, adapted to fit into the open slot d, with its arms e' e' projecting into and working in the two lateral slots d' of the rotary center, substantially as described.

4. The wheels O, having the hubs o o' combined with the valve V and the cam-groove f, substantially as and for the purpose set forth.

5. The abutment F, provided with the chambers or recesses g g' and the steam-channels i i', substantially as and for the purpose described.

160,712. AXE-SETTERS. John Sutton, Ja.sp, N. Y. [Filed Mar. 4, 1875.]

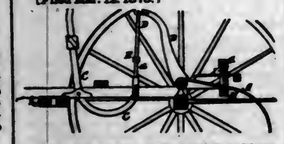


1. The combination of a sideless revolving or oscillating sieve and the inner and outer reservoirs or vessels, having a space between them, substantially as and for the purpose described.

2. The combination, with a sieve and an inner and outer vessel, of a hopper attached to and revolving or oscillating with the sieve, substantially as and for the purpose described.

3. The combination, with the outer vessel A and inner vessel H, of the bottomless vessel J, serving as a guard and a centering device, substantially as herein described.

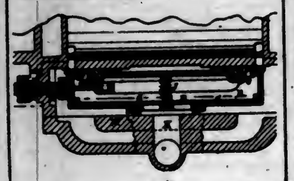
160,713. HORSE HAY-RAKES. Jas. R. Taylor, Westminster, Md., assignor to Taylor Manufacturing Company, same place. [Filed Mar. 12, 1875.]



The combination of lift-bar B, hand-lever C, and intermediate connecting-rod D, provided with adjustable foot-piece E, with the oscillating rake A, all constructed and arranged to operate substantially as and for the purpose specified.

160,714. BALANCED AND CUT-OFF VALVES. Jos. W. Thompson, Salem, Ohio, assignor to himself and Buckeye Engine Company, same place. [Filed Oct. 10, 1874.]

Brief.—The main valve is hollow. Steam is conducted into it through the lid of the chest. The cut-off is placed inside the main valve, and is operated by a rod passing through the main-valve hollow rod.

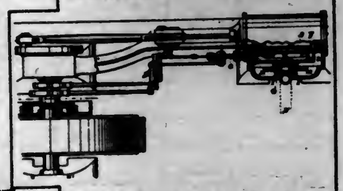


1. The combination of the sliding hollow steam-valve A, and inclosed sliding cut-off valve with the steam-chest L, having steam-induction pipe K, exhaust-passages M M, and pipe N, all constructed and relatively arranged substantially as herein shown and described.

2. The combination of the tubular valve-rod Q with the rod P, the valves A O, their eccentrics, and connecting-rods, as herein shown and described.

160,715. VALVE-GEARS FOR STEAM-ENGINES. Jos. W. Thompson, Salem, Ohio, assignor to himself and Buckeye Engine Company, same place. [Filed Mar. 20, 1875.]

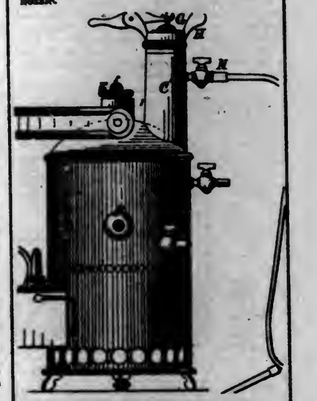
Brief.—The cut-off rock-shaft is pivoted to the main-valve rock-shaft, and receives its motion in addition to a movement from a separate eccentric.



The double-armed rock-shaft R of the cut-off valve, mounted on the rock-arm S of the main valve, which is operated by a fixed eccentric, in combination with an eccentric arranged for adjustment around its center of motion, and the rods connecting said parts, whereby the movement of the cut-off is varied, as set forth, for the purpose specified.

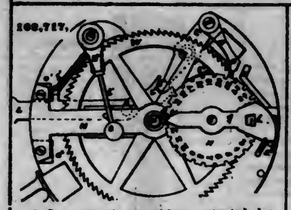
160,716. INSECT-DESTROYERS. William T. Tongue, Liverpool, England. [Filed Nov. 11, 1874.]

Brief.—A portable steam-generator, of size convenient for carrying in the hand, is provided with a spirit-lamp for heating, a safety-valve, steam-pipe, and nozzle, with steam stop-cock. A flexible pipe or tube of convenient length connects the steam-exit pipe with the nozzle.



As an improvement in means for destroying insects by steam, the hereinbefore-described apparatus, consisting of the casing A, containing the water-chamber C', steam-chamber C, combustion-chamber F, and discs p and p, the safety-valve G g, the steam-cock K, and the discharge-pipe and nozzle O o, all constructed and combined to operate in the manner and for the purpose substantially as specified.

160,717. PASSENGER-REGISTERS. Hamilton B. Towle and John B. Benton, New York, N. Y. [Filed Feb. 20, 1875.]



1. In registering-machines, actuated by pulls given upon a lever, the combination of two index-fingers, one of which is carried by friction, and may be freely adjusted to any point on the dial, and the other of which is permanently fixed to and moves only with the driving mechanism, arranged to operate substantially as described.

2. The actuating-lever L and lever L', pawl A, and ratchet-wheel W, in combination with the stop-lock B, adapted to receive the end thrust of the pawl at each movement of the actuating-lever, whereby the ratchet-wheel is securely locked.

3. A cover-plate, provided with suitable aperture, mounted upon the same shaft and combined with a register-disk, in combination with a register-wheel, the actuating-leg of which moves simultaneously the cover-plate and the disk, to keep the proper number upon its dial in view, and to keep, at the same time, the next consecutive number on the dial obscured until it is time for the indicator to change, and show said next number at the completion of a century, or at any other point of numeral division.

4. The disk x, carrying the index-hand C, in combination with the key V, inserted through the opening in the cover-plate.

160,718. FIRE-EXTINGUISHERS. Jacob B. Van Dyne, Louisville, Ky. [Filed July 30, 1874.]

Brief.—To operate the extinguisher from an upper floor, a rod passes down, terminating in an angle-spring having a subjacent stud, which engages with a notch on the shaft. The stopper of the acid-bottle is attached to a cam, so that it is swung to one side as it is lifted. The leaden acid-bottle has a glass mouth-piece, to prevent adhesion of the leaden stopper.

1. The angle-spring E, having subjacent stud e, and provided with a rod, F, in combination with a trunnioned fire-extinguisher, as and for the purpose described.

2. The combination of nut and screw I J and cam K, to remove or replace the stopper, in the manner specified.

3. A trunnioned fire-extinguisher, having a hollow trunnion, in combination with a stand-pipe having a swiveled connecting-pipe, and the latching devices, consisting of the spring E, notch-eted J, and rod F, substantially as shown and described.

4. In a chemical fire-extinguisher, the combination of a leaden acid-vessel, a glass cover or mouth-piece, and a leaden stopper, for the purpose specified.

160,719. FIRE-EXTINGUISHERS. Jacob B. Van Dyne, Louisville, Ky. [Filed July 30, 1874.]

Brief.—In the ring of the holder for the acid-bottle are formed slots, through which pins on the neck of the acid-vessel pass when the latter is secured to its holder. The vessel being then turned, the pins enter notches also formed in the ring, to prevent displacement of the acid-vessel, and the premature mixture of the chemical ingredients.

The combination, with acid-vessel having studs f' f', of the holder-ring H, having the notches h' h', as well as the vertical slots h h, as and for the purpose specified.



160,720. STEERING APPARATUS. Philip R. Voorhees, Washington, D. C. [Filed Jan. 21, 1875.]

1. A vibrating winding mechanism, constructed substantially as described, in combination with a rotary driving-shaft, a ship's rudder, and suitable ropes and levers, whereby the rudder is either moved and held by hand-power alone, or moved in either direction, but not held, by the assistance to the hand-power of power transmitted from the driving-shaft, without the necessity of reversing or stopping the motion of said shaft, all at the will of the helmsman, and in the manner substantially as described and set forth.

2. A cylinder and its piston, oscillating in a horizontal plane, in combination with a hand steering wheel or lever and a ship's rudder, through the intervention of a piston-rod, and suitable ropes and levers, whereby the rudder is actuated and controlled at the will of the helmsman, in the manner substantially as described and set forth.

3. The combination, with the winding-shafts s s, of the counterbalance-weights u u and toggles T T, attached to the winding-ropes P' P', whereby the said ropes are prevented from leaving and arbitrary winding action of the pulleys prevented, in the manner substantially as described and set forth.

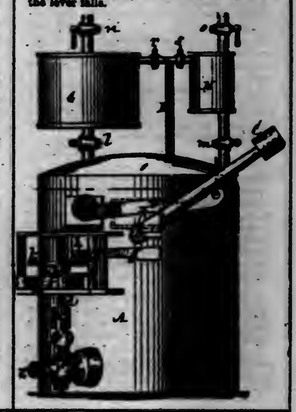
4. The combination, with a ship's rudder, of the oscillating cylinder F and its piston, the elevating-pumps P P, connected by a beam, and suitable ropes and levers, whereby the movements of the rudder and its resistance to the helm are controlled by operating the helm itself, at the will of the helmsman, in the manner substantially as described and set forth.

5. The combination of the oscillating cylinder F and its piston with the stand-pipe G and elevating-pumps P P, provided with pipes H H, K K, L L, whereby the motions of the pumps P P are actuated, in the manner and for the purposes substantially as described and set forth.

6. The combination of the elevating-pumps P P, constructed substantially as described, with the vibrating frame M and its winding mechanism, whereby said mechanism is thrown both in and out of winding operation, in the manner substantially as described and set forth.

160,721. FIRE-EXTINGUISHERS. Edward F. Wadhams, Stamford, Conn., assignor of nine-tenths his right to Elon Foster, New York city. [Filed Feb. 16, 1875.]

Brief.—A pivoted tilting vessel holds the acid, and is discharged by descent of a weighted lever. A stop and spring mechanism, interposed between the weighted lever and the discharge-cock, opens the latter when the lever falls.



The combination, with the pan B, vessel A, and discharge-cock F, of tripping mechanism, interposed between the pan and the cock, for opening the latter when discharging the contents of the pan, substantially as specified.

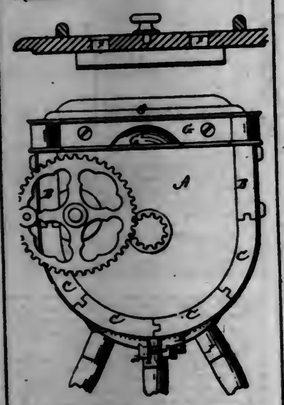
160,725. METALLIC ROOFS. J. C. Wands, Nashville, Tenn. [Filed Jan. 19, 1876.]



The raised corrugated ribs r at the lateral edges of corrugated plates, constituting a roof, combined, arranged, and constructed substantially as specified.

160,726. ROTARY CHURNS. C. H. Weston, Toledo, Ohio. [Filed Mar. 17, 1875.]

Brief.—The top of the churn is clamped by single castings at each end. The staves forming the body of the churn are held in position by being firmly fixed to the churn near the top. Each hoop is cut at its middle, the ends passed through slots in lugs, brought forward, and bent up around the ends of the lugs. A bolt passes through perforations in the lugs and ends of hoop, upon which a nut is screwed. By tightening this nut the staves are forced together.



1. The combination, with the churn-body A B C, of the hoops D, having the bent perforated ends a, the clasps E, provided with slots e, recesses b, and perforated lugs d, and the bolt f, passing through the ends a and lugs d, substantially as and for the purposes herein set forth.

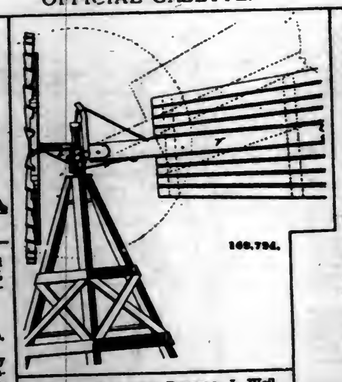
2. The combination, with the churn-body A B C, of the metallic castings G G, provided with end sockets to inclose the corners of the churn, and having handles G' cast therewith, all substantially as set forth.

160,727. WINDMILLS. David G. Webster, Park's Corners, Ill. [Filed Mar. 1, 1875.]

Brief.—The wheel is pivoted to one side of the turn-table, and connected to the vane by means of a short rigid rod, so that when the wheel yields to the force of the wind, the vane is raised upward. When the wind subsides the weight of the vane brings the wheel into position again.

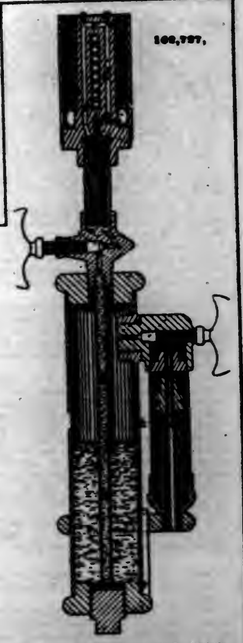
1. In combination with a wind-wheel, a vane that is pivoted so as to move vertically, and connected to the wheel by a rigid connecting-rod, substantially as shown.

2. The combination of the wheel W, journaled in the support b, which support is placed to one side of the center of the derrick, in combination with the step f, rod r, and vertically-moving vane V, substantially as set forth.



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160,727.

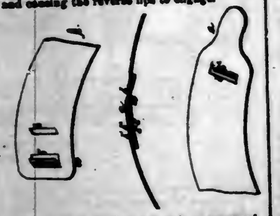


1. The combination, in a torch for lighting street-lamps, &c., of a tubular handle, forming a reservoir for the burning-fluid, and an air-pump for producing pressure in said reservoir, as and for the purpose described.

2. The combination, with the handle of a torch, and an air-pump connected therewith, of a ring surrounding said handle and attached to and serving as a guide for the piston of the pump, and a handle by which the piston is operated, substantially as described.

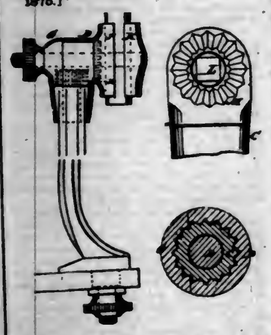
160,735. HOOPS FOR BARRELS. L. Weil, New York, N. Y. [Filed Mar. 12, 1875.]

Brief.—The hoop-lock consists of rectangular slots formed upon both ends of a metal hoop, and provided with reverse lips rising on opposite sides of the hoop from the edges of said slot. The hoop is locked by passing the narrow end through a slot in the wide end, and causing the reverse lips to engage.



The hoop A, having one end, a, narrowed and the other wide, and c' cross-slotted at b to receive said narrow end; the two ends then locked by reversed lips b^1 b^2, rising on opposite sides from the edges of cross-slots b^1 b^2, as and for the purpose described.

160,736. UMBRELLA-SUPPORTS. Richard J. Wellen, St. Joseph, Mo. [Filed Jan. 26, 1876.]



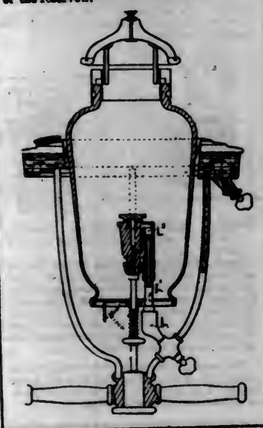
1. The annular and serrated socket C, and the head D, constructed and combined as and for the purposes set forth.

2. The jaw K, in combination with the screw I journaled in the head D, and the jaw J, as and for the purpose described.

160,737. VAPOR-BURNING TORCHES. Henry Wellington, New York, N. Y. [Filed Mar. 10, 1875.]

160,738. STREET-LAMPS. Henry Wellington, New York, N. Y. [Filed Mar. 10, 1875.]

Brief.—The shade rests upon the inner face of the reservoir.



1. The combination, in a street-lamp, of a reservoir for holding the burning-fluid with the frame that supports the glass shade surrounding the shade and forming part of the supporting frame, substantially as described.

2. The vaporizing-chamber consisting of the tube L', the socket L², and the channel f communicating with the said socket and the burner, substantially as described.

160,729. AXLES. Elisha H. Wheeler, Memphis, Mo. [Filed Nov. 14, 1873.]

Brief.—Skein, bolster, and axle bound together by means of tension-rod, hound-bolts, and lugs.

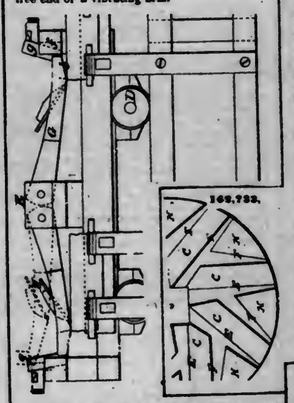


1. Axle A, bolster B, thimble-skein E, lugs 3 3, and tension-rod H, in combination with arm F, recess O, and flanges L, as set forth.

2. The combination of the axle, hound, bolts, washers 1 1 1, tension-rod H, lugs 3 3, as set forth.

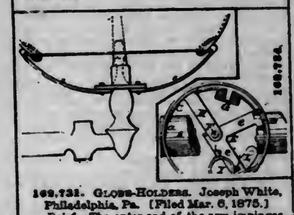
160,730. MACHINES FOR MAKING SPLINTS. Edward E. White, Oakland City, assignor of one-half his right to Ancel B. White, Lynnville, Ind. [Filed Dec. 10, 1874.]

Brief.—The material is secured in suitable clamps, and cut by planes attached to the free end of a vibrating arm.



1. In a machine for splitting hoops and making chair-splits, a reciprocating carriage carrying a double set of cutters, operating in the manner herein set forth.

2. The hinged arms G, pivoted at their inner ends, in pairs, to the central cross beam E, and extending therefrom in the same line, in combination with the guides f g for their free ends, substantially as herein shown and described



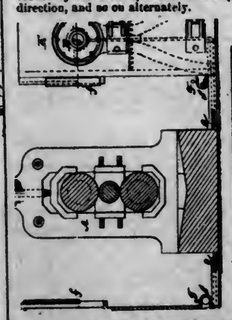
160,731. GLOBE-HOLDERS. Joseph White, Philadelphia, Pa. [Filed Mar. 6, 1875.]

Brief.—The outer end of the arm impinges upon the inside of the globe.

The improved globe holder, having the spring-arms e, curved upwardly and outwardly, and terminating in S-shaped hooks, bent inwardly and depending, so that their ends shall impinge on the inner surface of the globe, as shown.

160,732. APPARATUS FOR ROLLING METALLIC STRIPS OR RIBBONS. Saml. E. Wilmot, Bridgeport, Conn. [Filed Mar. 17, 1875.]

Brief.—The rolls are located between two reels placed in heated chambers, and the ribbons are drawn from one reel through the rolls, and wound upon the other reel, succeeded by the same operation in the opposite direction, and so on alternately.



1. The combination of a rolling-mill and reels on opposite sides thereof, constructed to give and take alternately, substantially as and for the purpose herein set forth.

2. The heat conserving casings or furnaces E E and reels B B, constructed to give and take alternately, arranged therein, in combination with an interposed rolling-mill, substantially as and for the purposes specified.

160,733. MILLSTONE-DRESS. John A. Witman and George W. Seibert, Middletown, Pa. [Filed Mar. 23, 1875.]

1. The combination of the stone A, dressed with eight double-tapered furrows, B, and lands G, and bed-stone D, dressed with eight double-tapered main furrows, E, short furrows F, and lands G H, all constructed and arranged as and for the purposes described.

2. The grooves or furrows constructed or formed as herein described—viz., wide at the eye, narrow at the skirt, perpendicular sides or edges b^1 b^2, deep at the back, and shallow at the skirt, the bottom deep on one side, with a curve upward and across the groove, and upward and outward toward the skirt—as and for the purposes described.

160,734. SHOT-CHAMBERS. Peter Eisenl, Nashville, Ill. [Filed Apr. 6, 1875.]

1. The combination of tube A, cut-offs B and C, arms e and H, springs G and I, substantially as and for the purpose set forth.

2. The combination of tube A, cuts-offs B and C, arms e and H, springs G and I, and knob K, substantially as set forth.

REISSUES.

6,399. SELF-CLOSING ANNUNCIATORS. Ernst Axtheim, Pittsburg, Pa. Patent No. 150,274, dated Apr. 28, 1874. [Filed Dec. 16, 1874.]

1. The combination of a bolt provided with a retracting-spring, a locking-slide having spring-dogs, and a lever operated from the bell-wire for advancing the bolt, substantially as and for the purpose specified.

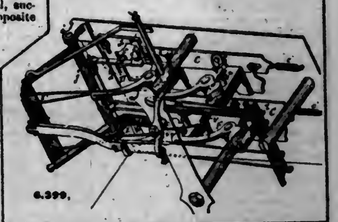
2. The combination of the bolts b, locking-slides C, bell-wires I, and intermediate mechanism, whereby the pulling of any one of the wires I exhibits a corresponding number, and conceals the number previously exhibited, as and for the purposes specified.

3. The locking-slides C, provided with the spring-catches c, substantially as specified.

4. The coupling-slide D, provided with the arms d d^1, in combination with the locking-slide C, having the pins or projections c^1 b, substantially as specified.

5. The coupling-slide D, having the lugs d^2, in combination with the catches c of the lever E, substantially as and for the purpose specified.

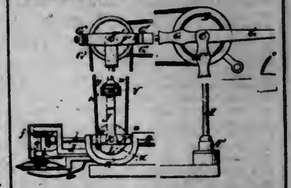
6. In combination with an annunciator a coupling-piece, by moving which the annunciator is changed at will from a self-closing to a hand-closing condition, and its reverse, as specified.



6,399.

6,400. APPARATUS FOR TRANSMITTING MOTIVE POWER. Roswell T. Smith, Nashua, N. H., assignor to himself, John G. Blunt, Wm. Earl, and J. K. Priest. Patent No. 59,069, dated Oct. 23, 1866; reissue No. 4,623, dated Nov. 7, 1871. [Filed Jan. 15, 1873.]

Brief.—The standard, supported upon the bed-plate, has a horizontal arm pivoted to its upper end. Said arm carries a weight at one end, and has a rod connected to the other, to the lower extremity of which the brush, shearing apparatus, or a device requiring universal motion, is connected.



1. In the machine for transmitting motion, the hanger F, pivoted upon the arm G, which is pivoted to its support A, whereby the hanger itself is permitted to vibrate in a vertical plane, and the arm and hanger together are permitted to vibrate in a vertical plane, which is at right angles to the plane in which the hanger alone vibrates, substantially as described.

2. In the machine for transmitting motion, the bearing N, pivoted upon the stirrup of the rod I, and upon the section O, whereby said bearing is permitted to move in planes at right angles to one another, substantially as described.

3. In the machine for transmitting motion, the arm G, pivoted to a swiveling-support, A, substantially as described.

4. In a machine for transmitting motion, the rod or bar I, pivoted to hanger or rod G, substantially as described.

5. In a machine for transmitting motion, the section O, pivoted to bearing N, substantially as described.

6. In a machine for transmitting motion, the combination of the swiveled rod or bar I with the section O, pivoted to bearing N, and having freedom to move in planes at right angles to each other, substantially as described.

7. In a machine for transmitting motion, the combination of the arm G, having freedom to vibrate vertically, the bar or rod I, having freedom to swing in planes at right angles to each other, and the section O, pivoted to bearing N, and having freedom to vibrate in planes at right angles to each other, substantially as described.

8. In the machine for transmitting motion, the combination of arm G, swiveled support A, bar or rod I, having freedom to swing in planes at right angles to each other, and the section O, pivoted to bearing N, substantially as described.

9. In a machine for transmitting motion, the arm G, rod or bar I, swivel-joint V, and the section O, pivoted to bearing N, substantially as described.

10. In a machine for transmitting motion, the shaft g, driven with a positive motion from the prime motor, which has its power transmitted to said shaft through the gearing, which is supported on shafts which form the joints of the parts composing the machine, substantially as herein set forth.

11. In a machine for transmitting motion, the combination of the following elements, viz: a vertically-swinging arm, G, a balancing-weight, H, and a support for said arm, substantially as described.

12. In a machine for transmitting motion, the combination of the following elements, viz: a vertically-swinging arm, G, a balancing-weight, H, a support for said arm, and a swivel-joint, A', substantially as described.

13. In a machine for transmitting motion, the combination of the following elements, viz: an arm, G, pivoted to swing vertically, a balancing-weight, H, a support for said arm, a hanger, F, a pivot-shaft, F', and a pendent swinging rod or bar, I, substantially as described.

14. In a machine for transmitting motion, the combination of the following elements, viz: an arm, G, pivoted to swing vertically, a balancing-weight, H, a swinging pendent rod or bar, I, stirrup J, and joint V, substantially as described.

15. In a power-transmitting machine, the combination of the following elements, viz: the gear-shaft g on section O, and carrying a gear, f, and a pivot-shaft, K, on bearing N, and carrying a gear, M, and intermediate gearing, substantially as described.

16. In a machine for transmitting motion, the section O, carrying the instrument to be driven, and the handle pivoted to a vibrating bearing, N, on a pivot-shaft, K, substantially as described.

17. In a machine for transmitting motion, the combination of the following elements, viz: Swivel-stirrup J on rod I, bearing N, section O, carrying a handle, and the shafts K and g, connected by bevel-gears M and c, and e and f, and d, substantially as described.

18. In a power-transmitting machine, the following elements, viz: a vertically-swinging arm, G, a balancing-weight, H, a pendent swinging bar or rod, I, and a hinged section, O, carrying the instrument to be driven, and pivot-shafts which support the gear-wheels and said arm, bar, and section, substantially as described.

19. In a power-transmitting machine, the combination of the following elements, viz: belt-pulley D on pivot-shaft C, belt-pulleys E and E' on pivot-shaft F, belt-pulley L on pivot-shaft K, belts n n', arm G, pivoted to swing vertically, a support for this arm, a balancing-weight, H, a pendent rod or bar, I, having a stirrup at its lower end, substantially as described.

6,401. CAR-ROOFS. A. P. Winslow, Cleveland, Ohio. Patent No. 25,071, dated Aug. 9, 1859; reissue No. 2,050, dated Aug. 8, 1866; extended seven years. [Filed Mar. 8, 1875.]



1. A car or steamboat roof formed of two layers, that underneath being metallic, that on top wood, substantially as and for the purpose set forth.

2. A car or steamboat roof composed of an under surface of metal, an upper layer of wood, and an intermediate air-space, substantially as and for the purposes set forth.

3. A car or steamboat roof composed of an under surface of metal, an upper surface of wood, an intermediate air-space, the said air-space communicating with the exterior air, whereby a circulation is maintained, substantially as and for the purposes set forth.

4. A car or steamboat roof composed of an under surface of corrugated metal and an upper surface of boards, substantially as and for the purposes set forth.

5. A car or steamboat roof consisting of an under surface of separate metallic plates, D, and an upper surface of boards, substantially as and for the purposes set forth.

6. A car or steamboat roof consisting of an under surface of separate metallic plates, an upper surface of wood, and an intermediate air-space, substantially as and for the purposes set forth.

7. A car or steamboat roof consisting of an under surface of separate removable metallic plates and an upper surface of wood, substantially as and for the purposes set forth.

8. A car or steamboat roof consisting of an under layer of separate metallic plates D, rafters B, and an upper surface of boards, substantially as and for the purposes set forth.

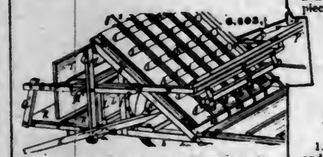
9. The combination, with the plates D and rafters B, of cap-plates F, substantially as and for the purposes set forth.

10. The combination, with the plates D, board covering A, and the rafters B, made to project above the said plates, of orifices H, substantially as and for the purpose set forth.

6,402. COATING METALS WITH METAL. Isaac Adams, Jr., Boston, Mass., assignor to the United Nickel Company, New York city. Patent No. 87,271, dated Aug. 21, 1860; reissue No. 6,313, dated Mar. 2, 1875. [Filed Apr. 16 1875.]

Rendering gas-tips and other similar articles anti-corrosive to heat or moisture by surfacing them with nickel, substantially as set forth.

6,403. HARVESTERS. John H. Elward, St. Paul, Minn., assignor to himself and W. S. Goodhue. Patent No. 127,324, dated May 28, 1872. [Filed Mar. 5, 1875.]



6,403.

1. In a machine for reaping grain, a removable gear and gear-frames, said gearing being adapted to drive the cutter at different velocities, and the gear-frame being constructed, substantially as described, so that it can be supported upon the main wheel at different heights, substantially as and for the purpose set forth.

2. The binders' platform, constructed of two parts, K K', hinged to each other, substantially as described, so that one part may be operated as a dropper, substantially as set forth.

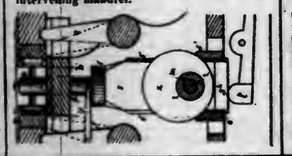
3. In combination with the bar I, to which is attached the upper ends of rods h', the fingers l', whereby said bar I is made to serve both as a support for rods h' and as a head for its rocking-grain receiving-fingers, substantially as set forth.

4. The combination, with broad, endless elevating-apron, upon the moving surface of which the grain is carried to the outer or stubble side of the machine, of the knife-edged slats h, arranged and operating as described.

5. The combination, with the secondary elevating-apron H', of the knife-edged slats h, and the compressing rods or wires s, substantially as and for the purpose described.

6,404. MACHINES FOR FORGING METALLIC SOCKETS. George Fitch and Peter Shafer, Etna, assignors, by mesne assignments, to George Fitch and John D. Hieber, same place, and F. O. Siegebruck, Millvale, Pa. Patent No. 134,045, dated Dec. 17, 1872. [Filed Jan. 29, 1875.]

Brief.—A vertical mandrel is elevated and depressed at pleasure by lever f and eccentric e, and is rotated by ratchet and pawl. The dies d are concave, corresponding to the cylindricity of the socket, and strike simultaneously upon the socket-blank surrounding the intervening mandrel.



1. The method of welding metallic socket-blanks and converting said blanks into sockets, finished internally and externally, on a rotating mandrel and by suitable dies, at one operation and one heat, substantially as set forth.

2. The combination of an intermittently-rotating mandrel, for supporting internally the walls of the socket, and reciprocating dies, bounded above and below by transverse walls, to prevent longitudinal extension of the socket, substantially as set forth.

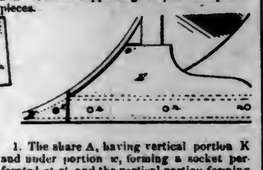
3. The combination of reciprocating dies d d, vibratory arms e e, and ratchet and pawl r v, whereby the mandrel is rotated when the dies are retracted, and is stationary at the forward stroke of the dies, substantially as set forth.

4. The sliding hub i, carrying an eccentric or cam at one end and a clutch at the other, and suitably arranged to operate the dies in one position and discharge the finished socket in the other, substantially as set forth.

5. The combination of mandrel p, one or more projections, s, and recessed and flanged dies d, substantially as set forth.

6,405. PLOWS. John Lane, Jr., Chicago, Ill., assignor to Hapgood & Co., and Furst & Bradley. Patent No. 113,436, dated Apr. 4, 1871. [Filed July 26, 1874.]

Brief.—Share, mold-board, land-side plate, and land-side-supporting bar, all in separate pieces.



1. The share A, having vertical portion K and under portion w, forming a socket perforated at a', and the vertical portion forming a shoulder on a line with the upper edge of the same, substantially as and for the purpose set forth.

2. The share A, having vertical portion K, ending on a line with the upper portion of the share, and the land-side F, ending with a vertical shoulder against the rear portion of the part K, the vertical portion of the share A and the land-side attached, by bolts a' and n, directly to the bar B, furnishing the entire support, all combined as and for the purpose herein specified.

3. The share A, having the vertical portion K, with perforation a' forward of the upper edge of the share, in combination with the land-side E and bar B, bolted together at a n, substantially as and for the purpose set forth.

6,406. BOILING-KETTLES. Stephen Spoor, Troy, N. Y. Patent No. 87,306, dated Feb. 23, 1869. [Filed Sept. 10, 1874.]



1. The construction and arrangement of the cover and bail of a boiler, kettle, or other similar vessel with projections on each, substantially as described, whereby the bail, when raised and tilted, will hold the cover nearly or quite closed, leaving an open space or spaces sufficient to allow the water to drain off without spilling the contents of the vessel, substantially as and for the purpose herein specified.

2. In a kettle or boiler the combination of the bail C, with shoulders or projections d d, whereby the said bail may be sustained in an upright position while boiling goes on in the kettle, substantially as and for the purpose herein specified.

3. A kettle or boiler, provided with a notch or projection, h, on its front side, in combination with a cover, B, held upon the kettle or boiler by the bail, which is held in a perpendicular position, substantially as and for the purpose herein specified.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 18. TUESDAY, MAY 4, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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DECISIONS OF THE COURTS.

SUPREME COURT OF THE UNITED STATES.

GEORGE W. BROWN, APPELLANT, *vs.* RUFUS B. GUILD, &c., AND GEORGE W. BROWN, APPELLANT, *vs.* JAMES SELBY, *et al.*

[*Appeals from the circuit court of the United States for the northern district of Illinois.—Decided at the October term, 1873.*]

[The opinion of the court in these cases was reported in the OFFICIAL GAZETTE, vol. 6, p. 391.

Below will be found the dissenting opinion of Mr. Justice Clifford.]

Mr. Justice CLIFFORD, dissenting:

Applicants for a patent are required to file in the Patent Office a written description of their invention and of the manner and process of making, constructing, and using the same, in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, and use the same; and in the case of a machine he must explain the principle thereof, and the best mode in which he has contemplated applying that principle, so as to distinguish it from other inventions.

Patents granted without a compliance with those conditions are invalid, as the express requirement of the act of Congress is that every inventor or discoverer shall do so *before* he shall receive a patent for his invention or discovery. (16 Stat. at Large, 201.)

Letters patent were granted to the complainant on the 2d of August, 1853, to take effect from the 2d of February prior to the date of the patent. Seed-planter is the name of the invention given in the patent, but in the introductory part of the specification it is denominated "new and useful improvements in seed-planters for planting corn and smaller grains."

Very minute description is given of the machine and of the several devices of which the machine is composed, for the declared purpose of enabling others skilled in the art to make and use the invention. Suffice it to say, without entering into details, that of all the numerous devices described as ingredients of the machine not one of them is new, nor it is claimed that the patentee either invented the machine or any one of the ingredients of which it is composed.

What he claims in that patent is as follows: (1) The oscillating horizontal wheels or distributers in the bottom of the hopper, having slots and tubes of various sizes, *in combination* with the stationary caps and pins for the discharge of different kinds and qualities of seeds. (2) He also claims the arrangement of the covering-rollers, mounted as described, and performing the functions of covering the seed, elevating the cutters in turning the machine, and also in adjusting the cutters to different depths.

Tested by the descriptive portion of the specification, the better opinion is that the second claim is also for a combination, but in the view taken of the case it is unimportant whether it be regarded as a method of accomplishing the described result or as a combination of the described ingredients to effect the same end, as it is quite clear that the patentee does not claim that he is the original and first inventor of any one of the several devices of which the entire machine is composed.

Beyond all doubt the invention consisted of the two combinations described in the respective claims, and it is equally certain that the letters patent were in all respects sufficient to secure the full enjoyment of the patented machine to the patentee. Nevertheless the patentee surrendered the same, and on the 16th of February, 1858, the same was reissued to him with an amended specification which contains only one claim. Instead of claiming a combination of old ingredients, as in the original patent, he claimed in the reissued patent a shoe for opening a furrow, which has a convex edge in front and a seeding-tube in its rear end, so that it may out through any grass, open out a furrow, and hold it open until the seeds are deposited in the same, substantially as set forth in the specification.

Like the original patent, the reissued patent was in form both operative and valid; but, inasmuch as it was not sufficiently comprehensive to supersede all other improvements, the patentee surrendered it for a second time and caused the original invention to be reissued in

five parts, embracing several claims, all of which, except one, are involved in the present action.

Surrendered patents cease to be a cause of action from the moment the surrender takes place, nor can the owner of the patent recover, even for an infringement which preceded the surrender, unless the claim for profits or damages had passed into judgment before the surrender took place. Such a patent, though inoperative as a cause of action, may be admitted as evidence to support or disprove an issue that the reissued patent is not for the same invention as the original. Reference may also be made to such patent as to a repealed statute, to aid in the construction of a reissued patent, if the latter is ambiguous; but it ceases to be operative for any other purpose, just as much so as a repealed statute, and can never have the effect to enlarge or diminish the operative words of a reissued patent.

Patents are public grants, and every person claiming any right under such an instrument must show that the right claimed is secured by the instrument; nor can he be benefited by showing that the right claimed was secured by a surrendered patent, unless the reissued patent also secure the same.

Viewed in the light of these suggestions, it is clear that the rights of the complainant in this case depend solely upon the last-mentioned reissued patents, which are the patents mentioned in the bill of complaint and which it is alleged by the complainant that the respondents have infringed.

Defenses of various kinds are set up by the respondents to the allegations of the bill of complaint, as follows: (1) That the complainant is not the original and first inventor of the improvements described in the said several patents mentioned in the bill of complaint. (2) They deny that the said new patents were issued in good faith, and they allege that said reissued patents are not for the same invention as that described and embodied either in the original patent or in the prior reissues of the original patent. (3) That the five last-mentioned reissued letters patent are severally invalid in law and void and of no effect, and that they do not confer any such right or monopoly to the complainant as he alleges and pretends to claim.

Enough has already been remarked to show that the original patent was a combination of old ingredients by which the described result was effected; or, in other words, that the patented invention consisted in a new combination of the described ingredients, every one of which was proved to be old. Old ingredients are not the proper subjects of letters patent in any other form than as a combination, for the plain reason that nothing is the proper subject of a patent which is not both new and useful.

Reissued patents must be for the same invention as the original, and that condition is just as applicable to a second reissue as to the first; nor is the second reissue relieved in any respect from the full force of that condition in a case where the invention in the reissue is divided into several parts.

Undoubtedly a new and useful combination consisting of old ingredients may be the proper subject of letters patent if the combination produces a new and useful result; but the act of Congress does not authorize the patentee to surrender such a patent and to reissue the same for the separate ingredients, for the plain reason that the ingredients are old, and for the additional reason that a patent for a separate ingredient is not the same as the combination of several ingredients. (*Gould* vs. *Rees*, 15 Wall., 194.)

Authorities to support these propositions are unnecessary, as they are self evident; nor is it necessary to do more than to refer to the several claims of the several reissues under consideration to show that every one of those reissues are invalid, both for the reason that the alleged improvement is old, and also for the reason that the invention embodied in each of the reissued patents is different from the one secured by the original patent. Even the court here admits that each one of those reissues is "for a distinct and separate part of the original invention alleged to have been made by the complainant," full proof of which is exhibited in the claims of the respective reissued patents. (*Gill* vs. *Wells*, 20 Wall.) They are as follows:

1. No. 1,036.—Appended to that patent is a claim much more comprehensive than is to be found in either of the four other patents, but it is plainly not a claim for a combination, nor one for the whole machine, as was admitted in argument by the complainant. What he there claims is a seed-planting machine constructed principally of frame-work, the front part of which is supported on not less than two runners or shoes, with upward-inclining edges, and the rear part is supported on not less than two wheels, the latter being arranged to follow the former.

Evidently that claim is not intended to cover the whole machine; nor would it benefit the complainant even if it could receive that construction, as it is not pretended that he was the original and first inventor of such a planting machine, nor that the specification of the original patent professed to describe such an original invention. Machines of the kind have existed for a very long period before the date of the complainant's patent, even for a period whereof the memory of man runneth not to the contrary.

2. No. 1,037.—Nothing is claimed in this patent except the construction of a shoe or runner for a seed-planting machine, with an upward inclining edge, with its point sufficiently raised so that it will climb up and over, or cut and break through, intervening obstacles without materially forcing the earth laterally at its front part, and widening toward the rear end so as to open a furrow in which the seed to be planted may be deposited, and long enough to furnish a support to the frame work of the machine. Explanations of that patent are certainly unnecessary, as it is plain that the claim is for distinct and separate ingredients of the combination embodied in the original patent.

3. No. 1,038.—Under this patent the complainant claims a hinged joint between the point of the tongue and the rear part of the machine, in combination with a seed-planting machine, so that one part of the frame-work may be raised, lowered, adjusted, and supported on the other part. Nor is any argument necessary to show that the claim of the patent is for one of the separate and distinct ingredients of the combination embodied in the original patent, all of which were confessedly old.

4. No. 1,039.—Two claims are made in this patent as follows: (1) The seat for the attendant, or, in the language of the claim, the mounting of the attendant upon the machine or seed-planter, wherein the seed-dropping

mechanism is operated by hand, in such a position that he may readily see the previously-made marks upon the ground and operate the dropping mechanism to conform thereto. (2) He also claims a lever, in combination with a seed-planting machine, or its equivalent, by which the driver or second attendant may raise or lower that part of the frame-work that carries the attendant and the seeding devices.

Manifestly the lever or its equivalent is the principal subject-matter of that claim, reference being made to certain other parts of the seed-planter, *merely* as a means of describing the functions to be performed by the lever and the results to be attained by its use; nor does it require any argument to show that the lever is old, as it is matter of common knowledge that it was well known long before the original patent of the complainant was issued.

5. No. 1,040.—Two claims are also made by the patentee in this patent: (1) He claims a pair of auxiliary wheels and an axle, in combination with the seed-planting machine, carried mainly upon not less than two runners and two covering-wheels, for the double purpose of taking a portion of the weight off from the runners and the other wheels, and for affording means of readily converting the machine from a hand-planter to an automatic seed-sower. (2) He also claims hanging the axle of the auxiliary wheels in hinged or adjustable arms or levers, so that more or less of the machine may be placed upon the auxiliary wheels.

All necessity for any remarks upon those claims is superseded by the admission that they are not infringed by the respondents.

Four of the five reissues are included in the charge, and the complainant also charges that the respondents have infringed five other reissued patents held by him, which also secure to him the exclusive right to the respective improvements therein described, all of which appertain to the same machine for planting corn and smaller grains.

Reference will first be made to the original patent from which those several reissues are derived. Like the preceding reissued patents, these were all derived from a single original patent, issued May 8, 1855, as appears by the record, which it is claimed is an improvement upon the prior original patent.

Doubtless the patentee made some change in the original machine, as appears by the descriptive portion of the specification; as, for example, he enlarged the rollers, increased the length of the side pieces, connected those pieces by cross-pieces, and constructed the frame in two parts, denominated front and rear, placing the long seat for the driver on the front end, in order that he may slide forward or back, to tilt the machinery when necessary to deepen the furrow, or to raise the front of the shoes from the ground, as occasion calls for such a movement; but he invented no new ingredient or device, nor did he introduce any element into the machine which was not previously well known, all of which will sufficiently appear from the claim when compared with the drawings, without reproducing the details of the specification annexed to the patent. It contains but a single specification in that regard, which, in substance and effect, is as follows: What he claims is the runners, with their valves, in combination with the hoppers and their plates, together with the adjustment of the valves by means of levers and cams, and the driver's weight, for the purpose of carrying and dropping seeds by each vibration of the lever, and to regulate the depth of the planting.

Tested by the description contained in the specification, it is not doubted that the patent was a valid one for the described combination, which, beyond all doubt, is composed of old ingredients. Regarded as an invention for a combination, it may be regarded as an improvement upon the original invention described in the first-mentioned patent, but it is quite clear that it contains no devices except such as had long before been well known to mechanics.

Though operative and valid, still it was not satisfactory to the complainant, because not sufficiently effective to shut out other improvements for planting seeds. Accordingly, on the 10th of November, 1857, he surrendered the patent, and the same was, on the same day, reissued to him with a single claim, as follows: He claims the locating the seat for the driver in the rear of the supporting-axle, in combination with the hinged frames or hinged joint, so that as the driver moves forward or back on his seat the rear frame may act as a lever for lowering or raising the seed part of the machine and thus throw it into or out of the ground, as circumstances may require.

Probably it would be difficult to frame a claim which would more exactly embody the true nature of the actual improvement, but still it was not satisfactory to the complainant, and on the 11th of December, 1860, he surrendered the patent, and the same was reissued to him in five separate patents, as follows:

1. No. 1,091.—Two claims are contained in this patent, as follows: (1) The placing of both the driver and the person who operates the seed slides or valves in such a position on the seed-planter that each may attend to his particular duty without interfering with that of the other. (2) The so locating the seats or stands for those persons, in combination with the machine, that the weight of one of the persons may be used to counterbalance or overbalance the weight of the other, for the purpose of more readily raising or lowering the seeding apparatus.

2. No. 1,092.—He claims in this patent the locating of the seat in the machine in such relation to a line drawn through the center of the wheels or ground-supports that the occupant of the seat may, by moving himself or throwing his weight forward or backward on his seat, without the necessity of rising, walking, or standing over or near the seeding devices, force the seeding apparatus into or raise it from the ground.

3. No. 1,093.—His claim in this patent is the so connecting of the parts between the fixed points in the described machine that the portion of it carrying the seeding devices may be raised up out of the ground by the attendant riding on the machine and be carried by the tongue or horses' necks and the supporting-wheels.

4. No 1,094.—Wherein he claims a lock-block or stop, in combination with the machine, which prevents the rear part of the frame from descending so low as to strike the ground or inconvenience the occupant of the seat upon the rear portion of the frame.

5. No. 1,095.—His claim in this patent is for a valve or slide in the seed-hopper and a valve in the seed-tube, so combining with a lever operating both that a half-motion of the lever, by the operator riding on the ma-

chine, shall open and close the seed-passages at regular periods and pass only the right quantities.

Most of these ten reissued patents are for a single ingredient of the combinations described in the two original patents, and every one of the others is for a separate and distinct part of one or the other of those combinations; and the rule of decision set up by the complainant is that he may mass these several patents just as if the several ingredients were all described in one patent embracing a claim for a combination of each and every of the respective ingredients included in these ten several patents. Such a theory, in my judgment, is simply absurd, and it is certain that it finds no support in any decided case nor in any treatise upon the rules and practice in patent cases.

Argument to show that such is the theory of the present suit is scarcely necessary, as it is plainly shown in that part of the bill of complaint which alleges that the improvements and inventions contained in those several letters patent constitute separate parts of an entire machine for seed-planting, and that they may be constructed for use and used in one machine in that department of agriculture; and the complainant charges that the respondents have constructed machines and used the same, and vended the machines to others to be used, in imitation of all those improvements and inventions except the improvement described in the reissued patent No. 1,040, which it is admitted is not infringed by the respondents.

All the ingredients described in those ten reissued patents are old; and it was admitted at the argument that no one of the patents contains a claim for a combination of the several ingredients described in the said several reissued patents, and that the case rests on the basis that the several claims, or some of them, are valid, though not amounting to a combination.

Valid patents may be granted for a new combination of old ingredients, provided it appears that the combination produces a new and useful result; but the invention in such a case consists entirely in the new combination, and any other party may, if he can, make a substantially different combination of the same ingredients, or he may use any number of the ingredients less than the whole, for the reason that the monopoly of the patent extends only to the combination, and not to the ingredients separately considered. (*Vance* vs. *Campbell*, 1 Black, 428; *Prouty* vs. *Ruggles*, 16 Pet., 341)

Patents may also be granted for a machine or for a separate and distinct device, but it cannot be held that such a patent is valid, unless it be proved that the patentee is the original and first inventor of the thing patented. (*Seymour* vs. *Osborne*, 11 Wall., 555.)

None of the separate devices patented in those reissued patents are new; and, it being conceded that no one of the patents contains any such a combination as that embodied in either of the original patents, it is clear, in my judgment, that the decree of the circuit court should be affirmed, unless the theory that these several patents can be massed and be, by judicial construction, converted from patents for separate and distinct ingredients into one patent for a combination of all the ingredients described in the several patents mentioned in the bill of complaint.

Courts of justice cannot accomplish such an object by construction, nor in any other mode, for several reasons: (1) Because the province of construction is restricted to the ascertainment of the meaning of the language employed in the grant. (2) Because the object can only be accomplished by the surrender of these patents and by a reissue of the original patent, which is a matter within the exclusive jurisdiction of the Commissioner. (3) Because each of these patents is a separate and distinct grant. (4) Because the court, in construing such a grant is restricted to the language employed by the granting power. (5) Because several patents for several separate and distinct devices do not in law amount to a patent for a combination, and, therefore, cannot so be declared by a court of justice.

Mr. Justice MILLER and Mr. Justice DAVIS concur in this dissent.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date May 4, 1875.]

8,304.—Valise-Locks.—GUSTAVE BERNHEIM, New York, N.—Case B. Application filed April 19, 1875. Term of patent 7 years.

8,305.—Fans.—GEORGE S. FARWELL, Boston, Mass. Application filed April 16, 1875. Term of patent 3½ years.

8,306.—Stair-Covers.—WILLIAM B. GOULD, Montrose, N. J. Application filed April 8, 1875. Term of patent 7 years.

8,307.—Fans.—BERNARD HECHT, New York, N. Y. Application filed April 26, 1875. Term of patent 3½ years.

8,308.—Font of Printing-Types.—HERMAN IHLENBURG, Philadelphia, Pa., assignor to MACKELLAR, SMITHS & JORDAN, same place. Application filed March 10, 1875. Term of patent 7 years.

8,309.—Clips or Fasteners for Suspending Cards.—GEORGE W. MCGILL, New York, N. Y.—Case B. Application filed February 26, 1875. Term of patent 14 years.

8,310.—Fans.—ELIZABETH W. PERRY, Cincinnati, Ohio. Application filed April 15, 1875. Term of patent 3½ years.

8,311.—Hat and Fur Boxes.—HENRY F. REINECKE, Jersey City Heights, N. J. Application filed April 17, 1875. Term of patent 7 years.

8,312.—Cuff-Buttons.—LEONARD S. BEALS, Astoria, N. Y. Application filed April 9, 1875. Term of patent 7 years.

8,313.—Font of Printing-Types.—JAMES M. CONNER, Greenville, N. J. Application filed April 14, 1875. Term of patent 7 years.

8,314.—Font of Printing-Types.—HERMAN IHLENBURG, Philadelphia, Pa., assignor to MACKELLAR, SMITHS & JORDAN, same place. Application filed April 28, 1875. Term of patent 14 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Certificate bearing date May 4, 1875.]

2,412.—Whisky.—ADAMS & TAYLOR, Boston, Mass. (Re-registration.) Application filed January 4, 1872.

"'Daniel Boone, Paris, Ky., Bourbon.'"

2,413.—Gin.—ADAMS & TAYLOR, Boston, Mass. (Re-registration.) Application filed January 4, 1872.

"Inside two concentric circles is a representation of a 'phœnix.' Below the figure are the initial letters 'A T.' Between the said circles are the words 'Phœnix' and 'Schiedam;' the former above and the latter below the figure."

2,414.—Whisky.—ADAMS & TAYLOR, Boston, Mass. (Re-registration.) Application filed January 4, 1872.

"A line forming an ellipse incloses the figure of a hunter or pioneer and the words 'Kentucky Pioneer;' 'Kentucky' being placed over the head of the figure, and 'Pioneer' beneath the feet of the same."

2,415.—Gin.—ADAMS & TAYLOR, Boston, Mass. (Re-registration.) Application filed January 4, 1872.

"Between two concentric circles or rings are placed the words 'Mayflower Gin, Schiedam.' Inside the smaller circle is a spray of flowers and leaves."

2,416.—Whisky.—ADAMS, BLAKE & TAYLOR, Boston, Mass. (Re-registration.) Application filed January 15, 1872.

"'G. O. Blake's Bourbon Co., Ky., Whisky.'"

2,417.—Gin.—ADAMS, BLAKE & TAYLOR, Boston, Mass. (Re-registration.) Application filed March 1, 1872.

"Inside two concentric circles is the representation of an apple-tree. Between the said circles, above and below the representation of the apple-tree, are the words 'Apple-Tree Gin, Schiedam.'"

2,418.—Soap.—J. P. BABCOCK & Co., Stonington, Conn. (Re-registration.) Application filed January 23, 1872.

"word Irish."

2,419.—Essence of Jamaica Ginger.—FREDERICK BROWN, Philadelphia, Pa. (Re-registration.) Application filed February 24, 1872.

"the fac-simile of the signature of the originator of the article, FREDERICK BROWN, Sr., and the word Genuine, placed upon a steel-plate engraving of geometrical lathe-work and medallion ruling."

2,420.—Liniment.—GILES O. CLARK, College Point, Long Island, N. Y., assignor to G. O. CLARK & Co. (Re-registration.) Application filed, July 30, 1872.

"letters 'G. O. C.,' in German text, and 'I. M. L.,' in Roman letters, arranged in an oval-shaped diagram, with rounded ends."

2,421.—Lead.—FOREST RIVER LEAD COMPANY, Salem, Mass. (Re-registration.) Application filed May 16, 1872.

"A barrel or cask lies upon its side, with the year '1840' lettered upon it. Underneath the foundation upon which the said barrel is placed is a streamer, upon which is placed 'Trade-Mark.' Below is a large shield containing the words 'Forest River Lead Company, Salem, Mass.'"

2,422.—Alcohol.—CAESTER H. GRAVES, Boston, Mass. (Re-registration.) Application filed November 20, 1871.

"'Atwood's Pure Alcohol, 95 per cent., Patented Aug. 23, 1853, C. H. Graves, Boston.'"

2,423.—Galvanized Sheet-Iron.—MCCULLOUGH IRON COMPANY, Philadelphia, Pa. (Re-registration.) Application filed January 24, 1873.

"word 'Chetwynd,' in crescent shape."

2,424.—Medicine.—JOHN PURLEY & Co., Atlanta, Ga. (Re-registration.) Application filed June 24, 1872.

"a representation of an Egyptian landscape, with camels and Bedouins in the foreground and the Pyramids in the background."

2,425.—Axle-Oil.—CHARLES C. RICHMOND, Boston, Mass. (Re-registration.) Application filed March 25, 1872.

"word 'Crosby's' and the picture of a pair of horses harnessed to a carriage."

2,426.—Soda-Water.—SAMUEL F. SIMES, Philadelphia, Pa. (Re-registration.) Application filed April 29, 1872.

"words 'Egg Soda.'"

2,427.—Wood-Carvings.—SORRENTO WOOD-CARVING COMPANY, Boston, Mass. (Re-registration.) Application filed December 16, 1871.

"'Sorrento Wood Carving.'"

2,428.—Compound Oxygen-Water.—GEORGE R. STARKEY, Philadelphia, Pa. (Re-registration.) Application filed November 14, 1872.

"word 'Oxygenaqua.'"

2,429.—Sewing-Machines.—THE FINKLE & LYON MANUFACTURING COMPANY, Middletown, Conn. (Re-registration.) Application filed December 20, 1871.

"a female figure clad in mail, bearing a spear in one hand, upon which hangs a wreath, and supporting a shield with the other."

2,430.—Paints, Colors, and Painting Materials.—D. F. TIEMANN & Co., New York, N. Y. (Re-registration.) Application filed October 12, 1872.

"a globe representing the earth, supported on the short arm of a paint-brush handle, used as a lever, and supported on a fulcrum upon the top of a paint-can, the long arm of the lever being grasped by a human hand and held in space to support the globe."

2,431.—Soda-Water Apparatus.—JAMES W. TUFTS, Medford, Mass. (Re-registration.) Application filed January 15, 1872.

"'The Arctic Soda Apparatus.'"

2,432.—Roasted Coffee.—G. BOYD & Co., Philadelphia, Pa. Application filed April 21, 1875.

"representation of an arrow, upon which are strung letters forming the word 'Aroma.'"

2,433.—Tonic or Bitters.—E. BROWN & Co., Jersey City, N. J. Application filed March 18, 1875.

"'The Great Zuni Sanpurgat, or Corrupt Blood Purifier.'"

2,434.—Coffee.—D. FOCHT & Co., Philadelphia, Pa. Application filed April 26, 1875.

"picture of a coffee-pot of ornamental design."

2,435.—Woolen Cloths.—MIDDLESEX COMPANY, Lowell, Mass. Application filed March 11, 1875.

"characters X X."

2,436.—Champagne.—MOËT & CHANDON, Epernay, France. Application filed April 3, 1875.

"figure of a five-pointed star, together with our firm-name inclosed in a circle."

2,437.—Lard.—GEO. C. NAPHEYS & SON, Philadelphia, Pa. Application filed April 30, 1875.

"a tin pail of the shape or configuration of the base section of an inverted truncated cone, the same being broadest at the top, and tapering downward to a less circumference at the bottom."

2,438.—Medicine.—JAMES R. NICHOLS & Co., Boston, Mass. (Re-registration.) Application filed February 23, 1872.

"compound word 'Cincho-Quinine.'"

2,439.—Essential Oils and other Chemicals.—CHARLES H. PHILLIPS, New York, N. Y. (Re-registration.) Application filed November 16, 1872.

"the monogram shown in the fac-simile, and containing the letters PHILLIPS."

2,440.—Mustard and Spices.—PINCKNEY, JACKSON & Co., New York, N. Y., Chicago, Ill., and London, England. Application filed April 22, 1875.

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McCurdy, J., Pantaloons block	162,845
McDonald, A. L., Trawl roller	162,935
McDonald, T. E., Wringer	162,846
McKeen, J. L., Road scraper	162 936
McKenney, A., Stump extractor	162,937
McKenney, A., Stump extractor	162,847
McLean, D. M., Pot and kettle	162,760
Meroney, T. J., Plow	162,939
Merrill, N. H., Carpet stretcher	162,938
Merrill, W. E., Steamboat head light	6,420
Morey, D., Straw feeding attachment for furnaces, (reissue)	162,940
Mosman, D. F., apparatus for heating feed water	162,927
Mott, A. M., assignee	162,941
Neesle, J. P., Street railway rail	162,906
Newhouse and Dennen	6,419
Norris, W. R., assignee, (reissue)	162,848
Ofeldt, F. W., Gas apparatus for carbureting air	162 761
Orlando, J., Strawberry cultivator	162 942
Osborn, O., Sulky plow	162,762
Osborne, H. F., Leather rounding machine	162 849
Osgood, R. R., Dredging machine	162,763
Osgood, R. R., and F. Brotherhood, Dredging machine	162,943
Ostrander, D. R., Combined feed box and rack	162,850
Ostrander, D. R., Farm fence	162 945
Painter W., Apparatus for transferring night soil from tanks to cars, &c	162,944
Palmer, A. B., and A. E. Elmer, Automatic fly fan	162,764
Palmer, W. H., Mechanism for molding boot and shoe soles	162,926
Parker, E. L., assignee	162,851
Patton, J. D., Gas purifier	162,852
Patton, W. P., Injector	162,853
Peck, F., Sewing machine bobbin winder	162,854
Perrenot, G. F., Ironing machine	162 856
Peterson, P., Firemen's extension ladder	162,855
Petry, N., Extension table	162 857
Phillips, G. H., Reservoir cooking stove	162,946
Pintsch, R., Apparatus for lighting railway cars	162,947
Pintsch, R. J., Treating leather for gas regulator diaphragme	6,411
Plumbe, G. E., assignee, (reissue)	162,978
Porter, F. C., assignee	162,858
Porter, H., Harvester	162,948
Pounds, W. H., Gas regulator	162,765
Pratt, F. A., Steam trap	162,987
Pratt, Reed & Co., assignees	162,859
Pratt, T. W., Construction of vessels	162 766
Pratt, W. L., Condenser and purifier of coal gas	162,767
Prince, G. S., Treating tobacco	6 421
Prusha, W. F., and E. L. Wales, Boot and shoe, (reissue)	6 414
Randall, W., Injector, (reissue)	162 949
Ray, J. S., Coffin handle	162,950
Rhoads, J., Car axle box	162,768
Rice, H. F., J. M., and W. B., Floating draw bridge	162,769
Rice H. F., J. M., and W. B., Car coupling	6,422
Rice, H. W., Steam boiler, (reissue)	6,421
Rice, W. B., assignee, (reissue)	6,416
Richardson, G., Spinning machine spindle bolster, (reissue)	6,416
Richardson, G., Spinning machine bobbin, (reissue)	162 951
Richardson, J., Opera chair	162,994
Richie, E. L., assignee	162,952
Root, D. A., Combination padlock	162,953
Rosenbusch, A., Fire alarm telegraph	162,954
Russell, D. N., Paper vessel	162,770
Scarritt, J. A., Music teaching apparatus	162,771
Schlich, F., and J. Koster, Bottle washing apparatus	162,865
Schnoering and Sprigade	162,986
Seaman, R., assignee	162,955
Severn, H., Grain conveyer	162,956
Shain, C. J., and G. L. Waitt, Car starter	162,957
Sharp, A. B., Car starter	162,772
Sharp, H. A., Car coupling	162,790
Shaver, J. I., assignee	162,773
Shaw, T., Plug valve	162,860
Sheldon, S. W., Bluing case	162,986
Shepard, H. W., assignee	162,828
Sholty, H. F., assignee	162 958
Shontz, A. S., Stove door handle	162 959
Sickles, G. B., Pocket cooking apparatus	162,960
Siebert and Smillie	162,862
Skelton, T., Horseshoe	162,960
Smillie, T. W., and A. Siebert, Stereoscopic print cutter	162 861
Smith, D., Sleigh shaft attachment	162 963
Smith, D., and J. C. Marshall, Revolving fire arm	162 961
Smith, D. B., Steak cooking pan	162,962
Smith, D. B., Plow	162,774
Smith, J. H. C. and N. B., Car coupling	162,917
Somerset and Hayes	162,889
Southworth, J. H., assignee	162,775
Spear, V. K., Machinery for burnishing boot and shoe heels, &c	162,797
Spencer, C. A., assignee	162,776
Spire, G., Planing machine	162,864
Sprague, A. V. M., Combined ice pick, chisel, and hammer	162,865
Sprigade, R., and J. Schnoering, Folding table	162 866
Squire, J. J., Clamp	162,867
Squire, J. J., Counter shaft hanger	162 963
Starliper, W. M., Corn row marker	162,777
Starr, E. T., Toilet mirror	162,668
Steers, T., Jr., Curry comb	162,964
Stephenson, J., Street car	162,965
Stewart, J. L., Petroleum still	162,966
Strong, G. S., Earth auger	162,948
Stuart, D. W., assignee	162,785
Studer and Wyss	162,757, 162,959
Sturges, F., & Co., assignees	162 967
Sturtevant, B. F., Fan blower	162,968
Sturtevant, B. F., Apparatus for preparing sole fastening material	162,969
Sturtevant, B. F., Sole fastening	162 970
Sturtevaut, B. F., Manufacture of sole fastenings	162,971
Sturtevant, B. F., Rod for sole fastenings	162,972
Sturtevant and Bickford	162,867
Sullivan, J., Cloth measuring machine	162,973
Talcott, S. C., Strap loop, (reissue)	6,417
Tallman, J. C., Bosom pad	162,869
Thackara, B. and C., assignees	162,889
Tuck, G. H., assignee	162,746
Tucker, T., Shoe fastening	162,974
Turner, J. C., Extension table slide	162,975
Union Manufacturing Company, assignee, (reissue)	6,419
Unverzagt, G. P., Machine for laminating the stems in leaf tobacco	162,778
Van Arnam, J. W., Egg tester	162,870
Vance, S B. H., Slide for gas pendants	162 871
Van Doren, F., Corn planter	162,779
Van Dusen, C., Fire extinguisher	162,976
Van Lier, A. M., assignee	162,781
Van Vleet, C. W., Addressing machine	162,872
Varnum, W., Ox bow pin	162,780
Vieta, E. B., Apparatus for shaping pantaloons	162,977
Waggoner, S. T., Folding table	162,978
Waitt and Shain	162,956
Wales and Prusha, (reissue)	6,421
Walker, T., Sash holder	162,979
Walsh, T. I., Steam engine governor	162,873
Ward, W. H., Hame fastening	162,980
Warner, O. S., Device for applying poisonous compounds to plants for destroying insects	162,781
Webster, F. D., Horse awning	162 982
Webster, J., Sad iron handle	162,981
Wells, F. E., Screw threading die	162,983
Wells, W., Auger	162,874
Wern, P., Lock for doors, &c	162,984
Westinghouse, G., Jr., Steam engine governor	162 782
White, W. M., Head rest	162,784
Whiteley, J., Brick machine	162,783
Whittemore, R. D., Invalid bedstead	162,985
Wiesebrock, F. W., Apparatus for drawing effervescent liquids	162,986
Wilcox and Carr	162,899
Wilder, S. H., Mortising machine	162,987
Wiley and Russell Manufacturing Company, assignee	162,983
Williams, O. T., Shingle machine	162,988
Wood, H. G., Rotary engine	162,875
Wyss, C. V., and H. Studer, Motive power engine	162,785
Yeomans, W. H., Needle case	162,989
Zirkle, J. M., Truss	162,990

TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED MAY 4, 1875.

162,735. SPRING-HINGES. Joseph Anain, Brooklyn, N. Y. [Filed Oct. 21, 1874.]

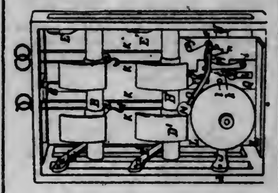
Brief.—A sleeve through which the pintle passes is placed midway between the eyes of the two leaves of the hinge. This sleeve carries a flat spring, which has one end secured to one of the leaves. The tension of this spring is adjusted by a collar and a short pin, which rests upon one leaf.



The movable sleeve B, having holes H, and provided with the spring A, attached in combination with the leaves C and D and pin G, all constructed and operating as and for the purpose set forth.

162,736. ANNUNCIATORS. T. H. Aurocker, Philadelphia, Pa. [Filed Oct. 27, 1874.]

Brief.—The levers carrying the number-plates turn upon transverse shafts, and are operated by wires attached to their ends, which wires are also connected with a weighted plate pivoted in the lower part of the frame. Pivoted arms rest upon the levers, and when the latter are operated the arms are also carried up. By bearing down the arms the levers are returned to their original position. The weighted plate at the bottom is connected with and operates a bell mechanism, to sound an alarm.



1. The combination of the shaft B, lever C, wire K, and the gravity-plate I, for the purposes shown and described.

2. The combination of the shaft B, lever C, wire K, adjusting-rod E, and the gravity-plate I, for the purpose shown and described.

3. The combination of the gravity-plate I, pin *l*, and the trip-plate Q, for the purpose shown and described.

4. The combination of the gravity-plate I, pin *l*, trip-plate Q, trip-lever R, and the lever O, for the purpose shown and described.

162,737. TAKE-UPS AND THREAD-CONTROLLERS FOR SEWING-MACHINES. M. M. Barnes, Boston, Mass. [Filed Nov. 16, 1874.]

Brief.—Take-up made in two parts, connected by a spring, to allow of a yielding motion in connection with the usual take-up motion.



The take-up composed of the two parts *a* and *b*, joined by the screw *c*, in combination with the coiled spring *e* and the stops *d* and *f f*, substantially as described, and for the purpose set forth.

162,738. TORCHES. Jos. Benson, Boston, Mass. [Filed Aug. 26, 1874.]

Brief.—For the purpose of lighting the torch the perforated flame-guard is made in sections, which may be opened by moving a rifle suitably connected therewith.

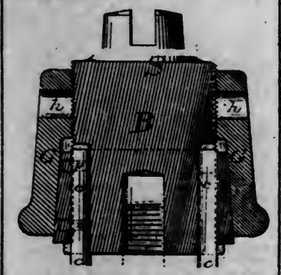


1. The combination, with a vapor-burner and an oil-reservoir connected with the burner, for supplying the same with vapor, of a longitudinally-divided shield or cover, hinged together, and having perforations to permit the escape of flame, and adapted to open and close for covering and uncovering the burner, substantially as and for the purpose described.

2. The combination, with a vapor-burner and an oil-reservoir, of the longitudinally-divided shield, the two parts of which are hinged together, and the links attached to the two parts of the shield and to a sliding stem, substantially as described, whereby by moving said stem the shield is opened or closed, as set forth, for the object specified.

162,739. MILLING-TOOLS. Edmond F. Bonaventure, New York, N. Y. [Filed Aug. 11, 1874.]

Brief.—A cylindrical head is provided with longitudinal notches or grooves, to receive a series of triangular cutters, which latter are held firmly in place through the medium of a conical sleeve screwed onto the head, acting in conjunction with wedge-pieces. A circular plate is fitted onto the end of the head, to adjust the cutters by, a notch permitting their insertion, one at a time.



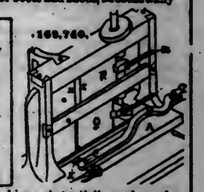
1. The improved compound cutting-tool, consisting of a head, B, fitted with a series of cutting-tools, arranged to project beyond the end of the head, combined with a sleeve, G, formed to clamp or hold the cutting-tools when screwed down, and release them when screwed up or back toward the spindle.

2. The adjusting-disk A, made with the notch H, through which to remove any one of the cutting-tools, in the manner substantially as described.

162,740. MACHINES FOR MAKING THE SHANK-PIECES FOR BOOTS AND SHOES. Leonel Bradford, 2d, Plymouth, Mass. [Filed Mar. 30, 1875.]

Brief.—Longitudinally-reciprocating slides are arranged one above the other. The one provided with cutters separates the blank from the sheet of stock, when it drops in front of the lower slide, and is molded into the form desired.

1. In a machine substantially such as described, in combination, the slides B and Q, eccentric-shaft J, standard U, and springs *m*, for punching, cutting, and molding metallic shank-pieces for boots and shoes, substantially as specified.



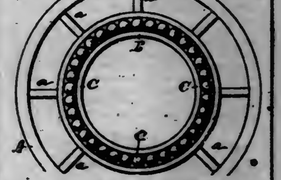
2. In a machine substantially such as described, in combination, the lever *c*, slide *e*, and cam M, all substantially as and for the purpose set forth.

3. In a machine substantially such as described, the slide Q, provided with the spring-dowel 1, as and for the purpose specified.

4. In a machine substantially such as described, the frame C, provided with the ways F F, pulley H, and cam-lever G, in combination with the slide E, punches T T, and standard U, substantially as and for the purpose set forth.

162,741. TURN-TABLES. S. M. Carpenter, Cleveland, Ohio. [Filed Dec. 15, 1874.]

Brief.—A turn-table of the circular trough and ball species, having a radiated metallic support for the lower trough, in which the balls travel.



1. The frame A, provided with the standards *a*, upon which rests the elevated groove or gutter B, substantially as and for the purpose set forth.

2. In combination with the frame A, provided with the standards *a*, the elevated groove or way B, balls C, and platform D, provided with its counter-groove D', as and for the purposes described.

162,742. WATER-CLOSETS. Wm. S. Carr, New York, N. Y. [Filed Mar. 20, 1875.]

Brief.—A bowl of porcelain or earthenware resting on a washer, secured by rubber wedges passing through loops in the upper part of the hopper. The bowl has two water-ways, opening above and below the valve closing the escape-pipe. The water-pipe is joined to the hollow arm in the upper part of the bowl. The hopper, having inward flange and opening, is connected with the bowl by a valve jointed to a rock-shaft by nut and screw. The rock-shaft has a shoulder at its outer end, behind the cam-arm, in combination as set forth.

1. The bowl or basin of porcelain or earthenware, resting upon a washer of elastic material, and secured in place by wedges passing through metallic loops at the upper part of the hopper, and pressing upon the base of the bowl, substantially as set forth.

2. The metallic hopper, made with a seat at the upper end for the elastic washer and earthenware bowl, and a dam around the outside of such washer, for the purposes set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

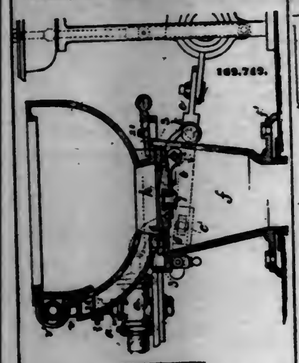
3. The hopper *f*, having an inward flange 3 and opening 21, through which the overflow-water passes from the basin, as set forth.

4. A bowl or basin made with the water-ways *r* and *s*, opening respectively above and below the valve that closes the escape-pipe, substantially as set forth.

5. The rock-shaft *t*, provided with a shoulder at its outer end, behind the cam-arm *k*, in combination with the spring 12, and water-closet pan or valve, for keeping the shaft water-tight at its junction with the hopper or container, substantially as set forth.

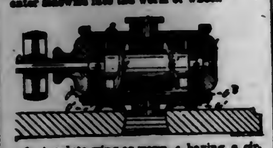
6. The valve A, of porcelain, connected to the arm 8 of the rock-shaft *t*, by a screw and nut, and removable from said rock-shaft, substantially as set forth.

7. The water-pipe *o*, connected to the bell-low procelain arm *v* by the rubber packing, in combination with the sleeve or ferrule *o*, packing gland *t*, and supply-cock or valve *o*, substantially as set forth.



162,743. CENTRIFUGAL PUMPS. Lake Chapman, Collinsville, Conn. [Filed Sept. 6, 1874.]

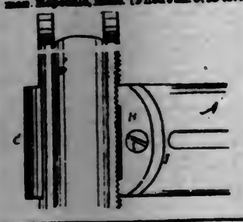
Brief.—Each of the worms or wheels is surrounded by a circumferential band, and a part of the outer end is closed by a plate. Each cap-plate is furnished with a radial wing, which extends to the nearest wheel. These wings act as cut-offs, to prevent the free rotation of the water, and thereby cause it to enter sidewise into the worm or wheel.



1. A volute wing or worm, *c*, having a circumferential band, *c'*, and a facing, *c''*, upon one end or side, substantially as shown and described.

2. The combination of the cylinder *a*, having the inlets *a' a'*, the cut-offs *b'*, the shaft *h*, and the right and left hand worms *c c'*, each provided with a circumferential band, *c'*, substantially as shown and described.

162,744. LOOM-TEMPLE. Nathan Chapman, Hopedale, Mass. [Filed Jan. 9, 1875.]

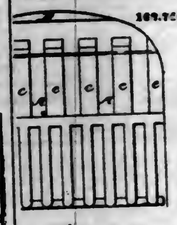


The loom-temple stand A, provided with a flange, C, curved flange J, and the curved and notched wedge-plate H, in combination with the stand D, having a notched side to correspond with the notched plate H, as described, for the purpose set forth.

162,745. FIRE-PLACES. John H. Garrard, Allegheny, Pa. [Filed Aug. 27, 1874.]

Brief.—The vertical ribs, which form gas-passages in the back of the fire-place, limit the motion of the horizontally-moving deflecting-plate.

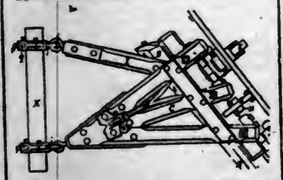
162,746.



A fire-tile, A, with grooves or open flues *e e e*, set vertically, an iron plate or tile, B, to lie horizontally as a deflector, the same to be coped over by the fire-tile D, laid horizontally against the top of the fire-tile A, as described and set forth, the whole combined substantially for the purpose intended.

162,748. ROAD-SCRAPERS. Barnard Goodrich, Exeter, assignor to himself and Geo. H. Tuck, Stratham, N. H. [Filed Oct. 28, 1874.]

Brief.—An inclined cutter on a drag is combined with a board provided with casters, and connected by bent arms hinged to the carrier. An adjustable tongue connects the cutter-carrier and drag, by a shackle, chain, and hooked screw, to the axle and drag.

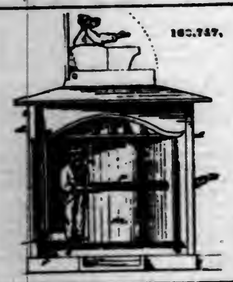


1. In combination with the cutter B and its carrier A, connected with the drag C, as described, the board E, provided with casters F F, and connected with the carrier by bent arms *g g* hinged thereto, all substantially as specified.

2. The combination of the adjustable tongue I, as described, with the cutter-carrier A and the drag C, arranged and connected with each carrier, all as shown and described.

3. The combination of the right-angular shackle *n*, the chain *o*, the hooked screw *p q*, and the nut *r*, all constructed, arranged, and applied to the axle K and the drag C or tongue I, substantially as specified.

162,747.



162,747. TOY MONEY-BOXES. John Hall, Watertown, Mass. [Filed Nov. 10, 1874.]

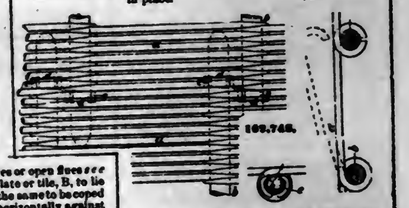
1. The toy money-box herein described, consisting of the box A, recess *m*, slot *p*, door *b*, and image *a*, secured to the door by the arm L, all said parts being constructed and arranged to operate substantially as and for the purpose described.

2. The toy money box, consisting of the box A, recess *b*, slot *k*, and image *c*, vertically pivoted at both ends, as described, all constructed and arranged as set forth.

162,748. FLOORS FOR MALT-KILNS. Louis Herrmann, Dresden, Germany. [Filed Mar. 3, 1875.]

Brief.—Into the recesses in the weft-wires are fitted collars, to confine the parts securely in place.

162,748.



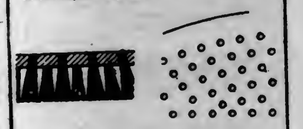
1. As an improvement in floors for malt-kilns, the combination of bent warp-wires *a a*, recessed weft-wires *b b*, and collars *c c*, to form hurdles, in the manner and for the purpose described.

2. The combination of the divided and interlocking end eyes of two abutting hurdles with a weft-wire, *b*, as and for the purpose set forth.

3. The combination of the projecting ends of weft-wires *b b* of one hurdle with the outer warp-wires *a a* of the other hurdle, for giving a reciprocal support to the edges of contiguous hurdles, in the manner described.

162,750. BRUSH-BACKS. Henry Holmes, Troy, N. Y. [Filed Apr. 9, 1875.]

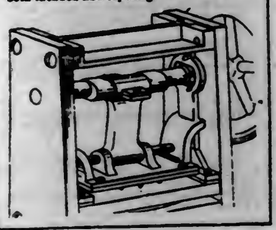
Brief.—The holes are punched by parallel punches while the back is in a concave position, after which the back is permitted to straighten out, which leaves the holes inclined, as shown, and tapering.



A brush block or back, punched with a series of inclined and tapering holes, as and for the purpose described and represented.

162,751. MACHINES FOR PUNCHING BRUSH-BLOCKS. Henry Holmes, Troy, N. Y. [Filed Apr. 9, 1875.]

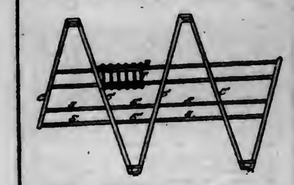
Brief.—The material for the brush-back is held in a concave seat in the machine, where it is punched from above. When the material is removed it assumes a flat shape, which causes the punched holes for the tufts to be both inclined and tapering.



The combination of the bed and platen for pressing the brush block or back into a concave or arched form, and the series of punches for punching said block or back while held in that form, as and for the purpose described and represented.

162,751. ELEVATED RAILWAYS. Carl L. Horack, Brooklyn, N. Y. [Filed Apr. 6, 1875.]

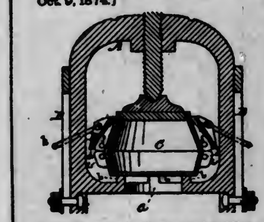
Brief.—An elevated railroad supported upon posts arranged so that those on one side are opposite the spaces between those on the other side, the cross-beams running from each post to each of the two nearest posts on the other side. The longitudinal track-stringers are arranged between the cross-beams.



1. The combination, in an elevated railroad, of the posts P P', cross-beams or their equivalent O O', and the track-stringers S S', when the arrangement is such that the posts on one side of the structure are placed opposite the spaces between the posts on the other side, one cross-beam running from each post to each of the two nearest posts on the other side.

2. The combination described, when the arrangement is such that the track-stringers are fastened between the cross-beams, the tops of the former remaining below or level with the tops of the latter.

162,752. PROCESSES AND APPARATUS FOR SOFTENING AND MOLDING CELLULOID. R. Finley Hunt, Washington, D. C. [Filed Oct. 9, 1874.]



1. The process of softening and molding celluloid and celluloid blanks by the application of the heating agents directly to the flask or mold containing the celluloid, by means substantially as herein described.

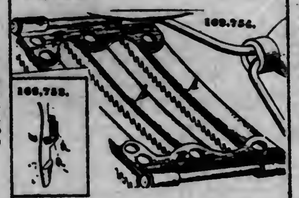
2. The herein-described apparatus for softening and molding celluloid and celluloid blanks, consisting of the screw-press A, having in its bottom a circular opening, *a*, and at or near the edge of this opening three or more projections, *b*, equidistant from each other, on which the flask or mold rests, thus forming a space or channel through which the flame and hot air are made to pass under the bottom of and around the flask or mold; the flask C having the lugs *c c* on opposite sides, with the holes *d* in each lug to receive the ends of the fork or holder, and having four tapered lugs or webs, *e*, equidistant from each other, the two opposite the lower lugs *c* being provided with holes *f*, and the loose jacket D having projections *g* on opposite sides, with holes in them to receive the loops or hooks *h*, all combined as and for the purpose herein described.

162,753. CURRY-COMBS. Warren T. Kellogg, Troy, N. Y. [Filed Sept. 22, 1874.]

Brief.—The knockers serve the additional purpose of bearings for the mane-comb, and are made separate from the comb, and attached by means of rivets.

The shouldered knockers D, provided with steels for riveting, and bearings *d* for the journals of the mane-comb, open at one end, and closed, as at *d'*, at the other, all substantially as specified.

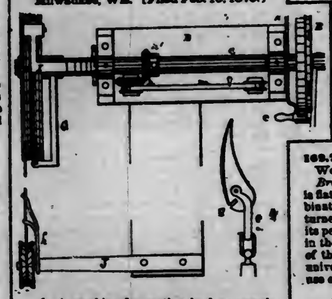
162,754.



162,754. CURRY-COMBS. Wm. P. Kellogg, Troy, N. Y. [Filed Sept. 22, 1874.]

As a new article of manufacture, the herein described curry-comb, composed of the tooth bars A, secured by separate rivets, stout wrought-iron end pieces B, handle D, and wire handle-frame C, the end pieces having lugs *b* and *b'* wrapped around the wire, as stated, and the ends of the wire being riveted down on the outer butts or lugs, all as specified.

162,755. MECHANISMS FOR CASTING THE LEAD ON VESSELS. Charles B. Kirtland, Milwaukee, Wis. [Filed Feb. 10, 1875.]



1. A machine for casting lead on vessels, having shaft *c*, crank F, wheels D and H and line *s*, combined, substantially as and for the purpose herein specified.

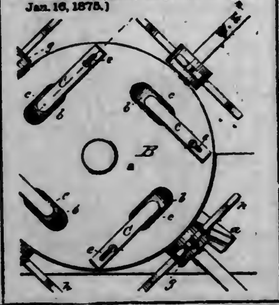
2. The device *e f*, in combination with the lead L, substantially as and for the purpose specified.

3. The wheels D and H and cord or cable *d*, in combination with the tripping device *h*, substantially as and for the purposes specified.

4. The wheel D, lead-line *s*, and the wheel H, cable *d*, in combination with the loose arm G and shaft C, as and for the purpose set forth.

5. The wheel D and shaft C, in combination with the wheels *n* and *n'*, and belt *m*, substantially as specified.

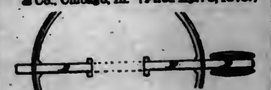
162,756. FEATHERING PADDLE-WHEELS. Chas. A. Lamphere, Arkport, N. Y. [Filed Jan. 16, 1875.]



1. The paddle-heads B, carrying the paddles D, upon the shafts of which are mounted the hubs *g*, carrying arms *h*, and the rollers *b*, provided with V-shaped grooves *i*, which are operated upon by friction-springs C, the whole adapted to be operated for feathering the paddles by suitable projections on the side of the boat, substantially as set forth.

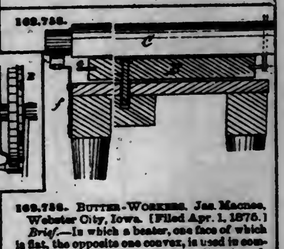
2. The regulating-springs C, having the lips *d* and elongated slot *e*, in combination with the rollers *b*, constructed to operate substantially as and for the purpose described.

162,757. STOVE-PIPE DAMPERS. Geo. W. Leading, Lacon, assignor to Frank Sturges & Co., Chicago, Ill. [Filed Apr. 6, 1875.]



A stove-pipe damper, consisting of a diaphragm, combined with the removable bent or doubled wire or spring D, passing entirely through the pipe, grasping the diaphragm, and constituting the sliding spindle thereof at opposite points, whereby the diaphragm may be turned and firmly held in any position, substantially as shown and described.

162,758.



162,758. BUTTER-WORKERS. Jas. Macnee, Webster City, Iowa. [Filed Apr. 1, 1875.]

Brief.—In which a beater, one face of which is flat, the opposite one convex, is used in combination with a revolving kneading-board, turned by means of teeth or projections upon its periphery, into which catches a pin inserted in the beater near the handle. The other end of the beater is attached to the table by a universal joint, which enables the operator to use either face of the beater.

1. The combination, with a suitable kneading board or table, of the removable hand-lever C, of the form shown and described, the same being connected to the table in a manner so that either side of such lever may be used, as and for the purpose specified.

2. The combination, with the table A and revolving kneading-board B, provided upon its outer periphery with teeth or projecting pins *c*, of the swiveled hand-lever C, having near its outer end pins *j j*, substantially as and for the purpose set forth.

162,759. MAGIC LANTERNS. L. J. Marcy, Philadelphia, Pa. [Filed May 31, 1875.]

1. In a magic lantern, a color-glass, constructed substantially as set forth, to slide upward from below across the line of light, whereby the shade is caused to descend upon the picture, as set forth.

2. The combination, substantially as set forth, of objective lenses, their supporting-frame, and a color glass or shade reciprocating in guides in said frame outside of the focus of the lantern whereby the effect of clouding is produced upon the picture.

3. A hinged flap, constructed substantially as set forth, to swing upward from below across the line of light, with its edge within the focus of the lantern, whereby a sharp line, similar to that caused by a falling curtain, is produced when the flap is turned up to shut off the light from the objective tube.

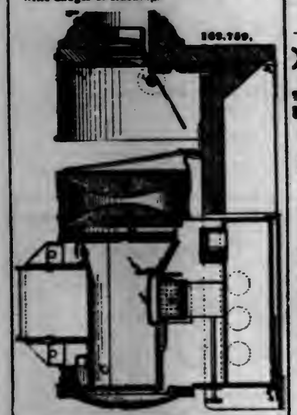
4. The combination, substantially as set forth, of a lantern-body, an adjustable frame, in which the objective lenses are mounted, a hood attached to the adjustable frame, and a swinging flap hinged within, and protected by, said hood.

5. The combination, substantially as set forth, of a flame-chamber, a lamp-chamber, a slotted diaphragm separating the two chambers, a lamp the upper edge of which sits close to the diaphragm, and flanges on the diaphragm overlapping the top of the lamp, to secure a strong draft, while preventing flickering.

6. The combination, substantially as set forth, of the flame-chamber, the front glass, its spring frame, and circular retaining-spring, whereby the glass, although accidentally cracked, may be retained in the frame.

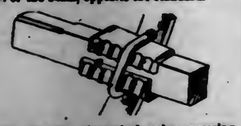
7. The combination, substantially as set forth, of the lamp, the flame-chamber, its front glass, and the heat-deflector plate *f*, arranged between the lamp and glass, whereby the front glass may be brought close to the lamp with little danger of cracking.

162,759.



162,760. PLOWS. Thomas J. Mercney, Salisbury, N. C. [Filed Apr. 13, 1875.]

Brief.—An ordinary clip or staple holds the plow-standard to the beam, and the adjustment for a deeper or shallower furrow is effected by means of two flanged and notched wedges, embracing the upper and lower corners of the beam, opposite the standard.



The flanged and notched wedges covering the upper and lower angles of the beam opposite the standard, in combination with the standard, beam, and calf or gripe, as shown and described.

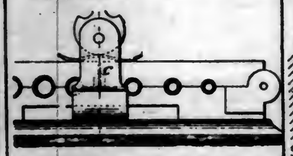
162,761. STRAWBERRY-CULTIVATORS. Jno. Orlando, West Yarmouth, Mass. [Filed Feb. 13, 1875.]

Brief.—A vertically-adjustable frame is mounted upon wheels. The frame carries upon each side a rotary vine-cutter, and upon two sets of cross-bars are mounted cultivator-teeth. The rear end of the frame carries a vibrating rake, which gathers up the vines and weeds, and when full can be vibrated backward and upward to discharge its burden.

1. In combination with a wheeled carriage, A, and frame C, arranged and applied together, as described, a vibratory rake, H, disk-cutters F F, a series of plow teeth, E, and cutters G, all being arranged to operate as explained.

2. In combination with the wheel-carriage A, the vibratory rake, and the frame C, arranged and applied together, as specified, the arms *b' l* and the levers *i m*, pivoted together, and applied all as shown and described.

162,762. LEATHER-ROUNDING MACHINES. Henry F. Osborne, Newark, N. J. [Filed July 9, 1874.]



The combination of a spring, with a sliding carriage or clip and bars of a rounding-machine, substantially as shown and described.

162,763. DRESSING-MACHINES. Ralph R. Osgood, Troy, N. Y., and F. Brotherhood, Charleston, S. C. [Filed Apr. 9, 1875.]

Brief.—The hoisting-chain is led down through the hollow top pivot of the crane (which is suspended on friction-rollers) to a sheave placed near the deck. The backing-chain is, in like manner, led up through the bottom pivot to a point near the former. The use of centering guide-sheaves is thus dispensed with, the twist of the vertical portions of the chain acting as a swivel. The arrangement of the crane enables the weight to be carried in the best manner, to avoid strains of the boat.

1. The combination of the upper hollow suspended trunnion N and J, hoisting-chain passed through said trunnion, and a sheave nearly on a plane with the deck of the dredging-boat, substantially as described.

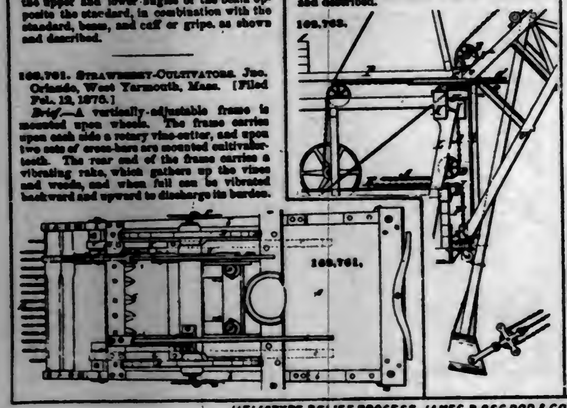
2. The combination of the bottom hollow trunnion, backing-chain passed through the said trunnion, and a sheave nearly on a plane with the deck of the boat, substantially as described.

3. The combination of friction-rollers with the suspended hollow-top trunnion and the turn-table of the swinging crane of dredging-machines, substantially as and for the purpose described.

4. The combination of struts L with the swinging crane, top trunnion, and kneisons of the boat, substantially as and for the purpose described.

5. The socket casting of the upper trunnion, constructed to receive the pivot of the top trunnion, and form an abutment for the struts L and their girts K, substantially as shown and described.

162,765.



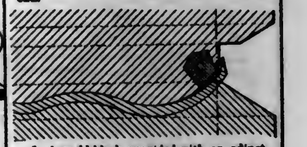
6. The pivot-casting of the top trunnion, having the turn-table of the crane, upper beams of the crane-arm, the angle-pulley, and the counterbalancing-timbers connected to it, substantially as described.

7. The combination of the counterbalancing-timbers P, turn-table, crane constructed with arms O and U, and the upper trunnion, substantially as described.

8. The suspension-bolts *d*, in combination with the crane, having main arm O, and auxiliary arm U, and top and bottom trunnions, substantially as described.

162,766. MECHANISM FOR MOLDING THE SOLES OF BOOTS AND SHOES. William H. Palmer, Dover, N. H. [Filed Feb. 13, 1875.]

Brief.—The mold is provided with a vertically-adjustable depressing-plate at its toe end.

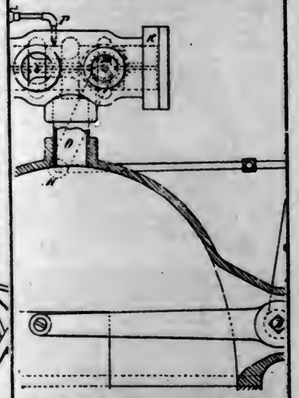


1. A mold-block provided with an adjustable stamp or device, O, for forming in the toe portion of the sole a depression to receive the inner sole and upper, all substantially as and for the purposes described.

2. A boot or shoe sole having a recess or depression at the toe formed by compression without removing any portion of the stock, substantially as and for the purpose described.

162,767. STEAM-TRAPS. Francis A. Pratt, Hartford, Conn., assignor to R. N. Pratt, New York, N. Y. [Filed Mar. 11, 1875.]

Brief.—The float automatically actuates an oscillating valve, which admits steam to and controls the movement of a piston-valve, the latter serving to regulate the admission of water to the reservoir. The cylinder is provided with a vent to allow of the escape of air from the reservoir.



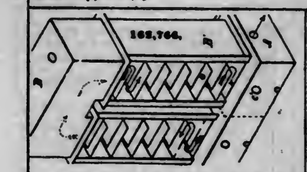
1. The combination of the subsidiary disk-valve J and its steam-channels with the cylinder and reciprocating piston K N N', and the steam and water pipes M L O, substantially as and for the purpose herein described.

2. The aperture P in the cylinder K, in combination with the reciprocating piston N and pipe O, leading to the reservoir, to form an escape-valve, substantially as herein described.

162,768. CONDENSERS AND PURIFIERS OF COAL-GAS. Wm. L. Pratt, St. Louis, Mo. [Filed Oct. 12, 1874.]

Brief.—Two upright chambers are set upon a divided tar-tank, and are connected at the top. They are provided with zigzag plates within and doors on the sides. The tar-tank and the connecting-tube are provided with cleansing-openings.

162,764.



The parlor described, having the divided tar-tank A, provided with the cleansing-openings *a a'*, the vertical chambers B B', provided with the removable doors C, and the connecting-tube D, provided with the cleansing-openings *r r'*, as described.

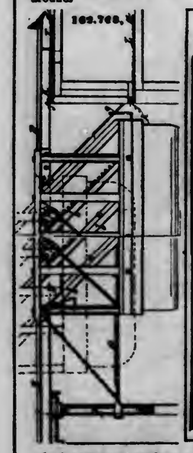
162,767. PROCESSES FOR TREATING TOBACCO. Geo. S. Prince, Richmond, Va. [Filed Feb. 13, 1875.]

The method herein described of curing and brightening tobacco in the leaf, for the manufacture of chewing and smoking tobacco, by subjecting it successively to the action of sulphuric acid, for the purpose of removing the sap and toughening the fiber, and to the action of sulphurous-acid gas, for bleaching and brightening it, and then to the action of steam for removing the acids and their compounds, substantially as herein set forth.

162,768. FLOATING DRAW-BRIDGES. Henry F. Rice, James M. Rice, and Wm. B. Rice, Dubuque, Iowa. [Filed Mar. 30, 1875.]

Brief.—A roadway combined with a floating truss-pontoon, the trusses of which are connected to the roadway by inclined guides and diagonal braces. Transverse shafts, with racks and pinions on the truss-pontoon, operate it, so as to preserve the roadway at a uniform level whatever the stage of the water. The hinge is composed of upper and lower levers, pivoted to a bracket and arms, to carry the pontoon entirely out of the way of the abutment and keep it steady when swung around.

162,768.



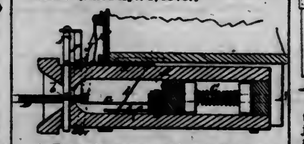
1. A permanent roadway or marine structure erected above water, in combination with a floating truss-pontoon, the trusses of the pontoon being connected to the roadway by inclined guides and diagonal braces, substantially as and for the purpose described.

2. The combination of the shafts, pinions, and rack-bars with the truss pontoon and the permanent roadway, substantially as described.

3. The perforated hubs, in combination with the shafts, pinions, rack-bars, pontoon-truss, and permanent roadway, substantially as described.

4. The combination of the hinge, composed of the bracket K, pivots *d d'*, and two pairs of arms, J L, with the truss pontoon-draw for a bridge, substantially as described.

162,769. CAR-COUPLINGS. Henry F. Rice, Jas. M. Rice, and Wm. B. Rice, Dubuque, Iowa. [Filed Apr. 6, 1875.]



1. The spring support and guide G, in combination with the draw-bar A, substantially as and for the purpose described.

2. The spring support and guide G, attached to an adjusting block, *c*, substantially as described.

3. The slide I, for holding up the coupling-pin F, connected to a spring-rod, A, and made with an angular shoulder, F', and slots *g g'*, in combination with the vertically-sliding notched bar F' of the coupling-pin F, and with the draw-heads, substantially as described.

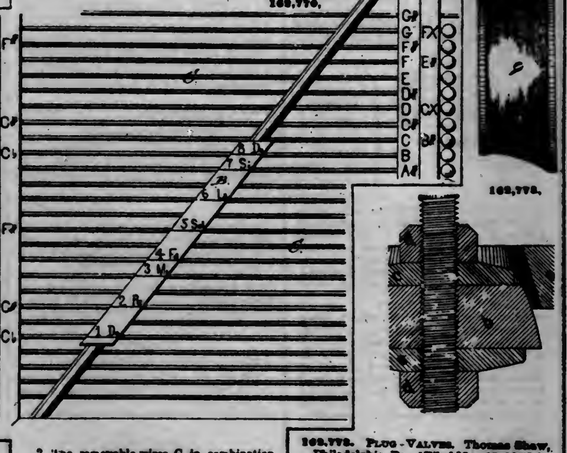
4. The combination of the laterally-movable bar K, swinging links K' K', rod J, bar F', coupling-pin F, and slide I, substantially as and for the purpose described.

162,770. MUSIC-TEACHING APPARATUS. J. A. Scarritt, Columbus, Ohio. [Filed Apr. 2, 1875.]

Brief.—For teaching the elements of transposition.

1. In combination with the frame A, provided upon its vertical margin with letters or characters indicating all the tones or notes of one, two, or more octaves, the removable wires or rods C and the sliding scale-indicator, so marked, spaced, and lettered as to indicate the major, minor, or chromatic scale, or any musical chord, substantially as and for the purpose described.

162,770.



1. The removable wires C, in combination with the frame A and sliding scale-indicator, substantially as and for the purpose shown.

2. The frame A, provided upon its vertical or lateral margins with the letters and characters of the natural scale in regular order, and so placed as to appear consecutively over the wires or rods C, substantially as and for the purpose shown.

162,771. BOTTLE-WASHING APPARATUS. Fredrich Schlich and John Koster, New York, N. Y. [Filed Oct. 17, 1874.]

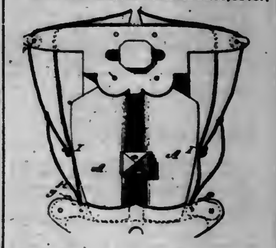
Brief.—Series of jet-tubes in connection with tubs in which the bottles are soaked and washed off, and with couplings that allow the jet-tubes to be moved from one tub to the other.

162,771.



The bottle-washing apparatus consisting of the tubs *a* and *b*, and ranges of nipples or jets and supply-pipes, arranged substantially as set forth, so that the washing jets can be placed over either one tub or the other, for the purposes specified.

162,772. CAR-COUPLINGS. Hiram A. Sharp, Jackson County, Mo. [Filed Feb. 10, 1875.]



The hinge-jaws A A, the pivoted braces *g g*, and the link O, in combination with the bumper I, to act substantially as described.

162,772.

162,773. PLUG-VALVES. Thomas Shaw, Philadelphia, Pa. [Filed Mar. 10, 1875.]

Brief.—The valve is molded with a concave periphery, placed in position on the rod, and compressed until said periphery assumes a convex form.

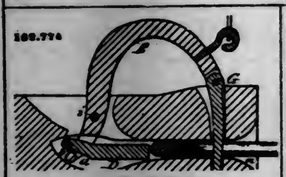
The elastic valve *b*, with a concave periphery, as described, for the purpose set forth.

162,774. CAR-COUPLINGS. Jno. H. C. Smith and Nathan B. Smith, St. Mine, Ill. [Filed Mar. 22, 1874.]

The combination, with a draw-head, A, having interior chamber *a*, of the slide D, curved lever E, and pin C, substantially as and for the purposes set forth.

160,776. MACHINERY FOR BURNISHING BOOT AND SHOE HEELS, &c. Vivian K. Speer, Lynn, Mass. [Filed Nov. 28, 1873.]

Brief.—The spring is caused to vary automatically in power during any elevation of the carrier, according as the angle formed by its free end with the body is more or less obtuse.



1. In combination with the tool-carrier and the abutment, with or without the roller, the spring, attached at one end to said carrier, and playing at the other upon the abutment, substantially as described.

2. In machinery for burnishing boot and shoe heels, the spring I, bent at its free end, substantially as described, in relation to the pivot of the carrier, as and for the purpose set forth.

160,777. TOILET-MIRRORS. Rhen T. Starr, New York, N. Y. [Filed June 22, 1874.]

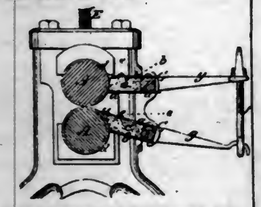
Brief.—The handle is provided with a circular rim, having internal screw-threads and an annular rib or projection, and is combined with a solid circular frame, having an external screw-thread and a rib or flange, whereby, when the latter is screwed into the former, the mirror is confined between the two ribs.



As an article of manufacture, a toilet-mirror, the handle B of which is formed with a circular rim, C, having internal screw-threads c', and a rib or flange, c^*, combined with a solid circular back, having external screw-threads c', and a rib or flange, c^*, substantially as described, whereby, when the two parts are screwed together, the reflecting-glass is confined between the ribs, and the mirror may be held and manipulated in the hand by its handle, for reflecting different parts of the person, as set forth.

160,778. MACHINES FOR LAMINATING THE STRIPS IN LEAF-TOBACCO. G. F. Unversagt, Baltimore, Md. [Filed Nov 11, 1874.]

Brief.—The scraper for removing gum from the rolls is formed of two metal plates, between which a wet sponge is held. The sponge and scraper are situated upon the short arm of a lever, so that the same can be adjusted to or from the roll as desired.



1. The combination, with the crushing rolls A A, of the sponge-holders, consisting of the scrapers a a, plates b b, and the adjustable arms g g, whereby the scrapers and moistening-sponges are made adjustable as one in relation to the rolls, in the manner substantially as herein set forth

2. The sponge-holders, consisting of the plates a b, forming openings at their edges, the upper plates provided with perforations c, and situated upon suitable supports for the purpose, as hereinafter set forth.

160,779. CORN-PLANTERS. F. Van Doren, Adrian, Mich. [Filed Feb. 11, 1875.]

Brief.—The lower end of the shoe is closed by a reversible spring-plate having a notched block for fitting under a transverse rod, for holding it in position. Above the seed-cup, and in the side of the planter, is secured a reversible cut-off bar, having a rubber cut-off on each end, which are used alternately in contact with the periphery of the seed-wheel, for cutting off the surplus seed.

160,779.



1. The reversible spring-plate H, provided with the central notched block d, in combination with the planter A, shoe B, and rod e, as and for the purposes herein set forth.

2. The reversible cut-off consisting of the bar I, blocks h h at the ends thereof, and the rubber pieces i i fastened to the blocks by central screws, substantially as and for the purpose herein set forth.

160,780. OX-BOW PINS. William Varnum, Sharon, Vt., assignor to James B. Larkin and Henry C. Varnum, same place. [Filed Aug. 18, 1874.]

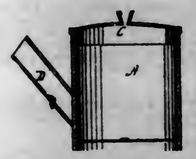
Brief.—For fastening the bows in the yoke.



The pin A, with standard or pivot C thereon, in combination with a spring, D, substantially as and for the purpose set forth.

160,781. DEVICES FOR APPLYING POISONOUS COMPOUNDS TO PLANTS FOR DESTROYING INSECTS. Oliver S. Warner, Akron, Ohio, assignor of one-half his right to Alex. M. Van Lier, Brooklyn, N. Y. [Filed June 20, 1874.]

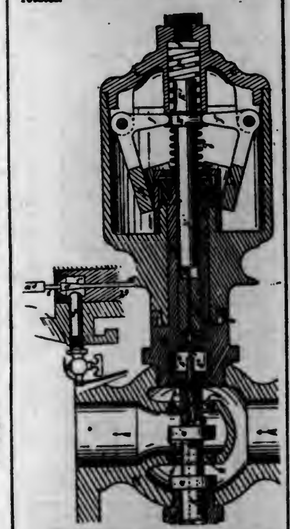
Brief.—The device consists of a covered vessel provided with a handle, and a perforated bottom placed a few inches above the lower end of the tube, through which the powder is sifted upon the plant



The magazine A, having the sieve-like or perforated bottom situated within the magazine proper, near the lower end thereof, and provided with the cover C and socket D, substantially as and for the purpose specified.

160,782. GOVERNORS FOR STEAM-ENGINES. George Westinghouse, Jr., Pittsburg, Pa. [Filed Apr. 3, 1875.]

Brief.—The governor-valve is operated by a piston working in a cylinder. A small valve, operated by the governor-balls, exhausts steam from the upper side of the piston, causing it to ascend. It is forced down by the small valve closing its port, and allowing the boiler steam to act in the upper side of the piston. The whole also containing the balls rotates.



1. A governor-valve and piston, arranged to operate the same, such piston, when in use, being subject to steam-boiler pressure simultaneously on both sides, in combination with an auxiliary valve and part for increasing or or lessening such pressure on one side, substantially as set forth.

2. A piston b, made subject to constant boiler-pressure on one side, and having a steam-port through or past the same to a chamber, b^2, on the other side, in combination with a governor-valve on one side and a tapering valve, d, and port i, communicating with the atmosphere on the other, substantially as set forth.

3. The combination of the rotating governor, governor-valve, piston, auxiliary valve and port, whereby when the governor ceases to revolve the auxiliary-valve port will be fully opened and the governor valve closed, substantially as set forth.

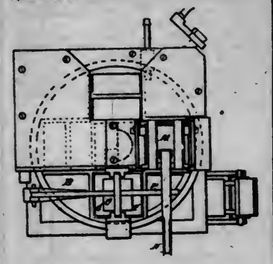
4. The valves a a', arranged on the same stem with pistons b b' of different areas, each working in a separate chamber, the piston b taking its steam from the boiler side, whether the governor-valves be open or closed, substantially as set forth.

5. The weights D D' in the revolving case C, in combination with arms f f', collar E, and regulating springs, arranged and operated substantially as set forth.

6. The combination of stems E' d^2 a^2, and valve d, with steam-ports, piston b, and chamber b^2, substantially as set forth.

160,783. BRICK-MACHINES. Jos. Whiteley, Dunlap, Iowa. [Filed Feb. 18, 1875.]

Brief.—Four pairs of molds are on a plate rotating on a vertical axis by hand gearing over a fixed platform, having an opening for the descent of the bricks onto an endless belt. The nearest mold, while being filled by hand, has the one in advance pressed by a cam lever, which, on further depression, acts on another lever, to expel the brick that is another step in advance.



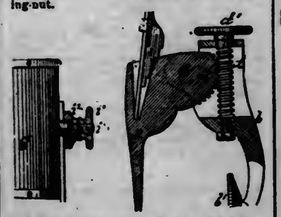
1. The combination, substantially as specified, of the horizontal rotary and bottomless molds, the fixed platform B having an opening, a, therein, a press, and an ejector, for the purpose set forth.

2. The combination of the presser L, the eccentric M, the lever N, the flexible bands s s, and the molds, substantially as and for the purposes specified.

3. The combination and arrangement, in a brick-making machine, of the press-lever N and ejector-lever P, both operating together substantially as and for the purposes specified.

160,784. HEAD-RESTS. Willard M. White, Boston, Mass. [Filed Jan. 8, 1875.]

Brief.—The standard is adjustable in the top of the clamp by sliding the foot-adjuster on the standard, and the head-rest is rotated and adjusted on the standard by the clamping-nut.



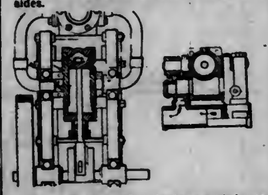
1. The combination of the clamp-fingers a b, the former bearing the gear-segment a', and the latter bearing the worm-screw d, all constructed and designed for use substantially as described.

2. The combination of the foot-adjuster c (its back consisting of a series of steps) and the standard f, substantially as shown and described.

3. The combination of the spring-standard f, rest g, pin i, nut i', and clamp i^2, substantially as shown and described.

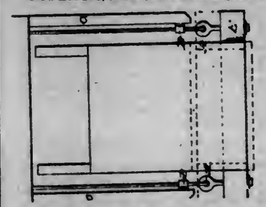
160,785. MOTIVE-POWER ENGINES. Conrad V. Wyss and Henry Studer, Zurich, Switzerland. [Filed July 14, 1874.]

Brief.—Valve ports are in the sides of the projecting chamber, and receive and exhaust the water simultaneously on both sides, the driving-column being divided to supply both sides.



The combination of a cylinder provided with a projecting valve-chamber, as shown in Fig. 5, the fixed distribution boxes located one up on each side and adapted to distribute the actuating fluid equally and simultaneously upon each side, substantially as and for the purpose as described

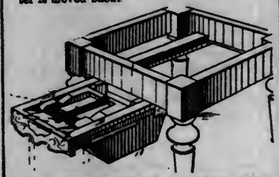
160,786. BALING-PRESSES. J. M. Albertson, New London, Conn. [Filed Nov. 20, 1874.]



In combination with the jointed side rods A, secured to the straining-beam E, the beams C, attached firmly to the head D, and extending downward parallel with the rod, and secured to it above the joint, substantially as and for the purpose specified.

160,787. FOOT-RESTS. Lewis M. Angle, Chicago, Ill. [Filed Mar. 19, 1875.]

Brief.—As the sliding frame is drawn out, the legs drop down into position to sustain the front portion thereof, and when the frame is moved back they are folded up by the strap which is attached to the staple. The cushion is folded into the sliding frame when the latter is moved back.



In combination with the seat-frame of an easy-chair, the sliding frame B, folding cushion C, folding legs E, provided with the staple e and connecting-strap i, all constructed and operated substantially as set forth.

160,788. BED-RIVES. Elvin Armstrong, Jeersyville, Ill. [Filed Oct. 6, 1874.]

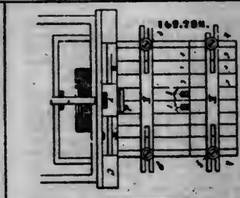
Brief.—The nests of frames are pressed together between slanted frames, slotted side bars being held by set-screws to these frames; the heavy box above having a slotted floor and surface grooves, and the top carrying over said slots V-shaped channels inverted over said slots, and leading to external air-ports.

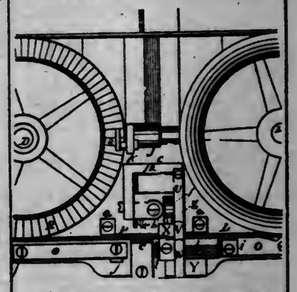
1. The combination of the bars E, slotted at their ends, and the securing-screws f f, with the follower k k and the intermediate frames e e, as described.

2. The combination of the board Q, having openings t and channels q q, with the V-shaped cover w, as described.

160,789. MACHINES FOR FINISHING HORSE-SHOE NAILS. Daniel Armstrong and John A. Hutchinson, Chicago, Ill. [Filed Jan. 27, 1875.]

Brief.—A pair of horizontal wheels (one of which has teeth to engage with a pawl to intermittingly rotate it) carry a belt provided with holders for the nails, which nails are carried between a die on a reciprocating frame and a roller on a rocking frame, where the first operation is performed, viz., beveling the nail flatwise. The next movement of the belt carries the nail between a stationary punch and a die on the reciprocating frame, when the second or finishing operation of cutting the bevel point is performed, after which the nail is delivered to a projection, which discharges it from the belt.





1. The belt L, provided with carriers M N, and arranged to place nails at the dies, and to stop during the finishing operation, and move forward, as and for the purpose specified.

2. The pointing-die b', formed of two pieces and combined with the adjusting-wedge f', as set forth.

3. The roller die a, formed of three pieces, and combined with the carriage C' and roller c', moved on the arc of a circle by the yoke 1, 5, as specified and shown, and with the carrying devices L M N.

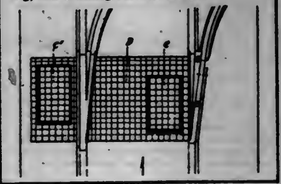
4. The die b', combined with spring f g and punch Z, substantially as described and shown.

5. The combination of the yokes 1, 5 and 3, cams 6 and 8, carriage C', lever K, pawl e with feed-wheel B, as described.

6. The nail-holder X a', constructed as set forth, and combined with the carriage C', rock-shaft A, spring W, cam U, plate V, substantially as described.

160,790. STREET-RAILWAY SWITCHES. C. B. Barlow, Portsmouth, N. H., assignor of one-half his right to John I. Shaver, Belleville, Canada. [Filed Feb. 3, 1876.]

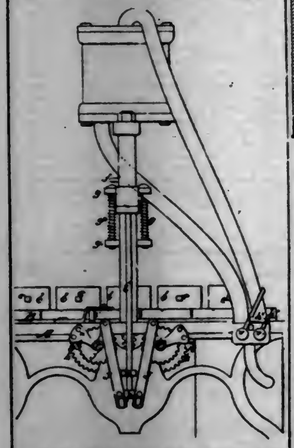
Brief.—An improvement on Patent No. 151,185, June 2, 1874. The movable tables upon which the horses are driven rest upon independent rollers, and are located above the plane of the bed-plate, overlapping the opening, thus avoiding obstruction by dirt.



in a street railway switch, substantially such as described, the tables *c c'*, arranged to work above the bed plate D, in combination with the loose independent friction-rollers *s s*, substantially as and for the purpose specified.

162,791. GLASS-PRESSES. Washington Beck, Pittsburg, Pa. (Filed Apr. 4, 1873.)

Brief.—The glass former or plunger is connected with and operated by the atmospheric engine, in contradistinction to hydraulic or steam engines, by the employment of which, and consequent escape of water from the cylinder to the mold, the glass becomes marred.



1. The power glass-press, consisting of the glass-shaping mechanism, and the mechanism for applying atmospheric pressure for performing the pressing operation, combined and operating substantially as described.

2. The combination of the revolving shaft *r*, carrying pin 2, with the plugs *b'* of molds *b*, substantially in the manner and for the purpose described.

3. The incline planes *e* of table A, in combination with the lifting-plugs *b'*, substantially as described.

4. The spring T, in combination with the reciprocating mold-bed B, pings *b'*, and shaft *r*, carrying pin 2, substantially as described.

5. The combination of the shaft *r*, wheel *k*, handle *q*, and the automatically-reciprocating mold-bed B, in the manner and for the purposes described.

6. The combination of the mold-bed B, connecting-links J, a rod, *i*, wheels *j* and *k*, pawls *l*, and a plunger, *l*, substantially as and for the purposes described.

7. The locking devices *s* or *s'*, in combination with the bed of molds, substantially as described.

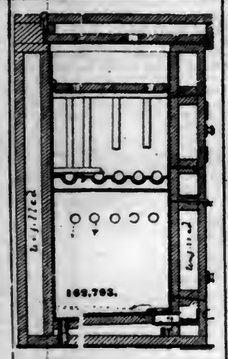
8. The removable handle ?, constructed with a socket, and provided with a catch pin, 6, on a spring-key, *4*, and adapted to be fitted and fastened upon the tenon *o* of the molds, substantially as and for the purposes described.

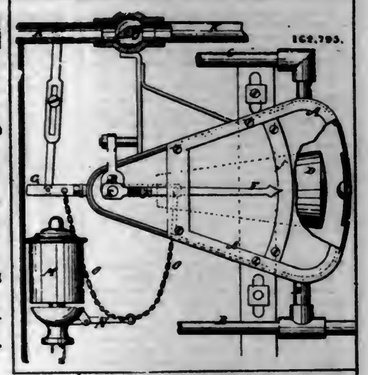
162,792. CIGAR-WRAPPER KNIVES. John H. Brookhiel, Highland Falls, N. Y. (Filed Apr. 14, 1875.)

Brief.—The two knives being upon one and the same end of the handle, either can be used, when desired, by turning the handle half-way over.



The combination of the handle *a*, rotting-blade *c*, and drawing-blade *d*, the two blades being secured to the same end of the handle, substantially as shown and described.



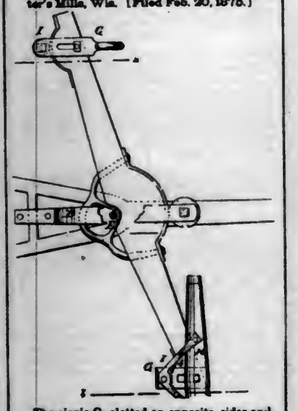


162,793. REFRIGERATORS. A. F. Bronner, New York, N. Y. (Filed Apr. 3, 1875.)

Brief.—Warm air falls through the perforated double cover of the case and removable cover of the ice-box and the ice, along the inclined drip-ways, under removable bottoms of the food chambers, on each side of the ice-box, into the hollow side walls and the large food-space. The drip passes down grooves under the ice rack into the hollow walls, down slanting troughs therein, to outlets across the front end of the floor, and thence to the rear exit. Pillars only separate the ice-box from the side food-chambers.

In refrigerators, the combination of a central ice-receptacle, by inclined troughs, with perforated double walls, bottom troughs, connecting and perforated front channel, and inclined bottom with exit-aperture, for conveying drip water off after utilizing the same, substantially as and for the purpose set forth.

162,794. WHIFFLETREES. J. H. Brown, Porter's Mills, Wis. (Filed Feb. 20, 1875.)



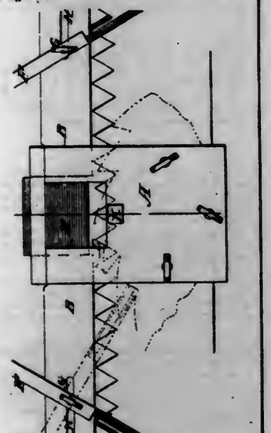
The clevis G, slotted on opposite sides and provided with end roll I, in combination with a double-tree having bolt and convexity near the end, as and for the purpose specified.

162,795. LOW-WATER INDICATORS. J. H. Brown, Porter's Mills, Wis. (Filed Feb. 20, 1875.)

The combination of the two chains O and the cross-bar O with the shaft E of the gage-float D, and with the stem N of the valve that admits steam to the whistle M from the pipe K, that supplies steam to the steam-pump, substantially as herein shown and described.

162,796. DEVICES FOR SETTING, FILING, AND JOINTING SAWS. William Bryson, Unity, Wis. (Filed Mar. 13, 1875.)

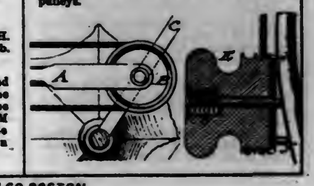
Brief.—A block, A, on each side of the saw to clamp and guide it. A screw through each, one to act as die and the other as punch for setting, and a straight or curved edge to gage or joint the points, said edge having at each end gages for the bevel-filing or sharpening cuts.



The improved device for setting, filing and jointing saw teeth, consisting of notched blocks A D A D, end-slotted edge E, jointing-gage F, adjustable gages F F, and set J K, all arranged substantially as shown and described.

162,797. ADJUSTABLE TOPS. Almon Clarke, Sheboygan, Wis., assignor to himself and Chas. A. Spencer, same place. (Filed Nov. 21, 1874.)

Brief.—The top may be operated from the rear, to a certain extent, by means of cords and pulleys.



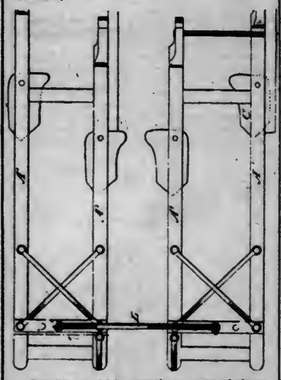
1. The canopy-adjusting device, composed of curved supporting standard with rotating end pulley, having adjustable canopy to be operated by spring-knob and connecting cords, all combined substantially as specified.

2. The combination of a rotating pulley, B, having clamping device B', with arc-shaped slide-piece C, attached to canopy for setting the same under any inclination to the carriage-body, as specified.

3. The pivoted spring-knob E, having ratchet base-plate *d*, and stop-pin *f*, combined with standard A and pin *d'*, for defining extent of turning motion of knob and securing its position when set, substantially as specified.

162,798. CORN-PLOWS. Linus G. Clawson, Pleasant Hill, Mo. (Filed Apr. 11, 1874.)

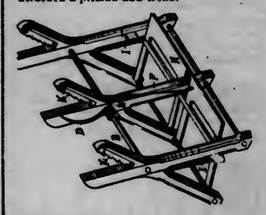
Brief.—The plow frames swiveled on the connecting-arch, and capable of being swung around to throw the earth either to or from the row.



Two frames, A' A', carrying a gang of plows having their respective sets of mold-boards turned in opposite directions, in combination with the connecting-bow L, pivoted loosely to each, as shown and described, so that they may by simply turning, and without any adjustment, be made to turn the soil to or from a row of plants.

162,799. SAW-BUCKS. Geo. Collins, Kingfield, Me. (Filed Apr. 6, 1875.)

Brief.—The saw-buck is automatically adjustable by means of a clutch formed upon one end of a spring coiled loosely around the central connecting-rod; the other end of the spring forming an arm, to the end of which is attached a pitman and treadle.

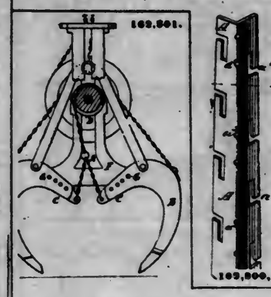


In a saw-buck, substantially such as described, the treadle H, pitman F, spring I, plate K, and coiled spring C, provided with the arm E and clutch D, constructed and arranged to operate substantially as and for the purpose specified.

162,800. FENCE-POSTS. Myron W. Colwell, Dunlap, Iowa. (Filed Apr. 3, 1875.)

Brief.—The post, which is driven into the ground, supports fence-wires in the angular slots shown, or boards, by means of wire ties, which pass through the round perforations.

The tapered fence-post A, made of wrought sheet-iron, bent longitudinally into angular form, and having angular slots a^1 formed in its side edges, and holes a^2 formed in its angle, substantially as herein shown and described.



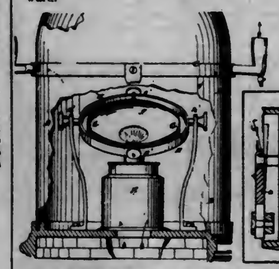
162,801. GRAPPLES. Geo. Conklin, Poughkeepsie, N. Y. (Filed Mar. 29, 1875.)

Brief.—Pivoted to the bottom of each of two descending sides of a frame is a pair of curved arms, connected by a metallic plate and ribs to form each side, which, on the descent of the implement, are, by attached chains, suspended openly, but which, on its ascent, collapse by the unwinding on a shaft of another suspending chain.

The combination of lever-jaws B B, pivoted at G G to a double frame, F F, provided with end chains A, and having pulleys D D, arranged as and for the purpose specified.

162,802. LIGHT-HOUSE LANTERNS. Oliver Cook, Darien, (Rowayton Post-Office,) Conn. (Filed Mar. 1, 1875.)

Brief.—The lamp chamber is made of glass, arched in form of a dome, which is attached to and supported by the lantern-frame. A reflector mounted in gimbals, supported by standards, throws the light upward against the clouds, which again reflect the light downward.



1. A light-house lantern provided with a glass dome or cover, substantially as herein shown and described.

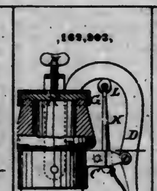
2. The combination of the concave-ring reflector F and the gimbal G H, provided with clamping screw-pivots *g' h'*, with the lamp E and the glass dome or cover of a light-house lantern, substantially as herein shown and described.

162,803. BOTTLE-STOPPERS. Gustave J. Orikelair, Green Bay, Wis. (Filed Dec. 19, 1874.)

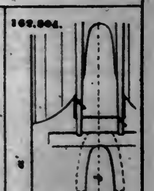
Brief.—The stopper is held in place by means of a bent or curved lever pivoted to a clevis on the band that encircles the neck of the bottle.

1. The band B, clevis C, lever D, stopper F, and spring I, constructed and arranged substantially as and for the purposes described.

2. In combination with the lever D, stopper F, the holding-hook K, for the purposes described, and also the clamp *L'*, as set forth.



162,804.



162,804. HORSESHOE-MACHINES. George Custer, Monroe, Mich. (Filed Mar. 18, 1875.)

Brief.—The inner end of the beading-die is made straight or square across, for the purpose of forming on the end of the shoe a straight or square toe for the reception of the calk.

The improved horseshoe-forming machine, composed of the blocks *a c*, constructed with the recesses *a' c'*, die *b*, hooks or draw-bars *f*, and female die *d*, constructed with a flat surface *e*, as described, substantially as and for the purpose set forth.

162,805. SEAL-LOCKS. Wm. H. Darling, New York, assignor of one-half his right to John Ardry, Brooklyn, N. Y. (Filed Oct. 2, 1874.)

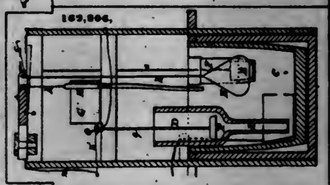


1. In a seal-lock, the combination of the block B, carrying the tumblers D, with the keeper B'', constructed with the shoulders *g*, and adapted for use with the seal *r*, substantially as and for the purpose set forth.

2. The combination of the seal *r*, thrust into place through the slot *m* in the keeper, and with its edges held by the groove *n* therein, the top plate *a*, provided with the key-hole *b*, and the tumblers D, carried by the block B, and arranged to lock upon the shoulders *g* of the keeper, the whole constructed and arranged substantially as and for the purpose set forth.

162,806. GALVANIC BATTERIES. William M. Davis, Cleveland, Ohio. (Filed Mar. 9, 1874.)

Brief.—Automatically gives notice of the total consumption of the sulphate of copper or of the zinc. Water-feed automatically regulated by a hydrometer.



1. In combination with the zinc bar E of a galvanic battery, the guiding-cell F and its supporting-shelf *f*, substantially as and for the purpose specified.

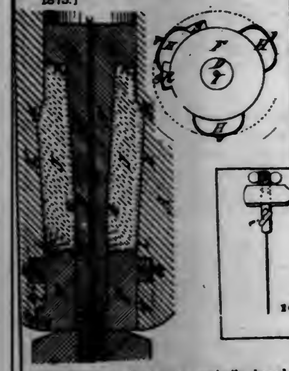
2. The combination, in a galvanic battery, of a water-reservoir, G, a hydrometer, H, and valve K, operating together substantially as and for the purpose specified.

3. The combination, with the reservoir D and a common call-circuit, of the call-weight P and the contact-spring Q, substantially as and for the purpose specified.

4. In combination with the descending bar of zinc E of a galvanic battery and a common call-circuit, the call-catch R and the contact-spring *r*, operating together substantially as and for the purpose specified.

5. In combination with the ascending bulb H, in the liquid of a galvanic battery and a common call-circuit, the contact-spring S on beam I, or their mechanical equivalents, operating together substantially as and for the purpose specified.

162,807. BREECH-LOADING ORDNANCE. D. Davison, New York, N. Y. [Filed Mar. 25, 1875.]



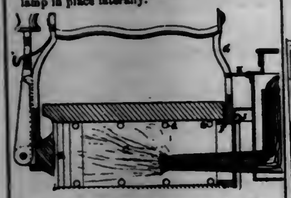
1. A cannon having the conically-shaped enlarged bore K, at or near the breech of the gun, with its smallest end toward the rear, in combination with the elastic cylinder and conical spindle, substantially as and for the purpose described.

2. The combination, with the piston-head C, and elastic cylinder J, of the spindle D made conical shaped, with its largest diameter at or near the inside face of the piston-head, substantially as and for the purposes described.

3. The locking ring F, constructed or provided with locking-legs H, and stop-lug E, in combination with the channels V G, and recess S, substantially in the manner and for the purpose herein described.

162,808. SAD-IRONS. Thos. J. Ellyson and A. O. Askew, Jackson, Tenn. [Filed Feb. 13, 1875.]

Brief.—The studs enter slots in the plate attached to the lamp, and the latch holds the lamp in place laterally.



The combination with burner and hollow iron, of handle, standard G, having pivot F and studs I, the plate J, and the latch K, all constructed and arranged substantially as and for the purpose described.

162,809. ORE-SEPARATORS. W. J. Evans, Houghton, Mich. [Filed Apr. 3, 1875.]

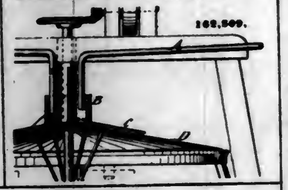
Brief.—Ore is fed onto a stationary cam-shaped plate, over which a stream of water flows. The ore is washed onto a revolving plate under the cam-shaped one. The gold, &c., remain near the top of the revolving plate, and are protected from further washing by the cam-plate, while the quartz and sand are still exposed to the stream of water, and are washed into the trough.

1. The combination of cam shaped stationary plate C, division-pieces L, and distributer B, with table D, to separate the ore from the puddled water and conduct the same evenly over the rotating table D, substantially as and for the purpose specified.

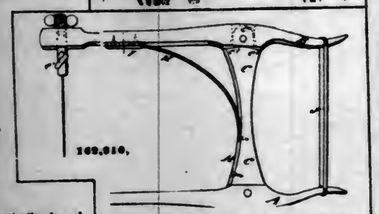
2. The perforated pipe E, in combination with the rotating table D, and cam shaped plate C, substantially as and for the purpose specified.

3. The conducting board G, pivoted on stationary plate C, and resting lightly on rotating table D, to conduct the water and ore into hutch H, through pipe f, substantially as described, and for the purpose specified.

162,809.



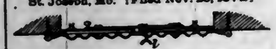
162,810.



162,810. FRET-SAW FRAMES. O. Evans, Halifax, Canada. [Filed Apr. 10, 1875.]

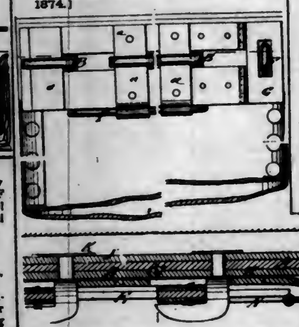
The combination of the springs H J and the flanged plate I with the frame A B C, having a pivoted mortise and tenon joint, b' c', at one end of the cross-bar C, substantially as herein shown and described.

162,811. FIRE-PROOF SHUTTERS. S. Fales, St. Joseph, Mo. [Filed Nov. 25, 1874.]



A corrugated metal shutter or door provided with air-passages G, in combination with the air-ventilating chamber f and box H, filled with a non-conductor of heat, substantially as and for the purpose set forth.

162,812. MAIL-BAG FASTENINGS. James C. Franklin, Lona, Oreg. [Filed Dec. 19, 1874.]



1. The hasp-slide pivoted on the wire staples F, in combination with the metal hooks B and the staple F, substantially as specified.

2. The washer-plates H, hinged together as described, in combination with the bag-front and the hooks, substantially as specified.

3. The slotted leather strap E, cross-plates e, attaching-plate N, and hasp G, combined and arranged substantially as specified.

4. The leather strap L, combined with the washer-plates H and the flap C, substantially as specified.

162,813. HUBS FOR VEHICLE-WHEELS. W. Gallan, Newark, N. J. [Filed Sept. 8, 1874.]

Brief.—To prevent the splitting of the hub.



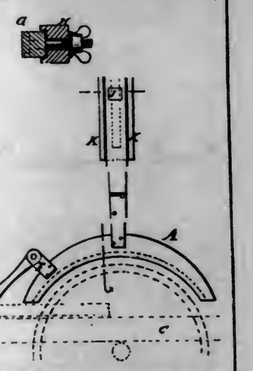
1. The combination of the hub a', with the bent double-ended tacks b, the tacks being driven into the hub and made to overlap each other, substantially as and for the purposes described.

2. The combination of the hub a', having one or more annular grooves in its surface, the bent double-ended tacks b, and filling-bands c, substantially as set forth

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162,814. SAW-GUARDS. Dwight Graves and Charles O. Howes, North Amherst, Mass. [Filed Jan. 18, 1875.]

Brief.—A circular saw guard consisting of a slotted and grooved stationary piece, which is secured to an upper floor-timber; and an adjustable hanger, the upper part of which is attached to the stationary piece, and the lower part provided with a grooved metal guard, having upon its front end a stationary stand, to which is pivoted a serrated presser-foot.



The combination of slotted flange-piece H, hanger G, guard A, stand F, and jointed foot E, all constructed and arranged to operate in the manner described.

162,815. IRONING-BOARDS. Henry Clay Green, Oshkosh, Wis., assignor of one-half his right to John H. Gottman, same place. [Filed Mar. 6, 1875.]

162,815.



162,815.



An ironing-board, A, having at one end the loosely-secured neck-wire B and a straining cross-bar, C, all combined to operate together in the manner described.

162,815.

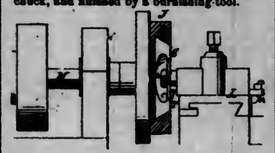


162,816. EARTH-AUGERS. A. M. Hanna, Kosciusko, Miss. [Filed Mar. 20, 1875.]

An improved earth-auger, formed by the combination of the cylinder A, the cross-bar B, the cutters C, having flaps or valves D hinged to their inner edges, and lips c' upon the outer corners of their cutting-edges, the bail E, and the sectional shaft F, with each other, substantially as herein shown and described.

162,817. MACHINES FOR RAISING AND PLANISHING TOBACCO-BOXES. Chas. J. Hauck, Brooklyn, N. Y. [Filed Sept. 5, 1874.]

Brief.—The blank is first raised by dies, then placed in a divided mold on a revolving chuck, and finished by a burnishing-tool.



1. The combination of the chuck J and the divided mold S, adapted to open and close, the chuck being provided with the eccentric or cam U to lock or unlock said mold, substantially as and for the purpose herein shown and described.

2. The combination of the slide L, the tool g, and cutter f, and mold S, substantially as and for the purpose shown and mentioned.

162,818. BRICK-KILNS. N. B. Heafer, Bloomington, Ill. [Filed Jan. 30 1875.]

The combination, in a brick-kiln, of a layer of coarse bituminous coal and a superimposed layer of fine coal or slack, to form a bed or foundation for the kiln, substantially as described.

162,819. LATHES FOR TURNING WOOD. W. B. Hodge, East Newark, N. J. [Filed Sept. 19, 1874.]

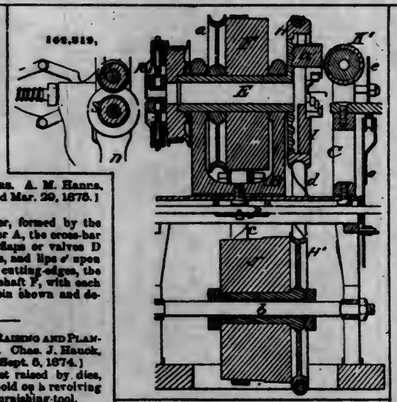
Brief.—The cutters are placed in a revolving head, and are forced toward the center and drawn from it by a spirally-grooved pulley, regulated in its motion by a pair of cone-pulleys, upon which runs a belt, the position of which is governed by a pattern-wheel.

1. In combination with the radially-adjustable cutter-carrying blocks a', the loose pulley H, and the hollow spindle E, the cone-pulleys F J, pulley H', belt d, belt c, shifting carriage F, lever-connections L e, pattern-plate c, and driving-roller K', substantially as described.

2. Segments I and cutter-carrying block a' on hollow spindle E, in combination with the pulley H, turning loosely on spindle E, substantially as and for the purpose described.

3. The cone-pulley F, fast on the hollow spindle E, and the cone-pulley J, loose on shaft b, in combination with carriage F, belts c, lever-connections L e, and pattern-plate c, actuated as described.

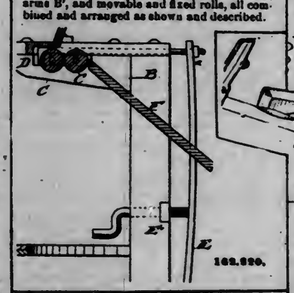
4. In a machine for turning irregular forms, the combination of a pattern-plate, c, a belt-shifter, and cone-pulleys F J, substantially as described.



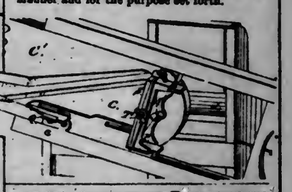
162,820. COMBINED WASH-BENCHES AND WRINGERS. O. S. Holden and J. S. Corey, Felchville, Vt. [Filed Mar. 29, 1875.]

1. The wringer rolls C C, supported horizontally in arms B' B', the vertical frame B B, the inclined shelf F and guard F', and wash-bench A, the said frame being connected with and forming part of the bench, all as shown and described, whereby the operation of wringing and discharging the clothes may be carried on, in the manner set forth

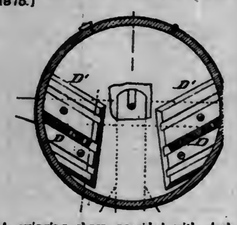
2. The sprag-plate E, attached to and extending along the standards B, the crank-screws E', the horizontal sliding hook-rods D, arms B', and movable and fixed rolls, all combined and arranged as shown and described.



162,820.



162,821. RECIPROCATING CHURNS. Wilhelm Howe, Brooklyn, N. Y. [Filed Apr. 3, 1875.]

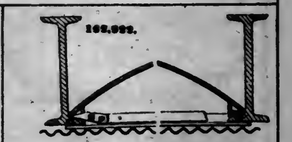


A swinging churn provided with dash-board D, adjustable in supporting plates D', as and for the purpose specified.

162,822. METALLIC LATHINGS. J. W. Hoyt, Springfield, Mass. [Filed Oct. 20, 1874.]

Brief.—A metal jaw is bolted to the ends of the furrings, between which jaw and the end of the furring the flanges of the beams are confined. A metallic strip is bolted to the furring, against which the lath-holding bolts are driven and upset.

162,822.



1. Metallic furring having clamps or jaws bolted to the ends thereof, for the purpose of securing said furring to the flanges of metal floor-beams, substantially in the manner described.

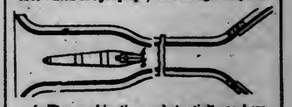
2. Metallic furring constructed with supplementary plates, wherein the ends of the rivets for retaining the lathing are upset, substantially in the manner described.

162,823. KITCHEN SLICING UTENSILS. A. Ilke, Lancaster, Pa. [Filed Dec. 5, 1874.]

The combination and arrangement of a swinging frame, B Z z, on a pivot-bolt, S, with its thumb-screw T held in position by a pin, t, sliding knife holders O C U, with the adjusting devices Q P p s v u, the whole constructed and operating substantially in the manner and for the purpose set forth.

162,824. APPARATUS FOR EXHAUSTING AND PROPELLING AIR. Christopher James, Bristol, England. [Filed Oct. 22, 1874.]

Brief.—The jet is delivered from a long narrow slit, and in the form of a thin sheet. The chamber and nozzle are of a thin oblong figure, and inclosed in a larger chamber of similar figure, reduced in width in the part into which the jet plays, and enlarged beyond.



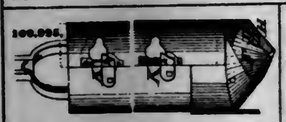
1. The combination, substantially as hereinbefore set forth, of a narrow straight jet casing or pipe, with an exterior casing, connected as described, and forming a narrow passage around it, through which the air or other fluid to be acted upon is admitted, and which is so constructed as to bring the said fluid in close contact with the inner jet-pipe, as set forth.

2. The jet-casing, as described, divided lengthwise of its orifice, and with bolts bolted or fastened together, as shown in Figs. 1 to 7.

162,825. EARTH-AUGERS. Wm. W. Jils, St. Louis, Mo. [Filed Apr. 20, 1875.]

Brief.—The bottom of the auger is provided with a lip and projections, over which the earth slides when boring. A hole behind the projection in the bottom allows the water to escape and lubricate the bottom. The bucket is provided with lugged hinges, which hold the door closed, but allow it to be opened when the same is slightly raised.

162,826.



1. The auger A, bottom F, lip H, and projection I, combined and operating substantially as described.

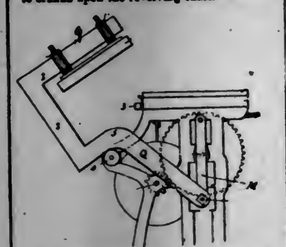
2. The auger A, bottom F, and perforation J, combined substantially as and for the purpose set forth.

3. The combination of the auger A, bottom F, lip H, projection I, and perforation J, substantially as described.

4. The combination of the auger A and door E, provided with the hinges K K', constructed as described, with the legs k k', substantially as and for the purpose set forth.

162,826. MEAL-MOLDERS IN THE MANUFACTURE OF LINSEED-OIL. Agur Judson, Newark, N. J. [Filed Feb. 13, 1875.]

Brief.—The platen is secured to two swinging brackets, pivoted to a vertically-reciprocating block sliding within guides. The bracket and block are connected by connecting-rods to cranks upon the revolving shaft.



In combination, the platen-supporting levers Q, guide-rolls 4, slides O, connecting-rods M, and cranks L, and their shaft, substantially as and for the purpose described.

162,827. BOXES FOR PACKING AND SHOWING GOODS. Francis S. Kinney, New York, N. Y. [Filed Apr. 3, 1875.]

Brief.—The box is provided with a lid at one end, which can turn down under it to support it, and inside of the box is a series of steps, upon which the cigarette bundles are placed. The steps gradually descend from front to rear.



The rhomboidal-shaped box A, made with the upper part of its lower end cut away, and provided with a terraced or step false bottom, B, and hinged flaps or false ends C D, substantially as herein shown and described.

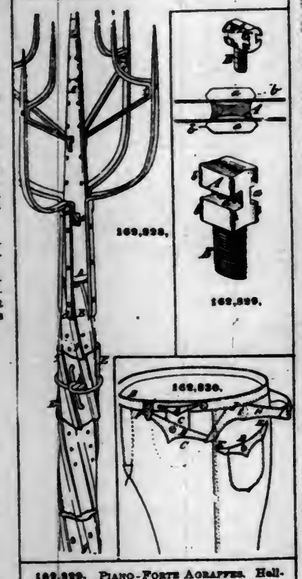
162,828. LIGHTNING-RODS. John A. Klockner, Canton, Ohio, assignor to himself and Henry F. Shelby, same place. [Filed Jan. 26, 1874.]

1. In combination with a hollow, ribbed, or corrugated main rod, the hollow conical main point A, when both the rod and point are pierced to admit the passage of the fluid into the interior of the point and rod, as and for the purpose described.

2. In combination with the hollow and pierced point and rod, the brace-points, with branched tangs, so as to conduct the fluid both onto and into the hollow point or rod, or both, substantially as described.

3. The tongued and grooved joint and wired splice *j k*, with or without the sleeve E, as and for the purpose described.

4. In combination with the hollow, ribbed, corrugated, and pierced main rod B, the coupling-piece F, for the purpose of joining said rod B to a solid rod of any kind, as described and represented.



162,829.

162,830.

162,829. PIANO-FORTE AGRAFFES. Hallmuth Kranich and Jacques Bach, New York, N. Y. [Filed Jan. 26, 1875.]

Brief.—The side grooves have a hollowed-out bottom, (as if cut out with a small circular saw,) so that the string may have but two bearing-points at the ends of the grooves.

1. A reversible piano-forte agraffe, A B, provided upon one or more sides with one or more right-angled grooves, *a*, and with ribs or teats *b* at the terminations of the said grooves, substantially as described, and for the purpose herein set forth.

2. A piano-forte agraffe, A B, provided upon one or more sides with one or more grooves, *a*, having concave backs, substantially as herein set forth.

3. An agraffe, A B, provided upon one or more sides with one or more transverse grooves, *a*, having concave backs, and having at the terminations of said grooves ribs *b*, or other projections, substantially as and for the purpose herein set forth.

162,830. OVERALLS. Saml. R. Krouse, San Francisco, Cal. [Filed Mar. 8, 1875.]

1. The stay D, stitched across the pocket-top to resemble a flap, and having its ends extended over and beyond the pocket-corners, to form the re-enforces E E, as and for the purpose herein described.

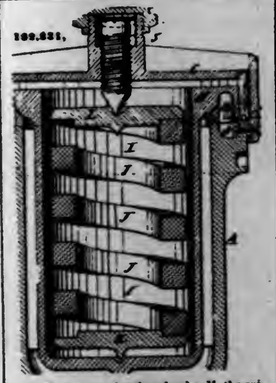
2. In combination with the waistband B, the cosponsed re-enforce or stay F, when constructed and arranged substantially as and for the purpose described.

3. The back-strap H, constructed as described, in combination with the waistband B, hip-seam K, and pocket-corner, substantially as herein set forth.

162,831. LOCK-UP SAFETY-VALVES. Ernestus B. Kunkle, Fort Wayne, Ind., assignor to himself and E. Bostick, same place. [Filed Nov. 14, 1874.]

Brief.—A cup-valve incloses a spiral spring between two disks, said disks being pivoted at their center, so that the spring is made to have an even bearing, and hold the valve squarely upon its seat. A seat is provided in the cap, to prevent the valve from being tampered with.

162,831.

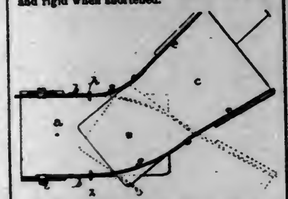


1. The cup or chambered valve H, the spiral spring J, and disks K L, respectively provided with a point and recess, and arranged within the valve, the pointed pressure-adjusting screw M, and the steam-pipe or casing A, having cap C, all combined as shown and described.

2. In a safety-valve, the combination of the steam-pipe cap C, having a socket, S, and screw-cap T with the sealed pressure-screw M, to permit the latter to be turned by a wrench, substantially as herein described.

162,832. EXTENSIBLE COAL-CHUTES. John M. Lafferty, Mansfield Valley, Pa. [Filed Mar. 23, 1875.]

Brief.—A chute composed of an upper and lower part, connected by a central pivot, so that it can be changed to either side, and provided with flexible side walls, moving in guides to lengthen and shorten it, so that the chute can be made flexible when extended, and rigid when shortened.



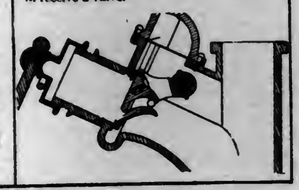
1. The upper part *c* and short vertical sides *b*, in combination with the movable part *c* and the rigid vertical sides *a*, substantially as and for the purpose specified.

2. The two parts *c c* and flexible walls *g*, in combination with the fixed guides *h* and the sides *b b* and *c c*, all as and for the purpose herein described.

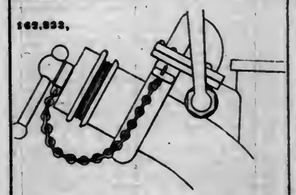
3. A coal-chute composed of the two parts *c c*, whereby the chute can be lengthened out and made flexible, or be shortened and made rigid, substantially as shown.

162,833. PIPES. Henry S. Lansdell and J. S. Long, Brooklyn, N. Y. [Filed Apr. 7, 1875.]

Brief.—A main and branch pipe cast in a single piece. The branch pipe is so cast as to have a valve-seat, and is otherwise adapted to receive a valve.



162,833.



The combination of a main and a branch pipe, when both are cast in a single piece, and the branch pipe so cast is provided with a valve-seat, and otherwise adapted to receive the valve, substantially as and for the purpose set forth.

162,834. VENTILATORS FOR COOKING-STOVES. Alfred Leigh, Flemington, N. J. [Filed Mar. 3, 1875.]

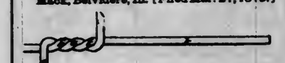
Brief.—The cams raise the flaps, and the weight retains them in position when raised.

1. The crank-rod *j*, with cams *l m*, in combination with flaps *d*, *e*, and *f*, as and for the purpose described and set forth.

2. In combination with flaps *d*, *e*, and *f*, the chain *n*, provided with weight *o*, arranged substantially in manner and for the purpose set forth.

3. The hood or inclosure, provided with folding flaps *d*, *e*, and *f*, crank-rod *j*, having cams *l m*, funnel-shaped or contracted top *c*, exit-pipe *g*, having check-damper *e*, all arranged and combined as described and set forth.

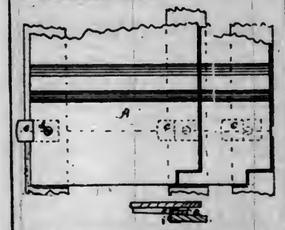
162,835. BARBED FENCE-WIRE. Martin M. Mack, Belvidere, Ill. [Filed Mar. 27, 1875.]



As an improvement in barbed fence-wire, the single wire *b*, provided at intervals with spiral twists, into which are spirally-intertwisted the barbs *a*, having their ends turned outward at right angles to the fence, substantially as specified.

162,836. ROOFING-TILES. Gaffy Manvel, Rochester, N. Y. [Filed Oct. 20, 1874.]

Brief.—The roofing-tiles are provided with a wedge-shaped depression, and at their lower ends with a mortise, into which the end of a clip fastened to the roofing-bars fits, and holds the tile at the lower end.



1. The roofing-tile, provided with the wedge-shaped depression C, substantially as and for the purposes shown and described.

2. The roofing-tile, formed substantially as shown and described, and provided with the mortise *a*, for the purpose set forth.

3. In combination with the roofing-tile A, the locking-clip *c*, for the purpose set forth.

162,837. MANUFACTURE OF HEXAGONAL NUTS. A. Marland, Pittsburg, Pa. [Filed Mar. 11, 1875.]

In the manufacture of polygonal nuts from cylindrical blanks, the combination of the following steps: first, severing the blanks transversely, without materially distorting their cylindrical form, from cylindrical rods or bars of a diameter equal or about equal to that of the inscribed circle of a cross-section of the nut to be made; second, inclosing the same in a close die-box of polygonal form in cross-section; third, expanding the same by end compression so as to fill the polygonal corners; and, fourth, punching the eye in the axial line of the blank, substantially as set forth.

162,837.



162,838.



162,838. MACHINES FOR MAKING BOX-NUTS. A. Marland and William J. Lewis, Pittsburg, Pa. [Filed Apr. 2, 1875.]

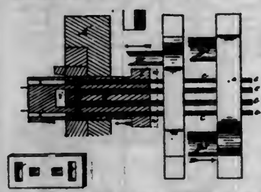
Brief.—An ordinary nut-making machine, adapted, by a particular die and a series of three punches, to form, simultaneously, three cylindrical and countersunk holes in the blank nut, the central hole being of greater diameter than the others, and the countersink being formed by a conical shoulder at the base of the punch.

1. In a machine for making box-nuts, the combination of the die-box, the front and rear dies *b c*, the outer punches *c c*, for punching the screw-holes, the intermediate larger punch *d*, for punching the box-rod hole, and the stripper *m'*, substantially as set forth.

2. In combination with the die *b* and die-box, the punches *c*, having each a punching or perforating point for making the screw-hole, and at the base thereof a conical flare or enlargement, *d'*, for swaging a countersink around the screw-hole at its outer end, substantially as described.

162,839. MACHINES FOR MAKING PLOW-CAPS. A. Marland and William J. Lewis, Pittsburg, Pa. [Filed Apr. 2, 1875.]

Brief.—An ordinary nut-making machine, adapted, by a particular die and a series of four rectangular punches, to simultaneously form, by punching, four rectangular holes in a plow-cap blank previously cut from a bar in the way common to nut-machines.



In a machine for making plow-caps, the combination of the die-box, the front and rear dies *b c*, the rectangular side punches *c c*, rectangular middle punches *c'*, and stripper *m'*, constructed, arranged, and operated substantially as set forth

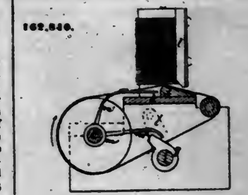
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162,840. PAPER-FEEDING APPARATUS. C. A. Maxfield, New York, N. Y. [Filed Sept. 22, 1874.]

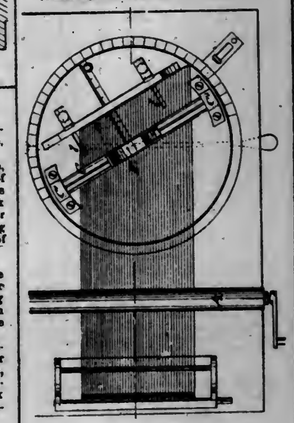
Brief.—The bed-plate has a ridge, over which pass the feeding friction-bands under the pile of blanks. Oscillating arms in rear of the ridge lift up the pile as the lower blank passes beyond them.

The combination of the friction-bands *f*, *f'*, and *f''*, lifting-arms *m' m'*, ridge *x*, and adjustable guides *V V*, substantially as hereinbefore set forth.

162,840.



162,841. APPARATUS FOR CUTTING GOODS BIAS. Salomon Mayer, New York, N. Y. [Filed Apr. 17, 1875.]





1. An apparatus for cutting goods bias, composed of a supporting-table, with centrally-slotted revolving disk-plate, provided with a slotted knife-guiding and treadle-acted clamp-piece, and parallel adjustable gage-piece, all arranged and operated substantially as and for the purpose set forth.

2. The slotted and spring-acted clamp-piece, having bottom slot in line with central guide-slot of disk and longitudinal side guide-slots, in combination with pivoted and spring-cushioned cutting-knife, guided therein substantially as specified.

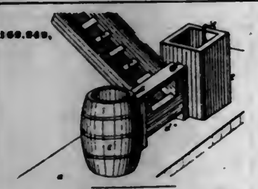
3. In an apparatus for cutting goods bias, the combination of the revolving disk-plate, having grooved or recessed circumferential bottom flange, with the sliding lock-bolt of the table, for setting disk to any cutting angle, substantially as set forth.

162,842. DEVICES TO PROTECT WORKMEN FROM THE WATER WHILE WASHING SHEEP. Charles H. McCall and James H. McCall, Morristown, Ohio. [Filed Feb. 11, 1875.]

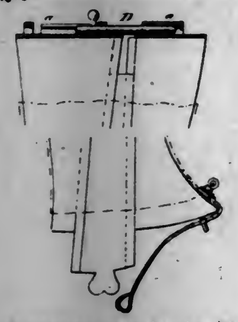
Brief.—Consisting of a platform, to which are attached suitable inclosures for the workmen to stand in, and a chute, which enables the washed sheep to gain the bank washed, not necessitating the wetting of the workmen, the whole firmly anchored in the water.

The device herein described, composed of the platform *a*, vessels or inclosures *c c*, chute *b*, and frame *d*, constructed and arranged substantially as herein set forth, and for the purpose described.

162,842.

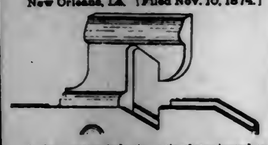


162,843. PANTALOONS-BLOCKS. Jas. McCurdy, Lock Haven, Pa. [Filed Mar. 29, 1875.]



The combination, with the front piece of the shaping-block having fastening-pin at lower end, of a leather strap and clamping device attached thereto and to the lower front end of leg for retaining the same in position on block, substantially as specified.

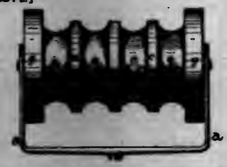
162,844. BALE-TIES. Oscar R. McClean, New Orleans, La. [Filed Nov. 10, 1874.]



1. In a cotton bale tie, a tie-plate riveted to and laterally projecting from a folded end of the bale-band, in combination with said bale-band, the end thereof being notched and folded, as shown, so as to provide a bearing for the looped free end of the bale-band, to enable it to be held in position independently of the expansive force of the bale, substantially as specified.

2. A bend-seat, one-half of which is on the folded end of the bale-band, and the other half on the tie-plate, the arrangement being such as to cause the looped free end of the band, when placed in position, to bear equally on the tie-plate and bale-band, as herein set forth.

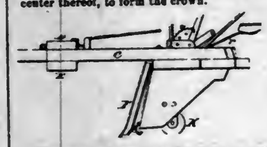
162,845. TRAWL-ROLLERS. Allan L. McDonald, Gloucester, Mass. [Filed Nov. 23, 1874.]



The combination of the frame *a*, having the shank *i*, for attaching it to the side of the boat, in combination with the grooved roller *c c*, provided with the flanges *g* on its ends, to prevent the ropes from slipping off, substantially as shown and described.

162,846. ROAD-SCRAPERS. J. L. McKeen, Acworth, N. H. [Filed Jan. 8, 1875.]

Brief.—An improved arrangement of parts to enable the operator to adjust the machine without stopping, to excavate from either side of the road at pleasure, and discharge in the center thereof, to form the crown.



The combination, with the racks *q q*, pinions *r r*, stands *l l*, pins S S, and levers J J, of the trucks K K, scraper F, lever G, and connection-rod *h*, draft-pole B, latch *j*, guide *k*, and lever *c*, substantially as and for the purpose hereinbefore set forth.

162,847. POTS AND KETTLES. Donald M. McLean, Gloucester, Mass. [Filed Mar. 26, 1875.]

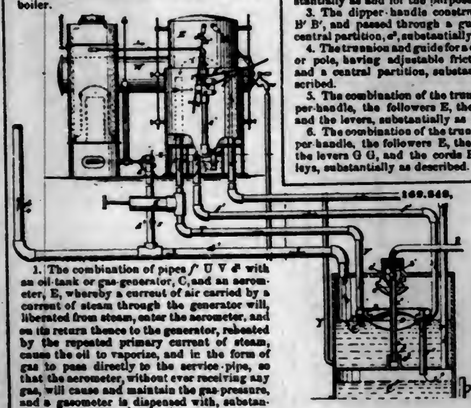


1. In combination, with a pot or kettle, *a*, the two bails *d d*, said bails crossing each other between the points of attachment to the pot or kettle, substantially as and for the purpose set forth.

2. The pot or kettle *a*, in combination with the bails *d d* crossing each other, as described, and the ears *e e* with shoulders to prevent the bails from falling, as and for the purpose set forth.

162,848. GAS APPARATUS FOR CARBURETING AIR. Frank W. Ofeldt, Newark, N. J., assignor to himself and George W. Hall, same place. [Filed Oct. 10, 1874.]

Brief.—Air is forced to the carburetting-tank by a steam-jet. The mingled air and steam pass through the lower division of a double annular chamber, which rests on the gasoline, from which they pass to the condenser. The air, freed from moisture, passes to the aerometer, and from it to the upper division of the annular chamber, and escapes through apertures into the gasoline. The rising and falling aerometer regulates the steam injector-valve. A pump is provided for forcing air to the carburetter, for making the first gas to start the flame under the steam-boiler.



1. The combination of pipes *f' U V d'* with an oil-tank or gas-generator, C, and an aerometer, E, whereby a current of air carried by a current of steam through the generator will, liberated from steam, enter the aerometer, and on its return thence to the generator, roasted by the repeated primary current of steam, cause the oil to vaporize, and in the form of gas to pass directly to the service-pipe, so that the aerometer, without ever receiving any gas, will cause and maintain the gas-pressure, and a gasometer is dispensed with, substantially as specified.

2. The combination of the pipes *f' f''*, passing through the oil in the generator into the condensing-tank C', with the pipe U, for the purposes of heating the oil without getting it mixed with water from condensation, separating the steam and air by condensation, and collecting the former, condensed, in the tank C', and returning the liberated air by the pipe U to the aerometer E, substantially as specified.

3. The annular vessel composed of compartments R and S, one of which is provided with tubes *r'*, passing through the other, for the purpose of heating a current of air passing through the former by a current of steam passing through the latter, in order to promote and maintain the formation of gas in a generator, C, substantially as specified.

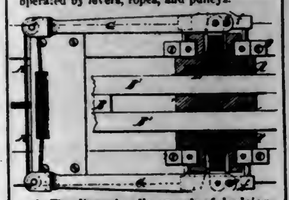
4. The cup *c'*, in combination with the hollow stem or pipe *c''*, provided with holes *c²*, as shown, for the purpose of bringing the supply to the bottom of the generator, substantially as specified.

5. The pipe *u'*, in combination with the water-tank W of the boiler T, and the condensing-tank C', for returning the condensed steam to the boiler, substantially as specified.

6. The air-pump B, in combination with the pipes *V d' d²*, generator C, boiler T, and aerometer E, for starting the machine, substantially as specified.

162,849. DREDGING-MACHINES. Ralph R. Osgood, Troy, N. Y. [Filed Mar. 9, 1875.]

Brief.—The dipper-handle of a dredging-machine is arranged to pass through a support or guide oscillating on trunnions, and is provided with clamps capable of extending transversely into the passage through which the pole moves, for the purpose of controlling the pole or dipper-handle. The clamps are operated by levers, ropes, and pulleys.



1. The dipper-handle or pole of dredging-machines, passed through a support or guide which has clamps capable of being extended transversely into the passage through which the pole moves, for the purpose of controlling the handle or pole, substantially as and for the purpose set forth.

2. The oscillating trunnion, forming a guide and support and clamp, the clamps thereof capable of being extended transversely into the passage, through which the dipper-handle or pole of dredging-machines is passed, substantially as and for the purpose described.

3. The dipper-handle constructed of bars B' B', and passed through a guide having a central partition, *e'*, substantially as described.

4. The trunnion and guide for a dipper-handle or pole, having adjustable friction-followers and a central partition, substantially as described.

5. The combination of the trunnion, the dipper-handle, the followers E, the plungers F, and the levers, substantially as described.

6. The combination of the trunnion, the dipper-handle, the followers E, the plungers F, the levers G G, and the cords H H, and pulleys, substantially as described.

162,850.

162,850. FARM-FENCES. D. R. Ostrander, Fountain Green, Ill. [Filed Dec. 23, 1874.]



1. The portable fence-posts having the base H, the uprights F F', braces I I', fitted to two sides of the uprights and the bolt I'' lengthwise of panel, holding all firmly together in one post, substantially as and for the purpose set forth.

2. In combination with the panels A, the auxiliary support formed of the four stakes M M' N N' driven into the ground crosswise securely, and all four bolted together into one frame to support and hold the panels, substantially as set forth.

162,851. GAS-FURNACES. Jos. D. Patton, Trewerton, Pa. [Filed Mar. 13, 1875.]

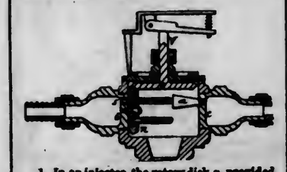
Brief.—Gas passes from retorts through scrubbers, and through condensers within the water of the gasometer, and on through another scrubber toward the burners. But one scrubber, with but one condenser, may be used.



One or more scrubbers located outside of a gasometer-tank, in connection with condensing-chambers beneath the surface of the water within the tank, for removing condensable matter and cleansing the gas, substantially as shown and described.

162,852. INJECTORS. Wm. P. Patton, Harrisburg, Pa., assignor to himself and S. S. Child, same place. [Filed Apr. 3, 1875.]

Brief.—A rotating disk provided with nozzles of different bores is pivoted so that any one of them may register with the steam-inlet and combining tube; said disk being controlled by a beveled gear and spindle, furnished with a spring-finger, to indicate the position of the disk. An alarm-valve is attached to the water-chamber, to indicate the operation of the injector.



1. In an injector, the rotary disk *a*, provided with two or more nozzles, substantially as and for the purpose set forth.

2. In an injector, the rotary disk *a* provided with two or more steam-nozzles, constructed as described, in combination with the steam-passage S and receiving-nozzle *s*, substantially as and for the purpose described.

3. The spring-handle *r h*, provided with the leg *b* and shaft V, in combination with the wheel *e* and disk *a* provided with different sized nozzles, substantially as set forth.

4. The notched plate 10 and leg *b* in combination with the spring-handle *r h*, shaft V, miter-wheel *e*, and disk *a* provided with the nozzles, substantially as and for the purpose set forth.

5. In combination with an injector the alarm-cock E, consisting of the valve *s*, screw G, and outlet-pipe *f*, constructed to operate substantially as and for the purpose set forth.

162,853. BOBBIN-WINDERS FOR SEWING-MACHINES. Franklin Peck, West Cheshire, Conn., assignor to Silas E. Jerolds and E. R. Lawton, same place. [Filed Dec. 26, 1874.]

Brief.—The hub of the main shaft is eccentric, and is fitted into an adjustable sleeve, also eccentric. The grooved drum, that moves the thread-carrier, has on its end a friction-disk, that is engaged and moved forward by a spring-latch carried by the rock-arm, that fits over the eccentric hub and sleeve, and operated thereby. The drum is locked after each forward movement by a spring-brake engaging the friction-disk; and the amount of movement imparted to the rocking arm is regulated by changing the relative axial positions of the hub and sleeve.



1. In combination with the main shaft of a bobbin-winder, an adjustable eccentric, for regulating the speed of the thread-carrier, substantially as set forth.

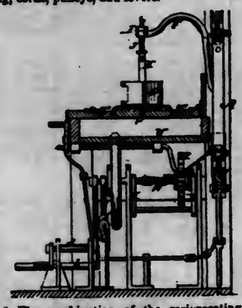
2. In combination with the main shaft of a bobbin-winder, the compound adjustable eccentric, hereinbefore described, consisting of the eccentric turned upon the end *g* of the main shaft A, and the eccentric formed upon the sleeve *s* of the adjustable disk I.

3. In combination with the adjustable eccentric, the rock-sleeve D, with its forked arm O and friction-latch *k*, spring *l*, and the friction-wheel E, constructed and arranged to operate substantially as set forth.

4. The combination of an eccentric on the main shaft, a friction-wheel on the shaft that drives the thread-carrier, and a friction latch or lever for communicating motion from the main shaft to such friction-wheel.

162,854. IRONING-MACHINES. G. F. Perrenot, Rockport, Ark. [Filed Feb. 5, 1875.]

Brief.—A reciprocating frame has a vertically-adjustable rail, to which are attached curved arms, that support a smoothing-iron, adjusted by rods and springs, above an ironing-board; the whole being operated by gearing, cords, pulleys, and levers.



1. The combination of the reciprocating frame A, vertically-adjustable rail-frame C, posts E, and the ironing-table, substantially as specified.

2. The overhanging arms F, vertically-adjustable rods H, springs J, irons G, and the ironing-table, substantially as specified.

3. The toggle-bars M, bar N, rod P, and levers O Q, combined and arranged with the vertically-adjustable rail-frame, and the ironing-table, substantially as specified.

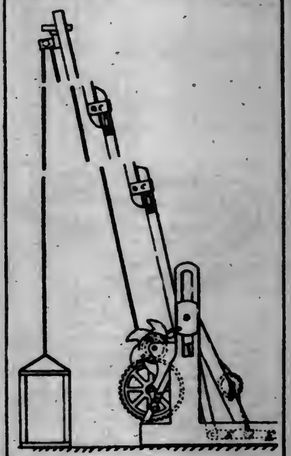
162,855. EXTENSION-TABLES. N. Petty, Rockport, Mo. [Filed Dec. 26, 1874.]



In an extension-table, the combination of the independent self-supporting end tables A, leaves B, and independent central table C, all connected together by suitable fastenings, to form a single extension-table, which can be disconnected to form three separate self-supporting tables, substantially as described.

162,856. FIREMEN'S EXTENSION-LADDERS. Peter Peterson, New Milford, Conn. [Filed Apr. 7, 1874.]

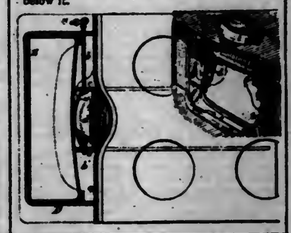
Brief.—The toggle-joint braces, slotted standards, and weighted slides enable the sliding sections of the extensible ladder to vary their angle of inclination, so as to be kept in suitable relation with the elevating mechanism.



The combination of the toggle-braces, slotted standards, and weighted slides with the telescopic ladders, operating as set forth, the whole arranged as and for the purpose specified.

162,857. REMOVOM COOKING-STOVES. G. E. Phillips, Troy, N. Y. [Filed Feb. 13, 1875.]

Brief.—The products of combustion may, by means of a single damper, be sent down the diving-flues, through the recesses in the flue-strips, into the central ascending and exit flue, or down to the return-flues under the oven, thence to the exit. In either case they impinge nearly the whole front of the reservoir. There is communication between the diving-flues through the space behind the damper, where its upper edge rests against the reservoir, and also through the channel below it.



HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

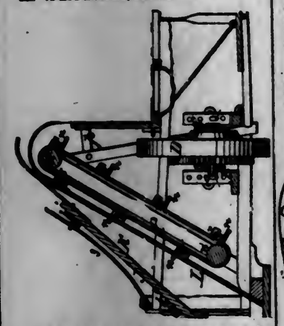
1. The combination of the body A and casing D of a stove, the partitions *e e'*, having recesses *i*, the valve h, covering said recesses, and water-reservoir E, smaller than the interior of the casing, whereby a gas-circulating space is formed completely round and beneath the reservoir, substantially as and for the purpose set forth.

2. The combination, in a reservoir-stove, of a reservoir, E, partitions separating the diving and rising flues, and having recesses *i*, through which said flues may communicate, and a valve or damper arranged in one of the flues, and closing the same when adjusted to one position, and covering the recesses *i* when adjusted to another position, all substantially as set forth.

3. The combination of the reservoir E, diving and rising flues, communicating passages *i i*, and valve h, arranged to bear with its upper edge against the reservoir and form a circulating passage, *e*, as set forth.

4. The combination of the reservoir-flues *b d*, valve h, and channel *o*, forming a communication in the stove, between the outer flues and around the central flue, as and for the purpose set forth.

162,656. HARVESTERS. Henry Porter, Polo, Ill. [Filed Dec. 26, 1874.]

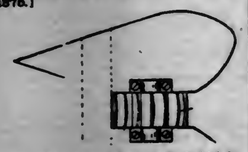


1. The grain rest or guard K, constructed as described, and operated by means of a long crank, *l*, and a spring, *s*, in the manner and for the purposes specified.

2. In combination with the reciprocating rising and falling rack K, actuated as described, the fixed strips L and elevating-fingers *n*, operated as specified.

3. The pitman-rod J', having the grooved connecting-pin *p'*, in combination with the removable lever J' and divided block *p*, substantially as described.

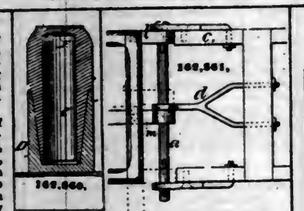
162,659. CONSTRUCTION OF VESSELS. T. Willis Pratt, Boston, Mass. [Filed Mar. 5, 1875.]



A steamboat or vessel, the hull of which is constructed in such a manner that the horizontal water-lines form a sharp angle at the stem and continue in regular divergence to a point nearly opposite the paddle-wheel center, whence they run into semi-ellipses, as shown in Fig. 1, substantially as and for the purpose set forth.

162,660. RUDDER-CASES. S. W. Sheldon, New York, N. Y. [Filed Dec. 26, 1874.]

As a new article of manufacture, the blowing-case made in two parts, A and D, the upper part A being externally, and the lower part D being internally, tapered, to fit one within the other, the upper part provided with cavity C for holding the blowing and the discharge-opening F, with covering-plate G, all as specified.



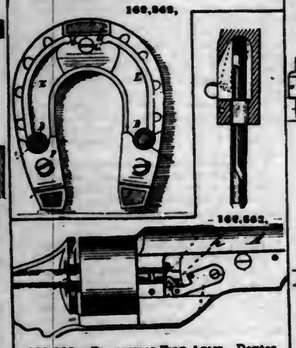
162,661. SLEIGH-SHAFT ATTACHMENTS. D. Smith, Johnstown, N. Y. [Filed Feb. 27, 1875.]

The cross bar *a*, in combination with the central strap *d*, shafts *f*, and straps *l m*, one of which is attached near the center of the cross-piece of the shafts, all substantially as and for the purposes set forth.

162,662. HORSESHOES. Thomas Skelton, Milwaukee, Wis. [Filed Apr. 9, 1874.]

Brief.—The wearing surface of the shoe is provided with a longitudinal rib having enlargements at the ends, around and between which the removable heel and toe calks are fitted.

The shoe A, provided with the rib E and enlargements D, in combination with the removable calks, constructed and applied as described.

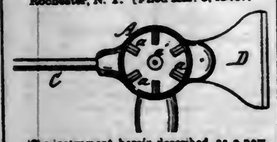


162,663. REVOLVING FIRE-ARMS. Dexter Smith and Jos. C. Marshall, Springfield, Mass. [Filed Mar. 26, 1875.]

1. In a revolving fire-arm, an extractor-rod located in front of the chambered cylinder, and operating to eject the empty shells from the rear of the chambers, and to rotate the cylinder to bring the chambers into position for that purpose.

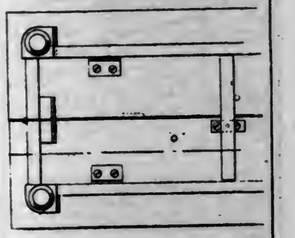
2. A revolving fire-arm in which the chambered cylinder may be rotated by the operation of the extractor-rod located in front of the cylinder.

162,664. COMBINED ICE PICKS, CHISELS, AND HAMMERS. Austin V. M. Sprague, Rochester, N. Y. [Filed Mar. 6, 1875.]



The instrument herein described, as a new article of manufacture, consisting of the head A, attached to the handle B, having the pick C and cutter D cast therein, and constructed with the teeth *a a'* and concavity *b* on the two opposite faces, as shown and described, and for the purposes specified.

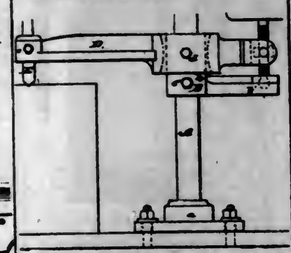
162,665. FOLDING TABLES. Rudolph Sprigade and John Schnoering, Brooklyn, E. D. N. Y. [Filed Mar. 29, 1875.]



A folding table composed of longitudinally-divided top-sections with hinged centrally-divided leg-sections, hinged side-boards, and pivoted locking center-piece, arranged for opening and folding, substantially as specified.

162,666. CLAMPS. Jno. J. Squire, St. Louis, Mo., assignor of one-half his right to J. W. Branch, same place. [Filed Feb. 17, 1875.]

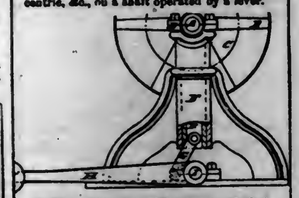
Brief.—The clamp has a universal adjustment by means of a swinging arm pivoted to a shoe provided with a sleeve, and which is vertically and horizontally adjustable upon a round post having a rotary movement in a suitable socket at its base. The material is clamped by a screw working in a nut journaled in the inner and forked end of the swinging arm, which forces a dog upon the outer end of said arm into the material.



The herein-described clamp, consisting of the post A, base *a*, shoe B, arm D, dog E, nut G, and screw H, combined and operating substantially as described and shown.

162,667. COUNTER-SHAFT HANGERS. John J. Squire, St. Louis, Mo., assignor of one-half his right to J. W. Branch. [Filed Feb 25, 1875.]

Brief.—Both bearings of the band pulley shaft are on vertical slides in standards, which, for the purpose of slackening the belt to throw out of gear, are raised by a link or eccentric, &c., on a shaft operated by a lever.

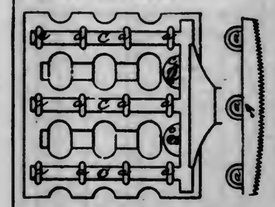


1. The combination of the counter-shaft A, pulley B, bearings D D', slides E E', supports F F', connections G G, lever H, shaft I, and counterpoise J, substantially as described and shown.

2. The combination of the counter-shaft A, pulley B, bearings D D', slides E E', supports F F', connections G G, and shaft I, substantially as described and shown.

162,668. CURRY-COMBS. Thos. Steere, Jr., Ottawa, Canada. [Filed Sept. 12, 1874.]

Brief.—The combs are detachable from the back plate, so that when they become worn out new ones can be inserted. Prongs attached to, and extending from, the handle pass through loops on the combs, for holding the latter to the back plate.



1. The combination, with the detachable combs A and back plate B, of the locking-prongs C, substantially as specified.

2. The combination, with the detachable combs A, back plate B, and pronged handle D, of the lugs *a* and screws *c*, substantially as specified.

162,669. BOSOM-PADS. John C. Tallman, New York, N. Y. [Filed Mar. 6, 1875.]

As a new article of manufacture, a bosom-pad made entirely of thin sheet-cork, molded or pressed into shape, as herein described, for the purpose set forth.



162,670. BOG-TESTERS. J. W. Van Arnam, Watertown, N. Y., assignor to himself and C. T. Greene, Newtown, Conn. [Filed Oct. 3, 1874.]

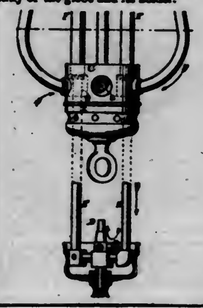
Brief.—The point of junction of the metallic chimney and tube, when soldered together, may be protected from the effects of heat by being surrounded by water placed in a receptacle attached to the chimney.

1. A lamp-chimney provided with branch tube B, enlarging toward the outer and upper end, as and for the purpose described.

2. The combination, with tubes A B, soldered together at their junction, of the water-receptacle C, covering said joint with liquid, as and for the purpose specified.

162,671. SLIDES FOR GAS-FIXTURES. Saml. B. H. Vance, New York, N. Y. [Filed Apr. 3, 1875.]

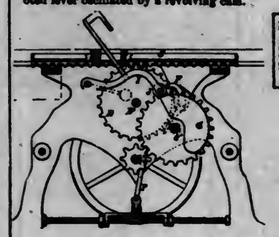
Brief.—The burner adjustable independently of the globe and its holder.



The combination of the sliding tubes E and the stationary tubes F, one or both pairs, with the burner D, the globe-holder C, and the arms B of a gas-pendant, substantially as herein shown and described.

162,672. ADDRESSING-MACHINES. Charles W. Van Vleet, Waterloo, N. Y. [Filed Feb. 13, 1875.]

Brief.—Toothed galley moved over grooved table by a cog-wheel beneath, which is intermittingly revolved by a wiper-tooth on a revolving shaft. Platen-arm attached to a pivoted lever oscillated by a revolving cam.



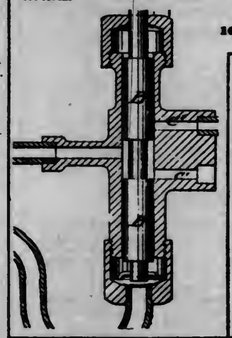
1. In an addressing-machine, the combination, with the toothed galley, sliding on table B, of spur-gear D, cam-wheel G, pivoted arm I, and platen-carrying arm M, substantially as shown and described, for the purpose specified.

2. In an addressing-machine, the combination of tooth *e* on revolving shaft E, the lever-pawl F, spur-wheel D, toothed galley C, and wheel G, having cam H, the pivoted bar I, and its rigid arm M, working through the table B, and carrying platen S, all as shown and described.

162,673. STEAM-ENGINE GOVERNORS. T. I. Walsh, Brownsville, Pa. [Filed Jan. 18, 1875.]

Brief.—When steam gets above required pressure, the double piston is raised, stopping the passage to the engine, and allowing steam to escape through a second passage.

The combination, in a steam-pressure detector and regulator, of a cylindrical communicating casing with steam-exit channels, and a weighted double piston sliding therein, for establishing or interrupting the steam-connection of boiler and engine, according as the pressure is below or above the fixed limit of pressure, substantially as and for the purpose set forth.



162,674. AUGERS. William Wells, Cleveland, Ohio, assignor of one-half his right to G. B. Johnson, same place. [Filed Feb. 24, 1875.]

Brief.—The shanks of augers may be extended to any desired length by means of auxiliary shanks provided with tangs upon each of their ends, and a double coupling or socket provided with spring-latches, which engage with suitable notches in the tangs.

As a means of extending the length of an auger-shank the combination with the brace and the bit of an intermediate double socket or coupling and the extra shank G, provided with a tang at each of its ends, substantially as and for the purpose described.



162,675. ROTARY ENGINES. H. G. Wood, Sharon, Pa. [Filed Mar. 13, 1875.]

Brief.—A double eccentric flanged piston revolves in a cylinder having open ends.

A rotary steam-engine constructed as shown and described—that is, having movable abutments J J and two or more eccentric drums or wheels, E E, with side wheels or flanges and a central dividing wheel or flange, revolving in an open cylinder on a central shaft, as shown and described.

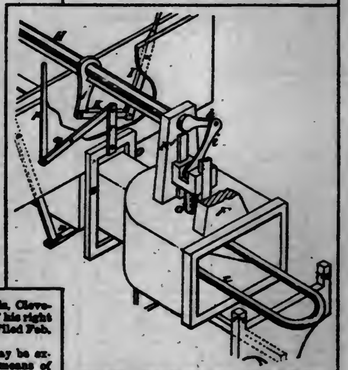
162,676. NEWSPAPER-FILES. F. B. Alderson, San Jose, Cal. [Filed Jan. 28, 1875.]

Brief.—The spring-follower or pressure-bar is held in an elevated position above the base or pin bar by stops pivoted in slots or recesses in the ends of the former.



In a temporary paper-file, the swinging stops H, in combination with the slotted holding-bar B and bar A, substantially as and for the purpose set forth.

162,677. CAR-COUPLINGS. Adolph V. Anderson, Virginia City, Nev., assignor of one-half his right to Manuel Axelson, same place. [Filed Feb. 10, 1875.]



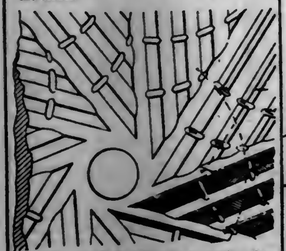
1. The coupling-pin c, provided between the standards F F, to be operated by the shaft H, with its crank-arm h and pitman i, in combination with the depending arm j, lever l, and connecting-rod k, substantially as and for the purposes described.

2. The devices for shifting the horizontal direction of the link, consisting of the bar M, having one end pivoted to the rear end of the draw-head, and carrying the plate L, with its cam m m in front of the bumper, in combination with the lever l' and the connecting-rod n, all to operate substantially as and for the purpose described.

3. In combination with the device for shifting the link c sidewise, the frame O and system of levers p q r, constructed and applied substantially as and for the purpose specified.

169,878. MILLSTONE-DRESS. Harvey T. Ashworth, Berger's Store, Va., assignor to himself and James T. Graves, same place. [Filed May 16, 1874.]

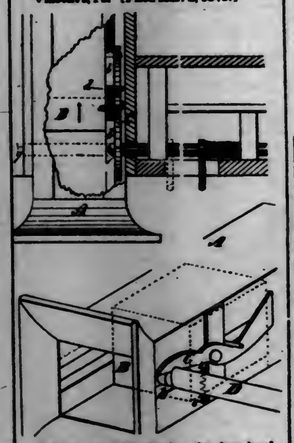
Brief.—Curved furrows cause a draft from the periphery in a backward direction, which materially assists in circulating air between the stones.



1. The ventilating-furrows traversing the lands from one leader to another, and curved as shown and described.

2. The inner parts F F of the lands, each having cracks inclined in an opposite direction from the next, as shown and described.

169,879. CAR-COUPLINGS. J. G. Reader, St. Vincent's, Pa. [Filed Mar. 2, 1875.]

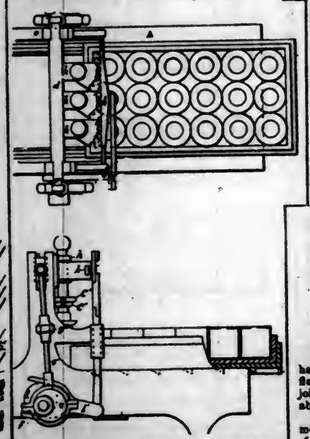


1. In a car-coupling having the draw-head A, secondary buffer B, and transverse coupling-bolt D, the centrally-pivoted trigger C at the side of the draw-head, to be operated from the buffer by means of the pin d, substantially as described and shown.

2. The combination of the laterally-pivoted trigger C, spring e, secondary buffer B, pin d, and transverse coupling-bolt D, having the groove f, substantially as described and shown.

169,880. SOLDERING-MACHINES. Wm. L. Bellis, Baltimore, Md. [Filed Oct. 9, 1874.]

Brief.—A series of annular soldering-tools adapted to be heated by gas, arranged in a cross-head in such manner as to be brought down on a series of cans supported on a carriage having an intermittent movement imparted to it, so as to bring the cans successively under the soldering-tools.



1. In a soldering-machine, the adjustably-held soldering-irons C, adapted to have the vertically-reciprocating and circumferential movements described, in combination with the sliding carriage B, to which an intermittent feed is applied, substantially as set forth.

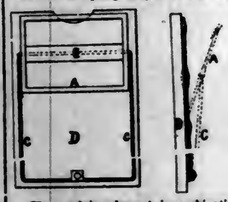
2. The cylindrical and flanged soldering-irons C within the adjustable bearings A, in combination with the springs e, substantially as described.

3. The soldering-irons C and toothed sectors i, in combination with the laterally-sliding rack k, as specified.

4. The vertically-movable cross-head d, connected by the eccentric wheels g and rods g' to the shaft f, in combination with the soldering-irons C, as shown.

169,881. BILL-FILES. D. H. Baker, Boston, Mass. [Filed Oct. 27, 1874.]

Brief.—A swiveled clamp held down by torsion of wire springs stapled to back piece.



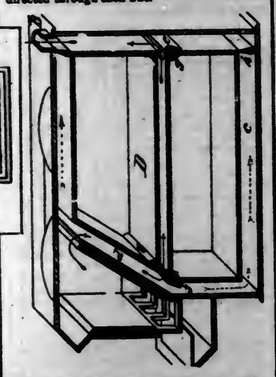
The revolving clamp A, in combination with springs C C and back piece D, or their equivalents, forming a bill-holder, substantially in the manner described, as and for the purposes set forth.

169,882. FIREMEN'S EXTENSION-LADDERS. Henry Bastian, Sr., Montoursville, Pa. [Filed Apr. 12, 1875.]

The toothed feet C C, connected by means of pivoted stirrups d d to the lower ends of the ladder A, as and for the purposes herein set forth.

169,883. COOKING-STOVES. E. H. Bates, Washington, D. C., assignor of one half his right to Norval B. Bates, same place. [Filed Mar. 10, 1875.]

Brief.—The draft may be direct and over the oven, or through the flue-shelf, or under the entire oven, or be divided and partially directed through each flue.

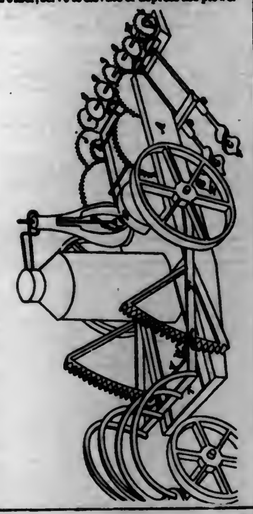


1. The combination, with the oven-wall, having the openings of the hollow sliding flue-shelf D, and the devices for closing the joints, of the shelf with the oven-wall, both above and below, substantially as described.

2. In a stove having flues a b c d, the removable hollow flue-shelf D and the valves e f h i, all combined and arranged substantially as and for the purposes set forth.

169,884. STEAM-PLOWS. D. Beesemore, Sacramento, Cal. [Filed Mar. 10, 1875.]

Brief.—The plows are of sugar form, placed upon rotating shafts projecting toward the line of draft, and operated by gear and bevel wheels. To the bearing-axle a skeleton-frame is pivoted, secured by a king-bolt to the axle of steering-wheels. A toothed segment upon one frame, and a crank-shaft and pinion upon the other, serve to elevate or depress the plows.





The balanced frame A, having the gear-wheels f h i, bevel-wheels g q, and spiral plows C, placed at an angle with the ground and projecting forward, in combination with the connecting-frame T, steering-wheels S, toothed segments U, shaft V, and pinion W, all arranged and operating substantially as shown and described.

169,885. PREPARED BRICKS FOR PAVING. R. A. Berryman, St. Louis, Mo., assignor to himself, S. Hutchins, and W. H. Barclay, same place. [Filed Mar. 24, 1875.]

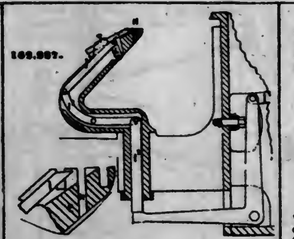
Brief.—Bricks for pavements are saturated in a solution of alum, borax, and copperas, and are then boiled in a mixture of exocthchone and coal-tar. When laid on a suitable foundation, the interstices are filled with a mixture of coal-tar and exocthchone.

1. A brick hardened by immersion in a solution of alum, borax, and copperas, and afterward boiled in a mixture of exocthchone and coal-tar, substantially in the manner set forth, for paving and other purposes.

2. A pavement made of bricks prepared as described, with the spaces between the bricks filled with the mixture of coal-tar and exocthchone, as set forth.

169,886. KNITTING-MACHINES. D. Bickford, New York, N. Y. [Filed Mar. 6, 1874.]

Brief.—The cam-cylinder is provided with a handle, by which it may be operated without toothed gearing, and the yarn-spool is carried around coincidently with the cams and the thread-guide, so as to avoid slack yarn on reversing. The cam-cylinder, preferably, has gear-teeth, as usual, so that, if desirable, it may also be driven in the usual way. The needle-elevating side cams are pivoted below the needle-groove, and operated automatically by the direct action of the needle-butts, or by springs placed beneath them.

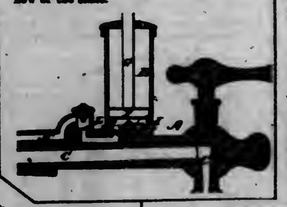


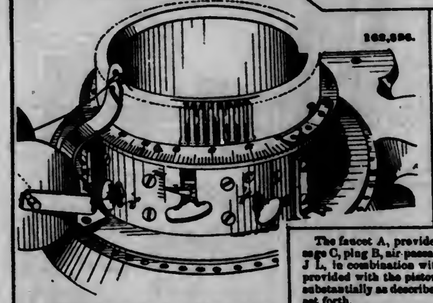
In a machine for pegging boots and shoes, the supporting-arm E, provided with the central opening H and the annular awl-receiving groove F, substantially as described

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169,887. AIR-PUMP FANNERS. Thos. Bingham, Pittsburg, Pa. [Filed Sept. 4, 1874.]

Brief.—Air is forced into the cask during the process of drawing liquids, to increase the flow of the same.





1. The wing or switch cams H H', adapted to rise and fall at their outer ends, substantially as and for the purpose set forth, in combination with a stitch or draw-down cam and the needle-cylinder.

2. The wing-cams, actuated by springs, in combination with guides u u, which serve to guide the needles to the draw-down cam, substantially as shown and described.

3. The wing-cams, adapted to be actuated by the butts of the needles, in combination with guides v v, needle-cylinder, and cam-plate.

4. A rotary knitting-machine resting on a smooth bed in its frame, provided with a driving-handle, as described, and with a shifting thread-guide and spool-carrier, which automatically, upon reversing the machine properly, change their position relatively to the needle-operating cams.

5. In combination with the rotary reversible cylinder of a family knitting-machine, a bobbin or spool frame or stand and a thread-guide, substantially as described, the combination being such that each frame or stand shall revolve coincidently with it and with the thread-guide, and upon reversing shall properly shift its position with the thread-guide.

169,888. PRESSURE-MACHINES. Jno. R. Bickford, Abington, and Benj. F. Sherbrenne, Boston, Mass. [Filed Apr. 5, 1875.]

Brief.—A dovetail groove is formed in each section of the slide, and receives a dovetail tenon that is attached to the opposite section; said tenon having one of its bearing faces formed by a yielding metal bar.



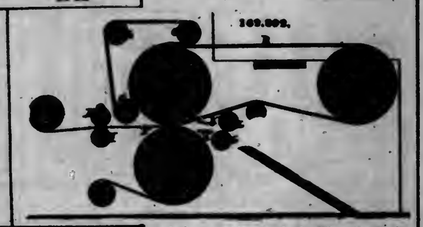
The combination of the slides A and A, provided each with a dovetail groove, a, half dovetail tenon A', pivoted bar B, and spring C, substantially as and for the purpose specified.

169,889. REFINING BASE-METAL BULLION. Fredk. H. Bousfield, San Francisco, Cal. [Filed Mar. 17, 1875.]

The process herein described for refining bullion—that is, by adding, while melted, lead to the amount of about two to five per cent., granulating the alloy, roasting the granules, and subsequently leaching with the sulphuric acid, and then brine, substantially as set forth.

169,890. GILDING-MACHINES. Wm. Braidwood, New York, N. Y. [Filed Nov. 28, 1874.]

Brief.—The gold-leaf is carried by a sheet to the pressure-rollers, where it is applied to the paper. After the gilded sheets of paper have passed through the pressure-rollers, they are separated from each other by passing between rollers which have a greater surface-speed than the pressure-rollers.



1. In a machine for leaf-gilding, the feed-apron D, in combination with the pressure-rollers C E and leaf-sheet F, substantially as described.

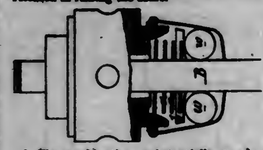
2. In a machine for leaf-gilding, the combination, with the apron D, rollers C E, and leaf-sheet F, of the feed-apron B and apron-roller C', substantially as described.

3. In combination with the pressure-rollers C E, the separating-rollers I, geared so as to have a greater surface speed than the pressure-rollers C E, substantially in the manner and for the purpose specified.

4. The guide-pieces K K, in combination with the pressure-rollers C E and separating-rollers I, substantially as described.

169,891. DROP-LIGHT CHANDELIERS. Geo. F. Blaisse, Philadelphia, Pa., assignor to Benj. Thackara, W. J. Beck, J. H. Southworth, Charles Thackara, and R. H. Beck, same place. [Filed Apr. 9, 1875.]

Brief.—The spheres are wedged between the cap and tube in lowering the latter, and are released in raising the same.



1. The combination, substantially as described, of the cup D and its spheres with the sliding drop-light tube B of a chandelier.

2. The combination of the cup, the spheres w, spring a, and plate b with the sliding tube B.

169,892. EXTENSION-TABLE SLIDES. Wm. J. Boda, Dayton, Ohio, assignor to himself and Alva E. Boda, same place. [Filed Oct. 12, 1874.]

The faucet A, provided with the liquid-passage C, ping B, air-passages I K N, and valves J L, in combination with the air-chamber E, provided with the piston F and piston-rod G, substantially as described, and for the purpose set forth.

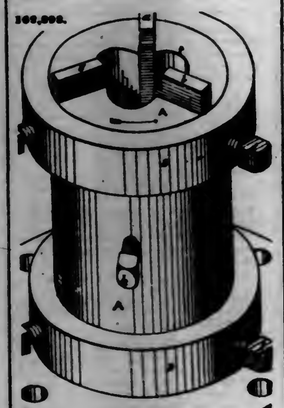
169,893. MACHINES FOR TURNING AXLES. Chas. A. Brand, Wilmington, Del., assignor of one-half his right to J. A. Hooper, Jr., Baltimore, Md. [Filed Sept. 2, 1874.]

Brief.—A revolvible head furnished with cutters. Two of the cutters, looking from their rear, are set at an angle to the axis of the axle being cut, to give a shear-cut and prevent chattering; and to compensate for the concave cut which this adjustment would make the cutters are made slightly helical in form.

1. In a machine for turning axles, the hollow revolvible head A, with flange A', in combination with the cutters a, b, and c, arranged with reference to the axis of the head A, as described, substantially as set forth.

2. The head A, in combination with the collars B and set-screws f and h, substantially as and for the purpose set forth.

160,902.



1. In a machine for pressing and molding glass and other materials, the combination of the former T and mold S with a lifting apparatus adapted to lift the mold, screw-spindle I, which forms the support of the mold, and with a divided nut, O, substantially as described.

2. In combination with the former T and mold S, a lifting apparatus constructed of the spindle I, crown-head R, slotted frame-piece D, cams F, rock-shaft G, and lever H, substantially as described.

3. In combination with the former T and mold S, the screw-spindle I, carrying and adapted to support the mold, and the divided nut O, substantially as described.

4. The combination, with the screw-spindle I and divided nut O, of the eccentric Q, substantially as and for the purpose described.

5. In combination with the divided nut O and eccentric Q, the rods e and springs f, substantially as described.

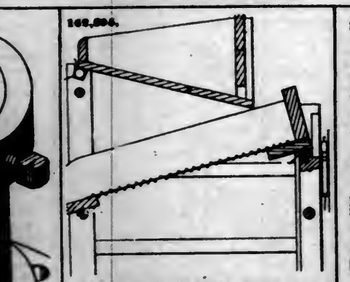
160,903. SCREENS. Geo. W. Brown, Ashburnham, Mass. [Filed Apr. 7, 1874.]

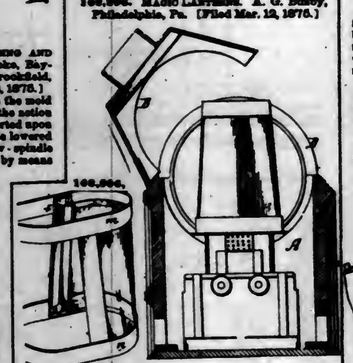
In a screen in which a hopper rests at one end upon, and is shaken by the movements of, the screen, the arrangement of the screen inclined in a direction the reverse of that of the hopper, the lower end of the latter resting on the intermittingly rising and falling end of the screen, which has a journal extending through and guided by vertically-slotted bars, and carrying a roll that rests upon a cam or wiper wheel, substantially as shown and described.

160,904. MACHINES FOR PRESSING AND MOLDING GLASS. Aries P. Brooks, Bayonne, N. J., assignor to Jos. M. Brockfield, New York, N. Y. [Filed Apr. 13, 1875.]

Brief.—The lifting apparatus lifts the mold in order to subject its contents to the action of the "former." The mold is supported upon a screw-spindle, and is adapted to be lowered by a revolving motion. The screw-spindle can be brought in and out of notion by means of the divided nut.

160,905.





1. The combination of the body A of a stereopticon or magic lantern with the cover B, hinged to one side of the said body, as set forth.

2. In a magic lantern, a lamp and chimney combined with the top of the body, substantially as described, so as to permit the withdrawal and replacing of the said lamp and chimney, as specified.

3. The lens-holder D, perforated in the manner and for the purpose described.

4. The lens-holder D and its flange f, in combination with the studs e at the end of the box.

5. The chimney-frame composed of the end-less strips m and n of sheet metal and the connecting-strips p, with their grooves s r.

160,906. MAGIC LANTERNS. A. G. Busby, Philadelphia, Pa. [Filed Mar. 12, 1875.]

1. A magic lantern having a body to the rear of which is adapted a shield, G, combined with a removable lamp, all substantially as set forth.

2. The combination of the flange n, open at the rear, with the tubular metal chimney F and chimney E.

160,907. MAGIC LANTERNS. A. G. Busby, Philadelphia, Pa. [Filed Mar. 12, 1875.]

1. The combination of the body A of a stereopticon or magic lantern with the cover B, hinged to one side of the said body, as set forth.

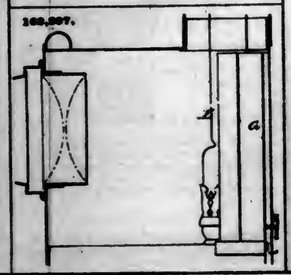
2. In a magic lantern, a lamp and chimney combined with the top of the body, substantially as described, so as to permit the withdrawal and replacing of the said lamp and chimney, as specified.

3. The lens-holder D, perforated in the manner and for the purpose described.

4. The lens-holder D and its flange f, in combination with the studs e at the end of the box.

5. The chimney-frame composed of the end-less strips m and n of sheet metal and the connecting-strips p, with their grooves s r.

160,907.



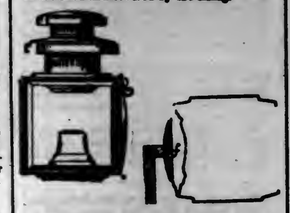
160,907. MAGIC LANTERNS. A. G. Busby, Philadelphia, Pa. [Filed Mar. 12, 1875.]

1. A magic lantern having a body to the rear of which is adapted a shield, G, combined with a removable lamp, all substantially as set forth.

2. The combination of the flange n, open at the rear, with the tubular metal chimney F and chimney E.

160,908. CARRIAGE-LAMPS. F. C. CHESEBRO, New Haven, Conn. [Filed June 19, 1874.]

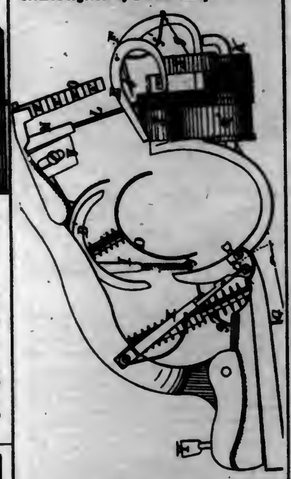
Brief.—The back, bottom, and top in one piece; the shank inserted through an aperture in the back and covered by the lining.



A coach-lamp body, the back, bottom, and top of which are in one and same piece, combined with a shank, S, having its head f upon the inside of the back, the stem projecting outward, and a lining to cover said head, substantially as described.

160,909. GRAIN-BINDERS. Charles F. GOFF and Stephen S. Wilson, Adel, Iowa. [Filed Mar. 15, 1875.]

Brief.—The cut grain is bound by a cord secured together by a metal clamp.



1. The journaled shaft F provided with the fingers f and f and spring-arm f', the rod I, the spring-arms G and f', the pivoted block H, the rod I, and the spring i, all constructed and combined to operate in the manner and for the purpose substantially as shown.

2. The pivoted lever B, provided near its outer end with the pick-up jaws N, in combination with the perforated stud M in working within the table A", substantially as and for the purpose set forth.

3. In combination with the table A" the cutter P attached to the lever B in rear of the pick-up jaws N, and arranged to cover the binding-cord L just before the same is grasped by said jaws, substantially as in shown and described.

4. In combination with the die U, provided with the projections a and a, and secured to and moving with the lever B, the table A" having the curved ing T and the recesses s' and s' for the reception of said projections, substantially as and for the purpose specified.

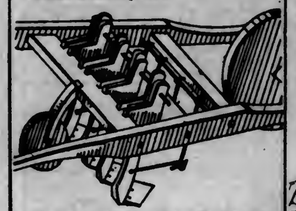
5. The geared feed-rollers S and S' and toothed wheel S', in combination with the ratchet-bar e e, attached to and moving vertically with the end of the pivoted arm B, substantially as and for the purpose shown.

6. The toothed stud W, attached to and moving horizontally with the bar W', in combination with the bar X, provided with the wedge-shaped lower end x, pivoted to the lever B and arranged to engage with the hooked end x of said bar X, substantially as and for the purpose shown and described.

7. In combination with the pivoted binding or compressing arm B the screw Y, passing downward upon its rear end and bearing at its lower end upon the base A, for regulating the opening through which grain flows to the binder, substantially as and for the purpose specified.

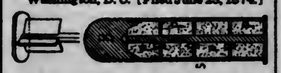
160,900. CULTIVATORS. William O. Clark, Northampton, Mass. [Filed Apr. 14, 1875.]

Brief.—This implement consists, primarily, of a wheelbarrow-frame, upon which are mounted a series of cultivator-teeth, which are pivoted at the top of the standards, and held to their work by springs, which yield to obstructions, and return to their positions by the tension of the springs as soon as the obstruction has been passed.



The improved cultivator described, consists of the frame-work A B B' L, provided with the wheels M N, springs i, rods H, pendulous pivoted beams F, and shares G, combined and arranged to operate substantially as and for the purpose specified.

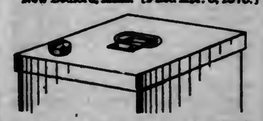
160,901. CARTRIDGES. Eustace J. Collett, Washington, D. C. [Filed June 23, 1874.]



1. The combination, in a cartridge, of disks D, each provided with flanges, shell S, bullet B, and the firing-pin F, as and for the purpose described.

2. The disks D, each having three, more or less, flanges, adapted for use in combination with a cartridge, as and for the purpose specified.

160,902. PAPER CANS. Edward T. Covell, New Bedford, Mass. [Filed Apr. 5, 1875.]



A paper can whose ends are closed by inner and outer heads of a material such as specified, substantially in the manner described—that is to say, the inner head fitting the interior of the can, with its outer face flush with the end of the can, and the outer head fitting over and upon the end of the can and outer face of the inner head, with an overstepping rim or flange that embraces the sides of the can, said inner and outer heads being connected together and to the sides of the can embraced between them, as shown and set forth.

160,903. GAS-COUPLINGS. John Crane and Abram B. Crane, Canisteo, N. Y. [Filed Mar. 29, 1875.]



1. The combination, in a self-coupler for cars, of the coupling-pin c, and the link k, with the stop-head d, pivoted beneath the draw-head, substantially as and for the purpose set forth.

2. The combination with the stop-head d, provided with an outwardly-projecting stem, e, of a horizontal spring, d, pivoted at its free end to said stem, and the spring f connected therewith below the stem-pivot, substantially as and for the purpose set forth.

3. The stop-head provided with shoulders a a', and having stem e, in combination with draw-head having slot b, whereby the outward movement of the stop-head is limited to support the pin in coupling position, as set forth.

160,904. SHEDDING MECHANISMS FOR LOOMS. G. Crompton, Worcester, Mass. [Filed Apr. 6, 1875.]



1. In a fancy loom, a series of exterior and interior heddle-frames, the interior frames being arranged in the same, or nearly the same, vertical planes as the exterior, and provided with heddles, and adapted to operate the warp, substantially as set forth.

2. The combination of a series of exterior and interior heddle-frames and heddles with pattern mechanism, elevators and depressers, and notched jacks, placed in position by the pattern mechanism, and adapted to operate exterior and interior heddle-frames, substantially as described.

3. The vertical levers, connected alternately with and combined with the series of exterior and interior heddle-frames, substantially as described.

160,905. SOAP-HOLDERS. Hiltch Cumley, Philadelphia, Pa. [Filed June 26, 1874.]

1. A soap-box having a strainer formed of round or equivalent-shaped metal or wooden rods, substantially as shown and described.

2. The soap-box A, having the drainer B, formed of metal bars resting in an annular groove, c, the middle bars being sprung into place, substantially as shown and described.

160,906.



160,906. SPRING BED-BOTTOMS. Augustus M. Donnan and Casey Newhouse, Stockton, Cal. [Filed Mar. 26, 1875.]

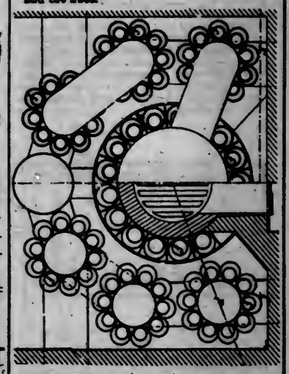
Brief.—The flat coiled springs are inserted between the main springs, to give an additional spring-surface to the bed-bottom.



In combination with the springs E E, the flat coiled spring G, placed between the upper coils of the springs E, and connected with them by links h h, substantially as and for the purpose described.

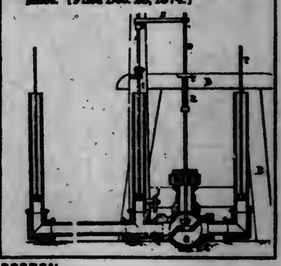
160,907. HOT-AIR FURNACES. L. Dupont, Lyons, France. [Filed Aug. 26, 1874.]

Brief.—The eccentrically-arranged tubes are placed in contact with both the fire-pot and the flues.



The double eccentric air-flues f arranged in a stove or furnace, and formed of double pipes, one placed within the other, substantially as and for the purpose described.

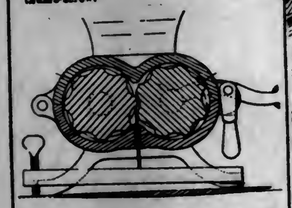
160,908. RAILWAY-SIGNALING APPARATUS. John Ewart, Lawrence, Mass., assignor of one-fourth his right to John Bailey, same place. [Filed Dec. 28, 1874.]



In a hydraulic railway signaling apparatus, the means, substantially as described, for equalizing the pressure and compensating for the expansion and contraction of the fluid and pipes, consisting of the pipe O, piston P, valve Q, and rod D with its arm E, in combination with the pipes I, L, and m, adapted to be operated by the piston-rod F, in the manner described.

162,909. MEAT-CUTTERS. Carl Fogelberg, Cambridgeport, assignor to himself and Oscar A. Johnson, Boston, Mass. [Filed Apr. 7, 1875.]

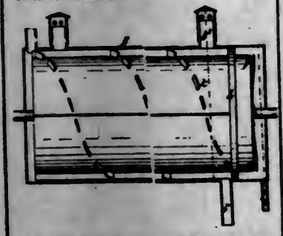
Brief.—A single knife passes through a slot in case resting upon an adjustable lever, which is raised or lowered, adjusting the knife by a thumb-screw.



The combination, with a meat-cutter, substantially as described, of the knife *i*, and an adjustable lever on which the knife rests, the knife being adapted to be adjusted within a slot extending entirely through the lower portion of the shell of the cutter, substantially as set forth.

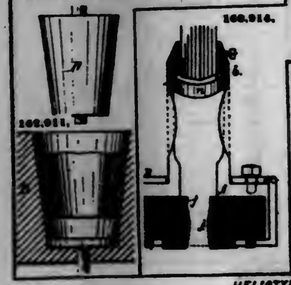
162,910. APPARATUS FOR DRYING AND BLEACHING GROUND WHEAT. C. S. Fuller, La Fayette, Ind. [Filed Mar. 17, 1875.]

Brief.—Steam is applied within the cylinder, around the outer surface of which the chop is moved by the spiral and longitudinal conveyers, the inner cylinder being revolved by suitable mechanism.



1. The combination, with the outer stationary cylinder B, of the revolving steam-drum C, provided on its outer surface with ribs *i*, for elevating the material, substantially as hereinbefore set forth.

2. The combination, with the outer stationary cylinder B, of the revolving steam-drum C, provided with longitudinal ribs *i* and interrupted spiral plates *k*, substantially as and for the purpose herein before set forth.



162,911. MANUFACTURE OF EARTHENWARE AND POTTERY. William Galloway, Philadelphia, Pa. [Filed Mar. 13, 1874.]

The within-described mode of first forming the clay into short tubes, and then subjecting the latter to the action of molds or dies under pressure, as set forth.

162,912. ORNAMENTATION OF SHOW-CARDS. Levi C. Goodale, Cincinnati, Ohio. [Filed Mar. 13, 1875.]



The hereinbefore-described process for forming signs, show-cards, &c., by first enameling, printing, or painting upon the surface of sheet metal the desired lettering, surrounded by the representation of a frame, and then striking up the portion of said plate covered by the latter, so as to cause its outer surface to conform to the shape of the frame represented, substantially as and for the purpose specified.

162,913. COMPOUND CHUCKS FOR WHEEL-CUTTING MACHINES. Elihu J. Granger, Brooklyn, N. Y. [Filed Jan. 9, 1875.]

Brief.—An outer and inner set of dogs are moved independently of each other by means of adjusting-screws.



A compound dog, having its parts telescopically arranged with relation to each other, and having each of its parts provided with independent means of adjustment in an axial line, substantially as described, and for the purposes set forth.

162,914. SCREW-CUTTING DIES: Mortimer A. Griffith, Dayton, Ohio. [Filed Jan. 20, 1875.]

Brief.—Four chasers arranged in radial grooves in a circular plate, and retained in position by a cap-plate provided with cam-grooves to receive pins on the dies, and thus provide for their adjustment. The shank-piece C is adjustable in the stock, and serves as a gage to determine the length to be cut.

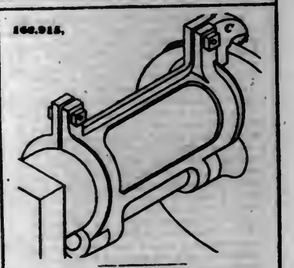
The improved screw-cutting device, constructed substantially as described, and consisting of the shank C, circular shaft *h*, boss A, threading-jaws *f*, and surface shell D, provided on its face, from which the chasers project, with an eccentric aperture and slots *f*, as and for the purpose specified.

162,915. ENDLESS WIREWAYS. Andw. S. Hallidie, San Francisco, Cal. [Filed Mar. 8, 1875.]

Brief.—The traveling cable of an endless wireway is prevented from jumping the supporting-pulley by a fixed block, which overhangs the upper edge of said pulley, and extends below its inside edge, serving as a guard or keeper.

In combination with the rope-supporting pulley B, the fixed block C, arranged to overhang the upper edge of the pulley and extend down below its inside edge, so as to serve as a guard or keeper for the rope, substantially as above specified.

162,915.



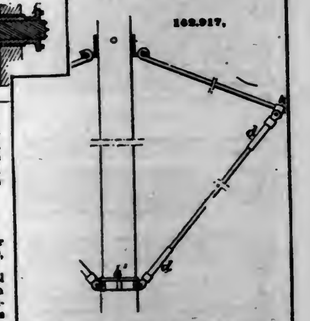
162,916. OPERA-BOOTS. Joseph T. Harper, Charleston, Ill., assignor to Jos. T. Harper & Son, same place. [Filed May 23, 1874.]

The combination of the boot-front, cut in two pieces, A A, having curved extended bottoms *b b*, with the upper B, having the break-joint tongue C, all substantially as set forth.

162,916.

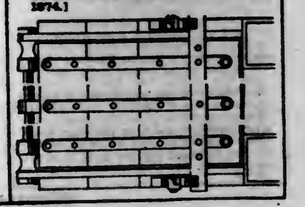


162,917. UMBRELLAS. Isaac B. Hayes and Jno. Somerset, Manchester, Great Britain. [Filed Jan. 16, 1875.]

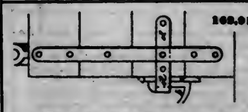


The mode described of connecting the ribs and stretchers of umbrellas, by means of the spring-jaws *d f*, ferrule *f*, connecting-pin *e*, and perforated projection *h*, combined substantially as set forth.

162,918. RED-GATES FOR VEHICLES. Jos. Heald, Chorley, England. [Filed June 3, 1874.]



162,918.

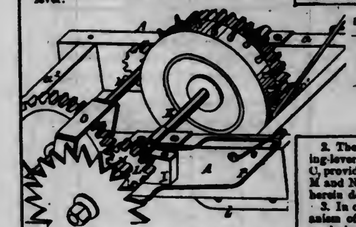


1. The combination of a hinge-gate of a land-carriage, the bolt *b*, and the striker on the said gate to actuate the bolt, all substantially as described.

2. The combination of the door of a land-carriage, the hinge *s* to form the striker, and the bolt *b*, substantially as and for the purpose specified.

162,919. ICE-CUTTING MACHINES. Charles Heisler and John M. Devemer, Williamsport, Pa. [Filed Apr. 12, 1875.]

Brief.—By bearing down on the lever the frame is lifted from the sleds, and the driving-wheel disengaged from the ice. The saw, in a side frame, is raised and lowered by a lever.



1. In an ice-cutting machine drawn upon sleds, and capable of being raised off of the sleds, so as to clear the driving-wheel, the combination of the frame I I, placed on the outside of the frame A, having the circular saw F, head O, and hand-lever P, the several parts being constructed and arranged substantially as described and shown, for the purpose set forth.

2. The combination, with the frame A, of the sleds B C, guide-rods *b'*, uprights *c'*, and lever D, substantially as described.

162,921.

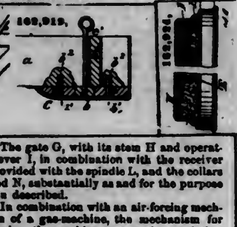


162,922. AUTOMATIC AIR-BLASTS FOR GAS-MACHINES. Robt. Hewson, San Francisco, Cal. [Filed Nov. 10, 1874.]

Brief.—The gas-holder, as it is elevated, shuts the cock in the pipe which supplies water to turn the water-wheel, and as it is lowered opens the same cock. Thus the power which evolves the gas is automatically regulated by the supply of gas.

1. In combination with the air-compressor A, provided with the shaft F, the external water-wheel E and pipe D, provided with the valve G and stem H, substantially as and for the purposes set forth.

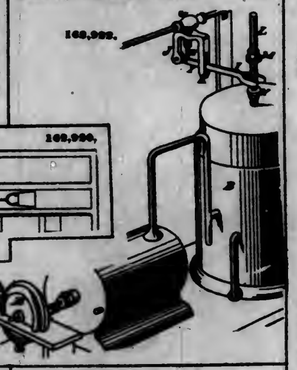
162,919.



2. The gate G, with its stem H and operating-lever I, in combination with the receiver C, provided with the spindle L, and the collars M and N, substantially as and for the purpose herein described.

3. In combination with an air-forcing mechanism of a gas-machine, the mechanism for rendering the machine automatic, consisting essentially of water-wheel E, pipe D, gate G, stems H and L, and operating-lever I, substantially as herein described.

162,922.



162,920. PROCESSES FOR VENTILATING, PUMPING, AND COOLING THE ATMOSPHERE OF MINES. Levi J. Henry, San Francisco, Cal. [Filed July 30, 1874.]

Brief.—A spray of water mingled with air is thrown into a mine by means of water-pipes, jets, tanks, wheels, and blowers, for the purposes of ventilating and cooling the air.

The combination of a water-pipe with jets, tanks, wheels, and blowers, as herein before described, for the purpose of ventilating, purifying, and cooling the air in mines.

162,921. SHAVING-MUGS. David Easton, Philadelphia, Pa. [Filed Apr. 14, 1875.]

1. As a new article of manufacture, a shaving-cup made of detachable sections, substantially as and for the purposes set forth.

2. The soap-receptacle C, made detachable from the body of a shaving-cup, and constituting an integral portion thereof, substantially as and for the purpose set forth.

162,920.

162,923. BOOTS AND SHOES. Chas. F. Hill, Baltimore, Md. [Filed Apr. 2, 1875.]

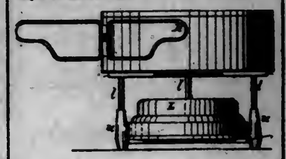


1. In a boot or shoe, the combination, with the upper, the insole, and the outsole, of a tap-sole depressed without break or incision upon the upper surface, and trimmed upon the lower, so as leave a raised protecting-edge for the vamp, substantially as and for the purposes described.

2. As a new article of manufacture, a tap-sole depressed without break or incision upon the upper surface, and trimmed upon the lower, so as to leave a raised edge at the toe, substantially as and for the purpose described.

162,924. POCKET LAMP-STOVES. Thomas W. Houchin, New York, N. Y. [Filed Apr. 20, 1875.]

Brief.—The legs of the gridiron are inserted into the sockets of the uprights on the stand to form the support for the boiler; a false bottom forming a non-conducting chamber, and a layer of porous fire-proof cement supporting the wire-gauze cover, and located upon a layer of cotton-wool.



1. A pocket-stove consisting of the stand S, lamp L, gridiron G, and boiler B, all constructed and combined in the manner and for the purpose set forth.

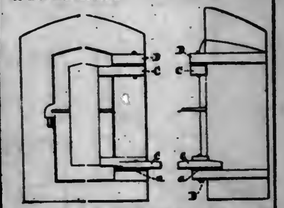
2. In the lamp of a pocket-stove, the false bottom *p* and air-space *s*, for the purpose specified.

3. In a pocket-stove, the triangular stand S, having the uprights *w*, provided with sockets, in combination with the gridiron G, provided with the legs *l*, as and for the purpose specified.

4. In combination with the chamber of lamp L, a layer of porous fire-proof cement, F, made to conform in shape with the wire-gauze W, placed above it, and located directly over the cotton-wool in the lamp-chamber, as described, for the purpose stated.

162,925. STOVE-DOOR HINGES. William T. Howard, Baltimore, Md. [Filed Feb. 11, 1875.]

Brief.—The serrations, in connection with the ridge, render the door adjustable. By the projection E, the door may be slightly lifted to diminish friction.

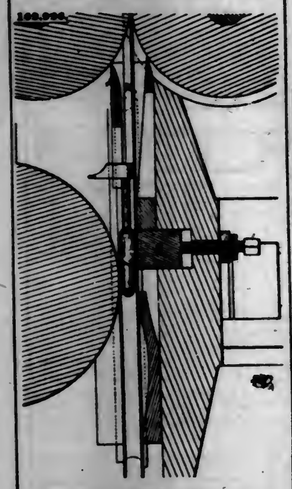


The hinge portion D of the door-frame, having the ridge or A-shaped tooth *a*, in combination with the dental portion C of the door-hinge, having its under surface provided with V-shaped teeth, the whole forming a device for adaptation to doors of stoves, furnaces, &c., whereby the door may be conveniently held to any desired position within its circumferential movement, substantially as herein set forth.

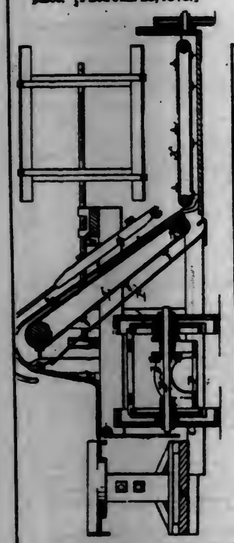
162,926. MACHINES FOR MAKING WELDED TUBING. Jno. Huggins, Birmingham, England, assignor to Richard Chamberlain, E. Ludlow, and Edwd. L. Parker, same place. [Filed Feb. 17, 1875.]

The hereinbefore-described and illustrated improvement on the machinery for which Letters Patent were granted me on the 8th day of December, 1873—that is to say, the addition to or combination with that pair of rolls of the said machinery L, which the welder of the tube is edicted, of a guide and welding roll for assisting in guiding the trough-like strip to the said welding-rolls, for assisting in welding the joint of the partly-made tube, and for perfecting the cylindrical figure of the said tube at the joint part, the said welding-rolls and guide and welding roll being constructed and combined and acting substantially as described and illustrated.

162,926.



162,927. HARVESTERS. Benj. Illingworth, Hampton, Iowa, assignor of two-thirds his right to R. S. Benson and A. M. Mott, same place. [Filed Jan. 26, 1875.]



1. The skiff-shaped standing-platform T, having its bottom formed of the two removable pans V V, for the purposes herein set forth.

2. In combination with the standing-platform T, the vertically-adjustable binding-platform W supported thereon, for the purposes herein set forth.

3. The combination of the hinged grain-receiver O, apron R, rod c, and hinged end tables S S, all substantially as and for the purposes herein set forth.

4. In combination with the hinged receiver O, the elevator-lining F, forming a spring to hold said receiver in place, substantially as herein set forth.

162,928. SECTIONAL BOILERS. H. F. King, Corry, Pa. [Filed Feb. 4, 1875.]

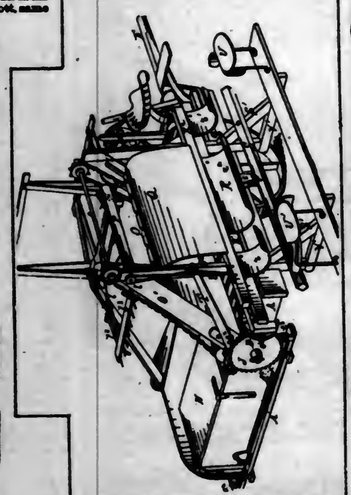
Brief.—A single cast-iron water-back is provided with a double row of water-passages, which register with a vertical row of blind water-tubes.



The upright water-back A, made in one piece, and constructed with a series of vertical longitudinal stay-plates, *f*, and a series of transverse metal strips, *g*, arranged centrally between said stay-plates, whereby the water-back is provided with a series of inner and outer water-passages, *d d*, for each row of tubes, as described, in combination with the inclined blind tubes B, projecting from the water-back, and each vertical row of the same communicating with one of the inner water-passages *d*, as set forth.

162,929. HARVESTERS. James H. Kirton, Rockford, Ill. [Filed Dec. 1, 1874.]

Brief.—The cut grain that falls upon the platform is carried by an elevator to the receiver, which is automatically reciprocated, so that the gavel is delivered alternately to the binders upon each end of the table.



1. The vibrating frame B, in which the driving-wheel is mounted, pivoted on the pinion-shaft, and provided at its swinging end with the toothed segment *b'*, in combination with the segment C, mounted on the rock-shaft *c*, and operated by means of the crank-arm *c'*, cord *c*[1], and lever D', arranged and operating as described.

2. The crank-arm *c'*, which operates the segment C and wheel-frame B, as described, provided with the grooved sector *c*[2], and connected, by means of the cord *f*, with the vibrating grain-wheel-frame E', said parts being combined and operating substantially as described, for simultaneously raising both sides of the machine.

3. The pivoted vibrating wheel-frame E', arranged and operating as set forth, in combination with the sliding frame E', made adjustable on the platform-frame A', substantially as and for the purpose described.

4. The stationary cam-plate K, provided with the curved way *k* and spur *k'*, in combination with the traveling block or shoe *m*, for actuating the rod-rake through the connecting crank and links, as described.

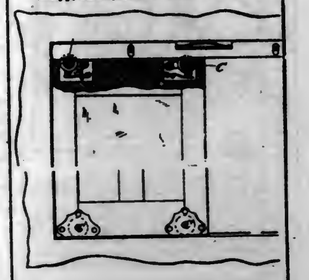
5. The hinged guard or cover N, connected to the vertical guard or fender M', and overhanging the platform M', as described.

6. The reciprocating grain-receptacle R, adapted to receive and support the gavels alternately upon its opposite ends, in combination with the cord, lever, and cam, substantially as described, for automatically reciprocating the receiver, in the manner and for the purposes set forth.

7. The reciprocating grain-receptacle R, supported and guided by the grooved roller *r'*, and the longitudinal rails or tracks S and S', arranged as described.

8. The cam-wheel J, provided with the cam-groove, formed substantially as set forth, in combination with the lever and cord, or their equivalents, for automatically operating the grain-receptacle, as described, whereby intervals of rest are given to said receptacle at each end of its throw, for the purpose specified.

162,930. MOUNTING CAR-DOORS. Geo. S. Knapp, Chicago, Ill. [Filed Feb. 25, 1875.]

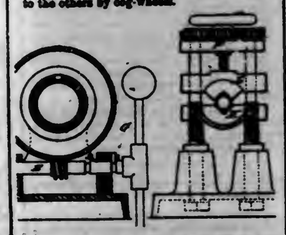


1. The sliding car-door mounted on rollers, and a notched rail or track therefor, the rollers or the rail being made movable, and acted upon by a spring, all combined substantially as shown.

2. In combination with the sliding car-door and the notched rail or track, the swinging arm L, roller C, and spring M, to operate substantially as shown.

162,931. MACHINES FOR CUTTING SCREW-THREADS. Chas. T. Litchfield, Brooklyn, N. Y. [Filed Mar. 27, 1875.]

Brief.—A hollow shaft provided with handles for direct propulsion or rotation, and a worm-wheel, worm, and weighted crank for slow and powerful movement. The bolt to be threaded is held in a clamp, the upper jaw of which is moved downward by a single screw, and the lower jaw moved upward by two screws, all the screws being right-handed, and all simultaneously moved by a hand-wheel attached to the middle one, which is connected to the others by cog-wheels.



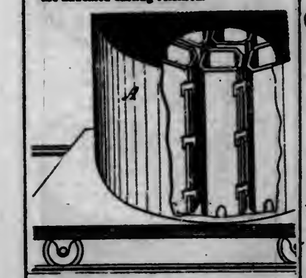
1. The hollow spindle A, with the handles *a* for direct propulsion, in combination with the worm-gear D, worm *b*, and driving-shaft E, and weighted crank G for indirect and powerful propulsion, substantially as herein set forth.

2. The combination of the three threaded spindles *a a* and *a'* with the jaws K L and pinions *p p* and *p'*, substantially as and for the purpose herein set forth.

3. The combination of the threaded spindles, jaws, and pinions with the hollow spindle, its handles, worm-gear, and threaded collar, and the head with the cutting-off tool and die-holding devices, substantially as and for the purposes herein set forth.

162,932. ANNEALING FURNACE-SLAG CASTINGS. Frederic A. Luckenbach, New York, N. Y. [Filed Dec. 31, 1874.]

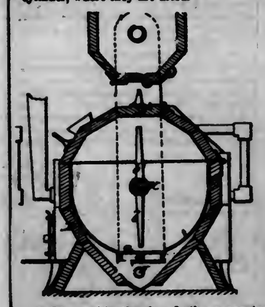
Brief.—An outer sectional mold envelops inner sectional molds, having flues through their sides at their bases. Molten furnace-slag poured into any one mold fills all of them. The cast is cooled in open air, or slowly in an oven. Then the outer mold is parted, slag between inner molds broken away, and inner molds severally opened, and the annealed casting released.



The process of annealing slag castings by the gradual cooling of a surrounding mass of slag cast simultaneously therewith, substantially as set forth.

162,933. FEATHER-RENOVATORS. Henry F. Manley, Potsdam, N. Y., assignor of one-half his right to Nathan P. Chaney, same place. [Filed Nov. 13, 15]

Brief.—The feathers are a...ed in the upper cylinder. A section of the lower cylinder being then raised, and a section of the upper cylinder being dropped, a passage is formed, through which the feathers fall into the lower cylinder, where they are dried.



1. The combination, in a feather-renovator, of the two cylinders B and D, arranged one above the other separately in the frame A, and connected to the boiler P by the pipes I and J, respectively, substantially as set forth.

2. The cylinder B, with hinged side B', in combination with the hinged side D' of the cylinder D, as and for the purposes herein set forth.

162,934. DOOR-CHECKS. M. H. Mattingly, Philadelphia, Pa. [Filed Apr. 7, 1875.]

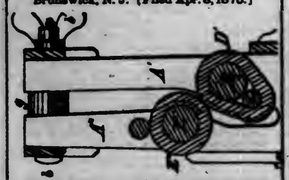
Brief.—An elastic cushion, held in place by a suitable bracket at the top of the door, breaks the force of contact, and prevents slamming.

162,935.



The combination, substantially as described, of the arm A, constructed at one end for attachment to a door or door-frame, and having at the opposite end a socket, B, with the elastic pad D, adapted to the said socket, and so arranged in respect to the door and door-frame that it will be compressed before the door is completely closed, all as set forth.

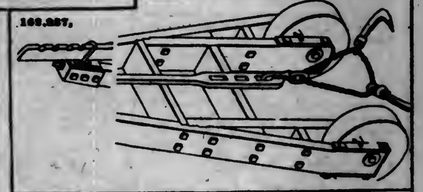
162,936. WRINGERS. T. R. McDonald, New Brunswick, N. J. [Filed Apr. 6, 1875.]



1. In a clothes-wringer, the combination of the rubber tube D', shafts D and *d* in a rigid support, A', and rubber tube E', shafts E and *e* in a yielding support, A'', substantially as and for the purposes described.

2. The combination of the spring *g*, screw-bolt *b*, and screw-nut *b'*, yielding support A'', and rubber tube E', and its shafts E and *e*, with the rigid support A', and rubber tube D, and its shafts D and *d*, substantially as and for the purposes described.

162,937.



162,938. STUMP-EXTRACTORS. A. McKenney, Berlin, Wis. [Filed Mar. 26, 1875.]

1. In a stump and grub puller, the combination of the crotched lever A and the axle C, having flanges B B formed thereon, all arranged substantially as and for the purposes herein set forth.

2. The clevis bar or rod *b*, arranged in combination with the axle C, having projections *a a* and flanges B B formed thereon, and the crotched lever A, substantially as for the purposes herein set forth.

3. In a stump-extractor, the wheel G, constructed as described, in combination with the tube *p* and flanges *r r*, having the jointed-projecting flanges *r' r'*, forming the journal-bearings, substantially as and for the purposes set forth.

4. In a stump-extractor, the combination of the hollow axle C, wheel G, rod *d*, nut *f*, and cap *h*, provided with tube *e* and tongue *c*, substantially as and for the purposes herein set forth.

5. The combination, with the crotched lever A, of the gripe-link J and slotted extension-bar L, as and for the purposes herein set forth.

6. The combination of the crotched lever A, middle plate I with tenon *v*, the stirrup *t* and plate *n*, with the notched extension-bar L, as and for the purposes herein set forth.

7. The combination of the notched eccentric-rod *b'* with the wheels O, having cog-plates H attached thereto, and the pivoted brace-hooks M, substantially as set forth.

8. The movable bent bar D, formed with shoulders *a a* and sharp edge *b*, in combination with the crotched lever A, substantially as and for the purposes herein set forth.

9. The movable iron platform, consisting of the cross-bar N, with hooks *c'* and the longitudinal bars O, substantially as and for the purposes herein set forth.

162,939. STUMP-EXTRACTORS. A. McKenney, Berlin, Wis. [Filed Apr. 1, 1875.]

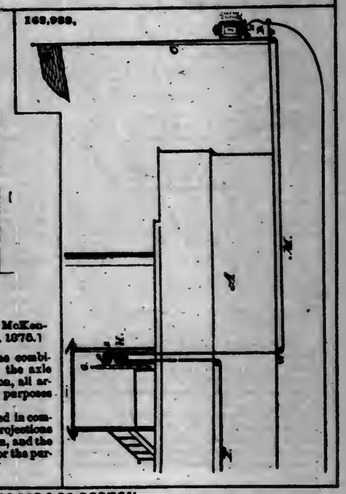
Brief.—The frame is formed of two long beams, converged to an apex in front, and braced laterally, supported on a wheel near each rear end, on a short axle-tree between the diagonal beam and a short longitudinal one braced and bolted against its inner side.

The double-crotch lever, in combination with the independent wheels and axles, as and for the purposes herein shown.

162,940. HEAD-LIGHTS FOR STEAMBOATS. Wm. B. Merrill, Cincinnati, Ohio. [Filed Jan. 14, 1875.]

Brief.—The light can be received through an entire circle by a person in the pilot-house.

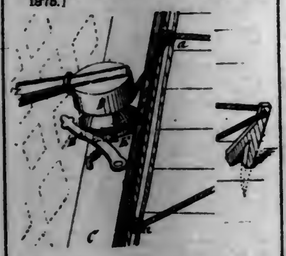
162,941.



1. The winch-shaft E F Q, arranged relatively to the steering-wheel, as described, in combination with suitable ropes M, sheaves W, and turn-table for turning a head-light placed in front of the jackstaff above the stem, substantially as herein set forth, for the purpose designated.

2. A head-light for steamboats and other water-craft, consisting of a lantern, I, (light on one side only,) attached to a horizontal turn-table, K L N, capable of complete rotation and connected by means of cords M passed under the steamer's deck around sheaves W, with the drum, worm, and winch movements S O P Q R F in the pilot-house, in manner substantially as set forth.

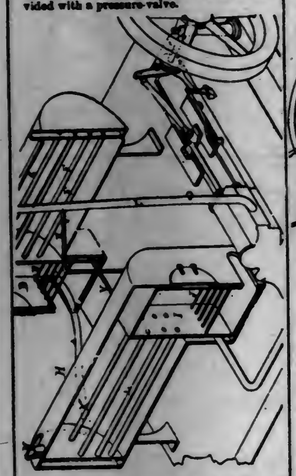
162,939. CARPET-STRETCHERS. Norris H. Merrill, Buchanan, Mich. [Filed Mar. 29, 1875.]



The endless cord L and bar C, having an eye, *a*, near each end, in combination with winding-pulley D and staple A, as and for the purpose specified.

162,940. APPARATUS FOR HEATING FEED-WATER. D. F. Mosman, Chelsea, Mass. [Filed Feb. 17, 1875.]

Brief.—The exhaust steam is conducted into the water in the heater. The heater is provided with a pressure-valve.



1. The method herein described of heating feed-water by steam-generators by exhausting steam into the feed-water in a vessel closed to the atmosphere except through the medium of a pressure or relief valve, substantially as set forth.

2. A feed-water heater, operating to heat the feed-water by direct contact of exhaust steam therewith, and closed to the atmosphere except through the intermediary of a pressure-valve, substantially as and for the purpose set forth.

3. In combination with the feed-water heater adapted to receive the exhaust steam, and closed to the atmosphere except through the medium of a pressure-valve, as described, flues or passages whose exterior surfaces are heated from the feed-water, or the heat of the exhaust steam, or both, and whose interior areas constitute air-flues, through which air is supplied to the boiler-furnace, and which air becomes heated in passing through such flues or spaces, substantially as and for the purposes stated.

4. The combination of the engine A, boiler B, heating-structure H, having a relief or pressure valve, N, as specified, and pump Q, substantially as and for purpose stated.

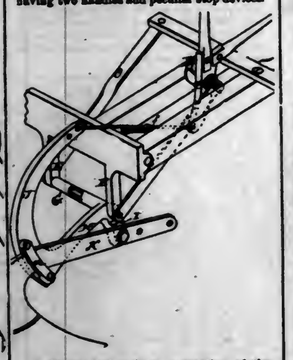
162,941. STREET-RAILWAY RAILS. John P. Nessle, Newark, N. J. [Filed Apr. 16, 1875.]



In a street-railroad track, the combination of the rails C C, reduced in thickness, as described, and the continuous line of supporting-plates B B, said rails and plates being arranged to break joints, substantially as and for the purposes herein set forth.

162,942. SULKY-PLOWS. Orman Osborn, Trumansburg, N. Y. [Filed Feb. 4, 1876.]

Brief.—The plow-beam is hung upon a rocking frame, composed of a hollow shaft having arms projecting at right angles, and a curved crank-arm connected by a rod with a lever having two handles and peculiar stop devices.



1. The swinging frame, consisting of the sleeve G, arms H I, and curved arm J, in combination with the plow-beam K, pivoted to the arm I, and held by the loop *a*, all substantially as herein set forth.

2. The combination of the two-handled lever P, having tooth *d*, ratchet-hub I, bolt *b*, spring *c*, and rod or chain *f*, with the swinging frame G H I J, having loop *a*, and the plow-beam K, all substantially as and for the purposes herein set forth.

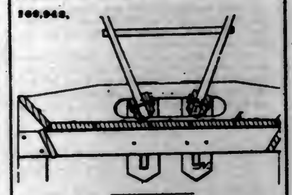
162,943. COMBINED FEED BOXES AND RACKS. David B. Ostrander, Fountain Green, Ill. [Filed Mar. 24, 1875.]

Brief.—A portable trough with central double rack, having bearings at bottom in slots, so that the journals may be moved together or apart, and the racks closed perpendicularly, or expanded over the trough at each side.

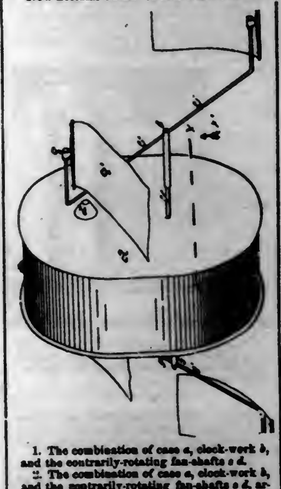
1. The portable feed table and rack, having the rack made adjustable in the distance of its sides apart, and arranged for use substantially as set forth.

2. The portable feed table and rack, having the two parts of rack formed of upright bars, arranged to fold together and open apart upon the table, substantially as and for the purpose set forth.

162,944.



162,944. AUTOMATIC FLY-FANS. Amos B. Palmer, Willimantic, and Albert R. Elmer, New Britain, Conn. [Filed Jan. 6, 1874.]



1. The combination of case *a*, clock-work *b*, and the contrarily-rotating fan-shafts *c d*.

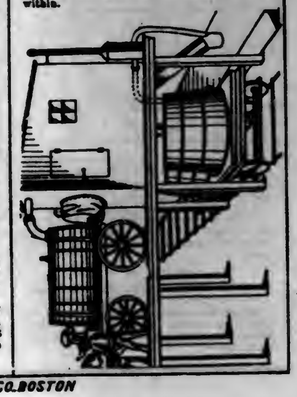
2. The combination of case *a*, clock-work *b*, and the contrarily-rotating fan-shafts *c d*, arranged to have different speeds of rotation.

3. The combination of the two contrarily-rotating fan-shafts *c d* with the adjustable fan-bearing sockets *e f*.

4. The combination of the contrarily-rotating fan-shafts *c d*, adjustable sockets *e f*, arms *e' f'*, swivels *g*, and banners *g'*.

162,945. APPARATUS FOR TRANSFERRING NIGHT-SOIL FROM TRANSIT-TANKS TO CARS, BOATS, &c. William Painter, Baltimore, Md. [Filed Mar. 6, 1876.]

Brief.—An air-tight structure placed on an elevated platform contains the transfer apparatus, with space for an operator to work within.



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1. An air-tight transfer-chamber, provided with means for connection with the exit-aperture of the transit-tank, and also with an air-tight discharge-chute, and located above a roadway or water-line, substantially as described, whereby night-soil or other offensive matter may be transferred from a transit-tank to a car-tank or barge without creating offense, as set forth.

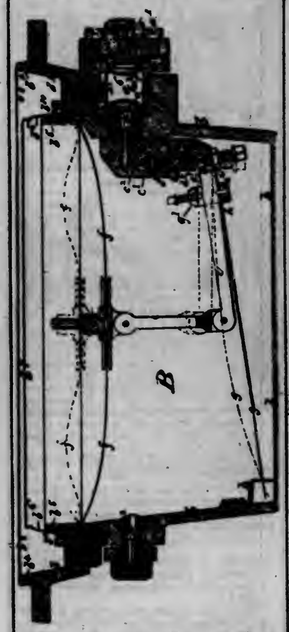
2. The combination, with the transfer-chamber, of a deodorizing apparatus, substantially as described.

3. The combination, with the transfer-chamber, of an air-tight conducting pipe or chute, a stench-pipe, and a deodorizer, the latter communicating with the transfer-chamber and with the car-tank or barge, substantially as described.

4. An apparatus, substantially as described, for transferring night-soil and other offensive matters from transit-tanks to car-tanks or barges, consisting essentially of an air-tight chute or conducting-pipe, a stench-conducting tube, and a deodorizer, whereby the night-soil and other offensive matters may be transferred by gravitation directly from the transit-tanks into the car-tanks or barges, substantially as described.

162,946. APPARATUS FOR LIGHTING RAILWAY-CARS. Richard Pintsch, Berlin, Prussia. [Filed Oct. 31, 1874.]

Brief.—A reservoir for containing gas, with a regulator upon the car. The valve is supported upon a hinged lever attached to the diaphragm, with a rod intervening between valve and lever, resting in adjustable bearings in the lever. An adjustable counterbalance-spring is attached to the lever.



1. The combination, with a reservoir or boiler in which gas is contained at a high pressure, of a regulator, B, constructed with a main case or castings, *b b'*, cover *b²*, dust-chamber *a²*, valve *c d*, levers *e e'*, spring *f*, and diaphragm *f'*, constructed and operating substantially as and for the purpose described.

2. The valve *d*, provided with a seat or aperture, *d²*, in combination with a supporting-rod, *c'*, and a lever, *e*, provided with an adjustable seat or recess in a bearing, *e²*, substantially as described.

3. The combination, with the valve *d*, supporting-rod *c'*, and lever *e*, of the adjustable counterbalance-spring *g*, arranged, constructed, and operating substantially as described.

4. The combination, with the valve casting or body *c*, formed with a chamber, *c¹*, valve seat *c²*, and passage *c³*, as described, of the valve *d*, formed with a conical upper end, *d'*, and a stem provided with channels *d²* and a seat, *d³*, for the reception of a supporting-rod, *c'*, substantially as shown and described.

162,947. TREATING LEATHER FOR GAS-REGULATOR DIAPHRAGMS. Richard J. Pintsch, Berlin, Prussia. [Filed Apr. 2, 1875.]

The process for treating leather for diaphragms for gas-regulators, dry gas-meters, and similar purposes, by means of a dissolution of gutta-percha in bisulphuret of carbon applied upon the inside, and best not oxidized oil, free of acid, applied upon the outside, substantially as described.

162,948. GAS-REGULATORS. W. H. Pounds, Philadelphia, Pa., assignor to T. J. Martin and D. W. Stuart, same place. [Filed Mar. 22, 1876.]

Brief.—The cover turns loosely upon the screwed ring-clasp of the diaphragm, and is provided with pins adapted to notches and grooves in the flange of the body. The clamping-plates inclose on all sides the packing around the spindle.

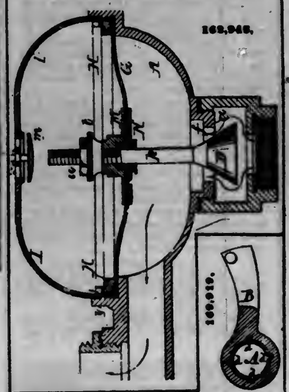
1. The combination, in a gas-regulator, of the body A, its flange *i*, grooves *s*, and notches *p*, the diaphragm O and cover I provided with pins *s c*, adapted to said grooves and notches, as and for the purpose set forth.

2. The combination of the cover I, inclosing a chamber above the diaphragm of a gas-regulator, and a valve, *m*, opening downward, as and for the purpose set forth.

3. The combination of the spindle *p*, clamping-plate N, having a threaded projection for the reception of the clamping-plate M, and jam-nut *t*, bearing on the plate M, as set forth.

4. The combination of the spindle *p*, clamping-plates M N, and packing *w*, confined in a recess in the plate N, as specified.

5. The combination of the body A, its flange *i* and shoulder *h*, the screw-ring H, adapted to the threaded interior of the flange *i*, and the diaphragm G, clamped upon the shoulder by the screw-ring, as set forth.



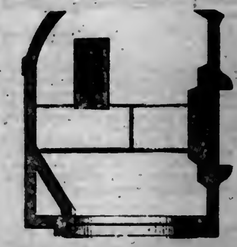
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162,949.

162,949. COFFIN-HANDLES. James S. Ray, East Haddam, Conn. [Filed Jan. 22, 1874.]

The coffin-handle having the tubular portion A and bars B united together by an indentation, *d*, formed by depressing the metal of the tubular portion outwardly by a tool into the interior of the rings of the bars B prior to the insertion of the tips C, all combined and constructed in the manner shown, and for the purpose specified.

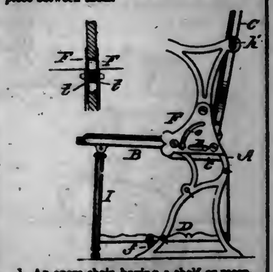
162,950. CAR-AXLE BOXES. John Rhoads, Harrisburg, Pa. [Filed Jan. 6, 1876.]



A journal-box, in combination with a receptacle or receptacles containing solid grease, substantially as and for the purpose set forth.

162,951. OPERA-CHAIRS. John Richardson, New York, N. Y. [Filed Nov. 14, 1874.]

Brief.—A chair with folding seat, having a folding frame beneath for hats, and formed to be joined in rows by making the ends upon adjoining chairs play between the same slotted plates, and mortising legs formed on the backs of adjacent chairs into the arm-piece between them.



1. An opera-chair having a shelf or receptacle arranged under the seat for receiving hats, in combination with the seat E, pivoted upon the frame, substantially as described, whereby the seat can be tilted without depressing its rear edge, thus avoiding the crushing of hats on the shelf below, as set forth.

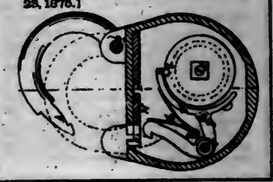
2. The slotted plates F, secured to the uprights A, in combination with the seat B, provided with the headed pins *i*, whereby said pins act as pivots for the seat, and also serve to unite the series of seats and their uprights, and prevent the latter from spreading apart, as set forth.

3. The combination of the back frames C, provided with the ears A, and the uprights A, provided with a notch for said ears to fit in, whereby the series of seat-frames are locked together, substantially as described.

4. The combination of the pivoted seat B and the folding shelf D with the telescopic legs I I', all constructed to operate substantially as described.

5. The stud *f*, attached to the folding shelf D, for supporting and locking it in place, as set forth.

162,952. COMBINATION-FASTENERS. D. A. Root, South Bay City, Mich. [Filed Mar. 23, 1875.]





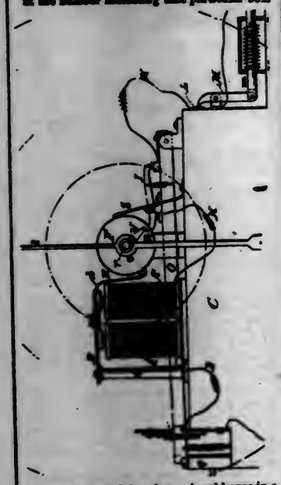
160,950.

1. The combination of the locking-dog, having the fence-lever pivoted thereto, with the hasp, notched tumbler-wheel, spring G, and knob G, whereby the dog is released from the notch in the hasp by turning the knob, substantially as described.

2. The bolt H, arranged to slide in the top of case A, and held in position by the hasp, in combination with the clip *p* and hook *g* on the back plate A', for securing the latter to the lock-case, substantially as described.

160,960. FIRE-ALARM TELEGRAPH. Andw. Rosenbaum, Quincy, Ill., assignor of one-half his right to Theodore W. Krebs, same place. [Filed Mar. 3, 1875.]

Brief.—Pointer in each box continues to be carried around by a step-by-step movement, produced by automatic interruptions of the circuit at the central box, until circuit is permanently broken at the box from which signal is sent in, by means of an arm upon the shaft of the pointer operating a circuit-breaking lever; said arm being so arranged with relation to the pointer that the circuit shall be broken at the moment that the pointers stand at the number indicating that particular box.



1. A system of fire-alarm signal-boxes in a common closed circuit, with an alarm-box common to them all, upon the breaking and making of which circuit at any signal-box the number of said box is automatically transmitted from the common alarm-box and indicated at all the other boxes.

2. The lever I, provided with the detent R, in combination with the cervoll tooth U, operated by the shaft *r*, substantially as set forth.

3. The lever O, of non-conducting material, provided with the tongue *b*, and operated by the lark Q, substantially as set forth.

4. The curved tooth U, for the purpose specified.

160,964. PAPER VESSELS. D. N. Russell, New York, N. Y. [Filed Dec. 22, 1874.]

Brief.—The vessel is coated with a grease and lime proof material of such a nature as to avoid all possibility of imparting any flavor or smell to its contents.

1. As a new article of manufacture, the butter dish or vessel composed of a body and bottom of paper, as united as to leave a water-tight joint, and having its interior surface coated or prepared, all substantially in the manner and for the purposes described.

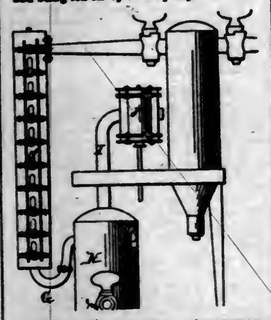
2. In a dish or receptacle for butter, having its body and bottom composed of separate pieces of stock, the combination, with said body and bottom, of a paper band, *a*, and a strip, *f*, of canvas or other light and flexible material, the whole arranged and operating together substantially as described.



160,954.

160,955. GRAIN-CONVEYERS. H. Severs, Davenport, Iowa. [Filed Apr. 13, 1875.]

Brief.—A vertical series of fan-blowers, each on a horizontal axis, worked by belting, exhausts for the purpose of conveying through tubing grain which falls into receivers; the air constituting its course through the jars by communicating ducts from periphery to center, and being led off by an air-pump.



1. The combination, with a grain-conveying pipe, D, of a series of suction fans or pumps, E E, for creating a vacuum in said pipe, and by suction draw the grain through the same into receivers properly arranged, substantially as herein set forth.

2. The combination of the air-conveying pipe B, receivers A A, provided with air-breakers *c c*, the pipe D, and the series of suction fans or pumps E E, substantially as and for the purposes herein set forth.

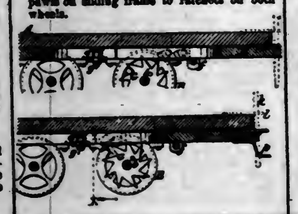
3. A series of suction fans or pumps, E E, arranged to communicate from the circumference of one to the center of the next fan or pump, in combination with a grain-conveying pipe, substantially as herein set forth.

4. The combination, with the suction fans or pumps E, of the pipe G, tank H, pipe I, and air-pump J, substantially as and for the purposes herein set forth.

5. In a grain-conveyer, a continuous stream or current of water passing with the air through a series of suction fans or pumps, for the purposes herein set forth.

160,956. CAR-STARTERS. Charles J. Shain and G. L. Waltt, Philadelphia, Pa. [Filed Feb. 26, 1875.]

Brief.—The first strain is applied through pawls on sliding frame to ratchets on both wheels.



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1. The combination of car-wheels B with wide-spaced ratchets G on their inner sides, draw-bar K, and pawls in pairs at each side of the draw-bar, and matching the wide-spaced ratchets, all substantially as set forth.

2. The combination, with the pawls *c c*, of ratchets G at each side of the car, and rest-plates *e*, to maintain the pawls in horizontal positions, as set forth.

3. The pivoted L-shaped pawl or pawls *c* in combination with the draw-bar, to engage with their operative arms, the ratchets on the inner faces of the car-wheels, but allow the slide to move between the ratchet, substantially as set forth.

160,957. CAR-STARTERS. A. B. Sharp, Plaquemine, La. [Filed Apr. 6, 1875.]

Brief.—Before stopping, rack is thrown into gear with pinion on axle, and thereby forced back, compressing spring. On starting, rack is withdrawn from gear, and pawls, pressed forward by expanding-spring, are made to engage with ratchet-wheels, also rigidly secured to the axle.

1. The combination of the car-axle, having pinion D, the rack-bar E, the spring G, the frame-work, having pawls *c* upon the opposite side of the car-axis from the rack, and the ratchet-wheels I, substantially as and for the purpose set forth.

2. The combination of pinion D, rack-bar E, spring G, frame F, having pawls *c*, ratchet-wheels I, hand-levers *a* and *d*, and crank-shafts *b* and *e*, all substantially as and for the purpose set forth.



160,957.



160,958.

160,958. STOVE-DOOR HANDLES. Absalom S. Shouts, Quincy, Ill., assignor to Comstock, Castle & Co., same place. [Filed Jan. 26, 1875.]

Brief.—The part H is cast with the door, while the part E is detachable.

The key composed of the handle A and latch B, made in one piece, and operating in combination with the bow composed of the parts E and H, substantially as specified.

160,959. POCKET COOKING APPARATUS. G. B. Siskain, Chicago, Ill., assignor to Frank Sturges & Co., same place. [Filed Apr. 12, 1875.]

Brief.—The support can be folded together and the dome pushed down into the lamp-body, and the whole put in the box. The size of the flame may be regulated by means of the cap, which is removable, and its pivoted lid.



1. A folding heating apparatus, consisting of a folding support or standard, and of a telescopic lamp, adapted for use in connection with each other, substantially as specified.

2. The combination of the folding standard B with the vertically-adjustable and folding lamp-support C C, substantially as and for the purposes specified.

3. The combination of the box A, the folding standard B, and the folding lamp-support C C, vertically adjustable on the legs of the standard, substantially as and for the purposes specified.

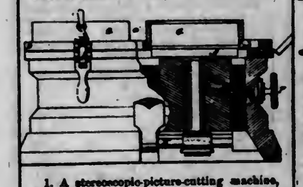
4. The combination, substantially as specified, of the box A, the folding standard B, the folding and vertically-adjustable lamp-support C C, and a telescopic lamp, for the purposes set forth.

5. A telescopic lamp, having a perforated dome combined with the annular cap C, having the lid H pivoted thereto, in combination substantially as described, with a folding and adjustable lamp-support, for the purposes set forth.

6. The lamp D, having therein the removable, annular, and perforated diaphragm E, and the vertically adjustable and perforated dome F, substantially as described, in combination with a folding standard or support, for the purposes set forth.

160,960. STEREOSCOPIC-PRINT CUTTERS. Thomas W. Smillie and Albert Siebert, Washington, D. C. [Filed Apr. 14, 1874.]

Brief.—The dies are adjustable toward and from each other, so that two prints can be cut out at once, with any desired distance between them.



1. A stereoscopic-picture-cutting machine, formed essentially of two pairs of dies A A', having interval *c* between them, and springs E E to hold the picture, substantially as shown and described.

2. The dies A A', having a lateral adjustment by swiveled screw passing through post *e*, as and for the purpose set forth.

3. The picture-boxes G, hinged to dies A', and forming a continuation of the female dies, as and for the purpose specified.

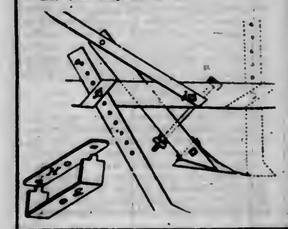
4. The hinged gage H, combined with dies, as and for the purpose specified.

160,961. STEAK-COOKING PANS. David B. Smith, Bastrop, La. [Filed Apr. 6, 1875.]



The cooking-pan, consisting of the separate pans A A', fitted together with a recess, *a*, and lip *b*, to form a closed chamber, and held by a hook, *c*, and curved lip *d*, and the griddles C, having legs *f*, all constructed, combined, and arranged as shown and described.

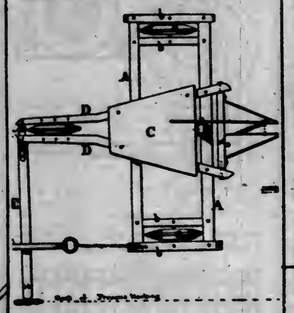
160,962. PLOWS. David B. Smith, Bastrop, La. [Filed Apr. 6, 1875.]



The combination, with the subsoil-plow having its shank perforated with adjusting-holes of the diagonal strap G, detachable plate H, and central bolt *f*, substantially as and for the purpose described.

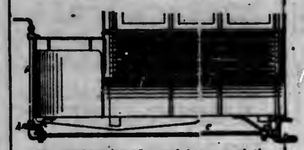
160,963. CORN-ROW MARKERS. Wm M. Startipor, Henry, Ill. [Filed Feb. 13, 1875.]

Brief.—At each end of the square frame is journaled a marking-wheel. Fixed to the main frame are two converging beams, at the rear of which is journaled a marking-wheel. Pivoted to and extending out at right angles from the converging beams is a bar having a marking-wheel. This bar is adjusted by rope attachment extending from it to the main frame.



The frame A, having double bars *b b* to receive the marking-wheels *a a*, in combination with the converging bars D D, provided with platform C, and arranged to receive the marking-wheel *a'*, the said bars D D being joined by a bar, *m*, provided with an eye or staple, *d*, having spring-stems to receive the gage-bar E, constructed and arranged to operate substantially as shown and set forth.

160,964. STREET-CARS. John Stephenson, New York, N. Y. [Filed Apr. 27, 1875.]



The combination of a rack-bar, *c*, and the rear or entrance door of a street-car with an operating gear, shaft C, bevel-gears *g* and *h*, and crank-lever *i*, substantially as and for the purpose set forth.

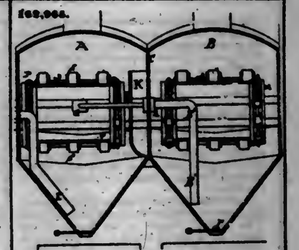
160,965. PETROLEUM-STILLS. J. L. Stewart, Philadelphia, Pa. [Filed Aug. 3, 1874.]

Brief.—The compartments of the still, or the separate stills, are placed over fires of different heat, and the distillation is progressive. Scrapers on endless chains remove the sediment. Overflow-pipes take heavy oil from the bottom of one still into the next still near the surface of its contents, and, with an automatic float-valve, prevent back-set of the oil, and maintain proper relative levels in the stills. An intermediate trough connects the rear of one still with the front of the next still.

1. In a series of stills operating in conjunction for the continuous distillation of petroleum into products of various specific gravities, the combination of the said stills A B, the overflow-pipes E' E, and the automatic regulating-valves *h*, substantially as herein described.

2. In a series of stills operating in conjunction for the continuous distillation of petroleum into products of various specific gravities, the combination of the said stills A B, the overflow-pipes E' E, the automatic regulating-valves *h*, and scrapers upon endless chains, substantially as herein described.

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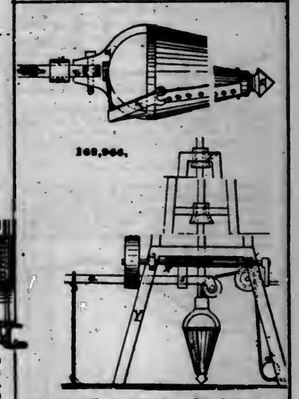


3. The combination of the scrapers S, the rods *r'*, the cross-bars *r*, and the chain P operating in a petroleum-still, as herein described.

4. The combination of the endless chain P, and the L-shaped scrapers S hinged and having a limited movement upon the chain, substantially as herein described.

5. The L-shaped scraper S hinged and having a limited movement, as and for the purpose described, in combination with the chilled-iron points S.

6. In a compartment, A, operating with others for the continuous distillation of petroleum, the combination of the trough K conveying the overflow from the pipe E', and discharging it upon the surface of the oil at the front of the still, as herein described.



160,966.

160,966. EARTH-AUGERS. Geo. S. Strong, Mount Vernon, Ohio, assignor of one-half his right to Benj. A. F. Greer, same place. [Filed Jan. 12, 1874.]

1. The combination, in an earth-boring auger, of the long hollow cone-shaped auger C B, straight cutting-blade A, removable point D, internal inwardly-opening valve O, air-passage P P', and extension-blade F, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

2. In combination with the auger C and blade A, constructed as described, the removable independent extension-blade F, hinged to the blade A, and extending and braced at an angle outward from the top rim of the auger C, substantially as and for the purposes described.

3. In combination with the auger C, provided with the ball B, the square shaft G, hinged to the ball B, and coupling *g*, sliding loosely on the shaft G, and fitting over the top portion of the ball B, whereby the shaft is locked in a vertical position to the auger, substantially as and for the purposes described.

4. The supporting frame-work I Y, provided at intervals with cross-bars I', which contain flaring mouth-shaped guides J, substantially as described.

5. The mechanism for raising the auger, consisting of the two ropes Z Z, attached to the lever and at each side of the shaft G, pulleys O' O', drum *c*, worm *n*, and worm-gear *i*, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

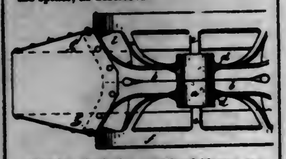
6. As an additional means for raising the auger a slight distance when desired, the levers or frame Q Q, pivoted or fulcrumed to the frame-work Y, and provided at their ends with pulleys O', held in bearings which revolve with the shaft, but are forced up or down by the levers Q through a collar, K, substantially as described.

7. The machine for boring wells, &c., herein described, consisting of the cone-shaped auger C D, shaft G, hinged to the bail B of the auger C, supporting-frame I I' Y, operating mechanism H M *g*, guides J, raising mechanism Z Z *c*, O' O' K, all constructed, arranged, and adapted to operate substantially as and for the purposes described.

8. In combination with the cone-shaped auger C, provided with the blade A and air-passage P P', the long slot in the side of the auger, and elastic inwardly-opening valve O, substantially as and for the purposes described.

168,967. FAN-BLOWERS. B. F. Sturtevant, Boston, Mass. [Filed Mar. 27, 1875.]

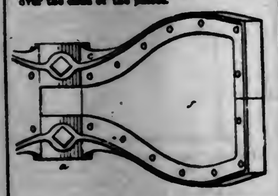
Brief.—The fan-plates are united to the side plates, and to the webs and flanges of the spider, as described.



The fan-wheel of a centrifugal blower, consisting of the fan-plates *l* united to the side plates *h* and to the webs *b*, and flanges *g* of the spider, constructed substantially as described.

168,968. FAN-BLOWERS. B. F. Sturtevant, Boston, Mass. [Filed Mar. 27, 1875.]

Brief.—A fan-wheel of which the plates are connected to the hub by webbed and flanged arms, extending along the sides and over the ends of the plates.



In the construction of rotary fan-wheels for blowers, the combination of the plates *f* with the hubs *a* by means of webbed and flanged arms, the webs and flanges of which extend from the hubs along the sides and over the ends of the plates, substantially as and for the purpose set forth

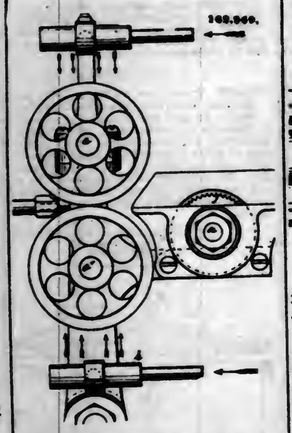
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168,969. APPARATUS FOR PREPARING SOLE-FASTENING MATERIAL. B. F. Sturtevant, Boston, Mass. [Filed Mar. 17, 1875.]

Brief.—The material is fed to the cutters in the form of long slips or straps, and leaves them in the form of rods, which are compressed, reduced, and hot-pressed by the rolls into proper diameters for pegs.

1. The combination of the series of circular toothed cutters with the annularly-grooved condensing-rollers, adapted to operate upon the material passing from the cutters, substantially as described.

2. The combination, with the annularly-grooved condensing-rollers, adapted to operate substantially as described, of the heating apparatus, substantially as and for the purpose specified.



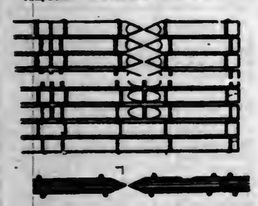
168,969. SOLE-FASTENINGS. B. F. Sturtevant, Boston, Mass. [Filed Mar. 6, 1875.]



1. A woven web of sole-fastenings the clinching-points of which are arranged to turn in positive and predetermined directions, substantially as described.

2. The process of forming a web of sole-fastenings, having clinching-points to turn in a predetermined direction, consisting of first weaving the fastenings as a web, and then dividing the web by cutting through each individual weft diagonally, and at the same or opposite directions, substantially as described.

168,971. PROCESSES FOR MANUFACTURE OF SOLE-FASTENINGS. B. F. Sturtevant, Boston, Mass. [Filed Mar. 6, 1875.]



That improvement in the art or process of forming sole-fastenings consisting of forming a web, substantially as set forth, and then dividing such web into two or more narrow webs of suitable lengths for fastenings, substantially as described.

168,972. RODS FOR SOLE-FASTENINGS. B. F. Sturtevant, Boston, Mass. [Filed Mar. 17, 1875.]

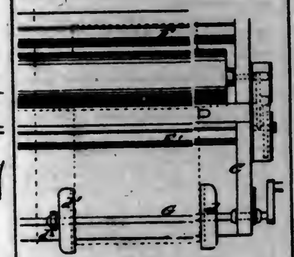


As a new article of manufacture, peg-sized, consolidated, hot-pressed rods of lignecous material, of several pegs' length, hardened and adapted to form weft of sole-fastening webs, and separate pegs, substantially as described

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168,973. CLOTH-MEASURING MACHINES. John Sullivan, Independence, Mo. [Filed Sept. 19, 1874.]

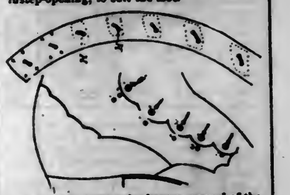
Brief.—The cloth-board checks are placed upon a rod, which also serves as a support to the cloth-board.



In a cloth measure and roller, the removable winding-rod G, having thereupon the winding-board clutches *d* and *d'*, substantially as and for the purpose set forth.

168,974. SHOE-FASTENINGS. T. Tucker, Oakland, Cal. [Filed June 26, 1874.]

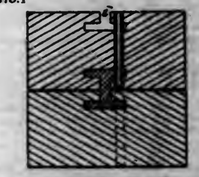
Brief.—The button or hook strip is received in a pocket in the under lap of the shoe, and the buttons adjusted, by means of the series of perforations, nearer to or farther from the instep-opening, to suit the foot.



1. A shoe, having the front composed of the outside K, with two or more series of perforations, the lining J forming a pocket to receive the adjustable button-strap, substantially as set forth.

2. The series of hook-buttons H, attached to the broad base P, and curved forward, substantially as and for the purposes set forth.

168,975. EXTENSION-TABLE SLIDES. John C. Turner, Newark, N. J. [Filed Jan. 15, 1875.]

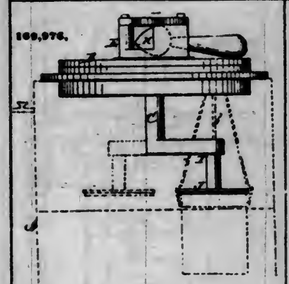


In an extension-table slide, the double-flanged angle-iron having flanges *a b*, provided with slot *c* and shoulder *e*, in combination with pin *d* passing through one wing of the mortise in the groove-sections into the slot *c* in the iron to hold the iron in its place, and at the same time act as a hook stop-pin, substantially as and for the purpose set forth.

168,976. FIRE-EXTINGUISHERS. Chas. Van Duzen, New Albany, Ind., assignor of one-half his right to F. S. Duvol and E. A. Maginness, same place. [Filed Feb. 24, 1875.]

Brief.—To the crank of a rod is attached the stopper of the acid-bottle. By raising the arm of an eccentric pivoted to the rod, and turning it to one side, the stopper is lifted from the bottle and carried away therefrom.

168,976.



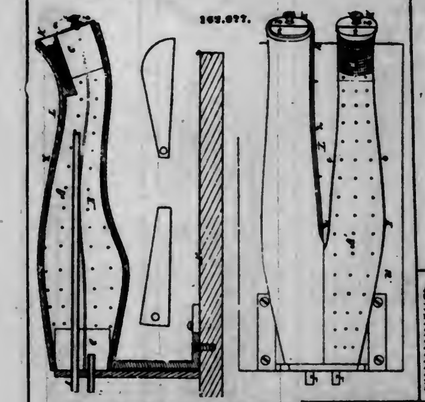
1. The eccentric H, constructed as described with bearing-points *x y* and curved surface *z*, in combination with the rod C and a fire-extinguisher tank, A B, substantially as and for the purposes herein set forth.

2. The combination, with the cover B, having hub D, of the rod C, with flange *d* and rubber ring *e*, and the eccentric H, all substantially as and for the purposes herein set forth.

3. The combination of the cover B, having hub D and box E, the rod C, lever G, and eccentric H, all constructed and arranged to operate substantially as and for the purposes herein set forth.

168,977. APPARATUS FOR SHAPING PANTALOONS. E. B. Vista, Boston, Mass. [Filed Apr. 29, 1875.]

168,977.



1. The combination of the steam-inducts H and the drying-pipes I I with the pantaloon-former or main leg portions X Y, composed of the chambered parts A A' B B', arranged as shown.

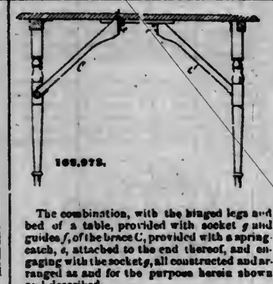
2. The series of crotch-pieces l m, in combination with the pantaloon-former, the parts A A' B B', chambered and applied together as described.

3. The combination of separate extensile covers K K, substantially as described, with the chambered parts A A' B B' of the pantaloon-former.

4. The removable instep-pieces N, toothed or grooved on their upper surfaces, as described.

5. An elastic presser or jacket, L, in combination with each of the chambered main portions X Y of the former, for steaming and shaping pantaloons.

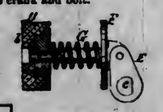
168,978. FOLDING TABLES. Saml. T. Waggoner, Coldwater, Mich., assignor to F. O. Porter, Buffalo, N. Y. [Filed Oct. 6, 1874.]



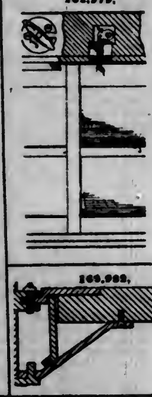
The combination, with the hinged legs and bed of a table, provided with socket *g* and guides *f*, of the brace C, provided with a spring catch, *s*, attached to the end thereof, and engaging with the socket *g*, all constructed and arranged as and for the purpose herein shown and described.

168,979. SASH-HOLDERS. Thos. Walker, Pleasantville, Md. [Filed Mar. 18, 1875.]

Brief.—A bolt, screw-threaded at one end, and provided with an adjustable friction-pad at the other, is mortised in the window-frame, and pivoted to a suitable crank handle. Interposed between a washer and the pad is a spiral spring, which forces the friction-pad automatically against the edge of the sash, thus holding it firmly in place until retracted by action of the crank and bolt.



168,979.



1. The combination of the bolt C, the friction-pad D, consisting of a nut, *a*, and rubber cushion *b*, the washer F, spiral spring G, crank-piece E, and detachable shaft H, substantially as and for the purpose described.

2. The bolt C, having a screw-threaded end, in combination with the adjustable friction-pad D, consisting of a nut, *a*, and rubber cushion *b*, substantially as and for the purpose described.

168,980. HAME-FASTENINGS. W. H. Ward, Virginia, Mo. [Filed Feb. 26, 1875.]



1. A swiveled horse awning or protector, supported by a single central standard on the pole of the car, substantially as shown and described.

2. In combination with the pole A, the stud B, having brackets *b b*, and the stay-braces C, substantially as shown and described.

3. In combination with the stud B, the hollow standard D, inclosing the former at its lower end, substantially as shown and described.

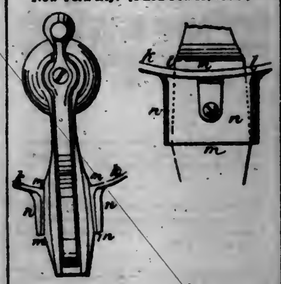
4. In combination with the standard D, the canopy G, sustaining the curtains *h h*, substantially as set forth and illustrated.

5. In combination with the standard D and canopy G, holding the curtains *h h*, the transverse arms *i i*, for holding said curtains extended, as set forth.

6. The combination of the following elements: a pole or tongue, A, standard D, canopy or frame G, rollers H R, curtains *h h*, and transverse arms *i i*, substantially as shown, for the purpose set forth.

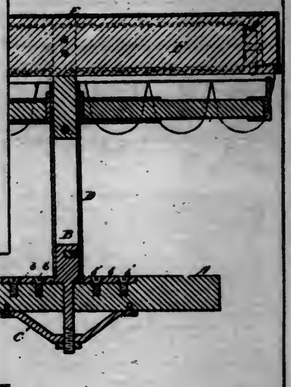
The bar A, provided with the teeth *a*, in combination with the bar B, provided with the ears C, forked thumb-piece D, tongue *b'*, and arched spring E, substantially as set forth.

168,981. SAD-IRON HANDLES. J. Webster, Brooklyn, N. Y., assignor to J. C. Kelley, New York city. [Filed Oct. 15, 1874.]



A handle for sad-irons, having the holding-arms of wedge form *m m'*, with beveled edges *l l*, in combination with the shield *k*, having socket ends *n*, corresponding in form to the arms, whereby the shield is dovetailed with the arms, and holds said clamps them intact with the handle.

168,982. HORSE-AWNINGS. F. D. Webster, Philadelphia, Pa. [Filed Mar. 2, 1875.]



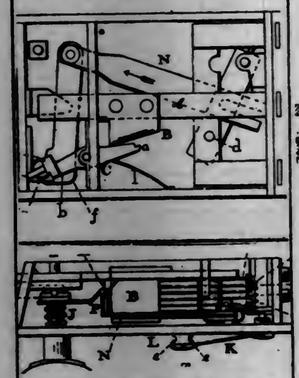
162,922. SCREW-THREADING DIES. F. B. Wells, Greenfield, Mass., assignor to the Wiley & Russell Manufacturing Company, same place. [Filed Dec. 21, 1874.]

Brief.—A spring placed in semicircular recesses in each of the divided dies tends to continually force them together. The adjustment of the dies against the action of the spring is effected by taper-headed screws.



The interposed taper or taper-headed screws, the dies, the spring, and the circular plate, combined together as described.

162,924. LOCKS FOR DOORS, &c. P. Wernl, Philadelphia, Pa., assignor of one-half his right to E. L. Richie, same place. [Filed Mar. 30, 1875.]



1. The tumblers C, in combination with the plates D, forming passages for a worm-bit key, by which the tumblers are operated, substantially as and for the purpose set forth.

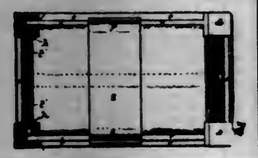
2. The combination of the post F' with the series of passage-plates D and guide E, substantially as and for the purpose set forth.

3. The knob with sliding spindle G and the arm H, in combination with the bar N, arm M, and the key-hole guard K, substantially as and for the purpose set forth.

4. The bolt A with leg E and pin *d*, and spring-bar N with leg F, in combination with the slotted arm H and sliding knob-spindle G, substantially as and for the purpose set forth.

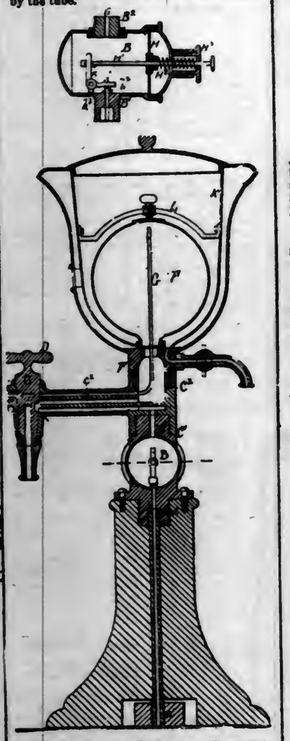
162,925. INVALID-BEDSTEADS. Robert D. Whittemore, Belvidere, Vt. [Filed July 9, 1874.]

In an invalid-bedstead, the combination of the posts *a*, having the slots *g h*, side rails *i*, head and foot rails *r*, moving in opposite directions, and attached to the rollers V by the straps *t*, rollers *n*, windlass *m*, and straps *t'*; the slots *g* serving to prevent the side rails *i* from swaying laterally, substantially as shown and described.



162,926. APPARATUS FOR DRAWING EFFERVESCENT LIQUIDS. Frederick W. Wiesebrock, Brooklyn, N. Y., assignor to H. W. Shepard and Robert Seaman. [Filed Mar. 19, 1875.]

Brief.—An apparatus having a pressure-regulator between the supply-vessel and the dispensing-vessel. The faucet has a supplemental discharge or pressure-escape tube, whereby any surplus pressure in the discharge-vessel is relieved from the liquid, and escapes by the tube.

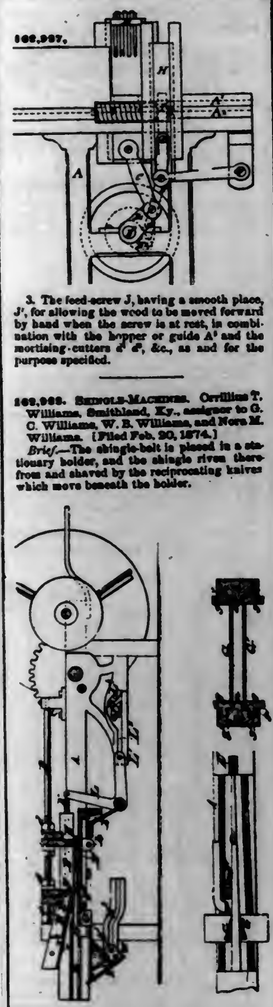


1. In an apparatus for drawing effervescent liquids, a pressure-regulator, B, arranged in connection with a dispensing-vessel, F, the whole being combined and arranged to operate substantially as described.

2. A dispensing-vessel, F, faucet C, having a nozzle, D', communicating through its opening d^2 with channel c^2 of the faucet, and tube G, the whole being combined and arranged to operate substantially as described.

162,927. MORTISING-MACHINES. Orrilliam T. Williams, Smithland, Ky., assignor to G. C. Williams, W. B. Williams, and Nora M. Williams. [Filed Feb. 20, 1874.]

Brief.—The shingle-bolt is placed in a stationary holder, and the shingle riven therefrom and shaved by the reciprocating knives which move beneath the holder.



1. The feed-screw J, having a smooth place, J', for allowing the wood to be moved forward by hand when the screw is at rest, in combination with the hopper or guide A^1 and the mortising-cutters d^3 d^3, &c., as and for the purpose specified.

162,928. SHINGLE-MACHINES. Orrilliam T. Williams, Smithland, Ky., assignor to G. C. Williams, W. B. Williams, and Nora M. Williams. [Filed Feb. 20, 1874.]

Brief.—The shingle-bolt is placed in a stationary holder, and the shingle riven therefrom and shaved by the reciprocating knives which move beneath the holder.

1. The fixed frow F and knife F', in combination with the shaping-knives G G', which, besides their traversing motion, move toward and from each other, substantially as and for the purpose set forth.

2. The fixed frow F and knife F' and shaping-knives G and G', in combination with the fixed immovable cross-bar E, armed with soft metal, substantially as specified.

3. The knife F', in combination with the tilting or yielding bottom plate B' of the carriage, substantially as specified.

4. The shaping-knife O, in combination with the push-bar K, substantially as specified.

5. The combination of the push bar K, bell-cranks L, fulcrumed on carriage B, connecting-rod D', grooves D', and automatic switches D^1, substantially as specified.

6. The receiver H, provided with a gutter, M, for the reception of the shingles and plate I, over which the top shaving passes, substantially as specified.

162,929. MORTISING-MACHINES. Solomon Wilder, Meriden, assignor to Pratt, Read & Co., Deep River, Conn. [Filed Mar. 19, 1875.]

Brief.—The machine is constructed to mortise what are termed buttons, one of which is glued upon the back of each key of a piano, and other musical instruments using similar keys.

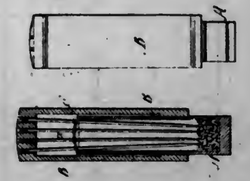
1. The gang of mortising-tools d^3 d^3, &c., elevated and depressed together, in combination with an intermittent-feed mechanism, which moves the wood between each stroke to an extent equal to the distance of the tools apart, as herein specified.

2. The hopper box A^3, feed-screw J, intermittent impelling mechanism H I K L, and mortising-cutters d^3 d^3, combined and arranged as herein specified.

7. The combination of the fork N n n' n', rod N', reciprocating receiver H, and cam-grooves N', substantially as specified.

8. The combination of the adjustable cross-heads C C', carriage B, and cross-bar E, substantially as specified.

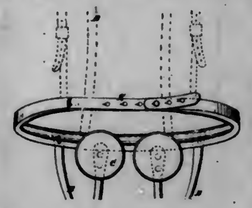
162,930. NEEDLE-CASES. William Henry Yeomans, Astwood, Redditch, England. [Filed Mar. 17, 1875.]



A needle-holder consisting of an inner casing, A, for the reception of needles, an outer casing, B, sliding on the inner casing, and perforated at the top, and a spring, *c*, whereby the outer casing is maintained in an elevated position, as set forth.

162,931. TRUSSES. Joseph M. Zirkle, New Market, Va. [Filed Apr. 3, 1875.]

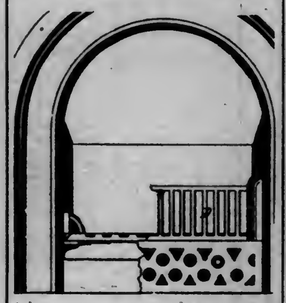
Brief.—The pad is held with an upward pressure from a metal rod extending forward from the metal back-belt, and passing between the thighs.



The combination of the belt *A*, arranged to encircle the body, one or more springs, B, attached to the back of the belt, and arranged to pass around underneath the thighs, one or more pads, C, suspenders D, and the straps E, all substantially as specified.

REISSUES.

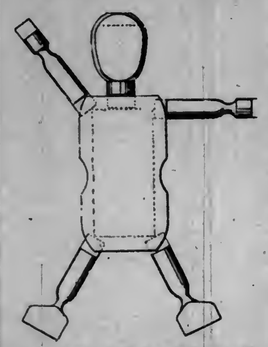
6,407. GRATES. Frank S. Bissell, Pittsburg, Pa. Patent No. 155,293, dated Sept. 22, 1874. [Filed Apr. 17, 1875.]



1. As a new article of manufacture, a bent knee and beam consisting of a single piece, substantially as set forth.

2. The combination of the rigidly-connected cross-piece B with the bent knee and beam, substantially as set forth.

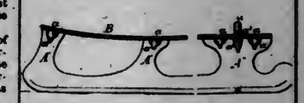
6,409. TOY BUILDING-BLOCKS. Charles M. Crandall, Montrose, Pa., assignor to C. M. Crandall & Co., same place. Patent No. 61,721, dated Feb. 5, 1867; reissue No. 5,356, dated Mar. 30, 1875. [Filed Apr. 26, 1875.]



1. As a new article of manufacture, children's building-blocks or other toys, constructed with interchangeable mortise-and-tenon joints, substantially as described, so that the several parts of the toy, irrespective of size or shape, may be fitted together and retain any desired position or combination by the clamping or friction caused by one part fitting or entering into another part, substantially as and for the purpose set forth.

2. Children's toys provided with one or more jaws, grooves, recesses, or similar clamping devices, within which corresponding tongues, tenons, or other projections of the toy are fitted, and retained in position by friction alone, substantially as described, so that a given combination and arrangement of the several parts is maintained, as specified.

6,410. SKATES. Oliver Edwards, Florence, Mass. Patent No. 154,176, dated Aug. 18, 1874. [Filed Jan. 15, 1875.]



1. The skate-runner A, with its risers A' and A'', rivets *a*, button or stud *a''*, and their enlarged bases *a'*, in one piece of metal, in the manner and for the purpose described.

2. The skate-runner A, having rivets *a*, stud *a''*, with their enlarged bases *a'*, in combination with the plates B and B', substantially as and for the purposes described.

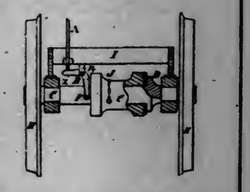
3. A skate-runner, A, with its risers A' and A'', rivets *a a a a*, and their enlarged bases *a'*, in one piece of metal, as described.

4. A skate-runner, A, with its risers A' and A'', rivets *a a a a*, their enlarged bases *a'*, and projections *d d*, in one piece of metal, as described.

5. A skate-runner, A, with its risers A' and A'', rivets *a a a a*, button *a''*, and their enlarged bases *a'* and projections *d d* in one piece of metal, substantially as described.

6,411. CAR-BRAKES. Albert F. Gue, Chicago, Ill., assignor to Luman Jenison, Jenisonville, Mich., Jas. M. Kelly and Geo. R. Plumbe, Austin, Ill., and Saml. W. Comings and George F. Field, Boston, Mass. Patent No. 151,118, dated May 19, 1874. [Filed Mar. 5, 1875.]

Brief.—Brakes operated by winding chain on sleeve, made to rotate axle by friction-clutches provided with pad.



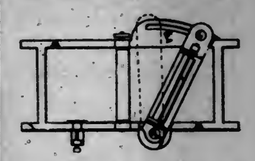
1. In a car-brake, the combination of collar D, frictional pad E, spool C, and devices for forcing the spool against the pad, substantially as and for the purpose set forth.

2. In a car-brake, the lever A, provided with the cam *m*, in combination with the clutch-lever B, substantially as and for the purpose set forth.

3. In a car-brake, the combination of chain J, sheaves K L, pad E, lever O, and spool C, substantially as and for the purpose set forth.

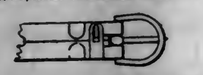
6,412. PLANING-MACHINES. O. G. Howes, Fort Ann, N. Y., assignor of one-half interest to Wm. R. Norris, same place. Patent No. 149,128, dated Mar. 31, 1874. [Filed Apr. 16, 1875.]

Brief.—The sides of paneled doors and similar articles are dressed by means of an unyielding bed, in connection with a revolving cutter-head, secured at any angle, other than a right angle, to the sides of the machine.



The cutter-head C, attached to the bed, as shown and described, in combination with the frame A of a planing-machine, as and for the purposes herein specified.

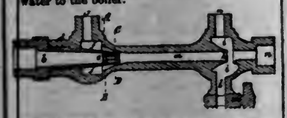
6,413. PROCESSES OF MANUFACTURING HARD SUGAR. Frans O. Matthiessen, New York, N. Y. Patent No. 161,404, dated May 30, 1870. [Filed Apr. 23, 1870.]



As an improvement in manufacturing hard sugar, the process herein described, which consists in removing the sugar from the molds in which it is purged and drained while it is yet soft, and when so removed cutting it into slabs of the desired thickness, and in cutting such slabs into pieces of the required size, and then subjecting such pieces to the drying operation, as and for the purposes specified.

6,414. INJECTORS. Wm. Randall, Salem, Mass., assignor of one-half interest to J. M. Crocker. Patent No. 140,414, dated Apr. 7, 1874. [Filed Mar. 29, 1875.]

Brief.—The overflow parts are so constructed and provided with pipe and valve, connecting them with a water-heater, as to operate as a secondary injector, to feed heated water to the boiler.



1. The combination of the nozzle *b* and the T-pipe *e*, arranged in manner and to operate substantially as specified.

2. The combination of the nozzle *b* and its T-pipe *e*, with the annular chamber *f* and the pipe or induct *g*, all being arranged substantially as explained and represented.

3. The combination of the nozzle *b*, annular chamber *f*, and the pipe or induct *g*, with the nozzle *h*, annular chamber *i*, feed-pipe or induct *k*, and the delivery-pipe *n*, all being arranged and applied substantially as specified and shown.

4. The combination of the discharge-pipe *l*, and stop-valve *m*, the nozzle *h*, annular chamber *i*, induct *k*, educt *a*, conduit *c*, nozzle *b*, annular chamber *f*, and induct *g*, all being arranged and applied substantially as shown and described.

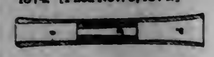
6,415. SPINDLE-BOLSTERS FOR SPINNING-MACHINES. G. Richardson, Lowell, Mass., assignor of one-half interest to the Lowell Machine-Shop. Patent No. 142,625, dated Mar. 17, 1874. [Filed Oct. 28, 1874.]

Brief.—Similar to Patent No. 143,783, but applied to a long bolster, and combined with a channel or groove, to conduct the oil from the educt down into the reservoir.



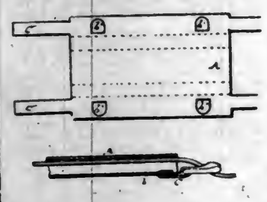
The bolster, constructed so as when in use to extend into the bobbin and above its base or lower end, and provided with the reservoir or trough *c*, one or more capillary inducts, *e*, one or more helical grooves *b*, and educt, *d*, and the connecting channel or groove *f*, all arranged substantially as specified.

6,416. BOBBINS FOR SPINNING-MACHINES. G. Richardson, Lowell, Mass., assignor of one-half interest to the Lowell Machine-Shop. Patent No. 142,626, dated Mar. 17, 1874. [Filed Nov. 9, 1874.]



The ring-spinning bobbin, constructed with the middle adhesive spindle-bearing D, and end the two chambers *a d*, open at their outer ends, without having at either of such ends an adhesive spindle-bearing, all being substantially as specified.

6,417. STRAP-LOOPS. Samuel C. Talcott, Ashtabula, Ohio. Patent No. 164,727, dated Sept. 1, 1874. [Filed Mar. 26, 1875.]



1. The loop A provided with the ties C, having the notches *a'*, in combination with the tie E, constructed as specified, and arranged to operate between the buckle and slots *b'* of the loop, all substantially as and for the purpose specified.

2. A loop, A, having ties C, constructed with relation to the slots *b'* to be folded and bent to hold the buckle B, substantially as specified.

3. The blank shown in Fig. 5, for the uses and purposes substantially as shown and described.

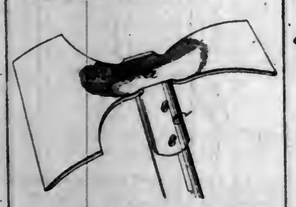
6,418. SPRING-BOTTOMS FOR BEDS. Jesse L. Branson and August Juergens, Cincinnati, Ohio. Patent No. 166,272, dated Oct. 27, 1874. [Filed Feb. 23, 1875.]



1. In combination, the metal strap, and the flat strip or strips of spring-tempered steel, spirally bent, connected to each other substantially as shown and described.

2. The combination, with a spirally-bent flat strip or strips, of two metal steadying bars or straps, the bars or straps being placed at opposite sides of the coiled strip, and fastened at each coil to said strip, substantially as shown and described.

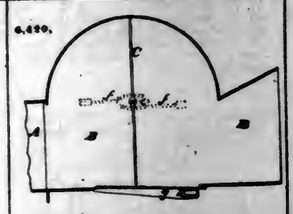
6,419. HOES. Moses Johnson, Three Rivers, Mich., assignor to the Union Manufacturing Company. Patent No. 159,332, dated Feb. 2, 1875. [Filed Mar. 30, 1875.]



1. A hoe, the contracted portion *a* of which forms an unbroken arch from edge to edge in cross-section, and flares toward the blade, and is flush therewith at its terminus, substantially as shown and described.

2. In a hoe, the cave C C, combined with the narrow curved portion *a*, substantially as described.

6,420. STRAW-FEEDING ATTACHMENTS FOR FURNACES. David Moroy, Watsonville, Cal. Patent No. 135,650, dated Feb. 11, 1873. [Filed Apr. 6, 1875.]



1. The boiler A, having the furnace C, grate D, return flues or tubes *c c*, and stack or chimney B, arranged as described, in combination with the straw-feeding furnace-door attachment, substantially as and for the purpose described.

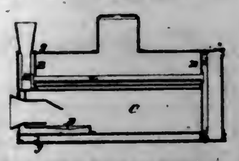
2. In a horizontal steam-boiler, the furnace C, formed with a grate, D, to serve as a fireplace, in combination with shell return-flues *c c*, when the tubes and tube-sheets are secured by flanges *f* and bolts *g*, so as to be removable from the shell in a body, substantially as and for the purpose described.

6,421. BOOTS AND SHOES. Wm. F. Prusha and Elisha L. Wales, Marlborough, Mass., assignor, by mesne assignments, to Wm. B. Rice, trustee. Patent No. 114,340, dated May 2, 1871. [Filed Apr. 2, 1875.]

1. A leather sole having a crease or indentation, *c*, and projecting struck-up portion *b* for attachment to the upper, substantially in the manner and for the purpose described.

2. A leather toe-tip or projection struck up in one and the same piece with a sole outside of the upper leather, and with a crease or indentation, *c*, substantially as set forth.

6,422. STEAM-BOILERS. Harvey W. Rice, Haywood, Cal. Patent No. 146,614, dated Jan. 20, 1874. [Filed Mar. 17, 1875.]



1. A leather sole having a crease or indentation, *c*, and projecting struck-up portion *b* for attachment to the upper, substantially in the manner and for the purpose described.

2. A leather toe-tip or projection struck up in one and the same piece with a sole outside of the upper leather, and with a crease or indentation, *c*, substantially as set forth.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 19. TUESDAY, MAY 11, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, DISTRICT OF MASSACHUSETTS.

GEORGE G. SAXE *et al vs.* A. H. HAMMOND *et al.*

[*In equity.—Before* SHEPLEY, *J.—January*, 1875.]

Different parties may all infringe by respectively making or selling, each of them, one of the elements of a patented combination, provided those separate elements are made for the purpose and with the intent of their being combined by a party having no right to combine them.

The mere manufacture of a separate element of a patented combination, unless such manufacture be proved to have been conducted for the purpose of aiding infringement, is not, in and of itself, infringement.

A patent which claims the application of means to a musical instrument whereby the air may be agitated to produce a tremulous note "*by agency external to the wind-chest, which shall not check the flow of the air past the reeds*," so as to give a continuous tremulous note, but not cut off the sound and make a succession of notes, is not infringed by the simple making of a fan capable of revolving and the selling of the same to a manufacturer of musical instruments.

Whether such a device would infringe, would depend upon the position and arrangement of it in the organ—whether or not it be placed external to the wind-chest, and whether it be placed so as to cut off the sound and produce a succession of notes, or merely to agitate the air and vary the notes without interrupting their continuity.

Where complainants had licensed large numbers of manufacturers to put a patented tremolo attachment upon their instruments, and had agreed to license all reputable makers who might apply: *Held*, that one who simply made and sold the attachment could not be held as an infringer, unless it appeared that the sale was to an unlicensed manufacturer.

The case of *Wallace and Sons* vs. *Holmes et al.* commented on, with approval.

[*Whitney* and *Betts*, for complainants.
B. E. Valentine and *W. W. Blackmar*, for defendants.]

SHEPLEY, *J.*:

This bill in equity alleges that the respondents infringe certain letters patent reissued to the complainants, as assignees of R. W. Carpenter, on the 5th of October, 1869, No. 3,665, for a "tremolo" attachment to musical instruments. The defendants deny infringement, and allege prior knowledge and use of the patented invention by La Fayette Louis and others more than two years before the date of the application of R. W. Carpenter; and, also, that the same invention and discovery, and the same device described in said patent, and substantial and material parts thereof, were patented on the 18th day of November, 1856, to La Fayette Louis.

If the defendants could be held as infringers of the Carpenter patent, if it be a valid patent, and not anticipated by the devices which were made and used by La Fayette Louis at Chicago and other places, it would be necessary carefully to consider and decide upon the probative force and effect of the testimony in relation to those devices of Louis, which, if the testimony of the witnesses in relation to them is to be received with full credit, acted substantially as agitators to, or reflectors of, the waves or currents of air passing through the reeds in the musical instrument, and not as valves to interrupt the continuity of the musical notes. If they operated in the way first described, they would seem to have operated in the same manner and with the like result as Carpenter's fan-tremolo, although Louis appears to have been ignorant of the philosophy of the operation—a want of knowledge which is imputable as well to Carpenter, and even to those who have the benefit of the theories (which are only claimed to be theories) of the most learned scientists who have testified as experts on this subject.

If, however, the evidence in this record is not sufficient to charge the respondents as infringers of the complainants' patent, it is not necessary to decide that question in this case.

The respondents are manufacturers of supplies of materials which are elemental parts of organs and other musical instruments. They sell to the organ manufacturers. It is not claimed that they have made any musical instruments or sold any in which the tremolo attachments of any kind are arranged, or to which they are applied in any manner. The complainants allege that they (the complainants) have licensed large numbers of manufacturers to put these fans in their organs, and prove that they agreed to license every reputable manufacturer who should apply. There

is no evidence in this record of a sale to an unlicensed manufacturer of organs. The thing made by the defendants is shown by the exhibit produced in the case; a wooden structure of the simplest kind, which is in itself no infringement, and which, in order to constitute an infringement of the complainants' patent, must be placed by an unlicensed manufacturer in a musical instrument, and placed in a certain position in that instrument, external to the wind-chest. A revolving fan is not new. All the respondents make is a fan capable of being made to revolve.

The complainants claim as their invention the application of any means to the musical instrument whereby the air may be agitated to produce a tremulous note "by agency *external to the wind-chest*, which shall not check the flow of the air past the reeds," so as to give a continuous tremulous note, but not cut off the sound and make a succession of notes, instead of a continuation of one note. Whether the fan made by the respondents would infringe this claim when placed in the instrument depends upon the position and arrangement of it in the organ, whether or not it be placed external to the wind-chest, whether it be placed so as to cut off the sound and produce a succession of notes, or merely to agitate the air and vary the musical notes without interrupting their continuity. Even if all these alternative conditions were on the side of infringement there must be the additional element of a sale for use by an unlicensed manufacturer, which is not proved in this case.

The complainants rely upon the case of *Wallace* vs. *Holmes*, (9 Blatchford, C. C. R., 65.) There can be no doubt as to the soundness of the conclusions of the court in that case, or the cogency of the reasons given by the learned judge (Woodruff) in his opinion. But, without rehearsing the facts in that case, it is sufficient to say that they were very different from the case now before the court; the gist of the decision in that case was, that the actual concert of the makers of the different elements in the combination was a certain inference from the fact in that case and the distinct efforts of the defendants to bring into use those elements of the combination which comprised the whole invention, although they could not be used without adding one other element, were found to be proved. No such state of facts is proved in this case, as has already been shown.

I must, therefore, repeat what I stated to counsel at the argument of the cause. As defendants only make one element of the patented invention, in order to hold them guilty, I must find proof connecting them with the infringement. Different parties may all infringe by respectively making or selling, each of them, one of the elements of a patented combination, provided those separate elements are made for the purpose and with the intent of their being combined by a party having no right to combine them. But the mere manufacture of a separate element of a patented combination, unless such manufacture be proved to have been conducted for the purpose and with the intent of aiding infringement, is not, in and of itself, infringement. A patent is valid for a new combination of old elements. A person who uses one or more of the old elements is not an infringer, unless he uses the new combination. (*Prouty* vs. *Ruggles*, 16 Peters, 336, 341; *Byam* vs. *Farr*, 1 Curtis, C. C. R., 260, 265; *Foster* vs. *Moore*, ib. 279, 288; *Eames* vs. *Godfrey*, 1 Wall., 78, 79.) The use of a part less than the whole is no infringement.

I infer from the remarks of counsel at the argument that, although respondents deny infringement, and do not waive this defense, it is desired that the court should pass upon the question of the validity of the interfering patents for the respective inventions of Louis and Carpenter. If the court should find the complainants' patent to be valid, no decree could be made in their favor, as respondents do not infringe. To find the complainants' patent invalid, in a case in which the defendants do not infringe, would partake too much of the nature of a moot case.

Complainants' bill dismissed.

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The GAZETTE contains the decisions of the Commissioner of Patents, and such decisions of the courts in patent causes as are believed to possess general interest to inventors and patentees.

During the past year a complete synopsis of foreign patent laws, prepared by members of the British Legation in foreign countries, has been printed in the GAZETTE. Also an epitome of the proceedings of the Vienna International Patent Congress, with the action of that body to perpetuate itself. Matters of this character will receive further attention in the GAZETTE.

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DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date May 11, 1875.]

8,315 and **8,316.—Fancy Cassimeres.**—FREDERICK S. BOSWORTH, Providence, R. I., assignor to THE WEYBOSSET MILLS, same place.—Nos. 1 and 2. Applications filed April 12, 1875. Term of patents 7 years.

8,317.—Font of Printing-Types.—JAMES M. CONNER, Greenville, N. J. Application filed February 26, 1875. Term of patent 14 years.

8,318 to **8,320**, inclusive.—**Embroidery Patterns.**—EMIL CRISAND, New Haven, Conn., assignor to HENRY ST. JOHN, same place.—Cases A A, B B, and C C. Applications filed May 4, 1875. Term of patents 3½ years.

8,321.—Toy Money-Boxes.—CHARLES M. FERGUSON and WILLIAM F. GILBERT, Derby, Conn. Application filed April 22, 1875. Term of patent 3½ years.

8,322.—Shanks of Table-Forks.—JOSEPH W. GARDNER, Shelburne, Mass. Application filed March 18, 1875. Term of patent 7 years.

8,323.—Wainscoting.—JAMES MILNE, Philadelphia, Pa. Application filed April 26, 1875. Term of patent 3½ years.

8,324.—Medal.—JOHN H. SCHREINER, Philadelphia, Pa. Application filed April 21, 1875. Term of patent 3½ years.

8,325.—Vase-Pedestal.—WILLIAM TWEEDDALE, Brooklyn, N. Y. Application filed April 24, 1875. Term of patent 7 years.

8,326.—Fancy Cassimere.—WILLIAM B. WEEDEN, of Providence, R. I., assignor to THE WEYBOSSET MILLS, same place. Application filed April 12, 1875. Term of patent 7 years.

8,327.—Coffin-Handle Socket.—GILBERT ROGERS, West Meriden, Conn., assignor to C. ROGERS & BROTHERS, same place. Application filed May 4, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date May 11, 1875.]

2,440.—Mustard and Spices.—PINCKNEY, JACKSON & Co., New York, N. Y., Chicago, Ill., and London, England. Application filed April 22, 1875.

"a monogram composed of the letters 'P., J. & Co.' as a center, surrounded by a double circle, on the inner one of which are inscribed the words 'QUALITY, PURITY, UNIFORMITY,' with the letter 'Y' at the end of each of said words, enlarged and elongated toward said center."

2,441.—Salve.—JOHN W. ROTHSCHILD, St. Louis, Mo. Application filed December 12, 1874.

"words Invincible Salve, arranged, preferably, as shown in the accompanying fac-simile, below a portrait of myself."

2,442.—Pins.—STAR PIN COMPANY, Birmingham, Conn.—Case A. Application filed March 13, 1875.

"'ORIENTAL PINS.'"

2,443.—Pins.—STAR PIN COMPANY, Birmingham, Conn.—Case B. Application filed March 13, 1875.

"words 'Merchants' ADAMANTINE PINS.'"

2,444.—Pins.—STAR PIN COMPANY, Birmingham, Conn. Application filed March 6, 1875.

"The representation of five-pointed stars, and the word 'star.'"

2,445.—Pins.—STAR PIN COMPANY, Birmingham, Conn.—Case D. Application filed March 27, 1875.

"words 'STAR PIN.'"

2,446.—Pins.—STAR PIN COMPANY, Birmingham, Conn.—Case E. Application filed April 10, 1875.

"words 'Star Pin Company' with five-pointed star beneath them."

2,447.—Coal.—THE LYKENS VALLEY COAL COMPANY, Wilconisco, Pa. Application filed April 29, 1875.

"words 'Lykens Valley Coal.'"

2,448.—Coal.—THE MINERAL RAILROAD AND MINING COMPANY, Shamokin, Pa. Application filed April 29, 1875.

"words 'Cameron Coal.'"

2,449.—Coal.—THE SUMMIT BRANCH RAILROAD COMPANY, Williamstown, Pa. Application filed April 29, 1875.

"words 'Franklin Coal of Lykens Valley.'"

2,450.—Whisky.—H. K. THURBER & Co., New York, N. Y. (Re-registration.) Application filed June 15, 1852.

"words 'Century Whiskey.'"

2,451.—Roasted Coffee.—ZOLLER & LITTLE, Baltimore, Md. Application filed April 23, 1875.

"words 'NEW MOON,' and a landscape view in which the representation of a new moon is seen in the clouds above a city, and its sheen is thrown across a sheet of water in the foreground."

2,452.—Roasted Coffee.—ZOLLER & LITTLE, Baltimore, Md. Application filed April 23, 1875.

"words 'BETSY'S CHOICE,' and a picture of a male and female figures at a table, on which is represented a coffee-urn."

2,453.—Gin.—ADAMS & TAYLOR, Boston, Mass. (Re-registration.) Application filed January 4, 1872.

"Inside two concentric circles is a representation of a honeysuckle plant, or a spray of the same. Upon each side of the spray is an initial letter of one of the firm-names. Between the said circles are the following: 'Honey-Suckle' and 'Schiedam,' the former above, and the latter below, the spray."

2,454.—Fertilizers.—JOSIAH J. ALLEN'S SONS, Philadelphia, Pa.—Case A. Application filed April 15, 1875.

"words 'SOLUBLE MARINE GUANO.'"

2,455.—Fertilizers.—JOSIAH J. ALLEN'S SONS, Philadelphia, Pa.—Case B. Application filed April 15, 1875.

"word 'PELICAN.'"

2,456.—Baking-Powder.—ATKINS & LADD, New York, N. Y. Application filed April 10, 1875.

"a representation of a suspension-bridge."

2,457.—Writing-Paper.—ABEL BEACH, Iowa City, Iowa. (Re-registration.) Application filed December 14, 1872.

"an outline-map, in miniature, of the State of Iowa."

2,458.—Oatmeal.—S. G. BOWDLEAR & Co., Boston, Mass. Application filed April 14, 1875.

"'B B Oat Meal. S. G. B. & Co.'"

2,459.—Wagon-Axles.—D. ARTHUR BROWN & Co., Fisherville, N. H. (Re-registration.) Application filed November 19, 1870.

"'Concord, N. H., Use.'"

2,460.—Wagons.—S. N. BROWN & Co., Dayton, Ohio. (Re-registration.) Application filed October 17, 1871.

"words 'The Trade Wagon.'"

2,461.—Tobacco.—DAVID BUCHNER, New York, N. Y. Application filed May 3, 1875.

"words 'SUN FLOWER.'"

2,462.—Twines, Yarns, Shoe-Threads, &c.—CABLE FLAX MILLS, Schaghticoke, N. Y. (Re-registration.) Application filed April 1, 1872.

"words 'Cable Flax Mills.'"

2,463.—Whisky.—F. CHEVALIER & Co., San Francisco, Cal. (Re-registration.) Application filed September 4, 1872.

"word 'Castle.'"

2,464.—Stopping for Dental Purposes.—IRA COLE, Norwalk, Conn., administrator of ASA HILL, deceased. Application filed March 30, 1875.

"words 'Hill's Stopping,' and directly below said words a copy of his autograph, 'A. Hill, D. D. S.'"

2,465.—Blasting Squibs and Fuses.—SAMUEL HARRIES DADDOW, St. Clair, Pa. (Re-registration.) Application filed October 21, 1872.

"two parallel bars, representing squibs held in place at either end by a St. Andrew's cross encompassing the words 'Miners' Safety Squib and Fuses, Fire, water, and gas proof.'"

2,466.—Champagne-Wine.—F. DE BARY & Co., New York, N. Y. (Re-registration.) Application filed December 21, 1872.

"words and letters 'G. H. Mumm & Co.,' 'Reims,' the figure of an eagle in an upright position, front view, with extended wings and uplifted head, *regardant*, clasping an olive-branch in his talons, a circle, and the words and letters 'G. de Bary,' and two stars."

2,467.—Cigars.—F. DE BARY & Co., New York, N. Y. (Re-registration.) Application filed January 18, 1873.

"words 'El Principe de Gales,' used in combination with the fac-simile signature of 'Vicente Martinez Ybor.'"

2,468.—Lead-Pencils.—EAGLE PENCIL COMPANY, New York, N. Y. Application filed April 29, 1875.

"'Chromo.'"

2,469.—Churn.—WILLIAM P. EMMERT, Freeport, Ill. Application filed May 1, 1875.

"word 'CLIMAX,' in connection with the word 'Churn.'"

2,470.—Hams.—EVANS, LIPPENCOTT & CUNNINGHAM, Cincinnati, Ohio. (Re-registration.) Application filed June 15, 1872.

"a figure representing an American shield, containing the thirteen stars and stripes or bars, in connection with the words 'Banner Hams.'"

2,471.—Medicine.—COCHRAN FLEMING, Sewickley, Pa. (Re-registration.) Application filed March 23, 1872.

"the fac-simile of the signatures of 'Fleming Bros.,' and 'C. McLane.'"

2,472.—Medicine.—COCHRAN FLEMING, Sewickley, Pa. (Re-registration.) Application filed March 23, 1872.

"the fac-simile of the signatures of 'C. McLane' and that of 'Fleming Bros.'"

2,473.—Medical Preparation.—HENRY D. FOWLE, Boston, Mass. Application filed April 1, 1875.

"words 'Original Pile and Humor Cure,' with two different monograms of my initials, viz., 'H. D. F.'"

2,474.—Silk Goods.—LOUIS FRANKE, New York, N. Y. Application filed April 3, 1875.
"the representation of a shield with a silk-worm on a mulberry leaf in the center of the same, and two shuttles above, and two cocoons below."

2,475.—Cakes, Crackers, and Biscuits.—D. B. FULLER & Co., Philadelphia, Pa. Application filed May 5, 1875.
"a picture of our patented cake-machine, with the figure of a workman engaged at his work near it."

2,476.—Coffee.—JAMES W. HAMBLET, Brooklyn, N. Y. Application filed May 3, 1875.
"word 'Cream.'"

2,477.—Cotton and Woolen Fabrics.—HAMILTON WOOLEN COMPANY, Southbridge, Mass. (Re-registration.) Application filed July 5, 1872.
"words 'Red Riding Hood Alpaca.'"

2,478.—Cotton and Woolen Fabrics.—HAMILTON WOOLEN COMPANY, Southbridge, Mass. (Re-registration.) Application filed July 5, 1872.
"words 'Niobe Alpaca.'"

2,479.—Whisky.—HOFFHEIMER BROTHERS, Cincinnati, Ohio. Application filed April 28, 1875.
"words 'OLD HOMESTEAD.'"

2,480.—Anti-Friction Metal and Journal Bearings.—I X L METAL COMPANY, St. Louis, Mo., and Sacramento, Cal. (Re-registration.) Application filed January 27, 1873.
"letters 'I X L.'"

2,481.—Canned Goods.—KEMP, DAY & Co., New York, N. Y. Application filed May 3, 1875.
"word 'BELL' and the figure of a bell."

2,482.—Shirtings, &c.—LANGDON MANUFACTURING COMPANY, Manchester, N. H. (Re-registration.) Application filed February, 28, 1872.
"letters 'G. B.'"

2,483.—Medicine.—LEE & BROTHERS, Ridgewood, N. Y. (Re-registration.) Application filed January 14, 1871.
"letters 'A. R. L.'"

2,484.—Whisky.—LILIENTHAL & Co., San Francisco, Cal. Application filed April 23, 1875.
"words 'Cyrus Noble,' 'Old Bourbon,' and the device of three coronets."

2,485.—Dress-Shields.—H. D. & R. LOCKWOOD, Boston, Mass. Application filed April 7, 1875.
"word 'Royal.'"

2,486.—Preserved Fish.—ISRAEL C. MAYO, Gloucester, Mass. (Re-registration.) Application filed December 22, 1871.
"word 'Pescatine.'"

2,487.—Woolen Cloth.—MIDDLESEX COMPANY, Lowell, Mass. (Re-registration.) Application filed December 14, 1871.
"word 'Yacht.'"

2,488.—Wrought-Iron Pipe, Tubing, &c.—NATIONAL TUBE-WORKS COMPANY, Boston, Mass., and McKeesport, Pa. Application filed March 27, 1875.
"letter 'B,' surrounded by a rhombus.'"

2,489.—Tobacco.—WILLIAM F. NOLEN, Brooklyn, N. Y. Application filed April 3, 1875.
"words 'DUBLIN CUT CAVENDISH.'"

2,490.—Horse-Nails.—NORTHWESTERN HORSE-NAIL COMPANY, Chicago, Ill. (Re-registration.) Application filed December 17, 1870.
"words 'Western Horse-Nail.'"

2,491.—Telegraph Instruments and Appurtenances.—PARTRICK & CARTER, Philadelphia, Pa. Application filed April 13, 1875.
"word 'CHAMPION.'"

2,492.—Medical Fluid Compound.—PIERRE E. PICAULT, Montreal, Canada. Application filed March 23, 1875.
"word 'Treasure,' or the French word 'Trésor.'"

2,493.—Ladies' and Gentlemen's Collars and Cuffs.—PINE, MILLER & DUNHAM, Troy, N. Y. Application filed April 30, 1875.
"word 'CENTENNIAL.'"

2,494.—Cigars.—PINCUS POHALSKI, New York, N. Y. Application filed April, 23, 1875.
"words 'Monte-Cristo.'"

2,495.—Milk.—JULIUS R. POND, New York, N. Y. Application filed May 1, 1875.
"words 'PEARL MILK.'"

2,496.—Plantation-Wagons.—WILLIAM M. PRICE, St. Louis, Mo. Application filed May 4, 1875.
"words and letters 'THE GRANGE WAGON, P. of H.'"

2,497.—Fertilizing Material.—CHARLES O. ROOT, Binghamton, N. Y. Application filed April 1, 1875.
"letters 'A. P.' and the word 'Ash.'"

2,498.—Gin.—I. D. RICHARDS & SONS, Boston, Mass. (Re-registration.) Application filed October 30, 1871.
"representation of a thistle."

2,499.—Baking-Powder.—STOCKDALE, SMITH & Co., Baltimore, Md. Application filed April 29, 1875.
"words 'Patapsco Baking-Powder and the monogram P. B. P.'"

2,500.—Cooking-Stoves.—SHINNICK, WOODSIDE & GIBBONS, Zanesville, Ohio. (Re-registration.) Application filed September 7, 1872.
"word 'Sensation.'"

2,501.—Friction-Matches.—THE SWIFT & COURTNEY & BEECHER COMPANY, New Haven, Conn. Application filed May 1, 1875.
"words 'THREE NOES,' in combination with a trinasal device of a human face.'"

2,502.—Yeast.—THE NATIONAL YEAST COMPANY, Seneca Falls, N. Y. (Re-registration.) Application filed December 10, 1870.
"the illustration of an eagle in suitable posture, and of the words 'National Dry-Hop Yeast.'"

2,503.—Medicine.—GEORGE TALCOT, Brooklyn, N. Y. Application filed April 29, 1875.
"words 'MAGIC CURE.'"

2,504.—Pills.—GEORGE TALCOTT, Brooklyn, N. Y. Application filed April 29, 1875.
"words 'MAGIC PILLS.'"

2,505.—Stoves and Ranges.—THOMAS, ROBERTS, STEVENSON & Co., of Philadelphia, Pa. Application filed April 17, 1875.
"words 'HARVEST HOME.'"

2,506.—Printing-Presses, &c.—JOB C. TRIPP, Fairhaven, Mass., assignor to BOSTON AND FAIRHAVEN IRON WORKS. (Re-registration.) Application filed January 13, 1873.
"words 'Improved Fairhaven.'"

2,507.—Watches.—JOHN W. TUCKER, San Francisco, Cal. Application filed May 1, 1875.
"word 'MINER.'"

2,508.—Watches.—JOHN W. TUCKER, San Francisco, Cal. Application filed May 1, 1875.
"word 'PALACE-CAR,' and the figure of a palace-car."

2,509.—Fertilizer.—J. J. TURNER & Co., Baltimore, Md. (Re-registration.) Application filed July 25, 1870.
"word 'Excelsior.'"

2,510.—Medical Compound.—ERNST A. WEBER, Brooklyn, N. Y. Application filed April 3, 1875.
"words 'Weber's Alpine Herb Tea,' or, in German, 'Weber's Alpin Kräuter Thee,' in connection with the portrait of the applicant."

2,511.—Wine.—WELLINGTON, KIDDER & Co., New York, N. Y. Application filed March 22, 1875.
"letters and figures 'L D,' in a triangle, and '1831' immediately underneath."

2,512.—Plows, Cultivators, &c.—WIARD & HOUGH, East Avon, N. Y. (Re-registration.) Application filed March 20, 1872.
"a character consisting of a combination of five circles or rings, viz., one in the center; one above the center; one below the center; one on the right of the center; and one on the left of the center."

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date May 11, 1875.]

233.—Title: "**Blut & Säfte Reinigungs Thee.**"—L. HERZINGER, New York, N. Y. Application filed May 1, 1875.

234.—Title: "**Duane Mills.**"—WALTER V. CLARK & EDW. HUNTINGTON, New York, N. Y. Application filed May 3, 1875.

235.—Title: "**Sperry's Cough and Croup Sirup.**"—DR. H. J. WIERS, Hartford, Conn. Application filed April 24, 1875.

236.—Title: "**H. H. Elliott's Pain-Reliever.**"—HORACE H. ELLIOTT, Boston, Mass. Application filed April 28, 1875.

237.—Title: "**Dr. I. J. Sperry's Female Monthly Pills.**" Dr. H. J. WIERS, Hartford, Conn. Application filed April 24, 1875.

238.—Title: "**Hand-Loom Silk.**"—EDWARD M. BENJAMIN, New York, N. Y. Application filed April 3, 1875.

239.—Title: "**National Rubber Co., Providence, Rhode Island.**"—NATIONAL RUBBER CO., Providence, R. I. Application filed April 12, 1875.

APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., May 19, 1875.

On the petition of ANN JENNETTE HATHAWAY, of Milwaukee, Wis., executrix of JOSHUA HATHAWAY, deceased, authorized by act of Congress approved February 18, 1875, praying for the extension of a patent granted to the said JOSHUA HATHAWAY, on the 3d day of April, 1860, for an Improvement in Devices for Converting Reciprocating into Rotary Motion,

It is ordered that the testimony in the case be closed on the 20th day of July next; that the time for filing arguments and the Examiner's report be limited to the 30th day of July next; and that said petition be heard on the 4th day of August next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

INDEX OF INVENTIONS PATENTED MAY 11, 1875.

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Anger and auger bit, W. Tucker	29	163,282
Auger, earth, H. Cull	51	163,159
Bale tie, J. B. Arrants	7	163,133
Bale tie, C. J. Beasley	7	163,138
Bank notes, &c., needle board for registering, J. D. Smith	117	163,271
Bed bottom, spring, B. P. Noteman	62	163,234
Bed bottom, spring, C. D. Rawson	62	163,106
Bed, spring, C. L. Alvord	62	163,131
Bell, door, F. M. Johnson	24	163,015
Bill file, M. Langhorne	146	163,216
Blank and envelope, combined, Gross and Kelchner	146	163,185
Blind slat adjuster, S. M. G. Lund	24	163,019
Blind slats and rods, machine for wiring, W. S. Gray	30	163,065
Blind stop, N. Holz	24	163,073
Boiler, circulating steam, L. Knight	148	163,062
Boiler feeder and regulator, T. G. Gardner	146	163,177
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Boot and shoe heels, metal wear plate for the treads of, J. M. Ewing	16	163,004
Bottle stopper, T. W. Murray	1	163,026
Bottles, apparatus for cleaning, A. Bosquet	1	163,045
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Broom handle socket, J. H. Pitts	22	163,245
Broom press, A. Boyer	52	162,997
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Buckle, M. Hester	23	163,195
Buckle, Himelrigh and Smith	23	163,070
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Car, street, J. Stephenson, (reissue)	121	6,429
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Carriage door, G. Shaffner	31	163,208
Carriage spring, H. Sprague	31	163,112
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Dripping stand for vessels, H. C. Collison	88	162,998
Egg carrier, J. L. Stevens	116	163,274
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Gas regulator, I. Rehn	64	163,255
Gate, automatic, H. Krom	52	163,084
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Kaleidorama, Ferris and School	157	163,173
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Leather punching machine, H. Mott	92	163,096
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Pipes, shield for, H. Patmont	167	163,241
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Railway, elevated, J. M. Hannahs	120	163,189
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Railway tie, H. Reese	120	163,254
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Separator, grain, H. Kurth	159	163,214
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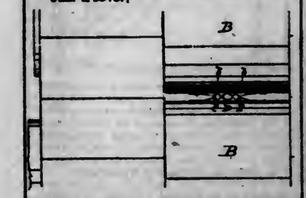
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TITLES, DRAWINGS, AND CLAIMS

OF

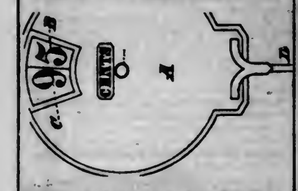
PATENTS GRANTED MAY 11, 1875.

163,201. MACHINES FOR POINTING STAPLES. John Adt, New Haven, assignor to the Stanley Works, New Britain, Conn. [Filed Jan. 4, 1875.]



In a machine for swaging or pointing staple-legs, the rollers B E, provided with dies C D E, having tapering V-shaped recesses b b, formed at the junction of the parts C D E, distant from one another equal to the distance from one another of the two limbs of the staple, all substantially as described.

163,202. INDICATORS. Fayette M. Amsden, Middleborough, and Marcus B. Amsden, Clinton, Mass. [Filed Oct. 12, 1874.]



The card B, containing the ordinals and slots C, arranged between and in combination with the card C, marked with the digits, and card A, provided with the opening F and tine D, all operating as and for the purpose set forth.

163,204. TOY DANCERS. H. C. Barton, East Hampton, Conn. [Filed Oct. 16, 1874.]

Brief.—By slight agitation of the plate while held in the hand the figure dances, moves in a circle, and the bell-wire furnishes appropriate music.



1. In a toy, the combination of the plate A, provided with a handle, a, and having a socket, c, and the wire B, bent to fit the socket, extending over the face of the plate, projecting upward, and carrying a jointed figure, F, as set forth.

2. The combination, in a toy, of the plate A, having a handle, a, and a wire bail, D, arranged below the plate, to strike the latter when vibrated, as described.

3. The combination, with a plate, A, constructed to be supported by the hand of a jointed figure, F, connected to a wire attached to the plate, and a bell, D, secured below the plate, so that the movement of the figure and the sounding of the bell are both effected by agitating the plate, as specified.

163,222. FEED-GAGES FOR CYLINDER PRINTING-PRESSES. Henry Barth, Cincinnati, Ohio. [Filed Jan. 12, 1876.]

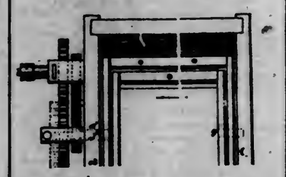
Brief.—The gage is secured in a depression in the cylinder, instead of on the feed-board, and is adjustable by set-screws.



In combination with the impression-cylinder of a printing-press, a gage of guide, when said gage is made vertically and circumferentially adjustable upon the face of the cylinder, substantially as shown.

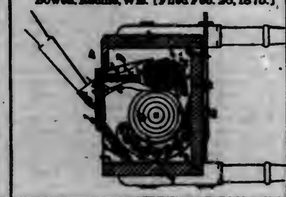
163,205. ROTARY CHURNS. Samuel S. Beckly, Lenark, Ill. [Filed Jan. 20, 1876.]

Brief.—A rotary churn in which, by throwing one of a system of gear-wheels in or out of gear, a motion of rotation in opposite or same directions is given to two dashers.



A churn the dashers b c of which are operated by the combination of the wheels 1 2 3 4 5, the wheel 2 being adapted to be thrown out of gear, so that the dashers will revolve together, substantially as described.

163,206. WASHING-MACHINES. Wm. A. Bowen, Racine, Wis. [Filed Feb. 26, 1875.]



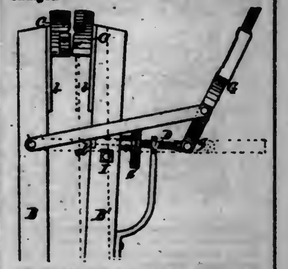
1. In a washing-machine, the vibrating wash-board D, composed of the fluted portion d, the segmental-grooved and plain-surfaced portion d', yielding, lift'-g, and pressing portion d'', side pieces E E, short journals b b, and sockets f f, in the manner and for the purpose specified.

2. In combination with bearings d d, cover-sections b b, rubber bearings l l, and board E, constructed with the portions d d' d'', and with side pieces E E, journals b b, sockets f f, and handles g g, in the manner and for the purpose described.

3. The combination of the circularly-corrugated end pieces C, the segmental roller wash-board E, the vibrating pounding, washing, and rubbing and lifting board D d d' d'', springs s', passages e e', inclined fluted bottom board F, cover-sections b b', sockets f f, journals b b, spring f, and handles g g, all constructed in the manner and for the purpose described.

163,207. BROOM-FRAMES. Aaron Boyer, Galesburg, Ill. [Filed Jan. 9, 1875.]

Brief.—The lever that operates the two clamping-jaws has its short arm adjusted by a thumb-screw, to regulate the movement of the jaws. The faces of the jaws are constructed to hold a broom evenly, firmly, and permit the horizontal seam to be made straight.



1. The stationary upright B and pivoted upright B', having clamps C, and operated by means of the screw-rod D and adjusting-nut e, attached to the pivoted upright, the lever G, and the connecting-rods H, the latter being pivoted to the lever and to the stationary upright, substantially as and for the purpose specified.

2. The clamps C, constructed as described, with an upper concave edge, c', to facilitate sewing, substantially as described, and for the purpose specified.

3. The clamps C, having the projecting side lugs c' and dovetailed projections c, in combination with the gib-plates b'' and fixed plates b, substantially as and for the purpose set forth.

163,208. DRIPPING-STANDS FOR VESSELS. Henry C. Collison, Dover, Del. [Filed Mar. 26, 1875.]

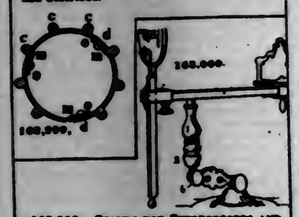


In combination with a close box, case, or stand, A, having side doors B B, the inclined and grooved shelves C C, stop-pieces b b, and receiver D, as and for the purpose described and represented.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

163,099. ROLLED IRON COLUMNS. John S. Cornell and John M. Cornell, New York, N. Y. [Filed Apr. 23, 1875.]

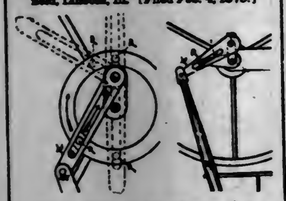
The improved post or column herein described, formed of the rolled segmental ribbed plates *c* with the strips *n o* along one edge set inward when formed in the rolls with the shoulder *m* of the rabbet immediately back of one of the ribs *c*, so that the joint on the outside will come against the side of the rib, and there be practically hidden, and the segments riveted together with the lap-joint *d*, as shown and described.



163,000. STANDS FOR STEREOSCOPES AND GRAPHOSCOPES. James Cremer, Philadelphia, Pa. [Filed Apr. 14, 1875.]

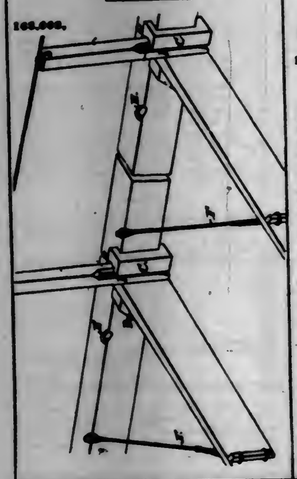
The adjustable stand for stereoscopes and graphoscopes, consisting of the handle 1, the socket-piece 2, the clamping hinge-joint 6, and the base *c'*, the said parts being constructed and arranged substantially in the manner described, for the purposes herein before set forth.

163,001. CRANKS AND LEVERS. A. R. Orthfield, Lincoln, Ill. [Filed Feb. 4, 1875.]



The combination of the stationary shaft O, the revolving shaft *q*, the slotted crank K, the pins *p* and *t*, operating together for the purposes herein described.

163,002.



163,002. STANDS FOR STEREOSCOPES AND GRAPHOSCOPES. James Cremer, Philadelphia, Pa. [Filed Apr. 14, 1875.]

The adjustable stand for stereoscopes and graphoscopes, consisting of the handle 1, the socket-piece 2, the clamping hinge-joint 6, and the base *c'*, the said parts being constructed and arranged substantially in the manner described, for the purposes herein before set forth.

163,003. SHEER-BOOMS. Wm. O. Culbertson, Girard, Pa. [Filed Mar 16 1875.]

1. In a sheer-boom the rudders thereof, adapted to turn on their longitudinal axes, in combination with their operating cords and windlass, and back-stops C, substantially in the manner and for the purpose described.

2. In a sheer-boom the rudders thereof, adapted to rotate on their longitudinal axes so as to present a horizontal or vertical surface to the water, in combination with the stops C and E, and hold-backs F, substantially as described.

163,004. DEVICES FOR TRANSMITTING MOTION. Raphael De Leidi, Brooklyn, N. Y. [Filed Aug 21, 1874.]



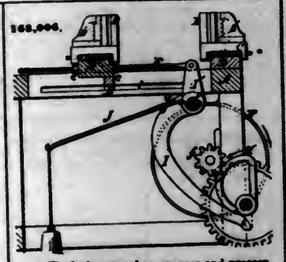
The combination of the tube A and rod B with the two pivoted arms C C, arranged and operating in relation to each other, substantially as represented and described.

163,005. METAL WEAR-PLATES FOR THE TREADS OF BOOT AND SHOE HEELS. Jas. M. Ewing, Washington, D. C., assignor of one-half his right to J. L. McGee, same place. [Filed Mar. 8, 1875.]

Brief.—The metal wear-plate revolves slightly every time the foot strikes the ground.

A circular revolving plate or disk, pivoted at its center, and attached to the under side of a boot or shoe heel, all arranged and operating so that a portion of its perimeter shall correspond with the side of the heel at the point where it first meets the ground, substantially as shown and described.

163,006.



1. The lock-corner-box squarer and presser, consisting of two stationary and two movable angle-blocks, B, said blocks B having recesses *b*, for receiving the corners of the box, and suitable mechanism for bringing the movable blocks toward the stationary blocks, substantially as and for the purpose described.

2. The combination, with a hinged block, B, of bed-plates C and guides D', whereby said blocks may be adjusted laterally, thus corresponding to different-sized boxes, substantially as and for the purpose described.

3. The hinged blocks B, provided with a right-angular mouth and spring B', substantially as and for the purpose described.

4. The block B, provided with an angular recess, *b*, for receiving the ends of the tenons, substantially as and for the purpose described.

5. The combination of the cam H, the lever I I', and rod E with the sliding guide D' and mechanism J K, for causing the said guide D' to recede, substantially as and for the purpose described.

6. The combination, with a screw-cut shaft, E, and nuts *e*, of guide-blocks D and block B, whereby the said blocks may be adjusted to any position on the shaft, substantially as and for the purpose described.

163,007. GAS-BURNERS. William Garland, Boston, Mass., assignor to Chas. A. Shaw, same place. [Filed Mar. 10, 1875.]

Brief.—The flow of gas is regulated by adjusting the inner cap upon the slotted tube.



In a gas-burner, the slotted tube B B, inner cap C, outer cap or casing G G, and tip H, combined to operate substantially as and for the purpose specified.

163,008. SASH-FASTENERS. Jas. B. Gillespie and Galen Coffin, Boston, Mass. [Filed Dec. 23, 1874.]

Brief.—A vertical catch-bolt is incased and secured in the side of the sash, its outwardly-projecting beveled head passing through an aperture in the plate, and resting in notches in the window-frame. There is also a spring of sufficient tension to somewhat more than sustain the weight of the sash, so that while there is no appreciable resistance to raising the sash, a slight downward pressure is required to force the beveled head inward by overcoming the spring. There is additionally a pivoted locking-dog, held in position by the friction of the spring, and operated by a key, by which the dog is turned over against the lower end of the catch-bolt, thus preventing it from being forced inward, and locking the device.



1. The catch-bolt A, with its beveled projecting head *a*, and its stem *b*, suitably attached to the plate B, in combination with the spring C, substantially as shown and described.

2. The dog *f*, in combination with the catch-bolt A, plate B, and spring C, substantially as and for the purpose shown and described.

163,009. SASH-FASTENERS. John Farrell, Pittsburg, Pa. [Filed Feb. 11, 1875.]

1. The combination of a valve closing against the pressure, a screw-ring adjustable in the case or chamber independently of the valve-stem which passes through it, and a spring interposed between the screw-ring and valve, substantially as and for the purposes set forth.

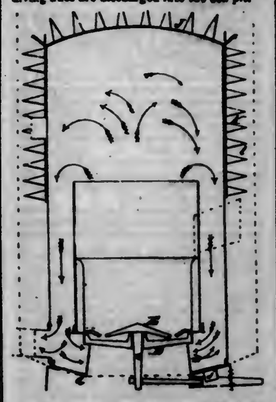
2. The piece *c*, having double inclines in opposite directions, made independent of the cap in which it is seated, in combination with the counter-piece *b*, made independent of the stem which passes through it, but rigidly connected with the handle, the parts being arranged and combined substantially as set forth.

163,010. CLAMPS. Charles H. Fuchs, Sandusky, Ohio, assignor to M. F. Cowdery and J. S. Cowdery. [Filed Feb. 16, 1875.]

Brief.—Wooden boxes formed of pieces with their corners locked may be pressed into shape and squared by means of four laterally and horizontally adjustable spring angle-blocks located upon the top of a suitable frame, and operated upon guides by a cam and lever-arm of peculiar shape, for bringing the blocks together, and imparting pressure thereto, each of the blocks being provided with a recess at the angle for receiving the projecting ends of the tenons.

163,011. HOT-AIR FURNACES. S. J. Gold, Cornwall, Conn. [Filed Sept. 10, 1874.]

Brief.—The serrated radiating-plates may be detachable. Ashes which collect in the diving-flues are discharged into the ash-pit.

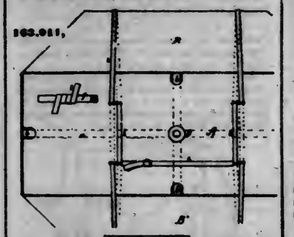


1. The combination, with the shell of the furnace, of radiating-plates, the flat surfaces of which are parallel to and in contact therewith, and studded with projections, substantially as hereinbefore set forth.

2. The combination, with the ash-pit and with a perforated bottom to the smoke-chamber or smoke-flues, of the plate H, whereby the ashes in said smoke chamber or smoke-flues are dumped directly into the ash-pit, substantially as hereinbefore set forth.

3. The combination, with the plate H, of the grate E, projection *j*, and lever *f g*, or its equivalent, substantially as hereinbefore set forth.

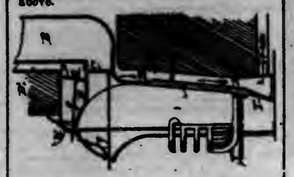
163,012.



3. The strap or straps *i*, combined and arranged with the footable body A, and series of cushions B B', substantially as described.

163,012. GRATES. Walter A. Holbrook, Milwaukee, Wis. [Filed Jan. 8, 1874.]

Brief.—Air can be admitted to the chamber in the rear of the grate from the outside or from the ash-pit, and warm air may be admitted to the room through a register above the fire-place, or be allowed to pass to rooms above.



The combination of the open grate, the fire-back A, the air-space D, the cold-air aperture V, the registers T, the damper G, register H, and chamber or space D', all as and for the purposes specified.

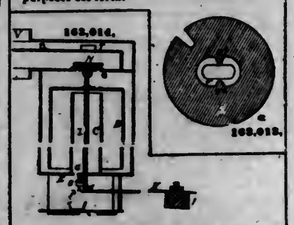
163,013. CHAIN-PUMP BUCKETS. E. Hoyt, Stamford, Conn. [Filed Mar. 20, 1875.]

Brief.—A bucket of india-rubber, with a central hub, also a flange with annular indentations on both sides. In the periphery of the rim is a V-shaped recess. This is connected with the flange of the link by a recess inside the hub. Also, there are two recesses in the link-flange, to receive corresponding projections on the interior of the recess of the bucket-hub.

1. An india-rubber bucket, *a*, constructed with a central hub, *a'*, having the recess *a''*, and provided with projections *a'''*, adapted to be received within recesses on a link, and a flange, *a''*, provided with a V-shaped recess, *b*, substantially as and for the purposes described.

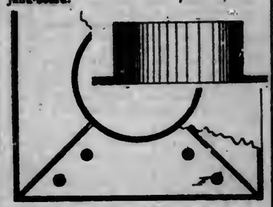
2. A link, *c*, provided with eyes or loops *c'* and a central flange, *c*, formed with recesses *c''* in its periphery, substantially as and for the purposes set forth.

163,014.



163,014. FOUNDERS' PATTERNS. S. J. Gold, Cornwall, Conn. [Filed Mar. 8, 1875.]

Brief.—Patterns composed of sheet-metal outer surfaces, with an interposed filling of junk-board.



1. A founder's pattern, the principal surfaces of which are made of sheet metal and combined with an inner filling, substantially as hereinbefore set forth.

2. A founder's pattern, embodying the combination with the sheet-metal shell or sides, and a filling between them, of strengthening-pieces inserted between the edges or other portions of the outside plates, substantially as hereinbefore set forth.

3. The combination, with the said outside plates and filling above described, of the connections F, connecting the outside plates to each other, substantially as hereinbefore set forth.

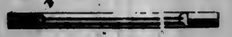
163,015.



163,015. DOOR-BELLS. Frank M. Johnson, Bristol, Conn. [Filed Nov. 3, 1874.]

The star wheel secured to the base-plate A, in combination with suitable springs, lever G, and hammer D, all substantially as described, and for the purpose set forth.

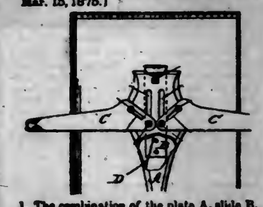
163,016. CARRIAGE-WINDOWS. George A. Keene, Lynn, assignor to himself and G. M. Clapp, Boston, Mass. [Filed Mar. 20, 1873.]



1. The rubber molding B, provided with groove *d* and scarfed into the sash, substantially as described.

2. The rubber molding *e*, framing one side of the glass and clamped into the sash, substantially as described.

163,017. SAFETY ATTACHMENTS TO POCKET-BOOKS. G. S. Knapp, Chicago, Ill. [Filed Mar. 15, 1875.]

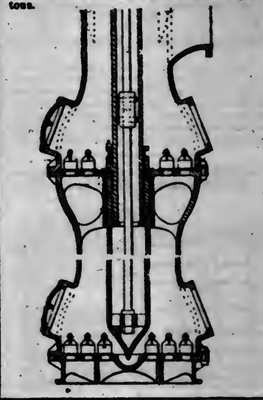


1. The combination of the plate A, slide B, and slotted swinging arms C, as shown and described.

2. In combination with the swinging arms C and slide B, an alarm, D, operated substantially as described.

163,018. PUMPS. Erasmus D. Leavitt, Jr., Cambridge, Mass. [Filed Dec. 7, 1874.]

Brief.—The plunger *a* made of two parts of differing diameters—the smaller rigidly secured to the upper part of the pump-case, and the larger sliding upon it, by which the pump discharges at each stroke a quantity of water equal to the difference in area of the two pistons.



163,019. LIFE-PRESERVING BEDS. Asa G. Haskell, North Andover, Mass. [Filed Mar. 24, 1875.]

1. The life-preserving bed, composed of the floatable body A, and series of cushions B B' hinged together and arranged as specified.

2. The combination of the rotary mouthpiece D, and the series of pipes or conduits *b*, with the body A, and its series of inflatable cushions, arranged and combined substantially as explained.

163,020. GAS-REGULATORS. S. S. Ingalls, Chicago, Ill. [Filed Mar. 11, 1875.]

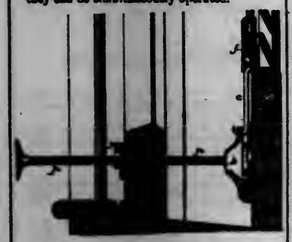
Brief.—A key for insertion between a leg upon the valve-rod and the bottom of the case for cutting off the gas. A lever with adjustable weight attached to the valve-rod.

The valve-rod D, extended through the bottom of the case, in combination with the cap B, upper guides Q Q, weighted lever H I, key K, and pin S, as and for the purpose set forth.

The differential plunger having the two parts of different diameters made separate from each other, the smaller of which is fixed and the larger movable, as described, in combination with the two chambers communicating with other by valves, and operating substantially as described.

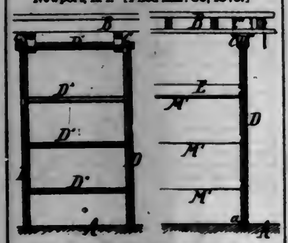
163,019. BLIND-SLAT ADJUSTERS. Sven M. G. Lind, Racine, Wis. [Filed Apr. 3, 1875.]

Brief.—A movable cam or knob, working on a divided plate, is attached by a bulbous-headed pitman to the connecting-rod of the blind, the pitman-head, in connection with a two-part guide, forming a ball-and-socket joint. The knob or cam is operated either by hand, or by the use of a short key, and there is also provided alternately a longer rod, extending into the room, with the key attachment, and there is additionally a connecting-rod or link hooked to the operating-rod of the upper and lower series of blind-slats, by which they can be simultaneously operated.



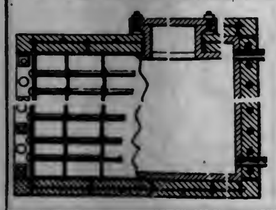
The combination of the divided plate a carrying knob or cam *b*, having stops 2, and adapted to be operated either by hand or by a rod and key, *p o*, extending into the room, the rod or pitman *c* connected with the blind-slat-rod *h* by a ball-and-socket joint, and the two-part guide *f i*, with or without connecting rod or link *l*, all substantially as described and shown, for the purpose set forth.

163,020. SHIPS' BERTHS. James Mahony, Newport, R. I. [Filed Mar. 30, 1875.]



The frames D D¹ D², both turning and sliding vertically in deep loops C, in combination with such loops, allowing vertical motion, and with sockets *a* in the deck below, adapted to support the beds M¹ M², and allow the whole to be readily folded, extended, and firmly placed and supported, as herein set forth.

163,021. TAN-VATS. Charles H. Manning, Washington, D. C. [Filed May 26, 1874.]



A wooden vat or cistern, supported, as shown, by a metallic frame net-work, the whole incased with a covering of artificial stone or cement, as shown and described.

163,022. NURSING APPARATUS. Frank F Marsh and Arthur F. Thompson, Boston, Mass. [Filed Apr. 8, 1875.]

Brief.—Between the rubber nipple and the rubber tube is a short length of glass tube, which carries a mouth-guard as an integral part. This glass connection shows whether the milk is flowing freely or not.

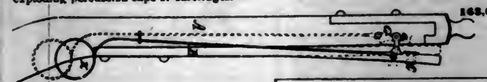


1. The combination of the milk-noter C (or glass piece arranged between the nipple and the elastic tube, to indicate the flow of milk from the tube to the nipple) with the nipple D, the tube B, and the breast-cap A, all being arranged as specified.

2. The milk-noter, as provided with the guard E in one piece with the tube, all as represented.

163,023. TOY GUNS. John B. McHarg, Rome, N. Y. [Filed Mar. 3, 1875.]

Brief.—Relates to that class of toy guns for exploding percussion-caps or cartridges.



1. In a toy gun, the combination of the stock and barrel A and the spring B, having the thimble C, as and for the purposes described.

2. In a toy gun, the combination of the stock and barrel A, the spring B, and the eccentric pivoted lever D, as and for the purpose described.

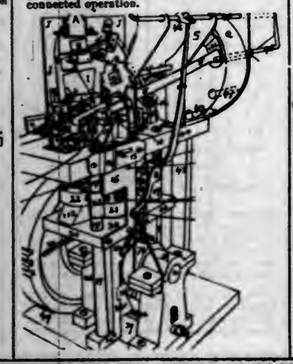
3. In a toy gun, the stock and barrel A, the spring B, the catch-lever G, and the rod I, as and for the purpose described.

4. In a toy gun, the stock and the barrel A, having secured to its forward end the bracket P, in which is secured a detachable thimble, M, as and for the purpose described.

5. In a toy gun, the combination of the stock and barrel A, the spring B, the bracket P, firing-lever N, and thimble M, as and for the purpose described

163,024. MACHINES FOR MAKING AND LOADING CARTRIDGES. Joe V. Meigs, Lowell, Mass. [Filed Dec. 8, 1874.]

Brief.—It consists of a combination of mechanism whereby cartridge-cases are formed from pieces of metal, or partially-completed cases are headed, primed, charged with powder, and the bullet inserted by a continuous and connected operation.



1. The combination of the driving-gear, the crank-shaft, the spring-pawl, the notch in the bearing-surface of the gear, and the compressing-pin for disconnecting the clutch and gear, as set forth.

2. The combination of the crank-shaft the segmental eccentric crank, the carriage, and the sector secured to the carriage, and acted upon by the eccentric portion of the crank, substantially as set forth.

3. The combination of the crank-shaft, the driving-gear, its clutch mechanism, the segmental eccentric crank, the hubs on the crank-shaft, the sliding carriage, the sector thereon, and the sectors secured to the bed-plate, these members being constructed and operating substantially as set forth.

4. The combination of a fixed punch, a moving die-plate, and a resisting-die, locked with the die-plate during the operation of the punch, substantially as set forth.

5. The combination of the hopper, the open-ended feed-drum, the troughs in the feed-drum, the reciprocating push-rod, and the conveying-tube, these members being constructed and operating substantially as set forth.

6. The combination of the conveying-tube, the carrier, the tilting fingers, the tube, and the feed-plate, these members being constructed and operating substantially as set forth.

7. The assorting tilting fingers, constructed and operating substantially as set forth.

8. The combination of the fulminate-reservoir, having an opening in its side, the yielding paddles revolving in the reservoir, and the fulminate-receiver, these members being constructed and operating substantially as set forth

9. The combination of the fulminate-receiver, its sliding sleeve, the vibrating arm, carrying the receiver, and the die-plate, carrying the shell to be primed, these members being constructed and operating substantially as set forth.

10. The combination, in a machine for loading cartridges, of the valved powder-conveying tube, the conveying-tube I, the valved scale-pan, arranged between the tubes, its scale-beam, and the hooked rocking lever, these members being constructed and operating substantially as set forth.

11. The combination, in machines for loading cartridges, of the valved conveying-tube, the valved scale-pan, the rocking lever, connected with the valves of the conveying-tube and scale-pan, the electrically-charged scale-beam, the electro-magnets, and connecting-wires, these members being constructed and operating substantially as set forth.

12. The combination of the main gear, its clutch, the disconnecting-pin, a catch engaging therewith, a lever, and an inspector connected thereby with the catch-rod, these members being constructed and operating substantially as set forth.

163,025. EMERY-WHEELS. S. G. Morrison, Williamsport, Pa. [Filed Aug. 18, 1874.]

Brief.—The emery surface is formed on a corrugated metallic ring, which is applied on a metallic wheel.

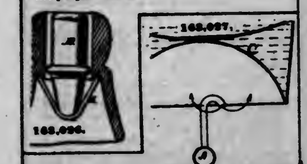


The combination of the metal wheel A and the metal ring B, with their corresponding bevels, and the emery surface *b b*, when used for the purposes substantially as described.

163,026. BOTTLE-STOPPERS. Thomas W. Murray, New York, N. Y., assignor of one-half his right to Henry Van Derbeck, same place. [Filed Mar. 17, 1875.]

Brief.—The hollow ballasted stopper, rising with the liquid, is caught and held fast by the forked springs striking the two projections inside the mouth of the bottle; while the rubber ring, expanding by the gases, hermetically seals it.

A hermetic stopper for gaseous liquids, operating as herein described, made of a hollow shank, D, to which, about midway of its length, is fastened the elastic band B, and at its end or base the forked or double spring S, the latter acting in the two-fold capacity of holding and locking fast the shank D, all working in combination with a bottle having the pendent projection *c*, substantially as and for the purpose set forth.



163,027. APPARATUS FOR MAKING LAMP-BLACK. Peter Neff, Gambier, Ohio. [Filed Mar. 8, 1875.]

Brief.—The water-covered domes depend on all sides. They may be of any-shaped perimeter in plan. When they have sides projecting upward from the base of the dome, such sides are steadied by braces connecting them.

In the manufacture of lamp-black, the combination, with the burner or burners B, of overhanging domes or concave surfaces C, filled with water upon their upper sides, the edges of the said domes or concaved surfaces made to project downward on all sides, to impede the progress and condense the products of combustion therein, substantially as and for the purpose described.

163,028. TRUNK-FASTENERS. Antony V. Romadka, Milwaukee, Wis. [Filed Apr. 10, 1875.]

In a trunk-fastener, the catch C, provided with lips, pivoted in the side of the case B, and, when locked, forming a part of it, in combination with the spring E and hasp or catch b, all constructed and arranged to operate as described.

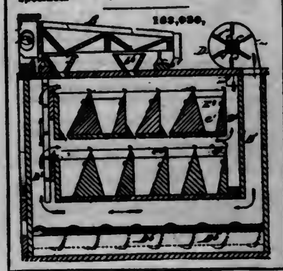


163,029. COPYING-PRESS PADS. Charles Rowland, New York, N. Y., and J. G. Rowland, Quincy, Ill. [Filed Nov. 24, 1874.]

Brief.—Blotting-pads waterproofed on one side.

1. A bibulous paper for blotting and copying purposes, coated on one side with asphaltum varnish, substantially as set forth.

2. A bibulous paper for blotting and copying purposes, coated on one side with asphaltum varnish and litharge, substantially as specified.



163,030. MIDDLINGS-PURIFIERS. Elias Schwab, Lebanon, Ill. [Filed Jan. 13, 1875.]

Brief.—Relative arrangement of air-chambers, fan, and separators, whereby a continuous circulation of air acts upon the middlings in their passage to and from the separators, the air returning to the fan-case, and carrying with it all light impurities, which are finally deposited and carried off in conveyor-chamber

In combination with the separators, the fan and its case D, air-chambers D^1 D^2 D^3 D^4, and conveyer D^5, all constructed and arranged to operate substantially in the manner and for the purpose set forth.

163,031. STATION-INDICATORS. Amos M. Smith, Chicago, Ill., assignor to the Vermont Home Company, Springfield, Vt. [Filed Jan. 23, 1875.]

Brief.—The indicating-ribbon is drawn one way by the action of a pivoted dog, and permitted to move back one tooth at a time by a rocking lever taking into one tooth at a time on second ratchet-wheel.



1. The combination of the pivoted pawl Q, provided with the projecting arm R, ratchet-wheel N, pins P, and the sliding piece T, as and for the purpose specified.

2. The combination of the pivoted pawl Q, provided with a projecting arm, R, the ratchet-wheels N and 1, the roller C, the pawl J, constructed so as to be removed from the ratchet-wheel when the pawl Q is operated, and the spring *b*, for drawing the ribbon from the roller C to reverse the indicator, all substantially as described.

163,032. REVOLVING FIRE-ARMS. Dexter Smith, Springfield, Mass. [Filed Jan. 21, 1875.]



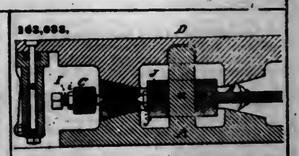
1. An extractor-plate, E', provided with a peripheral shoulder, *e'*, combined with a chambered cylinder, and arranged to be held stationary by one or more catches, *c*, operated in the rear of the extractor, substantially as described.

2. An extractor-plate, E', provided with a peripheral shoulder, *e'*, combined with a chambered cylinder, and arranged to be held stationary by one or more catches, *c*, while the cylinder is moved forward longitudinally to extract the shells, and operated by the movements of the hammer, substantially as described.

3. The combination of the extractor-plate E', provided with a peripheral shoulder, *e'*, the cylinder E, and the recessed recoil-plate F, to receive said extractor-plate, substantially as described.

163,033. TURN-TABLES. Henry F. Snyder and George S. Snyder, Williamsport, and Antes Snyder, Springdale, Pa. [Filed Sept. 24, 1874.]

Brief.—The supporting-rollers of a turn-table are adjusted by means of conical-pointed screws, which enter the front and rear face of the rolls; said screws carrying jam-nuts, whereby the adjustment is secured. The sections of the supporting-girders of the turn-table are secured together by strong iron ties having heads at each end, and enlargements or swells between said heads, through which pass vertical bolts, which extend down through the girder. These ties are sunk into corresponding recesses in the upper surface of the girders.

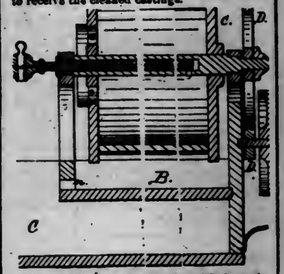


1. In combination with a turn-table, the center-screws I J, matching their conical points into corresponding holes in the ends of the anti-friction rolls B, and secured by jam-nuts *i j*, substantially as and for the purposes herein specified.

2. A turn-table having the two parts of the girder M connected by longitudinal ties having eyes G^1, with vertical bolts *e* extending through such eyes, both sets of bolts exerting their force in the central plane of the girder, substantially as and for the purposes specified.

163,034. RUMBLERS FOR CLEANING CASTINGS. Lyman I. Todd, Chicago, Ill. [Filed Mar. 24, 1874.]

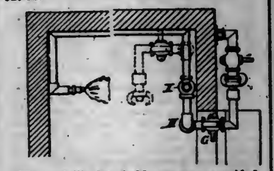
Brief.—A water-receptacle is placed beneath the rumbler, and provided with a shelf to receive the cleaned castings.



The rumble A, in combination with the tank C, provided with the shelf B, for the purpose set forth.

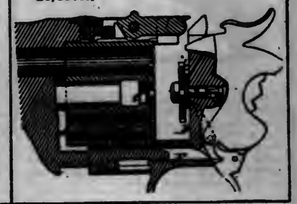
163,035. GAS-FIXTURES FOR LIGHTING VAULTS. Richd. H. Watson, Philadelphia, Pa. [Filed Apr. 15, 1875.]

Brief.—The adjustable section, hinged to the fixed section within the vault, is provided with a cock with two ways, the smaller of which is for a supply of gas when the larger is cut off.



The metallic detachable gas-pipe, provided with the manual coupling F and swinging joints I and H, as herein shown, in combination with the supply-pipes K and D, as and for the purpose herein set forth.

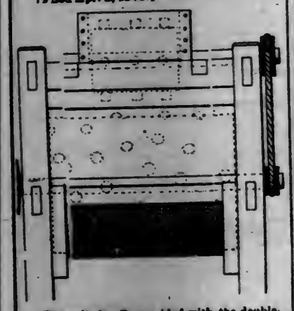
163,036. REVOLVING FIRE-ARMS. Daniel B. Wesson, Springfield, Mass. [Filed Jan. 26, 1875.]



1. In combination with a lock-frame, a single barrel, and a revolving cylinder of chambers, an extractor so arranged that the bearing upon which it revolves is wholly in rear of the front face of the recoil-shield.

2. In combination with a single barrel and revolving cylinder of chambers, a revolving extractor having a central shaft or other projection extending in a rearward direction from the front face of the recoil-shield, for the purpose of holding the said extractor, for withdrawing the cartridge-shells from the said chambers.

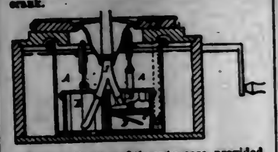
162,037. BLUE-GRASS-SEED CLEANERS. J. W. Wilcox and R. L. Dejarnatt, Paris, Ky. [Filed Apr. 2, 1875.]



The cylinder B, provided with the double-spiral rows of rubbing-teeth b, running in opposite directions from the middle, and rotating within a concave screen, A, to conduct the material from the middle to either end of said screen during the cleansing operation, substantially as set forth.

162,038. VAGINAL SYRINGES. J. S. Wilkin, Chicago, Ill. [Filed Sept. 15, 1874.]

Brief.—The vaginal tube is attached to a bifurcated pipe connected to two force-pumps, working in a receptacle containing medicated water. The vaginal tube passes up through a depressed cup sunk in the cover of the box containing the apparatus. It is worked by a crank.



The combination of the outer case, provided with a cast or cover having the drain-basin N arranged therein; the tank A, arranged in the said case; the double force-pumps B B, arranged in the said tank; the bifurcated discharge-pipe I, and the nozzle J, all substantially as and for the purposes specified.

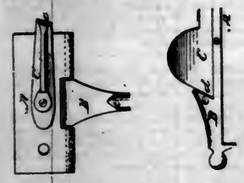
162,039. ADVERTISING CARD-RACKS. Geo. Willett, Burlington, Vt. [Filed Oct. 29, 1874.]



The combination card-holder and advertiser, composed of the concave band B, having pinned thereon the annular wire holders c c c, the movable index-cards A B C D &c., and the metallic or other back E, having the spurs d d d thereon for the purpose of holding the advertisements, all as herein described, and for the purpose as set forth.

162,040. FASTENERS FOR THE MEETING-RAILS OF SASHES. Thomas Wilcox, Belleville, N. J. [Filed Mar 1, 1875.]

Brief.—A jointed flap, suitably notched, is hinged on the edge of a base-plate, which is secured to the bottom rail of the upper sash, and a swinging button, with beveled projection, is likewise attached to the base-plate, in such manner as to move laterally upon, and engage with, the jointed flap, when it lies over the top rail of the lower sash, thus securely locking the meeting-rails together.



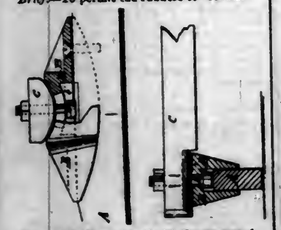
The jointed flap B, hinged to the base-plate A, in combination with the button C, likewise attached to the base-plate, all substantially as shown and described, for the purpose set forth.

162,041. VARNISHES. Maximilian Zingler, 10 Buckland Crescent, Belsize Park, England. [Filed Sept. 24, 1874.]

A varnish consisting of powdered gum, bisulphide of carbon, camphine, benzole, and methylated spirits, substantially as and in the proportions specified.

162,042. LOG-SLEDS. Hiram S. Bartlett, Midland, Mich. [Filed Mar. 20, 1875.]

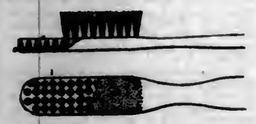
Brief.—To permit the runners to vibrate.



The saddle B, combined with the runners A, the beam C, and the bolt D, substantially as shown and described.

162,043. TOOTH-BRUSHES. Susan Bidwell, James Bidwell, and Arthur Bidwell, London, England. [Filed Sept. 19, 1874.]

Brief.—The cavities in the brush-stock are bell-mouthed at their outer edges, so that the bristles held therein will not be broken off by striking against the corner when in use.



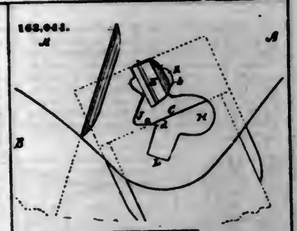
A tooth-brush in which the bristles are inserted into holes with curved and flaring entrances, for the purposes set forth.

162,044. STEP-LADDERS. Jacob Blauvelt, Blauveltville, N. Y. [Filed Oct. 17, 1874.]

Brief.—The metallic brackets for the top support of the stay-props are provided with notched holes for the insertion of angular-headed pivots attached to the props. The notches afford a means for adjusting the props at the desired angle.

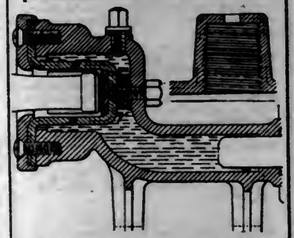
The plate A, having notched hole H, notches I, J, K, and L, in combination with plate C, having the angular-headed pivot M, substantially as specified.

162,045.



162,045. APPARATUS FOR CAPSULING BOTTLES. Antoine Bocquet, Paris, France. [Filed Apr. 17, 1875.]

Brief.—Hydraulic capsuling-machine in which the elastic diaphragm or chamber is secured to the surrounding casing at both ends, so that the pressure acts on the cylindrical or conical part, to compress the corresponding part of the capsule around the neck of the bottle. The diaphragm may have grooves or corrugations on the inner surface, for the purpose set forth.

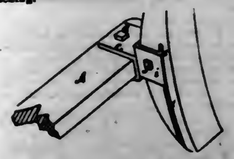


1. In machines for capsuling bottles, the combination of the elastic diaphragm or chamber with the surrounding casing by being secured at both ends, so that the hydraulic pressure acts only on the cylindrical or conical part, and compresses the corresponding part of the capsule around the neck of the bottle, substantially in the manner and for the purpose specified.

2. The elastic diaphragm or chamber, having grooves or corrugations at the inner surface, to obtain either regular plaits or hardly perceptible folds on the compressed part of the capsule, as desired, substantially as specified.

162,046. WAGON BRAKE-BLOCKS. George G. Buckland, Milton, Cal. [Filed Mar. 24, 1875.]

Brief.—Brake bar and block each provided with clasping-plates, one of which has diagonal serrated slots, and the other a corresponding raised portion, for attaching and detaching.



1. The brake-beam A, in combination with the plate c, having the diagonal button f, and shank g, the block B, and plate h, having the diagonal slot o, all substantially as and for the purpose set forth.

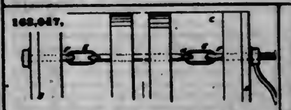
2. In a brake-block attachment for wagons, the roughened or toothed shank g of the button f, in combination with the roughened or toothed side of the slot o, substantially as and for the purpose set forth.

162,047. WAGON END-GATES. Benjamin F. Bulkley, Southport, Conn. [Filed Mar. 13, 1875.]

Brief.—By unfastening one side the rod is uncoupled.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

162,047.



The combination, with a wagon end-gate, having cleats C' C', of a hook-ended slide-rod, D, adjustable symbolts F F, and links E E, substantially as set forth.

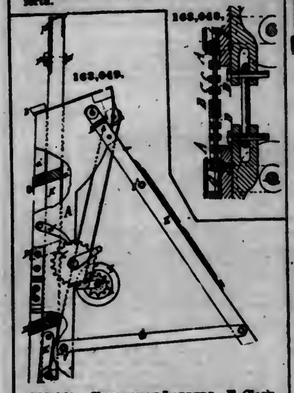
162,048. EXTENSIBLE SAFETY-BRIDGE. Wm. Campbell, Floyd C. H., Va. [Filed Apr. 10, 1875.]

Brief.—Cars provided with recess to allow play of rods through rigidly-attached end bars. Intermediate slats play out and in with bars. The ends of the slats are loosely connected by links. Whether the cars crowd or draw apart, there is thus always a platform connecting them

1. The combination of end bars A A, middle bar or bars B, intermediate bars C, rods D, and the links E, forming an extensible car platform, substantially as set forth.

2. The combination of bars A A, middle bar or bars B, intermediate bars C, rod D, and connecting-links E with two cars, each of which has a covered recess, G, in the platform, all substantially as and for the purpose set forth.

162,049.



162,049. EXTENSIBLE LADDERS. H. Clark, New York, N. Y. [Filed Oct. 10, 1874.]

Brief.—The top section is hinged to the top of the next section below, and when extended for use is held by lock-bolts. Stop-bars are pivoted to the lower sliding section, which engage with the steps to hold the ladder extended.

1. The combination of the pivoted buttons or stop-bars X, with the side bars of the lower extension-section, and with the forward part A B of a step-ladder.

2. The combination of the pivoted or hinged bars M, and the lock-bolts N, with the adjacent ends of the side bars of the extension-sections, substantially as herein shown and described.

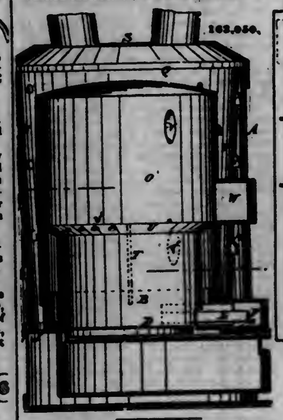
162,050. HOT-AIR FURNACES. William O. Crocker, Turner's Falls, Mass. [Filed Dec. 10, 1874.]

Brief.—The direct draft is through the upper exit-opening. The indirect draft is downward through the orifices in the flange of the fire-pot, thence forward, passing the vertical diaphragm, to the lower opening in the vertical flue.

1. In a heating-furnace, the combination, with an outer casing, A, and inner combustion-chamber O', of an intermediate jacket, M, which has openings N, and is made of a greater diameter at the top than at the bottom, as and for the purpose described.

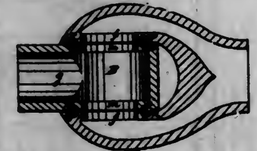
2. The combination of the fire-pot having a flaring flange, U, external partition-plates T, and openings U' in the flange, with the combustion-chamber O', base B, and indirect draft-flue V', as and for the purpose described.

3. The combination of the base B, having a double series of openings, I J, at its top, with the casing A, perforated jacket M, and combustion-chamber O', as herein set forth.



162,051. FLEXIBLE JOINTS FOR PIPES. John P. Culver, Jersey City, N. J. [Filed Apr. 5, 1875.]

Brief.—A joint having two hollow sections, communicating with each other by suitable passages, and connected by annuluses of soft metal, so arranged as to serve the purpose of packing the joint, providing a hinge or pivot thereto, and holding the sections together against tension or strain lengthwise.



The two hollow sections A B, communicating with each other by means of the passages m f, in combination with the annuluses C, of soft metal, cast into the grooves n n', and surrounding the passages m f, the whole constructed and arranged for operation, substantially as and for the purpose set forth.

162,052. DASH-BOARDS FOR CARRIAGES. John Curtis, Cincinnati, Ohio. [Filed Oct. 26, 1874.]

Brief.—Improvement on Patent No. 122,966, January 23, 1872.

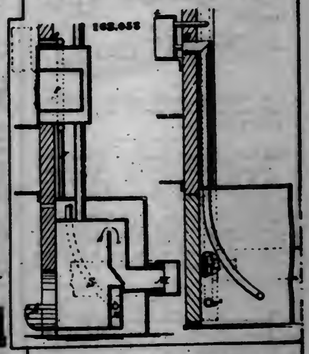


The mode of securing the terminal G to the molding or bead B of a dash-board by the shank g of said terminal or rivet, clinched against the end of core C and anchored in the binding D, for the purpose stated.

162,053. FIRE-PLACES. H. Mortimer Deey, New York, N. Y. [Filed Aug. 20, 1874.]

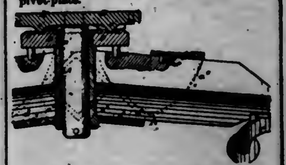
Brief.—From a water-back behind the grate a steam-pipe leads through the smoke-flue to a steam-radiator in an upper apartment. From this radiator another steam-pipe passes to the chimney-flue. From the air-chamber issuing the fire-place, an air-pipe, which incases the steam-pipe, extends to the room above, and discharges through a register. The radiator, by rarefying the air in front of the register, accelerates the flow of air through the air-pipe.

3. The combination, with fire-place grate, of the water-chamber R, pipe S, hot-air pipe I, and drum T, as and for the purpose specified.



162,054. CHAIN-BARRS. Wm. T. Doremus, New York, N. Y. [Filed Mar. 1, 1875.]

Brief.—The ring-groove and rib between the top plate and pivot-plate are intended to steady and regulate the movement of the pivot-plate.



1. The base-plate A, cast with the socket a' to receive the pivot or screw, and the sockets a² a² to receive the legs, substantially as herein shown and described.

2. The combination of the top plate D, provided with a tapering central hole and pins or points d³, with the tapering projecting upper end of the socket a and sockets a² a² of the base plate A, substantially as herein shown and described.

3. The top plate D having the ring-groove d² formed therein, in combination with the ring-rib d' formed upon the pivot-plate, substantially as herein shown and described.

162,055. CARRIAGE-CLIPS. Alfred W. Doty, Windham Centre, N. Y. [Filed Mar. 12, 1875.]



1. The combination, in a wagon-clip, of attaching-plates f, side pieces B, pivots E, and the spring-rests I, substantially as set forth.

2. The combination, in a wagon-clip, of socket d, straps c, and eye f, substantially as set forth.

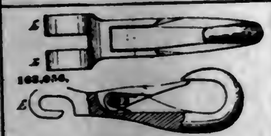
3. The combination of brace X, its attaching-arm, and clip M, for holding the brace X parallel with the bar A, substantially as set forth.

4. The malleable cast-metal spring and bar-clip C, in combination with the step b, substantially as set forth.

5. The combination of the block i with the body-bars A and clip M, substantially as set forth.

162,056. SNAP-HOOKS. J. G. Eberle, Glasgow, Mo., administrator of John Eberle, deceased. [Filed Apr. 26, 1874.]

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

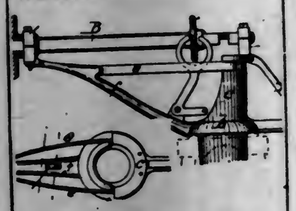


162,636.

A snap-hook, having reverse, bifurcated, and rear-shouldered hook E, as and for the purpose described.

162,637. FRAMES OR TURN-TABLES FOR WIND-WHEELS. Charles T. Edwards and G. E. Huntoon, Moline, Ill.; said Huntoon assignor to said Edwards. [Filed Mar. 31, 1875.]

Brief.—The features of the frame are the journal having the three converging arms, to sustain the front bearing of the shaft. The support for the rear bearing may be cast with the body, or made in a separate piece and bolted in place.

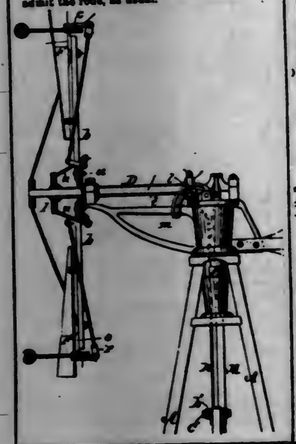


1. The frame for a wind-wheel, consisting of the tubular journal *a*, provided with the three converging arms, *c*, *c*, and *f*, cast in a single piece, as shown and described.

2. In combination with the open frame constructed as shown and described, the shaft B, sliding collar *h*, and the elbow-levers *i*, constructed and operating as shown.

162,638. WIND-WHEELS. Charles T. Edwards and G. E. Huntoon, Moline, Ill.; said Huntoon assignor to said Edwards. [Filed Feb. 16, 1875.]

Brief.—The improvement is in the form and construction of a fan-bar cap, and a bracket to support the fans or sails; also, in the use of one or more eccentrics to operate the sliding collar, through which the fans are controlled; also, a peculiar manner of connecting the controlling rods or bars to the fans, and in a peculiar arrangement of rods and levers, by which the movement of the fans is controlled without slitting their inner ends to admit the rods, as usual.



1. The cap or socket *d*, inclosing the end of the fan-bar, made in two parts, having their inner edges notched to leave an opening between them for the admission of the supporting journal or pivot.

2. In combination with the flanged or headed journals *f*, the caps or sockets *d*, constructed and arranged substantially as shown.

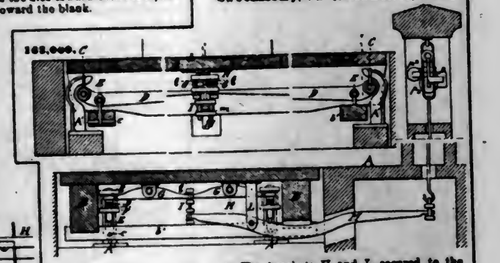
3. In combination with the sliding collar *i* and band *k*, the eccentric *m*, arranged to hold and move the collar, substantially as shown.

4. In combination with the fan-bar *c*, the flat plate *p*, secured thereto, the block *r*, pivoted to the end of said plate, and the controlling-rod *s*, having its end threaded and screwed directly into the block *r*, as shown, the arrangement forming an adjustable hinge-connection of the rod to the fan, consisting of two pieces only, without nuts or extra parts.

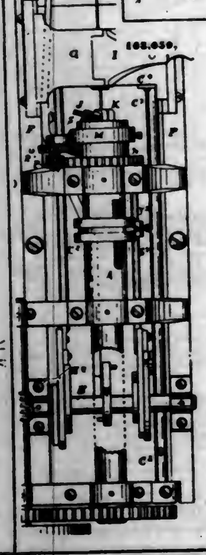
5. The sliding collars I and *i*, mounted on the main shaft, and connected by rods *t*, in combination with the pivoted fans F and the elbow-levers *w*, with the connecting-rods *s* and *u*, all constructed and arranged to operate substantially as described.

162,639. WOOD-SCREW MACHINES. Caleb Elliott, Richmond, Ind. [Filed Sept. 25, 1874.]

Brief.—The cutters rotate on their axis, and revolve around the blank, which is drawn outward while they are operating upon it by the cross-head. The finishing-dies revolve with the cutters around the blank. The cutters are thrown in at the point of the screw by means of a plunger within the mandrel, which plunger, by virtue of its peculiar construction, actuates the dies toward each other, and the cutters toward the blank.



162,639.



162,639.

1. The combination of the main mandrel A with the circular cog-rack N, pinion P, gear O, pinion R, and mills or rotary cutters J, substantially as shown and described.

2. In combination with the block L, the dies K, jaw-lever T, and mills or rotary cutters J, substantially as and for the purpose set forth.

3. The combination of the sleeve C' with the plunger A', dies K, jaw-lever T, and mills or rotary cutters J, substantially as shown and described.

4. The plunger A', consisting of two sections or leaves, the upper one E' being adjustable by means of the set-screw F', substantially as shown and described.

5. The clamp-lever A', pivoted to the cross-head G, in combination with the clamp-lever A', pivoted to the lever A' at B', substantially as shown and described.

6. The cam B', in combination with the levers A' and A' and springs *a* and *b*, substantially as shown and described.

7. The combination of the cam-leaf J' and spring R', as and for the purpose set forth.

8. The cam-leaf K' and spring Q', in combination with the pawl M', cam H', and slide-head N', for the purpose set forth.

9. The rod C', attached to the cross-head G by means of the hanger C', as shown in Figs. 1 and 2, and sliding through the bearing C', in combination with the pins *h* and *i* and feathers *k* and *n*, as shown and described.

10. The cam H', in combination with the pawl L', connection G', cross-head G, and clamp I, as and for the purpose described.

162,640. WEIGHING-SCALES. T. Fairbanks, St. Johnsbury, Vt. [Filed Dec. 10, 1874.]

162,640.

1. The brackets H and L, secured to the cross-plank A, so that both shall be carried by the platform B, and supporting the intermediate lever G and last lever M, as and for the purpose specified.

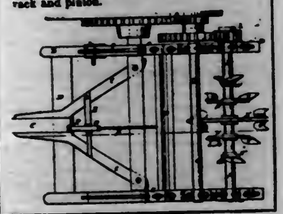
2. The cross timbers or bars *b' b'* and loops E, in combination with the main platform-sticks B B and the main levers D D, as and for the purpose herein specified.

3. The obliquely-mounted transverse levers G, having their inner ends adjacent, but out of contact with each other, and provided with conical points *n*, in combination with the twisting yoke I, and the last lever M and its connections, as herein specified.

4. The yokes I F and conical bearing-points *d g n*, in combination with the longitudinally-arranged main levers D, transverse levers G, and suitable connections therefrom to the weighing-beam, as herein specified.

162,641. ROTARY CULTIVATORS AND CHOPPERS. George W. Fenley, Nacogdoches, Tex. [Filed Mar. 6, 1875.]

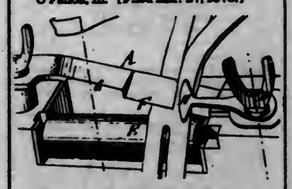
Brief.—The revolving cultivator-shaft is adjustable upon the pivoted frame by means of rack and pinion.



1. The combination of the sliding bars H, the gear-wheels E F K L, and the plow-shaft M with the frame D and the wheels A, substantially as herein shown and described.

2. The combination of the rack-bars I and gear-wheels J with the frame D and the sliding bars H, that carry the gearing F K L and the plow-shaft M, substantially as herein shown and described.

162,642. HARVESTER-KNIVES. A. Frederick O'Fallon, Ill. [Filed Mar. 27, 1875.]



The blade A, having the two edges F G, arranged as described, in combination with the guide-roller E and fastenings, which hold it obliquely thereto, and either side up, substantially as specified.

162,643. MACHINES FOR FINISHING LEATHER. J. P. Friend, Peabody, Mass. [Filed Feb. 2, 1875.]

Brief.—Improvement on United States Patent No. 117,877, of August 8, 1871.

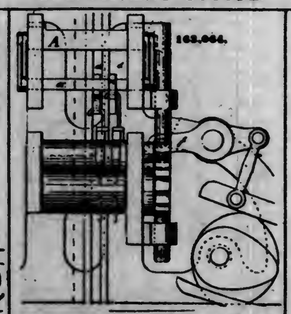


In a machine for finishing leather, the combination and arrangement of the links or connecting-bars N and O with the vibrating arm A, substantially as set forth and shown.

162,644. SHEDDING MECHANISMS FOR LOOMS. Robt. Burns Goodyear, Wilmington, Del., assignor of one-half his right to Wolfenden, Shorey & Co., Darlington, Pa. [Filed Mar. 16, 1875.]

1. The combination of cross-head or yoke A, cross-connections 1, 2, 3, and 4, lifter *a*, depressor *b*, and hooks *b' b* upon the lever-jacks F F', as and for the above-described purpose.

2. The hinged lever-finger *d*, spring *e*, and hooks *b b*, in combination with a pattern roller or chain, as described, and for the purpose specified.



162,644.

1. The combination of frame A, holder C, hand-lever B, feeding-pawl E'', lever E'', bracket-groove V, rod-wiring head D, and slat-wiring head K, punches G M, inclined guides F F', back plates H, separately-adjustable springs H' H'', and stop I''', all substantially as set forth.

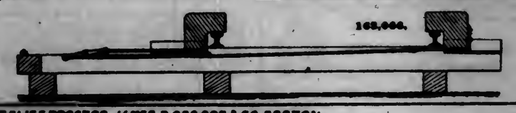
2. The combination of the upright wiring-heads D K, placed at right angles to each other, with the frame A, and arranged to operate in the manner and for the purpose as shown and described.

3. The combination of the plate H, held by spring, punch M, and inclined guide F, when so arranged that the plate will rest against the side of the punch at the top of its stroke, substantially as set forth.

4. The staple-stop I''', arranged to prevent feeding staples by operating the machine, for safety, substantially as set forth.

162,645. RAILWAY-TRACK CLOSERS. Isaac M. Haines, Pomeroy, Pa. [Filed Apr. 10, 1875.]

A track-closer for railway-tracks, composed of sliding blocks extending over the rails, guide-shoes, and operating double-crank and lever mechanism, applied substantially as specified.



162,646.

162,647. HAND-PROTECTING ATTACHMENTS FOR DRILLS. Wm. M. Hance, Dover, N. J. [Filed Mar. 29, 1875.]



The combination, with a drill or other tool, of the slotted disk B B', the sliding block C, the rubber block D, and the swiveled screw E, substantially as herein shown and described.

162,648. STRAW-CUTTERS. Thos. Hancock, Marietta, Ohio, assignor to A. T. Nye, Jr., same place. [Filed Sept. 14, 1874.]

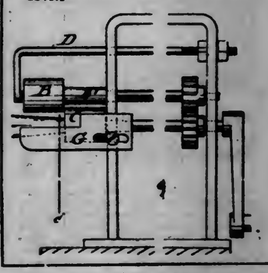
Brief.—The upper roller is pivoted to a vibrating frame, and is permitted to rise and fall, and still receive rotary motion from a vertical shaft, which instinctively adapts itself to the movements of the roller. This shaft is held in ball-and-socket joints for the above purpose, and can be elevated to change the gearing and speed from fast to slow.



1. The combination of the vertical shaft D, the ball-joint F, and its supporting-socket E, with the ball-joint and worm-gear F', and its supporting-socket E', and vibrating frame H, whereby the shaft is adapted to adjust itself to the vibration of the frame, substantially as described.

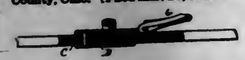
2. The combination of the vertical shaft D, loosely held in the ball-and-socket joints E F' F F', and the pivoted supporting-bracket S, provided with unequal sides, as described.

162,649. RAG-CUTTING MACHINES. Wm. C. Harrison, Goshen, N. Y. [Filed Mar. 1, 1875.]



The combination of cutting-roll B, feeding-roll B', cutting and feeding roll C, tension-spring rod D, extension-shaft F, and gage G, all arranged and operating together as and for the purpose specified.

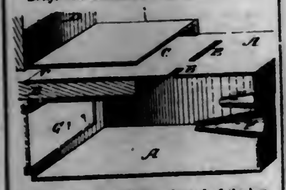
162,070. BUCKLES. Wm. Himsirigh and Jacob Smith, Franklin Township, Summit County, Ohio. [Filed Mar. 20, 1875.]



The combination of the tongue G, loop F, and tubular extension E, having a tooth, D, constructed to be applied to the strap, substantially as described.

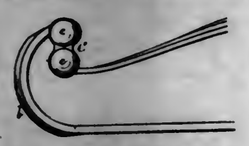
162,071. MOTH-TRAPS. Washington Hollis, Pembroke, Ky. [Filed Apr. 17, 1875.]

Brief.—To be attached to any hive.



An improved moth-trap formed of the box A, provided with the slot B, the passage C, the flange D, the slits E, (one or more,) the tapering tubes F, (one or more,) and the glass plate G, substantially as herein shown and described.

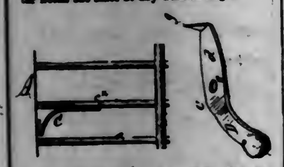
162,072. VEHICLE-SPRINGS. Christoph Hotz, Chicago, Ill. [Filed Mar. 9, 1875.]



The combined laminated and C spring, having corrugation b on the concave or convex side of the bent portion of the scroll, as and for the purpose set forth.

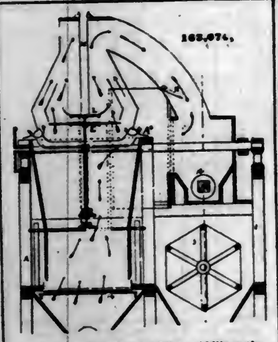
162,073. BLIND-STOPS. Nicholas Hotz, Green Point, Brooklyn, N. Y. [Filed Aug. 22, 1874.]

Brief.—A single struck-up piece of sheet metal carries a raised boss at one end and a spur at the other. A single screw secures the device to the side of a blind-slat, and the friction of the boss against the frame of the shutter holds the slats at any desired angle.



As a new article of manufacture, the automatic spring regulator A, stamped or struck up from a single piece of metal, having at one end the locking-spur g, bent at right angles thereto, and the upwardly-curved yielding spring-plate D, terminating in the boss or enlargement e, with an intermediate orifice, e, adapted to receive a fastening-screw, for the purpose specified.

162,074. MIDDLINGS-PURIFIERS. Wm. W. Hunting, Abel P. Holcomb, and A. Heine, Silver Creek, N. Y. [Filed Mar. 13, 1876.]



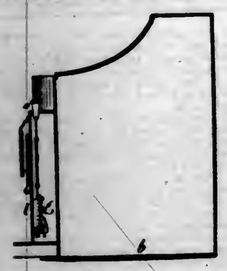
1. In a machine for purifying middlings the combination, substantially as described, of a fan for producing an ascending air-current, a whipper or agitator for disintegrating the material, a reciprocating sieve for separating the middlings after they have been acted upon by the whipper or agitator into different grades, and a revolving bolt for separating any flour that may be carried from the disintegrator by that portion of the air which passes it, from the the worthless material which passes with such flour, the parts being arranged to operate substantially as set forth.

2. The double-acting disintegrator, it being composed of two series of whippers or beaters, the upper ones being curved upward at their outer ends for the purpose of causing them to more effectually beat and disintegrate the material, and the lower ones being straight and extending outward to or beyond the inner surface of the interior hood.

3. A double conical hood, constructed with an air-passage between the two portions thereof, through which an ascending air-current passes, in combination with whippers or beaters, arranged to operate substantially as and for the purpose set forth.

4. In a machine for purifying middlings, the combination, substantially as described, of a disintegrator, a fan for creating an air-current, a revolving bolt, and a dust-deposit chamber, the parts being arranged to operate substantially as and for the purpose set forth.

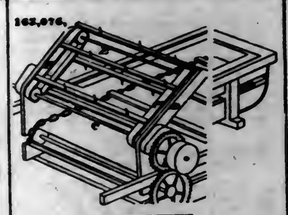
162,075. CANISTERS. Silas A. Ilsley, New York, N. Y., assignor to S. A. Ilsley & Co., same place. [Filed Mar. 18, 1876.]



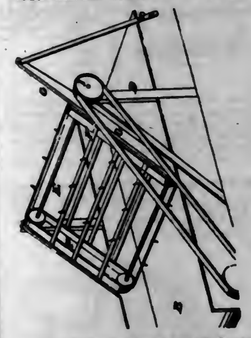
The canister made with the projecting portion l at the front thereof, provided with a thermometer, and having openings for the barometrical figures g h, and provided with the adjusting-knob o of the barometer within, substantially as set forth.

162,076. FEEDERS FOR THRASHING-MACHINES. Byron Jeshson, Woodland, Cal. [Filed Mar. 24, 1876.]

The toothed endless feeding-belt F, mounted above the carrier-belt B upon frame E, journaled at its lower end upon shaft C, and having upper end free to vibrate according to the feed, substantially as and for the purpose described.



162,077. DISTRIBUTERS FOR FEEDING-BELTS OF THRASHING-MACHINES. Byron Jackson, Woodland, Cal. [Filed Mar. 24, 1876.]

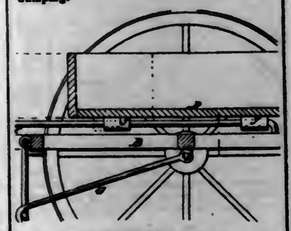


1. The adjustable distributing-belt F, supported in carrying-frame G, upon the shaft E, above the carrier-belt, and with its proximate face driven in an opposite direction to that of the carrier-belt, for the purpose of regulating the supply of straw passing beneath it, substantially as herein described.

2. The combination, in straw-carriers, of the endless belt B, with the distributing-belt F, adjustably mounted upon the shaft E, and having the side piece G' of its carrying-frame extended to serve as a lever by which the lower end of the belt can be raised or lowered and retained at any point by a cord, J, substantially as herein described.

162,078. SHIFTING BODIES FOR HAND-CARTS. Joseph Matthias Jones, Paris, Ky. [Filed Mar. 1, 1876.]

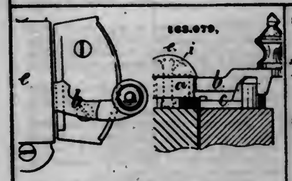
Brief.—Box adapted to slide forward for dumping.



The combination of the sliding box D and suitable supporting-clips I with the parallel runners H, frame B, and axle C, whereby said box is adapted to be shifted, as and for the purposes set forth.

162,079. FASTENINGS FOR THE MEETING-RAILS OF SASHES. Morton Judd, Wallingford, Conn. [Filed Mar. 27, 1875.]

Brief.—The invention is sufficiently pointed out in the claim; a nickel-plated or highly-polished cap-piece being attached by a concealed pin cast upon its inner side, and riveted to the bed-plate.



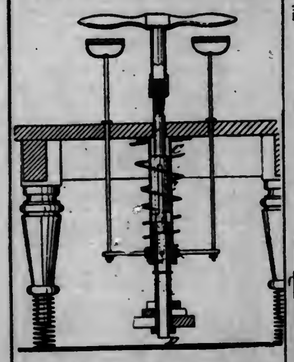
The cap-plate c, to which the attaching screw or rivet f is connected at its under side, so as not to appear upon the upper and smooth or polished surface, in combination with the lever-fastening b and box a, substantially as set forth.

162,080. CONVERTING OLD IRON INTO STEEL. Alexandre Jullien, Paris, France. [Filed July 12, 1874.]

Brief.—Melts cast-iron containing the minimum of phosphorus in a Siemens-Martin furnace, and adds wrought-iron scrap to reduce the carbon. To the molten mass adds ferro-manganese.

The compound or alloy, consisting of wrought-iron, cast-iron, and ferro-manganese, combined in or about the proportions herein set forth.

162,081. REMEDYING APPARATUS. Wm. A. Knight, Worcester, Mass. [Filed Apr. 10, 1875.]



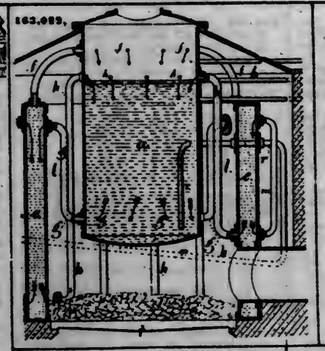
The combined adjustable spring and weight lift or exercising device, constructed of outer slotted guide-socket, sliding interior piston, carrying-yoke, and spring, together with perforated and weighted supporting intermediate tube, admitting separate or joint graduated use of apparatus, all substantially as and for the purpose set forth.

162,082. CIRCULATING STEAM-BOILERS. Luther Knight, Arlington, Vt. [Filed Feb. 9, 1875.]

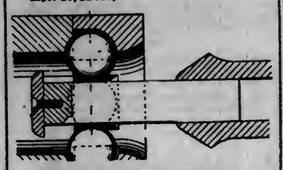
Brief.—Circulation is maintained between an inner and outer boiler by means of one series of pipes connecting the lower portion of the inner with the upper portion of the outer boiler, and another series of pipes connecting the lower portion of the outer with the water-line of the inner boiler.

1. The central vessel *a*, annular boiler *c*, and circulating-tubes *g*, passing from near the lower part of the vessel *a* to the upper part of the boiler *c*, in combination with the tubes *h*, that connect, from the lower part of the boiler *c*, to the vessel *a* near or above the water-line, as and for the purposes set forth.

2. The circulating-pipes *f*, passing from the top of the annular boiler *c* to the central vessel *a* above the water-line, in combination with the circulating-pipes *e*, as set forth.



162,083. COUPLINGS FOR THRASHING-MACHINES. B. Knock, Vermont, Ill. [Filed Apr. 17, 1875.]

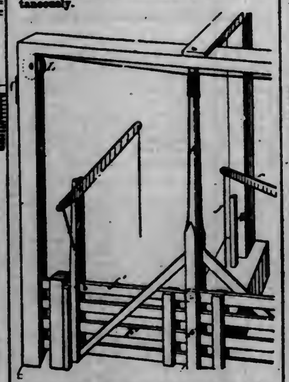


1. A coupling having balls therein, between which balls the clevis-shank is confined, substantially as shown and described.

2. A joint consisting of a socket-piece, a bar surrounded by balls, substantially as shown and described.

162,084. AUTOMATIC GATES. Hiram Krom, Dartford, Wis. [Filed Mar. 20, 1875.]

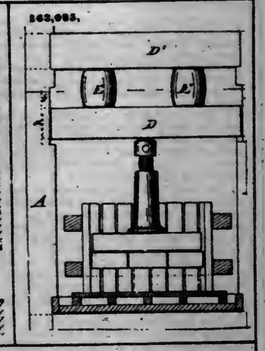
Brief.—A double gate in which the latches are connected to work together and simultaneously.



The combination, with the double gate, the central pivot-bar, and latch-posts G, of the latches *f'*, connected at their inner ends to admit of simultaneous operation, as shown and described.

162,085. PRESSES FOR OILERS, &c. Henry Krumsiek, Nashville, Ill. [Filed Oct. 31, 1874.]

In a press, the arrangement of the springs B, fixed and movable cross-bars D' D, and the uprights A A, having elongated mortises *b b*, all as shown and described.



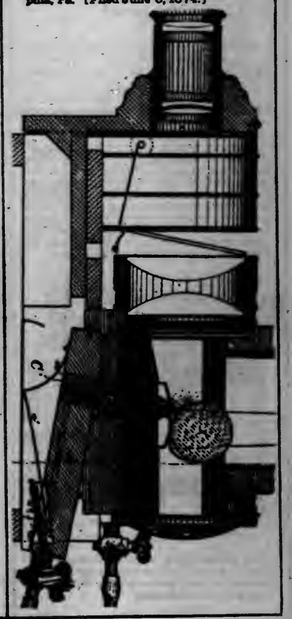
162,086. TOYS. Harvey T. Lee, Chicago, Ill., assignor to J. S. Hodges, same place. [Filed Feb. 20, 1875.]

Brief.—For a return-ball or to be whirled by the hand.



The toy described, consisting of a hollow globe, provided with the central partition, having reed or whistle openings, as described, adapted to give sound when the ball is moving in either direction, as set forth.

162,087. LAKE-LIGHT APPARATUS FOR MAGIC LANTERNS. Lorenzo J. Marcy, Philadelphia, Pa. [Filed June 6, 1874.]



1. In a lime-light magic lantern, the flat-mouthed jet, constructed as described, in combination with the lime-wheel, whereby the flame impinges against the lime-wheel in a thin sheet, and acts upon a larger portion of its surface than was practicable with the round jet heretofore employed in this class of instruments.

2. The combination, substantially as set forth, of a base-plate, the jet mounted thereon, and the lime-holder, adjustable on the base-plate, whereby the cap of the jet operates as a stop to insure the correct relative adjustment of the lime-wheel and jet.

3. The combination, substantially as herein before set forth, of the base-plate, its conducting-tube and burner-nozzle, and its adjustable plate which supports them, whereby the burner may be adjusted vertically relatively to the lime-light, as set forth.

4. The combination, substantially as set forth, of the lime-wheel and its holder, in which the lime is loosely held, and by which it is presented vertically and edgewise to the light, for the purposes set forth.

5. The combination, substantially as set forth, in a magic lantern, of a lime-wheel, a cradle in which it is held adjustable vertically in a laterally-adjustable standard on the base which supports the burner, whereby the lime-wheel is rendered adjustable both vertically and horizontally.

6. The combination, substantially as set forth, in a magic lantern, of a base-plate, adapted to be inserted through the body of the lantern, and a lime-holder adapted to be inserted through the chimney, whereby the two may be applied without interfering with the diaphragm or base of the flame-chamber.

162,089. SHEET-METAL BOXES. Henry Martyn, Boston, Mass. [Filed Apr. 5, 1875.]

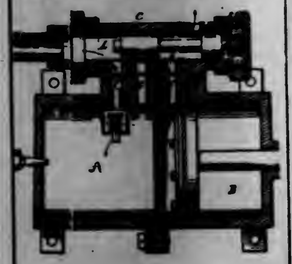
Brief.—The box is made from a single piece of metal, and the fold of the corners equally disposed on each side thereof.



The box A, having its corners continuous by the equally-disposed folds C C, substantially as described, for the purpose specified.

162,090. VALVES FOR STEAM AND AIR BRAKES. Henry B. Marchand, Pittsburg, Pa. [Filed Nov. 11, 1874.]

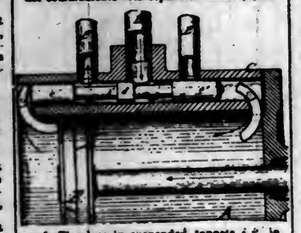
Brief.—A duplex valve controls the ports of the reservoir and the piston-cylinder. When air is being compressed in the reservoir, the pressure of the same forces the valve back, and opens the outer port in said reservoir. When the brakes are set the pressure in the connecting-tube is relieved, which releases the valve and allows a spring to throw it forward, thus establishing communication between the reservoir and piston-cylinder.



The duplex valve L, working in a valve-chest, C, in combination with the ports F G H, reservoir A, and piston-cylinder B, substantially as herein described.

162,092. VALVE-GEARS FOR STEAM-ENGINES. Henry B. Marchand, Pittsburg, Pa. [Filed Oct. 23, 1874.]

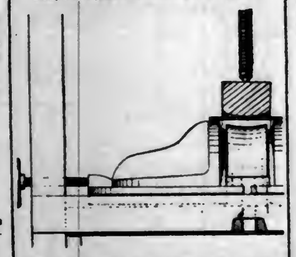
Brief.—The valve is operated by tappets hung loosely in the ends of the shell of the cylinder. Two ports at each end of the cylinder communicate with separate exhaust-pipes.



1. The loosely-suspended tappets *i i'*, in combination with the valve F, steam cylinder A, and piston B, substantially as and for the purpose described.

2. The valve F, composed of three bends, *c d c'*, in combination with channels *f f' h h'*, ports *g g'*, steam-pipe D, and exhaust-pipes E E, substantially as set forth.

162,091. MACHINES FOR PRESSING HORN-COLLAR PADS. Arnold F. Mason, George Chamberlin, and H. W. Chamberlin, Olean, N. Y., assignors to George Chamberlin & Son, same place. [Filed Apr. 10, 1875.]

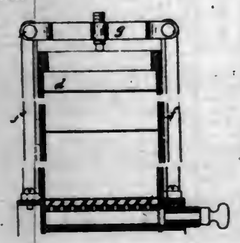


1. In a machine for shaping and pressing collar-pads, the adjustable curved-face side jaws, sliding and spring-cushioned center piece and follower in combination, all substantially as and for the purpose described.

2. The adjustable side jaws, having projecting guide-ribs, in combination with the grooved and sliding center-piece and the perforated supporting-piece of frame, for guiding head and shank of center-piece, as set forth.

162,093. APPARATUS FOR MOLDING AND LIQUORING SUGAR. Frans O. Matthiessen, New York, N. Y. [Filed Apr. 9, 1875.]

Brief.—The hot product of the vacuum-pan is injected at the bottom of a series of molds. An overflow-mold at the top regulates the charge. The liquoring is effected also from the bottom, the overflow-mold retaining the crust. The molds removed afford a series of loaves.



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1. The combination of a series of sugar-molds with guides for preserving their alignment, for the purpose of coabling the sugar-molds to be filled with the sugar mass at one operation.

2. The combination of one or more sugar molds with a surplus frame or box, for containing an excess of the sugar mass.

3. The combination of a liquoring-table with a series of sugar-molds, consecutively arranged thereupon, and a liquoring-pipe, for the purpose of liquoring the sugar mass contained in the molds at one operation.

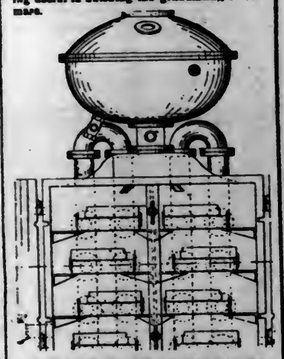
4. The combination of a liquoring-table provided with a liquoring-pipe, with a series of consecutively-arranged sugar-molds and a surplus frame or box.

5. The combination of a series of consecutively-arranged sugar-molds with elastic packing-strips placed between the several molds and their respective bearings, and a set-screw, for the purpose of compressing the series of molds, and thus making tight joints at all the bearings.

6. The combination of the vertical guides *f* and *f'* with the removable cross-bar *g*, for the purpose of permitting the introduction or removal of the sugar-molds, substantially as shown and described.

162,095. APPARATUS FOR REFINING SUGAR. Frans O. Matthiessen, New York, N. Y. [Filed Apr. 14, 1875.]

Brief.—A vacuum-chamber contains removable trays set upon hollow sheives, in which a hot-air or hot-water circulation is maintained. Hermetically-closing doors complete the vacuum. The chamber is preferably beneath the pan. When charged into the chamber, the product of the pan drips from the upper to the lower trays, its own heat being useful in finishing the granulating of the mass.



1. In combination with a vacuum-pan, a vacuum-chamber provided with heating-shelves and removable trays or pans, substantially as and for the purpose set forth.

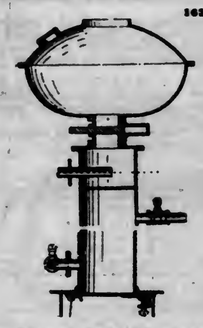
2. A chamber containing heating-shelves and provided with an exhaust-pipe for withdrawing the air from the chamber, and having a removable side capable of hermetical application.

3. In combination with a vacuum-pan, a vacuum-chamber provided with heating-shelves, and a hot-air injection-pipe and removable trays or pans, for the purpose of heating the material contained in the trays or pans by direct contact with hot air, substantially as set forth.

162,094. APPARATUS FOR REFINING SUGAR. Frans O. Matthiessen, New York, N. Y. [Filed Apr. 20, 1875.]

Brief.—The elevated vacuum-chamber, situated preferably beneath the vacuum-pan, contains near the top a finely-perforated diaphragm, to receive the charge from the pan. A two-branch pipe near the bottom admits hot or cold air. An exhaust-pipe below the diaphragm, and one above, draw off the air, to make the vacuum. The chamber is provided with a hermetically-closing door at bottom, through which the granulated sugar is drawn off.

162,096.



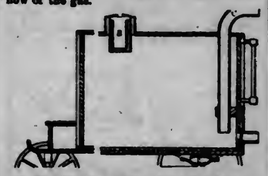
1. In an apparatus for refining sugar, the combination of a vacuum-pan with a vacuum chamber, which is provided near the top with a perforated diaphragm, substantially as shown and described.

2. The combination, in a vacuum-chamber, of a perforated diaphragm placed near the top of the chamber, and an exhaust pipe or pipes, with an injection-pipe near the base of the chamber, for the purpose of introducing and establishing within the vacuum-chamber an upward current of heated air, for acting upon the sugar-spray discharged through the diaphragm, substantially as described.

3. The combination of a vacuum-chamber, substantially such as described, with a branch pipe situated near the base of the chamber, for the purpose of regulating the temperature of the chamber by injecting therein currents of air of variable temperatures.

162,095. SEWAGE APPARATUS. Reuben A. McCauley, Baltimore, Md. [Filed Mar. 30, 1875.]

Brief.—The deodorizer is charged with chemicals graduated to set by their weight as a safety-valve, and thus prevent danger from an overpressure of gas from within. This does not interfere with its ordinary action as a deodorizer. A stand-pipe conducts the matter to a discharging point near the bottom of the receptacle, thus making the discharged matter act as a seal against the backward flow of the gas.



1. The deodorizer and safety-valve B, combined and connected with and operating by direct pressure from the ventilating-tank or sewage-receptacle A, substantially as and for the purpose specified.

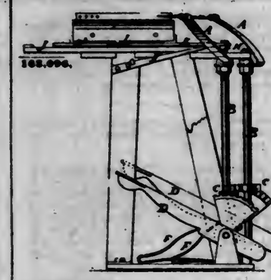
2. The combination of the ventilating sewage-receptacle A, deodorizer and safety-valve B, and stand-pipe C, substantially as and for the purpose specified.

162,096. LEATHER-PUNCHING MACHINES. Henry Mott, Fotteville, Iowa, assignor to himself and J. C. Calbreath, same place. [Filed Mar. 20, 1875.]

Brief.—The awl-carrying arms are automatically operated by semi-rotatial vertical shafts, to which they are attached. The stock is fed forward by mechanism actuated by the awl-bearing shafts.

1. The combination of the foot-power awl-carrying arms A, attached to semi-rotating shafts, intermittingly-reciprocating work-holding clamp I, and feed mechanism, substantially as specified.

2. The combination of the adjustable awl-carrying arms and semi-rotative shafts, adapted for relative adjustment, all substantially as and for the purpose described.



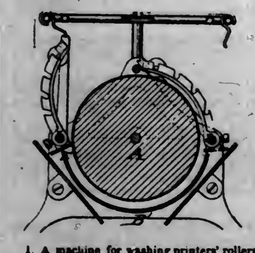
162,096.

3. The combination of the slide O with the feed-pawl and the notched feed bar, substantially as specified.

4. The foot-treadles D, springs F, gears C, shafts B, and the awl-carrying arms A, combined and arranged substantially as specified.

162,097. MACHINES FOR WASHING PRINTERS' ROLLERS. Thos. Muir, Glasgow, Scotland. [Filed Mar 6, 1875.]

Brief.—The rollers are hung in notches in pivoted quadrantal arms, which hold them in contact with a flannel clothed cylinder revolving in a lye-trough. The arms are then raised to a vertical position under perforated water-pipes, the water being prevented from entering the lye-trough by an inclined plate attached to the under part of the arms.



1. A machine for washing printers' rollers, composed of a revolving and laterally-vibrating cylinder, A, a lye-trough, B, pivoted quadrantal roller-bearing standards, and a system of perforated spray water-pipes, the whole being arranged and operated substantially in the manner and for the purpose set forth.

2. The pivoted roller-carrying standards, having an adjustable arm keyed to their pivot-rod, in combination with devices for retaining the standards in exact position from the rubbing-cylinder, and in upright position, substantially as shown and described.

3. A lateral guard-plate arranged below the pivoted standards, in combination with the cleaning-cylinder, and an outer inclined plate for conveying off the drip-water of the roller and prevent its entering the lye-trough, substantially as set forth.

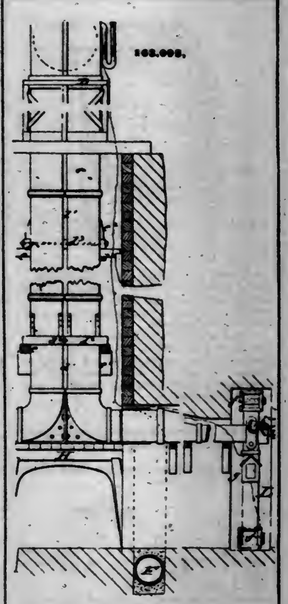
162,098. VENTILATING APPARATUS FOR COAL-MINES. Francis Murphy, Streator, Ill. [Filed Aug. 15, 1874.]

Brief.—The valves upon the ends of the main pipes can be opened by a current of air forced in by the fan, after which the fan is reversed to withdraw the noxious gases from the mine. Each branch pipe is provided with a flexible pipe to withdraw powder smoke after blasting.

1. The combination of reversing fan G and valves D with the lower weighted end valves A of the main tubes, for producing the automatic opening of the same by the forcing in of the air, as described.

2. The combination, with the branch pipe L, of a flexible movable tube, M, for exhausting the smoke and other gases in newly-opened parts of the mine, in the manner specified.

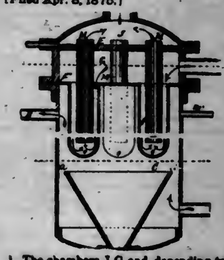
162,099.



162,099. PROCESSES OF TREATING BLOOD FOR THE MANUFACTURE OF MANURES. T. Myerson, London, England. [Filed Apr. 13, 1875.]

The process herein described of treating blood for the preparation of manure with a salt of alumina, for the purpose of retaining the ammonia, for the purpose set forth.

162,100. FEED-WATER HEATERS. Alex. Orme and William H. Burk, Chicago, Ill. [Filed Apr. 8, 1875.]



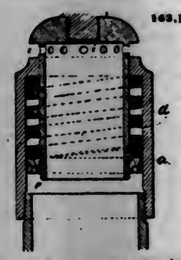
1. The chambers J G and depending tubes L and M, attached at their upper ends to the diaphragms E and F, all acting in conjunction to admit and discharge the steam at the upper end of the heater, whereby only the upper portion of the column of water is heated by direct radiation of heat, as specified.

2. The diaphragm C, located at the base of the heater, and arranged to form the annular space *a*, through which the volume of water ascends, as specified.

162,101. AUTOMATIC WATER-DISTRIBUTORS. Gilbert J. Orr, New York, N. Y. [Filed Apr. 10, 1875.]

Brief.—Automatic water-distributor containing a sliding cylinder, a valve, and lateral discharge-orifices, combined with a spring or weight, that keeps the parts closed until the maximum pressure has been exceeded.

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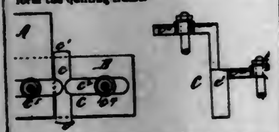


1. The cylinder *a*, containing the cylinder *c*, that is provided with lateral discharge-orifices *i*, in combination with the spring *d* and adjusting screw-ring *a*, substantially as and for the purposes set forth.

2. The automatic water-distributer, containing a sliding cylinder or valve and lateral discharge-orifices, combined with a spring or weight that keeps the parts closed until the maximum pressure has been exceeded, substantially as specified.

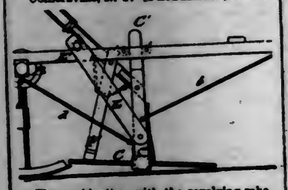
163,102. QUILTING-FRAME CLAMPS. Uberto N. Partridge, Boston, N. Y. [Filed Apr. 3, 1875.]

Brief.—The clamp joins the bars which form the quilting-frame.



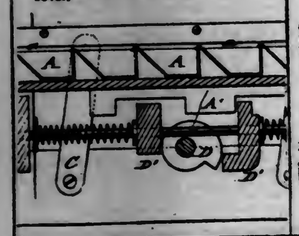
The clamp C, composed of the transverse ribs *c* and *c'*, the longitudinal ribs *c²* and *c³*, and the set-screws *c⁴* and *c⁵*, in combination with the quilting-frame A B, substantially as and for the purpose set forth.

163,103. HORSE HAY-RAKES. Glood Platt, Collierville, N. Y. [Filed Mar. 13, 1875.]



The combination, with the revolving rake, operating lever *d*, hinged slide-pieces G, and wheeled supporting frame of the cords and weights *b d d*, and supporting frame E E', all constructed and arranged to operate substantially in the manner and for the purpose specified.

163,104. CANE-CONCENTRATORS. James V. Pomeroy, Boulder, Colo. [Filed Mar. 1, 1875.]



The combination of level table B, having legs A', the series of overlapping pans A, supported at both ends by oscillating standards C C, the revolving cam D, and the sliding spring-plates D' D', all arranged substantially as and for the purpose specified.

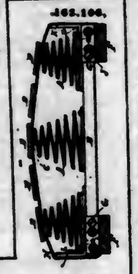
163,105. PLATE-LIFTERS AND TOASTERS. John A. Rakestraw, Altoona, Pa. [Filed Feb. 23, 1875.]

A combined plate-lifter and toaster, constructed with a handle, A, having forks D D, provided with prongs *a a*, and a loop, B, and hook K, adapted to receive, with capability of backward and forward motion, a handle, F, provided with a bend, *g*, and forks I, having prongs *f f*, the whole being constructed and operating in the manner and for the purpose described.

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163,106.



163,106. SPRING BED-BOTTOMS. Chandler D. Rawson, Worcester, Mass. [Filed Oct. 7, 1874.]

Brief.—By adjusting the slotted angle-irons on the screws attached to the supporting-bars, the webbing is adjusted and tightened on the springs.

The combination of the supporting-bars B B, cross-bars F F, angle-irons J, having the slots I, and headed screws or bolts G, with the adjustable webbing H, supported by springs A and K, and sustaining the slats D, all in the manner and for the purpose specified.

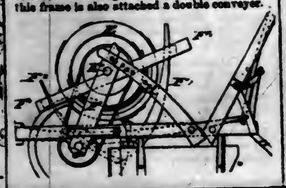
163,107. WRINGER-ROLLS. R. W. Rexford, Boston, Mass. [Filed Apr. 9, 1875.]



The grooved shaft *a*, in combination with the washers *a a*, having lips or projections *d d* fitting the grooves *b b* in the shaft, and the wires *f f* passing through perforations *e e* in the washers, substantially as and for the purpose set forth.

163,108. SEED AND GUANO DISTRIBUTERS. Robert Sappelt, Springfield, N. Y. [Filed Jan. 25, 1875.]

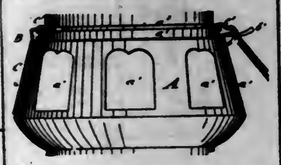
Brief.—Mounted upon a supplemental frame are two revolving drums, adjustable on arms to throw their weight to the front or rear. To this frame is also attached a double conveyer.



The revolving drums E E, and seed-conveyer F', mounted on frame F', in combination with pivoted standards F, and adjusting-arms H, as and for the purpose specified.

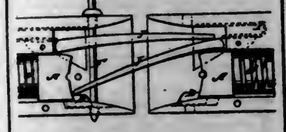
163,109. VENTILATING-DAMPERS. Anson Augustus Schroder, Warren Ill. [Filed Apr. 17, 1875.]

Brief.—The inclined flanges are operated to elevate or depress the dampers.



The pipe A, made with a conical enlargement in its middle part, having openings *a'* formed in it, with two shoulders, *a² a³*, at the upper end of said enlargement, and with holes above said shoulders, the ring B, having inclined flanges or cams *b'*, and a handle, *b²*, formed upon it, and the dampers C, having stems *c'* formed upon their upper edges, in combination with each other, substantially as herein shown and described.

163,110. CAR-COUPLINGS. Nathan G. Shelley, Stephen P. Bozarth, and D. V. Spring, Austin, Tex. [Filed Jan. 30, 1875.]



The combination of the sliding block A, rest D, spring G, pivoted coupling-link J, spring I, and the coupling-pin F with the draw-head of a car, substantially as specified.

163,111. TOILET-BRACKETS. Reuben A. Smith, East Weare, N. H. [Filed Feb. 27, 1875.]



As a new article of manufacture, the bracket herein described and shown, consisting of the back A, side pieces D, and strip C, all united by grooves formed in said back and side pieces, the towel-roll B, and mirror E, the latter being hung at the extremity of the outwardly-projecting side arms, and above the back A, as and for the purpose described.

163,113. CARRIAGE-SPRINGS. H. Sprague, Churchville, assignor of one-half his right to W. S. Brown, Le Roy, N. Y. [Filed Apr. 19, 1875.]

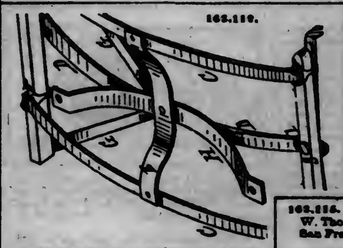
1. The combination of the side springs C C, spring-reach D, cross-strap E, body-loop H, and the angular braces G G, extending from the center of the reach to the outer ends of the rear axle, substantially as and for the purpose set forth.

2. The combination, with the springs C C and spring-reach D, of the cross-strap E and the angular braces G G, substantially as set forth

163,114. STEP-LADDERS. H. P. Stichter, Pottsville, Pa. [Filed Mar. 20, 1875.]

A ladder having the upper ends of brace-legs hook-hold in groove-cents *d d* of the body, as shown and described, to prevent the brace from slipping or folding up.

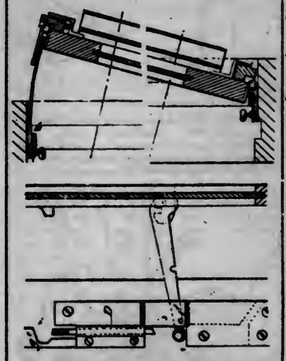
163,112.



3. The combination of the pivoted side springs C C of the rear axle and boleter, the reach D, attached on the bottom of the axles, and the body-loop H, fastened to center of the reach, to prevent longitudinal motion thereof from turning the axles, substantially as set forth.

163,113. CAR-WINDOWS. La Roy S. Starrett, Athol Depot, Mass. [Filed Mar. 20, 1875.]

Brief.—A car-window opening at either side, according to the direction in which the car is moving. When the window is open at one side the sash-hinge of the other is held locked by a spring-bolt of the jamb lock-plate with the recessed leg of the hinge-plate of the sash. The lock-plate of the sash-casing has downwardly-inclined channel for conducting away dust. The window-sash is provided with outer self-adjusting weather-stripe, sliding in guide-bands with spring-cushions.



1. A car-window provided with a hinged face-plate and operating-lever at each side, in combination with a lock and guide plate of the jamb of the window-casing, substantially as shown and described.

2. The combination of the spring-bolt of the jamb lock-plate with the recessed leg of the hinged plate of the sash, for locking sash-hinge at one side while sash is opened at the opposite side, substantially as specified.

3. The projecting lip of sash, in combination with top part of spring-bolt of lock-plate, to secure still further locking of one side of window, as set forth.

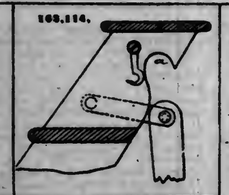
4. The lock-plate of sash-casing, having recess and downwardly-inclined channel at inside for conducting off the dust particles gathering therein, as shown and described.

5. The car-window sash provided with outer self-adjusting side weather-strips, sliding in guide-bands with spring-cushions, for the purpose set forth.

163,114. STEP-LADDERS. H. P. Stichter, Pottsville, Pa. [Filed Mar. 20, 1875.]

A ladder having the upper ends of brace-legs hook-hold in groove-cents *d d* of the body, as shown and described, to prevent the brace from slipping or folding up.

163,114.

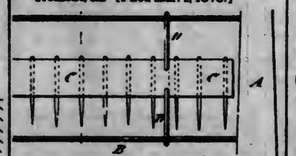


163,116. FOLDING CAR-LOCKS. Augustus W. Thornton, Oakland, and Martin Vice, San Francisco, Cal. [Filed Feb. 10, 1875.]



The angle-plate B, arranged to fit the gunwale A, in combination with the recessed stops F F and thole-pins C and D, constructed with projecting ribs G, substantially as and for the purpose set forth.

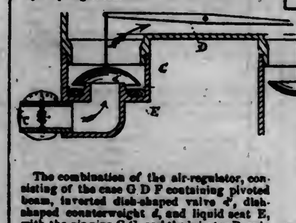
163,116. FARM-FENCES. Stephen Stout, Tremont, Ill. [Filed Mar. 1, 1875.]



The combination, with posts A A and wires B B, of the intermediate board C and U-shaped wires D, constructed and arranged substantially as and for the purpose specified.

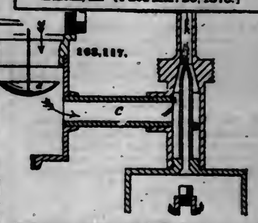
163,117. HYDROCARBON-GAS APPARATUS. G. W. Tinsley, Minneapolis, Minn. [Filed Mar. 1, 1875.]

Brief.—The quantity of air admitted to the injector is regulated by an inverted cup-valve, sealing in mercury, and balanced by a cup-shaped counter-weight. The air entrance may be set at any desired size of opening by a valve controlled by a disk having stops caught by a spring-catch.



The combination of the air-regulator, consisting of the case G D F containing pivoted beam, inverted dish-shaped valve *d'*, dish-shaped counterweight *d*, and liquid seat E, with the air-pipe C C, and the injector B, substantially as and for the purpose set forth.

163,117.

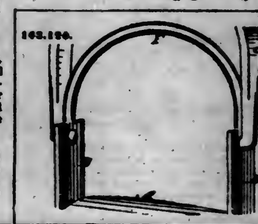


163,118. GAS-BURNERS. G. W. Tinsley, Minneapolis, Minn. [Filed Oct. 16, 1874.]

Brief.—The key may be revolved to regulate the flow of gas which supports the outer ring of flame. It may be drawn downward against the power of the spring, to release the drip.

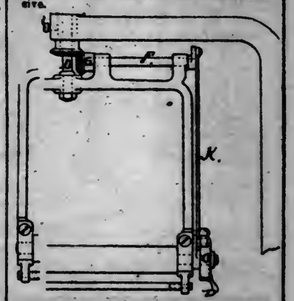
1. The key A, provided with the elongated tube C, constructed with the notches *d d*, in combination with the burner A, provided with the side ports *e e*, substantially as and for the purpose set forth.

163,118.



163,119. TAKE-UPS FOR KNITTING-MACHINES. Ira Tompkins and Albert Tompkins, Troy, N. Y. [Filed Mar. 26, 1875.]

Brief.—The differential wheels cause the take-up pawl to operate at constantly varying points around the cylinder of the machine, thus distributing the strain and the wear. The spring-keeper and stops retain the disk in either position to which it may be moved, to allow or prevent the operation of the take-up pawl. The devices of the third clause of the claim prevent the operation of the take-up pawls when the tension of the web is excessive.

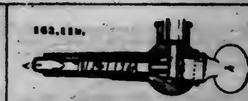


1. In combination with a take-up roll of a knitting-machine the differential gear-wheels and intermediate mechanism, as described, and for the purposes set forth.

2. The combination, with the take-up roll of a knitting-machine and its operating pawls, of the flanged disk O, having stops on its sides, and the spring-keeper R, as and for the purpose described.

3. The combination, with the crank-shaft F, of rod K, having a long slot to fit upper end, the pivoted arms T, provided with the supplementary roller, the spring S, screw V, and pivoted lever W, and its link, all as shown and described, to operate as specified.

163,120. STRAINER. Joseph R. Waggoner, Athens, Ill. [Filed Mar. 20, 1875.]



2. In combination with the tube C, key A, and barrier A, the collar *g* and spring *s*, constructed to operate as described, and for the purpose specified.

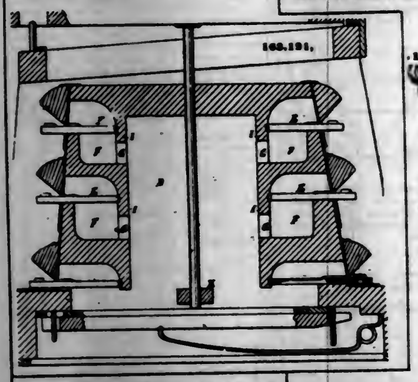
As a new article of manufacture, a stirrup consisting of the foot-piece A B, having bow or guard F, the whole pivoted in yoke C, as shown and described.

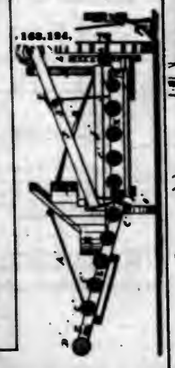
163,181. ORGAN REED-BOARDS. Wesley W. Walker, Brattleborough, Vt. [Filed May 1, 1874.]

The socket-board of a reed-organ having two opposite sets of reeds, E, cells F, passages G, sweet portions I, and median cell D, all relatively arranged substantially as and for the purpose specified

163,182. EXCAVATORS. John S. Whitecarver and William C. Whitecarver, Pontiac, Ill. [Filed Mar. 20, 1875.]

Brief.—A ditching-machine consisting of a triangular frame with a hinged elevator, provided with rollers, swiveled screws, and sliding frame for tightening the belt, and supporting-chains for regulating the height thereof. The plow and its standard, braces, and beams are regulated by a hinged lever. The endless belt is operated by gearing from the drive-wheel. The rear axle is made extensible, and connected to the triangular frame. The tongue is connected to a transverse lever, attached at one end by a chain to the frame, and at the other to the plow-beam.



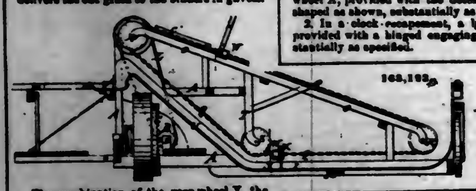


163,183. FOLDING TABLES. F. C. Wheeler, St. Joseph, Mo. [Filed Mar. 20, 1875.]

In a folding table, the combination, with rail D, connecting the upper ends of movable legs, of the cushion E E, movable by means of tongued and grooved parts E F, and held at any adjustment by screws I I, all as shown and described.

163,184. HARVESTERS. Frederic F. White, Stacyville, Iowa. [Filed Sept. 26, 1874.]

Brief.—An endless chain at the rear of the platform and elevator carries a rake, which delivers the cut grain to the binders in gavels.



The combination of the gear-wheel Y, the toothed bar Z, the pin A', and the guides B' with the rake X, the cross-bar W, the endless chains Q Q, and the inclined bars O O, substantially as herein shown and described.

163,185. CLOCK-ESCAPEMENTS. Geo. W. White and Walter I. Leary, Edenton, N. C. [Filed July 17, 1874.]

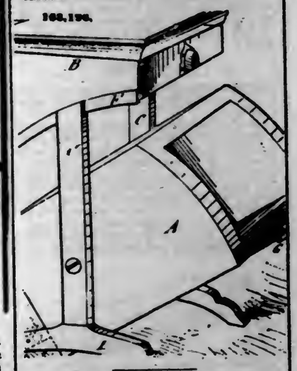
1. The plates D', provided at their ends with the hooks E, the shanks of which are pivoted to the plate, in combination with the wheel A, provided with the detents or teeth, shaped as shown, substantially as specified.

2. In a clock-escapement, a bar or arm, provided with a hinged engaging-teeth, substantially as specified.



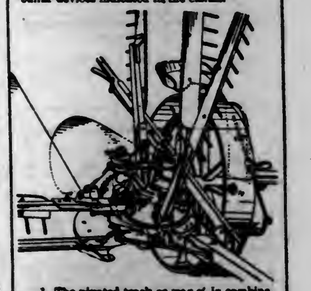
1. A single dust-tight box, consisting of pivoted body A and stationary cover B, the two coming together on a curved joint, F, and supported on stand C I, as shown and described.

2. The stop-blocks K, either one or two, hung to the base to turn eccentrically, in combination with the box A, for the purpose described.



163,187. HARVESTER-RAKES. W. A. Wood, Albany, N. Y. [Filed Jan. 4, 1875.]

Brief.—The reel-arms are made to act as rakes, at the will of the operator, by the peculiar devices indicated in the claims.



1. The pivoted track or way *a'*, in combination with the dog or pawl h, on the rotating rake-head or crown-wheel, substantially as described.

2. The pivoted dog h for actuating the rake-track *a'*, in combination with the locking-pawl h^1, for holding the dog h away from said track *a'*, as described.

3. The dog or pawl h, which actuates the rake-track *a'*, in combination with the locking-pawl h^1 and the pivoted track J^1, controlled by the attendant in his seat on the machine, substantially as described, whereby said attendant is enabled to cause the arm or arms set to act as rake-arms, to act as reel or gathering arms only.

4. The combination of the locking-lever *i*, with the arm *f* of the toggle-link connection between the rake and reel-arms and the eccentric pivot, substantially as described.

5. The crane post or arm E provided with the tripping-spur *e'*, for raising the pawl h^1, and releasing the dog h, as described.

163,188. COAL-HOLDERS. Saml. M. Whiteside and Amos C. Holliday, Wheeling, W. Va. [Filed Mar. 20, 1875.]

163,189. MOWING-MACHINES. W. A. Wood, Albany, N. Y. [Filed Jan. 4, 1875.]



1. The double-jointed coupling-arm F, which connects the cutting apparatus with the main frame, provided with the sleeve F^1, connecting it with the crank-shaft sleeve, and made to curve upward in front of and to form a shield for the pitman, and also provided with the hemispherical shield F^2, covering and protecting the crank-wheel, and vibrating with the coupling-arm, as described.

2. The pivoted guiding-loop G, applied to the coupling-arm F, and retained in position for guiding and holding the pitman-rod by means of the spring g^1, substantially as described.

163,190. FLUE-CLEANERS. A. W. Abrams, Springfield, Mass. [Filed Apr. 10, 1875.]

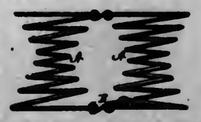


The improved brush described, consisting of the rod A, nuts J H, disks B B, and cones E E, constructed and arranged to operate substantially as and for the purpose specified.

163,191. EXTRACTING FATTY MATTERS FROM TANNERS' SCRAPS, &c. W. Adamson, Philadelphia, Pa. [Filed Sept. 1, 1874.]

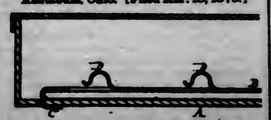
The process of extracting fatty and oily matter from carriers' and tanners' scraps and other offal, by kneading and crushing the same in dilute acid in the manner described.

163,192. SPRING-BEDS. C. L. Alvord, New York, N. Y. [Filed Mar. 20, 1875.]



The S-shaped connections B B, in combination with the double spiral springs A A, substantially as and for the purposes herein set forth.

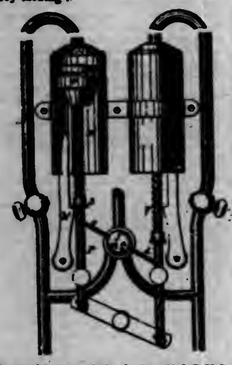
163,193. DEVICES FOR HOLDING ARTIFICIAL FLOWERS IN BOXES. Thos. Andrews, Jr., New York, N. Y., and Samuel C. Talcott, Ashtabula, Ohio. [Filed Mar. 13, 1875.]



The strip B, having its edges bent at right angles, and thus brought in contact with the bottom of the box A, and its upper surface, which is provided with the hooks D, correspondingly elevated above the bottom of the box, and held in position by the legs C, substantially as specified.

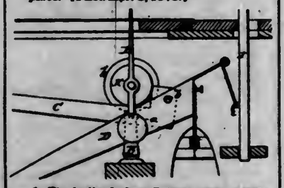
163,194. OPERATING VALVES. J. A. Ayres, Hartford, Conn. [Filed Nov. 14, 1874.]

Brief.—A small portion of air admitted through the main cock passes to the cylinders, and operates upon the pistons therein, the lower surfaces of which are inclined. When the pistons descend, said inclined surfaces strike the lever, which enters the cylinder and releases the collar, which is thrown down by the spring, and strikes the arm of the cock, thereby turning it



The combination of the devices M O P V S W, arranged in duplicate to move reciprocally, and operate the cock J by means of a small portion of the compressed air passing through it, substantially as herein described.

163,195. SCALES. Owen T. Baker, Wamego, Kans., assignor to Oscar M. Gay, same place. [Filed Apr. 8, 1875.]

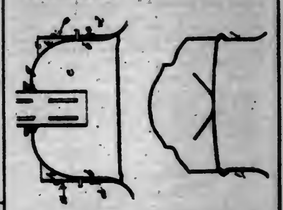


1. The inclined plane C, hung upon pivots *a* near one end, the other end vibrating in a slotted bar, E, and provided beyond the pivots *a* with pivots *b*, for the reception of the levers D, said pivots *b* being above a horizontal line through the center of motion of the vibrating end of the incline, substantially as herein set forth.

2. The combination, in a scale, of the vibrating incline C, levers D D, rolling weight K, and weighted index I, pivoted in the center of the weight at one end, substantially as and for the purposes herein set forth.

3. The combination, with the incline C, levers D, and rolling weight K, of the counter-scale and platform-scale, connected to the levers, substantially as and for the purposes herein set forth.

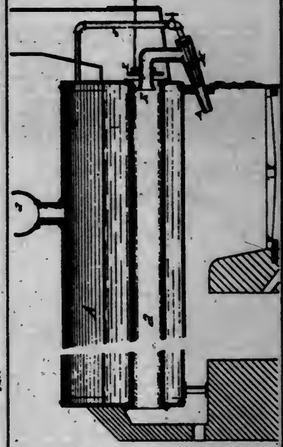
163,196. LANTERNS. Charles S. S. Baron and Alfred L. Baron, Bellaire, Ohio. [Filed Jan. 20, 1874.]



A lantern having the base composing the oil-cup top *c*, foot *a*, attaching-band *b*, and the shoulder *d*, and the dome composing the reflector *h*, the top band *i*, and the ventilator *n*, produced each from a single sheet, with its several parts integral and without seam or cutting, and having smooth surfaces throughout when finished, as a new article of manufacture, as herein specified.

163,197. STEAM-BOILER FURNACES. David P. Beard, St. Louis, Mo., assignor of one-half his right to Patrick G. Rooney. [Filed Dec. 12, 1874.]

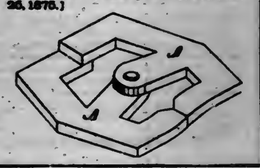
Brief.—A flaring-mouthed tube faces the smoke-flue, and by means of a steam-injecting pipe the smoke is drawn through said tube and forced in the furnace.



1. In a boiler of the character stated, the return flue H, arranged with its mouth *h'* facing the fire or fires *a* of the boiler, substantially as and for the purpose specified.

2. In combination with the return flue H *h* and boiler-flue or flues *a*, the adjustable plate I, operating substantially as and for the purpose specified.

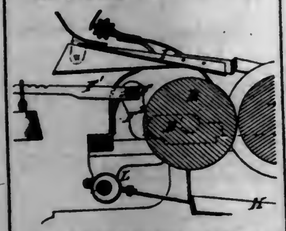
163,198. BALE-TIES. Charles J. Beasley, Petersburg, Va., assignor to W. H. Tapscy and Alex. Steel, same place. [Filed Mar. 20, 1875.]



HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

A bale-tie or buckle made in two pieces, A A, joined together by a rivet, and capable of opening at one end to such extent that the hoop or loop may pass vertically into the opening, and the two ends of said pieces brought together to form a bar through the loop, these ends being kept in position by the other loop being drawn into the narrower space between the opposite ends, as specified.

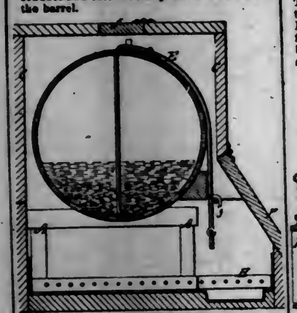
162,139. PROCESSES OF PREPARING GRAIN FOR GRINDING. Andrew Bertelsen, West Salem, and Marten Martens, Wrightsville, Wis. [Filed Dec. 1, 1874.]



The herein-described process of loosening the hull of grain previous to grinding—that is to say, rolling the grain under pressure between hard surfaces without crushing it, so as to merely destroy the adhesion between the hull and the flour-producing portions of the berry immediately underlying it.

162,140. TANKS FOR RETAILING COAL-OIL. John H. Boardman, Baltimore, Md. [Filed Mar. 27, 1875.]

Brief.—The barrel rests upon a frame, being wholly inclosed within a case. The contents are drawn off through a siphon into measuring-vessels, which stand upon a drainer. The bottom of the case is lined with sheet metal, descending into a trough in front, to conduct and catch the drip and overflow from the barrel.



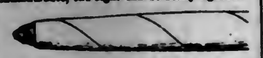
1. A closed barrel-case having one side of the lower part of it extended, so as to form, with a portion of the drip-tray, a closed dispensing-tray, with independent movable entrance therein, for the purpose and in the manner substantially as described.

2. The siphon, in combination with the adjustable cross-bar *g*, the barrel, and the barrel-case, substantially as set forth.

3. The troughed tray in the bottom of, and in combination with, the barrel-case, substantially as and for the purpose set forth.

162,141. CIGAR-TIPS. Francis Bourne, Boston, Mass. [Filed Apr. 20, 1875.]

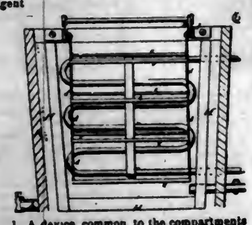
Brief.—Any suitable comminuted substance is saturated with collodion, and applied while wet to the end of the cigar, the collodion causing the mixture to adhere, and, being highly inflammable, the cigar can be easily lighted.



A tip for cigars, composed of a combustible comminuted material or mixture, saturated with collodion, and thus rendered highly combustible, and at the same time adhesive.

162,142. ICE-MACHINES. David Boyle, Washington, D. C. [Filed Nov. 10, 1874.]

Brief.—One device at the same time agitates the water to be frozen, and causes a current of the uncongealable fluid around and in contact with the coil containing the volatile agent



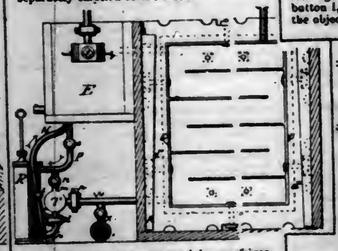
1. A device common to the compartments and spaces between them, whereby the uncongealable fluid in the compartments and the water in the spaces between the compartments are operated upon, producing simultaneously a current around the evaporator-coil in the compartment, and agitating the water between the freezing-plates, substantially as specified.

2. The pyramidal stripe *e*, for agitating the water and creating a current in the uncongealable fluid, as set forth.

3. An evaporator-tank surrounded by a non-conductor, in combination with the stripe *e*, draw-rods *d*, and means of operating the rods, substantially as stated.

162,143. ICE-MACHINES. David Boyle, Washington, D. C. [Filed Oct. 24, 1874.]

Brief.—Each hollow partition, through which the brine passes, is surrounded with a frame of non-conducting material. The brine is sent directly or reversely in a circuit from the tank containing the refrigerating-coil through the hollow partitions and the pump. The gas enters the distributer, passes into and through the coil, and out to condensing-pump. Pockets at ends of water-spaces are to be filled with water, to aid in detaching the blocks of ice. Each hollow partition may be separately emptied of the brine.



1. A freezing-plate, operated by a refrigerant, and encompassed by a non-conducting frame.

2. The combination of a freezing surface or a freezing-plate, encompassed by a non-conducting-frame, with a series of partitions open at their alternate ends, for the purpose of producing a uniform flow of the chilling-fluid and evenly chilling the plates.

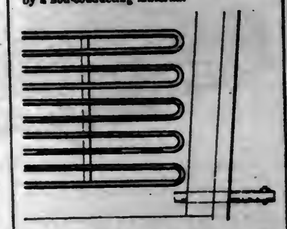
3. The combination of a hollow partition, encompassed by a non-conductor, with an evaporator-tank, as stated.

4. The combination of the pump E with the pipe N having the cock *i*, A having the cock *l*, P having the cock *o*, T and *m* having the cock *n*, W having the cock *p*, substantially as set forth, for the purpose of directing the flow of the chilling agent in a circuit beginning and ending in the tank E, and including the hollow partitions B, and either upward or downward through the partitions, as described.

5. The wedge-shaped pocket R, in combination with the freezing-tank, for the uses stated.

162,144. ICE-MACHINES. David Boyle, Quincy, Ill. [Filed Apr. 14, 1875.]

Brief.—The volatile agent circulates through coils in the uncongealable fluid, which is held in compartments (of the tank) whose sides are the freezing-plates, and which are enframed by a non-conducting material.



A hollow compartment composed of a non-conducting frame connected by freezing-plates, and containing an evaporator-coil, substantially as set forth.

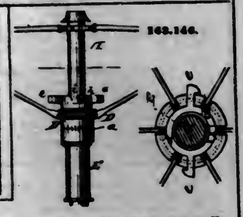
162,145. ROCKING-CHAIRS. Chas. Brada, New York, N. Y. [Filed Feb. 13, 1875.]

Brief.—The rocker is adjusted to any position on the supporting-frame, and is secured therein by the locking-bar engaging with the catch on the supporting-frame. The locking-bar is operated by the rock-shaft and connecting-lever, and is locked in position by the spring-catch engaging with the notched thumb-button on the rock-shaft.



The combination, with the rocker A and supporting-frame B, having a catch, *b*, of the locking-arm E, lever G, rock-shaft H, thumb-button I, and stop *d*, substantially as and for the object specified.

162,146. UMBRELLA-RUNNERS. George B. Bringman, Philadelphia, Pa. [Filed Apr. 15, 1875.]



1. In combination with the stick A and stretchers C, the runner D, tube E, spring *e*, and catches *c c*, constructed and arranged to operate substantially as and for the purposes herein set forth.

2. In combination with the subject-matter of the above claim, the bayonet-lock *h* and pin *i* in the stick A, substantially as and for the purposes herein set forth.

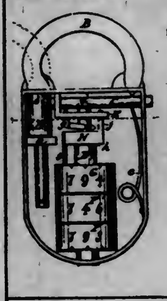
162,147. COMBINATION-PADLOCKS. Mott B. Brooks, Brockville, Canada, assignor to J. M. Gill, same place. [Filed Apr. 9, 1875.]

1. The combination of the case A, semicircular link B, having a pivoted extension, B', and a recess, *b*, the transverse bolt C, having a recess, *d*, the spring *e*, and the longitudinal bolt D, substantially as and for the purpose described.

2. The combination of the link B, having extension B', the bolt C, the bolt D, having studs *c c'*, the rings F F', having grooves *f f'* *g g'*, the bent pin *g'*, and the perforated disk E, substantially as and for the purpose described.

3. The combination of the collar H, having extensions *i* and *j*, the perforated disk E, the bolt C, the bolt D, and the ring G, having longitudinal groove *h*, substantially as and for the purpose described.

4. The combination of the link B, bolt C, bolt D, perforated disk E, the collar H, and the rings F F' G, substantially as and for the purpose described.

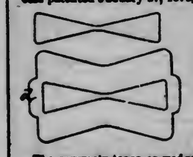


162,147.



162,148. COILS FOR TUBING. William F. Brooks, New York, N. Y., assignor to Geo. J. Brooks, Brattleborough, Vt. [Filed Dec. 1, 1874.]

Brief.—Improved core to be used in the process patented January 27, 1874, No. 146,808.



The reversely taper or wedge shaped core for use within a block of similar construction externally and internally, substantially as and for the purpose herein set forth.

162,149. ORDNANCE. John G. Butler, New York, N. Y. [Filed Mar. 18, 1875.]



1. The eccentric annular collars *h i* applied either to trunnions of full or reduced diameter, substantially as and for the purpose hereinbefore set forth.

2. The method of preserving or restoring the equilibrium of ordnance by eccentrically changing the trunnions, and thereby changing the centers thereof to correspond to the center of gravity, substantially as described.

162,150. DETENT-CYLINDERS. Jos. Butterworth, Philadelphia, Pa., assignor to Jas. Butterworth and Charles C. Butterworth, same place. [Filed Apr. 15, 1875.]



162,151. FEEDING ATTACHMENTS FOR CARTRIDGE-LOADING MACHINES. A. C. Carey, Boston, Mass. [Filed Mar. 27, 1875.]



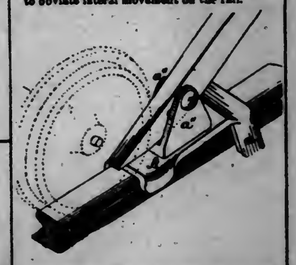
162,151.

1. In a machine-feeder for cartridges, the tube A, having grooves or recesses *b b'*, adapted for use with a hopper and a transversely-grooved feed-wheel, substantially as specified.

2. The guide-flanges *i*, in combination with the grooves or recesses *b' b* of a feed-tube, A, substantially as specified.

162,152. PINCH-BARS. M. Grier Collins, Wilmington, Del., assignor of two-thirds his right to James C. Pickels and Wm. P. Smith, same place. [Filed Apr. 1, 1875.]

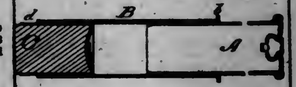
Brief.—The fulcrum-plate of one piece, with lugs above for pivoting the lever, and below to obviate lateral movement on the rail.



The fulcrum-plate A, provided with the lugs *a* and *a*, grooves *a'* and *a'*, ears *a''* and *a''*, and formed in one piece from cast-steel, substantially as and for the purpose shown.

162,154. BALL-CARTRIDGES. R. F. Cook, Potsdam, N. Y. [Filed Mar. 20, 1875.]

Brief.—In connection with fixed ammunition, the means referred to in claim for seating a patched ball in a breech-loading gun.



A cartridge for breech-loading fire-arms, consisting of the outer tube B, provided with flange *b*, powder-shell A, having flange *a*, and ball C, covered with a suitable patch, *d*, substantially as and for the purpose set forth.

162,155. RESERVOIR COOKING-STOVES. A. C. Corse and Michel G. Fagan, Troy, N. Y. [Filed Apr. 14, 1875.]

Brief.—The supplemental flue is in the rear of the ascending flue, and adjacent. It communicates with the reservoir-space, and at its sides with the descending flues, and by means of dampered openings in its bottom with the ascending flue, also. The descending flues are dampered near a plane passing through the upper line of the openings from them into the reservoir-space.

1. The combination and arrangement, between the ascending flue I and reservoir-chamber L, of the supplemental flue N, which communicates at its lower end with the latter, and at its sides with the descending flues H and H, substantially as and for the purpose specified.

2. The combination of the descending flues H and H, supplemental flue N, reservoir-chamber L, and openings *h*, *n*, and *n'*, substantially as and for the purpose shown.

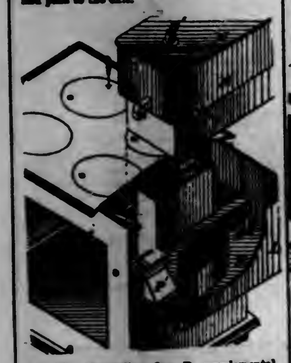
3. In combination with the top oven-flue F and reservoir-chamber L, the descending flues H and H, ascending flue I, supplemental flue N, openings h, n, and n', and dampers H' and I', substantially as and for the purpose set forth.

160,156.



160,156.—RESERVOIR COOKING-STOVES. A. C. Corse and Michel G. Fagan, Troy, N. Y. [Filed Apr. 14, 1875.]

Brief.—When all the dampers are closed, the products of combustion pass around the oven into the reservoir-space, around the flue-strip to the exit-flue. When only the damper closing the direct draft is closed, they dive in both side flues, enter the reservoir-space, and pass to the exit.



1. The descending flue P, supplemental flue P', openings p and q, and dampers P' and Q', in combination with the boiler-chamber M, substantially as and for the purpose shown.

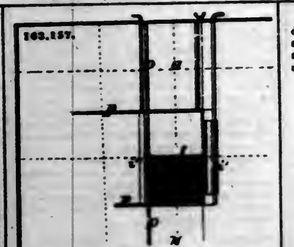
2. The descending flue P, supplemental flue P', the ascending flue Q, the exit-flue O, the openings o, p, and q, and the dampers P' and Q' in combination with the top flue I, bottom flues K and K', and the boiler-chamber M, substantially as and for the purpose shown and described.

160,157. RESERVOIR COOKING-STOVES. A. C. Corse and Michel G. Fagan, Troy, N. Y. [Filed Apr. 14, 1875.]

Brief.—The products of combustion may be sent directly to the exit, or down the rear diving-flue and the supplemental flue into the space beneath the reservoir, and thence up the ascending and exit flue, or down the rear diving-flue to the return-flues under the oven, and thence up the rear ascending flue.

1. In combination with the flues H and I, provided with the openings h, h', i, and i', and dampers h', i', and i'', the supplemental flue M, communicating at its upper end with the top oven-flue F, and at its lower end with the reservoir sheet-flue M, substantially as and for the purposes specified.

160,157.



2. In combination with the sheet-flues F and M, the flue H, provided with the openings h and h'' and damper h', and the flue I, having the openings i and i'' and the dampers i' and i''', substantially as and for the purpose shown.

3. The sheet-flues F and M, vertical flues H, I, and N, communicating openings h, h'', i, i'', and n', and dampers h', i', and i''', all combined to operate in the manner and for the purpose substantially as set forth.

160,158. RESERVOIR COOKING-STOVES. A. C. Corse and Michel G. Fagan, Troy, N. Y. [Filed Apr. 14, 1875.]

Brief.—Smoke may be sent direct or around the oven, first being passed through the reservoir-space, if desired. In the latter case the diagonal flue-strips direct it to the center of the lower portion of the space under the reservoir.



1. In combination with the flues G and G and the reservoir-chamber L, the openings g and g', and dampers G' and G', substantially as and for the purpose specified.

2. In combination with the reservoir-chamber L, the sheet-flue I, located at its lower front side, and furnishing communication between said chamber and the lower portion of the descending flues G and G, substantially as and for the purpose shown.

3. In combination with the reservoir-chamber L, and with the openings g and g, the vertical diagonal flue-strips O and O, arranged substantially as and for the purpose set forth.

4. In combination with the descending flues G and G, and with the reservoir-chamber L, the inlet and outlet openings g and g', respectively, the rolling dampers G' and G', the sheet-flue strip N, and the vertical diagonal flue-strips O and O, all arranged to operate in the manner and for the purpose substantially as shown and described.

160,159. EARTH-AUGERS. Henry Cull, Marshalltown, Iowa. [Filed Apr. 13, 1875.]

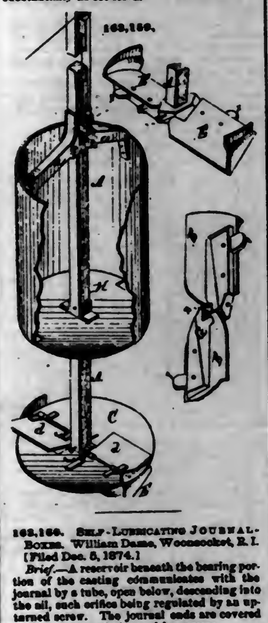
Brief.—The auger-shaft is provided with a pulley at the top, and another on the arms of the basket, over which a rope passes for elevating the basket. The shaft carries a disk for forcing out the earth, and a bottom plate with valves and cutters. The basket is movable on the shaft, and the L-shaped cutters are detachably connected to a cross-piece.

1. In combination with a shaft, A, and its pulley b and circular disk H, the movable cylinder B, having arms a a, and the pulley b, substantially as and for the purposes set forth.

2. The combination of the shaft A and disk H, movable cylinder B, open at both ends, the metallic piece G, with its L-shaped cutters E E, substantially as and for the purpose set forth.

3. The combination of the shaft A and its disk H, the movable cylinder B, and detachable L-shaped cutters E E, and the detachable disk C, provided with valves d d, all substantially as set forth.

160,160.



160,160.—SELF-LUBRICATING JOURNAL-BOXES. William Dame, Woonsocket, R. I. [Filed Dec. 5, 1874.]

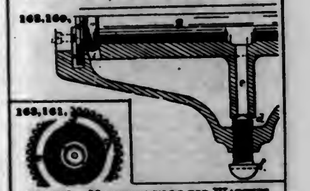
Brief.—A reservoir beneath the bearing portion of the casting communicates with the journal by a tube, open below, descending into the oil, such orifice being regulated by an upturned screw. The journal ends are covered with washers and clamped by screws.

1. In a sectional journal-box, the combination, with an oil-reservoir, C, of the lower section of the feed-tube e, having a countersunk lower end, and the adjustable screw f, having a correspondingly-beveled upper end, substantially as specified.

2. The cut-offs or washers i and the clamp-plates m, arranged in recesses h, and clamped by set-screws n, combined and arranged substantially as specified.

3. The combination of the oil-reservoir C, valve d, screw f, cut-offs i, with clamp-plates m, set-screws n, grooves o, with oil-holes s, substantially as and for the purpose described.

160,160.



163,161.

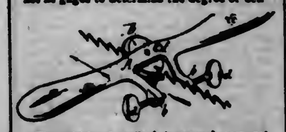
163,161.—MAINSPRINGS FOR WATCHES. Jno. A. Dawson, Boston, Mass., assignor to Florentine A. Jones, Schaffhausen, Switzerland. [Filed Dec. 10, 1874.]

Brief.—A mainspring safety attachment, consisting of a supplemental piece attached to and swinging on the outer end of main-spring, to engage in a recess in the barrel, and act as a stop-work for the winding mechanism.

In combination with the spring B and barrel A, the intermediate swinging piece C, hinged to the outer end of the spring at one end, and bearing against an abutment on the barrel at the other end, substantially as described, for the purpose specified.

160,162. SAW-SETS. Henry Disston, Philadelphia, Pa. [Filed Nov. 20, 1874.]

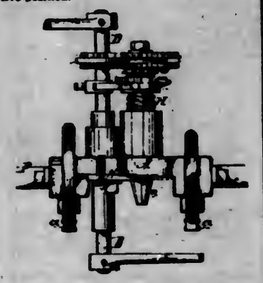
Brief.—A disk, with notches in the edge of various widths, is pivoted in a slotted frame, midway of the two handles, and is held in position by a set-screw. Two arms situated in the plane of the disk carry set-screws, that act as gages to determine the degree of set.



The within-described improved saw-set, consisting of the frame A having handles a a, arms b b, set-screws f and d, and the slotted and recessed disk B, all as set forth.

160,163. SAW-GUMMERS. Thos. S. Disston, Philadelphia, Pa., assignor to himself and Henry Disston & Sons, same place. [Filed Aug. 7, 1874.]

Brief.—An eccentric on the driving-shaft works between the bifurcated ends of a bell-crank lever, hung loosely upon the tubular feed-screw. A pawl carried by said lever engages with a ratchet-wheel attached to the feed-screw, and, upon the vibration of the lever by the eccentric, turns said wheel, and feeds the screw and tool-spindle forward. A central collar on the pinion is adapted to a groove in the cog-wheel, so that the pinion and wheel must always retain the same relative position.

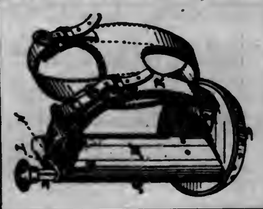


1. The combination, in a saw-gummer, of the saddle A, provided with set-screws c, the driving-shaft D, tubular screw H, spindle G, carrying the conical cutter n, turning in the tubular screw, and moving longitudinally with, but rotating independently of, the latter, and appliances, substantially as described, for communicating a rotary motion from the driving-shaft to the spindle, and a longitudinal motion from the latter to the driving-shaft, all as set forth.

2. The combination of the saddle A, its driving-shaft D, spindle G, and tubular screw H, the ratchet q, eccentric p, and the lever K, carrying a pawl, t, and having an elastic arm, as and for the purpose set forth.

160,164. ALARM FARE-REGISTERS. Thos. B. Doolittle, Bridgeport, Conn., assignor to the Doolittle Manufacturing Company, same place. [Filed Mar. 18, 1875.]

Brief.—Arranged to be carried on or in the hand, the fingers being left free for other work.



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1. The case for an alarm-register, consisting of a round, oval, or equivalent formed barrel, A, adapted to be held on or in the hand, and containing the registering mechanism, and the perforated case D for the bell, substantially as described.

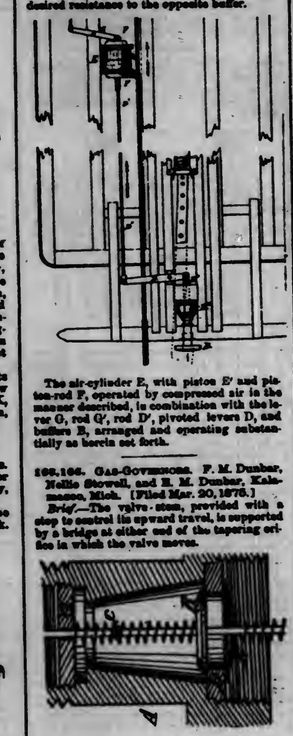
2. In a case for an alarm-register, the barrel A, provided with the sliding plates L M and seal-cavity N, substantially as and for the purpose described.

3. The combination, with the registering devices and with the alarm mechanism, arranged in relation to each other, as shown, of the straight push-rod B, passing down one side of the barrel, and provided with spring-arms J K, operating the register and the alarm, substantially as set forth.

4. An alarm-register embodying in its construction an oval, round, or equivalent formed barrel, carrying the registering mechanism, and adapted to be carried on or in the hand, a gong-containing case attached to such barrel, a series of registering-wheels, an alarm apparatus, and a straight push-rod, provided with spring-arms, and actuating the register and alarm, substantially as set forth.

160,165. RAILWAY-CAR BUFFERS. Prince R. Drake, Belle Ewart, Canada. [Filed Jan. 16, 1875.]

Brief.—A piston actuated by compressed air is combined with the buffer, to give it the desired resistance to the opposite buffer.



The air-cylinder E, with piston E' and piston-rod F, operated by compressed air in the manner described, in combination with the lever G, rod G', rod D', pivoted levers D, and buffers B, arranged and operating substantially as herein set forth.

160,166. GAS-GOVERNORS. F. M. Dunbar, Nellie Stowell, and R. M. Dunbar, Kalamazoo, Mich. [Filed Mar. 20, 1875.]

Brief.—The valve-stem, provided with a stop to control its upward travel, is supported by a bridge at either end of the tapering orifice in which the valve moves.

The screw-threaded pipe-section A, having a tapering orifice and carrying the rings D G, provided with perforated bridges, in combination with the spring-valve B and valve-rod C, with stop c, substantially as described, and for the purpose set forth.

160,167. ROASTING APPARATUS. Louis Dutertre, San Francisco, Cal. [Filed Mar. 22, 1875.]

Brief.—The flanges at the top, bottom, and ends prevent contact with the walls of the inclosing vessel or chamber.

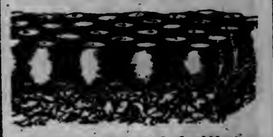


1. In a reversible roasting apparatus, the combination of the inner box B, provided with cover b b', and the outer box A, provided with cover a a, projecting supports and top pieces m m' n n', respectively, and fastenings p q p' q', all substantially as specified.

2. In a reversible roasting apparatus, the combination of the supporting angle-plates r r' o o' and handles r r' s s' with the box B and its cover b b', all substantially as and for the purpose specified.

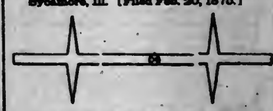
160,168. PAVEMENTS. Louis Dutertre, San Francisco, Cal. [Filed Feb. 15, 1875.]

Brief.—Cobble-stones having their ends clipped off are set in a bed of sand spread on a prepared foundation of cement or broken stone. The interstices between the cobble-stones are filled with a composition consisting of two per cent. petroleum, five per cent. pulverized limestone, ten per cent. gravel, and eighty-three per cent. asphaltum.



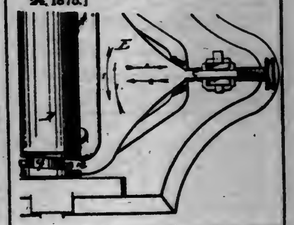
A pavement constructed of cobble-stones clipped at the top, set in a bed of gravel or sand spread on a prepared foundation of concrete or broken stone, and cemented together by an asphaltum preparation, all substantially as specified.

160,169. FENCE-WIRES. Reuben Hilwood, Sycamore, Ill. [Filed Feb. 20, 1875.]



A fence-wire, having barbs formed out of the metal of its body, and forming an integral part thereof, substantially as described, and for the purpose set forth.

160,170. PHOTOGRAPH-BURNISHERS. Wm. G. Entrekin, Philadelphia, Pa. [Filed Apr. 24, 1875.]



1. The burnisher *a*, combined with the roughened feed-roller D, and with appliances for imparting both a lateral and a longitudinal reciprocating movement to the burnisher, substantially as set forth.

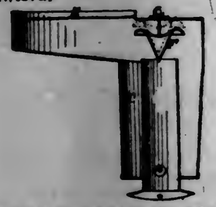
2. The combination of the scroll-groove *m*, of the roller D and eccentric portion *q* of the same with the forked stud *n*, attached to the burnisher arm E, all substantially as set forth.

162,173. BOOTS AND SHOES. T. R. Evans, Philadelphia, Pa. (Filed Feb. 15, 1875.)



A shoe or boot, having a central strip, *c*, forming a continuation of, and in one piece with, the vamp, and on each side of said strip a graduated elastic gore, broadest at its ends, as set forth.

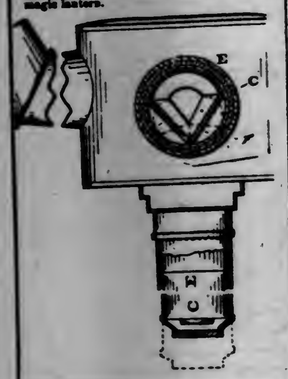
162,174. SMOKE-STACKS FOR LOCOMOTIVES. H. V. Farlee, Topeka, Kans. (Filed Dec. 17, 1874.)



In combination with the smoke-stack of a locomotive, a rearward-extending chamber, covered upon its upper side by means of wire-gauze, and having its lower side inclined forward and downward, so as to enable cinders to pass, by the force of gravity, directly from the same into the outer pipe of said stack, substantially as and for the purpose set forth.

162,175. KALEIDOSCOPE. Alfred C. Ferris and Charles E. School, Philadelphia, Pa. (Filed Mar. 16, 1875.)

Brief.—Obtains kaleidoscopic effects by magic lantern.



1. The kaleidorama, consisting of the tapering or conical reflectors F, and adapted to operate with the condensers of the lantern A, substantially as and for the purpose set forth.

2. The cylinder C, with cone D and reflector F thereto, and the collar E encircling the cylinder, substantially as and for the purpose set forth.

162,176. WEIGHING-SCALES. John Foller, Washington, D. C. (Filed Apr. 7, 1875.)



In weighing scales, the combination, with the bar B, provided with screw threads or serrations, of the weight A, adapted to be rotated and reciprocated upon said bar, substantially as and for the purpose specified.

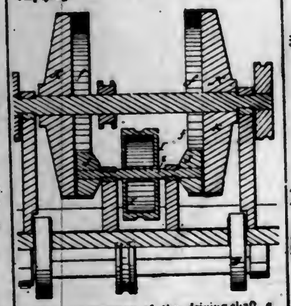
162,178. CUTTING-PLIERS. James G. Foreman, Corry, Pa. (Filed Mar. 1, 1875.)



The rectangular blades *f f*, having cutting-edges on all sides, adjusted and secured as specified, and for the purpose shown.

162,174. HAND-CARS. Joseph H. Gabert, Athens, Ohio. (Filed Mar. 30, 1875.)

Brief.—Hollow fly-wheels filled with sand, and provided with doors for convenience in emptying.



The combination of the driving-shaft *a*, hollow fly wheel H, and pulley *b*, belt *d*, shaft *e*, hollow equalizing-wheel I, friction-pulleys J J, wheels K K, having projecting rims *f f*, and a truck, substantially as and for the purpose set forth.

162,177. BOILER FEEDERS AND REGULATORS. Thomas G. Gardner, Lincoln, Ill. (Filed Jan. 13, 1875.)

Brief.—When the cylinder is empty the weighted lever raises it, opening an exhaust-pipe and closing the steam-pipe. Water then flows into the cylinder until its weight overcomes the weighted lever; it falls a short distance, which closes the exhaust and opens the steam-pipe. The water from said cylinder then flows through a bottom pipe into the boiler.

1. The pipe D, provided with elbows or connections E E', for attachment to a steam-boiler, and connected by pipes C and H with the rising and falling cylinder A, substantially as and for the purposes herein set forth.

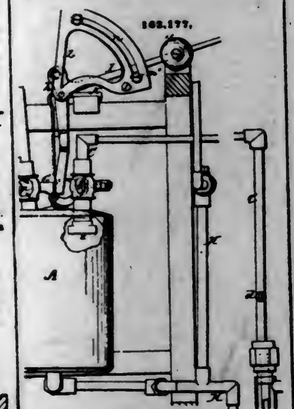
2. The steam-pipe C, passing from the intermittently-reciprocating cylinder A to the pipe D, and provided with a globe-valve, *b*, and with an inverted T at each end, substantially as and for the purposes herein set forth.

3. The combination of the cylinder A, pipe D, connections E E', pipe C, having valve *b*, and inverted T at each end, and the forked pipe H, having valves *f' f'*, all substantially as set forth.

4. The combination, with the intermittently-reciprocating water-cylinder A, of the exhaust-pipe with valve *a*, and the steam-pipe C with valve *b*, the two valves being connected by a bar, G, and operated by means of a weighted lever in such a manner as to open one valve and close the other simultaneously at each stroke of the lever, substantially as and for the purposes herein set forth.

5. The combination, with the intermittently-reciprocating water-cylinder A, of the oscillating elbow-lever I, with adjustable weight J, and knife-edge pivots *i*, bearing-plate K, slotted plates L L, with adjustable stops *m' m*, and arm P, and the bar G connecting the valves *a b*, all substantially as and for the purposes herein set forth.

162,177.

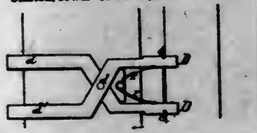


162,178. CARRIAGES. Jacob H. Gibson, Springfield, assignor to William J. Phelps, same place, and W. P. Abernethy, Northampton, Mass. (Filed Mar. 26, 1875.)



The combination of the support A, the socket and pivot joint B, the curved bar *d*, the slide *b*, provided with its set-screw *a*, and the canopy C, all forming an attachment to a carriage, substantially as described.

162,179. GATE-LATCHES. John L. Glessner, Clinton, Iowa. (Filed Apr. 24, 1875.)



The combination, with a gate and posts, of two crossed and pivoted latches, D D, having handles *d' d'*, the spring E, and the opposite catches *c c*, as and for the purpose specified.

162,180. MACHINES FOR CALENDERING PRINTED SHEETS. Henry Jos. Gill, Dublin, Ireland. (Filed Nov. 6, 1874.)

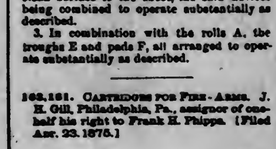


1. The hot-press cylinder-rolls A A, arranged side by side, in combination with troughs E E, for containing a liquid solvent of printers' ink, said rolls and troughs being constructed and arranged to operate substantially as and for the purpose set forth.

2. An apparatus for calendering printed paper consisting of two rolls placed side by side, so that the paper can be passed between and in direct contact with both rolls, a trough arranged under each roll for supplying a solvent thereto, and a rubber scraper for wiping each roll dry, so as to constantly present a clean surface to the sheet, the said devices being combined to operate substantially as described.

3. In combination with the rolls A, the troughs E and pads F, all arranged to operate substantially as described.

162,181. CARTRIDGES FOR FIRE-ARMS. J. H. Gill, Philadelphia, Pa., assignor of one-half his right to Frank H. Phipps. (Filed Aug. 23, 1875.)



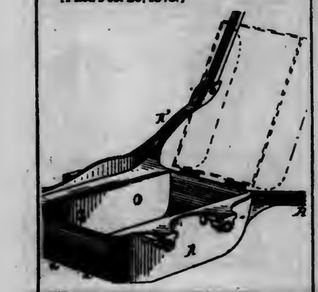
A cartridge-shell having a slot across the bottom of the pocket or recess *c*, with a solid anvil, *a*, secured in said pocket, substantially as described, whereby the anvil is retained in place, and a vent-opening is provided at the sides thereof, as set forth.

162,182. PROCESSES OF MANUFACTURING CIDER. William H. Gilmore, Shiloh, Ohio. (Filed Feb. 13, 1875.)

Brief.—To a solution of refined sugar and tartaric acid adds water and apple-essence obtained by freezing cider.

A cider compound made of refined sugar, tartaric acid, apple-essence, and water, substantially as described.

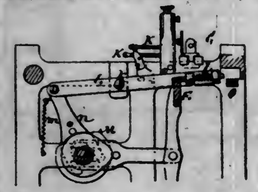
162,183. MOWING-MACHINES. Alexander Gordon, Geo. Telford, and Jacob H. Myers, Rochester, N. Y., assignors to the Hubbard Harvester Company, Minneapolis, Minn. (Filed Feb. 20, 1875.)



The open or slotted bottomed frame or body A, provided with the rack or gear guard *a*, grooved crank-axle arm A', tongue arm or socket A', and lever-arm A', constructed and arranged substantially as and for the purpose set forth.

162,184. NEEDLE-LOOMS. J. H. Greenleaf, New Haven, Conn. (Filed Oct. 23, 1874.)

Brief.—The tension device consists of a perforated blade-spring and rocking bearing, together with front and rear guides. A spring take-up finger controls the stop mechanism by means of a sliding bolt on a vibrating arm, the bolt being driven forward by the lay against the shipping lever when the thread breaks. The sliding friction clutch of the stop mechanism, when disconnected from the loose pulley, is thrown into gear with a fixed disk, thereby acting as a brake.

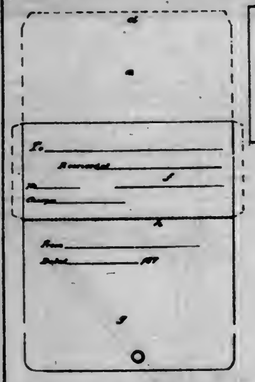


1. The combination, with the eye-pointed needle G, of one or more perforated springs, J, and rocking bearings *f*, for operation in connection with suitable eyes or guides, to control the tension of the needle-thread, substantially as specified.

2. The combination of one or more fingers or feelers, K, with the lever L, the forked lever n, the cam M, the spring m, the spring-stop *l*, the lay E, and the lever O, substantially as and for the purposes specified.

3. The combination of the double-faced clutch D, adapted to slide on and to turn with the driving-shaft of the loom, the loose pulley C on the said shaft, and the stationary brake cup or disk H, secured to the loom framing, the whole constructed and operating substantially as and for the purpose herein described.

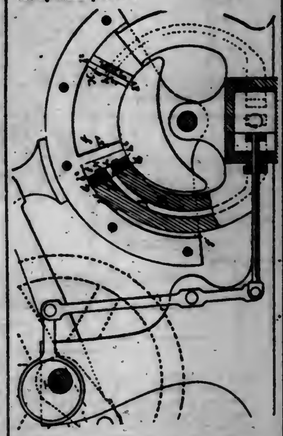
162,185. COMBINED BLANKS AND ENVELOPES. William L. Gross and William W. Kelchner, Springfield, Ill.; said Gross assignor to said Kelchner. (Filed June 27, 1874.)



The combined telegraphic-message and envelope blank, having the address portion *f* on the same side of the sheet with the face of the message portion *g*, the two being separated or divided by the perforations *h*, the folding envelope-flap *e d* above the address-surface, and the side sealing-flaps *d*, all as shown and set forth.

162,186. OSCILLATING ENGINES. Jno. Hall, Brooklyn, N. Y. (Filed Apr. 10, 1875.)

Brief.—The curved cylinder oscillates the curved pistons, the packing of which is set out by steam-pressure.



The packing, composed of the angle-plates G, fitted together with tenons *g'*, mortises *g'*, and lips or flanges *g'*, and the plate H, provided with the opening A, extension A', steam-ports or channels *i*, and flanged edges A', in combination with the abutments B B and the chambers *f f* of the cylinder, substantially as herein described.

162,187. RAILWAY-TIES. Silas H. Hamilton, Bushnell, Ill., assignor of one-half his right to John Fitch, Toledo, Ohio. (Filed May 4, 1875.)

Brief.—A railway-tie with tubular ends, having inner or gage lugs cast thereon, and having outer detachable lugs resting upon inclined seats, the upper outer ends of which have a wedge-shaped incline; said detachable lugs being fastened on the tie by a slotted bolt secured by a nut on inside of tie.



1. The metallic tie with tubular ends, the lips B C, and bolts D, having nuts within the tubular ends, as set forth.

2. The tubular-ended tie, having the ledges B C, bolt D, and inclines H, all arranged substantially as set forth.

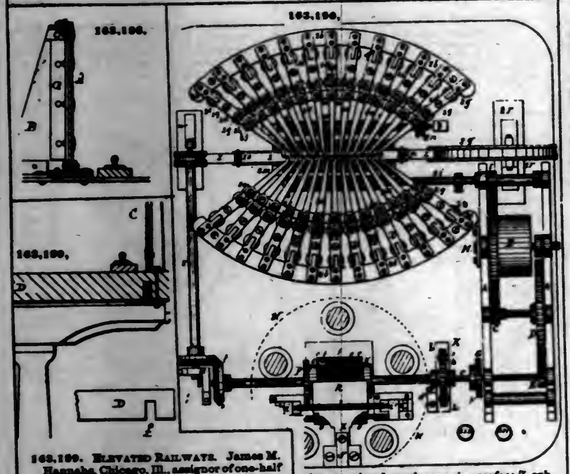
3. The tie with the inclines H, abutments I, clamps C, and bolt D, having nut and key K on its lower end, as set forth.

162,188. ELEVATED RAILWAYS. James M. Hannaha, Chicago, Ill., assignor of one-half his right to Louis Wahl and Christn. Wahl, same place. (Filed Dec. 26, 1874.)

Brief.—A metal-plate girder for elevated railways, having outside lateral braces or brackets, the several parts being strengthened and connected by angle-irons, and the inner side of the girder forming practically a smooth surface, to prevent injury to the cars should they leave the rails.

Girders for elevated railways, consisting of the iron plates A and outside bars or brackets B, the several parts being strengthened and connected together by angle-irons, as described, and constructed with a practically-smooth surface upon the inside, substantially as and for the purposes specified.

163,189.



163,190.

163,189. ELEVATED RAILWAYS. James M. Hasmahs, Chicago, Ill., assignor of one-half his right to Louis Wahl and Christn. Wahl, same place. [Filed Dec. 26, 1874.]

Brief.—A sheet-metal girder for elevated railways, having perforations near its lower flange, into which are passed notched ties, which rest upon the bottom flange of the girder.

1. The girder C, having openings *a* to receive the ties D, substantially as and for the purposes specified.

2. In an elevated railway, the girders C, in combination with the ties D, said ties being supported upon, and placed above, the lower angle-irons or chords, substantially as specified.

163,190. ELECTRO-MECHANICAL PRINTING-INSTRUMENTS. Hans R. M. J. Hansen and Christopher P. Jurgensen, Copenhagen, Denmark. [Filed Feb. 14, 1874.]

1. The writing-ball U and keys K *p*, having their points of contact arranged in a straight or diagonal line over the cylinder *e*, as set forth, in combination with the disk cylinder *e*, centers *f*, the shield T, provided with a series of contact-pieces, arranged either in a straight or diagonal line, to correspond with the points of contact of the keys K *p*, substantially as specified, the escapement E, spindle O, contact-wheel E, teeth *c*, electro-magnets 2*g*, armatures 2*d*, armature type-arms 2*a*, and a clock-work, substantially as and for the purposes set forth.

2. The writing-ball U and keys K *p*, arranged as described, the disk-cylinder *e*, centers *f*, the shield T, having a series of contact-pieces arranged thereon, substantially as set forth, and a clock-work, when used as a separate apparatus, and at any distance from and in combination with the electro-magnets 2*g*, armatures 2*d*, armature type-arms 2*a*, an escapement regulated by electro-magnetism, and a clock-work, as another and separate apparatus, the two being connected together by a series of wires of the same number as the keys K *p*, and each wire being joined in a cable, when the two apparatus may be used as an electric printing-telegraph, substantially as set forth.

3. The disk-cylinder *e* and centers *f*, in combination with the drum S, substantially as and for the purposes specified.

4. The writing-ball U, keys K *p*, disk-cylinder *e*, centers *f*, escapement E, and a clock-work, in combination with the pinion I, rollers 2*f* 2*f* 2*m*, having a carbonized paper band wound around them, the armature type-arms 2*a*, and a moving surface, such as a paper band, S, substantially as and for the purposes set forth.

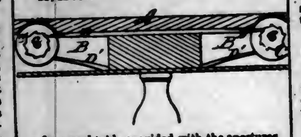
5. The writing-ball U, keys K *p*, disk-cylinder *e*, escapement E, and a clock-work, in combination with the spindle O, pinions *f* and *e f*, spindle V, carrying milled-edge wheel *x*, and the paper band or other moving surface Z, substantially as and for the purposes described.

6. The rollers 2*p*, in combination with the paper band Z, substantially as and for the purposes set forth.

163,191. TANNING COMPOUNDS. Arthur Haswell and John C. Long, Webster City, Iowa. [Filed Mar. 6, 1875.]

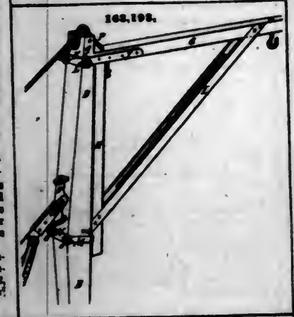
The herein-described compound, consisting of sumach, japonica, salt, sal-soda, oil of vitriol, spirits of turpentine, and potash, substantially as specified.

163,192. GAME-TABLES. Thomas L. Hawkins, Liberty Centre, Ohio. [Filed Mar. 12, 1875.]



In a card-table provided with the apertures 4, the disks C C', having numbers on their peripheries arranged in an ascending scale, and ratchet-wheels *e*, in combination with the pawls D D', arranged, one at the upper, and the other at the lower, part of the block B, whereby the disks C C' are allowed to turn only in opposite directions when operated by thumb-screws E E, substantially as described.

163,193.



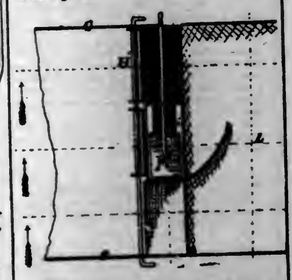
163,193. DERRICKS FOR STACKING HAY. Henry John Hay, Omph Ghent, Ill. [Filed Apr. 10, 1875.]

Brief.—Portable. A step for the post, and two rear braces pinned to the ground. Arm and diagonal brace together adjustable as to height.

An improved hay-derrick formed of the foot-board A, the pivoted shaft B, the braces E F and their couplings, the adjustable arm G H I and its couplings, the adjusting rope and pulley P Q, and the rigid arm R, constructed and combined with each other, substantially as herein shown and described.

163,194. RESERVOIR COOKING-STOVES. G. Hayner, Troy, N. Y., assignor to himself and Eddy, Corse & Co., same place. [Filed Apr. 14, 1875.]

Brief.—The products of combustion can be sent directly to the exit, or down the supplemental flue into the space under the reservoir, and thence either under the oven, or directly up to the exit by means of the damper in division-plate between the ascending and descending flues.



In combination with the top oven-flue F, descending flue H, ascending flue I, and reservoir-chamber L, constructed and relatively arranged as shown, the supplemental flue M, extending between said top oven-flue and reservoir-chamber, and the opening *i* and damper I', which afford direct communication between said flues H and I, substantially as and for the purpose specified.

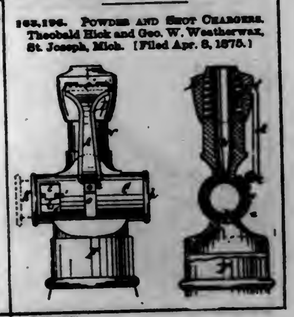
163,195. BUCKLES. Myron Hester, Grand Rapids, Mich. [Filed Sept. 5, 1873.]

Brief.—The cam-lever has a slot at one end, through which the strap is passed, and the other end is held by a catch or swinging loop, which is pivoted to the frame.



In a trunk-fastening, the combination of the body *a*, lever *d*, having the slot *s* through its upper end, and catch *j*, substantially as shown and described.

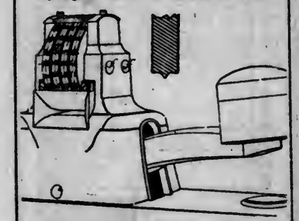
163,196.



163,196. POWDER AND SHOT CHARGERS. Theobald Hick and Geo. W. Weatherwax, St. Joseph, Mich. [Filed Apr. 6, 1875.]

The combination, in the top of a powder-flask, of the fixed exterior cylinder C, having the slotted openings *a* and *a'*, and the openings *c* and *c'*, communicating, respectively, into the flask F, and the nozzle-piece N, the movable interior cylinder *c*, with its openings *b* and *b'*, the screw-head *h*, and the extension-head *h'*, provided with the catch *d'*, engaging in the notched slot *s*, the hinged arm A, the collar D, and the coil-spring *g*, as described.

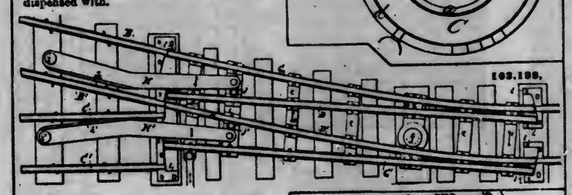
163,197. HAND-STAMPS. Benjamin B. Hill, Springfield, Mass. [Filed Mar. 17, 1875.]



In a dating-stamp, a series of revolving type-wheels provided with characters or figures upon the periphery having such a sharp cutting-edge as to readily pierce the ticket, and leave an indent of the said characters or figures in the ticket, in combination with a platen to support the ticket while being stamped, substantially as described.

163,198. RAILWAY-SWITCHES. Benj. Hinkley, Troy, N. Y. [Filed Jan. 10, 1874.]

Brief.—Both ends of the switch swing open; four rail-sections being rigidly connected, and turning upon a central pivot. The rail-sections do not cross, and the diverging lines of the main track do not cross. Frogs are thus dispensed with.

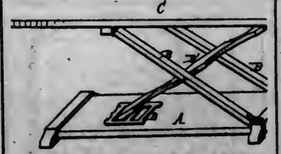


163,198.

1. The two inside-converging switch-rails D D', connected together and pivoted between their ends, in combination with the stationary rails A A' and the fixed converging rails B' C, terminating at or before reaching the point to which they converge, as shown and described.

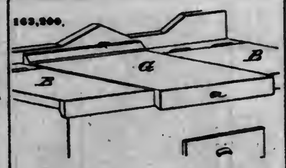
2. The combination of the inside-converging switch-rails D D', outside switch-rails G G', and safety switching-levers H H', with the fixed rails A A', B B', and C C', substantially as described.

163,199. IRONING-TABLES. Henry P. Hins and Friedrich Gehrke, Arlington Heights, Ill. [Filed Mar. 29, 1875.]



The base-board A, bars B B, brace B', table C, and ratchet-plates D D, constructed, arranged, and combined substantially in the manner and for the purpose set forth.

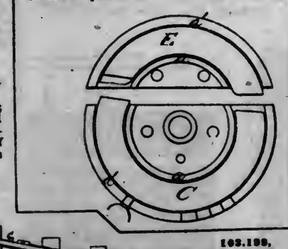
163,200. KNEADING-BOARDS. T. M. Hobson, Paola, Kans. [Filed Mar. 27, 1875.]



The reversible kneading board G, formed with flanges *a* at each end, and applied as a cover over a receptacle, E, and held between the covers B B of receptacles A A, substantially as described.

163,201. FASTENERS FOR THE MEETING-RAILS OF SASHES. H. A. House, Bridgeport, Conn., assignor to Frank Armstrong, same place. [Filed Apr. 10, 1875.]

Brief.—A circular bolt, in two sections, fitted in a suitable case, carries a recessed spring, so arranged that, when one of the sections of the bolt is thrust out of its case into that of the other by reaction of the spring, the other section enters the end of the case thus vacated, and securely locks the meeting-rails of the sashes; there being also a notched and toothed slot in the bolt-case, to hold the bolt in position, when desired, at intermediate points.



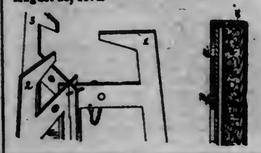
163,201.

1. The spring S, recessed into bolt C, in combination with sliding segmental bolt E, substantially as specified.

2. The case A, having a slot, *c*, with notch *d*, and teeth *e*, in combination with sliding bolts C E, and spring S, substantially as specified.

163,202. COOKING-LAMPS. G. P. Houston, Washington, D. C. [Filed Apr. 24, 1875.]

Brief.—Improvement on Patent No. 154,484, August 25, 1874.

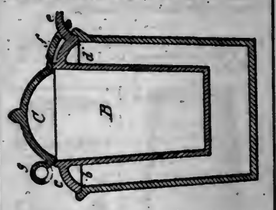


1. In a cooking lamp or stove constructed as described, the valve D, in combination with the holder *a* and cap *a'*, substantially as and for the purpose set forth.

2. In combination with a cooking lamp or stove, the plates 1, 2, and 3, forming the support, substantially as described.

163,203. GLUE-POTS. Thomas C. Howes, Cohoes, N. Y. (Filed Aug. 6, 1874.)

Brief.—The flange which sustains the glue-pot within the water-vessel is cast upon the glue-pot. This obviates the necessity of using a core in casting the outer vessel.



A glue-pot consisting of the inner vessel B, having the wide annular flange *c*, in combination with the outer vessel A, substantially as specified.

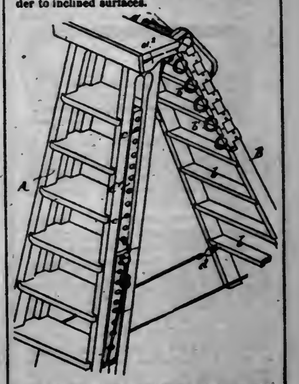
163,204. RELIEF-PLATES FOR PRINTING, &c. Benj. B. Huntoon, Louisville, Ky. (Filed Feb. 10, 1875.)

1. The herein-described method of producing relief-plates, consisting in striking up a sheet-metal face, filling the back of the same with cement, and then attaching a fabric to the back thereof, substantially as specified.

2. As an article of manufacture, a printing or relief plate composed of a sheet-metal face, cement filling, and cloth backing, constructed and arranged substantially as shown.

163,205. STEP-LADDERS. Jacob L. Isaacs and Richd. Halliday, St. Louis, Mo. (Filed Apr. 1, 1875.)

Brief.—The bolts that connect the back props with the main portion of the ladder are secured to strap-springs. The back props are provided with hooks, and when the ladder is used as an extension-ladder the hooks engage with the steps of the ladder proper. The cords that connect the back props are secured thereto by hooks, and pass through eyes on the lower step of the main ladder, and through the open stile, and hook at any desired adjustment into a perforated bar, to adapt the ladder to inclined surfaces.



1. The herein described and shown combination of parts—that is, the journals *a* and *b'*, the spring-bolt *a'*, and ladders A B, as and for the purpose set forth.

2. The combination of parts—that is, the journals *a b'*, the spring-bolt *a'*, and catch-hooks E—with ladder parts A B, by means whereof an extension for ladders is formed, as herein shown and described.

3. In combination with the ladder parts A B, the strip C, having slots *c*, buckle *c'*, cord D, and hooks *d*, for adapting the cord attachment to secure said ladders in varying positions, and as herein shown and described.

4. The hooks *d*, constructed as herein shown and described, to obtain a double fastening, as and for the purpose set forth.

5. The combination of the ladder parts A B, journals *a b'*, spring-bolt *a'*, cord D, hooks *d*, buckle *c'*, slotted strip C, to operate in the manner herein shown and described.

163,206. MICA LAMP-CHIMNEYS. William H. Johnson, Chicago, Ill. [Filed Apr. 13, 1875.]



The combination of the mica chimney A, metallic top rim E, metallic base-rim B, band C, and the vertical exterior and interior strips D D, connected together and to the chimney and bands by the rivets *x x*, all substantially as and for the purposes herein set forth.

163,207. GUIDE-ROLLERS FOR WEB-PRINTING PRESSES. John W. Kellberg, Philadelphia, Pa. [Filed July 22, 1874.]

Brief.—The web of paper is led to the printing-press over a guide-roller, held in a frame which is pivoted to swing vertically, so that either end of the roller will sink to allow the smooth passage of paper, one margin of which is shorter than the other.



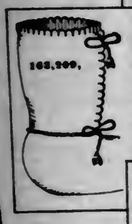
In a rotary printing-press, the roller B, mounted in a frame, A, A, A', and A', and that frame pivoted at *c c* on the frame C and C, in such a manner that its ends will yield vertically, substantially as and for the purpose described and set forth.

163,208. RAILROAD-SPIKES. Jas. M. Kent, Campbell, N. Y. [Filed Oct. 24, 1874.]

Brief.—The hook-spike is inserted in a previously-bored hole, the point, including the hook, entirely filling it, and the key *D'* driven behind it not only firmly holding the spike, but, by virtue of the inclined upper surface of the hook, exerting a strong downward pressure on the flange of the rail.

The half-headed semi-cylindrical holding-spike *A'*, provided at its lower end with the hook *a'*, having its upper face downwardly inclined and its back, or flat face, rounded opposite the hook, in combination with the semi-cylindrical half-headed key *D'*, substantially as and for the purpose set forth.

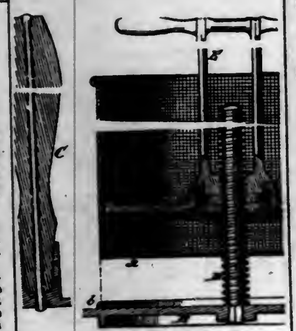
163,209.



163,209. SOCKS, MITTENS, &c. John Kent, New York, N. Y. [Filed Mar. 15, 1875.]

As a new and improved article of manufacture, a sock, mit, or other article of wearing apparel, composed of two thicknesses of knitted plush fabric, each having a plain knitted surface on one side and a plush surface on the other side, the plain knitted surfaces thereof being placed face to face, as and for the purposes herein set forth.

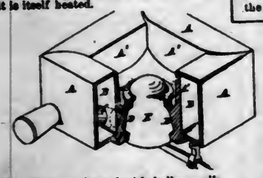
163,210. HAND JELLY-PRESSES. V. Knecht, Cincinnati, Ohio. [Filed Mar. 22, 1875.]



The base B, provided with fixed handle C and central screw-spindle D, in combination with the detachable cylinder A, having a bottom, *a*, follower F, and screw-handle E, all substantially as and for the purpose specified.

163,211. TUYERES. Franz Krein and Henry Franck, St. Louis, Mo. [Filed Apr. 23, 1875.]

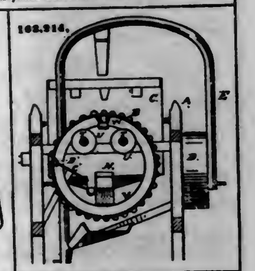
Brief.—The whole fire-box is formed of four hollow cast walls, the interior forming a passage for the blast, it cooling them at the same time it is itself heated.



1. The tuyere A, formed with hollow walls A', with interior air-passage B, and constituting the walls of the fire-place, and combined with interior annular chamber D and opening *a*, substantially as set forth.

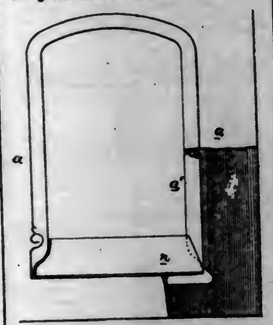
2. The combination of hollow walls A', passage B, chamber D, blast-opening *c*, and dropping E, all substantially as set forth.

163,212.



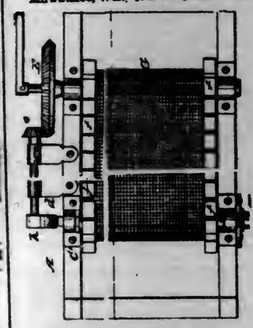
163,212. ALBUMS. Franz Friedr. Kulbrich, Berlin, Prussia. [Filed Mar. 10, 1875.]

Brief.—Lips *a* of paper are attached to each of the outer strips *a c'* at the lower edge of the opening, for the lower portion of the cards or pictures to rest upon, thereby facilitating their insertion and withdrawal.



The combination of the enlargements *s* in the openings of the strips *a* and *a'* of a photograph-album leaf, with strips *a c* arranged to underlap the inserted pictures, as and for the purpose specified.

163,213. GRAIN-SEPARATORS. H. Kurth, Milwaukee, Wis. [Filed Apr. 12, 1875.]



1. The revolving endless conveyer-belt G, made of rubber cloth, with longitudinal and transverse or other grooves made in its outer surface, to form cavities therein, for the purposes herein set forth.

2. The combination of the rotating roller B, reciprocating rotating roller B', rubber conveyer-belt screen G, gears *e* E, shaft D, eccentric A, and spring *b*, substantially as and for the purposes herein set forth.

163,214.

163,214. GRAIN-SEPARATORS. H. Kurth, Milwaukee, Wis. [Filed Apr. 12, 1875.]

Brief.—Pocketed or pitted cylinder suspended upon parallel shafts, which serve both to rotate and steady it. The vibrating blade, which receives the dust, &c., from the pockets, is provided with a clearing-edge of rubber.

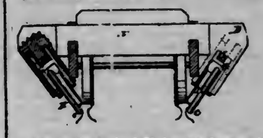
1. The combination, with the revolving cylinder B, of the rings V and the grooved wheels U on the parallel shafts T, substantially as described, whereby the cylinder is suspended and steadied at both ends and revolved, as set forth.

2. The vibrating blade C', provided with the rubber edge B', and arranged within the revolving cylinder B, substantially as and for the purpose herein set forth.

3. The revolving cylinder B, rings V, grooved wheels U, and parallel shafts T T, in combination with vibrating blade C', having rubber edge B', all substantially as and for the purpose specified.

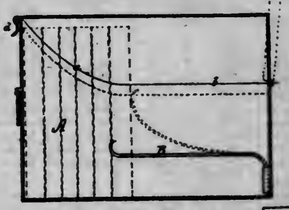
163,215. GUIDE-WHEELS FOR CAR-TRUCKS. T. H. Lane, Holly Springs, Miss. [Filed Apr. 13, 1875.]

Brief.—Yielding socket for guide-wheels, preventing strain and wear.



The inclined wheel H, having flange *c*, in combination with the frame G, the spring I, and the extension D, substantially as and for the purpose described.

163,216. BULL-FILES. Maurice Langhorne, Maysville, Ky. [Filed Apr. 1, 1875.]



The sheet-metal box A, having its sides cut down horizontally at *b*, and obliquely at *c*, so as to leave the front of the box flush with the top of the files, and having its cover provided with a lap-flange, *f*, with a spring, B, to hold up the files, all as and for the purpose specified.

163,217. EXPANDING MANDRELS. Peter B. Lawson, Cold Springs, N. Y. [Filed Apr. 26, 1875.]

Brief.—The nuts or rings are made of metal, and serve to center the cylindrical body operated upon, while the other rings are of rubber, and serve, when compressed by the screw and nut, and consequently expanded circumferentially, to hold the body to be operated upon from turning.



An expanding-mandrel, consisting of a central screw-threaded spindle, A, a nut, B, one or more centering-collars, C, and one or more expanding-collars, D, combined substantially as herein described.

163,218. RECLINING-CHAIRS. J. Silas Lees, Rock Island, Ill. [Filed Nov. 26, 1874.]

163,218.



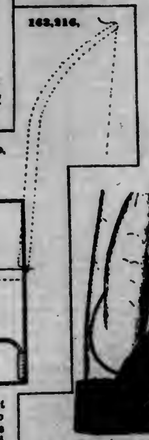
1. The combination, with the chair-frame A B C and hinged back D, of the bars *b*, hinged or pivoted ratchet-bars *d*, and springs *e*, substantially as and for the purposes herein set forth.

2. The shaft *h*, provided with lugs or projections *i i* and knob *f*, or its equivalent, in combination with the pivoted ratchet-bars *d*, springs *e*, and bars *b*, as and for the purposes herein set forth.

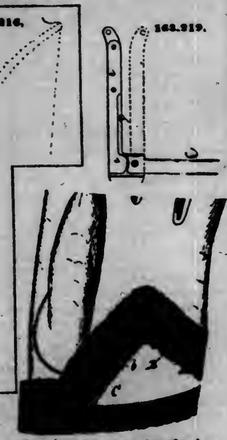
163,219. GLOVE CLASPS OR FASTENERS. Isaac Lewine, New York, N. Y. [Filed Apr. 6, 1875.]

Brief.—Two levers, one of them having a spring riveted to it, are pivoted together and operate after the manner of the blade of a jack-knife. The spring holds the levers open until the hand is inserted in the glove, and keeps them closed afterward.

163,216.



163,219.



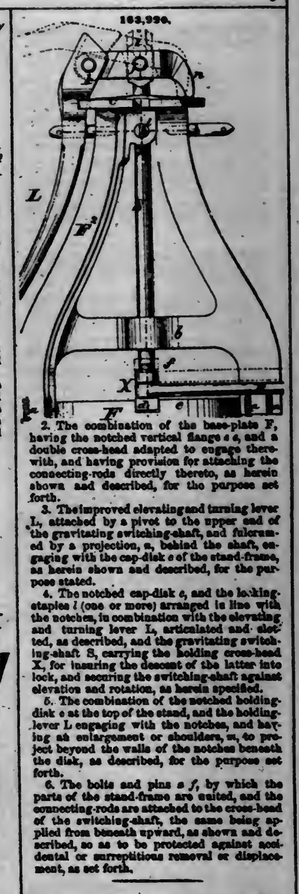
In combination with the opening of a glove, the levers B and C, pivoted together, as described, and the spring *e*, which is rigidly secured to the lever B, and bears against the pivoted end of the lever C, substantially as and for the purpose specified.

163,220. RAILWAY-SWITCH STANDS. Jos. H. Lukens, Burlington, N. J. [Filed Mar. 6, 1875.]

Brief.—A switch-stand having a vertical rotating gravitating-shaft, carrying at its lower end a cross-head secured in notches in bottom of stand; said shaft being elevated and turned by a jointed lever pivoted to the shaft, and having a fulcrum-point projecting back of shaft, and resting upon top of notched cap-disk. When in the desired position, the switch is locked by dropping the lever into the notches in the cap-disk, and, in addition, the lever is provided with a swell or enlargement, which takes under the disk, and prevents vertical displacement of shaft; also, a staple passes through the shaft for locking down the same by a padlock.

1. The base-plate F, having a vertical marginal flange, *c*, with index-notches therein, in combination with a cross-head, X, at the lower end of the gravitating switching-shaft, engaging at each end with the said notches for holding the switching-shaft in its different positions, in the manner herein specified.

163,220.



2. The combination of the base-plate F, having the notched vertical flange *c c*, and a double cross-head adapted to engage therewith, and having provision for attaching the connecting-rods directly thereto, as herein shown and described, for the purpose set forth.

3. The improved elevating and turning lever L, attached by a pivot to the upper end of the gravitating switching-shaft, and fulcrumed by a projection, *n*, behind the shaft, engaging with the cap-disk *c* of the stand-frame, as herein shown and described, for the purpose stated.

4. The notched cap-disk *c*, and the locking-staples *l* (one or more) arranged in line with the notches, in combination with the elevating and turning lever L, articulated and slotted, as described, and the gravitating switching-shaft S, carrying the holding cross-head X, for insuring the descent of the latter into lock, and securing the switching-shaft against elevation and rotation, as herein specified.

5. The combination of the notched holding-disk *c* at the top of the stand, and the holding-lever L engaging with the notches, and having an enlargement or shoulders, *m*, to project beyond the walls of the notches beneath the disk, as described, for the purpose set forth.

6. The bolts and pins *s f*, by which the parts of the stand-frame are united, and the connecting-rods are attached to the cross-head of the switching-shaft, the same being applied from beneath upward, as shown and described, so as to be protected against accidental or surreptitious removal or displacement, as set forth.

163,221. COMPOUNDS FOR INSULATING TELEGRAPH-WIRES. Alfonso A. Magtenphlin, Coldwater, Mich., assignor of one-half his right to Llewellen H. Johnson, same place. [Filed Feb. 2, 1875.]

Brief.—Pine-tar, eleven; coal-tar, four; resin, fifty; pulverized coke, sixteen; india-rubber, three and a half.

An insulating material composed of pine-tar, coal-tar, resin, coke, and india-rubber, mixed and compounded in the proportions and manner substantially as herein set forth.

163,222. COMPOSITIONS FOR PAVING AND ROOFING. James R. McClintock, New Orleans, La. [Filed Apr. 3, 1875.]

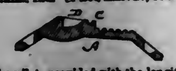
A semi-fluid solution of asphaltum in spirits of turpentine of commerce, put up and ready for use for paving, roofing, and other purposes, substantially as described.

163,223. COMPOSITIONS FOR PAVING AND ROOFING. James R. McClintock, New Orleans, La. [Filed Apr. 3, 1875.]

A semi-fluid solution of asphaltum in benzine, naphtha, or other similar light hydrocarbons, put up and ready for use for paving, roofing, and other purposes, substantially as described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

163,224. DOOR-SILLS. Thomas F. McEy, Franklin, Ind. [Filed Mar. 17, 1875.]

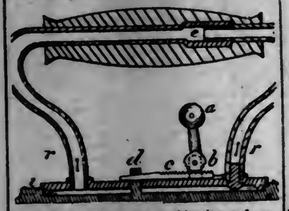


1. The sill A, provided with the longitudinal groove D and one or more transverse grooves, c, substantially as and for the purposes herein set forth.

2. The sill A, provided with the rise or offset C, having longitudinal groove or gutter D, and one or more transverse grooves or gutters, c, leading outward from the main gutter, substantially as and for the purposes herein set forth.

163,225. SAD-IRONS. Thomas F. McEy and Edwin C. McClain, Franklin, Ind. [Filed Mar. 17, 1875.]

Brief.—A tubular handle and plate attached to and detached from a sad-iron by a slide-rack and pinion.



1. In a sad-iron, the combination and arrangement of the lever a, the pinion b, the rack-slide c, the lug or post d, and the handle-plate f, substantially as and for the purpose set forth.

2. The combination of the iron g, having recess s and leg d, the handle-plate f, having legs e, and secured by the slide c, and the detachable hollow handle r, all constructed substantially as set forth.

163,226. PILE-DRIVERS. M. McDermott, Galveston, Tex. [Filed Jan. 22, 1875.]

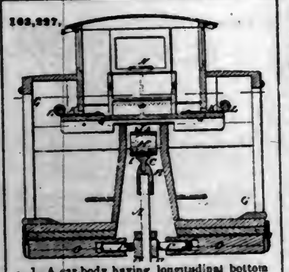
Brief.—A slide-block is provided with pivoted spring-nippers, that engage with permanent jaws on the hammer-block, on which is secured a pivoted sharpened spring-lever, that opens the nippers when they descend, to engage with the jaws on the hammer. The lever strikes a cross-bar in ascending, and releases the hammer. A portable frame and windlass are moved forward by a pulley and cord, and held by a hook against the cross-ties.



1. The combination of slide S, with P, spring-nippers T T Y Y c c, jaws U U, lever V, and spring X, operating substantially as and for the purpose specified.

2. In combination with the portable frame E and windlass F G H I J, the beam L and pulley M, connected and operating substantially as and for the purpose specified.

163,227. STEEL-RAIL-RAILWAY CARS. O. McWayne, Colfax, Cal. [Filed Dec. 5, 1874.]



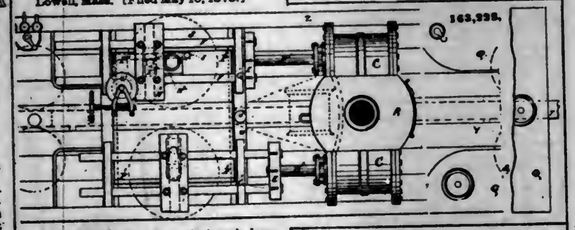
1. A car-body having longitudinal bottom cavity, provided with aligned vertical truck-wheels, having room for side play in the upper part thereof, and horizontal spring-pressed wheels P P, arranged as shown and described, for the purpose specified.

2. The laterally-sliding floor J in the car-body G, above the recess that receives the trucks and rails, substantially as shown and described.

3. The combination of the shafts L, ropes or chains K and M, and the vertical shaft N with the sliding floor J and the car-body G, substantially as shown and described.

4. The combination of the slides O, horizontal wheels P, and springs Q with the car-body G and the flat rails or plates P, attached to the posts A, substantially as shown and described.

163,228. LOCOMOTIVES. Jos V. Meigs, Lowell, Mass. [Filed May 16, 1873.]



1. The combination of a swivel-truck, bearing-wheels mounted thereon to run on a rail, and adjustable clamping or balancing wheels mounted on the truck, and bearing upon the vertical sides of the rail, as set forth.

2. The combination of two rails, one above the other, a truck, bearing-wheels mounted thereon, one behind the other, and adjustable clamping or balancing wheels, one above the other, and bearing on opposite vertical sides of the rails, as set forth.

3. The combination of a truck-frame, a turn-table, bearing-wheels adapted to run on top of the rail, and clamping or balancing wheels to run on the side of the rail, as set forth.

4. The combination of the turn-table, the truck-frame, the posts, the overlapping sliding tubes, and the springs inclosed therein, as set forth.

5. A supplementary supporting wheel or truck interposed between and combined with the end trucks, whereby one end of the car may be supported, while the other may be projected across a gap in the track, substantially as and for the purpose set forth.

6. The method of propelling cars by driving from the clamping-wheels instead of from the bearing-wheels, substantially as set forth.

7. The combination of longitudinally reciprocating transversely-slotted cross-heads, and blocks sliding in said slots, and carrying the wrists of the driving-cranks, as set forth.

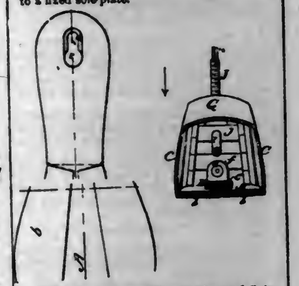
8. The method of mounting the driving-wheels in a frame adapted to slide laterally, to accommodate itself to curves in the track, substantially as and for the purpose set forth.

9. The method of varying the pressure of the driving or of the balancing or clamping wheels upon the track by shafts laterally adjustable in the truck-frame, as set forth.

10. The method of constructing a locomotive with the cylinders and boiler between the tank and driving-wheels, all combined as set forth.

163,229. SHOE-STRETCHERS. Clemens Miller and Peter Miller, Marietta, Ohio. [Filed Apr. 17, 1875.]

Brief.—Laterally-sliding plates are attached to a fixed sole-plate.

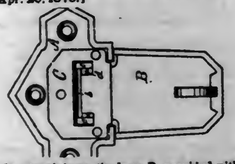


1. The screw-threaded operating-rod J, in combination with the detachable instep-plate G, intermediate fixed sole-plate A, toggle-jointed rods i i', link H, and actuating-rod I, substantially as specified.

2. The combination of the sliding plate E and T-rail c with the toggle-jointed rods D, plates C, and their actuating mechanism, substantially as specified.

3. The combination of the toggle-jointed rods i i', link H, and their actuating-rod I with movable instep-plate G and intermediate fixed sole-plate A, substantially as specified.

163,230. HASPS FOR TRUNK-LOCKS. Frank W. Mix, Terryville, Conn., assignor to the Eagle Lock Company, same place. [Filed Apr. 20, 1875.]



In a trunk-hasp, the hasp B, provided with the hub formed of the parts a b c, as shown and described, in combination with the plate d, upper portion A a a, and the plate C, all substantially in the manner specified.

163,231. MACHINES FOR DIVIDING COUNTER OR HEEL-STIFFENER BLANKS. S. Moore, South Sudbury, Mass., assignor to himself and H. Rogers, same place. [Filed Mar. 15, 1875.]

Brief.—An elliptically-cut stiffener-blank is divided through its middle or longer axis, leaving a beveled edge upon each opposite cut edge.

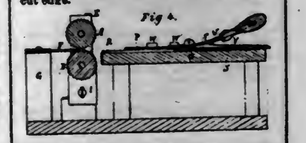


Fig 4.

1. The combination of the feed-rollers A B, the knife F, and the two gage-plates H I, arranged relative to the feed-rolls as described.

2. The knife or cutter F, provided with the shoulders d d, in combination with the gage-plates H I, provided with the hooks e e, to engage with the said shoulders, as set forth.

3. The hooked gage-plates H I, pivoted to the shafts of the feed-rolls and provided with springs M N to hold them in connection with the knife.

4. The combination of the gages W and the slide-jaws T U, applied to the table, as set forth.

5. The combination of the feed-rolls A B, provided with mechanism for operating them, the knife F, the gage-plates H I, the table O, the abutments or gages W, the slide-plate T, and the jawed lever U, all being arranged substantially in manner and for the purpose specified.

163,232. SOAP-PRESSES. Anthony Neupert, Buffalo, N. Y. [Filed Mar. 22, 1875.]

The combination, in a soap-press, with the bed C and pressing-box D, of the removable lower die F, actuated by the disconnected plunger-rod E, and provided with guide-pin f and detachable stop g, substantially as and for the purposes set forth.

163,233. FIRE-PLACE STOVES. Henry P. Ohm, Baltimore, Md., assignor of one-half his right to Alva Hubbard, same place. [Filed Apr. 7, 1875.]

Brief.—The draft may be either direct through, or indirect, in the latter case passing into the chamber of the radiator; thence downward through the column; thence through the chamber, annular flue, and column D', into the chamber, and finally out through the pipe.

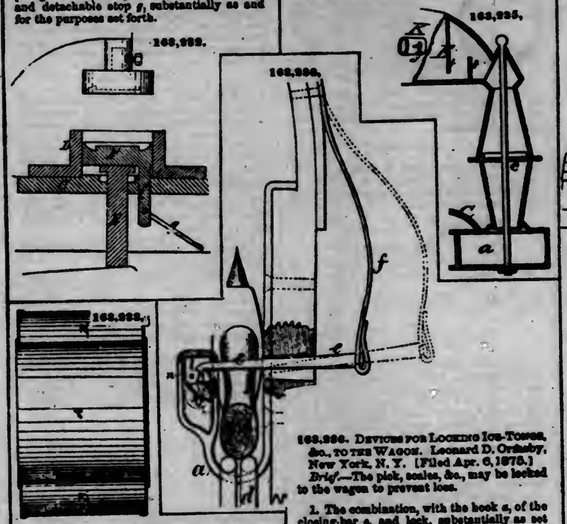
1. Outstanding heat-radiating columns D D', forming part of the indirect draft-flue, in combination with deflectors e, substantially as described.

2. The heat-radiating box E, divided as described, in combination with the combustion-section J and the escape E', substantially as described.

3. Outlets K K', combined with the combustion-chamber section J and radiator E, divided as described.

4. Chambers a a, columns D D', flue C, and radiator E, combined with outlet-pipes K K' and damper g, substantially as described.

5. The cylindrical section H of the fire-pot, provided with the flange i resting on the annular perforated shelf L, in combination with the inclined perforated ring l and combustion-chamber J, substantially as described.



163,234. DEVICES FOR LOCKING ICE-TONGS, &c., TO THE WAGON. Leonard D. Ormsby, New York, N. Y. [Filed Apr. 6, 1875.]

Brief.—The pick, scales, &c., may be locked to the wagon to prevent loss.

1. The combination, with the hook a, of the closing-bar c, and lock, substantially as set forth.

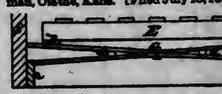
2. The spring-tumbler n, and bolt l, in combination with the hook a, closing-bar c, and spring f, substantially as set forth.

163,235. COFFEE-POTS AND TEA-POTS. Jno. Noland and Charles Neidich, Oil City, Pa. [Filed Dec. 14, 1874.]

Brief.—A box for containing the coffee or tea, surrounded by an air-chamber, to float the same.

The box A, having the perforated bottom and removable perforated top, in combination with the concentric air-chamber B, whereby the box is supported in the liquid, as specified.

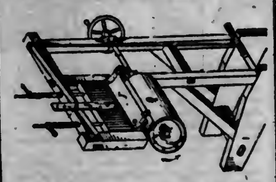
163,236. SPRING BED-BOTTOMS. R. F. Notoman, Olathe, Kans. [Filed July 18, 1874.]



The spring bed-bottom herein described, consisting of two sets of springs, each pair C C of which are united at their centers, and arranged transversely of the bedstead, with the ends of the lower springs resting in notches in the longitudinal cleats a a, attached to the side rails A A, adjustable blocks d d, longitudinal spring-bars D, transverse bars E E', and spring-slats F, all constructed and arranged substantially as set forth.

163,237. BOX-MACHINES. Sam. K. Paige, George W. Paige, and Jeremiah A. Paige, Hennikor, N. H. [Filed Mar. 1, 1875.]

Brief.—The material is wound upon a forming-cylinder, and its ends held in position by a pressure-bar while being secured.



In a box-machine, substantially such as described, the presser-bar I combined to operate with the drum C, substantially as and for the purpose set forth.

163,238. TRANSIT-TANKS FOR NIGHT-SOIL. William Painter, Baltimore, Md. [Filed Dec. 22, 1874.]

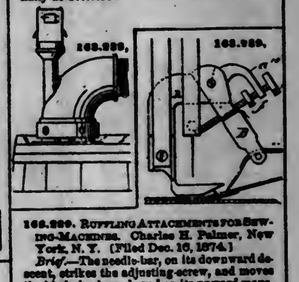
Brief.—The induction-pipe is attached to an induction-elbow. Said elbow is provided with a vent-standard, upon which is mounted the deodorizer. When filled the elbow is detached and the cap fastened in its place.

1. A night-soil tank, provided with an open air-vent, in combination with a deodorizing apparatus, which is attached directly to and mounted upon said tank, and in direct communication with the tank-vent, substantially as described.

2. The combination with a transit-tank, of an induction-pipe, provided with a tank-coupling device, and an independent vent-passage, substantially as described.

3. The combination with a night-soil transit-tank, of the induction pipe, the independent vent-passage, and a deodorizing apparatus, mounted upon said induction-pipe and connected with said vent-passage, substantially as described.

4. The combination, with a night-soil transit-tank, of the sealing-cap, composed of the annular-flanged cap, provided with the inclined-faced lugs and the gasket-plate, provided with a central upper bearing for contact with the coincident inner surface of the cap, substantially as described.



163,239. RUFFLING ATTACHMENTS FOR SEWING-MACHINES. Charles H. Palmer, New York, N. Y. [Filed Dec. 16, 1874.]

Brief.—The needle-bar, on its downward descent, strikes the adjusting-screw, and moves the blade backward, and on its upward movement strikes the upper end of the pivoted lever, and carries the blade and cloth forward. The adjusting-screw, that regulates the length of the gather, has a stop-ring on it, by which the changes are measured.

1. The combination of the standard A, lever B, and adjusting-screw F, the parts being relatively arranged as described, whereby the needle-bar is its ascent and descent alternately comes in contact with the lever and adjusting-screw, for the purpose of giving proper movement to the crimping-blade, substantially as described.

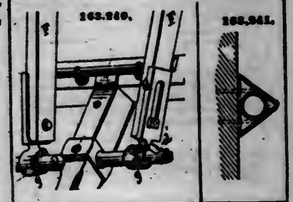
2. The crimping-blade, provided with an extension adapted to serve as a handle, substantially as described.

3. The combination of the standard A, having arm a^{10}, lever B, with the adjusting-screw F and stop-ring f, as described.

163,240. ANIMAL-POKERS. Josiah F. Palmer, Auburn, N. Y. [Filed Dec. 20, 1874.]

1. In combination with the trunnions D and D, and with the pivotal eyes g and g of the bow F, the stop d and detent d' d'', arranged to operate in the manner and for the purpose substantially as set forth.

2. In combination with the spurs f and f, the collars P and P, secured to or upon the pins I and I, and operating as stops to prevent the further inward passage of said spurs, substantially as specified.



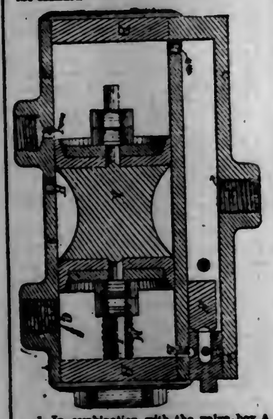
162,941. SHIELDS FOR PIPES. H. Palmieri, New York, N. Y. [Filed Dec. 23, 1874.]

Brief.—A continuous shield for water or other conducting pipes of a triangular shape, and completely covering the pipe, so that one of the sides may lie flush against the wall.

A continuous shield for water or other conducting pipes, constructed substantially as described, so that it shall be impossible to climb the same.

162,942. VALVES FOR AIR-BRAKES. Chas. H. Perkins, Bloomington, Ill., assignor to George Westinghouse, Jr., Pittsburg, Pa. [Filed Mar. 12, 1875.]

Brief.—Compressed air passes through the small valve to a tank, from which it passes to the operating-cylinder, as soon as the pressure is taken from the right-hand side of the large piston-valve, allowing said valve to uncover the cylinder-port. When the pressure is equalized on both ends of the large valve, the spring forces it over the cylinder port, and retains the air therein. A greater pressure of air on the spring side of the valve opens the exhaust.



1. In combination with the valve-box A, provided with the inlet-port G, outlet-port I, and exhaust-port H, and connected through suitable mechanism with an air-pressure tank, the valve K, arranged to move longitudinally within said valve-box, having greater width of bearing than, and capable of covering and uncovering, said outlet-port I, and of connecting the same with said exhaust-port H, substantially as and for the purpose specified.

2. In combination with the valve-box A and valve K, the spring M, placed between one end of said valve-box and said valve, and having such length as to cause said valve to cover the outlet-port whenever the air-pressure upon its ends is equal, substantially as and for the purpose shown.

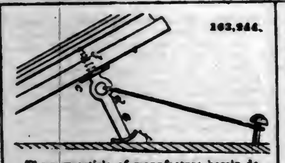
162,943. STOVE IMPLEMENTS. I. A. Perry, Oxford, Pa. [Filed Apr. 16, 1874.]

Brief.—An ordinary plate-lifter is constructed upon the extremity of one leg of a pair of tongs, the other leg assisting to hold the article while being lifted.



The combination, with a pair of lifting-tongs, of the rigid prong *c*, forming a part of one of the jaws, and extending inwardly and downwardly therefrom toward the other to form a purchase, substantially as specified.

162,944. PICTURE-FRAME HANGERS. F. A. Phillippi, Reading, Pa. [Filed Mar. 30, 1875.]



162,944.

The new article of manufacture herein described, consisting of screw *b*, collar *c*, eyelet *d*, projection *e*, and rocker *f*, for the purpose set forth

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162,945. BROOM-HANDLE SOCKETS. John H. Pike, San Francisco, Cal. [Filed Feb. 6, 1875.]

Brief.—The socket is provided with an indentation or hood upon the inside near one end, into which a projection upon the mandrel of the broom-machine takes to hold the socket to rotate it. Rough punched perforations assist in holding the broom-corn upon the socket.



The herein-described broom handle socket A, provided with barred perforations *e* and hood or bulge *m*, substantially as and for the purposes specified.

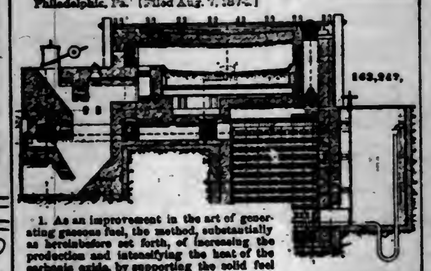
162,946. VESTS. Chas. R. Fiympton, Jersey City, N. J. [Filed Oct. 31, 1874.]

Brief.—Pantaloons are suspended by short strap attached to the vest.



The vest A, provided with buttons on the lower part of its inside, in combination with the strap C, having a button-hole, *c*, at its upper end, and a buckle, D, at its lower end, and strap E, provided with button-holes at each end, which engage with buttons *a a* on the waistband, substantially as described, and for the purpose set forth.

162,947. PROCESSES AND APPARATUS FOR GENERATING GASEOUS FUEL. A. Ponsard, Paris, France, assignor to William Sellers, Philadelphia, Pa. [Filed Aug. 7, 1874.]



1. As an improvement in the art of generating gaseous fuel, the method, substantially as hereinbefore set forth, of increasing the production and intensifying the heat of the carbonic oxide, by supporting the solid fuel upon the hearth of the producer, and supplying to it above the hearth a regulated continuous current of highly-heated air.

2. The method, substantially as hereinbefore set forth, of supplying to the producer a regulated continuous current of highly-heated air above the hearth, and confining the traverse of the air supplied and the gas produced to the hottest section of the producer, substantially as described.

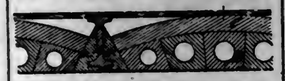
3. The combination, substantially as hereinbefore set forth, of a gas-producer, a furnace, a recuperator, through which the air is supplied which supports the combustion in the gas-producer, and a recuperator, through which the air is supplied which supports the combustion in the furnace.

4. The combination, with the gas-producer, the furnace, and the recuperator, of the regulating-valves, substantially as set forth.

5. The divided recuperator, substantially as described.

6. The bricks provided with recesses, substantially as and for the purposes set forth.

162,948. FIRE-PROOF CEILINGS AND FLOORS. George B. Post, Bernards, N. J. [Filed Mar. 12, 1875.]



The combination of a flat-bottomed hollow tile arch, B, and a solid arch, C, with each other, and with the floor-beams, the hollow-tile arch B forming a permanent center for the solid arch C, which supports the load above, while at the same time a level ceiling is produced, substantially as shown and described.

162,949. WOOL-WASHING MACHINES. J. K. Proctor, Philadelphia, Pa., assignor of one-half his right to James Smith & Co., same place. [Filed Jan. 28, 1870.]

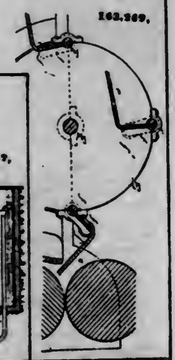
Brief.—In a tank with a curved bottom is journaled a cylinder, which carries pivoted teeth on shafts having crank-arms, for forcing the wool up an incline to a pair of rollers.

1. In a wool-washing machine, a lifting cylinder having revolving shafts F F and teeth *e f*, as described.

2. The shafts F, having winches *f*, anti-friction rollers *f' f'*, and teeth *e*, substantially as shown and set forth.

3. A lifting-cylinder, having an under-feed motion forward toward the incline B, and carrying teeth pivoted on its periphery, which move concentric with said incline on their upward motion, and drop by gravity into position for re-engagement with the stock, as set forth.

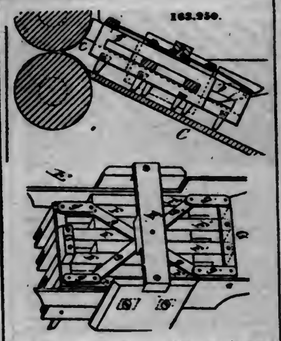
4. In combination with the revolving shafts F F of a wool-washing lifting-cylinder, having winches *f* and anti-friction rollers *f'*, the curved way *b b*, substantially as shown and described.



162,949.

162,950. WOOL-WASHING MACHINES. J. K. Proctor, Philadelphia, Pa., assignor of one-half his right to James Smith & Co., same place. [Filed Apr. 28, 1870.]

Brief.—In the tank is an inclined false bottom; also a fixed carrier, which has alternating reciprocating projecting hinged swinging teeth, connected by heads and arms.



162,950.

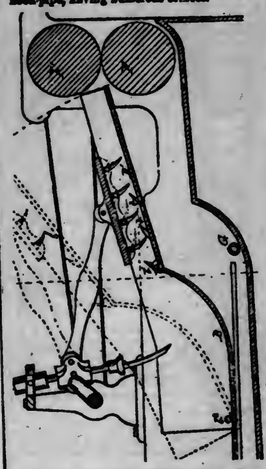
1. In a wool-washing machine a carrier provided with two series of alternately-reciprocating bars, F F', having downwardly-projecting hinged or swinging teeth *f f'*, substantially as shown and described.

2. In combination with the incline C, the fixed carrier E, provided with the reciprocating bars F moving over said incline, substantially as shown and described.

3. In combination with the bars F and F' secured to the cross-heads G and G', the arms *g g'* for producing an alternate reciprocation of said bars, substantially as shown and described.

162,951. WOOL-WASHING MACHINES. J. K. Proctor and Chas. R. Lindsay, Philadelphia, Pa.; said Lindsay assignor to James Smith & Co., same place. [Filed Oct. 9, 1873.]

Brief.—Within a tank or bowl is a hinged adjustable chute, with fixed and pivoted teeth, above which is a reciprocating carrier with pivoted teeth. Below the chute is a transverse feed-pipe, having numerous orifices.



1. In a wool-washing machine, the combination of the following elements: a chute or incline for bearing the stock to the squeeze-rolls, a fork or deliverer for placing the stock on said incline, and a reciprocating carrier, moving to and fro in the same plane above said incline, and having hinged or pivoted teeth.

2. The combination of a reciprocating carrier, having hinged or pivoted teeth, and a fork or deliverer for transferring the wool from the bottom of the bowl to said carrier, the latter moving to and fro in the same plane.

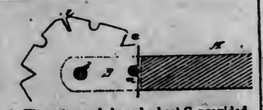
3. The chute or incline B, hinged or pivoted substantially as described, so as to admit of adjustment with reference to the squeeze-rolls, and allow easy access to the bowl for the purpose of cleansing the same, as set forth.

4. The hinged or pivoted pins *b'*, located on or above the surface of the bottom of the chute B, substantially as and for the purpose set forth.

5. In a wool-washing machine, a transverse flood-pipe, G, having discharge-orifices *g g*, and constructed substantially as shown and described, so that the water therefrom will be discharged in an even sheet over the bottom of the bowl, for the purpose set forth.

162,952. DEVICES FOR SWAGING AND SETTING SAW-TEETH. Maurice J. Rahilly, Beaver Falls, Pa. [Filed Mar. 3, 1875.]

Brief.—A polygonal-shaped wheel provided with notches *c* of varying degrees of angularity for swaging saw-teeth; and with slots *i* of different widths for setting the same. The wheel is arranged between the bifurcated arms of a lever, and is so formed that it cannot be locked in place by the center-pin, until the groove in one of the square portions rests over a rib, *e*, secured transversely in the handle.



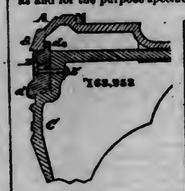
1. The polygonal-shaped wheel C, provided with two or more V-shaped notches, *c*, of different angles, and two or more V-shaped slots, *i*, of different width, and held in a handle, A, for the purposes herein set forth.

2. The combination of the handle A with jaws B B and rib *e*, the polygonal-shaped wheel C, having grooved sides, and provided with notches *c* and slots *i*, and the pin *b*, all substantially as and for the purposes herein set forth.

162,953. STOVE-LEG FASTENINGS. Albert J. Redway, Cincinnati, Ohio. [Filed Mar. 22, 1875.]

Brief.—The catch turns upon the bolt by which it is attached to the stove-leg.

The stove-bottom A, having the downwardly-projecting rim *a* and dovetailed ribs B, and the leg C, in combination with the fastener D, arranged on the outside of the leg, and adapted to lock behind rim *a*, substantially as and for the purpose specified.



162,953



162,954.

162,954. RAILWAY-TIES. Henry Reese, Baltimore, Md. [Filed Apr. 2, 1875.]

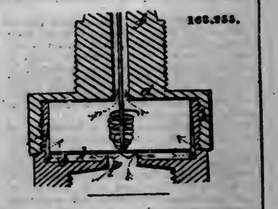
A T-iron railroad cross-tie provided near each end with oppositely-facing boat lugs O O', in combination with the U-shaped clamps D and wedges E, as and for the purpose specified.

162,955. GAS-REGULATORS. Isaac Rahn, Philadelphia, Pa. [Filed May 1, 1875.]

Brief.—Graduated slots in the wall of the chamber. Notched bearings upon the neck of the screw-orifice.

1. The combination of the graduated slots *o* with the movable disk *b*, arranged and constructed as described, or substantially the same, for the regulation of the flow of gas to burners.

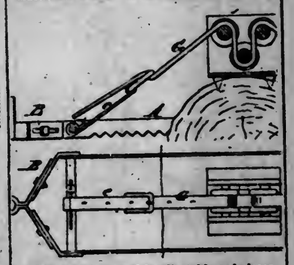
2. The combination, in the regulator, of the disk *b*, inlet *p*, and bearings for the disk, arranged to maintain a gas-passage when the disk is at the limit of its lowest motion, substantially as set forth.



162,955.

162,956. ATTACHMENTS TO CROSSCUT-SAWS. Alex. H. Riley, Butler, Ga. [Filed Apr. 15, 1875.]

Brief.—For facilitating the operation of sawing logs into different lengths by gauge of crosscut-saws, two or more saws are suspended in a pulley-carrying frame, which can be spiked to the log. The saws are attached to laterally-adjustable end pieces by means of elastic and non-elastic straps.



The saws A secured to adjustable end pieces B, in combination with the spiked pulley-frame D and the elastic and non-elastic straps G *e*, substantially as shown and described.

162,957. ROCK-DRILL CHUCKS. George H. Reynolds, New York, and Walter Taft, Mineville, N. Y. [Filed Apr. 3, 1875.]



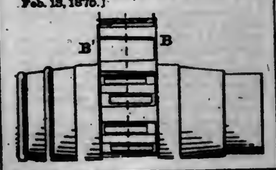
1. The grooved piston-rod A *a*, in combination with correspondingly-formed cheeks C D, and with means for firmly fixing the cheeks upon the rod and engaging in the groove therein, as and for the purpose specified.

2. The inclined surface *a'* on one side of the groove *a* in the piston-rod A, and the corresponding inclined faces *c' d'* of the internal projections *c d* on the cheeks C D, combined and arranged to serve as herein specified.

3. In combination with cheeks C D, having a conical exterior surface, and with a hoop, E, for firmly fixing the same to the piston-rod A, the second hoop or band G, adapted to confine and release the drill-bit B, as herein specified.

4. The annular recess *n* in the cheeks C D, arranged as shown relatively to the second hoop G, in combination with the piston-rod A and drill B, and adapted to serve therewith, as and for the purposes herein specified.

162,958. HUBS FOR VEHICLE-WHEELS. L. Rodenhausen, Philadelphia, Pa. [Filed Feb. 13, 1875.]



1. The combination, with a wheel-hub, of two bands, B B', one having at its outer periphery horizontally-extending plates C, substantially as and for the purpose set forth.

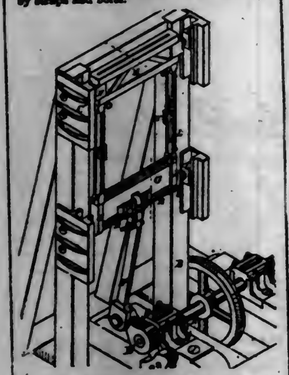
2. The combination, with a wheel-hub, of two bands, B B', having at their outer peripheries horizontally-extending plates C and horizontally-extending ledges D, substantially as and for the purpose set forth.

3. The combination, with a wheel-hub, of two bands, B B', one band having at its inner periphery horizontally-extending plates E, substantially as and for the purpose set forth.

4. The combination, with a wheel-hub, of two bands, B B', the bands being provided at outer peripheries with horizontally-extending plates C and ledges D, and at inner peripheries with horizontally-extending plates E, substantially as and for the purpose set forth.

162,260. SAW-MILLS. Alexander Rodgers, Muskegon, Mich. [Filed Jan. 20, 1875.]

Brief.—The lower girt, including the needle-pin, is formed of a single piece of metal, instead of from several secured to each other by straps and bolts.



1. The girt G, provided with the needle-pin P forged from the same piece of metal as the girt, and forming a component part thereof, substantially as and for the purpose specified.

2. The rock-shaft H, provided with the slotted arm a, and arm b, with its wrist-pin b', above a, and jam-nut p, as and for the purpose specified.

3. The girt G, constructed as set forth, in combination with the rock-shafts H, pin n, and pitman F, substantially as shown and described.

4. The method of imparting an oscillatory movement to a saw-frame by means of independent rock-shafts acting upon the slide-blocks, as shown and described.

162,261. APPARATUS FOR DISSOLVING AND CRYSTALLISING. John B. Rich, New York, N. Y. [Filed Sept. 8, 1874.]

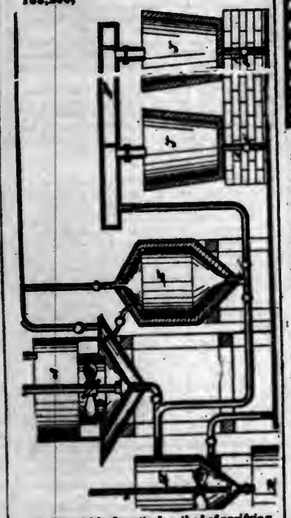
Brief.—The solution is agitated in the tank and heated by steam-jacket. The undissolved residue is run into H, when more water is added and agitation continued. The clear solution is run from A into the jacketed and closed tank B, from which, on the admission of steam, it is forced into the channel F, and thence into crystallising-tanks. The mother-liquor from these is run into channel L, together with the additional solution from residuum-tank H, then into the tank M, where the mixture is heated, and from which it is pumped back to A, and added to the new solution

1. In an apparatus for purifying and crystallising soluble solids, a dissolving-tank combined with an air-tight and jacketed receiver, substantially as and for the purpose described.

2. In an apparatus for purifying and crystallising soluble solids, the combination of a dissolving-tank with an air-tight and jacketed receiver, and a residuum-tank, substantially as and for the purpose described.

3. In an apparatus for purifying and crystallising soluble solids, an air-tight and jacketed tank, as and for the purpose shown and described.

162,262.



4. The within-described method of purifying and crystallising soluble solids, consisting in dissolving the solid by heat and agitation, conveying such solution to an air-tight receiver, and thence to crystallising-tanks, the residuum being subjected to further agitation and solution, and, with the mother-water from the crystallising-tanks, heated and returned to the dissolving-tank, substantially as specified.

5. In an apparatus for purifying and crystallising soluble solids, the combination of a tank, constructed with steam-bottom, agitator, and annulus, with a residuum-tank, provided with an agitator, one or more air-tight jacketed tanks, and one or more crystallising-tanks, and all arranged, constructed, and combined as and for the purpose herein before shown and described.

162,263. HOSE-COUPLINGS. J. Ruppenthal, St. Louis, Mo. [Filed Mar. 26, 1875.]

Brief.—The necks of the coupling are formed with a swell, from which they taper in both directions, and are circularly fluted, so as to better hold the hose ends in which they are inserted. Outside the hose ends are two conical sleeves, one of which screws into the other, and clamps the hose against the tapering sides of the swell on the coupling-necks. The inner one of the sleeves is prevented from turning on the coupling-neck by a lug or feather formed thereon, which enters a notch formed in the flange of said sleeve.

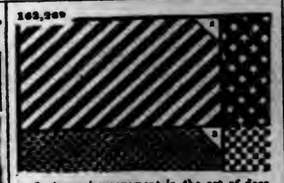


1. The swelled and fluted neck A, in combination with the tapering sleeves D E, arranged to screw together, as and for the purpose set forth.

2. The swelled and fluted neck A, having lug *a'*, in combination with tapering sleeves D E, as and for the purpose set forth.

162,264. PROCESSES OF DECORATING TIN-PLATE. Albert Edwin Schmidt and Gustav Jacob M. Bodtruch, Hamburg, Germany, assignors to Hamburg American Sewing-Machine Company, same place. [Filed Aug. 6, 1875.]

162,264.



1. As an improvement in the art of decorating tin-plate, coating the surface with a varnish containing alkanna, and subjecting the coated plate to heat, the color of the plate being determined or varied by regulating the heat, substantially as herein set forth.

2. The improved process of decorating tin-plate, consisting in printing the pattern or figure thereon, coating the printed surface with a varnish containing alkanna, and subjecting the prepared plate to heat of a greater or less degree to produce the desired color of pattern or figure, substantially as herein specified.

162,265. FAUCETS. Peter Schofield, Philadelphia, Pa. [Filed Apr. 7, 1875.]

1. A faucet in which a sliding tube, B, containing a valve, is combined with a fixed tubular stem, the end of which forms the seat of the valve, and with devices by which the said tube may be moved to and fro on the stem, all substantially as and for the purpose set forth.

2. The sliding tube B and its valve, the fixed stem A, and a weighted handle having a hub, *h*, in combination with screw-threads, substantially as described, by which the said tube B may be moved to or fro by operating the handle, as set forth.

3. The combination of the hub *h* of the handle with a nut, *p*, for limiting the outward movement of the handle, in the manner specified.

162,266.



162,264.



162,266. TONGUE-SUPPORTS. L. Schumber, La Fayette, Ind. [Filed Apr. 3, 1875.]

Brief.—The tongue is held up by a spring.

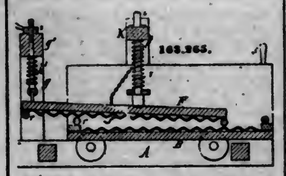
1. In a wagon, the combination of a sliding clip-plate, J, with a wagon-tongue and double-tree, substantially as set forth.

2. The combination of a sliding clip, J, double-tree E, spring-yoke K', and chains L, substantially as and for the purpose set forth.

3. The combination, with a vibrating tongue, H, and the spring-supported block *b*, of the set-screws *c*, substantially as set forth.

162,267. WASHING-MACHINES. P. Schweinhart, Buffalo, N. Y. [Filed Aug. 18, 1875.]

162,265.

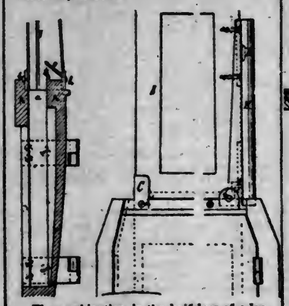


1. The combination, with the frame A, of the stationary rubbing-board F, pivoted at one end, and provided with spring-pressure bars *l*, and the reciprocating rubbing-board B, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the movable rubbing-board B, of the stationary board F, hinged at one end to the cross-piece *g'*, and attached near the middle to the pivoted cross-head K, so that by turning the latter the free end of the board F is raised or lowered, substantially as and for the purpose hereinbefore set forth.

162,268. CARRIAGE-DOORS. G. Schaffner, Troy, N. Y. [Filed Mar. 31, 1875.]

Brief.—The door may be used with the window up or down.



The combination, in the half-door of a landau, either in an open or closed carriage, of the panels A and A', the space *a*, the sash B, with its lower beveled edge *a*, and provided with the slide-button B and beveled grooved latch-piece *l*, the single sash-holder H, with its lipped groove *g* and catch *c*, hinged upon the top of the panels of the door at *h*, and the clasp or brace C, fixed upon the top of the half-door at *h'*, as and for the purpose described.

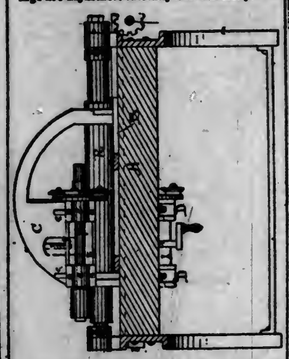
162,269. PAPER FANS. C. C. B. Schwartz, Philadelphia, Pa. [Filed Jan. 6, 1875.]



As a new article of manufacture, the paper fan herein shown and described, the same consisting of the circular fluted disk B, formed of a flattened truncated cone constructed of a quadrilateral piece of paper, crimped and united at its ends, in combination with the handle C, consisting of two strips, C', of pasteboard, secured to each other and to the disk, all as set forth.

162,270. MACHINES FOR MATCHING LUMBER. Geo. J. Shimer, Milton, Pa. [Filed Jan. 2, 1875.]

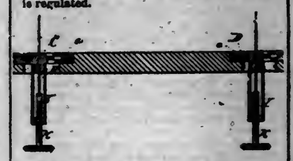
Brief.—For forming two narrow flooring-boards from one wide one that has been surfaced and grooved on both edges. Opposite grooves of suitable shape to form two tongues are cut along the top and bottom of a wide board, when the board is severed along the middle of said grooves, by means of two cutter-heads mounted on mandrels whose bearings are adjustable laterally and vertically.



The slide B, provided with an adjusting-screw, and constructed with the arch standard C, and pendent studs D D, provided with guide-cribs *c c* and *d d*, combined with sliding frames E I, combined with boxes *i i*, in which the cutter-head mandrels run, and whereby they are adjustable, as set forth.

162,271. NEEDLE-BOARDS FOR REGISTERING RAISE-NOTES AND OTHER PRINTS. James D. Smith, Washington, D. C. [Filed Feb. 12, 1875.]

Brief.—The needle passes through a longitudinally-adjustable socket, and rests upon a screw-rod, by which its height above the table is regulated.

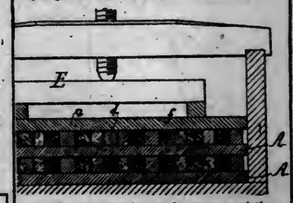


1. In combination with the needle-board and bearing-plate B, the needle-socket C and clamping-plate D, constructed and operating substantially as and for the purposes set forth.

2. In combination with the socket-plate C, having a hole through the same, the tube I and screw-rod K, whereby the needle may be adjusted vertically, substantially as and for the purposes described.

162,272. OMAR-PRESSES. Wm. P. Smith, Quakerstown, Pa. [Filed Mar. 3, 1875.]

Brief.—The bunches are laid upon a flat plate between hinged clamps, which are forced against the bunches by laterally-working wedges. The clamps are thrown back by springs when the wedges are withdrawn.



1. The combination of the tray, consisting of the board A, its permanent stripe, and hinged arms, with wedges *d*, and pressure-plate *f*.

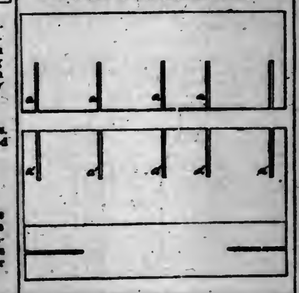
2. The combination of the permanent stripe *a*, hinged arms *b*, springs *m*, and wedges *d* for operating on the hinged arms.

3. The bar D, with its wedges *d*, arranged in respect to, and combined with, the hinged arms *b* of the tray and its stripe, as set forth.

162,273. MINERAL PAINT. James L. Sneed and Jno. B. Kirtley, Frankfort, Ky. [Filed Oct. 13, 1874.]

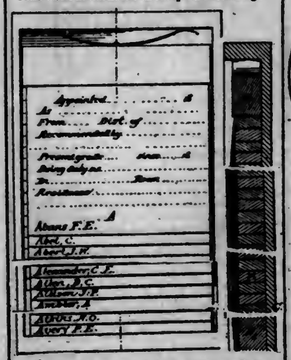
A paint made from the rock herein described, the constituents of which are silica, alumina, protoxide of iron, lime, magnesia, potash, soda, phosphoric acid, sulphur, and carbonic acid, by pulverising the rock and mixing with oil and pigments, if required.

162,274. HOG-CATCHERS. John L. Stevens, Chicago, Ill. [Filed Sept. 26, 1873.]



162,275. INDEXES. Charles W. Seaton, Washington, D. C. [Filed Apr. 15, 1875.]

Brief.—Slips of paper are pasted to one side of rectangular blocks, and the blocks placed side by side in a trough, the slips of paper extending one beyond the other a distance equal to the thickness of block, and the name or head word is borne on the flap so extending.



1. An expansible index, consisting of slips A, of equal size, and attached blocks E, said blocks being arranged side by side and the slips folded down one upon another, substantially as set forth.

2. The combination of a series of blocks, E, with the attached slips A, box C, and spring-block B, substantially as described.

3. The combination, with a box, C, containing a section or division of the card-index, of the covering slip *c*, attached to said box, substantially as described.

162,276. MODES OF ATTACHING BUTTONS. Samuel W. Shorey, Boston, Mass. [Filed Nov. 2, 1874.]

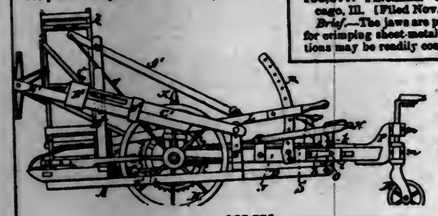


The improved method of attaching buttons to shoes, garments, &c., described, the same consisting in the metallic loop or staple C connected with the button, and having its free ends united by solder, substantially as and for the purpose specified.

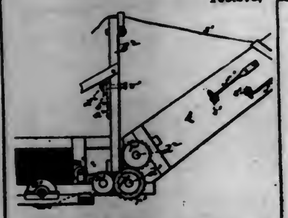
An egg-carrier provided with removably-folding trays divided into folding egg-receiving compartments, the trays and their compartments consisting of the series of sheets A A, having the notches *a a* sunken into one of their longitudinal edges, and of the series of sheets B B, having the notches *a' a'* sunken into one of their longitudinal edges, and also having the folding extensions *b' b'* projecting therefrom, each of said series being arranged together, substantially as shown and described.

162,273. HARVESTERS. Charles S. Stickle, and James D. Moore, Grinnell, and Wm. P. Parker, Tama, Iowa; said Moore assignor to said Stickle and Parker. [Filed Nov. 6, 1873.]

Brief.—The cut grain that falls upon the endless-belt platform is carried to the elevator, where it is carried between the two belts to the point of deposit.



162,275.





1. The combination, with the lever D N and connecting-bar G, of the pin *i*, spring *k*, and crank-shaft *h*, substantially as and for the purposes herein set forth.

2. The combination, with the frame A with its standards B B, and the axle C with the wheels H H', of the lever L, rods *f f*, chains *e e*, levers I I, with cogged segments *b b*, and the slotted and cogged plates *d d* attached to the standards B B, all substantially as and for the purposes herein set forth.

3. The endless aprons F F, arranged as described in the elevator E, so as to be farther apart at the throat *g* than at the center A', and closer together at the center than at the outer end *f*, for the purposes herein set forth.

4. The rollers *c* supported in spring-bearings *f' f'* and operating in combination with the aprons F F, substantially as and for the purposes herein set forth.

5. The combination of the adjustable arm C', loops D' D', reel-bearer E', and set-screw *g'*, substantially as and for the purposes herein set forth.

162,276. DETACHABLE PLATES FOR GLASS-MOLDS. Gustavus Storm, Philadelphia, Pa. [Filed Feb. 12, 1875.]



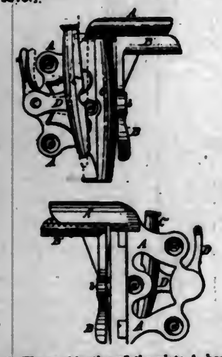
A detachable engraved plate for glass molds composed of two or more sections, *a*, adapted to a recess in the mold, all substantially as and for the purpose set forth.

162,277. FENCERS. Geo. H. Strong, Chicago, Ill. [Filed Nov. 23, 1874.]

Brief.—The jaws are provided with a swage for crimping sheet-metal pipe, so that the sections may be readily connected.

The pivoted jaws Q R, provided with the swage H N and gage P, substantially as and for the purpose set forth.

162,278. CORRUGED RIBS-HOLDERS AND WEFT-SOCKETS. J. H. Sunderman, Quincy, Ill., assignor of one-half his right to H. Moecker, same place. [Filed Jan. 30, 1875.]



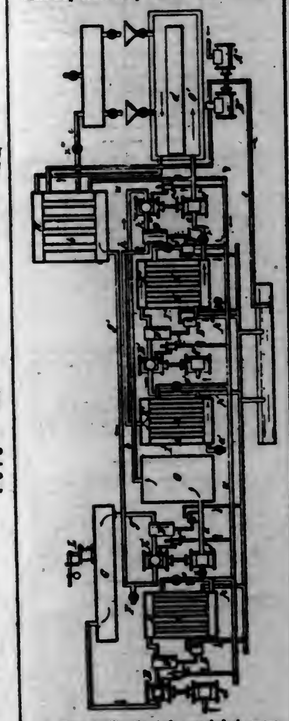
1. The combination of the plate A, having the socket-piece C and laterally-projecting arm A' rigidly secured thereto, with the angular lever D' D pivoted at *c*, and carrying the swinging socket-piece C', substantially as and for the purpose shown and specified.

2. The combination of the plate A, having the socket-piece C and laterally-projecting arm A' rigidly secured thereto, with the angular lever E B' pivoted at *b*, substantially as and for the purpose shown and specified.

3. The combination of the plate A, having the socket-piece C and laterally-projecting arm A' rigidly secured thereto, with the angular lever D' D carrying the socket-piece C', and with the angular lever B B', said levers pivoted, respectively, at *c* and *b*, substantially as and for the purpose shown and specified.

162,279. ICE-MACHINES. Augustus H. Tait, Jersey City, N. J. [Filed Oct. 21, 1874.]

Brief.—Cooled air is subjected to two consecutive and cumulative pressures, and allowed to expand in a closed chamber, whereby it is reduced in temperature to (say) zero. While at its greatest compression it is cooled by being passed through tubes jacketed with water. This air, at zero, is subjected to severer compressions and jacketings, and again allowed to expand (being at, say, 30° below zero) around pans containing water, which it freezes. It then passes backward through the apparatus, cooling the water, and repeating the circuit. Jet-pumps cool the air-pumps, while trap-boxes carry off the water.



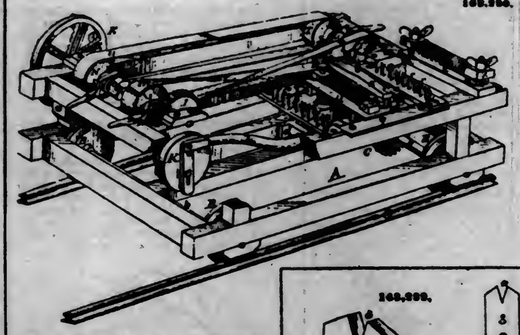
1. The combination of a cooled-air reservoir, O, air-pump B, condensed-air receiver H, expanding-air cylinder J, pump K, worked by expansion of air in J, pipes *g' g'*, and air-jacketed air chamber O, whereby cooled air is subjected to pressure, is condensed, reduced to lower temperature, and expanded, as and for the purpose specified.

2. The combination of condensed-air receiver H', having inlet *a'*, pump B', condensed-air receiver H'', air-expansion cylinder J', pump K', driven by J', and expanded-air chambers O and O', whereby the cooled air in O, which had been cooled by condensation and expansion, is further condensed and expanded, substantially as and for the purpose set forth.

162,280. MACHINES FOR FEATHERING CORDAGE, ROPE, &c. Theodore Tebow, Lexington, Ky. [Filed Mar. 6, 1875.]

Brief.—The cordage passes between the bars of the rubbers, and as the carriage moves along its track, the reciprocating rubber moves back and forth, sticking the cord; the devices of the first claim giving these motions, and permitting the operation of the movable rubber to be suspended when desired.

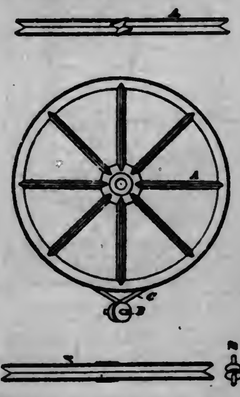
162,280.



1. The combination of the wheeled carriage A B, driving-shaft *i*, driven either immediately or by means of auxiliary shaft *j*, crank K, pitman L, reciprocating-rubber frame Q loose pulleys M N, clutches *o h*, direct- and cross-belts *m n*, pulley T T, shaft *i*, clutches *v s*, gear-wheels U V C, and detachable shaft-pulley D, for giving the direct and reversed motion to the carriage A B, the whole being arranged and operating substantially as and for the purpose specified.

2. A rubber, either reciprocating or stationary, composed of a block or blocks provided with elastic cushions and wound with hair cordage, as and for the purpose described.

162,281. DEVICES FOR TRANSMITTING POWER. George J. Trobaugh, Baltimore, Md. [Filed Dec. 28, 1874.]



In combination with a grooved wheel or pulley adapted to revolve in a certain plane, a correspondingly-grooved pulley constructed to revolve in a plane inclined with reference to the plane aforesaid, the said pulleys being connected by a crossed belt of a circular or nearly circular cross-section, substantially as and for the purpose set forth.

162,282. AUGERS AND AUGER-BITS. Wm. Tucker, Fishdale, Mass. [Filed Nov. 21, 1874.]

Brief.—The auger is made stiffer than ordinarily, and adapted to cut its entire length into the wood without being withdrawn for the removal of chips, by having the twist extend entirely up to the holding end, which is made flat and of the same size as the twist or rod. The auger is provided with a counter-sink, and a V-shaped groove in the end of the shank, for direct application to a brace having a corresponding V-shaped projection.

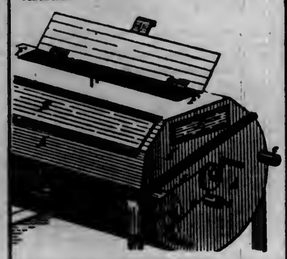
162,282.



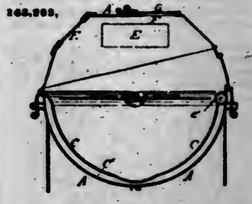
An auger-bit or auger having a flat holding end, 3, which is of the same, or nearly the same, size as the metal of the twist or rod 1, and is constructed with a notch, 4, and counter-sink 5, or their equivalents, to adapt the same for the application of a brace, handle, or stock directly thereto, as herein specified, for the purpose set forth.

162,283. FEATHER-RENOVATORS. Uriah B. Waddle, Trenton, Mo., assignor of one-half his right to Stephen D. Saxby, same place. [Filed Mar. 13, 1875.]

Brief.—The steam is injected from the perforated pipe at the side into the falling feathers.



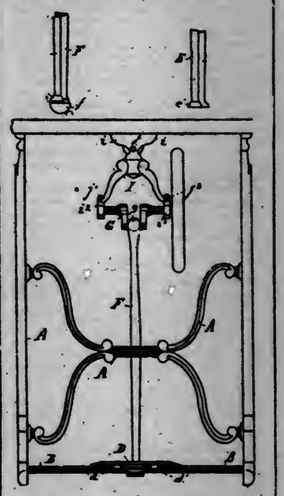
162,283.



The combination of the steam-pipe *c*, having opening *c'*, arranged as specified, to blow the steam-jets transversely across the cylinder or case, C, with an agitator consisting of the fan-blades D', having beaters D'' affixed thereto, substantially as and for the purpose specified.

162,284. TREADLES. Simon W. Wardwell, Jr., St. Louis, Mo., assignor to himself and George W. Shaw, same place. [Filed June 23, 1874.]

Brief.—The connecting-rod is, for adjustment, composed of one piece inclosing another along its length, grasping at top the crank-pin, and working on a ball and socket below in the treadle. Crank and wheel hang by a tongue-and-groove joint to the periphery of a disk on the under side of the table.



1. The combination of connecting-bar C, sandal D, screw H, sandal-rod E, pitman parts E F, and crank-shaft G, all said parts being constructed as herein shown and described, as and for the purpose set forth.

2. The combination of the supporting-block J, hanger I, crank-shaft G, pitman parts E F, connecting-bar C, sandal D, and rod E, constructed to operate as herein shown and described, as and for the purpose set forth.

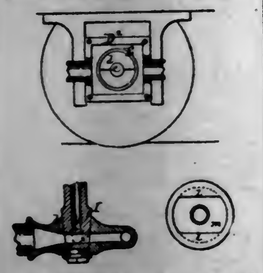
3. The pitman part E, having groove *e*, upper half-ball cavity *e'*, and lower half-ball bearing *e''*, to operate as and for the purpose set forth.

4. The pitman part F, having solid body, and terminating at its upper end with a cavity, *f'*, and its lower end with half-solid bearing *f*, to operate as and for the purpose set forth.

5. The combination of the grooved and solid pitman parts E F with upper and lower ball parts *e' f'* *e' f* and transverse openings *e' f'*, to operate as and for the purpose set forth.

162,266. DEVICES FOR LUBRICATING AND PREVENTING THE HEATING OF CAR-AXLE BOXES. Edmond A. Warren, Brooklyn, N. Y. [Filed Mar. 27, 1875.]

Brief.—The axle-boxes are connected by pipes, and by means of a pump water is forced through them, which serves to lubricate and prevent heating.



1. The combination, with the axle-boxes of a railroad car or cars, of pipes or tubes connected and communicating with the axle-boxes and with a pump, whereby water or other liquid may be forced to circulate through all the axle-boxes, as and for the purpose specified.

2. The combination, with the axle-boxes of a railroad car, and a tank and pump, of longitudinal tubes at the sides of the cars, and communicating with all the axle-boxes and a transverse tube, G, connecting the ends pipes or tubes, whereby a continuous supply of water from the tank may be forced through the axle-boxes, and conducted back to said tank for further use, as set forth.

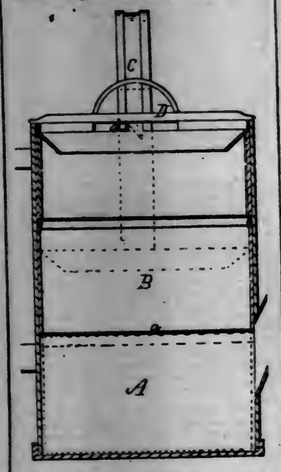
3. The axle-boxes of a railroad-car having nozzles, in combination with tubes or pipes F connecting the axle-boxes, substantially as described.

4. The axle-boxes, provided with nozzles substantially for their connection by means of the circulating-pipes F.

5. The combination of the axle-boxes D' or D², and their connecting pipes F G, the three-way cocks or valves I, and the pipes J attached to said valves, and provided with flexible connections and couplings, substantially as herein described.

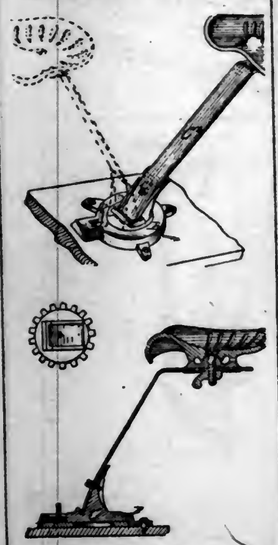
162,282. COFFEE-POTS. Henry W. Watson, New York, N. Y. [Filed Jan. 27, 1875.]

Brief.—To lift and adjust the retainer without removing the cover of the vessel.



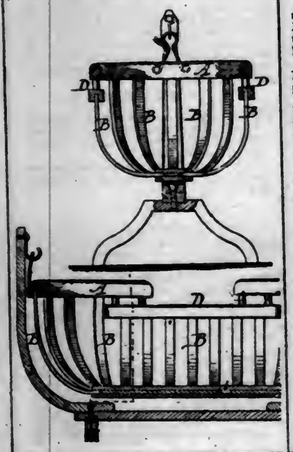
The coffee-holder B, constructed with the projecting handle C and notch *a*, in combination with the coffee-pot A, having the inward projection *d* and notch or depression outside of its cover D, as and for the purpose herein specified.

162,287. HARVESTER-SEATS. O. Wheeler, Jr., and H. J. Case, Auburn, N. Y.; said Case assignor to said Wheeler, Jr. [Filed Apr. 1, 1875.]



The notched or toothed disk, forming the pivotal support for the seat-standard, in combination with the socket-plate B and the spring locking pin or bolt, substantially as and for the purpose set forth.

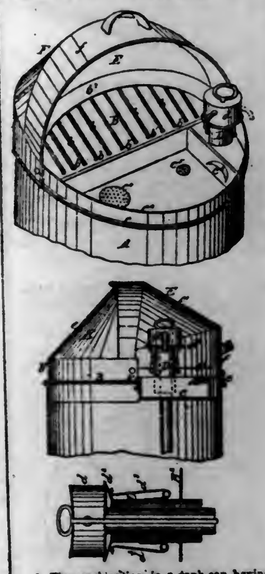
162,288. CRADLES. Francis O. Wireman, New York, N. Y. [Filed July 18, 1874.]



In a cradle-body, the combination of the independent end frames A, the vertical ribs B, the bottom C, and the straight bars or strips D, connected with the ends of the frames A by the bolts or pins *d*, and supported by the ribs B, as and for the purpose shown and described.

162,289. TANK-CANS FOR OILS. Henry H. Woloott, Syracuse, N. Y. [Filed Mar. 24, 1875.]

Brief.—The cover slides back above the fixed hood. When closed the entire top of the can is covered. Corrugations in the fixed dripping shelf carry the waste oils from the measures back into the tank. The pump is supported upon a fixed extension-shelf at the side. A removable tray, provided with drip apparatus, covers the rest of the top.



1. The combination, in a tank-can having a fixed hood, of a permanent dripping-shelf, B, provided with inclined corrugations or gutters *b*, and perforations *b'*, substantially as herein set forth.

2. The combination, with the dripping-shelf B, of the shelf-extension B² for the pump-support D, substantially as herein set forth.

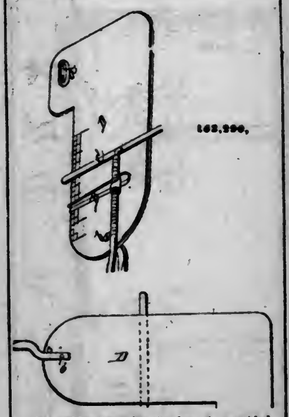
3. The combination, with the dripping-shelf B, of a fixed hood, E, and the rim-guard *b'*, inclosing and forming a base boundary for the shelf, substantially as and for the purpose set forth.

4. The combination, with a removable sink, C, and a fixed dripping-shelf, B, of the extension B² for the pump-support, independent of the sink, and the shelf, as and for the purpose set forth.

5. The cover F, constructed with the tapering end and gore sections *f f' f'*, in combination with the fixed hood E, having the inclined back *e* and guard-rim *b'*, over and upon which the cover is hinged to be opened and closed without binding of the overlapping parts, as set forth.

6. The combination of the hinged cover F, fixed hood E, and the dripping shelf B, the latter being inclosed and rim bounded above the sink, and with the pump-support, to obtain a firm and compact superstructure for the can, as set forth.

162,290. SEWING-MACHINE TUCKERS. J. H. Cleveland, Buffalo, N. Y. [Filed Oct. 2, 1874.]



162,290.

In combination with the bow A, provided with the adjustable shoe B, and adjustable gage C, the graduated plate D, pivoted to the end of the bow A, and provided with slot *a* and stop *d*, all substantially as and for the purposes herein set forth.

REISSUES.

6,122. KNITTING-MACHINES. Dana Bickford, New York, N. Y. Patent No. 60,121, dated July 21, 1868. [Filed Apr. 5, 1875.]

Brief.—The needle-cylinder does not revolve, but is adjustable vertically, to vary the length of stitch, by having a screw-thread on its lower end, engaging a ring-nut, held by projections to the lower side of the frame. The cams of the cam-cylinder directly engage the needle-butts, and are made precisely similar on each side of the elevating-cam, so that the machine may knit in either direction, and the draw-down cam-pieces are adjustable to vary the length of stitch.

1. In a rotary family knitting machine, having an adjustable needle-cylinder for lengthening and shortening the stitch, the cam-cylinder provided with the needle-guide or groove *i*, having two equal depressions, *a a*, for drawing down the needles to form the stitch, and one elevating-bead for forcing up the needles, the whole permitting the revolution of the cylinder in either direction.

2. In combination with a needle-cylinder and the cam-cylinder, provided with the needle elevating and depressing cam-groove, the two sides or cams K, for drawing down the needles to form the stitch, all arranged to permit the revolution of the machine in either direction.

3. A longitudinally-grooved needle-cylinder, in combination with a cam-cylinder having an endless cam-groove with two equal and similar bends, and two sliding cam-pieces, one for each bend, and each supported in side bearings or walls, so that proper adjustments may be made to tighten or loosen the stitches, and yet which will permit the revolution of the machine in either direction, to knit tubular or flat goods at will.

4. The combination of an upright needle-cylinder, the frame, and the cam-cylinder, as described, whereby the needle-cylinder may be readily removed without changing any other mechanism than the needles, and another similar cylinder, having more or less needle-grooves, be readily put in its place.

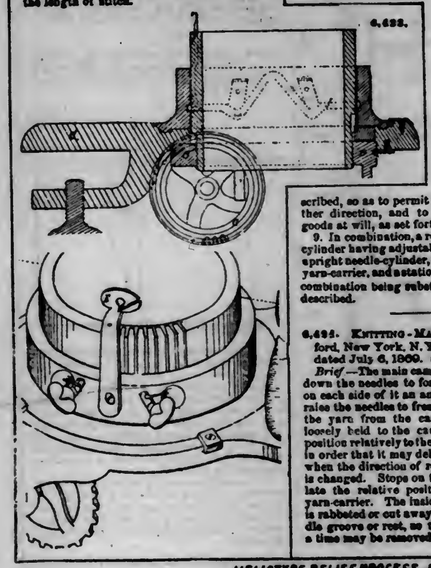
5. A needle-cylinder of a rotary reversible knitting-machine, constructed with a peripheral screw-thread or its equivalent, and combined with a piece engaging with such thread, whereby the cylinder may be raised or lowered to change the character of the fabric while the machine is in action.

6. The combination, with the needle-cylinder, of a ring-nut and detents or projections, adapted to raise or lower such cylinder, and to retain it in any desired position relatively to the cam-cylinder, substantially as and for the purpose described.

7. The combination, in the same machine, of devices, substantially such as described, for varying the cam-groove, with devices, substantially such as described, for raising or lowering the needle-cylinder.

8. A circular family knitting-machine composed of a stationary needle-cylinder and a rotary cam-cylinder whose cams are adapted to operate directly upon the heels of the needles, and are constructed substantially as described, so as to permit it to be rotated in either direction, and to knit tubular or flat goods at will, as set forth.

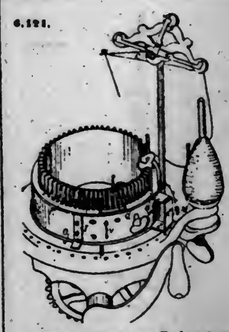
9. In combination, a reversible upright cam-cylinder having adjustable cams, a stationary upright needle-cylinder, a reversible open-eyed yarn-carrier, and a stationary thread-guide, the combination being substantially as shown and described.



6,122.

6,121. KNITTING-MACHINES. Dana Bickford, New York, N. Y. Patent No. 92,146, dated July 6, 1869. [Filed Apr. 12, 1875.]

Brief.—The main cam in this machine draws down the needles to form the stitch, and has on each side of it an automatic switch, which raise the needles to free the latch, and receive the yarn from the carrier, the latter being loosely held to the cam-cylinder, so that its position relatively to the cams may be changed, in order that it may deliver the yarn properly when the direction of rotation of the cylinder is changed. Stops on the cam-cylinder regulate the relative positions of the cams and yarn-carrier. The inside of the cam-cylinder is rabbeted or cut away widely above the needle groove or rest, so that several needles at a time may be removed.



6,121.

1. The draw-down cam Z of a rotary reversible family knitting-machine, substantially as described, combined with the guides Z', Z², all made and applied substantially as set forth.

2. In combination with the needle-cylinder, the cam-cylinder, provided with the stitch-cam, the switches, and the guides Z', for bringing or keeping the needles in position as the machine reverses, to work properly to free the latch and form the stitch.

3. A rotary reversible cam-cylinder for a knitting-machine, provided with a stitch-cam, substantially such as described, and with automatic switches situated on opposite sides of such stitch-cam, whereby the needles first engaged by such switches are compelled to rise high enough to free the latch, as set forth.

4. The combination, with the cam-cylinder, of a yarn carrier or guide, constructed substantially as shown and described, whereby it may be changed in position from one side to the other of the stitch-cam, substantially as and for the purpose set forth.

5. In combination with the cam, grooved substantially as described, and with the bed-plate, provided with a series of holes, the adjustable pins or stops, and a shifting yarn-guide, substantially as and for the purpose set forth.

6. A needle ring or plate, the tops of whose walls or ridges between the needle-grooves are rounded off, substantially as and for the purpose described.

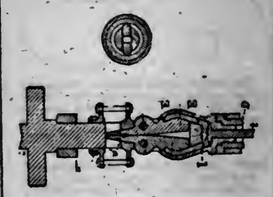
7. The combination of the bed-plate, the cam-ring, the reversible yarn-carrier, the stitch-cam, and the automatic switches, the combination being substantially as described.

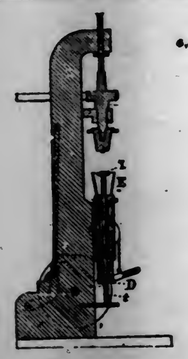
8. The combination, with a revolving cam, grooved substantially as described, of a thread-carrier, held by friction on the cam-plate or ring, so as to be carried by it, and yet permit the latter to continue its motions after the carrier is at rest, substantially as set forth.

9. Stops, or their equivalents, and projections on the cylinder, for determining the extent of traverse in either direction of the cam-cylinder or yarn-carrier of a rotating knitting-machine.

10. The continuously-grooved cylinder, having spacious rabbets F, two similar needle-elevating cams, and two automatic switches, substantially as and for the purpose set forth.

6,495. MACHINES FOR MOLDING POTTERY. Elizabeth Linton, Baltimore, Md., administratrix of Wm. Linton, deceased. Patent No. 31,304, dated Feb. 12, 1861; extended seven years. [Filed Apr. 26, 1875.]





6,496.

1. The combination of a core-mold or male former, having a punch point, with a matrix or female former, having a vertically-adjustable bottom, the said core-mold and matrix being adapted to be brought together, so as to form pottery articles within the space existing between the outer and inner surfaces of the said core-mold and matrix, and the newly-formed article to be lifted out from the matrix, substantially as herein specified.

2. The combination of the matrix F, slider D, suitably supported and guided in its up-and-down movement, rod t, and disk I, substantially as and for the purposes specified.

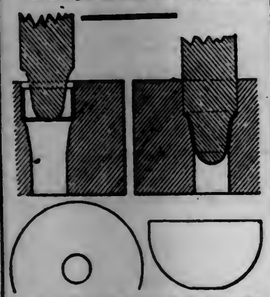
3. The revolving core-mold, in combination with the stationary, yielding, or traversing lip-mold or top molder, operated by springs, or so as to hold the vessel formed in the mold when the core is removed, substantially as described.

4. The core-mold grooved out or provided with air-channels, substantially as and for the purpose specified.

5. The punch-pointed core-mold, combined with the raising bottom I of the external mold or matrix E, substantially as herein set forth.

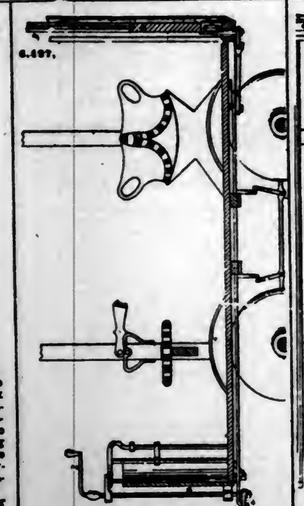
6. The method of forming flower-pots by drawing together a revolving and a stationary former or mold, simultaneously inclosing the clay in the space between the molds and punching out the bottom of the pot, substantially as herein specified.

6,496. MANUFACTURE OF EYELETS. Edwd. Parker, Plymouth, assignor, by mesne assignments, to the American Ring Company, Waterbury, Conn. Patent No. 48,064, dated Aug. 23, 1864. [Filed Feb. 27, 1875.]



The method herein described of manufacturing eyelets by perforating the metallic blank with a hole that is smaller than the opening through the eyelet, and then stamping up the eyelet, substantially as specified.

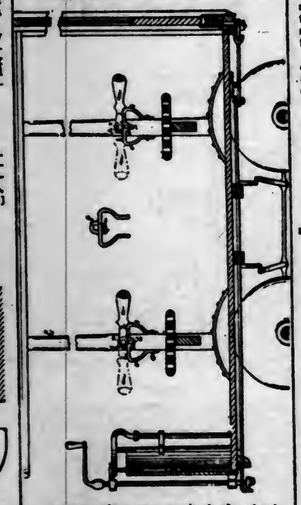
6,497. STREET-CARS. John Stephenson, New York, N. Y. Patent No. 150,118, dated Sept. 15, 1874. [Filed Apr. 20, 1875.]



6,497.

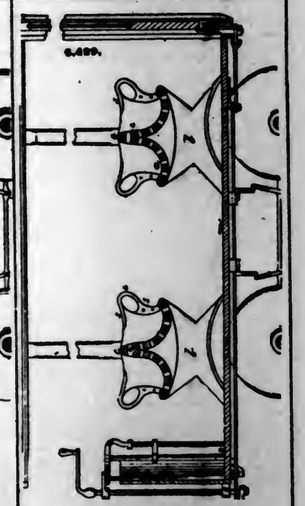
A rock-shaft, C, carrying at one end a crank-handle, *b*, at the front of the car, and at the other an arm or arms, *c*, in combination with a car end car-door, the arm or arms *c* being connected to the latter, substantially as and for the purposes set forth.

6,498. STREET-CARS. John Stephenson, New York, N. Y. Patent No. 150,118, dated Sept. 15, 1874. [Filed Apr. 20, 1875.]



A support for a turn-over back of a street-car seat, provided with a rest, *b*, for the arms of the passengers, and a grab-handle, *c*, to assist them in getting in and out of the car, substantially as set forth.

6,499. STREET-CARS. John Stephenson, New York, N. Y. Patent No. 150,118, dated Sept. 15, 1874. [Filed Apr. 20, 1875.]



6,499.

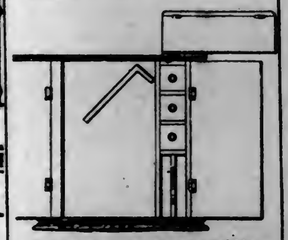
1. A frame end of a car-seat provided with a grab-handle, *a*, substantially as set forth.

2. A frame end of a car-seat provided with a grab-handle, *c*, in combination with a street-car having exit and entrance openings *m* at its sides for the passengers, substantially as set forth.

3. In combination with a street-car having exit and entrance openings *m* at its sides, a car-seat-frame end, *d*, provided with a grab-handle, *c*, the upper edge of both constituting a rest for an arm of the passenger sitting next to it, and the two adapted to prevent the passenger from falling out, substantially as set forth.

4. A frame end, *d d*, for a double car-seat, *a a*, said frame end being made in one piece, and provided with two grab-handles, *c c*, substantially as and for the purposes set forth.

6,500. SEWING-MACHINE TABLES. Francis B. Woltingw, Chicago, Ill. Patent No. 117,350, dated July 26, 1871. [Filed Mar. 11, 1875.]



1. A cabinet or table for sewing-machines, provided with a bed-plate for the machine, that is hinged at one end to the cabinet, substantially as described.

2. A cabinet or table for sewing-machines, having an opening through its top, a bed-plate for the machine, that is hinged at one end inside of the opening, and a cover to close over the said opening when the bed-plate is dropped down below the level of the table, substantially as shown.

3. The combination of a cabinet or table for sewing-machines with a writing-desk that is pivoted thereto at or near one end, so that the desk can be swung around out of the way while the machine is being used, substantially as set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 20. TUESDAY, MAY 18, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

SMITH *vs.* EDSON.—*Interference.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the interference between the applications of Jonathan Smith and Horace M. Edson, for letters patent for an* "IMPROVED VULCANIZING APPARATUS."—*Decided May* 24, 1875.]

The uncontradicted testimony of an applicant, supported by that of a disinterested and credible witness, that he made drawings of his invention at a certain date held sufficient, although the drawings were not preserved, to prove the conception of the invention at that date.

Where an applicant was first to conceive an invention, to reduce it to a working drawing and model, and to make application for a patent upon it, held that he was the first inventor, his opponent not having reduced the invention to practice.

THACHER, *Commissioner:*

The subject-matter of this interference consists of certain improvements in a vulcanizing apparatus used by dentists for molding dental plates. The arrangement and operation of these devices are quite clearly set forth by the applicant, Smith, in his specification, as follows:

I arrange the mold-closing device so as to draw or press the molds up against the under side of the top of the vessel, while at the same time the external device that produces this movement of the mold-closing clamp bears down upon the top of the vessel, thus equalizing the pressure upon the said top or head and removing liability of its being strained or ruptured by pressure of the molds from the inside of the vessel.

This arrangement is claimed to be a great improvement on an invention for which Edson, the opposing applicant, received a patent in July, 1868. In said patent the mold-closing clamp or device bears on top of the mold and presses it against the bottom of the mold-containing vessel. This vessel being at the same time a boiler for generating steam, it is alleged that the bottom is liable to be forced out by the great pressure brought upon it.

From the testimony in behalf of Smith it appears that about the 1st of January, 1874, one J. R. B. Ransom was negotiating with Edson for the sale of his 1868 patent; that one day Edson and Ransom came to the office of Smith, who is a brass founder and machinist, bringing with them a crude vulcanizing apparatus constructed upon Edson's patent of 1868.

They wished to engage Smith to improve the construction of this machine, to examine Edson's patent, and to ascertain whether it interfered with any other patents for a similar invention. Smith desired Ransom to procure a copy of what was known as the "Robert's patent," which was done about the 4th or 5th of February, 1874, and Smith then decided that said patent would not interfere with the manufacture of Edson's device. During the same week Smith, in the presence of Edson and Ransom, suggested ways, and made sketches of plans, whereby Edson's patent could be evaded by other parties, unless the same could be covered by a reissue of the Edson patent, and they all then thought they could be. Smith then proceeded to reconstruct and improve the machine Edson had brought to him. Among the sketches just alluded to, made in the first week of February, was one (marked "C" on Smith's Exhibit No. 1) which is claimed to indicate, and does indicate quite clearly, the particular device now in controversy. Smith and Ransom both swear positively that this sketch "C" was made in the presence of Edson about the time above mentioned, and its merits discussed by him and them. April 7, 1874, Ransom bought Edson's patent, and later, as it appears from the same testimony, Ransom and Smith came to Washington for the purpose of reissuing the same, which they accomplished, but without attempting, it seems, to embody therein the improvement represented by the sketch "C."

Before the sale of the patent, Ransom alleges that Edson assured him he would do everything in his power to make the machine a success, and if at any time he should discover that improvements could be made thereon he would give to him (Ransom) the benefit of such improvements.

Edson filed his application for the device in dispute June 3, 1874. About the 1st of July Ransom learned of this, and shortly afterward called Edson to account for it, claiming that it belonged to him under the contract before mentioned, and calling his attention to the fact that Smith had described to them this improvement in the previous February. Ransom testifies that Edson stated in reply that he had not thought of this invention until after he had sold his patent to him, and not until a short time before Ransom came to Washington; that it was not included in the contract, and that he had no recollection of Smith's explaining this invention to them.

Palmer, an employé of Ransom, also testifies that on one occasion Edson told him that he did not think of the present invention until after he had made the contract with Ransom.

On the 28th of August, 1874, Smith filed his application for a patent, and on September 8th a model, which he had made about the same time his application was filed, and which was the first model he had ever made, or caused to be made, of this invention.

Edson's account of his invention of this device is as follows: "The first thought I had of this matter was in 1866, and I made sketches of the same, although at the time I did not consider these sketches perfect in detail; they were exhibited to Dr. Terry and explained at my office in Mount Vernon, Ohio; then in '68 I took out a patent for one of the inventions, for the reason that that invention could be applied to boilers then in use; this other invention, the one in controversy, could not be applied to boilers then in use, because the boilers were not large enough; I mean the boilers in *general* use—those manufactured by the Buffalo Dental Manufacturing Company. I next exhibited sketches or drawings of this invention in controversy to Dr. Terry in 1868, and declared my intention to him to apply for a patent as soon as I had disposed of the other invention or patent. Again, I exhibited it to Dr. Terry in 1869; at that time I had almost made up my mind to procure or apply for a patent on this invention, but, in discussing the matter further, it was concluded best not to do it, because it would make the patent then out worthless, or nearly so, or injure its sale; then, in January 1874, I exhibited the drawings or sketches to Dr. Terry at my office in Toledo."

Dr. Terry, who alleges that he has nothing to do with Edson's inventions, confirms the testimony of Edson in the most positive manner. He alleges that Edson, in 1866, showed him sketches which substantially represented both Edson's 1868 patent and the invention in controversy; that in March, 1869, Edson again showed him sketches of this invention, and that they then fully discussed its merits, and then again in January, 1874. He makes a sketch of substantially the disputed device, and swears that it, as well as the present drawings, are precisely the same, principle as the device explained to him by Edson in 1866, and that, from Edson's explanation and sketches to him in January, 1874, he could have easily directed the invention to be made.

Edson positively denies that Smith showed him a sketch of this invention in February, 1874, or in any other month, and also denies having admitted to either Ransom or Palmer that he did not think of this invention until after he had made the contract of sale with Ransom in 1874.

Charles H. Allen testifies that about the last day of March, 1874, he made a drawing (Edson's Exhibit No. 1) fully showing the invention in controversy in every particular under Edson's instructions; and that he made a model in accordance with that exhibit about six weeks thereafter. Allen is not cross-examined, and his testimony, if it does not establish the truth of Edson's allegation that he made no such statement to Ransom and Palmer in regard to his having first thought of the invention after April 7, as they allege, certainly renders nugatory the effect of any such admission.

It is clear that Edson was desirous of disposing of his patent of 1868 to good advantage before he brought forward his present invention. To this end he seems to have found it necessary to resort to dissimulation, if not something worse.

Unsupported, he would have overreached himself by his own sharp dealing; but the fact of his conception and reduction to a tangible form of this invention prior to the same by Smith is established by the testimony of the only disinterested witnesses in the case. There is not the slightest evidence of collusion between Terry and Edson; and the testimony of the former, although unsupported by the production of the sketches made contemporaneously with Edson's conception of the invention, yet is very clear and strong, and increases in strength upon cross-examination.

The description Terry gives of the condition to which Edson had reduced the invention in January, 1874, corresponding precisely with its present form, the declaration that he himself could have then easily directed its construction, his demonstrated ability to do so, as shown by his familiar acquaintance with and correct description of the various features in this class of devices, together with his clear narration of other circumstances by which he was enabled to fix the latter-named date, convinces me that Edson had developed this invention as early, at least, as January, 1874.

This is sufficient in showing that he had anticipated Smith in the conception of the invention, and the testimony of Allen and the records of this Office also show that he preceded Smith in reducing the invention to the form of a working drawing and model, and in filing his application for letters patent.

The decision of the Examiners-in-Chief is therefore reversed, and priority awarded to Edson.

JAMES AND WILLIAM HORLICK.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of James and William Horlick, for letters patent for an* "IMPROVED COMPOUND FOR THE FOOD OF INFANTS AND INVALIDS."—*Decided May* 3, 1875.]

Where a new ingredient is added to an existing composition of matter, and the composition is thereby materially changed in form and quality, it is patentable.

THACHER, *Commissioner:*

The applicants claim—

The concentrated extract for food, consisting of wheat-flour, malt-flour, wheat-bran, and bicarbonate of potash, substantially as herein set forth.

The claim was rejected on reference to the forfeited application of Henry Sturz, filed October 13, 1866.

The ingredients of Sturz's compound are wheat-flour, ground barley, malt, water, and bicarbonate of potassa. It is thus seen that the present applicants add an ingredient not found in Sturz's mixture, viz., wheat-bran.

Both Sturz and the applicants base their inventions on a formula given by Liebig, which is set forth as follows in Sturz's application:

"In a small saucepan, carefully mix, so as to avoid the formation of lumps, wheat-flour, one-half ounce; and cow's milk, five ounces. Bring this mixture to boil slowly and keep it boiling for three or four minutes, and then take the saucepan off the fire. While it is boiling, mix in another vessel, malt, one-half ounce, and water, two ounces, with thirty drops of a solution containing eleven per cent. of bicarbonate of potassa. Then add this mixture to the hot contents of the saucepan, stir it together, put on the lid, and let it remain quiet in a warm place at a temperature not exceeding 148° Fahrenheit. After the lapse of this time put the saucepan on the fire again till the contents begin to boil, and then pass them through a fine strainer. The milk will then have absorbed all the soluble nutritive parts of the flour and malt, leaving the insoluble and indigestible parts in the strainer, and the acid nature of the milk and the flour, which is highly injurious to the infant stomach, will have been destroyed by the carbonate of potassa."

The object of both Sturz and the applicants was to make this discovery of Professor Liebig available to the public by putting it in such shape that it would be marketable, and with such simple directions accompanying it as could be readily understood and followed by all classes of people.

A somewhat analogous case was that of George Thompson, (*Pennsylvania Salt Company* vs. *Gugenheim*, 3 Fish., 423,) who introduced caustic alkali into general use in the manufacture of soap by farmers and others throughout the country, by incasing the same in an anti-corrosive impervious fabric. Judge Grier said "caustic alkali was not a new substance, nor was it a new composition of matter, nor its manufacture a new art, yet the fact was clear that the patentee had made a very important improvement in the art, and one of great practical value."

So, by a change in the process as given by Liebig, Sturz was enabled to give the above compound to the public, put up in bottles, or in a solid mass; but the trouble with Sturz's compound was that when put in a fluid state it was apt to ferment, and was thus unsuitable for transportation. He also appears to have found it necessary to offer, with a certain number of his bottles of mixture, a small porcelain cup, so that purchasers would be enabled to measure the exact quantity of the sirup to be mixed with a proper quantity of milk.

The Horlicks, on the other hand, have put the article into dry granular form, with clear and simple directions for its use, thus in every respect improving its merchantable qualities. But more than this, the present applicants have added a new element, mentioned neither by Liebig nor Sturz. They claim that by the addition of wheat-bran a greatly improved article is produced.

They are supported in their claims by several physicians, who certify that Horlick's preparation is a superior food in every respect to that of Sturz, and is put in a much more convenient and concentrated form. I coincide with this opinion, and believe the applicants have made a new and substantial improvement in this prepared food.

The decision of the Board is reversed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF OHIO.

THE STILWELL AND BIERCE MANUFACTURING COMPANY *vs.* THE CINCINNATI GAS-LIGHT AND COKE COMPANY, THE ARMSTRONG HEATER MANUFACTURING COMPANY, JAMES A. ARMSTRONG, AND STEPHEN H. STARR.

[*In equity.—Before* SWING, *J.—Decided January*, 1875.]

The first claim in reissued patent for feed-water heater and filter, granted to E. R. Stilwell, August 24, 1869, which is for "filtering material F, between a series of shelves and outlet, substantially as described," held valid, notwithstanding the fact that filters had been used for freeing the feed-water for boilers from the matter held in mechanical suspension therein, and the further fact that heaters composed of a series of shelves had been used for a similar purpose to remove from the water the matter held in solution and a portion of that held in suspension.

Although the operation of neither the shelves nor the filter is affected by the union of the two in the same machine, a new result is produced, inasmuch as the water is passed into the boiler in a condition different from that which would have been produced by either of the devices separately.

The Stilwell patent is not invalidated by the earlier English patent of Wagner, since it is doubtful whether the Wagner device could be practically used with success.

There is no force in the objection that the Stilwell patent does not specify what filtering material is to be used. The patent permits the use of any suitable filtering material, and persons skilled in the art could at once use the invention without experiment or additional invention.

The mere making of a model of an invention, held not to constitute invention, as against a patent subsequently granted to another for the same thing.

The alleged anticipation of the Stilwell invention by James A. Armstrong discussed.

[*Wood* and *Boyd*, for complainant.
Fisher & Duncan and *John E. Hatch*, for defendants.]

SWING, *J.:*

This suit is brought for the infringement of letters patent granted to E. R. Stilwell, for improvements in feed-water heaters and filters, and vested, by assignment, in the complainants.

Three patents are claimed to have been infringed—the first, Reissue No. 2,160, dated January 23, 1869; the second, Reissue No. 3,618, dated August 24, 1869; the third, Letters Patent No. 93,244, dated August 3, 1869.

The respondents file separate and joint answers denying infringement, and that E. R. Stilwell was the original inventor, and setting up prior invention by James Armstrong and prior use by sundry persons named in said answers.

The invention in the first patent described relates to the means of supplying water to a "feed-water heater and filter," and of effecting the separation of foreign elements therefrom; the first claim of which is as follows:

The overflow-box C, the pipe B, arranged with reference to the vessel A, substantially as described, and for the purposes specified.

And this is the claim alleged to have been infringed by the respondents.

By reference to the specification and drawings of the patent it will be seen that the end of the induction-pipe B, through which the water flows, is so placed in the overflow-box C as to be completely immersed, whereby the steam is prevented from entering the pipe.

It is not claimed that the respondents have in fact any such overflow-box as complainants' in form; but it is contended that the upper plate of the respondents' heater is so constructed, and the end of the induction-pipe so arranged, as that the end is in fact immersed, thus accomplishing the same result by equivalent means. Upon this point there is a difference in the testimony of the witnesses for the complainants and respondents; but the model No. 4 in evidence, stipulated by complainants as correctly representing the machine of the respondents, shows very clearly that, by its relations to the upper plate of the respondents' machine, it cannot be immersed; the space between the discharge-orifice of the pipe and upturned sides of the plate is so great that by no possibility could the water rise, before overflowing the plate, so as to immerse in any degree the pipe.

It is suggested by counsel that the relations of the pipe to the plate may have been changed after the witnesses examined the machine. As to that we cannot speak; but it is stipulated that the model correctly represents the machine, and it shows no such relations as claimed.

The first patent is not, therefore, infringed by the respondents.

The invention of the second patent is set forth in its claims as follows:

1. Filtering material F, between a series of shelves, and outlet, substantially as described.
2. The arrangement of steam-inlet *n*, shelves *a a a*, constructed and arranged substantially as described.
3. Depositing-plates *a a a*, constructed and arranged substantially as described.
4. The arrangement of steam-pipes M and N with reference to the plates *a a a*, substantially as specified.
5. The combination of the vessel A, the plates *a a a*, the plate *d*, the steam-pipes M, N, and E, and water-pipes *f* and *r*, substantially as described.

Complainants allege that the first and second claims of this patent are infringed.

The first claim is for the arrangement of three elements—filtering material, a series of shelves, and an outlet—and this arrangement is of that character that the filtering material may occupy such position between the series of shelves and the outlet as that the water, after flowing over the several plates, will pass through the filtering material on its way to the outlet.

The second is for the arrangement of steam-inlet, shelves, filtering material, and outlet.

Each of the elements embraced in these claims are old and have in some way been in use in and connected with devices for heating, purifying, and separating water for steam boilers. The filtering material is found in the Covington, Greenfield, Brownell, and Seaward devices; the series of shelves in the Wagner, Hooton, and Burden devices, and the outlet and inlet in all the devices referred to. This is not, therefore, in either of the claims a combination or arrangement of any new element or new elements with old elements, neither is it a combination of old elements applied to a new purpose; but it is bringing together and combining and arranging in a single machine or device that which existed before in several, and each performing the same office in their new relations which they did in their old.

The series of shelves. In the new the water passes over the shelves in a thin sheet, is subject to the action of steam passing through the spaces between the shelves, and in this way, and by these means, the crystallizable atoms in the water will be deposited upon the shelves and the water will be considerably heated. In the old the water spreads in very thin films during its whole course on the heated partitions (shelves) and is kept constantly boiling; from this it results that all matters settling, whatever may be their nature, held in suspension or solution, are not only divided, but a portion of them are brought to adhere and incrust on the partitions (shelves,) where they gradually deposit, according to their density.

The filtering matter in the new is to deprive the water of its less soluble particles of matter, and in the old to free it from any sand, mud, or other foreign matters which may be mechanically intermixed therewith; and when brought together, as in complainants' device, it is difficult to see in what way the former or customary action of either is modified by their connection with the other.

It is not claimed that the relation of the filtering matter with the shelves causes them to perform any new office, or even to perform their customary office in any better or more effective manner; no increased crystallization, adhesion, or incrustation.

Neither can it be successfully shown that the filtering material, by its relation with the shelves, performs any new office; it is for freeing the water from matter mechanically intermixed with the water, (mechanically held in suspension,) and it is by no means clear from the evidence that its relation enables it to perform this office in a more effective manner.

If, then, the operation of neither is affected by the other, does their union, their action in the same device, produce a result not produced by some of them separately? By the series of the shelves the matter held in solution was crystallized, and adhered and incrusted to the plates, and a portion of that held in suspension was also deposited upon them; but a large portion of the matter held in suspension still remained in the water and, from the lack of the filtering material, passed into the boilers. By the filtering material a large portion of the matter held in mechanical suspension was taken up and separated from the water; but from the lack of the series of shelves the matter held in solution was not separated from the water, but passed into the boiler; but, by combining both in a single machine, both these objects are accomplished, and the water is passed into the boiler in a condition different from that in which it was in passing from either of the devices after their separate action upon it.

If this be so, a new result is produced by the union, a result not previously produced by either of the elements acting separately, which removes it from the doctrine of aggregation as laid down in the cases of *Hailes* vs. *Van Wormer*, (vol. 5 PATENT OFFICE GAZETTE, 91;)

Birdsell vs. *McDonald*, (vol. 6 PATENT OFFICE GAZETTE, 682.) Treating the invention, then, as a combination producing a new result, is it novel?

It is not contended that any of the devices relied upon by respondents as anticipating complainants' patent embraces all the elements, excepting that patented to Wagner. This, the respondents say, is a complete anticipation of the invention, and their expert witness, who seems to be a very intelligent man, says: "I find the invention claimed in said English patent, (Wagner's,) when compared with the inventions claimed in the complainants' patents Nos. 2 and 3, to be identical in principle and operation."

And the expert witness Millward says: "I am of the opinion clearly that the said English patent (Wagner's) cannot be justly said to embrace or contain the invention set forth in the first claim of the letters patent No. 2, for the reason that it does not embody filtering material between "a series of heating-shelves and its outlet, the filtering material being located in the outlet-pipe itself; that its capacity is insufficient to perform the functions of Stilwell's filtering material, and that it is not designed to perform them."

In speaking of the third and fourth claims of the third patent, he says: "There is in the Wagner patent no upward filter at all, and no mud-well, from which mud can be drawn off while the heater is in operation." Again, "I do not find in this English patent a mud-well below a series of shelves and below an upward-filtering chamber; and, as I regard the construction and arrangement as essential to the invention specified in the fourth claim of said patent, and as it is so set forth in that claim, I am of the opinion that the English patent of Wagner does not contain or describe the invention specified in said fourth claim."

Thus we have two men, well versed in mechanical and chemical science, presenting to the court, under oath, statements diametrically opposed to each other in regard to the principle and operation of the two devices.

Strictly construed, it is very certain that the Wagner patent does not anticipate complainants' invention as described in the first and second claims of the second patent. Construed broadly, however, it may not be so clear that it does not anticipate it. It has the series of shelves operating in substantially the same way for the accomplishing of the same purpose; it has filtering material between the series of shelves and the outlet, and there is what may be called a mud-well; but it seems clear from the testimony that, from the incapacity of the filtering-chamber, and the kind of filtering material described in the patent, the Wagner device would not accomplish the results as efficiently as complainants'.

The superior utility of complainants' device over that of Wagner's is clearly shown by the evidence in the case, and is sufficient, in the opinion of the court, as against the Wagner device, to establish its novelty; for it is doubtful whether Wagner's could be practically successfully used. Our better opinion, therefore, is that the patent, either strictly or broadly construed, is not anticipated by the Wagner patent.

It is said, however, that as no kind of filtering material is mentioned, and no function is mentioned except filtering, if it appears that some kinds of filtering material will not work, the patent is void.

By the act of Congress an inventor is to describe his invention and the manner, and process of making, constructing, and using the same, in such full, clear, and exact terms as to enable any person skilled in the art to make, construct, and use the same.

This specification or description is addressed to persons acquainted with the character and nature of the business to which the invention relates, and it is only necessary that it should be so definite or full as to enable persons of competent skill and knowledge to construct, produce, or use the thing described without invention or addition of their own, and without repeated experiments. The description in the patent is not any and all filtering material, but is, any suitable filtering material. Suitable for what? For performing the function or office assigned to it, to wit: The separation of the solid matter from the hot water. This could hardly be said to embrace filtering material which would not perform the office or function assigned to it.

The persons acquainted with the business in which this invention was to be used were familiar with the various kinds of filtering material suitable for this purpose, and would at once use it and put it into operation without invention, addition, or experiment.

The patent is not, therefore, for that reason void.

Passing from the second to the third patent, the third and fourth claims of which it is alleged respondents infringe, the third claim in this patent is—

The filtering-chamber D, constructed and arranged substantially as described.

Without entering into an extended review of the evidence upon this claim, but examining it in connection with the specification and drawings, and with the other claims, and in the light of the state of the art at the time of the invention, I do not think it can receive that broad construction necessary to embrace the filtering-chamber of the respondents; and, receiving a strict construction, respondents do not infringe this claim.

The fourth claim is—

The mud-well G', arranged below a filtering-chamber, in combination with the shelves and inlets, substantially as described.

A broad construction of this claim would embrace the defendants mud-well. But can this claim, from the state of the art and a fair interpretation, receive such construction?

Mr. Millward says: "Mud-wells, as employed in steam-boilers and other apparatuses, have long been known as appliances for the collection and discharge of mud, and not simply for the collection only." Mr. Stilwell was familiar with the state of the art at the time he prepared his specifications, and, from the specification, it is very clear that he had no idea that he was claiming as his invention anything but the particular mud-well which he described in his specifications and drawings. The claim is the mud-well G', and the mud-well G' is described in the specifications and drawings as below the strainer G, and as of a funnel shape and form. Could complainant have entertained the idea that he could remove the entire mud-well, shown in his drawings and described in his specifications below the strainer G, and substitute in the place of the strainer G a plate at the terminus of shell A, and claim the space between the filtering-chamber D, and such plate as the mud-well of

his invention as described in his patent? I think not. Nor do I think that the specification, drawings, and claim, when fairly construed together, will bear any such construction; but his invention was *the* mud well which he so particularly and minutely describes, and as such is not embraced in the defendants' device.

The only remaining question in the case is whether the subject of the first and second claims of the second patent is the invention of E. R. Stilwell or of the defendant, James Armstrong?

The defendants claim the device as used by them was the invention of James Armstrong; that it was invented by him and put into public practical use in the latter part of the year 1845 or 1846; and have introduced in evidence a model which they claim represents the device which was so constructed and so used, and which was made, they say, by James Armstrong, in 1857, a period before complainant claims to have invented his device.

As bearing upon the date of the existence of the model and the construction of the device and its public use, the depositions of eighteen witnesses were taken by the parties, twelve by the respondents and six by the complainants. Of the respondents' witnesses, six testify in relation to the model and eight in relation to the device. The six witnesses of the complainant all were examined in relation to the alleged construction and use of the device.

As to the model—

James Armstrong testifies that he made it in 1857, and that it represented the machine he made and used in 1845 and 1846.

William Armstrong testifies that he saw the model in 1857.

Ruby E. Lucas testifies that she saw the model in 1860, under peculiar circumstances, and placed upon it the initials of herself and friend, which she finds upon it now.

John G. Sherwood testifies that he saw it in the spring of 1862.

Olin Armstrong testifies that he saw the model in 1861 or 1862.

Irwin R. Harris, that he saw it in 1863.

This testimony would seem to establish the existence of the model at a period as early as 1857.

The testimony offered by the respondents to establish the existence and public use of the device is as follows:

James Armstrong testifies to the construction and use of the device in the latter part of 1845 or fore part of 1846.

William H. Armstrong testifies to the use of the device about the same time: he also gives a general description of it.

Robert A. Gettings testifies that he helped make the device; that he furnished the plank; and gives a general description of it, but does not remember all its parts; testifies to the use of it.

George A. Mead testifies to the use of a long box, from five to eight feet long, with an upright at one end; saw Armstrong repairing it; with a pipe at one end.

William Cuykendall testifies that he went to look at Armstrong's mill and saw there a wooden heater in a rough state. This was before he put steam in his mill, which was in 1847.

F. W. Owings testifies that he drew a load of straw to the mill, which was put into a box which was used for filtering or clearing water. The box was square one way and long the other, with a spout on one end of it resembling the model of 1857.

David Trucell testifies that he heard William Armstrong speak of a heater that he was going to have put in the mill; didn't say whether it was wooden or no; but didn't know that it was ever put in.

James S. McCarrell testifies that in 1867 William Armstrong told him his brother had a similar machine in successful operation several years before that at his saw-mill, made of wood; heated the water and removed the mud before it went into the boiler.

Stephen R. Harris testifies that he saw the model in 1869, and James Armstrong then told him that it represented a heater and filterer he had made many years before that in a steam-mill in Huron county; that it was of wood; worked well in practice.

The testimony offered by the complainants to disprove the existence and public use of the device as claimed by the respondents is, first, the deposition of John Collins, who testifies that he assisted in putting up the works, setting the engine, and fixing the machinery for starting the grist-mill; that the heater used there was of sheet-copper, and used five months up to the time he left, and there was nothing of the kind described by Armstrong used while he was there.

Seymour N. Sage, who testifies that he commenced working for Armstrong, Long & Gettings, in the New Haven Mills, in the fall of 1845, and worked there till the first day of December, 1846; that he helped get out the timber and put up the saw-mill frame late in the winter or early in the spring of 1846, and helped put in a steam-engine, a tub-shaped iron heater, used from the time it was put up until he left, in December; that they never used the device described by Armstrong in that or any mill. John and William Armstrong were the owners while he was there.

Corydon Curtiss testifies that he was frequently at the mill from 1846 to 1847; saw Seymour Sage there; saw cast-iron heater, but did not see wooden one; thinks if one had been used would have seen it; cast-iron heater used as long as he recollected the mill, and don't recollect of ever seeing any other heater used in the mill.

Russell Curtiss testifies that he lived near the mill from 1845 to 1847; was acquainted with Seymour N. Sage, who sometimes ran the engine and sawed in steam-mill about eight months; taught Sage how to run the saw-mill; recollects something they called a heater; thinks it was made of iron; it was removed, thinks in March, 1847, and thinks he put the heater in the wagon, and thinks he would have seen the wooden heater if it had been there.

David Turcell testifies that he worked in Armstrong's mill in January, 1846; that he worked there about eight weeks; an iron heater was used while he was there; no other was used; don't think Seymour N. Sage worked there while he was there; quit before he came; heard Armstrong speak of getting another heater; didn't say whether it was to be wooden one or not, and don't know whether he ever put it in.

Asher Taylor testifies that he owned an interest in the mill during the time that Finch owned an interest in it. "I bought after he did, and sold before he did." Thinks he purchased in May, 1846, and sold last of August or in the fall, but not certain whether 1846 or 1845; an iron heater used while he was there, and no other that he remembers while he owned the mill; if there had been a wooden one would have likely recollected it.

George W. Benard testifies that he is a machinist; lived within three-fourths of a mile of the mill; worked in it while owned by William Armstrong and Finch, and when Mr. Sage was there; began the latter part of April or May and worked till July; about a year after worked for Taylor; tore out fore-bay and engine timbers; supposed the heater made of cast-iron; no other in use while he was there; if wooden heater had been there he thinks he would have known it.

Having thus shown what the evidence upon these points is, does it establish the fact that the patentee was not the first and original inventor? The presumption of the law is that he was the first and original inventor, and it casts upon the respondent, who denies it, to show by clear and satisfactory proof that he was not. The evidence in regard to the existence of the wooden heater at the Armstrong mills is very conflicting. On the one hand the witnesses state it was there and used; on the other hand they say that no such heater was there. Two of the witnesses for the respondents say they made the device; yet on the other hand witnesses, who are not impeached, say they worked there during the time that it is claimed to have been made and the time when it is said to have been used, and no such heater was there; and others say they saw it there, and yet others, who were frequently there and familiar with the premises, say that they never saw any such heater there, and if it had been there they would have been apt to have seen it. Again, the time when it is claimed this wooden heater was used was seventeen or eighteen years before the witnesses were testifying, and nothing is heard from it until eleven or twelve years afterward, when it is claimed that a model of it was made; but, then, no effort is made to procure a patent for it or to put it into use for more than ten years after the making of the model. And it is a matter not to be forgotten that James Armstrong, in 1868, took out a patent for a device different from that of the model of 1857, which he claims represented his invention of 1845 or 1846, and that afterward, in 1869, he took out a patent for substantially the same invention represented by said model. If the making of the model constituted invention, I should hold that the proof established the fact that James Armstrong was the prior inventor; but that does not constitute invention, and it can only be used as an item of testimony reflect upon the making and using of the wooden heater in 1845 or 1846. Taking it in connection with the testimony on that point, and weighing all the testimony together, I cannot say that it is of that clear and satisfactory character as requires me to find that James Armstrong invented the device, as claimed, in 1845 or 1846.

It results, therefore, from these findings, that respondents infringe the first and second claims of the second patent; but do not infringe the first and third patents, as alleged in complainant's bill.

SUPREME COURT OF THE UNITED STATES.

WILLIAM MASON, APPELLANT, *vs.* E. H. GRAHAM AND W. ROUSE

[*In Equity.—Appeal from the Circuit Court of the United States for the District of Massachusetts.—October term*, 1874.]

The patent of E. H. Graham, of October 16, 1860, reissued May 28, 1867, for "picker-staff motion in looms," has no relation to the *mere form* of a journal-bearing arm, nor does it consist in arranging a journal-bearing arm in a slot in the rocker. It embraces every combination of a rocker with a bed and loose journal-bearing arms, arranged so as to produce the result described in the specification as effected by the combination.

Inasmuch as defendant employs a combination of a rocker with a bed by loose journals projecting on each side the picker-staff, and the combination is effected by means of a journal-bearing arm, it is immaterial that the form of his journal-bearing arm is unlike that of complainant's, or that its mode of attachment is different, so long as it performs the same function in substantially the same way.

Where defendant had been in the habit of selling the infringing picker-staff motion both separately and attached to looms, in ascertaining his profits upon those sold with the looms, regard should be had to his profits upon those sold separately, rather than to the aggregate profits made by him upon the loom and attachment combined.

If defendant has cheapened the cost of producing the infringing device by an improvement of his own, he is entitled to a corresponding credit in the ascertainment of the profits which complainants are entitled to recover.

[*Benjamin Dean*, for appellant.

J. E. Maynadier, for appellees.]

[This was a suit in equity under letters patent relating to an improved picker-staff motion in looms, granted to E. H. Graham, October 16, 1860, and reissued May 28, 1867, to the inventor and Wanton Rouse, a half-owner in the patent.

The case as decided in the circuit court will be found fully reported in 5 Fisher, 1.

It was appealed by the defendant.]

Mr. Justice STRONG delivered the opinion of the court:

The object of the invention patented to the complainants in the court below was to produce an accurate and sure picker-staff motion in looms by a combination of devices, which, while giving great accuracy of motion, so guides and holds the picker-staff as to enable it to work with the least possible friction and lateral disarrangement.

In all picker-staff motions it is desirable, if not essential, that the end of the staff made to strike the shuttle should move in a right line, so as to drive the shuttle directly along the shuttle-race in the line in which it is desired to play. This has been effected by constructing the lower end of the staff in the form of a rocker, the exterior curve of which is an arc of a circle described from a center corresponding with that point in the staff that strikes the shuttle. This rocker is made to roll on a bed, the face of which is extended parallel to the shuttle-race, and which is placed on the outside of the loom beneath the lay. How to connect the rocker with the bed, so that the picker-staff may be maintained in proper position upon the bed, has been a subject of much inquiry. Various modes had

been suggested before the complainants obtained their patent, and several of these modes had been described in patents for improvements in looms granted to other inventors.

The invention described in the patent to the complainants relates to such a connection. It is primarily a combination of a rocker with a bed by means of loose journals projecting each side of the picker-staff, and arranged beneath it substantially as described in the specification. As in other arrangements for picker-staff motions, the rocker is made to play upon a horizontal bed parallel to and below the shuttle-race, and the bed has a socket passing longitudinally through its base for the passage of the shaft of the loom. The shank of the rocker is made hollow—that is, with a box or bearing extending through its tread upward, into which a shaft-arm or bar is inserted. This bar or shaft-arm is fitted with journals projecting on each side at right angles with the rocker, and resting in eyes formed in the bed-piece, which constitute the journal-bearings. The eyes have inclined slots cut in them, so that they form ears or open boxes, into which the journals are inserted when the parts of the picker-staff motion or the constituents of the combination are put together. Thus the shaft and the journals can readily be removed and replaced, and the journals are free to play without working out of their bearings. The rocker is retracted and caused to move by means of a spiral spring wound loosely around a short shaft below the bed, and attached at one end to a plate which turns freely on the shaft, and the plate is connected by a strap with a hook extending from the under side of the rocker or the lower end of the shaft-arm. This seems to be a sufficient description of the combination.

The patentees, after having described the drawings of their specification, say:

> The first part of this invention relates to the position of the journals. This position is determined by the position of the socket for the picker-staff, which socket is so placed that the point of the picker-staff which strikes the shuttle must move in the required line; and this part of the invention consists in placing the journal at or near this socket, and as near the level of the bed as practicable. In this position there is the least possible wear, and the journals perform all their functions to the best possible advantage. It is obvious that, as every point upon the rocker varies its position in the action of the motion with reference to the bed, it is impossible to connect the journal directly with the rocker, and its box directly with the bed, or *vice versa*. One or the other must be indirectly connected, and it is for this reason that in the motion described the journals are placed upon the arm *g*, upon which the rocker can play up and down. So far as we know, no rocker has ever been combined with its bed by means of journals before this invention.
>
> The second part of this invention consists in forming the boxes or bearings for the journals with such an opening that the journals may be laid in them in putting the motion together, without liability to work out in the operation of the rocker, as plainly shown in the drawings. This method of construction is much cheaper than making the boxes cylindrical, and is quite as efficient in every respect.

The claims made in the specification are:

> 1. The combination of a rocker of a picker-staff with its bed by loose journals projecting each side of the picker-staff, and arranged beneath the picker-staff, substantially as described.
> 2. In combination with the rocker, the bed, and the journals, the open boxes, substantially as and for the purpose described.
> 3. In combination with the rocker and its bed, the journal-bearing arm, operating substantially as and for the purpose specified.

By the arrangement thus described and claimed it is manifest the rocker is prevented from sliding perceptibly on its bed, and it is kept true in its bearings by the arm or bar from which the journals are projected, the arm having also a long bearing in the box of the rocker. The journals, moreover, having bearings in the ears of the bed, steady the rocker, resist any lateral movement, and prevent what is denominated as wabbling. As the picker-staff is made to oscillate, its rocker rises and sinks upon the arm, and thus most of the friction caused by the play of the staff comes upon the shaft or journal-bearing arm, and not upon the tread of the rocker or the bed plate.

Such is the invention patented to the complainants in the reissued patent. Such are the results obtained by it, and such is its mode of operation.

We think the invention has no relation to any mere form of a journal-bearing arm. Nor do we think it consists in arranging a journal-bearing arm in a slot in the rocker. In our opinion it embraces every combination of a rocker with a bed and loose journal-bearing arms, arranged so as to produce the result described in the specification as effected by the combination.

And we have been unable to perceive that the invention was anticipated by any of those devices which the defendant has given in evidence. Of these, four only need be noticed. They are those described in the earlier patents granted to Benjamin Lapham, to David Barnum, to Rensalear Reynolds, and to William Stearns. We do not propose to go into any critical examination of them. The case does not call for it. Of them all it may be said that, while each has a rocker and a bed, no one connects the rocker with the bed by means of loose journals, or by loose journal-bearing arms, and no one of them obtains the beneficial results secured by the invention belonging to the complainants. In Lapham's invention there is one journal on the bed and one on the rocker; both on the same side of the picker-staff. Obviously this device could not prevent wabbling or the sliding of the rocker on the bed. Barnum's invention has no journals, journal-boxes, or journal-bearing arms; nor has the device of Stearns. In the Reynolds patent the rocker is described as held to the bed by means of a strap fastened at one end to the under face of the rocker, and at the other to a point in the groove of the bed-piece, in which the rocker rolls. It is but faintly claimed, if at all, that any of these patents describe the invention of the complainants. The defendant has used them rather as exhibiting the state of the art when the Graham and Rouse patent was granted, and as requiring that patent to be construed to cover only a combination, of which a journal-bearing arm sliding vertically in a hollow place or box in the rocker, and having journals which turn in open boxes in the bed-piece, is an essential constituent. We think, however, they exhibit no such state of the art as requires that construction to be given to the patent, and we cannot perceive that such a construction is justified by the language of the specification and claims.

We come, then, to the inquiry whether the devices made and sold by the defendant are substantially the same as those patented by the reissued patent, or, in other words, whether the picker-staff motion made and sold by the defendant is an infringement upon the complainants' right. Upon this question the opinions of the experts examined are in direct conflict, and we are, therefore, under the necessity of comparing for ourselves the two devices.

We have already said that the object sought to be accomplished by the complainant's invention was the prevention of wabbling of the picker-staff, and compelling it to move steadily without lateral deflection in the required plane. It is not denied that exactly this is the object at which the defendant's motion is aimed. It remains, then, only to determine whether the means by which the intended result is obtained are substantially the same.

That both the combinations connect a rocker to its bed by journals indirectly, employing an arm to effect such indirect connection, is made clear by inspection.

In Mason's motion the arm is attached by a second journal; in the complainant's, by a slot in the rocker. It is true the form and the location of the arms differ; but they perform the same functions, and in substantially the same manner. Both are journal-bearing arms. Both connect the journals, whether they are on the rocker or on the bed, indirectly with the bed in the one case, or with the rocker in the other. Each, then, is a combination of a rocker with a bed by loose journals projecting on each side the picker-staff, and the combination is effected by means of a journal-bearing arm. That the form of the journal bearing arm of the defendant's motion is unlike that of the complainant's, or that its mode of attachment is different, is immaterial, so long as it performs the same function in substantially the same way. We are, therefore, of the opinion that the defendant's picker-staff motion must be considered as practically the same as that patented to the complainants, and, therefore, that the charge of infringement is sustained. The circuit court, then, correctly ordered that the defendant should account.

But we think there was error in the ascertainment of the profits with which he was charged. The master to whom the statement of the account was referred reported that the defendant had made and sold three thousand six hundred and thirty-nine pairs of the infringing motions as a part of looms manufactured in his establishment, and that the profits resulting from the manufacture and sale of such motions had mingled with the profits from the manufacture of looms. He further reported that the cost of making the looms, including the motions, was $59.63; that the cost of making the motion was forty-five and a half cents each, or ninety-one cents for each loom; and that the profits resulting from the manufacture of each loom, including the pair of motions, was $5.64. Assuming these to be the facts, the appellant insists that he should have been charged with only eight cents and six-tenths of a cent as the profit made by him on each pair of motions, that bearing the same proportion to $5.54, the whole profit on the looms, which ninety-one cents, the cost of a pair of motions, bears to $59.63, the cost of the entire loom with the motions. To this we cannot assent. It appears from the master's report that the defendant sold four hundred and fourteen pairs, separately from the looms, at $2 per pair, and two hundred and ninety-seven and a half other pairs for $534.75. These sales furnish a much better measure of profits than is a ratable proportion of the profits on an entire loom. It may fairly be presumed from them that the profits on the sale of looms with the motion attached were increased by the infringing device quite as much as was the profit on the motions sold separately. It does not appear at what profit, if any, the looms could have been sold without the picker-staff motion attached. But the master further reported that the defendant made the infringing motions after a pattern of his own devising; that they cost per pair fifty cents less than the picker-staff mechanism which he had immediately before put upon his looms; that they were made under a patent granted to him, and that they cost about fifty cents less than the motions made by the plaintiffs, the difference in the cost being due to his invention. If this is so, it is clear that the fifty cents saved on each pair, equivalent to fifty cents profit, is not due to the complainant's invention. Were it not for the defendant's improvement, the cost of making a pair of motions would have been, not ninety-one cents, but ninety-one plus fifty cents, or $1.41, and the profits on each pair would have been fifty-nine cents, instead of $1.09, charged to the defendant. Manifestly the complainants are not entitled to the savings or profits resulting from the defendant's own invention.

The defendant, therefore, has been charged by the master's report, confirmed by the court, too much for the profit derived from the sale of four hundred and fourteen pairs of motions sold separately from the looms, and from the sale of two hundred and ninety-seven and a half motions, also sold separately from the looms. For the former he should have been charged $243.26, instead of $451.26, and for the latter $175.52, instead of $263.

We think, also, that the defendant has been excessively charged for the profits made by him on the three hundred and forty-six beds and the one thousand five hundred and forty-eight rockers sold by him at various times for the repair of bridle motions previously made. He has been credited with the cost only, without reference to the fact that the cost was reduced by his own invention.

The complainants have not shown how much the cost would have been had the defendant made them without employing his own improvements. Under such circumstances it appears just to assume that but for the improvement of the defendant the cost of making the bed would have been forty-two cents, instead of twenty-seven and two-tenths, and the cost of making the rockers would have been nineteen cents and two-tenths, instead of twelve cents and four mills, as reported by the master. The consequence of this is, that the profit on the three hundred and forty-six beds sold was only $167.68, and the profit on the fifteen hundred and forty-eight rockers sold was only $471.49.

The decree, therefore, should have been in favor of the complainants for—

1st.	Profits on bridle motions sold on looms	$1,819 50
2d.	Profits on 414 pairs sold separately	243 26
3d.	Profits on 297½ pairs sold separately	175 52
4th.	Profits on the beds sold	167 68
5th.	Profits on the rockers sold separately	471 49
	Total	$2,877 45

A majority of the court is of opinion that the appellant is not entitled to a credit for the $1,000 paid on

the 25th of October, 1869, for which a receipt was then given.

The decree of the circuit court is reversed, and the case is remitted with instructions to enter a decree in favor of the complainants against the defendant for $2,877.45, with costs of suit in the court below.

Each party to pay his own costs in this court.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF OHIO.

JOSEPH INGELS *vs.* PHINEAS P. MAST.

[*In equity.—Before* EMMONS *and* SWING, *JJ.—February*, 1875.]

Semble, That, when the patent on which a recovery is based is for a combination, the complainant may recover simply for the value of the improvement or element that he has added to what was before old.

[Hearing on exceptions to master's report.

The opinion of the court on the question of infringement is reported in 6 Fisher, p. 416. The court there held that complainant's patent was for a combination of four elements—a seed-cup for grain-drills, having, first, a concave hopper; second, a seed-wheel turning therein, with projecting cogs to draw forward the grain; third, an elevated delivery-orifice, so as to make the drill forced feed; and, fourth, cheeks or bosses, between which the wheel turned.

It held that the Strayer patent, earlier in date than that on which the suit was brought, showed all these except the last, to wit, the cheeks.

The master reported damages to the amount of nearly $20,000, upon the basis of a license fee for the *whole combination* covered by the patent in suit and others. There was also other testimony in the record to show the value of the *whole combination*. Exceptions were filed to the report.

Complainant contended that under the decision of Judge Grier in *Livingston* vs. *Jones*, 2 Fisher, and other decisions, he was entitled to the profit on the entire combination, while defendant claimed that, under the rule, in many cases (finally settled in *Whitney* vs. *Mowry*, 16 Wallace,) complainant could recover only for the additional profit that he had made by using the whole combination over what he might have made by using all except the cheeks, the only thing Ingels added to the combination of Strayer; and, as complainant had rested his case without thus apportioning the profits, it was contended that he was entitled to recover nominal damages only.

The court delivered no full opinion, but gave simply its conclusions.]

[*Wood* and *Boyd*, for complainant.
Hatch and *Parkinson*, for defendant.]

EMMONS, *J.*:

1. The testimony, when analyzed, does not show any certain basis upon which the finding of the master can rest. No one witness swears to any license fee that is applicable to the precise thing here used, and for which damages are claimed. There is no claim that the report of the master is warranted by any proof of profits.

2. Subject to reconsideration when the master's further report comes in, it is suggested that the proper measure of damages is the difference between the value of the improvement used by the defendant and any other like device which was open to him without royalty, or by payment of a less royalty.

This is said, notwithstanding the suggestion in Judge Grier's decision in *Livingston* vs. *Jones*, 2 Fisher, that there is no warrant for subdividing the elements in an improvement, and giving the complainant the value only of that peculiar feature in it which he has added. He seems to argue that the portion of the device which is improved must be taken as a unity, and the complainant entitled to its whole value as improved. We rule, for the present, on the contrary, that he is entitled only to the value of that which he has added, and that such a subdivision should be made. See 1 Wallace, *Jones* vs. *Morehead*, which, although not deciding the question of damages, modifies Judge Grier's decision of unity.

3. The master will, however, make an additional report, upon the basis that the complainant is entitled to damages for all the profits which the defendant has made by the use of the improved cheeks described in the patent. This as distinguished from the rule which would confine him to the difference of the value of the cheeks and such as he might have used without royalty.

It will be recommitted to the master to make a further report in accordance with these views.

U. S. CIRCUIT COURT, DISTRICT OF MASSACHUSETTS.

THE BURLEIGH ROCK-DRILL COMPANY *vs.* GEORGE W. LOBDELL *et al.*

[*In equity.—Before* SHEPLEY, *J.—January*, 1875.]

Where acquiescence alone is relied upon as a basis for a motion for a preliminary injunction, the infringement must be palpable.

The fact that a defendant is using a machine openly made and sold, under patents, and which the manufacturers have in good faith put in open competition with the machines made by complainant, honestly believing that they were not trespassing on any rights of complainant, though no defense if he is adjudged at final hearing to infringe, is a reason why the court should hesitate to interfere before the final decree in a case where there is no suggestion of any irremediable injury in the intervening time, or any want of ability to respond to any judgment which may finally be recovered.

[This was a suit in equity brought before the court on motion for injunction *pendente lite*.]

[*C. Smith*, for complainant.
C. H. Drew, for defendants.]

SHEPLEY, *J.*:

This is a motion for preliminary injunction, *pendente lite*.

Although, upon a careful consideration of the evidence in the record, I see no good reason to doubt the validity of the two patents of the complainant, which alone were in issue at the hearing upon this motion, yet there has been no prior judicial adjudication in favor of their validity. The acquiescence in the patent has, it is true, been sufficient to lay the foundation for an injunction *pendente lite* in case of a clear substantial identity between the patented invention and the infringing device; but where acquiescence alone is relied upon as a basis for the motion for a preliminary injunction, the infringement must be palpable.

This is not a case of wilful infringement, or of the use of a device identical with the patented one, or a mere colorable attempt to evade it. The respondents' are using a machine openly made and sold and used under patents, and which in good faith the manufacturers have placed in open competition with the machines made by the complainants, honestly believing that they were not trespassing upon any rights of the complainants. This is no defence if they are adjudged at the final hearing to infringe; but it is a reason why the court should hesitate to interfere before the final decree in a case where there is no suggestion of any irremediable injury in the intervening time, or of any want of ability to respond to any judgment which may finally be recovered.

Without anticipating at this time any conclusions which may with more accuracy and more appropriately be drawn at the final hearing, and, remarking only that, for the purposes of the hearing on this motion, I treat the ninth claim of the patent No. 52,960 as a claim for a combination of three elements, it is sufficient to decide that a case of infringement is not made so clearly to appear as to require any action by the court in the nature of an injunction at this stage of the proceedings.

Motion denied.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date May 18, 1875.]

8,328.—Lamp-Pedestals.—NATHANIEL L. BRADLEY, West Meriden, Conn., assignor to THE BRADLEY & HUBBARD MANUFACTURING COMPANY, same place. Application filed May 4, 1875. Term of patent 7 years.

8,329.—Coat and Hat Hooks.—FRANCIS T. FRACKER, New Britain, Conn., assignor to P. & F. CORBIN, same place. Application filed April 23, 1875. Term of patent 7 years.

8,330.—Carpets.—HEINRICH F. GOETZE, Boston, Mass., assignor to THE ROXBURY CARPET COMPANY, same place. Application filed May 7, 1875. Term of patent 3½ years.

8,331.—Charm-Medal.—CHRISTIAN H. HERSHEY, Philadelphia, Pa. Application filed April 28, 1875. Term of patent 3½ years.

8,332.—Group of Statuary.—HENRY W. HIRSCHFELD, West Meriden, Conn., assignor to THE MERIDEN BRITANNIA COMPANY, same place. Application filed May 4, 1875. Term of patent 7 years.

8,333.—Carpet.—ARTHUR MARTIN, Paris, France, assignor to THE ROXBURY CARPET COMPANY, Boston, Mass. Application filed May 7, 1875. Term of patent 3½ years.

8,334.—Fireman's Trumpet.—FRED. J. MILLER, Brooklyn, N. Y. Application filed March 29, 1875. Term of patent 3½ years.

8,335.—Ornament for Burial-Caskets.—W. MAX REID, Amsterdam, N. Y. Application filed April 17, 1875. Term of patent 7 years.

8,336.—Heating-Stoves.—GARRETTSON SMITH and HENRY BROWN, of Philadelphia, assignors to SHEELER, BUCKWALTER & Co., Royer's Ford, Pa. Application filed May 5, 1875. Term of patent 7 years.

8,337.—Stove.—NICHOLAS S. VEDDER, Troy, N. Y., assignor to COMSTOCK, CASTLE & Co., Quincy, Ill. Application filed May 8, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date May 18, 1875.]

2,513.—Whisky.—BARKHOUSE BROTHERS & Co., Louisville, Ky. (Re-registration.) Application filed November 25, 1871.
"words 'Gold Dust' and the figure of the horse."

2,514.—Kitchen Ranges and Stoves.—BARTLETT, ROBBINS & Co., Baltimore, Md. (Re-registration.) Application filed August 19, 1871.
"words 'Baltimore Kitchener.'"

2,515.—White Lead, Zinc, and Paints.—BAXTER, BELL & Co., New York, N. Y. Application filed April 24, 1875.
"word 'CENTENNIAL.'"

2,516.—Stoves.—PHILO D. BECKWITH, Dowagiac, Mich. (Re-registration.) Application filed November 19, 1872.
"words 'ROUND OAK.'"

2,517.—Soap.—R. M. BISHOP & Co., Cincinnati, Ohio. (Re-registration.) Application filed August 26, 1872.
"words 'Royal Olive Soap.'"

2,518.—Metallic Paint.—F. G. BOURKE & Co., New York, N. Y. (Re-registration.) Application filed December 17, 1870.
"'The New York Copper or Metallic Paint.'"

2,519.—Bronchial Troches.—JOHN I. BROWN & SONS, Boston, Mass. (Re-registration.) Application filed September 7, 1871.
"'Brown's Bronchial Troches.'"

2,520.—Whisky.—JOHN E. CASSIDY, Boston, Mass. (Re-registration.) Application filed April 8, 1872.
"words 'Pure Old Neptune Whiskey.'"

2,521.—Friction-Matches.—JAMES L. CLARK, Oshkosh, Wis. (Re-registration.) Application filed September 14, 1872.
"a star upon the wrapper or package of matches with the words 'Star Matches.'"

2,522.—Stoves and Stove-Trimmings.—CULTER & PROCTOR, Peoria, Ill. (Re-registration.) Application filed November 18, 1872.
"words 'Woman's Rights.'"

2,523.—Stop for Reed-Organs.—J. ESTEY & Co., Brattleborough Vt. (Re-registration.) Application filed December 22, 1871.
"word 'Delecante.'"

2,524.—Reed-Organs.—J. ESTEY & Co., Brattleborough, Vt. (Re-registration.) Application filed September 7, 1871.
"'The Vox Jubilante.'"

2,525.—Paints.—FARRAND, WILLIAMS & Co., Detroit, Mich. Application filed May 8, 1875.
"a representation of a spray of maple leaves."

2,526.—Liver-Pills.—COCHRAN FLEMING, Sewickley, Pa.—(Re-registration.) Application filed March 23, 1872.
"the raised seal and the words 'McLane's Liver Pills.'"

2,527.—Oil-Cans.—JOHN P. HAINES, Irvington, N. Y. (Re-registration.) Application filed April 3, 1871.
"'Magic Disk Oil-Cans.'"

2,528.—Cotton, Woolen, and other Fabrics.—HAMILTON WOOLEN COMPANY, Southbridge, Mass. (Re-registration. Application filed February 28, 1872.
"words 'Tycoon Reps.'"

2,529.—Water-Proof Material.—ALFRED A. HAWLEY, Methuen, Mass. (Re-registration.) Application filed January 31, 1872.
"word 'Repellent.'"

2,530.—Harness.—JAMES R. HILL & Co., Concord, N. H. (Re-registration.) Application filed November 14, 1871.
"words 'The Concord Harness.'"

2,531.—Pocket Cook-Stoves.—HOUGHIN MANUFACTURING COMPANY, New York, N. Y. Application filed May 8, 1875.
"words 'MULTUM IN PARVO,' 'POCKET COOK-STOVE.'"

2,532.—Licorice-Paste.—JAMES C. MCANDREW, New York, N. Y. Application filed April 30, 1875.
"the representation of an oriental ship, as shown in the accompanying fac-simile, either with or without a surrounding line or border, and either with or without any words, letters, or figures added thereto, above or below."

2,533.—Galvanized Sheet-Iron.—McCULLOUGH IRON COMPANY, Philadelphia, Pa. (Re-registration.) Application filed January 24, 1873.

"a spread eagle."

2,534.—Prepared Plumbago.—MORSE BROTHERS, Canton, Mass. (Re-registration.) Application filed March 14, 1872.

"word 'Sun,' either preceded by or not, an adjective, such as the word 'Rising.'"

2,535.—Watches.—HUGH MULLIGAN, Philadelphia, Pa. Application filed April 9, 1875.

"'GENL. GEORGE WASHINGTON, EXHIBITION WATCH, 1876. PHILADELPHIA.'"

2,536.—Boots and Shoes.—CHARLES W. MUNDELL, Brooklyn, N. Y. Application filed May 6, 1875.

"words 'Charles W. Mundell, Noiseless Heel Tap for Boots and Shoes,' and the enlarged letter M, the whole being circumscribed by the heel-shaped marginal line."

2,537.—Shirt-Bosoms.—SOLOMON L. SIBLEY, Boston, Mass. (Re-registration.) Application filed November 7, 1872.

"three lines; a curved line with two straight lines—one at each extremity thereof, and the words 'Sibley's Trade Mark' over or under the center of the curved line."

2,538.—Green Paints.—D. STEINER & CO., New York, N. Y. Application filed April 20, 1875.

"words 'MAGNESIA GREEN.'"

2,539.—Mustard.—SWAIN, EARLE & CO., Boston, Mass. (Re-registration.) Application filed July 12, 1872.

"words 'Golden Mustard,' and a figure of a caster or cruet-stand."

2,540.—Gunpowder.—THE MIAMI POWDER COMPANY, Xenia, Ohio. (Re-registration.) Application filed June 29, 1872.

"a device representing a mounted cannon, with the words Miami Powder Co.' on the side of the cannon."

2,541.—Boots.—JOSEPH H. WALKER, Worcester, Mass. (Re-registration.) Application filed July 15, 1872.

"words 'Saddle-Seam Boot.'"

2,542.—Plumbago or Graphite Lubricant.—AMERICAN GRAPHITE COMPANY, New York, N. Y. (Re-registration.) Application filed March 15, 1872.

"a circle inscribed within an equilateral triangle, and inclosing devices and words as follows, to wit: Within the circle is the figure of a globe mounted upon an axle, representing the north and south poles, and bearing upon its surface the words 'The Perfect Lubricator; Ticonderoga Plumbago of Absolute Purity.' Within the corners of the triangle, and exterior to the inscribed circle, are severally depicted the figures of a steamship under way, a locomotive in motion, and a stationary steam-engine."

2,543.—Liniment.—REUBEN BANES, New Moorfield, Ohio. Application filed April 12, 1875.

"a monogram of the three letters B B B in one character."

2,544.—Bitters.—BYRNE BROTHERS & CO., New York, N. Y. Application filed May 11, 1875.

"words 'GLOBE BITTERS.'"

2,545.—Spool-Thread.—CLARK THREAD COMPANY, Newark, N. J. (Re-registration.) Application filed August 3, 1872.

"the initial letters of the words 'Our New Thread,' or 'O. N. T.,' which are used by us in combination with the words 'Clark's O. N. T. Spool-Cotton.'"

2,546.—Spool-Thread.—CLARK THREAD COMPANY, Newark, N. J. (Re-registration.) Application filed August 3, 1872.

"letters 'O. N. T.'"

2,547.—Lead-Pencils.—ORESTES CLEVELAND, Jersey City, N. J.—Case A. (Re-registration.) Application filed August 10, 1872.

"words 'American Graphite Polygrade Pencils,' together with the word 'DIXON.'"

2,548.—Lead-Pencils.—ORESTES CLEVELAND, Jersey City, N. J.—Case B. (Re-registration.) Application filed August 10, 1872.

"the representation of a crucible."

2,549.—Lead-Pencils.—ORESTES CLEVELAND, Jersey City, N. J.—Case C. (Re-registration.) Application filed August 10, 1872.

"word 'Crucible.'"

2,550.—Lead-Pencils.—ORESTES CLEVELAND, Jersey City, N. J.—Case D. (Re-registration.) Application filed August 10, 1872.

"the letter 'S.'"

2,551.—Lead-Pencils.—ORESTES CLEVELAND, Jersey City, N. J.—Case E. (Re-registration.) Application filed August 10, 1872.

"the letters 'S S.'"

2,552.—Lead-Pencils.—ORESTES CLEVELAND, Jersey City, N. J.—Case F. (Re-registration.) Application filed August 10, 1872.

"the letter 'M.'"

2,553.—Lead-Pencils.—ORESTES CLEVELAND, Jersey City, N. J.—Case G. (Re-registration.) Application filed August 10, 1872.

"the letters 'S. M.'"

2,554.—Lead-Pencils.—ORESTES CLEVELAND, Jersey City, N. J.—Case H. (Re-registration.) Application filed August 10, 1872.

"letters 'V. H.'"

2,555.—Lead-Pencils.—ORESTES CLEVELAND, Jersey City, N. J.—Case I. (Re-registration.) Application filed August 10, 1872.

"the letters 'V. S.'"

2,556.—Lead-Pencils.—ORESTES CLEVELAND, Jersey City, N J.—Case J. (Re-registration.) Application filed August 10, 1872.

"the letters 'V V H.'"

2,557.—Lead-Pencils.—ORESTES CLEVELAND, Jersey City, N. J.—Case K. (Re-registration.) Application filed August 10, 1872.

"words 'American Graphite.'"

2,558.—Stoves.—COMSTOCK, CASTLE & CO., Quincy, Ill. (Re-registration.) Application filed December 10, 1870.

"'ECONOMY.'"

2,559.—Medicated Brandies.—THOMAS DOCKUM & SON, New York, N. Y. Application filed April 30, 1875.

"A monogram consisting of the letters 'D' and 'S,' in white and shaded by black, intertwining with each other, and the character '&,' in black, in the center of the said intertwined letters, is printed upon a gilt ground surrounded with a white border, formed of curved and straight lines meeting one another at angles, the whole forming a peculiar shield."

2,560.—Baking-Powder.—DRIBLER, FURMAN & ALEXANDER, New York, N. Y. Application filed April 22, 1875.

"'Peerless Baking Powder,' together with a representation of loaves of bread."

2,561.—Sewing-Machine Needles.—EXCELSIOR NEEDLE COMPANY, Woloottville, Conn. (Re-registration.) Application filed October 22, 1872.

"word 'EXCELSIOR.'"

2,562.—Cigars.—HAWORTH & WILLIAMS, Newark, N. J. (Re-registration.) Application filed September 26, 1872.

"word 'Diamond,' with the initial letter 'H' above and below the word, inclosed in a rhomboid."

2,563.—Oiling Apparatus.—SAMUEL HUTCHINSON, JR., Salem, Mass. (Re-registration.) Application filed April 22, 1872.

"figure of the said oiling apparatus and the words 'Wick-ed Oiler.'"

2,564.—Medicine.—J. & C. MAGUIRE, St. Louis, Mo. (Re-registration.) Application filed May 27, 1872.

"a design representing a pass in the Andes mountains, showing two natives leading llamas laden with the product of the cundurango. The words (or legend) accompanying the design are 'Maguire's Cundurango Liver and Blood Bitters, [trade-mark,] Heart of the Andes; Home of the Cundurango.'"

2,565.—Filet Under-Garments.—CARL MEZ & SONS, Freiburg, Germany. Application filed April 19, 1875.

"words 'Filet Under-Garments,' 'Carl Mez & Sons, Freiburg,' and the words 'semper bene,' inclosed by a pair of equally-balanced scales."

2,566.—Stoves.—MITCHELL, STEPHENSON & CO., Pittsburg, Pa. Application filed May 11, 1875.

"word 'REVOLUTION.'"

2,567.—Soap.—HENRY T. MUNSON, Washington, D. C. Application filed May 13, 1875.

"word 'SALICYLIC.'"

2,568.—Cigars.—CHRISTIAN C. SAUMS, Baltimore, Md. Application filed April 23, 1875.

"words 'Little Nut,' with a branch of a hazel-tree, with nut on the same, under the above words, and the letters 'C. C. S.' under the branch."

2,569.—Pastilles.—STOWELL & CO., Charlestown, Mass. (Re-registration.) Application filed December 1, 1871.

"words 'Samuel Kidder & Co.'s Asthmatic Pastilles.'"

2,570.—Lubricating-Oil.—THE GALENA OIL WORKS, Franklin, Pa. (Re-registration.) Application filed February 17, 1872.

"words 'Galena Oil,' together with the representation of a star that embraces the letter G."

2,571.—Cigars.—WHITLOCK & ABRAMS, Richmond, Va. Application filed May 11, 1875.

"word-symbol 'IMPREGNABLE' in conjunction with the monogram composed of the letters and character 'W. & A.'"

2,572.—Medicine.—YERBA BUENA BITTERS COMPANY, San Francisco, Cal. Application filed April 18, 1875.

"words 'DR. WARREN'S YERBA BUENA BITTERS.'"

2,573.—Lard, Lard-Oil, and Neat's-Foot Oil.—N. K. FAIRBANK & CO., Chicago, Ill. Application filed May 11, 1875.

"a boar's head."

2,574.—Cigars.—F. HARHNELS, New Orleans, La. Application filed May 12, 1875.

"words 'La Hermosa.'"

LABELS REGISTERED DURING THE WEEK.

[Each Certificate bearing date May 18, 1875.]

240.—Title: "J. N. Richardson, Son & Owdon."—JOHN BULLOCKE, Bay Ridge, N. Y. Application filed May 8, 1875.

241.—Title: "Dr. Brown's Vapor, Electro-Vapor, and Medicated Bath."—G. W. BROWN, Rockfield, Ill. Application filed May 10, 1875.

242.—Title: "Superior Coloring for Butter."—ALEXANDER MAY, Jeffersonville, Ind. Application filed May 17, 1875.

243.—Title: "Directions for Using the Manhattan Patent Compound Lye."—I. N. STERN, Keokuk, Iowa. Application filed May 4, 1875.

244.—Title: "Kimm's 50c Premium Aromatic Bitters."—STEKETEE & KIMM, Grand Rapids, Mich. Application filed May 17, 1875.

245.—Title: "Rupert & White's Botanical Liniment."—ALBERT HENRY WHITE, Somerville, Mass. Application filed May 5, 1875.

REMITTANCES.

All money sent by mail, either to or from the Patent Office, will be at the risk of the owner. In no case should money be sent inclosed with models. All payments to or by the Office must be paid in specie, Treasury notes, national bank-notes, certificates of deposit, or post-office money-orders.

APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., May 19, 1875.

On the petition of ANN JENNETTE HATHAWAY, of Milwaukee, Wis., executrix of JOSHUA HATHAWAY, deceased, authorized by act of Congress approved February 18, 1875, praying for the extension of a patent granted to the said JOSHUA HATHAWAY, on the 3d day of April, 1860, for an Improvement in Devices for Converting Reciprocating into Rotary Motion,

It is ordered that the testimony in the case be closed on the 20th day of July next; that the time for filing arguments and the Examiner's report be limited to the 30th day of July next; and that said petition be heard on the 4th day of August next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

INDEX OF INVENTIONS PATENTED MAY 18, 1875.

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Bale tie, J. W. Philp	7	163,522
Bale tie, W. L. Rose	7	163,331
Barrel, J. H. Morrison	40	163,512
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Barrels, drip pan for, J. A. Clark	40	163,360
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Skate, O. Edwards	143	163,308
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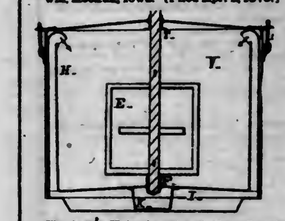
OF

PATENTS GRANTED MAY 18, 1875.

162,291. PRESERVING METALS FROM OXIDATION. Alberto Arn and Mario Del Bubba, Florence, Italy. [Filed Aug. 20, 1874.]

The process of preserving metals from oxidation, which consists in applying to the surface of the metal a composition consisting of quartz, carbonate of potasse, and a metallic oxide, in equal parts, pulverized and mixed together with water to the consistency of a paste, and then exposing the metal thus coated to the air to dry the coating, and afterward submitting it to about 500° centigrade, all as above set forth.

162,292. WASHING-MACHINES. Orea Baldwin, Keokuk, Iowa. [Filed Apr. 2, 1875.]



The boiler V, having the platform I and the spouts H, in combination with the shaft-bearing F on the platform, and its support K, and with the shaft A and side frames or arms E, reaching toward the sides, all arranged to operate substantially as and for the purpose set forth.

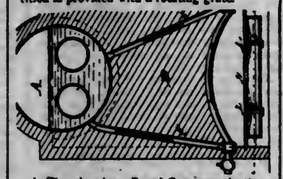
162,293. FAUCETS FOR OIL-CANS. George W. Banker, New York, N. Y. [Filed Apr. 14, 1875.]

1. A faucet for metallic cans, consisting essentially of a screw-threaded tube having a closed end, in which a groove is cut partially through the metal, forming a circular disk, a plunger working in said tube, carrying a valve, and provided with a punch for forcing out said disk to form the opening when desired, substantially as described.

2. As an article of manufacture, a faucet for metal cans, consisting of a threaded tube, *c*, plunger *f*, spout *e*, diaphragm *b*, and flange or plate *d*, attached to the top of tube *c*, by means of which the faucet is attached to the can, substantially as described.

162,296. SMOKE-CONSUMING FURNACES. John C. Baum, Cincinnati, Ohio. [Filed Aug. 14, 1874.]

Brief.—A partition at the back of the furnace extends nearly to the grate, and is supported by the boiler circulating tubes. The combustion-chamber at the back of the partition is provided with a rotating grate.



1. The chambers B and C, communicating at the bottom by opening Q, in combination with the continuous grate surface and bottom K K and diaphragm D, substantially as specified.

2. The bridge-wall of the furnace having a curved front surface, in combination with the diaphragm D confronting it, to form in rear of chamber B the chamber C, with the alternately enlarged and contracted portions *o f*, the bottom of said chamber being formed by a grate-surface, substantially as and for the purpose specified.

3. The boiler A and continuous grate surface and bottom K N, in combination with the diaphragm D and its supporting and circulating pipe or pipes, the diaphragm reaching from the boiler to near the grate-surface, all substantially as and for the purpose specified.

4. The combination of the rotary grates L *L'*, toggle-joint I *I'*, rod *b*, and lever F, for the purpose mentioned.

162,296. BUHL-SAWS. Ephraim Brown, Lowell, Mass. [Filed Jan. 9, 1875.]

Brief.—The arms are jointed, so that the tool may be folded and occupy less space.

1. In a buhl-saw frame, the jointed sides B, in combination with and connected by links or plates *c*, held and released by ferrules *d*, substantially as and for the purpose described.

2. The tubular socket E, constructed as described, with an end bushing, *e*, having a shoulder, *i*, and with a side shank, H, and a set-screw, *h*, in combination with the frame-side B, substantially as described.

3. The spring clamp or gripe F, constructed as described, with shoulders *g* and a notch, *n*, in combination with the bushed socket E and its set-screw *h*, and clamping and holding the ends of the saw, substantially as described.

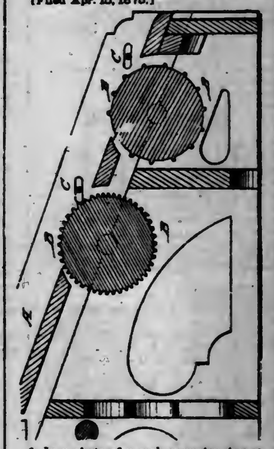
4. The combination of the hollow capped handle K with the tubular bushed socket E, having a shoulder, *i*, a frame-connecting shank, H, and a set-screw, *h*, and with the clamp F, having a notch, *n*, and shoulders *g*, and with the frame-side B, substantially as and for the purpose described.

162,297. CIGAR-BOX TRAYS. G. W. Brown, Philadelphia, Pa. [Filed Sept. 30, 1874.]

Brief.—The cigars are placed in the openings in the tray, and a revenue-stamp placed over the open slots, so that the cigars can be examined without breaking the stamp; but in order to remove one (as in the case of one being sold) the stamp will be canceled over that cigar.

A cigar-tray having openings a at or near one edge, into which the thick ends of the cigars may be introduced, and recesses *f* at the opposite edge for the reception of the tips, all being constructed substantially as set forth.

162,298. COAL-SEPARATORS. WM. Buechley and Theodore Thorn, Pottsville, Pa. [Filed Apr. 15, 1875.]



1. In a chute of a coal-separator, two or more fluted rollers transversely in the bottom thereof, with a spring-rod in front of each roller, for automatically separating the slate from the coal, substantially as herein set forth.

2. The combination of the fluted rollers B, rods C, and adjustable spring-arms D in a chute, A, substantially as and for the purposes herein set forth.

162,299. BRICK-MACHINES. J. K. Caldwell, Philadelphia, Pa. [Filed Apr. 17, 1875.]

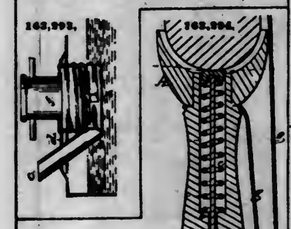
1. The combination of the stop-wheels *b c*, the latter provided with a crank, with the rotating mold-wheel A, having pendants *a'* attached, substantially as described.

2. In combination with the rotating mold-wheel A, the spring stop-bolt *m*, lever *o*, and cam *n*, all constructed and arranged to operate substantially as described.

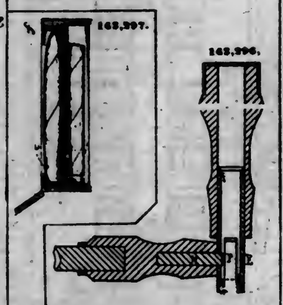
3. The combination, in a brick-machine, of a rotating mold-wheel, one or more plungers, *k*, arranged to enter the molds from above, and the movable section J' of the track, with one or more followers, *o*, with the mechanism for operating said plungers and followers, whereby pressure is applied to the bricks in the mold both from above and below, substantially as set forth.

4. In combination with the rotating mold-wheel, the stationary wiper *r*, the followers *o*, and the track J, having an elevation of sufficient height to raise the face of the followers above the top of the molds, whereby they are cleaned as they pass under the wiper, substantially as described.

162,294. TOY CUPS AND BALLS. C. H. Bass, Medford, Mass. [Filed Apr. 24, 1875.]



The cup A, with its shank B, provided with a sliding rod or piston actuated by a spring for projecting the ball D from the cup, substantially as described.



HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

3. The feeding apparatus, consisting of the tubes S and t, with the slides u and x', and the cams f and g, all constructed and arranged to operate substantially as described, whereby the clay is fed to the molds in uniform quantities, as set forth.

4. The slide C, provided with plungers or studs c, arranged to automatically enter and withdraw from the molds, substantially as described.

7. In combination with a rotating mold-frame, carrying a series of followers, p, a circular track, J, having a section thereof movable vertically with the lever F' and the cam E', all arranged to operate substantially as and for the purpose set forth.

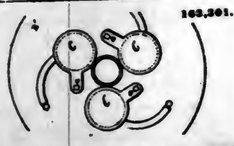
162,200. HAND-STAMPS. R. D. Chamberlain, Westfield, N. J. [Filed Apr. 8, 1875.]



In combination with a hand-stamp, strips of rubber characters, arranged in such a manner as to be changed from one character to another by winding on spools or reels, for the purpose of printing, substantially as described.

162,201. FIRE-PLUGS OR HYDRANTS. L. S. Chesman, Washington, D. C. [Filed Mar. 26, 1875.]

Brief.—A hydrant having three or more separate discharge-pipes centered in a vertical position by two horizontal plates, through both of which said pipes pass. The hydrant has sliding valves on the under surface of the lower plate, said valves being operated by vertical valve-rods extending through both plates. The hydrant has also brownell draining siphon-tubes, with flap-valves, and a vertical sliding jacket, with slots and guide-pins.



1. In a fire-plug or hydrant, the several and separate discharge-pipes A, constructed and arranged as shown, in combination with the horizontal plates B B', substantially as and for the purposes specified.

2. The sliding valves C, constructed and arranged as shown, and operated by the valve-rods c and their handles b, in combination with the horizontal plates B B' and the discharge-pipes A, substantially as and for the purposes specified.

3. The branch draining siphon-tubes D, constructed and arranged as shown, and operating by the flap-valve e, in combination with the discharge-pipes A, substantially as and for the purposes specified.

4. The vertically-sliding jacket E, provided with the slots e, in combination with the plates B B', the latter provided with the flange d and guide-pins g, substantially as and for the purposes specified.

162,202. LAUNDRY-REGISTERS. E. G. Dike, New York, N. Y. [Filed Apr. 10, 1875.]



A washing-list indicator or register, adapted for denoting the number of any article, the total number of pieces, and the number of weeks due, by means of a registering-scale, having imprinted or stamped upon its face the letters, words, and figures arranged substantially as shown and described, and provided with a series of pins and perforated holes, or pins or buttons and slides, for the purpose of arbitrarily fixing or pointing out any desired letter, word, or figure on said registering-scale, the whole inclosed within a case or box, and combined, arranged, and operating substantially as and for the purposes as herein shown and described.

162,203. MACHINES FOR MAKING WASHERS. I. W. Doog, New Market, N. H., assignor of one-half his right to Orrin Murray, same place. [Filed Dec. 29, 1873.]

Brief.—An automatic intermittent feed device, operated by a cam on the main shaft; an adjustable hollow punch, mounted within a stock which is adjustably attached to a reciprocating yoke; and a fixed die, inside of which is a yielding sleeve, which acts to strip the blank from the die, and the fixed adjustable center-punch within the sleeve.

1. As an improvement upon the combination composed of the hollow punch e, reciprocating stock C, yoke D', and their actuating parts, the screw-threaded connection to adjust the punch-stock, substantially as described.

2. The yoke D', stock C, hollow punch e, and screw-threaded connection for adjusting the punch-stock, as above claimed, in combination with the fixed die F, sliding sleeve F', and punch E, substantially as and for the purposes described.

3. The revolving cam B', head-stock I, having pin i, and arm I', in combination with the feed-carriage G, substantially as and for the purposes described.

4. The reciprocating arm I', in combination with the upper sliding jaw G' of the feed-carriage, when said jaw is actuated to clamp and release the iron bar by the intermediate devices through the reverse movement of the arm I', substantially in the manner described.

162,204. SAFETY-FUSE. P. M. Doughty, Louisville, Ky. [Filed Mar. 18, 1875.]



The combination, with the plate or frame A, of the pins B B hinged to the same on a line with each other, and the hook C hinged to the plate outside of the line on which the pins are hinged, substantially as and for the purposes herein set forth.

162,205. HUBS AND AXLES FOR VEHICLES. Geo. R. Drew, Millburn, N. J. [Filed Aug. 26, 1874.]

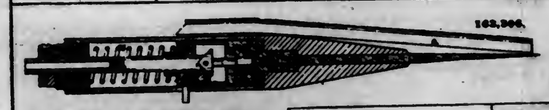
Brief.—For lubricating the spindle, and preventing the admission of dirt.



The combination of the box B with the hub C, and an axle, A, having upon it the bollow collar F, substantially as specified and shown.

162,206. ATTACHMENTS TO AUTOMATIC DENTAL PLUGGERS. Louis Duvinage, Philadelphia, Pa. [Filed Mar. 16, 1875.]

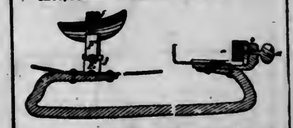
Brief.—A tube for carrying gold-foil is clamped to the plugger-casing, and the vertical movements of the plugger-point feed the gold from it into the cavity of the tooth.



1. The tube p, in combination with the vibrating bar f, for feeding gold-leaf, substantially as and for the purpose set forth.

2. The vibrating bar f, in combination with casing g, cam e, spring d, and tube p, as described.

162,207. SKATES. Oliver Edwards, Florence, Mass. [Filed Feb. 8, 1875.]

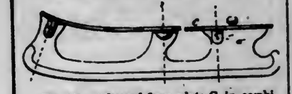


1. The combination of the stationary heel-plate B', having the depression b' and the vertical stud b, with the clamp-plate D and screw d, substantially as described.

2. The combination of the stationary heel-plate B', having depression b' and stud b, clamp-plate D, and screw d, with the adjustable jaw C, substantially as described.

3. The adjustable clamps E, when curved to receive the sole of the boot, and bent outward at the slot f to receive the strap F, substantially as and for the purpose described.

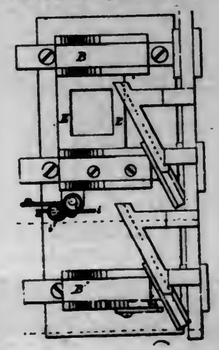
162,208. SKATES. Oliver Edwards, Florence, Mass. [Filed Nov. 26, 1874.]

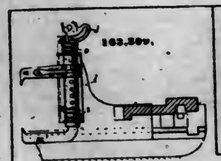


The lips d' formed from plate C, in combination with the rivet c'', as a means of securing the heel-plate to the riser a'', substantially as described.

162,209. HEAD-BLOCKS FOR SAW-MILLS. Chas. R. Hy, Northfield, Vt. [Filed Aug. 26, 1874.]

Brief.—To obviate the use of a set-bar, all the knees (except the one at the forward end) are directly connected to plates provided with inclined slots, which engage with corresponding inclined projections upon a reciprocating bar; and to economize space at the forward end of the carriage, the knee at that end is caused to take its motion from the next inside knee by means of a platform connecting said knees. The dogs for dogging the log are adjustable on a swinging standard attached to the side of the middle knee, and by means of a spiral spring, operating upon the standard, are held out of the way when not in use.





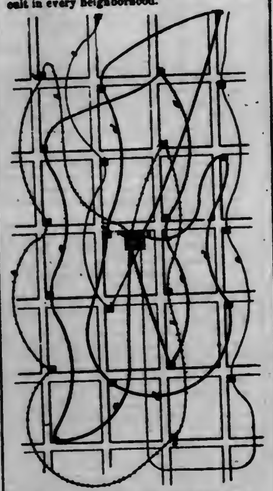
1. The upright B at the forward end of the carriage, combined with the inner upright B' by the bar or platform E, for the purpose described.

2. The combination of the weighted lever i with the cam j, spiral spring e, cylinder l, dogs m and m', and spring-catch n, substantially as described, for the purpose specified.

3. The spiral spring e, in combination with swinging dogs, substantially as described, for the purpose specified.

162,210. FIRE-ALARM-TELEGRAPH CIRCUITS. John N. Gazzewell, Hackensack, N. J. [Filed Mar. 20, 1875.]

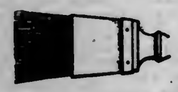
Brief.—No two contiguous boxes on same circuit, thus avoiding, in great measure, danger of interference, and insuring good alarm-circuit in every neighborhood.



The combination and arrangement, in a fire alarm telegraph, of a series of signal-stations and electric circuits, as herein described, whereby each signal-station throughout the series is in a different circuit from that or those located nearest or adjacent to it, as specified and shown.

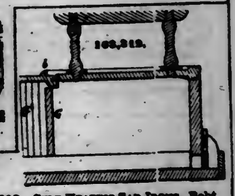
162,211. FURNITURE-DUSTERS. Cordon Griswold, Hartford, Conn. (Filed Oct. 9, 1874.)

Brief.—The fiber is bent at the center, and held by a metal ring, which is nailed to a projection upon the wooden handle. A leather finishing-head covers the fibers at the upper part.



As a new article of manufacture the duster herein described, composed of the wooden handle a a', manila fiber b, metal binding-head d, and overlapping head d', nail c, and finish-head e, all constructed and combined in the manner and for the purposes set forth.





162,212. SELF-HEATING SAD-IRONS. Robt. H. Hasscritter, Hermann, Mo. [Filed Mar. 15, 1875.]

Brief.—A spring holds the pointed door or lid in a vertical position. From the rear to the front compartment the products of combustion must pass under the partition G, or through perforations in it. The chimney is detachable, and may or may not be used.

1. The combination, with a box-iron, of the removable partition G, solid or perforated removable chimney I, and spring e, for the purposes specified.

2. The combination, with the body of a box-iron, of the lid constructed in the two sections H (which is provided with the shoulder b) and H', (which is journaled or hinged in the side plates A,) substantially as and for the purposes set forth.

162,213. CIGAR-BOX TRAYS. H. B. Hoyt, Philadelphia, Pa. [Filed Oct. 12, 1874.]

Brief.—The tray is composed of pasteboard, and is folded to the form shown. The side chambers are perforated for the reception of the cigars, which are to lie crosswise of its length. Over the tips of the cigars, upon one of the chambers, is pasted the revenue-stamp, so that a cigar cannot be removed without canceling the same; yet the cigars can be examined without being removed from the tray.



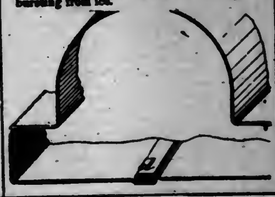
1. The within-described tray, having longitudinal chambers at the sides, and the whole being made of a strip of stiff paper or pasteboard, scored, folded, and secured as set forth.

2. The hollow rib X and its diagonal and notched strip p, all constructed as described.

3. The hollow rib W, with its diagonal strip q and lips u, the whole being constructed as specified.

162,214. RAIN-CONDUCTORS. J. W. Hoyt, Springfield, Mass. [Filed Oct. 20, 1874.]

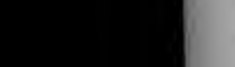
Brief.—The form of the leader is ornamental in appearance, affords a good base for attachment to the building, and is in no danger of bursting from ice.



As a new article of manufacture, a leader for conducting the water from the gutters of buildings, constructed with a hollow rectangular base, in combination with an arched front surface, substantially as and for the purpose described.

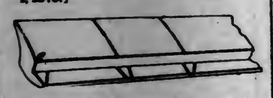
168,215. METALLIC LATHING. J. W. Hoyt, Springfield, Mass. [Filed Oct. 20, 1874.]

Brief.—A mode of securing metallic lathing to the furrings by means of rivets having bifurcated shanks.



The combination of the metallic furring and lathing with rivets having split or bifurcated shanks, substantially as and for the purpose described.

168,216. HORSESHOE-CALK-BLANK BARS. James B. Johnston, Chicago, Ill., assignor to Robt. W. Hale, same place. [Filed Apr. 1, 1875.]



As a new article of manufacture, a calk-blank bar shaped and formed substantially as and for the purpose set forth.

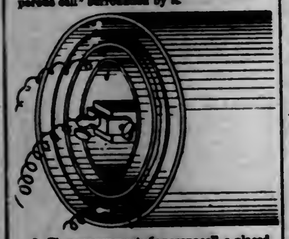
168,217. WASHING-MACHINES. M. Jones, Des Moines, Iowa. [Filed Mar. 11, 1875.]



In a washing-machine, the stationary frame C, having a fixed wash-board, *a*, and an adjustable section, *b*, and a roller, *e*, in combination with a sliding frame, *f f*, carrying wash-board sections *d d* and rollers *g g*, substantially as and for the purposes shown and described.

168,218. GALVANIC BATTERIES. Vincent B. Keegan, Boston, Mass. [Filed Feb. 4, 1875.]

Brief.—Claims that a purely electro-chemical action is secured by the form of battery covered by first claim, and that the wire coil "prevents the confusion of hydrogen gas and the metallic salts within the walls of the porous cell" surrounded by it.

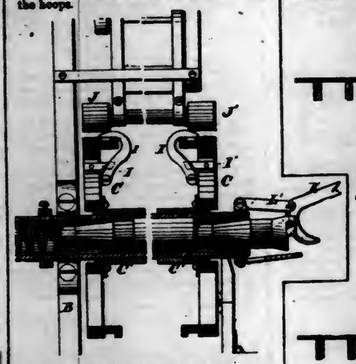


1. The arrangement of a porous cell, *a*, placed within another porous cell, *b*, which shall allow of a space between them to constitute a vessel, and each cell to contain an acid or a salt, which shall be electrically or chemically different in each cell, to act electively with each other and to the negative metal of the battery, in the manner substantially as described.

2. In combination with the porous cell *b*, a coil of wire, *n n' n''*, through which the electric current circulates, said wire surrounding the porous cell, and consisting of a continuation of the wire leading from the zinc pole of the battery.

168,219. MACHINERY FOR MAKING PAPER BARRELS. Marble D. Kenney, Rockton, Ill. [Filed Feb. 17, 1875.]

Brief.—The machine is intended to facilitate the operation of hooping paper barrels by holding the parts in the proper relation to each other during the operation of securing the hoops.



1. The wheels C, composed of hub C', arms or spokes D, and quarters or sections E F, said sections secured to and sliding on the spokes D, and adapted to be operated and expanded by a wedge or cone working in the interior of the hollow axle, substantially as and for the purposes described.

2. In combination with the sectional wheels C C, the rod G, mounted within the hollow axle A, and constructed with enlarged cone or wedge shaped portions, cam-lever K, and coil-spring X, for operating said rod, substantially as described.

3. In combination with the expansible and collapsible wheels C C, the swinging frame J and roller J', as and for the purposes described.

4. In combination with the sections E F, of the wheel C, the retracting-springs H, as and for the purpose described.

5. In combination with the sections E F, of the wheel C, the hooks I and lugs I', as and for the purposes described.

6. The hollow axle A, supported only at one end, perforated to receive the projecting ends F of the sections E of the wheels C, which are secured thereon, and receiving within its interior a wedge or cone shaped rod, G, as and for the purposes described.

7. The combination and arrangement of segmental wheels C C, hollow shaft A, rod G, and cam-lever K, as and for the purposes described.

8. The sections or quarters E, constructed with a projecting portion, F, secured to and sliding on projecting arms or spokes D of the hub C', substantially as and for the purposes described.

9. In combination with the sections or quarters E, the hub C', permanently secured to the hollow axle A, and constructed with several projecting arms or spokes, D, as and for the purposes described.

10. The sectional wheels C, constructed or provided around its periphery with a recess or groove, *c*, as and for the purposes described.

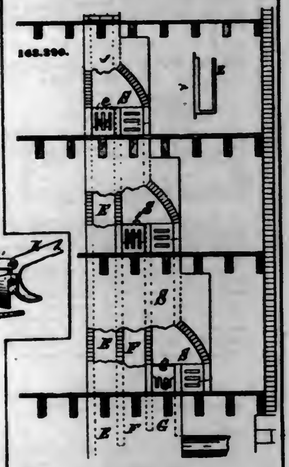
168,220. HEATING AND VENTILATING APPARATUS FOR BUILDINGS. Orlando Kelsey, Worcester, Mass. [Filed Aug. 10, 1875.]

Brief.—A double or twofold flue the first to introduce heat from the source of supply, the second to exhaust the impure air, the two acting together to produce the desired result. There is no connection, however, between the heat and ventilating flues. The heat and ventilating pipes are separate until united to the escape at the top of the building.

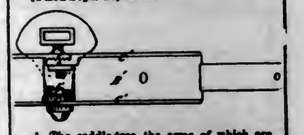
1. The auxiliary ventilating flue or flues S, adjoining the heat-flues E and F and G, and extending from first floor to top of building, and ventilating every story, in combination with the heat-flues E, F, and G, substantially as shown and described.

2. The caps *s*, *f*, and *g*, for forcing the ventilation, substantially as shown and described.

3. The reflectors 2, substantially as shown and described.



168,221. HARNESS-SADDLES. Chas. Kenny, New York, N. Y., assignor of one-half his right to George Walker, Little Falls, N. J. [Filed Sept. 24, 1874.]



1. The saddle-tree, the arms of which are made adjustable and held at any desired angle to each other by means of the toothed ears *e* and the screw *f'*, substantially as and for the purpose set forth.

2. In an adjustable saddle-tree, the wood blocks or pads B', clasped between the metal side pieces C', substantially as and for the purpose set forth.

168,222. TREADLES. George F. Lots and Adolph T. Duerer, Chicago, Ill.; said Lots assignor to said Duerer, and said Duerer assignor of five-ninths his right to E. M. Lots, same place. [Filed Oct. 19, 1874.]

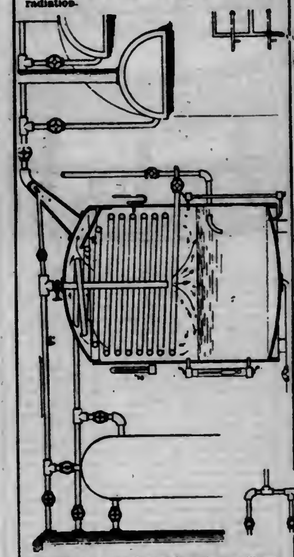
Brief.—A disk affixed to the shaft is rotated by friction-pawls, rocking beam, and two rods connected with the treadle.



The combination of the beam F, actuated by two treadles, the rock-shaft G, rocker-arms M M, links N N, pawl-heads K K, pawls L L, and springs *o*, with the friction-wheel J, to rotate the driving-shaft of a sewing-machine, substantially as described.

168,223. MANUFACTURE OF GAS. Henry M. Martin, New York, N. Y. [Filed May 5, 1875.]

Brief.—To make a permanent lighting or heating gas, impinges a heated gas or other aeriform fluid (as steam or superheated steam or air) on the surface of liquid hydrocarbon, otherwise unheated, and fixes the vaporous mixture in a highly-heated retort. May assist evaporation by radiated heat within the evaporating-vessel above the surface of the liquid, or may evaporate by such unaided radiation.



1. The process of manufacturing an illuminating-gas, which consists in bringing an aeriform fluid into contact in a closed vessel with the surface of a liquid hydrocarbon not otherwise heated, and then passing the resultant vapors through a hot retort, where they are converted into a fixed gas, substantially as described.

2. The process herein described for treating hydrocarbons in the manufacture of illuminating or heating gas, consisting in carrying off, by means of a heated fluid, the constituents of the hydrocarbon down to any desired specific gravity, and converting them into a fixed gas leaving an oil of any desired density in the vessel, as set forth.

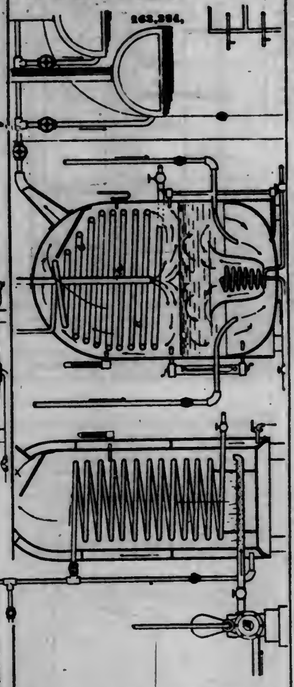
3. The combination of a still provided with means for heating its upper portion with a fixing-retort.

168,224. MANUFACTURE OF GAS AND OILS. Henry M. Martin, New York, N. Y. [Filed May 5, 1875.]

Brief.—Separates the constituents of liquid hydrocarbons by regulated radiated heat above their surface within their closed receptacle. May assist evaporation by heating below surface, or by causing currents within the liquid, which will bring its particles successively to the surface, or by both means. Accomplishes the motion of currents by a small steam-coil assisted by the direction of the inflowing liquid. Makes illuminating-gas by evaporating liquid hydrocarbons by radiated heat in closed vessels above their surface, and fixing the vapors in a highly-heated retort. May at the same time agitate the liquid. May also introduce gas or steam burned, dried, or superheated.

1. The process of separating liquids of different densities, which consists in evaporating off the lighter constituents, by subjecting the liquid in a closed vessel to the action of radiated heat of controllable temperature above its surface as set forth.

2. The process of evaporating liquids in a closed vessel, which consists in subjecting the liquid to the action of radiated heat above its surface, while at the same time it is heated below its surface as set forth.



3. The process of evaporating liquids in a closed still, which consists in subjecting the liquid to the action of radiated heat, above its surface, while at the same time it is kept in motion by convective currents, and fresh portions are continually presented at the surface, as described.

4. The process of manufacturing illuminating gas, which consists in evaporating a liquid hydrocarbon, in a closed still, by radiated heat above its surface, and conveying the vapors into heated retorts, where they are converted into a fixed gas, as set forth.

5. The process of manufacturing illuminating gas, which consists in bringing steam, superheated steam, or gas, or other fluid of graduated heat into contact with the surface of a liquid hydrocarbon in a closed vessel, the liquid being kept in constant motion, as described, and passing the commingled vapors, and gas, or steam, into heated retorts, substantially as specified.

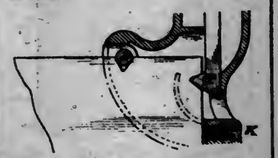
6. The process of manufacturing illuminating gas, which consists in bringing steam, superheated steam, or gas, or other fluid of graduated heat, into contact with a liquid hydrocarbon in a closed vessel, the liquid being kept in constant motion, as described, and having its surface subjected to radiated heat to assist evaporation and prevent condensation of vapors, and then passing the resultant mixture into heated retorts, substantially as set forth.

7. The combination of a closed vessel and a steam-coil below the surface of the liquid to produce a current in the vessel, and a supply pipe or pipes, as and for the purpose set forth.

8. A closed vessel, or still, heated above the level of the contents and provided with a steam-coil below the level, substantially as and for the the purpose described.

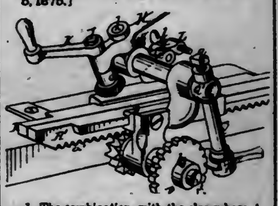
168,225. SAW-HANDLES. Alex. C. Martin, Hamilton, Ohio. [Filed Apr. 15, 1875.]

Brief.—Crescent saws are attached to their handles, without drilling holes in the blades or the use of rivets, by means of a metal socket having triangular-shaped flanges fitting loosely upon each side of the blade at one corner of the same, and provided with a pivot or stop resting in a notch in the top of the blade, in connection with a catch upon the end of an adjustable screw-rod, which fits in a notch in the end of the blade. The handle is vertically adjustable by a set screw placed in the heel of one of the bearings of the socket.



The socket B C, having the pivot or top L, resting in notches in the top of the saw-blade, and screw K, bearing against the end of the latter, in combination with the adjustable rod F, having the catch P, substantially as and for the purpose described.

168,226. SAW-FILING MACHINES. James McSweeney, Pittsfield, Mass. [Filed Apr. 5, 1875.]



1. The combination, with the clamp-bars A *a'*, of the slides D D', standard E, feathered shaft F, adjustable sleeve G, lever-arm H, and file J, all arranged and operating substantially as described.

2. The adjustable sleeve G, carrying the lever-arm H and file-wheel J, as described, in combination with the reversible arm L and set-screw *l*, for determining the bevel of the teeth, as described.

3. The saw-clamp, provided with the rack *a'*, in combination with the slides D D', carrying the grinding-wheel and the indicator-wheel P, all arranged and operating substantially as and for the purpose set forth.

168,227. BATHING APPARATUS. Edward Morse, Stoneham, Mass., assignor of one-half his right to Joseph A. Lovejoy, same place. [Filed Mar. 1, 1875.]

Brief.—By lengthening the funnel into which the steam is admitted by means of a sleeve, the funnel will be more readily filled with steam, and consequently a greater quantity of air will be forced into the chamber.

1. In a bathing apparatus, substantially as described, the pipes C and J and sleeve K, combined to operate substantially as and for the purpose specified.

2. In a bathing apparatus, substantially such as described, the funnel R, provided with the sleeve P and aperture Q, in combination with the nozzle O and rubber pipe K, substantially as and for the purpose set forth.

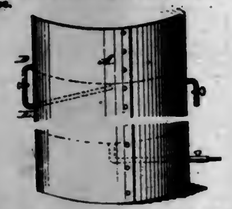
3. In a bathing apparatus, substantially such as described, the chamber H, in combination with the pipes I D O K, substantially as and for the purpose specified.

168,227.



163,208. FIRE-EXTINGUISHERS. Alexander Allen Murphy and Charles Coppin Hearle, Montreal, Canada. [Filed Mar. 11, 1875.]

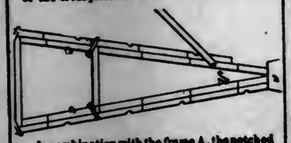
Brief.—A case having two chambers—one an air-compressing apartment, the other a chamber or reservoir containing an extra supply of compressed air to expel the water when fire. The two chambers are connected by a pipe having a suitable valve. The lower chamber is provided with a suitable discharge-pipe.



The air-compressing chamber B, in combination with the chamber or reservoir A, and pipe D E, provided with a valve, substantially as and for the purpose set forth.

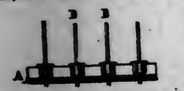
163,209. SCAFFOLDS. Clarence G. Reed, Cambridge, Mass. [Filed Apr. 9, 1875.]

Brief.—The top of the supporting-frame is provided with a notched plate or cleat, for preventing the lateral displacement of the end of the cross-joist thereon.



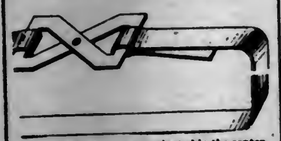
In combination with the frame A, the notched joist B and the notched cleat *c*, substantially as and for the purpose set forth.

163,210. BIRD-CAGES. Louis P. Reichert, Buffalo, N. Y. [Filed Sept. 8, 1874.]



The combination, with the wires B, of the bands A, provided with lateral extensions D, having perforations *b* formed therein for the reception of the wires B, such parts D being adapted to be folded over and lock the said wires in position, in the manner and for the purpose substantially as shown and described.

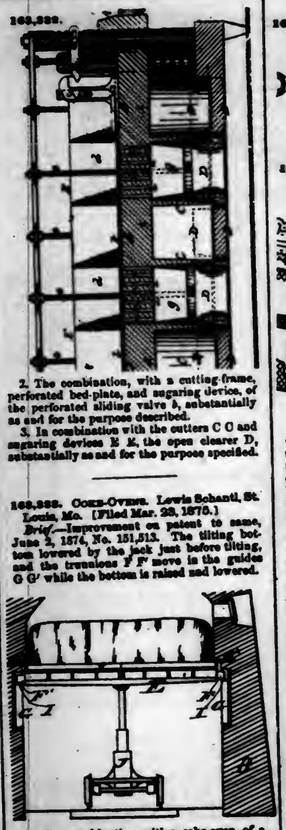
163,211. BALE-TIES. W. L. Rose, Wadesborough, N. C. [Filed Jan. 20, 1875.]



The double lever, cross-riveted in the center, opening from both ends to receive the hoops.

163,212. MECHANISMS FOR CUTTING AND SEPARATING CHAMPIGNONS. Jos. W. Roper and Geo. J. Hill, Buffalo, N. Y., assignors to J. W. Roper & Co., same place. [Filed Dec. 24, 1874.]

1. In a crusher and cake cutting machine, in combination with the cutting-frame A, bed-plate B, with perforations *a a a*, the engaging devices E E, having one or more compartments, *d d*, substantially as and for the purpose specified.



2. The combination, with a cutting-frame, perforated bed-plate, and engaging devices, of the perforated sliding valve *b*, substantially as and for the purpose described.

3. In combination with the cutters C C and engaging devices E E, the open clearer D, substantially as and for the purpose specified.

163,213. COKE-OVENS. Lewis Schantl, St. Louis, Mo. [Filed Mar. 23, 1875.]

Brief.—Improvement on patent to same, June 2, 1874, No. 151,513. The tilting bottom lowered by the jack just before tilting, and the trunnions F F' move in the guides G G' while the bottom is raised and lowered.

1. The combination, with a coke-oven, of a bottom having a vertical and oscillating movement, substantially as described.

2. The combination of the oven A, walls B B', guides G G', pins I I', and bottom E, substantially as described and shown.

3. The combination of the oven A, walls B B', girders D D', plates *d d*, &c., bottom E, flange *c*, and pins I I', substantially as described.

4. In combination with the oven A, walls B B' girders D D', plates *d d*, &c., bottom E, flange *c*, the guides G G', and lowering apparatus J, as and for purpose described.

5. The combination of the oven A, walls B B', girders D D', plates *d d*, &c., bottom E, flange *c*, pins I I', guides G G', substantially as described and shown.

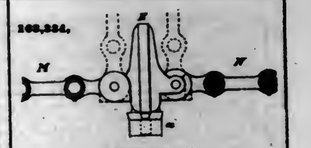
6. The bottom E, trunnions F F', walls B B', guides G G', and lowering apparatus J, substantially as described.

163,214. TOWEL-STANDS. Chas. Schermerhorn, New York, N. Y., assignor to himself and John F. Cleveland, same place. [Filed Oct. 9, 1874.]

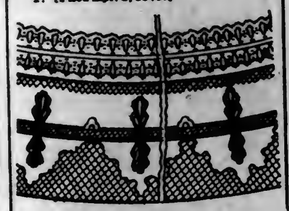
Brief.—The detachable ornamental body is provided with a hinged frame on two opposite sides, and is supported on the standard by means of a screw on the lower portion entering a nut in the top of the standard.

The towel-stand described, having the detachable ornamental body E, supported on the stem A by the nut *a*, and provided with two hinged frames, M N, on opposite sides, as and for the purposes specified.

163,215.



163,216. PROCESSES OF ORNAMENTING SKIRTS. Jacob Schoenhof, New York, N. Y. [Filed Apr. 2, 1875.]



1. The garment having its body combined with a facing-band by means of adhesive material and indentation in an ornamental pattern, so that the outer surface of the garment exposes a facing different from the body and having the appearance of being quilted upon the body of the garment, the same being a new article of manufacture.

2. The garment having its body combined with a facing-band by means of adhesive material and indentation in an ornamental pattern resembling quilting, and also embossed in color, so that the outer surface of the garment exposes a facing different from the body and having the appearance of being quilted upon the body of the garment; and also embossed colored figures, the same being a new article of manufacture.

3. The process, substantially as before set forth, of producing garments with ornamental facing-bands having the appearance of quilted work, by uniting a portion only of the face of the body of the garment with adhesive material and the facing-band, and then indenting the faced portion in ornamental lines by heat and pressure, so as to simultaneously cement the facing to the face of the garment and indent it in ornamental lines.

4. The process, substantially as before set forth, of producing garments with ornamental facing-bands, partly embossed in color and presenting the appearance of quilted work, by overlaying a portion only of the face of the body of the garment with adhesive material and a facing-band, and then both embossing a portion of the face of the garment and indenting the faced portion in ornamental lines by heat and pressure, so as to simultaneously cement the facing to the face of the garment, emboss it in color, and indent it in ornamental lines.

163,217. MACHINES FOR DRESSING STAVES. Geo. A. Shideler, Logansport, Ind. [Filed Feb. 6, 1875.]

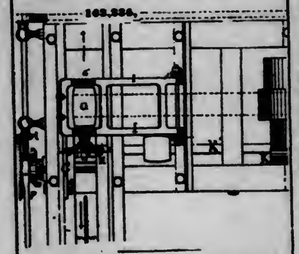
Brief.—The machine dresses both sides of the stave, and through the agency of an adjustable gage, which guides the upper cutter, the stave may be left thicker at the ends than in the middle.

1. The combination of the pivoted cutter-head frame I, having a guide friction-wheel K, with the sliding carriage, having a gage-bar, O', adjusted thereon, and the under cutter H', substantially as and for the purpose described.

2. The feed-gear, consisting of the combination of the friction-wheels *m n*, upon the shaft L', and the wheels *l o* upon the shaft L, with the adjusting-lever *p*, as and for the purpose specified.

3. The combination of the shaft E, and gearing F F' E, the shaft K' and pulleys K K'', shaft C and pulley K'', shaft L and pulley B'', shaft G and pulley G, and their connecting-belts, with the cutter-heads H and H', bevel friction-wheels *l m n o*, shaft-pin *b'* and rack *b*, and carriage L', all substantially as and for the purpose set forth.

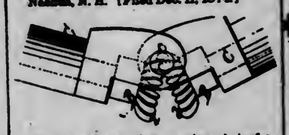
163,226.



163,227. MANUFACTURE OF LEATHER BELTING. Frank G. Slemmer and G. O. Clark, Philadelphia, Pa. [Filed Mar. 20, 1875.]

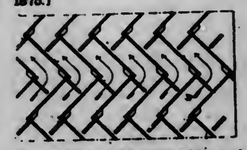
The within-described process of preparing canvas or other textile fabric for use in the manufacture of the leather belting as patented by us December 10, 1872—that is to say, by thoroughly saturating the material with cement, and stretching and drying it before introducing it between the leather—substantially as and for the purpose set forth.

163,228. UNIVERSAL JOINTS. R. T. Smith, Nashua, N. H. [Filed Dec. 11, 1874.]

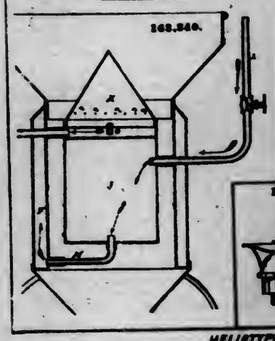


The combination of the sections A A of a shaft or arm, gear-wheels B B, having the teeth *d* and strap-boxes C C jointed together by pivots *e e*, which are located as shown, all substantially as and for the purpose described.

163,229. APPARATUS FOR FURNISHING ILLUMINATING-GAS. Chas. V. Smith and Wm. Farmer, New York, N. Y. [Filed Feb. 15, 1875.]



The combination of the series of diagonal or inclined and overlapping plates, placed one above the other, forming zigzag passages, extending through a vertical column, substantially as described, for the purpose of causing the gas to pass through a series of falling films of the heavier matter in its course through the passages.



163,230. APPARATUS FOR STRAINING CHAIN. Michael H. Steele, Cleveland, Ohio [Filed Mar. 20, 1875.]

1. The induction-pipe L, pipe M, pipes N and O, and eduction-pipe P, arranged in relation to, and in combination with, the chamber J, annular chamber F, and distributing-chamber K, in the manner substantially as described, and for the purpose set forth.

2. The chambers J, F, and K, as arranged in relation to each other, and in combination with the pipes N O, provided with a stop-cock, *q*, for admitting spent steam to the wheel and shutting it off therefrom, as the condition of the wheel may require, in the manner substantially as described, and for the purpose set forth.

163,231. DEVICES FOR CONNECTING, HOLDING, AND PUNCHING SECTIONS OF SHEET-METAL PIPE. Melvin Stephens, Brooklyn, N. Y. [Filed Feb. 24, 1874.]

Brief.—A divided hinged cross-piece, *f*, is forced forward, to press the end of one length of pipe over or into another by a screw-stem, *d*, and nut *c*. A punch is situated in the end of an overhanging arm, for making rivet-holes in the joint.



1. The mandrel *a* and the abutment A, in combination with mechanism, substantially as specified, for pressing the lengths of sheet-metal tubing endwise, so as to slip one into the other, substantially as specified.

2. The arm *i*, punch *i*, and gage *a*, in combination with the mandrel *a*, abutment *b*, and mechanism for pressing the lengths of sheet-metal tubing together endwise, substantially as specified.

163,232. DRILLS FOR DRILLING METAL. D. L. Toppan, Somerville, assignor to himself, D. C. Malcom, and H. H. Malcom, East Cambridge, and G. B. Chapin, Medford, Mass. [Filed Apr. 1, 1875.]

Brief.—Spring-pawls arranged in recesses in the spindle, alternately engage with and slip over the ratchet-teeth in the wheels D C, and thus insure the rotation of the drill-spindle in the same direction by opposite motions of the actuating-lever. A handle is employed to steady the drill when employed on light work.



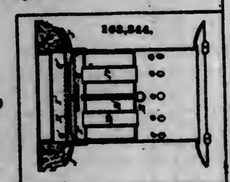
The adjustable handle H, in combination with the sleeve *f*, spindle A, lever G, and bevel-gears C D E, substantially as and for the purpose set forth.

163,233. LAMP-EXTINGUISHERS. Albert Waterman and Elias Waterman, Rutland, Wis. [Filed Apr. 17, 1875.]

Brief.—A recess in the sliding tube for receiving the gas-tube.



163,234.



In a lamp-extinguisher, the sleeve *a*, constructed with the recess *b*, as and for the purpose set forth.

163,235. GAS-STOVES. John J. West, Chicago, Ill. [Filed Mar. 5, 1875.]

Brief.—A diffuser, screen, and annular flange arranged above the gas-pipe and fires, for mixing the air and gas.

1. The chamber F, inclosed by the outer walls of the stove, and having therein the ports or openings *c' c'*, in combination with the shield or flange J projecting from the outer walls and arranged somewhat below the said ports, substantially as shown and described, and for the purpose set forth.

2. The combination of the pipe B', fires D D, annular flange H, and chamber F, having therein the ports or openings *c' c'*, all operating together, in connection with a diffuser, in a gas-stove, substantially as and for the purpose specified.

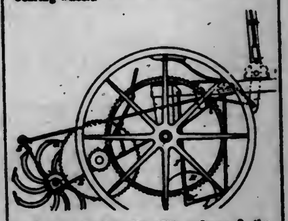
3. The combination of the pipe B', fires D D, diffuser G, diaphragm F, flange H, openings *c' c'*, and chamber F, substantially as and for the purpose specified.

163,236. COMPOSITIONS FOR LINING FURNACES. Chas. Edward Wilson, New York, N. Y. [Filed Nov. 9, 1874.]

A composition consisting of asbestus, plumbago, and kaolin, substantially as and for the purpose set forth.

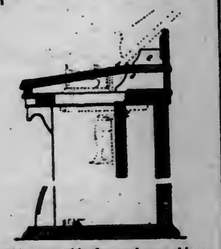
163,246. REVOLVING CULTIVATORS. R. C. Winters, Colete, Ill. [Filed Feb. 3, 1875.]

Brief.—A series of disk-colters in a pivoted frame in front of the wheels, and a series of revolving spades in rear of and driven by the bearing-wheels



In combination, the tilting frame I, the colters K K, carried by said frame, the frame S, the revolving and spirally-arranged spades *a' a'*, carried by the frame S, the driving-gearing, and the adjusting mechanism, all operating together substantially as described, to the same implement.

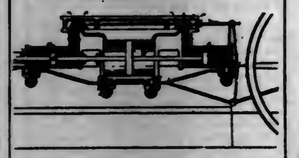
163,247. SEWING-MACHINE TABLES. F. R. Wolfinger, Chicago, Ill. [Filed Mar. 10, 1875.]



In a cabinet or table for sewing-machines, the combination of the rest *c*, leaf *f*, hinged thereto, and the hinged bed-plate *a*, whereby the cabinet can be used wholly for a writing-desk or a sewing-machine, substantially as shown and described.

162,848. COMPOUND STEAM-ENGINE. A. Alexander, Pittsburg, assignor to Farrelly Alden, Allegheny, Pa. [Filed Jan. 7, 1875.]

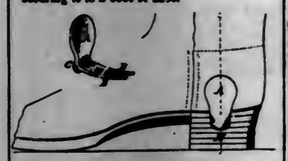
Brief.—The cylinders are in line with the high-pressure cylinders at the ends. The three pistons are on one piston-rod. The valve of each high-pressure cylinder also admits the exhaust steam from said cylinder to the low-pressure cylinder.



The combination of the two steam-cylinders a and c with an auxiliary cylinder, A, each supplied with valves, ports, and pistons, having a common stem, d, the two steam-cylinders operating alternately, and alternately admitting their exhaust steam into the auxiliary cylinder b, to operate the piston therein, while their own pistons are balanced by the free circulation of the exhaust steam around them, substantially as described.

162,849. METALLIC COUNTER-SUPPORTS FOR BOOTS AND SHOES. Henry C. Babcock and Louis M. Morrison, Bennington, Vt. [Filed Mar. 10, 1875.]

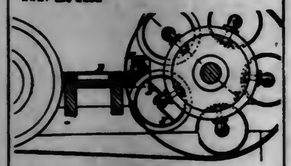
Brief.—The counter-support is re-enforced at the angle, and is provided with tangs for securing it to a boot or shoe.



The described protector and metallic counter-support for boots and shoes, consisting of the flexible barbed tangs B B and a supporting-lip, A, adapted to be applied as shown.

162,850. MACHINES FOR SAWING STAVES. William Barber, Cape Vincent, assignor to himself and Lewis Parker, Lyons, N. Y. [Filed Sept. 27, 1873.]

Brief.—The staves are cut by a band-saw running over pulleys arranged in a circle, one of which is provided with fans for blowing away the dust.



1. The combination, with cylinder saw G, of cross-rolls D, tip-guides E F, and rollers H, all arranged on a frame, substantially as and for the purpose described.

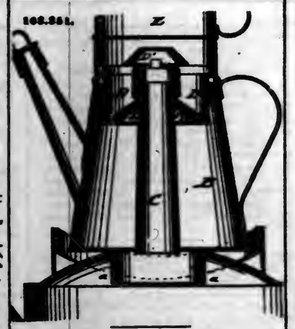
2. The rollers H', provided with wings H, applied substantially as and for the purpose specified.

162,851. COFFEE-POTS. Ezekiel Law Bate, Adrian, Mich. [Filed Apr. 3, 1875.]

The improved coffee-pot, formed of the body portion E, having the base-flange a, and central open-ended steam-tube C, with deflector D', the detachable strainer D, with conical perforated bottom and short central tube, and the detachable cap or vessel B, having a bottom flange for adapting it to connect with the strainer, all as shown and described.

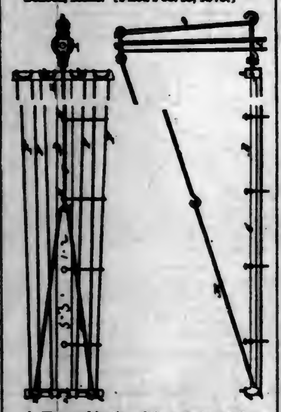
162,852. PLOWS. Francis R. Bell, Marshall, Tex. [Filed Apr. 10, 1875.]

Brief.—The mold-board is made of wood, and along its upper edge is provided with a series of holes, which form oil-chambers, thus keeping the wood saturated, to prevent the tenacious soil from adhering to the board.



A wooden mold-board, F, for plows, saturated with oil, and provided with a number of oil-receiving holes or reservoirs, f', in its edges to keep it saturated, substantially as herein shown and described.

162,853. CLOTHES-DRYERS. George Rent, Seneca, Kans. [Filed Feb. 13, 1875.]



1. The combination of the swinging clothes-frame B, ring I, rods J, M, and O, and swivel-plate, with the post or standard A, all constructed substantially as herein described, for the purpose set forth.

2. The combination of the cords H with the clothes-supporting frame B and cords F, as and for the purpose set forth.

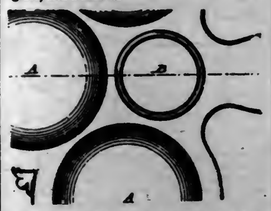
162,854. ELEVATORS. H. H. Blake, Pittsburg, Pa. [Filed Mar. 27, 1875.]



In a passenger-elevator constructed substantially as described, the car having a door arranged to swing outwardly, so as to intersect the landings and act as a stop to prevent the movement of the car while said door is open, as shown and set forth.

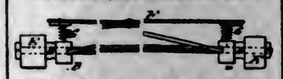
162,855. LUNCHEON-PLATES. J. W. Botsler, Washington, D. C. [Filed May 8, 1875.]

Brief.—The plate is divided into several receptacles, to receive different kinds of food, together with a stand for a tea-cup or wine-glass, and a handle.



As a new article of manufacture, the dish or plate herein described, consisting of three or more food-receptacles, A, a holder, B, for cup or glass, and handle C, substantially as shown, and for the purpose set forth.

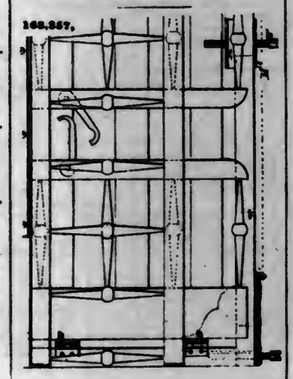
162,856. SPRING BED-BOTTOMS. Alva P. Brown, Texas, Ohio. [Filed Mar. 20, 1875.]



1. The combination of arched slats A, rests B, springs D, tie-rods C, and the head-blocks E, substantially as specified.

2. The combination of slats F and springs G with the arched slats A and movable rests B, substantially as specified.

162,857.



162,857. CRIBS. Henry Buttenberg and W. R. Hodges, Memphis, Tenn. [Filed June 20, 1874.]

Brief.—By means of the sliding blocks and screw-hooks, the crib can be attached to bedsteads having side rails of irregular form.

The arrangement, with the slotted front rail of a crib, of the sliding block H' and the screw-hook F, as shown and described, to operate as specified.

162,858. MOUTH-PIECES FOR CIGARS. J. Campbell, Lancaster, Pa. [Filed Apr. 22, 1875.]

Brief.—The device is made of one piece of solid wood, and is formed with a square lateral shoulder, and a bell-shaped opening leading to the smaller end of the tube.

The mouth-piece for a cigar herein described, constructed with its tube and socket of one piece of wood, in the manner substantially as and for the purpose specified.



162,859. CONVERTIBLE MEAT CASES OR CANS. Alex. Chambers, Jr., and A. McD. McCook, U. S. A. [Filed Apr. 23, 1875.]

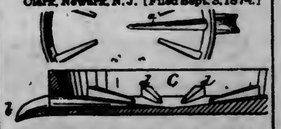
Brief.—Intended for travelers', soldiers', and sportsmen's use. The top or cover forms a dish or plate, and the whole, when assembled, may be placed in the haversack or game-bag.

1. A portable convertible meat can or vessel, consisting of a frying-pan, A, and a detachable food-plate or dish, B, arranged as a raised cover upon a flanged seat, c, on and around the rim of the pan, and a handle, d, hinged at one end to the pan, and conformed to and turned down upon the said raised cover, substantially as shown and described.

2. In combination with the frying-pan A and the removable dish or food-plate B, forming a raised cover on the pan, as described, a handle hinged at one end to the pan, and conformed to and extended across the said raised cover, and having its other end bent or shaped to and sprung over the rim of the pan, and thereby engaged with the latter, substantially as shown and described.

3. In combination with the frying-pan having the loop e thereon, and the detachable dish or food-plate constituting the raised cover on the pan, the handle hinged at one end to the pan, and conformed to and extended across the said raised cover, and having at its other end a carrying-loop, f, extended through the said loop on the frying-pan, substantially as shown and described.

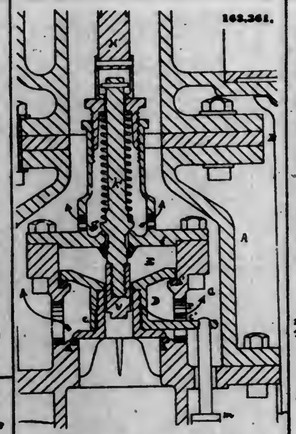
162,860. DRIP-PANS FOR BARRELS. Jno. A. Clark, Newark, N. J. [Filed Sept. 2, 1874.]



The drip-pan C, having an imperforate or solid bottom inclined on the inside toward and provided with groove a, having spout b, and radial ribs d, substantially as and for the purpose set forth.

162,861. STREET-HYDRANTS. Gilbert H. Clemens and George C. Morgan, Chicago, Ill. [Filed Mar. 10, 1875.]

Brief.—The hydrant has a water-way extending above the discharge-pipe, and is provided with a loose cap to prevent obstruction; the valve-rod being constructed of part metal and part non-conducting substance, to prevent action of frost. The main valve is held in place by the pressure of water in the chamber above it. The secondary valve being raised, the water escapes to the water-way, while the main valve is lifted by the pressure of water beneath it.



1. A hydrant case or shell, made of two or more parts, A A', in combination with a non-conducting material, B, between the same, substantially as and for the purpose specified.

2. A valve-rod, made partly of metal, h h', and partly of wood, H, substantially as and for the purpose specified.

3. The main valve D, chamber E, and secondary valve g, in combination with the water-way G, substantially as and for the purposes specified.

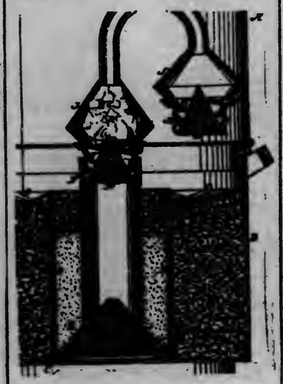
4. In a hydrant, the water-way G, extended above and combined with the outlet K, substantially as and for the purposes specified.

5. The loose cap J, in combination with the water-way G, substantially as and for the purposes specified.

6. The combination of the valve D, loose ring c, and arm c', with the drain-valve m, substantially as described.

162,862. WATER-FILTERS. C. B. Cooper, Nashville, Tenn. [Filed Apr. 10, 1875.]

Brief.—The water is admitted through the perforated cone in the shorting of the siphon, which prevents impurities from entering. It then flows through the sponge and perforated cone of the long leg into a vessel. From thence it passes through the perforated cone at the bottom into the space between the inner and outer vessels, and rises through the sand and gravel in said space, and overflows into the conserve ring. It percolates through the gravel and charcoal in said space, and flows out of the holes in the bottom into a receiver beneath.

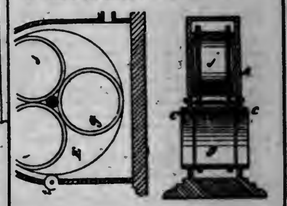


1. The siphon J, provided with a perforated cone, N, at the enlarged end of its short arm, and a sponge and perforated cone, K H, at the enlarged end of its long arm, in combination with the vessels F D C B A, substantially as herein shown and described.

2. The concaved and perforated ring-plate O, in combination with the vessels D C B F A, and with the siphon J and its attachments, substantially as herein shown and described.

162,863. DISTRIBUTERS FOR HYDRAULIC PIPES. John M. Crawford, Philadelphia, Pa. [Filed Mar. 10, 1875.]

Brief.—A disk rotates between the ends of the induction and adduction pipes. It is provided with one through section, one section to close the induction, and another section to close the exit pipe, and allow the water to flow through an escape-pipe. A pointer is placed on the outside of the disk-stem, to indicate the various positions of the disk.



1. A distributer or separator for hydraulic pipes, having the ingress and egress openings C C directly opposite each other, in combination with the diaphragm F, with its pipe-section g, for the purpose of conveying the stream directly through the distributer, without admitting it to the body of the distributer, substantially as above described.

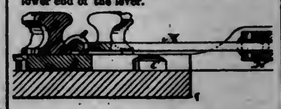
2. The distributer A, with its openings C C and wasteway I, in combination with the diaphragm F, with its connecting pipe-section g, closed pipe-section j, and packed face K, arranged and operated substantially as and for the purpose described.

3. The distributer A, with its openings C C and rotating circular diaphragm E, in combination with the shaft s, crank u, and wheel t, substantially as and for the purpose above described.

4. In combination with a distributer, A, having a rotating diaphragm, E, the index-finger W, substantially as and for the purpose described.

162,864. RAILWAY-SWITCHES. Minter H. Davidson, Prunytown, W. Va. [Filed Apr. 24, 1875.]

Brief.—An improvement in operating a vibrating frog-rail, consisting of a vibrating lever capable of longitudinal movement by means of a slot in said lever, through which a fulcrum-pin is passed; the lower end of the lever taking into holes in a plate, and being secured therein by a pin. The frog-rail is secured to the operating-lever by a link near the lower end of the lever.



An adjustable rail, E, with the plate D resting on the bed-plate A, having stops C and a lever, E, connected by bar M, the lever being changeable by means of the slot J and fulcrum-pin K and holes H', substantially as and for the purposes described.

162,865. RECIPROCATING CHURNS. G. De Nottbeck, New York, N. Y. [Filed Apr. 17, 1876.]

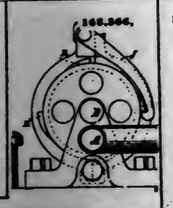
Brief.—The dasher is hung by a spring to the under side of the churn-cover.

The combination of the dasher F and spring G with the churn-body C and cover H, as shown and described, to operate as specified.

163,266.



163,266.



163,266. PNEUMATIC DESPATCH APPARATUS. Olney B. Dowd, New York, N. Y. [Filed June 13, 1874.]

Brief.—An improved circuit pneumatic dispatch apparatus having a circular receiver for the arrest of packages; a perforated revolving disk-receptacle for their introduction, operated by a lever, pawl, and ratchet; and branches for smaller carriers for way-stations.

1. The combination, with the dispatch-tube and pocket-disk, of ratchet-lever I, pawl J, retention K, and regulating stud-pin L, substantially as specified.

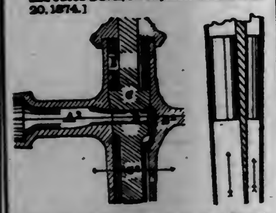
2. The dispatch-carrier H, composed of two caps, H O, and enlarged at the middle by a packing-band, P, substantially as specified.

3. The packing-band D, combined with the middle portion of the carrier, substantially as specified.

4. The pipe A, slotted at Q, and provided with branch R, as and for the purpose specified.

5. The cylinder or tank S, one or more conveve bottoms, T, and a discharging-trap, U V W, in combination with one or more conducting-pipes, entering the tank tangentially, substantially as specified.

163,267. FAUCETS. Stephen A. Dumas, Buffalo, N. Y., assignor to John Irlbacher and Jacob Davis, same place. [Filed June 20, 1874.]

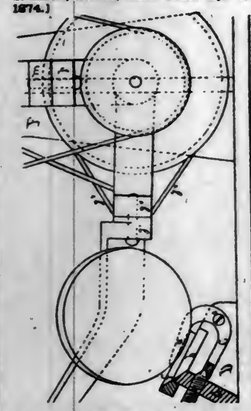


1. The combination, with a chamber, B², and a reciprocating-cylinder, D, located within, and formed in one piece with the said chamber, of the plug C, having the passage E, and surrounded by an annular space, B², provided with a section of a conical seat, A², and the series of holes B², all when constructed and arranged substantially as described, and for the use and purpose set forth.

2. The combination, with the chamber B², of the annular space B², provided with a part of a conical seat, A², around the main passage A², and the series of holes B², all when arranged substantially as and for the use and purpose set forth.

3. The combination, with the annular space or recess, B², serving to protect the seat of the faucet against the effects of compression of the chamber B², of a section of a conical seat surrounding the main passage A² only, substantially as described, and for the use and purpose set forth.

163,268. KNIFE-GRINDING MACHINES. J. S. Elliott, Chelsea, Mass. [Filed Apr. 6, 1874.]



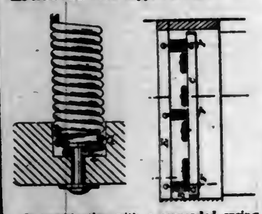
1. The knife-block, constructed as described, with ends D, and inclined back, E, and a recessed top or knife-bed, *b*, and provided with a cam, C, constructed as described, and pivoted to the ends of the block, and with a screw, *c*, for operating the cam, substantially as described.

2. The curved guide L *g* A, or frame-guiding mechanism, in combination with base-supported stand F, and the pivoted swinging frame I, and guiding the latter, substantially as described.

3. The construction of the jointed connection of the beams, viz, the two cars *n* and *p*, or *q* and *p*, pivoted together, as shown, and having upon their adjacent faces the tongues *t* and stops *s*, substantially as described.

163,269. SPRING BED-BOTTOMS. J. Fowler, New York, N. Y. [Filed Mar. 13, 1875.]

Brief.—The lower coil of the spring is contracted to form a bearing for the head of the rivet, by which the spring is connected with the cross-rails which support the slats.



In combination with a suspended spring bed-bottom, the contracted coil E' of the springs, and the bolt or rivet F, applied to the cross-rails, substantially as shown and described.

163,270. IRONING-TABLES. P. H. Gaffney, Malden, Mass. [Filed Mar. 2, 1875.]

163,268.

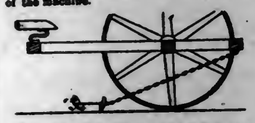




In combination with the skirt-board A, removably attached to a vertical support by the slotted brackets B B and studs C C, the hinged mortised arm *a* and hinged tenoned brace *a'*, said arm and brace operating together to support the board A while the latter is in use, or to be folded up against it under other circumstances, substantially as described.

163,272. CULTIVATORS. Elijah D. Corbam, Hadley, Ill. [Filed Apr. 12, 1875.]

Brief.—The colter and cultivating-shovel are attached to a shoe worn on the foot of the driver, who sits in rear of the axle-tree. Draft-chains connect the shoes to the front portion of the machine.



The foot cultivating-shoe described, consisting of the sole B, shovel *c*, brace *a*, colter *s*, heel support *e*, and set-screw *o*, all constructed, arranged, and operating, as and for the purpose set forth.

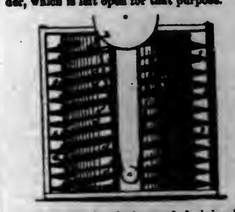
163,273. FIRE AND WATER PROOF COMPOSITIONS. Watson S. Gray and F. W. Gray, Philadelphia, Pa. [Filed Apr. 16, 1875.]

Brief.—A fire and water proof compound consisting of twenty-eight gallons coal-tar; five pounds rosin; four gallons dead-oil or benzine; ten pounds chlorate soda, soda-ash, or caustic soda; two gallons boiling water; two gallons shellac-varnish; twenty-five pounds air-slaked lime or dry clay; ten pounds soapstone, marble-dust, ground ore, or brick-dust; five pounds sulphate of iron.

The compound or composition of matter consisting of the ingredients herein set forth, and for the purpose specified.

163,274. MEDIA FOR DRYING AND DRAINING HOSE. Hiram Abraham R. Gelder, Minneapolis, Minn. [Filed Apr. 7, 1875.]

Brief.—Steam, either free or in tubes, may be introduced at the lower end of the cylinder, which is left open for that purpose.



1. A device for drying and draining hose by the application of heat, consisting of the combination of the cylinder *f* and the spiral shelves *g*, for the support of the hose *o'*, substantially as shown.

2. The combination of the cylinder *f*, shelves *g*, friction-rollers *h*, and a gearing for revolving the drying and heating cylinder, substantially as set forth.

163,275. WOODEN ROOFS. Leonard Henkle, Rochester, N. Y. [Filed Jan. 16, 1875.]



1. In a wood roof, composed of boards arranged side by side, the boards A A', having doubly inclined upper surfaces *a a'*, substantially as specified.

2. The combination, with a beard, A, having a double inclined upper surface, of the flanges *a* arranged and erected upon the lateral edges of the said board for the purpose of forming gutters *k*, substantially as specified.

163,276. MEDIA FOR DRYING AND DRAINING HOSE. Hiram Abraham R. Gelder, Minneapolis, Minn. [Filed Apr. 7, 1875.]

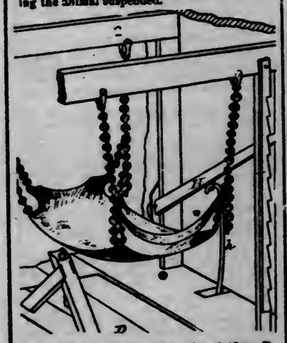
163,277. CORN-SHELLERS. F. H. Hunter, Heltonville, Ind. [Filed Apr. 3, 1875.]



The combination, with the corn-sheller formed of the cross-ribs B and bars A, of the sheet-metal plate D, the same being applied beneath the ribs, and having its ends bent up to form a receptacle for chaff, &c., as shown and described.

163,278. SLIDES FOR SHOEING ANIMALS. Lafayette M. Johnson, Forest City, Mo. [Filed Mar. 9, 1875.]

Brief.—A platform, which is also a part of the floor, is elevated a short distance above the level of the floor by means of cams and levers, in which position the animal is led onto it, when the sling is adjusted to support the weight. The platform is then lowered, leaving the animal suspended.

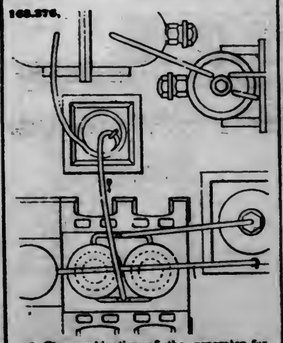


1. In a shoeing apparatus, the platform D for raising the animal while securing the suspending devices, substantially as described.

2. The combination of the movable section or platform D, cam-levers E E, connecting-bar G, rod A, lever H, and swinging ratchet-bar I, all constructed substantially as and for the purposes herein set forth.

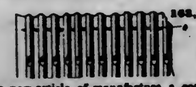
163,279. BLANKS FOR CORRUGATED-PAPER BOXES. Albert L. Jones, Brooklyn, N. Y. [Filed Apr. 10, 1875.]

163,276.



2. The combination of the generator for supplying gas under pressure with the pump or pumps for further compressing the same, and the refrigerator interposed between the pumps and generator, by which the gas is cooled and reduced in volume while under pressure, substantially as described.

163,279.



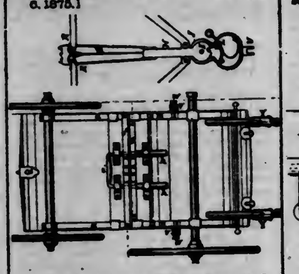
As a new article of manufacture, a corrugated-paper blank, cross-crimped at *b*, end-lapped at *d*, and notched at *e*, as shown and described.

163,280. BALE-TIES. William A. Jordan, New Orleans, La., assignor of one-half his right to C. S. Roudebush, Crystal Springs, Miss. [Filed Jan. 16, 1875.]



A bale-tie, from the raised portion of which lips extend forward over the band-seat, as and for the purposes set forth.

163,281. CHILDREN'S CARRIAGES. F. Herman Jury, New York, N. Y. [Filed Mar. 6, 1875.]



1. The combination of the spring-stop L with the notched and pivoted head I of the middle bow H and the case J, substantially as set forth.

2. The combination of the back and front bows with the middle bow and shifting inside braces O, for adjusting the back and front bows, all substantially as set forth.

3. The said braces, in combination with the slotted portion of bow H, by the stud-pins R and the headed spring S, substantially as set forth.

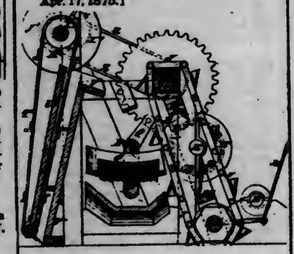
4. The combination of the folding handles, having locking-sleeves Y, with a carriage, substantially as specified.

5. The backward-folding body, in combination with backward-folding frame-pieces a, substantially as and for the purpose set forth.

6. The combination of the sliding tapered handle A *d* with the spring-stops and the folding body and frame-pieces, substantially as specified.

7. The top detachably connected to the body by the notched stud U, sockets V, and binding-screws W, substantially as specified.

163,282. SAND AND GRAVEL SEPARATORS. Nicholas J. Keller, Pittsburg, Pa. [Filed Apr. 17, 1875.]



1. The combination of the concave inclined screen O, constructed as described, the inclined rock-shaft P, the rigid arm Q, the connecting-rod R, and the cam S, with the shaft H and elevator I J K, substantially as set forth.

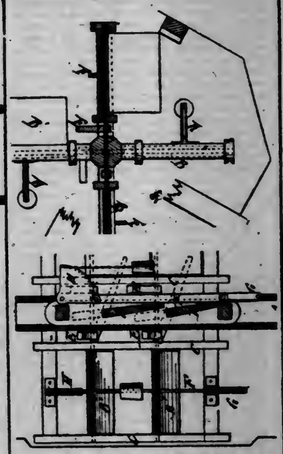
2. The combination of the endless-chain pump or elevator T U V with the elevator I J K and rocking screen O, substantially as described.

3. The combination of the inclined trough D, the box E', elevator F', and slide G' with the elevator I J K, the rocking screen O, and the endless-chain pump T U V, substantially as described.

4. The combination of the band Z, loose pulley B', ratchet-wheel H', pawl I', and wheel J' with the shaft Y, that drives the elevators T, U, V, and F', and with the shaft H, that drives the elevators I J K, and the screen O, substantially as herein shown and described, and for the purpose set forth.

163,283. WIND-WHEELS. J. J. Kimball, Naperville, Ill. [Filed Nov. 14, 1874.]

Brief.—Horizontal vanes are pivoted to and pendent from, horizontal rods arranged radially to a revolving vertical axis. There is also a stop-bar applied on one side of the baskets or vanes, to hold them to the wind, which is controlled by a weighted lever, and serves as a regulator



The combination, with the vanes B, pivoted horizontally, as shown, of the stop-bars F, pivoted and weighted segmental levers H, and links G, all as shown and described.

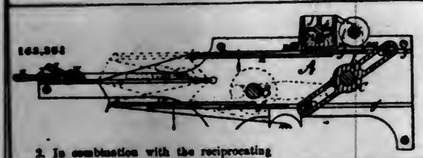
163,284. MACHINES FOR POLISHING THE EYES OF MACHINE-NEEDLES. Samuel C. Kingman, Bridgeport, Conn., assignor to Wheeler & Wilson Manufacturing Company, same place. [Filed Mar. 13, 1875.]

Brief.—The threads from the spools first pass under an agitator in a pan containing a mixture of oil and emery. Two reciprocating plates, operated through the medium of a double-slotted lever, are each provided with two projecting spring-arms, the ends of which are furnished with bearing-screws for the grooved rollers, around which the threads are once wound. A series of clamps, operated by cam-levers, secure the shanks of the needles. The levers can be simultaneously operated to release the clamps by a swinging plate pivoted to ears on the clamp carrier.

1. In a machine for polishing the end walls of the eyes of sewing-machine needles, the double reciprocating plates *f* and *f'*, and double slotted lever I, said plates fitted to slide freely in the grooves *g* and *g'*, respectively, and made to reciprocate in opposite directions at the same time by means of the oscillating motion of said lever, substantially as shown and specified.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

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2. In combination with the reciprocating plates *f* and *f'*, the elastic arms *h h' h'' h'''* secured in pairs at one end to said plates, respectively, and the free ends of said arms extending from said plates, substantially as shown and specified.

3. In combination with the elastic arms *h h' h'' h'''*, the grooved rolls *i* and *i'*, fitted to revolve freely in bearings in the free ends of the said elastic arms, substantially as shown and specified.

4. In combination with the elastic arms *h h' h'' h'''* and rolls *i* and *i'*, the screws *o o' o'' o'''* passing through the free ends of said elastic arms, and against the ends of said rolls, for the purpose of regulating the tension of the working portions of the polishing-threads between said rolls, substantially as shown and specified.

5. In combination with the reciprocating plates *f* and *f'*, elastic arms *h h' h'' h'''* and rolls *i* and *i'*, the plate *n* and the series of two or more lever-clamps, *v v*, and series of two or more cam-levers, *x x*, attached to said plate for the purpose of securing a series of two or more sewing-machine needles to said plate, said plate fitted to slide freely in the grooves *v v* in the frame A, and secured in the two positions in said grooves during the operations of rounding and polishing the upper and lower end walls of the eyes in said needles respectively, substantially as and for the object specified.

6. In combination with the reciprocating plate *f*, the spool-stand *m*, with the spools *l l*, pan *j*, and agitator *k* attached to said spool-stand, all constructed so as to be attached to or removed from said plate simultaneously, for the purpose specified.

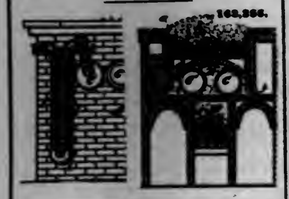
7. In combination with the reciprocating plate *f'*, reel *g*, and ratchet-wheel *s* attached to said reel, the pawl *t*, as pivoted to the frame A or other stationary portion of the machine so to cause the point of said pawl to enter one of the teeth of said ratchet-wheel near the termination of the right-hand reciprocating motion of said ratchet-wheel, and revolve the same the distance of one or more teeth during the remaining portion of said motion, substantially as and for the object set forth.

8. In combination with the plate *n*, series of two or more lever-clamps, *v v*, and the series of two or more cam-levers, *x x*, the swinging plate *y*, as pivoted to said plate so as to operate the said lever-clamps and cam-levers simultaneously, when it is desired to release the series of needles from said plate, substantially as and for the object specified.

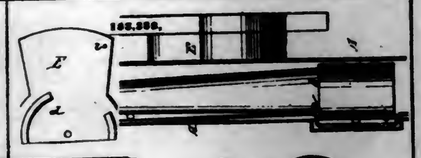
9. In combination with the double lever I and reciprocating plates *f* and *f'*, the rock-shaft C, lever G, connecting-rod H, disk F, and revolving shaft B, constructed and arranged for the purpose of imparting an oscillating motion to said double lever, and reciprocating motions to said plates, substantially as and for the object specified.

10. The combination of the frame A, revolving shaft B, disk F, connecting-rod H, lever G, rock-shaft C, double lever I, reciprocating plates *f* and *f'*, elastic arms *h h' h'' h'''*, rolls *i* and *i'*, plate *n*, series of lever-clamps *v v*, series of cam-levers *x x*, swinging plate *y*, spool-stand *m*, pan *j*, agitator *k*, spools *l l*, reel *g*, ratchet-wheel *s*, and pawl *t*, all constructed and arranged for the purpose of rounding and polishing the end walls of the eyes of sewing-machine needles, substantially as and for the object set forth.

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163,285. GAS APPARATUS. John D. Kutz, Sunbury, Pa. [Filed Apr. 20, 1875.]

Brief.—Places the vaporisers in an open chamber, and regulates their temperature by heaping on more or less sand. Catches the drip at the outlet of the vaporizers, while the gas passes on into the fixing retorts.

1. In combination with the furnace of a gas apparatus, the heating-chamber *a*, containing the vaporising-tubes B, and a body of sand surrounding said tubes, whereby the heat is equally distributed, and is regulated in degree, substantially as and for the purpose set forth.

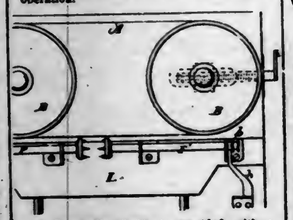
2. The combination of open heating-chamber *a*, containing sand-covered vaporiser B, retorts C C' arranged below said vaporiser, and connected therewith by pipe h, and a dripseal connected to the under side of projecting portion *b'* of outlet-pipe *b* of the vaporiser, as shown and described.

163,286. ARTIFICIAL STONE. Hans Lemon, James A. Cameron, and Hartsell Hainer, Memphis, Tenn. [Filed Dec. 19, 1874.]

Stone made of sharp sand, cement, dolomite limestone, powdered chalk, litharge, hickory-wood ashes, mixed with silicate of soda, and lime-water, when all these ingredients are used in combination, in the proportion hereinbefore stated, and the mode of treating the stone by warm baths of silicate of soda and lime-water alternately and washing in lime, substantially as and for the purposes described.

163,287. MACHINES FOR CUTTING CORKS. Geo. S. Long, Forestville, Conn., assignor of two-thirds his right to Burton Allen, 2d, Norman Allen, and Henry W. Porter, same place. [Filed Sept. 8, 1874.]

Brief.—Straight or tapering corks can be cut by means of an endless smooth-edge knife, in connection with a laterally-adjustable carriage provided with two revolving spindles, between which the blank is held during the operation.



1. The endless knife A, provided with a continuous sharp cutting-edge, and running over pulleys B B, substantially as and for the purposes set forth.

2. The combination of the endless knife A, pulleys B B, spindles F F', shipper *b*, cam *h*, and carriage I, substantially as described, and for the purposes set forth.

163,288. WHIP-SOCKETS. Jacob J. Markel, Nankin, Ohio. [Filed Apr. 19, 1875.]

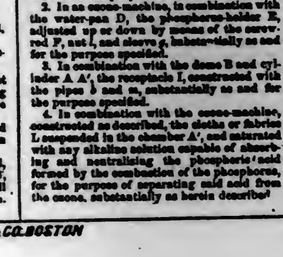
Brief.—The whip may be used without removing it from the socket.

1. The combination of tubular whip-socket A, having box B, with the spring C, having shoulder *c*, for supporting and locking the whip, substantially as set forth.

2. In a whip-socket fastening, plates E and G, pivoted together, in combination with an interior spring, for the purposes set forth.

3. The combination of the recessed plate E, having the groove *e* and hub *f*, the plate G, having flange *d* and pin *f*, and the spring A, all substantially as and for the purposes set forth.

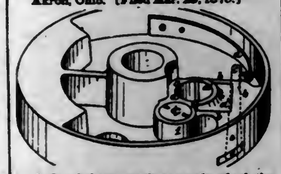
163,289.



163,289. ROCKING-CHAIRS. James W. McDonough, Chicago, Ill. [Filed Jan. 12, 1875.]

The combination of the tilting-arms D D, pivoted to the seat B, the catch E, pivoted to one of the said arms, the notched plate C, attached to the seat, the tilting back F, pivoted to the seat, the foot-rest G, also hinged to the seat, and the flexible connecting-pieces H H, attached to the back, arms, and foot-rest, all arranged and operating together substantially as shown and described, and for the purposes set forth.

163,290. CRANK-WHEELS. Lewis Miller, Akron, Ohio. [Filed Mar. 29, 1875.]



1. In a balance crank or crank-wheel, the combination, with the wrist-pin box, made in two parts—the one, *a*, permanent, and the other, *a'*, adjustable—of the key *c* and holder *d*, as and for the purpose described and represented.

2. In a balance crank or crank-wheel, the oil cup or holder *f*, cast in or on the crank, in combination with its cap, plug, and opening *g*, and the wrist-pin box, as and for the purpose described and represented.

163,291. OZONE-MACHINES. Geo. Milton, Buffalo, N. Y., assignor of two-thirds his right to E. Spondelow and F. W. Bartlett, same place. [Filed Feb. 23, 1874.]

1. The combination of the cylinders A and A', the hollow legs or pipes *a a*, with air-openings *c c*, the air-baffle *f*, with air-holes *n n*, the gutters R, and base Z, constructed to operate as and for the purpose herein described.

2. In an ozone-machine, in combination with the water-pan D, the phosphorus-holder E, adjusted up or down by means of the screw-rod F, nut *l*, and sleeve *g*, substantially as and for the purpose specified.

3. In combination with the dome B and cylinder A A', the receptacle I, constructed with the pipes *b* and *m*, substantially as and for the purpose specified.

4. In combination with the ozone-machine, constructed as described, the cloths or fabrics L suspended in the chamber A', and saturated with any alkaline solution capable of absorbing and neutralising the phosphoric acid formed by the combustion of the phosphorus, for the purpose of separating said acid from the ozone, substantially as herein described.

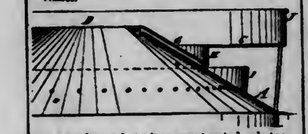
163,291.



5. In an ozone-machine, the combination of the septums *p p* and the saturated diaphragms B, situated in the upper part of the apparatus, and forming a compartment or chamber communicating with the air-inlet openings *n n*, in order to introduce the air below the said septums *p p* and diaphragms, substantially as and for the purpose set forth.

163,292. SUGAR SKIMMERS AND COOLERS. John L. Morgan, Savannah, Ga. [Filed Apr. 24, 1875.]

Brief.—A tight fitting cover applied to the top of the pan allows the froth of the boiling juice to pass up the inverted funnel-shaped cone, and through the opening. Falling back upon another cone, which is perforated, the liquid drains back, cooled and clear, into the vessel.



A cooler and strainer constructed substantially as described—that is, having a large cone, A, with perforations and flanges for the boiler, stop flanges H and I, a short perforated cone, G, horizontal part C, aperture D, and rim-flange J, for the purposes described.

163,293. TRUCKS FOR BRICK-YARDS. Edward Noonan, La Salle, Ill. [Filed Apr. 10, 1875.]

Brief.—The truck is particularly adapted for brick-yards. The shafts are easily detachable and attachable, so that one pair may answer for two trucks, one truck being drawn while the other is being laden.



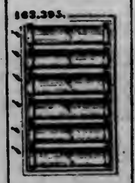
1. The combination of the wheels A, the axles B, the springs C D, the body E, the platform F, and the cross-bars, king-bolt, and washers G I H J, substantially as set forth.

2. The combination of the bars K and the flanged hooks L with the platform F, and the shafts M, substantially as set forth.

163,294. SPICE-BOXES. Edwin Norton, Chicago, Ill. [Filed Nov. 12, 1874.]

The top *a* of a spice-box, formed with shoulder *n*, the depressed portion having perforations *d*, stud *h*, and flange *g*, in combination with the swinging cover *b*, pivoted at *c*, and having flange *f*, and recess *i*, all as and for the purpose set forth.

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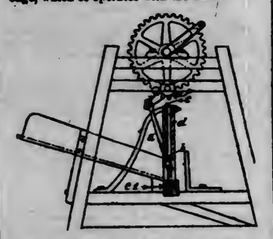


163,295. PACKING CIGARS. Edwin Norton, Chicago, Ill. [Filed Apr. 14, 1875.]

As an improvement in packing and preserving the integrity and aroma of cigars, the process of isolating each cigar within a separate rigid case, as described.

163,296. FEED-CUTTERS. Jacob B. Nye and John W. B. Nye, Swatara P. O., Pa. [Filed Sept. 26, 1874.]

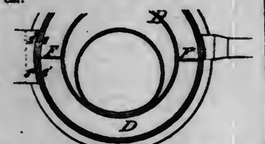
Brief.—The reciprocating cutting-knife is guided between two vertical plates provided with openings, through which the material is fed and delivered. The bottom edge of the opening in the inner plate forms a cutting-edge, which co-operates with the knife.



The guide-plates *c d*, the former being provided with the cutting-edge *c'*, in combination with the knife *b*, pitmen *a e*, and crank-shaft *g*, as and for the purpose set forth.

163,297. CAR HEATERS AND VENTILATORS. J. Oliphant, Allegheny, Pa. [Filed Sept. 26, 1874.]

Brief.—The draft through one of the openings is direct, but when admitted through the other opening it is compelled to pass over the partitions. The water-trough fills the annular air-space horizontally. The flange in the blower creates an eddy in its rear, which facilitates the escape of dirt. The vertical flues admit air both to the top and bottom of the car.



1. The combination of the jacket C, inclosing the annular air-space D, partitions F F', openings *g g'*, and slides *g' g'*, substantially as and for the purpose specified.

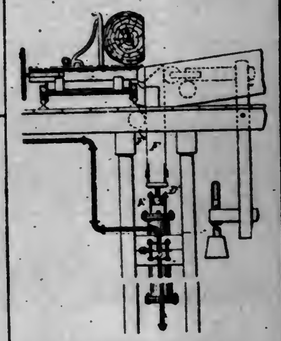
2. The flange E, encircling the base of the heater B, and forming, with the wall of the latter, an annular open-top trough, in combination with the jacket C and air-space D, conducting air to the interior of the car, substantially as described.

3. In combination with the car-heater, the blower H, constructed with a sloping bottom and bottom opening, and provided with a vertical flange at its lower edge, as and for the purpose specified.

4. In combination with an apparatus for heating and ventilating cars, a series of vertical flues, rising at every seat or pair of seats from a floor-line, and provided with registers at top and bottom, substantially as shown and described.

163,298. LOG-TURNERS FOR SAW-MILLS. J. Orm, Paducah, Ky. [Filed Apr. 19, 1875.]

Brief.—The turning-bar is attached to the piston-rod of an oscillating steam-cylinder, and is operated by the direct action of steam upon the piston.



1. In a log-turning device, the spike-bar F, having spikes F', in combination with the piston-rod I'' and piston-head D''' of a steam-cylinder, A, constructed and operating substantially as and for the purposes described.

2. The oscillating steam-cylinder A, having trunnions *a*, and provided with piston-head D''', piston-rod D'', and opening *c'*, in combination with the spike-bar F, reciprocating in directions differing from a perpendicular line, to suit the different sizes of logs to be acted upon, substantially as and for the purposes described.

3. The swinging or oscillating bar I, arm I', having guide-wheel H' attached thereto, and bearing upon the supporting-wheel D', and arm J, supporting weight K, in combination with the reciprocating and oscillating spike-bar F, substantially as shown and described.

163,299. DIES FOR FORMING HATCHET-CLAWS. James Palmer, Newark, N. J., assignor to Charles A. De Hart, same place. [Filed Apr. 17, 1875.]

Brief.—The plunger is provided with a small roller on each side near the end—one to operate against the vertical side of the recess in the die, and the other to draw down and form the claw of the hatchet against the opposite side, which is suitably grooved for the purpose.



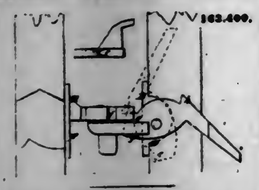
In the device for forming a hatchet-claw the combination of the bed A and plunger C, substantially as shown, and for the purpose specified.

163,300. LOCK-HINGES FOR BLINDS AND SHUTTERS. Abijah S. Parker, Binghamton, N. Y., assignor to the Parker Manufacturing Company, same place. [Filed Dec. 7, 1874.]

Brief.—On one leaf of the hinge is a circular flange with notches, and on the other is a pivoted catch-lever. The short end of the lever drops into the various notches of the flange, and thus secures the blind either wholly or partly open, and also shut. The short arm of the catch-lever is formed wedge-shaped, so as to draw the blind toward the frame and prevent rattling.

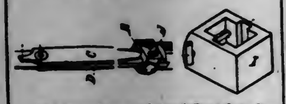
The beveled catch *g*, in combination with the notch *e*, for the purpose of drawing the blind closely into place in the act of fastening, as specified.

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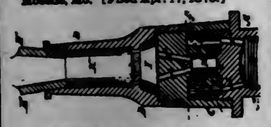
163,401. SCREW-DRIVERS. Wm. F. Patterson, Boston, Mass. [Filed Apr. 27, 1875.]

Brief.—The screw-driver is provided with two supplemental reversible blades, pivoted upon the main blade at such point as to have a common center of motion, and secured in place by an internally-slotted and sliding clamp, provided with an eccentric shaft, which fits into suitable slots formed upon one edge of each of the blades.



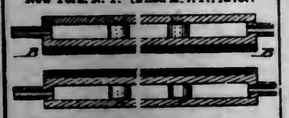
In a screw-driver, substantially such as described, the blade B, provided with the reversible auxiliary blades U D, and the clamp I, provided with the mortise H, and the eccentric shaft J, all constructed and arranged to operate substantially as and for the purpose set forth and specified.

163,402. GAS-BURNERS. Coleman D. Payne, Mocsalla, Mo. [Filed Apr. 17, 1875.]



An improved gas-burner, formed by the combination of the part A, provided with the circular projection *a'* and the holes *a''*, the part C, provided with the circular projection *f'* and the holes *f''*, the tube F, provided with the holes *f'*, the part D, provided with the perforated plate J, and the tip E, with each other, to form the five chambers B G H I K, for the gas to pass through, substantially as herein shown and described.

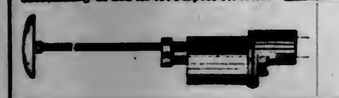
163,403. LOCKING-DEVICE. Philipp Pfeffer, New York, N. Y. [Filed Apr. 17, 1875.]



In an apparatus for drying lumber, the combination of hollow steam-heated press-plates A and face or lining plates B, having perforations and connecting channels between press-plate and lining, for conveying and issuing of the moisture of the lumber by the action of the press, substantially as herein shown and described.

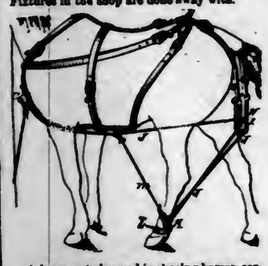
163,404. REPLACEMENTS FOR LOADING FIRE-ARMS. O. D. Phillips, Lisle, N. Y. [Filed Apr. 24, 1875.]

An implement for charging muzzle-loading guns, composed of a perforated muzzle-fitting cup-piece, revolving, and a spring-locked cylinder, with barrels or chambers, and a sliding rod for transferring the charge to gun-barrel, substantially as and for the purpose set forth.



163,405. HORSESHOEING-HARNESS. Isaac P. Pickering, Table Grove, Ill. [Filed Apr. 24, 1875.]

Brief.—The animal's foot is held up by the harness, relieving the smith of all weight. Fixtures in the shop are done away with.



A harness to be used in shoeing horses, constructed substantially as described—that is, consisting of the breast-backle C, back or rump ring E, U-shaped piece H, pulley I, draft-strap J, fetlock-piece L, and pulley K, with the straps connected therewith.

163,406. MACHINES FOR REMOVING BROKEN DRILLS FROM HOLES. John W. Platt, Mineral City, Nev. [Filed Mar. 26, 1875.]

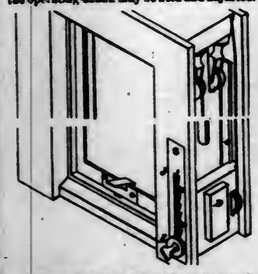


1. The jaws A, tapered and beveled as shown, in combination with the stem C, case D, handle F, and operating-nut E, substantially as herein described.

2. The transverse cylindrical head *b* of the jaws A, in combination with the stem C, said head fitted to slide into a hole in the lower end of the stem C, and retained in place by the case D, substantially as herein described.

163,407. BASH-BALANCES. John J. Prior, San Francisco, Cal., assignor of one-half his right to Philo N. Tryon, same place. [Filed Apr. 2, 1875.]

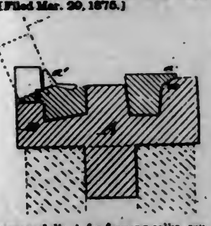
Brief.—The counterbalancing-weight of the upper sash of a window is so constructed and arranged that it will slide freely in guide-ways inside the window-casing. To this weight is attached a shank, passing through a long vertical slot in the face of the casing, which shank terminates in a lifting button or handle, whereby the weight is slid up or down, and operates the sash, and there is preferably a slotted rack-plate, in the notches of which the operating-shank may be held and adjusted.



1. In combination with a balanced sash, the shank K, passing through the slot O in the casing, and fastened to the weight D inside of the casing, and provided with the button or handle L on the outside of the casing, substantially as and for the purpose described.

2. In combination with the sliding weight D and lifting-button L, operating through a slot, O, in the casing, the slotted rack-plate J and locking-shank K, substantially as and for the purpose described.

163,408. DIES FOR FORMING HORSESHOE-CALKS. Leonard Prichard, Sweet Valley, Pa. [Filed Mar. 20, 1875.]



The improved die A for forming calks, constructed substantially as herein described and shown, with a groove having tapering sides and an inclined edge, *a*, upon which to form the flange *a'*, and a second groove having a vertical wall with a notch cut in the center, into which a portion of the flange is driven to form the spur on the calk.

163,409.



163,409. CAR-AXLE BOXES. G. T. Bacul, Tangipahoa, La. [Filed Feb. 9, 1875.]

1. The bearing A, in combination with the removable lining B and basin D, as described, and for the purpose set forth.

2. The housing C, having flanges *g* and *b'*, in combination with pad *i*, leather flange *c*, and spring *d*, as described, and for the purpose set forth.

163,410. MEASURING DEVICES FOR KNITTING-MACHINES. James Folk Reisinger, Ashland, Ohio. [Filed Dec. 20, 1874.]

Brief.—A standard with a socket for holding the arms and supporting the spring tape-measure and the fastening device.

The combination of the spring tape-measure, the supporting-standard, and the fastening device, substantially as described.

163,410.



163,411.



163,411. DOOR-MATS. Orrin Rice, Adrian, Ill. [Filed Mar. 1, 1875.]

Brief.—The rubber ring embracing wick tube and adjuster holds the latter in place.

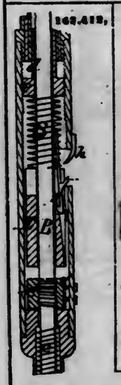
1. A miner's lamp, having sponge-filled body A, the central spirally wire bound well B, and the funnel-shaped neck-tube E, constructed and arranged as shown and described.

2. The combination of the adjuster G and the rubber ring, with the wick-tube, substantially as specified.

3. The combination of spring L, with the hook J, substantially as specified.

A door-mat formed of the back piece having screw-threaded cavities, and the tufts or bunches of corn-husks secured therein, as shown and described.

163,412.



163,414.



163,412. DENTAL PLUGGERS. R. S. Rider, Catlettsburg, Ky. [Filed Feb. 6, 1875.]

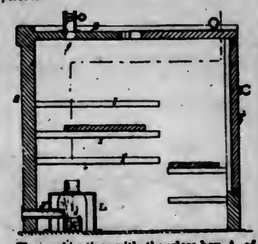
Brief.—On a continuous rod, which serves as both a push and pull plugger, an anvil is adjusted upon a screw-thread, and held from rotating by set-screws inserted in the side of the tubular casing. The tension of the forcing-spring is adjusted by a screw-follower with square tube, which passes over the square stem of a screw-cap.

1. In a dental plugger, the reciprocating rod B, adjustable anvil *c'*, catch *g*, having lip *g'*, and springs *g'*, *f*, and *e*, in combination with the grooved sliding hammer E and slotted tube A, having the tongue *h*, substantially as described, and for the purpose set forth.

2. The reciprocating rod B, carrying the sliding hammer E and spring S, in combination with the screw-follower *s*, having square tube *d*, square stem *c'*, and screw-cap *b*, substantially as described, and for the purpose set forth.

163,413. PORTABLE MEDICATING HOT-VAPOR BATHS. Robt. R. Roberts, Hot Springs, Ark. [Filed Oct. 31, 1874.]

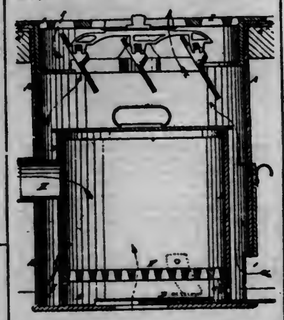
Brief.—An air-inlet is arranged by a tube opening upon the flame of the lamp, whereby circulation of fresh air is maintained, and warmed before coming in contact with the person.



The combination, with the close box A, of the open-ended arch I, the lamp K, and a pipe, N, discharging directly into the flame of said lamp, as shown and described, whereby is secured a healthy circulation of air in the box, while said air is warmed before coming into contact with the person of the bather.

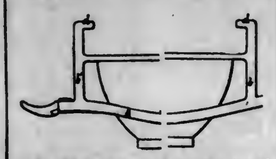
163,415. CAR AND CARRIAGE HEATERS. J. Schmitt, Williamsburg, N. Y. [Filed Mar. 20, 1875.]

Brief.—The springs counteract concussion, and the short exit-pipe sliding in the discharge-pipe allows slight horizontal movement of the fire-pot.



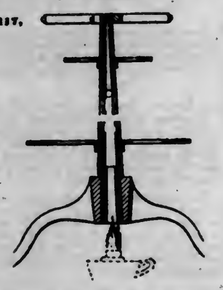
In heaters that hang below a car or coach, the fire-pot D having short pipe H opening into a discharge-pipe at one side of case A, and held by springs in position, as shown and described.

163,416. TOOLS FOR KITCHEN USE. Jos. A. Simonds, Washington, N. H. [Filed Mar. 6, 1875.]



The improved tool above described, formed of the arms A A', hinged together at *a*, each arm having the two uprights *b b'*, connected together by a cross-piece, *c*, and each arm being curved outward between the uprights, as shown.

163,417.

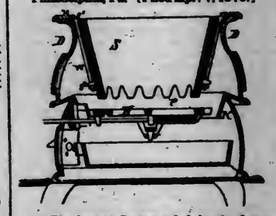


163,417. PLANT-PROTECTORS. Martha B. Slocum, Hornellsville, N. Y. [Filed Apr. 24, 1875.]

Brief.—A hollow standard is supported upon legs high enough to admit a lamp beneath. The standard tapers toward the top, and is perforated along the sides, and is provided with shelves for receiving the flower-pots. A cross-piece is placed upon the top of the standard to support a bead, in order to prevent the escape of heat and moisture.

A device for protecting plants against freezing, composed of a hollow tapering standard with heat-issuing apertures, plant-supporting shelves, and top cross-piece, the whole arranged and applied, substantially as and for the purpose set forth.

163,418. FIRE-POTS FOR STOVES. J. Spear, Philadelphia, Pa. [Filed Apr. 7, 1875.]



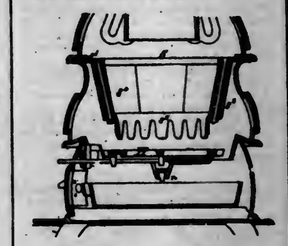
1. The fire-pot S, suspended, by the flange *s'*, from the section D of the wall of the stove, in combination with the supporting-bolts W, connecting the flange *s'* with the lugs *s''*, for the purpose of supporting the lower section of the fire-pot when cracked off, substantially as herein described.

2. The suspended fire-pot S, made in rings, and suspended by the flange *s'* from the section D of the wall of the stove, in combination with the supporting-bolts W connecting the flange *s'* with the lugs *s''*, substantially as herein described.

3. The suspended fire-pot S, having its discharge end notched or fingered, in combination with the bolts W connecting the upper flange *s'* and the lugs *s''*, substantially as and for the purpose herein described.

4. The combination of the suspended fire-pot S, having its discharge end notched or fingered, the bolts W connecting the top and bottom of the fire-pot, the clinker-cleaning opening P, and the upper and lower sections with mica lights O and D, as herein described.

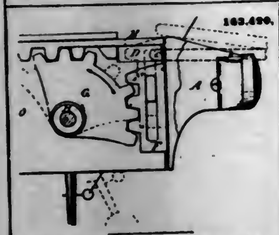
163,419. STOVES. J. Spear, Philadelphia, Pa. [Filed Apr. 7, 1875.]



The combination, in a suspended fire-pot, S, of the lower section *s'*, the casing *s''*, the fire-brick lining *s'''*, and the bolts W, connecting the upper flange *s'* with the lower section *s'''*, substantially as herein described.

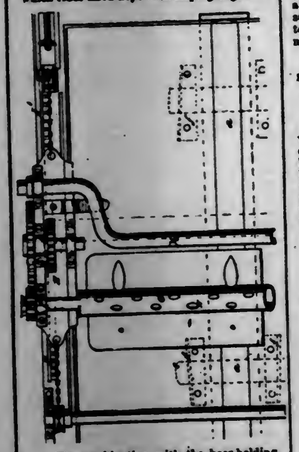
163,420. CAR-COUPLINGS. John G. Strickland, Palo, Iowa. [Filed Oct. 31, 1874.]

The mechanism for coupling and uncoupling railroad-cars, consisting of the box A, with its bumper B, provided with the coupling-notch D, in combination with the segmental rack G, horizontal lock-bar E, vertical bolt F, and levers I, all substantially as and for the purpose set forth.



163,491. BEER-COOLING. Wenzel Toepfer, Milwaukee, Wis. [Filed Mar. 20, 1876.]

Brief.—Air is forced through the revolving of a fan, which is reciprocated horizontally on trucks over the beer-vat. A pipe for cool air, also carried by the truck, passes through the beer. The bottom plates of the vat are fastened together by placing their adjacent edges in a groove between two intervening plates, and forcing the plates together by a clamp, which rides fixed keys with sloping edges.



1. The combination, with the beer-holding vat, of a fan having a hollow perforated shaft and pipe-connections for receiving cold air, and also of contrivances for reciprocating and revolving the fan over the beer, substantially in the manner described.

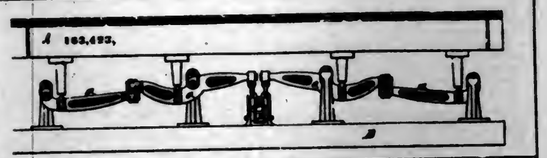
2. The reciprocating trunks E, hollow and perforated fan and the hollow water-conductor X, combined with a beer-vat, substantially in the manner described.

3. The combination of the strips *a b*, clamp *c*, and keys *f* with the bottom plates *a b*, secured together by bolts, in the manner described, for fastening them together.

163,492. LIFE-PRESERVER. Adolph Traub, New York, N. Y. [Filed Mar. 13, 1876.]



A life-preserver provided with long fins E E, tapering to points E I, and held by elastic straps F F, as and for the purpose specified.



163,493. RAILROAD-TRACK SCALES. John H. Usher, Buffalo, N. Y. [Filed Nov. 21, 1874.]

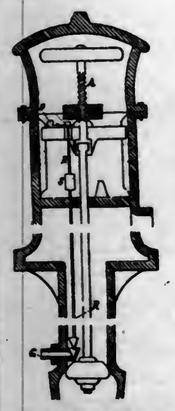
The series of longitudinal connecting and multiplying levers *a a a*, arranged under the platform-stringers A B, to operate independently, substantially as and for the purpose specified.

163,494. METHODS OF BOOKING GOLD-LEAF. John Varley, New York, N. Y., assignor to Stephen Hickcox, same place. [Filed Mar. 20, 1875.]

The method herein described of booking gold-leaf, consisting in applying each leaf to a perfectly-dried sheet of tissue-paper or other suitable backing, and then subjecting the same to heavy pressure, substantially in the manner shown and described.

163,495. ATTACHMENTS TO STREET-HYDRANTS. Charles M. Vergnes, New York, N. Y., assignor of one-fourth his right to Clinton W. Sweet. [Filed Apr. 2, 1875.]

Brief.—When the main screw raises the valve to its greatest elevation, the hydrant is closed and the cross-piece raised, and the catch being closed holds up the small rod, and leaves the waste-pipe open. By swinging back the catch the valve may move irrespective of the small rod, and the hydrant remains full. The cylinder on the small rod acts to close the hole through which it passes, and also as a weight.



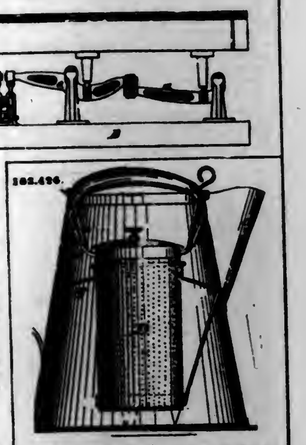
The arrangement of the rod B E with the cylinder S, put in motion by the main screw A, and the catch D, regulating the action of the waste-pipe G, substantially as described.



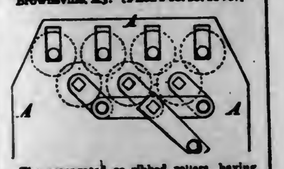
163,496. COFFEE-POTS. Sumner P. Webber, Charlotte, Mich. [Filed Apr. 10, 1876.]

Brief.—Particles of coffee escaping from the detachable strainer are retained below the fine annular strainer. The former is retained in position by spring at the top and a ring and legs at the bottom.

The combination of a coffee-pot having an annular stationary strainer at the inside below the spout, with a detachable coarser strainer for the ground coffee fitted therein and retained at some distance from the bottom by legs and at the top by wire springs, substantially as set forth.



163,497. WASHING-MACHINES. S. Wells, Brownsville, Ky. [Filed Feb. 12, 1876.]



The corrugated or ribbed rollers, having journals working in vertical slots in the side-box A, the rollers B supporting the former, and provided with parallel cranks connected by a bar and operated by an extended crank-lever, all combined as shown and described.

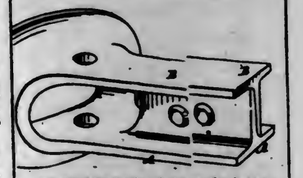
163,498. HARROWS. Addison H. Whiteside, Oswego, Ill. [Filed Apr. 10, 1876.]

Brief.—The harrow-teeth are bent at right angles, and pass through the timber-beams in an oblique direction, and are held in place by angular staples, one end of which passes through the beam at right angles, and so located as regards the teeth that they are held perpendicular to the beam when the draft is in one direction, and incline backward when drawn in the other direction.

1. A harrow-tooth connected to the beam by a right-angled arm at the upper end, fitted in a hole oblique to the cross-section of the beam, substantially as specified.

2. The combination of the staple C, having the outward swell and rearward extension, as described, with a harrow-tooth connected with the beam by a right-angled arm of the upper end, in a hole oblique to the cross-section, substantially as specified.

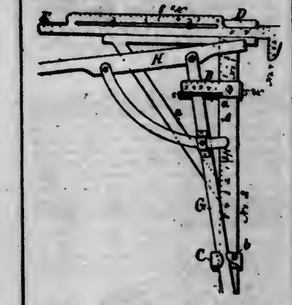
163,499. CAR-COUPLINGS. John T. Wilson, Pittsburg, Pa. [Filed May 5, 1876.]



The draw-bar having the strengthening portion *a a* thereof made solid with the top and bottom bars A B, substantially as and for the purpose set forth.

163,500. GAGES FOR SHAPING WAGON-AXLES. Daniel R. Winter, Newton, Iowa. [Filed Dec. 1, 1874.]

Brief.—The device is intended to assist carriage-makers in giving the proper bend to axles.

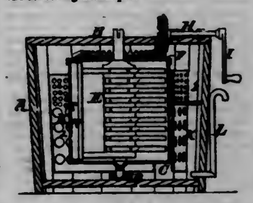


1. The instrument composed of the bars A, B, D, E, G, and H, loops C and *c*, and graduated scales Nos. 1, 2, 3, 4, and 5, substantially as and for the purposes shown and described.

2. The method of ascertaining the required angle of the axis of a spindle, relative to the axis of a carriage-axle, substantially as set forth, and illustrated.

163,501. ICE-CREAM FREEZERS. Lucien B. Woolfolk, Lexington, Ky. [Filed Oct. 24, 1874.]

Brief.—Salt is kept at the top of the brine, while the ice may sink to the bottom of the tub, and may or may not pass beneath the cream-holder. Scraper pivoted on a beveled surface fits a tub of any slant. Outlet-pipe withdraws brine from bottom, and maintains its level to cover the salt. Beater may revolve with cream-pot, but when pinned by M is stationary, and its scraper N operates against the revolving cream-pot.



1. The segments K, in combination with the tub A, the cream-bucket C, the waste-pipe L, the beater E, hinged bar M, cogs F', cog-wheel G, shaft H, and crank I, substantially as set forth.

2. The salt-compartments 1 1, in combination with the ice-compartments 2 2, the tub A, and cream-bucket C, for the purpose mentioned.

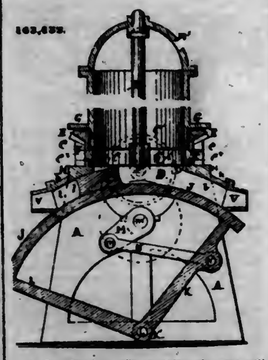
3. The ice-compartments 2 2, extending down to the bottom of the brine, in combination with the salt compartments 1 1, the tub A, and the cream-bucket C, as described.

4. The ice-compartments 2 2, extending down to the bottom of the brine, in combination with the salt-compartments 1 1, the tub A, and cream-bucket C, and the waste-pipe L, as described.

5. The scraper N, having a beveled knife-edge, and pivoted at its center to the beater-frame, which is beveled, to permit of sidewise adjustment of the scraper, substantially as herein set forth.

163,502. BRICK AND TILE MACHINES. Chas. D. Wrightington, Fairhaven, Mass. [Filed Apr. 15, 1874.]

Brief.—A reciprocating segment extends the entire length of and forms the bottom of the hopper. This segment has a projection on its outer surface, which operates as a piston for forcing the clay into the mouth-piece.



1. In a brick or tile machine, the pug-mill A', the lower part of said pug-mill or hopper being formed by the rim of the driving-gear E, or by an extension of said rim, or by an annular ring, connected to the said gear E, substantially and for the purpose set forth.

2. In a brick or tile machine, the mud-box or compressing-chamber, having the piston or plunger I secured to the rocking or oscillating segment J J, the latter forming the bottom of said mud-box, and the two having a movement in unison, for the purpose set forth.

3. The combination of the pug-mill or hopper A', having the flange G G, with the posts F F F F, and the bottom plate H H, for the purpose set forth.

4. The combination of the pug-mill A', having a flange, G G, with the bevel-gear E, the pinion E', the annular ring *e e*, the inclined radial blades C C C C, and the shaft B, for the purpose set forth.

5. The combination of the bevel-gear E, the rim thereof forming the lower portion of the pug-mill A', and the pinion E', with the inclined radial blades or propellers C C C C, for the purpose set forth.

6. The combination of the bevel-gear E, having the annular ring *e e*, with the friction-rollers *a a a a*, for the purpose set forth.

7. The combination of the bevel-gear E, the pinion E', the annular ring *e e*, and the radial inclined blades C C C C, with the bottom plate H H, as described, and for the purpose set forth.

8. The combination of the gear E, the annular ring *e e*, and the radial inclined blades C C C C, with the mud-box D or other receptacle for the clay, as described, and for the purpose set forth.

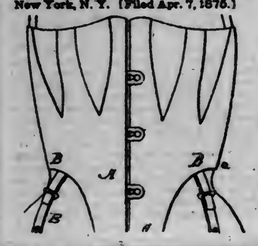
9. The combination of the pug-mill A' with a segmental mud-box, D, as described, and for purpose set forth.

10. The combination of the mud-box D and the mouth-piece V V with the piston I and the oscillating segment J J, as described, and for the purpose set forth.

11. The combination of the oscillating segment J J, the radial arms K K, and the hub K', with the side frames A A and the bottom plate H H, as described, and for the purpose set forth.

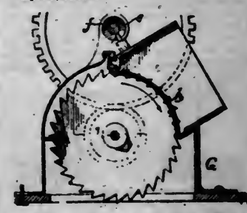
12. The plunger I, oscillating upon the arc of a circle from end to end of a mud-box, and under the main shaft B, as and for the purpose described.

163,503. CORSETS. Josephine N. Ames, New York, N. Y. [Filed Apr. 7, 1875.]



The corset, having its body A B cut and constructed with its bottom flaps *a b* curved in the manner shown and described, for the purposes set forth, and having the shoulder straps and braces D D, the connecting-straps and buckles C, skirt-supporting straps and buckles E, all constructed, combined, and arranged as specified and shown.

163,504. MILLS FOR GRATING COCOA-NUTS. Jno. P. Anderson, Philadelphia, Pa. [Filed Apr. 6, 1876.]



1. The combination in a grating-machine of a series of circular saws, with a slotted segmental shield, substantially as and for the purpose described.

2. The combination of the series of circular saws, and the slotted segmental shield, with a reciprocating hopper, H.

3. The combination in a grating-machine of the circular saws, hopper H, shaft *f*, and scroll cams *c*, whereby a reciprocating movement is imparted to the hopper.

4. The adjustable shield G and its slotted plate A, in combination with the saws, as set forth.

5. The combination of the saws with the slotted stripper-plate *i*.

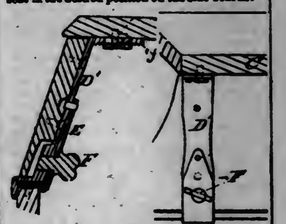
163,505. PAPER BOXES. Charles M. Arthur and James Bentley, Birmingham, Conn. [Filed Apr. 27, 1876.]



As an article of manufacture, the herein-described box, consisting of the principal side A, with the parts E F F projecting from one side, and the flaps P I transversely from the part E, the parts D L projecting from the second side, the part C from the third side, with the transverse flaps G, H, and P on the said part C, the closing side B, and its tongue T projecting from the fourth side, the whole formed and folded from a single piece, as shown and described.

163,506. VEHICLE-SEAT LOCKS. Daniel Argerbright, Troy, Ohio. [Filed Apr. 3, 1876.]

Brief.—An adjustable clamp to secure the seat in the desired position on the side-boards.



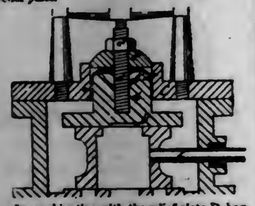
1. In a sliding seat, the combination, with the angular bracket D', having jaw *c*, the pivoted booted clamping-plate E, having set-screw F, and the metallic strip *a*, substantially as and for the purpose specified.

2. The bracket D', adapted to be applied to the side of a wagon box, in combination with the bracket D, having a projecting rod, *e*, and support B, whereby the seat will be prevented from twisting and rocking, substantially as specified.

3. The arm *f* of the bracket D', having slot *i* and corrugated under side, in combination with the corrugated washers *g*, screw *s*, and seat *e*, substantially as and for the purpose set forth.

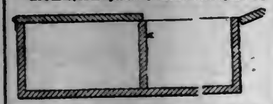
163,437. SLIDE-VALVES FOR STEAM-ENGINES. Edwd. Armstrong, Allegheny, Pa., assignor to himself and James E. Hutchinson, same place. [Filed Mar. 31, 1875.]

Brief.—A concave metallic disk serves to pack the opening in the steam-chest cover, and also allows of a yielding movement to the relief-plate.



In combination with the relief-plate D, having a suitable stem or projection, *d*, an elastic concave metallic disk, *c*, secured to the stem and free at its periphery, substantially as and for the purpose specified.

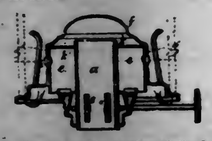
163,438. CIGAR-BOXES. Benjamin Ash, New York, N. Y., assignor to Louis Ash & Brother, same place. [Filed Feb. 26, 1875.]



A cigar-box having the partition *a* and the sectional lids B and C, one hinged and the other removable, as set forth.

163,439. LAMP-BURNERS. L. J. Atwood, Waterbury, Conn., assignor to Plume & Atwood Manufacturing Company, same place. [Filed Apr. 7, 1875.]

Brief.—The chimney-rest, spring chimney-clamps, and deflector connected together, and removable from the screw-neck and wick-tube of the burner.



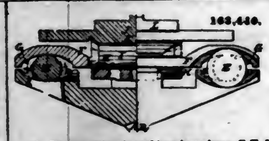
1. The removable portion of the burner, made with a circular chimney-rest and spring chimney-clamps, a cylindrical body, *g*, and a deflector at the top of the cylinder, all rigidly united together, in combination with the stationary portion of the burner, containing the wick-tube *a*, the air-distributer *k*, and the cylindrical body *c*, over which the removable cylinder *g* is placed when the parts of the burner are put together, and which cylinders are of nearly equal length, so as to firmly sustain the removable portion of the burner, as set forth.

2. The wick-raising wheels, made of sheet metal, with a cylindrical hub on one side, surrounding the shaft, as and for the purposes specified.

163,440. PLATFORM-SCALES. S. J. Austin, St. Louis, Mo. [Filed Apr. 12, 1875.]

Brief.—Bearing rollers between platform-plates equalize strain upon whole length of the knife-edges.

163,440.



1. The combination of bearing-pieces C F J and rollers E E I, substantially as and for the purpose set forth.

2. In combination with the rollers E E I and pieces C F J the roller-bearings D D H having perforations *d* to allow escape of dirt from the bearings.

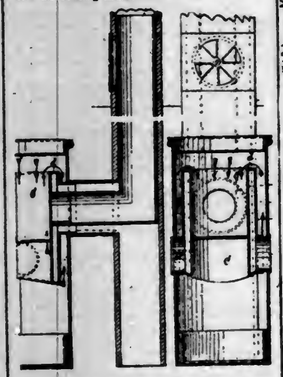
3. In combination with the rollers E E I and pieces C F J the bevel-flanges *e*, to prevent derangement of the parts, as set forth.

4. The projections B, in combination with the saddle-piece C and recessed knife-edge bearing A, to prevent endwise movement of the saddle on the knife-edge.

5. The combination of bearing-pieces C F J, rollers E E I, knife-bearing A, and bracket-wings L, for attachment of the platform-timbers, substantially as set forth.

163,441. HEATING-STOVES. John D. Avil, Philadelphia, Pa. [Filed Apr. 26, 1872.]

Brief.—To equalize the flow of the products of combustion through and around the central air-heating drum.



The combination, in an air-heating stove substantially as described, of the plate L, provided with openings at its periphery, as described, with the cylinders B and B', which surround the central space C, for the purpose hereinbefore described.

163,442. MAGAZINE-STOVES. William W. Baldwin, Cleveland, Ohio. [Filed Mar. 6, 1875.]



1. The combination, with the reservoir E and opening *f*, of the opening C, made to extend below the lower end of the wall G, substantially as and for the purpose described.

2. The combination, with the perforated reservoir E, the perforations of which communicate directly with the air-space F, and the air-space F, of the flue I and damper *i*, substantially as and for the purpose described.

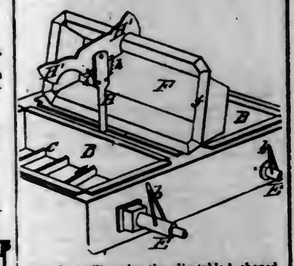
3. The combination, with the perforated reservoir E, the perforations of which connect directly with the air-space F, of air-space F, flue I, and air-register H, substantially as and for the purpose described.

4. The combination, with the combustion-chamber B, perforated reservoir E, the perforations of which communicate directly with the air-space F, and air-space F, of the exit-flue O and flue I, substantially as and for the purpose described.

5. The combination, with the combustion-chamber B, air-space F, and flues O and I, of the air-register H, by which means the draft has direct transit through the reservoir E without passing down by an indirect course, substantially as and for the purpose described.

163,443. MILK-COOLERS. Ira Bertows, Gouverneur, N. Y. [Filed Aug. 7, 1874.]

Brief.—An L-shaped outlet-pipe turns on its horizontal arm in a sleeve through the side of the water-pan, and maintains the water at any desired height. The regulating-arm may be inside or outside of the water-pan. When inside a handle operates it, and indicates its inclination. When the milk-pans are tipped upward and inward, the rocking bar and springs hold them.



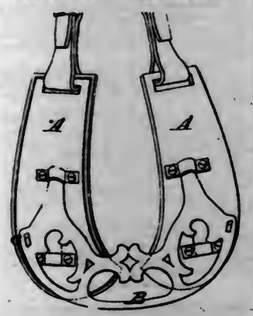
1. In a milk-cooler, the adjustable L-shaped outlet-pipe E to regulate the height of the water in the cooler, substantially as herein set forth.

2. In a milk-cooler, the combination of the outlet adjustable pipe E and the elbow a on the outside of the cooler, having air-hole or vent *i*, substantially as and for the purposes herein set forth.

3. In combination with the frame A, coolers B B, and basted pans F F, the standard H with hooks H' H' and springs h h, substantially as and for the purposes herein set forth.

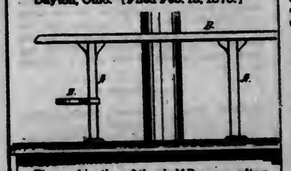
4. The combination of the adjustable L-shaped outlet-pipe E and the pointer *b*, as described, for regulating and maintaining the height of the fluid in the pans, substantially as and for the purposes herein set forth.

163,444. HORSE-COLLARS. G. F. Beardsley, Glen's Falls, N. Y. [Filed Oct. 10, 1874.]



In a horse-collar, the combination, substantially as described, of the concave-convex pads A A, suspended by the strap P, attached to their ends, and connected by a single rigid bow, B, having loops, and hinged to said pads.

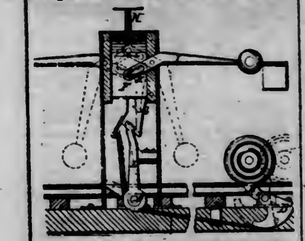
163,445. STOVE-PIPE SHELVES. M. Bennet, Dayton, Ohio. [Filed Feb. 13, 1875.]



The combination of the shelf B, surrounding the pipe and provided with projecting hooks, the standards A, constructed as described, and bracket E, substantially as and for the purpose specified.

163,446. RAILROAD-SIGNALS. Festus C. Bolton and Michel Adams, Cleveland, Ohio. [Filed Feb. 15, 1875.]

Brief.—A colored globe or shade is mounted on the apparatus, which is brought down over a light at the same time the arms are raised.



1. The railroad-crossing signal, consisting of the combination, with the pivoted arms I, cord or wire C', and tilting lever B, of the block F and cross-bar H, substantially as and for the purpose described.

2. The combination, with the arms I and mechanism for elevating them, substantially as described, of the block F, projecting arm G, and spring-hook L, for retaining the said arms in their horizontal position, substantially as and for the purpose described.

3. The combination, with the hook *g* and the spring-hook L, of the tilting lever K, arranged to be operated by the car-wheels, whereby the arms I are released, substantially as and for the purpose described.

4. The combination, with the block F, of the cross-bar H, pans M, and the colored shade, whereby the said shade may be brought down over and a light when the arms are elevated, substantially as and for the purpose described.

163,447. SPRING-MOTORS. Henry Bolton, Brantford, Canada. [Filed Mar. 17, 1875.]



1. The combination of the magazine-spring U with the secondary constant-tension driving-spring I, rigidly attached at one end to a ratchet-wheel upon the main-shaft, and at the other to a loose gear-wheel, substantially as and for the purpose described.

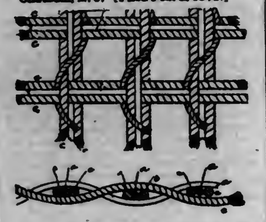
2. The combination, with the magazine-spring U and the driving-spring I, rigidly attached to the shaft at one end, and to the loose gear-wheel at the other, of a stop-wheel, M, rigidly attached to the main shaft, a pawl, Q, and the pin S upon the gear-wheel, substantially as described, for the purpose of rendering the action of the magazine-spring upon the driving-spring intermittent

3. The combination, with the ratchet-wheel I upon the main shaft, of the pawl P, the eccentric O, and the fly-wheel N, for the purpose of rendering the intermittent action of spring U upon I instantaneous, substantially as set forth.

4. The combination, with pawls P and Q, of a lever W', for the purpose of silencing the machine when nearly run down to operate with both springs and continuously.

5. The combination, with a shifting-lever, of a loose pulley, *a*, having a clutch upon one side and a gear-wheel upon the other, to reduce the speed, substantially as described.

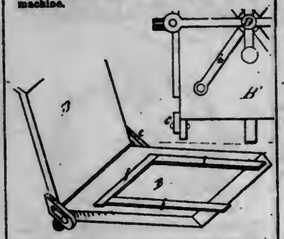
163,448. WIRE FABRICS. Geo. S. Brocher, Chatham, N. J. [Filed Feb. 2, 1875.]



As a new manufacture, perforated wire cloth, composed of spring-wires laid with two or more fibrous threads to each wire and with reticulations, substantially as set forth.

163,449. MACHINE ELECTROTYPE-SHELLS. Jas. S. Brooks, Pittsburg, Pa. [Filed Dec. 28, 1874.]

Brief.—Invention claimed in process and machine.

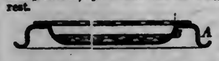


1. The method of producing finished electrotype-backs, consisting in securing the shell, face downward, between true and parallel plates, determining the size and thickness of the back by adjustable straight-edged metallic rules, constructed and adapted to give a true and finished edge, heating all to a uniform temperature, and then pouring the molten metal upon or between the back of the shell and the upper or opposing plate, as described.

2. The apparatus for backing electrotypes, consisting of hinged and swiveled plates H B', frame A, slide C, and heating appliances, supports *a*, arms *b*, pressure D, and guide-rules *f*, combined and operating as described.

163,450. EVAPORATING-PANS. C. Brownell, Troy, N. Y. [Filed Sept. 7, 1874.]

Brief.—Intended to be used beneath ordinary stoves. The rim may be extended to serve as a platform, upon which the stove-legs may rest.

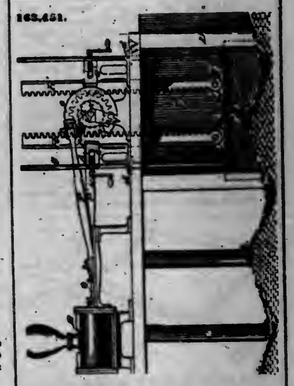


The within-described evaporating-pan, having the separate dish B suspended in the rim A, above the floor, and adapted to serve under stoves and furnaces, as and for the purposes herein specified.

163,451. WAVE-POWER MACHINES. Chas. Buckner, Jr., San Francisco, Cal., assignor of one-half his right to Johann H. A. Ledwig, same place. [Filed Sept. 7, 1874.]

Brief.—A buoy with four guide-rods passing through socket-plates, and provided with adjustable racks for engaging loose pinions, and ratchet-wheels and pawls, operates, by the rise and fall of the waves, a pumping or other apparatus. Wedge-shaped caissons attached to the wharf guide the waves to the buoy. Slide-rests and adjustable blocks with tongues hold the racks in position.

163,451.



1. The buoy B, actuated by the rise and fall of the waves, provided with guide-rods *g g g g*, that operate within the fixed socket-plates *d d d d*, and adjustable racks E E', for engaging the loose pinions V V', pawls *p p'*, ratchet-wheels T T', and pumping or other apparatus E E', as described, substantially as and for the purposes herein set forth and specified.

2. The wedge-shaped caissons C C', attached to the wharf structure W W, in combination with the waves and floating buoy B, substantially as and for the purposes herein set forth and specified.

3. The slide-rests G G', with adjustable blocks A A', provided with tongues *e e' e'*, respectively, in combination with the racks E, E', pivoting onto buoy B, substantially as and for the purposes specified.

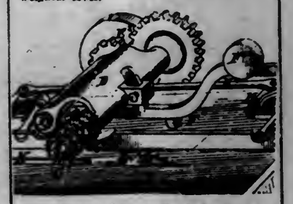
163,452. TEMPORARY BINDERS. R. Buell, Columbus, Ohio. [Filed Apr. 26, 1875.]



The combination of the plate A, provided with the needles B, having the slots C in their upper ends to receive a cord, with the gage D, having the slots or recesses E in its edge, substantially as shown and described.

163,453. SAWING-MACHINES. George W. Bugbee, Cincinnati, Ohio, assignor to J. A. Fay & Co., same place. [Filed Apr. 1, 1875.]

Brief.—The oscillating frame carrying the feeding-rolls is adjustably attached to a weighted lever.



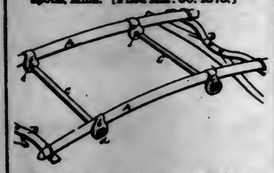
1. The combination of the fixed roll carrying frame D and the weighted lever P F', adjustable on each other, substantially as specified.

2. The feed-roll-carrying frame D and weighted lever F F', adjustable on each other, in combination with the bottle F', substantially as and for the purpose specified.

3. The combination of the gage G g g, links H² H², and connected quadrants H H' H', with the platen A, substantially as specified.

4. The combination of the gage G g g, links H² H², connected quadrants H H' H', and lever I (with the platen A, having a graduated rack or series of holes, e, substantially as specified.

163,455. SWINGING BUGGY-BODIES. H. M. Carpenter and Ellwood Grimshaw, Minneapolis, Minn. [Filed Mar. 30, 1875.]



The rubber straps b b, provided with the holes a a, in combination with the thoroughbraces A A, cross-bars C C, and steel springs B B, substantially as described.

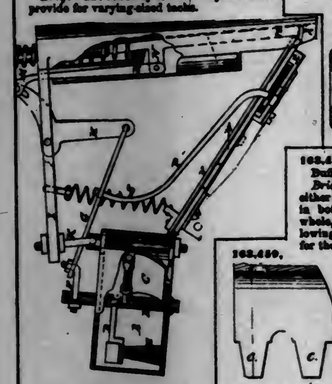
163,456. WHIFFLETREES. Thomas Carroll, Prairie City, Ill., assignor of one-half his right to F. A. Woodmansee, same place. [Filed Mar. 17, 1875.]



The wheel D, attached to the whiffletree B, and provided with shoulders b b, in combination with the hammer-strap C, having slot f, the tongue A, and bolt e, connecting the whiffletree to the tongue, all substantially as and for the purposes set forth.

163,457. TACKING-MACHINES. James W. Carver, East Boston, Mass. [Filed Apr. 24, 1875.]

Brief.—The roadway is made adjustable to provide for varying-sized tacks.



1. The combination of the box A and spindle B, provided with the scoops C and brushes E, substantially as and for the purpose set forth.

2. The combination of the spindle B, provided with the brushes E and scoops C, with the piston-rod and hammer a, and the intermediate system of rods and levers, as shown, when arranged for joint operation, substantially as and for the purpose described.

3. In combination with the box A, the frame I, and its swivel-connections K, the cylinder G and the raceway V W W', substantially as and for the purpose set forth.

4. The combination of the raceway c, the spring c, and the pivoted hook T, as and for the purpose specified.

5. The combination of the hook T, the rod P, and the slotted bar G with the spindle B, provided with brushes and scoops, substantially as set forth.

6. The adjustable plates W W', forming the raceway, and having the curved ends c', in combination with the recessed end of the cylinder C, whereby the tack is brought to a position under the hammer, and then driven in, substantially as and for the purpose set forth.

7. The combination of the adjustable plates V W W', for adaptation to tacks of different sizes, substantially as described.

163,458. WATER-VALVES. A. Chabot, San Francisco, Cal. [Filed Jan. 21, 1875.]

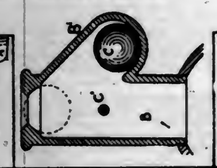
Brief.—The shaft above the valves is filled with water from the reservoir, which keeps the main valve to its seat. To the small valve is attached a weight equal to that of both valves. The small valve being raised from its seat, water will enter the delivery-pipe through the spaces between the feathers on said valve and fill the pipe, thus balancing the main valve, when it will be necessary to exert a force sufficient to lift its actual weight to open it.



The valve A, with its equalising-valve D, seating over pipe B, for the purpose as specified.

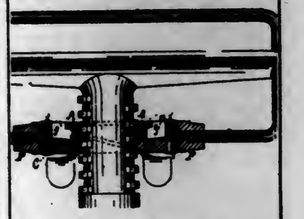
163,459. VENT-VALVES. A. Chabot, San Francisco, Cal. [Filed Feb. 26, 1875.]

In a vent or air valve, the spherical float C, in combination with the pocket B' and guard-pin C', substantially as described.



163,460. MOPS. Charles B. Clark, Buffalo, N. Y. [Filed Mar. 15, 1875.]

Brief.—The side slots, through which the ears of the nut pass in adjusting the latter to place, are finally closed by the pieces that clamp and hold the binding-wire.



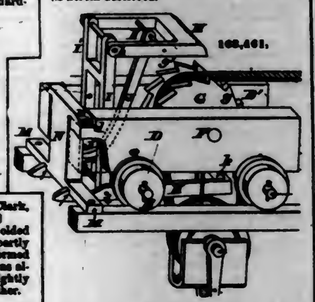
The collar C, with slots c c, and clamping-arms F F, provided with tongues f f, in combination with the nut A, substantially as constructed and arranged.

163,461. HAY-CONVEYERS. Wm. M. Conner and W. I. Rouse, Burlington, Ky. [Filed Apr. 23, 1875.]

Brief.—On an overhead inclined track a carriage is hauled by a rope from the load passing over a ratcheted pulley thereon. The pawl is struck free by the carriage reaching the limit of its descent, hooks at the same moment springing under a lateral bar, to be released by impact on the ascent of the load.

1. In combination with the carriage D D' E c c E' c' c' and track A A' N, the ratchet-pulley G g, pivoted pawl H h, trigger J, drag-rope F, and sheave E e, as and for the purpose specified.

2. The latches K L K' L', pivoted at f f' to the carriage, and provided with a cross-bar, h, which prevents contact of said latches with the pulley G, whenever the former are disengaged from the transverse rail M of the track, as herein described.



163,461.

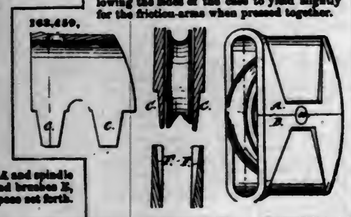
163,462. RAILROAD-TICKETS. E. R. Cook, Trenton, N. J. [Filed July 19, 1875.]

1. The coupon-ticket provided with detachable dollar spaces, and detachable cent spaces, arranged in different detachable columns, as shown and described.

2. A railroad way-ticket, provided with detachable dollar and cent spaces, arranged in different detachable columns, and also with the dial or equivalent device, substantially as set forth.

163,463. SAND-PULLEYS. Charles B. Clark, Buffalo, N. Y. [Filed Mar. 15, 1875.]

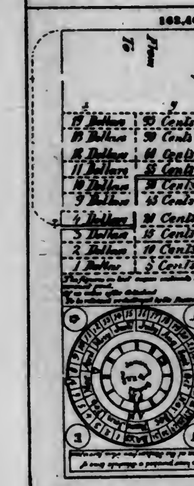
Brief.—The axle-bearings being molded either wholly in one part of the case or partly in both, and the ends of the case formed whole, with screw-holes cast therein, thus allowing the sides of the case to yield slightly for the friction-arms when pressed together.



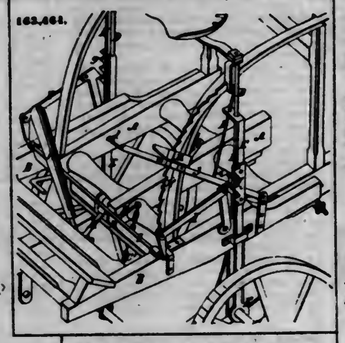
163,450.

A sash-pulley case formed in two parts, A B, when the line of division is made horizontally from front to rear, so that the arms C C and the ribs D F F, together with the axle-bearings a a and screw-holes b b, may be molded and cast in the manner described and shown, substantially as and for the purpose set forth.

163,464.

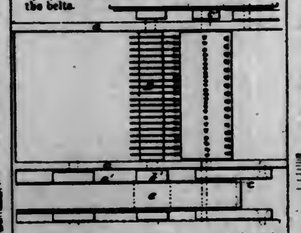


163,465.



163,465. COTTON-GINS. Orville C. Dewey, Wheeling, W. Va. [Filed Mar. 27, 1875.]

Brief.—Through the medium of the oblique arms of the belt wheels on each side, these belt wheels accommodate themselves automatically to the strain of the belt, and when the belt is comparatively loose upon the belt wheels, the contact of those wheels which are carried on the arms with the friction-wheels of the saw-shaft and brush-shaft will be kept up by the movement of these belt-wheels and the belts.



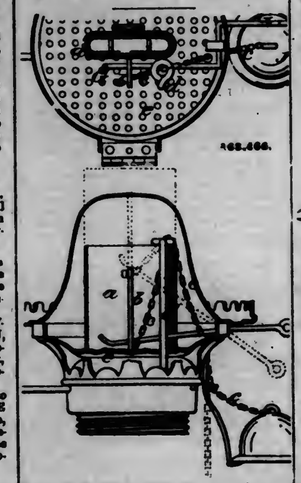
The combination, with the saw-shaft and brush-shaft, of the automatically-adjustable belt-wheels c c', the belt-wheels a' b, the belts c c', and the friction-wheels b' c', respectively arranged each between a pair of said belt-wheels on the relatively opposite ends of the saw-shaft and brush-shaft, substantially as shown and described.

163,466. PIPE-COUPLINGS. A. W. Cooper and John Sutcliffe, Chicago, Ill. [Filed June 24, 1874.]

Brief.—An externally-threaded tube, provided with conical threaded ends, in combination with internally-threaded nuts with plain conical internal bearing-surfaces at the ends for the pipes, and adapted to work together, and form an external and an internal screw-thread upon the enlarged ends of said pipes, while the clamping-surfaces are brought to gether upon the same, to form the packing and secure the joint.



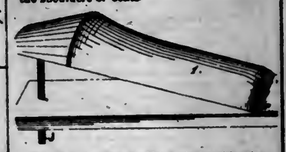
The combination of the externally-threaded tube A, provided with conical threaded ends, with the internally-threaded nuts F F, provided with plain conical internal bearing-surfaces at the ends, as set forth, for the pipes B and C, and adapted to work together and form an external and internal screw-thread upon the enlarged ends of said pipes, while the clamping-surfaces are brought together upon the same, to form the packing and secure the joint, substantially as herein described.



163,466.

163,467. SHAPING-BLOCKS FOR GARMENTS. Henry Erleston, St. Joseph County, Mich. [Filed Dec. 30, 1874.]

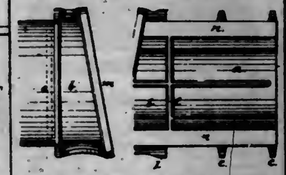
Brief.—The block is for stretching, pressing, and shaping the bottoms of pantaloons and the shoulders of coats.



The forming block No. 1, in combination with the table or board No. 2 and adjusting-screw No. 3, when constructed and arranged to operate substantially as herein described, and for the purpose specified.

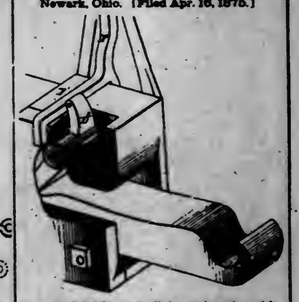
163,468. BEDSTEAD-FASTENINGS. William H. Elliot, New York, N. Y. [Filed Apr. 1, 1874.]

Brief.—The curved surface of the body of the tenon fits into a correspondingly-formed recess or mortice in the end of the rail, and a cleat which rests against the flattened edges of the tenon holds it firmly in place. The diagonal head and flanges enter the post-mortice.



In a bedstead-fastening, the tenons consisting of the curved plate a, provided with the thickened and flattened edges a, forming the body thereof, the flanges c, transverse rib b, head b, and diagonal flanges m, all constructed substantially in the manner and for the purpose set forth.

163,469. CAR-COUPLINGS. L. D. Evans, Newark, Ohio. [Filed Apr. 16, 1875.]



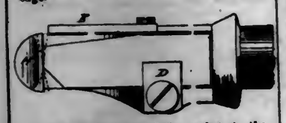
1. A pivoted trigger, D, in combination with a coupling-bar and a draw-head, A, and provided with a retaining weighted arm, D', for dropping into the recess of the coupling-bar, and a vertical arm, D', passing up through the draw-head, substantially as set forth.

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2. The combination, with a trigger, D, pivoted within a draw-head, A, and provided with a downwardly-projecting arm, D^1, and a vertically-projecting arm, D^2, passing up through the draw-head A, of a lever-arm, a coupling-bar, C, having one or both ends, C^2, curved and provided with recesses C^1, substantially as set forth.

163,470. SHOE-KNIVES. W. J. FitzGerald, New Haven, Conn. [Filed Mar. 9, 1875.]

Brief.—The socket or knife-holder is provided at its end with a rocking guard, to adapt the knife to different curves of the sole-edge.



1. The combination of the socket A, the knife C, and the rocking guard H, substantially as described.

2. The combination of the socket A, the cutter C, rocking guard H, and guide E, substantially as described.

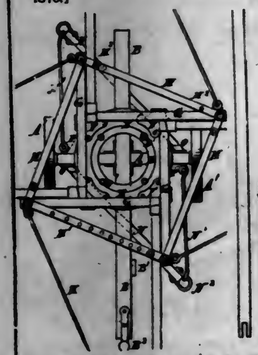
163,471. COVERINGS FOR BEDS, CRIBS, &c. John Foster and William A. Weant, Salisbury, N. C. [Filed Oct. 2, 1874.]

Brief.—The cover is composed of two sections, one being pivoted to and folding within the other, and the latter is hinged to supporting-frame, so that it can be turned over to obtain access to the bed, in which position it is supported by brackets attached to the supporting-frame.



The cover constructed, as described, of the frame-work and the netting, and having a pivoted movable portion, F, in combination with the hinges G, the brackets H, and the frame-work of the bed or crib, substantially as and for the purpose described.

163,472. BOARD-POWERS. Daniel Geiser, Waynesborough, Pa. [Filed Mar. 24, 1875.]



1. In combination with the frame formed of the beams G, the auxiliary frame H, attached to the outer ends of the beams G, so as to form diagonal braces, substantially as set forth.

2. The auxiliary frame constructed with pins H^1 H^2, engaging the levers I and bars N, for compactly and securely packing such pieces for transportation.

3. In combination with the beams G, the brackets F, attached to the annular plate E, and constructed with recesses, one to receive the end of one beam, and the other to receive the outer end of another beam, and yet another to receive the inner end of the levers I, substantially as set forth.

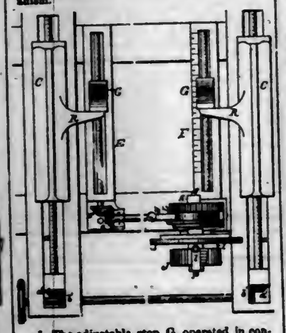
4. In combination with the levers I, the brackets F, constructed with a series of plates, forming recesses to receive the levers and hold them, in connection with a stationary eye, at different inclinations, substantially as set forth.

5. In combination with the two-wheeled truck of a horse-power, a beam, B, at right angles to the axle A, and adjustable legs B^1, substantially as set forth.

6. In combination with the axle A of the truck which supports a horse-power, the adjustable bars N and rods N^1, attached thereto for securing the horse-power, substantially as set forth, when either down or mounted.

163,473. SAW-MILL HEAD-BLOCKS. Wm. Glue, Muskegon, Mich. [Filed Apr. 30, 1875.]

Brief.—A moving gage-block is first adjusted to the thickness of the piece of lumber to be cut; the log is then set to it by means of an independently-operating setting mechanism.



1. The adjustable stop G, operated in connection with a saw-mill head-block, substantially as and for the purpose specified.

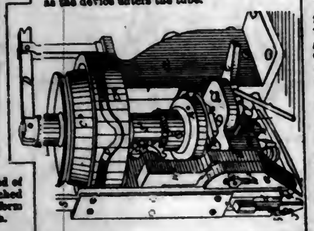
2. The quadrant O, provided with an adjustable stop, P, for regulating the throw of the lever I, to suit saws of different thickness.

3. The wheel L, with its friction-pulley M, in combination with the pinion *f*, screw *e*, and stop G, as set forth.

4. The gear L, with its friction-pulley M, in combination with the spring *g* and brake N, as and for the purpose specified.

163,474. MACHINES FOR NAILING SOLES FROM NAIL-STRIPS. Louis Goddu, Winchester, assignor to American Cable-Screw-Wire Company, Boston, Mass. [Filed Apr. 20, 1875.]

Brief.—A vibrating nail-strip carrier is provided, adapted to automatically deliver to the cutting-jaws and nail-tube strips varying in width, as desired. The cutting jaws, when closed, form the nail-tube, compress the nail, form a head thereon, and release the nail just as the device enters the tube.



1. In a machine for nailing boots and shoes, with nails cut from a strip, the combination, with the driver *d*, of jaws *j f*, between which the nail is cut from a strip and the head formed by compression by the same movement which effects the severance of the nail, substantially as herein set forth.

2. The combination, in a machine for nailing boots and shoes, of jaws *j f*, adapted to sever a nail from the strip, then compress the nail and form a head, and become a tube and guide for the nail and driver, substantially as and for the purpose described.

3. The combination, in a nail cutting and driving machine for boots and shoes, of a driver, *d*, and a nail-strip carrier adapted to feed the strip and deliver the severed nail to a compressing and head-forming tube directly in the line of the driver without transfer of the severed nail from the point of entrance, substantially as and for the purpose stated.

4. The combination, in a nailing-machine for boots and shoes, of a driver, cutting-jaws, nail-compressing and head-forming tube and guide, and a carrier adapted to automatically deliver nail-strips of different widths, as may be required, directly to the line of the driver and the jaws, essentially as herein set forth.

5. The combination, in a nailing-machine for boots and shoes, of a driver, *d*, with a fixed cutter, *j*, and a jaw, *f*, having a movement toward and from the fixed jaw, the two forming a nail-compressing tube-guide when closed, substantially as and for the purpose stated.

6. The combination, in a nailing-machine for boots and shoes, of a nail-driver, a nail-strip carrier, and jaws having cutting-edges, and a nail-forming guide into which the nail-strip is fed, the nail cut, and its head formed thereby, and driven through said guide-jaws to complete the operation, substantially as herein set forth.

7. The combination, in a nailing machine for boots and shoes, of a nail-driver, a nail-strip carrier and jaws having cutting edges, and adapted to compress the nail and form a head thereon, with mechanism for operating the jaws, substantially as herein set forth.

8. In a machine for nailing boots and shoes, the jaws *j f*, with cutting-edges, forming, when closed, a nail-tube or guide for compressing the nail and forming a head thereon, and adapted, one or both, to automatically yield or open slightly just previous to the descent of the driver, substantially as and for the purpose described.

9. The combination, with the movable jaw *f* and its carrying-arm *b* in a nailing and driving machine, and the eccentric *c*, by which said jaw is operated, of the adjustable ball-and-socket-joint brace-connection *c' c'' c'''*, whereby the cutting-jaw has a positive action directly from the driving-shaft, substantially as herein set forth.

10. The combination, in a nailing-machine for boots and shoes, of a nail-strip carrier, A, having a vertical back-piece, *i*, carrying the feeding-ratchet stems *k l* for the nail-strips, with automatic operating ratchet-pawls *m*, carried by a yoke-slide, *n*, and operated by an eccentric-cam, n^1, on the driving-shaft *c*, whereby the feed of the nail-strip is effected with certainty, substantially as herein set forth.

11. The combination, in a nailing-machine for boots and shoes, of a shifting nail-strip carrier, A, having two separate and independent nail-guides, *h*, and a vertical back-piece, *i*, carrying two separate and independent feed-ratchet stems, having milled feeding portions *k*, with a horizontally-operating cam-yoke, *n*, carrying two separate and independent ratchet-pawls, *m*, whereby either ratchet-pawl can be engaged, and the other rendered inoperative by throwing the nail-strip carrier from one side to the other, without arresting the action of the machine, substantially as herein described.

12. The combination, in a nailing-machine for boots and shoes, of a nail-strip carrier, A, with the movable jaw-carrier *b*, the pivot-stem *g* of the former being concentric with and inclosed by a sleeve-bearing, *f*, of the jaw-carrier, whereby the adjustment of said strip-carrier is made concentric and in co-operation with the action of the movable jaw, substantially as herein set forth.

13. The combination, in a nailing-machine for boots and shoes, of a nail-strip carrier, provided with a vertical back-piece, *i*, which carries the feeding-ratchet stems *k l* of a stop-opening, *f*, within the frame, and within which the back-piece moves, the ends of which opening serves to limit the throw of the strip-carrier to bring the front end of the strip-guides therein at a point in line with the driver and the opening between the jaws, substantially as herein set forth.

14. In a nailing-machine for boots and shoes, a pivoted nail-strip carrier, having nail-strip passages A A, in combination with the driver and a nail-forming tube and guide, to which it operates to feed and deliver nail-strips of different widths, substantially as herein described.

15. The combination, in a nailing-machine for boots and shoes, of a pivoted vibratable nail-strip carrier, A, having a vertical back-piece, *i*, carrying the feeding-ratchets, with a shifting slide-bar, B, seated in the frame, and suitable devices for imparting it to a sliding movement to shift the nail-carrier, substantially as herein set forth.

16. The combination, in a nailing-machine for boots and shoes, of a vibratable nail-strip carrier, A, and the slide-bar B, with a device for applying the changing force to shift such carrier irrespective of the operation of the jaws, whereby an automatic shifting movement of the nail-strip carrier is effected previous to the feeding and cutting of the next nail, and without arresting the action of the machine, and without regard to the action of the jaws, substantially as herein set forth.

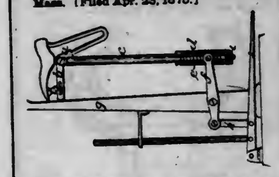
17. The combination, in a nailing-machine for boots and shoes, of a vibratable nail-strip carrier, with a slide-bar, B, connecting therewith, a pivoted triangular driver, *p*, connecting with such slide-bar, and an actuating pivoted lever, *i*, having a sliding tongue, *n*, for operating upon the cam-face of the pivoted driver, substantially as and to produce the results herein set forth.

18. The combination, in a nailing-machine for boots and shoes, of the cutting and nail-forming fixed and movable jaws *j f*, with the abutments a^1 a^2 in the frame, and movable jaw-carrier *b*, whereby a firm support is given the jaws to sustain them under their cutting and nail-forming action, substantially as herein set forth.

19. The combination in a nail-cutting and driving machine for boots and shoes, of a driver-bar, *a*, with its operating cam *c* formed upon the surface of the horizontal balance-wheel c^2 of the machine, whereby the blow of the driver is derived directly from the balance-wheel upon the main shaft, substantially as herein set forth.

20. The combination, in a nailing, cutting, and driving machine for boots and shoes, of a driver-bar, *a*, with its operating cam *c* and balance-wheel c^2, with the friction-clutch pulley c^3, whereby the balance-wheel of the machine serves the several purposes of a regulator for the speed of the machine, a driver for the driver-bar, and a means for applying the power and stopping the machine, substantially as herein set forth.

163,475. JACK ATTACHMENTS FOR NAILING-MACHINES FOR BOOTS AND SHOES. Louis Goddu, Winchester, assignor to American Cable-Screw-Wire Company, Boston, Mass. [Filed Apr. 23, 1875.]

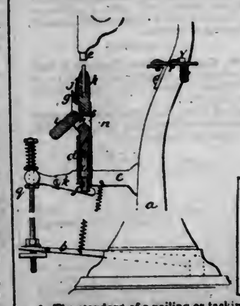


1. A jack for shoe-tacking machines, having its pivoted bar-support *b*, constructed with a spring-branch, *h*, integral therewith, in combination with the toe-support *i*, whereby the work is sprung and automatically held in position for operation upon the toe-support, without separate appliances for the purpose, substantially as herein set forth.

2. The combination of the swiveling jack-support *c* and a guide-sleeve, *d*, therefor, open at both ends and provided with a spring-cushion, *e*, with a stop-nut, *i*, whereby to limit the amount of the jack to a working position with respect to the nose, as herein set forth.

3. The combination, with the treadle of a shoe-tacking machine, of a work-supporting jack, the yielding swiveling jack-rod *c*, and its guide-sleeve *d*, with the pivoted arm *f* and the link *h*, by which a jointed flexible connection of the jack is effected with the treadle, substantially as herein set forth.

163,476. SHOE NAILING AND TACKING MACHINES. Louis Goddu, Winchester, assignor to American Cable-Screw-Wire Company, Boston, Mass. [Filed Apr. 23, 1875.]



1. The standard of a nailing or tacking machine, provided with and sustaining the laterally-adjustable elastic plate-bearer *r* and the pivoted work-support *b*, whereby either may be moved into or out of action with the driver-nose *e*, according to the kind of work to be done, the device *b* being adapted rigidly for heel-work, and the device *r* for sole-work in tacking on rands and sole-tape, substantially as herein set forth.

2. The combination, with the driver-nose of a tacking-machine, of the pivoted support *b*, provided with the shoulder *s*, and the pivoted handle-arm *i*, provided with the shoulder *n*, whereby the said arm serves as a handle by which to lock the work-support in or out of working position, as herein set forth.

3. The combination, with the driver-nose of a tacking-machine and a vertically-presenting work-support, *b*, of a pivoted locking-arm, *i*, and the operating-treadle *k*, whereby the work-support is maintained in a working position, substantially as herein set forth.

4. The combination, with the work-support *b*, of the slotted stem-carrier *g*, the pivoted handle-arm *i*, fixed sleeve *d*, and the treadle *k*, whereby the sleeve is carried by the standard, and the work-support by the treadle, as set forth.

5. The combination, in a tacking-machine having a vertically work-presenting pivoted support, *b*, of a cushioned connection for such support with the treadle, consisting of the pivoted arm *k*, and the cushioned connecting-rod *l m*, having a free connection with the pivoted arm, whereby the work-support has a cushioned action with regard to the nose-driver, and also an automatic adjustment with the nose independent of the action of the treadle, essentially as herein described.

6. The combination, with the pivoted work-support *b*, the slotted stem-head *g*, which carries it, and the arm *i*, which locks it in position, of a spring, *j*, acting against the slotted head *g*, whereby to automatically carry the support in true position with regard to the nose-driver, as herein described.

7. The combination, with the driver-nose of a tacking-machine, of a swinging flexible plate-bearer, *r*, pivoted to the standard for lateral adjustment in relation to the driver, essentially as herein described.

8. The combination, with a pivoted flexible plate-bearer, *r*, for supporting and presenting upon its flat surface the work for the action of the driver-nose, with an inverted anvil, *n*, carried by said bearer in the line of the driver, as and for the purpose stated.

163,477. SHOE-NAILING MACHINES. Louis Goddu, Winchester, assignor to American Cable-Screw-Wire Company, Boston, Mass. [Filed Apr. 23, 1875.]

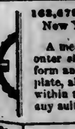


1. The combination, with the driver-bar of a nailing-machine for boots and shoes, of a wooden spring of two or more branches, carried by and fixed directly upon the head of the machine, to operate the driver-bar without support for the outer ends of the spring-bars, substantially as herein set forth.

2. The combination, with the driver-bar of a shoe-nailing machine, of a wooden spring of two or more branches, united at their outer ends and provided with a fulcrum-point and adjusting-screw, all carried by the head of the machine, as herein set forth.

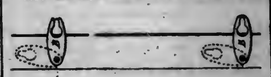
3. The combination, with the turret *b* and the spring-bars, of the yoke-clamp *d*, secured by the concave seats *f f* and the clamp-screw *e*, to make a firm carrier for the spring-bars, one branch whereof being bolted to the yoke, as specified.

163,478. PISTOL-STOCKS. W. L. Godfrey, New York, N. Y. [Filed Mar. 4, 1875.]



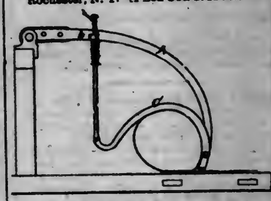
A metallic pistol-stock constructed with an outer shell of sheet metal struck up to any form and size, and interlined with a re-enforce plate, also struck up to form and size fitting within the shell, and caused to adhere to it in any suitable manner.

163,479. CORSET-CLASPS. W. C. Goodwin, New Haven, Conn. [Filed Nov. 23, 1874.]



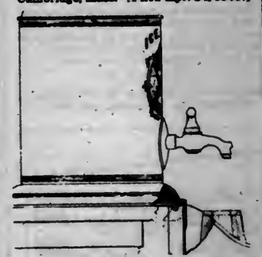
A corset-clasp, consisting of the strip A, with the catches or fastenings B pivoted thereon, substantially as and for the purpose specified.

163,480. GRAIN-BINDERS. Jas. F. Gordon, Rochester, N. Y. [Filed Oct. 3, 1874.]



In combination with the vibrating binder-arm A, the spring compressor-bar C, pivoted at or near the outer vibrating or swinging end thereof, substantially as set forth.

163,481. WATER-COOLERS. Peter Gray, Cambridge, Mass. [Filed Apr. 24, 1875.]



The combination, with a water-cooler or liquid-holder, of a removable tumbler-holder or drip-cup attached to, and sustained by, the cooler, substantially as described.

163,482. SURFACE-CONDENSERS. William H. Guild, Williamsburg, Brooklyn, N. Y. [Filed Feb. 19, 1875.]

163,488.



In combination with the condensing-tubes D E, rising, respectively, from the top plates of the chambers B C, the escape-tube G, rising from the bottom plate of chamber C, and extending through the same into the interior of the condenser, substantially in the manner herein shown and described.

163,489. JACK-SPOOLS. Henry M. Guy, Worcester, Mass., assignor, by mesne assignments, to Dubora C. James, same place. [Filed Mar. 28, 1873.]



As a new article of manufacture, a spool provided with heads formed of pressed pulverized leather, substantially as specified.

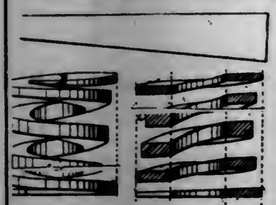
163,490. TOPS FOR PRESERVING-CANS. T. H. Hamilton, Baltimore, Md., assignor of one-half his right to James H. Shansbury, same place. [Filed Apr. 6, 1875.]

Brief.—A flat-bottomed groove is formed in the can-top. The cap is provided with a horizontal flange to fit said groove, the solder being applied between the parts. The groove forms a guide for the soldering-iron.



The can-top A, provided with the opening B and the groove C, having flat bottom *a*, in combination with the cap D, provided with the rim *b* and flat flange *d*, substantially as and for the purposes herein set forth.

163,491. CAR-SPRINGS. Walter P. Hansell, Pittsburg, Pa. [Filed Jan. 26, 1875.]



1. A spiral spring made from a bar having a uniform flatwise and edgewise taper from the ends to the middle, and from the middle to the ends, substantially as and for the purpose set forth.

2. A spiral car-spring, coiled from a bar tapering edgewise from the middle to the ends, to give the greatest strength to the middle coils of the spring, as set forth.

3. A spiral car-spring having broad, thin, flat end coils, thick center coils, a cylindrical central opening, and a double conical contour, substantially as set forth.

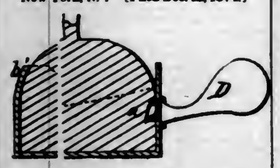
163,492. CAR-STARTERS. Franklin D. Hardy, Delavan, Ill., assignor to Chas. L. Booth and Dexter D. Hardy, same place. [Filed Mar. 30, 1875.]

Brief.—A lever, the butt of which is an outward and upward extending cam, over which drops a hook pivoted near it.



The lever *a*, constructed with the fan-shaped head a^1, having the curved edge a^2, and provided with the studs *b*, and having the hook *c*, slotted at c^1, and pivoted thereto so as to turn on the upper side thereof, and so that the slot c^2 will pass over the head a^1, substantially as and for the purpose set forth.

163,493. SAD-IRON SHOES. Emil Hartzig, New York, N. Y. [Filed Dec. 12, 1874.]



The combination, with an ordinary sad-iron, having at its heel a hole, *a*, of the sad-iron shoe C, having the front lip *b'*, spring-finger D, and bevel-catch *b*, substantially as described.

163,494. DOSE-REGISTERS. D. L. Hawkins, Elizabeth, N. J. [Filed Mar. 27, 1875.]

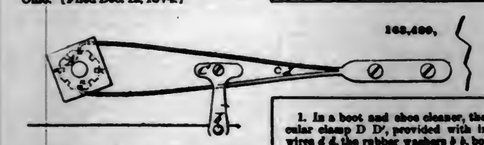
Brief.—The time at which the next dose of medicine is to be taken is indicated by turning the disk, provided with numerals upon its beveled side, to the stationary pointer.



The medicine-register, consisting of a circular, movable, truncated pyramid, B, having twelve sides numbered as described, and combined with a pointer, which is secured rigidly to a base, A, as set forth.

163,495. NUT-LOCKS. Horace L. Heston, Lilly Chapel, assignor of one-half his right to Benjamin F. Roberts, West Jefferson, Ohio. [Filed Dec. 12, 1874.]

163,496.



1. The improved nut-lock, formed by a nut with grooved extension or shank, in connection with a forked double spring provided with bent or hook-shaped ends, entering into grooves on opposite sides of shank, substantially as specified.

2. The pivoted cam-piece, placed intermediately between the legs of the spring, and provided with operating lever-handle and drop-pin at outer end, in combination with the double spring and a socket-hole of the plate or other object to which the nut-lock is applied, for releasing the spring from the nut, and retaining the same in that position, substantially as specified.

163,497. MACHINES FOR BORING HUBS. E. M. Heskin, Springfield, Ill. [Filed Aug. 6, 1874.]

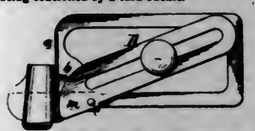
Brief.—The wheel is secured to a revolving table, and the hub bored by a stationary cutter, around which the wheel is revolved.



The combination of the head D, with concavity E, legs *c c*, and set-screw *d d*, the arms F F, and sleeve C, cast in one piece with the mandrel G and tool *e*, all constructed substantially as set forth.

163,498. SEWING-MACHINE ATTACHMENTS. Frank Henry, Philadelphia, Pa. [Filed Apr. 24, 1875.]

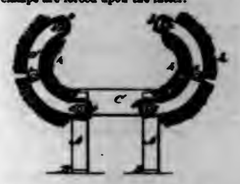
Brief.—A plate provided with a notched edge for the reception of the lip of a hemmer or other sewing-machine attachment, the lip being controlled by a turn-buckle.



A sewing-machine attachment in which are combined a plate, A, constructed for the reception of the lip *b*, a slotted lever or arm, D, hinged to and adjustable on the said plate, and a turn-buckle, *m*, for retaining and releasing the said lip, all substantially as set forth.

163,499. BOOT AND SHOE CLEANERS. H. H. Holmes, Council Bluffs, Iowa. [Filed Jan. 19, 1875.]

Brief.—The side clamps are semicircular, and between them is a wire which forms an indentation in the broom material when the clamps are forced upon the latter.



163,499.

1. In a boot and shoe cleaner, the semicircular clamp D D', provided with interposed wires *d d*, the rubber washers *b b*, bolts *c*, and nuts *e*, all substantially as and for the purposes herein set forth.

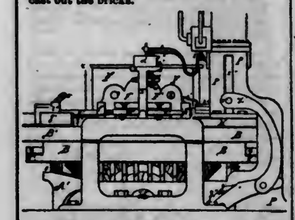
2. The combination of the standards A A, having feet B B, and scraper C, with semicircular clamp D D' at each end for the attachment of the brushes *h*, substantially as and for the purposes herein set forth.

163,493. CONCENTRATED EXTRACTS FOR FOOD. James Horlick and Wm. Horlick, Chicago, Ill. [Filed Oct. 12, 1874.]

The concentrated extract for food, consisting of wheat flour, malt flour, wheat bran, and bicarbonate of potash, substantially as herein set forth.

163,494. BRICK-MACHINES. Andw. J. Hoyt, Philadelphia, Pa. [Filed Nov. 20, 1874.]

Brief.—A horizontal mold-table, with four series of molds, is intermittently revolved by cam action at its periphery. A continuous circular track beneath, of different elevations, actuates the posts and followers in their progress, to receive the clay above to sustain the downward pressure, the re-pressure, and to cast out the bricks.



1. The combination of the segmental disks *q q* on the vertical shaft L with the segmental concave stops q' q'' in mold-table B B', substantially as specified.

2. The two curved plates A and a^1, posts *b*, pin a^2, and cam-wheel R, in combination with the follower-posts and revolving mold-table, all operating substantially as set forth.

3. The supporting plate b^1, lever *b*, and spring *c*, in combination with the cam x^1 and a^2, pins *r*, and follower-stems *o o o*, all working automatically, as herein set forth.

4. The cam-roll X, main driving-shaft *i*, re-pressure-track *y y*, stems *o o o*, follower and re-pressure-plate H H', in combination with a revolving mold-table, B B', substantially as described, and for the purpose herein set forth.

5. The combination of the bar K'' and its connections k^1 k^2 c' c'' with the dies d^n d^m, for the purpose herein specified.

6. The combination of the intermittent cog-wheel 5, with the wheel 6, 9, 10, and 11, and the reciprocating hopper F, all operating substantially as specified.

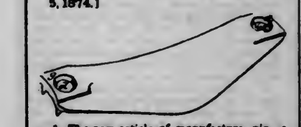
7. The friction-roll-adjusting stop, in combination with the steam die-head K', and the revolving mold-table B B', substantially as described and set forth.

8. The combination of the step J and standards K K with the mold-table and vertical shaft N, as arranged and described.

9. The segmental cam-disk *w w*, with its concentric grooves s^1 s^2, cam-teeth thereon, the T-groove with its bases, the bolts and nuts for fastening the teeth to the disk, in combination with the vertical rods w' w' and the connecting valve-levers, all operating substantially as herein described.

10. The combination of the main driving-shaft, vertical shaft N, disks *w w*, and the brick-removing device, all working in combination as described.

163,495. FELLY-JOINT PLATES. Jas. Ives, Mount Carmel, Conn., assignor to Ives, Woodruff & Co., same place. [Filed Aug. 5, 1874.]



1. The new article of manufacture, viz., a felly-joint plate made of malleable cast metal, and with tapered sides or wings, bolt-holes and nut-seats, all as and for the purpose set forth.

2. A cast-iron felly-joint plate, having dowel-pins, tapering wings, bolt-holes, and nut-seats formed in the manner and for the purposes described.

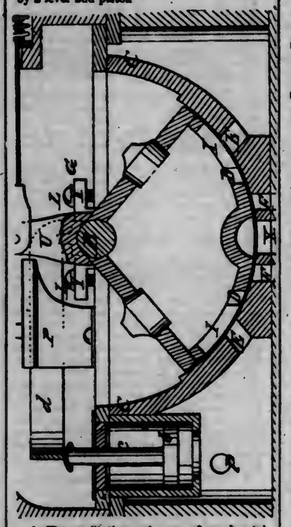
163,496. COUPON TAGS AND CHECKS. Geo R. G. Jones, Memphis, Tenn., assignor of one-half his right to Joseph W Allison, same place. [Filed Jan 2, 1875.]



The within described baggage check, consisting of the tag A, provided with the wire B, and having its face divided into the duplicate C and original D with suitable instructions and numbers printed thereon, substantially as and for the purposes herein set forth.

163,497. OSCILLATING STEAM-VALVES. H. P. Jones, Keokuk, Iowa, assignor of one-half his right to Wolf H. Anderson, Rock Island, Ill. [Filed Apr. 3, 1875.]

Brief.—Steam is admitted from the middle chamber to the inside of the valve, from which it is delivered to the cylinder through ports in the shell of the valve. The valve rotates in adjustable bearings, and is held to its seat by a lever and piston



1. The oscillating valve A, of quadrantal form, having slots D I in its periphery, substantially as described.

2. The adjustable boxes G for journals B, combined with pillow-block E, leading from cups Y into oil-receivers T, substantially as described.

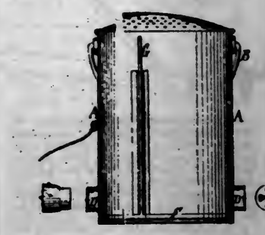
3. Stuffing-box J, combined with the two-part spool N, spring O, and valve-rod Z, substantially as described.

4. The lever *d* and piston *b*, combined with the adjustable boxes G and valve-trunnions B, substantially as described.

5. The adjustable fulcrums *e e* and the keepers P P, combined with valve A, piston *b*, and lever *d*, operated as described.

163,498. LIVE-BAIT RECEPTACLES. Robert B Kepner, Washington, D C [Filed Apr. 22, 1875.]

Brief.—For readily replenishing the supply of fresh water, and examination of the live bait for use, or removal of dead fish from the rest



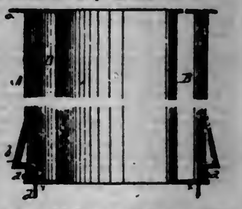
1. The live-bait receptacle, consisting of the shell or bucket A, having tubular openings D D, protected by wire or wire-netting, perforated false bottom F, and handle or lifter G, the whole combined and arranged substantially as and for the purpose specified.

2. The shell or bucket A, having tubular openings D D, protected by wire or wire-netting, perforated false bottom F, handle or lifter G, and perforated cover C, the whole combined and arranged substantially as and for the purpose specified.

3. A live-bait bucket, consisting of the shell A, having tubular openings or perforations D D, suitably protected, perforated false bottom F, handle or lifter G, perforated cover C, and spring-latch, the whole constructed, combined, and arranged to operate substantially as described, and for the purpose specified.

163,499. STOVE-PIPE THIMBLES. Charles M. Loughlin and John S. Hughes, Bevier, Mo [Filed Nov. 21, 1874.]

Brief.—The springs being pressed inwardly, the thimble is readily removed.



1. In a stove-pipe thimble, the hoop or thimble A, provided with flange *a* at one end, and sockets *b b*, near the other end, as and for the purpose set forth.

2. The hoop or thimble A, having flange *a*, and sockets *b b*, in combination with the ventilator B, composed of two cylinders of different diameters connected by perforated heads, and the spring-catches *h h*, all substantially as and for the purpose herein described.

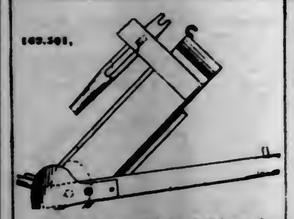
163,500. BUCKLES. Jno. Linen, Waterbury, Conn., assignor to Smith & Griggs Manufacturing Company, same place. [Filed Nov. 23, 1874.]



The herein-described buckle, consisting of a sheet-metal plate, slotted to form the several bars, all of which are in substantially the same plane with the frame, the tongue A hinged to one of the bars, and with the loop B, at the end opposite the tongue, directly over the bar 5, all substantially as specified.

163,501. SNOW-PLOWS. Calvin Marshall, North Easton, Mass. [Filed Oct. 7, 1874.]

162,501.



1. In combination with the draft-frame, the pivoted snow-plow, composed of two converging side boards, a rear cross-log, and a central keel, said plow capable of being adjusted in respect to the draft-frame, substantially as and for the purpose set forth.

2. A snow-plow provided with a supplementary metallic keel or cutter extending below the plow proper, substantially as described.

3. In combination with the keel-board and its receiving-frame, the vibrated slotted lever, provided with a forked forward end, adapted to engage with a staple on the draft-frame, as set forth.

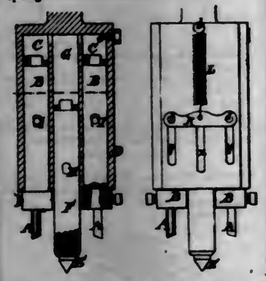
162,502. SPOUTS FOR COFFEE-POTS. N. S. McFarland, New York, N. Y. [Filed Apr. 26, 1875.]



A spout constructed as herein described, so as to form, when attached to a vessel, a chamber, C, below the outlet *a*, and a channel connecting said chamber with the body of the vessel, whereby said chamber is enabled to constantly hold a quantity of liquid, and thereby prevent the escape of aroma, whether the liquid in the body of the vessel stands above or below the outlet *a*, substantially as set forth.

162,503. DRILLING APPARATUS. John McKay, Newcastle-on-Tyne, England. [Filed Feb. 23, 1875.]

Brief.—A head having chambers opening into each other at the rear end, and fitted with rams, the two former carrying cutters, and the latter carrying a centering-point. The chambers are filled with liquid to equalize the pressure of the cutters and center, and the rams are held back against the liquid by spring.

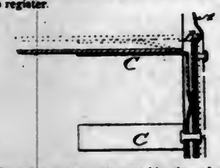


1. The combination, in a head-stock for drilling and boring machines, of the center-pin E, adapted to a chamber, O, with the cutter-rams F, adapted to chambers C, the said chambers communicating with each other, and containing liquid, as and for the purpose set forth.

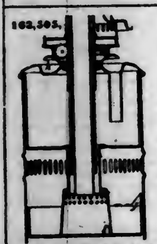
2. The combination of the center-pin E and its ram F, and the rams B, carrying the cutters A, and under the control of springs L, with the communicating chambers C C C, containing liquid, as specified.

162,504. VENTILATING-FLUE STOPPERS. Baron A. Meade, Newark, N. Y. [Filed Aug. 26, 1874.]

Brief.—The springs which hold the flue stopper in place cross each other over the center of the stopper or cap, and are attached thereto by the rivet, which also holds in place the register.



In a flue-stopper, the combination of the metallic spring-strips C C, crimped and crossed at right angles to each other, and fastened to the pivot that secures the movable register-plate B and the flue-plate A, substantially as shown and described.



162,505. LAMPS. Rufus S. Merrill, Boston, Mass., assignor to Herman G. Moehring, Rufus S. Merrill, Wm. B. Merrill, and John Merrill, same place. [Filed May 1, 1875.]

1. The annular oil-receiving recess, formed in the top of the metallic lamp-body around the lamp-collar, in combination with an oil conducting tube or tubes, leading from said recess into the lamp-body, as shown and set forth.

2. The lamp-body or oil-reservoir, in combination with an extension or well projecting below the bottom of, and communicating with, the oil-reservoir, and a central draft-tube, which, with said well, forms an annular chamber for reception of the lower portion of the tubular wick, substantially as shown and set forth.

3. The lamp-body, and the annular wick-receiving chamber, projecting below the bottom of said body, and formed by the union of the central draft tube, and an outer enveloping jacket, as described, in combination with a drip-cup, constituting the base of the lamp, and provided with a tubular perforated stem, which is detachably connected with the lower end of the annular wick-receiving chamber, substantially as shown and set forth.

4. The lamp-body, the detachable drip-cup, constituting the base of the lamp, and the tubular connecting stem, through which air is admitted to the central draft-flue of the lamp, in combination with an outer perforated shell or receptacle, into which the lamp fits, and from which it is removable, substantially as set forth.

5. The detachable drip-cup, formed to constitute a base for the lamp, when the latter is removed from the outer shell or jacket, and provided with a discharge-spout and shield, and a central perforated stem, having at its base an opening, through which the drip may pass into the cup, substantially as set forth.

162,506. CEMENT PAVEMENTS. Isidor Mock, Brooklyn, N. Y. [Filed Apr. 6, 1875.]

Brief.—The cement sections are separated by beveled strips of wood covered with tarred paper, to facilitate their removal. The subsoil is dusted for the same object, and pyramidal blocks of wood are inserted in the upper central face of the cement when fluid, into which screw-rings can be inserted when it is desired to lift the blocks.

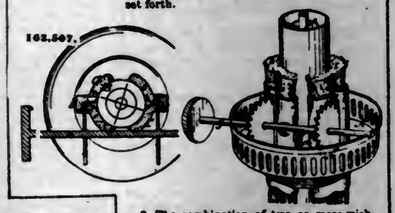


1. In combination with the sections of a cement pavement formed directly on the ground, the triangular-shaped wood-parting-strips D, having on each side a layer of tar paper or other material, substantially as and for the purpose specified.

2. The combination of the pyramidal plugs E, with the sections B, of a cement pavement, said plugs being molded into the cement, substantially as and for the purpose described.

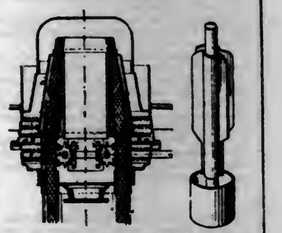
162,507. WICK-RAISERS. Herman G. Moehring, Philadelphia, Pa., assignor of one-half his right to Rufus S. Merrill, W. B. Merrill, and Joshua Merrill, Boston, Mass. [Filed May 1, 1875.]

1. A wick-tube formed on one of its sides with an offset, bulge, or corrugation to receive a portion of the wick which is crimped or bent therein, in combination with a wick-raiser working through an opening in said bulging part or offset of the tube upon the crimped portion of the wick, substantially as set forth.



2. The combination of two or more wick tubes, each formed with an offset, bulge, or corrugation to receive a crimped portion of the wick, as described, with wick raising pinions or ratchets, one for each tube, working through openings in the bulging parts of the tubes upon the crimped parts of the wicks, and a single rotary shaft or spindle, upon which all the pinions are fixed, substantially as set forth.

162,508. LAMP-BURNERS. Herman G. Moehring, Philadelphia, Pa., assignor of one-half his right to Rufus S. Merrill, W. B. Merrill, and Joshua Merrill, Boston, Mass. [Filed May 1, 1875.]



1. In an Argand lamp-burner, the combination, with two or more independent wick-tubes, of a central draft-tube and an external wick-assembling shell, which, with the central draft-tube, forms an annular chamber to receive the wicks from the independent tubes, and assemble them in the form of an annular wick, substantially as set forth.

2. In an Argand lamp-burner, the combination of the following instrumentalities, namely: two or more independent wick-tubes, a central draft flue or tube, a wick-assembling shell, which extends above the wick-tubes, surrounds the central draft-tube, receives the wicks from said independent tubes, and assembles them around the central draft-tube in the shape of an annular wick, one or more lateral air-passages, located between the wick-tubes, and leading to the central draft-flue or tube, substantially as shown and described.

3. A lamp-burner formed with a filling orifice or passage extending through it from top to bottom, substantially as shown and set forth.

4. In an Argand lamp-burner, a central draft flue or tube, which communicates with the oil-reservoir of the lamp, and constitutes a passage through which the lamp may be filled, substantially as set forth.

5. In an Argand lamp-burner, the combination, with a central draft flue or tube formed to communicate with the lamp-reservoir, as described, of a plug or stopper within the tube, closing the said channel of communication, and removable through the upper end of the tube, substantially as shown and set forth.

6. In combination with the central draft flue or tube of an Argand burner, an inner draft-regulating tube concentric with the central draft-flue, and formed with an opening or openings for reception of a portion of the air admitted to the said draft-flue, substantially as set forth.

7. In combination with the central draft-flue, the inner concentric draft-regulating tube and one or more transverse vertical plates or partitions, substantially as shown and described.

8. In combination with the central draft-flue or tube, the removable plug or stopper, formed with a stem, by which it may be lifted out from the flue, and a cup or receptacle for catching ashes that may drop from the wick into the draft-flue, as set forth.

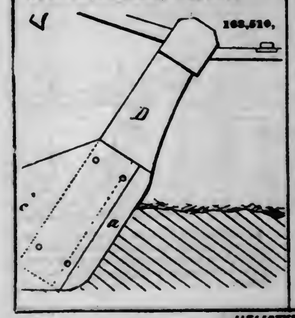
162,509. SELF-OILING HATCHWAYS. D. Moore, Brooklyn, N. Y., assignor to S. I. Thursby, same place. [Filed May 1, 1875.]

Brief.—The car is raised by telescopic tubes operated by hydraulic pressure. The hatches are without apertures, and are carried up by the car in its ascent, and deposited in its descent. Rubber cushions on the hatches deaden the concussion, and centering nipples and sockets are provided for properly centering the hatches upon their seats.

1. The tight hatches, in combination with an elevator operated from below, substantially as described, and for the purpose specified.

2. The cushions *a a*, in combination with the hatches and elevator, substantially as described.

3. The centralizing nipples *f f*, and corresponding cavities *f' f'*, in combination with the elevator, substantially as described.



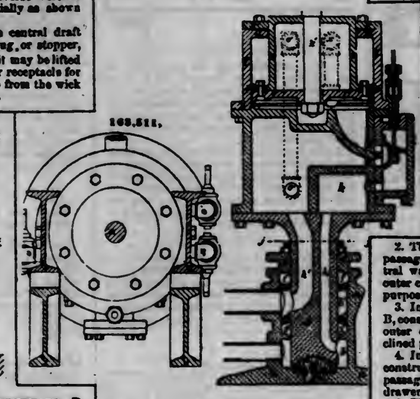
162,510. COMB-ROW MARKERS. Albert G. Moore, Uniontown, Pa. [Filed Mar. 6, 1875.]

Brief.—The marking teeth leave the furrows wide and flat.

In a land-marker, the inclined teeth D, constructed with rounded front edges *e*, flaring wings *e e*, and flat bottom, substantially as shown and specified.

162,511. WATER-PRESSURE CRANES. C. H. Morgan, Worcester, Mass. [Filed Feb. 17, 1874.]

Brief.—Water-ways through and around the step-spindle made tight by suitable packing crossed with pressure and exhaust chambers, which communicate by a slide-valve with cylinder containing a piston, presenting a greater pressure-area on its under side than on its upper. Pipes with cocks connect the upper portion of cylinder with pressure and exhaust chambers, by which economy of water or accelerated speed may be obtained on light lifts.



1. In combination with the stand-case *a* of a water-pressure crane, and the step-spindle *g* turning therein, the annular spaces *b b'* and gland *c*, and interposed packing between them, and the pressure and discharge passages *h h'*, as and for the purpose described and represented.

2. In combination with the step-spindle *g*, and the vertical passages *h h'* through it, the chambers *k* and *k'*, ports *n p p'*, and valve and valve-chest *m l*, as and for the purpose described and represented.

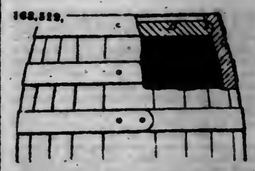
3. In combination with the cylinder *q*, the differential piston *r s* and lifting piston-rod *x'*, as and for the purpose described and represented.

4. In combination with the water-chambers *h* and *h'*, cylinder *q*, and differential piston *r s*, the connecting-pipes *o*, *o'*, and *x*, and valves *w*, *w'*, and *w''*, all as and for the purpose described and represented.

162,512. BARRELS. Josiah H. Morrison, Portsmouth, N. H., assignor to himself, W. J. Most, C. H. Gould, and W. D. Varrell, same place. [Filed Apr. 23, 1875.]

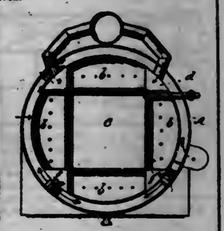
Brief.—For the purpose of giving greater strength to the edge of heads and staves in barrels, casks, and kegs for holding liquor, the barrel is provided with a peculiar-formed seam, consisting of an arc-joint made by cutting a concave groove in the inner ends of the staves, and providing the head with a convex edge.

A crozo for barrels, casks, and kegs, consisting of the arc-joint *a' b'*, constructed and applied, substantially as and for the purpose specified.



162,513. COMBINED GAS-VENTILATORS AND WATER-COOLERS. Andrew J. Morrison, Troy, N. Y. [Filed Feb 6, 1875.]

1. A combined water-cooler and ventilator, substantially as described, wherein the air to be cooled is caused to pass through suitable passages in contact with ice chambers, as specified, and afterward filtered from all impurities by coming in contact with water in a drip-pan arranged below a centrally-located water-tank to receive the drippings therefrom, as set forth.



2. The inner cylinder B, provided with air-passages *d d* and *f f*, ice-chambers *b*, and central water tank C, in combination with the outer cylinder A, substantially as and for the purpose specified.

3. In combination with the inner cylinder B, constructed substantially as described, the outer cylinder A, annular space *g*, and inclined partition *h*, for the purpose set forth.

4. In combination with the inner cylinder B, constructed, as described, with suitable air-passages and ice-chambers, the drip-pan or drawer D, for the purpose set forth.

5. The combination, with the outer cylinder A and annular space *g*, having inclined partitions *h h*, of the inner cylinder B, provided with air-passages *d d* and *f f* and ice-chamber *b*, as and for the purpose set forth.

6. The water-cooler and ventilator herein described, consisting of the outer cylinder A, with cover I, inner cylinder B, provided with central water tank or reservoir C, ice-chambers *b*, air-passages *f f* and *d d*, and cover H, tubes *s s*, main pipe E, and drip-pan or drawer D, substantially as described.

162,514. PROCESSES OF PRODUCING GELATINE RELIEF-PLATES FOR PRINTING. Wm. H. Mumler, Boston, Mass. [Filed June 2, 1874.]

1. The process herein described of obtaining level, straight, and true surfaces on gelatinous films, from which to produce relief-plates for printing from, by grinding the surface of said film with emery-cloth or other suitable abrading material properly extended upon and secured to a true flat surface of wood or other suitable material, substantially as described.

2. The process of producing relief-surfaces upon gelatine plates by photographing or printing from a photographic negative the picture to be reproduced upon the surface of said gelatine plate, grinding the surface of the plate either before or after printing thereon the picture, and then treating it with acetic acid, substantially in the manner herein set forth and described.

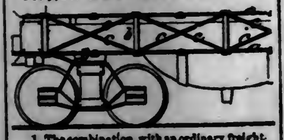
3. The process herein described of producing gelatine relief-plates by photographing or printing from a photographic negative or positive upon the surface of the gelatine plate the picture to be produced in relief, treating the plate with acetic acid until it has eaten away the gelatine to as great a depth as possible without injury to the lines, removing the acid and coating, or filling the parts acted

upon by the sand with a paste made of bone-black and any suitable gum, or with indelible ink, black shellac-varnish, or other opaque or semi-transparent substances, then exposing the plate in the direct rays of light without the negative or positive plate, and after removing the paste or other opaque or semi-transparent substances, treating the gelatine plate with acetic acid a second time, substantially as described.

4. In the process of producing relatine rub'r plates, treating the plate, after a partial relief has been produced, to a coating of bone-black paste, india-ink, black shellac-varnish, or other opaque or semi-transparent substance, substantially in the manner herein described, for the purpose specified.

5. The method of preventing the emery or other abrading material from scratching the surface of the gelatine plate by filling the interstices of the abrading-surface with tallow or equivalent material, substantially as described.

163,515. OIL-CARS. Albert P. Odell, Oil City, Pa. [Filed Jan. 2, 1875.]



1. The combination, with an ordinary freight-car, of a truss and an oil-tank, suspended below the floor of the car by the truss, all substantially as and for the purpose set forth.

2. The combination, with an oil-tank, of the car-floor H, having trap-door h and raised sides and ends J J, substantially as set forth.

163,516. GRAIN-SEPARATORS. Harrison Osborn, Richmond, Ind., and T. T. Kendrick, New York, N. Y. [Filed Apr. 19, 1875.]

Brief.—Improvements in means for supporting and actuating the upper and lower shoe; improved "sheat-board" and deflecting devices for blast; adjustment for fan-doors.



1. A shoe-board for grain-separators, formed in two or more parallel, or nearly parallel, planes or steps, E E', having the space between said steps closed by inclined board e to deflect and concentrate the blast upon the fan, substantially as set forth.

2. The shoe J, suspended at its rear end by straps K, and supported at its front or feed end upon roller l, reciprocating upon corrugated cross-bar M, said shoe being guided thereon by yokes J', as and for the purpose set forth.

3. The shoe U, pivoted and sliding on horizontal rod b, and with one end riding upon roller F over corrugated bar d, to impart an oscillation and jar to said shoe during its movements, as set forth.

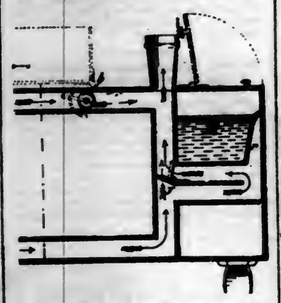
4. Two or more vertical wind-guides, Q, placed in front of the middle of the fan-wings, substantially as and for the purpose herein set forth.

5. The horizontal adjustable wind-guides q, pivoted to the upright adjustable wind-guides Q, substantially as and for the purpose set forth.

6. The fan-doors r and pointed blocks s, in combination with notched cleats c, substantially as and for the purpose set forth.

163,517. RESERVOIR COOKING-STOVES. C. N. Palmer, Elmira, N. Y. [Filed July 23 1874.]

Brief.—The products of combustion may pass directly through the aperture in the damper in the top flue.

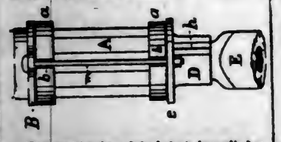


1. In combination with the top plate D of the fire-box, and the elevated top D' of a step-stove, the folding oven H, constructed as herein described, with hinged plates h h' h², adapted to be turned back completely away from the top plate D, as set forth, or to be entirely removed.

2. The combination of the oven A, the front flue B, the fire-box C, located with its top at the mid-height of the said front flue, the folding oven, consisting of hinged plates h h' h², and the register m, communicating from the interior of the oven H to the rising portion of the flue B, all as specified.

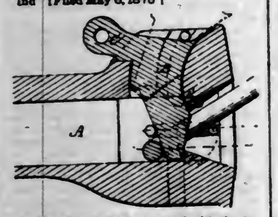
163,518. PUMPS. Alinus N. Parkhurst, Logansport, Ind. [Filed Apr. 17, 1875.]

Brief.—Flanged collars are secured to the ends of the tubing and the stock, adjacent to the cylinder, and the whole secured together by long bolts, the said bolts occupying notches in the flanges of the cylinder.



The combination of the baked-clay cylinder A, having flanges a a, provided with notches b, long bolts m, collar B, having lugs provided with bolt-holes c, upper tubing C, flanged collar D, having ribs A, and lower tubing E, constructed substantially as and for the purpose set forth.

163,519. CAR-COUPLINGS. Wm. V. Perry, Beaver Dam, Wis., assignor to the Perry Safety Car-Coupling Company, Kokomo Ind. [Filed May 6, 1875.]



1. The draw-head A, provided with the interior transverse ridges f f' and the tapering head b, substantially as and for the purposes set forth.

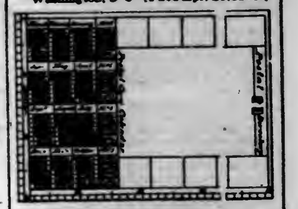
2. The coupling pin B, having concave front curve x, straight front edge c, and convex back curve z, the curves being concentric, substantially as and for the purposes set forth.

3. In a car coupling, the combination of the flat bar D and rod h with the slotted plate E, provided with the transverse groove m, substantially as and for the purposes set forth.

4. The combination of the draw-head A, having the ridges f f', and the fork G, shaft n, and arm H, substantially as and for the purposes set forth.

5. The combination, with the link-adjusting device G n H and shaft or rod I, of the chain p, spring K, and arm J, projecting from said rod, substantially as and for the purposes set forth.

163,520. POSTAL-CARDS. A. Petersohn, Washington, D. C. [Filed Apr. 20, 1875.]



A postal card provided upon the surface opposite to that on which the address is designed to appear with a blank space for manuscript, surrounded by spaces for advertisements, a calendar, a measure, and a partially-concealed perforation, all arranged as and for the purposes hereinbefore set forth.

163,521. PROCESSES OF DYEING SILK FABRICS. Jean Baptiste C. H. Fettididier, St. Denis, France. [Filed Apr. 27, 1875.

The herein-described improvement in the process of dyeing fabrics wholly or in part silk, consisting in the solution of the dye in alcohol or similar solvent, combined with a fatty and resinous mordant, and subsequently passing the dyed fabric through a bath of benzine, for dissolving the said fatty and resinous mordant.

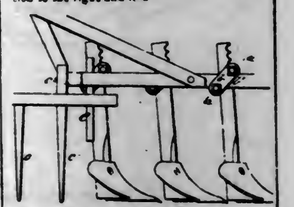
163,522. BALE-TIES. John W. Philp, Humboldt, Tenn. [Filed Apr. 20, 1875.]



A cotton-bale tie consisting of the plate a, having the slots b c c, as described, in combination with the wire g, looped and interlocked or crossed at e with each other on the under side of the plate, whereby the strain is directly upon the wire hoop instead of the plate, as specified.

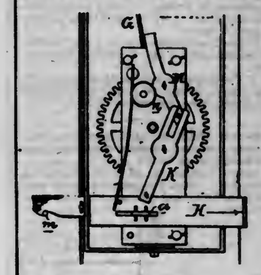
163,523. CULTIVATORS AND HARROWS COMBINED. Elias M. Potter, Rutherford Depot, Tenn. [Filed Feb 13, 1875.]

Brief.—A rectangular frame consisting of three beams, each carrying a cultivator-tooth, with handles secured to the outer ones. To the middle beam, at its rear end, is attached a triangular harrow, which has a limited vibration to the right and left.



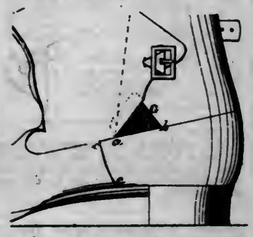
In combination with the plow stock A the triangular harrow, loosely connected by means of the pin c, and limited in lateral vibration by the steady-pins c' c², substantially as described.

163,524. BURGLAR-ALARMS. Thos. Powell, Philadelphia, Pa. [Filed Apr. 17, 1875.]



A burglar-alarm in which are combined the spring sliding bar H and its catch, the levers K and M, and the escapement-arm G of clock-work mechanism.

163,525. GAITER BOOTS AND SHOES. Wm. B. Putnam, Boston, Mass., assignor of one-half his right to H. S. Jenkins, same place. [Filed Apr. 20, 1875.]



In combination with a gaiter having the front quarter overlapping the rear quarters, and fastened by an ankle-strap, as described, elastic gores G, inserted at or immediately back of the point of junction between the instep-piece and upper or main part of the shoe, and operating to produce a close fit over the instep, and to hold down the rear strap, in the manner set forth.

163,526. COTTON-SPINDLES. Croghan A. Ramsey, Schulenburg, Tex. [Filed Mar. 8, 1875.]

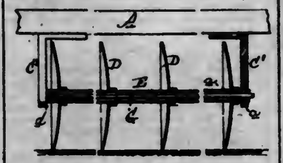
Brief.—A reservoir for containing liquid, of any convenient form for being carried on the cantle of a saddle, is provided with two flexible pipes attached near the bottom, and terminating with a perforated sprinkler. When these are depressed below the level of the surface of the liquid, a discharge in the form of a fine spray is introduced, and when elevated above the surface of the liquid the flow ceases



The combination, in a cotton-worm destroyer, of the fluid-vessel A, with the flexible ejecting-hose B B, having flaring nozzle-sprinklers b b, and hooks or fastening devices for holding the nozzles in elevated positions upon the vessel, whereby the rider has control both over the discharge of the fluid and the direction thereof upon the rows of plants, as described.

163,527. DISK-HARROWS. Silas G. Randall, Greene, N. Y. [Filed Mar. 17, 1875.]

Brief.—The concave disks for each series are mounted upon a hollow shaft, which is hung upon short journals projecting inward from the hangers. A small rod with a head on one end, and a screw-nut or pin on the other, passes through both journals and the hollow shaft, to prevent the hangers from spreading.



The combination of the hangers, having the lateral journals a, with the tubular axle mounted on said journals, and the shaft G, passing through the axle and connecting the hangers together, substantially as and for the purpose described.

163,528. GAS-CARBURETERS. William H. Reed, Chicago, Ill., assignor of part of his right to Warren A. Wells, Henry C. Hayt, D. J. Small, Henry Jones, and L. P. Converse, same place. [Filed May 10, 1875.]

Brief.—Two independent spiral passages extend through the chamber side by side, one containing the hydrocarbon and absorbent material, and the other a non-conducting material.



An air-carbureter having a double convolute wall, forming two separate and independent convolute chambers, a b, inside of a case, A, in one of which chambers is an absorbent, and in the other a substance which is a poor conductor of heat, substantially as described.

163,529. VENTILATING-PIPES FOR LEAD-CORRODING HOUSES. James D. Richeson, St. Louis, Mo. [Filed May 1, 1875.]

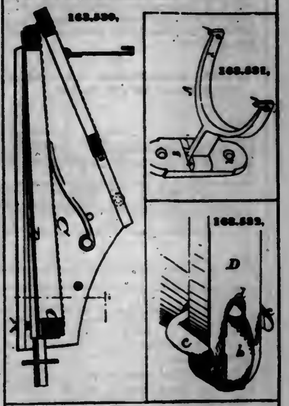
1. The tapering pipe-section having perforated sides A, projecting cap B, and corner brackets C, substantially as and for the purpose set forth.

2. In combination with the pipe-sections, as described, the bracket-screws D, substantially as and for the purpose set forth.

163,530. GRAIN-SEPARATORS. Michael C. Rider and George W. Reynolds, Loveville, Pa. [Filed Nov. 7, 1874.]

Brief.—Device for adjusting the inclination of a sieve.

In a grain-separator, the frame C', in combination with the adjusting-screws d, screws C, and depressing-springs S, substantially as and for the purpose set forth.



163,531. RAIN-SPOUT SUPPORTS. D. Rosier, Haverhill, Mass. [Filed Apr. 14, 1875.]

Brief.—The base-plate is provided with a dovetail socket, to receive the dovetailed head of the furcated brace.

1. The fastening-plate E, tapered and provided with the dovetail socket, as described, and for use with the separate furcated brace provided with the dovetailed head to enter such socket.

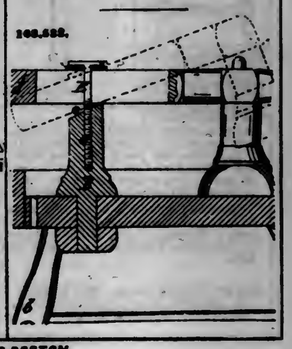
2. The dovetailed and furcated braces A, provided with the studs f f and the screw-bolts e e arranged with it, and for use as specified.

3. The tapering base-plate E, provided with the socketed flange, as described, in combination with the furcated brace A, provided with the dovetailed head a, the holes e e, and the studs f f, all being substantially as specified.

163,532. TRACE-FASTENERS. C. Robinson, Eau Claire, Wis. [Filed May 4, 1875.]

Brief.—The guard prevents the brace from falling down and slipping off the head.

In combination with the T-shaped hooks B b, secured within the end of a whiffletree with its cross-bar b in a vertical position, the guard C, pivoted upon the inner portion of said hook, and having lateral arms c and c, which engage with the ends of said cross-bar, substantially as and for the purpose set forth.

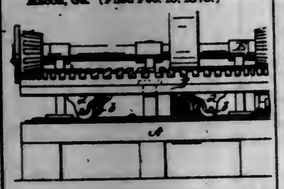


163,626. BUTTER-WORKERS. W. Ryder, Cattaraugus, N. Y. [Filed Dec. 26, 1874.]

Brief.—Within the inclined flanged butter-receptacle, provided with an escape for the whey, is supported a lever capable of horizontal and vertical, as well as endwise, motion, to which the kneading-block is attached.

The inclined table A, having the surrounding flange *a*, rectangular groove *c*, and aperture *d*, in combination with the slotted bar C, provided with the block D, standard B, and pivoted pin E, substantially as and for the purpose set forth.

163,627. HORSE-POWERS. J. S. Schofield, Macon, Ga. [Filed Feb. 16, 1875.]



The combination, in a horse-power, of a frame, A, having circular track *a*, and the master-wheel B, having castings *d d*, carrying the flange-rollers *b b*, all substantially as set forth.

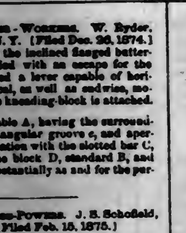
163,628. CARBURETERS. Ira W. Shaler, Brooklyn, N. Y. [Filed Mar. 22, 1875.]

Brief.—The carburetor is constructed to slide on a rod attached to the ceiling. The pipe leading to the burners is extensible. The rolls of wicking are twisted upon wires.

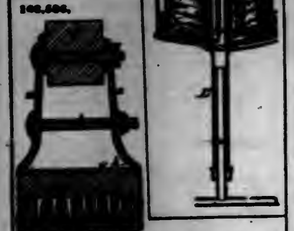
1. The communicating pipes H and I, in combination with the oil-reservoir A and pipe *l*, as and for the purpose set forth.

2. The packing *n*, twisted upon wires *n*, and placed in frames *p* within the interior perforated shell K, substantially as herein set forth.

163,629.



163,630.

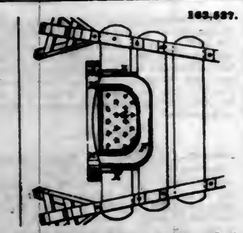


163,630. BRUSH-HOLDERS. W. P. Shenk, Clifton, W. Va. [Filed Nov. 7, 1874.]

Brief.—The side pieces clamp the brush-back at their lower ends, and receive the handle upon a pivot at their upper ends. Midway in the bolt for drawing the parts together.

The adjustable clamping device, which holds the brush rigidly, consisting of the hook-shaped arms *a*, clamping-bolt *f*, and the pivot-bolt *e* for the handle, substantially as herein set forth.

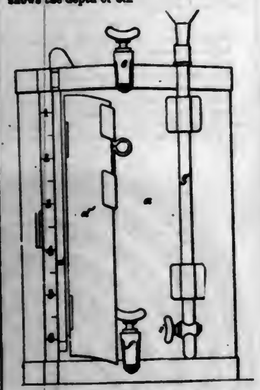
163,631. CIRCUS-SEATS. Wm. H. Storey, St. Paul, Minn., assignor to David C. Price, same place. [Filed Jan. 26, 1875.]



A show-seat consisting of the frame F, the back H, formed of a single piece of bent wood, pivoted to the sides of the said frame, and the jointed braces K, the back H being constructed to fold around and closely embrace the seat-frame, in order that the upper surfaces may be flush, as and for the purpose specified.

163,632. STORAGE AND DELIVERY TANKS FOR EXPLOSIVE AND INFLAMMABLE OILS. Pierre Sinibaldi, Paris, France, and Geo. R. F. Sinibaldi, London, England; said Geo. R. F. Sinibaldi assignor, by mesne assignments, to said Pierre Sinibaldi. [Filed Mar. 6, 1875.]

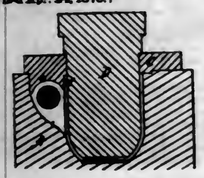
Brief.—The receptacle contains oil suspended against the top by water. When oil is to be drawn off, water is poured into the funnel, which leads to the bottom by pipe, thus forcing by displacement from the faucet at the top the same amount of oil. A gage shows the depth of oil.



1. In a device for the conveyance or storage of inflammable materials, the combination of the following elements: the pipe *g*, provided with the cock *i*, draw-off cocks *e* and *f*, and cistern *a*, substantially as described.

2. The combination, with the cistern or vessel for containing the petroleum or other gaseous liquid, of the water-admission pipe *g*, the oil-discharge pipe *e*, and the taps or cocks for controlling the said pipes and the gage *d*, substantially as herein set forth, and for the purpose specified.

163,633. MOLDS FOR GLASSWARE. John H. Smith and Matthew Smith, Pittsburg, Pa. [Filed Apr. 24, 1875.]



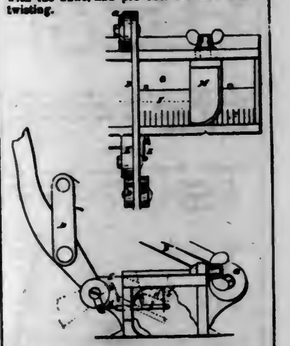
1. The process herein described form forming handles and ornamental projections upon glassware, by forcing the glass around a removable mandrel, which crosses the mold or a portion thereof.

2. The combination of mold A and mandrel B, substantially as and for the purpose specified.

3. The combination of mold A, mandrel B, and ring C, having the projection *c*, substantially as and for the purpose set forth.

163,640. PRINTERS' LEAD AND RULE CUTTERS. Judson A. Stanton, Cleveland, Ohio. [Filed Feb. 12, 1875.]

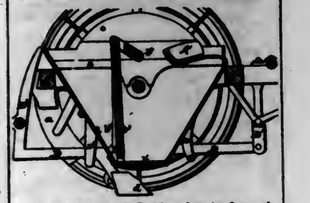
Brief.—The part cut off is received upon a hinged leaf, which descends at the same time with the knife, and prevents the rule from twisting.



The drop-leaf F, lever I, links J K, and springs *c*, in combination with the lever C, links D, knife B, and table A, in the manner substantially as described, and for the purpose specified.

163,641. SELF-LOADING CARTS. Thos. C. Strawn, Perry Township, Fayette County, assignor to himself and N. Q. Speer, Belle Vernon, Pa. [Filed June 12, 1874.]

Brief.—The plow-beams are hinged at the forward end to a standard, and provided at rear with a guide-piece and lifting-lever. A spring forces the plow outward by pressing against the guide-piece. The hopper-box has the lower portion of rear side and bottom hinged and operated by levers, so as to discharge the load close against an embankment.



1. The plow-beam D, hinged at its forward end to the standard D^1, and provided at its rear end with a guide-piece D^2, passing in rear of frame A, in combination with the lifting-lever E, substantially as and for the purpose specified.

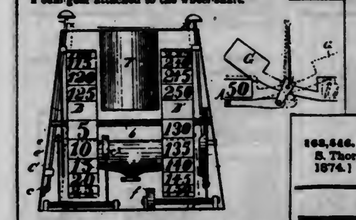
2. The plow-beam D, hinged to the standard D^1, and provided with guide-piece D^2, in combination with the spring D^3, constructed substantially as and for the purpose specified.

3. The plow-beams D, D, hinged at their forward ends to the standards D^1 D^1, and provided at their rear ends with guide-pieces D^2 D^2, in combination with each other and with the spring D^3, substantially as and for the purpose specified.

4. The hopper-shaped box, having the lower portion *b* of the rear side and the bottom *b'* thereof hinged, and provided with the supporting-levers b^2 and b^3, substantially as and for the purpose specified.

163,642. PRICE-INDICATORS. F. Sumpf, St. Louis, Mo. [Filed Mar. 4, 1875.]

Brief.—The numeral-wheels are secured to and simultaneously rotate with a common shaft, which is provided at one end with a ratchet-wheel, operated through the medium of a pawl and spring-bar. When the highest number upon the wheel B has been presented at the opening in the face of the frame or case, the lowest number upon the wheel B' will next appear at another opening in the face of the frame. At the juncture of change of numbers from one wheel to the other (seriatim) the fact is announced by a pin on the ratchet-wheel striking the bell-hammer mechanism. An arrangement of levers is provided to alternately cover and uncover the openings in the face of the case, thereby exhibiting the numerals of one wheel only, till its highest number has been presented, after which that opening is closed and the other exposed. The levers are pivoted to a common center, and operated by a cam-gear attached to the wheel-shaft.



1. In a price-indicator and register device, the combination of the wheels B B', having figures, the stem C, spring *c'*, ratchet-wheel D, its pin *a*, the stem *c'*, rock-shaft *d'*, arbor *d''*, bell E, all arranged to operate in a casing, A, as herein shown and described, and by means whereof the price to be paid is indicated and stands registered, in the manner and for the purpose set forth.

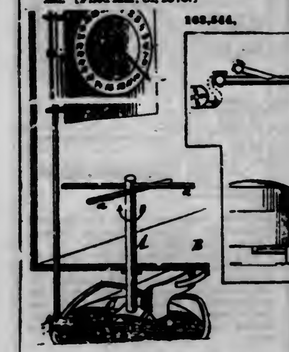
2. The movable plate G, arm *g*, lever *g'*, its pin *g''*, gear-wheel I, having cam-flange *h'*, pinion H in combination with wheels B B', to operate in manner and for the purpose set forth.

163,643. BARREL-HOOPS. R. W. Sutherlen, Fillmore, Minn. [Filed May 20, 1874.]

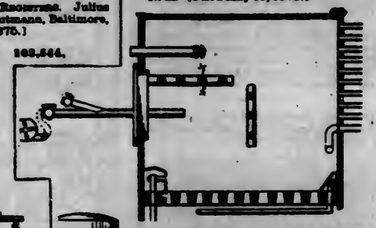


The beveled hoop A, having tapering ends, and secured together by the strap B, having its ends *b b* bent or inclined and driven into the face of the hoop, and wrought-nails *a a* passing twice through the strap, and clinched into the hoop, as herein set forth.

163,644. PASSENGER-REGISTERS. Julius Thoss and Adolph Trautmann, Baltimore, Md. [Filed Mar. 31, 1875.]



163,644.



The method herein described of promoting combustion and intensifying heat in furnaces, by simultaneously admitting hydrogen and carbonic-oxide gases and heated air to the same, and commingling and mixing the two at the moment they enter the furnace, substantially as described.

163,645. WAGON-BRAKES. E. A. Thompson, Daleville, Ala. [Filed Dec. 7, 1874.]

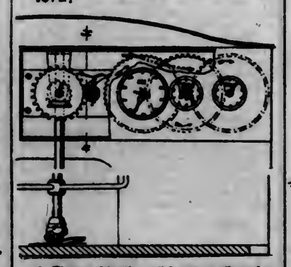
Brief.—When the catch is in place the strain comes on the shorter chain, which draws on the lever that brakes the wheel. When the catch is removed the strain comes on the other chain, which acts on the lever that releases the wheel.

The brake lock-chain hook for wagons, consisting of the lever-hook *c e e'*, in combination with the chains *c d*, the locking and unlocking trigger-loop A, and the tongue *f*, as shown and described.

163,645.



163,646. PASSENGER-REGISTERS. William S. Thorn, New York, N. Y. [Filed Oct. 21, 1874.]

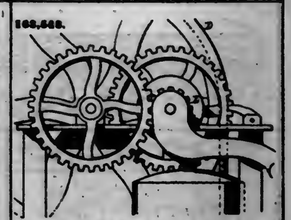


1. The combination, with a turnstile and a registering mechanism, of an intermediate mechanism, communicating the motion in either direction, of the stile to the register, substantially as and for the purposes set forth.

2. The combination, with the rotating shaft of a turnstile, of the piece U, recessed on its under side, and the spring S, substantially as and for the purposes set forth.

163,647. ATOMIZING COMBUSTION IN FURNACES. Joseph C. Tiffany, Portsmouth, N. H. [Filed May 10, 1875.]

163,648.

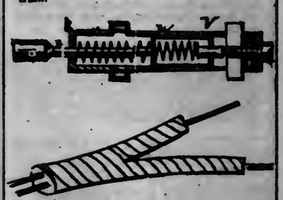


1. The combination, with the gasometer or gas-holder, of a train of multiplying gearing, connected at one end, by a suitable cord, with the gas-holder, and the other by means of a cord with a suitable weight, to counterbalance said gas-holder, as and for the purposes herein set forth.

2. The combination of the shaft O C', weighted pulley D, and gear-wheels O H, of such relative diameters that a light weight on the pulley will counterbalance a heavy weight at shaft C', substantially as herein described.

163,649. TRAIN-TELEGRAPH. A. N. Towne, San Francisco, Cal. [Filed Dec. 26, 1874.]

Brief.—The insulated cylinder or circuit-breaker is designed for use with an elastic conducting-cord extending from end to end of the train.



1. A signal apparatus for railway-trains, consisting of two complete electric circuits connecting with the opposite poles of a differential magnet, one of which circuits passes through the entire length of the train, so that when the train-circuit is ruptured the remaining circuit will cause the armature of the magnet to vibrate back and forth and ring a bell, substantially as above described.

2. The insulated cylinder or circuit-breaker *c*, with its screw *a*, in combination with the spindle *t*, with its short barrel *u* and surrounding spring *s*, said barrel *u* having the projecting spring-rod V, substantially as and for the purpose above described.

163,650. HOLDERS FOR SPINNING-RINGS. Chas. H. Trowbridge, Whitinsville, Mass. [Filed Apr. 7, 1875.]



1. The combination, with the ring and ring-rail of the clamp-like holders for holding and adjusting the ring, substantially as described.

2. The clamp-like spinning-ring holder *c*, composed of the bars *d*, flanges *e*, and top plate *f*, slotted to receive a holding-screw, and adapted to hold a ring-race, substantially as described.

163,651. FIRE-PROOF ROOFINGS. Peter G. Tyrrell, New York, N. Y. [Filed Apr. 17, 1875.]

Brief.—A fire-proof roof-plate formed of a corrugated sheet of sheet metal, strengthened and supported by brass-rods, and filled with non-conducting fire-proof material.

The brass-rods B, in combination with a corrugated sheet-metal roofing and a non-conducting substance, substantially as specified.

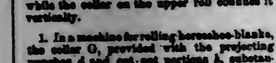


163,551.



163,555.

163,552. PILL-TILE. Wm. H. Van Velsor, Philadelphia, Pa. [Filed Apr. 14, 1875.]



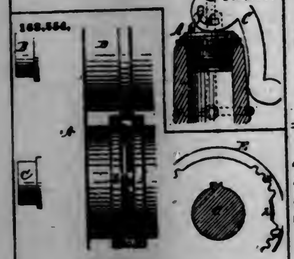
As an article of manufacture, a pill-tile of ground glass.

163,553. BOTTLE-STOPPER. W. Vom Hofe, New York, N. Y. [Filed Jan. 20, 1875.]

Brief.—A metallic plate which is connected on one side to a flanged stopper, while from its other side rise two lugs, which form the bearings for a fixed pin, and between which operates a cam-lever, that has its fulcrum on a ball, which swings on pivots projecting from a band that is secured to the neck of a bottle; said cam-lever being provided with an eccentric slot, which rests on the pin secured in the lugs of the metal plate, so that the ball is swung up over the mouth of the bottle. The stopper can be depressed and held in position by turning the hand-lever against the side of the bottle. By raising the lever the stopper is withdrawn.

The cam-lever C, provided with an eccentric slot, *f*, in combination with a ball, D, swinging on the neck-band *e* of a bottle, and with a pin, *a*, secured in lugs rising from a metal plate, A, to which the stopper B is attached, all constructed and operating substantially in the manner herein shown and described.

163,554.



163,555.

163,554. ROLLS FOR ROLLING HORSESHOE-BLANKS. James T. Walker, Albany, N. Y. [Filed Apr. 17, 1875.]

Brief.—The improvement is in the construction of the rolls only; a collar on the lower roll having recesses in which the toe-calk is formed, and peculiarly-shaped projections for indenting the nail-holes, on each side of which is a collar for confining the blank laterally, while the collar on the upper roll confines it vertically.

1. In a machine for rolling horseshoe-blanks, the collar G, provided with the projecting punches d and cut-out portions A, substantially as and for the purposes herein set forth.

2. The combination of the side collars E and H and the intermediate collar G, provided with the projecting punches d and cut-out portions A, substantially as and for the purposes set forth.

3. The combination of the roll D, provided with the circumferential flange *a*, and the roll formed of the collars E H and intermediate collar G, all constructed substantially as and for the purposes herein set forth.

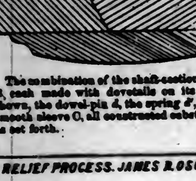
163,556. HORSESHOE-BLANK. James T. Walker, Albany, N. Y. [Filed Apr. 17, 1875.]

Brief.—The indentations C for the nail-holes have their inner sides straight, while the other three sides are beveled or inclined.

The straight rolled horseshoe-blank described—that is to say, having the toe-calk projection B solid therewith, and of about half the width of the bar, and the indentations C, of the shape substantially as described, for the nail-holes, as and for the purposes set forth.

163,556. LAMP-EXTINGUISHER. Henry J. Warren, Lexington, Mass. [Filed Feb. 16, 1875.]

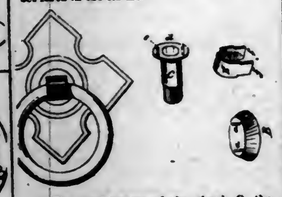
Brief.—The weight restores the sliding tube, acting directly thereon, when it has been raised to extinguish the flame.



The weight B, with its vertical rod *d*, in combination with the lever *e* for operating directly upon the sleeve *c* on the wick-tube, all constructed and arranged substantially in the manner and for the purpose set forth.

163,557. DRAWER-PULLS. W. N. Weeden, Waterbury, Conn., assignor to Benedict & Burnham Manufacturing Company, same place. [Filed Mar. 27, 1875.]

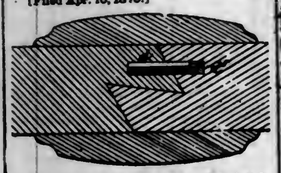
Brief.—The novelty consists in details of the manufacture, and putting together, whereby the cost of production is lessened, as fully set forth in the claims.



1. The combination of the shank C, the boss B, constructed with slots *a*, and the loop or socket E, constructed with tenons *f*, corresponding to the said slots *a*, substantially as set forth.

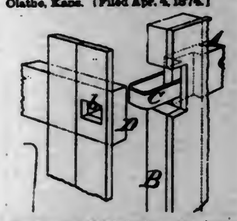
2. The combination of the boss B, constructed with slots *a*, the headed shank C, constructed with slots *c*, and the loop E, constructed with tenons *f*, the said parts united by means of the said tenons and slots, substantially as set forth.

163,558. SHAFT-COUPLINGS. P. B. Weeks and Martin Metcalf, Battle Creek, Mich. [Filed Apr. 16, 1875.]



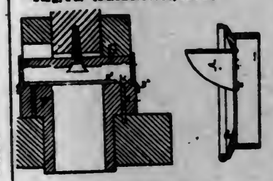
The combination of the shaft-sections A and B, each made with dovetails on its end, as shown, the dowel-pin *d*, the spring *b'*, and the smooth sleeve C, all constructed substantially as set forth.

163,559. PORTABLE SEEDS. T. L. Wescott, Olathe, Kans. [Filed Apr. 4, 1874.]



The bars A A B B halved together, in combination with bars D D, notched into bars B B, and confined thereto by means of staples C C and wedges *c c'*, in the manner and for the purposes described.

163,560. JUG-TOPS. Homer Wright, Pittsburg, Pa. [Filed Nov. 17, 1874.]

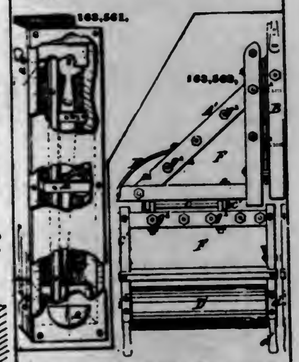


The jug-top consisting of the lip A, body B, and drip-flange B', the lip being secured to the drip-flange by means of tangs upon one and slots in the other part, substantially as and for the purpose specified.

163,561. LEVELS. Alfred B Wroth, Winterset, Iowa, assignor of two-thirds his right to R. G. Barker and Geo. Atkinson, same place. [Filed Aug. 10, 1874.]

The leveling-beam *c c*, having a central pendent weight, *d*, and vertical indicators *f f* at its ends, when mounted and arranged in the case A, having openings *a a*, and provided with the plumbing-lever , substantially as and for the purposes shown and described.

163,561.



163,562.

163,562. COMBINED LAND-ROLLERS AND HARROWS. Henry J. Yeargin, Liberty, Tenn. [Filed Mar. 31, 1875.]

Brief.—Two triangular harrow-frames are pivoted to a center-beam, which also forms the draft-bar. At the rear of each triangular section is hinged a rectangular frame, the forward section of which is supplied with cutters or teeth that have a rearward inclination. Behind these in each section, is mounted a roller.

1. The combination of the main harrow-frames A A', tongue B, and rear harrow-frames C C', all hinged and arranged as set forth.

2. The combination of frames A A', tongue B, frames C C', hinged as shown, the extended arms *d*, and handles *d'*, as set forth.

3. The combination, in a harrow composed of sections hinged together, of two independent rolls, D D', as and for the purpose set forth.

4. The combination of the harrow-frames A A' C C', hinged as set forth, the inclined cutting-teeth G G', and the rolls D D', as described.

163,563. PLOWS. John P. Zeller, South Bend, Ind. [Filed Jan. 20, 1875.]

Brief.—The front section of the mold-board is detachable, and secured by a wing, which laps by the standard on the landside. To its lower angle is fitted the share, secured by a hook and bolt.



In a plow, the combination of the plow-point D, provided with lug *b*, and the colter E, provided with the wing G, the point and colter being constructed, as described, of separate pieces, and detachable independently of each other, substantially as herein set forth.

163,564. COMBINED DRIERS AND BAKE-OVENS. Jno. Zimmerman, Mansfield, Ohio. [Filed Jan. 14, 1875.]

Brief.—Hinged dampers between the furnace-case and the hood, for controlling the supply of air. A supplemental non-conducting partition for converting the drier into an oven.

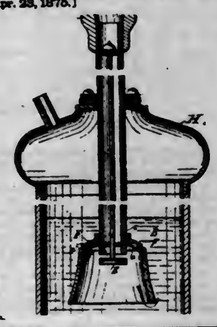


1. In combination with the furnace D and hood E, the dampers *c c*, as and for the purpose set forth.

2. The casing A and furnace D, in combination with the diaphragm S, said diaphragm being constructed of wood, with a sheet-metal sheathing, as described, and for the purpose set forth.

REISSUES.

4,421. APPARATUS FOR CARBURETING AIR. Dana Bickford, New York, N. Y. Patent No. 51,126, dated Nov. 28, 1865. [Filed Apr. 28, 1875.]



1. In a carbureter, an inlet-tube made adjustable vertically to adapt the same to the quantity of liquid in the vessel.

2. In a carbureter, the combination, with an inlet-tube, of an inverted cup having a flaring or bell-shaped mouth, the tube entering the top of the bell, whereby the air or gas flows downward through the tube and into the bell, and is thence distributed.

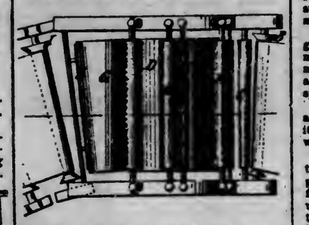
3. A carbureter provided with a bell or inverted cup for receiving the gaseous matter, made adjustable relatively to the quantity of liquid in the vessel.

4. A closed vessel for containing liquid hydrocarbon or its equivalent, in combination with an inlet-tube for conducting into it gaseous bodies to be carbureted therein, and with an inverted cup, bell, or cone appended to and in direct communication with such tube.

5. The described apparatus, as composed of the vessel A, provided with a cover, H, and a stuffing-box, *d*, the bell-shaped vessel or cup C, its tube D, and valves E and F, substantially as and for the purpose set forth.

4,422. CARDING-ENGINES FOR MAKING BATS FOR FELTED FABRICS. Henry J. Davies and W. D. Davies, Brooklyn, N. Y., assignors to Bennett & Smith. Patent No. 155,603, dated Sept. 29, 1874. [Filed Apr. 12, 1875.]

Brief.—Wool is fed from an endless apron stretched over conical rolls to the carding-cylinder, and from a conical doffer to a delivery-apron stretched over conical rolls, whereby a web of concentric curvature, suitable for felting into skirts, is produced.



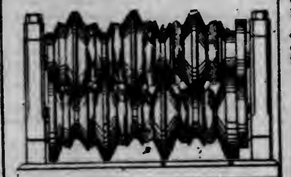
1. The doffer G, of conical form, substantially as and for the purpose herein specified.

2. The feeding-apron A, of varying length throughout its width, and its conical rollers B B, in combination with the carding-cylinder D, substantially as specified.

3. The delivery-apron H, of varying length throughout its width, in combination with the conical doffer of a carding-engine, substantially as herein set forth.

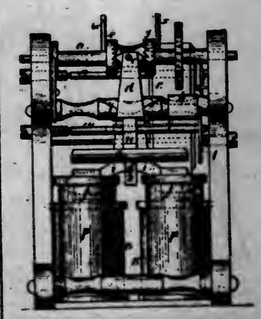
4,423. ROLLS FOR REDUCING OLD RAILS. John P. Edwards, Cleveland, Ohio, and Ambler J. Rogers, Jackson, Mich. Patent No. 154,720, dated Sept. 8, 1874. [Filed Mar. 5, 1875.]

Brief.—A pair of rolls having a series of grooves whose margin axes lie oblique to the axes of the rolls, and are in form and dimensions adapted to the reduction of a railroad-rail to a rectangular bar.



Rolls A and B, provided with a series of reducing-grooves, the said grooves formed at an angle with the axes of the rolls, substantially as set forth, whereby a railroad-rail or butt-end, &c., may be simultaneously reduced in depth and thickness, and formed into a bar of different sectional area, and of the same or different form, without lapping or crimping its external surface, for the purpose set forth.

4,424. TELEGRAPHIC-PRINTING APPARATUS. Theodore M. Foote and Chas. A. Randall, Brooklyn, E. D., N. Y., assignors, by mesne assignments, to the Gold and Stock Telegraph Company, New York city. Patent No. 105,060, dated July 5, 1870. [Filed Apr. 24, 1875.]



1. A type-wheel rigidly secured to its shaft, and controlled by an escapement and step-by-step motion, in combination with a unison-stop that is disconnected by the printing mechanism, substantially as described.

2. The combination, with a printing-telegraph instrument, of a unison that arrests the movement of the type-wheel shaft, an electro-magnet, to throw the unison out of action, and one main-line circuit, substantially as specified.

3. In a printing-telegraph, the unison mechanism brought into action by the type-wheel or its shaft, to arrest the movement of such type-wheel, substantially as specified.

4. In a printing-telegraph instrument, a type-wheel and its shaft rigidly secured together, in combination with an escapement for moving or controlling the type-wheel, a unison mechanism for adjusting or setting the type-wheel, and an electro-magnet for effecting the printing, all automatically controlled from the sending-station through one main circuit.

5. In a printing-telegraph instrument, a type-wheel, in combination with a unison that operates to stop both the type-wheel and the motor that carries the same when the unison is effected, substantially as specified.

6. A compound helix, consisting of three pairs of electro-magnets, C' C C G' G C, having a switch-bar, F, passing through the core of the middle pair C C, in combination with the relay-magnet, type-wheel, and printing-magnets, and circuit-connections, arranged and operating substantially as set forth.

7. The double pallet *e*, oscillating between the teeth of the ratchet-wheels *s f*, that face each other upon the type-wheel shaft *a*, in combination with the magnets B B', substantially as and for the purposes described.

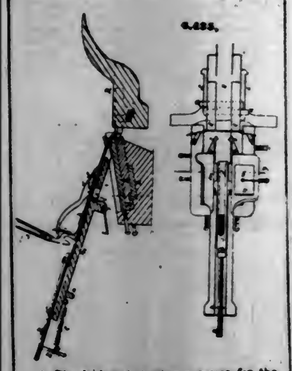
8. The oscillating anchor *y*, and pins *w q*, in combination with type-wheel shaft, and with the printing-lever, or any part connected to the same, substantially as and for the purposes set forth.

9. A paper-feeding mechanism, composed of one elastic roller, and a second roller or an oscillating foot, and operated from the printing-lever of the telegraphic-printing apparatus, as herein described.

4,425. MACHINES FOR CUTTING NAILS. Worcester Haddock, Pittsburg, Pa., assignor, by mesne assignments, to the Haddock Nail-Machine and Nail Company. Patent No. 144,845, dated Nov. 25, 1873. [Filed May 11, 1875.]

Brief.—The dies in the gripper-head are fastened by stirrups and wedges. Two prongs, *i*, over which the plate is fed, remove the scrap on the retraction of the nippers. To receive lateral movement of the vibrator is compensated for by an elastic device, through which power is communicated to it, and the bed-piece is held against forward movement by a dowel-piece, and is adjustable outward, when too short from use or grinding, by grinding off the edge of the dowel-piece.

6,425.



1. The die-box A, having a recess for the reception of a stop, B, provided with a projection, C, fitted to a recess in the bed-piece D, substantially as herein described, and for the purpose set forth.

2. The plate-nipper consisting of the jaw *e*, and pivoted jaw *f*, in combination with the locking device consisting of the adjustable slide h, link *i*, and pivoted lever *j*, said parts constructed, arranged, and operating with relation to each other, substantially as herein described, and for the purpose set forth.

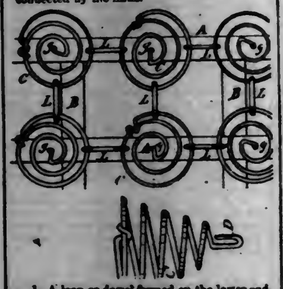
3. In combination with the vibrator *m*, having opening *k* and the tongs for griping the plate, the forked lever *i*, substantially as described, and for the purpose set forth.

4. The connecting-rod *o*, furnished with a hook, *t*, in combination with the plate *w*, having openings *w'*, and held in position with relation to vibrator *m*, through the medium of rods *s*, and springs *f*, substantially as herein described, and for the purpose set forth.

5. In combination with the vibrating gripping-head K of a nail-cutting machine, the hooks *n*, and keys *o*, arranged and operating substantially as herein described, and for the purpose set forth.

6,426. BED-BOTTOMS. Pulaski C Hard, Wadsworth, Ohio. Patent No. 136,156, dated Feb. 25, 1873. [Filed Dec. 31, 1874.]

Brief.—The barbed dowel or loop on the lower end of the spring holds the spring firmly in the slot, their upper and larger ends being connected by the links.



1. A loop or dowel formed on the lower end of a bed-spring, substantially as shown and described.

2. The combination of the spring C, having a loop or dowel, D, formed upon the lower end thereof, with the link L and slats A and B, substantially as shown and described.

6,427. ROTARY CLOTH-MEASURER. William Hebden, Boston, Mass., assignor to himself and Daniel Potter. Patent No. 146,337, dated Jan. 13, 1874. [Filed Apr. 20, 1875.]

Brief.—Has an adjustable guiding and tension rod for different thicknesses. Spring-clamp holds end of cloth, the clamp actuating a lever to operate a brake, stopping the machine when end of cloth is reached.

6,427.



1. In a machine for measuring and examining cloth, &c., a spring-clutch, G, adapted to hold one end of the cloth, and connected with so as to operate a brake or pawl, M, and stop the roller B and index *t*, when the end of the cloth has reached the desired position, substantially as described.

2. In a machine for measuring and examining cloth, &c., an adjustable rod, *g*, provided with arms *f f'* turning on said rod, and held or released by screw nuts *e*, substantially as and for the purpose specified.

6,428. SHOES. John H. Hussey, Baltimore, Md., assignor, by mesne assignments, to Adler, Clement & Wiel, and E. W. Bubier. Patent No. 153,820, dated Aug. 4, 1874. [Filed Apr. 24, 1875.]



1. The flange D, formed from the middle-sole, and making a part of the same, said flange being cut from the inside toward the edge of the sole around the toe, and projecting above the upper surface of the sole from which it is cut, substantially as and for the purpose specified.

2. The flange D, formed from the sole C, and making a part of the same, said flange being cut from the inside toward the edge of the sole, and projecting above the upper surface of the sole, in combination with the in-sole B and the upper E, substantially as and for the purpose set forth.

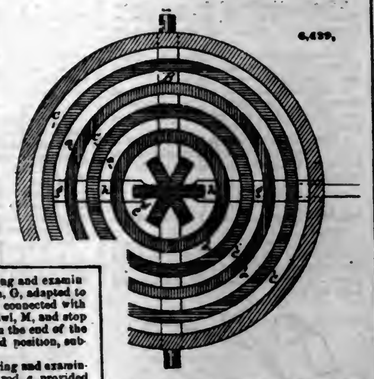
6,429. GRATES. Edward S. Renwick, Millburn, N. J. Patent No. 87,112, dated Feb. 23, 1869. [Filed Apr. 17, 1875.]

Brief.—The connections between the movable rings being subjacent, they do not interfere with the coal on the surface of the grate.

1. The combination, substantially as before set forth, of the central hub, turning on an upright axis, the stationary circular grate-bar, the movable grate-bar, and the subjacent connections between the turning hub and the movable grate-bar.

2. The combination, substantially as before set forth, of the stationary circular grate-bar, two movable grate-bars, constructed to turn on an upright central axis, and the subjacent connections between the movable grate-bars.

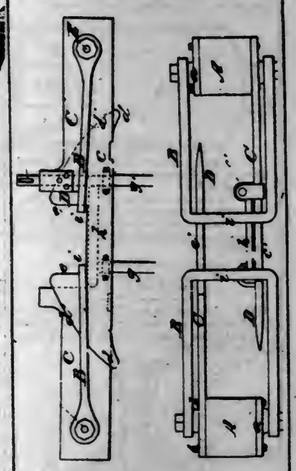
6,429.



3. The combination, substantially as before set forth, of the central hub, turning on an upright axis, the stationary circular grate-bar, the movable grate-bar, the subjacent connections between the central hub and the movable grate-bar, and the journals upon which the grate may be tipped.

4. The combination, substantially as before set forth, of the stationary circular grate-bar, two movable grate-bars, constructed to turn upon an upright axis, the subjacent connections between the said movable grate-bars, and the journals upon which the grate may be tipped.

6,430. CAR-COUPLINGS. William F. Starr, St. John, Canada. Patent No. 159,975, dated Feb. 16, 1875. [Filed Apr. 17, 1875.]



1. The combination of lifting-loop F, having the cross-bar *h*, with guides *f*, substantially as and for the purpose set forth.

2. In a car-coupler, the vertically-vibratory coupling-link B and the rigid barbed and notched coupling-arms C, in combination with the lifting-loop F, provided with cross-bars *h*, so that both links may be uncoupled at one and the same operation, substantially as set forth.

3. The notched and barbed arms C, in combination with draw-block A or frame-work of a car, and the coupling-link B, spanning both arms C, all substantially as set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 21. TUESDAY, MAY 25, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, EASTERN DISTRICT OF PENNSYLVANIA.

THE UNION PAPER COLLAR COMPANY *vs.* HENRY J. WHITE.

[*In equity.—Before* MCKENNAN, *Cir. J.—Decided April*, 1875.]

The first claim of the reissued patent of Walter Hunt, of October 22, 1872, (original, July 25, 1854,) which is for "a shirt-collar composed of paper and muslin, or its equivalent, so united that the muslin will counteract the fragile character of the paper," construed to be for "a shirt collar composed of paper and muslin, or its equivalent, united by paste, glue, or other appropriate sizing, by means of which union the fragility of the paper is re-enforced by the fibrous strength of the muslin, and the necessary cohesiveness of the fabric thus secured."

Although paper and muslin or linen cloth were before united and used for maps, &c., this was not analogous to the use Hunt made of these materials, nor in anywise suggestive of his invention.

He produced a new device by giving a new form to an old substance, and, by suitable manipulation, making its peculiar properties available for a use to which it had not before been applied. This involved invention, and, in view of the great practical benefits resulting from it, invests the product with special patentable merit.

Notwithstanding the fact that the patent has been reissued seven times, the law presumes that the last patent was granted to correct accidental or inadvertent mistakes in the original. The only test of the validity of the Commissioner's action is, whether he has allowed a reissue for a different invention from that covered by the original patent, or for what was not therein described, claimed, or indicated.

The claim for "a shirt-collar composed of paper and muslin, or its equivalent, so united that the muslin will counteract the fragile character of the paper," is not for the mere effect resulting from the union of paper and muslin, nor for the fabric thus produced, nor for the special mode of preparing it; but it covers the use of it for making collars, where its constituents are incorporated with each other, so that the textile strength of the one is made available to re-enforce the fragility of the other.

The original patent describes a standing collar composed of cloth with paper on *both* sides; but both the invention and the claim are more comprehensive than this, and include a collar with paper on *one* side only, and this, too, when the collar is *turned over*, so as to expose the cloth surface only to observation.

The patent is not infringed by collars of paper with a simple cloth re-enforcement at the button-holes.

Characteristic resemblance is the fairest test of substantial identity.

[*George Harding*, for complainant.
J. J. Coombs and *E. Wetmore*, for defendant.]

MCKENNAN, *Circuit J:*

The complainants are the owners, by several mesne assignments, of a patent granted to Walter Hunt on the 25th of July, 1854, for a new article of manufacture, consisting of a collar made out of paper and muslin, so combined, formed, and manipulated as to adapt it to use as such. This patent was duly extended for seven years from the date of its expiration, and was reissued on the 22d of October, 1872, No. 5,109. The validity and infringement of this reissued patent are the subjects of this contention.

I do not think the legal presumption that Hunt was the first and original inventor of the article of manufacture for which he obtained a patent is at all shaken by the proofs in the cause. It is true that paper and muslin or linen cloth were before united and used as a fabric for maps, &c.; but this was not analogous to the use to which Hunt adapted them, nor was it in anywise suggestive of his invention. He was the first to discover the adaptability of this material to a use not cognate to any to which it had before been applied, and, by appropriate manipulation, to give it a useful and practical form. He thus not only supplied the public with a new article of manufacture, but he demonstrated unknown susceptibilities of the material out of which it was made. This is something more than the mere application of an old thing to a new purpose. It is the production of a new device by giving a new

form to an old substance, and, by suitable manipulation, making its peculiar properties available for a use to which it had not before been applied, thereby distinguishing it from all other fabrics of the class to which it belongs. This seems to me to involve an exercise of the inventive faculty, and, in view of the great practical benefits resulting from it, to invest the product with special patentable merit.

The patent in controversy is the seventh reissue of Hunt's original patent. This multiplication of reissues is of itself suggestive of a purpose to cover intervening improvements, and some phrases in the specification of the last reissue may, not without semblance of reason, be treated as having that significance. It is difficult to suppose that so many reissues, with considerable intervals of time between them, were necessary to correct accidental or inadvertent mistakes in the specification and claims of the original patent; and yet the correction of these is the only legitimate purpose of a reissue. This practice has been strongly disapproved by the Supreme Court on more than one occasion.

In *Carlton* vs. *Boker*, (17 Wall., 471,) Mr. Justice Bradley remarks: "We think it proper to reiterate our disapprobation of these ingenious attempts to expand a simple invention of a distinct device into an all-embracing claim, calculated by its wide generalizations and ambiguous language to discourage further invention in the same department of industry, and to cover antecedent inventions."

Whatever reason there may be to suspect that the motive of the patentee was to give undue elasticity to his patent, still the law presumes that the reissue was granted to correct an inadvertent omission in the original, because it commits to the Commissioner of Patents the conclusive determination of that question, and the only test of the validity of his action is, whether he has allowed a reissue for a different invention from that covered by the original patent, or for what was not therein described, claimed, or indicated.

The claim in the reissue which, it is urged, avoids it, is as follows:

> A shirt-collar composed of paper and muslin, or its equivalent, so united that the muslin will counteract the fragile character of the paper.

Construing this in connection with the specification, its obvious import is, that the patentee sought to secure as his invention a shirt-collar composed of paper and muslin, or its equivalent, united by paste, glue, or other appropriate sizing, by means of which union the fragility of the paper is re-enforced by the fibrous strength of the muslin, and the necessary cohesiveness of the fabric is thus secured.

Now, is not this described, or, at least, clearly indicated, in the original patent? In that patent the nature and distinguishing qualities of the invention are thus stated:

> Attempts have been made at various times to manufacture shirt-collars of paper; but they have never been extensively introduced, nor has anything lasting or beneficial resulted therefrom, on account of the fragile nature of the material, which rendered it liable to be easily broken and defaced, while it was liable to be quickly soiled and entirely destroyed if exposed to either rain or perspiration.
>
> The object of my present invention is to produce a shirt-collar that shall not be easily broken, while it shall have sufficient elasticity to bend to the motions of the head, that shall possess the beauty and whiteness of the most carefully-dressed linen collar, and at the same time shall preserve itself unsoiled for a much greater length of time, and shall cost originally less than the washing and dressing of a linen collar; and my invention consists in making the collars of a fabric composed of both paper and cloth, and in subsequently polishing the same by enameling or burnishing, or in any suitable and efficient manner.

This statement distinctly identifies the subject of the first claim of the reissued patent. The invention to which it refers is said to be a shirt-collar consisting of paper and muslin, the qualities of which are cheapness of cost, smoothness of surface, flexibility, cohesiveness, and impermeability to moisture. It is not expressly declared that muslin is combined with paper to "counteract the fragile character" of the latter, but this is so distinctly indicated as to be equivalent to a direct expression of it. A substitute for paper collars is proposed, which are stated to be mainly objectionable on account of the fragile character of the material out of which they are made. This infirmity the inventor proposes to cure by the addition of a textile material, which obviously has no other function or object; and, in describing the mode of carrying his invention into effect, he directs how the paper and muslin are to be combined to secure for the fabric the necessary and desired qualities. Clearly, this distinctly indicates, and is broad enough to cover, "a shirt-collar composed of paper and muslin, so united that the muslin will counteract the fragile character of the paper."

But it is urged that the contested claim is merely for an abstract result, and is, therefore, void. Certainly it is the settled law that a mere principle, or result, or mode of operation, is not patentable. So, therefore, in *O'Reilly* vs. *Morse*, (15 How., 62,) the eighth claim of Morse's patent was adjudged to be void, because it sought to appropriate the use of electro-magnetism for marking or printing characters at a distance, independently of the means by which this natural agency was thus utilized; and in *Burr* vs. *Duryee*, (1 Wall., 31,) it was held that a mode of operation, irrespective of the mechanism by which it was effected, would not be patentable.

Is the claim in this patent obnoxious to this objection? In one sense it is for a result, but only in the sense in which any fabric or device is the result of the means employed to produce it. It is not for the mere result of a union of paper and muslin in a shirt collar, independent of the corporeal substance which embodies it; but it is for a thing fabricated in a given form, for a specific purpose, and out of materials so united that the combined fabric is impressed with the peculiar qualities which belong to each of its constituents. A collar made of these materials in mere juxtaposition is not within the range of the patentee's conception; but when they are incorporated, so as to constitute substantially a single fabric, and are used for the purpose for which he was the first to discover their adaptability, it is an invasion of his right.

The claim, then, is not for the mere effect resulting from a union of paper and muslin, nor for the fabric thus produced, nor for the special mode of preparing it; but it covers the use of it for making collars, where its constituents are incorporated with each other, so that the textile strength of the one is made available to re-enforce the fragility of the other; and such original application of it to the production of a most useful article the inventor can lawfully claim to appropriate.

Does the defendant infringe this patent?

Hunt's invention consists of two elements or parts—first, of a collar with reference to the materials out of which it is made, and their union so as to secure certain qualities; and, second, of the subsequent manipulation of this collar, by which a smooth surface is given to it, and it is rendered impervious to moisture.

The defendant manufactures and sells shirt-collars made of muslin or linen cloth pasted to a sheet of paper. Fundamentally they are the same with the collar described in Hunt's patent, because they are composed of muslin, or its equivalent, and paper, so united as to utilize the same properties contemplated by Hunt in the union of the same elements; but it is sought to differentiate them, for the reasons that the defendant attaches a sheet of paper to but one side of the cloth, and that the collar is turned down, with the cloth surface only burnished and exposed to view.

The first reason rests upon an undue limitation of the scope of Hunt's invention. In his original patent, in explaining a mode of carrying his invention into practice, he describes a collar with paper on both sides of the cloth. Although he does not limit himself to any form of collar, yet the description is evidently applicable to the standing collars then in fashion, and the double coating of paper was suggested as best adapted to collars of that class; but, as has already been said, his invention was more comprehensive than this, and it was clearly indicated in his original specification. It is appropriately claimed in the reissued patent in controversy, the authorized purpose of which was to protect it fully. Clearly the terms of that claim are broad enough to embrace the collars made by the defendant; but, at any rate, I do not think a double coating of paper on one side of the cloth changes the identity of the fabric described by Hunt. It is still composed of the same constituents, so united as to embody the same properties which he first proposed to utilize, and the difference is only apparent and formal. Characteristic resemblance is the fairest test of substantial identity.

Nor is there any better foundation for discrimination in the fact that the defendant's collars are turned down, and the cloth surface only is exposed to observation.

Hunt's patent is not limited to any particular form of collar, and the polishing of the cloth surface pertains exclusively to the manipulation of the collar after it is made to fit it for use. It does not in any sense change the fundamental character of the fabric out of which it is formed, and, therefore, does not affect the applicability of the first claim of the reissue.

The defendant also manufactures collars entirely of paper, with patches of muslin pasted around the button-holes to give additional strength at these points, and these are claimed to infringe the patent. I do not think so. Hunt did not contemplate any such restricted combination of paper and muslin. His collar was composed, throughout its whole body, of paper and muslin, and this was necessary to secure and embody the properties which he intended to make available. Nor could he successfully claim such a device. He did not invent paper collars, nor the application of cloth to button-holes to strengthen them. Such re-enforcement had been long before applied to button-holes in leather curtains, sails, and other fabrics. It was merely, therefore, the application of an old device to an analogous and well known use, for which no one could obtain a patent.

The complainants are entitled to an injunction to continue in force until the 25th day of July next, when the patent will expire, and to an account, and a decree will be entered accordingly.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date May 25, 1875.]

8,338.—Burial-Casket.—FRANKLIN A. FIELD, Everett, assignor to THE NEW ENGLAND CASKET COMPANY, Boston, Mass. Application filed April 28, 1875. Term of patent 7 years.

8,339.—Base-Panel for Vases.—MELVILLE D. JONES, Boston, Mass. Application filed April 19, 1875. Term of patent 7 years.

8,340.—Border for Vases.—MELVILLE D. JONES, Boston, Mass. Application filed April 19, 1875. Term of patent 7 years.

8,341.—Panel for Vase-Pedestals.—MELVILLE D. JONES, Boston, Mass. Application filed April 19, 1875. Term of patent 7 years.

8,342.—Telegraph-Key.—CHARLES W. LEWIS, Chicago, Ill., assignor to THE WESTERN ELECTRIC MANUFACTURING COMPANY, same place. Application filed April 12, 1875. Term of patent 14 years.

8,343.—Ornamental Star.—WILLIAM MARTIN, Philadelphia, Pa. Application filed March 17, 1875. Term of patent 7 years.

8,344 to 8,351, inclusive.—Carpets.—JOSEPH M. CHRISTIE, Kidderminster, England, assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass. Applications filed May 12, 1875. Term of patents 3½ years.

8,352 to 8,354, inclusive.—Backs of Lounges.—GEORGE HARTZELL, Philadelphia, Pa., assignor to JOHN P. REIFSNEIDER, ALFRED D. REIFSNEIDER, WILLIAM H. GOSNELL, and GEORGE HARTZELL, same place.—Cases A, B, and C. Applications filed April 2, 1875. Term of patents 3½ years.

8,355.—Neck-Tie.—REGINALD R. PARKER, Indianapolis, Ind. Application filed April 24, 1875. Term of patent 3½ years.

8,356.—Lamp-Posts.—WILLIAM TWEEDDALE, Brooklyn, N. Y. Application filed May 15, 1875.

8,357.—Cigar-Box.—HENRY ZIMMERMANN, Chicago, Ill. Application filed April 25, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date May 25, 1875.]

2,575.—Clothes-Wringers.—BAILEY WASHING AND WRINGING MACHINE COMPANY, (the name of said company having been changed to BAILEY WRINGING-MACHINE COMPANY,) Woonsocket, R. I. (Re-registration.) Application filed February 5, 1873.

"word 'Excelsior.'"

2,576.—Clothes-Wringers.—BAILEY WASHING AND WRINGING MACHINE COMPANY, (the name of said company having been changed to BAILEY WRINGING-MACHINE COMPANY,) Woonsocket, R. I. (Re-registration.) Application filed February 5, 1873.

"word 'Novelty.'"

2,577.—Lead for Painters' Use.—BOSTON LEAD COMPANY, Boston, Mass. (Re-registration.) Application filed February 23, 1872.

"eight-pointed star and the fac-simile of the company's corporate seal, or the words 'Boston Lead Company, incorporated 1829.'"

2,578.—Soap, Toilet Preparations, &c.—COLGATE & CO., New York, N. Y. (Re-registration.) Application filed July 8, 1872.

"words 'CASHMERE BOUQUET.'"

2,579.—Soap, Toilet Preparations, &c.—COLGATE & Co., New York, N. Y. (Re-registration.) Application filed July 8, 1872.

"the design of ashield, which contains two garlands of leaves, as shown, and which is crossed obliquely by a band that contains the letters 'C. & Co.'"

2,580.—Cigars.—F. DE BARY & Co., New York, N. Y. Application filed April 19, 1875.

"word 'Home,' with the other features of the label as described."

2,581.—Leather.—EAGLE TANNING WORKS, Chicago, Ill. (Re-registration.) Application filed August 18, 1871.

"an oval shape, containing the words 'Trade Mark, Eagle Tanning Works,' with a cut of a flying eagle."

2,582.—Coffee, Spices, Baking-Powder, &c.—ELMER H. GARBUTT & Co., New York, N. Y. (Re-registration.) Application filed April 18, 1872.

"letters 'E. H. G. & Co.,' arranged as a monogram, and used in connection with the words or apothegm 'All Right.'"

2,583.—Gin.—GILL & LOOTZ, Boston, Mass. (Re-registration.) Application filed October 26, 1871.

"figure of the Apolle Belvedere."

2,584.—Chemical Compound.—MOSES ALEXANDER GOLDSTONE, Toronto, Canada. Application filed May 10, 1875.

"words 'Goldstone's Britannia Scale-Purgative,' and the signature in the center thereof, 'M. A. Goldstone.'"

2,585.—Lamp-Chimneys.—CHARLES F. A. HENRICHS, New York, N. Y. (Re-registration.) Application filed November 3, 1871.

"words 'Fire-Proof Chimney,' and a representation of a phœnix."

2,586.—Fire-Brick, Tiles, &c.—MCCONNELL, PORTER & Co., Sciotoville, Ohio. (Re-registration.) Application filed June 24, 1871.

"word 'Scioto.'"

2,587.—Soap.—JESSE OAKLEY, New York, N. Y. (Re-registration. Application filed January 16, 1872.

"'Maltese.'"

2,588.—Soap.—JESSE OAKLEY, New York, N. Y. (Re-registration.) Application filed March 16, 1872.

"Maltese cross."

2,589.—Corsets.—OTTENHEIMER, ROTHSCHILD & Co., New York, N. Y. (Re-registration.) Application filed February 19, 1872.

"letters D/d."

2,590.—Corsets.—OTTENHEIMER, ROTHSCHILD & Co., New York, N. Y. (Re-registration.) Application filed February 19, 1872.

"word 'Comet.'"

2,591.—Corsets.—OTTENHEIMER, ROTHSCHILD & Co., New York, N. Y. (Re-registration.) Application filed February 19, 1872.

"capital letters W. F."

2,592.—Corsets.—OTTENHEIMER, ROTHSCHILD & Co., New York, N. Y. (Re-registration.) Application filed February 19, 1872.

"capital letters G. S."

2,593.—Corsets.—OTTENHEIMER, ROTHSCHILD & Co., New York, N. Y. (Re-registration.) Application filed September 13, 1872.

"capital letter G."

2,594.—Corsets.—OTTENHEIMER, ROTHSCHILD & Co., New York, N. Y. (Re-registration. Application filed October 19, 1872.

"capital letters X. L."

2,595.—Corsets.—OTTENHEIMER, ROTHSCHILD & Co., New York, N. Y. (Re-registration.) Application filed October 19, 1872.

"capital letter B."

2,596.—Corsets.—OTTENHEIMER, ROTHSCHILD & Co., New York, N. Y. (Re-registration.) Application filed October 19, 1872.

"capital letter D."

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APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., May 19, 1875.

On the petition of ANN JENNETTE HATHAWAY, of Milwaukee, Wis., executrix of JOSHUA HATHAWAY, deceased, authorized by act of Congress approved February 18, 1875, praying for the extension of a patent granted to the said JOSHUA HATHAWAY, on the 3d day of April, 1860, for an Improvement in Devices for Converting Reciprocating into Rotary Motion,

It is ordered that the testimony in the case be closed on the 20th day of July next; that the time for filing arguments and the Examiner's report be limited to the 30th day of July next; and that said petition be heard on the 4th day of August next.

Any person may oppose this extension.

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Burner, Argand gas, E. R. Walker, (reissue)	64	6,453
Burner for lanterns, vapor, Brown and Watkins	90	163,634
Burner, gas, F. H. McGeorge	64	163,600
Butter coloring compound, J. C. Roriek	45	163,610
Butter package, H. W. Campbell	45	163,573
Car axle box, A. A. Freeman, (reissue)	122	6,449
Car brake, J. Y. Smith	122	163,612
Car coupling, W. H. Adams	122	163,718
Car coupling, P. Brown	122	163,633
Car coupling, Conner and Fritz	122	163,746
Car coupling, L. W. Powis	122	163,806
Car coupling link, J. M. Clem	122	163,743
Car doors, device for operating street, D. R. Hart	121	163,770
Carpet stretcher, A. D. Williams	62	163,712
Carriage, child's, W. Wuerz	31	163,715
Carriage curtain fastening, C. P. Ketterer	31	163,663
Carriage jack, R. Eldridge	79	163,756
Carriage jack, H. E. Nittenger	79	163,798
Cartridge box, G. E. Bringman	32	163,570
Chain and wheel for transmitting power, J. H. Whitney	67	163,832
Chair, pivot, J. Lemman	62	163,790
Chair, tilting, J. M. Waters	62	163,705
Chairs, &c., Bottom for, C. D. Flynt	62	163,760
Cigar box, C. A. Siecke, (reissue)	160	6,458
Circuit closer, electrical, L. L. Duerden	50	163,753
Clothes pounder, W. H. Castle	91	163,739
Coal hod, J. B. Driscole	154	163,752
Copper bottom for kettles, A. Cummings	136	163,747
Corset, L. H. Foy, (reissue)	80	6,448
Corset, C. L. Olmstead	38	163,685
Cotton seed huller, F. Streuby	41	163,702
Crimping machine, O. Noack	16	163,602
Cup, berry, D. W. Kniffin	63	163,665
Cylinder cam, M. J. Carney	67	163,738
Dental flask, W. C. Tracy	46	163,615
Dental mirror, T. Cogswell	46	163,578
Dentists, vulcanizing apparatus for, H. M. Edson	84	163,755
Desks, folding seat for school, U. Smith	62	163,611
Drills, steam engine for rock, J. Brandon	150	163,631
Drills, valve movement for rock, D. Kennedy	124	163,785
Drying sized fabrics, mechanism for, W. H. Palmer, Jr	37	163,801
Eaves trough hanger, J. F. and L. Hees	126	163,655
Elevator, hydraulic, T. Stebins, (reissue)	118	6,459
Engine for rock drills, steam, J. Brandon	150	163,631
Engine governor, steam, A. Kendall	60	163,662
Engine, portable steam, L. Sweet	150	163,823
Engine, reciprocating steam, C. W. Hermance	150	163,773
Engine, rotary, O. Burnett	150	163,572
Engine, traction, W. H. Milliken	94	163,681
Engines, fire kindler for steam fire, F. Beaufait	118	163,723
Engines, oscillating valve for steam, W. Haddock	152	163,651
Fabrics, mechanism for drying sized, W. H. Palmer, Jr	37	163,801
Fan, helical cone suction, J. White	12	163,710
Fans, apparatus for mounting, G. Brueck	165	163,731
Fanning apparatus for rooms, P. J. Bender	165	163,628
Fare register, Rummig and Uderitz	42	163,695
Felly plate, J. Y. Sitton	31	163,698
Fence, farm, Hoffman and Shoemate	52	163,658
Fence, iron, M. G. Freeman	52	163,761
Fence post, E. Powell	52	163,692
Ferro manganese, manufacture of, A. Jullien	35	163,782
Fire arm, breech loading, W. H. Elliot	18	163,646
Fire arm, breech loading, O. M. Robinson	18	163,810
Fire place, J. F. Merrill	154	163,678
Fire plug, water motor, W. W. Harding	167	163,652
Fracture box, C. Westerkamp	156	163,829
Furnace, air heating and ventilating, S. W. Kimble	154	163,786
Furnace, metallurgic, T. D. Morgan	99	163,795
Game and other boards, C. F. Morgan	143	163,601
Game board, Bourn and Vermilye	143	163,630
Garments, apparatus for cutting out, K. McKenzie	38	163,674
Gas apparatus, Smith and Goldthorp	27	163,817
Gas purifier, G. H. Wells	66	163,706
Gas purifiers, center valve for, R. Briggs	66	163,569
Gas retort, W. Smith	66	163,818
Gate, farm, W. H. Pratt	52	163,693
Gate, sliding, J. P. McMurray	52	163,675
Generator, sectional steam, G. H. Starbuck	148	163,820
Glassware, manufacture of, W. C. King	68	163,787
Glove fastening, S. W. Glenn	38	163,764
Grain binder, J. H. Whitney	74	163,830
Grain tally, S. A. Hazelton	159	163,590
Harrow, C. Boswell	73	163,736
Harvester rake, J. H. Mears, (reissue)	74	6,454
Harvester rake, C. Wheeler, Jr	74	163,708

2,579.—Soap, Toilet Preparations, &c.—COLGATE & CO., New York, N. Y. (Re-registration.) Application filed July 8, 1872.

"the design of a shield, which contains two garlands of leaves, as shown, and which is crossed obliquely by a band that contains the letters 'C. & Co.'"

2,580.—Cigars.—F. DE BARY & CO., New York, N. Y. Application filed April 19, 1875.

"word 'Home,' with the other features of the label, as described."

2,581.—Leather.—EAGLE TANNING WORKS, Chicago, Ill. (Re-registration.) Application filed August 18, 1871.

"an oval shape, containing the words 'Trade Mark, Eagle Tanning Works,' with a cut of a flying eagle."

2,582.—Coffee, Spices, Baking-Powder, &c.—ELMER H. GARBUTT & CO., New York, N. Y. (Re-registration.) Application filed April 18, 1872.

"letters 'E. H. G. & Co.,' arranged as a monogram, and used in connection with the words or apothegm 'All Right.'"

2,583.—Gin.—GILL & LOOTZ, Boston, Mass. (Re-registration.) Application filed October 26, 1871.

"figure of the Apollo Belvedere."

2,584.—Chemical Compound.—MOSES ALEXANDER GOLDSTONE, Toronto, Canada. Application filed May 10, 1875.

"words 'Goldstone's Britannia Scale-Purgative,' and the signature in the center thereof, 'M. A. Goldstone.'"

2,585.—Lamp-Chimneys.—CHARLES F. A. HINRICHS, New York, N. Y. (Re-registration.) Application filed November 3, 1871.

"words 'Fire-Proof Chimney,' and a representation of a phœnix."

2,586.—Fire-Brick, Tiles, &c.—MCCONNELL, PORTER & CO., Sciotoville, Ohio. (Re-registration.) Application filed June 24, 1871.

"word 'Scioto.'"

2,587.—Soap.—JESSE OAKLEY, New York, N. Y. (Re-registration. Application filed January 16, 1872.

"'Maltese.'"

2,588.—Soap.—JESSE OAKLEY, New York, N. Y. (Re-registration.) Application filed March 16, 1872.

"Maltese cross."

2,589.—Corsets.—OTTENHEIMER, ROTHSCHILD & CO., New York, N. Y. (Re-registration.) Application filed February 19, 1872.

"letters D/d."

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Buckle or fastener, Lockwood and Ware	23	163,596
Bullets, device for swaging, W. D. Hillis	32	163,656
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Zoche, W. F., Steering propeller	163,717
Zoller, A., Barrel faucet attachment	163,717

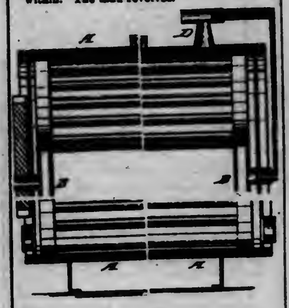
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED MAY 25, 1875.

163,565. APPARATUS FOR TREATING OR DRYING SCRAPS OR OFFAL. Gurdon S. Allyn, Groton, Conn. [Filed Apr. 16, 1875.]

Brief.—Steam is admitted to the hollow head, and passes through the pipes, heating the mass. Escaping into the opposite hollow head, it passes out through the hollow journal. By its escapement past an inverted funnel, which opens into the tank, the steam sucks out the vapor generated by the heated pipes within. The tank revolves.

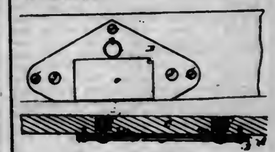


1. The combination of the tank A, hollow cylinder-heads B B, with hollow journals a b, and the pipes C C, connecting said heads, and running parallel with the axis of the cylinder, substantially as herein set forth.

2. The combination of the tank A, T-shaped pipe D E, and the pipe G, conducting the exhaust through the horizontal part E of the pipe, substantially as and for the purposes herein set forth.

163,566. LABEL-HOLDERS. C. F. Barker, North Bridgton, Me. [Filed Apr. 21, 1875.]

Brief.—The card or label is held between spring-plates, and shown through an aperture in outside plate.



1. The card or name-plate holder, substantially as described, composed of the shouldered and slotted plates A B and their elastic connections, all constructed, arranged, and applied essentially as specified.

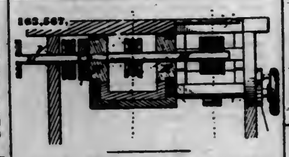
2. The said name-plate holder, as composed of the shouldered and slotted plates, their elastic connections, and one or more spurs or points projecting rearward from the front plate, all as represented.

164,567. PLANING-MACHINES. Charles R. Beall, Hamilton, assignor of one-half his right to Theodore Greville Massie, Cincinnati, Ohio. [Filed June 1, 1874.]

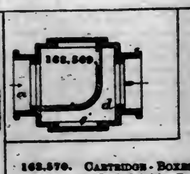
Brief.—Two distinct operations can be performed upon the table at the same time, by means of two mandrels made independently operative by two pulleys upon the same counter-shaft.

The combination of fixed mandrel U, adjustable mandrel M, counter-shaft s, cones o o', clutch-pulleys f g, grooved sleeves h, and the lever j, substantially as and for the purposes set forth.

163,567.



163,568.

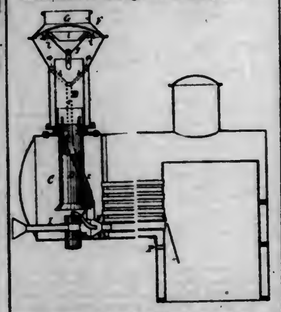


163,570.



163,568. SPARK-ARRESTERS FOR LOCOMOTIVES. Alfred Berney, Somerville, Mass. [Filed Jan. 27, 1875.]

Brief.—The sparks and cinders are forced from an enlarged tube by a jet of steam through an auxiliary protecting-tube to the fire-box. A deflector is placed in front of said tubes in the fire-box, to prevent the flame from entering them. An outside air-inlet is arranged in advance of the deflector, by which it is kept cool and the air heated. Air from the front of the locomotive is also admitted to the fire-box through the auxiliary tube.



1. The combination of the enlargement or auxiliary chamber H with the air-blast pipe I, the return-flue K, and the conduit c from the annular chamber a, such chamber surrounding the chimney, and being provided with means, as described, for intercepting sparks from the chimney and deflecting them into it, the said chamber, in order that they may be drawn from it by the air-blast or current into the auxiliary chamber, and from thence forced by said blast into and through the return-flue E and thence into the fire-place.

2. In combination with the enlargement or chamber H, the air-blast-pipe I, and the return-flue E, applied to a boiler and its smoke-box, as set forth, a pipe or pipes, f or m, to lead steam from the steam-blast pipe, or from the steam-space of the boiler, or both, into the said chamber H, spark-inductor C, all being substantially and for the purpose as described.

3. The combination, with the deflector, arranged in the fire-place, and with the rear ends of the return-flues, as shown, one or more air-inlets, P, arranged in advance of the deflector, all substantially as and for the purpose or purposes as set forth.

4. The re-enforce guard-tube R, in combination with the return-flue K, the blast-pipe I, and the conduit c, to lead the cinders from the chimney down into the pipe K, all being substantially as described.

163,569. CENTER-VALVES FOR GAS-PURIFIERS. Robert Briggs, Philadelphia, Pa. [Filed Oct. 12, 1874.]

A center-valve for gas-purifiers, the lower chamber B of which is provided with openings a a' and e e', and a partition, l, so that the course of the gas through the said center-valve may be changed at pleasure, all substantially as set forth.

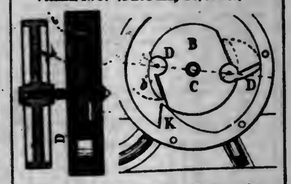
163,570. CARTRIDGE-BOXES. George H. Bringman, Philadelphia, Pa. [Filed Oct. 20, 1874.]

A circular box, A, provided in the center with the inverted cup C, having aperture a, with slots b b, in combination with the lid B, provided with the central T-shaped projection D, for the purposes herein set forth.

163,571. INFLAMMABLE SOAPS. J. P. Bryan, Canton, Ohio, assignor to the Central Soap Company, same place. [Filed Mar. 20, 1875.]

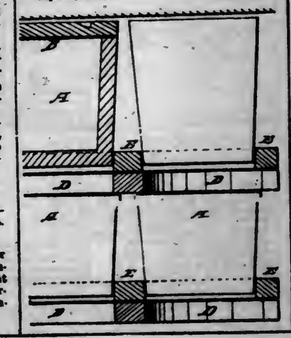
The process, substantially as herein described, consisting in mixing with any saponaceous compound such substance or material as shall render the mass readily pulverizable when drying and grinding the mass, whereby it is reduced to an impalpable powder, substantially as and for the purposes described.

163,572. ROTARY ENGINES. Oswald Burnett, Irvington, assignor of three-fourths right to C. H. Albertson and Benj. Hall, Vienna, N. J. [Filed May 27, 1874.]



The combination, with the cylinder A, having cam J and abutment K, of the grooved disk B, having side depressions b e f and tongues c', and the valves D, pivoted to said tongues c', and formed of two parts, one part consisting of the head a and laterally-extending face b', and the other part of the head a and toe-piece G, all constructed, arranged, and operating substantially as and for the purpose set forth.

163,573. BUTTER-PACKAGES. Hardy W. Campbell, Montgomery Centre, Vt. [Filed Apr. 2, 1875.]



HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

The boxes A, constructed as described, in combination with the cross-bars D, frames E, and the cases C, all as and for the purposes herein specified.

163,576. SPRING BED-BOTTOMS. B. P. Carter, Arcade, N. Y. [Filed Apr. 24, 1875.]

Brief.—The flexible strap is wound around the transverse bar, one end of it being attached to the end of the slat, and the other to the loop of the spring. Pressure or weight upon the slat unwinds the strap from the bar against the spring, which rewinds the strap, and restores the slat to its position when the pressure is removed.

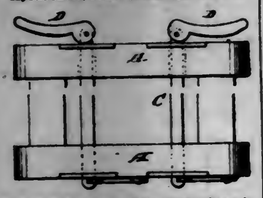


1. The combination, with a bed-bottom slat constructed of two spring-bars connected together at their ends, of a block or wedge arranged between said spring-bars, and capable of being moved or adjusted in the space between the bars, for increasing or decreasing the elasticity of the slat, substantially as described.

2. In combination with the slat of a bed-bottom, the flexible strap *g*, transverse bar H, and the spiral spring, having a loop to which the strap is attached and arranged on the transverse bar, substantially as and for the purpose described.

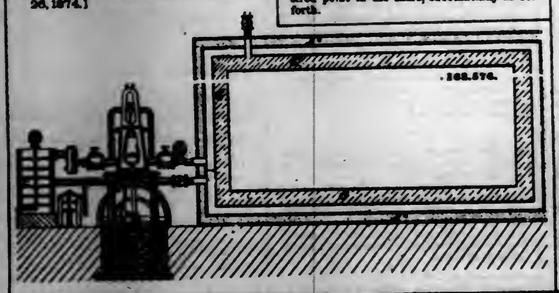
3. The combination, in a bed-bottom, of a slat composed of two spring-bars, having at each end a flexible strap, a transverse roller or bar, and a coiled spring arranged on said roller or bar, and having a central loop, to which the end of the strap is attached, and branching arms for holding the spring in place, substantially as described.

163,575. HARNESS-FRAMES FOR LOOMS. J. B. Casey, Henry Ansel, and Jas. Johnson, Mystic River, Conn. [Filed Apr. 7, 1875.]



The combination, with the harness-frame A B, having slots or mortises in its side pieces, of the rods or bars C C, having eyes at one end, the eccentric levers D D pivoted at the other end of said rods, and the hooks *b b*, whereby the rods can be readily withdrawn and inserted, the several parts being arranged and operating together, as and for the purpose herein set forth.

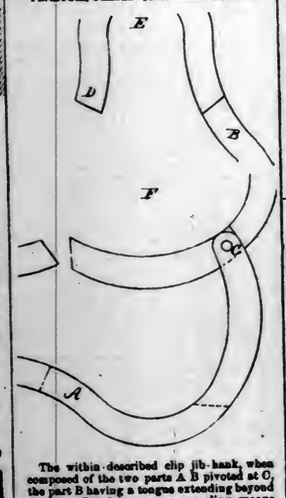
163,576. REFRIGERATING APPARATUS. O. H. Chiancok, Brooklyn, N. Y. [Filed Oct. 26, 1874.]



1. The combination of an ice-making machine, so termed, and a refrigerating-shell cooled or operated by the said machine, and surrounding in whole or in part a chamber closed against the access of external air, substantially as and for the purpose set forth.

2. The combination, with an ice-making machine, so termed, a refrigerating shell cooled or operated by the said machine, and arranged to cool a chamber closed against access of external air, of the ice-box provided between such shell and chamber, substantially as and for the purpose herein set forth.

163,577. JIB-HANKS. Chas. W. Clements, Yarmouth, Canada. [Filed Mar. 29, 1875.]



The within-described clip jib-hank, when composed of the two parts A B pivoted at C, the part B having a tongue extending beyond the pivot C and into a corresponding groove in the part A, and both parts, where they form the smaller loop, formed as sister-hooks, substantially as and for the purpose herein set forth.

163,578. DENTAL MIRRORS. T. Cogswell, Boston, Mass. [Filed Mar. 16, 1875.]

Brief.—The mirror has one straight edge for convenience in placing it below the gums. It is also rotated in its own plane upon a central pivot, and held fixed at any point by corrugations upon its casing. A napkin-holding and a cheek-holding device are combined with the mirror.

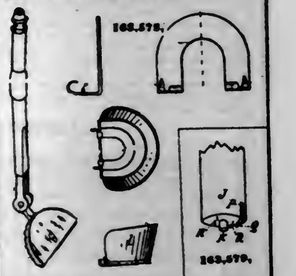
1. The mirror *g*, of the form shown in Figs. 1 and 3, pivoted to a shank, *c*, attached to a handle by means of either a jointed or rigid connection, as set forth.

2. A mouth-mirror rotating in its own plane around a point of attachment within said plane, and having provision for retention at any desired point in the same, substantially as set forth.

3. The combination of a mouth-mirror with a movable double-jawed shank, A, provided with a locking device, as and for the purpose set forth.

4. A napkin-holding device, in combination with a mouth-mirror, substantially as and for the purposes described.

5. A tongue or cheek holding device, in combination with a mouth-mirror, substantially as and for the purposes set forth.



163,579. PUNCHING-MACHINES. Charles A. Corman, Wayland, Mass. [Filed Apr. 23, 1875.]

Brief.—Ornamenting devices are secured to the end of the punch-bar, so that when the hole for the eyelet is cut by the rotation of the punch-bar the ornamentation is effected around the eyelet.

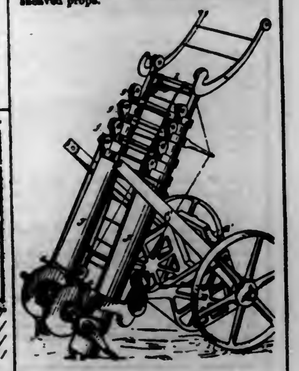
1. In a punching mechanism, constructed and operating substantially as described, the combination of the punch K and stude R, substantially as and for the purpose specified.

2. In a punching mechanism, substantially such as described, the combination of the punch K, studs R, and wheel Q, substantially as set forth.

3. The combination of gears F H, collet G, bar J, punch K, and yielding bed I, substantially as set forth and specified.

163,580. EXTENSIBLE FIRE-LADDERS. Benj. F. Covel, B. L. Chace, and J. M. Weaver, Fall River, Mass. [Filed Dec. 29, 1874.]

Brief.—The ladder consists of a pair of telescopic sections secured together by cross-braces. A flexible rope ladder is attached to the upper section, and as the sections are extended by means of ropes and pulleys, the ladder is unwound from a drum which is secured to the lower section. The lower section is pivoted to the forward end of the carriage-hounds, and when the rear truck is disconnected from the front truck the sections are thrown into position for use, and are adjusted to any desired angle by ropes passing over sheaved props.



1. In combination with the telescopic frames moved simultaneously, the flexible ladder and ladder-drum, whereby the ladder is raised with the frames and tightened at any altitude, substantially as hereinbefore set forth.

2. In combination with the forward end of the truck, the drum and ropes for lifting the frames off and onto the pillar of the front axle, substantially as hereinbefore set forth.

3. The box B' secured to the casting K by a T-shaped bolt, whereby the rear portion of the truck is enabled to adapt itself to inequalities of surface, and whereby the telescopic frame may be raised to any required angle, substantially as hereinbefore set forth.

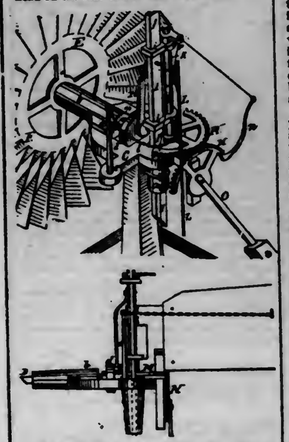
4. The combination of the rear truck, and derrick-arms pivoted thereto, with the ceiling-ropes and drums, arranged as described, so that the ceiling of the ropes will automatically elevate the derrick-arms to the proper altitude, and bend the telescopic frames, substantially as hereinbefore set forth.

5. The derrick-arms G G' pivoted to the axle of the rear truck and adapted to be elevated and sustained in position without the aid of a prop, substantially as hereinbefore set forth.

6. The box B', constructed as described, with the recesses G', in which the ends of the frames J J rest when ready for transportation.

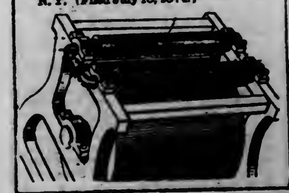
163,581. WHEELS. Joseph Cushman, Thomson, Ill. [Filed Oct. 27, 1874.]

Brief.—It consists in a rod secured to the turn-table, and serving as the pivot of the guide-vane, the rod being placed out of the axial plane of the wheel-shaft, and provided with guides, in which moves the operating-slide, the latter element being connected by a pitman-rod of peculiar shape with a crank-head on the rear end of the wheel-shaft.



The pivot-rod K of the guide-vane, secured to the frame of the turn-table out of the axial plane of the wheel-shaft, and provided with guides *i*, in combination with the slide I and crank-head *d* of the wheel-shaft D, substantially as shown and described.

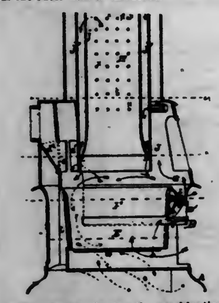
163,582. MACHINERY FOR UNITING PAPER AND CLOTH. Chas. H. Denison, New York, N. Y. [Filed July 16, 1874.]



The combination, in a machine for uniting paper to cloth, of the steam drying-cylinder for drying the paper and cloth, and the hollow carrier-roll for carrying the same, provided with pipes for introducing water for cooling said carrier-rolls to keep the surface moist and prevent paste from accumulating thereon, substantially as described.

163,583. MAGAZINE-STOVES. Wm. Doyle, Albany, N. Y. [Filed Dec. 16, 1874.]

Brief.—To heat by air-heating passages which discharge into the room, by heat reflected through windows, and by radiation from the outer wall of the stove.



1. In a stove or heater, the combination of the sectional fire-pot, comprised by the cooking section F and fuel-burning section E, with space *a* between, and the lower section provided with a grate, and its upper margin closing to the wall of the ash-chamber, with the flame-space *h* leading from the upper margin of the lower section to the combustion-chamber J, substantially as and for the purpose set forth.

2. The combination, with the sectional fire-pot, having a space between the sections, and a flame-space or passage-way, *h*, leading from the upper margin of the lower section of the fire-pot to the combustion-chamber above, of the air-heating flue K and tubes L, discharging into the said flame-space, substantially as and for the purpose set forth.

3. The descending flues *f f* and their extended continuations *f' f'*, leading from the combustion-chamber into the base-flues I and I', in combination with the flame-space or passage-way *h* and the mica lights E', set opposite the flame passage or space *h*, whereby the stove may be rendered capable of warming a room from its lower parts by the united operations of the hot gases circulating through the said flues and base, and the heat radiated from the flame in the flame-passage through the mica lights, substantially in the manner set forth.

4. In a stove or heater, the chamber *l*, communicating with the interior of the fuel-reservoir, the outer air of the room, and the combustion-chamber, in combination with the flame passage or space *h*, surrounding the upper portion of the fire-pot, and the descending flues *f f*, leading the hot gases laterally from the discharge end of the reservoir, whereby the mingled air and gas from the chamber *l* may be drawn in contact with the flame and hot gases from the flame passage or space *h* for their better combustion, substantially as and for the purpose set forth.

163,584. STEAM-PACKINGS FOR PISTONS. Chas. L. Eastman, Concord, N. H. [Filed Feb. 16, 1874.]

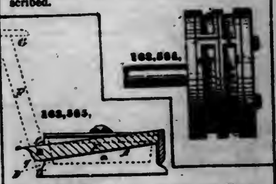
Brief.—The packing-rings have outside grooves, which communicate with the inside of the cylinder, to which steam is admitted, making a differential pressure on the rings, to hold them out against the inside of the cylinder.

1. The combination of the piston-head and follower, and the split rings *a*, *b*, and *c*, forming together a steam-chamber in the piston, said rings being fastened together, freely moving around between the head and follower, and furnished with steam-passages leading directly from said chamber to the channels in the perimeter of the external rings *b* and *c*, as and for the purpose described and represented.

2. In combination with the spider and ring *c*, the adjusting devices C D, for keeping the piston-head central in relation to the cylinder, substantially as described.

3. The combination of the valve A with the slots or cut-aways in the opening in which it works, and with the head and follower of the piston, as and for the purpose described and represented.

4. The combination of the piston-head and follower, the spider, the rings *a*, *b*, and *c*, and the steam-ways through them, whereby a steam-chamber is formed in the piston-head without other mechanisms, and a steam-tight packing is produced solely by the action of the steam, and without any wedge, spring, or other pressure exerted on the surface of the inner ring from the center outward, as represented and described.



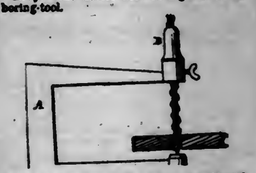
163,585. INKING APPARATUS FOR HAND-STAMPS. David A. Bidell, New York, N. Y. [Filed Apr. 24, 1875.]

Brief.—Hinges the "stamp-rack" to the base or pad-holder, so as to fold down, as shown in Fig. 3, to facilitate packing for transportation purposes.

As a new article of manufacture, the combined rack and pad, constructed with the rack G F, working on the pivot *g*, pad or pads *a*, and the base *e*, the whole combined for use and operation substantially as herein set forth.

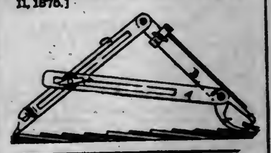
163,586. WOOD-BORING MACHINES. John Faraday, Chester, Pa., assignor of one-half his right to William P. Kirk, same place. [Filed May 7, 1874.]

Brief.—The device acts as a guide to the boring-tool.



The combination of the screw-auger D with the sleeve B, nipple C, and the frame A, substantially as and for the purpose herein before set forth.

163,587. SEINGLING-BRACKETS. Alfred P. Fletcher, Middletown, Conn. [Filed Mar. 11, 1875.]



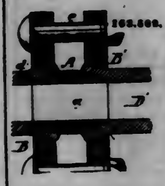
The combination, in a staging-bracket, of the slotted brace A, pivoted to the beam B at *b*, the toothed jaws *f* and *g*, the jaw *f* carried by the beam B, being curved, and the jaw *g* carried by the brace A being flattened, so that its upper side will form a portion of the level support for the staging when adjusted in position upon the roof, the slotted upright C provided at its lower end with the shoes *d d* upon the feet D D', and hinged at *e* to the beam B, the screw-bolt E, the thumb-nut F, and the washer *c*, and the collar *m*, formed with the projections *p*, and provided with the thumb-screw *n*, as described.

162,588. JOINTS FOR LEAD PIPES. Albert B. Goodell, Philadelphia, Pa., assignor of one-half his right to John W. Biddle, same place. [Filed Sept. 15, 1874.]

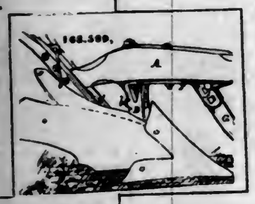
Brief.—The flaring ends of the pipes are drawn tightly upon the internal tubular block by means of the clamping-plates, whose central openings are tapered to conform to the shape of the pipe at the point of coupling. The plates are drawn together by bolts.

The combination, with the flaring ends of the pipes D D' and internal tubular block A, of the plates B B', having openings with bevel edges, and the screw-bolts *c c*, all as set forth.

162,588.



162,589.

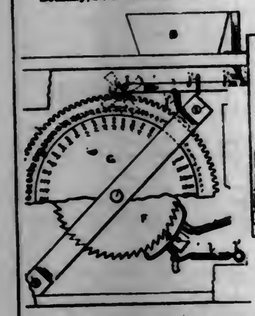


162,589. SWIVEL-PLOWS. Joab Hapgood, Shrewsbury, Mass. [Filed Oct. 27, 1873.]

Brief.—The coiter is attached to the front end of a lever pivoted to the under side of the beam, and is automatically moved to be in line with the land side when turned on either side.

The combination, with the beam A, moldboard E, and standard B of the lever F and *i*, pivoted at *a b*, supporting-loop K, and cutter-blade G, said parts being constructed and arranged for operation substantially as herein set forth.

162,590. GRAIN-TALLIES. S. A. Haselton, Bethany, N. Y. [Filed June 10, 1874.]



1. The wheel E, having the projection T, arranged to operate in combination with the dial G, ratchet-wheel F, and pallet-lever K, having the arm L, and spring *l*, substantially as and for the purpose specified.

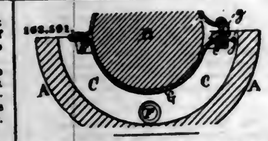
2. The pallet-lever K, having the hand-lever M operating in combination with the ratchet-wheel F and dial G, substantially as and for the purpose specified.

162,591. LUBRICATORS. Charles H. Holt, Boston, Mass. [Filed Oct. 26, 1874.]

Brief.—The bearing is centrally grooved, within which the clamp secured to the journal revolves. Said clamp is detachable, and has wings or projections, by means of which oil is carried from the reservoir to the journal.

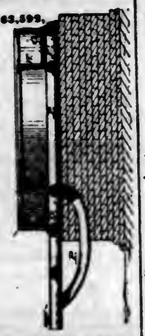
The detachable clamp-ring C, having projections *g g*, in combination with journal B and bearing A, having groove G, substantially as and for the purpose set forth.

162,591.



162,592. DEVICES FOR HEATING WAGON-TIRES. Stephen B. Hopkins, Comeaut, Ohio. [Filed Mar. 13, 1875.]

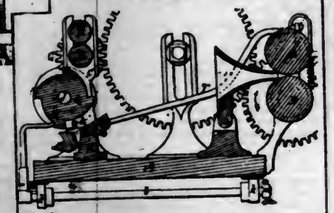
162,592.



The improved tire-heating apparatus herein described and shown, consisting essentially of the annular metallic furnace F, and the two internally-perforated annular tubes F, connected thereto and to the main blast-pipe for supplying air to the furnace on both sides of the tire.

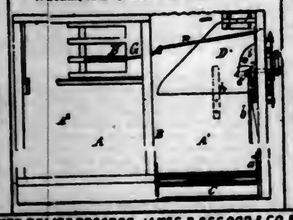
162,593. STOPPING MECHANISMS FOR RAILWAY-HEADS. R. W. Hunton, Fall River, Mass. [Filed Apr. 26, 1875.]

Brief.—For shifting the belt and stopping the machine when the sliver passing between the condensing or delivering rolls is above or below a given thickness.



The levers T, pivoted to the boxes of the upper roll, the tripper S, connected with such levers, the ratchet-wheel Q, shaft J, sleeve K, sketch N, rod *e*, rock-shaft *i*, and dog *m* with shipper-rod *h*, combined for operation as described, whereby the changes in position of the two condensing-rolls relatively to each other are transmitted to the belt-shipper.

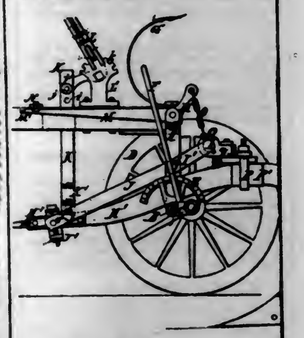
162,594. ANIMAL-TRAPS. Geo. W. Kelley, Wabash, Ind. [Filed Oct. 1, 1874.]



The combination of the box A with partition B, door C, gate G, connecting-rods *b n*, treadle D with stop *i*, catch *p*, and the shaft *d*, provided with spring *m*, crank-pin *o*, and arm *k*, all constructed and arranged substantially as and for the purposes herein set forth.

162,595. WHEEL-PLOWS. John Keys and John R. De Mier, Coultersville, Ill. [Filed Feb. 20, 1875.]

Brief.—The arched axle is journaled in the crank-axles, which are held and adjusted by spring-levers and ratchets. Arms are pivoted on the axle and to a yoke carrying the front end of the plow-beam, which is raised by an elbow-lever.



1. The arched axle A, constructed with the spindle *a b*, in combination with the short crank-axles C, confined loosely thereon by nuts *c*, in the manner and for the purpose herein described.

2. The side bars J, pivoted to the sides of the arched axle, and connected at their front ends by a pivoted yoke, J', in combination with the bar K, ball-crank lever L, and a suitable stop device, L', substantially as and for the purpose described.

3. The perforated swiveling yoke K' on the pivoted side bars J J, in combination with the turning sleeve Q *q* on the vibrating bar I, whereby the front and rear of the beam are supported and allowed movements in a vertical plane.

4. The combination, with the arched axle A, tongue G, and plow H H', of the rear and front corresponding supports I J J' K and the levers L and M, substantially in the manner and for the purpose described.

162,596. BUCKLES OR FASTENERS. Samuel T. Lockwood and John M. Ware, Chicago, Ill. [Filed Apr. 26, 1875.]

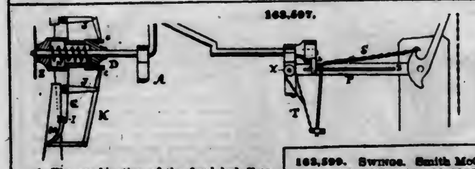


As a new article of manufacture, the buckle or fastener A, consisting of the part or body *a*, adapted for attachment by means of rivets to the part to which it is to be applied, having thereon the vertical pin *a'*, and provided with one or both of the lateral arms *c c*, detached at one end from the part or body *a*, substantially as specified.

162,597. WINDMILLS. William W. Marsh, Sycamore, Ill. [Filed Feb. 26, 1875.]

Brief.—A spring arranged within a sliding head applied to the main shaft forms the head out, and keeps the fans in position. A disk, which nearly fills the space between the inner ends of the fans in high winds, assists in driving the fan-frame against one of the supports of the wind-wheel, whereby the spring is compressed and the fans thrown out of the wind more or less.

162,597.



1. The combination of the fixed hub E on the outer end of the shaft and the sliding head D, cut out to form a recess and a covering for the spring, with the spring N and shaft C, substantially as and for the purpose specified.

2. The combination of the rocking bars or shafts I with the levers or arms M, bars or rods L, and levers K with the fans H, sliding head D, hub E, and spring N, substantially as specified.

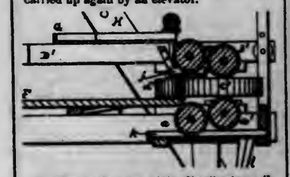
3. The plate F, covering the central space, in combination with a sliding main shaft C, substantially as and for the purpose specified.

4. The combination of the weighted rod V, adjustable collar U, and chain S, with the rod Z and the rear end of the main shaft C, substantially as and for the purposes specified.

5. The combination of the lever R, chain S, and chain or cord Y with a sliding main shaft, substantially as and for the purposes specified.

162,598. PAINTING-MACHINES. William W. Marsh, Sycamore, Ill. [Filed Feb. 26, 1875.]

Brief.—The strips are fed between four rollers, which paint the four sides simultaneously. As the paint runs down over the rolls from upper trough, it is received by a drip-pan and carried up again by an elevator.



1. The combination of the distributing-rollers *a b*, painting-rollers *a' b'*, with paint-reservoir G, trough *f*, drip-trough *k*, and suitable pulleys and frame, substantially as and for purpose specified.

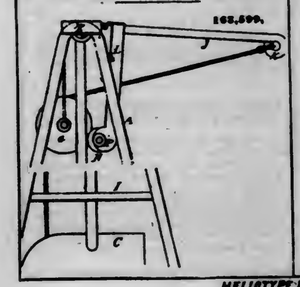
2. The rollers *a a'*, *b b'*, *c c'*, and *d d'*, in combination with paint-receptacles G *j k* and suitable pulleys and supporting-frame, constructed substantially as and for the purpose specified.

3. The combination of the rollers *a a' b b' c d d'* with paint-receptacles G *j k*, table F, and suitable pulleys, and frame with adjustable bars D D', substantially as and for the purpose specified.

4. In a painting-machine, the elevator H, in combination with paint-receptacles G *j k*, rollers *a a'*, *b b'*, *c*, and *d*, and suitable pulleys and frame, substantially as and for the purpose specified.

5. The distributing-rollers *a b*, and painting-rollers *a' b'*, in combination with the table F and a table to receive the painted strips, the rollers and tables arranged on a line, whereby long strips can be painted and the parts placed close together, as and for the purpose specified.

162,599.



162,600. SWINGS. Smith McCleverr, Chicago, Ill. [Filed Apr. 12, 1875.]

The swing B C, combined with the sheave G, arms L L J, and rope H, as and for the purpose set forth.

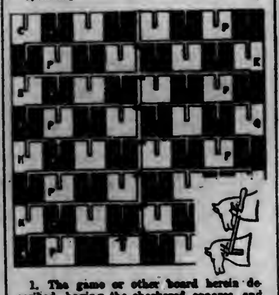
162,601. GAS-BURNERS. F. H. McGeorge, Corning, N. Y. [Filed Mar. 30, 1875.]

Brief.—The tube conducts the heat derived from the flame-slit and side perforations.



The combination of the shell, having the small side openings, with the internal heating-tube, as described.

162,602. GAME AND OTHER BOARDS. Chas. F. Morgan, Cleveland, Ohio. [Filed Feb. 8, 1875.]



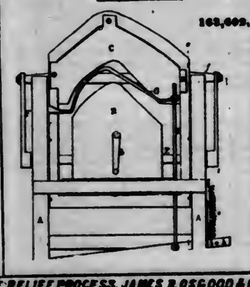
1. The game or other board herein described, having the checkered squares, and provided with slots arranged from the outside border to every square thereof, substantially as and for the purposes described.

2. In combination with a slotted game or other board, the double-faced pieces, connected by a bar, arranged to pass from one position to another in the board by means of the said slots, substantially as described.

3. In combination with a slotted board, the double-faced pieces, with handles attached, substantially as and for the purposes described.

4. A game or other board provided with slots extending through the said board, the said slots being arranged as described, so that a character or piece may be moved by a person on either side of the board from one position to any other position on the said board, substantially as and for the purposes described.

162,602.



162,603. CRIMPING-MACHINES. O. Noack, Baltimore, Md. [Filed Mar. 17, 1875.]

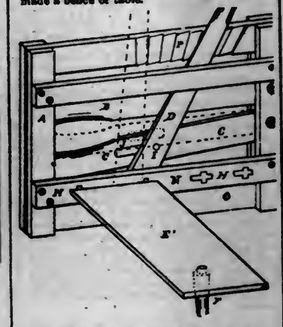
Brief.—The clamp-bars, which hold the leather in position upon the jaws, are vertically adjustable, and operated by a lever.

1. The clamps G, pivoted to the frame A, and adapted, to be raised, when not in use, by means of a reactionary spring, in combination with the plate C and lower die-plates B, substantially as herein specified.

2. The clamps G, adjustably connected to the rods *g*, in combination with the treadle h and swinging bar *k*, substantially as and for the purpose set forth.

162,604. HOG-TRAPS. Harrison Ogborn, Richmond, Ind., assignor to Saml. Watson, same place. [Filed Mar. 9, 1875.]

Brief.—The trap stands in or forms the exit-door of an inclosure. One of its vertical bars is pivoted above. Near the ground it and the next bar are concaved on contiguous sides. A transverse bar carries a pin, which moves in a slot in the pivoted upright bar, widening and closing the space between the vertical bars, near its handle moving over a ratchet-surface. The hog may thus be held by the neck, or by tilting the machine he may be thrown upon his side, the side guiding-boards being then made a bench or table.

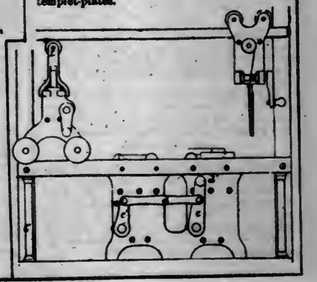


1. The jaws B C, in combination with the lever D, slot J, pin I, and ratchet F, constructed and operating substantially as and for the purposes set forth.

2. The detachable table E', secured to the upright N by the tenons E and mortises H, in combination with the jaws B C and frame A, substantially as and for the purposes set forth.

162,605. MOULDING-MACHINES. Samuel J. Peet, M. C. Poland, and John C. Poland, Jr., Boston, and Jos. W. Willis, Canton, assignors, by mesne assignments, to the Peet Moulding-Machine Company, Boston, Mass. [Filed Aug. 13, 1874.]

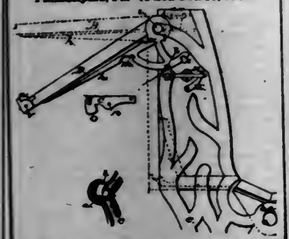
Brief.—Semi-flasks are placed over templet-plates, through which the patterns project, and arranged to be withdrawn by mechanism. The sand is packed in the flasks about the patterns by means of a ram mounted on a movable carriage, the ram being also capable of transverse movement to reach all parts of the flasks. The bosses on the semi-flasks facilitate the operation of fitting them to the templet-plates.



1. In a machine, substantially as described, for making sand molds for castings, the combination of the two templet-plates, the patterns, the sand-flasks, and a carriage movable horizontally, and provided with a ram capable of having compound or vertical and horizontal movements, the whole being constructed and arranged to operate substantially as set forth.

2. The sand-flasks when formed with projections or bosses a^2 a^3, &c., as and for the purpose set forth.

163,605. SCHOOL-SEATS. Isaac N. Peirce, Philadelphia, Pa. [Filed Oct. 15, 1874.]



1. The seat-joint, consisting of the standard *a*, provided with the pivot-*e* *e*, having a rounded or oval projection or cam, *b*, formed thereon, in combination with the seat-arm *c*, having an opening, *f*, for the said pivot, and an oval chamber, *g*, to receive the cam *b*, as and for the purpose set forth.

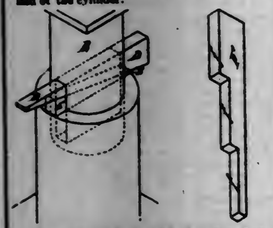
2. The lid B, provided with the book-rest F F, turning one-quarter around upon the wire pivots V V V V, and having the book-ledges *q q*, substantially as described.

3. The wire bolt *y* and cover H, provided with the notch or hole *s*, in combination with the lid B, having the pin or block projection X upon its under side, to engage with the bent wire bolt *y*, and force it up into the notch or hole *s*, substantially as described.

4. The desk-lid attachment I, having the notches *k l m* in combination with the latch C, having the projections *p* and springs E, and wires *t t*, and lever *v*, substantially as described.

163,606. HYDRAULIC PRESSES. C. Feper, St. Louis, Mo. [Filed Apr. 19, 1875.]

Brief.—A keyway is made in the ram, and a key of varying thickness, which may consist of two complementary wedges, or of one piece having a series of bearing-faces parallel to and at different widths from the base of the key, is inserted, its lower edge to bear on the end of the cylinder.

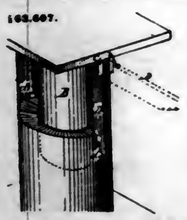


1. The key F, having offset bearings *f*, in combination with the ram B, having slot *b*, of hydraulic presses, fit the purpose of supporting the ram stationary, substantially as set forth.

2. In a hydraulic press, the inclined planes D and E, in combination with the cylinder and platen, for the purpose of supporting the ram stationary, substantially as set forth.

163,607. HYDRAULIC PRESSES. C. Feper, St. Louis, Mo. [Filed Jan. 26, 1875.]

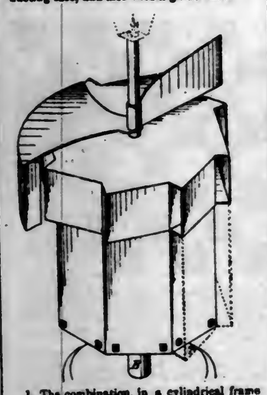
Brief.—Pivoted to the platen are keys formed with offset bearings, which engage with the top of the cylinder as the ram is raised, and by means of which the ram can be retained in a "true" position after the required pressure has been produced.



In a hydraulic press, the keys D, in combination with the cylinder and platen, for the purpose of supporting the ram stationary, substantially as set forth.

163,608. ADVERTISING DEVICES. Cullin W. Reed, Chagrin Falls, Ohio. [Filed Nov. 13, 1874.]

Brief.—A cylindrical frame is loosely mounted upon a fixed vertical shaft, to exhibit advertisements placed upon its panels, which are "tangentially connected" with it, and by which manner of connection the wind causes the frame to rotate. It is also provided with a rotary guard, to conduct currents of air upon the surfaces or buckets projecting laterally from its body. The guard is constructed with a concave receiving and conducting face, and also with a guide-vane.



1. The combination, in a cylindrical frame supported upon a fixed axis, of a series of side panels tangentially connected with the frame for receiving and displaying characters, advertisements, &c., substantially as described.

2. The combination of a series of buckets for receiving currents of air with the cylindrical frame-work, constructed for displaying characters, advertisements, &c., and a central axis or standard for supporting the frame, substantially as described.

3. The combination, with a cylindrical or polygonal-shaped frame-work for displaying characters, advertisements, &c., of a rotary guard for conducting currents of air upon surfaces or buckets projecting laterally from the frame-work, substantially as described.

4. The guard, constructed with a concave receiving and conducting face, and with a guide-vane, in combination with a cylindrical or polygonal-shaped frame, constructed for displaying characters, advertisements, &c., substantially as described.

163,609. LOOM-SHUTTLES. John Rigby, Chicopee, Mass. [Filed Apr. 13, 1875.]

Brief.—The device is for stopping the loom when the warp-threads break or knot. A hook is so arranged as to be carried off a bearing when it comes in contact with a warp-thread, and the downward movement of the hook allows a pivoted latch to drop sufficiently far to bring its beveled point in position to catch the weft-thread and break it, thereby putting in operation the stopping mechanism.



In a loom-shuttle, the fixed frame *c*, provided with a chamber, *d*, and a projecting support, *f*, the loosely-pivoted latch *e*, having a bevel-point, *h*, and connected, by a cord, *m*, to the hook *h*, all combined and operating together, as and for the purpose set forth.

163,610. BUTTER-COLORING COMPOUNDS. John C. Borick, Wauseon, Ohio. [Filed Aug. 6, 1874.]

An antiseptic coloring matter composed of the annotto, curcuma, and bromo-chloralum, mixed together in about the proportions set forth

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163,611. FOLDING SEATS FOR SCHOOL-DESKS. Uriah Smith, Battle Creek, Mich. [Filed Dec. 4, 1874.]

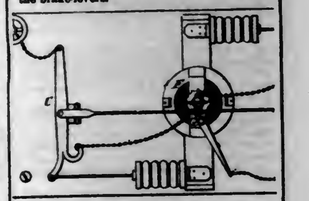
Brief.—The seat is pivoted to the arms and braces, and not to the standards, and the parts are so arranged that when the seat is folded the back edge thereof rises instead of the front edge, as heretofore.



The combination of the arms C and braces B with the seat S and standards D, constructed to operate substantially in the manner and for the purpose herein set forth.

163,612. CAR-BRAKES. John Y. Smith, Pittsburg, Pa. [Filed Apr. 6, 1875.]

Brief.—A spiral spring secured to the car-frame is wound up and set at its full tension by a pawl and ratchet. The spring, when released, revolves a spindle, which winds the brake-chains attached to transverse brake-levers. A vacuum-diaphragm is mounted on each side of the frame, and attached to the brake-levers by rods. The exhaustion of the air contracts the diaphragm, which acts in combination with the spindle to set the brake. A hand-pulley is also attached to the ends of the brake-levers.



In combination with the transverse lever C to operate the brakes of a railway-car, the hand-brake, the vacuum-chamber, and the spring for setting the brake, substantially as set forth.

163,613. REVOLVING STEREOSCOPES. J. F. Steward, Piano, Ill. [Filed July 13, 1874.]

1. The case A B, the part B being in sector-jar form, and the glass *a* in sides and top, in combination with eye-glass C, bar *c*, and pins *f*, substantially as and for the purpose specified.

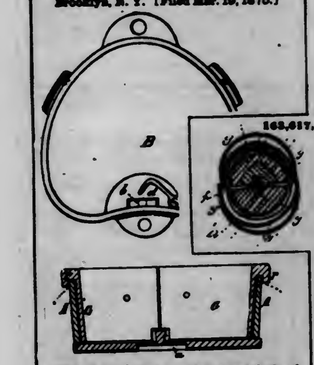
2. The device herein described, consisting essentially of the parts A B, glass *a* in sides and top, curtains *e*, *e'*, and *d*, and the eye-glass C, all combined as and for the purpose herein described.

163,614. FIRE-PROOF SAFES, &c. William A. Shepard, New York, N. Y. [Filed Jan. 6, 1874.]



Portable safes, vaultrooms, or stationary closets for buildings, made of double walls, which are lined with slate-paper, and which have filled between them either anthracite-coal ashes or a mortar composed of plaster-of-paris and the ashes of anthracite coal, substantially as described.

163,615. DENTAL FLASKS. Wm. O. Treat, Brooklyn, N. Y. [Filed Mar. 19, 1875.]



1. The combination, with a dental flask, of the sectional detachable beating-plates G, arranged to slide outward in the removal of the plaster from the flask, substantially as and for the purpose set forth.

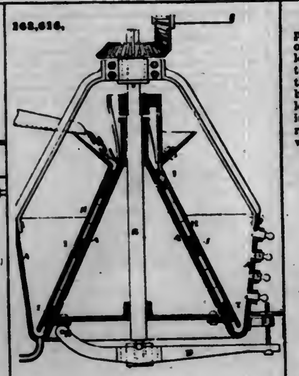
2. The combination of the outwardly-projecting hook-lugs *r*, provided upon the beating-plates G, with the notches *r'*, formed in the edge of the section A and the section C of the flask, substantially as and for the purpose set forth.

3. The cap B, constructed with the dovetail-stud *c* and hook *d*, in combination with the dovetail-notch *a* and staple *b* of the section A, substantially as and for the purpose set forth.

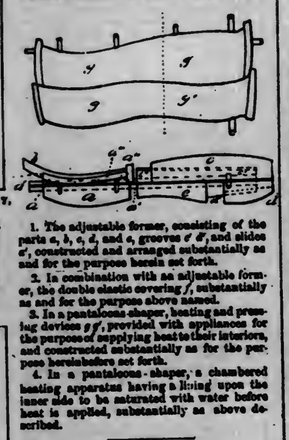
163,616. MACHINES FOR SAWING QUICKSILVER. John W. Varney, Virginia City, Nev., assignor of one-half his right to J. B. Hereford, same place. [Filed Oct. 21, 1874.]

Brief.—Seven fluted quicksilver in tailings by rubbing gently in the device shown. Shoes are of rubber, wood, or leather, dovetailed into the conical muller. Inner cone is copper-lined. Bottom of pan is covered with quicksilver.

The combination of the tub A, with its central cone, the revolving conical muller H, with its rubbing-shoes I, the hollow shaft B, and the mechanism for revolving the muller, all constructed and arranged to operate substantially as described.



163,617. APPARATUS FOR SHAPING PANTALOONS. Ellen E. Vieta and Chas. B. Shaw, Boston, Mass. [Filed Apr. 27, 1875.]



1. The adjustable former, consisting of the parts *a*, *b*, *c*, *d*, and *e*, grooves *c' d'*, and slides *a'*, constructed and arranged substantially as and for the purpose herein set forth.

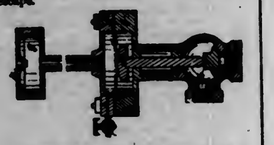
2. In combination with an adjustable former, the double elastic covering *f*, substantially as and for the purpose above named.

3. In a pantaloons shaper, heating and pressing devices *g g'*, provided with appliances for the purpose of supplying heat to their interiors, and constructed substantially as for the purpose hereinbefore set forth.

4. In a pantaloons-shaper, a chambered heating apparatus having a lining upon the inner side to be saturated with water before heat is applied, substantially as above described.

163,618. SAFETY-VALVES. Thos. Walker, Philadelphia, Pa. [Filed Feb. 9, 1875.]

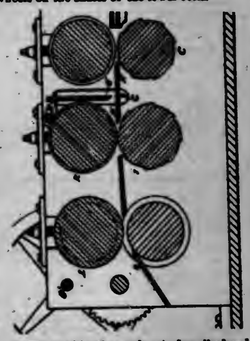
Brief.—The chamber and column above the diaphragm are filled with mercury to weight the valve. When the pressure in the boiler rises above the desired height, the mercury will be forced into the receiver, the valve released, and the excess of steam allowed to escape.



The combination of the chamber *b c*, perforated pipe-disk *c*, bolster or piston *d*, hollow column or pipe *f*, receiver *g*, cover *h*, and cock *i* with the valve *a*, substantially as and for the purpose set forth in the annexed specification.

163,619. MACHINES FOR MAKING WROUGHT-NAIL BLANKS. Thos. T. Wood, Chicago, Ill., assignor to Geo. B. Griffin, same place. [Filed Jan. 6, 1875.]

Brief.—The header has sufficient lost motion, by virtue of the slot in the end of bar, to allow the jaws to close upon the nail before it advances, and also to allow them to separate and release the nail before the receiver is again actuated.



1. The combination, as herein described and shown, of the rollers C and F, the knives G and G', and the rollers J and K, substantially as and for the purposes specified.

2. The combination, as herein described and shown, in a machine for making wrought-iron nails, of one or more pairs of forming-rollers, of the knives G and G', and of the slitting-rollers L and L', substantially as and for the purposes specified.

3. The combination, substantially as described, of forming-rolls, knives, knife-actuating mechanism, slitting-rolls, and an intermittent-feed mechanism, whereby the bars are forced, fed to the knives, there stopped and cut, and then fed forward and slit, all operating together in connection with each other and driving mechanism, in the same machine, for the purposes set forth.

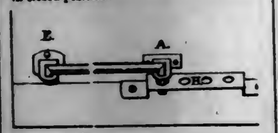
163,620. MACHINES FOR HEADING WROUGHT-NAILS. Thomas T. Wood, Chicago, Ill., assignor to George B. Griffin, same place. [Filed Jan. 6, 1875.]

Brief.—Two pairs of forming-rollers, the upper rolls of which are plain, while the lower ones are serrated throughout their entire lengths, and knives or cutters interposed between them, which serve the plate into sections, the said sections being slit into strips or blanks by a pair of slitting-rollers after they leave the second pair of forming-rolls. An intermittent rotation is given to the forming-rollers by pawls, which engage with ratchet-wheels on the shafts of the lower rolls.

In combination, the pivoted levers J J, provided with the jaws *c' c'*, the toggle K K, pivoted to the said levers, and the reciprocating blocks B and B', loosely jointed to each other and pivoted to the toggle, substantially as and for the purposes specified.

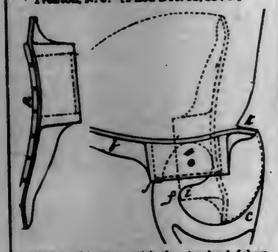
163,621. SHUTTER BOWERS AND FASTENERS. G. F. S. Zimmerman and C. Zimmerman, Frederick, Md. [Filed Feb 20, 1875.]

Brief.—A swinging bar or brace, with downward-projecting point, is hinged to the shutter near its lower inside corner, and at the opposite corner of the shutter a plate with hole through it is likewise attached. These are combined with a suitable socket and a plate having a series of holes, both of which are secured to the window-sill, in such manner that the downward point of the brace passes intermediately through a hole in the plate on the shutter into corresponding holes of the sill plate, thus securely fastening the shutter in closed position.



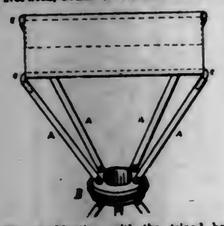
The fastening formed by the end of the brace D passing down through the hole C in plate A into a corresponding hole in plate H, in combination with the permanent attachment of the brace to the shutter at E and the socket F, as above described.

163,622. SCHOOL-SEATS. Benjamin Allen, Trenton, N. J. [Filed Dec. 18, 1874.]



The combination, with the standard *f*, having an elongated opening, *e*, and shoulders *j k*, of the seat-arm *b*, having an oblong rectangular mortise, which is partly closed at the bottom by a flange, *d*, and provided with the pin *g*, projecting into said mortise, the arm being held upon the standard by the elastic plate *a*, sprung into the mortise and resting upon the flange *d*, all as and for the purpose set forth.

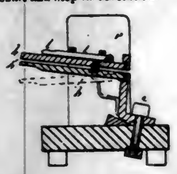
163,623. CAMP-STOOLS. Nelson R. Allen, Norwich, Conn. [Filed Dec. 26, 1874.]



The combination, with the tripod base, formed by the three tubular legs A screwed into the beveled annular central piece B of the seat-frame, consisting of four similar tubular interchangeable arms, screwed into the same central piece B, having the parallel side rods *a a* inserted into their upper ends, and provided with the seat C, for the purpose of making a cheap, light, and rigid pocket-chair, as herein described.

163,624. STOP-MOTIONS FOR MACHINERY. John W. Askin, Melrose, Mass. [Filed Feb. 20, 1875.]

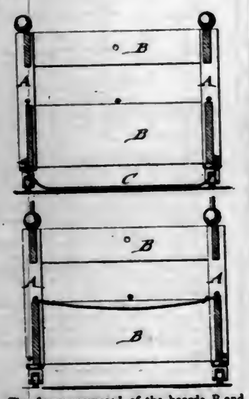
Brief.—Two levers pivoted to an upright embrace the shaft, the latter having a projection thereon, which, when brought in contact with the projection on the bolt connected to one of the levers, will cause them to gripe the shaft and stop its revolution.



In combination with the shaft *b*, provided with the rod or projection *d*, the levers *h h'* and slide *i*, provided with the rod *p*, substantially as and for the purpose herein specified.

163,625. COMBINED BABY-TENDERS AND CRIBS. Arlette Baird, Riverhead, N. Y. [Filed Mar. 29, 1875.]

Brief.—The side and end boards of the frame are provided with headed pins or buttons on their upper and lower edges. A suitable canvas or other stretcher is attached to the upper buttons to form a crib, or a carpet is attached to the lower ones to form a "baby-tender."



The frame composed of the boards B and posts A, the side-boards having fastening devices along their upper and lower edges, as shown and described, whereby a stretcher, D, or floor-covering, C, may be attached, according as the frame is to be converted into a crib or baby-tender, as set forth.

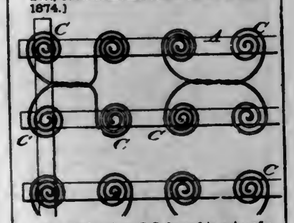
163,626. INSTRUMENTS FOR SCRIBING STAIR-CURVES. Andrew Beck, Philipsburg, Pa. [Filed May 16, 1874.]

Brief.—The table over which the pencil moves is made in two parts, and is adjustable up or down, and to any inclination. The pencil-carrying head is upon a horizontal rod, which slides through the center-post. The motion of the pencil to or from the center-post is determined by a templet, which corresponds with the sweep or curve of the stairs, and against which the head and pencil are drawn by a spring or weight.

1. The combination of the base A, three posts, B C, rocking cross-bar D, three posts, F G, and cross-bar H for supporting the shaft I adjustably in place, substantially as herein shown and described.

2. The combination of the arms E and set-screws *e'* with the center post F and the rocking cross-bar D for plumbing the shaft I, substantially as herein shown and described.

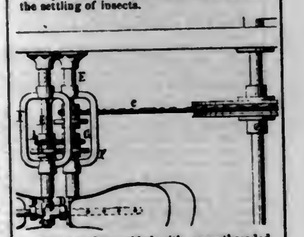
163,627. SPRING BED-BOTTOMS. E. O. Bennett, Crawfordsville, Iowa. [Filed Nov. 7, 1874.]



The spiral springs C C, formed in pairs of a single wire, the pairs being attached by twisting together their connecting-wires, substantially in the manner as described, and for the purpose set forth.

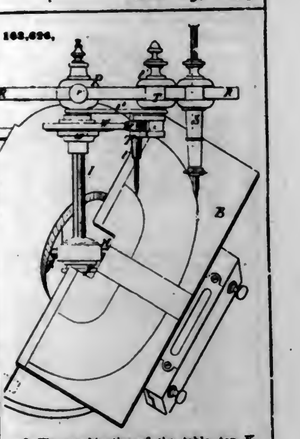
163,628. FANNING APPARATUS FOR ROOMS. Philipp J. Bender, New York, N. Y. [Filed Sept. 21, 1874.]

Brief.—For cooling the air, and to prevent the settling of insects.



The joint C, provided with screw-threaded sockets, in combination with the fans A, having the screw-threaded shanks B, the locking-nuts D, vertical shaft E, and hanger F, all being constructed and arranged to operate substantially as and for the purpose described.

163,629.

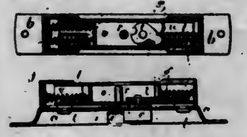


3. The combination of the table-top K, curved bars L, and set-screws *g'* with the cross-bar H and side posts G, substantially as herein shown and described.

4. The combination of the spirit-levels M and set-screws *m'* with the side edges of the table-top K, substantially as herein shown and described.

5. The combination of the ellipse-plate W and its hub *w'*, and set-screw *w''*, with the shaft I, head P, bars R, arm T, and tilting table-top K, substantially as herein shown and described.

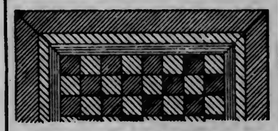
163,629. LOCKS FOR BAGS, &c. Gustave Bernheim, New York, N. Y. [Filed Apr. 19, 1875.]



1. The latch *e* upon the sliding plate *i*, that connected to the moving end *f* of the bolt-case, in combination with the stationary portion *g* of said case, and the box-shaped base *c*, into which the latch projects, substantially as set forth.

2. The latch-plate *i*, sliding between the base *a* and stud-plate *c*, and having a projection, 2, extending up through a mortise in the stud-plate *c*, in combination with the tumbler *t*, swinging upon such stud-plate, and the yielding presser *s*, substantially as and for the purposes set forth.

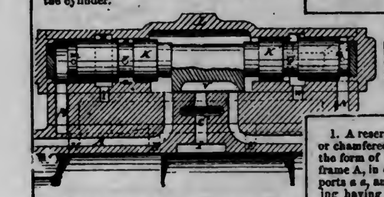
163,630. GAME-BOARDS. A. O. Bourn, Providence, R. I., and Wm. G. Vermilye, New York, N. Y. [Filed Mar. 13, 1875.]



A game-board composed of a foundation of india-rubber, or a compound thereof, and having cloth squares, points, &c., after the manner of inlaying, on one or both of its surfaces, substantially as and for the purposes specified.

163,631. STEAM-ENGINES FOR ROCK-DRILLS. James Brandon, New York, N. Y. [Filed Oct. 31, 1874.]

Brief.—Steam is admitted to and exhausted from the small cylinder, to actuate the valve, by means of the main piston and the ports in the cylinder.

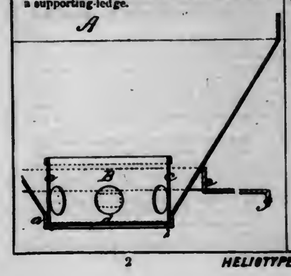




The valve-piston K K', having grooves *a a'* and passages *n n' r r'*, combined with a steam-chest, L, having grooves *s s' M N W Y* and passages H H' E E', as and for the purpose specified.

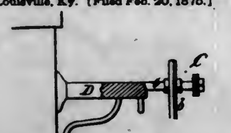
163,632. MILK-STRAINERS. John W. Brey, La Harpe, Ill. [Filed Apr. 17, 1875.]

Brief.—The bottom consists of a detachable sieve with a perforated rim, which rests upon a supporting-ledge.



In a strainer the detachable sieve B, having a perforated rim, *c*, and the funnel-shaped vessel A, having a cylindrical part, *a*, and a supporting-ledge, *b*, combined and arranged substantially as specified.

163,633. CAR-COUPLINGS. Perry Brown, Louisville, Ky. [Filed Feb. 20, 1875.]

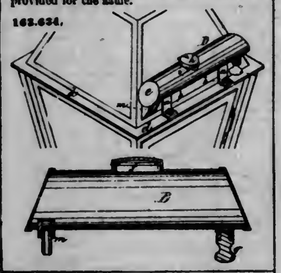


1. The combination, with an endwise-movable draw-head and a coupling-pin, B, having rod *b*, of the bifurcated arm D and slide C, substantially as specified.

2. The rollers J, separated by rollers *r'*, and vertically movable in a horizontal plane in vertical grooves in the chamber of the draw-head, substantially as specified.

163,634. VAPOR-BURNERS FOR LANTERNS. Frederick A. Brown and Albert H. Watkins, Boston, Mass. [Filed May 6, 1875.]

Brief.—The feed-pipe extends within the reservoir, to form a trap for water and other impurities, and a separate discharge-outlet is provided for the same.

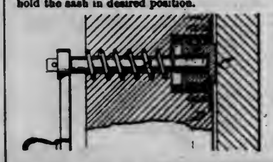


1. A reservoir, B, for vapor-burners, beveled or chamfered off at its ends to correspond to the form of the upper portion of the lantern-frame A, in combination with the legs or supports *a a*, and provided with a supply-opening having a hinged cap or cover, *b*, constructed and applied substantially in the manner and for the purpose set forth.

2. A reservoir for vapor-burners, having the feed-pipe *m* extending above the level of its bottom to form a trap, and provided with a discharge-outlet, through which water or impurities may be drawn off, substantially as described.

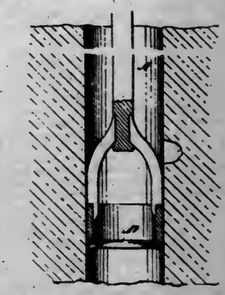
163,635. SASH-HOLDERS. R. R. Calkins, St. Joseph, Mo. [Filed Apr. 3, 1875.]

Brief.—A screw-threaded bolt, operated by a crank-handle, is let into the sash, and provided with a flanged and spring-acted clamp, likewise recessed into the sash; a ring-shaped face-plate, automatically acted on by the spring, pressing against the window-frame, to hold the sash in desired position.



The combination, with sash, of the crank screw-bolt A, socket C, having shoulder *c*, ring-shaped face-plate D, and spring *b*, all constructed and arranged substantially as and for the purposes specified.

163,636. STONE-EXTRACTING TOOLS. N. R. Cheadle, Delta, Ohio. [Filed Feb. 20, 1875.]

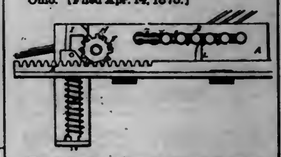


1. The method of removing stone in well-boring by first cutting under them, and then dislodging them with a drop, as set forth.

2. The bit B, twisted and tapering to a median point, as and for the purpose specified.

3. A stone-drop, D, applied in well-boring to break or dislodge stones, in the manner described.

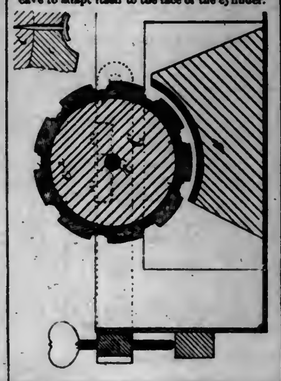
163,637. MUSIC-LEAF TURNERS. Gustavus M. Cohen and Gregor Dietz, Cleveland, Ohio. [Filed Apr. 14, 1875.]



The sliding catch I, ratchet-wheel H, pinion F, and shaft G, in combination with the slide D, lug L, and frame A, substantially in the manner as described, and for the purpose set forth.

163,638. PAPER-PULP ENGINES. Francis A. Cushman, Lebanon, N. H. [Filed Apr. 21, 1875.]

Brief.—The grinding-cylinder is faced with stone segments, held to the core by curved metal stripe set in longitudinal depressions in the stone. The bed-plate is of stone, concave to adapt itself to the face of the cylinder.

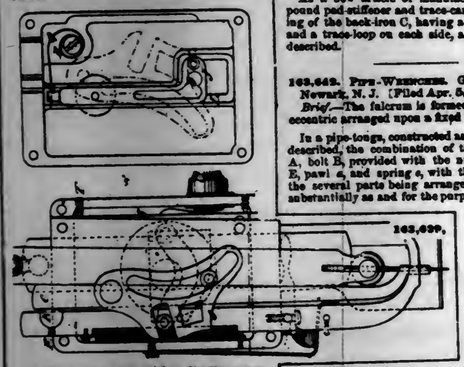


1. The stone-faced grinding-cylinder, having longitudinal grooves in its surface, in combination with the concave stone bed-plate, substantially as described.

2. The grinding-wheel C, when constructed of separate sections or segments *c*, and attached to the periphery of an interior drum of wood or metal by means of the joining-plates *d*, substantially as described and set forth.

162,639. SEWING-MACHINES. George S. Darling and Augustus L. Darling, Watertown, N. Y. [Filed Dec. 12, 1874.]

Brief.—A piece operated by a screw at the head of the presser-bar impinges upon the helper-bar, pressing against the needle-bar, and serves to take up the wear of these parts. The needle-bar is connected to the cam-bar by a link, pivoted at its upper end to the thread-tube, and at its lower end to the cam-bar by a stud on said link, which enters a hole in the cam-bar. The lower edge of the tumbler that connects the presser-bar is provided with a cam-surface for operating the take-up, and a screw on axis upon the lever connected with the crank-disk as to adjust the length of the stitch.



1. The combination of the adjusting-piece E and screw F with the presser, helper, and needle-bar, substantially as specified.

2. The combination, with cam-bar, having a hole and groove leading therefrom, the needle-bar, and the thread-tube, of a pivoted link, provided with a stud, substantially as described.

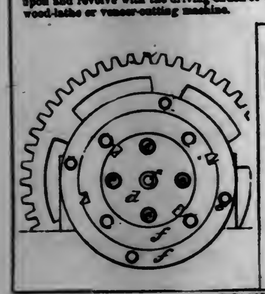
3. The combination of screws *a f*, tubes *b d*, held together by screws *f*, and the elastic washers *f f*, with the plate A, as shown and described, for the purpose specified.

4. The tumbler F, having the take-up-actuating cam O arranged on the lower end, substantially in the manner described.

5. The take-up slide J, in combination with the cam O on the tumbler F, substantially as specified.

162,640. LATHE-DOGS. Calvin B. Davis, Canandaigua, N. Y. [Filed May 1, 1875.]

Brief.—A series of concentric rings, provided with tubular spurs, are made to slip upon and revolve with the driving-shaft of a wood-lathe or veneer-cutting machine.



In a lathe-dog, the concentric and detachable spurred rings *f*, adapted to be locked against rotation independently of each other, and of a central spurred disk, substantially as specified.

162,641. SPRING TRACE-CARRIERS AND BACK-LOOPS. William Davis, Petaluma, Cal. [Filed Jan. 18, 1875.]



As a new article of manufacture, a compound pad-stiffener and trace-carrier, consisting of the back-iron C, having a top loop, A, and a trace-loop on each side, as shown and described.

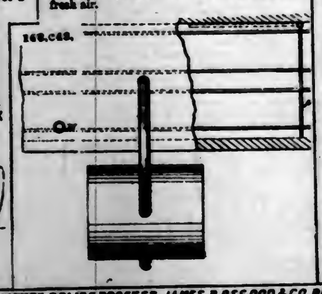
162,642. PIPE-WRENCHES. Geo. D. Dean, Newark, N. J. [Filed Apr. 5, 1875.]

Brief.—The fulcrum is formed of a double eccentric arranged upon a fixed axis.

In a pipe-tongs, constructed as herein before described, the combination of the eccentrics A, bolt B, provided with the nut D, washer E, pawl *e*, and spring *e*, with the shanks C, the several parts being arranged to operate substantially as and for the purpose set forth.

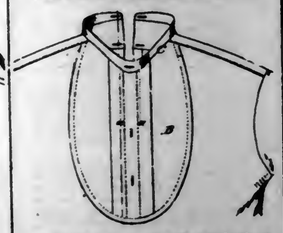
162,643. VENTILATION OF RAILWAY-TUNNELS, &c. Joseph Dixon, New York, N. Y. [Filed Apr. 24, 1875.]

Brief.—To deal with a less body of air, the tunnels are divided into sections of a mile or so. Midway of these are placed fan-blowers, connected by suitable pipes extending right and left into the tunnel at any desired elevation. Partitions occupying the entire space crosswise of the tunnel are formed by pivoted or folding doors. The exhausted air escapes by a pipe leading from the blower to the surface of the ground, while other pipes supply fresh air.



The combination of one or more partitioning-doors and a blowing apparatus with the tunnel, substantially as herein shown and described.

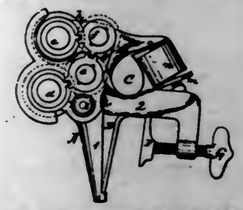
162,644. SHIRTS. John C. Dunham, Buffalo, N. Y. [Filed Apr. 17, 1875.]



A shirt-body having front B united only at the top with collar-band, and down the center to point *a a*, leaving its outer edge entirely free to yield to the movements of the wearer, substantially as and for the purpose specified.

162,645. WRINGING-MACHINES. Chas. A. Eisenhart and Edmd. B. Louer, York, Pa. [Filed Sept. 23, 1874.]

Brief.—The rollers are operated by four gear-wheels, two of which are in fixed bearings, and two yielding and connected to the others by links. The frames are connected by flanged ears and gudgeons. The clamping-jaws are held in place by flanges and tongues. The upper roll is adjusted by a spring and clamping-jaw, and all held to a tub by a screw-clamp.



1. In a clothes-wringer, the fixed pinions *d a*, movable pinions *c f*, links *g h*, and rolls B D, in combination with the jointed castings A C, substantially as and for the purpose described.

2. In a clothes-wringer, the bearing C, constructed with flanged ears *e*, fitting over and embracing gudgeons *b* on casting A, as herein shown and described.

3. The clamp-jaws E, constructed with flanges *f* and tongue *f*, in combination with legs 1 and 2, substantially as shown and described.

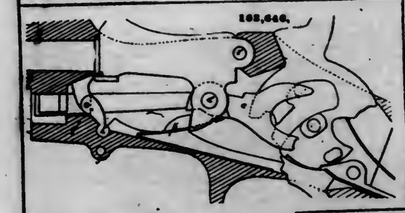
4. The bearing C of the upper roll in combination with the clamp-jaw E and spring *n*, substantially as and for the purpose described.

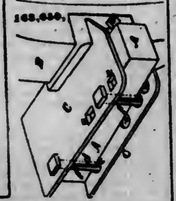
5. The combination, with the bearing C, spring *n*, and jaw E, of the plate F and adjusting-screw, substantially as and for the purpose described.

162,646. BREECH-LOADING FIRE-ARMS. W. H. Elliott, New York, N. Y. [Filed May 17, 1875.]

1. In a fire-arm, the breech-block of which is operated through the medium of a hammer and double pawl, the arrangement of the hammer on one side of the center of the receiver, to make room for the double pawl without widening the receiver, and so that it may have the most direct action, substantially as set forth.

2. The combination of a retractor-spring, *i*, and retractor, when said spring is arranged between the retractor and the operating-shoulder, and a breech-block, which operates as a retainer of the shell after it has been started by the positive movements of the retractor, the combination and operation being substantially as described.





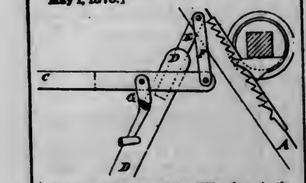
3. The hammer, provided with a cam, in combination with the double pawl *e*, provided with shoulder *e'*, whereby the breech-block is raised so as to conceal the point of the retractor, as herein set forth.

4. The combination, with the double pawl, having the spring-bearing surfaces, as described, of a fixed spring, adapted to operate upon opposite sides of its center of movement, and to hold the breech-block in its several positions, as well as to operate the double pawl, substantially as herein specified.

5. In a breech-loading fire-arm, the front surface of whose breech-block has a movement substantially at right angles with the axis of the bore, a cartridge-retractor, having a body with a thin upper edge, which serves as a partition to prevent the entrance of sand to the lock or limb work, substantially as herein set forth.

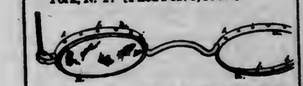
6. The breech-block, provided with projections *c* to fill the retractor, cut in the rear end of the barrel, for the purpose of affording a complete annular support for the head of the cartridge, and of forming a stop for the upward movement of the breech-block, as herein described.

162,647. LIFTING-JACKS. John B. Fayette and Lorenzo Meeker, Oswego, N.Y. [Filed May 1, 1875.]



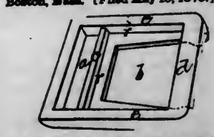
The combination of the lifting-bar A, the brace-bar B, the lever C, the socket-plate D, the sliding bar E, the connecting-bars F, and the bracket G with each other, substantially as herein shown and described.

162,648. SPECTACLES. Joseph Gall, New York, N. Y. [Filed Feb. 5, 1875.]



The lens-frame *a*, provided with perforations 1 1, substantially as described.

162,649. BALE-TIES. J. M. Goldsmith, Boston, Mass. [Filed May 15, 1875.]



1. In a bale-tie, the plate A, having rectangular slot *a*, oblong slot *b*, with its lateral and end bars overhanging a recess, *r*, and lugs upon its under side, adapted for use substantially as specified.

2. The buckle-plate A, having slots *a b*, an overhanging ledge and lugs, in combination with the notched end of a strap-iron binder, substantially as specified.

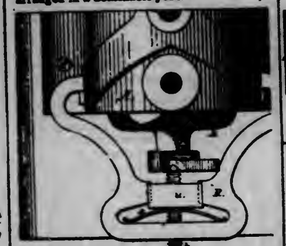
162,650. SHOES FOR WAGON-BRAKES. JNO. Grimsto, Milton, Cal. [Filed Mar. 17, 1875.]

Brief.—Box attached to shoe slips over brake-bar, and is fastened thereto by bolts fitting into grooves on the bar.

The combination of brake-bar A, having grooves *d*, three-sided box C having bolts *e e*, brake-shoe B, and bolts *f f*, substantially as and for the purpose set forth.

162,651. OSCILLATING VALVES FOR STEAM-ENGINES. Worcester Haddock, Pittsburg, Pa. [Filed Mar. 24, 1874.]

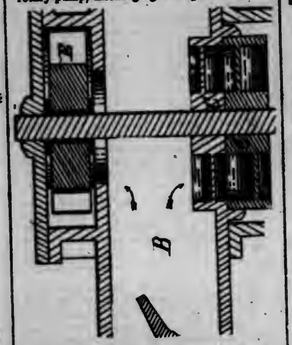
Brief.—Lateral wear of the conical valve is compensated for by a spring and set-screw arranged in a detachable yoke.



The case A and conform valve D, provided with openings, as shown, in combination with the detachable bridle R, screw *t*, nut *u*, and spring *s*, when arranged and operating substantially as herein shown and described.

162,652. WATER-MOTOR FIRE-PLUGS. W. W. Harding, Philadelphia, Pa. [Filed May 3, 1875.]

Brief.—The water in the inlet-pipe is controlled by a valve, and when admitted operates a turbine water-wheel, which drives a rotary pump, discharging through a nozzle.



The water-motor fire-plug herein described, consisting of an inlet-pipe, B, a motor, O, an outlet-pipe, D, and a pump, E, the force of the water on the motor acting on the pump to force a column of water through a nozzle, N, substantially as described.

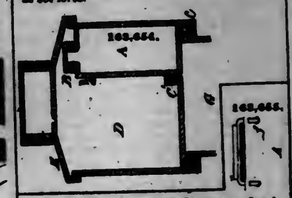
162,653. BRAKES FOR HAY-WAGONS. WM. Harper, Senecaville, Ohio. [Filed Mar. 20, 1875.]



The curved pivoted lever T, in combination with the rear end of the wagon body, the cord U, the rods S O, crank-shaft P Q R, and sliding brake-bar *l*, whereby the weight of the longer lever-arm keeps the brakes ordinarily from the wheel, all substantially as set forth.

162,654. DINNER-BUCKETS. F. H. Hoenig, Louisville, Ky. [Filed Feb. 20, 1875.]

The within-described dinner-bucket, composed of the detachable portions A D O, secured together by the cover E and flanges O O', constructed and arranged substantially as set forth.



162,655. HAY-TROUGH HANGERS. Jacob F. Hess and Lenard Hess, Massillon, Ohio [Filed Mar. 23, 1875.]

The wire-clasp F, with hooks *f f*, in combination with the cross-bar C and trough A, substantially as and for the purpose specified.

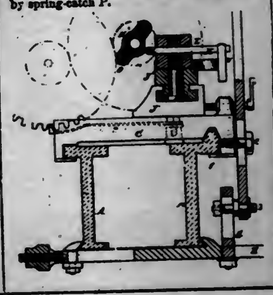
162,656. DEVICES FOR SWAGING BULLETS. William D. Hillis, Elgin, Ill. [Filed Feb. 27, 1875.]



In a device for forming a double-pointed bullet, the setting-die C, and the pinion-die B, each having an equal recess, *c*, in the shape of a conical or conoidal frustum in combination with a tubular block, A, substantially as specified.

162,657. PLANING ATTACHMENTS FOR METAL-TURNING LATHES. Axel Hoffmann, New York, N. Y. [Filed Mar. 1, 1875.]

Brief.—An adjustable clamp for attaching to the bottom of the lathe-shears, slotted for the reception of a slotted bearing-post for the lever, which lever is for reciprocating the bed, and with it the cutting-tool, longitudinally with the lathe. The article to be operated upon is centered in the lathe, and held from turning by spring-catch P.

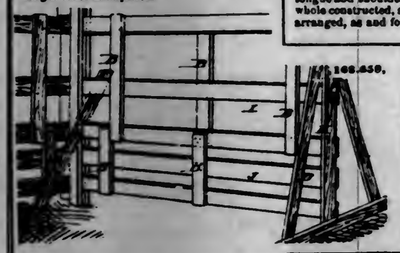


1. A removable planing attachment for turning-lathes, constructed substantially as described—that is, having a clamp, D, lever E, bed C, tool-holder bed J, spring N, and feed-spring P.

2. The arm G, in combination with the adjustable clamp D, lever E, bed C, and lathe-shears A, for the purposes described.

163,658. FARM-FENCES. David L. Hoffman and P. M. Shoemate Aullville, Mo. [Filed Mar. 6, 1875.]

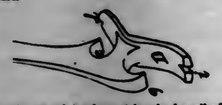
Brief.—The panels are formed of detachable longitudinal sections, which are separated and attached end to end when a low and longer fence is required.



The combination of the detachable sections I and J and the posts supporting them, as shown and described, whereby the sections may be arranged one above the other, or end to end, as set forth.

163,659. STOVE IMPLEMENTS. L. S. Hoyt, Ridgefield, Conn. [Filed Mar. 20, 1875.]

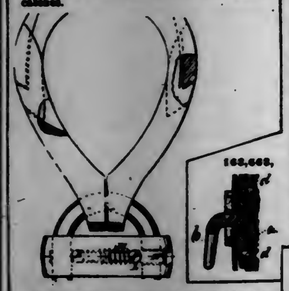
Brief.—A lid and cover-lifter and pot-handle.



The improved implement herein described, consisting of the handle A, provided with the hooking-lip *a*, recess *c*, projections *d* and D, the latter having the notch *i* and the hook *f*, as a new article of manufacture.

163,660. MOUSING-HOOKS. N. B. Johnson and Samuel Adams, Chelsea, Mass. [Filed Apr. 17, 1875.]

Brief.—The two parts of a mousing-hook are kept closed by an adjustable slide, which is fastened on a link by means of spring-catches.



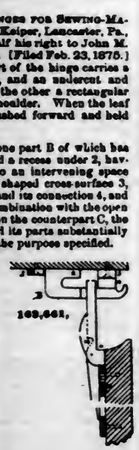
1. The combination of a mousing-hook, consisting of two parts, with a link and slide thereon, and operating substantially as shown and described.

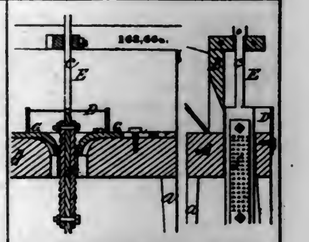
2. The combination of a mousing-hook and a link, with an adjustable slide, which slide is fastened on the link by means of spring-catches J J, and grooves or channels in the link, as described.

163,661. TABLE-HINGES FOR SEWING-MACHINES. Henry B. Keiper, Lancaster, Pa., assignor of one-half his right to John M. Keiper, same place. [Filed Feb. 23, 1875.]

Brief.—The one part of the hinge carries a cross-lug and recess, and an undercut and projecting hook, and the other a rectangular opening and abrupt shoulder. When the leaf is raised it can be pushed forward and held upright.

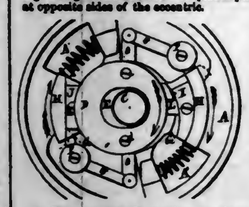
A table-hinge, the one part B of which has a flat surface, 1 2, and a recess under 2, having open sides, as also an intervening space between 2 and the T-shaped cross-surface 3, the narrowed base 6, and its connection 4, and terminal hook 5, in combination with the open tongue and shoulder on the counterpart C, the whole constructed, and its parts substantially arranged, as and for the purpose specified.





163,662. GOVERNORS FOR STEAM-ENGINES. A. Kendall, Cleveland, Ohio. [Filed Nov. 20, 1874.]

Brief.—The eccentric is moved at right angles to the shaft by the governor-balls, acting through cams and inclined planes placed at opposite sides of the eccentric.



1. The eccentric D, having an elongated hole, E, therein, wings G G', inclined plane J, cam I, and shaft C, in the manner substantially as described, and for the purpose set forth.

2. The inclined plane J, and cam I, as arranged to operate in combination with the eccentric D, in the manner as and for the purpose set forth.

3. The combination of the eccentric D, keys L M, wings G G', inclined plane J, cam I, shaft C, links *e' e'*, balls P P, links Q Q, springs A', and wheel A, all arranged and combined to operate in the manner as set forth, and for the purpose specified.

163,663. CARRIAGE-CURTAIN FASTENINGS. Chas. P. Ketterer, New York, N. Y. [Filed Apr. 2, 1875.]

Brief.—The curtain is secured at the top. The hook is turned up, put through the button-hole, and then turned down, which fastens the curtain.

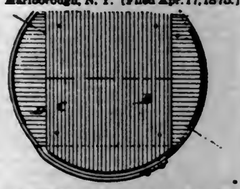
As a fastening for carriage-curtains, the combination of plate *a*, screws *d*, and the bent-headed pin *b* that passes through a countersunk hole in said plate *a*, all substantially as set forth.

163,664. FEED-MILLS. O. B. Knapp, Brandon, Wis., assignor to himself and R. C. Kelly, same place. [Filed Mar. 27, 1875.]

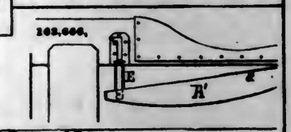
1. The combination of a reciprocating shaft, E, having detachable corrugated plates *f*, with the curved detachable and adjustable corrugated plates G, substantially as specified.

2. The combination, with a hopper, C, reciprocating grinding-shaft E, and plates G, of a supplementary feeding-box, D, constructed and arranged substantially as specified.

163,665. BERRY-CUPS. Dewitt W. Kniffin, Marlborough, N. Y. [Filed Apr. 17, 1875.]



A berry-cup made of wood-veneering, having a bottom of two thicknesses fastened together with the grain of the wood at right angles, one part having tenons which pass through slots in the body, and hold the bottom to the body, substantially in the manner shown and described.



163,666. APPARATUS FOR SHAPING PANTALOONS. John Kraft, Newark, N. J. [Filed Jan. 30, 1875.]

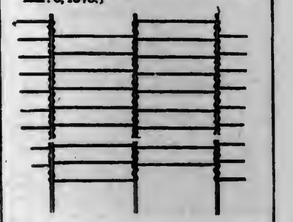
1. The arms A and A', in combination with the locking device E and spring *a'*, substantially as and for the purposes set forth.

2. The irons F, in combination with the curved arm A, formed and adapted to operate in conjunction therewith, substantially as and for the purposes specified.

163,667. MANUFACTURE OF HARD SUGAR. Eugen Langen, Cologne, Germany, assignor to F. O. Matthiessen and Wiechor's Sugar-Refining Company, Jersey City, N. J. [Filed Mar. 17, 1875.]

The improved process of converting granular sugar into hard or loaf sugar herein described, which consists in subjecting granular sugar, when mechanically mixed with a strong sugar solution, to heat, for the purpose of superficially dissolving the sugar-crystals, and then cooling and hardening the mass in molds, in the ordinary manner.

163,668. FLY-NETS. Luther B. Lee and George W. Lee, Ridgewood, N. Y. [Filed Mar. 6, 1875.]



As an article of manufacture, a cord for the cross-bars or strands of fly-nets, stitched as and for the purpose specified.

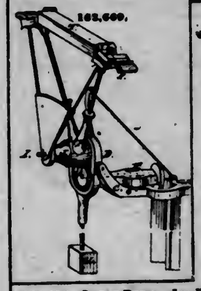
163,669. WINDMILLS. Isaac Lahmer, Greenfield, Ind. [Filed Mar. 24, 1875.]

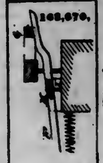
Brief.—Consists in devices for securing the cross-bars which form the outer frame of the wheel to the radial arms, and to the rods to which the disk of the wheel is fastened; also, in the method of pivoting the wind-wheel below the central hub from which the arms diverge, so that with a weight attached to the lower end of an oblong head piece, into which one of the cog-wheels is secured, a proper equipoise may be maintained.

1. The combination, with a wind-wheel of the character described, of the bevel-wheels G and H, and for the purpose set forth.

2. The devices N E Q for securing the outer ends of the rods L and arms O to the transverse bar T, as described.

3. The combination of the wind-wheel with the shafts S and I, bevel-wheels G H, and oval head-piece D, for the uses and purposes expressed.





163,670. LATHE-RESTS. Jas. R. F. Leland, Baltimore, Md. [Filed Dec. 19, 1874.]

Brief.—The device acts in such a manner as to prevent vibration in articles of irregular form during the process of turning.

The self-adjusting spring-rest F, having pin G and slot H, combined with a lathe-bed having stud I and a cutting-tool, as and for the purpose specified.

163,671. LOOM SHUTTLE-BINDERS. Amos Mallory, Mystic Bridge, Conn. [Filed Oct. 7, 1874.]

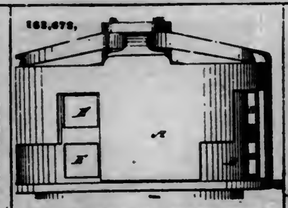
Brief.—The ordinary shuttle-box swell is dispensed with, and the binder is so constructed as to act as check, relief, and swell, the picker-stick bearing upon the outer end to bring the binder firmly against the side of the shuttle.



The lever C having the inclined surface *b*, and rounded surface *a*, and its inner end provided with the extension *d* and lug *e*, substantially as and for the purposes herein set forth.

163,672. WATER-WHEELS. Isaac Mallory, Dryden, N. Y. [Filed Mar. 13, 1875.]

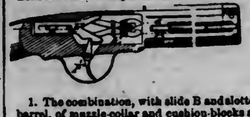
Brief.—The gate is made with openings on opposite sides and opposite each other. These are so arranged in regard to the chute-openings that the water may be entirely shut off; or two or more of the chute-openings may be uncovered, or one or more for each of the two openings in the gate. The water may be admitted to only the lower tier of buckets in the wheel, through two or four openings; or, by moving the gate farther, two or four chute-openings are uncovered for the upper tier of buckets, so that water may be admitted through two, four, six, or eight openings successively, according to the amount of power required.



In combination with a turbine wheel, C, having two sets or tiers of buckets, arranged one above the other, and a chute-curb, B, having two tiers of chutes, E, the revolving gate A, provided with a series of openings, J J and K K, all constructed and relatively arranged as herein shown and described.

163,673. TOY GUNS. William H. Martin, Mobile, Ala. [Filed Mar. 20, 1875.]

Brief.—Pressure upon the trigger urges a fork-piece forward, compressing toward each other the tails of the pivoted, spring-jaws E, thus opening the jaws and freeing the arrow-headed hook, to impel the missile in its front.

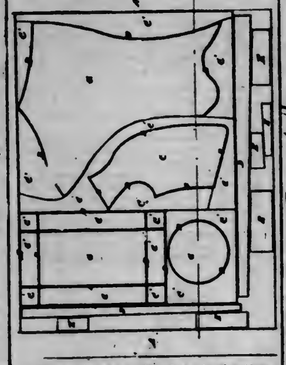


1. The combination, with slide B and slotted barrel, of muzzle-collar and cushion-blocks arranged on a toy gun, as and for the purpose described.

2. The combination, with the barrel and stock, of arrow-head slide B B' and spring-jaws E, as and for the purpose set forth.

3. The combination, with spring-jaws E, having divergent rear arms, of the trigger-operated slide F, constructed and arranged as and for the purpose described.

163,674. APPARATUS FOR CUTTING OUT GARMENTS. Kenneth McKenzie, Hamilton, Canada. [Filed Oct. 24, 1874.]



The combination, with chase A, of cutters B, pattern-blocks C, interfilling blocks C', foot-sticks D, and quoins E, as and for the purpose specified.

163,675. SLIDING GATES. J. P. McMurray, Oregon, Mo. [Filed Oct. 24, 1874.]

Brief.—A crane-like arrangement, by which a sliding gate may be elevated and depressed. When partially withdrawn it may be revolved as upon an axis.

The apertured plate T, pulley S, cord R, and post-pin V, in combination with bracket B F and rod E, as shown and described, to support the gate at different elevations.

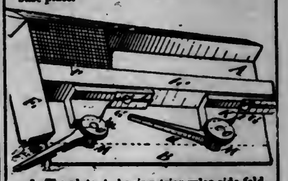
163,676. PROCESSES OF RENDERING ARTIFICIAL STONE IMPERVIOUS TO MOISTURE, AND PREVENTING EFFLORESCENCE THEREON. Wm. McMurtrie and Benj. Chambers, Jr., Washington, D. C. [Filed May 12, 1875.]

1. The process, substantially as described, of rendering artificial stone impervious to moisture, and preventing efflorescences thereon by mixing with the ordinary constituents of the stone in the process of manufacture the soluble, earthy, or metallic sulphates, singly or together, in the form of a powder, and then a solution of the fatty acids.

2. The process, substantially as described, of rendering artificial stone impervious to moisture, and preventing efflorescences thereon by adding to the surface of such stone after manufacture, or already in use, a solution of the earthy or metallic sulphates, and then a solution of the fatty acids.

163,677. PRINTERS' GALLEYS. Henry H. McWilliams, Sacramento, Cal. [Filed Mar. 20, 1875.]

Brief.—The side and end ledges of the galley are formed by folding over the edges of the base-plate, and soldering the first fold to the base, so that the second fold shall be at right angles thereto. A second plate having a single square ledge, similarly formed, is slotted to fit over studs in the base-plate. The studs carry eccentric-headed levers, which, acting against sliding projections on the ledge, lock the type between it and the ledge on the base-plate.



1. The plate A, having triangular side fold C and end fold E, combined with a slotted plate, B, having quadrangular fold F on the inner side, and adjustable transversely, as and for the purpose specified.

2. The slotted slides G G and eccentrics M M, in combination with the movable plate B and bar F, for the purpose described.

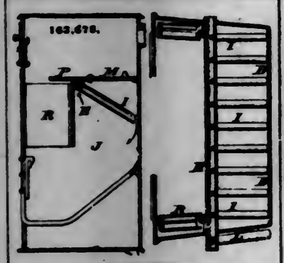
163,678. FIRE-PLACES. John F. Merrill, Cincinnati, Ohio. [Filed Apr. 10, 1875.]

Brief.—The stove may be used as either an open or magazine stove.

2. The combination of swinging tubular front H I and open-front stove or fire-place, forming the magazine J, as and for the purpose set forth.

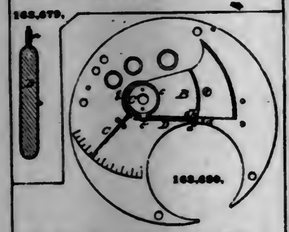
3. In combination with the grated front H I of magazine J, the folding doors R.

4. The combination, in an open stove or fire-place, of the auxiliary grate H I, forming the magazine J, the hinged doors R, and cover M, as set forth.



163,678. WINDOW-BLINDS. S. W. Merrill, Maynard, Mass. [Filed Apr. 14, 1875.]

The encompassing band A and eyelet *e*, arranged together and combined with the blind-slat D and its connection-bar B, substantially as specified.



163,679. WATCH-REGULATORS. John A. Miller, Paducah, Ky. [Filed Feb. 2, 1875.]

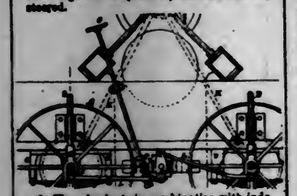
Brief.—A watch-regulator in which the screw operating the regulator-arm is attached to the side of the bridge, and connected by a screw-nut with the collar of the regulating-arm.

1. The screw-shaft D, secured to the balance-bridge B, turning in a bearing in plate *d'*, and working in nut *e* on collar *c*, substantially as and for the purpose described.

2. The combination of the screw-shaft D on balance-bridge B, and working on nut *e* on yoke *a*, and the pointer-arm C, having the slotted end *a*, with the hair-spring *c*, substantially as and for the purposes described.

163,680. TRACTION-ENGINES. William H. Milliken, Sacramento, Cal. [Filed Apr. 10, 1875.]

Brief.—Parts adapted to pass without straining over inequalities, and to be readily steered.



1. The wheels A, in combination with independent axles B, yoke D, pivots, and body, substantially as set forth.

2. The independent axles, in combination with jointed sections of the main axle, middle sections of the same, body provided with fixed bearings for the same, and the driving-wheel carried thereby, substantially as set forth.

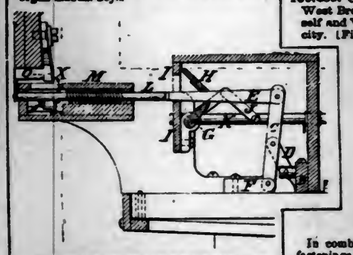
3. The combination of the wheels, independent axles, horizontally-oscillating yoke D, and rock-shaft N, substantially as and for the purpose set forth.

4. The combination of equalizing-beam Q and springs S with the body and the horizontally-oscillating independent wheels, substantially as set forth.

5. The combination of pivoted yokes D with the body, each having vertical movements relatively to the other, substantially as set forth.

163,682. REED-ORGAN ATTACHMENTS. H. R. Moore, Erie, Pa. [Filed Nov. 14, 1873.]

Brief.—Vibrating tongues are arranged vertically upon a sound-board, and are sounded by an improved action operated by the usual organ manual-keys.



1. The picker-action herein described, consisting essentially of the rod L, with its coiled spring and the picker X, in combination with the slot N, bar P, and spring R, substantially as specified.

2. In combination with the subject-matter of the preceding claim, (of claim 1,) the vibrators V and sounding-board T, substantially as described.

3. The stationary bar R, levers O D E, and block F of the key A, in combination with cam G, lever I, draw-rod K, and gravity-lever H, substantially as described.

4. In combination with the subject-matter of the preceding claim, (of claim 3,) the picker-action L M P R, substantially as and for the purpose set forth.

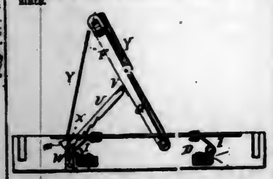
163,683. CLAMPS FOR GRINDING WATCH-CRYSTALS. Arthur C. Norton, Monona, Iowa. [Filed Mar. 20, 1875.]



The revolving elastic-faced disks A and B on independent axles C, in combination with jointed clamping-arms D E and a clamp-screw, G, substantially as specified.

163,684. INVALID-BED BOTTOMS. Harrison Ogborn, Richmond, Ind., and T. T. Kendrick, New York, N. Y. [Filed Apr. 15, 1875.]

Brief.—The staples guide the ratchet-bars in their movement over the detent-blocks, and the triangular blocks on the lower ends of the ratchet-bars prevent them from passing entirely through the staples when the head-rest is lifted. The ratchet-bars are released and the head rest lowered by means of the cords. The cords attached to the slats and to the upper cross-bar of the head-rest form a support for the back when the head-rest is elevated, and also form an intermediate support for the slats.



1. The ratchet-bars U U, hinged at their upper ends to the side pieces F F, and having at their lower ends the triangular blocks *a a*, in combination with the detent-blocks W W, beveled at their upper ends, the staples X X, and the cord Y, one end of said staple being set into the block W, while the other end embraces the ratchet-bar U, and passes into the side rail, all as shown, and for the purposes set forth.

2. The series of cords Q, connected at their lower ends to the series of slats S, and at their upper ends to the cross-bar O of the head-rest, substantially as and for the purposes set forth.

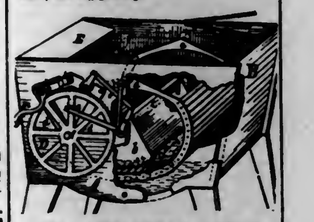
163,685. CORSETS. Chauncey L. Olmstead, West Brookfield, Mass., assignor to himself and Waterman & Mayer, New York city. [Filed Apr. 6, 1875.]



In combination with a corset, the hoop *b*, fastenings *c d*, spring-braces *e a*, and pockets *l*, all constructed and arranged to operate substantially as and for the purposes set forth.

163,686. WASHING-MACHINES. Ruben G. Orwig, Des Moines, Iowa. [Filed Feb. 12, 1874.]

Brief.—Two reciprocating rubbers moving in opposite directions by means of levers, links, and cog-gearing.

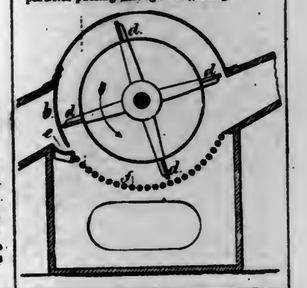


1. In a washing-machine, the moving carrier and wash-board *a a*, and the oscillating pressing and rubbing device *b b* on the rock-shaft *c*, when arranged and suspended relative to each other in the tub A, substantially as and for the special purposes shown and described.

2. The combination of the driving-wheel D, pitman *e*, crank *c*, carrier and wash-board *a a*, pinion and crank *g*, pitman *o*, crank *n*, shaft *c*, and rubbing and pressing device *b b*, substantially as and for the purposes shown and described.

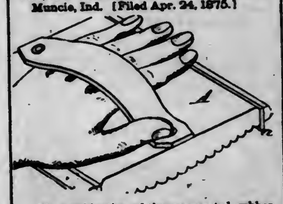
163,687. MACHINES FOR MIXING WOOL. S. R. Parkhurst, Mount Clair, N. J., assignor to Emily R. Parkhurst, same place. [Filed Feb. 18, 1875.]

Brief.—The fibers of different-colored wool, blown from a picker, accumulate against the fingers and project between them, and, being struck by the beaters, are carried down, matted together, and removed off the ends of the fingers and over the grating, and thus thoroughly mixed together, the dirt and foreign particles passing through the grating.



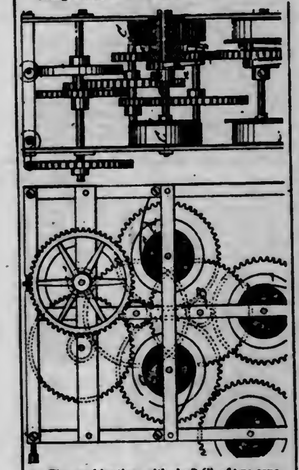
The rangs of fingers *b* at the end of the trunk *a*, in combination with the revolving beaters *d* and grate *f*, substantially as set forth.

163,688. HAND-RUBBERS. R. I. Patterson, Muncie, Ind. [Filed Apr. 24, 1875.]



The combination of the corrugated rubber A and the rubber pieces *a a* at the ends thereof, substantially as described.

163,689. MOTORS. Jacob G. Peterson, Morganton, N. C. [Filed Mar. 13, 1875.]



The combination, with shaft C, of two separate springs, one coiled directly on it, and the other on a circumjacent sleeve, as and for the purpose specified.

163,690. WINDOW-BLINDS. Johann Peyer, Wahring, (near Vienna,) Austria, assignor to Jos. R. Von Wesseley, New York, N. Y. [Filed Aug. 6, 1874.]

Brief.—The gudgeons are made separate from the slats, and are attached by a metallic clasp and screw. They are, furthermore, furnished with two eccentric pins, which pass through curved slots in the metal face-plate of the frame, and there connect with rods which are attached to all the slats similarly, and cause them to move in unison.



1. In a Venetian blind or shutter, the slat A, provided with the pin *d* eccentric to the gudgeon *c*, in combination with the fillet *b*, having curved slot *e*, and rod C, substantially as and for the purpose hereinbefore described and set forth.

2. The clamp D, made with the pins *a d*, disk *m*, jaws *i l*, and screw *n*, the screw having its outer part larger than the inner, substantially as herein shown and described.

163,691. HEDDLE-FRAMES. Edwin S. Pike, Worcester, Mass., assignor to Geo. Crompton, same place. [Filed Apr. 24, 1875.]



1. A heddle-bar locking device adapted to be secured, substantially as described, to the heddle-bar, to hold it in position.

2. The combination with the heddle-frame, and its bars of heddle-bar locking devices applied only to the heddle-bars, and removable therefrom, substantially as described.

163,692. FENCE-POSTS. Eugene Powell, Delaware, Ohio. [Filed Jan. 25, 1875.]

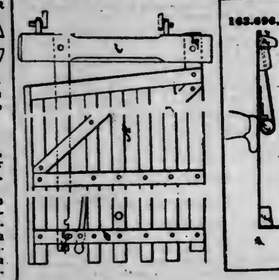


1. The combination of the sheet-metal post A, having a widened base or stool portion formed in one piece therewith, and the stool C, extending longitudinally, or in the direction of the fence, and made separate from the post, substantially as herein described.

2. The combination of the post A, brace-rods B, stool C, and sleeves or rings E, substantially as set forth.

163,693. FARM-GATES. W. H. Pratt, Prattville, Mich. [Filed Feb. 5, 1875.]

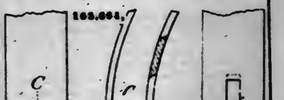
Brief.—The rear end of the bar, which passes longitudinally between the rails of the gate, is pivoted to the swinging upright. Its front end extends between other uprights, and is provided with hooked notches, which engage with a pin through the uprights when the gate is to be supported off the ground.



The end notched and pivoted latch-bar F, combined with pivoted gate A and hinged post C, as and for the purpose specified.

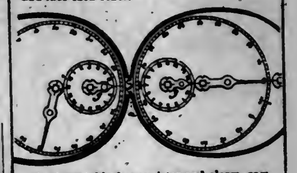
163,694. MAINSPRINGS FOR WATCHES. C. W. Rice and Asa L. Burbank, Worcester, Mass. [Filed Nov. 25, 1874.]

The mainspring, having its outer turn or coil constructed with a hook, C, and a catch E, or their equivalents, so as to form a clasp or guard restraining and holding the spring when nearly run down, and allowing it to turn backward in the barrel without damage, substantially in the manner and for the purpose above set forth.



163,695. FARE-REGISTERS. J. A. Rummig, New York, and Christoph J. Uderitz, Williamsburg, N. Y. [Filed Feb. 20, 1875.]

Brief.—A portable fare-register composed of two half-shells, and each containing a fixed dial-plate, rotary pointer, fixed gong, and projecting lever, for actuating the pointer and clapper to the gong, the two gongs being of different pitch, and the instrument when closed, the faces of the dials being concealed, and faces each other.



1. A portable fare-register and alarm, composed of two half-shells, *b* and *d*, one of said half-shells containing a fixed dial-plate and rotary pointer, a fixed gong, and a projecting lever, B, for actuating the pointer and the clapper of the gong, the other half-shell also containing a fixed dial-plate and rotary pointer, a fixed gong, and a projecting lever, B, for actuating the pointer and the clapper of the gong, the two gongs being of different pitch, all arranged so that when the instrument is closed the two dial-plates will be concealed and face each other, substantially as and for the purpose herein shown and described.

2. The combination of the pawls *m o*, carrying the pins *s t*, with the slide D and eccentric *u*, substantially as and for the purpose herein shown and described.

163,696. TOYS. Jas. B. Safford, Buffalo, N. Y., assignor of one-half his right to T. A. Jebb, same place. [Filed Feb. 20, 1875.]

Brief.—A spring is attached underneath the toy figure, and by its snap gives the figure a somersault. The snap is delayed by a friction-lug. An improvement upon the skip-jack.



1. The combination, with the actuating spring placed on the under side of the toy, of a frictional stop, arranged substantially as described, to permit the spring to release itself, as set forth.

2. The combination, with the base of a toy, of the springs C C, arms *d d*, bar *S*, and a suitable stop, substantially as and for the purpose hereinbefore set forth.

3. The combination, with the springs C C, arms *d d*, and bar *S*, of one or more frictional stop-blocks, B, substantially as and for the purpose hereinbefore set forth.

163,697. ILLUMINATING-SIGNS. C. H. Seawell, St. Louis, Mo. [Filed Aug. 1, 1874.]


A
A
A

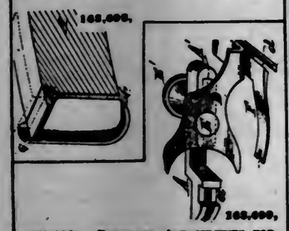
1. As a new article of manufacture, the metallic plate or sign-board A, having letters B painted thereon, and backed by a semi-transparent glass plate, C, said letters having perforations or drill-holes b to indicate or produce their outline at night, in combination with one or more illuminating-burners, as herein described.

2. In combination with a lantern, A, having the letters painted thereon, and perforations to indicate the outlines of said letters, the semi-transparent glass plate C and one or more illuminating-burners, E, as set forth.

168,698. FELLY-PLATES. James Y. Sitton, Due West, S. C. [Filed Apr. 5, 1875.]

The clip C, provided with the vertical parallel side ears or flanges G G, as and for the purpose specified.

168,698.



168,699.

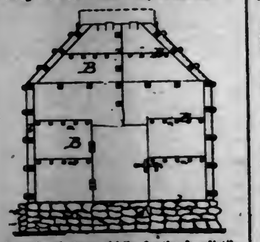
168,699. RUFFLING ATTACHMENTS FOR SEWING-MACHINES. John D. Rowbrige, Indianapolis, Ind. [Filed Nov. 11, 1874.]

Brief.—The ruffling-blade and the lever-arms that engage the needle-bar are made in one piece. The bracket by which the ruffler is held to the head of the machine is slotted, and the fulcrum of the blade-piece adjustable in the slot to vary the length of ruffle.

The combination of the slotted bar A A', horizontally-adjustable fulcrum-pin E, and the ruffler compound of lever D *d S*, and finger F, constituting a single unchanging piece, all substantially as and for the purpose specified.

168,700. CHARCOAL-KILNS. W. Sparrow, Hancock, Mass. [Filed Oct. 30, 1874.]

Brief.—Designed for use where soft coil for covering the wood is not easily obtainable.



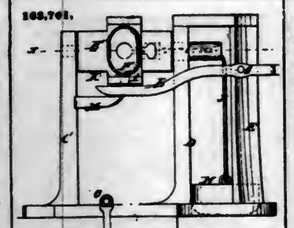
A sectional charcoal-kiln for the dry distillation of wood, composed entirely of thin metal sheets, which are formed into sections B B, and adapted to be placed on, and combined with a perforated foundation, C, of stone, substantially as specified.

168,701. ROW-GUARDS FOR PLOWS. Wm. Edwin Stanley, Montezuma, Ga. [Filed Feb. 27, 1875.]

Brief.—Pivoted in uprights upon the plow-beam is a hollow shaft for the reception of a reversible marking-rod. The journal on which the marking-shaft is secured is hollow for the passage of a cord that extends downward, and to the lower end of which is attached a weight (moving in guides) for retracting the shaft to its normal position, should it meet an obstruction. By a pivoted two-pronged lever the shaft is turned from side to side.

1. The marker-socket F, pivoted to its supporting-shaft E', and having a weighted cord connected to it, substantially as specified.

168,701.



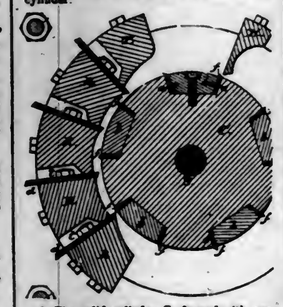
2. The marker-socket F, connected to a reversing-shaft, E', having a reversing and supporting fork, L, combined with it, in the manner described.

3. The combination of the notched hollow reversing shaft E', pivoted marking-socket F, and weighted cord J, substantially as specified.

4. The combination of the guide-posts D with the supporting-posts D, reversing shaft E, marking-socket F, and fork L, substantially as herein described.

168,702. COTTON-SEED HULLERS. Ferdinand Streuby, New Orleans, La. [Filed July 21, 1874.]

Brief.—Mode of securing the knives to the cylinder.



1. The solid cylinder C, formed with segmental recesses in its periphery, into which fit the removable segments *b*, to secure the knives *f*, as described.

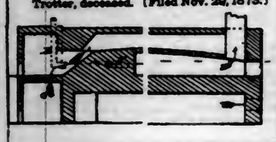
2. The tongue *c*, in combination with the solid segment and grooved knife *f*, as specified.

168,703. COAL-SHOVELS. James D. Tallmadge, Chicago, Ill. [Filed Mar. 1, 1875.]



The combination, in a coal-shovel, of four wires doubled and bent into eight tines with protruding shanks, and the ferrule by which they are held together, all substantially as set forth.

168,704. PROCESSES OF MAKING WHITE OXIDE OF ZINC. Chas. W. Trotter, Brooklyn, N. Y., administrator of Jonathan G. Trotter, deceased. [Filed Nov. 29, 1873.]



The method or process of working the ores of zinc or galvaniser's dross when mixed with coal by the auxiliaries of free hydrogen and oxygen gases, generated in the reducing-chamber or oxidising-chamber, by the decomposition of different currents of steam projected into and upon the ignited charges of ore and coal on the bed of the oven, substantially as and for the purposes set forth.

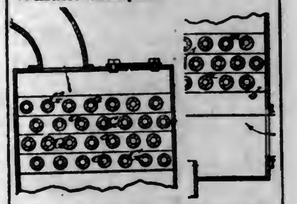
168,705. TILTING CHAIRS. J. M. Waters, Cincinnati, Ohio. [Filed Sept. 9, 1874.]



In a tilting chair provided with a suitable frame, E G G, and stop-arm D, the spring B, attached rigidly at one end at or near the swivel-bolt, projecting thence forward toward the front of the chair, then bent back upon itself, and having its other end so secured by the seat or abutment H upon the rear of the chair-seat A as to secure the compression of the spring when the chair is tilted back.

168,706. GAS-PURIFIERS. George H. Wells, Nashville, Tenn. [Filed Apr. 24, 1875.]

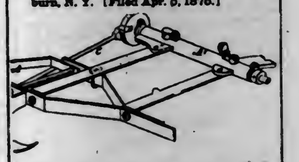
Brief.—The rods are of bamboo or other cane. The grids set one over another within the case, and the rods of adjacent grids are in different vertical planes.



1. A gas-scrubber, composed of cane rods or other similar material, substantially for the purpose herein described.

2. In a gas-purifier, a series of sectional grids, composed of cane rods or other similar material, substantially as and for the purpose set forth.

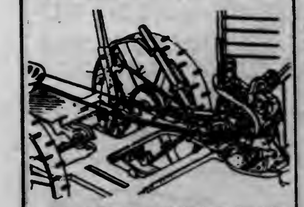
168,707. JOURNAL-BEARINGS AND PITMAN-CONNECTIONS. Cyrenus Wheeler, Jr., Auburn, N. Y. [Filed Apr. 5, 1875.]



1. The combination of the tubular frame A', shaft *h*, and crank-wheel D, bushings *a a*, and oil-holes and covers 1 2, as and for the purpose described and represented.

2. The combination of the crank-wheel D, pitman C, and the pitman-connection, composed of the slotted cap *g*, ball 6, and its trunnions *e e*, and the hollow screw *i*, as and for the purpose described and represented.

168,708. HARVESTER-RAKES. Cyrenus Wheeler, Jr., Auburn, N. Y. [Filed Dec. 16, 1873.]



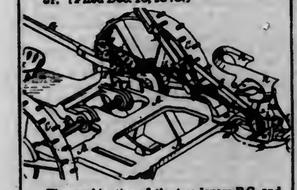
1. In combination with the lever C and its bell-crank *a*, the connecting-rods *b d*, the former attached to the track of the rake-stand, or to a rigid piece connected thereto, and the latter attached to the rear end of the main frame, or a projection thereon, for the purpose of lifting and tilting the cutting apparatus at one and the same operation, substantially as described.

2. The chain-guide *j*, with a free entrance for the chain at its front, and an opening at the other end, where the chain passes onto the rake-driving wheel, said opening corresponding in form to a cross-section of the chain, for the purpose of arranging the links of said chain in proper order to take the projections or recesses in the drive-wheel, as described and represented.

3. In combination with the automatic tripping mechanism *s t u v*, for holding and releasing the switch *o*, the locking mechanism *w*, under the control of the driver, for the purpose of holding the switch in one position when desirable to do so, without regard to the automatic tripper, as and for the purpose described.

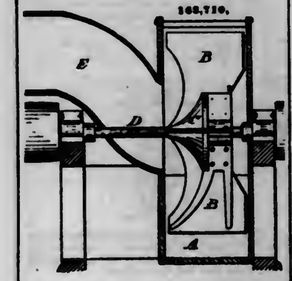
4. The cord *y*, when attached to the tripping mechanism *s*, in combination with the switch *o* and rollers *p* on the rake-arms, for the purpose of changing the rake-operating or shifting mechanism from automatic to one entirely under the control of the driver, as described.

168,709. MOWING-MACHINES. Cyrenus Wheeler, Jr., and Henry J. Case, Auburn, N. Y.; said Case assignor to said Wheeler, Jr. [Filed Dec. 16, 1873.]



The combination of the two levers E G, and crank-arm *g*, with the links connecting them with each other, and with the main frame and cutting apparatus, substantially as described, so that by the operation of the lever G the cutting apparatus may be raised and tilted at one and the same time.

168,710.



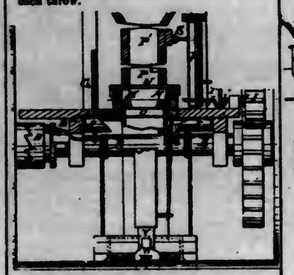
168,710. HELICAL-CONE SUCTION-FANS. Jas. White, Cleveland, Ohio. [Filed Mar. 6, 1875.]

Brief.—The hub of the fan-wheel is cone-shaped, with the apex toward the induction-pipe. The edges of the fans upon the same side of the machine are curved, also, to facilitate the passage of shavings, to discharge which is the purpose of the machine.

In a suction-fan, the combination of the cone C, curved edge wings B B, with the revolving shaft D and fan-case A, substantially as described.

168,711. POTATO AND SEED PLANTERS. W. H. Whitman, Scranton, Pa. [Filed Mar. 13, 1875.]

Brief.—The hopper is made in sections, the lower one being slotted to allow the slide to be reciprocated beneath. The edges of the sections are rounded off to allow the two upper sections to rock upon each other and upon the stationary section. Motion is imparted to the hopper by connecting-rods, one extending from the vertical pivoted shaft to the hopper, and the other from a crank-shaft that receives its motion by a cog-wheel gearing with a similar wheel on the axle of the bearing-wheel. The seed-slide is reciprocated by crank and a pitman, having a spring in its end, that causes it to stand still for a brief time at the end of each throw.



1. In a seed-planter, a hopper made in three parts, P P' P", the middle one forming a vibratory throat, as and for the purpose set forth.

2. The combination, with the seed-slide and driving-crank, of an intermediate pitman, K, provided with springs *k'* that cause it to stand still for a brief time at the end of each throw, as and for the purpose specified.

3. The combination of the shaft R and its arms and connecting-rods S T, with the frame Q, the pivoted jointed hopper P, and the crank *f'* formed upon the shaft J, that gives motion to the pitman K, of the dropping-slide L, substantially as herein shown and described.

168,712. TRILL-COUPLINGS. S. J. Wiser, Bowmansville, N.Y. [Filed Apr. 20, 1875.]



1. In a thill-coupling, the combination, with a stationary jaw, E, of a movable jaw, F, and a journal-pin, T, substantially as and for the purpose set forth.

2. The combination, with the stationary jaws E and movable jaw F, of the spring K and the catch L, substantially as and for the purpose set forth.

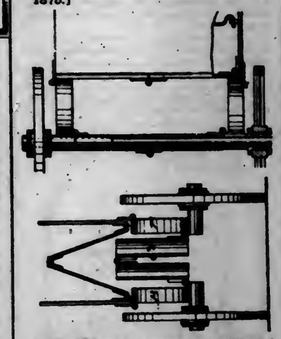
3. The combination, with the clip B, of the plate D, having the jaw E, lug H, and shaft E', with the catch L of the loose jaw F, projection F', and shaft F", journal-pin J, and spring K, as and for the purpose set forth.

168,714. BED-BOTTOMS. William Wood, Canton, Ohio. [Filed Mar. 20, 1875.]



In a bed-bottom the combination of the frame A, cross-bars *c*, springs *b*, slats *c*, end pieces *d*, springs *f g*, and slats *h*, substantially as shown and described.

168,715. CHILDREN'S CARRIAGES. William Wuers, New York, N. Y. [Filed Feb. 6, 1875.]



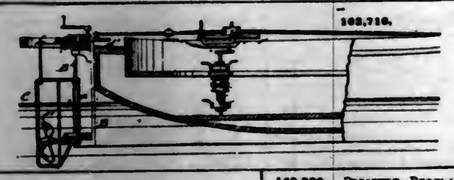
1. A child's carriage constructed of hinged sectional body and axles folding up symmetrically toward the central longitudinal axis, substantially as and for the purpose set forth.

2. In folding child's carriages, a body having centrally-hinged bottom sections, hinged sides, and detachable end parts, substantially as shown and described.

3. In folding child's carriages, the combination of the hollow exterior axle sections, hinged together and to the end sections, with an interior solid axle forming one strong axle, and admitting folding up on being withdrawn, substantially as specified.

168,716. STEERING-PROPELLERS. Wilhelm F. Eschs, Brooklyn, N. Y. [Filed Mar. 6, 1875.]

The combination of the rudder and screw-frame C, propelling-screw C', tube *a*, vertical driving-shaft B', driving-gearing *d d' d"*, guide-wheel *i*, arm *l*, rod *l'*, and steering-ropes *i i*, as and for the purpose set forth.



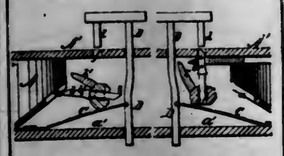
162,716.

162,717. FAUCET ATTACHMENTS FOR BARRELS. Albt. Zoller, Hoboken, N. J. [Filed Oct. 10, 1874.]



The key E, provided with the prongs *d*, thread *f*, and flange *e*, for opening and closing the valve C of a barrel, as specified.

162,718. CAR-COUPLINGS. Wm. H. Adams, Mount Gilead, Va. [Filed Apr. 23, 1875.]



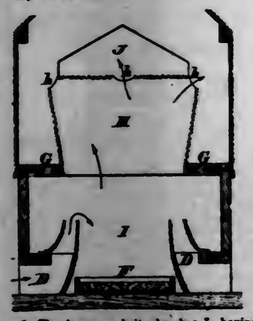
1. In an automatic coupling, the combination of draw-head A, having slot *e*, top-bolted case A' *e'*, rock-shaft having loose pin *b* and rigid wing *b'*, spring C, and a link-rod, substantially as set forth.

3. The combination of spring C, rod D, treadle E, and loose pin *b*, to drop the latter, all substantially as set forth.

3. The combination, with loose pin *b*, of a treadle, E, having the subjacent stud *d*, substantially as and for the purpose set forth.

4. The combination with a loose pin, *b*, of rock-shaft, spring, and cross-pin *b'*, to allow a car to detach itself when it runs off the track, all substantially as set forth.

162,719. FLY-TRAPS. Chas. Arendall and Wm. C. Runyan, Marathon, Ohio. [Filed Apr. 13, 1874.]

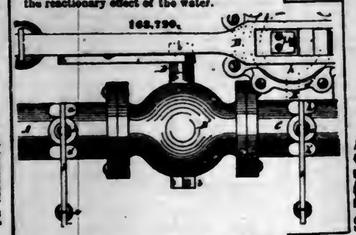


1. The lever or bait chamber I, having tubular entrances D D leading to the upwardly-projecting curved grooves or spouts E E, and the bait-tray F, in combination with the upper or light chamber K, the platform G, having apertures *g*, and the condensers H, having orifices *h*, as and for the purpose set forth.

2. A fly-trap, having longitudinal-ascending entrances, formed of wire-gauze, projecting at an angle into the cage, the lower sheet of gauze being stretched upon beveled blocks forming part of the base of the trap, as and for the purpose set forth.

162,720. PRESSURE-REGULATORS WITH SAFETY-VALVES. Phinehas Ball and Benaiah Fitts, Worcester, Mass., assignors to the Union Water-Meter Company, same place. [Filed Mar. 15, 1875.]

Brief.—A safety-valve is placed in the low service-main to relieve the regulator from the force of the reactionary blow of the "water-hammer" incident upon the closing of hydrant or other large valves, and a safety-valve in the high-pressure main gives vent to the excess of pressure upon the sudden closing of the governor-valve, and thus neutralizes the reactionary effect of the water.



162,720.

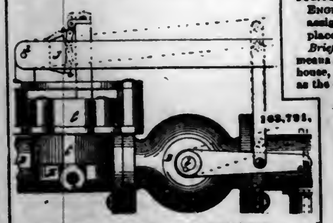
1. The combination of a pressure-regulator, governor-valve B, and safety-valve *c*, with a water-main, in which the safety-valve is applied to the low-service end C of the main, so as to operate in the manner substantially as and for the purposes set forth.

2. The combination of a pressure-regulator, governor-valve B, and safety-valve *d*, with a water-main, in which the safety-valve is independently attached to the high-service end A of the main, so as to operate in the manner substantially as and for the purposes set forth.

3. The combination of a water-main, governor-valve, and pressure-regulator, with a safety-valve, *d*, applied to the high-service end A, and a safety-valve, *c*, to the low-service end C, in the manner substantially as and for the purposes set forth.

162,721. PRESSURE-REGULATORS WITH DASH-POTS. Phinehas Ball and Benaiah Fitts, Worcester, Mass., assignors to the Union Water-Meter Company, same place. [Filed Mar. 15, 1875.]

Brief.—To secure a gradual and uniform motion of the regulator upon the governor-valve, a "dash-pot" is attached to the lever of the regulator.



162,721.

1. The combination of a pressure-regulator, C, and dash-pot K with a water-main and its governor-valve D, substantially as and for the purpose set forth.

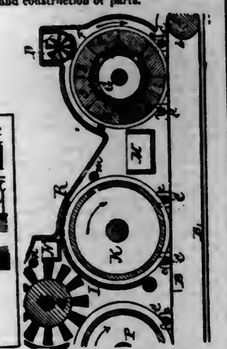
2. The combination of a pressure-regulator, C, dash-pot K, and safety-valve *n*, with a water-main and its governor-valve D, safety-valve *n* being applied to the low-service end B of said main, substantially as and for the purpose set forth.

3. The combination of a pressure-regulator, governor-valve B, and safety-valve *n*, with a water-main and its governor valve, safety valve *n* being applied to the high service end A of said main, substantially as and for the purposes set forth.

4. The combination of a pressure-regulator, dash-pot, and two safety-valves, *m* and *n*, with a water-main and its governor-valve, the whole being arranged in the manner and for the purposes substantially as set forth.

162,722. BRONZING-MACHINES. Willard J. Barber, Willimantic, Conn. [Filed Mar. 27, 1875.]

Brief.—Relates to the particular arrangement and construction of parts.



1. The combination, with the bronze-hopper D, constructed with a perforated bottom, of the perforated slide or slides F, substantially as and for the purpose described.

2. A revolving bronzing-roller having its surface composed of a series of movable bronzing-pads, to each of which a horizontal reciprocating motion is imparted during the revolution of the bronzing-roller, for the object specified.

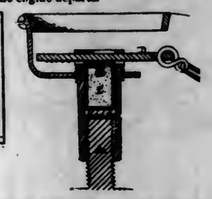
3. The bronzing-roller having the bronzing-pads attached to horizontal sliding plates H, in combination with cams I and J, for moving said plates, substantially as described, whereby the surface of the bronzing-roller has a reciprocating motion imparted to it in a direction parallel with its axis, for the object specified.

4. The combination of the cleaning-brush or roller K, the curved jacket L, partly surrounding the same, and the clearing-bar *n*, the whole being constructed and arranged substantially as and for the purpose described.

5. The combination of the cleaning-roller P, the revolving clearing-brush O, arranged above the same, the clearing-bar *n*, and the jacket R, inclosing the whole, all constructed and arranged substantially as herein shown and described.

162,723. FIRE-KINDLERS FOR STEAM FIRE-ENGINES. Frank Benedict, Detroit, Mich., assignor to himself and James Bittle, same place. [Filed Dec. 11, 1874.]

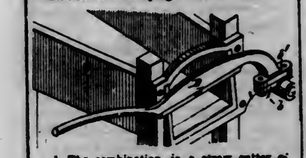
Brief.—The friction-plate is attached by means of a chain to the floor of the engine-house, to secure the withdrawal of the same as the engine departs.



The combination, with a fire-grate, of the match-tube, the friction-plate, and the screw, the same being adapted to receive and ignite a friction port-fire, as specified.

162,724. STRAW-CUTTERS. Benj. Belcher, Chicopee Falls, Mass., assignor of one-half his right to John W. Belcher, same place. [Filed May 6, 1875.]

Brief.—The knife is adjustable with respect to the throat of the machine. The point of adjustment is independent of the pivot upon which the lever carrying the knife works.

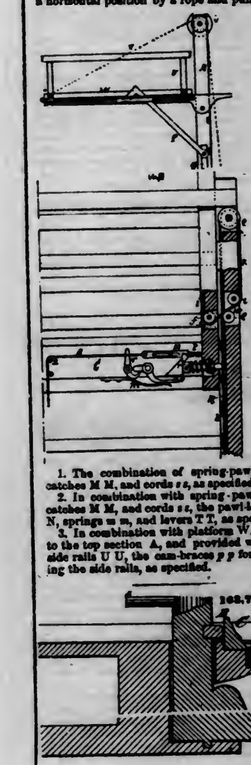


1. The combination, in a straw-cutter, of the stationary pivot and the knife, adjustably independent of the pivot, either at an angle or on a straight line, at a point away from said pivot with respect to the throat of the box, as set forth.

2. The combination, in a lever feed-cutter, of the stationary pivot *a*, sleeve C, with slotted flange *b*, and the lever D, with flange *b'*, connected to the flange *b* with screws, substantially as and for the purposes herein set forth.

162,725. EXTENSIBLE FIRE-LADDERS. Jos. M. Birchler, Chicago, Ill. [Filed Mar. 15, 1875.]

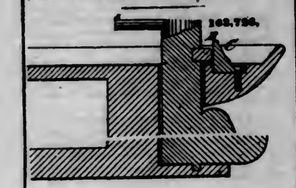
Brief.—Each section is provided with spring-catches, which engage in notches on the sides of the ladder. The sections are operated by ropes and pulleys. A platform is pivoted to the upper section, and is raised to a horizontal position by a rope and pulley.



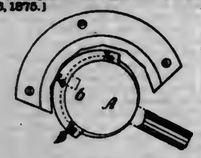
1. The combination of spring-pawls L L, catches M M, and cords *s s*, as specified.

2. In combination with spring-pawls L L, catches M M, and cords *s s*, the pawl-levers N N, springs *n n*, and levers T T, as specified.

3. In combination with platform W, hinged to the top section A, and provided with the side rails U U, the cam-braces *p p* for adjusting the side rails, as specified.



162,726. RUDDER-POST BEARINGS. Joseph N. Bitting, Jr., Camden, N. J. [Filed Mar. 26, 1875.]



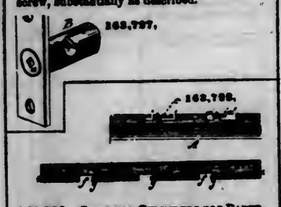
1. The bearing B, made eccentric or wider at the middle than at the ends, substantially as shown and described.

2. In combination with a rudder post, A, an eccentric segment, B, and polygonal bearing, C, substantially as shown and described.

162,727. SASH-HOLDERS. W. B. Blackmer, Anconia, Conn. [Filed Apr. 20, 1875.]

Brief.—A suitable case attached to the window-frame carries an endless screw, which passes through and is combined with a transverse bolt, in such manner that the turning of the screw in one direction draws the bolt hard against the sash as a friction-holder, while turning it in the opposite direction releases the same.

The herein-described sash-lock, consisting of the screw C, supported in its case B, combined with the bolt E, projecting through a slot in the case, and worked by the said screw, substantially as described.



162,727.

162,728.

162,728. GRINDING-CYLINDERS FOR PAPER-PULP ENGINES. Chas. J. Bradbury, Lawrence, Mass., assignor to himself and Geo. W. Russell, same place. [Filed Apr. 26, 1875.]

Brief.—Knives secured in cylinder by sliding bayonet-catch.

1. The blades C, formed with the notches *f* and shelves *g*, substantially as and for purposes stated.

2. The roll A, formed with the longitudinal grooves *a'*, annular grooves *a'*, and lips *a'*, substantially as and for purposes stated.

3. The combination, with the roll A, provided with longitudinal grooves, as described, of the blades C, entering said longitudinal grooves, and provided with shelves or projections which engage in the undercut grooves, as shown and set forth.

4. The combination of the roll A, removable blades C, and hoops *e e*, substantially as and for purposes stated.

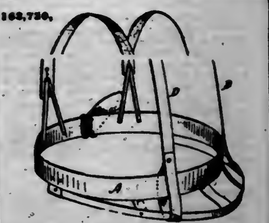
162,729. TREATING WOOL, &c., TO FREE THEM FROM IMPURITIES. Otto Braun, Berlin, Prussia. [Filed Apr. 12, 1875.]

The process of treating wool, &c., to free them from impurities by first immersing them in water to remove impurities soluble in water, then displacing the water by an intermediate liquid capable of dissolving the impurities insoluble in water, and, finally, displacing the intermediate liquid by means of other, which will dissolve the impurities insoluble in alcohol and water, substantially as and for the purposes set forth.

162,730. SKIRT-SUPPORTERS. M. P. Bray, Birmingham, Conn. [Filed Feb. 5, 1875.]

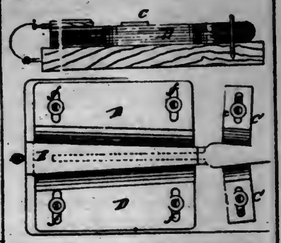
The herein-described skirt-supporter, consisting of the waistband A, supporting-spring B, and straps D D, attached to both the said spring and band, substantially as described, so as to support each independently of the other, as specified.

162,730.



162,731. APPARATUS FOR MOUNTING FANS. Gustav Brueck, New York, N. Y. [Filed May 7, 1875.]

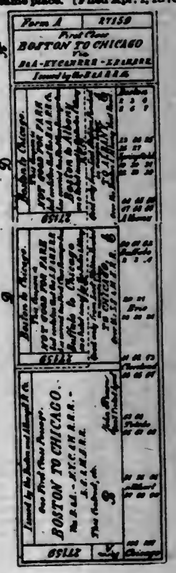
Brief.—The leaves and folded covering of the fan are held in position while being joined together.



1. In an implement for mounting fans, the combination of leaf-guides C C and guides D D, for the folded covering of a fan, substantially as shown and described.

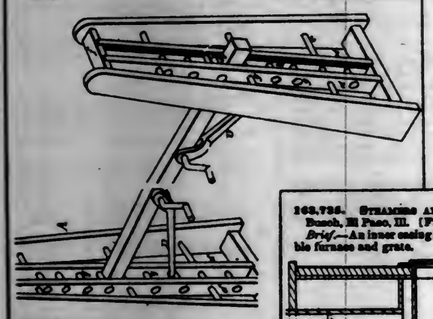
2. The combination of a follower, E, with the guides D D, for the folded covering, and with the leaf-guides C C, substantially as set forth.

162,732. TICKETS. Louis Brush, Buffalo, N. Y., assignor of one-half his right to T. A. Jebb, same place. [Filed Apr. 1, 1875.]



A passage-ticket extending over two or more lines of railroad, or divisions thereof, consisting of a contract-stub and passenger-strip, containing a continuous list of the stations on the entire route, permanently connected, and a series of coupons for the different roads or divisions, not good for fare, but forming a voucher for each road, or division, adapted to be detached from the other portions of the ticket by the conductor, while the passenger portions forms a continuous ticket and stop-over check, substantially as and for the purposes hereinbefore set forth.

163,732. SCAFFOLDS. Wm. Burge, Manmee, assignee of one-half his right to T. W. Ryan, South Toledo, Ohio. [Filed Apr. 24, 1875.]

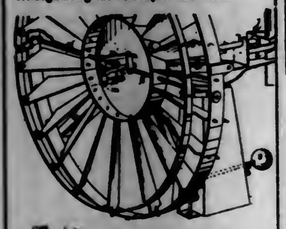


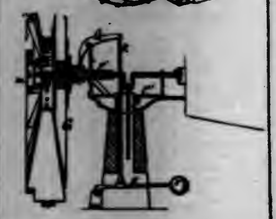
1. The frames A, constructed with central posts *d d'*, and removable bolts *g*, substantially as and for the purposes specified.

2. The combination of the slides *y*, having spurs *v*, and working in grooves *k*, with the removable braces D, substantially as and for the purposes specified.

163,734. WINDMILLS. Wm. T. Burrows, Nashua, Iowa, assignor of one-half his right to M. B. Ridgeway and M. Rosenbaum, same place. [Filed Nov. 6, 1874.]

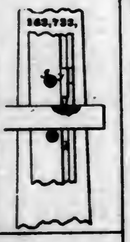
Brief.—A wind-wheel provided with pivoted blades, a sliding hub or sleeve moving endwise bodily on the main shaft, and with crank-rods operated by said movement of the wheel, whereby the position of the blades is determined and regulated by the position of the wheel on its shaft, and thus, in turn, by the force or backward thrust of the wind thereon, for regulating the velocity of the wheel.





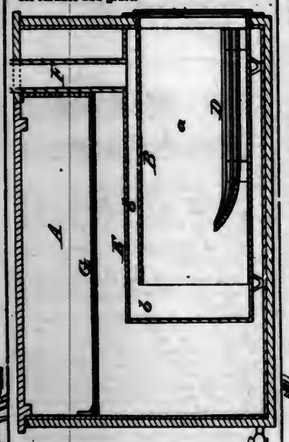
1. The wind wheel having the fixed and movable rings and pivoted slats, all connected with the sliding hub or sleeve, and adapted to slide endwise bodily on its main central shaft, as described, in combination with the arm or cross-head m on the end of said shaft, and the crank-rods N connected therewith, and operating as described.

2. The wind wheel provided with the fixed and movable rings, pivoted slats, and crank-rods, as described, and adapted to move endwise bodily on its shaft, in combination with the forked lever Q, rod R, and weighted lever S, for moving the wheel and pivoted slats, as described.



163,736. STEAMERS AND BOILERS. Carl Busch, El Paso, Ill. [Filed Mar. 27, 1875.]

Brief.—An inner casing incloses the removable furnace and grate.

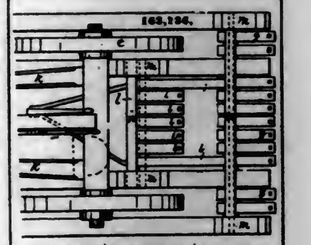


1. The chest A, having the casing E and escape-pipe F, in combination with the removable furnace B and grate D, substantially as and for the purpose set forth.

2. In an agricultural boiler, the chest A, having supporting-flanges, in combination with the perforated shelf G, casing E, and furnace B, substantially as and for the purpose set forth.

163,735. HARROWS. Columbus Burwell, Etna, Me. [Filed Mar. 31, 1875.]

Brief.—A rectangular frame is suspended from the axle-tree of bearing-wheels, from near its middle, by links. The forward end is also attached to the shafts by a lever and link. Two sets of pivoted arms, each carrying a tooth, are attached to the frame, one at the rear and the other near the middle, the latter sliding in ways by means of a lever. When the forward frame is shoved back it locks down the rear pivoted arms, and if at the same time the forward end of the main frame is drawn up to the shafts, the weight of the machine is thrown upon the rear teeth; thus forcing them into hard or impacted soil.



1. In a harrow, the combination of a balanced or nearly balanced frame, *c*, provided with one or more rods, *f f*, with independently-acting toothed finger-bars, hinged on said rods, as and for the purposes set forth.

2. In a harrow, the combination of a balanced frame, *c*, provided with one or more rods, *f f*, having toothed finger-bars hinged thereto with links, whereby said frame is suspended from its supporting-wheels, as herein set forth.

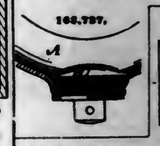
3. The combination of the frame *c*, provided with hinged tooth-carrying finger-bars, with the frame *l* sliding thereon, and operating as set forth, for the purposes described.

4. The combination of the frame *c*, with its hinged tooth-carrying finger-bars, and frame *l*, with a lever *p* and link or chain *q*, for changing the point of suspension of said frame *c* from its middle to its front end, whereby the weight of said frame is thrown upon the teeth, as and for the purposes specified.

163,737. DRAIN-SCREW ATTACHMENTS FOR STENCH-TRAPS. William A. Butler, New York, N. Y. [Filed Apr. 19, 1875.]

Brief.—A stench-trap made of ductile metal, and in two longitudinal half-sections. The lower half has a drain-screw socket struck up by stamping or otherwise, and having its lower edge turned in to form an annular flange, which forms a seat for a lead-metal screw-box within the socket, and serves to receive a drain-screw, the head of which bears on the outer edge of the soft metal of the internal flange of the socket to make a close joint.

In a sheet-metal trap composed of longitudinal half-sections, as described, the combination, with the lower half-section A, of the socket *b*, for reception and retention of the screw-box of the drain-screw, said socket being struck up from the metal of said half-section A, and being formed with an interior flange, *c*, at its lower end, substantially as and for the purposes herein set forth.





163,738. CYLINDER-CAMS. M. J. Carney, Toledo, Ohio. [Filed Apr. 23, 1875.]

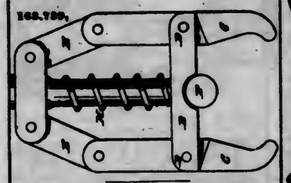
The combination of the part A, formed with the elongated cylindrical hub C, having slot *i*, and the movable part B, having slot *a*, the bolt *b*, nut *d*, and set-screw *b'*, which pass through the two parts B and C, for connecting both of the same directly to the shaft, all constructed as and for the purposes herein set forth.

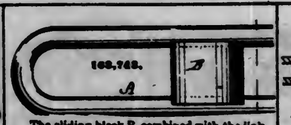
163,739. CLOTHES-POUNDERS. William H. Castle, Geneva, Ohio, assignor of one-half his right to R. O. Rote, same place. [Filed Sept. 7, 1874.]

Brief.—The handle has a cross-head at the lower end. Jaws are pivoted to cross-bars, through which the handle moves, and is actuated by a spiral spring.

1. A clothes-pounder having jaws fulcrumed to a slide on its handle, and listed or jointed at their upper ends to the latter, whereby their lower ends are caused to simultaneously pound and squeeze the clothes as they strike the same, substantially as shown and described.

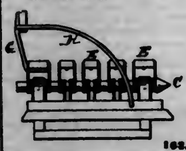
2. The handle A, with its lower end provided with a cross-head, F, in combination with the jaws C C, slide B, and links E, with or without the spring H, substantially as and for the purpose set forth.

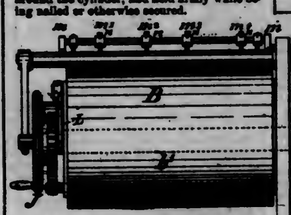




The sliding block B, combined with the link A, and having one side longer than the other, substantially as and for the purposes set forth.

163,744. VEHICLE-SEATS. Wm. H. Cloud and David D. Craig, Fremont, Ohio. [Filed Apr. 13, 1875.]







The combination of the seat-body A, arms B B, bars C C, the looped coil-springs D D, slats E E, back F, the bars G G and H H, all substantially as and for the purposes set forth.

163,741. BELL-PULLS. Clemens Clay, Philadelphia, Pa. [Filed Dec. 28, 1874.]



1. A bell-pull face-plate, A, having ways or lugs *a' a'* on each side of the opening *a* for holding the loop B, substantially as shown and described.

2. In combination with the plate A, having the ways *a' a'*, the removable adjustable loop B, substantially as shown and set forth.

163,742. SPOOL-HOLDERS. Caleb T. Cheverland, Old Town, Me. [Filed Feb. 19, 1875.]



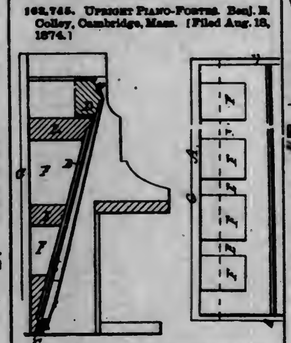
A spool-holder consisting of the cylinder *a*, provided with the thread-opening *b*, pin *c*, and hole *f*, as and for the purpose set forth

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163,743. CAR-COUPLING LINKS. James M. Glass, Opelika, Ala., assignor of part of his right to W. B. Shepard, Geo. A. and A. P. Bush, and W. H. Groom, same place. [Filed Apr. 1, 1875.]

Brief.—One side of the block is longer than the other, that it may be placed in the mouth of the draw-head to hold the link up. To give the link a downward inclination the shorter side is made to rest in the bottom of the draw-head.

163,745. UPRIGHT PIANO-FORTES. Benj. R. Colley, Cambridge, Mass. [Filed Aug. 18, 1874.]



The combination, in an upright piano, of the inclined sounding-board B and a series of passages, F, leading from the lower end to the upper end of the piano-case, substantially as herein shown and described.

163,746. CAR-COUPLINGS. John D. Conner and Louis Fritz, Philadelphia, Pa. [Filed Feb. 20, 1875.]

1. In combination with the swivel C and draw-head B, the swiveled post D to permit the lateral movement of said draw-head, as set forth.

2. The draw-head B, swiveled vertically and laterally, as and for the purposes set forth.

3. The combination of the draw-head B, having the chamber *b*, holding-springs *b' b'*, with the rod *c*, having a head, *c'*, working in said chamber, as set forth.



a. The draw-head B, having a hook, F, in combination with link E', pin *c*, and link E, substantially as set forth.

5. In combination with a draw-head, B, and link E, an auxiliary holding-pin, *c'*, of india-rubber, substantially as and for the purpose set forth.

6. In combination with the draw-head B, holding the hook F, the lever G, engaging with the stud *f* on said hook, substantially as and for the purpose set forth.

163,747. COPPER BOTTOMS FOR KETTLES. Allan Cunningham, New York, N. Y. [Filed Jan. 30, 1875.]



In a seamless extension copper bottom for tea-kettles, the combination of the central recess A, with corrugations *c c c* and one or more shoulders or flanges, B and C, with the inclined extension D, provided with the flanged lip *b*, arranged for forming one-half of a double seam when attached to a kettle-body, the whole bottom being struck out of sheet metal in a finished state for use, substantially as and for the purposes as herein shown and described.

163,748. COTTON-SEED PLANTERS. Joseph Deane, Mitchell, Ind., assignor of one-half his right to E. P. Hamilton, Louisville, Ky. [Filed Apr. 6, 1875.]

Brief.—Oscillating agitator, regulating-slide, series of saws, brush-cylinder for cleaning saws, all mounted on wheels carrying opening and covering devices.



In a cotton-seed planter, the combination of the agitators J, regulator R, brush-cylinder L, and saw-cylinder K, constructed and arranged substantially as shown and described.

163,749. DRIVEN-WELL POINTS. Delos A. Danforth, Hobart, Ind. [Filed Apr. 8, 1875.]

Brief.—A well-tube provided with a number of holes, countersunk on the outside. In the holes are inserted filters of a button shape, consisting of a piece of wire-gauze, doubled, and in suitable shape. A piece of sheet metal is fastened around the edges of the gauze to hold the same, and on one side the metal is formed into a collar or hollow shank, thus completing the button, the collar being of the same size as the hole in the well-tube.

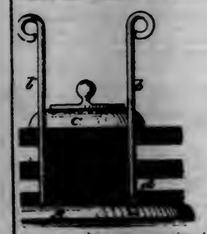
1. A well-point filter made in the form of a button, of wire-gauze *b*, sheet-metal rim *d*, and collar or hollow shank *c*, substantially as and for the purpose herein set forth.

2. The combination of the well-tube A, provided with countersunk apertures *a a*, and the filters B B, made in the form of buttons, and riveted in the countersinks, substantially in the manner and for the purposes herein set forth.



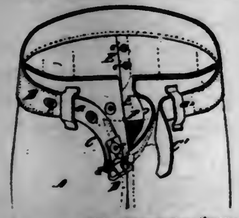
162,750. BILL-FILES. Charles Davis, Jr., Portland, Me. [Filed Mar. 31, 1875.]

Brief.—Files of bills are crossed in the standards and held down by the weight.



A bank-bill holder, consisting of a base, A, upright standards *b b' b''*, with a cover or weight, C, substantially as described.

162,751. OVERALLS. Sigmund Pentsch, Philadelphia, Pa. [Filed Apr. 26, 1875.]



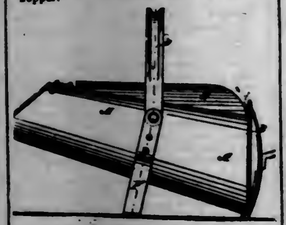
1. As a new article of manufacture the overalls A, provided with the elastic gusset F at the fly, and the buckle-straps C C' formed in one piece with the waist-band strap C having the button-hole *c'*, and buttons *c c*, substantially as and for the purpose set forth.

2. In combination with a fly, E, an elastic gusset, F, to prevent tearing, substantially as shown and described.

3. In combination with the buckle-strap C, attached to the overalls A, the loose sliding-buckle D, substantially as described for the purpose set forth.

162,752. COAL-HODS. John B. Driscole, New-York, N. Y. [Filed Apr. 13, 1875.]

Brief.—The body of the hod or scuttle may be made of various sizes by varying the size of the base. The flanges form an elongated hopper.



1. A coal-hod the body A of which is composed of one piece bent partially round into a frustrumical shape, and held in shape by a base, B, secured to it at one end, and some suitable means of connection at the other end, substantially as set forth.

2. In combination with the body A, composed of one piece bent partially round, as described, the lips or flanges G G, the whole constructed to operate substantially as and for the purposes described.

3. In combination with the body A, the legs F F, ears *h h*, and arched brace *i*, made all in one piece, substantially as described.

162,753. ELECTRICAL CIRCUIT-CLOSERS. L. L. Duerden, Brooklyn, N. Y. [Filed May 6, 1875.]

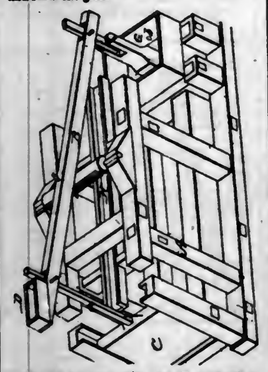
1. A telegraph-key, the moving part of which (for making and breaking contact) consists of a flexible and elastic diaphragm or disk, secured at its edges to a suitable base, and operating substantially as herein shown and described.

2. The combination of the flexible and elastic metallic diaphragm or disk, the recessed base, to which said diaphragm is secured at its edges, and the contact-points, inclosed in a chamber formed by and between the disk and base, substantially as set forth.

3. A telegraph-key, in which the contact-points are contained in a chamber hermetically sealed, or practically so, to the atmosphere, substantially as set forth.

162,754. WATER-WHEEL GATES. George W. Dunn, Texas Creek, Colo. [Filed Mar. 6, 1875.]

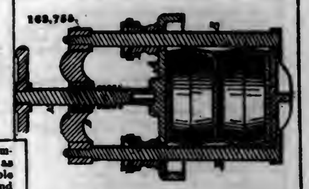
Brief.—The gate is connected by a rod with the inner end of the lever, which is provided with a box for the reception of weights to bear down the end of the lever and gate. From the other end of the lever is suspended a box. A trough is arranged in such a manner that when the water rises in the reservoir above the gate it will pass through this trough and fill the box, so that the box will overbalance the weighted end of the lever and raise the gate.



The combination of the gate C, connecting-rod *c*, lever or walking-beam B, with weight-box D, the box G, with outlet *h*, and the trough H, all constructed and arranged substantially as and for the purposes herein set forth.

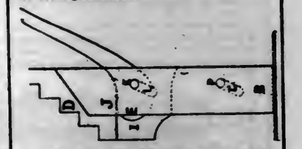
162,755. VULCANIZING APPARATUS FOR DENTISTS. Horace M. Bisco, Toledo, Ohio. [Filed June 3, 1874.]

The combination, with the cover A, of the boiler and steaming-boxes G G, the rods B B, base C, cross-bar D, and screw E, whereby the flasks on the base are drawn upward against the under side of the cover, substantially as set forth.



162,756. CARRIAGE-JACKS. R. Eldridge, Harwich, Mass. [Filed Jan. 18, 1875.]

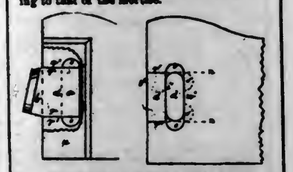
Brief.—Between two posts a cam-lever raises diagonally, by pins working in an upper and a lower slot, a block with a stepping series of bearing-shoulders.



As an article of manufacture, a carriage-jack composed of base A, standards B B', rack-head D, having body C, provided with two slots, L L', and sliding obliquely upon guide-bolt F and fulcrum-bolt K, when raised by hand-lever H, moving cam B under the shoulder of the body C, past the vertical center of fulcrum-bolt K, so as to be self-sustaining, all being constructed, combined, and arranged substantially as shown and described, as and for the purposes set forth.

162,757. RIVETED-FASTENINGS. William H. Elliot, New York, N. Y. [Filed Aug. 1, 1874.]

Brief.—The recesses are formed in the manner shown, to permit the inner corners of the tenon to enter the mortise without binding, the tenon being made of a form corresponding to that of the mortise.



A bedstead-rail, provided with a mortise having the flat depressions *d d'*, shoulders *f*, and recesses *e e*, formed therein, as described.

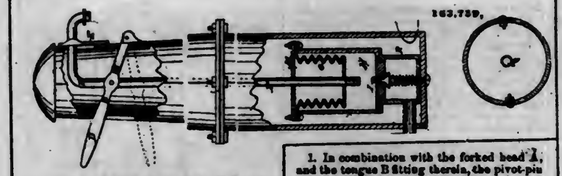
162,758. WOOD-PAVEMENTS. Lewis S. Filbert, Philadelphia, Pa., and L. M. Hoffman, Washington, D. C. [Filed Apr. 6, 1875.]



A round-block pavement provided with a vulcanite plastic filling and covering, substantially as herein set forth.

162,759. HYDRANTS. James W. R. Fisher and Wm. H. Fiske, Martinsburg, W. Va., assignors of one-third their right to C. J. Faulkner, Jr., and H. B. Faulkner. [Filed Apr. 9, 1875.]

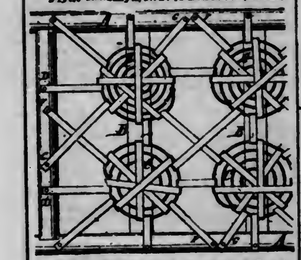
Brief.—The hydrant has a vertical moving water-way operated by a pivoted lever. The two lower chambers are connected by a screw-joint. The upper chamber has an elastic cup of suitable material to hold the water-way centrally over the valve-seats, and for other purposes. All the internal parts may be removed together except the lower chamber.



1. The combination of chambers H E, connected by screw-joint, cap G, tube F, lever D, and tube-section B, as shown and described, so that all the internal parts may be removed together except the bottom chamber.

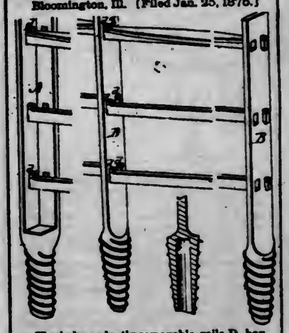
2. The elastic cup G, fastened between the top of chamber H and its cover M, as and for the purpose specified.

162,760. BOTTOMS FOR CHAIRS, &c. C. D. Flynt Brooklyn, N. Y. [Filed Jan. 2, 1875.]



The combination, with the springs C and frame A, of the flat longitudinal transverse and diagonal flexible metal strips D E F G, connected with the top coils of the springs by wrapping, and their ends fastened to the surrounding supporting-frame, substantially as herein shown and described.

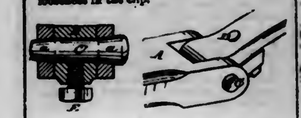
162,761. IRON FENCES. M. G. Freeman, Bloomington, Ill. [Filed Jan. 25, 1875.]



The independently-removable rails D, having notches *a* at their ends, and secured by wedges *d* alternately in the posts B, having a double series of openings for receiving the same, substantially as set forth.

162,762. THILL-COUPLINGS. C. O. Gardiner, Springfield, Ohio. [Filed Mar. 27, 1875.]

Brief.—Peculiar form of bolt avoids friction on thill-iron, while providing against looseness in the clip.



1. In combination with the forked head A, and the tongue B fitting therein, the pivot-pin C, with a cylindrical waist and tapered ends, and secured to the tongue, so as to turn therewith, substantially as set forth.

2. The combination of forked head A, the split tongue B, screw D, and the coupling-pin C, with tapered ends and a cylindrical waist, and clamped fast in the end of the tongue, substantially as set forth.



162,763. STEAM-RADIATORS. Stephen J. Geoghegan, New York, N. Y. [Filed May 14, 1875.]

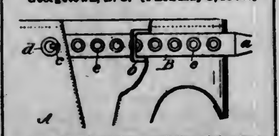
Brief.—Incoming steam drives air out of the perforated screw-plug. The valve, which is placed in the last pipe of the radiator, when expanded by heat of steam, closes the perforation.



1. The pipe C' of a steam-radiator, in combination with a valve, *c*, substantially as and for the purpose specified.

2. The pipe C', having orifice and perforated screw-plug *c*, in combination with the valve *a* and screws *d d*, substantially as and for the purpose set forth.

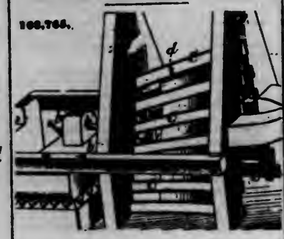
162,764. GLOVE-FASTENINGS. S. W. Glenn, Georgetown, D. C. [Filed May 3, 1875.]



1. A glove-fastening, consisting of the strap B, provided with one or more eyelets, *e*, in combination with a loop, *c*, and hook *c*, all constructed to operate substantially as herein described.

2. The strap B, composed of two layers or thicknesses, and having the eyelets *e* inserted through one layer or thickness only, substantially as shown and described.

162,765. [illegible]



162,766. VEGETABLE-CUTTERS. John N. Goolsbee, Woodville, Tex., assignor of two-thirds his right to J. W. Stewart and J. K. Durham, same place. [Filed Apr. 13, 1875.]

Brief.—Two converging tiers of knives fastened in swinging frame, so arranged as to have each knife have the same shear-cut.

The herein-described vegetable-cutter in which the knives C, arranged in two converging tiers, are attached to a swinging frame or handle at varying angles to operate with an even shear-cut, substantially as specified.

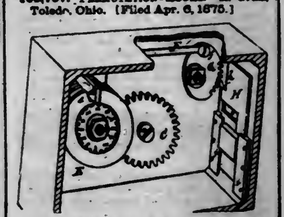
162,766. PUMPS. Daniel J. Gorton, Quincy, Ill. [Filed Apr. 10, 1875.]

Brief.—Convex faces above the valves deflect the water, so that it shall strike and bear at once upon the back of the valves. The waste-water hole is placed so that the stream shall flow into the forcing-cylinder, and maintain a priming therein.

1. The protuberances *e e*, in combination with the valves D D', substantially as described.

2. The barrel A, having the orifice G, as and for the purpose specified.

162,767. PERMUTATION-LOCKS. R. Grah, Toledo, Ohio. [Filed Apr. 6, 1875.]



1. The combination of the toothed disk B' with the rim E, provided with the single tooth *i*, notch *e*, and screws *h*, substantially as and for the purpose set forth.

2. The combination, with the dial-knob B and gear-wheel C, of the spindle D, carrying the tumblers E, provided with the notches *e*, and gear-wheel C', bar F, dog *d*, geared sector G, and rock-bolt H, all constructed and arranged substantially as described and shown.

162,768. VEHICLE-POLE TIPS. Ellwood Grimshaw and Warren F. Osgood, Minneapolis, Minn. [Filed Jan. 23, 1875.]

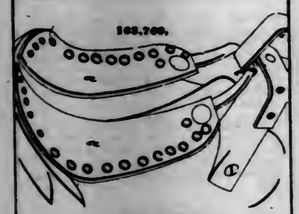


The slotted metallic tip C', with the slanting annular stop D and rear fastening device, in combination with the catch E, with the stop *b*, and the spring C, held by a stud, substantially as set forth.

162,769. SPRING-SADDLES. C. H. Harris, Cedartown, Ga. [Filed May 15, 1875.]

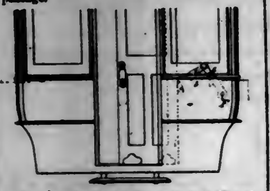
In a riding-saddle, the spring C, constructed as described, and having the portion from *c* to *c'* rigid and straight, in combination with the pieces *a a*, and metal bar *m*, substantially as and for the purpose described.

163,769.



163,770. DEVICE FOR OPERATING STREET-CAR DOORS. Daml. B. Hart, St. Louis, Mo. [Filed May 1, 1875.]

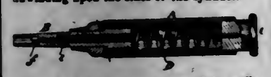
Brief.—When the crank and rock-shaft are turned one way, the toggle forces the door forward, closing it. When turned the other way, the toggle draws the door back, opening the passage.



The combination of the rock-shaft F and its operating lever or handle with the toggle-levers *e* and *f* and the sliding entrance-door of a street-car, substantially as and for the purpose set forth.

163,771. WATCH-KEYS. Addison Hathaway, Chicopee Falls, and F. Hathaway, Springfield, Mass. [Filed Apr. 15, 1875.]

Brief.—A watch-key having a revolving cylinder, the ratchet-connection between the parts being formed by the friction of the spring in unwinding upon the sides of the cylinder.



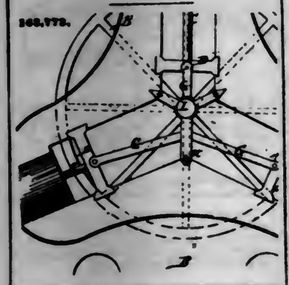
The combination, with the revolving cylinder A and barrel B, of the plunger *f*, rod *e*, spring D, and plug C, substantially as shown and described.

163,772. MATS FOR BIRD-CAGES. Andrew B. Hendryx, Ansonia, Conn., assignor to Hendryx & Bartholomew, same place. [Filed Apr. 19, 1875.]



As an article of manufacture, the herein-described mat for bird-cages, consisting of a wood body inclosed by a metal edge, as described.

163,773.



163,774. ADDRESSING-MACHINES. Henry S. Herr, Indianapolis, Ind. [Filed Apr. 2, 1874.]

Brief.—A printing machine constructed to move over the type held in columns in chases or galleys. The vertically-reciprocating plunger is connected by a beat lever to a rod bearing a doubly-adjustable pawl, having a branch extending to each side of the type-column, and acting against the vertical sides of both ends of the type-lines forming the address, which are separated by low slugs, leaving spaces for the action of the pawl-points.

1. In combination with the plunger B, beat lever C, rod *f*, spring *s*, adjusting-nuts *n n*, and casting or frame A, in an addressing-machine, the pawl *p*, provided with the two spring-points *a a*, constructed and arranged to operate, as shown and described, along the perpendicular sides of a column of type forming a series of names or addresses, and for the purpose set forth.

2. In combination with the set-screw *d*, beat-lever C, rod *f*, and pawl *p* in an addressing-machine, the adjusting-nuts *n n*, for the purpose of adjusting the pawl *p* upon the rod *f*, as shown and described, and for the purpose set forth.

163,775. STOVES. George W. Herrick, Detroit, Mich., assignor to the Detroit Stove-Works, same place. [Filed Mar. 23, 1875.]

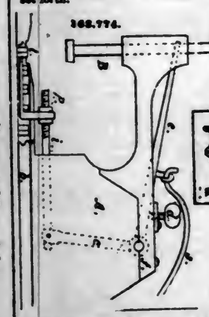
Brief.—Air is received through perforations in the top of the stove, and, passing down between the magazine and the casing, is supplied to the combustion-chamber in front of the pendent diaphragm.

1. The combination, with a magazine-stove, of a combustion-chamber located at the plane of the fire-pot and ash-pit, and outside thereof, said combustion-chamber being provided with a pendent diaphragm, and the apertures *g* and *h* in the cover and magazine for delivering air thereto in front of said diaphragm, substantially as described and shown.

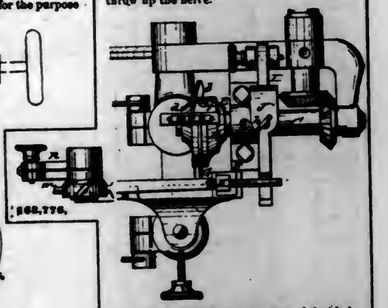
2. The illuminated combustion-chamber D D^1 D^2, and pendent diaphragm M, in combination with a magazine-stove having a throat to pass the gaseous products of combustion into said combustion-chamber, and a flue between the magazine and its casing for delivering air to the gases of combustion as they enter the said chamber, substantially as described.

3. The flanged division-plate *f* and flue-strips *k k*, in combination with the magazine J J^1, casing K, and perforated cap-chamber L, for supplying a current of heated air to the combustion-chamber D, substantially as set forth.

163,776.



163,775.



163,776. MACHINES FOR SETTING SAWS. B. Heunsch and Louis Beyer, Washington, D. C., assignors to Robert C. Hewett and Geo. Follansbee, same place. [Filed May 11, 1875.]

Brief.—A hub fastened to the shaft by a set-screw is provided with a clamp, in which a portion of the feeling-blade is secured. A lip on the end of the spring portion of the feeling-blade is placed between the legs of a bar, which slides in a groove in the hub, in virtue of which the blade can be set to feel the saw either to the right or to the left. One of the parts of the lever which raises the hammer-helve may be adjusted by a set-screw, so as to cause said lever to raise the helve to a greater or less extent, as required. The helve is secured in a piece which is pivoted to the overhanging bracket of the frame. When it is not desirable to have the hammer strike, the pin which secures said piece to the bracket is removed, and the piece allowed to turn and throw up the helve.

1. The feeling-gage, consisting of the blade G, held in a clamp, E, on the hub D, and formed with the spring part *b*, movable to the right or left by means of the slide *d*, substantially as and for the purposes herein set forth.

2. The lifting-lever, made in two parts, I and J, hinged one upon the other, and their relative position adjusted by means of a set-screw, in combination with the spring-helve L and hammer K, substantially as and for the purposes herein set forth.

3. The combination, with the spring-arm L, carrying the setting-die K, of the pivoted stud P, bracket R, arms *m n*, and pin *p*, substantially as and for the purposes herein set forth.

163,777. PAPER-RULING MACHINES. Wm. O. Hickok, Harrisburg, Pa. [Filed Apr. 17, 1875.]

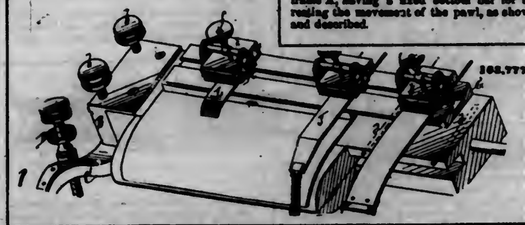
1. The combination, with the beam A, of the curved pen-rest C, having ears, as shown, and pivoted to one end of the beam below the journal thereof, and adjusted by the set-screws *b b*, which pass through the beam, all substantially as set forth.

2. In combination with the pen-beam A and longitudinally-grooved bar G thereon the movable chairs E, having blocks I, plates *h*, and set-screws *f*, passing through a cross bar in the chair for holding and adjusting the ex tensible pen-bars, all constructed substantially as set forth.

3. In combination with the beam A and the bar G thereon the flat metal strip or rail *h*, secured upon the latter bar, and projecting in front thereof, forming a groove for wedging the flannel on the beam, as set forth.

2. The pivoted lever-pawl and its sliding, slotted, extension piece or arm Q, and the spring R, in combination with the ratchet-wheel O of the alarm mechanism, and the frame A, having a fixed bottom bar for arresting the movement of the pawl, as shown and described.

163,777.



163,778. CLASPS FOR STOCKING-SUPPORTERS. Elijah L. Howard, Boston, Mass., assignor to John A. S. Graves, same place. [Filed Feb. 23, 1875.]



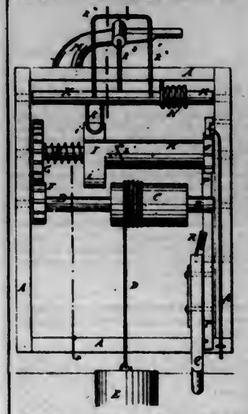
1. The improved clasp consisting of the two plates A and B, pivoted together, as described, and provided with the beat lever E, by which they are pressed powerfully and securely together, substantially as and for the purposes stated.

2. The two plates A and B, pivoted together, as explained, formed with the lips or ribs *c d e*, and combined with a suitable clamping device, substantially as and for the purposes stated.

3. In combination with the two plates A B, the beat lever E, so constructed and arranged that its longer arm serves both as a handle to operate the cam *f* and to stiffen or truss the plate B, substantially as and for the purposes stated.

163,779. BURGLAR-ALARMS. F. H. Hunter, Haltonville, Ind. [Filed Apr. 3, 1875.]

Brief.—The device is secured above the door, and a pawl-lever, which engages with a ratchet on the main shaft, is thrown out of gear to free the mechanism and sound an alarm. The pawl-lever is made in two parts—the lower end tapered, so that in closing the door the lower part slides upon the other, and the pawl is not disengaged.

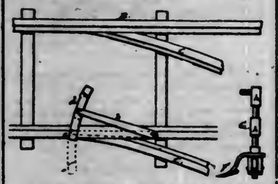


1. The combination of the frame A, shaft B, drum C, cord and weight D E, gear-wheels F G, armed collar I *c*, clutch *P P'*, spring J, and the shaft K, provided with the arms b^1 b^2, and spring N, to enable a pistol to be discharged, a drum to be sounded, and a bell rung by the descent of a weight, E, substantially as herein shown and described.

2. The pivoted lever-pawl and its sliding, slotted, extension piece or arm Q, and the spring R, in combination with the ratchet-wheel O of the alarm mechanism, and the frame A, having a fixed bottom bar for arresting the movement of the pawl, as shown and described.

163,780. STREET-RAILWAY SWITCHES. Geo. T. Jacobs, Washington, D. C., assignor of one-half his right to Thomas A. Mitchell, same place. [Filed Apr. 1, 1875.]

Brief.—An improved device for operating street-railway switches, consisting of an adjustable and reversible cam carried on the lower end of the operating-shaft; said shaft being provided with a steadying-wheel, which traverses the track-rail when the device is in operation. The cam strikes projecting lugs on the switch-point to properly shift it.



1. Combined with the switch *b*, provided with the studs *c e*, an adjustable and reversible cam, F, substantially for the purpose set forth.

2. The cam F, combined with the shaft G, constructed with the rectangular portions *h h* and cylindrical portions *i i*, and moving in the bearings *g g*, substantially as described.

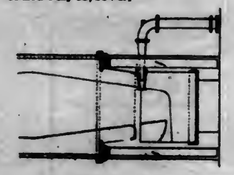
3. Combined with the cam F and shaft G, the gage-wheel J, substantially as set forth.

163,781. THILL-COUPLINGS FOR SLEIGHS. C. H. Johnson, Southington, Conn. [Filed Apr. 6, 1875.]



As a new article of manufacture, the sleigh-shackle having upon the rear end of its eye A a bolt, A', which extends horizontally rearward, substantially as and for the purpose specified.

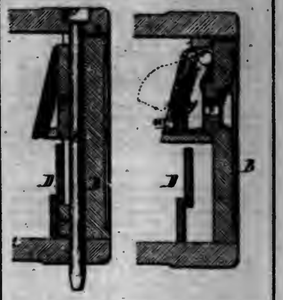
163,782. MANUFACTURE OF FERRO-MANGANESE. Alexandre Jullien, Paris, France. [Filed July 16, 1874.]



The process herein described of producing definite alloys of iron and manganese by combining the iron, in a state of fine division, with the comminuted ores of manganese, moistening the mass with ammoniacal solutions, and forming into bricks and reducing the same by heat, substantially as described.

163,783. AXLE-BOXES. Florens Keiser, Pottstown, Pa. [Filed Apr. 24, 1875.]

Brief.—Self-closing valve for admission of oil. Pin passing through projections of cover and box-front, to hold them together.



1. The combination of the cover B, its packing-strip *s*, and ribs *f f*, with the open front end of the axle-box adapted to the said cover, all substantially as set forth.

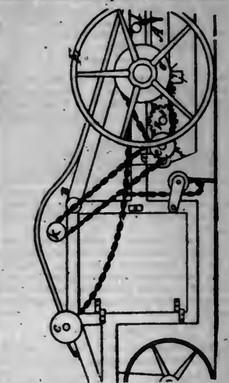
2. The combination of the cover B and the front end of the axle-box, with the retaining-pin E, passing through the box and through projections on the cover, substantially as set forth.

3. The combination of the cover B, having opening *t*, with the pocket *w* and self-closing valve *y*, all substantially as and for the purpose set forth.

4. The combination of the pocket *w* on the cover and its self-closing valve, with the partition D, substantially as and for the purpose set forth.

163,784. STREET-SWEEPERS. Orson W. Kellogg, Fond du Lac, Wis., assignor of one-half his right to Milford Van Dresar, same place. [Filed Apr. 16, 1875.]

Brief.—A street-sweeper in which the frame which carries the broom is attached to the sides of the machine by straps secured to the front end of the frame, and capable of vertical adjustment, the frame being raised or lowered by a chain attached to its rear end, which passes forward and up to the driver's seat.



The combination of the broom-frame A, straps *a*, chains *b*, pulleys B, and windlass *c*, as and for the purpose described.

162,785. VALVE-MOVEMENTS FOR ROCK-DRILLS. Daniel Kennedy, New York, N. Y. [Filed Apr. 7, 1875.]

Brief.—The valve is operated by the piston striking the tappets.

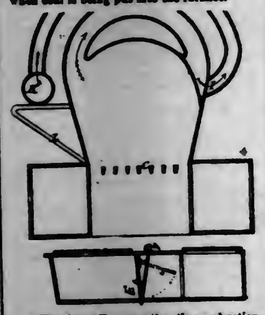


162,786.

The levers L M L M mounted on the centers *h h*, in combination with the slide-valve C *e e' e'*, piston B, and cylinder A, and with the ports *b' b'* and *b' b'*, operating together as herein specified.

162,786. AIR-HEATING AND VENTILATING FURNACES. Smith W. Kimble, Springfield, Ill., assignor of three-fourths his right to A. Leggett, S. W. Elsbree, and A. Rafter, same place. [Filed Apr. 14, 1875.]

Brief.—The pipe which receives the fines rests loosely on brackets, and is moved by expansion and contraction. When the drop-door is down, ashes can be drawn from the fire-bed into the ash-pit. The door is raised when coal is being put into the furnace.



1. The throat T, connecting the combustion-chamber and ash-pit, provided with drop-door *a*, as and for the purpose described.

2. The fines I, connecting on one side of furnace with combustion-chamber, passing over it, and on the other side attached to a pipe, K, resting loosely on brackets L, as and for the purpose described.

162,787. MANUFACTURE OF GLASSWARE. William G. King, Union Township, Allegheny County, assignor to King, Son & Co., Pittsburg, Pa. [Filed Apr. 19, 1875.]



1. As a new article of manufacture, a pressed fabric or seamless hollow article of glassware having claw-feet pressed thereon, substantially as set forth

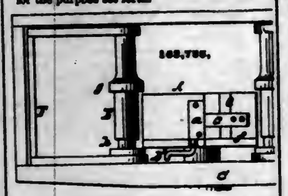
2. The combination of hollow mold B, having a cavity of any desired form for pressing the body of the article to be made, a base, *b*, in which are the foot-cavities *a*, and movable sections D, having re-entrant faces *d*, and moving in horizontal planes, substantially as set forth.

162,788. MACHINES FOR MAKING BOXES. John Kline, Nevada, Ohio. [Filed Apr. 10, 1875.]

Brief.—The material from which the box is formed is wound upon a cylindrical former, being retained in contact therewith by two pressure-rolls held in oscillating frames.

1. In combination with the cylinder A, having the clamps *a*, *b'*, *b'*, *c*, and head D, the plate *d*, cylinders or rollers E E, and frames G, F F, substantially as and for the purpose set forth.

2. In combination with the cylinder or or block A, the rollers or cylinders E E, having the annular flanges *g g*, and grooves *h h*, pivoted frames F F, and frame G, or other support for the latter, substantially as and for the purpose set forth.



162,789.

162,789. MAIL-BAG FASTENERS. ROCHLOS, Cincinnati, Ohio. [Filed May 5, 1875.]

Brief.—A girth or strap completely encircles the top of the bag. The staples are passed through slots from the side next the mouth of the bag, and the free end of the strap is heard through the staples on the opposite side.



1. A bag-fastener consisting of a girth, M *m*, secured by one end to the bag at K, and having a series of rearwardly-projecting staples, N, arranged to pass from the side next the mouth or opening through appropriate slots in the bag's mouth, so as to allow the back strap P to be wove through them, said strap being a continuation of the girth M, and adapted to be coupled to the staple K, or its equivalent, substantially as herein described, and for the purpose set forth.

2. The stab or loop *p'* at the junction of the girth M with the back strap P, as and for the object stated.

3. The combination of shanked and riveted staples N *n n'*, girth M, and guard-plates O O', for the purpose designated.

162,790. PIVOT-CHAINS. John Lemmon, Cincinnati, Ohio. [Filed Jan. 27, 1875.]



1. A pivoted tilting-chair, consisting of the base B, spindle C, having the cross-bar E, and stop-arms *a a'* at its upper end, combined with the helical springs D D', attached at one end to the extremities of said cross-bar, and at the other to the seat-frame A, substantially as specified.

2. In combination with the helical springs D D' and screws *d*, the slotted seat-frame A *s*, substantially as and for the purpose specified.



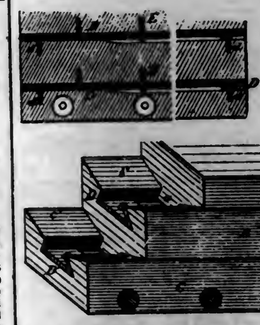
162,791.

162,791. LIFTING-JACKS. William Livingstone, Valley Stream, assignor to himself and E. A. Rogers, New York, N. Y. [Filed Apr. 26, 1875.]

Brief.—Wheel-segments, forming bearings at the ends of the right and left hand screws, provided with sleeve-nut, are for the purpose, when the article has been raised, to roll a greater distance than heretofore usual in lifting-jacks.

The combination, with the right and left hand screws and tubular nut, of the wheel-segments, forming bearings at the ends of the screws, for the purpose set forth.

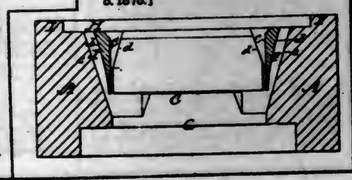
162,792. EXTENSION-TABLE SLIDES. Geo. B. Lyman, Dayton, Ohio [Filed May 12, 1875.]



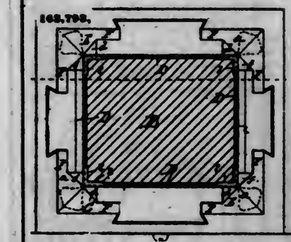
1. An extension-table slide, having a dovetail tenon with bearing-surfaces at each side, adapted to slide in a mortise in the adjacent block with corresponding bearing-surfaces, said mortise being enlarged considerably beyond the size of the tenon, while at each end it is provided with a metallic plate closely fitting said tenon, the latter being also embraced by a similar plate, which serves as a stop, and also to guide the tenon in the enlarged mortise, substantially as and for the purpose set forth.

2. The slide A B, having the dovetail tenon *a* and mortises *c*, respectively, the latter being enlarged, as described, and provided with the plates D and pins E, all constructed substantially as and for the purposes set forth.

162,793. DIES FOR FORMING SHEET METAL. Henry Martyn, Boston, Mass. [Filed Apr. 5, 1875.]

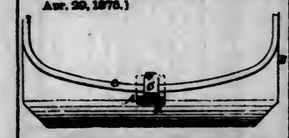


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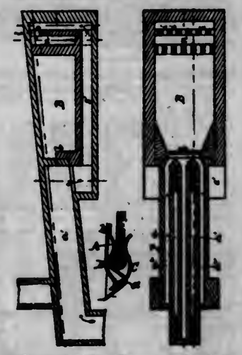
The female die A, constructed at its corners with the openings *e*, and spaces or openings *F* back of the working-faces of the die, said openings or spaces F having inclined walls *d* and *f*, substantially as described, whereby, when the plunger forces the sheet metal into the female die to form the box, the corners of said metal are forced through the openings F, and by the inclined walls *d* and *f* the metal is folded against the sides and ends of the box, as set forth.

162,794. FASTENINGS FOR POCKET-BOOKS. Louis Mamer, New York, N. Y. [Filed Apr. 29, 1875.]



In a fastening for pocket-books and other similar articles, the combination of the hook C, case A, the spring D, and the abutment *a*, all constructed and adapted to operate substantially as described.

162,795. METALLURGIC FURNACES. T. D. Morgan, Pittsburg, assignor to himself, D. Morgan, same place, and Hugh McDonald, Allegheny, Pa. [Filed Mar. 6, 1875.]



1. The neck of the ordinary metallurgic furnace, divided into alternately-arranged air, gas, and smoke flues *a a' a'*, the air and gas flues taking air and gas at the stack end of the neck, substantially as set forth.

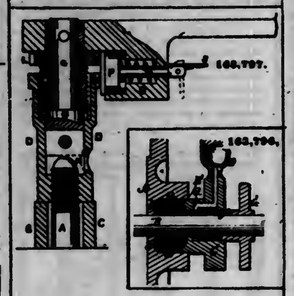
2. The air and gas flues *a a'*, arranged in the neck, alternately with the smoke-flues, and taking air and gas at the stack end of the neck, in combination with the flues *c c'* under the bed of the furnace, and up-take flues *m n*, with their discharge-ports alternately arranged, substantially as set forth.

3. A system of gas and air flues, *a a' c c'*, in combination with the up-take flues *m n* and operating-chamber B, whereby the air and gas are heated, mixed, and ignited, substantially in the manner and for the purposes set forth.

162,796. STUFFING-BOXES. A. G. Myers, Dayton, Ohio. [Filed May 6, 1875.]

1. The combination of the packing-box A, having concave bottom *h*, the packing-box C, having concave front *a*, and provided with the oil-cup D, and the packing-box G, having concave front *f*, all substantially as and for the purposes herein set forth.

2. The flanged and perforated chamber-ring *d*, inserted in the middle packing-box C, in combination with the packing-boxes A, C, and G, and the packings *a a'*, all substantially as and for the purposes herein set forth.



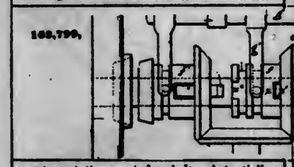
162,797.

162,796.

162,797. DEVICES FOR ROUNDING THE ENDS OF BOLTS. Jas. Nelson, Sunderland, England. [Filed Dec. 12, 1874.]

Brief.—A recess in the flange formed around the upper portion of the stationary cylindrical guide-body allows the spring-pawl carried on the under side of the handle to enter between two of the teeth of the feed-screw, and to move the said screw the distance of one tooth (before the flange again compels the pawl to recede) upon every revolution of the handle. Holes F are formed in the guide-body, to allow lubricants to be injected and the chips to be removed.

1. In a device for trimming studs and bolts, a rotary spindle, G, provided with a cutter, H, affixed removably to its lower extremity, and a rotating crank or handle, I, at the top, in combination with a stationary cylindrical guide-body, D, and an intermittent and arrestable feeding mechanism for feeding the said cutter



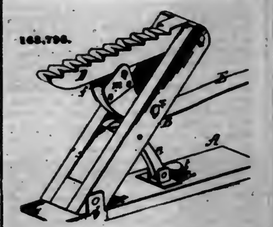
162,799.

up to a stationary stud or bolt, substantially in the manner shown, and for the purposes specified.

2. In a device for trimming studs and bolts, the combination of the rotating spindle G, provided with a cutter, H, and handle I; the stationary guide-body D, with a threaded opening, E, and an intermittent feeding mechanism, consisting of the threaded gland K, bearing a toothed flange, L; the stationary flange M, with beveled recess N; the spring detent or pawl R on the piston P, actuated by a spring, Q, and cam-lever S, all arranged to operate in the manner and for the purposes substantially as set forth.

3. In a device for trimming studs and bolts, in combination with the rotating cutter H on the spindle G, the stationary cylindrical guide-body D, provided with a threaded opening, E, in the bottom of the same, by means of which the said stationary body may be securely attached to the stud or bolt to be operated upon, in the manner substantially as shown, and for the purposes specified.

162,798. CARRIAGE-JACKS. HENRY B. Mitzinger, Philadelphia, Pa., assignor of one-half his right to S. Mitzinger, same place. [Filed Apr. 15, 1875.]



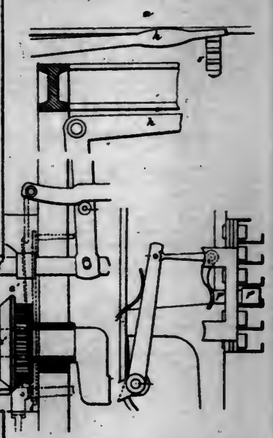
162,798.

1. A carriage-jack in which are combined the frame B, hinged to the lever A, the operating-lever E, notched arm D, and a device for retaining and releasing the said frame, all substantially as set forth.

2. The retaining-arm *a*, adapted to the central opening of the hinged frame B, having notches for the reception of a transverse pin in said opening, and provided at its lower end with a treadle, *t*.

3. The combination of the notched arm D with the operating-lever E, the short arm of which carries an anti-friction roller, *c*, and has a straight portion, *f*, as and for the purpose set forth.

162,799. LOOMS. Jas. Lee Norton, London, assignor to Gerald Hopper, Denmark Road, Camberwell, England. [Filed Mar. 29, 1875.]



1. The combination of a belt-pulley and a clutch, adapted to be disconnected from the crank-shaft, with a shaft in gear with the clutch-box, whereby, through the belt-pulley and shaft, the shedding and shuttle-box mechanisms may be reversed while the lay is at rest.

2. The combination of a clutch-box, belt-pulley, bed gearing, by which the shedding movement may be reversed, substantially as described, with a clutch-box adapted to disengage the crank-shaft, that the lathe may be at rest.

3. The combination of the hand-lever and connections with the clutch-box *f f*, the belt-pulley, and gearing, adapted to give movement to shedding mechanism, either backward or forward, substantially as set forth.

4. The combination of two pulleys actuated by power and their connections or gearing, whereby one of the pulleys, practically a fast pulley, is adapted to move the operative parts of the loom in the regular forward order, and the other pulley, through a belt, to operate other parts of the loom, as described, in a reverse order while the lay is at rest.

5. In a loom adapted for fancy weaving, the combination of the belt-pulley, clutches, and gearing, whereby, when the lay and picking motion are at rest, the other parts of the loom may be operated, substantially as described.

6. In a loom provided with a shaft, *c'*, or a pinion, *c'*, for imparting movement to shedding and shuttle-box-operating mechanisms, a clutch-box adapted to be disconnected from the crank-shaft and combined with gearing, substantially as described, to change the movement of the parts operating the shuttle-box and harness or shedding mechanisms while the crank-shaft and batten operate, substantially as described.

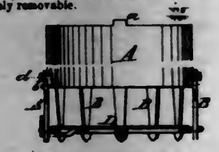
7. In a loom provided with a clutch-box and gearing for operating the parts which operate the shedding or shuttle-box mechanisms, substantially as described, a picking-shaft and a movable arm, *n*, adapted to be thrown out from the path of the actuating-tappet, for operating the picking-shaft when the loom is being reversed or operated to find a last pick or true shed, substantially as described.

8. The fast and loose parts *f' f'* of the clutch-box, forks *g' g'*, bar *g*, lever *h*, and holder or plate *n*, for moving the clutch-box and confining the lever in adjusted position, all substantially as described.

9. The combination of the crank-shaft and the clutch, adapted to be disengaged from the crank-shaft, with a belt-pulley and gearing, to impart movement to shedding and shuttle-box mechanisms, substantially as described.

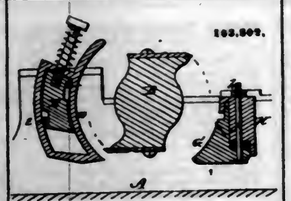
162,800. STOVE-GRATES. Henry P. Ohm, Baltimore, Md., assignor of one-half his right to Alva Hubbard, same place. [Filed May 5, 1875.]

Brief.—The vertical bars are attached loosely at both top and bottom, and are separately removable.



1. The combination of the parts A, B, C, and D, constructed and put together substantially as described.

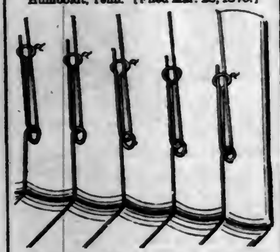
2. Bars B, having enlargements *c* on their lower ends, and oblong slots *e* through their upper ends, combined with buttons *b* and loops *f* on a base-ring, C, substantially as described.



162,802.

The combination of the frame A of a planing-machine and a revolving cutter-head, having cutters, the curved guide E, with rollers *e*, independent pressure-blocks D D, springs *c*, bolt *d*, and nuts *d'*, and the guide H, with independent spring-pressure blocks G secured by the bolts *b*, all constructed to operate substantially as set forth.

162,803. COTTON-BALE TIES. J. W. Philp, Humboldt, Tenn. [Filed Mar. 29, 1875.]

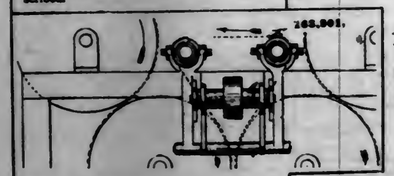


The wire bale-tie having the coil *c* near one end, and passing the other end through it before it is brought into the clasp *d* at the end of the coiled end of the wire for final fastening, as shown and described.

162,804. LACED BOOTS AND SHOES. Pascal Plant, Washington, D. C., assignor of one-half his right to Peter Hanney, same place. [Filed May 6, 1875.]



162,804.



162,801.

162,801. MECHANISMS FOR DRYING SHEET FABRICS. William H. Palmer, Jr., Middletown, Conn., assignor to Horst. F. Palmer, New York, N. Y. [Filed Apr. 3, 1875.]

The combination, in a machine for drying sized or dressed fabrics, of rotary drying-cylinders and one or more rotary cylinders having a longitudinal reciprocating motion, the whole being constructed to operate substantially as and for the purpose herein described.

162,805. PLANING-MACHINES. C. B. Patterson, Pittston, Pa. [Filed Mar. 20, 1875.]

Brief.—Two boards of different thickness can be fed at the same time, and both held alike, or one board can be placed on one side of the machine, held alike at both edges, and uniform thickness and even surface secured in wood-planing machines, by means of a series of independently-operating chip-breaker or pressure-blocks arranged upon an inverted cross-bar or guide, and operated by spiral springs and friction-rollers. The inner sides of the blocks and cross-bar are curved on a circle concentric with the circle described by the cutters in their revolution.

1. The upper of a boot or shoe, having two exposed lacing-edges, said edges being provided with lacing-loops *a*, having elongated openings *c*, adapted to receive a flat lace, *g*, substantially in the manner and for the purpose specified.

2. A supplementary strip, *m*, provided with lacing-loops *c*, having elongated openings *c*, substantially as set forth.

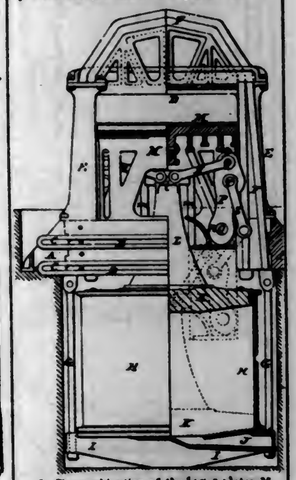
3. The combination of a supplementary strip, *m*, provided with lacing-loops *c*, having an elongated opening, *c*, with the upper of a lace-gaiter, boot, or shoe, substantially as set forth.

4. A gaiter provided on its front edge *b* with two rows of lacing-loops, *c*, having an elongated opening, *c*, and with a flat lace, *g*, or laces *g g'*, the loops *a* being so arranged with respect to each other that when laced up the lace will practically cover the openings of the shoe, substantially as shown and described.

5. A lace-gaiter, provided with at its lacing-edges *b* with two half tongues, *e e*, formed by projecting the edges of lining *f* beyond the edges of the upper, substantially as set forth.

162,806. COTTON-PRESSES. T. D. Powers, St. Louis, Mo. [Filed Apr. 6, 1875.]

Brief.—The plates, when commencing to rise, travels at a greater, but at a constantly-decreasing, speed relatively to that of the piston, until, when near the top of the stroke, the movement of the plates is so slow that a powerful compression is had upon the bale.

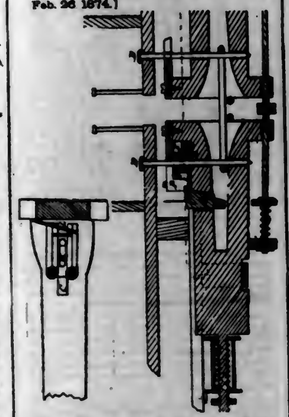


1. The combination of the lower platen M, lever-links P, arms N and S, post or column L, piston K, and cylinder H, substantially as set forth.

2. The lower platen M, having guides *m* for the column L of the piston K, in combination with the link-levers P, struts N, arms S, and open-topped steam-cylinder H, substantially as set forth.

3. The combination of stationary platen D, columns E, ties F, moving platen M, link-levers P, arms S, secured to the frame, and struts N, connected to the column L of the piston K, substantially as set forth.

162,808. CAR-COUPLINGS. Levi W. Powis, Valparaiso, Ind., assignor of one-half his right to F. W. Hunt, same place. [Filed Feb. 26 1874.]



In combination with the coupling-pin D, the slide M, spring L, and pivoted centred post C, all substantially as and for the purpose set forth.

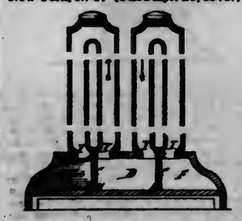
162,807. LIGHTNING-ROD STANDARDS. W. S. Rayburn and Frederick J. Martin, Philadelphia, Pa. [Filed Apr. 6, 1875.]



162,810.

The within-described lightning-rod standard, consisting of the legs *a*, plate *b*, which may or may not form part of a bracket for an insulator, the stem B, and insulator-bracket D, all being constructed and combined substantially as and for the purpose set forth.

162,809. STEAM-RADIATORS. G. B. Riggins, New York, N. Y. [Filed Apr. 23, 1875.]



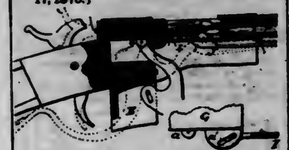
1. The base A, provided with a central induction-compartment, D, and lateral eduction-compartments F F, communicating with each other by means of a passage, H, in combination with the pipes B, substantially as described.

2. The partitions C C of the base, arranged across the pipe-openings I, in combination with the diaphragms K of the divided ends of the pipes B, substantially as described.

162,809. STARCH LUBRICANTS. Mary E. Robinson, Jackson, Miss. [Filed Mar. 27, 1875.]

A starch lubricant composed of starch and soap mixed together in about the proportions set forth, the soap being of the same color as the fabric to be ironed, as and for the purpose specified.

162,810. BREECH-LOADING FIRE-ARMS. O. M. Robinson, Upper Jay, N. Y. [Filed Apr. 17, 1875.]

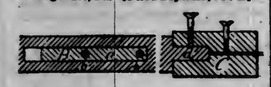


1. The extractor-bar *I*, connected and combined with the breech-block by an inclined slot, so that its working end is raised up behind the rim of the cartridge, substantially as specified.

2. In combination with the extractor-bar I, constructed and arranged to operate by means of the inclined slot, as specified, the spring J attached to the under side of the barrel, and provided with a projection upon its end adapted to enter a slot in the bar I for the purpose of throwing out the cartridge, substantially as specified.

3. The sliding block G, constructed with projections *e e'*, whereby connection is made with the extractor-bar I and with the guard-lever D, operating said block, together with the sliding block E, all constructed and combined, substantially as and for the purpose set forth.

162,811. MACHINES FOR DRESSING MILLSTONES. David Savage and H. Coleman, Orangeville, Pa. [Filed Sept. 28, 1874.]



1. A mill-pick bar made in two parts, A and B, and adjustably connected together by means of a slot, *a*, and set-screws, *b*, substantially as and for the purposes herein set forth.

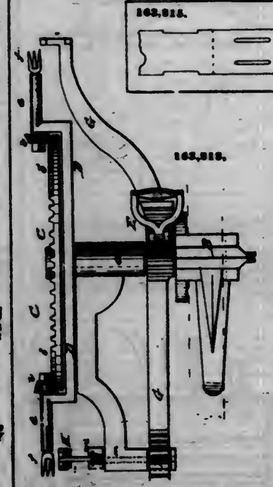
2. The swiveled holder C, introduced between the pick D and pick-bar A B, substantially as and for the purposes herein set forth.

162,812. VEHICLE-TOPS. Leonard Sawyer, Amesbury, Mass. [Filed May 6, 1875.]



In a carriage-prop, the combination of the body A B, having screw C and slot G, with the nut H and the washer E, having point F, all substantially as and for the purpose set forth.

162,813. APPLE-PARERS. R. L. Schenck, Pleasant Mount, Mo. [Filed Apr. 22, 1875.]



162,813.

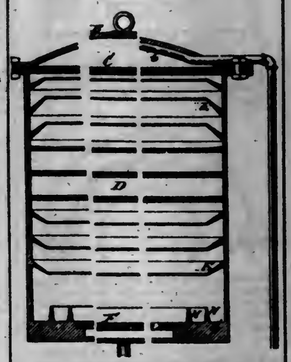
1. The combination of the wheel C, having notched semicircle *b*, the bar D, with tubular bearings *c*, fork *f*, and pinions *i*, as and for the purpose set forth.

2. The combination, with the wheel C and bar D, of the latches *t* and *v*, substantially as and for the purposes herein set forth.

3. The cogged slide G, operated by lever E and segment *h*, in combination with the segment *h* and vertical shaft *m*, provided with knife-paring lever H, substantially as and for the purpose specified.

162,814. APPARATUS FOR FILTERING LIQUIDS. Thos. R. Sinclaire, New York, N. Y. [Filed July 29, 1874.]

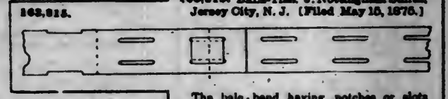
Brief.—Combines ledges upon the sides and marginal bottom of the vessel with perforated diaphragms above and below, and a forcing apparatus.



1. The combination, with the filtering-vessel A, constructed with the impervious surface G, of the false bottom F and the side or bottom ledges E H, either or both, substantially as herein specified.

2. The combination of the vessel A, ledges E H, false bottom F, diaphragm C, cover B, pipe *b*, orifice or pipe K, and forcing apparatus L, substantially as and for the purposes specified.

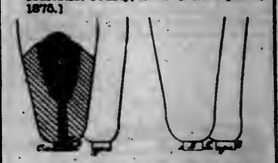
162,815. BALE-TIES. J. Nottingham Smith, Jersey City, N. J. [Filed May 10, 1875.]



162,815.

The bale-band having notches or slots formed in it, as described, in combination with the clip or clasp, applied as set forth, to form a bale-tie, substantially as and for the purpose set forth.

162,816. MILKING-TUBES. S. A. Smith, Muscatine County, Iowa. [Filed Apr. 27, 1875.]



As an article of manufacture, the milking-tube A, having grooved head B and slide-valve C, arranged substantially as and for the purpose specified.

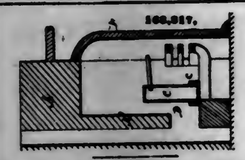
162,817. GAS APPARATUS. R. H. Smith and Joshua Goldthorp, Pittsburg, Pa. [Filed Apr. 13, 1875.]

Brief.—A diving-flue back of the retort. An asbestus-lined shield to retain the heat in the fire-place.

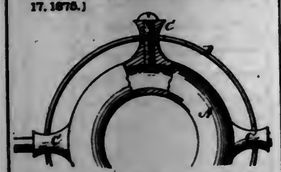
1. The combination of the retort C and the rear wall A', forming the intermediate diving-flue D, to economize the heat of the fire and the escaping products of combustion, all substantially as set forth.

2. In combination with the retort in the fire-place, as described, the shield H, covering the front of the fire-place to prevent inconveniently heating the apartment in which it is situated, substantially as set forth.

No. 163,017.

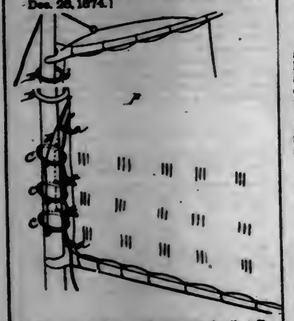


No. 163,018. GAS-RETORTS. William Smith, Pittsburg, Pa., assignor to R. H. Smith and Joshua Goldthorp, same place. [Filed Mar. 17, 1875.]



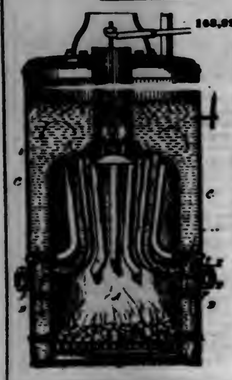
In combination with a fire-box, D, having notches at its top, the circular retort A, having two or more hollow projecting bosses, C, resting in the notches in the stove or fire-box, as set forth.

No. 163,019. MEANS FOR REEFING SAILS. Isaac Solomon, Solomon's Island, Md. [Filed Dec. 26, 1874.]



The combination, with a mast and sail, A B, of the upper hoops D, connected directly to the sail by the clamps b, and the lower loose hoops C, connected to the lacings a, and connected together and to the sail by the guide-ropes d, substantially as and for the purposes herein set forth.

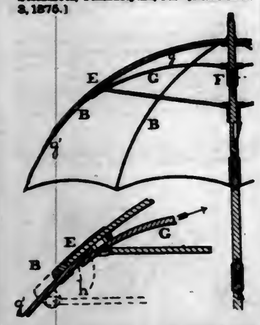
No. 163,020.



No. 163,020. SECTIONAL STEAM-GENERATORS. George H. Starbuck, Troy, N. Y. [Filed Mar. 18, 1875.]

A steam-boiler composed of a cast-iron inner shell, A, and water-leg B, with strengthening-braces F and flange D, all cast in one piece, and an upper shell, C, of boiler-iron, provided with a flange, E, secured to the flange D of the water-leg by means of screw-bolts and nuts e, substantially as herein set forth.

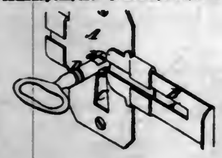
No. 163,021. FOLDING UMBRELLAS. Uriah G. Steinmetz, Philadelphia, Pa. [Filed Mar. 3, 1875.]



1. The combination, with the stocks E, fixed sections f, and hinged sections f', having overlapping ends h, of the arms G, sliding in the stocks and overlapping the overlapping ends of the stretchers f', substantially as and for the purpose set forth.

2. The combination, with the sectional ribs B, stocks E, and sliding arms G, of the auxiliary runner F and fastening J, substantially as and for the purpose set forth.

No. 163,022. KEY-FASTENERS. H. Stretcher, Indianapolis, Ind. [Filed Apr. 10, 1875.]

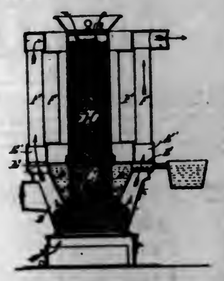


The improvement in key-fasteners, consisting of the key-hole escutcheon A, having lateral flanges or ears, with their upper and lower edges bent over to form guides, and the locking-slides B, having the studs c c and bent thumb-piece, substantially as shown and described.

No. 163,023. PORTABLE STEAM-ENGINES. L. Sweet, Wellsville, N. Y. [Filed Apr. 23, 1875.]

The cast-iron stove A having fire-brick lining D its entire length and mounted upon wheels, in combination with the boiler and engine supported thereon, all substantially as set forth.

No. 163,024. MAGAZINE HEATING-STOVES. G. H. Timmerman, St. Louis, Mo. [Filed Apr. 1, 1875.]



1. The stove part, consisting of the lower extension part C, water-chamber D, having outward-flaring bottom d', its partition d, pipes d' d', and top plate E, in combination with the stove-body B, flue-chamber B', and feed-pipe H, all constructed as herein shown and described, and for the purpose set forth.

2. The stove part consisting of the lower part C, water-chamber D, top plate E, flue-chamber E', pipes F, feed-pipe H, and stove-body B, all combined and congruated to operate substantially as herein shown and set forth.

No. 163,025. APPARATUS FOR ENAMELING MOLDINGS. Washington Wallick, Philadelphia, Pa. [Filed Oct. 16, 1874.]

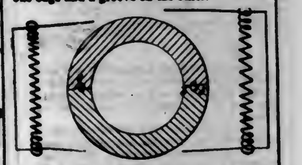
Brief.—A box having troughs for holding the enameling composition is provided with a longitudinal strip, which, in connection with the molding, divides the box into two distinct compartments.



An enameling-box divided into two compartments by a slotted partition, and having openings at the ends in a line with the slot in the partition, all substantially as and for the purpose set forth.

No. 163,026. LAMP-CHIMNEYS. Oliver D. Warfield, Chicopee Falls, Mass., assignor of one-half his right to John Anderton, same place. [Filed May 9, 1874.]

Brief.—Each section provided with a rib on one edge and a groove on the other.

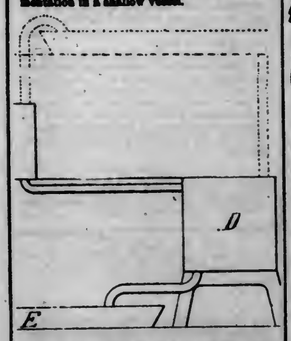


A lamp-chimney section having straight vertical edges, one of which is provided with a rounded rib or bead, centrally arranged on the edge, and the other of which is provided with a correspondingly-rounded channel, as herein shown and described.

No. 163,027.

No. 163,027. PROCESSES OF BREWING. Emil H. Wiegand, Philadelphia, Pa., assignor to Jos. Fleischmeyer, same place. [Filed Sept. 30, 1874.]

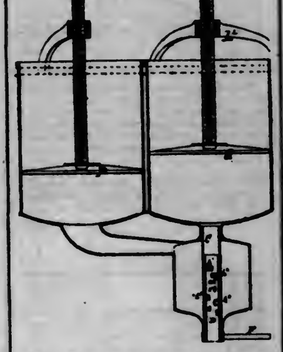
Brief.—After the first stages are completed in the process of brewing malt liquor, the partly-fermented liquor is conveyed from one deep vessel to another, and then to final fermentation in a shallow vessel.



The process described of subjecting the liquor obtained directly from the hop-vat A to primary fermentation in a comparatively deep vessel, D, and then to final fermentation in a shallow vessel or vessels, E, as and for the purpose set forth.

No. 163,028. APPARATUS FOR VARIEGATING SOAP. George C. Wenzel, Newburg, N. Y. [Filed Mar. 23, 1875.]

Brief.—Two or more vessels for containing soaps of different colors are fitted with pistons. The soaps are driven through pipes, and are intermixed by means of the perforated pipes contained in the separate mixing-chamber. The inner mixing-pipe turns within the outer one by means of a handle.

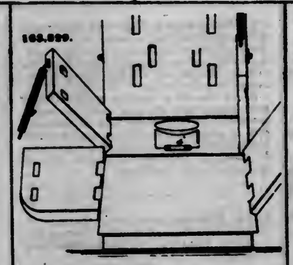


The adjustable gate, consisting of the annular perforated tubes C and D, with handle F, in combination with the tubes b' b^2 b^3 on the inside of the tube D, for the purpose of mixing colored soaps in different streams, and to regulate the relative quantity of the different kinds of colored soap, substantially as specified.

No. 163,029. FRACTURE-BOXES. Christn. Westerkamp, Cincinnati, Ohio. [Filed Aug. 6, 1874.]

Brief.—A hinged piece adjusts by means of a set-screw and nut in the bottom of a box, having hinged sides and foot-rests. The hinged foot-board is secured by two coil-springs, and is furnished with both rectangular and circular openings, through which cords and bandages may be passed.

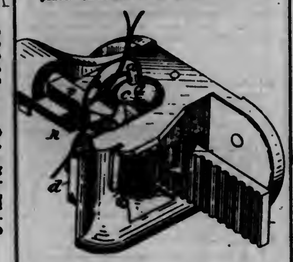
No. 163,029.



1. In combination with the hinged sides and foot-rest, the hinged piece i, adjustable by means of the set-screw and nut, as and for the purposes set forth.

2. The hinged foot-board, held by the springs e e, and furnished with rectangular and circular holes, as and for the purposes set forth.

No. 163,030. GRAIN-BINDERS. John H. Whitney, St. Louis, Mo., assignor to Sumner & Whitney Manufacturing Company, same place. [Filed Nov. 18, 1874.]



1. A twister for grain-binders, consisting of the rotating shaft C, having attached rigidly thereto the eccentric spindle a, provided with a laterally-projecting finger or lip, b, the whole being constructed to operate substantially as described.

2. The clamping device, consisting of the stationary pin c and the spring lever or jaw d, the latter being pivoted eccentrically to the pin c, whereby the wire is held tight when drawn in one direction, and released when drawn in the opposite direction, as set forth.

3. The finger b, pin c, and conical headed roller a, all constructed and arranged to operate as described.

4. The shaft C, provided with the rigidly-attached spindle a, finger b, incline f, and cutting-lip e, in combination with the stationary lip c and the clamping device c d, all constructed to operate substantially as described.

No. 163,031. HARVESTER-RAKES. John H. Whitney, St. Louis, Mo., assignor to Sumner & Whitney Manufacturing Company, same place. [Filed Nov. 17, 1874.]

1. The series of rods c, each having a series of teeth, e, rigidly attached, with a guiding-arm, a, said rods c being attached to an endless canvas, A, arranged to carry the same, and cause the arm a to travel in the groove b, substantially as and for the purpose set forth.

2. The canvas A, provided with the slots f, in combination with the grooved roll C and the tilting or pivoted teeth e, all constructed to operate as set forth.

3. In combination with the canvas A, provided with the pivoted rods c and their teeth, the rods B arranged to support the grain and deliver it from the platform while the teeth are being drawn down out of the grain, in the manner shown and described.

4. The adjustable bearings or blocks I, provided with the projections e, in combination with the tilting rake-teeth e, substantially as set forth.

No. 163,032.



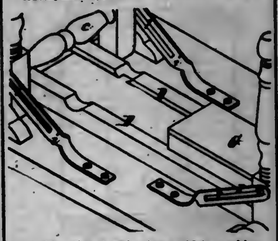
No. 163,032. CHAINS AND WHEELS FOR TRANSMITTING POWER. John H. Whitney, St. Louis, Mo., assignor to Sumner & Whitney Manufacturing Company, same place. [Filed Nov. 20, 1874.]

Brief.—A chain composed of a series of flat bar-links, one of which has oblong holes in its ends, the next provided with studs projecting from its sides, which fit into the holes of the first. The wheel is composed of two disks, each provided with polygonal solid hub, having radial projections equal to the length of the links.

1. A chain composed of the links H and I, constructed to operate substantially as described.

2. The wheel A, provided with the projections C, arranged alternately on opposite sides, substantially as shown and described, whereby it is adapted for use in combination with the links H and I, as set forth.

No. 163,033. FOLDING TABLES. Geo. H. Williams, Albany, N. Y. [Filed Apr. 7, 1875.]



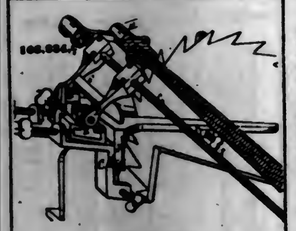
1. The slotted spring-braces f h in combination with the pivoted legs of a table, constructed to operate substantially as described.

2. The pivoted legs B C, with their cross-bars c d, in combination with the longitudinally-sliding drawer G, the cross-bars being arranged so as to confine it in place when the legs are folded, substantially as set forth.

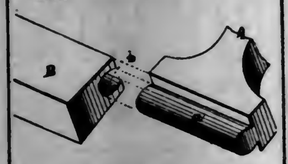
No. 163,034. SAW-FILING MACHINES. James A. Wilcox and Edmund D. Noble, Spring Lake, Mich. [Filed Oct. 21, 1874.]

1. The combination, with the angle-plate C, of the adjustable plate D, having dovetailed ways, in which the reversible tool-carrier H is secured, said tool-carrier having pivoted to it the frame F, carrying the filing attachment, as and for the purpose set forth.

2. The combination, with the angle-plate C, of the pivoted plate J, having arms J' J', bearings i, and adjusting-screws h h, as and for the purpose set forth.



163,995. RAILWAY-RAMMER HEADS. M. A. J. Wimpee, Rome, Ga. [Filed Mar. 10, 1875.]



In combination with the rammer A, provided with the dovetail tongue *a*, the removable head B, having a groove, *b*, which corresponds to and embraces said tongue, substantially as and for the purpose specified.

REISSUES.

6,441. HEATING-STOVES. Albert Brown, Troy, N. Y., assignor, by mesne assignments, to D. R. Paris and Sweet, Quimby & Parry, same place. Patent No. 84,943, dated May 21, 1867; reissue No. 5,906, dated Aug. 4, 1874. [Filed Jan. 9, 1875.]

Brief.—The magazine is attached to the bottom of the oven, which depends from the top of the stove.



1. In combination with the combustion-chamber of a base-burning stove, a fuel-reservoir or supply-chamber located directly under an oven depending within the stove, substantially as described.

2. The combination of a fuel-reservoir or fuel-supplying chamber with the combustion-chamber of a base-burning stove, its fire-pot, and an oven suspended from the top of the stove in direct communication with the combustion-chamber.

3. The combination of an oven and a fuel-reservoir or fuel-supplying chamber with the combustion-chamber of a base-burning stove and a fire-pot, the fuel-reservoir or fuel-supplying chamber being removable and suspended within the stove in contact with the products of combustion.

4. An oven of a heater or stove provided with an opening or aperture to receive a boiler, in combination with an open-mouthed fuel-supplying reservoir or supply-chamber intervening between the oven and fire-pot, and disconnected therefrom.

5. The combination of an oven constructed to receive and support a rack or slide with the fuel supply reservoir, arranged within a heating stove, and interposed between the oven and the fire-pot, the reservoir being disconnected from the fire-pot.

6. An oven of a heater or stove provided with an opening or aperture to receive a boiler, and a rack for supporting pans or other articles, in combination with an open-mouthed fuel supplying reservoir or supply-chamber interposed between the oven and the fire-pot, and disconnected therefrom.

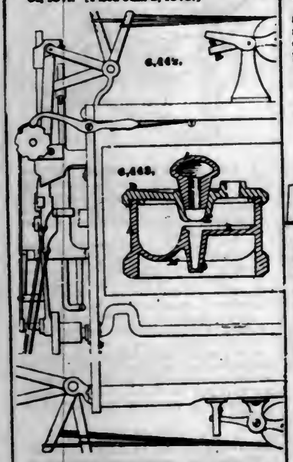
6,442. HARNESS-MOTIONS FOR LOOMS. G. Crompton, Worcester, Mass. Patent No. 99,972, dated Nov. 27, 1866. [Filed May 10, 1875.]

1. The combination, with the frame of the loom, and with cords for moving the harness-frames, of adjustable sheaves at the bottom and at the top of the loom, over which the cords pass, to permit the adjustment of the harness-frames and cording, substantially as described.

2. In combination, the sheaves, the pivoted frame, and mechanism for adjusting the position of the sheaves and frames, substantially as described.

3. In combination, a lifter and depressor, jacks, and elbow or angular levers connected with the jacks, and notched for adjustment of the harness or heddle cords, the latter extending from the elbow or angular levers to the harness-frames, substantially as described.

6,443. INKSTANDS. Samuel Darling, Providence, R. I. Patent No. 111,435, dated Jan. 31, 1871. [Filed Jan. 9, 1875.]



1. The combination, in an inkstand, of an ink-reservoir, an elevated dipping-cup within the reservoir, and an ink-receiving recess in the upper part, substantially as described.

2. The combination, in an inkstand, of an ink-reservoir and a pen-gage, such gage consisting of a cup or chamber and a deep narrow cavity leading downward from the bottom of this cup or chamber, the upper end of said cavity, which opens into the cup, being made smaller than the width of an ordinary writing-pen, when the height of the walls surrounding the cup or chamber regulates the amount of ink to be taken upon the pen, substantially as described.

3. The combination, in an ink-stand, of an ink-reservoir, a central dipping-orifice or tube, an ink-receiving recess in the upper part surrounding the dipping-orifice, and a cork-hole, the lower opening of the dipping-orifice being larger than an ordinary writing-pen, and above the ink when in use, substantially as described, and for the purpose herein set forth.

4. The combination, in an ink-stand, of an ink-reservoir, a central dipping-orifice, an ink-receiving recess in the upper part, and a deep narrow cavity in the lower part, substantially as described and herein set forth.

5. The combination, in an inkstand, of an ink-reservoir, a central dipping-orifice, a deep narrow cavity in the lower part, and an external recess under the bottom surrounding a central leg, which leg contains said deep cavity, substantially as described, and for the purpose herein set forth.

6. The combination, in an inkstand, of an ink-reservoir and an elastic stopper, such stopper having an air-chamber in its upper part or head, and a small air-duct through the lower part, which is inserted into the inkstand, thus providing a free passage for air from the chamber in the head of the stopper to the interior of the reservoir, substantially as described.

6,444. IRON BRIDGES. James B. Eads, St. Louis, Mo. Patent No. 142,361, dated Sept. 2, 1873. [Filed May 10, 1875.]



1. The combination of two arches joined together end to end, so that each constitutes one-half of a single span or complete rib of a roof or bridge, when each of said arches is combined with a system of bracing under or on the concave side of the arch.

2. The bracing C C, when used beneath an arch jointed at the center, and to the abutments, in combination with the longitudinal members B B, for the purpose set forth.

3. The longitudinal member or counter-arch B, when combined with the half-span arch A and bracing C, constituting one-half of a jointed arch or rib of a bridge, for the purpose set forth.

6,445. IRON BRIDGES. James B. Eads, St. Louis, Mo. Patent No. 142,361, dated Sept. 2, 1873. [Filed May 10, 1875.]



The within-described method of bracing the arches of a bow-string girder, the bracing being secured under each half-arch of the span, as described, and performing its functions independently of the chords or ties which resist the thrust or spread of said arches.

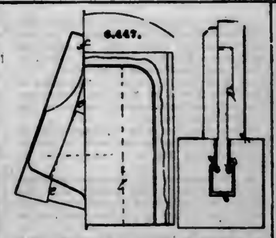
6,446. IRON BRIDGES. James B. Eads, St. Louis, Mo. Patent No. 142,361, dated Sept. 2, 1873. [Filed May 10, 1875.]



The bridge-pier, composed of columns C C, inclined and joined together in pairs, the planes of said pairs being located in the line of, or parallel with, the thrust of the arch.

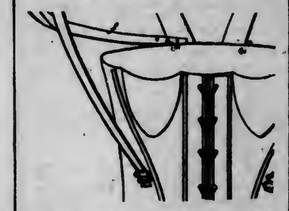
6,447. BEDSTEAD-FASTENINGS. William H. Elliot, New York, N. Y. Patent No. 93,193, dated Aug. 3, 1869. [Filed Aug. 17, 1874.]

1. In a bedstead-fastening, a tenon provided with shoulders at each end, the shoulders on the post end of the tenon being diagonal, in combination with a side rail having a shouldered mortise, and a post having a mortise with diagonal shoulders, the shoulders of the mortises in both post and rail being formed out of the material of the said parts, substantially as and for the purpose set forth.



2. A side rail having a tenon attached thereto, provided with diagonal shoulders *c'*, in combination with a post having diagonal shoulders *c* forming a component part of said post, the surfaces of the diagonal shoulders of the post and tenon being tangential to each other, substantially as and for the purpose set forth.

6,448. CORSETS. Lavinia H. Fuy, New Haven, Conn. Patent No. 30,906, dated Sept. 18, 1860. [Filed May 6, 1874.]



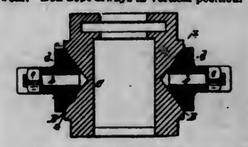
1. The combination, with the body or waist part A, having its lower part A' cut out, as described, and as seen in Fig. 4 at *a a*, of a semicircular piece, C, Fig. 5, substantially as and for the purposes set forth.

2. The combination, with the lower edge of the waist or body part A, of a semicircular dress and skirt supporting rim C, the parts of which are cut separately from the body part and in semicircular form, as described, and as shown or indicated in Fig. 5, substantially as and for the purposes stated.

3. The combination, with the waist A and straps E E, of detachable shoulder-braces F.

6,449. CAR-AXLE BOXES. A. A. Freeman, Philadelphia, Pa. Patent No. 63,379, dated Apr. 2, 1867. [Filed Apr. 20, 1875.]

Brief.—Easily-detachable guides, creating only minimum of friction, and provided with extension-pads, separating them from the hangers. Successive layers compensate for wear. Box kept always in vertical position.



1. The combination of V-shaped guides B B with the hanger A and box C, substantially as and for the purpose set forth.

2. The bolts *b b*, in combination with the rib *c* on each leg of the hanger, and recess or channel *d* in the guides, substantially as and for the purpose set forth.

3. The combination, with the legs of the hanger A, of the V-shaped guides B B, bolts *b b*, nuts *c c*, and strips *e*, substantially as and for the purpose set forth.

6,450. THILL-COUPLINGS. Geo. G. Larkin, Exeter, N. H. Patent No. 62,430, dated Sept. 22, 1866. [Filed Apr. 3, 1875.]

Brief.—Head of screw presented toward eye of thill-iron and recessed for holding anti-rattling pad.



1. The combination, with a carriage-shackle, of the disk *c*, formed with a screw threaded shank, *g*, working in the front of the clip *a*, and against the rear of the eye of the shaft-iron, or other intervening substance, substantially as and for the purposes described

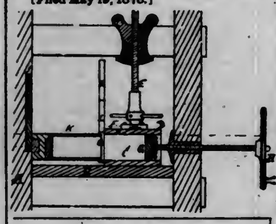
2. The combination, with a carriage-shackle, of the disk *c*, having the shank *g*, arranged and operating as described, and a pad or cushion, *n*, as herein set forth.

6,451. PROCESSES FOR PRESERVING MEATS. William C. Marshall, New York, N. Y., assignor to Arthur A. Libby, Chicago, Ill. Patent No. 43,516, dated July 12, 1864. [Filed May 19, 1875.]

1. The process herein described for packing and preserving meats, the same consisting in subjecting the meat, after it has been exposed to preserving processes, as described, to a heavy pressure and packing, and hermetically sealing the so compressed meat in packages or boxes, substantially as and for the purpose herein set forth.

2. As a new article of manufacture, the above-described compressed meat, preserved in solid form, without disintegration or desiccation, in hermetically-sealed packages, substantially as herein set forth.

6,452. APPARATUS FOR PRESERVING MEAT. William C. Marshall, New York, N. Y., assignor to Arthur A. Libby, Chicago, Ill. Patent No. 43,516, dated July 12, 1864. [Filed May 19, 1875.]



1. The press-box C, with the movable screw-top D, follower G, and hinged end I, in combination, constructed and operating substantially as and for the purpose herein shown.

2. The frame I, in combination with the package K and press-box C, in the manner and for the purpose substantially as herein set forth.

6,453. ARGAND GAS-BURNERS. Edwin R. Walker, New York, N. Y., assignor to E. P. Gleason, same place. Patent No. 72,344, dated Dec. 17, 1867. [Filed Apr. 2, 1873.]

Brief.—The disk or plate prevents the hissing sound.



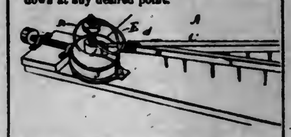
1. In an argand gas burner, the combination of the plate or valve and the inlet, as and for the purpose described

2. In an argand gas burner, the combination of the screw, the plate, and the inlet, as and for the purpose described.

3. In an argand gas burner, the combination and arrangement of the plate or valve with the inlet by means of ribs, projections, or devices, by which the inlet is left slightly open when the valve is shut, for a small supply of gas to pass, as and for the purpose described

6,454. RAKES FOR HARVESTERS. John H Mears, Oshkosh, Wis., assignor, by mesne assignments, to Reuben Hoffheins. Patent No. 94,594, dated Mar. 4, 1863. [Filed Feb. 16, 1875.]

Brief.—The rake-arm is hinged to the bevel-wheel, by which it is revolved. It is held down to the platform by a cam-guide supported upon the vertical axis, and is guided during the non-raking part of the revolution by a second guide, in a nearly vertical position. The vertical axis is adjustable to make the rake come down at any desired point.



1. A a continuously-revolving rake, combined with a controlling guideway, which is adjustable around the center of revolution, to cause said rake to come down upon the platform at any point desired.

2. The standard B around which the rake-driving gearing revolves, in combination with the guideway E affixed to and supported by said standard.

3. In combination with the rake-driving mechanism, the shield J, to cover and protect the same, as set forth.

4. In combination with a rake rotating on a stationary vertical axis, an upper stationary guideway or cam, E, for the purpose of guiding or controlling the rake in its rotation, to cause said rake to be forced down from an upright or vertical position to a horizontal position on the platform of a harvester, and retain said rake in that position until, in its movement, it has swept the grain from the said platform.

5. The combination of an upper guideway or cam, E, with a lower guideway or cam, D, and a rake continously revolving on a vertical stationary axis.

6. In combination with a continuously-revolving rake hinged to its driving mechanism, the cam-guide D around the outer side of the axis of rotation, and formed so that, after the rake has passed over the platform in a horizontal position, it will be adjusted successively to a vertical position, and again to a horizontal position, as set forth.

7. Combined with the rake C the detachable rake I, substantially as set forth.

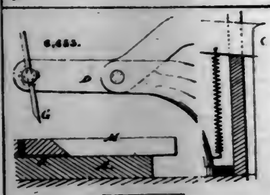
8. The combination with the wheel F having the rake-arm hinged thereto, the stationary standard or spindle B, which forms a center for the rake's rotation, and the guideway D E, arranged for joint operation, substantially as shown and described.

6,455. MACHINES FOR TUNING KEYS OF MUSICAL INSTRUMENTS. Milon Pratt, Deep River, Conn., assignor to himself and Pratt, Read & Co., same place. Patent No. 159,498, dated Nov. 3, 1874. [Filed Mar. 20, 1875.]

Brief.—The wood remaining upon piano or organ keys, after the pieces known as "sharps" have been removed, is trimmed off by means of a chisel or cutting-tool adjustably attached to the end of a lever pivoted on a curved slotted standard, and operating in connection with a subjacently-recessed guide, upon which the key-board is placed.

1. The combination, with platform A and guide N, of a beveling cutter, G, as and for the purpose specified.

2. The lever D fulcrumed in a post, C, holding the cutter G at one end, and connected at the other with a treadle, as and for the purpose set forth.



6,455. SPINDLES FOR SPINNING-MACHINES. Francis J. Rabbeth, Pawtucket, R. I., and John B. Atwood, Willimantic, Conn., assignors, by mesne assignments, to Francis J. Rabbeth and Paine, Jenks & Sons. Patent No. 63,561, dated Apr. 2, 1867. [Filed Jan. 26, 1875.]

Brief.—The spindle is provided with a tubular whirl, which extends down around the bolster, which extends some distance above the rail, and supports the spindle, and also extends below the rail, and is provided with a step for the spindle. The top of the whirl is provided with pins, which engage and assist in driving the bobbin. Passages through the whirl-tube allow oil to be supplied to the oil-cup for lubricating the spindle.



1. In combination, the tube B' and bolster B, projecting upward, as described, the live spindle A, which extends above the bolster for receiving the bobbin, and the sleeve D', which encircles the bolster, is connected with the spindle above the bolster, and sustains and drives the bobbin.

2. The combination, with a tube having a step and a bolster for a spindle, of the flanged bracket provided with bolt-holes, substantially as described, whereby the tube and the several parts sustained by it may be readily adjusted on a spindle-rail.

3. The bolster B and the oil-box B', closed at its lower end, and surrounding the spindle, in combination with the spindle A, and annular oil-reservoir C surrounding it at the top of the bolster, and provided with the return-passage *a*, substantially as described.

4. The combination of the oil-chamber, the spindle, and the sleeved whirl, having the lateral oiling-passage *d*, substantially as described, whereby, without lifting the whirl or spindle, oil may be readily supplied.

5. The combination of the sleeved whirl, having the lateral oiling-passage, with a movable guard for closing said oil-passage.

6. In combination with the spindle and tube, the set-screw F and packing K, substantially as described.

7. The spindle A and oil-box B', in combination with the bolster B, provided with the oil-passage *a*, and the oil-cup C, provided with the slot *a*, substantially as described.

8. The combination of the oil-box B', surrounding the spindle, and closed at the bottom, the bolster B, the spindle A, and the oil cup C, provided with the slot *a*, substantially as described.

6,457. PACKING-MACHINES. Alex. Ralph, Philadelphia, Pa. Patent No. 142,601, dated Sept. 9, 1873. [Filed Apr. 8, 1875.]

1. In a packing-machine, the combination of a hopper, A, a feed-screw, F, a feed-spout, I, and a yielding package-carrier, J, as shown and described.

2. The shaft C, in combination with the cone friction-pulleys D E, for the purpose shown and described.

3. The shaft C, pulleys D E, gear-wheels G H, and the screw F, as shown and described.

4. The combination of the hopper A, shaft C, cone-pulleys D E, agitators C', screw F, and the gear-wheels G H, as and for the purpose shown and described.

5. The follower J, when constructed as shown and described.

6. The screw F, carrier J, and the weighted lever P, as shown.

7. The shifting bar S, in combination with the clutch-lever T and the trip-rod V, as shown.

8. The shifting bar S, in combination with the clutch-lever T, trip-rod V, weighted lever P, and the friction-cones D E, as shown.

9. The shifting-bar S, in combination with the clutch-lever T, friction-cones D E, and the weighted lever U, as shown.

10. The former X, in combination with the form retainer Y, as shown

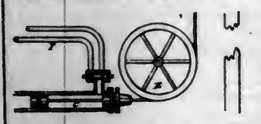
6,458. CIGAR-BOXES. Charles A. Stecke, New York, N. Y., assignor to himself and Augustus Wannack, same place. Patent No. 156,127, dated Dec. 22, 1874. [Filed Apr. 24, 1875.]



A metal cigar-box that is provided with a supplemental branding surface of wood, pasteboard, or other suitable material, to receive the manufacturer's brand, substantially as specified.

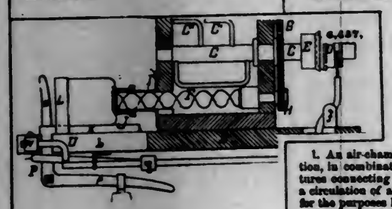
6,459. HYDRAULIC ELEVATORS. Timothy Stebbins, San Francisco, Cal. Patent No. 139,624, dated June 3, 1873. [Filed May 14, 1875.]

Brief.—The cylinder is placed in a horizontal position. To economize space and avoid the liability of the rigid rod to bend, substitutes for it a flexible piston-rod, made of steel wire, of a size adapted to the load.



The horizontal cylinder A, in combination with the flexible piston-rod C, attached directly to the piston B, and the large pulleys E and platform, arranged and operated as shown and described.

6,460. PLATFORMS FOR STOVES. Newark Tea-Tray Company, Newark, N. J., assignees, by mesne assignments, of Clark Brownell. Patent No. 106,773, dated July 26, 1870. [Filed Feb. 1, 1875.]



6,457.



6,460.

1. An air-chamber beneath the central portion, in combination with one or more apertures connecting therewith, adapted to allow a circulation of air in such chamber, as and for the purposes herein specified.

2. In connection with an air space or chamber, the combination of one or more apertures in or near the base, and one or more apertures in or near the top, to cause the air to circulate through the space by reason of its heat, substantially as specified.

3. A flat surface, upon which the stove-legs rest, in combination with a higher central portion, affording a deeper space for defending against heat, substantially as herein specified.

4. In combination with a stove-platform, a dome or elevated central part, constructed as described, so as to be capable of attachment or removal at will, substantially as and for the purposes described.

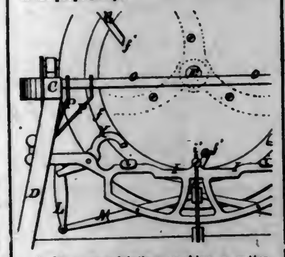
5. In combination with a stove-platform, a lining of sheet metal, cement, or any analogous non-conducting material, substantially as described.

6. The combination of a metallic upper surface, having an air-space beneath, with a flanged molded edge extending downward from such upper surface or body, substantially as specified.

7. A metallic body or upper surface, and a flange or edge extending downward therefrom, inclosing an air-space under the central portion, in combination with internal supports beneath the body, upon which the weight of the stove rests, substantially as described.

6,461. STAVE-JOINTERS. John J. Relyea, Cleveland, Ohio. Patent No. 126,702, dated May 13, 1873. [Filed Feb. 17, 1873.]

Brief.—A revolving wheel having a slightly concave face is provided with suitable cutting-bits. The stave is secured upon an oscillating table, and pressed against the face of the wheel until the cutters have reduced it to the proper shape.



1. In a stave-jointing machine, a cutter-wheel having its sides made smooth and uniform by means of sheet-metal covering-plates, substantially as and for the purpose shown.

2. In a stave-jointing machine, a cutter-wheel made concave, and provided upon its outer face with a ridge, which intersects the cutter-openings, substantially as and for the purpose set forth.

3. In combination with the frame I, suspended from or by means of the link-bars P and P, the arms I' and I', shaft R, and arms Q and Q, all constructed to operate in the manner and for the purpose substantially as shown and described.

4. In combination with the frame I, provided with the bearings *i i* and *i'*, the clamps K and K, bars L and L, levers M and M, and treadle N, substantially as and for the purpose specified.

6,462. PLANE-IRONS. John J. Relya, Cleveland, Ohio. Patent No. 126,703, dated May 13, 1873. [Filed Feb. 17, 1875.]

Brief.—Wood can be smoothly dressed, regardless of the irregularity of its grain, by means of a plane-iron provided upon its front side with a longitudinally-adjustable cap, which at its forward end has an angle of ninety degrees with relation to the outer face of the iron.



In combination with a cutting-blade or plane-iron, a cap, which, at its forward end, has an angle of ninety degrees with relation to the outer face of said blade, substantially as and for the purpose specified.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 22. TUESDAY, JUNE 1, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

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DECISIONS OF THE COURTS.

SUPREME COURT OF THE UNITED STATES.

THE UNION PAPER-COLLAR COMPANY, APPELLANTS, *vs.* ISAAC VAN DEUSEN, JOHN VAN DEUSEN, AND HENRY BOEHMER, PARTNERS, AS VAN DEUSEN, BOEHMER & CO.

[*Appeal from the Circuit Court of the United States for the Southern District of New York.—Decided at the October term*, 1874.]

The purpose of a reissue is to render effectual the actual invention for which the original patent should have been granted—not to introduce new features.

Therefore, in an application for reissue, parol testimony is not admissible to enlarge the scope of the invention beyond what was described, suggested, or substantially indicated in the original specification, drawings, or Patent-Office model.

Whether a reissued patent is for the same invention as the original depends upon whether the specification and drawings of the reissued patent are substantially the same as those of the original; and, if not, whether the omissions or additions are or are not greater than the law allows to cure the defect of the original.

Where the original patent for improvement in paper shirt-collars, granted to Andrew A. Evans, May 26, 1863, stated the invention to consist, first, in making the collars of parchment-paper, or paper prepared with animal-sizing; and, second, in coating one or both sides of the collar with a thin varnish of bleached shellac to give smoothness, strength, and stiffness, and to repel moisture, the claim being for "a shirt-collar made of parchment-paper, and coated with varnish of bleached shellac, substantially as described, and for the objects specified:" *Held*, that a reissue thereof which describes a paper other than parchment-paper, or one prepared with animal-sizing, and which does not require either side of the collars to be coated with a varnish of bleached shellac for any purpose, the claim being for "a collar made of long-fiber paper, substantially such as is above described," is for a different invention from that embodied in the original patent.

Articles of manufacture may be new in the commercial sense when they are not new in the sense of the patent law.

New articles of commerce are not patentable as new manufactures unless it appears in the given case that the production of the new article involved the exercise of invention or discovery beyond what was necessary to construct the apparatus for its manufacture.

It appearing that the collars made by Evans, apart from the paper composing them, were identical in form, structure, and arrangement with collars previously made of linen, paper of different quality, and of other fabrics, and that Evans did not invent the special paper used by him, nor the process by which it was obtained: *Held*, that he was not entitled to a patent for the collars as a new manufacture.

The relations of employer and employé, in regard to the origin of inventions, stated.

The object in turning down a collar on a curved line instead of a straight line is precisely the same, whether the collar be all paper, paper and linen, or all linen. Hence, where it appeared that linen collars had been turned over on a curved line to prevent wrinkling, and to afford space for the cravat: *Held*, that it was not patentable to apply the same mode of turning down to collars of paper or paper and linen.

Reissued patent of Andrew A. Evans for "Improvement in Paper Shirt-Collars," July 10, 1866, (original May 26, 1863,) and of Solomon S. Gray, March 29, 1864, (original June 23, 1863,) pronounced invalid.

[The opinion of the circuit court, embodying the reasons for the decision from which this cause was appealed to the Supreme Court, will be found reported in the OFFICIAL GAZETTE, vol. II, 361; in 10 Blatchf., 109; and in 5 Fisher, 597.]

[*O. A. Seward*, for appellant.
J. J. Coombe and *E. Wetmore*, for appellees.]

Mr. Justice CLIFFORD delivered the opinion of the court.

Patents may be granted for a new manufacture, as well as for a new and useful art, machine, or composition of matter, if it appears that the manufacture is both new and useful, and that the applicant who desires to obtain the exclusive property therein is the original and first inventor or discoverer of the improvement. Such a patent also, if inoperative or invalid for either of the reasons stated in the thirteenth section of the patent act, may, if the error arose from inadvertence, accident, or mistake, and without any fraudulent or deceptive intention, be surrendered; and, in that event, the Commissioner may cause a new patent to be issued

for the same invention for the residue of the period then unexpired for which the original patent was granted. (5 Stat. at Large, 122.)

Matters embraced in the pleadings not in controversy will be passed over without comment. Seven of the patents described in the bill of complaint are of that character, which leaves but two for re-examination. Certain of the patents were adjudged invalid, in respect of which there is no assignment of error by the complainants, and certain other patents were adjudged valid, and, the respondents not having appealed from the decree, the question of their validity is not open to re examination. Two other patents were surrendered by the complainants and reissued during the litigation, for the infringement of which no profits or damages can be recovered in this suit. Stripped of all such matters the case presents two principal questions for decision: First, whether the reissued patent granted to Andrew A. Evans for improvement in paper shirt-collars is a valid patent. Second, whether the reissued patent originally granted to Solomon S. Gray for improvements in turn-over shirt-collars is a valid patent.

Usually the question of infringement also arises in such controversies; but that question is closed in this case in favor of complainants by the admission of the respondents.

Proofs were taken on both sides, and the circuit court entered a decree that the two patents in issue here are invalid, and the complainants appealed to this court. Since the appeal was entered here the complainants have filed the following assignment of errors:

1. That the circuit court erred in its decision that Evans was not the inventor of his patented product, and in its decree that the reissued patent therefor "is not a valid patent."

2. That the circuit court erred in its decision that Gray's invention was anticipated by prior inventions, and in its decree that the reissued patent therefor "is not a valid patent."

Two answers are made to the first assignment of errors:

I. That the reissued patent of Evans is not for the same invention as the original, which, if true, is sufficient to show that the patent is invalid, even if the patentee was the original and first inventor of the improvement described in the original patent.

Power to surrender patents for the purpose suggested in the act of Congress implies that the specification may be corrected to the extent necessary to cure the defects and to supply deficiencies to render the patent operative and valid; but the interpolation of new features, ingredients, or devices which were neither described, suggested, nor substantially indicated in the specification, drawings, or Patent Office model were never allowed; and by a recent act of Congress it is provided that no new matter shall be introduced into the specification, nor, in the case of a machine patent, shall the model or drawings be amended, except each by the other. (16 Stat. at Large, 206.)

Repeated decisions also have established the rule that parol testimony is not admissible, in an application for a reissued patent, to enlarge the scope and effect of the invention beyond what was described, suggested, or substantially indicated in the original specification, drawings, or Patent-Office model, as the purpose of a surrender and reissue is not to introduce new features, ingredients, or devices, but to render effectual the actual invention for which the original patent should have been granted.

Unless, however, it is apparent upon the face of the new patent that the Commissioner has exceeded his authority, his decision is final and conclusive, as the jurisdiction to reissue patents is vested in him, subject to a single exception, that if there is such repugnancy between the old and the new patent that it must be held, as a matter of legal construction, that the reissued patent is not for the same invention as that embraced and secured in the original patent, then the reissued patent is invalid.

Whether a reissued patent is for the same invention as the surrendered original, or for a different one, must very largely be determined by a comparison of the two instruments, as the decision must necessarily depend upon the question whether the specifications and drawings of the reissued patent are not substantially the same as those of the original; and if not, whether the omissions or additions are or are not greater than the law allows to cure the defects of the original specification.

Before describing the nature of his invention, the patentee in this case admits that he is aware that shirt-collars have been made of a fabric composed of paper and woven cloth prepared in a peculiar manner, and that collars of an indifferent character have been made of the ordinary kinds of paper; but the former, as he states, are expensive, and have a coarse appearance, and that the latter are too fragile to admit of a suitable button-hole, or to be of much utility as a shirt-collar.

His invention, as he states, consists of two features: First, in making shirt-collars of a fabric known to the trade as parchment-paper, or paper prepared with animal-sizing, which may be manufactured cheaper than a fabric composed of paper and cloth, and is sufficiently tough and strong to form tenacious button-holes, and is susceptible of a smoother surface and polish than cloth-paper, and may be turned over without cracking or forming a roughened edge. Second, in coating one or both sides of paper shirt-collars with a thin varnish of bleached shellac, which not only adds smoothness, strength, and stiffness to the fabric, but, being a repellent of water, it also prevents perspiration or other moisture from entering the fabric of the collar, and renders the surface of the paper so hard and smooth that it wears much longer without being soiled by being exposed to dust or dampness.

Specific directions are then given by the patentee as to the manner of dressing the described fabric before it is manufactured into shirt-collars, as follows: First take the parchment-paper, or paper prepared with animal-sizing, and cover one or both sides of it with thin varnish of bleached shellac, and allow it to dry. Then pass the paper through the polishing rollers, such as are in general use for polishing paper or cloth, and then the fabric is ready to be cut into collars; and the button-holes may be punched by dies with great rapidity.

Instead of that, the representation of *the reissued patent* is that the alleged inventor discovered, as the result of his experiments, that, in order to produce a really good collar, the paper used for the fabric must possess sufficient strength, without excessive thickness, to destroy the resemblance to linen, and sufficient tenacity, toughness, and pliability to allow the collar to be folded upon itself without cracking at the fold, with the pureness of color and necessary polish to resemble starched linen.

Shirt-collars of the kind described he made, as represented in the specification of the reissued patent, out of a paper which he produced or caused to be produced, in which he combined those qualities, which paper was made of a long fiber, substantially, in that respect, like bank-note paper, and of about the same thickness as an ordinary shirt-collar, and of a pure shade or color, such as to resemble starched linen. By means of the length of the fiber of the material he was enabled, as the representation is, to obtain from the specified degree of thickness the requisite degree of strength, tenacity, and pliability to make a collar practically useful for wear without interfering with the resemblance in appearance to a linen collar, and the representation is that he found a sample of the paper which was suitable, and that he used it, and filed it with his original application for a patent.

Particular description is also given of the means the inventor employs to produce paper possessing the requisite qualities for such a manufacture, as follows: What is known as hard stock, it is said, must be used in larger proportion than is required for other descriptions of paper, except for that which is known as bank-note paper, and in the process of pulping the stock that dull knives should be used, and that the knives or beaters and the mode of their striking the knife-bar should be so arranged as to draw out the pulp, instead of chopping it short, constituting what is known as the long-beating process, which should be continued for a great length of time, so that the fiber shall be not only long but fine, the effect of which will be to make the paper stronger and smoother, and to bed the fiber in the thickness of the paper, so as not to mar the surface.

Two modes of manufacturing the pulped stock into paper are then described, as follows:

1. If worked upon a cylinder machine, the representation is that the paper may be run off in two or more sheets of pulp, which may be united as they run from the machines—and pass together one over and the other under the pressure-rolls—into one sheet of the required thickness; or one sheet may be first run off upon a reel, and then united in the same manner with another sheet running from the cylinder, and both passing under the rolls together. Preference, however, is given by the patentee to the former mode, for the reason that the several sheets are, in that case, of equal degrees of moisture, and therefore form, in that state, a more perfect union; and he adds that great care must be taken to expel the moisture from the pulp in case a single sheet is used in that mode of manufacture, as the thickness and length of fiber tend to retain the dampness.

2. Such paper, it is said, may also be made of the required thickness from a single sheet of pulp in case a Fourdrinier machine is used; but the representation is that the wire on which the pulp is formed should be supplied with extra suction-boxes to remove the water, and that its forward motion should be much slower than in the manufacture of the ordinary paper; but the lateral or vibratory motion of the wire should be even more rapid than usual, in order to afford greater time and motion for extracting the moisture from the pulp. Care should also be used to give to the paper in the pulp the slight bluish tinge which is found in starched linen, and to prevent its having a dead or yellowish-white color.

Instruments so widely different can hardly be compared within the usual meaning and ordinary application of that word, as they really have substantially nothing in common, so far as respects the description of the invention which they respectively profess to secure. Examples where the difference between the original and reissued patents is as manifest as in this case may, perhaps, arise, but none such were referred to in the argument of such a striking character, nor are any such within the recollection of the court where the difference between the reissued and original patents is so pervading as in the case in decision.

Wide differences in that regard were exhibited in a case recently decided by this court; but they were by no means as striking and unmistakable as those disclosed in this record. (*Gill* vs. *Wells*, 6 OFFICIAL GAZETTE, 836.) Here the dissimilarity extends to every part of the description of the invention. There it had respect only to one of the elements of the patented combination. Attempt was made in that case to emasculate the combination described in the original patent by leaving out one of the material elements in order to give the exclusive right a more comprehensive effect in prosecuting suits for infringement; but in the case before the court the reissued patent is different throughout from the invention embodied in the original patent.

Proof of that proposition is found also in the respective claims of the patents, as well as in the respective specifications. "What I claim as new and desire to secure by letters patent," says the original patentee, "is a shirt collar made of parchment-paper and coated with varnish of bleached shellac;" but the patentee of the reissued patent claims as an article of new manufacture a collar made of long-fiber paper, without referring to a coating of any kind; nor is the question affected in the least by the fact that the claim of the respective patents concludes with the phrase "substantially as described," because the description of what is claimed, as given in the respective specifications, is even more widely different than the claims of the respective patents.

Instead of the phrase employed in the claim of the original patent, the specification to which it refers states that the nature of the invention consists, first, in making shirt-collars of a fabric known to the trade as parchment paper, or paper prepared with animal-sizing; and, second, in coating one or both sides of paper shirt-collars with a thin varnish of bleached shellac, which, as there represented, not only adds smoothness, strength, and stiffness to the fabric, but also, being a repellent of water, prevents perspiration or other moisture from entering the collar.

Nor will any attempt to construe the claim of the reissued patent by the specification have any tendency to remove the difficulty in the way of the complainants, as the specification is to the same effect as the claim, and shows conclusively that the manufacture there described is a collar made of long-fiber paper, manufactured in the manner and by the means therein minutely

described; that the paper there described is not the parchment-paper described in the specification of the original patent; nor is it paper prepared with animal-sizing; nor does the specification or claim of the reissued patent contemplate or require that either side of the collars shall be coated with varnish of bleached shellac for any purpose. Animal-sizing, according to that patent, may be *used* or it may be *omitted*, and one or both sides of the paper may be covered with a thin varnish of bleached shellac, or such a coating may be *omitted* altogether, which shows that those two requirements of the original patent are not a material part of the invention embodied in the reissued patent.

Authorities to support the proposition that a reissued patent is invalid if not for the same invention as the surrendered original is scarcely necessary, as the rule is universally acknowledged. (*Gill* vs. *Wells*, 6 OFFICIAL GAZETTE, 886.)

II. Suppose, however, the two may be so construed as to obviate that objection to the reissued patent, still the second defence of the respondents remains to be considered, that the patentee in the original patent is not the original and first inventor of the alleged improvement.

Usually the patent, when introduced, is *prima facie* evidence to support the affirmative of that issue; but the representations of the specification may be such as to afford satisfactory proof that the alleged invention is neither new nor useful. Equivalent views were expressed by the circuit court in disposing of the question involved in the present issue, and in those views the court here entirely concurs. (*Same case*, 10 Blatch., 119.)

Nothing was known to the supposed inventor respecting paper made of long fiber when he obtained his original patent, except that he previously found, as he states in his reissued patent, a sample of it ready made, suitable for such a purpose, and that he used it and filed it with his original application for a patent. Where he found it does not appear, nor does it appear for what purpose he used it, except that he filed it in the Patent Office. He does not even state that the original patentee knew who made it, nor that he had any knowledge of the process by which it was made. Viewed in any reasonable light, the narration shows that the sample was made by another, and not by the supposed inventor, and it affords a strong ground of presumption that he knew nothing respecting the process of manufacturing such paper, or of the constituents of the manufacture, except what is a matter of common knowledge.

Hard stock, it is now said, must be used in larger proportions than is required for other descriptions of paper, and that the pulp must be subjected for a greater length of time to the long-beating process, so that the fiber shall be not only long but fine, in order that the paper may be strong, smooth, and even, and that the fiber shall become bedded in the thickness of the paper, so as not to mar the surface. Neither of such requirements or conditions was contained in the original specification, from which it may be inferred that the original invention did not include the discovery of the constituents of the paper to be used for the purpose, nor the process by which the paper was to be manufactured. Conclusive support to that proposition is found in the specification of the original patent, in which the patentee states that he takes the parchment-paper known to the trade, or paper prepared with animal-sizing, and covers one or both sides of it with thin varnish of bleached shellac, and having allowed it to dry, the paper is then passed between polishing-rollers, such as are in general use for polishing paper or cloth, which operation finishes the fabric, ready to be made into collars.

Enough appears in these suggestions to show that the specification of the original patent does not describe the process of making paper possessing the qualities of long fiber paper, but the making of collars out of parchment-paper, showing that the discovery that for a good paper collar the manufacturer must have paper which possesses the qualities of long-fiber paper is a subsequent discovery. Nor does the statement in the reissued specification that he produced such a paper, or caused it to be produced, strengthen the case for the complainants, because the same specification states, in effect, that he found a sample of such paper suitable for the purpose, and that he used it and filed it with his original application, showing conclusively that the paper existed prior to his supposed invention.

Improvements in the manufacture of paper have often been made, and it may be that the discovery at that period of the constituents for making such paper, or of the process by which paper possessing the described properties could be produced, would have been the proper subject of a patent. Sufficient appears to show that the patentee learned from his experiments that he wanted paper of the qualities described in the reissued patent, and the evidence proves that he said so to the paper-manufacturer; but it is clear that he did not communicate any information to the manufacturer respecting the process by which such paper could be produced, nor did he give the manufacturer any directions upon the subject. Information of the kind he could not communicate for the best possible reason, which is that he was utterly destitute of any knowledge as to the constituents of such paper or the process by which it could be manufactured. Such paper was eventually produced by the manufacturer, to whom the patentee applied to make the attempt, after many experiments as to the character of the materials suited to the end, and as to the mode of operation best adapted to effect the desired result, without any assistance whatever from the patentee.

Good paper collars may unquestionably be manufactured from that product; but it is nevertheless true that the patentee is not entitled to a patent for the collars as a new manufacture for several reasons:

1. Because he did not invent either the product or the process by which the product is obtained.

2. Because the collars, apart from the paper of which they are made, are identical in form, structure, and arrangement with the collars previously made of linen, paper of different quality, and other fabrics.

3. Because it appears that the patentee is not the original and first inventor either of the paper or the process by which the paper is made, or of the collar which is denominated a new manufacture.

Articles of manufacture may be new in the commercial sense when they are not new in the sense of the patent law. New articles of commerce are not patentable as new manufactures, unless it appears in the given case that the production of the new article involved the exercise of invention or discovery beyond what was necessary to construct the apparatus for its manufacture or production. (*Glue Co.* vs. *Upton*, 6 OFFICIAL GAZETTE, 840.)

Nothing short of invention or discovery will support a patent for a manufacture any more than for an art, machine, or composition of matter, for which proposition there is abundant authority in the decisions of this court. *Hotchkiss* vs. *Greenwood*, 11 How., 265. *Philips* vs. *Page*, 24 How., 167. *Jones* vs. *Morehead*, 1 Wall., 162. *Simpson* vs. *Woodman*, 10 Wall, 121.)

Suffice it to say that it is not pretended that the original patentee invented either the paper or the process; but the claim in argument is that he was the first person to conceive the idea that paper possessing the described qualities was desirable for the purpose of making such collars, and that, inasmuch as he was not a paper-manufacturer, he had a right to employ trained skill to produce the desired product, and that he, under the circumstances, should be regarded as the actual inventor because he made known to the manufacturer that paper of such qualities would be useful, and because he employed the manufacturer to engage in the effort to produce the desired article; but the patentee communicated no information to the manufacturer as to the constituents or ingredients to be used, or as to the mode of operation by which they were to be compounded in order to produce the desired result.

Where a person has discovered a new and useful principle in a machine, manufacture, or composition of matter, he may employ other persons to assist in carrying out that principle, and if they, in the course of experiments arising from that employment, make discoveries ancillary to the plan and preconceived design of the employer, such suggested improvements are, in general, to be regarded as the property of the party who discovered the original principle, and they may be embodied in his patent as part of his invention.

Doubt upon that subject cannot be entertained; but persons employed as much as employers are entitled to their own independent inventions; and, if the suggestions communicated constitute the whole substance of the improvement, the rule is otherwise, and the patent, if granted to the employer, is invalid, because the real invention or discovery belongs to the person who made the suggestions. (*Agawam Co.* vs. *Jordan*, 7 Wall., 602.)

Apply that rule to the present case, and it is clear that the original patentee was not entitled to a patent either for the paper or the process, as he never made any invention or discovery upon the subject.

Remark respecting the other patent granted to the same party is quite unnecessary, as it is admitted that it falls within the same rule as the preceding patent, and for the additional reason that the decision of the circuit court in that regard is not assigned for error.

III. Two principal defenses are set up by the respondents to the charge made against them that they have infringed the reissued patent of Solomon S. Gray, as set forth in the bill of complaint: First, that the patentee is not the original and first inventor of the improvement. Second, that the alleged invention had been in open and public use, and on sale in this country, for more than two years, with the consent and allowance of the supposed inventor, before he filed his application for a patent.

Three claims are contained in the reissued patent, substantially as follows:

1. The turning over of a paper or a paper-and-cloth collar by a defined line, whether pressed into the material by a die or pointed instrument, or by bending it over the edge of a pattern or block of the proper curve or line, substantially as described.
2. So turning the part B of a paper or paper-and-cloth collar over toward the part A in a curved or angular line instead of a straight line, substantially as and for the purpose described.
3. So turning the part B onto or toward the part A, in the manner described, as that a space shall be left between the two parts;

which, it is admitted, is substantially the same as the second claim, in consequence of which those two claims will be considered together.

Collars of paper or paper and cloth, if turned over on a defined line, are covered by the first claim, whether the line is curved, angular, or straight, and whether the line is made or pressed into the fabric by a die or any pointed instrument, or marked or effected by bending the material over the edge of a pattern or block of the proper or preferred line or curve. Evidently, therefore, it is intended to cover collars turned over on a defined line, effected in any possible manner or by any practicable means, if made of paper or paper and cloth. Shirt-collars are turned over or down on a curved line, in order to prevent the collars from puckering or wrinkling when bent in a circle, and in order to cause the part turned over or down to set out a little from the band portion of the same, so as to admit a neck-tie between the band and the part of the collar which is turned over.

Manifestly these objects are precisely the same, whether the collar be all paper, paper and cloth, or all linen. Hence it is difficult to perceive upon what ground it can be held that any change in the manner of turning down a collar on a curved line, if made of any one of these fabrics, is patentable, if collars of either of the other fabrics have been turned down before in the same manner and precisely for the same purpose.

Evidence is exhibited which shows that many years before the patent was granted in this case paper envelopes and the tops and bottoms of paper boxes were produced by shapers of steel pressed on the material so as to produce defined lines by which the material could be folded. Satisfactory proof is also exhibited that collars made of paper and cloth were, several years earlier than the date of this invention, folded over a piece of metal in a straight line, which is the same process as that described in the specification of this patent, as it appears that the material was bent over a pattern or block to give the proposed curve or line.

Plenary evidence is also exhibited showing that linen collars were ironed on blocks, with a groove in the block, by which the collar received a defined line for the folding, which accomplished the same purpose as the pattern or block.

Proofs were also exhibited showing that paper collars, long before the alleged invention under consideration, were folded by laying upon the unfinished side of the same a piece of tin, having at one edge the required curve, which enabled the manipulator to accomplish the same object by pressing upward over such a curve a part of the collar, so as to mark the line of the curve and crease the paper preparatory to turning the collar over, which enabled the laundress to accomplish the

same object as the means described in the specification of the patent.

Support to the answer is also derived from the proofs that linen collars had for years been turned over in a curved line, and for the very purpose described, which is to prevent wrinkling and to afford space for the cravat.

Taken as a whole, the proofs in this regard are conclusive that the patentee is not the original and first inventor of the patented improvement described in either of the claims of his patent.

Decree affirmed.

SUPREME COURT OF THE UNITED STATES.

JAMES F. DANE, WILLIAM WESTLAKE, AND JOHN P. COVERT, APPELLANTS, *vs.* THE CHICAGO MANUFACTURING COMPANY.

[*In equity.—On appeal from the Circuit Court of the United States for the Northern District of Illinois.—October term, 1874.*]

The invention claimed in the reissue (November 23, 1869,) of the letters patent for an improvement in lanterns, granted to William Westlake, April 26, 1864, is the adaptation to a globe-lantern of a wire guard, removable at pleasure, the top of which is a band or ring sufficiently large for the globe to be passed through it, and which is separated from the top of the globe by a disk, to which it is connected by fastenings that allow the said parts (the disk and guard) to be detached at pleasure, so as to permit the removal of the globe.

The combination of old devices, which constitutes the invention set forth in the Westlake patent, is anticipated by the English patent to Isaac Evans in 1861.

[*L. L. Bond*, for appellants.
No appearance for appellee.]

Mr. Justice BRADLEY delivered the opinion of the court.

This case comes before us under peculiar circumstances. The appellants were complainants below, and filed a bill as assignees of William Westlake of certain letters patent granted to him April 26, 1864, for an improvement in lanterns, for which they obtained a reissued patent November 23, 1869. The bill was dismissed, on what ground does not appear. The defendants have not appeared to contest this appeal. We are left to ascertain as best we can, with such aid as the appellants' counsel has given us, the real merits of the controversy.

The nature and objects of the alleged invention are described by the patentee as follows:

> The nature and objects of my invention consist in the construction of lantern-guards without hooks, projections, or catches sticking out and interfering with the safe and convenient use of the lanterns, and so that the same can be readily attached or detached; in the employment of band or disk to fill or cover the space between the enlarged band or ring at the upper end of the guard and the top of the globe; and in the application of suitable fastenings to secure the dome to the guard.

In other words, the improvement claimed is the adaptation to a globe-lantern of a wire guard, removable at pleasure, the top of which is a band or ring sufficiently large for the globe to be passed through it, and which is separated from the top of the globe by a disk, to which it is connected by fastenings that allow the said parts (the disk and guard) to be detached at pleasure, so as to permit the removal of the globe. The object of the disk is said to be to cover the space between the top of the guard and the top of the globe, and to hold the latter, which it is important should be contracted at the top. It is stated that the fastenings referred to may be any suitable fastenings to secure the dome or disk to the guard; spring-catches being specifically described for the purpose, but any proper fastenings being admissible.

The reissued patent originally contained three claims, as follows:

> 1. The lantern-guard *a*, constructed entire without hinge or joint, so that, as a whole, it can be readily attached to or removed from the lantern, as set forth.
> 2. The disk *g*, in combination with the ring or band *b* of the guard and fastenings *e*, substantially as and for the purposes specified.
> 3. The guard *a*, in combination with the disk *g*, fastenings *e*, and removable globe *d*, substantially as specified.

The letters in these claims refer to the drawings, but the parts designated will be really understood from the foregoing description.

The first claim, which was for the removable guard alone, was afterward surrendered by a formal disclaimer filed in the Patent Office April 12, 1871.

The other two claims are for combinations; but the disk, designated in the drawings by the letter *g*, and being the disk before mentioned as being used to fill or cover the space between the circular top of the guard and the contracted top of the globe, and to hold the latter in place, is the central and important element in each combination. In the second claim it is combined with the top ring or band of the guard and the fastenings that connect them; in the third it is combined with the guard, the fastenings, and the removable globe. But in both all these elements are pre-supposed and implied. The idea of the guard is never dissevered from the circular ring or band which forms its top, and the guard and disk are never dissociated from the globe with its contracted top and capacity of removal. It is a globe-lantern with the globe removable and contracted at top, to which the improved guard, with its enlarged and circular top, and the attendant intervening disk, are adapted, and for which they are constructed. This is what the patentee in substance says, and what, indeed, is essential to make his claim to invention even plausible.

From the evidence before us it appears that when Westlake applied for his patent in March, 1864, all the elements of his improvement were well known. Butterfield's lantern, patented in 1855, and Lamport's, presented to the Patent Office for a patent in 1858, both had removable guards with bands at the top, and contracted-topped globes, the guards being so constructed, however, as to open like a jacket, and thus to be removed from the lantern. But the top of the guard, when in place, fitted closely around the top of the globe, and, therefore, there was no place or occasion for a disk between the guard and the globe, as in Westlake's lantern.

In Canning's lantern and in Max Miller's, both presented for patents, and the latter patented in 1858, there was a nearer approach to Westlake's. They had a guard with an enlarged top, consisting of a circular ring, large enough to allow the globe to be removed through the same; and this top was connected by fastenings (bayonet-fastenings are exhibited) with the dome, the bottom of which was spread out like a broad flat bell, and might have served the purpose of the disk in Westlake's lantern, had it been admissible or required. But in these lanterns, the top of the globe not being

contracted, as in Westlake's, it filled the top of the guard, and left no intervening space for a disk between them. With this exception—namely, that the top of the globe was not contracted—the difference between the lanterns of Canning and Max Miller, and that of Westlake, was very slight. And as globes with contracted tops were not new, it may be deemed somewhat doubtful whether the application of such globes to these lanterns (Westlake's being little more than this) was entitled to the merit of invention, and therefore patentable.

In Waters' lantern, patented in 1855, there was a globe with a contracted top, such as is employed by Westlake; and said top was inserted for support in the lower part of the dome, around which a narrow flange spread outwardly (somewhat like Westlake's disk) far enough to receive, in small apertures, the wires of the guard, the tops of which (not being connected by a ring or band) were inserted therein directly. But although the dome could be detached from the wires by pressing them inwardly, and lifting the dome off from them, and thus give room for removing the globe, yet, as the parts were arranged, this could not be done conveniently; and, in fact, the globe was not removed from the top of the guard, but the latter was detached at the bottom, and lifted off from the globe, when it was desired to have access to the latter.

In none of the lanterns thus far adverted to was there fully exhibited and applied a disk described in Westlake's patent, used for the same purpose as in his, although the germ of it was seen in Waters' lantern, and an adaptable equivalent for it in Canning's and Max Miller's. But Westlake, in his testimony, admits that the disk was old at the time he made his invention, when used as a reflector in a conductor's lantern; and two English patents were put into the case, which exhibit it as used substantially in the same manner, and for the same purpose, that it is used in Westlake's lantern. The first was a patent granted to Graham Chappell in 1812, and the other to Isaac Evans in 1861. The use of the disk was somewhat similar in both of the lamps or lanterns described in these patents. That of Evans' will be more particularly adverted to.

Evans' lantern had an inner chimney, contracted at the top, an outer globe, and a guard, having a circular rim or band at the top. The disk was called in the patent a *crown-plate*, and filled and covered the space between the contracted top of the inner chimney and the outer globe, and between the latter and the top rim of the guard. It has some perforations to allow the air to pass upward between the chimney and globe. The specification says:

> Above the top of the outer glass cylinder *a*. (the globe,) and inside the upper ring, is placed a crown-plate, *l*, provided with a number of projecting flanges, which serve to keep the upper part of the outer and inner glass cylinders *a* and *b* in their places.

As this lantern was intended to be used in mines, the crown-plate was fastened to the top or rim of the guard by a screw, so as to obviate the danger of its being accidentally detached; but when it was detached and removed the globe and cylinder could also be removed through the top of the guard, or the latter could be removed from the lamp by detaching it from below. This crown-plate, therefore, seems to have served the precise office of Westlake's disk. Stetson, the complainants' expert, testifies as follows: "In Evans' patent, Exhibit No. 1, the equivalency of the guard is somewhat doubtful, but I think it is substantially the same as the guard claimed in the first claim of Westlake's patent. It has a glass chimney contracted at the top, within the globe, which is held in place by a disk supporting it at the top, and extending out to the ring at the top of the guard." This is a precise description of Westlake's disk. It is true the witness adds, "but the disk has holes for the circulation of air; the disk practically only fills the space between the small top of the lamp-chimney and the globe." But the fact that the disk had holes in it does not deteriorate from its importance as a disk to fill and cover the space between the chimney and the guard, and to hold the former as well as the globe in place. The witness admits that "if the small holes were made in the defendant's disk their lanterns would still infringe the second claim of the patent;" thus implying that the holes do not destroy the identity of the disk.

Smith, the defendant's expert, says: "This lantern, Exhibit 1, representing Evans' patent, has a guard so made that it may be separated from the top and from base of the lantern, all in one piece. The parts are screwed together instead of being held by catches, but it admits the entire removal of the dome from the guard just the same. There is a plate inside of the upper band of the guard which has flanges upon it to maintain the top of the globe and chimney, and this plate fills the entire space except so far as it is perforated. The globe can be raised through the top band of the guard. The guard in this Exhibit 1 is whole, and can be removed, not from the entire lantern any more than the guard in Exhibit B, (Westlake's,) but from the other parts of the lantern the same as the guard of Exhibit B. It cannot be removed from the other parts of the lantern as readily as the guard of Exhibit B, because it is screwed to the other parts, and cannot be unscrewed as readily as spring-catches can be worked.

"The lantern Exhibit 1 comes as completely within the first claim of the complainant's patent No. 3,747, marked complainants' Exhibit A, as the defendants lanterns do.

"The disk *g* is stated in the patent to be for filling and covering the space between the band and the top of the globe. There is such a disk in Exhibit 1, and it is the equivalent of disk *g*. The fastenings in the lantern Exhibit 1 for securing the disk to the guard, or the guard to the disk, are not like the fastenings *e* shown in the Patent No. 3,747, but they are equivalents for each other, because both specifications say that other fastenings may be used, and they both produce the same result and admit of the complete separation of the guard and disk, and in Evans' Exhibit 1 the globe can be removed.

"The combination claimed in the second claim of the Patent No. 3,747, Exhibit A, is substantially embodied in the lantern Exhibit 1, unless the claim embraces the guard *a*, removable, leaving an entire lantern.

"There is a loose globe in Exhibit 1, and it therefore substantially embodies the third claim; but there is a difference in construction between the lantern-guards."

This testimony seems to us to be corroborated by the patents and other exhibits; and from this it sufficiently appears that both the second and third claims of Westlake's patent are exemplified in Evans' lantern. It has

the combination of the disk, the band, and the fastenings specified in the second claim; and that of the guard, the disk, the fastenings, and the globe, specified in the third claim. While, therefore, it may be true that none of the lanterns referred to are equal to Westlake's in beauty of form or convenience of adaptation to the purpose for which it is intended, yet every part has been anticipated and used in some form or other for the very purposes and uses to which it is applied in Westlake's; and in Evans' lantern all the essential parts are brought together and used in the combinations claimed by the patentee. Of course, the combination might be new, and, if productive of new and useful results, and not a mere aggregation of results, might be the subject of a patent, though all the parts were used before. But here the combinations patented, as well as their separate elements, had been anticipated.

The decree is, therefore, affirmed.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date June 1, 1875.]

8,358.—Silk Fabrics.—JOSEPH COIGNET, New York, N. Y., assignor to HAMIL & BOOTH, same place. Application filed April 30, 1875. Term of patent 3½ years.

8,359 to 8,363, inclusive.—Inkstand-Supports.—CHARLES KITSCHELT, New York, N. Y., assignor to NICHOLAS MULLER'S SONS, same place.—Cases A, B, C, D, and E. Applications filed May 14, 1875. Term of patents 7 years.

8,364.—Fan.—NATHAN METZ, New York, N. Y. Application filed May 19, 1875. Term of patent 3½ years.

8,365.—Medal.—JOHN H. SCHREINER, Philadelphia, Pa. Application filed May 26, 1875. Term of patent 3½ years.

8,366.—Medal.—ISAAC TOWNSEND, Philadelphia, Pa. Application filed May 8, 1875. Term of patent 7 years.

8,367.—Cooking-Range.—NICHOLAS S. VEDDER and FRANCIS RITCHIE, Troy, N. Y., assignors to SWETT, QUIMBY & PERRY, same place. Application filed May 21, 1875. Term of patent 7 years.

8,368.—Vase.—JOSEPH W. FISKE, New York, N. Y. Application filed May 4, 1875. Term of patent 7 years.

8,369.—Fork-Handle.—JOSEPH F. FRADLEY, Brooklyn, N. Y. Case A. Application filed April 17, 1875. Term of patent 7 years.

8,370.—Spoon-Handle.—JOSEPH F. FRADLEY, Brooklyn, N. Y.—Case C. Application filed April 17, 1875. Term of patent 7 years.

8,371.—Lawyer's Badge.—SIMPSON L. HARMON, Batesville, Miss. Application filed February 12, 1875. Term of patent 7 years.

8,372.—Tea and Coffee Pots.—JAMES D. RICE, Philadelphia, Pa. Application filed April 28, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date June 1, 1875.]

2,601.—Blacking.—JOSEPH ANDREWS, New York, N. Y. Application filed May 18, 1875.
"word 'CENTENNIAL.'"

2,602.—Chisels, Plane-Irons, and other Light Edge-Tools.—BUCK BROTHERS, Millbury, Mass. Application filed May 24, 1875.
"representation of a buck's head."

2,603.—Crackers, Biscuits, Cakes, &c.—DAVID CARRICK & CO., Philadelphia, Pa. Application filed May 19, 1875.
"picture of a bell draped with the United States flag, the word 'Centennial,' and the figures '1776' and '1876.'"

2,604.—Flour.—LEONARD DAY & CO., Minneapolis, Minn.—Case A. Application filed May 8, 1875.
"word 'PALISADE.'"

2,605.—Flour.—LEONARD DAY & CO., Minneapolis, Minn.—Case B. Application filed May 8, 1875.
"words ROYAL ROSE."

2,606.—Flour.—LEONARD DAY & CO., Minneapolis, Minn.—Case C. Application filed May 8, 1875.
"word 'BISMARCK.'"

2,607.—Flour.—DAY, ROLLINS & CO., Minneapolis, Minn.—Case A. Application filed April 17, 1875.
"word 'Hercules.'"

2,608.—Flour.—DAY, ROLLINS & CO., Minneapolis, Minn.—Case B. Application filed April 5, 1875.
"words 'GOLD LEAF.'"

2,609.—Flour.—DAY, ROLLINS & CO., Minneapolis, Minn. Application filed April 17, 1875.
"word 'ORIENT.'"

2,610.—Flour.—DAY, ROLLINS & CO., Minneapolis, Minn.—Case D. Application filed April 17, 1875.
"words 'White Spray.'"

2,611.—Glass Lamp-Chimneys.—EXCELSIOR FLINT GLASS COMPANY, Pittsburg, Pa.—Case A. Application filed April 19, 1875.
"the star-symbol."

2,612.—Glass Lamp-Chimneys.—EXCELSIOR FLINT GLASS COMPANY, Pittsburg, Pa.—Case B. Application filed April 19, 1875.
"letters 'X L C R.'"

2,613.—Bitters.—THEODORE FILLETTE, New York, N. Y. Application filed May 22, 1875.
"the monogram 'F. S. W. T.,' in connection with the words 'Sherry Wine Tonic.'"

2,614.—Clay Pipes.—HOPKINS & ROBINSON MANUFACTURING COMPANY, Akron, Ohio. Application filed May 5, 1875.
"words 'Cream Pipes.'"

2,615.—Bolting-Cloths.—HUNTLEY, HOLCOMB & HEINE, Silver Creek, N. Y. Application filed May 10, 1875.
"words 'EXCELSIOR ANCHOR BOLTING-CLOTH.'"

2,616.—Composition for Printers' Inking-Rollers.—ISAAC L. JACKSON, New York, N. Y. Application filed May 21, 1875.
"words 'Eureka' and 'Isaac L. Jackson's transparent.'"

2,617.—Cigars, Cheroots, and Cigarettes.—FRANCIS S. KINNEY, New York, N. Y.—Case A. Application filed May 22, 1875.
"word 'CAPORAL.'"

2,618.—Cigars, Cheroots, Cigarettes, and Smoking-Tobacco.—FRANCIS S. KINNEY, New York, N. Y.—Case C. Application filed May 22, 1875.
"word 'DRAGOON.'"

2,619.—Ale, Porter, and Beer.—KOHLER & GEISKEN, Philadelphia, Pa. Application filed April 13, 1875.
"word 'CRYSTAL.'"

2,620.—Lager-Beer.—JOHN EMIL KUBELY, New York, N. Y. Application filed March 24, 1875.
"letters 'U' and 'S' and the words 'Centennial Lager-Bier.'"

2,621.—Medicine.—LAWSON CHEMICAL COMPANY, Cleveland, Ohio. Application filed January 25, 1875.
"a bottle having thereon the words 'Lawson's Curative,' the streams of lightning bearing the words 'Quick and Certain Relief,' and a human skeleton."

2,622.—Collars and Cuffs.—MEDBERY & MANN, Ballston Spa, N. Y. Application filed May 24, 1875.
"word-symbol 'JOHN HANCOCK.'"

2,623.—Collars and Cuffs.—MEDBERY & MANN, Ballston Spa, N. Y. Application filed May 24, 1875.
"word-symbol 'Seventy-Six.'"

2,624.—Steam-Heating Apparatus, Steam-Fittings, &c.—PANCOAST & MAULE, Philadelphia, Pa. Application filed April 24, 1875.
"a capital letter, A, having the central cross-bar V-shaped. Within the apex of the A is the smaller Gothic letter M, and on the left hand of the letter A, and a little above the line of M, is the letter O, and on the right hand of A is the letter E in a corresponding position. The three letters O M E are similar in size."

2,625.—Medicine.—RADWAY & CO., New York, N. Y. Application filed May 24, 1875.
"two oval devices used in conjunction and constituting a whole, one being attached to the top of a box containing our pills, and the other to the bottom."

2,626.—Medicinal Fluid Preparation.—RADWAY & CO., New York, N. Y. Application filed May 24, 1875.
"a combination of certain devices, words, and letters."

2,627.—Medicine.—RADWAY & CO., New York, N. Y. Application filed May 24, 1875.
"the devices, words, letters, and figures shown."

2,628.—Watches.—LOUIS STRASBURGER & CO., New York, N. Y.—Case B. Application filed April 30, 1875.
"words 'R. Lanier, Geneva,' with the figures of an arrow and two stars."

2,629.—Watches.—LOUIS STRASBURGER & CO., New York, N. Y.—Case C. Application filed April 30, 1875.
"letters and words 'James Picard, Geneva,' and the figure of a five-pointed star."

2,630.—Watches.—LOUIS STRASBURGER & CO., New York, N. Y.—Case D. Application filed April 30, 1875.
"letters and words 'P. H. Doret, Locle,' with the figure of a Maltese cross."

2,631.—Watches.—LOUIS STRASBURGER & CO., New York, N. Y.—Case E. Application filed April 30, 1875.
"letters and words 'Ph Doret, Locle,' with the figure of a crescent."

2,632.—Watches.—JOHN W. TUCKER, San Francisco, Cal.—Application filed May 22, 1875.
"words 'The Ladies' Friend' and the figure of a greyhound."

2,633.—Corsets.—UNITED STATES CORSET COMPANY, New York, N. Y. Application filed May 3, 1875.
"word 'CHARM.'"

2,634.—Soap.—ALBERT E. WHYLAND, New York, N. Y. Application filed May 15, 1875.
"words 'Big Bonanza.'"

2,635.—Tobacco, Cigars, and Snuff.—JESSE LAZEAR & CO., Baltimore, Md. Application filed May 24, 1875.
"words 'Amazon Brand' and the pictorial representation of a female warrior on a rearing horse defending herself with a javelin from the attack of a tiger."

LABELS REGISTERED DURING THE WEEK.

[Each Certificate bearing date June 3, 1875.]

253.—Title: **"Caution."**—BENJAMIN F. BADGER, Charlestown, Mass. Application filed May 28, 1875.

254.—Title: **"Donovan's Rheumatic Liniment."**—MICHAEL HENRY DONOVAN and WILLIAM FRANCIS DONOVAN, Weymouth, Mass.

[Certificate bearing date June 7, 1875.]

255.—Title: **"Stringer's Pulmonic Syrup."**—Mrs. JOHN STRINGER, New York, N. Y. Application filed June 1, 1875.

TO CORRESPONDENTS.

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APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., May 19, 1875.

On the petition of ANN JENNETTE HATHAWAY, of Milwaukee, Wis., executrix of JOSHUA HATHAWAY, deceased, authorized by act of Congress approved February 18, 1875, praying for the extension of a patent granted to the said JOSHUA HATHAWAY, on the 3d day of April, 1860, for an Improvement in Devices for Converting Reciprocating into Rotary Motion,

It is ordered that the testimony in the case be closed on the 20th day of July next; that the time for filing arguments and the Examiner's report be limited to the 30th day of July next; and that said petition be heard on the 4th day of August next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

INDEX OF INVENTIONS PATENTED JUNE 1, 1875.

	Class No.	No. of Patent.
Alarm, burglar, J. Andrews	24	163,960
Amalgamator, W. H. Carson	3	163,847
Anchor, J. S. Williams	138	164,065
Bale tie, J. S. Carson, (reissue)	7	6,462
Balnster, P. J. Hardy	4	163,993
Battery, flume, D. F. Hawkes	3	163,887
Bed bottom, spring, J. Wagner	62	163,902
Bedstead fastening, W. H. Elliot	62	163,982
Belting, machine, C. A. Jewell	81	164,002
Billiard table, H. W. Collender, (reissue)	143	6,469
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Bird cage hook, extension, V. Balcom	24	163,909
Bit stock, D. F. Sutton	29	163,896
Boat propelling mechanism, T. W. Pratt	139	164,033
Boiler, wash, W. P. Casperson	91	163,916
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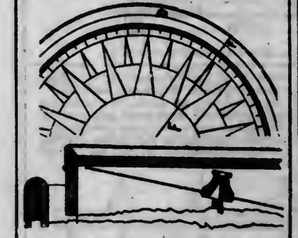
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Voth, H., and C. J. Hyatt, Adjustable and reversible chair	163,953
Wade, A. M., Spinning machine spindle	164,059
Wagner, J., Spring bed bottom	163,902
Wakefield, J. E., Folding chair	164,060
Wall, A. S., Slow match for lighting fuses	163,903
Walton Brothers, assignees	164,028
Ware, J. A., Folding chair	164 061
Warren, J. E., Fence post	163,954
Watkins, W., and H. B. Scutt, Barbed wire fence	164,955
Wattles, T. B., Spinning frame bobbin	164,062
Welch, H. M., Culinary steamer	164,063
West, J. J., assignee, (reissue)	6,473
Westgate, J. D., Machine for cutting button holes in cloth, leather, &c	163 904
Whipple, J. T., Pump for deep wells, (reissue)	6,477
White, E. A., Folding music stand	163,905
White, T., Extension table	164,064
Williams, J. S., Anchor	164,065
Wilson, T., Steam brake	164,066
Wingate, J. L., Trace fastening for whiffletrees	163,956
Wood, C. B., Fifth wheel	164,067
Wood, G. W., Exercising apparatus	163,957
Yates and Addison	163 906
Zimmer, A. M., Wood grinder for paper pulp	163,958

TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED JUNE 1, 1875.

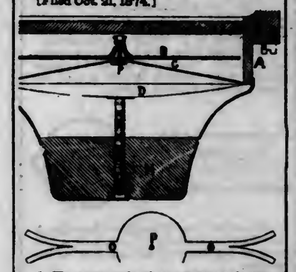
163,836. MARINERS' COMPASSES. David Baker, Boston, Mass., assignor of one-half his right to W. I. Humphrey, same place. [Filed Oct. 27, 1874.]



1. In a mariner's compass, a line, F, in connection with a vertical mark, G, upon the inside of a compass-bowl, for the purpose of observing the magnetic bearing or azimuth of a heavenly body by a shadow cast from said line or mark F directly upon the compass-card, and down upon the inside of the compass-bowl, to coincide with the said vertical mark G, substantially as and for the purpose set forth.

2. The combination of the weight L with the line F and vertical mark G, substantially in the manner described, as and for the purpose set forth.

163,837. MARINERS' COMPASSES. David Baker, Boston, Mass., assignor of one-half his right to W. I. Humphrey, same place. [Filed Oct. 21, 1874.]



1. The compass-bowl as constructed, consisting of two parts, the sides A and flexible bottom D, united together, substantially as and for the purposes set forth.

2. The conical disk C, for confining the liquid within a compass-bowl to a shallow space, substantially as and for the purposes set forth.

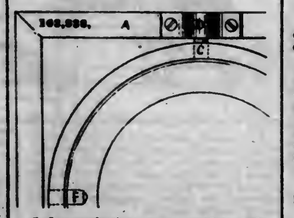
3. The glass plate E, with conical under surface I, substantially as and for the purpose set forth.

4. The combination of a compass-bowl with the cone C or an arm, O, provided with a short pivot, P, substantially as and for the purpose set forth.

5. The combination of the top, the frame, and suitable intermediate packing, secured together by screws S S passing upwardly from the under side of a ledge or lugs upon the frame, substantially as and for the purpose set forth

163,838. MARINERS' COMPASSES. David Baker, Boston, Mass., assignor of one-half his right to W. I. Humphrey, same place. [Filed Oct. 21, 1874.]

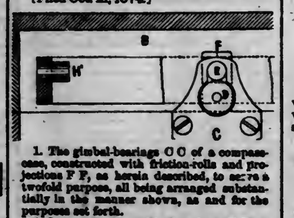
Brief.—Prevents "lubber-line" from moving out of line with ship's course, however much the ship may be "heeled."



1. In a mariner's compass, a mark or marks or other means of indicating a point or line in the direction of the axis of the outer gimbal-ring, as and for the purposes set forth.

2. A mariner's compass provided with means for indicating the lubber-point, placed in the vertical pane of the axis of the outer gimbal-ring, substantially as and for the purpose set forth.

163,839. MARINERS' COMPASSES. David Baker, Boston, Mass., assignor of one-half his right to W. I. Humphrey, same place. [Filed Oct. 21, 1874.]



1. The gimbal-bearings C C of a compass-case, constructed with friction-rolls and projections F F, as herein described, to serve a twofold purpose, all being arranged substantially in the manner above, as and for the purpose set forth.

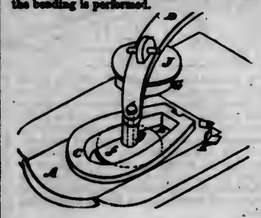
2. In combination with the pivots E E' or H H' of the gimbal-ring G, the friction-pulleys D D' and the self-adjusting spring-washers L L, for steadying a compass or chronometer suspended within said gimbal-ring, substantially in the manner described, as and for the purposes set forth.

163,840. MARINERS' COMPASSES. David Baker, Boston, Mass., assignor of one-half his right to W. I. Humphrey, same place. [Filed Oct. 21, 1874.]

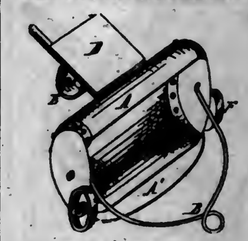
A liquid compass in which the liquid that comes in direct contact with the pivot, card, and needle is oil, or a liquid in which oil predominates sufficiently to prevent oxidization, substantially as specified, and for the purpose set forth.

163,841. MACHINES FOR BENDING HORSESHOES. Arthur Barton, Nevada City, Cal. [Filed Apr. 27, 1875.]

Brief.—A hollow former, to which the blank is fixed by a stop, and a bending-roller, (two parts), whose pivot, provided with a friction-roll, follows the inner side of the former while the bending is performed.



163,842. ROAD-SCRAPERS. H. A. Beach, Battle Creek, Mich. [Filed Jan. 15, 1875.]



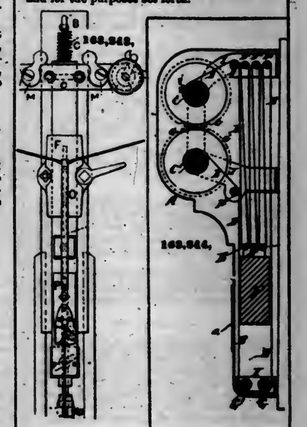
The scraper A, of the form shown, provided with the bale B, bars C C, platform D, caster-wheel E, and wheels F F, substantially as described.

163,843. SCROLL-SAWING MACHINES. H. L. Beach, Montrose, Pa. [Filed Aug. 26, 1874.]

Brief.—The saw is strained by a system of springs, and its reciprocation operates a blower, which drives away the sawdust from its path.

1. The slotted tubular support E, in combination with the spiral spring C, hook B, bolt D, box F, cap O, and cam-lever N, substantially as and for the purposes set forth.

2. The slotted tubular support E, in combination with the cross-head F, the beads K and R, the helical springs I, levers J, and geared wheels L, and eccentrics M, substantially as and for the purposes set forth.



163,844. STATION-INDICATORS. C. August Blomquist, La Porte, Ind. [Filed Apr. 14, 1875.]

Brief.—The winding-drums at each end of same belt are geared together, and slack is taken up by a compound pulley and weight.

1. The indicator herein described, consisting of an endless belt, B, the length of which is taken up between a set of fixed pulleys, D D' D'' D''', and a set of movable pulleys, E E' E'', the said belt or ribbon being printed with the names of stations or other information, which printing or advertisement is disclosed to the passenger through the window *a*, as shown described.

2. The combination of the belt B, pulleys D D' D'' D''', weighted pulleys E E' E'', the rollers G G', and the drums C C', with the case A, substantially as described.

163,845. GAME APPARATUS. C. M. Browne, Brooklyn, N. Y. [Filed Oct. 10, 1874.]

Brief.—The quoit has a dead inelastic fall, and, with the board, is especially adapted for use either indoors or out.

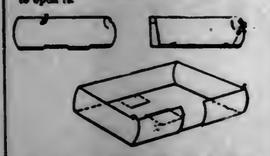


1. The penetrated shield or hub A, in combination with the adjustable pegs D D' and rods F, substantially as described.

2. The quoits E, composed of hollow rings of leather or equivalent material, and filled with sand or other stuffing, as and for the purpose set forth.

163,846. MATCH-BOXES. Ebenezer Stanley Burchett, 20 Brompton Square, England. [Filed May 11, 1875.]

Brief.—The spring, or the tray actuated thereby, presses against a flange upon the lid to open it.

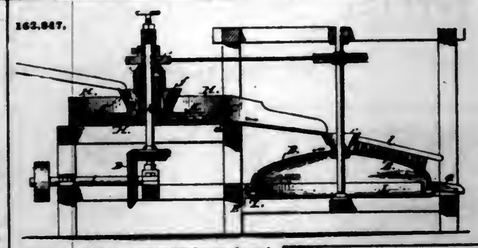


1. The combination, substantially as set forth, of the box-body, the hinged lid, and the spring bearing against the back of the lid, whereby the box is opened by the pressure of the finger and automatically closed, as set forth.

2. The combination of the box-body, the lid, the tray, and the spring *g*, these members being constructed and operating substantially as set forth.

163,847. AMALGAMATORS. W. H. Carson, San Jose, Cal. [Filed Sept. 10, 1874.]

Brief.—After amalgamation in the pan, the pasty pulp passes to the revolving amalgamated copper dome-shaped distributor. The amalgam is retained in the trough I, while the exhausted pulp passes off through the spout.

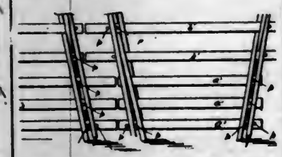


1. The pan H, provided with a bottom formed of amalgamated copper plates or dies forming alternate elevations and depressions, and the spout C, in combination with the muller A, also provided with amalgamated copper shoes and the funnel *f*, substantially as and for the purpose set forth.

2. The rotating copper-surfaced dome-shaped separator B, provided with distributing-funnel *s*, in combination with the stationary brush I and trough I, provided with the spout *o* and siphon P, constructed to operate substantially as and for the purpose set forth.

163,848. FARM-FENCES. Waltsell B. Cary, Bloomfield, Iowa. [Filed Apr. 7, 1875.]

Brief.—The reversely-inclined panel-posts serve to prevent endwise sway of the panels. The lap-joints prevent a continuous opening being formed between the panels in case of their slight separation.

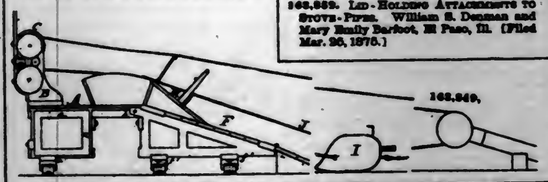


1. The combination, in a portable fence, of two adjacent detached panels, composed of boards *a a'* and *b b'* of different lengths, projecting beyond the fence-posts and forming lap-joints, substantially as shown and described.

2. The posts C C at opposite ends of a fence-panel, inclined toward each other, and held in position by pins *p* passing through holes in the boards *a b* on opposite sides of said posts, substantially as described.

163,849. GRADING APPARATUS. E. Church, Cleveland, Ohio. [Filed Dec. 19, 1874.]

Brief.—An excavating apparatus consisting of a bridge with space for teams under it, windlasses with clutches, and trap-doors secured by latch mechanism. An inclined platform is provided with a flap and bail, against which the scoops strike, when the trap-doors are opened and the load dumped into the carts.

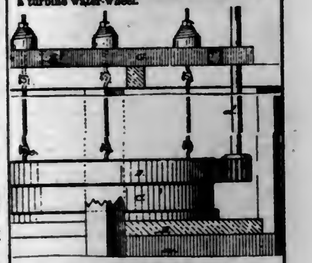


1. The bridge A, constructed with a space for teams to pass under, and having combined therewith the frames B B, drums C C, shafts and clutches D D, and the trap-doors H H, provided with the latch and closing device, substantially as and for the purpose set forth.

2. The inclined platform F, provided with the flap M, having a bail, *m*, by means of which the scoop I is made to tilt and deposit its loads onto the trap-doors, substantially as shown and described, and for the purpose set forth.

163,850. WATER-WHEELS. Jas. P. Collins, Norwich, Conn. [Filed Apr. 20, 1875.]

Brief.—Springs are applied in combination with a suspended water-wheel gate having a bearing-surface in a horizontal plane, for the purpose of diminishing the friction between the bearing-surfaces of the gate and guide of a turbine water-wheel.



In combination with a suspended water-wheel gate, having a bearing-surface in a horizontal plane, springs, applied substantially as and for the purpose set forth.

163,851. CARTESIAN TOYS. A. Demuth, New York, N. Y. [Filed Apr. 20, 1875.]

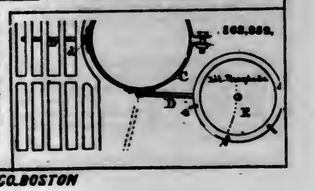
Brief.—The lower bulb is held in the palm of the hand. The heat of the hand expands the air, which, rising in bubbles through the liquid, sets the figure in motion.



The cartesian toy composed of the bulbs A B, which are connected by the neck *a*, and contain the figure C, for operation as described.

163,852. LID-HOLDING ATTACHMENTS TO STOVE-FUEL. William S. Denman and Mary Emily Barfoot, El Paso, Ill. [Filed Mar. 26, 1875.]

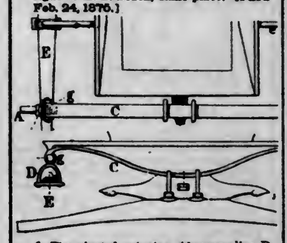
163,853.



1. In combination, with the adjustable collar C and brackets D D, the basin-shaped stove-lid holders E E.

2. The combination, with the collar C and brackets D D, of the hollow stove-lid, basins E E, provided with pendent hooks *e e* on their rims, as described.

163,854. SIDE-BAR WAGONS. Martin Donnelly, Peoria, Ill., assignor of one-half his right to H. E. Beach, same place. [Filed Feb. 24, 1875.]



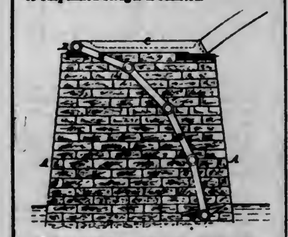
1. The pivoted swinging side-spar clips D D, having an eye at its apex, and in combination with the supporting-spring C to sustain the ends of their respective side spars below the spring-heads, substantially as set forth.

2. The half-elliptic spring, having pendent ends *g g*, in combination with the fastening and pendent clip D, to avoid the torsion of the side spars, substantially as set forth.

3. The combination of the side spars E E and their clips D D below the spring-heads *g g*, the pivot-bolt *d*, and recurved spring-heads *g g*, substantially as described.

163,855. METALLIC-ARCH BRIDGES. Jas. B. Eads, St. Louis, Mo. [Filed May 11, 1875.]

Brief.—A skew-back for metallic bridge-arches is combined with a metallic chain-tie extending downward through the masonry of the abutment, and anchored in the lower portion thereof, so as to utilize the weight of the abutment in resisting the thrust of the arch, in a manner similar to that in which the strain of suspension-bridges is resisted.



The combination of the abutment A, skew-back C, chain or tension member E, and anchor-block F, substantially as described.

163,856. SHOE-DRESSINGS. J. I. Eastman, Philadelphia, Pa. [Filed Mar. 6, 1875.]

Brief.—Composed of Brazil wood, caustic soda, soluble Prussian blue, gum-shellac, and water.

The within-described ingredients, mixed or compounded in about the proportions and for the purpose specified.

163,864. EXTENSIBLE LADDERS. William S. Elliott, Corning, N. Y. [Filed Oct. 31, 1874.]

Brief.—A ladder composed of an upper section with two or more rectangular frames, the ladder and its frames telescoping into the frame next below, and extended by means of ropes, a pulley, and a crank. The rectangular frames are each provided with a rope ladder, which, as the ladder is extended, travels from the rear part of each frame into grooves in the sides of the frames, thus forming a continuous ladder.

163,850.



1. The combination, with the ladder A, of the frames A' A', substantially as specified.

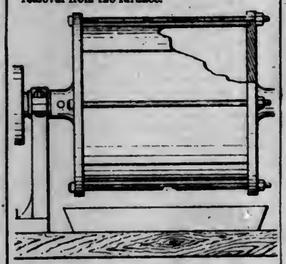
2. The combination, with the grooves *a' a'* in the sections A' A', respectively, the rounds F F and the ropes E E', substantially as specified.

3. The combination, with the shafts C C', having pulleys *f f'*, and the winches D D', having rag-wheels *g g'*, of the ropes E E', having ladder-rounds F F', substantially as specified.

4. The combination of the ropes E E', having rounds F F', with the rag-wheels *g g'*, ratchet-wheel I, pawls *p*, and retaining-springs S, as specified, and for the purpose set forth.

163,857. MANUFACTURE OF SHEET-IRON. J. Ellis, Pittsburg, Pa. [Filed Nov. 16, 1874.]

Brief.—The sheets to be polished are clamped, lapping one another, endwise between two circular heads on a shaft, forming thus a hollow cylinder, in which polishing material is placed and the cylinder revolved. The mottling is done by a plain roll on a level table closely studded, and the lining is accomplished by alternating the sheets with layers of wood-ashes in a close iron box placed on wheels, to facilitate its introduction into and removal from the furnace.



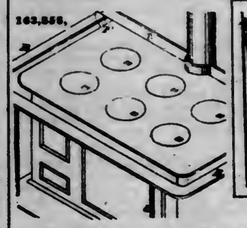
1. The mode or method of scouring and polishing sheet-iron—that is to say, causing the loose scouring and polishing material or substance to slide over the inner surface of the sheets, in the manner shown and described.

2. A table studded over with small hemispherical protuberances, in combination with a roll, the surface of which is plain and smooth, as and for the purposes set forth.

3. The mode or method of lining sheets of iron by arranging them in open order within a close cast-iron box, and alternated with an interlayer of wood-ashes, in the manner shown and described.

163,858. ATTACHMENTS FOR COOKING-STOVES. Frank Enos, Mineral City, Nev. [Filed Apr. 2, 1875.]

163,858.



In a cooking-stove, the detachable rim B and B', in combination with the hooks F and legs D D, constructed to operate substantially as described.

163,859. CHAIN-PUMPS. Chas. Fishbaugh, Tiffin, Ohio. [Filed Apr. 27, 1875.]

Brief.—The rubber is slitted inward from the edge, the slits terminating in round holes through the same.

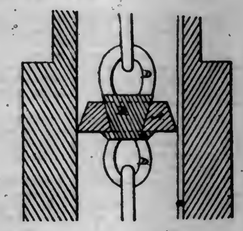


1. The bevel-edged rubber collar B, provided with one or more slits and holes, C C C C, substantially as described.

2. The combination of the bevel-edged rubber collar B, with one or more slits and holes, C C C C, with the cone and flange A, and the inner surface of the pump-stock F burned, substantially as described.

163,860. CHAIN-PUMPS. Geo. Fishbaugh, Tiffin, Ohio. [Filed Feb. 19, 1875.]

Brief.—The tubing is provided with a small groove running the whole length of it, by which the water standing in the tube draws down into the well.

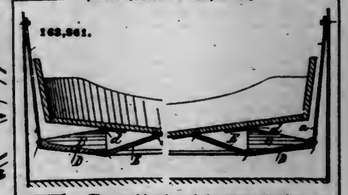


1. A chain-pump stock provided with a groove, G, as and for the purposes set forth.

2. The combination of the chain-pump stock, provided with a groove, G, the cone-shaped cylinder B, with the flange G, the bevel-edged rubber collar A, and links D D, substantially as and for the purposes above described.

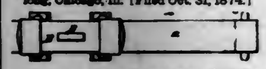
163,861. SWINGING SHIPS' BERTHS. Thos. P. Ford, Brooklyn, N. Y., assignor of one-half his right to Thomas Scott Dick, same place. [Filed Nov. 16, 1874.]

163,861.



The combination of the suspension bars or frames a with the carrier-frames B and their connecting-rods *c*, together with the fixed arms D and their connecting-rods E, attached to and in connection with the berth, substantially as described, and for the purpose set forth.

163,863. WHIFFLETREES. Thomas T. Furlong, Chicago, Ill. [Filed Oct. 31, 1874.]



As a new article of manufacture, a whiffletree consisting of a half elliptic spring, made of flexible leaves, differing from each other in length and bound together at or near their centers, one or more of the shorter leaves being within the curve of the longest one, and the said spring being provided with a drawbar or lug, and constructed at the ends to receive the traces, substantially as specified.

163,862. SPRING-BUFFERS FOR TRUNKS. E. N. Geer, Corry, Pa. [Filed Sept. 15, 1874.]

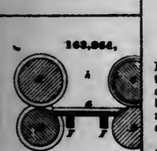
1. A spring-buffer for trunks composed of a metallic boss and a rubber or other spring, both held in a suitable socket, substantially as described, for the purpose specified.

2. The angular socket A, provided with an inwardly-projecting flange, *a*, at its mouth, in combination with the spring C and boss E, the latter having the flange *b*, all arranged and operating substantially as described.

3. The elongated metallic buffer B', having the roller E and the concave back, in combination with the elongated socket A' and spring C', substantially as described, for the purpose specified.



163,864.



163,864. ROLLS FOR ROLLING AND CREASING HORSESHOE-BARS. H. H. Gilmore, Cambridgeport, Mass. [Filed Apr. 14, 1875.]

Brief.—Bar passed through grooves, the shafts of the creasing-rolls acting as discharging-rolls; then through another groove, guide trough, and creasing-rolls, emerging therefrom in a finished state.

1. In the horseshoe-bar-rolling machine, the rolls A B, constructed to reduce the bar with the tread slope *b b* and the edge slope *c f*, in combination with the rolls C D for creasing it, substantially as described.

2. The combination of the discharging rolls or cylinders *e e* with the creasing-rolls C D and the rolls A B, for reducing and sloping the bar on its upper surface and edge, as set forth.

3. The combination of the guide-rolls F F and the trough G with the frame, the reducing-rolls A B, the creasing-rolls C D, and the discharging rolls or cylinders *e e*, all being arranged and applied substantially in manner and to operate as and for the purpose explained.

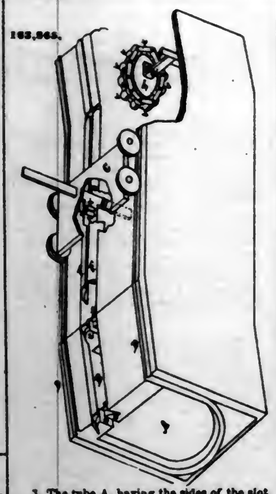
163,865. ENDLESS-ROPE TRACTION-WATER. Andrew S. Hallidie, San Francisco, Cal. [Filed Mar. 8, 1875.]

Brief.—An improvement in endless-rope traction-railways, in which the slot through which the grapple from the car passes is kept closed by stripe or bars of semicircular cross-section, the outer ends of which rest in semicircular seats. The upper inner edges of the strips are thicker than the edges, and thereby close together by gravity after having been opened by a wedge-shaped separator provided with rollers, said wedge being on the grappling-arm. An improved supporting-pulley is employed where the angle of the road changes, consisting of a series of small travelers or pulleys arranged to rotate on and around an oval block, secured beneath or above the traveling cable, as the case may be, thereby giving a less abrupt bearing-surface to said cable than when the ordinary round pulley is used.

1. The slot-closing strips F F, constructed and applied, as described, so as to close together automatically by gravity, substantially as and for the purpose described.

2. The sheave E, with wedge attachment J and friction-rollers *h h*, in combination with the strips or bars F F, substantially as described, and for the purpose specified.

163,865.



3. The tube A, having the sides of the slot B beveled inward, as described, and having the projections *e e* with their rounded upper surfaces, in combination with the stripe or bars F F with their concave under sides and rounded upper outside corner, substantially as and for the purpose described.

4. The improved pulley, consisting of the oval form T, with its encircled series of connected rollers or pulleys *v v v*, connected by links *x x x*, substantially as and for the purpose described

163,866. PAPER DOLLS. Wm. H. Hart, Jr., Philadelphia, Pa. [Filed Apr. 14, 1875.]



1. The combination, with the upper portion A of a doll, of the tongue C, contained into legs D, substantially as and for the purpose set forth.

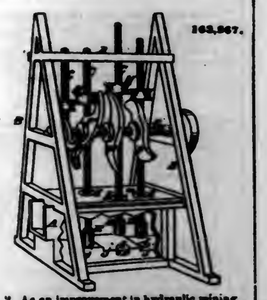
2. The prong or loop E, fixed to or a portion of the tongue C, and operating with the doll's dress, substantially as and for the purpose set forth.

163,867. FLUME-BATTERIES. D. F. Hawkes, Timbuctoo, Cal. [Filed Nov. 16, 1874.]

Brief.—Pulverized gold-holding material washing through the waste-flume of a hydraulic mine by a stamp-battery.

1. In combination with a main flume, A', provided with the grating *c'*, the turn-out flume A, provided with one or more battery-stamps, E, substantially as and for the purpose set forth.

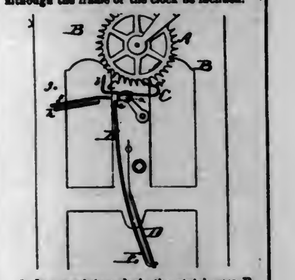
163,867.



2. As an improvement in hydraulic mining, the process of reducing the unbroken pieces of cement, earth, or other light material by passing the wash from the sluices through a flume which leads through a stamp-battery, whereby the lumps or pieces will be carried by the water underneath the stamps and subjected to a crushing action in their passage through the flume, substantially as and for the purpose set forth.

163,868. PENDULUM-CLOCKS. V. Himmer, New York, N. Y. [Filed Oct. 19, 1874.]

Brief.—A clock so constructed that the pendulum will adjust itself in vertical position, although the frame of the clock be inclined.



1. In a pendulum-clock, the crutch-wire E, connected by a flexible joint with the anchor C, or a projection thereof, substantially as described.

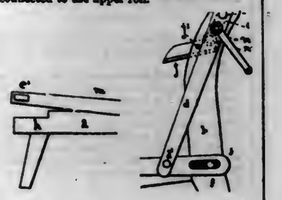
2. In combination with the anchor C and jointed crutch-wire E, the projecting pin *f* and the stop-pins *g* and A, arranged substantially as and for the purpose described.

163,869. LAUNDRY-POLISHES. C. L. Holland, Ipswich, Mass. [Filed Dec. 8, 1874.]

The herein-described laundry-polish, composed of starch-flour, gum-arabic, and glycerine, in the proportions and in the manner herein set forth.

163,870. WASH-BENCHES AND WRINGERS. Cornelius F. Hornbeck, Slaterville, N. Y. [Filed Feb. 11, 1875.]

Brief.—The rolls are forced together by draw-rods pivoted to a lever-platform, upon which the tub stands, the weight of the latter being sustained by the draw-rods, which are connected to the upper roll.



The combination of the adjustable lever-platform *m e e'*, having a slot, *f*, with rods *d*, pivots *b f*, upper cross-bar *c*, bearing-rods *c'*, wriagar-rollers *n*, curved posts *b*, and bench *a*, as set forth.

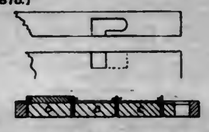
163,871. PESSARIES. John Kean, Chicago, Ill. [Filed May 11, 1875.]

Brief.—Both the hinged wings of the pessary and a cup upon a perforated standard adjust together vertically, by turning nuts at the outer end of the cup-stem.



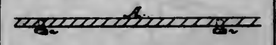
The adjustable and self-sustaining pessary composed of hollow curved standard *b'*, constructed at its end with screw-thread *b'*, adjustable jaws *a*, hinged together and to the standard, arms *d*, united at the lower end and hinged to the jaws at the top, perforated cup *f*, secured to a curved stem, *g*, constructed at its end with screw-thread *g'*, and operating-nuts *h i*, working on screw-threads *b' g'*, all constructed, arranged, and adapted to operate as and for the purpose described.

163,872. STEREOTYPE-PLATE HOLDERS. A. N. Kellogg, Chicago, Ill. [Filed Apr. 26, 1875.]



The combination of the column-plate, provided with the L-shaped cavities in its side edges, with the column-rules furnished with pins, substantially as specified.

163,873. STEREOTYPE-BLOCKS. A. N. Kellogg, Chicago, Ill. [Filed Apr. 26, 1875.]



1. The combination of the plain A and block B, provided with the fastening consisting of a button or flanged shank upon one and a lipped cavity in the other, whereby the two may be united, or separated when united, by a short sliding movement, substantially as specified.

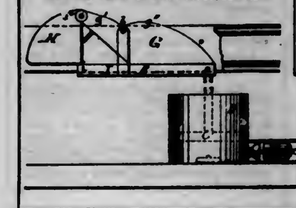
2. The plate A, provided with the headed short screws or buttons *a a*, in combination with the block B, made with the cavities *b b*, covered partly by the notched lip *c*, substantially as specified.

163,874. STEREOTYPE-PLATES. A. N. Kellogg, Chicago, Ill. [Filed Nov. 11, 1874.]



The whole page-plate cast with a groove on the back opposite the interval between the columns, substantially as specified.

163,875. RAILROAD-CROSSING SIGNALS. R. T. King, Cleveland, and Lucien L. Nunn, Oberlin, Ohio. [Filed Feb. 18, 1875.]



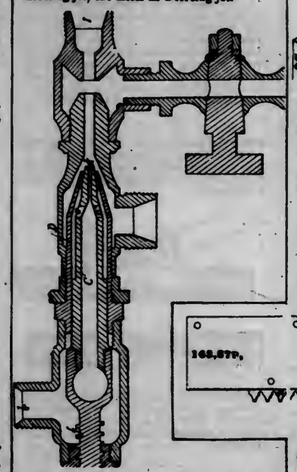
1. The railroad-crossing signal, consisting of the whistle, operated through the medium of a tilting lever, adapted to be operated by the wheels of a train passing in one direction only.

2. The combination, with the levers B and G, of the block H, substantially as and for the purpose described.

3. In combination with the leverage mechanism B G H, the rod C, cylinder D, sounder F, and pipe E, all arranged substantially as and for the purpose described.

163,876. INJECTORS OR EJECTORS FOR STEAM-ENGINES. George H. Little, Peabody, Mass. [Filed Feb. 13, 1875.]

Brief.—An interior tube receives steam within itself, and delivers it in the first instance in a small central jet. By drawing the said tube back, its tapering point is unseated from a surrounding nozzle and tube, and steam passing through side outlets in the inner tube is delivered in an annular jet around the other—the former acting as a drafting-jet, the latter as a forcing-jet.



1. The described construction, consisting of the inner steam-tube C having the small outlet *h* and the side outlets *c' c'*, in combination with the outer tube D, the one tube being adjustable relatively to the other, as set forth, and whereby, when the tubes are seated together, the letting on of steam will draft water without moving any of the parts, and the unseating of these tubes from each other will force the drafted water into the boiler.

2. In combination, the inner steam-tube C, the outer tube D, the regulating nut or nuts, overflow-neck having a full-sized opening; the overflow-chamber, straight or tapering; and the outlet I, straight or of increasing size, the parts being arranged and operating substantially as shown and described.

163,877. INSECT-POWDER INJECTORS. A. Meyer, New-York, N. Y. [Filed Mar. 26, 1875.]

Brief.—A cup similar in form to an ordinary oil-cup has a free bottom attached to a diaphragm, which joins the outer case at its largest diameter. The diaphragm is kept distended by a spiral spring within. The nozzle is held in place by a screw-cap, and can be removed to charge the instrument.

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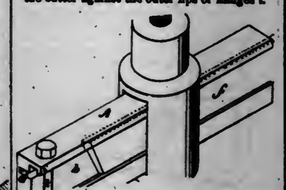
163,877.



The double-bottom disks I J of the vessel A, in combination with the flexible diaphragm K and spring N, as specified.

163,878. CUTTER-HOLDERS FOR METAL-LATHES. Jos. R. Mitchell, Haywood, Cal. [Filed Apr. 2, 1875.]

Brief.—A longitudinal groove, extending nearly through the upper part of the holder, permits the top to be sprung down by the screw in the tool-post, and thus clamp the cutter between the top and bottom of the grooved way in which it rests. The pin *k* passes transversely across the back of the recess in which the tool is held, and projects slightly, to hold the cutter against the outer lips or flanges *i*.



1. The tool-holder A, with its way or recess *b* and lips *i i*, in combination with the tool or bit, *f* and the clamping or pinching screw *c*, substantially as and for the purpose described.

2. In combination with the tool-holder A, with its recess or way *b*, and bit or cutter, the bolt or pin *k*, with its projecting faces, arranged and operated substantially as and for the purpose described.

163,879. SAWS FOR SAWING STONE. Samuel G. Morrison, Williamsport, Pa. [Filed Oct. 8, 1874.]

Brief.—The cutting portion of the saw consists of emery-paste or other similar abrasive material, which is attached to a metal back.

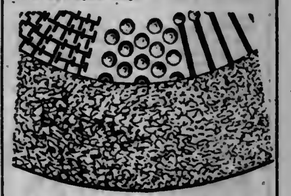
163,879.



The saw-plate herein described, composed of two metal plates united together at the upper edge by rivets, in combination with the corrugated metal blades *c*, provided with an edge of emery-paste, substantially as specified.

163,880. MODES OF APPLYING EMERY TO METAL SURFACES. Samuel G. Morrison, Williamsport, Pa. [Filed Sept. 1, 1874.]

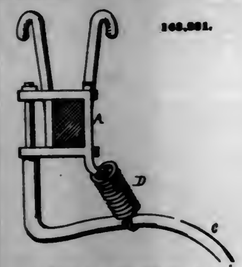
Brief.—The metal plate or tool is roughened, heated, and coated with flour of sulphur, which melts and spreads upon the surface. A thick paste, composed of dissolved gum-shellac, pulverized sulphur, and emery, is applied, pressed, and baked sufficiently to melt the sulphur only.



The process or mode of applying emery to metal surfaces for mechanical purposes, substantially as described.

163,881. WIRE-TUBERING. Aaron J. Mowry and Henry Chance, Burgoon, Ohio. [Filed Apr. 15, 1875.]

Brief.—A gripe embraces the plow-beam, the upper and lower bars of which project upon the land-side of the plow, and in which is swiveled a bent or curved arm, which reaches over into the furrow upon the mold-board side of the plow, to sweep down the stubble, weeds, and grass upon the edge of the land forward of the mold-board, in order that these may be covered in by the turning furrow. The arm is held to its work by a spiral spring, which allows it to pass over immovable obstructions.



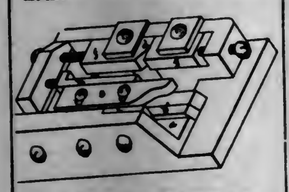
163,891.

The clevis A, in combination with the hook C, of the shape shown, operating upon the swivel B, and attached to the clevis by the coiled spring D, substantially as shown and described

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163,892. DIES FOR FORMING SPURS ON HORSESHOE-CALKS. Joseph Palmer, Concord, N. H., assignor to himself and C. P. Moore, same place. [Filed Dec. 12, 1874.]

Brief.—A rough blank, with a lateral and projection, is first pierced (with its projection resting upon the steel slide *b'*) in the recess *a* of the die. A cverge then descends and compresses the projecting portion of the blank into a partially-formed spur. The blank is taken from the die *a*, and pierced, with its spur portion over the die *d*, in a recess on the other side of the die. A punch, of the same configuration as the die *d*, then descends, forces the blank through the die and recess, thereby shearing off the surplus metal, and finishes the calk



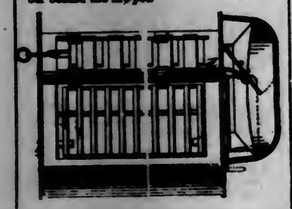
1. The dies described, being the recess *d* and the adjustable parts *f*, *b*, *g*, as set forth.

2. The combination of the die *d* and punch *d'*, as described.

3. The combination of the punch *c b* with the die *a b'*, as described.

163,893. RESERVOIR COOKING-STOVES. D. B. Paris, Troy, N. Y. [Filed Oct. 16, 1874.]

Brief.—From the fire-pot the draft may be either direct to the exit-flues, or indirect through the reservoir-chamber and the opening at its rear, which leads into the fire-chamber behind the fire-pot.



1. In a cooking stove or range, having its exit-flue opening on its rear side, or longitudinally opposite the fire-box, a reservoir-chamber located on one end of the stove, horizontally and laterally opposite the fire-box, in combination with an ash-pit below said chamber.

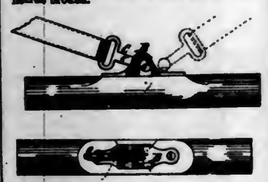
2. In a cooking range or stove having its exit-flue opening on its rear side, a reservoir-chamber and ash-pit, located the one above the other on one end of the stove, and a baking-oven and flue-space on the other end, in combination with a fire-box intervening, constructed as described, so that the smoke and heat may pass around the oven or through the reservoir-casing, at the will of the operator.

3. A smoke-flue leading to the exit-pipe located on the back side, and in rear of the back plate of an oblong or square shaped cooking-range, in combination with a reservoir casing or chamber, located at right angles thereto on one end of the range, and connected therewith by an aperture made through the end or rear wall of said casing, to allow the smoke to pass through it on its way to the exit-pipe.

4. In an oblong or square shaped cooking-range, having its exit-flue opening on its rear side, connected with a reservoir casing or chamber located on one end at right angles therewith, the combination of the fire-box and reservoir casing or chamber, separated by a plate or wall, provided with a protecting damper, that may either prevent or allow the direct action of the heat upon the reservoir.

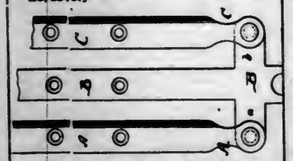
163,894. HOLDBACKS. J. V. Phillips, New Buffalo, Mich. [Filed Apr. 16, 1875.]

Brief.—Ordinarily holds firmly, but is detached whenever tugs are unhitched or whiffletrees broken.



In a holdback attachment, the combination of tongue C, having notched cross-head *c* and socket B, provided at its entrance with a shoulder, substantially as and for the purpose set forth.

163,895. SLAT-IRONS FOR CARRIAGE-TOPS. Freeman B. Plumb, New York, N. Y., assignor to J. B. Brewster & Co. [Filed Feb. 26, 1875.]



The cross-shaped slat-iron B, made in one piece with the rigid arms *a b*, that project from opposite sides of said slat-iron, in combination with the slat-irons A and C, that are respectively pivoted to the arms *a* and *b*, so that the pivot *d* of the beak bow will, in folding, come beneath the pivot *d* of the slat-iron, substantially as shown and described

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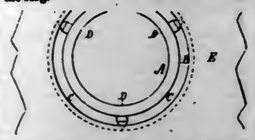
163,896. SLATE-PENCIL ATTACHMENTS. J. Pomeroy, New York, N. Y. [Filed Oct. 16, 1874.]



The sponge-holder for slate-pencils herein described, consisting essentially of the tube *b*, provided with slits *c*, claws *c*, and ring *g*, all constructed and arranged to operate substantially as set forth.

163,897. SPINNING-RINGS AND RING-RAILS. George Richardson, Lowell, Mass. [Filed May 11, 1875.]

Brief.—The sockets in the ring-rail are larger in diameter than the ring, and the latter has no flange to rest on the top of the rail, and thereby a space is left entirely around the ring, through which waste may fall, the ring being supported by screws passing into its neck, the points of which enter a groove in the socket, and are adjustable to centralize the ring.

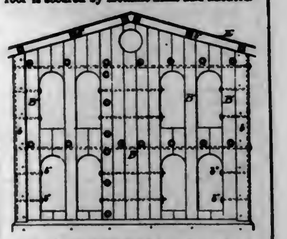


1. A spinning-frame ring, A, and its rail E, provided with a waste-discharging passage, C, encompassing the ring and open or uncovered both at top and bottom, to allow waste passing from the ring or the traveler, to fall down through such space and be discharged from the rail, as set forth.

2. The ring-socket B, provided with the peripheral groove *b*, arranged in it as explained, in combination with the ring A and its adjusting-screws D D D, applied together and arranged in such socket and groove, all substantially as specified.

163,898. WOODEN HOUSES. M. Rogers, Phillipsport, N. Y. [Filed May 6, 1875.]

Brief.—A house made of grooved stripe of plank, without frame, lath, or plaster, having metal tongues inserted in the grooves, and held together by transverse bolts and nuts. The floors rest in grooves, and are held together by anchor-links and screw-rods. The roof is secured by metallic links and anchors.



1. In the construction of the walls, partitions, roofs, or floors of houses or buildings, the combination of the grooved stripe B', metal tongue *b'*, and screw-rods *b''*, substantially as and for the purpose described.

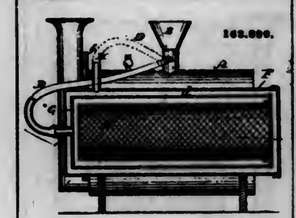
2. The combination of the floors *c*, *c'*, or *c''*, constructed as described, and resting in grooves *a* in the outer walls B, with the anchor-links 1, and screw-rods *b''*, in the manner substantially as and for the purposes described.

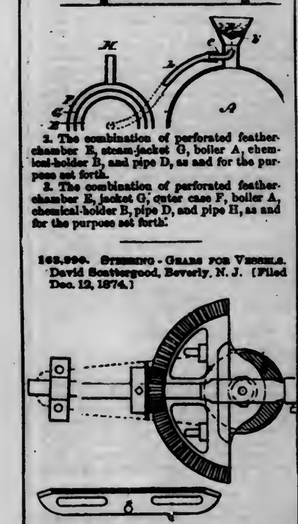
3. The combination of the screw-rods *b''*, in the outer walls B, and in the roof B, with the perpendicular link-anchor 5, and angle-link 6, constructed and arranged as described, to secure the roof to the walls of the building, as set forth.

163,899. FEATHER-RENOVATORS. Horace B. Rowe, Brockville, Canada. [Filed Feb. 19, 1875.]

1. The combination of boiler A, the chemical-holder B, connected thereto, and having the converging and perforated bottom *b'*, so as to permit the chemical to pass in small drops and impregnate the steam, the perforated feather-chamber E, and the pipe D, connecting said boiler and chemical-holder with the said feather-chamber, as and for the purpose set forth.

163,899.





1. The beveled-wheel segment, provided with slotted apertures and combined with a strap-bolt and nuts for fastening the same, as set forth.

2. The beveled segment having a central bolt-hole and nut-pocket adapted to be held to a rudder-post by a central bolt and nut, as set forth.

163,900. STEERING-GEARS FOR VESSELS. David Scattergood, Beverly, N. J. [Filed Dec. 12, 1874.]

In a washing-machine, the combination of the standards *a*, provided with the sliding tongues *h*, springs *j*, adjusting-straps *i*, and pins or catches *n* on the top of the tongue, substantially as shown and described.

163,901. JOURNAL-STUDS OR CRANT-PINS. Oliver H. Seymour, Indianapolis, Ind., assignor to Franklin H. Brown, same place. [Filed Mar. 26, 1875.]

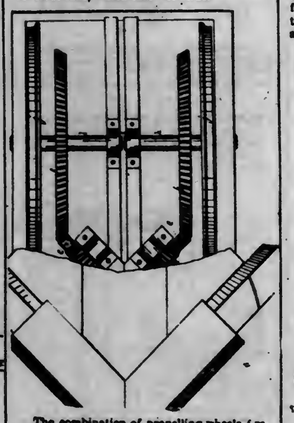
163,902.



The expansible pin A, made in one piece, and terminating at one end in a male screw, and at the other in a flaring, recessed, and split head terminating in a female screw, in combination with the headed screw-pin C, all substantially as shown and described, and for the purposes set forth.

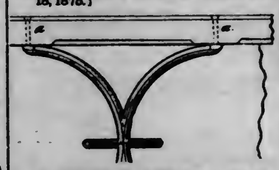
163,903. TRACK-CLEARERS. S. G. Smith, Hollis, Me. [Filed Jan. 4, 1875.]

Brief.—Operated by friction of wheels on rails. Plow divides snow, and bevel-gearing revolves fans, which throw it aside.



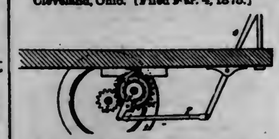
The combination of propelling-wheels *j* revolved by contact with the track, short shafts *k*, driving-gears *f*, guars *e*, their shafts, snow-removing fans having radial fans, base *a*, and prow *b*, all as and for the purposes set forth.

163,904. STUDS FOR WAGON-BODIES. Chas. Spencer, East Greenwich, R. I. [Filed Mar. 15, 1875.]



As a new article of manufacture, a stud for wagon-bodies, made of malleable metal, in one piece with the projecting pins *a a'*, substantially as set forth.

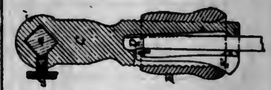
163,905. CAR-STARTERS. Frank Stafford, Cleveland, Ohio. [Filed Mar. 4, 1875.]



The shaft D, having upon it a cam, F, and a propelling spring, G, gear-wheel H, for imparting motion to the car, and a ratchet for winding up the spring, in combination with the gear-wheel I, bifurcated arm K, connecting-rod P, and lever O, substantially as and for the purpose set forth.

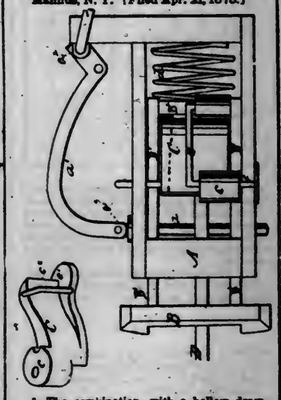
163,906. BIT-STOCKS. Delay F. Sutton, Philadelphia, Pa. [Filed Mar. 22, 1875.]

Brief.—The bit is secured to the stock by means of a tapering angularly recessed socket-piece provided with a single tapering dog, depending by a stud on the upper end of its shank from the socket-piece, in connection with a screw-sleeve having its lower end flaring outward.



The socket-piece C, having a groove, *a*, in combination with the single dog F, suspended from said piece C in an opening opposite to the groove *a*, and with the sleeve E, all constructed, arranged, and operating as set forth.

163,907. CAR-COUPLINGS. O. L. Taylor, Manlius, N. Y. [Filed Apr. 21, 1875.]



1. The combination, with a hollow draw-head, A, provided with parallel sides, and a buffer-head, B, having parallel bearing-plates B', of the connecting-link *c*, bent lever C, plate *c'*, pin *c''*, and link D, substantially as shown and described.

2. The combination, with a draw-head, A, buffer B B' B'', connecting-link *c*, lever C, plate *c'*, pin *c''*, and coupling-link D, of the coupling-pin *a*, lever *a'*, axle *a''*, and handle *a'''*, all constructed to operate substantially as set forth.

163,908. BASES FOR COLORS IN PRINTING WITH SOLUBLE SILICATES. Wilhelm C. A. Teichmann and Herman Kroeschell, Chicago, Ill. [Filed Sept. 9, 1874.]

Brief.—Slakes quicklime in ammonia alum, and uses the precipitate as a "size" to fix colors in painting with soluble silicates.

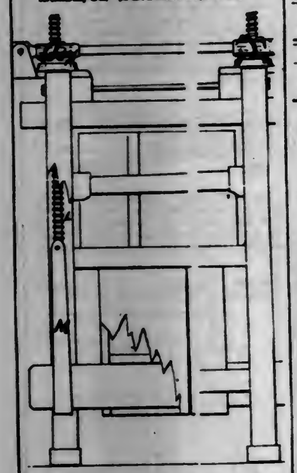
The process herein described of obtaining a base for paints, consisting in slaking quicklime in a solution of ammonia alum, as set forth.

163,909. BUTTER-PACKAGES. J. C. Tilton, Pittsburg, Pa. [Filed Aug. 10, 1874.]



The herein-described butter-package, consisting of a metallic case, A, porcelain lining B, and notched flange G, in combination with cover C and spring-bar D, for fastening down the same, all constructed and arranged as and for the purpose set forth.

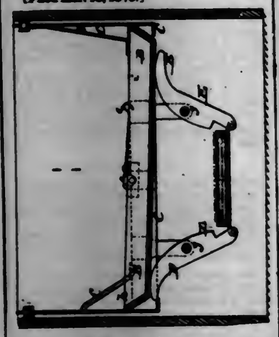
163,900. COTTON-PRESSES. E. Van Winkle, Atlanta, Ga. [Filed Mar. 23, 1875.]



1. In a cotton-press, the stationary draw-bails L, having right and left screw-threads, in combination with the pinion-wheels G and G', which form the nuts thereof, and a screw pinion-shaft, E, having right and left thread-worms, substantially as and for the purposes described.

2. A combined pinion-wheel and screw-nut, in combination with a friction-ball and oscillating trunnion, as and for the purposes set forth.

163,901. SWINGING SHIFT' RAILWAY. Wm. Van Aken, Flatbush, assignor to himself and Richard T. Coombs, Brooklyn, N. Y. [Filed Mar. 18, 1875.]

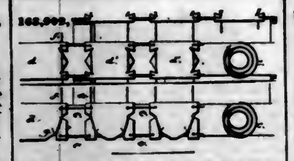


The vibrating berth B, hung, by transverse pivots a, in the vibrating frame D, and combined with the levers D and B, which are pivoted to the vibrating frame C and joined by the weighted connecting-bar B, so that their upper ends bear against the under side of the berth B, substantially as specified.

163,902. SPRING BED-BOTTOMS. J. Wagner, Utica, N. Y. [Filed Mar. 12, 1875.]

The combination of the notched blocks d d', longitudinal wire-links e, and transverse wire-threads f, as described, the blocks being woven and linked together to form the upper surface of the bed-bottom, substantially as set forth and described.

163,903.

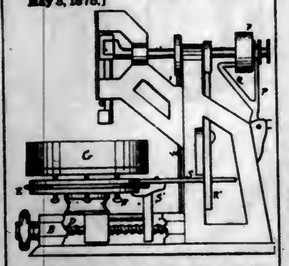


163,904. SLOW-MATCHES FOR LIGHTING FUSES. Adam S. Wall, Graniteville, Cal. [Filed Mar. 24, 1875.]



A slow-match, B, for firing blasting-fuses, adapted to have one of its ends secured around the fuse at the point where it is to be fired, substantially as and for the purpose described.

163,905. MACHINES FOR CUTTING BUTTON-HOLES IN CLOTH, LEATHER, &c. Joseph D. Westgate, Lynn, Mass., assignor to himself and Asa H. Bodwell, same place. [Filed May 3, 1875.]

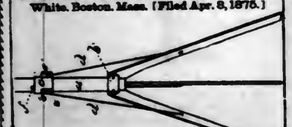


1. In a machine for cutting button-holes, the combination of the ways B and screw D with rotating disk E and table-block G, all substantially as and for the purpose described.

2. In combination, the rotating cam K, lever E', sliding-lever S, and flanged disk R, for turning the table-block G, as shown and described.

3. In combination with the loose pulley P, the shipper P', provided with an arm, Q, adapted to apply friction to the disk and stop further motion when the pulley is moved back.

163,906. FOLDING MUSIC-STANDS. E. A. White, Boston, Mass. [Filed Apr. 6, 1875.]

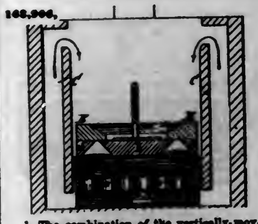


The combination, with the tripod b and legs c, of the rods d, slide s s', having a slot, f, formed on its interior face, and the pin f, secured to the standard a, substantially as and for the purpose herein specified.

163,907. WASHING-MACHINES. Thomas Addison and James T. Yates, Ellicott City, Md. [Filed July 31, 1874.]

Brief.—The tub has a central chamber, formed by two partitions extending nearly to the bottom thereof. The chamber has a perforated bottom, and also has a vertically-moving plunger, provided with a large valve, opening downward. The vertical movement of the plunger forces the water down through the clothes and perforated bottom, on which the clothes are placed, and up through the side chambers, formed by the partitions, into the central chamber, and through the valve again to the clothes.

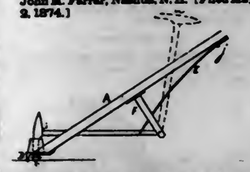
163,908.



1. The combination of the vertically-moving plunger E, the downward-opening valve I, the false bottom B, and side partitions C, substantially as and for the purpose specified.

2. The combination of the inclined pieces J with the edges of the plunger E, as described, for the purpose of tucking the clothes down and preventing the wear of the same between the edges of the plunger and sides of casings, substantially as specified.

163,907. COMBINED CARPET-STRETCHERS AND TACK-DRIVERS. Geo. A. Alger, Manchester, assignor to Samuel G. Parker and John M. Farrar, Nashua, N. H. [Filed May 2, 1874.]

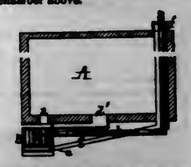


1. A stretching and tacking mechanism combined, consisting of the serrated plate D at the extremity of the staff, spring-jaws placed above said plate to hold the tack, and a hammer pivoted at the end of its handle to a support projecting from the under side of the staff, said hammer being actuated by a rod running in eyes upon the staff, all as and for the purpose set forth.

2. The combination of the slotted staff A, the hammer-support F, hammer s pivoted at the end of its handle to the end of the support F, and the actuating-rod R, joined to the hammer-handle at a point midway between its head and the pivoted end of the handle.

163,908. CAR HEATERS AND VENTILATORS. Jonathan Amory, Boston, Mass. [Filed June 2, 1874.]

Brief.—Air enters the box at the top of the car, and descends through a flue which surrounds the smoke-axis flue, and through two branch flues passes into the air-chamber below the fire-pot chamber, to supply both the fire and the hot-air chamber. The chamber below the fire-pot is connected by pipes with the hot-air chamber above.

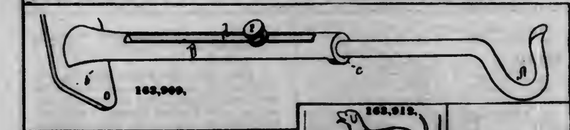


The combination of the air-box f and its two flaps, the casing B, and its flues d, d', g, and h, with car A, substantially as described.

163,909. REVERSIBLE BED-CASE HOOKS. Vernum Balcom, Boston, Mass. [Filed Apr. 17, 1875.]

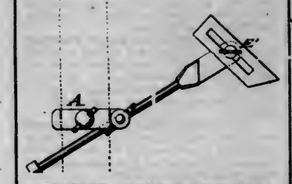
Brief.—A balanced suspending-hook made conveniently adjustable.

The sliding hook A, in combination with the stationary slotted stock or holder B, provided with the attaching-plate b, ring or tube a, and tightening-screw c, substantially as and for the purpose set forth.



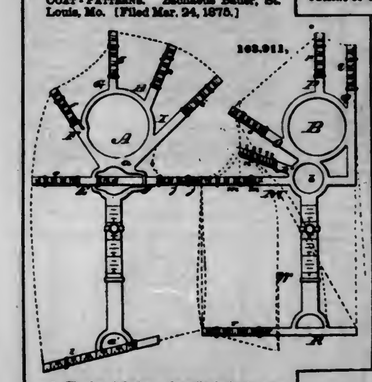
163,909.

163,910. STONE-CUTTERS' GAUGE. Edwin R. Batcheldor, Prospect, assignor to himself, Charles McLeod, South Thomaston, and T. H. Murch and Henry J. Snow, Dix Island, Me. [Filed Apr. 3, 1875.]



The adjustable gage for attachment to stone-cutters' squares, consisting of a clamping guide-piece, A, with a sliding rod, C, applied thereto by socket and clamp-screw, and provided with an adjustable slotted gage-piece and set-screw at the end, substantially in the manner and for the purpose set forth.

163,911. APPARATUS FOR LAYING OUT COAT-PATTERNS. Zacharie Bauer, St. Louis, Mo. [Filed Mar. 24, 1875.]



1. The herein-before-described device for laying out coat-patterns, consisting of the parts A, B, and D, combined and arranged to operate substantially as described.

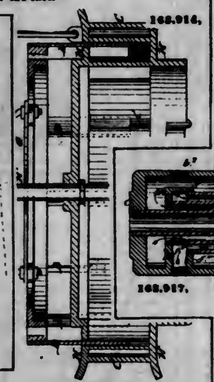
2. The herein-described devices, consisting of the part A, having the frames s and s', and the arms E, F, G, H, I, J, and L, and the slides d, f, g, h, i, j, and l, and the part B, having the frames b and b', the arms M, N, O, P, Q, and R, and the slides m, n, o, p, q, and r, all combined and arranged to operate substantially as shown and described.

3. The part D, as and for the purpose set forth.

163,912. LETTER AND PICTURE BLOCKS. Daniel Birnell, Greenville, N. J. [Filed May 1, 1875.]

The picture-blocks A, in combination with the letter-blocks B, each of the latter having one of the letters forming the name of the pictured object, and fitting to the block A by means of grooves and projections, which vary in form for the different letters, substantially as and for the purpose set forth.

163,913.



1. The gates B, arranged in the inner and narrowest position of the throats, substantially as specified.

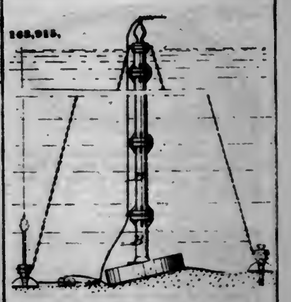
2. The combination of the secondary guides D with the main guides C, substantially as specified.

3. The combination of the gates B, ring F, radial arms G, hub H', inclined rods J, guide-runner K, yoked lever M, and oscillating fulcrum-stand N, with the wheel and case of a turbine, as and for the purpose set forth.

163,914. STATIONS FOR SUBMARINE TELEGRAPHS. Robert F. Bradley, Moffettsville, S. C. [Filed Mar. 20, 1875.]

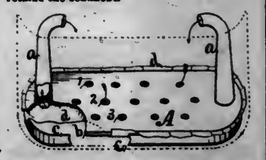
In ocean-telegraphy, a station for placing intermediate points in communication with the land termini, constructed of a hollow sectional column, which is supported on a universally-jointed base-plate, and anchored, by stay-chains or cables, to bottom stay-plates secured by stakes, for carrying the branch cable from the main cable to the surface, substantially as and for the purpose set forth.

163,915.



163,916. WASH-BOILERS. W. P. Casperson, Monroe, Iowa. [Filed Dec. 19, 1874.]

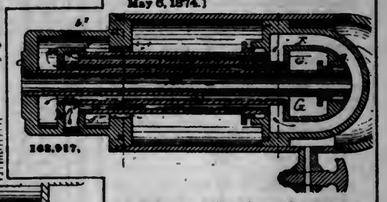
Brief.—A flexible strainer is arranged beneath the perforated plate, which acts as a valve to close the perforations and direct the ascending water to the upright tubes, and also retains the sediment.



1. In an automatic wash-boiler or boiler attachment, the flexible diaphragm d d, substantially as and for the purposes specified.

2. The combination of the perforated plate A, having conductors a a, a series of perforations, 1 2 3, and a narrow rim, b, the movable rim c c, and the movable and flexible diaphragm d d, substantially as and for the purposes shown and described.

163,917. HEATERS AND CONDENSERS. Joe. E. Coughlin, San Francisco, Cal. [Filed May 6, 1874.]



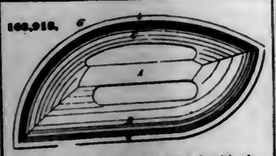
1. A heater and condenser for steam-engines, consisting of a series of pipes or tubes, telescoped one within another, so as to form alternate steam and water passages, and having a cap at each end, one of which is provided with a steam-induction, a water-induction opening, and a water-discharge orifice, and the other with a discharge and a condensed-steam discharge-orifice, all combined substantially as and for the purposes set forth.

2. The combination, in a heater and condenser, of the telescoped tubes 1, 2, 3, and 4, cap A, having the discharges b' and l, cap C, having steam-induction opening b', water-induction opening b', and water-discharge K, water-chamber B, having water-passage F, and enlarged steam-chamber G, all constructed and operating substantially as and for the purposes set forth.

163,918. POT-SCRAPERS. Urias Cramer, New Philadelphia, Ohio. [Filed Sept. 22, 1874.]

Brief.—The pot-scraper is made in the form of an elongated irregular cup, with a straight edge, a short curved edge, and a long curved edge, to adapt it for scraping the interior surfaces of vessels with different curves and angles.

163,918.



A pot-scraper, A, constructed with the straight edge D E, and curved edges E F and F G D, as described, and for the purpose specified.

163,919. MUCILAGE-HOLDERS. Henry T. Cushman, Bennington, Vt. (Filed Mar. 18, 1875.)

Brief.—The receptacle containing the liquid mucilage is united to the cap, thereby forming a base for the mucilage-reservoir, and a cover to the chamber of the base, in which chamber the mucilaginous matter to be dissolved is kept in dry lump form.

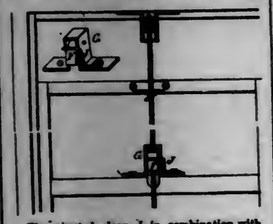


1. Mucilage-stands provided with a chamber for containing dry adhesive material, and a separate reservoir for dissolving such dry material, and containing the liquid adhesive product so formed, all combined in one case, in which that portion of the case which incloses or protects the glass fountain or reservoir also serves to cover or inclose the chamber containing the dry material aforesaid, substantially as described and set forth.

2. The combination of the base A, provided with the chamber H, with the cap B and reservoir J, for the purposes set forth.

163,920. SASH-BALANCES. Thos. I. Dale, Russellville, Ky. (Filed Apr. 10, 1875.)

Brief.—A swinging pivoted clasp, serving to clasp either the upper or lower edge of a serrated dog, to release its bite upon the cord, or to hold it more securely in position.

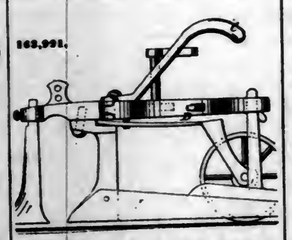


The pivoted clasp J, in combination with the dog F, supported in bearings in the metallic case G, substantially as and for the purpose set forth.

163,921. CULTIVATORS. Albert Dart, Rockville, Conn. (Filed Apr. 17, 1875.)

Brief.—The frame consists of a central beam to the upper side of which the handles are attached. A cultivator-tooth is adjustably secured to the front end, and a wing-standard a little in the rear, to the upper end of which is secured a spring, extending rearwardly, terminating in a bifurcation, which supports a bearing-wheel. Stationary wings are attached to the wing-standard, and adjustable wings are attached to pivoted arms upon each side of the center beam.

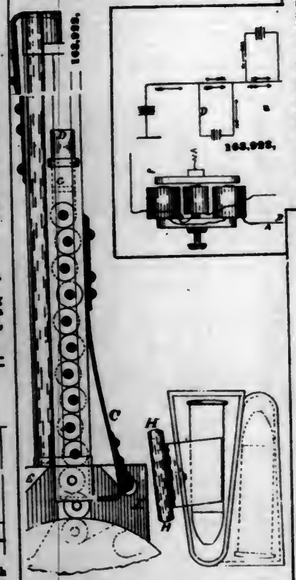
163,921.



The combination, with spring-adjusting wheel, of stationary wings I I and adjustable wings J J, as and for the purpose specified.

163,922. FEED-CASES FOR MACHINE-GUNS. De Witt C. Farrington, Lowell, Mass. (Filed Nov. 27, 1874.)

Brief.—The case is placed vertically over the feed-opening in the gun, and is made in two compartments, which have their openings at opposite ends; said openings being closed by spring-hooks, which, when the case is put in position for use, are forced out by means of lugs on said springs taking into inclined grooves in the base which supports the case. When one compartment is exhausted the case is reversed, and the other compartment brought into position to be used.



1. The duplex feed-case herein described, the cartridge delivery of the compartments being arranged at opposite ends, and the case adapted for operation, as set forth.

2. In combination, a cartridge-magazine or feed-case and a spring-hook, C, provided with lugs H, the hook and lugs being above the end of the case, substantially as set forth.

3. The follower D, when provided with the slot G, adapted for operation, and to be secured in place by the spring-hook C, in the manner substantially as set forth.

4. The combination of the inclined planes E, with the spring-hook C, and the lugs H, operating with the inclined planes or slots E, for the purposes and in the manner substantially as set forth.

163,923. DUPLEX TELEGRAPH. M. Gally, Rochester, N. Y. (Filed Feb. 9, 1875.)

1. The combination, with a main line, of a branch containing both the receiving-instrument and a magnetic key or switch for connecting main line with battery, or for breaking its direct connection with ground, substantially as specified.

2. The combination, with circuit D, having a magnetic switch therein, of circuit A A', the one being open while the other is closed, and vice versa.

3. The combination, with the main line, of sub-line A' and switch *f*, for cutting out the main battery when not in use for transmitting, substantially as specified.

4. A receiving-magnet, provided with ordinary electro magnet or magnets, and an additional magnet or magnets, all acting upon the same armature-lever for equalizing its stroke under different conditions of currents, substantially as specified.

5. A compound electro-magnet, consisting of a number of cores and helices, a part of which are stationary, the armature being adjusted to them by means of a spring, the others being in themselves adjustable, to be moved to or from the armature, substantially as specified.

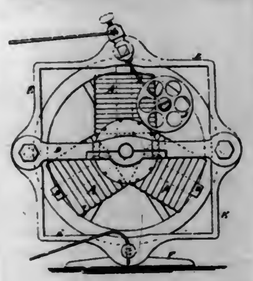
6. An armature having magnetic extremes and non-magnetic center, the extremes to be affected by electro-magnets as a polarized armature, and the center as a common armature, substantially as specified.

7. The combination, with the main line passing through one or more of the magnets of the receiver, of the compensating circuit passing through the same magnet or magnets, and also through another magnet or magnets not affected by the main-line current, but all acting upon the same armature-lever, substantially as specified.

8. The combination, with a main line and its battery, of one or more circuits, each having a section of union with the main line, and an independent battery maintaining intact its own circuit-current, the magnetic or neutral condition of each section of union changing with any change of the direction of the main current, substantially as specified.

9. The method of reducing the resistance of a wire or helix to a given current, by passing through it, in whole or in part, the current of another circuit or circuits.

163,924. ELECTRIC MOTORS. Charles J. B. Gaume, Williamsburg, N. Y. (Filed May 1, 1875.)

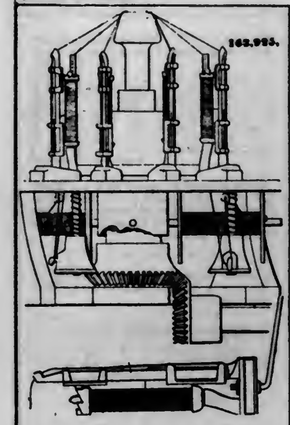


The frame or box armature E, made with four, more or less, plain or concaved sides, having half-round or square enlargements formed upon their outer or inner surfaces, substantially as herein shown and described.

163,925. LOOMS FOR WEAVING TUBULAR FABRICS. Jas. B. Gillespie, Boston, Mass., assignor to Theodore A. Dodge, trustee, same place. (Filed Apr. 14, 1875.)

Brief.—The warp is carried on spools moving on radial lines, and the carriers are provided with pivoted inclined feed, adapted to run in deep grooves, and to cross each other. Combined with the loom is a mandrel and mechanism for introducing a water-proof lining as the tube is woven, and at the weaving-point.

163,925.



1. The combination, with the heads of the warp-carriers, of the pivoted inclined feet, adapted to cross each other, substantially as described.

2. The combination of a rotating grooved surface or plate, with warp-carriers having pivoted inclined feet adapted to cross each other at the intersection of the grooves, substantially as described.

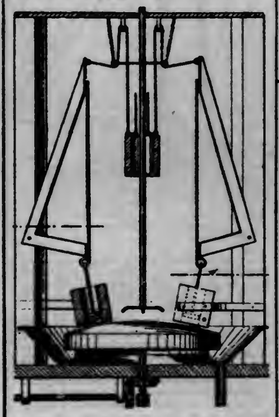
3. The combination of the warp-carriers and their pivoted feet, with the grooved plate and the independent removable warp-carrier guides, substantially as described.

4. The combination of the mandrel, about which the tube is formed, with a shoulder, *s*, against which the warps rest at the weaving-point, substantially as described.

5. The combination, with a loom for weaving a tubular fabric, and the mandrel, of mechanism adapted to form and introduce a lining or water-proof material within the tube during the process of weaving, substantially as described.

163,926. WOOD-GRINDERS FOR PAPER-PULP. Jas. C. Gregg, Elkhart, Ind. (Filed Apr. 10, 1875.)

Brief.—Double bell-crank levers and a weight operate the pistons which feed the wood to the grinding-stone.



The combination, with a double elbow-lever fulcrumed on different frame-posts, of a single central hollow weight, attached to all the levers to prevent jarring, shaking, or quivering of the lever.

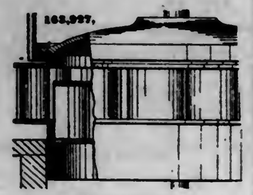
163,927. WATER-WHEEL GATES. Jas. M. Hart, Apple Grove, Va. (Filed Apr. 24, 1875.)

Brief.—The chutes and cylindrical gate are made in one piece, so that the vertical adjustment of the chutes and gate delivers the water at full or partial gate, while the hanging of the chutes admits their turning in case of obstruction.

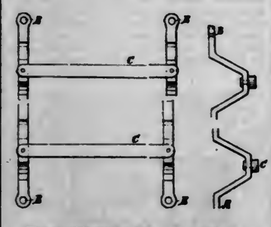
1. As an improvement in water-wheels, the chutes and gate combined in one piece, to be adjusted for full or partial gate of wheel, substantially as specified.

2. The vertically-adjustable chutes and gate combined, hung by an annular top flange to a supporting-ring band, so as to revolve with the wheel in case of accidental obstruction, substantially as described.

163,927.



163,928. CLOTHES-DRIERS. R. S. Heath, North Hope, Pa. (Filed May 1, 1875.)



The combination of the crooked bars A, having holes B, with the cross-bars C, pivoted to the bars A, substantially as specified.

163,929. GAS-BURNERS. Wm. J. Herriott, Boston, Mass. (Filed Mar. 19, 1875.)

Brief.—The slotted plate arrests impurities, and divides the current of gas before entering the pebbles. The tip with crossed slits projects into an expansion-chamber.

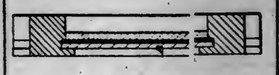
163,929.



1. The combination, with the chambered burner *a a'* and its tip *l*, of the slotted plate *b*, fitted to a seat in the bottom of the burner, the pebbles, the plate *g*, securely fitted to the shell *a*, and the removable tip or gas-regulating piece *f*, all constructed and combined as described, to arrest the impure or other particles moving with the gas, and to deliver the gas in measured quantities into the chamber, from which it is consumed through an opening in the tip *l*, as set forth.

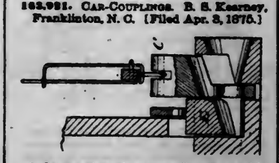
2. The combination of the burner *a a'*, regulating-tip and plate *f g*, tip *l*, and tube, provided with crossing-slots *i*, and fitted to the interior of the removable shell *a'*, and projecting within the chamber, all as shown and described.

163,930. MIRRORS. Allen Huber, Berlin, Canada. (Filed Dec. 19, 1874.)



As a new article of manufacture, a mirror having a water-proof rear face, and over this a cement back, as and for the purpose described.

163,931. CAR-COUPLINGS. B. S. Kearney, Frankinton, N. C. (Filed Apr. 3, 1875.)

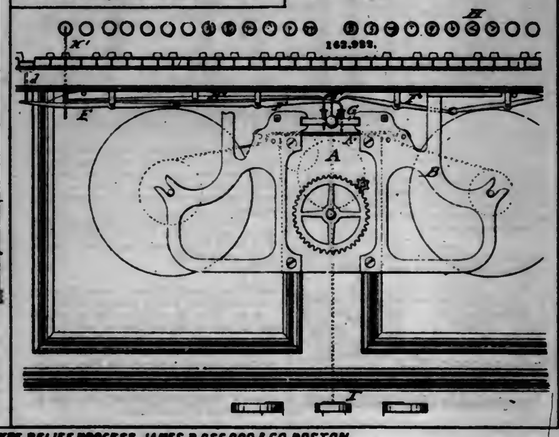


1. In an automatic car-coupling, the combination of a top-recessed draw-head, A, sliding socket-gate, C, governing rear block E, and straight or curved coupling-link having ball-shaped head, all substantially as and for the purpose set forth.

2. The combination of the coupling-link having ball-shaped head, with a curved and tapering governing-block, and top lever bearing thereon, for retaining the link at any required inclination for coupling, substantially as set forth.

163,932. AUTOMATIC MUSIC-RECORDERS. C. Landrien, Brussels, Belgium. (Filed Nov. 7, 1874.)

163,932.

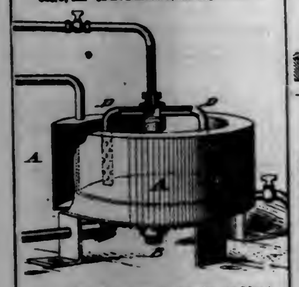


1. In an apparatus for recording the musical compositions played on keyed instruments, the combination of a series of jointed transmitting key-levers, F F', the series of stops H, connecting-levers H', pedal I, and marking-lever I' with the guide-board, pencils, or marking devices, and the sheet of paper arranged to be moved by suitable clock-work mechanism, all constructed and relatively arranged substantially as herein shown and described.

2. The combination of the keys of a keyboard instrument by sliding pins d, fulcrumed and jointed transmitting-levers F and F', with spring acted marking devices, and the guide-board G, all constructed and arranged substantially as specified.

3. The spring-stops H, pivoted rods H', and fulcrumed levers H'', in combination with the corresponding marking devices for registering the musical expressions and other miscellaneous signs, as specified.

163,922. MACHINES FOR MOISTENING OLEAGINOUS SEEDS. Alfred B. Lawther, Chicago, Ill. [Filed Mar. 6, 1875.]



A machine for mixing, moistening, and heating oleaginous seeds, herein described, comprising a steam-jacketed reservoir or vessel, A, and hollow revolving perforated stirrer-arms D, as and for the purpose set forth.

163,924. VARIABLE EXHAUSTS. William F. Lesser and Charles Michel, College Point, N. Y. [Filed Apr. 24, 1875.]



The combination of the vertical screw-threaded rod D and adjustable conical plug F with the exhaust-nozzle, said rod being arranged in and projecting above the rim of the nozzle, as shown and described.

163,925. PACKAGE-HOLDERS. G. Lovinson, Boston, Mass. [Filed Jan. 6, 1875.]

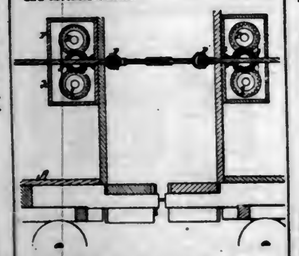


1. The within-described holder composed of the two end pieces or caps *b b*, connected by a cord or band, *c*, substantially as and for the purpose set forth.

2. In combination with a package consisting of a number of pencils or pen-holders, the caps *b b*, united by one or more cords or bands, *c*, substantially as described.

163,926. STATION-INDICATORS. S. P. Littlefield, Lynn, Mass. [Filed Dec. 31, 1874.]

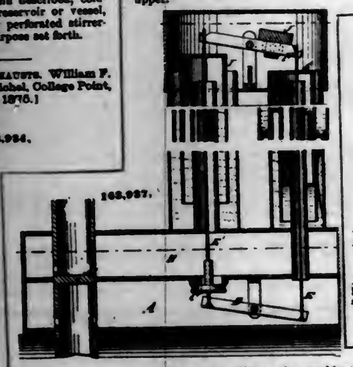
Brief.—Shaft runs through whole train, by which, through bevel-gearing, the indicator is in each car actuated. The connection of shafts between the cars is made by universal joints and extensible shaft.



The combination of the shafts C C', the extensible and contractile shaft E, and their connecting universal joints D D' with the two railway-carriages A B and their station-indicators F, all being arranged and applied substantially in manner and to operate as and for the purpose as hereinbefore specified.

163,927. GAS-REGULATORS. D. P. Mayhew, Detroit, Mich. [Filed Mar. 20, 1875.]

Brief.—One water-valve is operated from the lower chamber, and the other from the upper.



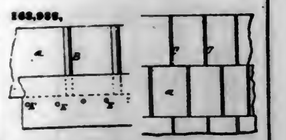
1. In a gas-regulator, the combination of the water-valves G I, communicating, respectively, with the receiving and exit chambers A H, and connected with the exit-valve C, substantially as herein described, for the purpose set forth.

2. The combination of the receiving-chamber A, exit-chamber H, exit-valve C, levers F D, rod E F, and water-valves G I, substantially as specified.

163,928. CEMENT ROOFS. Isaac Mills, Jr., Pittsburg, Pa. [Filed Mar. 25, 1875.]

Brief.—Tiles or shingles made of cement are molded on the roof-boards, nails having been previously driven partially into the roof-boards to secure said tiles. Spaces are left between the side edges of the tiles, to allow for thermal changes, and the spaces thus left are covered with a strip of bent metal, the edges of which are embedded in the tiles before they set or become hard.

163,929.



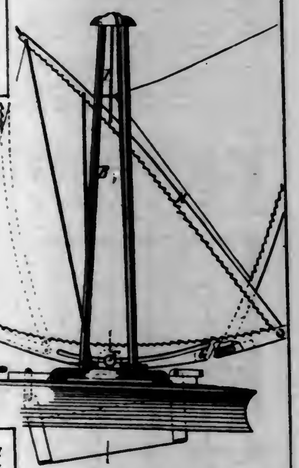
The application of cement while in a plastic state to roofs, in sections *a*, with the weather-space C, fluting B, and the fastening by means of nails E, substantially as and for the purpose hereinbefore set forth.

163,930. COMBINED TABLES AND DESKS. Thomas W. Moore, Plainfield, N. J. [Filed Nov. 14, 1874.]



The combination of the lid A, consisting of two sections hinged together, having triangular strips G, and the piece E, having the strip F hinged thereto, whereby the device may be converted from a table to an inclined closed desk, or vice versa, all substantially as specified.

163,940. MASTS AND SAILS OF VESSELS. Joseph W. Norcross, East Boston, Mass. [Filed Nov. 13, 1874.]



1. The combination of a mast composed of four timbers with a platform which revolves in or on the deck of the vessel, and with a cap which unites the tops of the four timbers, substantially as set forth.

2. The combination of the boom of a sail with a guide secured on a platform revolving in or on the deck of the vessel, either the boom or the platform being movable fore and aft, substantially as described.

3. The combination of a curved boom and a suitable guide with a halyard suspended from the cap of the mast B, substantially as set forth.

4. The arrangement of a groove in the main-boom, for the reception of the boom of an outrigged sail, substantially as described.

5. The combination of a sheer-boom with the main-boom, constructed and operating substantially as set forth.

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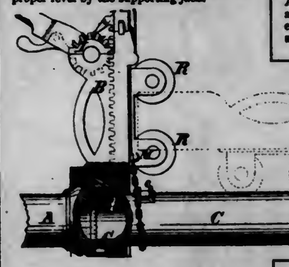
163,941. CONSTRUCTION OF VESSELS. Joe W. Norcross, East Boston, Mass. [Filed Aug. 20, 1874.]



A vessel the aft section of which forms an arc, *j k*, described from a center, *c*, while its forward section forms an arc, *j i*, described from a center, *c'*, the centers *c* and *c'* being obtained substantially in the manner described, and illustrated in Fig. 4, for the purpose specified.

163,942. ART OF LAYING STREET-MAINS. Andrew O'Neill, Ansonia, Conn. [Filed Oct. 15, 1874.]

Brief.—The bayonet-joint coupling is used. The twisting-jack rests upon and holds in place one section of the pipe, while the twisting strain is applied to the succeeding section, the other end of the latter being kept at a proper level by the supporting-jack.



1. The mode of coupling or forming joints of gas or water mains, consisting in providing the sections of pipe with the respective members of a bayonet or screw joint, and with leaden gaskets or packing-rings, and with external lugs *a p*, or their equivalents, bringing the parts loosely together by hand, and forcibly rotating the entering section by means of a twisting-jack, substantially as herein specified, for the purposes set forth.

2. The twisting-jack B, constructed with a deep saddle, and with a notch or depression therein, in combination with a corresponding projection, *a*, on one section, A, which is thus held by this jack, while it supports the same during the application of the twisting strain to an adjoining section, C, as set forth.

3. The combination of the rack-bar H, chain N, and lug *c*, for the purpose described.

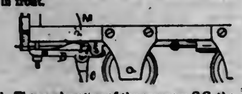
4. The wheel or wheels R, arranged on one of the vertical sides of the twisting-jack B, and constructed with concave peripheries, in combination with the laid pipe, forming a track therefor, as means for transporting the twisting-jack from point to point.

5. The combination of the adjusting and supporting jack F, having a swiveled stirrup, B, supported by a vertical screw, and the plug D, having a long cylindrical stem, D', with lugs or projections *a e* on the sections of pipe, and a twisting-jack, B, operating in connection therewith, as described, for laying street-mains by mechanical means, in the manner specified.

6. The improved dead-end P, having one member of a screw or bayonet coupling and an external lug, *p*, formed thereon, for use in combination with a twisting-jack, to temporarily stop or plug the outer end of a section or branch, substantially as herein described.

163,943. TRACK-SCRAPERS. Sabil A. Otis, Boston, Mass. [Filed Apr. 14, 1874.]

Brief.—The scraper may be elevated out of the way when not in use, and is pivoted, so as to yield to extraordinary pressure from below or in front.



1. The combination of the scrapers C C, the shaft D', the cam S, and the spring R, all to operate with the adjustable levers D D, substantially as set forth.

2. The combination of the scrapers C C, the springs M M, and stops M' M' with the swinging levers D D and shaft D', all to operate substantially as and for the purpose set forth.

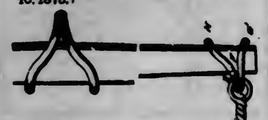
163,944. SLATE-CUTTING MACHINES. Thos. W. Petty, Danielsville, Pa. [Filed Jan. 4, 1875.]



In a machine for cutting or dressing slate, the combination of the knife-lever G, adjustable weight K, slotted fulcrum-post I, stop-post m, guard L, treadles N O, with the frame A, notched bar E, flange D', cutter-plate E, and knife F, when all the parts are constructed and relatively arranged as herein shown and described.

163,945.

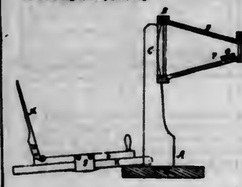
163,946. WHIFFLETREE HOOKS AND CLIPS. Isaac N. Fyle, Decatur, Ind. [Filed Apr. 10, 1875.]



1. A clip formed of two wire wrought-metal rings, spread apart at one end and welded together at the other, to adapt it to different sizes of single trees, substantially as set forth.

2. The end clip F, consisting of two rings, G H, in combination with a twisted and double wire hook, F, substantially as and for the purpose set forth.

163,946. APPARATUS FOR VIEWING PICTURES. Edwd. S. Ritchie, Brookline, Mass. [Filed Apr. 20, 1875.]



1. The combination of the eye guard D and the adjustable picture-supports K L M K L M, substantially as described, with the lens C and the supporting-frame A.

2. The combination of the head piece E with the eye-guard D, provided with the lens C, arranged at its larger end, as set forth.

3. The lens-carrying frame B and the eye-guard D, made separate, and provided with means of connection, substantially as and for the purpose described.

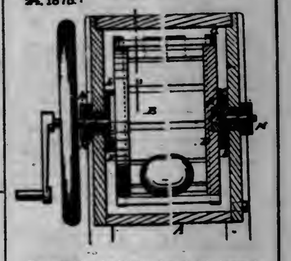
4. The combination of the compensating-lens G and its movable frame F, as described, with the eye-guard D and the main lens C, all being arranged substantially as specified.

5. Each picture supporter and adjuster, composed of the arm M and the two bars K L, all arranged and combined as explained.

6. The combination of the supporting-frame A, with the lens-carrying frame B and the adjustable picture-supporters K L M K L M, pivoted to said frame, all as specified.

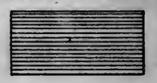
7. The combination of the frame A with the eye-guard D and lens C by side pivots, admitting the changes of position, substantially as specified.

163,947. WASHING-MACHINES. Edward J. Robinson, Schenectady, N. Y. [Filed Apr. 24, 1875.]



The combination of the detachable journals J, flanged plates K, journal-boxes L, and nuts M with the revolving washing-cylinder B and suds-box A, substantially as herein shown and described, for the purpose specified.

163,948. MANUFACTURE OF HEELS AND SOLES OF BOOTS AND SHOES. J. J. Sawin, Natick, Mass. [Filed Apr. 7, 1875.]

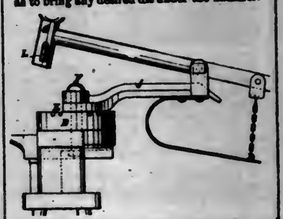


1. In the process of manufacturing heels from curried and oiled leather, the immersion of the oiled leather to form the lifts in naphtha or other volatile hydrocarbons, substantially as described.

2. As a new article of manufacture, a heel-blank made from lifts or layers of scrap upper leather with the oil extracted, substantially as described.

163,949. DEVICES FOR WELDING CHAIN-LINKS. Philander H. Standish, Jefferson City, Mo. [Filed Sept. 20, 1874.]

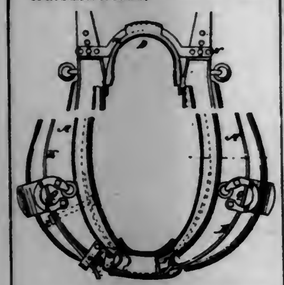
Brief.—The plate contains dies of different sizes, and can be swung around the pivot, so as to bring any desired die under the hammer.



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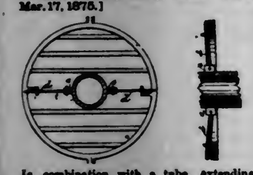
The combination, substantially as described, of rotary plate D, having open dies E near its edge, and hammer, having main die G and wing-dies L L, all arranged substantially as and for the purpose specified.

163,960. COMBINED HAMES AND HORSE-COLLAR. Ezra Stroud, Rockford, Minn. [Filed Aug. 3, 1875.]



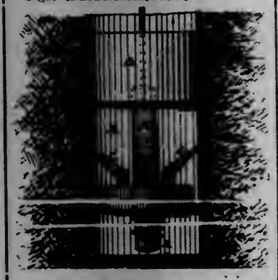
The hames A, having holes *a*, the bow-rods M M, having a series of holes, N, in their end portions, and supporting the neck-pad D, all combined as shown and described, for the purpose specified.

163,961. HEATING-STOVES. Levi B. Stuart, Seymour, assignor of one-half his right to Frederic Durand, Derby, Conn. [Filed Mar. 17, 1875.]



In combination with a tube, extending centrally entirely through the stove and grate, the ears *a a* on the tube, and the swinging bars *d d* on the grate, pivoted to the ears, all substantially as and for the purpose described.

163,962. TOOTHPICKS FOR OIL-WELLS. J. Taylor, Millerstown, Pa., assignor of one-half his right to H. F. Randolph, Ridgeway, N. Y. [Filed Nov. 21, 1874.]



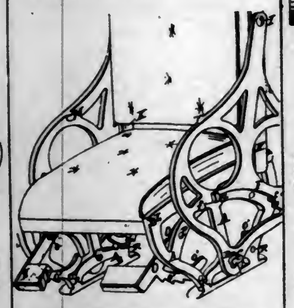
1. In combination with the magazine B, provided with the anchors O O and the discharging devices, the separate tamping-box D, adapted to be connected and suspended, substantially as and for the purpose set forth.

2. The movable rod or shaft R, passing through the magazine and operating the hammer H to fire the charge, in the manner set forth.

3. The combination, with the rod R and magazine B, of the spring T, in the manner and for the purpose stated.

163,963. ADJUSTABLE AND REVERSIBLE CHAIRS. Henry Voth, Moberly, and Chas. J. Hyatt, St. Louis, Mo. [Filed Sept. 20, 1874.]

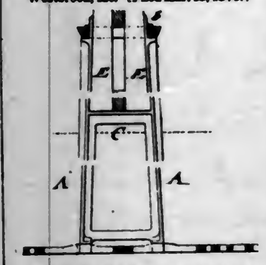
Brief.—The back, at its mid-height, is pivoted to side frames, having at their lower ends slotted connection with pivot-studs on the seat-frames. Said side frames have also ratchets that engage studs on the seat-frames. The foot-rest has slotted connection with the seat-frames, and is adjusted to the desired position by means of ratchet-arms engaging studs on said frames



1. The arm-frame F, having slotted pivot-connection C D and racks *f f*, engaging stud G, in combination with the back, pivoted to the frames, and having downwardly-extending arms K, engaging studs L of the seat-frame A, all constructed and combined substantially as set forth.

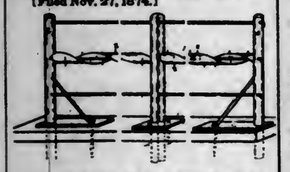
2. The foot-rest having slotted pivot-connection *e* P with the base-frame A and ratchet-racks *e'*, engaging on studs E, all constructed and combined substantially as shown and described.

163,964. FENCE-POSTS. John H. Warren, Westbrook, Me. [Filed Mar. 13, 1875.]



A fence-post consisting of extension-standards A D, collar *b*, and studs E, all constructed substantially as and for the purpose specified.

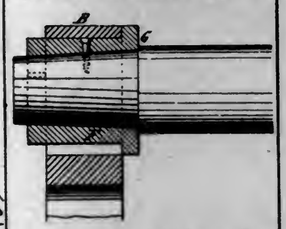
163,965. BARBED-WIRE FENCES. William Watkins and Hiram B. Scott, Joliet, Ill. [Filed Nov. 27, 1874.]



The attachment of wire fences herein described, consisting of wire encircling strip *a*, formed of spiral metal, and having barbs *s* projecting through the sides thereof, constructed as and for the purpose described.

163,966. TRACE-FASTENINGS FOR WHIFFLE-TREES. John L. Wingate, Moores Forks, N. Y. [Filed Aug. 10, 1874.]

Brief.—Strain comes on whole whiffletree, instead of on metal attachment at end.



The combination, with thimble F, having leg H on its circumference, and collar G, of the trace-eye B, having slot E, as and for the purpose specified.

163,967. EXERCISING APPARATUS. George W. Wood, New York, N. Y. [Filed Mar. 6, 1875.]

Brief.—The elasticity of the tube is overcome by the muscular contraction of the operator in any exercises desired.



1. The conical plugs or handles B, inclosed in the ends of a rubber or other elastic tube or rod, substantially as herein shown and described.

2. The combination of the cord C with the rubber tube A and the conical plugs or handles B, substantially as herein shown and described.

3. The combination of a cross or stirrup handle, D, with the rubber tube or rod A and the conical plugs or handles B, substantially as herein shown and described.

163,968. WOOD-GRINDERS FOR PAPER-PULP. Anna M. Hammer, Elkhart, Ind. [Filed Mar. 20, 1875.]

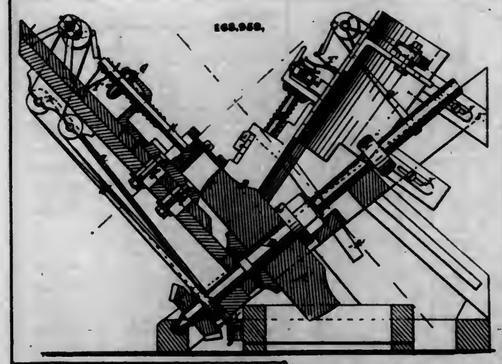
Brief.—The grinding-wheel is set at an angle of forty-five degrees, and has feed-boxes on face and edge. Each feed-box has a piston-plunger.

1. A stone for grinding wood, arranged to run in a plane oblique to the horizontal plane, in combination with feed-boxes for the face and for one side, substantially as specified.

2. The combination of feed-pawl lever Q and a crank-shaft with the feed-presser, having a ratchet-stem, substantially as specified.

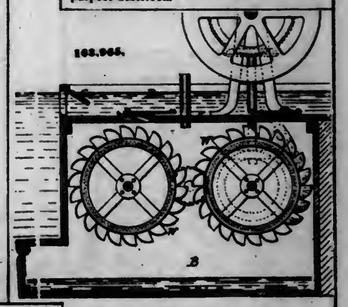
3. The combination of a spring T, with the feed-pawl and its connecting-rod and crank-shaft, substantially as specified.

163,959.



A series of curved band-cutting knives, C, secured upon a shaft, *c*, mounted in bearings *b*, free to play up and down in curved slots *a*, in uprights A, substantially as and for the purpose described.

163,965.



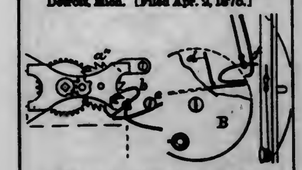
163,969. SPOOLS. Nicholas I. Allen, Hopedale, Mass., assignor to George Draper & Son, same place. [Filed May 11, 1875.]

Brief.—To enable a barrel-shaped yarn-load to be built by a uniform traverse of the yarn-guide.



The double-headed spool, having its body largest in diameter at its middle, and tapering each way from its middle to the two heads, all being substantially as shown and described.

163,970. BURGLAR-ALARMS. J. Andrews, Detroit, Mich. [Filed Apr. 2, 1875.]

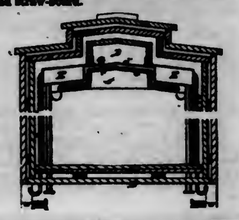


1. The lever *c*, having the bent cord and adapted to be attached directly to the thread-loop, and to allow the entrance of the pivoted wire *f* to lock said lever, in combination with the catch *d*, pallet *h*, gong-striker *b'*, gong B, and escape-wheel *a'*, all substantially as herein specified.

2. The combination of the pivoted locking-wire *f*, with the bent stop-lever *e*, the parts being constructed and adapted for operation, as shown and described.

163,971. REFRIGERATING-CARS. Richard Armiger, Baltimore, Md. [Filed May 1, 1875.]

Brief.—Water-chambers between ice-box retain the drip-water. Bottom of ice-box is a continuous metal floor. Water condensing on it conveyed away by troughs. Food-chamber air-tight; air-space around it lined with felt and straw-board.



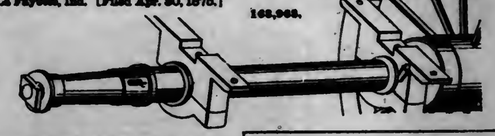
In refrigerator-cars, a median ice-chamber, D, and a water-chamber, E, on each side to receive the drippings thereof, the whole resting upon a metallic bottom, *f'*, that forms the roof of an air-tight provision-chamber, C, as shown and described, so that the ice-cold water, which absorbs caloric slowly on the journey, may form an important part of the cooling medium over the provision-chamber.

163,972. PROCESSES FOR PREPARING COCOA-NUT FOR DOMESTIC USE. Alexander P. Ashbourne, Oakland, Cal. [Filed Apr. 15, 1875.]

The process of preparing cocoa-nuts for domestic use, substantially as herein described, and consisting essentially of first grating or pulverizing the meat, and then cooking by the direct action of steam, drying and sweetening the same.

163,973. WAGON-AXLES. Edwd. Ballman, La Fayette, Ind. [Filed Apr. 20, 1875.]

163,973.

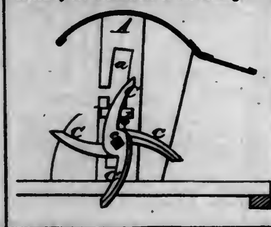


1. An axle adapted to turn in boxes, combined with a thimble-chain adapted to turn upon the thimble, so that there is an independent revolution of the axle and of the traction-wheels, all substantially as and for the purpose set forth.

2. In combination, an axle, a box in which it is to revolve, and thimble-chains capable of revolution upon a thimble rigidly attached to said axle, substantially as and for the purpose set forth.

163,974. BAND-CUTTERS FOR THRASHING-MACHINES. Byron L. Beard, Thorntown, Ind. [Filed Apr. 17, 1875.]

Brief.—The bearings of the shaft carrying the band-cutting knives are free to play up and down in slots curved in an arc concentric to the shaft, imparting motion to allow the tension of the driving-belt to remain unaffected by the rise and fall of the bearings.



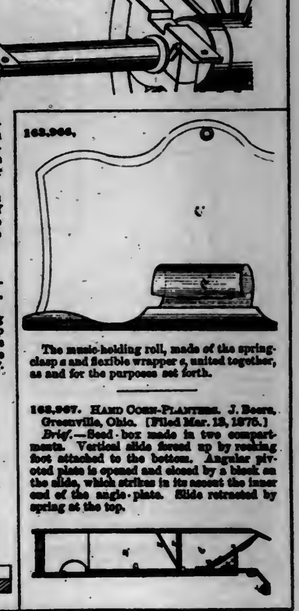
163,975. TIDE-POWERS. Peter Boehs, Bath, Pa. [Filed Mar. 19, 1875.]

1. The method, substantially herein described, of utilizing the tides as a power by means of a flood and ebb gate, C A, communicating with an upper water-head dam, D, and a lower receiving and emptying dam, E, and a water-wheel, W, or wheels between these dams for joint operation, as herein set forth.

2. The combination, in a tide-power apparatus, of an ebb-gate, A, opening outward, and a flood-gate, C, opening inward, with the lower and upper dams D B, and the water wheel or wheels, combined for operation with these tide-gates, substantially as herein set forth.

163,976. SHEET-MUSIC HOLDERS. Bernard J. Beck, Brooklyn, N. Y. [Filed Jan. 29, 1875.]

163,976.



The music-holding roll, made of the spring-clasp *a* and flexible wrapper *c*, united together, as and for the purposes set forth.

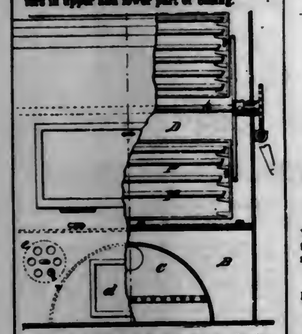
163,977. HAND CORN-PLANTERS. J. Beers, Greenville, Ohio. [Filed Mar. 12, 1875.]

Brief.—Seed-box made in two compartments. Vertical slide forced up by rocking foot attached to the bottom. Angular pivoted plate is opened and closed by a block on the slide, which strikes in its nearest the inner end of the angle-plate. Slide retracted by spring at the top.

The notched seed-slide D, acted on by a spring, and having guard G, block K, and floor L, in combination with the pivoted plate H, carrying jaw F'', and the seed-box, having corresponding jaw F, and the chambers B C, separated by diaphragm F, all arranged as shown and described, to operate as specified.

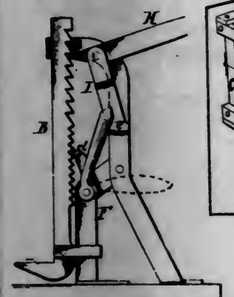
163,969. FRUIT-DRIER. Henry R. Bidwell, South Haven, Mich. [Filed Jan. 7, 1876.]

Brief.—A furnace, drying-chamber, and intermediate fire-chamber, receiving trays, and a regulator. Between the two latter are registers in upper and lower part of casing.



In the herein-described fruit-drier, having the furnace C, drying-chamber D, and intermediate fire-chamber B, the revolving shelves or trays, in combination with the regulator *f g*, registers *e*, and door *c*, whereby there is maintained a circulation of heated air of given temperature within said drying-chamber, substantially as specified.

163,970. LIFTING-JACKS. Joseph C. Bird, Bishop Gun, Md., assignor of one-half his right to Edwin Martin, same place. [Filed May 8, 1875.]



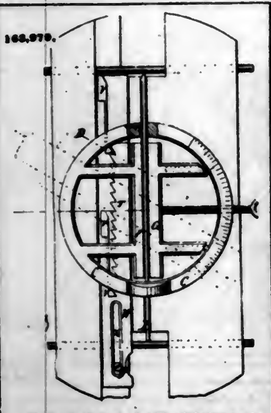
1. The combination, in a lifting-jack, of the toothed lifting-bar B with the operating-lever H, hung to the upper forked end of an arm, I, which is contained in the space between the opposite sides of the frame, and rests loosely at its lower end upon a bearing, *e*, on the frame, all substantially as set forth.

2. The combination of the arm *f* on the spindle of the pawl *d* with a movable weight or lever, by adjusting which the center of gravity of the said pawl can be changed, as set forth.

163,970. SAW-FILING MACHINES. Wm. B. Bissell, La Grange, N. C., assignor to himself and W. H. Hardee, same place. [Filed Dec. 20, 1875.]

Brief.—The plate carrying the spring-pawls is provided with a slot and set-screw for setting the pawls to the ratchet-bar after the file is adjusted.

163,970.



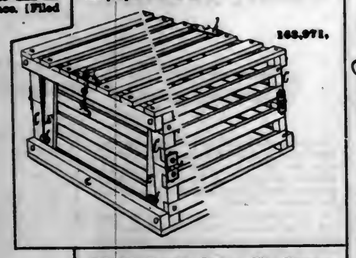
The notched ratchet-bar T and spring-pawls V, arranged on a shifting-plate, combined with the feeding-frame C, as and for the purpose specified.

163,971. POULTRY-COOPS. Frederic M. Blanc, Winchester, Va., assignor of one-half his right to T. V. Purcell, same place. [Filed May 11, 1875.]

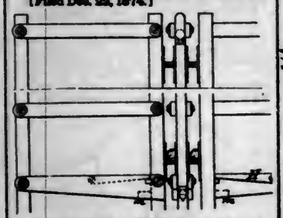
Brief.—The ends are hinged at top, and turn inward against the roof. The sides, with their pents, are centrally hinged to bend inward, and made to double upon themselves, and thus bring the top and bottom near each other.

The combination, with the top and bottom frames A B, of the jointed and folding sides C D and the hinged folding ends E, all arranged and operating in the manner and for the purpose set forth.

163,971.



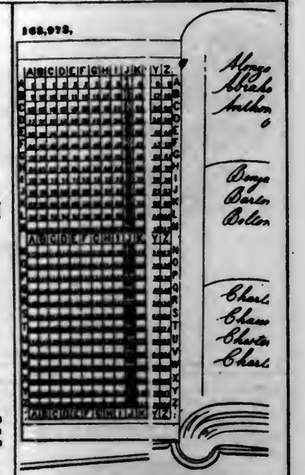
163,972. CLOTHES-DRIERS. Wm. Bloomer, New York, N. Y., assignor to Thomas Van Dyke and William W. Downs, same place. [Filed Dec. 23, 1874.]



In a clothes-drier with hinged sections and pivoted bars, the combination of the stop H with one of the said bars, and with the step *n*, as and for the purpose set forth.

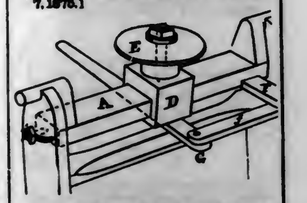
163,973. INGRAIN. C. H. Bradley, Coatesville, Pa. [Filed Apr. 11, 1876.]

163,973.



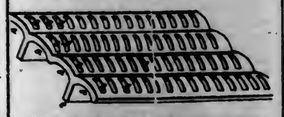
Three horizontal alphabetical columns of letters, representing initial letters of christian names, and the two perpendicular alphabetical columns, representing the initial letters of surnames, and the figures horizontally arranged, representing the numbers of pages, in combination with two or more numerals in each square of one or more columns, by which I subdivide different christian names of the same initial, substantially as described.

163,974. SAW-SHARPENING MACHINES. P. D. Burgher, Deep Creek, Va. [Filed Apr. 7, 1876.]



The saw-swing A, resting in, and adapted to be secured horizontally or at an angle in, its frame, in combination with the traveler D, saw-rest E, bearing F, link *f*, and lever G, all combined and operating substantially as and for the purpose specified.

163,975. FURNACE GRATE-BARS. Joseph Clark, Green Point, N. Y., assignor of two-thirds his right to Abel Bruce, Saugatuck, Conn., and Frank S. Smith, Brooklyn, N. Y. [Filed May 20, 1875.]



The herein-described grate-bar or section, consisting of a series of longitudinal perforated arches, *a*, substantially as set forth.

163,976. SHOEING-TOOLS. Joseph C. Cook, New York, assignor to William H. Boe, Flushing, N. Y. [Filed Dec. 28, 1874.]

Brief.—The lining of the tube is held to the exterior part by a cement packing, whereby the heat is prevented from burning the wooden part, and permits the handling of the device.

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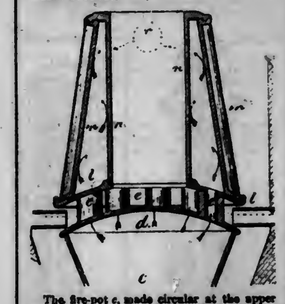
The combination of the tube A, non-porous lining B, non-conducting casing *a*, hollow plug C, with perforated partition *b*, and mouth-piece or holder D, all substantially as and for the purposes herein set forth.

163,977. MANUFACTURE OF ARTIFICIAL MARBLE. John Cowman and S. B. Barber, Rochester, N. Y. [Filed Mar. 6, 1875.]

1. The composition for making imitation stone, consisting of the combination, with gypsum, of glue, gum-tragacanth, and alum, compounded substantially as described, and for the purpose specified.

2. The process of forming artificial marbles and other facititious stones, by combining gypsum, glue, gum-tragacanth, and alum with mineral colors in separate vessels, and applying the colored cements by suitable instruments in building up a body or facing of the stone with the colors blended throughout, as described.

163,978. AIR-HEATING FURNACES. Saml. W. Davenport, Somerville, N. J. [Filed May 3, 1875.]



The fire-pot *c*, made circular at the upper end, and oblong contiguous to the grate-bars, in combination with the dome *d*, that covers the fire, the circular range of tubes *e*, the annular plate *f*, the central air-heating shaft *n*, and casing *m*, substantially as specified, whereby the air to be heated is drawn in between the dome *d* and plate *f* by the ascending current in the shaft *n*, substantially as set forth.

163,979. TREATING TAR. T. H. Dunham, Boston, Mass. [Filed May 15, 1875.]

Brief.—Treats tar and water by steam heat in vats communicating with other vats, where the goods are moved by machinery; allows tar to settle; draws off impurities; adds alkalies; boils again. Then bleach and render inodorous or less inflammable by sulphuric acid and chlorine; or may (instead of such bleaching) add resin, shun, glue, tallow, or oil, and boil again; adds crude sulphur, and color to suit, and finally a soluble salts of an alkali and earths.

1. The prepared tar, being inodorous and bright-colored, as described.

2. The process described for treating tar to give it a brightre color and free it from odors, consisting in treating it with acids and alkalies, or with bleaching compounds, substantially as described.

3. The method herein described for rendering tar fire-proof, consisting in combining with it sulphate of ammonia or other salt of ammonia, or a soluble salt of an alkali, and other, chalk, infusorial earth, whiting, lime, baryta, or equivalent earthy material, substantially as set forth.

163,980. FISH-HOOKS. E. L. Dunlap, Bucksport, Me. [Filed May 1, 1876.]

Brief.—A snap-hook, the line being attached to a hinged or pivoted latch, securing the spring-striker in position.

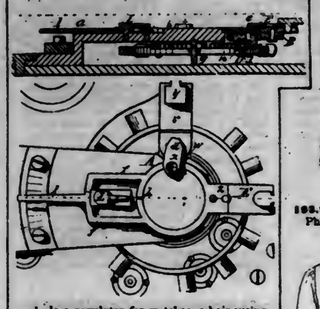
163,980



The main hook *a*, secondary spring-hook, and spring *d g e f*, arranged and connected therewith, as shown, in combination with the swinging catch *b*, pivoted to the shank of the main hook *a*, all constructed and arranged substantially as shown and set forth.

163,981. REGULATING CHRONOMETER, WATCHES, &c. Leander Eaton, Worcester, Mass. [Filed Mar. 8, 1875.]

Brief.—Adjusting parts of regulator held in position by locking levers



1. In a regulator for watches, a hair-spring lock for holding or locking the hair-spring to give it a single, permanent, and firm base of action, for the purposes herein set forth.

2. In a watch-regulator, the levers for fastening the movable or adjustable parts thereof, for the purposes herein set forth.

3. In a watch-regulator, the combination of a lock with the index of the regulator for the purposes herein set forth.

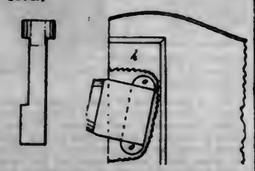
4. The regulator-frame A, constructed as described, with the arms *f f* and cut *h*, substantially as and for the purposes herein set forth.

5. The hair-spring lock consisting of the plate B with jaw *n*, bolt D, lever E with jaw *c*, and lever *c*, all constructed as described, and attached to the regulator-frame A, substantially as and for the purposes herein set forth.

6. The adjustable hair-spring holder, consisting of the plate *e* with jaw *g*, movable jaw *b*, and levers *x y*, all constructed substantially as and for the purposes herein set forth.

7. The combination of the regulator-frame, hair-spring lock, adjustable hair-spring holder, and the sight *l*, all substantially as and for the purposes herein set forth.

163,982. BEDSTEAD-FASTENINGS. Wm B. Elliot, New York, N. Y. [Filed Nov 7, 1874.]



In a bedstead-fastening a wood-tenon having all its shoulders parallel to each other, and to the ends thereof, and united with the side rails of the bedstead by a mortise cut diagonally therein at an angle corresponding with the inclination of the post-mortise, said rail-mortise being covered by the cleat *h*, substantially as and for the purpose set forth.

163,983. CORSETS. Harriet G. Emery, Boston, Mass. [Filed Oct. 27, 1874.]

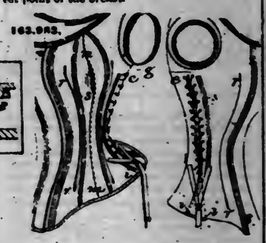
1. The elliptic side openings under the arm, closed at the top and enclosed at the bottom, and provided with a lacing for adjusting the same, substantially as shown and described.

2. In connection with the side openings under the arm, and with their adjusting-lacings, the flaring parts *i i*, arranged to overlap, as shown and described, or to meet without overlapping, as shown in Fig. 1, and for the purposes set forth.

3. The combination of the seams *r r*, made as described, with the elliptic side openings and their lacings.

4. The combination of the contrasted seams *r r*, made as described, with the seams *n n*, extending vertically over the center and highest point of the breast.

163,983.



163,984. SHIRT-BOSOMS. S. S. Fleishman, Philadelphia, Pa. [Filed Mar. 10, 1876.]



The combination, in an open-back shirt, having a hinged flap, B, formed of continuations of the two sides *a b* of the fixed portion of the bosom, of plaits *a'' a'''*, one carried by the flap and the other arranged on one side of the fixed bosom, substantially as set forth.

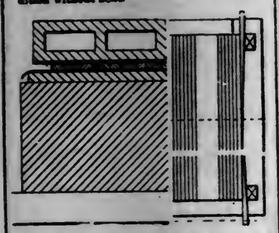
163,985. KNITTED TRIMMINGS. Gabriel M. Gernsheym, Brooklyn, E. D., N. Y. [Filed Aug. 13, 1874.]



A knitted trimming, the back of which is composed of a series of plain stitches or loops, *a*, which lie close together, and each of which is longer than the stitches composing the face of the trimming, said face presenting a continuous undulated surface, each undulation being composed of a series of stitches, *b b' b²*, which are drawn tight, while the back stitches *a* are elongated to match, substantially as shown and described.

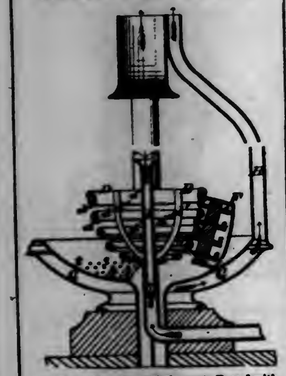
163,906. MAKING WOODEN MATS. James M. Hall, Worcester, Mass. [Filed Feb. 10, 1875.]

Brief.—After the slats have been glued to the cloth the mat is laid cloth downward upon a heated compressible bed, and a smooth platen is brought to bear upon the slats; it is subsequently permitted to "set" in this condition without heat.



The described improvement in the art of manufacturing wooden mats for table or other use, which consists in subjecting the prepared strips, preliminarily put together, glue-coated, and furnished with a cloth covering, as described, to pressure on a yielding heated bed, where the mat is evened, and the glue caused to bind the strips to the cloth, and subsequently pressing the mat in a cooling and setting apparatus, and smoothing off the wood faces of the mat, all substantially in the manner set forth.

163,907. HEATING-STOVES. P. J. Hardy, New York, N. Y. [Filed May 3, 1875.]



1. In combination with the grate D, and with the shaft E, provided with the disks *a* and *c*, that pass into the openings *d*" of said grate, the casing F, arranged to inclose said shaft at all points, except at its front side and lower end, substantially as and for the purpose specified.

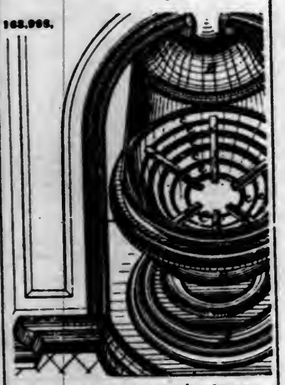
2. In combination with the basket-grate D, the concave hollow base A, having interiorly a correspondingly-shaped air-space, G, which communicates, through openings *p* and *p*, with the space surrounding said grate, and, by means of the pipes H, H, and H, is connected with the exit-flue, substantially as and for the purpose shown.

163,908. HEATING-STOVES. P. J. Hardy, New York, N. Y. [Filed Mar. 27, 1875.]

Brief.—The movable portion of the casing can be revolved entirely around its axis. The rotation of the cup-shaped grate raises it by means of the disks.

1. A heating-stove having the circular portion of its casing above its grate made sectional, centrally pivoted at its upper and lower ends, and capable of rotation around its axial center, substantially as and for the purpose described.

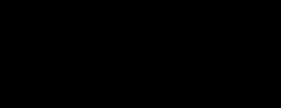
163,908.



2. In combination with the annular openings *c*" *c*", &c., of the horizontally-rotating grate C, the shaft F, provided with the toothed disks *f f*, &c., and arranged to cause one of said disks to be contained within each of said annular openings, substantially as and for the purpose shown.

163,909. APPLICATION OF STONES TO WALLS OF BUILDINGS. P. J. Hardy, New York, N. Y. [Filed Feb. 11, 1875.]

Brief.—A facing for walls consisting of thin slabs of marble or other stone, secured in place by a metal frame, and leaving an air-space between its inner face and the outer face of the wall.



In combination with the wall of a building, a facing or covering composed of slabs of marble, slate, or other like material, secured in place thereon by means of a metal frame, and having an air-space between its inner face and the outer face of said wall, substantially as and for the purpose specified.

163,910. APPLICATION OF MARBLE TO BUILDING PURPOSES. P. J. Hardy, New York, N. Y. [Filed Mar. 22, 1875.]

Brief.—An interior frame of metal with an exterior covering of stone, which conceals the same, for monuments and architectural purposes, allowing of the use of thin slabs, while giving the appearance of solidity.

For architectural purposes, the combination of an interior frame or core, of metal, with an exterior covering of stone which conceals the same, substantially as and for the purpose specified.

163,911. COVERINGS FOR WALLS OF BUILDINGS. P. J. Hardy, New York, N. Y. [Filed Mar. 13, 1875.]

As a new article of manufacture, a covering for the exterior walls of building, composed of a sheet of lead or other soft metal, having impressed or otherwise formed upon its outer face the configuration of brick, stone, or other facing usually employed for walls, substantially as and for the purpose specified.

163,912. APPLICATION OF STONES TO BUILDING PURPOSES. P. J. Hardy, New York, N. Y. [Filed Mar. 31, 1875.]

Brief.—The marble is used in thin slabs, and is applied, by means of metal supporting-frames, to the construction of newel-posts, columns, and similar articles.

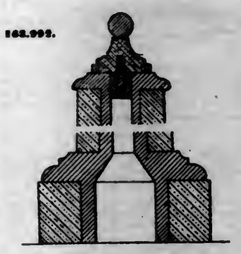
163,909.



163,911.



163,912.



In the construction of columns, newel-posts, and for other like architectural purposes, the combination of slabs of marble or other stone with metal supporting and inclosing frames, substantially as specified.

163,913. BALUSTERS. P. J. Hardy, New York, N. Y. [Filed Feb. 20, 1875.]

As a new article of manufacture, a metal baluster having the whole or a portion of its surface covered with wood veneer, substantially as and for the purpose specified.

163,913.



163,914.



163,914. CONSTRUCTION OF COLUMNS AND PILASTERS. P. J. Hardy, New York, N. Y., [Filed May 1, 1875.]

Brief.—A metal supporting-frame with base and frieze, between which a stone shaft or column is held.

The combination of the metal supporting-frame A, base B, and frieze C with the stone shaft E, substantially as and for the purpose specified.

163,915. CONSTRUCTION OF MARBLE COLUMNS. P. J. Hardy, New York, N. Y. [Filed May 1, 1875.]

Brief.—An ornamental coin.on consisting of a metal center rod, longitudinally-divided stone base and shaft, and recessed metal plates at top, middle, and bottom, to contain the ends of base and shaft.



In a column for architectural purposes, the combination of a metal center, F, longitudinally-divided base and shaft A and B, and recessed metal plates C, D, and E, for containing the ends of said base and shaft, substantially as and for the purpose specified.

163,916. HAND-RAILS. P. J. Hardy, New York, N. Y. [Filed Feb. 11, 1875.]

Brief.—A hand-rail consisting of two metal sections united by bolts or screws, and provided with recessed edges, that embrace the edges of the stone or marble top piece.



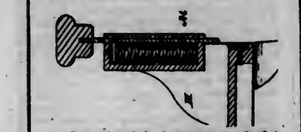
In combination with the metal sections A and A, constructed and united as shown, the stone or marble section C fitted between and embraced by the edges *a* and *a* of the former, substantially as and for the purpose specified.

163,917. HORSESHOES. Christn. Hartmann, Hanover, Germany. [Filed Apr. 17, 1875.]



The combination of the buffer B, having slit *f*, with lining *g* of textile fabric, retaining-spring *h*, and shoe A, substantially as herein set forth.

163,918. MACHINES FOR CUTTING PRINTERS' LEADS. Wm. Hawkins and W. P. Dodge, Newark, N. J. [Filed June 30, 1873.]



1. In a printer's lead-cutter, a standard for carrying the knife, composed of the part H, adapted to be secured to the side of the table, a wing, J, turned transversely across and over the table, having a recess adapted to receive a spring and a removable face-plate, M, substantially as described and shown.

2. The printer's lead-cutter, substantially as described, wherein a knife, composed of a single piece, to which a striking-handle is secured, and reciprocating between a wing-standard and a removable face-plate, and a table having a side ledge, adapted to hold and guide a gage, are all constructed, combined, and arranged to operate substantially as set forth.

163,919. WATER-ELEVATORS. Peter Hoag and Otto Junkerman, Centralia, Ill. [Filed Nov. 21, 1874.]

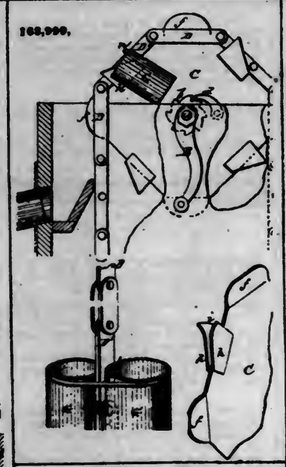
Brief.—A water-elevator with a wheel having alternate elongated projections and flanges, forming flaring mouths. The endless chain is formed of alternate double bars and single bars. The buckets are arranged in pairs, pivoted one on each side of the chain, and connected by a rod.

1. The wheel C, provided on its circumference with alternate elongated projections *f* and flanges *h h*, constructed as described, to form the flaring mouth *i*, substantially as and for the purposes herein set forth.

2. The buckets G G, arranged in pairs, pivoted one on each side of the chain D D', and connected by a rod or bail, *a*, substantially as and for the purposes herein set forth.

3. The combination, in a water-elevator, of the wheel C, having alternate elongated projections *f* and flanges *h*, forming flaring mouths *i*, the endless chain formed of alternate double bars D D and single bars D', and the buckets G G, arranged in pairs, pivoted one on each side of the chain, and connected by a rod or bail, *a*, all substantially as and for the purposes herein set forth.

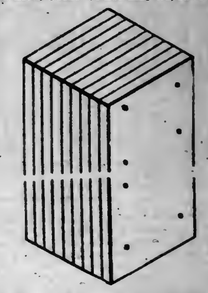
163,920.



1. The combination of an ice-house and an adjoining platform, B, with an articulated and adjustable frame and endless chains, substantially as described, for the purpose specified.

2. The combination of the articulated frame, the endless chains, chain drum or pulleys E on the driving-shaft, and chain drum or pulleys G with the adjustable frame I.

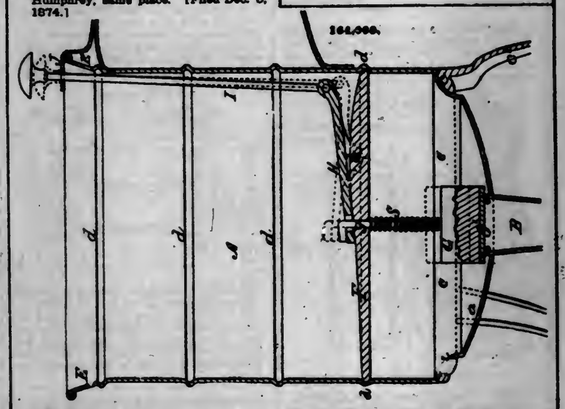
164,002. MACHINE-BELTINGS. C. A. Jewell, Hartford, Conn. [Filed May 24, 1875.]



As an improved manufacture of belting, an angular or nearly square belt, substantially as shown and set forth.

164,000. MEASURES AND FUNNELS. John Dudley Humphrey, New Britain, Conn., assignor of one-half his right to Wm. A. Humphrey, same place. [Filed Dec. 5, 1874.]

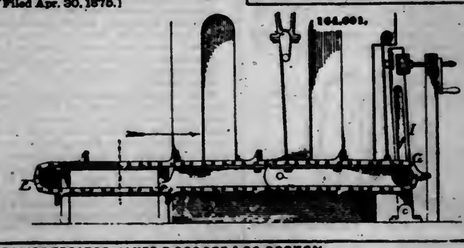
164,000.



The measuring-vessel A, having annular gradations *d d*, annular flange E, ejection-tube B, and shelf J, in combination with the rod F, valve C, spring S, lever H, and rod I, provided with catch *k*, substantially as described, and for the purpose set forth.

164,001. STORING AND REMOVING ICE. A. Hunt, Philadelphia, Pa., assignor to the Knickerbocker Ice Company, same place. [Filed Apr. 30, 1875.]

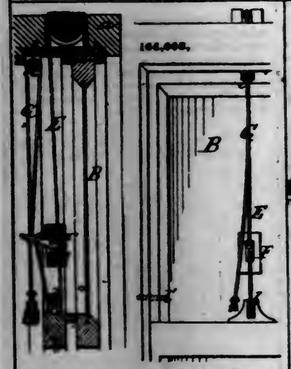
164,001.



164,003. SASH-BALANCES. Elias Johnson, Wesson, Ohio. [Filed May 6, 1875.]

Brief.—A traveling clamp is applied upon the balance-cord of a pair of sashes, moving up and down upon the same, in such manner that either sash can be raised or lowered independently of the other, and either one can be readily adjusted to any degree of elevation or depression relative to the other.

164,003.



The combination of a traveling clamp, F, with the snaps B C, balanced by means of a cord, B, passing over a pulley, D, at the top of the window-frame, substantially as specified.

164,004. WASHING-MACHINES. George S. Jones and Benj. F. Kidd, Russellville, Ky. [Filed Apr. 21, 1875.]

Brief.—The rollers are formed of end plates, connected by small detachable metallic rods passed through sections of rubber tubing.

The washing-roller, consisting of the end plates E, the detachable rods C, and the sections of rubber tubing H, all combined and arranged substantially as and for the purpose described.

164,004.



164,005.

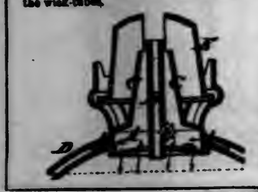


164,005. PAPER BOXES. Louis A. Kettle, Philadelphia, Pa., assignor of one-half his right to Rupert Kettle, Merridale, England. [Filed Jan. 8, 1875.]

The paper lid C, formed of the outer pieces a c, with the interposed narrow piece b, in combination with the paper body A, formed with inwardly-projecting rims B, substantially as and for the purpose set forth.

164,006. LAMP-BURNERS. Abraham Kimber, Muncie, Ind., assignor of one-half his right to William O. McMillan, Wiley, Pa. [Filed Mar. 20, 1875.]

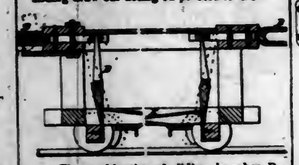
Brief.—Perforations in the bottom and sides of the burner and tubes, upon both sides of the wick-tubes.



In a lamp-burner for crude petroleum, having perforations a in its bottom and b through its sides, tubes C C, leading to the upper end of the wick-tube B, and annular skirting D, combined substantially as described, and for the purpose set forth.

164,007. CAR-BRAKES. Fielding L. Kirtley, Cleburne, Tex. [Filed Apr. 14, 1875.]

Brief.—Brakes automatically applied by sliding draw-bar acting on pivoted levers.



1. The combination of sliding draw-bar B, lever D, rods E E, and the brake-bars, as and for the purpose set forth.

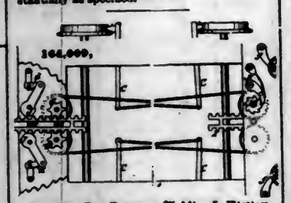
2. In combination with a car-brake, the sliding draw-bar B, having the jointed turn-up end B', as and for the purpose set forth.

164,008. STAIR-BUILDERS' ADJUSTABLE SQUARES. Columbus B. Kirkpatrick, Parkersburg, W. Va. [Filed Mar. 27, 1875.]



The square herein described, having short branches a and long branches b, slotted longitudinally, and connected in pairs of short branches and of long branches by clamp-screws c, to form an adjustable rise and tread measuring instrument for stair-builders, substantially as specified.

164,009.



164,009. CAR-BRAKES. Fielding L. Kirtley, Cleburne, Tex. [Filed Apr. 14, 1875.]

Brief.—When speed of locomotive is decreased, cars, in crowding, make the sliding rack operate the windlass-shaft pinions, and thereby automatically apply the brakes. Apparatus may be locked by a cam operated by hand.

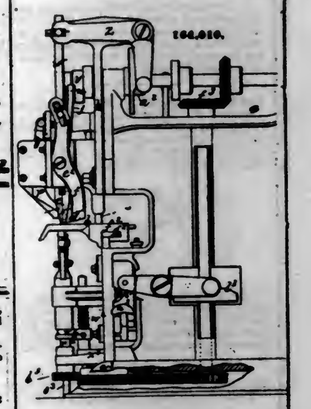
1. The slotted draw-bar H, having racks I, in combination with the windlass-shaft F, pinion G, the brake-lever C, and the connecting cord or chain, substantially as and for the purpose set forth.

2. The combination, with the draw-bar H, of the locking-cams J, the connecting-link d, the vertical shaft K provided with a hand-wheel, and the ratchet and pawl f, substantially as and for the purpose set forth.

164,010. MACHINES FOR FORMING AND DRIVING STAPLES FOR LEATHER-WORK. Asa B. Keith, Braintree, and Eunice S. Reed, administratrix of Timothy K. Reed, deceased, East Bridgewater, Mass., assignors, by mesne assignments, to Metallic-Seam Company, New Haven, Conn. [Filed May 17, 1875.]

Brief.—Improvements on Shorey's Patent No. 138,348. The wire is fed over a former, which serves as a rest for the center of the staple-forming length of wire, which is bent into staple form by the descent of the bender, when it is severed by the cutting device. As the device descends, the former is withdrawn, the staple driven through the parts to be united, and the projecting ends raised by rotating nippers and twisted, after which the twisted ends are embedded into the stock by a setting-rod.

164,010.



1. In combination with the wire feeding and bending mechanism, the severing-cutters, acting against the top and bottom surfaces of the wire, substantially as described.

2. In a machine for forming seams, a pair of twisting-nippers, actuated to have an upward motion during the twisting operation.

3. The combination of the rotary cam a^2, cam-rise a^3, shaft r^6, and sleeve q^2, for imparting the inward movements to the nippers, substantially as described.

4. In combination with the cam a^2, the spring w^2, for imparting the downward movement to the sleeve, substantially as described.

5. The continuously-rotating shaft r^6, in combination with the nippers, and for imparting to them their twist movement, substantially as described.

6. In combination with the driving-shaft, the shaft S^2 and gears b^2 b^3 b^4 b^5, for actuating the nipper-shaft r^6, substantially as described.

7. In combination with the twisting mechanism, the set s^3, for bending the twisted staple-points, substantially as described.

8. In combination with the set s^3, the cam q^2 and spring for imparting to it its respective movements, substantially as described.

9. In combination with and for operating the former d, the lever c^2, with its slot d^2 and the pin projecting from the driver-bar w, substantially as described.

10. The lever z, cam a^2, and spring b^2, for operating the driver-bar w, substantially as described.

11. The crank-pin u, link j, and bender-bar i, combined and operating substantially as described.

12. The cutter-lever p, operated by the incline o and a spring, substantially as described.

13. The swinging head h and vertically-moving work-support plate h, moving laterally together, substantially as described.

14. The cam F, lever k^2, and spring m^2, combined and operating to actuate the work-plate vertically, substantially as described.

15. The vertical slide-plate f^2 and horizontal slide-plate f^3, connected, and having relative movements and movements in common, substantially as described.

16. The method of making a staple-seam, by forming the staples with the parallel V-shaped points, and driving said staples in line, so that the edge of each staple-point stands at a right angle to the plane of the seam as it enters the work, substantially as described.

17. A staple having the wedge-shaped points, with the edges of the two points inclined, substantially as described.

164,011. DIVIDERS FOR DRAWING AND WELDING TUBULOS. Geo. Matheson, McKeesport, Pa., assignor to himself and the National Tube-Works Company, same place. [Filed Mar. 26, 1875.]

Brief.—The bell-mouthed die is intended to be slipped upon the rod that is welded to the skelp, and the die-support has a channel cut downward from the top into the die-space, to permit the rod to be passed down through it.

164,011.

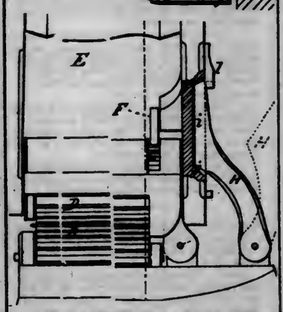


The combination of the matrix B with the support or holder C, provided with the slot D, substantially as and for the purpose hereinbefore described and set forth.

164,012. SMOOTHING AND FLUTING IRONS. William D. Mayfield, Fort Worth, Tex. [Filed Feb. 20, 1875.]

Brief.—A smoothing-iron with a pair of fluting-rollers, operated by a vertically-vibrating handle with pawl and ratchet-wheel.



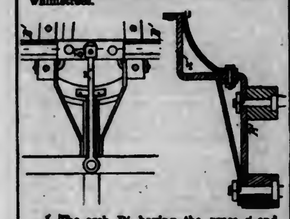


1. In a combined smoothing and fluting iron, the vertically-vibrating actuating-handle E O, having pawl F, in combination with the fluting-rollers D E, the former having a rack-wheel, G, substantially as specified.

2. The actuating-handle E G, having recess j and latch l, in combination with the pivoted lever H, provided with flattened end i, substantially as and for the purpose set forth.

164,013. CORN-HARROWS. J. McCormick, Peoria, Ill. [Filed Aug. 20, 1874.]

Brief.—To the lower part of the arched bars, bent at right angles, are secured sections of the harrow; the front arch of which is strengthened by the curvilinear brace, which also forms corners, into which the front end of the removable pivoted handle projects. The tongue is made rigid by a bar projecting from the front arch-bar to the bolt holding the whiffletree.

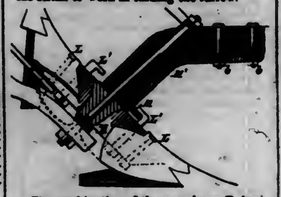


1. The arch B', having the brace c and openings s and s', in combination with the removable and adjustable plow-handle D, substantially as and for the purpose set forth.

2. In combination with the draft-pole e, the removable rod r, attached in the manner as described, and for the purpose set forth.

164,014. REVERSIBLE PLOWS. J. McCabe, Woodbury, Tenn. [Filed Apr. 14, 1875.]

Brief.—The plow-beam has an angle of about forty-five degrees downward and backward, and through which a strong bolt passes, engaging with the lower end of a standard rising rearwardly therefrom, and at right angles thereto. The shares and mold-boards are both upon a short beam that is pivoted upon the inclined bolt. Both mold-boards look in the same direction, so as to turn the furrow in the same direction in the return furrow upon the same side of the land. To the lower side of the beam is secured an iron bar, terminating in a projection that engages with a hook on either end of the share-beam, so as to take the strain of work in turning the furrow.



The combination of the cross-beam B, journaled to the bolt b, extending longitudinally through the bent portion of the main beam A, and the projections l' l', adapted to engage over the projection M of the plate M', attached to the main beam A, for the purpose of receiving the strain upon the plowshares, substantially as described.

164,015. MAGAZINE FIRE-PLACE STOVES. Joseph J. McCormick, Baltimore, Md., assignor to E. C. Bibb, same place. [Filed Jan. 23, 1875.]



1. In a fire-place stove or heater, the combination of two vertical sections, adapted to be separated vertically, for access to the interior of the combustion-chamber, substantially as and for the purposes set forth.

2. In combination with a stove or heater, constructed in two vertical sections, adapted to be separated vertically, for access to the interior of the combustion-chamber, the fuel-magazine K, detachably secured to the front section of the stove, substantially as and for the purpose set forth.

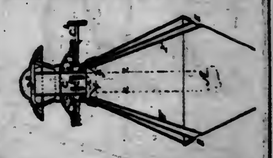
3. In combination with a stove or heater, constructed in two vertical sections, adapted to be separated vertically for access to the interior of the combustion-chamber, the pivoted grate W, supported in the removable stop-plate X, adapted to fit the guides Y, secured to the rear section of the stove, substantially as and for the purposes set forth.

4. In combination with a stove or heater, constructed in two vertical sections, adapted to be separated vertically, for access to the interior of the combustion-chamber, the reciprocating fire-pot front E, curved at its lower edge, connected with the peripheral teeth of the pivoted grate W, and located a short distance from the lower bank of mica J, substantially as and for the purpose set forth.

5. In combination, the horizontal base fire B, extended well to the front of the fire-chamber D, the base flues O O, diving-flues F F, and rising flue F', substantially as and for the purposes set forth.

164,016. LAMPS. Cameron McKinnon, Midway, Ala. [Filed May 6, 1875.]

Brief.—The tubes, diminishing toward the burner, throw a jet of air against the wick, which, commingling with gas in the lamp, carries the same to the flame.



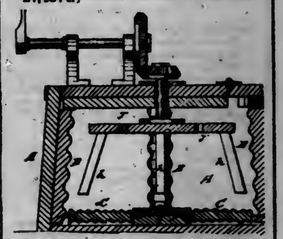
The combination, with the lamp bowl or body A and wick-tube C, of the tubes F F, gradually decreasing in diameter and extending up from apertures E E on opposite sides of the interior of the bowl or body A to a point just below the under side of the tube C, in position that the jets or streams from the nozzles or openings f f shall impinge against the opposite edges of the wick a, in the manner and for the purpose set forth.

164,017. CAR-COUPLINGS. Jas. McNabb, Widder Station, Canada, assignor to himself and Sylvanus Cornell, same place. [Filed Aug. 22, 1873.]



The combination of the draw-bar A, capable of longitudinal movement under the car-bed, the hooked coupler E, pivoted within its socket, so as to have a lateral movement, and the wiper D, all substantially as and for the purpose set forth.

164,018. WASHING-MACHINES. James W. Malick, White Cottage, Ohio. [Filed Mar. 27, 1874.]



The tub A, provided with corrugated ribs B B, in combination with rollers C C and revolving disk J, provided with flaring arms h h, as described.

164,019. SLATE-FRAMES. Wm. A. Miller, Paterson, N. J. [Filed Apr. 17, 1875.]

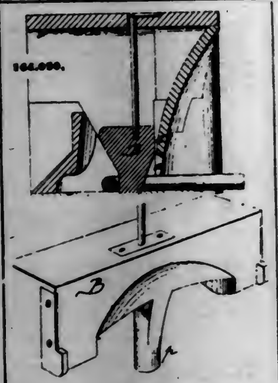


The combination, with the groove a, having the long bevel or incline a', and counterbore d, of the recess d', spring c, and sleeve p, for the purposes specified.

164,020. AUTOMATIC CAR-COUPLINGS. J. Miller, Baltimore, Md. [Filed May 1, 1875.]

The combination of the sliding and locking block B, having the pin p, and the draw-head, substantially in the manner and for the purposes set forth.

164,020.



164,021. HOES. Henry D. Mills, Otsego, Mich. [Filed Apr. 6, 1875.]

Brief.—The hoe-blade is made of plate-steel cut into the desired form. A hole is made for a bolt, for securing it to the socket of the handle, by punching, leaving a circular lip on the face of the hoe around the hole. The socket of the handle is formed with a recess, into which the lip fits, and the parts are secured by a bolt, which screws into the socket.



The hoe-blade A A', having the projection *c*, in combination with the socket B, having the recess *c'*, and screw C, when the several parts are constructed and arranged substantially as described and shown.

164,022. PLOW-IRONS. Gilpin Moore and George Ourkendall, Moline, Ill., assignors to Deere & Co., same place. [Filed Jan. 6, 1874.]

Brief.—To facilitate welding and to strengthen the combined land-side and share at their point of junction, the land-side is constructed with a lateral flange along its upper edge.



1. A forward land-side bar, B, for plows, having a lateral flange, *b*, along its upper edge, substantially as described, and for the purpose specified.

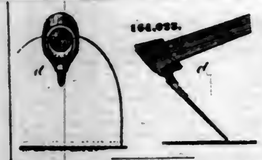
2. A slip-plowshare, when constructed of the ordinary share and a flanged land-side bar, substantially as described, and for the purpose specified.

164,023. HOES. Daniel Moore and Edwin Moore, Brooklyn, N. D., assignors to themselves and Richard D. Alliger, New York, N. Y. [Filed May 3, 1875.]

Brief.—The blade of the hoe is made of sheet-metal, with a tongue rising from the middle of the upper edge. This tongue is curved into a semicylinder form, and bent forward, having a lip that turns downward, and fits within and over the lower section of the eye, which is made of a single piece, and receives the tongue of the blade. The wooden handle, being driven in, holds the parts firmly together.

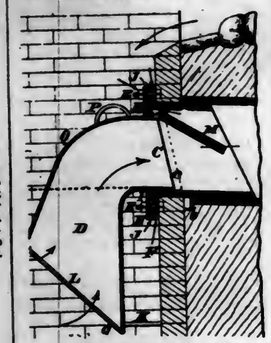
The hoe-blade, made with a trough-shaped tongue, in combination with the eye receiving such tongue, and the projection *f*, to prevent the tongue and eye separating after the handle has been inserted in place, as set forth.

164,024.



164,024. SEWER-TRAPS. James Naughtee, Cincinnati, Ohio. [Filed Apr. 28, 1875.]

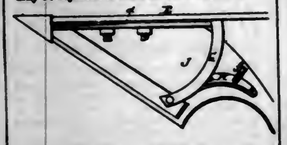
Brief.—The tube or body has a flanged discharging neck, terminating with an oblique seat for flap-valve at discharge-orifice. It also has a downturned flaring inlet, whose oblique inlet is protected by a strainer.



The trunk, tube, or body D, having the flanged discharging-neck C, terminating with oblique seat *o* for flap-valve M, and having the down-turned flaring inlet Q, whose oblique inlet *g* is protected by strainer L, as and for the purpose set forth.

164,025. PLOWS. Holcom Olson, Mount Pleasant, Iowa. [Filed Apr. 1, 1875.]

Brief.—A flange upon the front edge of the mold-board is clamped between the standard and the land-side. The flexible mold-board may be adjusted to different curves by a screw.



1. A mold-board and point or share made in one piece and provided with a flange, *d*, as shown, to be clamped between the plow-standard B and land-side bar E, all combined substantially as and for the purposes herein set forth.

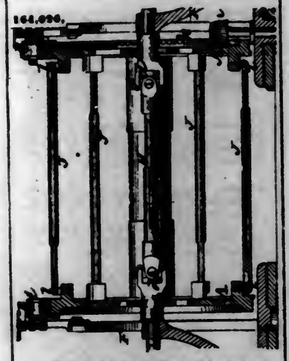
2. The frame of a plow, consisting of the standard B, bar G, arm H, supporting-plate I, and land-side bar E, all substantially as and for the purposes herein set forth.

3. The combination of the mold-board J, frame B G H, and set-screw *f*, for regulating the curve of the mold-board, substantially as herein set forth.

164,026. MACHINES FOR TWISTING FABRICS. William H. Palmer, Jr., Middletown, Conn., assignor to Herbert P. Palmer, New York, N. Y. [Filed Apr. 8, 1875.]

1. The combination, with the revolving selvage-carriers A A, of the endless bolts, bands, or chains B B, in the relation as regards both their lines or courses of travel with said carriers, the delivery-roll R, around which the bands pass, and the guide-pulleys C C, in parallel axial relation, or thereabout, with the revolving carriers, substantially as shown and described.

164,026.



2. The combination, with the adjustable revolving selvage-carriers A A, of the longitudinally and universally adjustable shaft H, connecting said carriers in a positive manner, essentially as described.

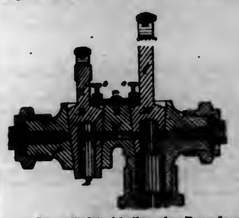
3. The combination of driving mechanism, applied to the one revolving selvage-carrier on the one side of the machine, with the connected and adjustable revolving selvage-carriers on the opposite side of the machine, substantially as herein set forth.

4. The longitudinally-adjustable bars or ribs J, connected with the revolving selvage-carriers, and adapted to serve as a traveling frame for the support of the body of the fabric, essentially as described.

5. The adjustable telescopic delivery-roll, provided at its ends with sheaves, substantially as and for the purpose herein described.

164,027. INJECTORS. William P. Patton, Harrisburg, Pa., assignor to himself and Sullivan S. Child, same place. [Filed Apr. 27, 1875.]

Brief.—Water-chamber consists of a hollow cock, having conical perforations of varying size in its sides, which serve as steam and delivery nozzles. The overflow-chamber is similar, the cock having a perforation to register with the delivery for overflow, and a transverse tube, similarly registering, to convey water through to the boiler. A cross-bar binds the cocks to their seats, or, being turned a quarter, admits of their ready removal.



1. The cylindrical hollow plug B, perforated as described, in combination with the steam-pipe *a*, exit-pipe *a'*, and inlet or supply pipe C, constructed to operate substantially as and for the purpose set forth.

2. The cylindrical hollow plug D, provided with the transverse tube *d*, orifice *e*, and escape-pipe E, in combination with the pipe or bore *a'* and exit-pipe *a'*, all constructed to operate substantially as and for the purpose set forth.

3. The plug B, provided with the perforations or nozzles of different sizes, in combination with the steam-pipe *a*, inlet or supply pipe C, the pipe or bore *a'*, plug D, provided with the transverse tube *d*, orifice *e*, and escape-pipe E, and the exit-pipe *a*, all constructed to operate substantially as and for the purpose set forth.

4. The clamping-bar *a*, provided with the screws *o o*, in combination with the plugs B and D, substantially as and for the purpose set forth.

164,028. DEVICES OR CLAMPS FOR STOPPING LEAKS IN WATER AND OTHER PIPES. Jas. B. Peake, Washington, D. C., assignor to himself and Walton Brothers, New York city. [Filed Apr. 5, 1875.]

Brief.—A metal clamp of two equal parts, each having a longitudinal semicircular groove, so as to fit over the pipe. One part of the clamp has a longitudinal dovetail flange, fitting in a correspondingly-shaped groove of the other. The packing between the clamp and the bursted pipe may be of sheet-lead or other suitable material.



1. The clamps A and B, provided with tapering dovetailed flanges or ribs *a a*, and with correspondingly-shaped grooves, substantially as and for the purposes herein set forth.

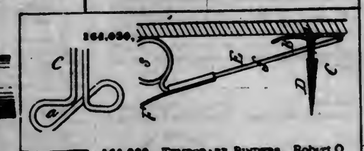
2. The combination, with a pipe, C, of the packing *b* and the clamps A B, having tapering dovetailed joints, substantially as and for the purposes herein set forth.

164,029. APPARATUS FOR MANUFACTURING IRON AND STEEL. John B. Pearce, Philadelphia, Pa. [Filed Dec. 26, 1874.]

6. In a Bessemer plant, the elevated parallel tracks extending the length of the works, the transverse traveling track or crane, and crab, combined and arranged to command the cupola-ladles, converters, steel ladles, and ingot molds, substantially as described.

7. The combination, with the cupola-ladles, converting vessels, steel ladles, and ingot-molds, of a single crane and its tracks, arranged to command all said articles in a Bessemer plant, substantially as specified.

164,030.

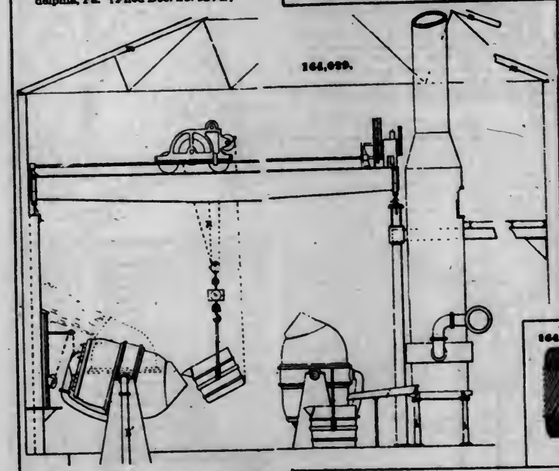


164,030. TEMPORARY BINDERS. Robert O. Peirce and Wm. H. Foye, Portland, Me., said Peirce assignor to said Foye. [Filed Apr. 10, 1876.]

1. The detached thumb plate F, in combination with a paper-fastener and a wire clamp, E, substantially as described.

2. The paper-fastener C, formed of a single piece of wire by bending the same in figure-8 form, to construct the base, and approximating the ends and extending them up to form penetrating-points, substantially as specified.

164,029.



1. The process of feeding converters, which consists in carrying the molten metal from the cupola to the converting-vessel in detachable cupola-ladles by means of a crane, whereby the usual runners are dispensed with, substantially as described.

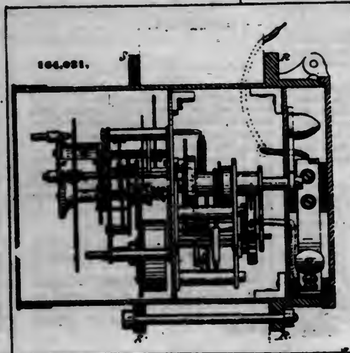
2. The combination, with the traveling crane and crab, of the second chain-drum *r* on said crab, the tilting-chain E', and the converting-ladle L', substantially as and for the purpose specified.

3. In a Bessemer plant, the combination, with a counterbalanced post for handling the tuyere-plate, of the elevated tracks extending the length of works, and arranged in relation to the cupola-ladles, converters, and molds, the transverse traveling crane, and the crab or hoisting-carriage, substantially as described.

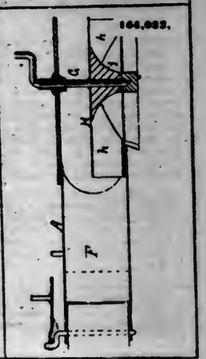
4. The trunnion-band section of a converting-vessel, interchangeable with every converting-vessel in the plant, substantially as specified.

5. The combination of a tuyere-plate, having no depending flanges and a nearly hemispherical sheet-metal chamber, with a projecting extension or pipe, for easy handling and free access to the interior of the tuyere-box, substantially as described.

164,031.



164,032.



164,031. ELECTRIC SIGNALING AND RECORDING APPARATUS. William J. Phillips, Philadelphia, Pa. [Filed Apr. 26, 1876.]

Brief.—Arranged so that a watchman may send in a signal to central office, announcing his visit to any post, and at the same time register by suitable devices the time of the visit upon a dial in the box, all as an ordinary district alarm system.

1. The combination, with an electric signaling or alarm mechanism, of a recording mechanism for registering at the transmitting station the time of transmittal of a signal therefrom, substantially as set forth.

2. The double-faced signal-box, provided with the signaling mechanism and the clock-work register, substantially as set forth.

3. The combination, with the circuit-breaking wheel and motor-train thereof, of a pencil or other marking-point of a registering mechanism and suitable connecting devices, substantially as set forth.

4. A double-faced signal-box, provided with the flanges R S and bolts U, substantially as and for the purposes set forth.

5. In the registering mechanism, the pencil-arm M, composed of the rigid parts *m m'*, united by a spring slip or piece, *n*, substantially as and for the purposes set forth.

6. The combination, with the arm M, provided with projection *c*, of the standard Q, provided with beveled upper edge or end, substantially as and for the purposes set forth.

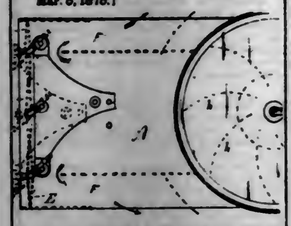
164,032. CHUCKS FOR METAL DRILLS. Geo. M. Pratt, Middletown, Conn. [Filed Mar. 20, 1876.]

Brief.—The rear ends of the clutch-actuating levers rest upon the inclined bottoms of the longitudinal recesses cut in the swiveled follower, and are, when the follower is advanced, forced apart, pressing the clutches with which they are connected together. In order that the clutches may be opened upon the retreat of the follower, the levers are provided with pivots, which work in inclined grooves cut in the side walls of the longitudinal recesses.

1. In combination with the chuck-head and levers, the cylindrical follower, with longitudinal recesses, having inclined bottoms, for the purpose of operating said levers without straining the same, substantially as set forth.

2. In combination with the cylindrical follower, having longitudinal recesses, and the levers for actuating the clutches, the inclined grooves in the side walls of said recesses for returning the levers and clutches, as and for the purposes set forth.

164,032. MECHANISMS FOR PROPELLING BOATS. T. W. Pratt, Boston, Mass. [Filed Mar. 6, 1875.]

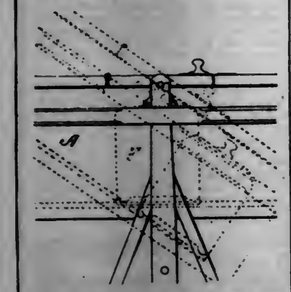


1. In a mechanism for propelling vessels, the case B, provided with the horizontal wheel H, having the blades h h, curving backward from the direction of motion, in combination with the curved abutments j j and the deflector I, all constructed and arranged substantially as and for the purpose set forth.

2. In a mechanism for propelling vessels, the case B, constructed substantially as described, and provided with the horizontal wheel H, in combination with the eduction-pipe A, valves E E E, and supplemental orifices F F, all constructed and arranged substantially as and for the purpose set forth.

164,033. RECIPROCATING CHURNS. William H. Price and Rudolph Hoover, Schellsburg, Pa. [Filed Mar. 13, 1875.]

Brief.—A rocking churn-box with a perforated gravitating dasher-block. The ends of the churn-box are provided with strips, to prevent the block and the box from coming in contact.

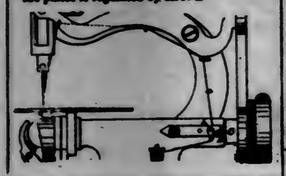


1. In a churn, the gravitating dash-block F, having perforations d, in combination with an oscillating or rocking cream-box, substantially as specified.

2. The strips e in a rocking cream-box, A, in combination with a gravitating dash-block, substantially as specified.

164,034. THREAD-TENSION DEVICES FOR SEWING-MACHINES. John Rosen, Stanstead, Canada, assignor to Orro Merrill, same place. [Filed Feb. 1, 1875.]

Brief.—The needle-thread is clamped between two spring-plates secured on the frame of the machine. The main shaft has a cam, the projections of which force a pin against the outer plate, releasing the thread, and the plate forces the pin back and clamps the thread, as the cam revolves. The tension of the plates is regulated by screws.





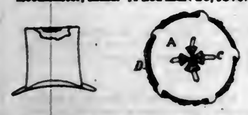
164,035

1. The cam-grooved driving-shaft C and sliding pin G, in combination with the combined spring and clamping plates A and B, all constructed and arranged as shown and described, to operate as specified.

2. In a tension device, the combination of a spring clamping-plate, A, and a sliding pin, G, with the shaft C, having a cam formed with an acute angle for acting on said plate and releasing the thread, in the manner described.

3. The combination of the plates A B and the adjusting-screw i, substantially as set forth.

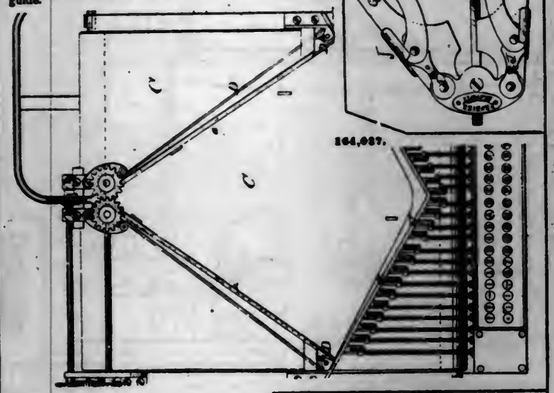
164,036. HATS. Arthur A. Richardson, Leominster, Mass. [Filed Mar. 20, 1875.]



As a new article of manufacture, the holder A, provided with the points b c, and carrying the sponge D, substantially as and for the purpose specified.

164,037. TYPE-SETTING MACHINES. A. C. Richards, New York, N. Y. [Filed Apr. 12, 1875.]

Brief.—Types are dropped from inclined cases upon a broad band. Two converging belts at an angle with the broad band, and moving at a different rate of speed, carry the types into a type-channel. The converging belts are held down to the broad band by a guide.

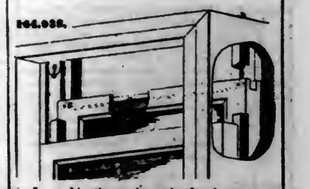


1. The combination of an endless carrying-apron, C, with converging belts D D, and with a series of type channels or cases, from which the desired types are discharged successively, substantially in the manner herein shown and described.

2. In combination with the endless carrying-apron and the converging belts, the flanged rails e, overlapping the inner strands of the converging belts, substantially as and for the purpose set forth.

164,038. SASH-BALANCES. Thomas J. W. Robertson, Washington, D. C. [Filed Apr. 27, 1875.]

Brief.—Differential movement of the sashes, and a working indicator, of one toward the other, resulting from peculiarities of the hanging, and methods of attaching the suspending-cords.



164,038.

In combination with a pair of sashes, a suspending cord or cords, connected therewith, and with the window-frame, one end of the cord being attached to the side of the lower sash, and another portion connected with the center or both sides of the upper sash, whereby one of the sashes is nearly suspended and the other hung from one side, thus producing a differential movement of the two, and rendering them self-balancing, substantially as shown and described, for the purposes set forth.

164,039. SKATES. Peter Rodier, Detroit, Mich. [Filed Apr. 17, 1875.]

164,039.

1. The combination of the plates C C' C', the two latter provided with the spurs f f, with the heel-pedestal of a skate, substantially as and for the purposes set forth.

2. The ratchet heel-plate D and bolt S, in combination with the plates D C', as and for the purposes set forth.

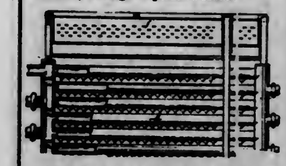
3. The toe-plate E, foot-plate F, side plates G G', plates H H', adjustable clamps J J', and a locking device, in combination with the pedestal B' B' of a skate, substantially as and for the purposes set forth.

4. The block K, pivoted between the plates G' E', in combination with the notch o and projection p of the foot-plate F, substantially as described.

5. A skate having a stationary side plate provided with an adjustable sole-clamp, a swinging side plate provided with a similar clamp, which latter plate is pivoted to the stationary plate, or to an intermediate girt-plate, and a locking device, the several parts combined and operating substantially as described.

164,040. BEER-COOLERS. August Rose, New York, N. Y. [Filed May 12, 1875.]

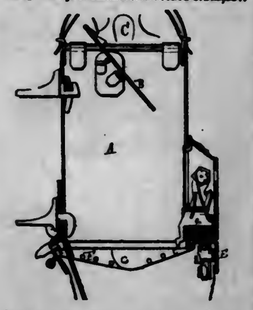
Brief.—Each vertical section, consisting of end pipes divided by partitions and flanges, with its connecting horizontal tubes, may be removed, leaving an operative cooler.



A sectional beer-cooler, consisting of the horizontal tubes A and sectional columns B, provided with flanges for the purpose of connecting a number of said sections together, substantially as and for the purposes herein set forth.

164,041. LETTER-BOXES. A. Rosenstjerna, Chicago, Ill. [Filed June 28, 1874.]

Brief.—Improvements on Patent No. 141,237.



1. The combination of the flap C, provided with small stud a, and the tilting diaphragm B, provided with the beveled stud a' and the aperture a', substantially as described, and operating in the manner set forth.

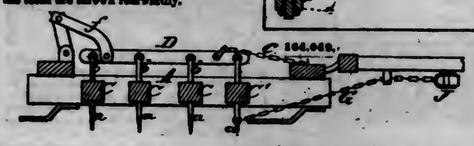
2. The combination, with the bag-jaw F and box A, of the locks E' F', the former being provided with the indicating-roller and operating-mechanism, and the latter with the indicating-device, both being operated when the locks are brought in contact, as set forth.

3. The bag-jaw, provided with the hook a', in combination with the box having the socket i upon the binding I, for the purpose of securing the front of the bag to the bottom of the box when the locks are in juxtaposition.

4. The combination of the flap C', provided with the cam b', the spring b, and the tilting diaphragm B, substantially as described and shown.

164,042. HARROWS. Ayres Ross, Victor, Iowa. [Filed Mar. 6, 1875.]

Brief.—The side beams of the harrow-frame are slightly diverging. The beams that carry the teeth are journaled in the side beams. The middle teeth in the forward beam have a hole below the beam, into which is hooked the draft-chain. The upper side of all the tooth-beams have standards, which are pivoted to the longitudinal connecting-bar, the forward end of which is connected to the frame by a chain, which limits the forward motion of the teeth. The rear end of this connecting-bar is connected to a lever, by which the points of the teeth are thrown rearwardly.

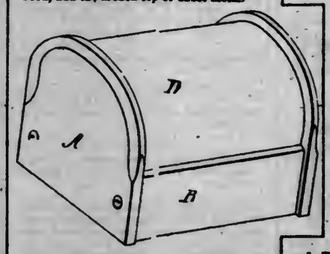


164,042.

The rocking bar C, armed with teeth c, and connected with the whiffletree J by the chain G, in combination with the connecting-bar D, chain c, and rocking bars C, substantially as described.

164,043. SEWING-MACHINE COVERS. Geo. Rehfuss, Philadelphia, Pa., assignor to the American Button-Hole, Overseaming, and Sewing Machine Company, same place. [Filed Mar. 13, 1875.]

Brief.—The sides and ends are made of wood, and the arched top of sheet metal.



The within-described sewing-machine cover, consisting of the end pieces A and A', side pieces B and B', all of wood, and the arched top D, of sheet metal, set within grooves in the end pieces, all being combined and secured for ready detachability, as set forth.

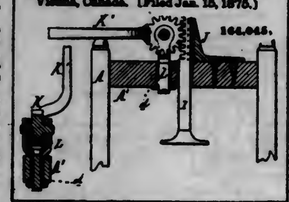
164,044. DIES FOR CHEMISETTE HORNS. William Russell, Cincinnati, Ohio. [Filed May 26, 1875.]

Brief.—The creaser is made out of one piece of metal, and, when placed in the groove in the die, springs outward against the walls of the groove with sufficient force to retain it in the die when the shoe is withdrawn. Below the creaser-groove are holes, through which an implement can be inserted to knock out the creaser when it is necessary, to either adjust, sharpen, or change it.



In combination with the grooved and rimmed die A a a, the creaser D, constructed and operating substantially as and for the purpose specified.

164,045. CIDER-PRESSES. Hugh Sells, Vienna, Canada. [Filed Jan. 15, 1875.]

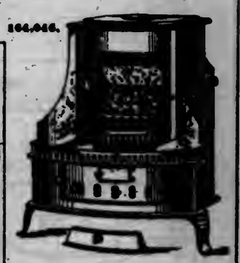


164,045.

164,042.

The combination of the pinion and lever K K', the standards L L, plate d, and wedge e with the press-bar I, provided with the rack h, and the guide J on the cross-piece A', substantially as described.

164,046. STOVES. James Spear, Philadelphia, Pa. [Filed Mar. 27, 1875.]



164,046.

1. The combination, with an open-front stove, of a pivoted radector, substantially as set forth.

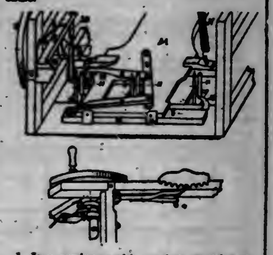
2. The combination, in an open-front stove, of a fire-chamber, a pivoted radector, and sliding doors, substantially as set forth.

3. The combination, in an open-front stove, of a fire-chamber, pivoted radector, a reverse-draft damper, and revertible-draft flues, substantially as set forth.

4. The combination, in an open-front stove, of a fire-chamber and front doors sliding upon a front plate, which is separated by an air-space from the vertical front grate, substantially as set forth.

164,047. SEWING-MACHINES FOR SETTING STRAW. John F. Smith and H. W. Bisbee, Exeter, N. H. [Filed Feb. 20, 1875.]

Brief.—The crown-head, operated by the main shaft through the connecting-pitman, imparts to the needles the proper reciprocating movement, and also operates the trimming-shears arranged on either side of the machine. The feeding-hands are moved forward by a ratchet on one of their supporting-drums, and a pawl actuated by a cam on the main driving-shaft, which, in connection with two other cams arranged thereon, and a series of slides and levers beneath the work-supporting bed, manipulate the thread-carriers in such a manner that the thread is carried completely around the needles at each descent of the same.

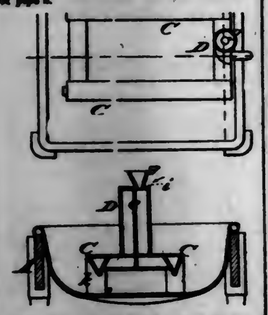


1. In a sewing-machine, substantially such as described, the slide M, provided with the spring N, and the slide 16, provided with the bent arms 19 and carriers 11, constructed and arranged to operate substantially as specified.

2. In a sewing-machine, substantially such as described, the rocker-shaft K, provided with the arms I J, the shaft 9, provided with the cams I 19, the slide M, carriers 11, slide 16, pitman 20, levers 5 6 7 15, spring 4, and needles c, combined and arranged to operate substantially as and for the purpose set forth and specified.

164,648. MILK-COOLERS. Russell Smith, (Nelson H. Smith, administrator,) Richford, Vt. [Filed Mar. 30, 1876.]

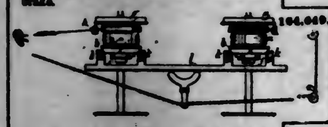
Brief.—The trunk D is divided into two compartments, the water passing in at the feed-funnel *g* of the division *f*, and carried around in the triangular pipes C, and discharged through the division *f'* into and out of pipe *h*.



The rectangular cooler C, formed of triangular pipes, in combination with the centrally-divided trunk D, having a feed-funnel, *g*, and air-hole *i*, and an angular discharge-pipe, *h*, substantially as described.

164,649. CAR-STARTERS. Andw. H. Smith, New York, N. Y. [Filed Nov. 16, 1874.]

Brief.—A spring attached to brake-wheel and to friction-wheel is wound by braking. Its unwinding force assists in starting the vehicle. If the motion of the latter be reversed, the apparatus acts only as an ordinary brake.

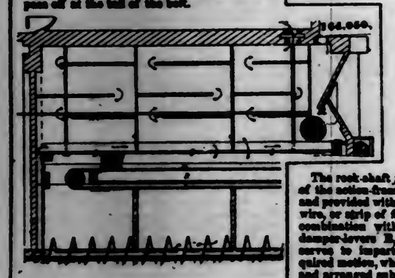


1. The friction-wheels *b* and *c* and the spring *a*, attached at its ends to said wheels, in combination with the pawls *e* and *h* and brake-blocks *k*, substantially as and for the purposes set forth.

2. The bar *l*, carrying the brake-blocks *k*, and to be operated by a connection to the hand-brake, in combination with the brake-wheel *b*, ratchet-wheel *f*, and pawl *e*, for operating the wheel *b* as an ordinary brake when the motion of the car is reversed, as set forth.

164,650. FLOUR-DRESSING MACHINES. G. T. Smith, Minneapolis, Minn. [Filed July 12, 1871.]

Brief.—The lighter particles of bran are taken up and carried off by the current of air passing upward through the bolting-cloth. The heavier particles are prevented from passing through the belt by the same current and pass off at the tail of the belt.



The combination, in a machine for dressing flour or middlings, of a bolting-surface through which an air-current passes in one direction, while the flour or middlings pass in the other, with a brush or a series of brushes, which traverse the under side of the bolting-cloth to remove the adhering particles of flour, substantially as set forth.

164,651. RAILWAY-RAIL JOINTS. Wm. M. Specht, Dunkirk, Ohio. [Filed Apr. 21, 1876.]

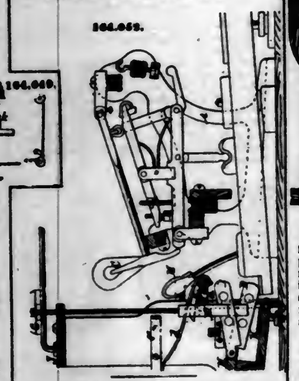


The reversely-arranged wedges I K, having the slots *c*, in combination with the double-headed bolts E and the rails, substantially as described.

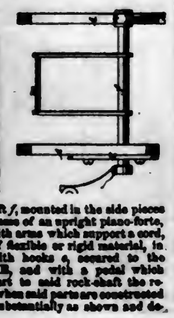
164,652. PIANO ATTACHMENTS. A. Steinway, New York, N. Y. [Filed May 15, 1876.]

The rock-shaft O, mounted in brackets M, secured in blocks I, situated beneath the wrest-plank of a grand piano, said rock-shaft being provided with two or more arms, which support a wire, cord, or strip of flexible or rigid material, in combination with pins or shoulders formed on the foot or rods which connect the under damper-levers with the damper-heads, said rock-shaft O being subjected to the action of a pedal, when said parts are constructed and arranged substantially as and for the purpose shown and described.

164,653.

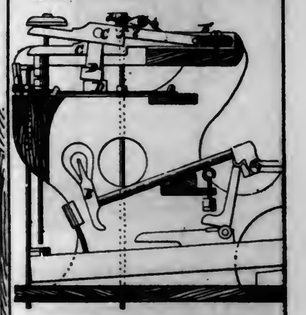


164,653. PIANO ATTACHMENTS. A. Steinway, New York, N. Y. [Filed May 15, 1876.]



The rock-shaft *f*, mounted in the side pieces of the action-frame of an upright piano-forte, and provided with arms which support a cord, wire, or strip of flexible or rigid material, in combination with hooks *e*, secured to the damper-levers E, and with a pedal which serves to impart to said rock-shaft the required motion, when said parts are constructed and arranged substantially as shown and described.

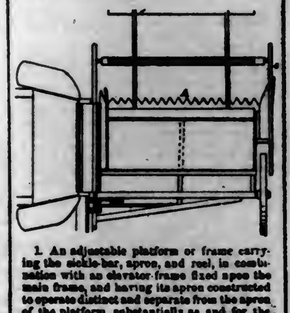
164,654. PIANO ATTACHMENTS. A. Steinway, New York, N. Y. [Filed May 15, 1876.]



The rock-shaft *c*, mounted on the damper-frame E, and provided with arms which support a cord, wire, or strip of flexible or rigid material, in combination with hooks *g*, secured in the damper-levers G, and with a pedal which serves to impart to said rock-shaft the required motion, when said parts are constructed and arranged substantially as shown and described.

164,655. HARVESTERS. Sidney S. Stults, Cedar Bluffs, Nebr. [Filed Sept. 15, 1874.]

Brief.—The platform upon which the cut grain falls is vertically adjustable independently of the elevator-apron.



1. An adjustable platform or frame carrying the sickle-bar, apron, and reel, in combination with an elevator-frame fixed upon the main frame, and having its apron constructed to operate distinct and separate from the apron of the platform, substantially as and for the purpose set forth.

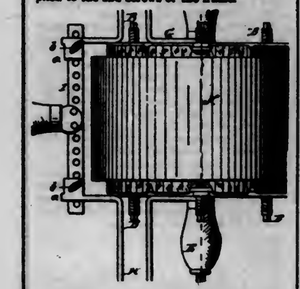
2. The frame of the sickle-bar, apron, and reel, rigidly attached by hinge-plates to a rod, *a*, swung in fulcrum-bearings under the axle, in combination with a crank-coupling, *i*, levers L M, brace-rod *n*, tongue F, and standards G' O, provided with slots *m*, substantially as set forth.

3. The combination of the detachable grain-carrier K, stationary elevator-frame, and pivotal supports P' P, substantially as and for the purposes set forth.

4. The sheet-metal pressure-rack, hinged or pivoted to the elevator, in combination with and overlapping a rack having a hinged connection with a wire support attached to the adjustable frame, substantially as and for the purpose set forth.

164,656. GRAINING-ROLLERS. A. J. Taplin, Bloomington, Ill. [Filed Mar. 6, 1875.]

Brief.—The construction of the frame-work allows the roller to be adjusted to any desired width, and is operated by means of a key applied to the end screws of the frame.



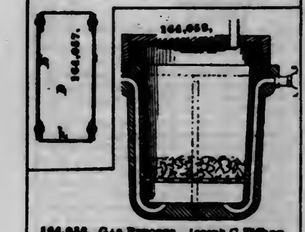
1. In a graining-machine, the combination of the adjustable wheels A A, right-and-left-hand adjusting-screws B B, center shaft D, and supporting-arms C C, substantially as and for the purposes herein set forth.

2. The combination of the adjustable frame, composed of wheels and screws A B, with center shaft D, levers G G with bands H H and sockets *a a*, the sliding bar I with handle J, and the set-screws *b b*, all substantially as and for the purposes herein set forth.

3. In a graining-machine, the outside bolting, consisting of the composition K, plate *d d*, and canvas or other belt L, arranged upon an adjustable frame, substantially as and for the purposes herein set forth.

164,657. APPARATUS FOR CASTING HOLLOW ARTICLES OF CEMENT. L. A. Tardieu, Elizabethport, N. J. [Filed Mar. 24, 1875.]

The core for forming the interior of hollow rectangular, or polygonal molded articles of clay, plaster, cement, and other similar materials, consisting of the polygonal or rectangular block, over which is fitted a sleeve, consisting of the strips E E of sheet metal, united at their ends by means of flexible strips F F, substantially as and for the purpose described.



164,658. GAS-RETORTS. Joseph C. Tiffany, Portsmouth, N. H. [Filed May 13, 1875.]

Brief.—Passages for the oil in the body of the retorts present it more nearly to the heat, and deliver it at various points on the bottom, whatever the inclination of the retorts.

A gas-retort provided with a series of passages, formed in its shell or body, extending from the the top thereof where they are connected with suitable supply-pipes, to the bottom where they terminate at various points around the same, for the purpose of feeding and distributing the oil evenly over the heating-surface of the retort, substantially as described.

164,659. SPINDLES FOR SPINNING-MACHINES. Asel M. Wade, Lawrence, Mass. [Filed May 11, 1875.]

Brief.—The dead spindle is a fixed hollow tube, having a neck and shoulder at its top to receive and support the live spindle, which is a wooden tube tapered at its upper end to form a bearing for the bobbin, and has a metal bushing driven in its lower end, which serves as a lower bearing for it against the dead spindle, and also to expand it, so that it is held securely between the bushing and tapering whirl-tube.

1. The live-spindle, composed of the wooden tube B, the tapering metallic bushing L, and the tapering bearing-tube I, provided with the whirl K, all being made and arranged substantially as described.

2. In combination with the said live-spindle, the single-tube dead-spindle A, provided with the bearing-neck *g*, shoulder *h*, and support B, all as described.

164,659.

164,660.

164,660. FOLDING CHAIRS. John R. Wakefield, Worcester, Mass., assignor to R. W. Valil, same place. [Filed Apr. 6, 1875.]

Brief.—When the chair is folded the outer ends of the arm-pieces move downward, and carry the frame forming the back legs with them until it rests against the back.

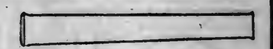
The frames *a*, *b*, *c*, and *d e f*, connected together by the arm-pieces *h*, links *l*, and flexible seat *s*, and swinging in the manner specified while the chair is being folded, as set forth.

164,661. FOLDING CHAIRS. John A. Ware, Worcester, Mass., assignor to R. W. Valil, same place. [Filed Apr. 6, 1875.]

The combination, with the back frame *a c d* and the front frame *e*, of the seat-frame *b k* and links *m*, the parts being arranged so that the links *m* swing from a nearly vertical position, and by a toggle movement strain the flexible seat in folding and unfolding the chair, as set forth

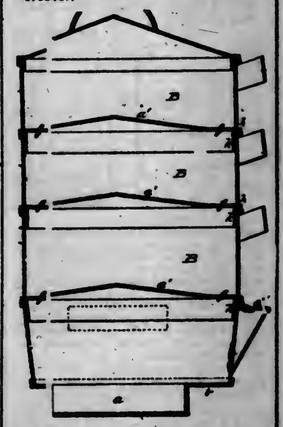
164,662. BOBBINS FOR SPINNING-FRAMES. Thomas B. Wattles, Canton, Mass. [Filed Nov. 17, 1874.]

Brief.—To overcome the inequality of the drag of the traveler when guiding the yarn on different parts of the bobbin.



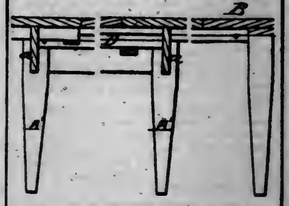
The improved bobbin or quill, having its body or barrel conical or tapering from end to end, and greater in diameter at the upper than at the lower end, substantially as and for the purpose specified.

164,663. CULINARY STEAMERS. Harlow M. Welch, Cowansville, Canada. [Filed Apr. 3, 1876.]



In a steam cooking-utensil, the sections B B, each having a convex-convex bottom, *a'*, provided with a series of drip-holes, *p*, extending entirely around the outer edges of said bottom and flange *b*, whereby said sections may be interchangeably fitted into each other and the base-section, and the water of condensation be carried back into the boiler without coming in contact with the materials to be cooked, substantially as described.

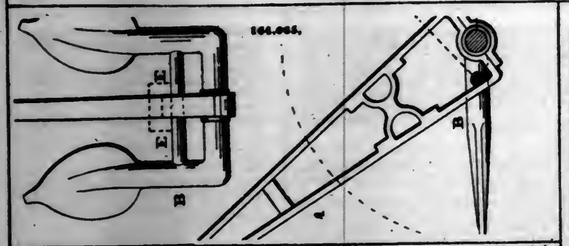
164,664. EXTENSION-TABLES. Thos. White, Waynetown, Ind. [Filed Mar. 13, 1875.]



In an extension-table, the transversal leg-supported central frame A, having the rigid T-shaped bars D D, connecting the end rails *a a*, and the movable leg-supported leaves B' B, provided with L-shaped slides F' E, respectively engaging with the inside and outside grooves of the bars D D, substantially as specified.

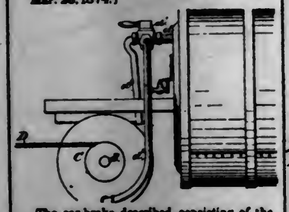
164,665. ANCHORS. Joseph S. Williams, Riverton, N. J. (Filed May 14, 1876.)

An anchor, the flukes B B of which are swiveled in the crown of the shank A, and have a transverse rigid connection, E, operating therewith, substantially as and for the purpose set forth.



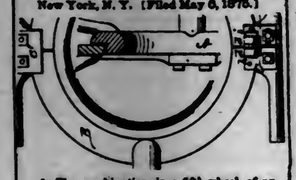
164,465.

164,466. STEAM-BRAKES. Thomas Wilson, Kalamazoo, Mich., assignor of one-half his right to Geo. W. Fist, same place. [Filed Mar. 26, 1874.]



The car-brake described, consisting of the piston B b', adapted to make a partial revolution in the cylinder C, the live-steam and exhaust pipes d d' d², the regulating-cock d³, adapted for operation by the engineer, and the intermediate devices O D, for communicating the movement of the piston to the brake mechanisms, the parts being relatively so arranged that the brakes are fully applied before the piston can make a complete movement, substantially as described.

164,467. PITH-WHEELS. Chas. B. Wood, New York, N. Y. [Filed May 6, 1875.]



1. The combination, in a fifth-wheel, of an interior upper annular plate, A, formed with an exterior circumferential groove, and the exterior annular plate B, made in two or more parts, and fitting in the groove in the plate A, substantially as herein set forth.

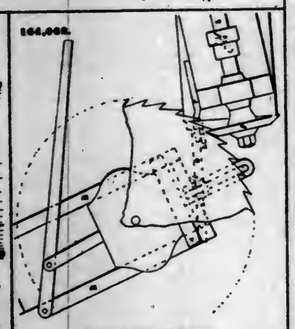
2. An adjustable fastener, in combination with the bisected plate B and interior plate A, for holding said bisected plate in the groove on the interior plate, and taking up all lost motion thereof, substantially as herein set forth.

3. The combination of the annular plate A, provided with a circumferential groove, a b, the exterior bisected annular plate B, fitting in said groove, and one or more adjustable fastenings, consisting of the plates C, with lugs d, bolt h, and nut i, all substantially as and for the purposes herein set forth.

164,468. SAW-SHARPENING MACHINES. P. D. Bangher, Deep Creek, Va. [Filed Sept. 8, 1874.]

1. The carriage D, having a recessed under face, plate G, having a corresponding upper face, and the projecting guide g, dividing the D, in combination with the adjusting-screws e and rollers ff, the whole resting upon a track, and forming a longitudinally-sliding and combinedly-adjustable support for the saw, substantially as herein set forth.

2. The vertically-adjustable arm h, and clamp i, in combination with the frame 2 and bracket B, substantially as set forth.



164,468.

REISSUES.

6,462. SEWING-MACHINES. C. F. Bosworth, Milford, Conn. Patent No. 68,836, dated Sept. 17, 1867. [Filed May 6, 1875.]

Brief.—Improvement on Letters Patent No. 33,297. A variable motion is imparted to the needle-bar by means of a series of grooves arranged at right angles to each other in disks secured to the forward end of the driving-shaft, and a connecting-rod attached at its lower end to the needle-bar, and provided at its upper end with studs, which operate in said grooves. A take-up, operated by means of a cam of peculiar shape on the driving-shaft, acts in connection with an eye formed in a projection on the needle-bar, to take up the thread at the proper time; and an adjustable guide pivoted to the cylindrical supporting-surface guides the bent to the stitching mechanism, whereby each successive braid is laid in proper position for stitching.

1. The combination of the rotating plates provided with crossing slots, substantially as described, with the needle-bar and its connecting-link, and the two bearings working in the two crossing slots, as and for the purpose set forth.

2. The combination of the thread-controlling eye, governed in its position by the needle-bar, with the take-up composed of two arms, a rock-shaft, and spring, and its actuating-cam, adapted to operate the take-up positively to slacken the thread and draw it taut, substantially as described.

3. The shuttle-carrier provided with the tongue g^1, arranged relatively to the return-tongue f^1, as described, whereby the shuttle is prevented from tilting when the thread is taken up, substantially as described.

4. The combination, with the roller for guiding and bending the braid, of the needle and the pivoted needle-guard e^1 and its spring, substantially as described.

5. The combination of the roller over which the braid to be sewed is bent, and the gage s^1 for governing the edge of such bent braid, with a cylindrical supporting-surface, e, and gage r^1, substantially as described.

6. The combination of the roller h^1 and gage s^1, for binding and gaging the strip of bent braid being overlapped and stitched on an under braid, with the cylindrical supporting-surface, the gage for the lower strip, and the divided feed having different movements, substantially as described.

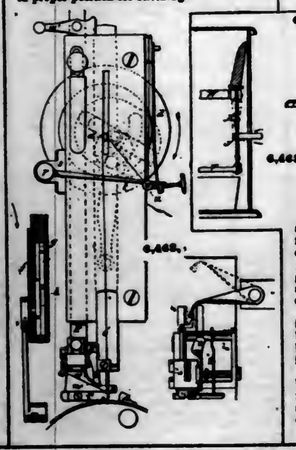
7. The combination, with the supporting-surface e, of the adjustable gage, pivoted outside the needle-hole and beyond the head of the machine, substantially as described.

6,464. CYLINDER-COCKS FOR LOCOMOTIVES. Geo. C. H. Hopkins, Lyndon, Vt. Patent No. 130,724, dated Mar. 11, 1873. [Filed Mar. 19, 1875.]



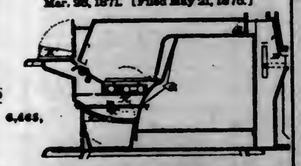
1. A cylinder-cock constructed with its plug A and reservoir B in an angular relation to each other, whereby the seat of the plunger-valve can be located within the reservoir B, and the plunger-valve permitted to move by the action of a tappet from said seat in a direction lengthwise of the steam-cylinder, to which the cock may be applied, and transverse to the steam-passage of the plug A, substantially as described.

2. The plug A and reservoir B, in combination with the plunger-valve f, valve-rod E, finger a, and longitudinally-sliding rod g, arranged and operating substantially as described.



6,465.

6,465. COOKING-STOVES. Daniel B. Furs, Troy, N. Y. Patent No. 112,093, dated Mar. 28, 1871. [Filed May 21, 1875.]



1. A sifting-grate located in the body of a cooking-stove and below the fire-grate, the former arranged to dump and discharge its contents into the pit below.

2. In combination with an ash-pan and fire-grate, a dumping and sifting grate or coal-screen, intervening between the two and located within the body of a stove.

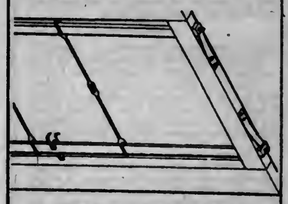
3. In combination with a fire-grate, a sifting-grate or coal-screen, located within the body of a cooking-stove, constructed to vibrate horizontally and to dump and discharge its contents.

4. For a stove, a sifting-grate or coal-screen hinged directly or perpendicularly below a fire-grate, and, in combination therewith, the sifting-grate, being arranged to dump and discharge its contents.

5. In combination with a fire-grate, a sifting-grate or coal-screen located lower down than the fire-grate, and resting upon vibrating supports, one end or one side of which moves with the screen as it vibrates, for the purpose of screening the coals that may fall upon it.

6. For a sifting grate, a support or supports, constructed to sustain the sifting-grate, one end or one side of which supports is attached to a stove, while the other end or side vibrates with the grate, the whole in combination with a fire-grate located in the stove over or above the sifting-grate.

6,466. LOOM HEDDLE-FRAMES. Henry Parsons, Waterloo, N. Y., assignor to George Crompton, Worcester, Mass. Patent No. 96,100, dated Aug. 12, 1862. [Filed Apr. 26, 1875.]



The combination, with the heddle-frame, of a heddle-bar holding-device, consisting of an arm and a pin adapted to be connected with the upright side or end piece of the heddle-frame, whereby the heddle-bar may be engaged or disengaged by the movement of the pin and its carrying-arm, substantially as and for the purpose described.

6,467. SEWING-MACHINES. C. F. Bosworth, Milford, Conn., assignor, by mesne assignments, to the Straw-Sewing-Machine Company. Patent No. 36,807, dated June 9, 1863. [Filed May 6, 1875.]

Brief.—The braid is passed over a roller journaled in a frame attached to the lower end of the presser-bar, and is thereby presented in a bent condition to the action of the needle, which is deflected toward the bend in said braid by a deflector attached to a spinning-arm secured to the presser-bar, the movement of such deflector being regulated by a cam operated by the needle-bar. Above and slightly in rear of the bending-roller is arranged a second roller, which acts in connection with a guide in the above-mentioned frame, to present the braid to the bending and stitching mechanism in proper position for stitching to the already stitched braid, which passes under the bending-roller, and is guided to the needle by an adjustable gage secured to the supporting-surface below. The feed is formed in two parts, each of which is adjustable independently of the other.

3. The combination of the movable roller, about which the braid is bent, and the supporting surface and feeding device arranged in opposition to the roller, with the needle arranged just in advance of the roller, where by the bent braid is united to the top of the other braid, supported on the supporting-surface by a series of stitches, substantially as described.

4. The combination, with the sewing mechanism, the presser, and the supporting surface, of the gages arranged at opposite sides of the needle-hole, and adjusted to guide the lapped edges of two pieces of fabric, substantially as described.

5. The combination, in a straw braid sewing-machine, of a roller, over which the braid is bent to be sewed, with a needle guard or deflector, substantially as described.

6. The improvement in the art of manufacturing hats from substantially a continuous braid, consisting in laying the braid in successive coils or rows, commencing at the edge of the brim, and overlapping each successive coil or row on the inner edge of the braid of a preceding coil or row, and uniting the same by stitches, substantially as described.

6,468. BALE-TIES. John S. Carson, Brookhaven, Miss., assignor to Warren L. Carson, Memphis, Tenn. Patent No. 97,541, dated Mar. 9, 1869. [Filed May 12, 1875.]



1. In a metallic tie for baling purposes, a hook attached to the tie for the purpose of completing the connection between the ends of the same, and thereby preventing the release of the bale.

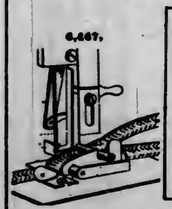
2. The combination, in a metallic tie for baling purposes, of a band passing around the bale, a link to connect the two ends of the band, having an opening, through which the looped end of the band may be passed, and a hook secured to some portion of the tie, and so adjusted that it may engage the loop of the free end of the band after it has been passed through the opening in the link, and thereby prevent the withdrawal of the band.

6,469. BILLIARD-TABLES. F. W. Collender, New York, N. Y. Patent No. 145,767, dated Dec. 23, 1873. [Filed May 20, 1875.]

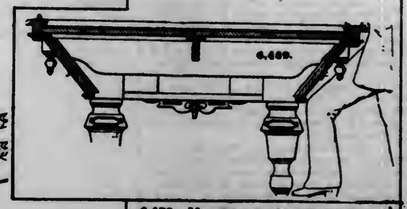
Brief.—Combining proper support for the table, even to its outside edges, with sufficient room below for the knee of the player.

In combination with the bed and projecting cushion-rails, the beveled sides or broad rails f, the whole constructed and arranged substantially in the manner and for the purpose described.

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1. The combination, with sewing mechanism, of mechanism adapted to guide straw or other plaited braid, and present it in a bent or folded condition between the point of the needle and the braid to which it is to be sewed, supported on a supporting-surface against the thrust of the needle, substantially as described.

2. The combination of a roller or guide, over which the braid is bent, and the gage for the edge of the bent strip with a supporting-surface, and a gage for the edge of the braid, to which the bent braid is to be united, substantially as described.

6,470. MACHINES FOR PLAINISHING PAPER. William B. Lockwood, Philadelphia, Pa., assignee of John F. Schuyler, deceased. Patent No. 37,700, dated Feb. 24, 1863. [Filed Mar. 4, 1875.]

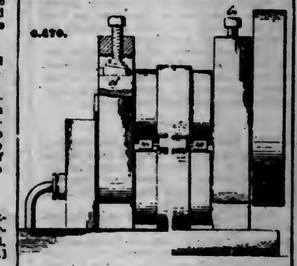
Brief.—Two rolls, revolving in contrary directions at different speeds—the upper ribbed by draw-filing longitudinally, the lower smooth and steam-heated.

1. As an improvement in the art of plainishing paper, submitting the paper to friction under pressure between a roughened feed-roller and a plainisher, substantially as described.

2. The combination, in a paper-plainishing machine, of a plainisher with a draw-filed roller, for controlling the paper while it is under pressure between the said roller and plainisher, all substantially as set forth.

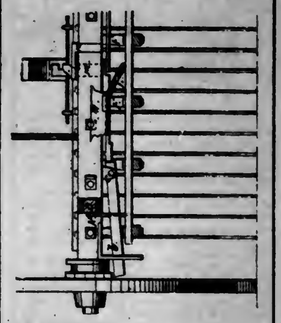
3. The auxiliary roller K, of the form described—that is to say, rounded longitudinally, and larger in diameter in the middle than at the ends—in combination with the upper and lower rollers D and E, for the purpose specified.

6,470.



6,471. HORSE-RAKES. John Pennypacker, Ridley Park, Pa. Patent No. 40,663, dated Feb. 23, 1863. [Filed July 2, 1874.]

Brief.—The lifting-bar is placed at some distance behind the axle, to give firm support to the teeth, which are supported against lateral strain by the walls of the slots in the lifting-bar, through which they pass. The pawl-levers, by reason of their spring ends, permit the pawls to slide over the ratchets in backing; or, if one wheel is stationary, in turning, the pawl and its ratchet on the other side operate the rake.



1. The combination, in a horse-rake, of a rocking axle operated by the forward motion of the wheels, rake-teeth separately hinged to the rake-head, and teeth-supports arranged behind the axle, and rigidly connected thereto, substantially as shown and described, so as to support the teeth when in action against lateral strain, and raise them in a body when the axle is rocked for discharging the load.

2. In combination with each of the supporting-wheels of a horse-rake, a ratchet and pawl constructed and arranged to operate substantially as described, so that the two wheels may act in concert to raise the rake when both wheels are advancing, or independently when the machine is turning corners or changing direction.

3. In combination with the notched plate J and the latch n, the lever I for depressing said plate.

6,472. FIRE-KINDLERS. W. O. Philbrick, Lynn, Mass., assignor to J. D. Husbands, Jr., St. Louis, Mo. Patent No. 73,922, dated Jan. 28, 1868. [Filed May 13, 1875.]

Brief.—The blocks are beveled and perforated to permit circulation of air.



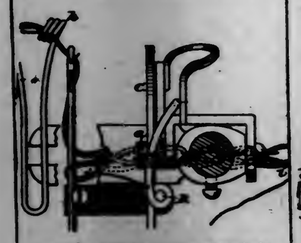
6,472.

1. A fire-kindler constructed from a block of suitable material, with a series of air-passages or draft-flues for admitting the draft into and through the block, to intensify the heat and support combustion.

2. The combination, with a fire-kindler having beveled sides for affording a circulation of air around the kindler, of draft-flues or air-passages for permitting a draft into and through the kindler, substantially as described.

6,473. REGULATING ATTACHMENTS FOR SEWING-MACHINES. Israel M. Rose, Brooklyn, N. Y., assignor, by mesne assignments, to Joseph J. West, New York city. Patent No. 120,008, dated Feb. 18, 1873. [Filed Nov. 26, 1874.]

Brief.—A latch-needle on a rock-shaft carried in the vibrating plate, connected to the presser and actuated from the needle-carrier, takes a thread from the guide, draws it under the needle-thread, and forms it into a chain on the upper side of the fabric. A guide or loop on the presser-foot places the embroidery-thread in proper position to be taken by the latch-needle at each vibration of the same.



1. An embroidery-thread-embroining device, constructed substantially as described, whereby said thread, without passing through the fabric, is confined within itself, and laid in the form of a braid upon the surface of the fabric, for attachment thereto by sewing.

2. The embroidery-thread carrier consisting of the vibrating plate C, latch-needle E, and connecting mechanism, substantially as described, arranged as specified, for laying an embroidery-thread upon the surface of the fabric, as set forth.

3. The combination of the latch-needle E, the rock-shaft D, to which it is attached, and the vibrating plate C, on which the said rock-shaft has an independent axial motion, substantially as herein described.

4. The combination of the latch-needle E and the guide h on the presser-foot, substantially as and for the purpose herein specified.

5. The embroidery-thread carrier of an embroidery attachment to a sewing-machine, arranged and operated substantially as herein described, whereby it is enabled to perform a longitudinal and a lateral motion, as and for the purpose herein specified.

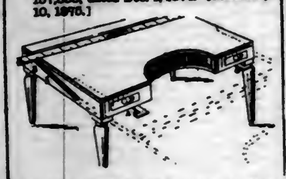
6. The combination of a sewing-machine needle with a vibrating embroidery-thread carrier, E, as set forth.

6,474. BUCKLES FOR SUSPENDERS. Abraham Shonfeld, New York, N. Y. Patent No. 119,287, dated Mar. 28, 1871. [Filed Nov. 24, 1874.]



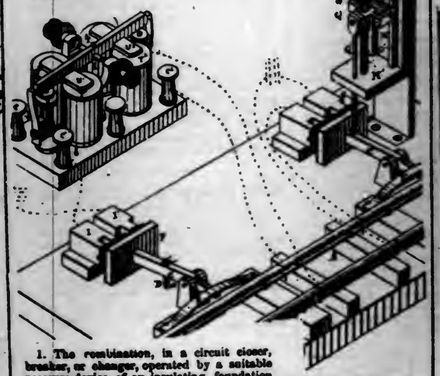
The suspender-buckle, having the body a, bar 3, and hook 5 for the ring or attachment of the suspender-ends, and the opening for the suspender, in combination with the swinging clasp c, that is in front of, and connected with, the body a, substantially as set forth.

6,475. LADIES' WORK-TABLES. Charles B. Snyder, Minneapolis, Minn. Patent No. 157,256, dated Dec. 1, 1874. [Filed May 10, 1875.]



A lady's work-table having a cover of such form and construction as to adapt it to use as a lap-board, attached to the table by links pivoted to the latter in front of a longitudinal median line, that the rear edge of the lap-board may be brought over and dropped, below the front edge of the table, upon the leg substantially as and for the purpose set forth.

6,476. CIRCUITS AND CIRCUIT-CLOSERS FOR RAILWAY-SIGNALING APPARATUS. H. W. Spang, Reading, Pa. Patent No. 142,121, dated Aug. 26, 1873. [Filed Nov. 10, 1873.]



1. The combination, in a circuit closer, breaker, or changer, operated by a suitable pressure device, of an insulating-foundation having metallic conducting-pieces arranged thereon, and a metallic roller or rollers for electrically connecting the same, substantially as set forth.

2. The metallic plates or rails O O' O' or O' O' O', or O' O' O' O', in combination with the insulating-plate N, guide-rod P, sleeve Q, roller-hand R, roller or rollers R', as and for the purpose set forth.

3. The combination of curved spring or yielding presser-bar B, detached lever C, and a circuit-closer having an insulated foundation with metallic roller or rollers, for electrically connecting the same for closing an electric railway-signal circuit, as set forth.

4. The combination of the electro-magnets T' T' T' T', armature-lever U, armatures U' U', and springs V' V', one or both, substantially as described.

5. The combination of the two lines of rails a a' of insulated section A of railway-track, electro or relay magnet T' T', controlling a secondary circuit and electric railway-signal apparatus, and connected with said lines of rails at one end of said section of track, and a circuit closer and breaker and battery located beyond the opposite end of said section of track, and connected with said lines of rails thereof at said opposite end, as and for the purpose set forth.

6. The combination of electro-magnet T' T', battery Y, and circuit closer and breaker B with electro-magnet T' T', connected with lines of rails a a' of insulated section A of railway-track at one end thereof, and battery Y' and circuit closer and breaker B', located beyond and connected with said lines of rails at the opposite end thereof, as and for the purpose set forth.

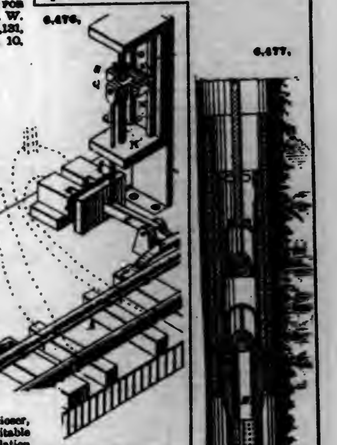
7. The combination of an insulated section of railway-track, the respective lines of rails of which are in continuous metallic connection, an electro-magnet having its terminals connected respectively to opposite lines of rails of said section at one end thereof, a galvanic battery having one of its poles connected to one line of rails of said section at the opposite end thereof, and its other pole connected with a circuit-closer, which is electrically connected with the other line of rails at said opposite end of the section, substantially as and for the purpose set forth.

6,477. PUMPS FOR DEEP WELLS. James T. Whipple, Oak Park, Ill. Patent No. 74,736, dated Feb. 18, 1868. [Filed Nov. 30, 1874.]

Brief.—The filter is attached to a valve-seat having an elongated conical base, which is screwed into a collar that is forced down the tube to the desired point. Valve-seat and filter may be removed without disturbing the tubing.

What

1. In combination with the filter extending below the main tube, the valve-seat D, when connected to the filter and arranged to admit of being withdrawn through the tube, as specified.



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2. In combination with valve-seat D, the adjustable ring or collar C, adapted to pass through the cavity of the tube, whereby the seat is secured in position, as specified.

3. The flexible packing G, arranged to close the space between the periphery of the base of the valve-seat and the inner surface of the tube below the seat, as and for the purpose set forth.

4. In combination with the valve-seat D, the cylinder F, arranged to receive the valves and compress the packing G between its end and the shoulder of the valve-seat, as specified.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 23. TUESDAY, JUNE 8, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

ANDREW MILLS.—*Appeal; Interlocutory.*

[*Appeal from the Primary Examiner in the matter of the application of Andrew Mills for Letters Patent for a* "FRUIT-PICKER," *filed March* 25, 1875.—*Decided June* 2, 1875.]

Where an applicant for patent had filed his application in 1855, and after its rejection had withdrawn it, and it afterward became abandoned by operation of the 2d proviso of the 35th section of the act of July 8, 1870, held that the applicant was barred from prosecuting a new application for patent for the same invention, an application being analogous to an action at law to establish a right of property, and the statute being in the nature of a statute of limitations upon the right of action.

The word "abandoned" in the body of the proviso referred to applies to the application alone; but in the last clause the word "abandonment" has a wider signification, referring both to the application and the invention.

Where applicants file new applications, such as have been before filed by them and abandoned under the 2d proviso of the 35th section of the act of 1870, the proper action for Examiners is not to reject them on reference to the former application, but to refuse to consider them on the ground that the right to file them no longer exists.

THACHER, *Commissioner:*

James Bailey, on January 2, 1875, filed an application for a patent for a fruit-picker, which was rejected on reference to an application of Andrew Mills, the present appellant, filed March 7, 1855, rejected April 5, 1855, and withdrawn June 12, 1855.

A reconsideration was then asked by Bailey on the ground that the reference was not a pertinent one, in view of the Commissioner's decision in the Rouse and Stoddard case, 7 OFFICIAL GAZETTE, 169. This was granted in accordance with the requirements established in the case cited, a letter of inquiry was dispatched to the applicant, Mills, and to his attorney of record, for the purpose of ascertaining whether the invention of the former had been brought into public use. March 11, 1875, Mills replied to the inquiry by filing an affidavit setting forth that his invention had not been in public use, and on March 25 filed the present new application for the same invention. At the same time he requested that an interference be declared between his and Bailey's applications.

April 3 the Primary Examiner, in a letter to Mills, referred to his former application of March 7, 1855, and stated that, "In view of section 35 of the act approved July 8, 1870, it cannot be seen that the present application can be entertained by the Office. The application is consequently rejected." Upon a reiteration of this objection Mills took the present appeal.

The 35th section of the act of 1870, cited by the Examiner, has the following proviso:

And provided further, That when an application for a patent has been rejected or withdrawn, prior to the passage of this act, the applicant shall have six months from the date of such passage to renew his application or to file a new one; and if he omit to do either, his application shall be held to have been abandoned. Upon the hearing of such renewed applications abandonment shall be considered as a question of fact.

It is urged by the appellant that the term "abandoned" relates to the *application* and not to the *invention* or right to a patent; that the object of the law was evidently to prevent parties from continuing an application for years, and repeatedly calling it up and getting action on it under one fee; that the law was not to prevent a party from obtaining a patent for his invention, but to require him to seek it upon a new application and fee, *provided* he had not renewed his application or filed a new one within six months from July 8, 1870; but if *subsequent* to that date the application should be renewed, then it should be held to have been abandoned—such abandonment to be considered as a question of fact. This reasoning, I think, must be regarded as more ingenious than sound.

It is no doubt true that the word "abandoned," in the body of the section referred to, applies to the application alone; but in the last clause, which provides that "Upon the hearing of such renewed applications, abandonment shall be considered as a question of fact,"

the word "abandonment" appears to have a wider signification, and to include within its scope both the abandonment of the application and the invention. At least such was the construction placed upon it by Judge Drummond in the case of *Marsh* vs. *Sayles et al.*, (5 Fisher, 610.)

The discussion of the point as to the abandonment of the invention is, however, not necessary in the decision of the precise question arising here. The single point to be now determined is whether the Office is not barred by statute from entertaining at all the present application. As regards those applications designated by the last proviso of the section under consideration—viz., those filed and then rejected or withdrawn prior to July 8, 1870—I believe the plain purport of the language of the proviso to be that there was a specified limitation of the time within which such applications could alone be renewed or new ones for the same invention filed in place thereof.

Regarding the filing of an application for a patent as analogous to an action at law to establish one's rights to a certain species of property, the section referred to is in the nature of a statute of limitations, which prescribes the time within which, after such action is commenced and then discontinued or dismissed, a new action may be commenced. Statutes and rules limiting the time for the recommencement of actions are common everywhere.

If, as alleged, the object of the law was to simply prevent an applicant from renewing his application without paying an additional fee, it would have been a very easy matter to have said so, and if such was the only limitation of the legislators, the limitation as to the time of renewing the old or filing the new application was an entirely meaningless and superfluous requirement.

The position taken that the statute, so far as the question of abandonment is concerned, had reference to applications filed after the expiration of the six months from July 8, 1870, is entirely opposed to the plain meaning of the language therein employed. That part of the section bearing on this point says: "The applicant shall have six months from the date of such passage to renew his application or to file a new one, and if he omits to do either his application shall be held to have been abandoned. Upon the hearing of *such* renewed applications abandoment shall be considered a question of fact."

Now, it is quite evident from this language that the question of abandonment is to be regarded with reference to two classes of applications: First, if the new or renewed application is *not* made within the six months, then the original application "shall be held to have been abandoned"—that is, absolutely abandoned, without redemption either by renewal or filing another application. Second, if the new or renewed application is made within the six months, then "upon the hearing of *such* new or renewed applications abandonment shall be considered as a question of fact"—that is to say, an opportunity is then afforded of showing that the application had not been abandoned. When the language of the statute is so plain and clear it is not necessary for its interpretation to inquire what the legislature intended. Here a limited period was prescribed, within which a certain thing could be done—to wit, the renewing of an old application for patent, or the filing of a new application for the same invention; and by the very fact of such limitation, after the expiration of the period named, the act contemplated cannot be done at all.

It is not for me to discuss the policy of the law which bars an applicant for a patent in his attempt to renew an application that may have been either wrongfully rejected or unwisely withdrawn. It is the duty of the Commissioner to execute the plain provisions of the statute without regard to their effect. I do not see how it is possible to put any other construction upon the statute bearing upon this case than that given above, and, in my opinion, therefore, the Commissioner has no authority whatever for entertaining the application of Mills.

In cases like this, the application ought not to be rejected on reference to the prior application; but the proper action is for the Examiner to refuse to consider the application on the ground that, under the 35th section of the old law of 1870 the right to file such an application no longer exists.

The application of Mills is remanded to the Examiner, who will refuse to give it further consideration in view of the decision above.

HART *vs.* LITTLE.

[*Appeal from the Examiners-in-Chief in the matter of the interference between the applications of Daniel R. Hart and Samuel H. Little for Letters Patent for an* "IMPROVEMENT IN STREET-CAR DOORS."—*Decided May* 27, 1875.]

Alleged sketches of an invention not preserved or accounted for, and not followed up by a reduction of the invention to practice, are not sufficient to establish priority of invention.

Where one is first to conceive an invention, but throws aside all evidence of the conception, makes no effort to complete or introduce the invention to the public, and delays making application for a patent for nearly four years after another has brought it into extensive use, he has no standing as an inventor.

THACHER, *Commissioner:*

In two previously-adjudicated interferences upon the same subject-matter, in which Little was a contestant with other parties, it was determined, on substantially the same proof as is now adduced by him, that he had conceived this invention as early as June 19, 1869; that on that day he made a drawing of the same; that during 1869 and 1870 he made models fully embodying the invention; and that he exercised due diligence in filing his application for a patent, which was done January 29, 1872. The original drawing and the model referred to were introduced in evidence, and clearly identified by several witnesses.

In the reproduction of his proof in this case, some discrepancies in the testimony of some of the witnesses are found; but they are not such as to vary the essential matters above set forth, or to materially weaken the credibility of those in whose testimony the discrepancies appear. Such being the state of the case in behalf of Little, it now remains to pass upon the claims of Hart to the title of first and original inventor.

Hart not only appeared as a witness in the two interferences already alluded to, but also in a third interference in which, although Little was not a party, the same subject-matter was more or less involved. The first interference was between Little and one John Stephenson, the decision of which by the Commissioner may be found in 3 OFFICIAL GAZETTE, page 379. At that time Hart was in the employ of Stephenson, and has been ever since; and in neither his testimony in that interference, nor in that of one or two other witnesses in that case who now appear in his behalf, was there the slightest claim set up in behalf of Hart that he was in any degree whatever the originator of this invention. On the contrary, Hart gave the entire credit to Stephenson, and that, too, in reply to questions directly upon this point. After that interference had been decided in favor of Little and against Stephenson, new opponents to Little's claims sprung up in the persons of Shaffer and Rider, of St. Louis, and upon an interference with them Hart was again produced as a witness against Little, when, for the first time, he testified substantially that he communicated the knowledge of this invention to Little. Smith and Rider having also been defeated finally, Hart himself now comes forward as a competitor.

The close pecuniary relations between Hart and Little's first opponent, John Stephenson, which relations still exist, justify a very close and careful scrutiny of his present claim.

In his preliminary statement he alleges that he conceived the device in controversy on the 15th of April, 1869, while employed at Wight's omnibus and car shop, in the city of St. Louis, Missouri; that on the following day he made a drawing of the improvement, fully showing the same; that on the same day he showed and explained this drawing, and described the improvement to his son, to Mr. Herman G. Bohn, and to his employer, Mr. Wight, and shortly thereafter to other parties, all of whom, he alleges, fully understood the invention and its mode of operation; that on the 19th of June, 1869, he described this improvement to Samuel H. Little fully and completely; that on the 4th of July, 1869, he constructed the first car with some changes from his original plan; and that on the same day he called Little's attention to said change while he was looking at the car, and also to the previous conversation they had had on the 19th of June, in which he had described to Little his first plan.

As far as the early sketches mentioned are concerned, several witnesses swear that they saw them at the time specified. Hart's son testifies that he saw them, "over a year" after the date given above, in a bag or trunk in which his father or mother had placed them. None of them are produced, however, and there is no evidence showing that any search was made for them. Their original existence, and the plan which it is alleged they represented, are testified to by Hart and his son, Bohn, Bothe, and Messing. The testimony of his employer, Wight, was not taken.

The records of the previous interference have been introduced here, and there is no point relating to the invention in dispute—its conception, growth, and completion—in which Hart does not contradict himself at one time or another, or in which he is not flatly contradicted by other witnesses.

To give credence to his testimony in regard to any one of the matters arising at any particular stage of the case is to discredit his statements made at another time upon the same subject, or to impeach the testimony of some one witness in his own behalf, and that of several on the other side.

Bohn does not seem to be much better off. He admits, on cross-examination, that in an equity suit between some of these parties, brought some time previous to the institution of this interference, he testified, in answer to the question, "When did you and Hart first talk about this endless-cord arrangement?" that "To the best of my recollection, I never had a conversation with Mr. Hart about the endless cord arrangement, in particular." He now narrates not only a conversation he had "in particular" with Hart on this very subject in April, 1869, but alleges that he saw Hart temporarily apply the very device in dispute to a car during that spring, and introduces a drawing made with considerable labor, which, he says, is a copy of the sketch Hart showed him at that time. This drawing (Bohn's Exhibit No. 1) was made before testimony in this interference was taken, and under directions by telegraph of John Stephenson's attorney, in New York.

The temporary embodiment by Hart of the device, as mentioned above, was not alluded to by him in his preliminary statement, or in the previous testimony of himself and associates in the other cases; and in the present case, in his testimony in his own behalf, no mention is made of it. It was brought forward by Hart while testifying as a witness for Little, who called him at a late stage of the case to testify in regard to some other matters.

Nothing can be made out of Messing's direct testimony, unless it is that Hart's first and only device was the weight-and-cord arrangement. When pressed, however, upon cross-examination, he comes out more strongly in favor of Hart's claim to the paternity of the subject-matter in controversy. His testimony is very contradictory, and, taken in connection with that of his principal, unreliable.

Hart's son and Bothe, although testifying as to the existence of the sketches made by Hart in the spring of 1869, have nothing to say as to the temporary embodiment in a car of the plan represented thereby, described by Hart and Bohn.

Setting aside as incredible the unsupported statements of Hart and Bohn as to the experimental embodiment of the device at the time alleged by them, and admitting that Hart did make a fugitive sketch or sketches of the same at that time, what is the effect? The majority of witnesses in his behalf testify positively that he had nothing to do with putting the endless-cord arrangement on the street-cars which his company subsequently manufactured. Hart himself swears that shortly after he had conceived the plan of the continuous cord he discovered the plan for using a cord with weights, and that he considered the latter device in comparison with the former as gold compared with brass.

Stephenson introduced cars with the continuous-cord arrangement into St. Louis in 1870. Hart not only had knowledge of, but acquiesced in, that use for two or three years; and when finally the time came for him to declare upon his oath what he knew about the matter, alleged that he had always regarded John Stephenson as the inventor of the device. As a matter of law, and between him and Stephenson, Stephenson was the prior inventor, for, admitting that Hart was the first to con-

ceive the invention, he threw aside all evidences of that conception, made no efforts to complete it or introduce it to the attention of the public, and delayed making his application for a patent until nearly four years after the former had brought it into extensive use.

Unless, for the first time, crude fugitive sketches and inexcusable *laches* are to be regarded as sufficient to establish one's right to an invention, Hart has no standing whatever before the Office.

The only point remaining to be considered is, whether Hart has proved that he imparted to Little the knowledge of this invention on the 19th of June, 1869, as he alleges. This point is easily determined.

The allegation has for its support the testimony of Hart alone. It is denied by Little, whose statement is sustained by corroborative testimony of witnesses, and also by documentary evidence.

In this state of the case, the conclusion in regard to this allegation must be, not proven.

The claims of Little as an original inventor have been so thoroughly sifted and settled in several previous adjudications that I deem it unnecessary to again rehearse the testimony in his behalf. I have, therefore, simply stated the foundation on which Hart builds his claim, and the conclusions at which I have arrived upon reviewing the evidence adduced by Hart and other opponents of Little in this and the previous interferences.

The decision of the Board is reversed, and priority of invention awarded to Little.

DECISIONS OF THE COURTS.

SUPREME COURT OF THE UNITED STATES.

DENNIS G. LITTLEFIELD AND IRA JAGGER, APPELLANTS, *vs.* JOHN S. PERRY, TRUSTEE AND EXECUTOR OF MARY J. PERRY, DECEASED.

[*In Equity.—Appeal from the Circuit Court of the United States for the Northern District of New York.—October term*, 1874.]

The power of assignment under the statute has been so construed by the courts as to confine it to the transfer of an entire patent, an undivided part thereof, or the entire interest of the patentee, or undivided part thereof, within and throughout a certain specified portion of the United States.

One holding such an assignment is an assignee within the meaning of the statute, and may prosecute in the circuit court any action that may be necessary to protect his rights under the patent.

While a mere licensee cannot, in his own name, sue strangers who infringe, yet he would be permitted in a court of equity to bring suit against the patentee for the infringement of the rights secured to him by his license.

An agreement to account and pay a specified royalty, contained in an instrument of assignment, forms part of the consideration of the assignment, and does not reduce the grantee to the position of a licensee.

Neither does a clause of forfeiture for non-performance, contained in an assignment, reduce the grantee to the position of a licensee. For the non-payment or other non-performance a forfeiture may be enforced as for condition broken, but until it is enforced the title granted remains in the assignee.

Where the patentee, Littlefield, under letters patent relating to stoves, executed with Treadwell and Perry a "grant" and a "supplemental agreement" on the same day, by the former of which, for the consideration therein named and of the agreements contained in the supplemental paper, he made conveyance of an absolute interest in his patent for a specified territory, said deed being duly recorded in the Patent Office, while in the supplemental agreement it was stipulated that nothing contained in the grant should give the grantees the right to use the principle of the patent in furnaces erected in cellars, &c., which supplemental paper was never recorded: *Held*, that the "grant" was to be treated as an assignment, and that the grantees and those claiming under them could sue in the circuit court in their own names to prevent an infringement of their rights.

An assignment of an imperfect invention, with all the improvements upon it that the inventor may make, is equivalent in equity to an assignment of the perfected results. In such case the assignees become in equity the owners of the patent issued upon the invention when perfected, and, if the assignor takes the legal title, he holds it in trust for them, and should convey.

In a contest between an assignor in equity and his assignee a court of equity will give the same effect to an equitable title that it would to one that was legal.

Where the patented improvement formed a part only of the infringing stoves made by the defendants, the inquiry in the accounting before the master should have been confined to an account of the profits received by the defendants as the direct result of the improper use of the improvements, and could not include all the profits received from the manufacture of the stoves embracing such improvements.

In cases of infringement the profits actually realized, without interest, are usually the measure of unliquidated damages. Circumstances may, however, arise which would justify the addition of interest, in order to give complete indemnity for losses sustained by wilful infringements.

[*H. E. Sickels* and *E. R. Hoar*, for appellants.
J. H. Reynolds and *E. W. Stoughton*, for appellee.]

WAITE, *Ch. J.*:

We are met at the outset of this case with a question of jurisdiction. All the parties—plaintiff as well as defendant—are citizens of the State of New York. The power of the circuit court, therefore, to entertain the cause, if it exists at all, must be found in the jurisdiction conferred by the patent laws.

The suit is in equity against a patentee by one who claims to be his assignee, to restrain him from infringing upon rights under his patent, which are alleged to have been assigned. The circuit court has jurisdiction of all suits arising under the patent laws, and has power, upon a bill in equity filed by a party aggrieved, to grant injunctions, according to the course and principles of courts of equity, to prevent the violation of any right secured by patent. Every patent, or any interest therein, is by statute made assignable by an instrument in writing, and the patentee or his assignee may, in like manner, grant and convey an exclusive right under his patent throughout any specified part of the United States. All such assignments must be recorded in the Patent Office within three months from the time of their execution. This power of assignment has been so construed by the courts as to confine it to the transfer of an entire patent, an undivided part thereof, or the entire interest of the patentee, or undivided part thereof, within and throughout a certain specified portion of the United States. One holding such an assignment is an assignee within the meaning of the statute, and may prosecute in the circuit court any action that may be necessary for the protection of his rights under the patent.

The title of the complainant in this case grows out of what is termed in the answers "a grant and supplementary agreement," executed in "two parts," between Littlefield, the patentee, and Treadwell & Perry. The "grant" is one of the parts and the "supplementary agreement" the other. The grant, taken by itself, contains, in most unmistakable language, an absolute conveyance by the patentee of his patent and inventions described, and all improvements thereon, within and throughout the States of New York and Connecticut, and an agreement by the assignees to pay a royalty on all patented articles sold, with a clause of forfeiture in case of non-payment or neglect, after due notice, to make and sell the patented articles to the extent of a reasonable demand therefor. This grant was duly recorded in the Patent Office six days after its execution.

The supplementary agreement was never recorded. It contained, among other things, a stipulation to the effect that nothing in the assignment should give to Treadwell & Perry the right to use or apply the principle of the patent to furnaces erected in cellars or basements of houses for the purpose of heating several rooms, it being the intention of the patentee to reserve that to himself. It also contained certain other stipulations between the parties, intended for the protection of their respective rights and the regulation of their conduct under the assignment. The defendants now contend that by reason of this reservation and these several stipulations the title of Treadwell & Perry, under the grant, has been reduced from that of assignees to mere licensees.

Undoubtedly, for the purpose of ascertaining the intention of the parties in making their contract, the two instruments, executed, as they were, at the same time, and each referring to the other, are to be construed together. If, when so construed, they shall be found to convey to the assignees the title to the patent and inventions, and grant a license back from the assignee to the patentee of the right to use the patent and its principle in the manufacture of the designated furnaces, the circuit court had jurisdiction of the cause.

When the "grant" was placed on record, Treadwell & Perry became the apparent owners of the entire patent and inventions throughout the specified territory. Neither the agreement to account and pay the royalty nor the clause of forfeiture for non-performance contained in that instrument reduced them to the position of licensees. The agreement to account and pay formed part of the consideration of the assignment, and was, in effect, an agreement to pay at a future time a sum to be determined by the number of articles made and sold. For the non payment or other non-performance a forfeiture might be enforced as for condition broken, but until it was enforced the title granted remained in the assignees.

The "supplementary agreement" contained a provision that Littlefield should sue infringers "in his own name or otherwise," and also defend all suits against Treadwell & Perry for alleged infringements of other patents by the use of his; and this, it is alleged, is evidence of the intention of the parties to make the grant effective only as a license. It needs only a slight examination of that clause in the contract, however, to become satisfied that it was intended only as a provision for placing on Littlefield the costs and expenses of all such litigation, as well as all damages for infringements growing out of the use of the inventions by the assignees. The suits were to be prosecuted in his name or otherwise, as circumstances should require, and he was to be at all the costs and expense of maintaining patents. That is the extent of the provision.

Upon the argument the reservation of the right to use the principle of the patent and inventions in the manufacture of furnaces seemed to be relied upon with more confidence as establishing this claim on the part of the defendants. All agree that the intention of the parties, when ascertained by an examination of both the instruments, must govern in this action where only the parties themselves are interested. There are no intervening innocent third persons. Jagger, the partner of Littlefield, who is co-defendant with him, is charged with full notice of the rights of Treadwell & Perry and others claiming under them.

It is a significant fact that the agreement was executed in two parts. Ordinarily the whole of such a contract is embodied in a single instrument. Another important fact is that only one of the parts is recorded, and that the one which, taken by itself, places the title in Treadwell & Perry. The record is intended for the benefit of the public. *Bona fide* purchasers look to it for their protection. The record of the grant alone, therefore, furnishes the strongest evidence of the intention of the parties to give effect to the two instruments as an assignment. It is true that in the recorded part reference is made to the other; but the manner of the reference is not such as to indicate that the unrecorded part contained anything to defeat the title granted by that which was recorded. The language is, "in consideration of one dollar, and of the agreements herein contained on the part of the parties of the second part, and of the agreements contained in a certain agreement this day executed between the parties hereto, and bearing even date herewith, hath, and by these presents doth, assign," &c. And again: "It is expressly understood and agreed between the said parties that in case the said party of the first part shall well and faithfully keep and perform all the agreements herein, and in the aforesaid agreement bearing even date herewith contained, and said parties of the second part shall, &c., neglect, &c., that this assignment and transfer shall thereafter be void and of no effect," &c. This is undoubtedly sufficient to charge purchasers with notice of the execution of the supplementary agreement, and possibly of its provisions, but it falls far short of indicating an intention of the parties, by anything contained in the unrecorded instrument, to limit or defeat the assignment made in consideration of it. The most that can be inferred from such language is that the parties had stipulated between themselves, not as to the legal effect of the recorded instrument, but as to their obligations or equitable rights under it. We think, therefore, that Treadwell & Perry were the assignees of Littlefield within the meaning of the patent laws, and that they and those claiming under them may sue in the circuit courts to prevent an infringement upon their rights.

But, even if they are not technically assignees, we think this action is nevertheless maintainable. They certainly had the exclusive right to the use of the patent for certain purposes within their territory. They thus held a right under the patent. The claim is that this right has been infringed. To determine the suit, therefore, it is necessary to inquire whether there has been an infringement, and that involves a construction of the patents. The act of Congress provides "that all actions, suits, controversies, and cases arising under any law of the United States granting or confirming to inventors the exclusive right to their inventions or discoveries shall be originally cognizable, as well in equity

as at law, in the circuit courts," &c. An action which raises a question of infringement is an action arising "under the law," and one who has the right to sue for the infringement may sue in the circuit court. Such a suit may involve the construction of a contract as well as the patent; but that will not oust the court of its jurisdiction. If the patent is involved it carries with it the whole case.

A mere licensee cannot sue strangers who infringe. In such case redress is obtained through or in the name of the patentee or his assignee. Here, however, the patentee is the infringer, and, as he cannot sue himself, the licensee is powerless, so far as the courts of the United States are concerned, unless he can sue in his own name. A court of equity looks to substance rather than form. When it has jurisdiction of parties it grants the appropriate relief without regard to whether they come as plaintiff or defendant. In this case the person who should have protected the plaintiff against all infringements has become himself the infringer. He held the legal title to his patent in trust for his licensees. He has been faithless to his trust, and the courts of equity are always open for the redress of such a wrong. This wrong is an infringement. Its redress involves a suit, therefore, arising under the patent laws, and of that suit the circuit court has jurisdiction.

It is next asserted that the complainant has not by his proof shown himself to be the assignee of Treadwell & Perry. They, on the 25th of March, 1862, assigned all their interest to George W. Sterling. He became dissatisfied with his purchase, and, by agreement of parties, the sale was canceled, he giving effect to the cancellation by executing a reassignment to Treadwell & Perry, bearing date June 2, 1862. Under date of April 7, 1862, Treadwell & Perry executed another assignment to one Dickey. Both the reassignment from Sterling and the assignment to Dickey were left at the Patent Office for record on the 26th June, 1862, and on the 2d July, Dickey assigned to Mary J. Perry, in whose name the suit was commenced.

It is now claimed that this proof shows title in Treadwell & Perry, inasmuch as Sterling reassigned to them after they had assigned to Dickey. Mrs. Perry was the wife of John S. Perry, one of the firm, and he is now a party to the suit, having upon her death succeeded to all her rights as trustee under her will. Treadwell, the other member of the firm, has been several times in the progress of the cause examined as a witness, and has testified that Dickey became the owner of the patents uner a transfer, to which he consented. It is clear, therefore, that Mrs. Perry at the commencement of the action was in equity, if not in law, the owner of whatever had been assigned by Littlefield, and that, if Treadwell & Perry had the legal title, they held it in trust for her, and will be estopped by a decree in her favor from setting up as against Littlefield any beneficial interest under it. At an earlier stage of the proceedings it might have been proper to make Treadwell a party, but upon the case as it now stands no possible harm can result to the defendants from a decree against them in his absence.

This brings us to a consideration of the merits of the case.

On the 15th April, 1851, a patent was issued to Littlefield for a certain improvement in cooking-stoves, and on the 30th December, 1852, he filed in the Patent Office his application for another improvement in stoves, devised "for the purpose of economizing and burning the gases generated by the combustion of anthracite coals." On the 5th April, 1853, he executed the grant and supplementary agreement already referred to. In the grant, after reciting that he held a patent bearing date April 15, 1851, "for a coal burner so constructed as to produce combustion of the inflammable gases of anthracite coals," and that he had "made application to the Patent Office at Washington for letters patent securing to him a certain improvement in the invention so as aforesaid patented to him," and that such application was then pending, he proceeded to assign all the right, title, and interest which he then had, or might thereafter have, "in or to the aforesaid inventions, improvement, and patent, or the patent or patents that may be granted for said inventions or any improvement therein, and on any extension or extensions thereof within and throughout the district, &c., for and during the term for which the aforesaid letters patent were granted, and the terms for which any patent for the aforesaid improvement, or any improvement or improvements thereof, may be granted, &c." The application of December 30, 1852, was rejected at the Patent Office, and finally withdrawn by Littlefield on the 22d day of July, 1853, he at the same time filing another application for "a new and useful improvement in stoves," so devised as "to burn the gaseous or more inflammable elements of the coal in contact with its more refractory portions, and thus secure a complete combustion of them both." Upon this application a patent was issued January 20, 1854. All the patents outstanding, and the subject of this controversy are admitted to be reissues of this or improvements upon it. Littlefield and his co-defendant do not deny that they have used the patents issued after January, 1854, and, if the title to them passed under the assignment of April, 1853, it is admitted that such use is an infringement, and that the complainant is entitled to a decree. The simple question then presented for our consideration is as to the effect to be given to this assignment.

It is well settled that a recorded assignment of a perfected invention, made before a patent has issued, carries with it the patent when issued, (*Gaylor* vs. *Wilder*, 10 How., 477,) and that reissues are not patents for new inventions, but amendments of old patents. If a reissue is obtained with the consent of an assignee it inures at once to his benefit; if without, he has his election to accept or reject it.

The parties have themselves agreed that the invention of 1852 is an improvement upon the patent of 1851. In the grant the patent is described as being "for a coal-burner, so constructed as to produce combustion of the inflammable gases of anthracite coal," and the application as being for an improvement upon the patent. It is true that the application is not referred to by its date, but there can be no doubt as to its identity, because the language adopted to describe the patent is not that of the claim in the patent itself, but of the application of 1852. Besides, the application is said to be then pending, and it is not pretended that Littlefield had any other on file in the Patent Office at that date. This relieves us from an examination of the specifications in the patent and application for the purpose of ascertaining whether in point of fact the one was an improvement upon the other. Littlefield having agreed that it was, and having induced Treadwell & Perry to purchase by reason of this agreement, cannot now deny it.

It is clear, also, that the idea which Littlefield had in mind, and which he was endeavoring by his devices to make practically useful, was greater economy in the use of the inflammable gases of coal to produce combustion. It is not important in this suit that the patent, which had then been obtained, was not in fact suited for that purpose. It is sufficient that it was intended to be so. The subsequent devices, better adapted to the end to be accomplished, may, therefore, properly be regarded as improvements upon the original invention. They produce a stove doing the same thing which the first was intended to do, but doing it better. This is the proper office of an improvement.

The assignment in this case, by its express terms, covers all improvements in the original patent or the invention described in the application of 1852. It carried with it the legal title to the existing patent. If one had been issued upon the application that, too, would have inured to the benefit of the assignee, because in that case it would have been the assignment of a perfected invention. Without considering whether the invention upon which the patent of 1854 issued was not, in fact, the same to all intents and purposes as that of 1852, it is sufficient for the purposes of this case that it was an improvement upon it, or perhaps more properly, that invention perfected. An assignment of an imperfect invention, with all the improvements upon it that the inventor may make, is equivalent in equity to an assignment of the perfected results. The assignment in this case being such an one, the assignees became in equity the owners of the patent granted upon the perfected invention—that is to say, of the patent of 1854. Littlefield took the legal title in trust for them and should convey. Courts of equity in proper cases consider that as done which should be. If there exists an obligation to convey at once, such courts will oftentimes proceed as if it had actually been made.

There is here no attempt to obtain the specific performance of a contract, but to restrain this patentee from infringing upon rights which, in a court of equity, he is deemed to have assigned. In other words, this complainant is in equity an assignee, and entitled to protection as such. If the assignment in precisely its present form had been executed after the last reissue was granted, we think it would hardly be claimed that the legal title to all the present outstanding patents did not pass with it. What such an assignment could do in respect to legal titles this has done in respect to such as are equitable. The contest is now between an assignor in equity and his assignee. A court of equity will in such a case give the same effect to an equitable title that it would to one that was legal.

It is next contended that the assignment in this case was forfeited before the commencement of this action, because of the failure of Treadwell & Perry to perform its conditions. There is no proof that the royalty on the stoves made and sold before the action was commenced was sufficient to discharge that part of the debt due from Littlefield to Treadwell & Perry, which was first to be paid out of it before anything was payable to him, and there could be no forfeiture for a neglect to make and sell until after reasonable notice of the default. No such notice is proven or even claimed.

It is next insisted that, if the plaintiff claims the benefit of the last reissues, he puts it out of his power to have damages for infringements previous to their their date. The original bill in this cause was filed August 27, 1862. Everything since that time has been done *pendente lite*. The first reissue was granted November 19, 1861, and the first patent for an improvement on the patent of 1854 was issued on the 27th June previous. All in the way of reissues or improvements except these has been done pending the suit. The litigation gathers to its harvest the fruits of the labors of Littlefield and his associates during its pendency. His infringement and that of his co-defendant, Jagger, claiming under him, commenced in 1862, only a short time before the action was commenced. The question presented by this objection is, therefore, comparatively unimportant; but if it were not, the result would be the same. For as Littlefield held his patents all the time in trust for these assignees to the extent of the territory they owned, he must account to them for the profits he has made by the unlawful use of the trust property.

We are, therefore, clearly of the opinion that the complainant is in equity the assignee of Littlefield, and that he is entitled to recover of the defendants the profits they have made out of these infringements upon his rights. So far there is no error in the court below.

We now come to the decree itself. The plaintiff is entitled, as has been seen, to recover of the defendants the profits they have made from the use of the several inventions within the assigned territory; but the decree directed an account of "all the profits, gains, and advantages which the said defendants, or either of them, have received, or which have arisen or accrued to them, or either of them, from the manufacture, use, or sale of stoves within the States of New York and Connecticut, embracing the improvements described in and covered by the said letters patent, and the reissues thereof, or any of them." An account stated upon these principles has been approved by the court in the decree appealed from.

The decree is, as we think, too broad. After the interlocutory decree below settling the principle of the accounting, the case of *Mowry* vs. *Whitney*, 14 Wall., 620, was decided in this court. It was there held that the question to be determined in such a case as this was "what advantage did the defendant derive from using the complainant's invention over what he had in using other processes then open to the public, and adequate to enable him to obtain an equally beneficial result? The fruits of that advantage are his profits." For such profits he is compelled to account as damages.

Here the order is to account for all profits received from the manufacture, &c., of stoves, embracing the improvements covered by any of the patents. This would cover all the profits made upon a stove having in it any one of the improvements patented. The true inquiry is as to the profits which the defendants have realized as the consequence of the improper use of these improvements. Such profits belong to the plaintiff, and should be accounted for to him. The account of the master may not charge the defendants with more than the complainant is entited to recover. The conduct of the defendants in withholding statements which it would seem they ought to be able to make, and their evident unwillingness to account, would induce us to sustain the report had the order of reference been less broad. As it is, we think the decree, so far as it settles the principles of the accounting for profits, must be reversed, and that the inquiry before the master must be confined to an account of the profits received by the defendants as the direct result of the use within the assigned territory of the several inventions involved in the case.

This reverses the decree. Many exceptions were taken to the master's report. Some were as to the matters of form, and others were directed to the principles of the accounting as settled by the decree. It is un-

necessary to consider these further. Another account may dispose of them all.

The circuit court, however, in rendering its final decree added interest to the amount found by the master to be due upon the account for profits. In *Mowry* vs. *Whitney supra*, it was held that interest is not allowable in such cases, except under peculiar circumstances. The testimony thus far presented in this case does not in our opinion justify such an allowance. It will be for the court to determine, upon the coming in of the new report, accompanied by other evidence, whether the conduct of the defendants has been such as to subject them to liability in this particular. Profits actually realized are usually, in a case like this, the measure of unliquidated damages. Circumstances may, however, arise which would justify the addition of interest, in order to give complete indemnity for losses sustained by wilful infringement.

The decree of the circuit court is reversed to the extent hereinbefore indicated, and the cause remanded, with instructions to take a new account of profits and proceed in accordance with this opinion.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date June 8, 1875.]

8,373.—Newspaper-Rack.—HORACE Z. BAKER, Providence, R. I. Application filed February 27, 1875. Term of patent 3½ years.

8,374.—Heating-Stoves.—JOHN V. B. CARTER, Detroit, Mich., assignor to DETROIT STOVE WORKS, same place. Application filed June 3, 1875. Term of patent 7 years.

8,375.—Reservoir Cooking-Stoves.—JAMES DWYER, Detroit, Mich., assignor to DETROIT STOVE WORKS, same place. Case A. Application filed June 3, 1875. Term of patent 7 years.

8,376.—Font of Printing-Types.—CARL E. HEYER, Boston, Mass. Application filed February 18, 1874. Term of patent 3½ years.

8,377.—Medal.—ISRAEL Y. KNIGHT, Philadelphia, Pa. Application filed June 1, 1875. Term of patent 3½ years.

8,378.—Carpets.—JOSEPH C. G. LIBERT, Paris, France, assignor to THE ROXBURY CARPET COMPANY, Boston, Mass. Application filed May 17, 1875. Term of patent 3½ years.

8,379.—Font of Printing-Types.—ANDREW LITTLE, New York, N. Y. Application filed April 14, 1875. Term of patent 14 years.

8,380.—Hand-Wheels of Valves.—DANIEL MCLAUGHLIN, Bridgeport, Conn., assignor to THE BELKNAP MANUFACTURING COMPANY, same place. Application filed May 21, 1875. Term of patent 3½ years.

8,381.—Bracket-Saw Frames.—HENRY L. PRATT, Brooklyn, N. Y. Application filed February 5, 1875. Term of patent 3½ years.

8,382.—Writing-Tablets.—JOHN M. QUACKENBOS, Jr., New York, N. Y. Application filed April 29, 1875. Term of patent 7 years.

8,383.—Vase.—ABRAHAM SCHLANK, New York, N. Y. Application filed February 26, 1875. Term of patent 3½ years.

8,384.—Buttons.—JOSEPH R. SMITH, Waterbury, Conn., assignor to THE WATERBURY BUTTON COMPANY, same place. Application filed May 31, 1875. Term of patent 3½ years.

8,385.—Fountain-Inkstands.—LEVI L. TOWER, Boston, Mass. Application filed June 17, 1875. Term of patent 14 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date June 8, 1875.]

2,636.—Saws.—E. C. ATKINS & Co., Indianapolis, Ind.—Case B. Application filed May 6, 1875.
"words 'Silver Steel.'"

2,637.—Seamless Drawn Tubes.—BRIDGEWATER IRON COMPANY, Bridgewater, Mass. Application filed May 5, 1875.
"words 'Bridgewater Seamless Drawn Tubes,' coupled with an anchor."

2,638.—Gilmore's Neuralgia Cure.—W. GILMORE & SON, Pavilion, N. Y. Application filed April 27, 1875.
"shield bearing the legend '*Quæ Prosunt Omnibus.*'"

2,639.—Corn Flour.—GLEN COVE STARCH MANUFACTURING COMPANY, New York, N. Y. Application filed May 28, 1875.
"allegorical picture representing the cultivation of corn, preparation of flour from the corn, and the cooking of the flour by Indians."

2,640.—Fans.—HECHT BROTHERS, New York, N. Y.—Case A. Application filed May 13, 1875.
"a design representing Independence Hall of the Philadelphia Centennial Exposition buildings."

2,641.—Fans.—HECHT BROTHERS, New York, N. Y.—Case B. Application filed May 13, 1875.
"a design representing the horticultural hall of the Philadelphia Centennial Exposition buildings."

2,642.—Fans.—HECHT BROTHERS, New York, N. Y.—Case C. Application filed May 13, 1875.
"a design representing the art gallery of the Philadelphia Centennial Exposition buildings."

2,643.—Fans.—HECHT BROTHERS, New York, N. Y.—Case D. Application filed May 13, 1875.
"word 'INTERNATIONAL.'"

2,644.—Ladies' and Children's Dresses and Under-Garments.—HANNAH S. HUTCHINSON, Boston, Mass. Application filed May 26, 1875.
"words 'Dress Reform Committee.'"

2,645.—Cigars, Cheroots, Cigarettes, and Smoking-Tobacco.—FRANCIS S. KINNEY, New York, N. Y.—Case B. Application filed May 22, 1875.
"words 'Triple Alliance.'"

2,646.—Cigars, Cheroots, Cigarettes, and Smoking-Tobacco.—FRANCIS S. KINNEY, New York, N. Y.—Case D. Application filed May 22, 1875.
"the figures expressing the number one-half."

2,647.—Silk, Worsted, Linen and Cotton Braids.—AUGUST MOLL, Brooklyn, N. Y. Application filed May 25, 1875.
"the figure of a bird, with outstretched wings, suspending from its beak or bill a pair of scales."

2,648.—Rubber Boots and Shoes.—NATIONAL RUBBER COMPANY, Bristol, R. I. Application filed May 27, 1875.
"word 'ALLIGATOR.'"

2,649.—Bar-Iron, Shafting, &c.—PRATT & Co., Buffalo, N. Y. Application filed May 12, 1875.
"word 'Acme.'"

2,650.—Prepared Salmon.—JAMES QUINN, Portland, Oreg. Application filed May 21, 1875.
"letters S. R. F., which signify States Rights Fishery, and the anchor in the position shown."

2,651.—Sewing-Machines.—THE SINGER MANUFACTURING COMPANY, New York, N. Y. Application filed May 24, 1875.
"word 'Singer' and the shuttle, needles, and thread, placed as has been described."

2,652.—The "Cottage Spring-Bed."—THE TUCKER MANUFACTURING COMPANY, Boston, Mass. Application filed March 18, 1875.
"words 'Cottage Spring-Bed'—which we usually arrange in a border or representation of a ribbon—over a perspective representation of the spring-bed."

2,653.—Corsets.—UNITED STATES CORSET COMPANY, New York, N. Y. Application filed March 29, 1875.
"name '5TH AVENUE.'"

2,654.—Calendars and Almanacs.—CHARLES E. WEMPLE & Co., New York, N. Y. Application filed May 28, 1875.
"word 'Centennial.'"

2,655.—Fever and Ague Pills.—WILLETS & Co., Philadelphia, Pa. Application filed May 18, 1875.
"words 'The William Penn Infallible Fever and Ague Cure' and the likeness of William Penn."

2,656.—Canned Oysters and Fruits.—W. R. BARNES & Co., Baltimore, Md. Application filed May 31, 1875.
"representation of a 'Big Gun' or cannon."

2,657.—Grates.—FRANK S. BISSELL, Pittsburg, Pa. Application filed April 17, 1875.
"word 'PEERLESS.'"

2,658.—Carriage Hardware.—C. COWLES & Co., New Haven, Conn. Application filed May 20, 1875.
"a trefoil formed from three C's intersecting."

2,659.—Cigars.—F. DE BARY & Co., New York, N. Y. Application filed May 8, 1875.
"the word 'Home' and the letters and character 'E & E.'"

2,660.—Perfumeries, Cosmetics, and Soaps.—AIMÉ GUERLAIN, Paris, France. Application filed February 25, 1875.
"a figure representing a genius holding in the right hand a sword and a crown; in the left hand a branch of palm-tree and a crown; standing on a sphere decorated in the middle of a vessel, with a sky full of stars, and surrounded by a circle, with the legend 'Honneur et Patrie,' and on each aid of the sphere a trophy a trophy of flags, and under a cross."

2,661.—Cigars.—S. JACOBY & Co., New York, N. Y.—Case A. Application filed May 26, 1875.
"word 'DOVETAILS.'"

2,662.—Cigars.—S. JACOBY & Co., New York, N. Y.—Case B. Application filed May 26, 1875.
"word 'OVALADOS.'"

2,663.—Stoves.—DENNIS G. LITTLEFIELD, Albany, N. Y. Application filed March 14, 1874.
"word 'Anti-Clogger.'"

2,664.—Soap.—ROBINSON BROS. & Co., Boston, Mass. Application filed March 8, 1875.
"words 'Oat Meal.'"

APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., May 19, 1875.

On the petition of ANN JENNETTE HATHAWAY, of Milwaukee, Wis., executrix of JOSHUA HATHAWAY, deceased, authorized by act of Congress approved February 18, 1875, praying for the extension of a patent granted to the said JOSHUA HATHAWAY, on the 3d day of April, 1860, for an Improvement in Devices for Converting Reciprocating into Rotary Motion,

It is ordered that the testimony in the case be closed on the 20th day of July next; that the time for filing arguments and the Examiner's report be limited to the 30th day of July next; and that said petition be heard on the 4th day of August next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

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Explosive compound, P. Castellanos	71	164,264

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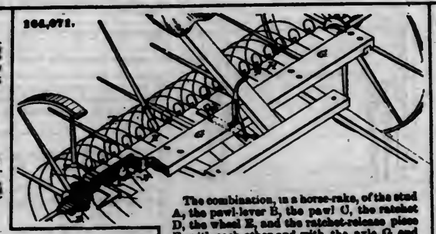
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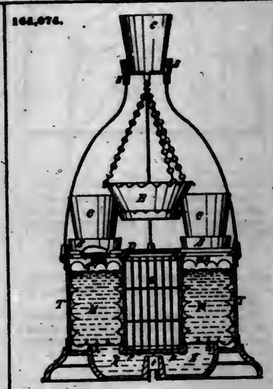
PATENTS GRANTED JUNE 8, 1875.



164,069.



164,071.



164,076.

164,069. ELEVATOR. Jonas H. Bancroft, Boston, Mass. [Filed May 15, 1875.]

Brief.—A disk at each end of a winding-drum shaft lies against the inside, adapted to lock therewith by a spring-latch engaging with a pivoted pawl, the latter protruding over a ratchet-disk on the outside. On winding, the shaft is thus attached to the drum, the pawl being held free; on unwinding, by reason of the weight of the platform, they are in the same condition. When, however, the drum stops, through an obstruction to the platform, the latch is released, and the pawl falls into the ratchet.

1. The combination of the driven shaft and its catch with the winding-drum and its pivoted latch, substantially as and for the purpose described.

2. The driven shaft and its catch, in combination with the winding-drum, its pivoted latch and finger, and the stationary toothed ratchet, into which the finger engages when the descent of the car is arrested, substantially as described.

3. The combination of the car, the operating-rope, winding-drum, and pivoted latch with the catch and driven shaft, and the winding-drum surrounding the driven shaft, and operating substantially as described.

4. The combination of the driven shaft, the disk provided with a space, *o*, and the catch with the winding-drum and latch, substantially as described.

164,070. TOOL-HANDLES. Alex. Beaudry, Boston, Mass. [Filed Apr. 30, 1875.]

Brief.—The adz is attached to the handle by means of a square shank on the head of the tool, which fits in a corresponding metal socket on the end of the handle. The lower portion of the shank and socket are beveled, so as to fit snugly together. The whole is secured in place by a wedge-nut provided with a screw-thread on its interior, and having its under side convex, and fitting into a countersink upon the upper side of the head of the handle.



An adz or ax, with its beveled seat 10 and square shank *a* provided with a screw-thread, *b*, in combination with the nut *c* and a handle, B, having a square socket, *d*, provided with beveled edges 11 and a countersink, 12, substantially as and for the purpose set forth.

164,071. HORSE-RAKES. Robert Brown, Dayton, Ohio. [Filed Mar. 24, 1874.]

Brief.—The rake-head is raised by the hand-lever until the stud upon the rake-bar strikes the pawl-lever, and carries the latter to force the pawl into engagement with the ratchet, when the raising of the teeth is completed automatically. The pawl is released by its free end coming in contact with the curved end of the "ratchet-release piece," and the teeth and bar drop back.

The combination, in a horse-rake, of the stud A, the pawl-lever B, the pawl C, the ratchet D, the wheel E, and the ratchet-release piece F, with each other and with the axle G and rake-head H, operating automatically for the lifting and dropping of the teeth and rake-head, substantially in the manner specified.

164,072. SECTIONAL STEAM-GENERATORS. Edward M. Butts and Geo. M. Jones, Allegheny, Pa. [Filed May 5, 1875.]

Brief.—A series of circulating-tubes are attached to the opposite sides of a centrally-partitioned water-chamber.

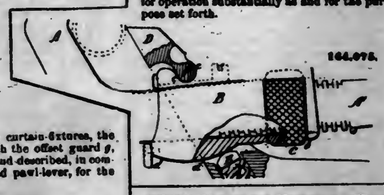
1. A vertical central water-supply chamber, *a*, with a system of pipes, *a'*, leading horizontally therefrom on each side, a system of exterior pipes, *a*, leading back to the vertical side chambers *a''*, each parts being arranged and combined substantially as and for the purpose set forth.

2. The central steam-chamber *c*, in combination with the side chambers *c'*, and with the steam-superheating pipes, arranged substantially as set forth.

164,073. CURTAIN-FIXTURE BRACKETS. Jas. Chase, Rochester, N. Y. [Filed Mar. 2, 1875.]



164,073.



164,075.

As an improvement in curtain-fixtures, the bracket B, provided with the offset guard *g*, substantially as shown and described, in combination with the pivoted pawl-lever, for the purpose set forth.

164,074. COMBINED AQUARIUMS, BIRD-CAGES, AND FLOWER-STANDS. Jas. Chase, Rochester, N. Y. [Filed Apr. 2, 1875.]

1. In a combined aquarium and fernery, the cap D, constructed, as shown and described, so as to receive and sustain in their proper relative position the pivoted censers I and the suspension-rods L, for the purpose of constituting in the same article an ornamental plant-stand.

2. In combination with a combined aquarium and fernery, or bird-cage, the suspended or elevated plant-crock and saucer, and the hanging basket S.

3. The side and end plates P and R, having a curved offset at the ends, in combination with the clamping-rods *r* and glass plates T, as and for the purposes set forth.

4. The pivoted centering-saucers S, constructed substantially as shown and described, in combination with the plate D and crocks C, for the purposes set forth.

5. The combination, with the chambers M, either or both, the depressed chamber R, substantially as and for the purposes set forth.

164,075. PIPE-WRENCHES. M. S. Clark, New York, N. Y. [Filed Mar. 26, 1875.]

Brief.—A collar actuated by a milled nut on the wrench-lever which carries the fixed jaw has an arch-shaped socket to receive the pivot or journal made in a slot in the wrench-lever which carries the moving jaw.

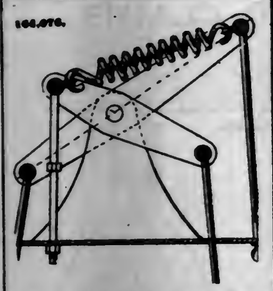
1. The slide B, constructed with the socket *c* and arc-shaped surface *d*, in combination with the screw-threaded shank of the jaw A, the nut C, and movable jaw D, constructed with the shoulder or bearing *f*, substantially as and for the purpose set forth.

2. The spring-actuated pressure-block E, in combination with the slide B, constructed with the arc-shaped surface *d* and socket *c*, the screw-threaded shank of the fixed jaw A, the nut C, and movable jaw D, constructed with the shoulder or bearing *f*, the whole arranged for operation substantially as and for the purpose set forth.

164,076. MECHANICAL MOVEMENTS. Hiram S. Combs, Georgetown, Conn., and Wm. Rhodes, New York, N. Y. [Filed May 14, 1875.]

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

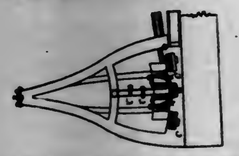
164,076.



The combination of rods with stops and levers with the spring, to secure a direct and reverse motion, in the manner substantially as described.

164,077. MACHINES FOR CUTTING HOOPS. Peter Cook, Detroit, Mich. [Filed Sept. 5, 1874.]

Brief.—The material is held in a self-adjusting clamp, which, as the swinging frame moves back and forth, places it in the proper position to cut the hoops alternately beveling in opposite directions.



1. The feed-guide D, made in two parts, hung upon the adjustable suspenders *d d'*, and oscillating over the knives K K' and concave beds C C', substantially as and for the purposes described.

2. The feed-guide D, hung upon a short arm, in combination with the swinging hopper B, hung upon a longer arm, and both oscillating over the knives K K' and concave beds C C', as and for the purposes described.

164,078. LIME-SUPPORTING TRAYS FOR GAS-PURIFYING BOXES. Geo. W. Day, Haverhill, Mass., assignor to Manhattan Lime-Hurdle Company, same place. [Filed Feb. 19, 1875.]



1. The improved lime-supporting hurdle or tray, as specified, the same consisting of the rectangular side bars A A, the cylindrical bars B B, and the series of slats *a a*, &c., the said bars B extending transversely through the bars A and the series of slats *a*, and the latter secured to the bars B, in manner as shown and described.

2. The combination, with the bars A A, bars B B, and the series of slats *a a*, constructed, arranged, and combined together as described, of the adjusting clamp-rods, as and for the purpose set forth.

164,079. BETTERMENT-TABLES. Anthony Dubroy and John F. Wagner, Cleveland, Ohio. [Filed Mar. 4, 1875.]

1. The slide F, provided with grooves *e* and *f*, in the upper and lower edges thereof, and pivoted to the frame B of the table by swivel-guides, constructed substantially as described, in combination with the leaves D E and table A, as and for the purpose set forth

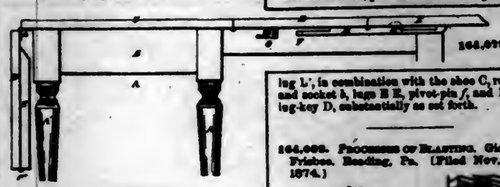
2. The slide M, in combination with the round shoe C, and locking-key D, substantially as and for the purpose set forth.

3. The sections G G', constituting the sides of the table-frame, arranged in relation to each other, as described, strip H, and bar J, in combination with the slide F, substantially as and for the purpose set forth.

1. The sole A, provided with the leg B, in combination with the round shoe C, and locking-key D, substantially as and for the purpose set forth.

2. The combination of the locking-key D having projection *g* and leg *h*, with the recess *b* in the shoe, substantially as set forth.

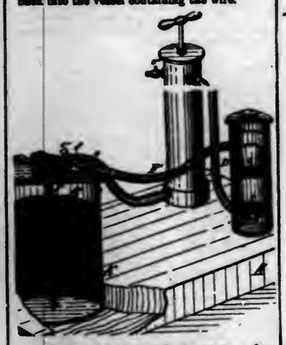
3. The sole A, provided with the leg B and leg L', in combination with the shoe C, recess and socket *b*, legs B E, pivot-pin *f*, and locking-key D, substantially as set forth.



164,079.

164,080. ANNEALING WIRE. N. F. English, Hartland, Vt., assignor to A. Lapham, Washington, D. C., and George H. Osborn, Pittsford, Vt. [Filed May 18, 1875.]

Brief.—The air is pumped from the vessel in which the wire is heated, and is made to pass (through a receptacle containing quicklime and metallic sodium. By this means the air is freed from water, carbonic acid, and oxygen, and the remaining nitrogen passes back into the vessel containing the wire.



1. The combination, with the retort A, for annealing wire, of the central pipe *c'*, pipe *c*, and pump C having vent-cock *c'''*, substantially as and for the purposes described.

2. The combination of the retort A, central pipe *c'*, pipe *c*, and pump C, with pipe E, holder D, and vessels F and G and their contents, pipe F', opening *f'* in the cap of the retort A, whereby a continuous circulation is had by taking the air from the bottom of the retort and supplying its place at the top of the retort, substantially as described.

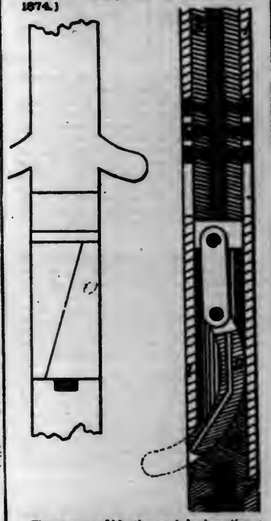
3. The process above described of preventing scale or oxide on wire in annealing and cooling it, by exhausting the air in the retort and causing it to be circulated first through quicklime, then through sodium, before it is forced into the retort, substantially as described.

164,081. GAS-BRAKE SHOES. A. A. Freeman, Philadelphia, Pa., assignor of one-half his right to Wm. M. Gingerly, same place. [Filed Apr. 6, 1875.]

Brief.—Peculiar looking-plates, lugs, and recesses for attaching shoe to sole.



164,082. PROCESSES OF BLASTING. Gideon Frisbee, Reading, Pa. [Filed Nov. 23, 1874.]



The process of blasting rock by inserting a plug in a common long hole-bore at any desired point, and enlarging the hole at that point, to form a chamber for holding explosive, by means of an expanding bit placed and operated upon the plug, substantially as described.

164,083. TOY MONEY-BOXES. Russel Frisbie, Cromwell, Conn., assignor to the J. & H. Stevens Company, same place. [Filed Apr 17, 1875.]

Brief.—The head is not moved by the descent of the coin, but both head and arm must be manipulated by pressure upon the pivoted foot.



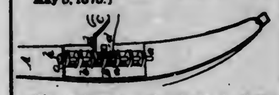
1. The parts *c f g e*, in combination with the arm, head, and foot of the figure, so that the arm and head are moved by the movement of the foot, substantially in the manner herein described.

2. In a toy money-box, the combination of the sliding plate *o* and set-screw *p* with an opening and slot in the bottom plate, substantially in the manner described.

164,084. COMPOSITIONS FOR DRAIN-PIPES. William H. Haight and Thos. G. Gladding, Leavenworth, Kans. [Filed May 17, 1875.]

A compound composed of oxide of iron, plaster-of-paris, brimstone, coal-tar, distillate of coal-oil, and sand and gravel, substantially in the proportions and for the purposes above set forth.

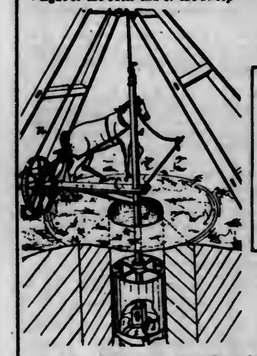
164,085. HAMES. Wm. A. Hodson, Dyer's Station, Tenn., assignor of one-half his right to Jas. P. Snoddy, same place. [Filed May 5, 1875.]



The combination, with a hame, A, of the plate B, provided with perforated ears *a* and recesses *b*, the trace-hook C, having perforated projections *d*, and the pin A, all substantially as and for the purposes herein set forth.

164,086. EARTH-AUGERS. Sidney H. Horn, Bloomfield, Iowa. [Filed Mar. 22, 1875.]

Brief.—The bucket is provided with a socket for the shaft at its lower end, with four inclined cutting-lips, and the rim carries four reamers. The hub is provided with radiating braces extending to the bottom and secured therein. A sweeping beam is supported on a traveling wheel, and combined with the auger-shaft, to prevent it from being bent by the weight of the outer end of the sweep.



1. In a well-boring apparatus, the socket *a* having a centering-point on its under side, the inclined cutting-lips 1 2 3 4, the rim *b b*, carrying the reamers *c*, when arranged and combined substantially as and for the purposes shown and described.

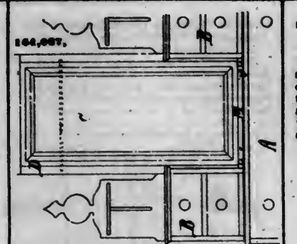
2. The hub B, having radiating-braces *g*, in combination with the rim *b b*, to brace the auger and support the bucket G, substantially as and for the purposes shown and described.

3. The sweeping-beam C, supported upon the traveling-wheel E, in combination with an auger-shaft, A, substantially as and for the purposes shown and described.

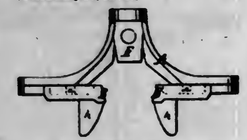
164,087. DRESSING-CASES, OR COMBINED BUREAUS AND WARDROBES. J. H. Horsfall, New York, N. Y. [Filed May 3, 1875.]

The combined wardrobe and dressing-case herein described, composed of the base A, sets of drawers B E, mirror C, wardrobe D, and slide M, all arranged and adapted to serve as and for the purposes herein set forth.

164,087.



164,088. HOLDERS FOR BROOMS. Geo. W Hunter, Philadelphia, Pa., assignor of one-half his right to W. F. Stone, same place. [Filed May 17, 1875.]



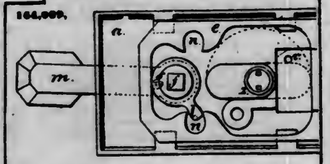
1. In a broom hanger, the cam-shaped jaws provided with flaring guides, having a serrated periphery and outer flange, substantially as described and shown.

2. The plate A, provided with stop-shoulders *a a*, and jaws B B, provided with ears or stops *e e* and projections *b b*, when combined for operation substantially as shown and described.

3. As an article of manufacture, a broom-holder having cam-jaws hung upon arms A, in the angle of which is placed the plate E, beveled at its sides to furnish angular slots for the insertion of the knife, substantially as set forth and described.

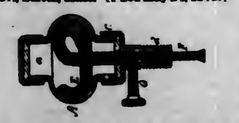
164,089. REVERSIBLE LATCHES. Elisha C. Hussey, Rutherford Park, N. J. [Filed Jan. 12, 1875.]

164,089.



The reversible frame *e* and latch *d* within the case, and the arm *i*, spindle *f*, and weighted handle *m*, constructed and arranged as specified, so that the arm *i* enters the notch *n* in the lower part of the frame *e*, and acts to project or retract the latch by a direct movement, as set forth.

164,090. MACHINE-OILERS. S. Hutchinson, Jr., Salem, Mass. [Filed May 24, 1875.]



1. A machine-oiler having to its wick-tube D and fastening-neck *d* a separate wick-carrying tube, F, and a clamp-screw, G, arranged in the neck, as set forth.

2. The oil-reservoir or its cap C, provided with the tubular fastening-neck *d*, and the wick-clamp screw G, arranged in such neck, as set forth.

3. The oil-reservoir or its cap C, provided with the wick-tube D and the tubular fastening-neck *d*, and also with the wick-clamp screw G, arranged in said neck, as specified.

164,091. MACHINES FOR BUNCHING AND SIZING ASPARAGUS. Japhet A. Ireland, Bakersville, N. J. [Filed Dec. 16, 1874.]

Brief.—The bed is concave, and has a corresponding hinged presser-bar. The length is determined by pivoted plates that can be turned across the trough at the rear end. The asparagus is laid in the trough upon strings, which tie it into bundles, after which a cutter severs the ends.



The trough A, in combination with the tie-cords B, the sizing-plates D, the hinged cap E, and the knife F, for the purpose shown and described.

164,092. SAFETY-WHEELS FOR WATCHES. Eugene Jeanjaquet, Springfield, Ill. [Filed Dec. 18, 1874.]

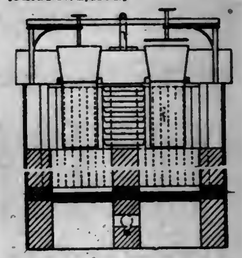


1. The combination, with the center-staff A, having the flange *a* and chamber *a'*, of the wheel B, secured to said flange, as set forth.

2. The pinion C, sleeved on the staff A, and provided with the raised part *c* and notch *c'*, as set forth.

3. The combination, with the staff A, having the flange *a* and pin *b*, of the pinion C, having the raised part *c* and notch *c'*, as set forth.

164,093. GAS-MAKING PROCESSES. Moses W. Kidder, Boston, assignor of one-half his right to Person Noyes, Lowell, Mass. [Filed Nov. 2, 1874.]



1. The process, substantially as herein described, of generating and combining gases from burning coal with volatilized hydrocarbon and producing fixed illuminating-gas, and purifying the fixed gas by means of steam and air introduced into an apparatus or furnace beneath and passed upward through burning coal, as specified, and by liquid or vapor of hydrocarbon introduced at or near the top of the furnace and mingled with the first-named gases, as set forth; then by passing the whole product of the coal, steam, air, and hydrocarbon combined, or mingled gases and vapors, downward through the incandescent coal, the gas-producing coal to each gas-generating compartment or furnace serving alternately to purify and combine the gas generated in the other compartment, substantially as described.

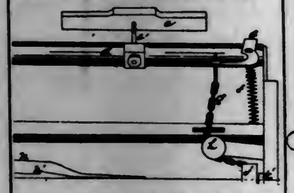
2. The process, substantially as herein described, of generating and purifying gas from burning coal by means of steam and air introduced into an apparatus or furnace beneath, and passed upward through the burning coal, as specified; then by passing the gases or whole product of the steam, air, and coal combined, from one gas-generating apparatus or compartment through an upper trunk, B, and downward through incandescent coal in another trunk connected gas-generating compartment, changing the direction and current

of the gas from one generator to the other, and vice versa, and causing the gas-producing coal in each gas-generating furnace or compartment to serve alternately as a purifier for the gas generated in the other compartment, substantially as described.

3. The process, substantially as herein described, of purifying gas by alternately passing the gas from one gas-generating apparatus or compartment, through an upper trunk, E, and downward through incandescent coal in another trunk-connected gas-generating compartment, changing the direction and current of the gas from one gas-generator to the other, and vice versa, and causing the gas-producing coal in each gas-generating furnace or compartment to serve alternately as a purifier for the gas generated in the other compartment, substantially as described.

164,094. CLOTH-MEASURING MACHINE. Mark Knott, Willimantic, Conn. [Filed Apr. 9, 1875.]

Brief.—A mechanism for holding up a presser-bar while the workman is adjusting the cloth between the presser-bar and roll.

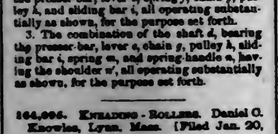


1. The combination of the cloth-roll *a*, presser-bar *c*, rod *c'*, shaft *d*, lever *e*, and spring *f*, all operating substantially as shown, for the purpose set forth.

2. The combination of the shaft *d*, bearing the presser-bar, lever *e*, spring *f*, chain *g*, pulley *h*, and sliding bar *i*, all operating substantially as shown, for the purpose set forth.

3. The combination of the shaft *d*, bearing the presser-bar, lever *e*, chain *g*, pulley *h*, sliding bar *i*, spring *m*, and spring-handle *n*, having the shoulder *n'*, all operating substantially as shown, for the purpose set forth.

164,095. KNEADING-ROLLERS. Daniel G. Knowles, Lynn, Mass. [Filed Jan. 20, 1875.]



As a new article of manufacture, a kneading-roller, A, having the concentric projections C, the latter having the diversified surfaces or peripheries E F, and being separated by the interstices D, substantially as described, for the purpose specified.

164,096. HAME-TUPS. R. G. Latta, Friendship, assignor of one-fourth his right to Pratt & Letchworth, Buffalo, N. Y. [Filed May 8, 1875.]

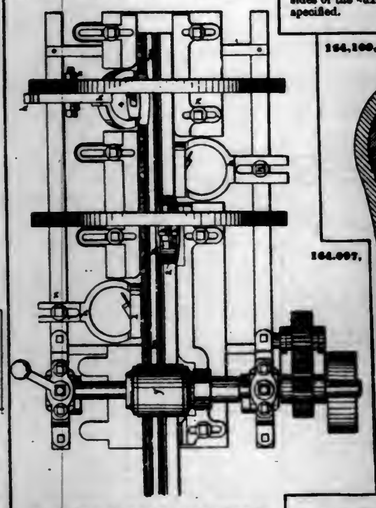


1. The combination, with the body of the hame, of the tip C and corrugated strip portion D, cast in one piece, and constructed substantially as and for the purpose herein before set forth.

2. The tip C, cast of malleable metal, with the socket *d* and lip *f*, substantially as and for the purpose herein before set forth.

164,097. MACHINES FOR FINISHING WOOD MOLDINGS. John G. Loomis, Brooklyn, N. Y. [Filed Sept. 22, 1874.]

Brief.—The molding, after being roughly formed by rotating cutters, is carried by yielding feed-rollers over a bed and beneath adjustable smoothing-planes, which remove the corrugations left by the rotating cutters.



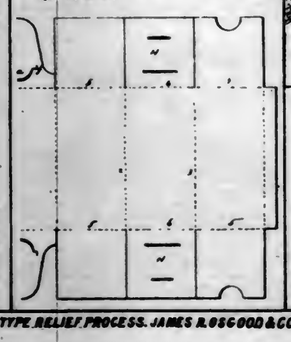
A new mode of backing wood moldings by means of planes 1 2 3 4 arranged upon a table or frame, F, and secured at any required angle in the slotted arches A A, and to the heads *h h* with nuts and bolts *n n*, in combination with the feed-roller *g*, which operates the molding *m*, at a high or low speed, by the gearing H, substantially in the manner and for the purpose set forth.

164,098. CHAIN-PUMPS. Chas. L. Merrill, Evansville, Ind., assignor of one-half his right to Lorenzo D. Bartlett, Hudson, N. Y. [Filed Apr. 22, 1875.]

Brief.—The hollow cylinder of the bucket in its descent conveys air beneath the surface of the water, and, liberating it there, agitates and purifies the water.

The chain-pump bucket M, consisting of the cylinder H, air-space *h*, links K, flanges *I J*, and packing G, provided with orifice *g*, substantially as and for the purposes set forth.

164,099. PAPER BOXES. James L. Moore, Stratford, Conn., assignor of one-third his right to E. B. Munson, same place. [Filed Apr. 12, 1875.]



1. The combination of the scouring-tongue O and auxiliary tongue *e* formed therein, with the fold H provided with slits corresponding to said tongues, substantially as specified.

2. The combination of the scouring-tongue O and auxiliary tongue *e* formed therein, with the fold H provided with slits corresponding to said tongues, and shoulder *f* on one or both sides of the auxiliary tongue, substantially as specified.

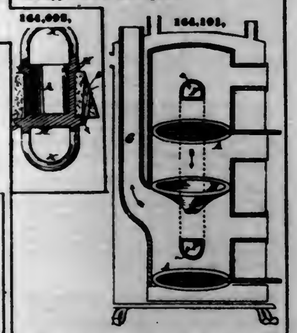
164,100. DYNAMIC WRENCHES. Sebastian Piymale, Portland, Oreg. [Filed Feb. 20, 1875.]

Brief.—A dynamic wrench composed of a ratchet, pawl, link, levers, fulcrum, spring, screw, and pin, operating in a case on an indicator over a dial.

The ratch A, pawl B, link C, levers D and F, fulcrum E, spring H, screw I, and pin M, operating in a case, J, on an indicator, G, over a dial, I, substantially as described, and for the purpose set forth.

164,101. WARM-AIR FURNACES. John B. Reinhard, Louisville, Ky. [Filed Mar. 26, 1875.]

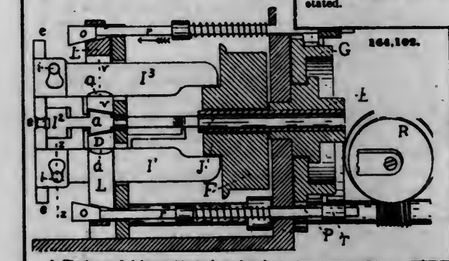
Brief.—The draft passes from the upper grate through the side flues to the lower grate. Partially-burned fuel may be discharged from the upper to the lower grate.



The combination of the grates A A, partition-plate H, descending flues F F, and discharge-flue G, arranged, constructed, and operated substantially as and for the purpose herein-before set forth.

164,102. MACHINES FOR FORGING HORSE-SHOE-NAIL-BLANK RODS. F. H. Richards, New Britain, Conn. [Filed Mar. 3, 1874.]

Brief.—Four radially-disposed hammers—one pair swinging in a horizontal and the other in a vertical plane—are operated, to vary the stroke and determine the amount of the reduction of the rod, by means of wedges on the ends of bars, reciprocated simultaneously by templets on a revolving wheel, such wedges bearing against the outer ends of sliding blocks, in which the hammers are pivoted. Said hammers are operated in pairs to strike blows by a cam revolving on a tubular bearing, through which the rod, as it is forged, is drawn and wound upon a drum.



164,102.



164,103.

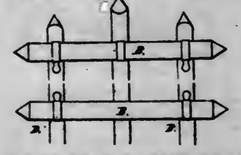
1. The levers I, fulcrum-blocks L, and wedges O, in combination with patterns P, arranged to operate said wedges O.

2. The levers I, fulcrum-blocks L, or their equivalent, wedges O, or their equivalent, and patterns P, arranged substantially as described, in combination with cam J.

3. The spring-braces *b*, constructed and arranged as described, in combination with levers I.

4. The combination, as herein described, of levers I, having segmental fulcrums *a* constructed to bring the center of their oscillation near the common center of tools *c*, with the fulcrum-blocks L, having concave bearings for said fulcrums *a*.

164,103. GLASS PICTURE-FRAMES. Wm. H. Roby, East Cambridge, Mass. [Filed Apr. 7, 1875.]



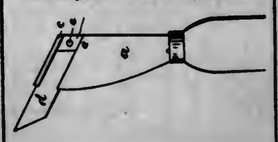
1. A picture-frame having its bars A A and B B formed of glass, and united by metallic clasps, substantially as shown and described.

2. A glass picture-frame, having its bars A A, B B, and C formed of glass and united by metallic clasps, substantially as shown and described

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164,104. SHOEMAKERS' KNIVES. George R. J. Ruggles, Milford, Mass. [Filed Feb. 15, 1876.]

Brief.—The blade-holder is provided with a transverse slot and grooves, permitting an endwise adjustment of the blade, as required.



The holder *a*, provided with the groove *c c* and slot *f*, in combination with the adjustable blade *d* and the fastening device *e g*, all substantially as and for the purpose herein shown and described.

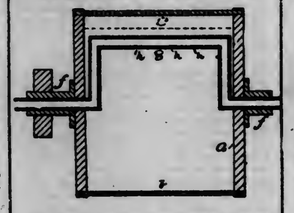
164,105. KEY-RINGS. Joseph B. Sanford, Brockton, Mass., assignor to himself and Charles F. Sylvester, same place. [Filed Apr. 23, 1875.]

Brief.—A steel ring is re-enforced with soft metal, which can be readily engraved, and also strengthens the ring and increases its torsion.

1. The improved key-ring, as described, the same having its body A formed of steel, and a re-enforce, *b*, of soft metal applied thereto, substantially as and for the purpose set forth.

2. An improved key ring, having its body A formed of steel, and re-enforced with the soft-metal plates *a* and *c*, and constructed and applied substantially as and for the purposes stated.

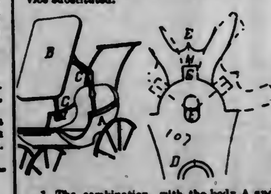
164,106. MACHINES FOR WASHING LEATHER. William Shaw, Kingman, Me. [Filed Apr. 6, 1875.]



The combination of a revolving drum or cylinder provided with a door upon its surface, with hollow journals, and *d* perforated pipe passing through the journals and across the cylinder, all substantially as and for the purposes described.

164,107. CHILDREN'S CARRIAGES. Harry J. Still, Jr., Philadelphia, Pa. [Filed Mar. 8, 1875.]

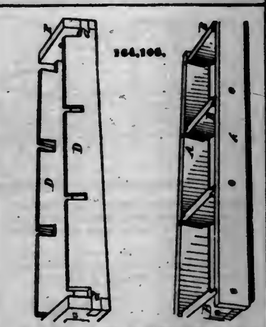
Brief.—Permits firm adjustment of top in three positions. Top-standards may be withdrawn from sockets, and baby-fastening device substituted.



1. The combination, with the body A and the top B of a juvenile-carriage, of pivot F, standard-sections E, having projections C and G, and standard-sections D, having slots *e* and sockets H, whereby the sections are rendered capable of extension and vibratory motion, and their right-line position is retained, substantially as set forth.

2. The combination of the body A, sockets I, ring-cheeks J, and the strap K, substantially as forth.

164,108. BRICK-MOLDS. Edgar C. Singer, Marlin, Tex. [Filed May 17, 1875.]

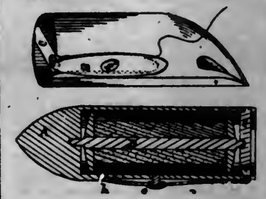


164,108.

1. A brick-mold, provided with interior movable sides, the adjoining surfaces of the stationary and movable sides being inclined so that the inner movable sides when moved will spread outward, substantially as and for the purpose herein set forth.

2. The combination, with a brick-mold, A B C, having the inner surfaces of its sides inclined as described, of the movable sides D D, having their outer surfaces inclined, and provided at their ends with projecting square tenons *d d*, and the slotted slides E E, all constructed substantially as and for the purposes herein set forth.

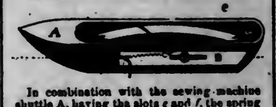
164,109. SEWING-MACHINE SHUTTLES. J. Stamm, Covington, Ky. [Filed Mar. 17, 1875.]



1. In combination with a sewing-machine shuttle, having a slot, *h*, extending from its rear end forward for the thread to pass through, the spring B, nut *c*, and pins *f* and *h*, the parts being arranged to operate substantially as and for the purpose set forth.

2. In a sewing-machine shuttle, the spring B, latch C, screw-pin *f*, and nut *c*, substantially as described.

164,110. SHUTTLES FOR SEWING-MACHINES. J. Stamm, Covington, Ky. [Filed Aug. 13, 1874.]



In combination with the sewing-machine shuttle A, having the slots *e* and *f*, the spring B, slotted at *h*, bent at the front end to enter the slot *f*, and having the forks *i* and *i'* of unequal length, substantially as described.

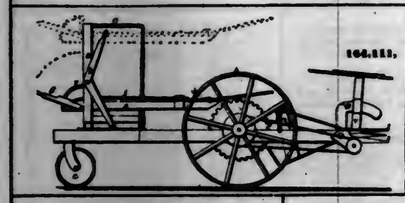
164,111. CORN-HARVESTERS. G. A. Swarts, Orangeville, Ill. [Filed Dec. 9, 1874.]

1. The vertically-adjustable clasp, in combination with a frame provided with a roller and way upon which to travel, whereby the stalks may be readily lifted over the side of the frame, substantially as specified.

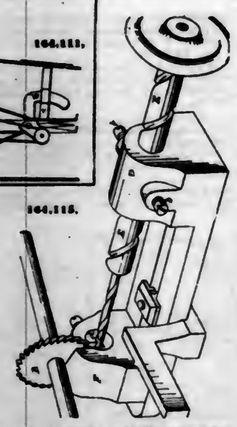
2. The combination of the shaft *c*, wheels *s t*, rods *u*, supports *v* pivoted upon the shaft, and guides *w*, substantially as specified.

3. The combination of the bar 2, arms 3, rods 4, rod 5, lever 6, and ratchet, substantially as described.

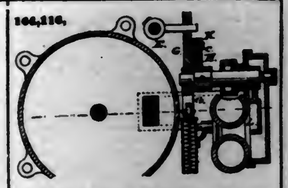
4. The combination of the clasp, frame, and lever 9, substantially as set forth



164,111.



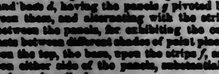
164,115.



164,116.

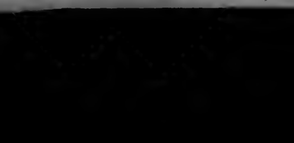
164,112. SLEEVE-BUTTONS, &c. John B. Ulmar, Boston, Mass., assignor to himself and George R. Keiso, same place. [Filed Feb. 19, 1870.]

Brief.—One end of the spring is extended and bent around the edge of the outer disk, to facilitate the adjustment of the parts.



A sleeve-button or stud made in two parts, *a c*, the former having a single flat spring, *b*, provided with shoulders *c c* and an operating-arm, *d*, and the latter having a flat, tubular shank, *f*, provided with ledges *f g*, to engage the shoulders *c c*, the arm *d* having its outer end extended over the edge of the disk, in manner and for the purpose set forth.

164,113. CAR-COUPLINGS. Stephen Ustick, Philadelphia, Pa. [Filed Aug. 14, 1874.]



1. The bar C, suspended by means of the hangers D, and extending from end to end of the car, in combination with the draw-bars of a railroad-car, as set forth.

2. The rod I, having a coupling, K, in combination with the draw-bar B and rod J, for adjusting the height of the bar, and admitting of its oscillating freely, substantially as described.

3. The combination of the pivoted draw-bar B, permanent bar C, and rods I and J, substantially as and for the purpose set forth.

164,114. REVOLVING PAINT-EXHIBITORS. Theodore C. Van Arsdale, Brooklyn, N. Y. [Filed Apr. 30, 1875.]



The revolving frame consisting of the top *a* and base *d*, having the panels *g* pivoted between them, and alternating with the strips *f* between the panels, for exhibiting the contrasts between different shades of paint placed upon the top, the base, upon the strips *f*, and upon either side of the panels, substantially as above described.

164,115. MACHINES FOR MAKING TWIST-DRILLS. L. Weaver and Theodore Decker, Seymour, Conn. [Filed Feb. 23, 1875.]

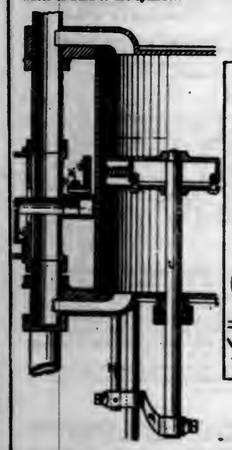
Brief.—A mandrel with a single spiral groove, for holding and feeding forward a blank to the tool. The mandrel, as it is fed forward, is caused to turn by a screw passing through the head into the spiral groove, and is (for forming a second groove in the same blank) turned half a revolution, and another screw on the opposite of the head set into the groove.

1. The combination of the nut or guide-piece D, the feeding-mandrel E, with single spiral groove, and the two screws *b b*, or their mechanical equivalents, for feeding up the blank and for gaging and spacing the grooves therein, substantially as described and represented.

2. The combination of the adjustable head F, the changeable bushing *d*, oblique slot *e*, and milling or cutting tool B, as and for the purpose described and represented.

164,116. FLUID-METERS. Daniel P. Weir, Salem, Mass. [Filed Jan. 8, 1875.]

Brief.—A sliding valve loosely fitted to a stem is operated by means of a jointed spring-lever and slotted dog, motion being given to the lever by tappets upon a shaft attached by an arm to the piston-rod, for admitting the water or fluid to the cylinder.

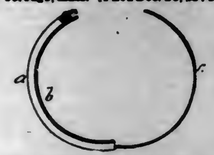


In combination with the inlet and outlet ports of a water-meter, the sliding valve L, loosely fitted to the stem H, slotted dog E, and jointed spring-lever C, all arranged to operate substantially as specified.

164,117. LUBRICATING COMPOUNDS. Jos. Williams, Sharpsburg, Pa. [Filed May 11, 1875.]

A lubricating compound composed of tallow, sulphur, lime, oil, black-lead, potter's clay or fire-clay, substantially as described.

164,118. BRACELETS. Chas. Wills, Attleborough, Mass. [Filed Dec. 26, 1874.]



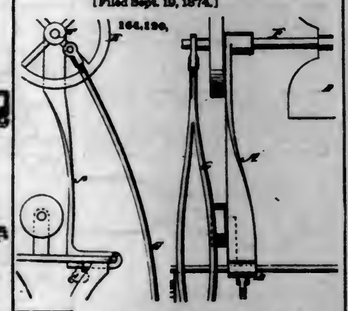
The bracelet having its front *a* provided with a shoulder, *a'*, over and upon which the lining *b* is rolled, and having an internal spring, *c*, throughout its entire length, rivited at each end to the bracelet, all constructed and arranged substantially as hereinbefore specified.

164,119. WATCH-CHAIN SWIVELS. Chas. Wills, Attleborough, Mass. [Filed Oct. 19, 1874.]



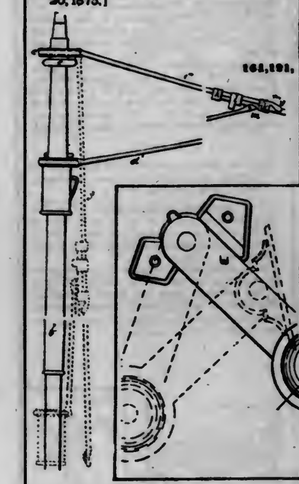
The combination of the bead-sections *a a'*, case *d*, and ring *f* with the arm *b*, screw *c*, and rod *e*, substantially as described, and for the purpose set forth.

164,120. SEWING-MACHINE FAN ATTACHMENTS. Isaac A. Abbott, New Orleans, La. [Filed Sept. 19, 1874.]



A fan attachment consisting of shaft F, having the D and wheel E, standard A, having tubular bearing at top, bar G, and treadle H, all connected with the same supporting-frame, as shown and described.

164,121. FOLDING UMBRELLAS. Alfred M. Alexander, Indianapolis, Ind. [Filed Mar. 20, 1875.]



164,121.

1. The sectional rib *g*, provided with a guide-clamp, *h*, having a guard, *c*, and shoulder *s*, substantially as and for the purpose set forth.

2. The sectional rib A, provided with the guide-clamp *h'*, in combination with the sectional rib *g*, provided with the guide-clamp *h*, having guard *c* and shoulder *s*, and the brace *d'*, substantially as described.

3. The combination, with a sectional extensible umbrella-rib, C, of the lock-brace *d'* and shoulder *s*, constructed and arranged substantially as specified.

164,122. VALVE-GEARS FOR STEAM-ENGINES. Charles A. Amerman, Hartford, Conn. [Filed Feb. 18, 1875.]

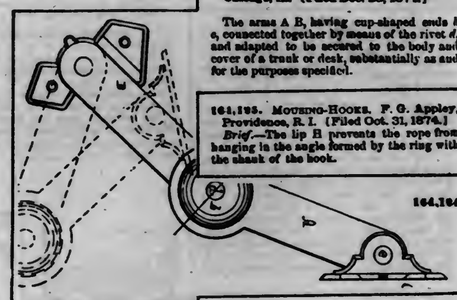
In combination with the valve-spindles F' F' of a steam-engine, each provided with a shoe, *d*, the shaft G, with the spiral ribs *s* arranged thereon, and of increasing elevation from one end to the other, in the relative position described, and having a continuous revolution imparted through said shaft, combined with an adjustable axial movement, substantially as described.

164,123. TRUNK-STAYS. H. L. Andrews, Chicago, Ill. [Filed Dec. 26, 1874.]

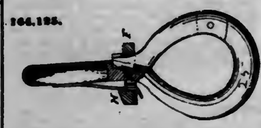
The arms A B, having cup-shaped ends *b c*, connected together by means of the rivet *d*, and adapted to be secured to the body and cover of a trunk or desk, substantially as and for the purposes specified.

164,124. MOUSING-HOOKS. F. G. Appley, Providence, R. I. [Filed Oct. 31, 1874.]

Brief.—The lip H prevents the rope from hanging in the angle formed by the ring with the shank of the hook.



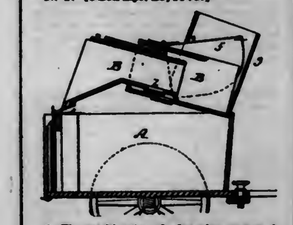
164,124.



164,125.

The mousing-hook ring F, having the lip H, as and for the purpose set forth.

164,125. SPOUT ATTACHMENTS FOR DUMPING-CARTS. Mary A. Alvord, New York, N. Y. [Filed Apr. 20, 1875.]



1. The combination of a dumping-wagon, A, with a discharge-spout, B, hinged thereto at *c c*, in such a manner that it may rest entirely on the top of the cart as set forth.

2. The vehicle discharge-spout B, consisting of one or more troughs or tubes, and of the pivoted blade *f*, substantially as herein shown and described.

3. The pivoted guard *g*, combined with the blade *f* and discharge-spout B of a dumping-wagon, substantially as specified.

164,126. BELL-PULLS. Stephen D. Arnold, New Britain, Conn., assignor to P. and F. Corbin, same place. [Filed Apr. 14, 1875.]

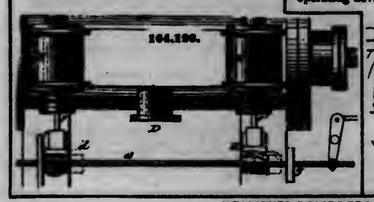
Brief.—The inner end of the lever may be cut off to adapt the device to doors of different thickness.



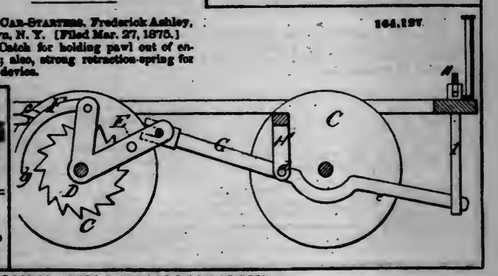
The lever bell-pull *f g*, pivoted to the plate *r*, and provided with two or more wards, *i i*, in combination with the bridle *e*, lever *d*, hammer *l*, and bell *a*, substantially as set forth.

164,127. CAR-STARTERS. Frederick Ashley, Brooklyn, N. Y. [Filed Mar. 27, 1875.]

Brief.—Catch for holding pawl out of engagement; also, strong retraction-spring for operating device.



164,128.



164,127.

1. In a horse-car starter, the combination of angular lever E, having its fulcrum in one of the car-axles, hinged pawl F, having a projection, *b*, the toothed wheel D, lever G, bi-furcated at its rear end, rod I and treadle H, all substantially as described, for the purposes set forth.

2. The combination, in a car-starter, of a reaction-spring, S, a propulsion-pawl, F, having a lug or arm, *c*, the necessary connecting mechanism, and a shelf, J, for holding the said pawl free from the toothed periphery of the rack-wheel, substantially as set forth.

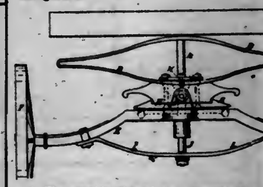
164,128. SPOUT-PITCHERS. S. William Babbitt, West Meriden, Conn. [Filed May 14, 1874.]



A supplemental spout consisting of the ring B, inclined passages D, and nozzle C, the whole adapted to be set in the mouth of a pitcher and held therein or removed therefrom, substantially as described.

164,129. RUNNING-GEARS. Henry Backer, Union Hill, N. J. [Filed Mar. 13, 1875.]

Brief.—Front axle peculiarly curved, braced, and guided.



1. The combination of the strengthening-bar I, with the bent axle E, and the ring-bolt J, substantially as and for the purpose set forth.

2. The combination of the arm *b'* and the loop or staple M, with the brace K, the axle E and the bolt J, substantially as and for the purpose set forth.

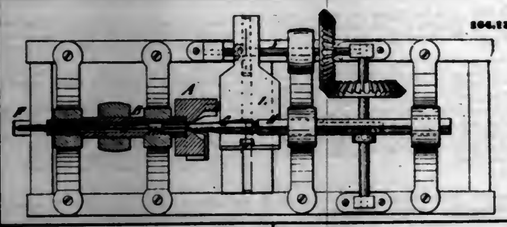
164,130. MACHINES FOR TURNING BOBBINS. Luther Bean and James M. Butters, Stratford Hollow, N. H. [Filed Oct. 24, 1874.]

Brief.—The blanks from which the articles are to be made are fed to the machine, and after being turned removed therefrom, by a reciprocating table.

1. The combination of the cutter-head A, hollow mandrel B, sliding centers E H, and the sliding table or carrier I, substantially as specified.

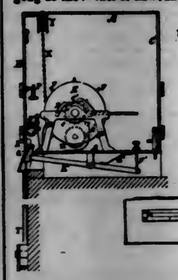
2. The combination of cam J, spring F, centers E H, sliding table I, tappet M, cam-shaft, tappet-shaft, and the gearing connecting the said shafts, all substantially as specified.

164,130.



164,131. FIRE-ESCAPES. F. P. Berney, San Quentin, Cal., assignor to L. B. Matthews, same place. [Filed Mar. 6, 1875.]

Brief.—A flexible ladder is wound on a reel which is incased in a housing on the roof or upper part of the house. The doors of the housing, when released by the rod and lever, are forced open by springs, and a ball, which is attached to a rope, which in turn is secured to the lower end of the ladder, drops to the ground, and the ladder is unwound by this means for use. A friction-brake secured to the axle of the drum is operated by the unwinding of the ladder. Projections on the drum strike a spring, which in turn strikes a gong as the ladder is unwound.



1. An automatic brake, H I J *g'*, worked by a screw attached to shaft of reel, as and for the purpose specified.

2. The combination of the chain or cord L, the rubber ball M, the pin N, and the springber O, with the ladder K and with the doors B of the box A, substantially as herein shown and described.

3. The combination of the inclined catch-bolt Q, the rod or chain S, and the lever U, with the box A and the catches E and doors B, substantially as herein shown and described.

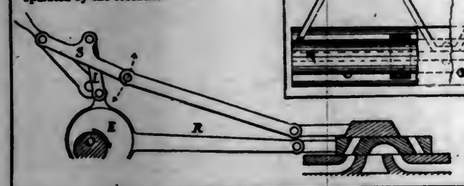
4. The combination of the box W and the pipe T with the lever U and the rod or chain S that operates the catch-bolt, substantially as herein shown and described.

5. The combination of the chain or rope X and the pulley Y with the ladder K and the box A, substantially as herein shown and described.

6. The combination of the lever E', the pivoted rod F', and the spring G' with the catch-bolt Q and the box A, substantially as herein shown and described.

164,132. CUT-OFF-VALVE GEARS. Hugo Bilgram, Philadelphia, Pa. [Filed May 22, 1875.]

Brief.—The quantity of steam admitted to the cylinder is regulated by the inclination of the rocker, which is adjusted by a lever, and operated by the eccentric.

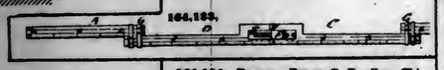


The combination of the rocker S, which is angularly adjustable by its fulcrum *f*, and is operated by the eccentric E through the eccentric-strap and the link L, with a rod, C, conveying motion to the cut-off valve P of an engine.

164,133. FOLDING AND SLIDING TEN-FOOT POLES. Stephen W. Blatchly, Dickson City, Pa. [Filed Jan. 30, 1875.]

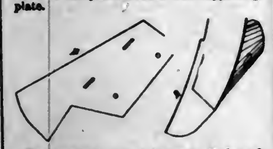
Brief.—A measuring device made in four sections, in order that it may be folded up into a compact form. The middle pieces are hinged together, and attached to the hinge is a sliding bar, so that when the device is opened this sliding bar is run across the hinge, thereby forming a rigid joint. The end pieces are attached to the middle pieces by loose bands, so that they can slide backward and forward. The whole device, when opened, measures ten feet.

As a new article of manufacture, a ten-foot pole made in four sections, the two middle ones hinged together and provided with slide F, the shouldered part C I having bar F, and the parts A D having bands G H, all constructed, notched, and arranged substantially as and for the purpose specified.



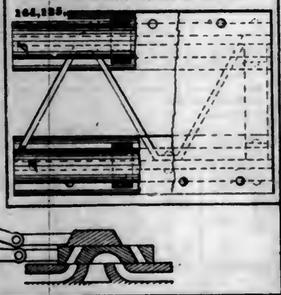
164,134. PLOWS. Byron C. Bradley, Chicago, Ill. [Filed Mar. 19, 1875.]

Brief.—Method of construction and attachment of the plow-standard and supporting-plate.



The standard A and the parts B, formed or rigidly secured together, and constructed as described, forming a foundation for, and in combination with, the mold-board C and land-side D, and points E, all as and for the purpose herein described.

164,135. COMPRESSION-MEMBERS OF BRIDGES. Alexander E. Brown, Cleveland, Ohio. [Filed May 18, 1875.]



1. The column or compression-member of a bridge, truss, or other structure, consisting of the combination, with a truss-work, A, of railway T rails B, firmly secured to the surface of the said truss-work at or near its outer edges, substantially as and for the purpose described.

2. The combination, with a plate or truss-work, A, of four railway T-rails secured firmly thereto, the said rails B located two upon one face and two upon the other face of the plate or truss, at or near its outer edges, substantially as and for the purpose described.

164,136. COMPRESSION-MEMBERS OF BRIDGES. Alexander E. Brown, Cleveland, Ohio. [Filed May 18, 1875.]

1. A compression-member of a bridge or other truss, consisting of two or more railway T-rails placed head to head and firmly bound together, substantially as and for the purpose described.

2. A compression-member of a bridge or other truss, consisting of railway T-rails placed head to head and firmly bound together, in combination with plates C, secured to the bottoms of the flanges, substantially as and for the purpose described.

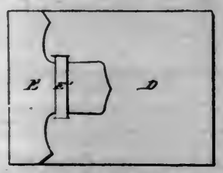


164,137. COMPOUND IRON COLUMNS FOR BRIDGES. Alexander E. Brown, Cleveland, Ohio. [Filed Feb. 16, 1875.]

1. A compression-member of a bridge-truss or other structure, consisting of a hollow column formed by arranging railway T-rails about a central open space and fastening them rigidly together, substantially as and for the purpose described.

2. The column or hollow compression-member, consisting of the combination, with three or more railway T-rails, A, of the central stay-brace D and suitable fastenings, whereby the rails are bound snugly together, substantially as and for the purpose described.

164,138. PICTURE-EXHIBITORS. J. Buechner, St. Paul, Minn. [Filed Apr. 24, 1875.]



1. As a new article of manufacture, a picture-case composed of an ordinary frame with hinged back part, having inclosing flaps and tongue for folding entirely around the same, or separately at the back for inclosing and exhibiting pictures, substantially as specified.

2. The folding bottom flap of the back part, provided with tongue locking-straps at both sides, for securing the flaps of the case at front or at the back, substantially as described and shown.

164,139. PEG-CUTTERS. Matthew Buhler, Lamoille, Ill. [Filed Apr. 24, 1875.]

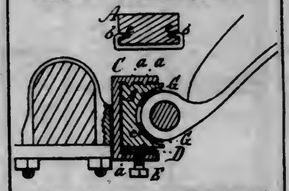
1. The peg-cutter A, having its lower surface wrought into cutting and rasping edges, and provided with end cutters A and aperture H, all substantially as and for the purpose set forth.

164,139.



2. The shank C, having mortises D E cut in from opposite sides, and united at the end of the shank to receive the stem B, as and for the purposes described.

164,140. TELL-COUPLINGS. C. D. Bundy, Lima, N. Y. [Filed Nov. 20, 1874.]

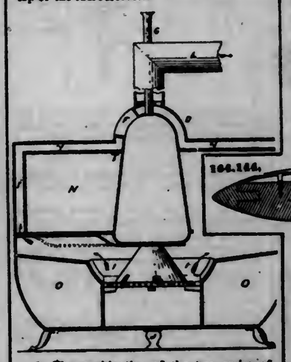


1. The metallic wear-plates G G, provided with the bent spars *b b*, in combination with the rubber packing A, having sockets *a a* for the reception of said spars, as and for the purpose specified.

2. The combination, with a rubber packing, A, provided with the self-attaching wear-plates G G, of a case, C, covering said packing at its top, bottom, and rear, and provided with points *a a* for holding in the rubber, the compression upon the packing being produced by a follower, D, and set-screw E, as shown and described.

164,141. MAGAZINE COOKING-STOVES. T. N. Caulkins, Owasco, N. Y. [Filed Apr. 16, 1874.]

Brief.—One series of ovens surrounds the ash-pit and the other the magazine. Cold air is introduced through a pipe which leads through the interior of the smoke-flue to the top of the fuel-reservoir.



1. The combination of the two series of ovens O and N, the main combustion-chamber between them, the flues *f* and *g*, and the dome D, substantially as described, for the purpose set forth.

2. The combination of the air-pipe G, the ebullition-pipe L, and the dome D, in the manner and for the purpose specified.

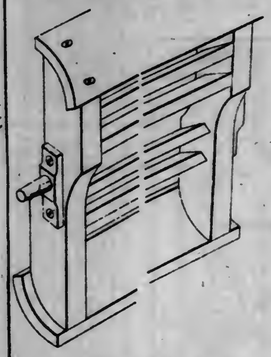
164,142. BALE-TIES. Edwin D. Chadick, Denison, Tex. [Filed May 22, 1875.]



A bale-tie consisting of the tubular T-shaped buckle A, in combination with a wire band, as described.

164,143. ROTARY CHURN-DASHERS. Wm. C. Chamberlain, Dubuque, Iowa. [Filed Mar. 22, 1875.]

Brief.—A churn-dasher so constructed that when revolved in one direction the stripe present breaking surfaces to the cream, and when revolved in a contrary direction they form scoops, in which the butter is gathered.



1. The combination, in a dasher, of the end pieces A and the permanent stripe B C D, constructed, arranged, and operating as described.

2. The dasher, having the stripe B C and the stripe B' C' arranged permanently upon its end pieces in the relation to one another as shown, for the purpose of gathering butter after the operation of churning, substantially as set forth.

3. The dasher, having the stripe B C D and the stripe B' C' D' arranged upon its end pieces in the relation to one another as shown, for the purpose of both agitating and gathering butter, substantially as described.

4. The dasher, with stripe C D diverging from one another toward the agitating side of the dasher for the purpose of facilitating the escape of small lumps of butter, substantially as described.

164,144. SHUTTLES FOR LOOMS. Thomas Oberthaim, Lewiston, Me. [Filed Apr. 24, 1875.]

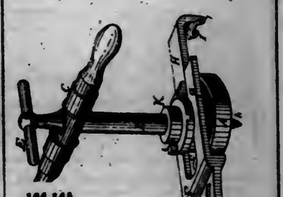


The combination, with a shuttle having a spindle, B, delivery-eye *b*, and friction-pad *c*, of the threading-guide *c*, constructed as shown, all arranged and operating together substantially as specified.

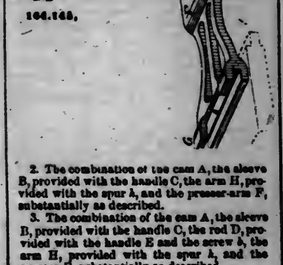
164,145. FLOOR-CLAMPS. Wm. D. Clark, Springfield, Ill. [Filed Apr. 8, 1875.]

Brief.—Tongued and grooved flooring-boards can be placed in position, and securely held while being nailed, by means of a cam attached to the lower end of a sleeve squared in its upper end to hold a transverse handle, by turning which the cam is pressed against a grooved and slotted arm, which forces the board into position. The clamp is held down to the floor or beam by a rod passing through the sleeve, and provided at its lower end with a screw-point, in connection with a horizontal holding-arm, secured on its inner end to the main sleeve, and provided upon its outer and rear part with one or more spurs.

1. The combination of the cam A, the sleeve B, provided with the handle C, the rod D, provided with the handle E and the screw *b*, and the presser-arm F, substantially as described.



164,145.



2. The combination of the cam A, the sleeve B, provided with the handle C, the arm H, provided with the spur *h*, and the presser-arm F, substantially as described.

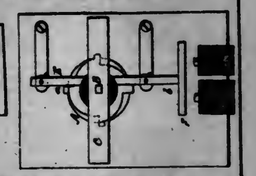
3. The combination of the cam A, the sleeve B, provided with the handle C, the rod D, provided with the handle E and the screw *b*, the arm H, provided with the spur *h*, and the presser F, substantially as described.

4. The combination of the cam A, provided with the slot *a* in its upper surface, the sleeve B, provided with a handle, the rod D, provided with a handle and a screw, *b*, and the presser-arm F, provided with the pin *f* on its under side, adapted to draw back the presser-arm when the cam is turned, substantially as described and shown.

5. The combination of the cam A, the sleeve B, provided with the handle C, the rod D, provided with the handle E and screw *b*, the ring E, provided with set-screw *i*, the arm H, provided with the spur *h*, and the forked presser-arm F, made to inclose a part of the arm H, so that said presser-arm must move in a straight line, substantially as described.

164,146. AUTOMATICALLY-OPERATED GAS-COCKS. Edward Coe, New Haven, Conn. [Filed Nov. 14, 1874.]

Brief.—Closing the circuit withdraws the lower projection upon the upright armature-bar from engagement with the projecting tooth, and draws down the upper projection upon the lower surface of the cam, which holds the cock until the circuit is broken. Breaking the circuit allows the cock to revolve, and the upper projection, riding upon the cam, raises the lower projection into the path of the next projecting tooth.



The combination of the shaft B, spring D, toothed wheel A, cam P, and reciprocating bar E, provided with an arm, *c*, above, and an arm, *b*, below, the wheel and cam, the said arms arranged relatively to each other, and to the teeth of the wheel and cam, substantially as described.

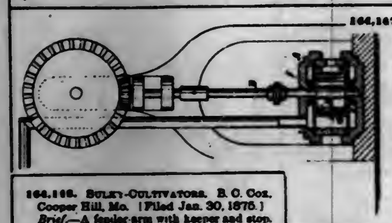
164,147. PUMPS. William H. Conver, Agnew's Mills, Pa. [Filed Apr. 24, 1875.]

Brief.—Two gears intermeshing and operated in the usual manner, and contained in a rectangular case, are packed upon their sides by leather diaphragms and springs, and upon the pressure side of their faces likewise.

1. The combination of packing-diaphragm E and springs F with the toothed wheels B and a cam, A, substantially as specified.

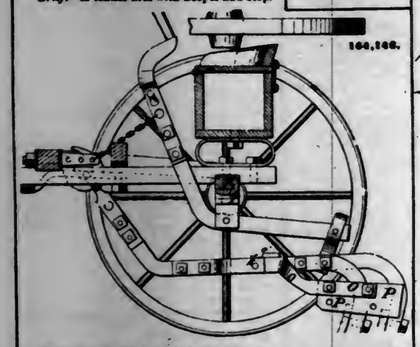
2. The combination of face-packings G and springs H with the toothed wheels B and packings E, substantially as specified.

164,147.



164,148. SULKY-CULTIVATORS. R. C. COX, Cooper Hill, Mo. [Filed Jan. 30, 1875.]
Brief.—A feeler-arm with keeper and stop.

164,148.



The half-keeper *b'*, pivoted toe-bars O *o'*, and plates P, combined with plow-beams, substantially as and for the purpose set forth.

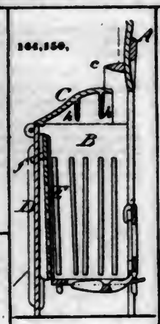
164,149. HYDRANTS. Dewitt C. Cregar, Chicago, Ill. [Filed Feb. 23, 1874.]
Brief.—The waste device is cast with the valve-seat, and has its opening so arranged that all the water above the valve will be drawn off. The top is provided with guards for protecting the ends of the valve-stems and socket.



1. The combination, with the main seat E, having the chamber F, channel N, and lug *d* cast therewith, of the stem T and spring S, substantially as and for the purpose described.
2. The combination of the socket X, rotating stem-screw Y, union U, guide-bolt *z*, and main stem J, substantially as and for the purpose herein stated.
3. The top Y, provided with the guards C C C, for the purpose of protecting the ends of the valve-stems S and socket X, in the manner set forth.

164,150. FIRE-PLACE GRATES. George W. Cunningham, Franklin, Pa. [Filed May 15, 1875.]
Brief.—The inclined ends support the back plate, and allow expansion.

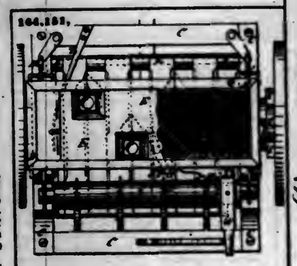
164,150.



1. The combination of the perforated false back E, inclined studs *f*, and perforated back D, substantially as specified.
2. The arched crown O, having ribs *h*, in combination with the front plate A, provided with the air-box *i*, substantially as set forth.
3. The back plate D, provided with ribs, in combination with the jambs B and rod G, substantially as and for the purpose set forth.

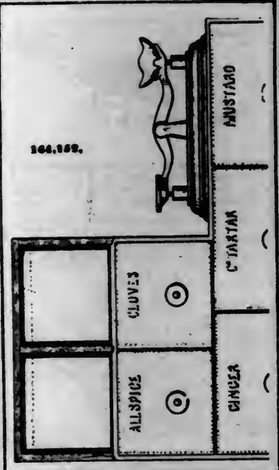
164,151. GRAIN-DRILLS. James C. Daman, Elk Point, Dak. [Filed Jan. 26, 1875.]
Brief.—The lever that operates the roller by which the drill-teeth are raised is cut away at its front end to fit into a notched board secured to the back of the vibrating hopper, for throwing the same out of contact with cams on the inner surface of one of the bearing-wheels, and is held by a spring-catch.

164,151.



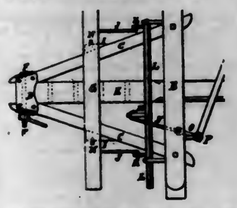
The combination of the lever W with roller V, beams J, reciprocating seed-box D, having spring Q, catch-block X, and spring-catch Y, applied to the frame G, all constructed and arranged as shown and described, to operate as specified.

164,152.



The spice-cabinet constructed substantially as described, with sheet-metal drawers, a sheet-metal covering to the under side of the horizontal partitions, and with a recess forming a scale-stand, as specified.

164,153. WAGON-BRAKES. D. L. Dedbeugh, Bedford, Pa. [Filed Mar. 20, 1875.]



The combination of the hook-bolts H and triangular blocks I with the brake-bar G and the bands C, substantially as set forth.

164,154. COMBAGE. Thomas H. Dunham, Boston, Mass. [Filed May 15, 1875.]

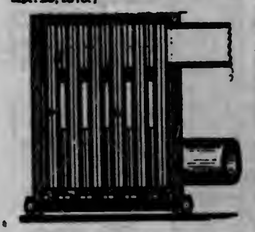
The improved cordage herein described, made by combining metal wires, threads, or ribbons with fibrous strands, the two being laid together as in rope-making, and the interstices filled with tar or tar compound, whereby both the metal and fibrous strands will be covered by the tar compound, as described.

164,155. WEED-COVERING ATTACHMENTS. Joseph W. Dysard, Michigan City, Ind. [Filed May 1, 1875.]



The wheel D, the adjustable curved and bent bar E, the hinged plate F, and the clamp G H I J, in combination with each other, to adapt the device to be attached to the beam of a plow, substantially as herein shown and described.

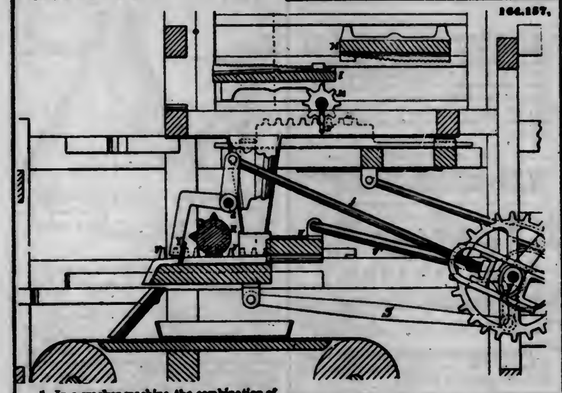
164,156. RADIATORS FOR STEAM-HEATERS. Charles R. Ellis, Brooklyn, N. Y. [Filed Apr. 29, 1875.]



The combination, in a cast-metal radiator, of tablets composed of pairs of plates with flanges around their edges, blocks and collars setting together, and clamping bars and bolts to hold the tablets, substantially as specified.

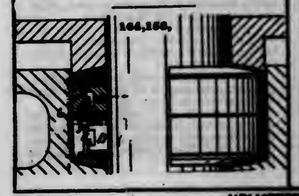
164,157. CRACKER-MACHINES. Adam Exton and John Exton, Trenton, N. J. [Filed Nov. 30, 1874.]
Brief.—The crackers are cut from a long roll of dough laid between oppositely-reciprocating grooved plates, the edges of the grooves being serrated. Thence they drop into ways or channels leading to the tubes, which carry them to the "docker." They are swept from the ways into said tube by fingers attached to a rod having rotary reciprocating motion. The tubes deliver them upon a reciprocating table, where they are pushed under the "docker-roll" by a vibrating slide. A rising and falling sweep drops behind the finished crackers as they come from under the roll, and pushes them into a hinged and grooved chute, which delivers them in pans placed upon an endless belt.

164,157.



1. In a cracker-machine, the combination of the grooved reciprocating table Q, rods S, rotary crank-shaft T, and the vibrating sweep Y, elbow-levers *c*, fixed shaft *d*, rod *f*, and cam *g*, all constructed and arranged as shown and described, to operate as specified.
2. The combination of the tubes P, (when arranged as described,) the pusher U, board or table Q, sweep Y, and roller R, in a cracker or biscuit machine, for the purposes described.

164,158.



164,159. SCHOOL-DESKS. Henry R. Fry, Marion, Ind. [Filed Apr. 10, 1875.]
Brief.—The seatless forming the end pieces are moved in such a manner that when their edges are brought together the grain of the wood, at their upper ends, runs transversely, and at their lower ends obliquely. The arrangement of the seat-lever and metallic plates to which the lever is pivoted in such that, when the seat is down, the inner end of the lever has a firm bearing against the standard.

1. The end support of a desk constructed of two independent pieces or sections, each moved into the desired shape, and connected edge to edge, substantially as described.
2. The metallic castings or plates applied to the lower and outer sides of the standards, in combination with the lever carrying the seat, and pivoted between said plates, and having the rearwardly-extending foot, substantially as described.

164,160. METALLIC PACKINGS FOR PISTON-RODS OF STEAM-ENGINES, &c. J. A. Fulton, Cambridge, Mass. [Filed Feb. 26, 1875.]

The combination of the sectional packing-ring D, grooved on its external periphery for the reception of the spring *a*, with the external packing-ring E, grooved on its internal periphery in such manner as to set over the periphery of the internal ring D, as and for the purpose described.

164,160. BROADCAST SEED-SOWERS. Robt. Furnas, Decatur Township, Marion County, Ind. [Filed Mar. 11, 1875.]

The hollow revolving head M, constructed with gear L near its rear side, and forming, with the flange Y at the front side, bearings for the head to revolve upon, in combination with the hollow shaft T, provided with an opening in the bottom, to allow the seed to enter the revolving head, and the cap N, all constructed and arranged substantially as specified.

164,159.

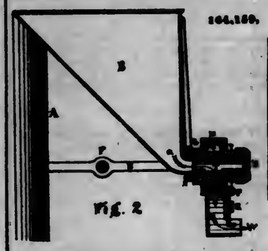


Fig. 2

164,161.



164,161. GRATES. Chas. C. Gates, Albany, N. Y., assignor to J. L. Mott Iron-Works, New York city. [Filed May 18, 1875.]
Brief.—The ring, being inclined outwardly and grooved, readily discharges refuse.



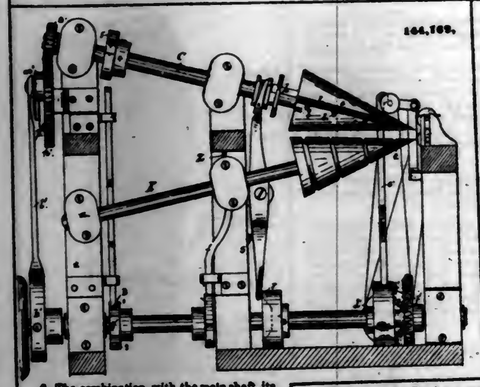
1. The grate B, in combination with its outer vibrating ring, the grate and the ring being in the same horizontal plane, and the ring being corrugated on its upper surface with grooves inclining downward radially from the inner to the outer periphery, and having a center-pin, on which it vibrates, substantially as specified.
2. The horizontally-oscillating ring A, having the center bearing-hook I for the pivot J of the grate, the hook being contrived to support the grate flush with the upper surface of the ring, and arranged forward of the grate's center on the depressing side of the grate, to lessen the dip of the grate in the ash-pan, substantially as specified.

164,162. PAPER-BAG MACHINES. Almon B. Glover and D. M. Church, Derby, Conn. [Filed Mar. 19, 1875.]
Brief.—Takes a nearly a, ure piece of paper and winds it under pressure around the former, which is caused to rotate a little more than one revolution, and then reverse a distance equal to the lapped and pasted seam. Removes the cornucopia from the cone by feed-rolls, one within and the other without the cone, and compresses it between calender-rolls.

1. The forming-cone, made hollow, and provided with the internal automatically-operated nipper-shaft *a*, set at an inclination to the cone-shaft and parallel with the peripheral surface of the cone, the cone-shaft terminating within the cone, substantially as and for the purpose set forth.
2. In combination with the hollow cone, and with the nipper-shaft within the same, set at an incline to its axis, the slide *p*, automatically operating to actuate the nippers, substantially as shown and described.
3. The gearless shaft E, on which is the lower cone, having peripheral groove, in combination with the pivoted bearing *n*, cam *o*, lifting-rod *m*, shifting-block *n*, and reacting-spring *r*, as and for the purposes set forth.
4. In combination with the upper hollow forming-cone, the discharging-rolls *d* D, the one journaled in the cone near its tip, and the other arranged to be automatically and intermittently spaced to engage and discharge with it, and both serving to loosen the cornucopia from its cone, and then to pull it endwise therefrom.
5. In combination with the upper cone or former mechanism, substantially as, and operating as described, to rotate the former beyond a full revolution, and to reverse the movement to the point of such full revolution, and bring the clips into position to grasp the paper for another lap.

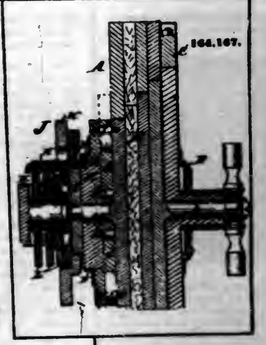
HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

164,169.

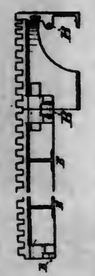


6. The combination, with the main shaft, its eccentric and eccentric rod, and with the shaft C and its gear c', of the gear n', toothed plate or ratchet and pawl, the gear n' at times being the driver of c', and at other times being or turned back by c', while the main shaft continues its revolution in one direction only.

164,167.

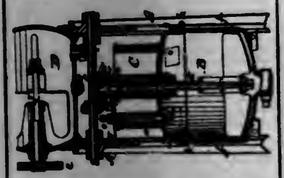


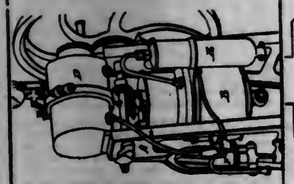
164,168.



164,169. CARBONIC-ACID-GAS GENERATORS. Charles C. Glover, New York, N. Y. [Filed Apr. 19, 1875.]

Brief.—A gas-generator which has the pump between the generator and the receiver. The pump, causing a partial vacuum, causes the gas to enter the washer, while at the same time the pump, by its action, forces the purified gas and liquid to be aerated into the receiver.





1. In an apparatus for generating and charging carbonic-acid gas, the pump F, interposed between the generator B and the receiver D, to act by suction on the generator, and by force on the receiver, substantially as specified.

2. The combination of the valve l with the actuating-lever J, and with the cam p on the wheel P', substantially as specified.

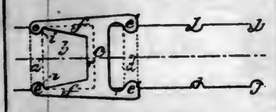
3. The adjustable sleeve r, carrying the cam p', combined with, and applied to, the wheel P', which carries the cam p, all arranged to permit the lengthening and shortening of the cam p, substantially as specified.

4. The combination of the generator B and perforated tube K with the carbonic-acid vessel C and the valve l, all arranged to prevent the discharge of acid into the generator in case of undue pressure within the latter, substantially as described.

5. The silver-shell M, supported by a support, P', at its upper end on the hinged bushing t, which rests on the tube-extension f, so that the cold shell is suspended into the generator without having a step or bearing therein, substantially as set forth.

6. The generator B, pipe e, washer E, pipe f, pump F, and receiver D, all combined and arranged, with respect to one another, substantially as herein shown and described.

164,165. BALE-TIES. J. M. Goldsmith, Boston, Mass. [Filed May 10, 1875.]



1. In a bale-tie, the combination, with a binder, B, having notches t in one end and spaced notches f in the other, of the plate A, having slots a b, with retaining-lugs s s' over bars d and a recess, r, under the body of the plate, substantially as specified.

2. The plate A having slots a b, lugs s s', and recess r, adapted for use, substantially as specified.

164,166. BALE-TAGS. J. M. Goldsmith, Boston, Mass. [Filed Mar. 6, 1875.]



The bale-tag consisting of the oblong plate A, having slots b and tongues a, adapted for use substantially as specified.

164,166. FOOD FOR ANIMALS. G. Gordon, Boston, Mass. [Filed Apr. 17, 1875.]

The composition for food for animals, consisting of the residuum of brewers' malt and the residuum of palm-nuts, substantially as described.

164,167. PERMUTATION-LOCKS FOR SAFE-DOORS. Henry Gross, Cincinnati, Ohio. [Filed Nov. 6, 1874.]

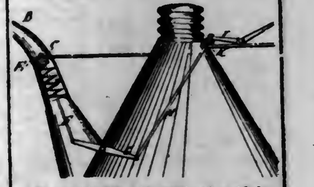
1. The door B, moving in revolutions or parts of revolutions, to operate the lock and bolt-work of the safe, substantially in the manner and for the purpose specified.

2. The combination of the rotating door B, bolt-work G F E, and crank-wheel H, locking M, drive-wheel I, and tumblers L of a stationary lock, J, constructed, connected, and operating substantially as and for the purpose specified.

164,168. IRON CURBS FOR STREETS. Richd. Harrington, Shenandoah, Pa. [Filed Dec. 3, 1874.]

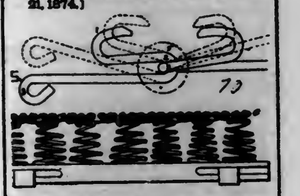
A cast-iron curbing constructed in single sections and with parallel sides, with the laterally-projecting perforated flanges B at each end for the passage of a bolt, a series of laterally-projecting perforated flanges, E, at the base of the sections for securing the same to its foundation, and a horizontal rib, F, near the upper edge of the sections for supporting the pavement, all as herein shown and described.

164,169. OIL-CANS. G. K. Haswell, New York, N. Y., assignor to himself and Chas. H. Haswell, Jr., same place. [Filed May 8, 1875.]



The combination, with spout and vent-hole, of spring-valve C D, rods F H, levers G I, and pad K, all arranged as shown and described, for the purpose specified.

164,170. SPRING BED-BOTTOMS. Warren D. Hatch, Peterborough, N. H. [Filed Nov. 21, 1874.]



1. The combination, with spring-supporting pieces, springs, and slats, of hooked or hinged jaws c, attached to the springs and holding the slats, substantially as described.

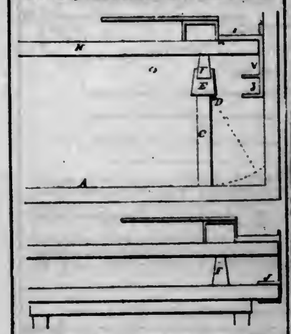
2. The combination, with the springs and slats, of the hooked or hinged jaws c', grasping the slats and connecting the springs, substantially as described.

3. The slat-holding jaws, hooked or hinged together, and adapted to receive and retain the slats, substantially as set forth.

4. The combination, with the series of springs, of metallic slat-holders connected on the springs, and metallic slat-holders connecting the adjacent springs, substantially as described.

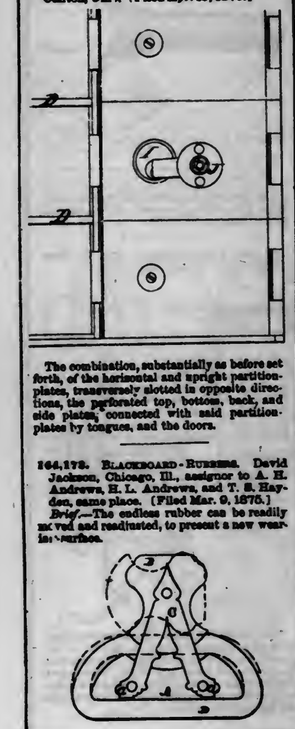
164,171. IRONING-TABLES. Zebina M. Hibbard, Freeport, assignor of one-half his right to S. R. Hibbard, Chicago, Ill. [Filed Apr. 26, 1875.]

Brief.—A metal plate that may be attached to a wall, in connection with an ironing-board and a detachable leg, so that the plate and board may be connected with a common table.



The plate V, provided with inwardly-projecting jaws or clamp J, nib B, and attaching-plate I, in combination with the hinged removable standard C and dovetail parts E F, attached to a board, H, as and for the purpose set forth.

164,172. MULTIPLE SAFES. Julius C. Hintz, Canton, Ohio. [Filed Apr. 19, 1875.]



The combination, substantially as before set forth, of the horizontal and upright partition-plates, transversely slotted in opposite directions, the perforated top, bottom, back, and side plates, connected with said partition-plates by tongues, and the doors.

164,173. BLACKBOARD-RUBBERS. David Jackson, Chicago, Ill., assignor to A. H. Andrews, H. L. Andrews, and T. S. Hayden, same place. (Filed Mar. 9, 1875.)

Brief.—The endless rubber can be readily moved and readjusted, to present a new wearing surface.

A black board-rubber, consisting of the parts A, B, C, and D, constructed and arranged to operate substantially as and for the purposes specified.

164,174. BOG-BOOTS FOR ANIMALS. W. Jacobs, Charleston, S. C. [Filed Mar. 29, 1875.]

A bog-boot for animals, whereof the upper is composed of two side pieces, A, front piece B, and heel-stiffening C, and provided with the fastening-straps D and loops E, substantially as specified.

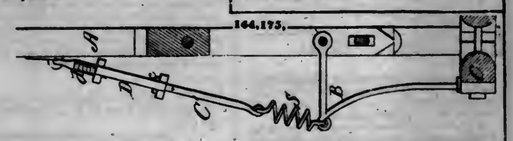
164,174.



164,175. TONGUE-SUPPORTS. Jas. Jarrell, Thorntown, Ind. [Filed Apr. 24, 1875.]

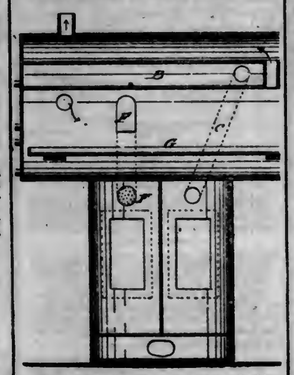
In a tongue-support, the angular support B, spring S, link C, and turn-buckle D, in combination with a vibratory tongue, A, substantially as specified.

164,175.



164,176. FEED-WATER HEATERS AND FILTERS. G. F. Jasper, Freeburg, Ill. [Filed Apr. 24, 1875.]

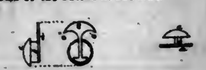
Brief.—The water is heated in the box by the exhaust steam, and passes down through one filter and up through the other into a pan, in which the sediment is deposited.



The combination of the water-box, double filter-receptacle, connecting-pipe C, return pipe F, and sediment-pan G, substantially as and for the purpose specified.

164,177. STUD-FASTENINGS. John C. W. Jefferys, Tottenham Court Road, England. [Filed Jan. 16, 1875.]

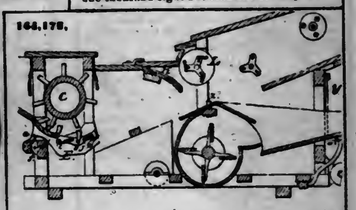
Brief.—The helix is attached to a flat shank, and falls outside of the periphery of the front disk of the button at one side.



A stud formed of back a, having horns a' a^2, flat shank b, and head c, the said back a being extended beyond the upper disk or head c at one side, all being constructed substantially as shown and described.

The above specification signed by me this 6th day of November, in the year of our Lord one thousand eight hundred and seventy-four

164,178.



164,178. THRASHING-MACHINES. Arthur Johnston, Lockport, N. Y. [Filed July 29, 1874.]

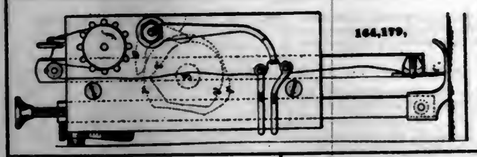
Brief.—Adjustable concave of a fixed and a swinging section, and provided with adjustably inclined and depressed teeth. Expansible real-beater over carrier. Journal-bearings of stacker-arms formed on brackets secured to frame of machine, to relieve roller-bearings of stacker-apron from their weight.

164,179. SEWING-MACHINE TAKE-UPS. J. T. Jones, Ilion, N. Y. [Filed Apr. 24, 1875.]

Brief.—The take-up receives its backward movement from a spring, as usual, but while the stitch is being drawn taut it receives a positive movement.

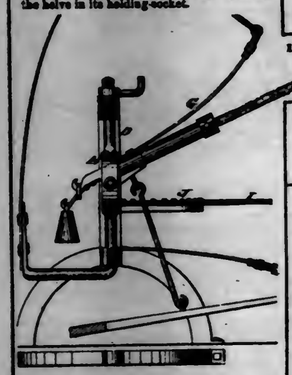
The combination, with the thread-controlling lever m, spring-arm o, and cam r, of a second cam, arranged as described, whereby the thread-controller is caused to act positively and independently of the spring during a portion of the movement, for the purposes and substantially as specified.

164,179.



164,180. BLACKSMITHS' FORGING-HAMMERS. Andw. J. Judson, Hillville, assignor of three-fourths his right to Jacob Truby, Catskill, Pa. [Filed Apr. 2, 1875.]

Brief.—A lever attached to the yoke-piece in which the hammer-helve is pivoted is used to turn it around, the said lever afterward dropping into one of the notches of a bar, and holding said yoke-piece in any desired position. The range of the hammer can be lengthened or shortened at pleasure by adjusting the helve in its holding-socket.



1. The hammer-helve and its lifting-springs, arranged to swing laterally in the pivoted support D, in combination with the lever I and holding-bar J, substantially as specified.

2. The foot-power hammer A, having an extensible helve, in combination with a laterally-swinging support, D, for the helve, substantially as specified.

164,181. RABBED-WIRE FENCES. Charles Kennedy, Hinckley, Ill. [Filed Jan. 30, 1875.]



The fence-wire, in combination with a barb having body C, both the fence-wire and the body being bent together, and having bends of corresponding forms, whereby the barb is prevented from moving longitudinally or turning, substantially as and for the purpose specified.

164,182. COOPER-POTS. R. P. Kennedy, Oil City, Pa. [Filed Jan. 14, 1875.]



1. The double-walled inverted cup D, reticulated cup b, and their connecting-conduit c, combined and arranged substantially as specified.

2. The combination of a condensing-cup, F, with a filtering-cup, b, tube c, passing through air-chamber d, ebullition-chamber E, and pipe e, substantially as specified.

164,183. CAUTERY-ELECTRODES. Jerome Kidder, New York, N. Y. [Filed Mar. 29, 1875.]

164,184.



1. In galvano-cautery instruments for excising tumors, an insulating-handle, extending back of the fixed supporting-ring to such length that a firm hold for the hand is produced, substantially as specified.

2. In galvano-cautery instruments, the insulating-handle having the loop-drawing sliding-ring at the upper section and the fixed holding-ring at the lower section, arranged in connection with the circuit opening and closing spring-button, near the fixed ring, whereby the excising action of the instrument is instantly obtained by the joint employment of the thumb and fingers, substantially in the manner and for the purpose set forth.

164,184. VESICULAR ELECTRODES. Jerome Kidder, New York, N. Y. [Filed Mar. 29, 1875.]



A double vesicular electrode provided with an insulating head in which the metallic conductors are embedded flush with the surface, substantially as and for the purpose set forth.

164,185. RESERVOIR-ELECTRODES. Jerome Kidder, New York, N. Y. [Filed Mar. 29, 1875.]



An electrode, for common exterior application, provided with a reservoir for hot water, substantially as and for the purpose set forth.

164,186. MACHINES FOR HANDLING STRAIGHT-CUT TOBACCO. F. S. Kinney, New York, N. Y. [Filed Dec. 19, 1874.]

Brief.—The tobacco, as it is cut, falls upon an endless belt, from which it is taken by a pendent fork, and the fiber is kept straight and laid between pins upon a board by reversing the latter over the fork.

1. The fork I J, in combination with the grooved roller G, the endless chains F, and the roller B, connected with a tobacco-cutting machine, substantially as herein shown and described.

2. The reversing-board K, provided with pins L, in combination with the fork I J, for removing the tobacco from said fork without disturbing the fibers, substantially as herein shown and described.

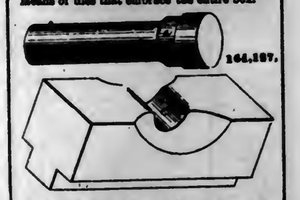
164,186.



164,187. MANUFACTURE OF CARRIAGE-AXLE BOXES. Wilson W. Knowles, Mount Carmel, Conn., assignor of one-half his right to J. A. Grannis, same place. [Filed May 19, 1875.]

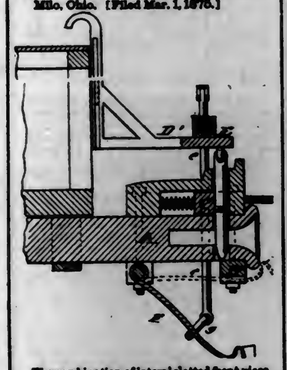
Brief.—The mandrel, including its enlarged shoulder, is passed into the tube, the shoulder closely fitting the interior of the tube at its end, and the latter is then drawn down upon the shank portion of the mandrel by the dies, the mandrel and tube being rotated during the operation. The swaged tube is then placed on another similar mandrel, and finished by means of dies that embrace the entire box.

164,187.



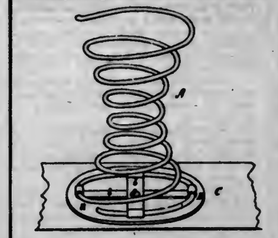
The method described for making axle-boxes from tubing by means of the dies, and as hereinbefore described.

164,188. CAR-COUPLINGS. Geo. W. Kyle Milo, Ohio. [Filed Mar. 1, 1875.]



The combination of lateral slotted front piece B of pin-suspending frame D', pivoted levers f, spring-acted connecting-rods e, bottom rod g, and pivoted upset-arm F, for raising and dropping the upset with the raising and dropping of the coupling-pin, substantially as and for the purpose set forth.

164,189. FURNITURE-SPRINGS. Harmon W. Ladd, Chelsea, Mass., assignor to Fannie R. Ladd, same place. [Filed Dec. 30, 1874.]



1. The rivet c, the cap or disk B, and the connecting-straps b, arranged and combined together, and with the spring A and the canvas or cloth cover C, substantially in the manner and to operate as specified.

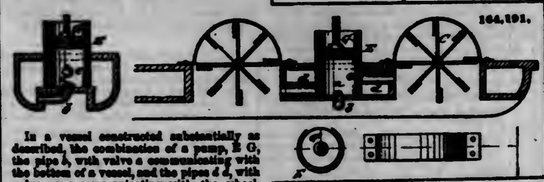
2. In combination with the spring A and the canvas or cloth cover C, the flexible cap B, arranged between the said cloth cover and the bone-coil of the spring, all substantially as specified.

164,190. COVERS, GRIDDLES, &c., OF STOVE-TOPS. J. Warren Lamb, Whitestone, N. Y. [Filed May 26, 1875.]



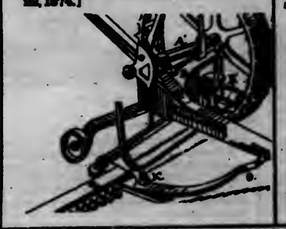
A cover, griddle, or other movable part of the top of a stove or range made of malleable iron, substantially as described.

164,191. MEANS FOR VENTILATING AND DISCHARGING BILGE-WATER FROM VESSELS. Daniel Leahy, Riverside, Pa. [Filed Apr. 10, 1875.]



In a vessel constructed substantially as described, the combination of a pump, E G, the pipe b, with valve a communicating with the bottom of a vessel, and the pipes d f, with valves e e communicating with the wheelhouses thereof, as and for the purposes herein set forth.

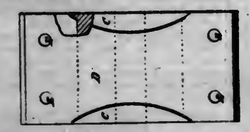
164,192. MOWING-MACHINES. Alton L. Little, Sheboygan Falls, Wis. [Filed June 22, 1874.]



The main frame B, to which the tongue C is attached, constructed as described, with the frame U, having rod V, on which the stable-lever vibrates, in combination with the shuttle G and wheel A, having pins and rollers E, substantially as described.

164,193. BOOM-HARDWARE. Charles Littlefield, Vinalhaven, (Carver's Harbor P. O.), Me. [Filed Apr. 17, 1875.]

Brief.—The side plates are formed with curved recesses, fitting within the flanges formed upon the main hammer-head. The cutters are held firmly together by bolts passing through the side plate.



The described combination of main piece A, having flanges C, plates D D, having holes F, and the bolts F, all constructed and arranged substantially as and for the purpose specified.

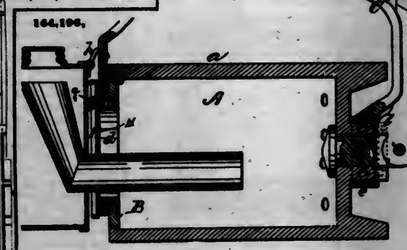
164,194. WINDOWS. Michael F. Lyons, New York, N. Y. [Filed May 14, 1875.]

Brief.—Iron bars or gratings are secured in the frame, and enter cavities in the mullions of the sash, so that when the windows are closed the iron bars or gratings are invisible. For use in lunatic asylums.

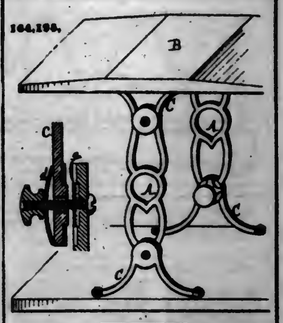
164,194.



164,195.



164,195.



164,196. FLUTING AND POLISHING IRONS. William I. McCausland, Louisville, Ky. [Filed Apr. 17, 1875.]

Brief.—The smoothing and the fluting surfaces are cast in one piece, and the handle is adjustable, so that either of the four surfaces may be used.

1. In a fluting and smoothing iron, the combination of a hollow casting, A, having smoothing-surfaces a and fluting-surfaces b, and a vertically-vibrating operating-handle, C C' d, adapted to be locked into position vertical to either of the surfaces, substantially as specified.

2. The hollow casting A, having tubular notched trunnion c, vertically-vibrating handle C C' d, with spring-latch G, in combination with a locking-rod, F, having a leg, l, and slot, f, and pivoted in the end of a rotating bolt, E, substantially as specified.

3. The hollow casting A, having a notched trunnion, c, rotating bolt E, and a locking-rod, F, in combination with a rotating handle, C C' d, substantially as specified.

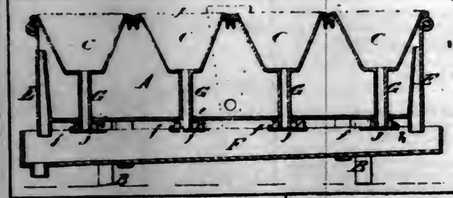
4. The arm C, having tubular cylindrical end d, with buttons g, in combination with lamp D', plate H, having openings e, and a wick-tube reaching into the interior of the ironing-plate, substantially as specified.

164,197. MILK-COOLERS. F. W. Meeks, Bristol, N. Y. [Filed Mar. 20, 1875.]

Brief.—Valves for covering the outlet-pipes are pivoted on flanges of the nut, which compresses the rubber packing-ring. The covers of wire-cloth, with edges clamped in metal, clasp the upper edges of the milk-pans.

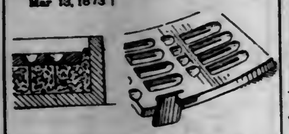
1. In a milk pan and cooler, the combination of the tank A, pans C, draw-off pipes G, washer f, cover-ring h, and gate j with the inclined trough F, supported upon legs B, substantially as described.

2. Removable wire-gauze covers J, having flanges n, which are disconnected at their ends, and pressed on their edges, as described.



164,196.

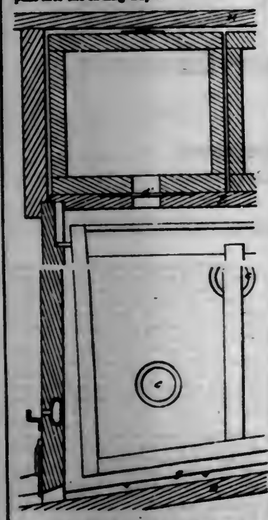
164,196. METHODS OF CASTING. Lyman Morgan, Port Washington, Wis. [Filed Mar 13, 1873.]



The method of molding for casting staves for cant-machine cases by striking the cores through the pattern, and then lifting the pattern off of the cores, leaving them sticking in the sand, substantially as described.

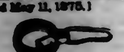
164,199. MOTH-TRAPS. Jacob Neal, Moulton, Iowa. [Filed Apr. 24, 1875.]

Brief.—Above the bee-entrances are placed checks, which lead to perforations through the wall of the hive, through which the moths pass into the sliding trap s.



The combination, with the perforated hive-wall, of the concave miller-slides in rear of said perforations, and the check-ledges below the moth perforations and above the bee-entrances, substantially as specified.

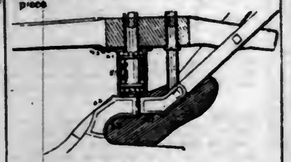
164,200. FASTENINGS FOR WEARING APPAREL. Robert C. Nichols, Boston, Mass. [Filed May 11, 1875.]



As a new article of manufacture, the fastening shown and described, consisting of the beaded part combined with the flat ring pierced with thread-holes, as and for the purpose specified.

164,201. PLOWS. John B. Norris, Marcus M. Bowers, and Wm. C Dimmock, Richmond, Va. [Filed Aug. 4, 1874.]

Brief.—Cylindrical weed feeder on plow standard, friction balls; land side grooved on the under side; mold board formed with projection to fit around the cylinder; notches in lower end of cylinder, detachable breast-piece.



1. The neck or stem of a plow, with movable and fixed annular collars or rings forming ledges around the neck or stem, each of said ledges being provided with a suitable number of anti-friction balls combined with a revolving cylinder or collar suspended over and resting upon the top series or group of balls, as shown in Fig. 8, substantially as and for the purpose described.

2. The revolving cylinder or collar of a plow formed with one or more nicks or notches, *l*/ *l*/, as shown in Figs. 5, 11, for the purpose substantially as set forth and described.

3. A plow-beam or pedestal bracket formed with an inclined or an oval breast, a^1, and an elliptical or elongated arched arm, b^1 b^1, formed with a mortise through the breast part thereof, and provided with a detachable breast-piece, d^1, substantially as shown and described, for the purpose set forth.

4. The mold board formed with the spur-like projection or scraper a^7, in combination with the revolving cylinder k^1, Figs. 1, 2, 12, substantially as shown and described.

5. A land-side strip and share of a plow, fluted or grooved on the under side, as shown at S, Figs. 1, 4, 8, 9, substantially as set forth and described.

6. The feeder-pin a^1, the feeder-plate a^1, and the lateral shield-plates a^2, combined with the plow-beam, and the revolving cylinder or collar k^1, Figs. 1, 8, as shown and for the purposes substantially as set forth and described.

7. An equalizing plate or yoke constructed with inclined slots, in combination with the projecting arms of a torsional spring, substantially as described, whereby the arms move upwardly as the spring is pressed downwardly.

8. The combination of a double slotted equalizing bar or connecting yoke with the outwardly projecting arms of a double torsional spring.

9. An equalizing plate or yoke constructed with an opening to admit of the ready attachment and detachment of the arms of a torsional spring.

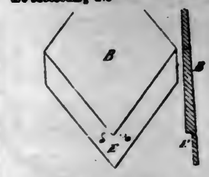
10. In combination with the arms of a torsional spring and their supporting and connecting plate, a washer, arranged on said arms, for limiting and regulating the motion of the arms in their bearings.

11. A torsional spring composed of two parallel bars connected at one end by a loop turned upward or downward, for resisting and preventing separation or breaking.

12. The combination, in a torsional spring, of two separate parallel bars or rods turned in a direction opposite that of the arms, so that they will press against each other as the two arms of the spring are turned outward.

164,202. ROOFING-TILES. La F. Parker, Davenport, Iowa. [Filed Mar. 11, 1875.]

Brief.—A rhomboidal shaped tile with overlap on two lower edges; the body gradually increasing in thickness from upper to lower angle, and provided with a nail-hole at each side angle, the heads of the nails being accommodated by recesses in the lap portion of the succeeding tile.



1. The diamond-shaped tile herein described, having the overlaps E, of about the same thickness as the upper point, and the body B, tapering in section, as in Fig. 3, all constructed substantially as and for the purposes specified.

2. The depressions *a a* to receive the heads of the nails, as described.

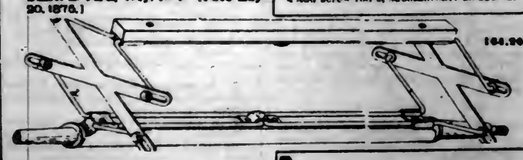
164,204. CLAMPS FOR HOLDING FILES IN TRIMMING-RATES. Robt. Parker and J. B. Colman, Corry, Pa. [Filed Apr. 28, 1875.]

Brief.—Teeth may be made removable.

1. The combination of the jaws *a b*, teeth *c*, rods *l*, screw-rod *e*, sleeves *d e*, and stuffing-boxes *h s*, substantially as shown.

2. The jaws *a b*, provided with the sleeves *d e*, in combination with the stuffing boxes *h s* and screw-rod *e*, substantially as shown.

164,203. TONGUE-SUPPORTS FOR VEHICLES. Daniel B. Paris, Troy, N. Y. [Filed May 20, 1875.]



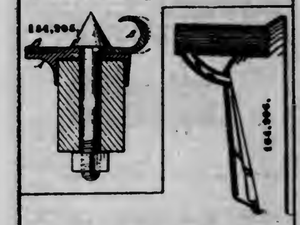
1. The combination, with the outwardly projecting arms of torsional springs and their connecting-bar, of the equalizing or connecting yokes, the connecting bar being of a length less than the distance between the connecting-yokes, whereby the said connecting-bar is adapted to pass down between the connecting-yokes and cause the outwardly-projecting arms to pass beyond their horizontal position, as set forth.

2. An equalizing-plate or connecting-yoke having slotted openings to receive the arms of torsional springs, and constructed with a horizontally-projecting supporting-flange, substantially as described, for suspending the springs upon the bolster or axle of a vehicle, as set forth.

164,205. VEHICLE-SPRING SHACKLES. Thos. T. Pearce, Hopewell Corner, Canada, assignor of one-half his right to Chas. A. McLane, same place. [Filed Apr. 28, 1875.]

Brief.—The shaker is secured to the axle and bolster, and is used preferably with longitudinal springs.

The combination of clip piece A, adjustable leg *a*, and the shackle-piece B, as and for the purpose set forth.



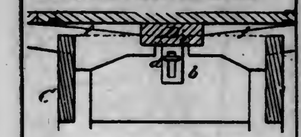
164,206. 164,208.

164,206. COOKING-STOVE VENTILATOR. Andrew A. Peterson, Chicago, Ill., assignor of one-half his right to Niels J. Nelson, same place. [Filed Mar. 23, 1875.]

Brief.—The device is adapted to conduct fumes from cooking to the smoke-pipe, the several parts being combined in one article.

The combination of the steam and smoke gatherer A and the pipe D with the stove-pipe C, substantially as and for the purpose specified.

164,207. REVERSION-TABLES. W. Perry, Rockport, Mo. [Filed Oct. 17, 1874.]



In an extension-table, the combination of the support A, the notched end boards C, the rising center board E, the extension-wings G, slide-bars H, slotted arms *h*, and pins *d*, all arranged to operate as described.

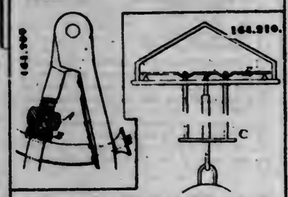
164,208. VEGETABLE-DISHES. Ella Portington, Factoryville, N. Y. [Filed May 1, 1875.]

164,209. ADJUSTABLE MECHANISMS OF DIVIDERS, COMPASSES, AND CALIPERS. Jos. H. Potts, Pennington ville, Pa. [Filed Feb. 15, 1875.]

1. The combination, with dividers and compasses, of the nut A and thread upon which it works, both encircling the leg of the dividers, as shown in Fig. 1, and to operate as and for the purpose described and set forth.

2. The combination, with compasses, dividers, and calipers, of the spring B.

3. The adjusting mechanism of compasses, dividers, and calipers, consisting of the nut A and spring B, or their equivalent, to operate substantially as and for the purpose above described.



164,209. 164,210.

164,210. COMPENSATION-PENDULUMS. C. M. O. Prentice, Monroeville, Ohio. [Filed Mar. 13, 1875.]

1. A compensating pendulum consisting of a series of metallic rods, B, each rod suspended from a point between the fulcrum and point of application of the power of a lever, E, and secured rigidly to a plate, C, at their lower ends, in combination with one or more rods, A, possessing a greater degree of expansion, the said rod A being connected with plate C at bottom, and acting as a power for the lever E, substantially as and for the purpose described.

2. The combination, with plates C and D and levers E on the upper plate, of rod or rods A and rod or rods B, the said rod or rods A, by their greater expansive properties, acting to raise the levers E, and thus preserve the pendulum constant in length, substantially as and for the purpose described.

164,211. SHEET-BOOKS. Peter A. Prince, Porter's Mills, Wis. [Filed Mar. 20, 1875.]



164,211.

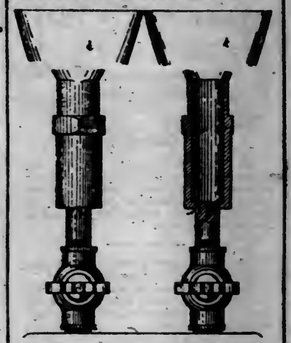
The combination, with boom A, of pivoted weighted center-boards B, working in diagonal slots, chains D, revolving on pulleys E, and book-chains H on pulleys J, as and for the purpose specified.

164,212. TREADLE MECHANISMS FOR PRINTING-PRESSES AND OTHER PURPOSES. Geo. W Prouty, Boston, Mass. [Filed Feb 10, 1876.]

In a treadle mechanism for operating printing presses and other machinery, the combination of a pivoted treadle, L, rod K, connecting said treadle to the device or devices to be operated thereby, and the radius-arm O, pivoted at one end to the rod K, and at the other to a fixed or stationary portion of the machine, all constructed, arranged, and operating substantially as described.

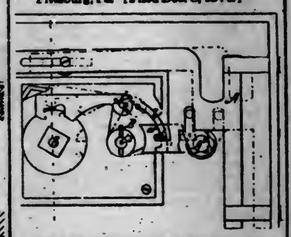
164,213. GAS-BURNERS FOR REMOVING PAINT. Samuel G. Reed, Wellesley, Mass. [Filed Apr. 14, 1875.]

Brief.—The flattened openings placed in line to afford a broad continuous sheet of flame.



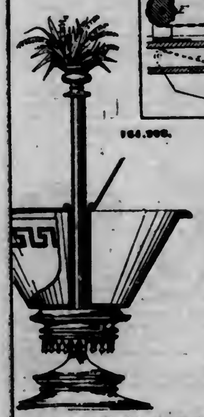
The combination, with the chamber *b*, of two or more burners having flattened mouths *k* arranged together, and in line to produce a broad sheet of flame, substantially as and for the purpose set forth.

164,214. COMBINATION-LOCKS. G. Blessek, Pittsburg, Pa. [Filed Dec. 8, 1874.]



The bolt A, having a projection, a^1, or similar device, in combination with the locking-case B, constructed to engage with the projection upon bolt A, so as to hold the bolt when withdrawn, substantially as specified.

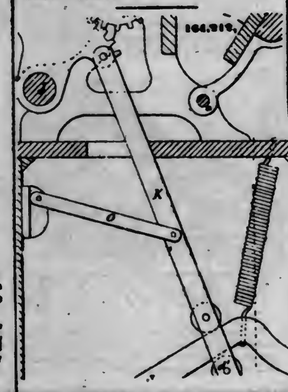
164,215. VEGETABLE-DISHES. Thos. Hall, Jr., Philadelphia, Pa. [Filed Mar. 20, 1875.]



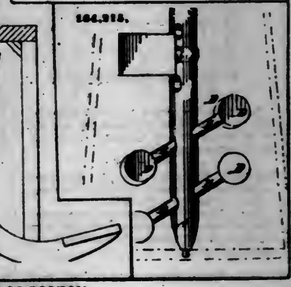
164,208.

1. A vegetable-dish composed of a detachable and subdivided vessel, revolving on a supporting-stand, substantially as and for the purpose set forth.

2. A vegetable-dish having radial partitions, forming compartments for different articles, and a central socket-tube for being detached from and replaced on the stand, substantially for the purpose specified.



164,215.



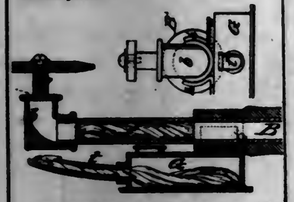
164,216.

164,915. ROTARY CHURN-DASHERS. James J. Robinson, Gibson City, Ill. (Filed Apr. 10, 1875.)

The combination of shaft A, oblique bars B, cross-bar C, and disks D, constructed and arranged substantially as and for the purpose specified.

164,916. SOLDERING-IRON HEATERS. Chas. J. Rogers, Norwich, Conn. (Filed Nov. 7, 1874.)

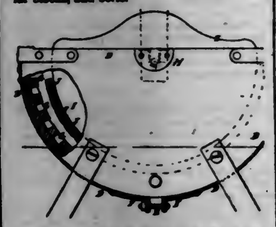
Brief.—A removable lamp applied by means of spring-clasp to a hollow handle, which serves as a connection between a reservoir and a gas-generator, and as a holder for the soldering-iron.



The detachable lamp G *i*, provided with spring-clasps *h h*, in combination with the reservoir A, flexible tube C, tubular handle B, having a wooden holder, B', gas-generator, *b*, and soldering-iron, substantially as and for the purpose set forth.

164,917. WASHING-MACHINES. C. B. Ross, Lincoln, Ill. (Filed May 15, 1875.)

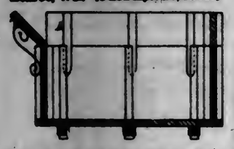
Brief.—A concave tub with a convex rubber, both having curved cleats, and strengthened by corner-clamps, metallic straps, angular blocks, and bolts.



1. The corner clamps *c*, the metallic straps D, the angular blocks or plates F, and the bolts E, in combination with suds-box A B, substantially as herein shown and described.

2. The rubber H I K, curved cleats G and J, made with a single or double curve, in combination with the concave surface of the suds-box A B, substantially as herein shown and described.

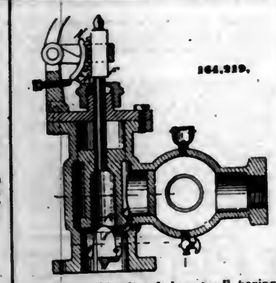
164,918. WAGON-BOX STRAPS. J. Scannell, Monroe, Wis. (Filed Apr. 27, 1875.)



The wagon-box strap *a*, provided with a recess, *c*, upon one side, to receive the strape *b* on the secondary box, substantially as and for the purpose specified.

164,919. THROTTLE-VALVES. Reinhard Schedtler and John E. McNamar, Newark, Ohio. (Filed Mar. 29, 1875.)

Brief.—The valve is operated by a segment of a gear-wheel. The valve is held open, more or less, by a screw-stop in contact with the segment.

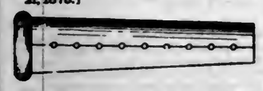


1. The combination of the valve E, having fingers G and arched openings I, the stem F, having rack M, the sector N, stop P, and lever O, substantially as and for the purpose described.

2. In combination with the valve E, the bar K, substantially as described.

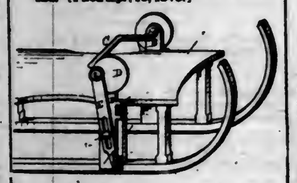
3. In combination with the sector N, the adjustable screw P, for the purposes described.

164,920. UMBRELLA-HANDLES. Louis Schneider, Philadelphia, Pa. (Filed Jan. 21, 1875.)



As a new article of manufacture, a handle for canes, umbrellas, or parasols, consisting of a casing of the thin or shell part of horn, in combination with a wooden or other suitable core or former, substantially as shown and described.

164,921. PROPELLERS FOR SLEDS. Charles Schwager and Jos. Wilson, Indianapolis, Ind. (Filed Apr. 20, 1875.)



The plates B B, cranked shaft C, face-plates D, wrist-pins *e*, pointed levers E E, and fulcrum-studs *e*, in combination with a sled, substantially as and for the purpose specified.

164,922. CHAINDRABLE FEED-GEARS FOR FEED-CUTTERS. Romaun Seelig, Chicago, Ill. (Filed Apr. 20, 1875.)



The reversible sleeve E and its pinions *a' b'*, in combination with the gear-wheel D, having gears *a b* of different diameters, substantially as and for the purposes set forth.

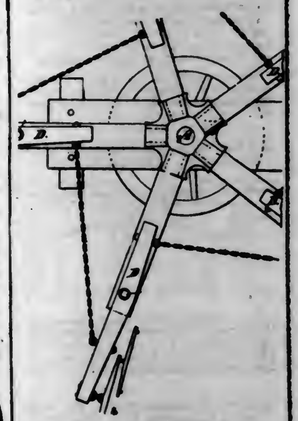
164,923. BOTTLE-STOPPERS. M. W. Shaw Galveston, Tex. (Filed Mar. 20, 1875.)

Brief.—A valve-stopper for bottles, provided with a flange or rim at its lower part, so as to convey the liquor directly from the perforations along the flange to the vessel to be poured into without spreading it over the cap



A valve-stopper for bottles provided with flange D, as and for the purpose specified.

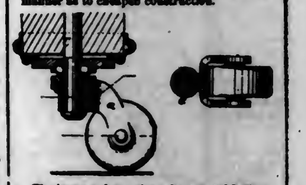
164,924. HORSE-POWER EQUALIZERS. A. A. Sheets, Maumee City, Ohio. (Filed May 19, 1875.)



The levers D D, &c., pivoted upon the top or bottom of the sweeps of a horse-power, and connected together by chains, in the manner and for the purpose shown and described.

164,925. FURNITURE-CASTERS. Covedra B. Sheldon, New York, N. Y. (Filed Jan. 31, 1874.)

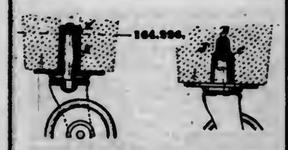
Brief.—Forming a rolled-up eye for the swivel-pin of the caster, the whole struck up from a single piece of sheet metal in such manner as to cheapen construction.



The improved one-piece sheet metal horn *a*, having the rolled-up eye *a'*, as shown and described.

164,926. FURNITURE-CASTERS. Covedra B. Sheldon, New York, N. Y. (Filed Apr. 17, 1875.)

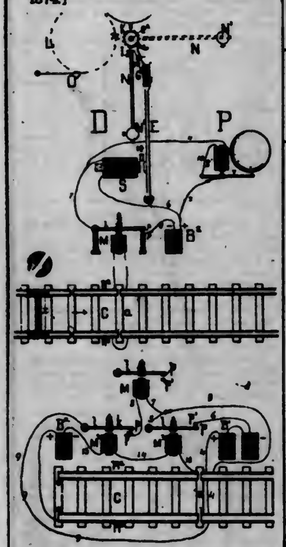
Brief.—A hard-metal washer is interposed near the top of a stamped or struck-up spindle-socket, the spindle passing through the washer and riveted above, the object being to give solidity and bear the weight without wearing away the soft metal. There may also be a shoulder for the washer formed in the socket by a contraction of the upper ends thereof, the spindle in each case passing entirely through and riveted above.



1. The combination, with spindle and spindle-shaft, of bush or washer C, secured in the socket by the spindle end passing through the same, and riveted above, as and for the purpose described.

2. The shoulder for washer or wearing-bush, formed in the socket by a contraction, F, at the upper end thereof, the spindle passing through and riveted above the socket, as and for the purpose specified

164,927. ELECTRIC RAILWAY-SIGNALS. H. W. Spang, Reading, Pa. (Filed Feb. 4, 1874.)



1. The combination of an insulated section of railway-track, the respective lines of rails of which are in continuous metallic connection, a galvanic battery having its poles connected respectively to opposite lines of rails of said section at one end thereof, an electro-magnet having one terminal of its coil connected to one line of rails of said section at the opposite end thereof, and its other terminal connected with a circuit-closer, which is electrically connected with the other line of rails at the same end of the section as is the first terminal, substantially as and for the purpose set forth.

2. The combination of rails R R' of insulated section A of railway-track, battery B, wires 1 2, rails R' R' of short insulated section of track C, wire 5, wires 3 4, electro-magnet M, and signal apparatus D or P, or both, substantially as described.

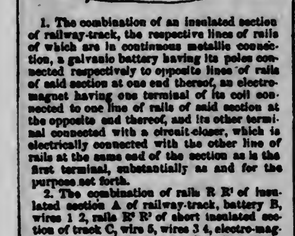
3. The combination of insulated or separated sections of single rails R R', short insulated sections of rails R' R', connected rails R' R' R' R', galvanic battery B, wires 1 2, galvanic battery B', wires 6 7, electro-magnet M, arranged to operate a signal or signals, wires 3 4, electro-magnet M', having armature-lever composed of parts *l l'*, insulated from each other, points *p p' p' p'*, wires 8 9 5 10 11, resistance-coil Y, wire 12, electro-magnet M', arranged to operate a signal or signals, wire 13, circuit-closer O, and wires 14 and 15, substantially as and for the purpose set forth.

4. The combination of separated short rail-section R' of section C, connected rails R' R', wire 7, battery B', wire 6, separated rail R', wire 8, electro-magnet M', wire 9, lever *l*, points *p p'*, wire 4, electro-magnet M, arranged to operate a signal or signals, wire 3, separated rail R of section of track A, wire 1, battery B, wire 2, and connected rail R', substantially as and for the purpose set forth.

5. The combination of electro-magnet M', arranged to operate a signal or signals, wire 13, separated rail R', wire 12, resistance-coil Y, wire 11, lever *l*, points *p' p'*, wire 10, separated rail R', wire 6, galvanic battery B', wire 7, connected rails R' R' R', wire 15, circuit-closer and breaker C, and wire 14, substantially as and for the purpose set forth.

6. Rails R R' of insulated section of track A, having a galvanic battery, B, and electro-magnet M' arranged for controlling or operating a signal or signals connected therewith at one end, *b*, of said insulated section of track, and galvanic battery B', and electro-magnet M, arranged for controlling or operating a signal or signals connected therewith at the other end, *a*, of said insulated section of track, in combination with a circuit-closer and breaker, or devices for closing and breaking circuit at each end *a* and *b* of said insulated section of track A, substantially as described, and for the purpose set forth.

7. Rails R R' of insulated section of track A, having galvanic battery B and electro-magnet M' arranged for controlling or operating a signal or signals connected therewith at one end, *b*, of said section of track, and galvanic battery B' and electro-magnet M arranged for controlling or operating a signal connected therewith at the other end, *a*, of said section of track, in combination with galvanic battery B' and electro-magnets M' M', (or one electro-magnet, M', with two levers or conductors, *l l'*, as in Fig. 7,) and rails R' R' of short section of track C; also with galvanic battery B', electro-magnets M' M', or one electro-magnet, M', and two levers, *l l'*, or



conductors, and rails R' R' of section of track C', substantially as and for the purpose set forth.

8. The combination of spring O' with vibrating signal-disk L, as and for the purpose set forth.

9. The combination of spring O' with vibrating signal-disk L, as and for the purpose set forth.

10. The insulated switch-rail R', arranged to slide upon insulated plate R'' for the purpose of being brought into line with either rail R' or R', which are electrically connected, substantially as and for the purpose set forth.

11. The combination of rails R' R'' R'' of siding or crossing section A', insulated at S' S', rails R' R' R' of section of track A, frog E, wire 9, plates H' H, and wires 1 2 of battery B, substantially as and for the purpose set forth.

12. Resistance-coils D D', in combination with rails R B' of insulated section of track A, (or with wires 5 5, and 1 2,) substantially as and for the purpose set forth.

13. The combination of rails R R' of insulated section of track A, wires 1 2, battery B, wires 3 5, electro-magnet M, wire 4, and rails R' R' of insulated section of track C, substantially as described.

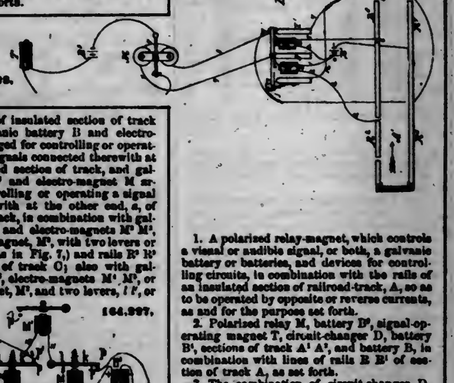
14. Rails R R' of insulated section of track A, in combination with wires 1 2, battery B, wire 3, electro-magnet M, wire 4, and short insulated track-section C, or other circuit-closer, substantially as described.

15. Circuit-closer and breaker or changer G, actuated by switch-rod *f'*, or its equivalent, in combination with rails R' R', plate H, wire 5, connecting-wire 9, or equivalent, rail R', wire 6, wire 7, insulated rail R, wire 3, electro-magnet M, wire 4, circuit-closing section of track C, or its equivalent, having metallic connection with rail R', substantially as and for the purpose set forth.

16. Insulated or separated section of track A' of branch track, or siding, or crossing at grade, in combination with rails of insulated section of main track A, battery B, magnet M, and short insulated section of track C, or other circuit-closer, substantially as and for the purpose set forth.

17. Rails R R' of insulated section of track A, in combination with wires 1 2, battery B, wires 3 5, magnet M, wire 4, electro-magnet M', wires 8 7, battery B', wire 6, and rails R' R' of section of track C or other circuit-closer, substantially as shown and described.

164,928. ELECTRIC RAILWAY-SIGNALS. H. W. Spang, Reading, Pa. (Filed Oct. 2, 1874.)



1. A polarized relay-magnet, which controls a visual or audible signal, or both, a galvanic battery or batteries, and devices for controlling circuits, in combination with the rails of an insulated section of railroad-track, A, so as to be operated by opposite or reverse currents, as and for the purpose set forth.

2. Polarized relay M, battery B', signal-operating magnet T, circuit-changer D, battery B', sections of track A' A', and battery B, in combination with lines of rails R R' of section of track A, as set forth.

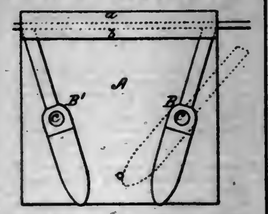
3. The combination of circuit-changer D, having two magnets, E E', of different resistances, battery B', and sections of track A' A', as set forth.

4. The combination of magnet M, battery B', wires 2 6 7, and rails R R' R' R', arranged to be operated by the metallically-connected wheels of a car or train, substantially as set forth.

5. The combination of magnet M, battery B', wires 2 7 8 9, and rails R' R R' R', arranged to be operated by the metallically-connected wheels of a car or train, substantially as set forth.

164,929. REIN-HOLDERS. F. C. Sparhawk, Newburyport, Mass. (Filed Jan. 30, 1875.)

Brief.—The two clamping-dogs turn in opposite directions, and are weighted, so as to act automatically in clamping the reins.



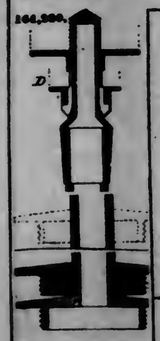
The plate A, provided with the overlapping shelf *a* and the dependent flange *b*, in combination with the weighted and pivoted dogs B B', all arranged as shown and described.

164,220. VAPOR-BURNERS. Jeremiah Stever, Bristol, assignor of one-half his right to I. B. Newton, Waterbury, Conn. [Filed Dec. 16, 1874.]

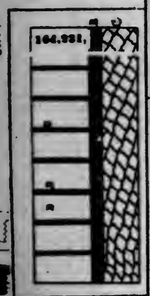
Brief.—The distance of the burner from the wick is adjustable by means of the sleeve. The packing prevents escape of gas, and insures sufficient friction between the sleeve and wick-tube.

The combination of the wick-tube B, sleeve C, burner D, and the packing E, substantially as described.

164,220.



164,221.



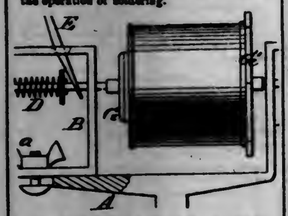
164,221. PAVEMENTS. Saml. Strong, Washington, D. C., assignor to himself and Elbon C. Ingersoll, same place. [Filed May 12, 1875.]

Brief.—On a well pounded or rolled foundation of small broken stone, gravel, and cement is spread a one-inch layer of water-proof cement, upon which hard-pressed bricks are laid, either on their sides, ends, or edges, breaking joints. The interstices between the bricks are filled with tar or grouting.

My improved mode of paving streets and roadways with hard-burnt pressed bricks, combined with foundation C, water-proof cement B, and packing D, as herein specified.

164,222. SOLDERING-CLAMPS. Mark Tandy, Dallas City, Ill., assignor of one-half his right to E. Mendenhall, same place. [Filed Dec. 5, 1874.]

Brief.—Two clamping-disks are mounted opposite each other upon horizontal axes, one of which is adjustable longitudinally to suit vessels of different lengths. A lever and compressing-spring are mounted on one of the axial arms to hold and release the vessels in the operation of soldering.



In a machine for holding cans, the adjustable frame B, carrying the lever E, shaft C, clamp G, spring D, and clamping device e, in combination with the slotted frame A, carrying the shaft C' and clamp G', substantially as described.

164,223. ROOFING COMPOSITIONS. Eli Thayer, Worcester, Mass. [Filed May 12, 1875.]

Brief.—Slaked lime and sand are mixed to a mortar with water. Hair or other fibrous material is then added. Coal tar, pitch, or other kindred substance is then introduced at ordinary temperatures, which expels the water therefrom.

The process herein described of expelling water from roofing and similar compositions containing it by the use of coal-tar, pitch, or other similar hydrocarbons, substantially as specified.

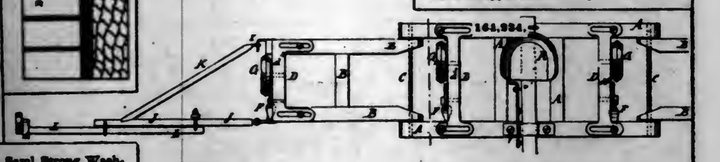
164,224. CORN-MARKERS. Miles A. Throckmorton, Andersonville, Ohio. [Filed Apr. 24, 1875.]

Brief.—A marker made in sections, and hinged together, the sections provided with adjustable cross-bars carrying marking-plows and wheels. Hinged to the outer sections of the frame are extensible arms, having marking-plows and wheels for varying the width of the rows.

1. The combination of the adjustable bars D, the bottom plates d^3, and the slotted cross-head or L, plates d^2 with the frames A B B, substantially as herein shown and described.

2. The combination of the marking-plows F and the V-faced wheels G with the adjustable bars D d^2 d^3, and with the frames A B B, substantially as herein shown and described.

164,224.



3. The detachable extension-frame J K I, provided with the cross-bar O, the double-pointed plow Q, and the wheel P, in combination with the frames A B C, the adjustable bars D d^2 d^3, the plows F, and the wheels G, substantially as herein shown and described.

164,225. MACHINERY FOR BEATING OUT THE SOLES OF BOOTS AND SHOES. S. D. Tripp, Lynn, Mass. [Filed May 8, 1875.]

Brief.—A series of last-supporting arms are mounted upon a shaft, which, by its rotation, brings the sole of the boot or shoe in contact with a chain rubbing mechanism, a series of formers, and a series of rollers at each rotation.

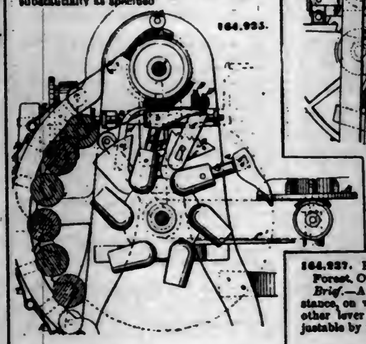
1. In a machine for smoothing the soles of boots and shoes, the combination of a rotary last-support, chain-rubbing mechanism, and pressing-formers, all substantially as and for the purpose described.

2. In a machine for smoothing and shaping the soles of boots and shoes, the combination, with a rotary last-support, a chain-rubbing mechanism, and pressing-formers, of pressing rollers, substantially as and for the purpose set forth.

3. The combination of the rubbing-chain mechanism with a series of revolving lasts, substantially as specified

4. The combination of the revolving pressing-formers with a series of revolving lasts, substantially as specified

164,225.



5. The combination of pressing-rollers with a series of revolving lasts, substantially as specified.

6. The combination of rubbing-chain C, arm j, rock-shaft K, arm i, and cam k, as and for the purpose specified.

7. The combination described of arm j, pulley D, and spring m, with shaft K, and chain C, as and for the purpose specified.

8. The described combination of last-support G, with rest q, and the detachable hook d, for securing the last rigidly in the manner and for the purpose specified.

9. The combination of the revolving table A' with a series of revolving lasts and smoothing and shaping mechanism, substantially as specified

164,226. POTATO-DIGGERS. Elias Vandervoer, Jr., Manalapan, N. J. [Filed Oct. 12, 1874.]

Brief.—The share has separating-fingers projecting in the rear, and below and behind these another set, which have a throwing motion upward and backward by means of a pivoted lever, having its fulcrum situated upon the standard a short distance above the fingers, and worked by crank and connecting-rod at its upper end.

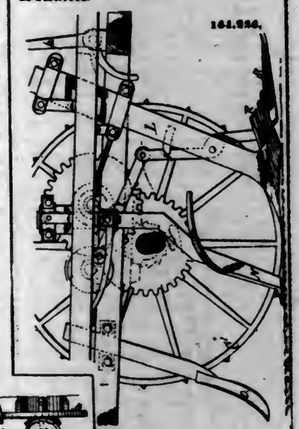
1. In combination with the potato-plow M, having rear sifter-bars, the vertically-reciprocating sifter-bars S, substantially as described.

2. The pitman I, pivoted lever K, standard L, and sifter S, in combination with the plow M and rear sifter-bars R, substantially as described.

3. The potato-plow M, in combination with the colter N, having a side arm, n, and forward colter O, all arranged as and for the purpose substantially as described.

4. The combination of the potato-plow M, having sifting-bars R, colter N, and arm n, colter O, and vertical cleaker S, substantially as described.

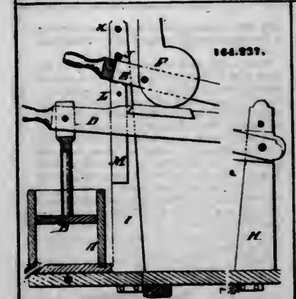
164,226.



164,227. PRESSES. Edward Van Gosen, Forest, Ohio. [Filed May 15, 1875.]

Brief.—A hand-lever used in the first instance, on which a cam-lever pivoted to another lever is afterward pressed, and is adjustable by pins in a series of holes.

164,227.



The levers D, E, and F, standards H and I, pins J K L, and the rests M, combined with the follower B and press-case, substantially as specified.

164,228. CURTAIN-CORD HOLDERS. F. B. Wagner, Buffalo, N. Y. [Filed Mar. 24, 1875.]

The bracket F, having an extended lower end, terminating in the loop M, in which the scroll-wheel K is pivoted, the latter being corrugated upon part of its periphery, and smooth as to the rest, as and for the purposes described.

164,229.



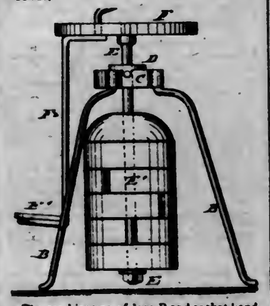
164,230.



164,229. CORSETS. Julius Waterman, New York, N. Y., assignor to Waterman & Mayer, New York city, and Chauncey L. Olmstead, West Brookfield, Mass. [Filed Mar. 13, 1875.]

The combination, in a corset, of the removable bustle-hoop c, the pockets or receptacles d for the ends of the hoop, the straps e, with loops on their ends, through which the hoop passes, the loops t, and the cord or lace f, substantially as described, and for the purposes set forth.

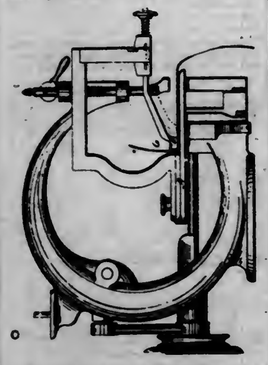
164,230. SHIPS' FURNITURE TO PREVENT SEASICKNESS. Joseph Wertheim, Frankfort-on-the-Main, Prussia. [Filed Apr. 17, 1875.]



The combination of legs B and socket-band C with rod E, having seat F at the top, weight E' at the bottom, and intermediate ring D, all constructed and arranged substantially as and for the purpose specified

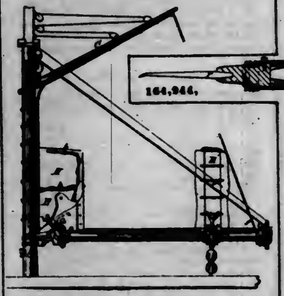
164,241. SEWING-MACHINE GUIDES FOR BANDING HATS. Dwight Wheeler, Bridgeport, Conn. [Filed Dec. 26, 1874.]

Brief.—The main or principal guide, against which the lower edge of the crown of the hat is guided, is secured to the bed plate of the machine, and has rising from its front edge an arm, which passes forward over the work, and then downward at its front end, through which slides a secondary guide, which acts upon the outside of the hat at the junction of the rim and crown, pressing it against the main or principal guide, and holding the hat in position for stitching the upper edge of the band.



The combination of the principal guide B on the work-plate, and auxiliary guide G, arranged above the work-plate, and having a combined rotative and longitudinal movement, substantially as specified.

164,242. DEVICES FOR REEFING SAILS. J. Whittington, Elida, Ohio. [Filed Apr. 17, 1875.]

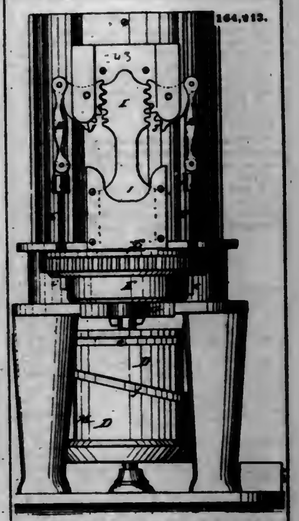


In a sail adapted to be reefed by a revolving boom or gaff, or both, the herein described arrangement of pinions and gear-wheel at the forked end of the boom, and the loose collar for connection with the sheet upon the revolving end thereof, the devices at the forked end being unobstructed by the sail in their operation, by reason of the bonnet H therein, and the apron B' over the loose ring on the revolving end, permitting the sail to be reefed without interference, all substantially as and for the purpose set forth.

164,243. BRICK-MACHINES. Carmi H. Williams and Walter W. Allport, Chicago, Ill. [Filed May 7, 1875.]

Brief.—A toothed arm at the bottom of a vertical pug-mill shaft rotates, successively, mold-boards around it. Cam-slots on the surface of a cylinder beneath the mill reciprocate toothed cam-segments, gearing with a rack between them, of a form that will give a connected plunger the greatest pressure when completing its descent.

164,212.

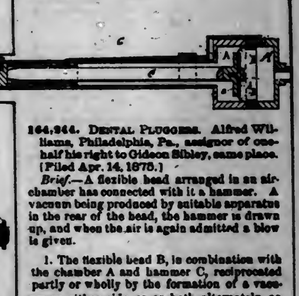


1. The plunger I, provided with the toothed rack at the top, and toothed levers J J, in combination with jointed shafts L L', and follower E, with arms e, substantially as and for the purpose set forth.

2. The combination of the shafts L L', coupling-arms K, and toothed levers J, with the plunger I, substantially as and for the purposes specified.

3. The main cylinder D, having cam-grooves e and f, and shafts L L', in combination with the follower E, coupling-arms K, toothed arms J, and plunger I, all as and for the purpose described.

164,244.



164,244. DENTAL PLUGGERS. Alfred Williams, Philadelphia, Pa., assignor of one-half his right to Oldeon Bibley, same place. [Filed Apr. 14, 1875.]

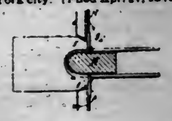
Brief.—A flexible head arranged in an air-chamber has connected with it a hammer. A vacuum being produced by suitable apparatus in the rear of the head, the hammer is drawn up, and when the air is again admitted a blow is given.

1. The flexible head B, in combination with the chamber A and hammer C, reciprocated partly or wholly by the formation of a vacuum on either side, or on both alternately, as a device for producing blows in a dental plugger.

2. The slide G, having a shoe, e, in combination with the tool-holder E and opening f of chamber A, substantially as and for the purpose set forth.

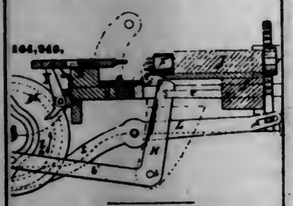
3. The flexible head I, in combination with the chamber H, as a conveyer of motive power to a dental plugger, substantially as described, or by any other suitable means.

164,245. MAKING WIRE FASTENINGS FOR BOTTLE-STOPPERS. Henry W. Yarington, Oceanic, N. J., assignor to R. C. Anthony, New York city. [Filed Apr. 17, 1875.]

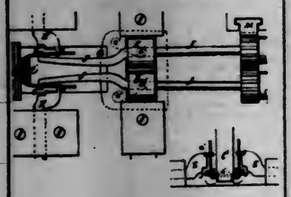


1. The female die C, constructed with the cam-sides and the continuous groove in its end and sides, to form the spiral bands, substantially as described.
2. The cylinders K K, provided with the pins *o p o p* and the lips *n n*, combined together and operated substantially as described.
3. The follower X, combined with the cylinders K K, and operated substantially as described.
4. The combination of the die C, the former H, the shafts N N, the cylinders K K, and the follower X, operated to make a bottle-stopper fastening, substantially as described.

164,946.



164,946. MAKING WIRE FASTENINGS FOR BOTTLE-STOPPERS. Henry W. Yerington, Oneonta, N. J., assignor to R. C. Anthony, New York city. [Filed Apr. 17, 1875.]



1. The benders E E, provided with the cleats *a a'*, in combination with the die C, and operated substantially as described.
2. The combination of the die C, the spring D, and the benders E E, operated substantially as described.
3. The combination of the benders E E with the teeth *b' b'* of the twisting-rods J J, operated substantially as described.

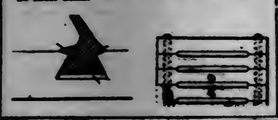
164,947. SHAWL OR CARETTE STRAP HANDLE. Benjamin Andrews, Philadelphia, Pa. [Filed Sept. 4, 1874.]



The cast handle A, with recessed ends B C, in combination with the plates F F, for confining both the straps D and rings or loops E E, substantially as and for the purpose set forth.

164,948. SCHOOL DESKS AND SEATS. H. L. Andrews, Chicago, Ill. [Filed Apr. 15, 1874.]

Brief.—The chair of the bench and seat are connected by a dovetail joint, wherein a space is left between the metal and wood, to prevent the latter from being split by shrinkage. The series of open slats rest against one another at their ends.

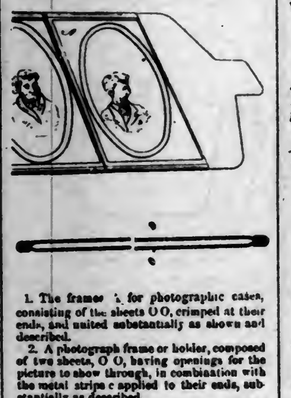


1. The frames A, for photographic cases, consisting of the sheets O O, crimped at their ends, and united substantially as shown and described.
2. A photograph frame or holder, composed of two sheets, O O, having openings for the picture to show through, in combination with the metal stripe c applied to their ends, substantially as described.
3. A photograph-case composed of a series of frames or holders, A, composed of the sheets O O, united by the metal stripe c, and frames being united and provided with a cover, as set forth.

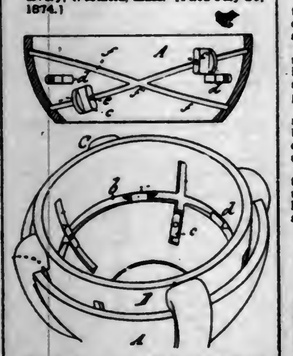
1. The herein-described dovetail-joint, having a space left between the face of the metal that enters the groove and the wood, to prevent the latter from being split by shrinkage, substantially as set forth.
2. A school seat or settee, having its seat or back composed of a series of open slats, resting one against another at their ends, and secured to the frame by means of a dovetail joint, as set forth.

164,949. PHOTOGRAPH-ALBUMS. James C Arms, Northampton, Mass. [Filed Apr 14, 1875.]

Brief.—The frames are made of two perforated sheets with a metal binding. These frames may be bound together into a book, or attached one to the other by flexible connections, so as to be folded or extended into a long strip.



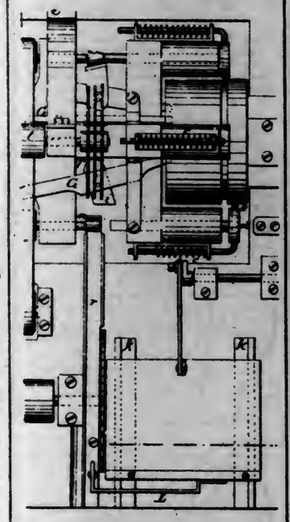
164,950. CIRCULAR-WEAVING LOOMS. D. Avery, Westfield, Mass. [Filed July 30, 1874.]



The shell A, of spherical form in its cross-section, and provided with the grooves *f*, in combination with the slotted shell B, also of spherical form, and the loosely-pivoted bobbin-holders *c*, whereby said bobbin-holders *c* are actuated and guided in a vertical direction, and the bobbin-holders *d* are actuated in a horizontal rotary manner, and all of which said bobbin-holders are always equidistant from the point at which the threads unite to form the fabric, substantially as described.

164,951. MACHINES FOR CUTTING BUNGS. Jno. Rachelder, Gardiner, Me. [Filed Mar 9, 1875.]

Brief.—The strip of wood from which the bung is to be formed is placed upon a reciprocating table, and fed to the cutting-off saw, when a bung-blank of the proper length is instantly severed. The blank is then deposited in a trough, from which it passes, and is caught and held between head and tail spindles, that are independently rotated and revolved in the stocks which support said spindles. The blank is reduced to the desired shape by one saw having an inclined vibratory motion, or a series of circular saws of graduated diameters, after which it is finished by suitable knives, whose action is governed by a fixed cam provided upon its face with a peculiar-shaped groove.



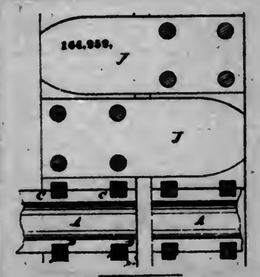
1. In a bung-machine, the combination of the revolving head and tail spindles, fixed cam, trimming-knives, and saws, constructed and operating substantially as specified.
2. In a bung-machine, in combination with revolving head and tail stocks, finishing-knives, arranged, constructed, and operated substantially in the manner and for the purpose described.
3. In a bung-machine, the combination of revolving head and tail stocks, finishing-knives, and their supporting-levers with a cam, substantially as and for the purpose described.
4. In a bung-machine, the reciprocating saw-table, provided with the spring L, in combination with the trough *r*, and the revolving head and tail stocks, substantially as shown and described.

164,952. PORTABLE RAILWAYS. Alex. Ross, Las Canas, near Alacranes, Cuba. [Filed May 10, 1875.]

Brief.—A portable railway-track in which the rails of the sections are secured to the iron ties by square-sided rivets, and each section is provided at its ends with projecting locking-pieces, which articulate with those on the end of the adjacent section, and thereby tend to prevent lateral displacement of the sections.

1. The combination, with the rails A A and cross-pieces B of the sections of a portable railway, of square-sided rivets for securing the rails and cross-pieces together, substantially as described.
2. The combination of the locking-pieces J J with the sections O, arranged and operating substantially as described.

164,953.

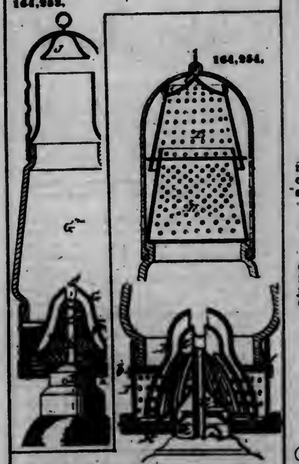


164,953. LANTERNS. George A. Beidler, Philadelphia, Pa. [Filed Apr. 9, 1875.]

Brief.—An outer shell and inner perforated cone connected. A solid air-breaker pendent from the perforated flange around the deflector, and a sectional air-breaker in the dome.

1. In the burner described, the combination of the exterior cone G and the interior perforated shell G', surrounding the entire interior of the cone G, and extended above the wick-tube, for the purpose of creating a single current of air to the flame, and to prevent an excess of heat on the wick-tube, substantially as set forth.
2. The combination, with the burner G G', of the arms *b b*, collar *d*, with the semi-tubular projections *e e*, and the legs or bulges *f f* on the wick-tube C, substantially as and for the purposes herein set forth.
3. The combination, with the perforated rim E and interior perforated air-breakers *a a* and *f*, of the annular solid air-breaker *h*, depending from the perforated diaphragm *f*, substantially as and for the purposes herein set forth.
4. An air-breaker, consisting of the cylindrical section I and the bell-shaped section J, arranged within the dome of a lantern, substantially as and for the purposes herein set forth.

164,953.



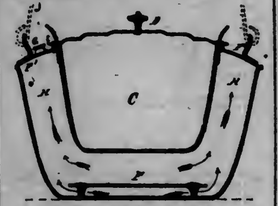
164,954. COMBINED LAMPS AND LANTERNS. George A. Beidler, Philadelphia, Pa. [Filed Mar. 17, 1875.]

Brief.—The ring and chain for handling the lamp are connected thereto by means of a rod, for preventing contact with the lamp.

1. In combination with the reservoir A and a burner thereon, the perforated diaphragm H and perforated rim I, with perforated flange *b*, substantially as and for the purposes herein set forth.
2. In combination with the perforated dome K of the lantern, the perforated air-breaker L L, made in sections, loosely connected together, and loosely sustained within the dome by means of the rings *e* and rod *f*, all substantially as set forth.
3. The combination of the links *e*, rod *f*, and chain *h* with the dome K of a lantern, all constructed substantially as and for the purposes herein set forth.
4. The combination with the reservoir A and the burner thereon, the perforated diaphragm H, perforated rim I, having perforated flange *b*, the detachable globe J, and dome K, having sectional air-breaker L L, all substantially as set forth.

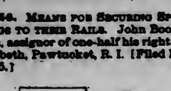
164,955. CULINARY APPARATUS. Matthew C. Bogia, Philadelphia, Pa. [Filed Sept. 16, 1873.]

Brief.—The cooking or food-containing vessel is suspended in a casing which has an opening or hole in its bottom, over which is placed a deflector-plate, to protect the bottom of the containing-vessel from excessive or irregular heat.



The exterior pot A, with ledge F on top, and opening B in bottom, the interior closed pan C suspended from the ledge F, the deflector F, between the open bottom of the pot A, and closed bottom of the pan C, and the damper G in the ledge F, all constructed, combined, and operating substantially as and for the purpose set forth.

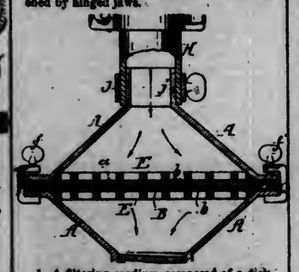
164,956. MEANS FOR SECURING SPINNING-RINGS TO THEIR RAILS. John Booth, Lincoln, assignor of one-half his right to F. J. Rabbeth, Pawtucket, R. I. [Filed Feb. 24, 1875.]



The combination of a spinning-ring and its rail with eccentric frictional engaging devices or surfaces for connecting the two together, substantially as described.

164,957. WATER-FILTERS. Isidor Bruch, Philadelphia, Pa. [Filed Apr. 24, 1875.]

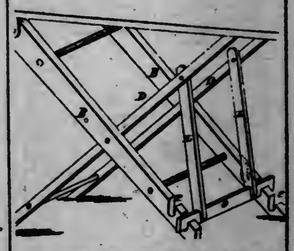
Brief.—A filter formed by the combination of a disk of pressed carbon, felt, and a grating, combined as shown. The flexible tube joining the filter to the hydrant-nozzle is fastened by hinged jaws.



1. A filtering medium composed of a disk, *a*, of compressed carbon interposed between two strips, *b b*, of felt, as set forth.

2. The combination of the gratings E K, filtering medium B, and rubber ring D, with the flanged edges of the two halves A and A' of the casing, and with the screw-clamps F F.
3. The combination of the flexible tube H, with the hinged jaws I and J for connecting the filter, and a hydrant, as set forth.

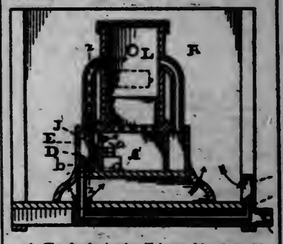
164,958. INKING-TABLES. Oliver F. Berlingame, Sterling, assignor of one-half his right to F. B. Palmer, Rock Falls, Ill. [Filed Jan. 30, 1875.]



The combination, with the table A, of the legs B B hinged to the table and having notches P P at their lower ends, the legs D D pivoted to the legs B B, and the arms or rods L L having bar O and pivoted to the legs D D near the upper ends for supporting the free end of the table, all constructed substantially as shown and described.

164,959. VENTILATING ATTACHMENTS TO STOVES. Charles Carter, Philadelphia, Pa. [Filed May 14, 1875.]

Brief.—The contaminated air is supplied to the grate or combustion-chamber. The pipe that conducts it is inclosed by the fresh-air conduit, which is thereby partially warmed.



1. The fresh-air pipe F, in combination with the pipe D inclosed thereby, and communicating with the ventilating-register C, and with the reservoir E of a combustion apparatus, B, substantially as and for the purpose set forth.
2. The pipe D, communicating with the ventilating-register C, in combination with the reservoir E, communicating with said pipe, and with the ash-pit A' and chamber L of a combustion apparatus, B, substantially as and for the purpose set forth.
3. The reservoir E, in combination with the pipe D, having opening *b*, the pipe H, with openings *a* and *d*, the pipe J, with opening *d*, and the pipe K and combustion-chamber, and with the adjustable damper M, substantially as and for the purpose set forth.

164,960. MANUFACTURE OF NITRO-SULPHURIC ACID FOR MANUFACTURING NITRO-GLYCERINE. Prudencio Castellanos, San Francisco, Cal. [Filed Oct. 27, 1874.]

The process of preparing a mixture of nitric (NO_5) and sulphuric acid (SO_3) for the manufacture of nitro-glycerine by condensing vaporized nitric acid in liquid sulphuric acid, as set forth.

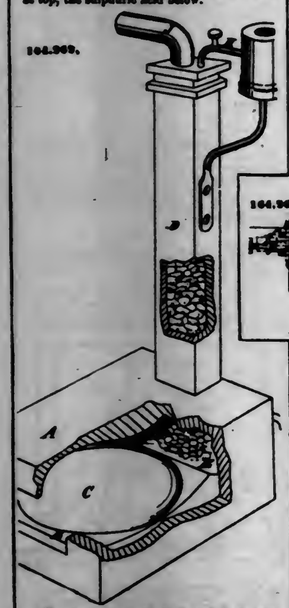
164,961. RECOVERING ACIDS FROM RESIDUUM OF NITRO-GLYCERINE MANUFACTURE. Prudencio Castellanos, San Francisco, Cal. [Filed Oct. 27, 1874.]

The process herein described for treating and recovering acids from the residuum remaining after the manufacture of nitro-glycerine, consisting in dropping the dilute residuum in small quantities through a heated chamber filled with obstruction, passing sulphurous-acid gas into the same, and collecting the resulting nitric acid in leaden chambers, while the sulphuric acid is drawn off from the bottom of the heated chamber.

164,869. APPARATUS FOR RECOVERING ACIDS FROM THE RESIDUUM OF NITRO-GLYCERINE MANUFACTURE. Prudencio Castellanos, San Francisco, Cal. [Filed Oct. 27, 1874.]

Brief.—The products of combustion and sulphurous-acid gas pass from the furnace up the tower through the obstructions, over which the dilute residuum from nitro-glycerine manufacture drops from the tank above. The gases, with the nitrous fumes, pass off by the pipe at top, the sulphuric acid below.

164,869.



The furnace A, with its hearth C, for producing heat and sulphurous acid, in combination with the vertical chamber or tower D, with its inclined floor E and obstructions, as shown, the tank G, inlet-pipe H, and discharge-pipes F and J, substantially as and for the purpose herein described.

164,868. EXPLOSIVE COMPOUNDS. Prudencio Castellanos, San Francisco, Cal. [Filed Apr. 6, 1875.]

An explosive compound, consisting of nitro-glycerine, nitro-benzole or benzine, fibrous material, and pulverized earth, substantially as and for the purpose set forth.

164,866. EXPLOSIVE COMPOUNDS. Prudencio Castellanos, San Francisco, Cal. [Filed Oct. 27, 1874.]

An explosive compound or powder consisting of nitro-glycerine, nitrate of potash or soda, picrate, sulphur, a salt insoluble and incombustible in nitro-glycerine, and carbon, in about the proportions herein described.

164,865. VESSELS FOR CONTAINING POISON. W. M. Cotesworth, Philadelphia, Pa. [Filed Apr. 13, 1875.]

164,865.

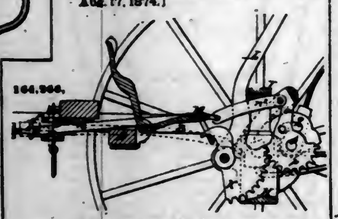


As a new manufacture, a vessel of glass or other plastic or vitreous material, on which is represented the front of a skull, substantially as and for the purpose set forth

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164,866. HORSE-RAKES. Chas. M. Clinton and Lyndred Mood, Ithaca, N. Y. [Filed Aug. 17, 1874.]

164,866.



1. The combination, with the rotatory rake-head, of a draft device, having a motion independent of the rest of the machine, substantially as described, and which, when operating to lift the rake, exerts no material tendency to draw the machine along.

2. In a wheeled horse-rake in which the movements of the teeth are controlled by a rake-head, independent of the axle, the combination, with the said rake-head, of a draft device, arranged and operating to hold the rake down to its work, substantially as set forth.

3. In a wheeled horse-rake in which the rise and fall of the teeth are effected and controlled by the rake-head, the combination, with the said rake-head, of a draft device, the whole so arranged and operating that, by means thereof, the rake-teeth can be either lifted or depressed by the action of the draft power.

4. The combination, with the rake-head and the teeth thereto attached, and thereby controlled, of a draft device which operates both to hold down and to lift up the rake-teeth, when arranged to pull directly on the rake-head.

5. As a means for utilizing the draft power to both hold down the rake (in gathering) and to lift the rake, (in dumping,) the sliding draft-rod arm *e*, and rotatory rake-head, combined and operating together, substantially as set forth.

6. A tooth-holder or device by means of which the teeth is secured to the rake-head or shaft, formed substantially as described, so as to constitute both a socket for the reception and retention of the rear of the tooth, and a clamp to embrace and make fast to the rake-head, substantially as described.

7. A tooth-holder, formed substantially as described, so as to constitute both a socket for the rear of the teeth and a clamp to embrace the rake-head, as described, and having its socket so made as to permit in the tooth a slight play or oscillation, as and for the purpose set forth.

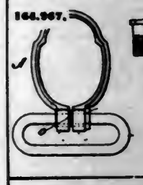
8. In combination with the rake mechanism and a means for lifting the rake by the power of the driver, the jointed draft device *a b* and a locking pin or device, the whole so arranged and operating that the power of the team may be brought into, or kept out of, action at pleasure, during the operation of the machine.

164,867. SWIVEL. RAINS FOR FIRE-ARMS. J. M. Clough, Troy, N. Y., assignor to E. Remington & Sons, same place. [Filed May 7, 1875.]

1. The clamp-band A, in combination with the tubular screw *a* and loop B, substantially as described.

2. A swivel for guns, consisting of a loop, B, having its ends mounted in a tubular screw, with a pin, *c*, inserted in said screw between the ends of the loop, as set forth.

164,867.



164,868.

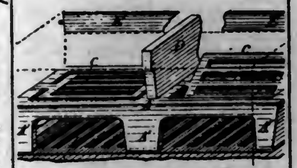


164,868. HINGES FOR SEAT-ARMS OF SCHOOL-DESKS. William B. Cogger, Morris, assignor to the Sherwood School-Furniture Company, Chicago, Ill. [Filed Mar. 17, 1875.]

In combination with the frame A, having grooves *a*, and the seat-arm C, the bar E, extended and curved at its lower end to lie within one of the grooves *a*, and held by the bolt and nut, as set forth.

164,869. STOVE ATTACHMENTS. Hezekiah S. Cook, Albany, N. Y. [Filed July 18, 1874.]

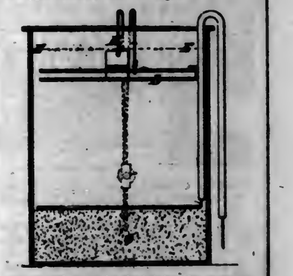
Brief.—The attachment is adapted to contract the fire-pot laterally and vertically.



The portable summer attachments A B C, as herein described, for cooking stoves and ranges, provided with a removable partition, D, in its fire bed or grate, the several parts constructed and combined with each other substantially as set forth.

164,870. GALVANIC BATTERIES. Howard P. Dechert, New York, N. Y. [Filed Nov. 12, 1874.]

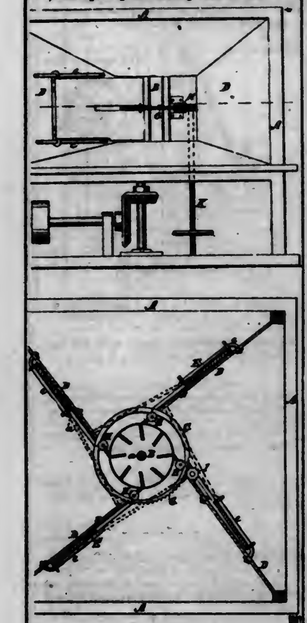
Brief.—Interposes a secondary or local-action copper pole between the poles of a sulphate-of-copper battery, and near the zinc pole, in order to prevent the accumulation of copper upon the zinc pole when the sulphate-of-copper solution rises too high.



A secondary or local circuit-pole, separate and distinct from the primary pole, applied in connection with a primary pole, substantially as and for the purpose set forth.

164,871. WINDMILLS. George Desbrough, Utica, N. Y., assignor to Alex. H. Chapin, same place. [Filed May 14, 1874.]

Brief.—The rack is reciprocated circularly by a pinion meshing therewith, and mounted on a vertical shaft provided with hand-wheel. By turning said hand-wheel in one direction or the other, the pinion will cause the rack to slide over the rollers, carrying the gates with it, thus opening and closing them at will.



The slotted gates, supported at their outer ends on rods *e*, the circular reciprocating rack G, the flanged friction-rollers H, the pinion I, and shaft K, in combination with the partitions D, arranged with relation to the wheel B, as shown and described.

164,872. HAND-STAMPS. J. F. W. Dorman, Baltimore, Md. [Filed May 5, 1875.]

Brief.—The adjustable block is surrounded by rubber bands carrying type, which project through the slot in the hinged type-bearing plate.

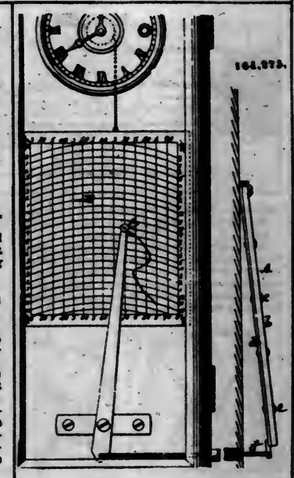
1. The rubber type-bands E, block C, and type-case B, combined substantially as specified.

2. The hinged rubber-faced type-plate D, having the opening *d*, combined with the type-case B, substantially as shown.

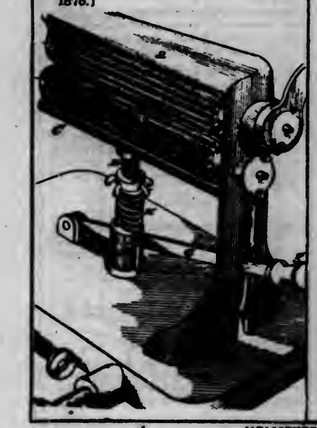
3. The slotted type-case B, combined with the block C and screw *b*, substantially as set forth.

4. The combination of the type-case B, inserted in the handle A, vertically-adjustable block C, rubber type-bands E, and self-clasping hinged plate D, having the rubber type-face *d*, substantially as and for the purposes specified.

164,873.



164,872. FLUTING-MACHINES. Jno. E. Donovan, Cincinnati, Ohio. [Filed Feb. 18, 1875.]

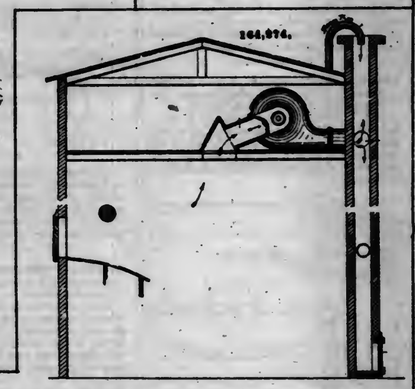


1. The combination of adjustable lower roller-frame C D, slotted post E, socket F, lever G, and spring H, arranged to operate substantially as and for the purpose specified.

2. The combination of adjustable lower roller-frame C D, slotted and screw threaded post E *c*, socket F, lever G, spring H, and adjustable nut I, substantially as and for the purpose specified

3. The combination of adjustable lower roller-frame C D, slotted post E, socket F, lever G, spring H, and catch *e''*, substantially as for the purpose specified

164,874.

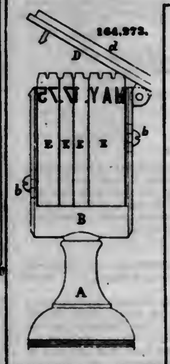


164,874. METHODS OF DESTROYING THE VERMIN AND COLLECTING THE DUST ARISING FROM CARPET-BEATING MACHINES. John Doyle, Philadelphia, Pa. [Filed Mar. 12, 1875.]

1. The combination of the following elements or devices, namely: an apartment for containing the carpet or fabric, a chimney or receptacle for the reception of the refuse material, a fan for conveying said material from the apartment to the receptacle, and a steam-pipe opening into said chimney or receptacle, the whole being arranged to operate substantially as and for the purpose set forth.

2. The herein-described method of gathering the dust and destroying the insects arising from the cleaning of carpets or other fabrics—that is to say, by conveying the dust, insects, &c., by means of a blast, into a chimney or other suitable receptacle, and there subjecting them to the action of steam, substantially as described.

164,872.



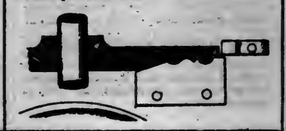
164,875. REGISTERING-THERMOMETERS. D. Draper, New York, N. Y., assignor to G. Tagliabue, same place. [Filed Mar. 4, 1875.]

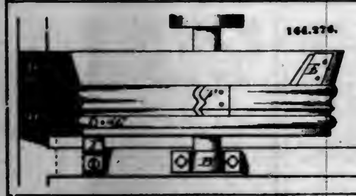
A self-registering thermometer composed of the compound strip of hard rubber and metal, a marker, a time mechanism, and a movable tablet or indicator card, constructed and arranged to operate substantially as described.

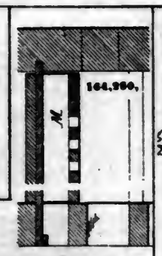
164,876. MACHINES FOR MAKING FENCE-PICKETS. Hillary Dufour, Peter C. Dufour, and E. B. Rowe, Chicago, Ill. [Filed Sept. 7, 1874.]

Brief.—Fence-pickets can be rapidly formed without liability of splitting or injuring the same during the operation of shaping the ornamental head by means of a grooved and ridged revolving cylinder mounted in a suitable frame, and provided with a series of cutters set in recesses in said cylinder, and having their cutting-edges shaped to correspond with the grooves and ridges in the same, in connection with a bearing-plate of corresponding form, for supporting the picket, and suitable rests or guides.

The combination of the grooved and ridged revolving-cylinder, the knives having their cutting-edges shaped to correspond with the grooves and ridges, the bearing-plate H for supporting the picket while being dressed, and the combined rests and guides I I', the whole being constructed for operation, substantially as described.

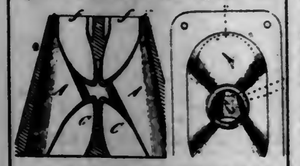






164,277. EXHAUST-NOZZLES FOR STEAM-ENGINES. Henry D. Dunbar, North Hartland, Vt. [Filed Oct. 27, 1874.]

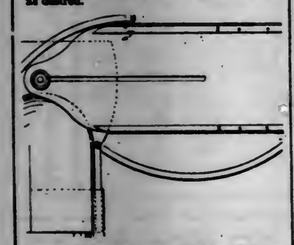
Brief.—The end of one of the exhaust-pipes of each cylinder is surrounded by the main exhaust of the opposite cylinder, by which arrangement the exhaust of each cylinder tends to produce a vacuum in the other, and thereby assists the exhaust of each engine.



The combination and arrangement of the pipes A and C with the exhaust-passages of a steam-engine, the same forming an improved exhaust-nozzle, substantially as described.

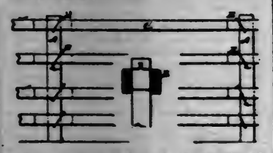
164,278. COAL-CHUTES. Robert Dunbar, Mansfield Valley, and John Keegan, McDonald, Pa. [Filed May 18, 1875.]

Brief.—A coal-chute provided with a swinging and sliding scoop, connected by curved adjustable guard-plates to the sides of the chute-section, so that the lower pivoted end may be set at any angle, to distribute the coal as desired.



A chute for discharging coal or other articles into cars, boats, &c., provided with a swinging and sliding scoop, connected by curved adjustable guard-plates to the sides of the chute-section, to be set to any angle thereto, for conveying the coal without shovelling to any part of the car or boat, substantially in the manner and for the purpose set forth.

164,279. FARM-FENCES. Wm. A. Hinson, Statesville, N. C., assignor of one-half his right to Jacob H. Best, same place. [Filed Feb. 1, 1875.]



In a post and rail fence, the combination of wires B, forming loops on the front and rear of each posts, with the rails, in the manner described, whereby each rails are preserved from contact with the posts, substantially as specified.

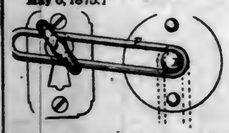
164,280. FIRE-BOXES. William Banis, New York, N. Y. [Filed Oct. 22, 1874.]

Brief.—The interior supporting-bar, of iron, is protected by the inclosing semicircular fire-brick sectional bars.

1. The combination, with a furnace of fire-clay pipes M, supported by internal bars of iron, and having openings, through which air admitted to the said pipes can pass downward therefrom into the fire-place, all substantially as set forth.

2. The combination of the pipes M, each made in two parts, the internal supporting-bars, and the retaining-slabs *d*, all as specified.

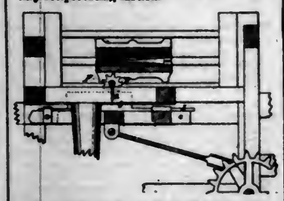
164,281. ADJUSTABLE KEY-FASTENERS. E. B. Everitt, West Meriden, Conn. [Filed May 6, 1875.]



The combination of the button B, having the circumferential groove *c*, and carrying the sliding eye E, and provided with the long shank S, working in the recess R, and the flanged collar C, substantially as described, and for the purpose specified.

164,282. CRACKER-MACHINES. Adam Exton and John Exton, Trenton, N. J. [Filed Mar. 30, 1875.]

Brief.—The cut crackers are delivered upon a table leading to the tubes, which conduct them to the docker. They are swept into the mouth of said tubes by fingers attached to a rod placed over said table, and having a rotary reciprocating motion.



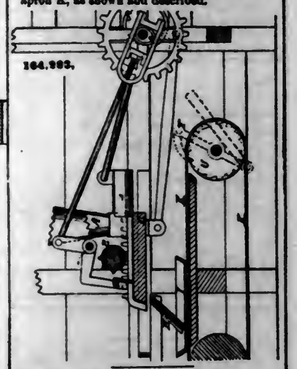
In a cracker-machine, the combination, with a hopper having series of parallel ways or channels, of a rocking shaft arranged at right angles thereto, and provided with radial fingers for taking into said channels, a sliding rack-bar, and a reciprocating frame, upon which the shaft is mounted, as shown and described, whereby the molded crackers are conveyed or impelled along the channels for delivery to the docking apparatus.

164,283. CRACKER-MACHINES. Adam Exton and John Exton, Trenton, N. J. [Filed Mar. 30, 1875.]

1. In a cracker-machine, the combination, with a grooved reciprocating table, of the docking-roller B, having a reciprocating rotary motion, substantially as shown and described.

2. In a cracker-machine, the combination of a reciprocating table, C, a sweep operated so as to rise and fall, as described, and the inclined chute H, all arranged as shown and described.

3. In a cracker-machine, the hinged and inclined chute H and the horizontal traveling apron K, as shown and described.



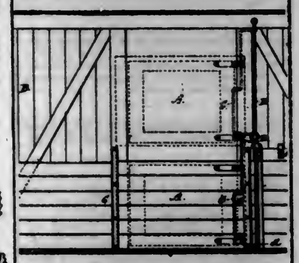
164,284. PUTTING UP YARN. G. P. Farmer, Brooklyn, N. Y. [Filed May 7, 1875.]

1. The mode herein described of putting up cords, yarns, &c.—that is, by inclosing one or more continuous pieces in a wrapper, and arranging each piece in a series of folds, whereby the cord will unlap without entangling when any part is drawn from the end of the wrapper, as set forth.

2. As a new article of commerce, a bundle or package of yarn, thread, cord, or other like articles coiled and wrapped in the manner described.

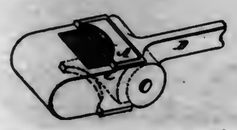
164,285. CAR-DOORS. Robert Ferguson, Toronto, Canada. [Filed Feb. 16, 1875.]

Brief.—Door slides up and turns out of the way, so as to lie flat against the inner sides of the car.



In a car, the combination of sliding bar C, the lower end of which forms arm *d*, door A, rod D, and checking and locking device E, substantially as and for the purposes set forth.

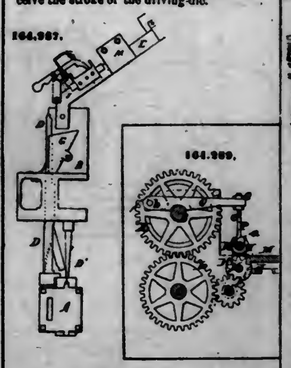
164,286. TRILL-COUPLINGS. Herbert K. Forbis, Danville, Ky., assignor of one-half his right to A. H. Peacock, same place. [Filed Dec. 16, 1874.]



The combination of the block A, concave on its front side, provided with recess B in its rear, and having corner projections *a a* and flanges *x x*, with the clip shaft-iron and the rubber block C, all substantially as set forth.

164,287. MACHINES FOR NAILING BOXES. John H. Foster and Dennis O'Brien Ladd, Chicago, Ill.; said Ladd assignor to said Foster. [Filed Nov. 10, 1874.]

Brief.—The nails pass through a tube which terminates in a swinging end, and delivers them to the clip in a proper position to receive the stroke of the driving-die.



1. The combination of the traveling hollow spindle or guide and nail-conductor, open at or near the top and bottom, the clip, and the die, all arranged and operating together substantially as described, and for the purposes specified.

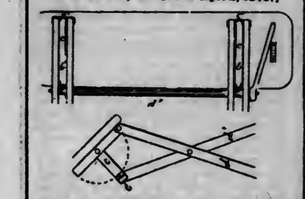
2. The combination of the hollow spindle D, the yielding finger D', the clip, and the die, substantially as and for the purposes specified.

3. The combination of the fixed guide or hopper G and the hollow spindle D D', carried by the die and passing freely through the clip, substantially as and for the purpose specified.

4. The combination of the guide-bars E E, the yielding frame H, provided with the pin I and the stop J, the lever K, and the hollow spindle, substantially as and for the purposes specified.

5. The guide-bars E E, provided with the vertical pieces M M, in combination with the removable block N, attached to the said pieces by means of bolts and nuts, substantially as shown and described, for the purpose of thereby rendering the said bars adjustable to nails of different sizes.

164,288. IRONING-TABLES. S. W. Fraley, Wilkesbarre, Pa. [Filed Apr. 2, 1875.]



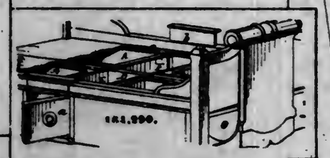
In an ironing-board, the combination of the arms *a a*, pivoted to the central point of the cleats *b b'*, and provided with the hooks *c'*, with the sections *d d'*, of the folding frame, substantially as set forth.

164,289. MACHINES FOR PERFORATING PAPER. Lewis Francis, New York, N. Y. [Filed May 18, 1875.]

Brief.—Feed-rolls work intermittingly to agree with the action of perforating-cylinder.

1. In a machine for perforating paper and other materials, the guide-rollers H I, having a like surface speed to the cutters D, the upper one of which is arranged to partake of the rising and falling movement of the cutters, substantially as described.

2. The combination, with the cutter shaft of a paper-perforating machine, of the pivoted yokes O, vertical arms P, and feed-rollers H and I, substantially as shown and described, the said yokes and arms forming the connection between the feed rollers and the cutter shaft, as set forth.



164,290. BEDSTEADS. Julia B. French, Boston, Mass. [Filed May 3, 1875.]

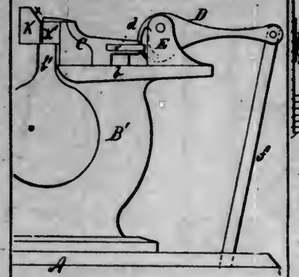
1. The combination, substantially as described, of drawers beneath the bed-bottom, grooved side rails, and a sectional bed-bottom, whose sections constitute a cover for the drawers, and enter the grooves in the side rails, substantially as shown and set forth.

2. The combination, with the foot-board, of the sectional mirror, having its upper section hinged and arranged with relation to the foot-board and the lower section, substantially as and for the purposes set forth.

3. The foot-board and hinged sectional mirror, in combination with a removable cap, substantially as and for the purposes set forth.

164,291. MACHINES FOR CALKING HORSE-SHOES. Erastus Gleason and R. Hamilton, Greenwich, N. Y. [Filed Apr. 23, 1875.]

Brief.—Dies are reversible, to serve as the jaws of a vise or calking-dies. Improvement consists chiefly in details of construction.



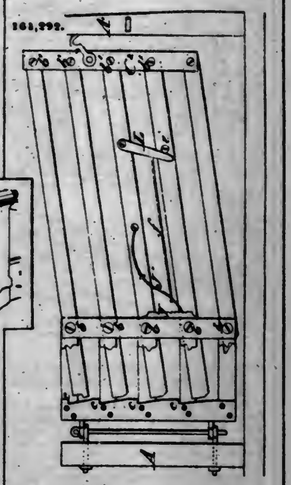
1. The combination of the standard B, having top surface B'', shoulder *c''*, and vertical dovetail-groove *c'*, with the standard B', having projecting top *b*, dovetailed projections *b'*, and the slide C, having vertical dovetail-groove *c*, and operated by the cam-lever D, substantially as set forth.

2. The combination of the reversible dies having dovetailed projections *m*, with the standards B B' and slide C, substantially as and for the purposes set forth.

3. The combination of the standards B B', and slide C, having dovetailed groove *c'* and *c*, and removable dies and cam-lever D, pivoted between the ears E, the pitman *f*, and a treadle, *g*, all substantially as and for the purposes set forth.

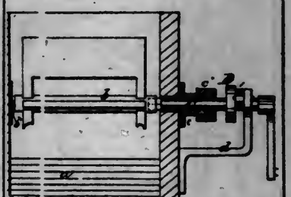
164,292. FARM-GATES. Johnston Golden, Bradford, Vt., assignor of one-half his right to Geo. Baldwin, same place. [Filed Apr. 3, 1875.]

Brief.—When the lever is adjusted on one side of the pin, the pawl will be disengaged from the teeth of the bar; but when the lever is adjusted on the opposite side of pin, the pawl will engage with the bar, and sustain the section after it is raised to the desired height.



The sections C C' of the swinging gate pivoted together, in combination with a pawl, J', and ratchet-bar J, substantially as described.

164,293. ROTARY CHURNS. Jos. Goodman, Pittsburg, Pa. [Filed Apr. 6, 1875.]



The projecting L-shaped bracket *d*, recessed at its upper end, and holding the grooved dog or clamp *e*, in combination with the sliding shaft C, having the shoulder D, working in the stuffing-box *e e'*, substantially as shown and described, and for the purpose specified.

164,294. MACHINES FOR CUTTING HOOPS. Geo. V. Griffith, Huntington, Ind. [Filed Jan. 23, 1875.]

Brief.—The feeding-table oscillates upon trunnions so placed that the edge of the table against which the knife cuts shall be at the center of oscillation.

1. In a hoop-cutting machine, the combination of a reciprocating knife, E, with an oscillating table, G, whose inner edge forms the axis of oscillation, for the purpose of supporting the hoop-planks close to the cutting-edge of the knife, substantially as described.

2. The oscillating table G, adapted for adjustment to and from the knife, substantially as described, for the purpose specified.

3. The oscillating table operated from the main shaft through the medium of the gearing, the cams M, the pivoted arms J, and the connecting-rods and links L K, substantially as described.

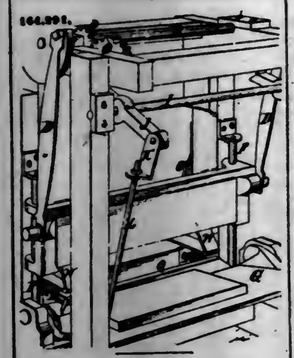
4. The oscillating table having the extent of its oscillations adjustable by means of the screw-rods L and pivoted links K, substantially as described, for the purpose specified.

5. The yielding stop or gage Q, combined with the reciprocating knife and oscillating table, substantially as described, for the purpose specified.

6. The yielding stop or gage Q, adapted for adjustment to regulate the thickness of the hoops, substantially as described.

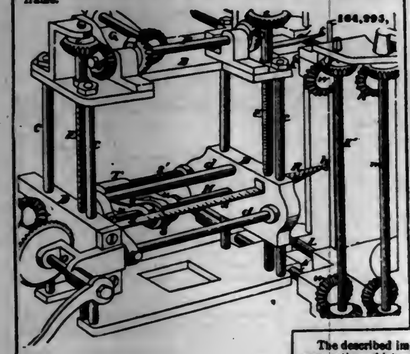
HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

164,991.



164,992. LOCK-MORTISING MACHINES. C. J. Hardee, San Francisco, Cal. [Filed Apr. 10, 1875.]

Brief.—Mortises for the reception of mortise-locks in the edges of doors without removing them from their hinges are made by means of an auger-bit of concave-convex form, having its point sharpened in the cutting side, and bent at right angles to the bit, and mounted in a longitudinally-adjustable frame. The auger is fed to the work by an adjustable nut, provided with two arms, which embrace a collar formed upon the shank of the auger, and with an index-finger for indicating the depth of bore, in connection with a graduated scale attached to the auger-frame. The machine is clamped to the door by two adjustable jaws mounted upon the front of the main frame.



1. The frame, consisting of the sliding heads D D and bolts or rods d d arranged to be moved up or down along the guiding-rods c c by means of the screws E, bevel-wheels e g, and shaft F, and carrying the spindle N, with its boring and lateral-cutting bit R operated by the shaft O and bevel-wheels P g, in combination with screw S, with its nut T having the arms v v and sliding collar S, all combined and arranged to operate substantially as and for the purpose above described.

2. A boring or mortising auger N R, in combination with a laterally-adjustable frame, D, and clamping-jaws J J, when constructed to operate substantially as and for the purpose set forth.

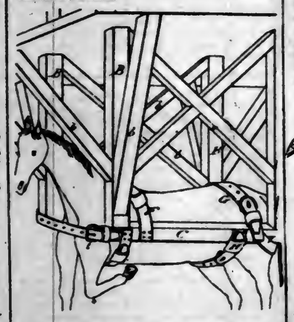
3. In combination with a boring and mortising tool, having the feed-screw S', nut T, with its arms v v, and sliding collar S, the graduated scale X, and index-finger y, substantially as and for the purpose described.

4. In combination with a mortising-bit, R, the short bit 2, for counteracting the edge of the mortise, substantially as specified.

164,993.

164,994. HORSESHOEING-STOCKS. Robert S. Harris, Wilmington, Del. [Filed Feb 20, 1875.]

Brief.—Consisting of four posts suspended from the ceiling, thoroughly braced by inclined braces, two bars secured to the suspended posts, to which are attached straps to fasten the animal.



The horseshoeing-stocks herein described, consisting of the pendants B B B B, longitudinal rails C C, and straps D, E, F, G, H, and I, constructed and combined substantially as shown and described.

164,997. METHODS OF ORNAMENTING SKIRTS, &c. Isidor Hauser, New York, N. Y., assignor to Louis Dryfoos, same place. [Filed Mar. 5, 1875.]

The process of ornamenting skirts and other articles, which consists in printing or embossing upon said article the desired ornamental pattern or design, in which are left spaces, as described, then applying to said spaces patches or medallions of fabric differing in color from the fabric of which the body of the skirt or other article is composed, said patches or medallions—when thus placed—being incorporated in and becoming an integral part of the printed or embossed design or pattern, as shown and set forth.

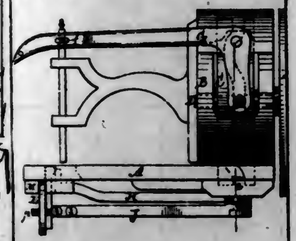
164,998. PROCESSES FOR COATING THE INTERIORS OF CASKS. Geo. Heath, Seneca Falls, N. Y., assignor of one-half his right to A. Proudfoot, same place. [Filed Apr. 8, 1875.]

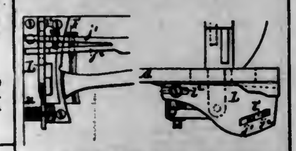
Brief.—The composition used consists of alcohol, gum-shellac, pulverized charcoal, and beeswax.

The process of coating the interior surfaces of casks with the composition herein described, applied while hot to the heated cask, and then ignited, and the volatile portions burned away, substantially as described, and for the purpose specified.

164,999. SEWING-MACHINES. I P Hicks, Pine Plains, N. Y. [Filed Mar. 4, 1875.]

Brief.—The needle-bar and shuttle and feed-levers are all operated by a single-grooved cam. The end of the feed-levers fits into an inclined slot in the feed-bar, and gives the necessary four motions to the feed-surface. The end of the lever is branched, the branches being moved to and from each other by screws, to regulate the length of stitch. A coil-spring in a cap bears against the side of the feed-bar, to prevent its moving forward till the branched arm strikes the end of the slot, and after the upward motion is given by the inclined slot.





1. The combination of the single-grooved cam C and the needle-lever G, shuttle-lever H, and feed-lever J, arranged and operating substantially as shown and described.

2. The combination of the lever J, divided into branches P P, provided with the set-screws P^1 P^2, and the feed-bar L, having the inclined slot P_3, substantially as shown and described.

3. The combination of the cap M, spring m, and screw m^1, with the feed-bar L, having the slot P, as shown and described, for the purpose specified.

165,000. HYDRAULIC ELEVATORS. Philip Hinkle, San Francisco, Cal. [Filed Mar. 1, 1875.]

Brief.—The drum-shaft is provided with two pulleys of different diameters, either one to take and wind the rope, according to amount of load. The large pulley is provided with a lip in its flange, and a sliding pin, a forked lever, and clutch, for controlling the operation. The cross-head is connected with the drum by cords carried around pulleys in said cross-head, to equalize the draft. The escape-water, when a load is descending, operates an injector to raise a portion of it. The carriage, ascending, opens the doors at the landings.

1. The pulleys F and G, of different sizes, secured side by side upon the same shaft, the pulley F, having a lip, m, in combination with the shipping mechanism, by which the rope can be run upon either one of the pulleys, substantially as and for the purpose set forth.

2. The lever J, having its fulcrum upon an arm of the pulley F and attached to the pin l, together with the lever K and central pin L for operating the lever J and shifting the rope H from one pulley to the other, substantially as herein described.

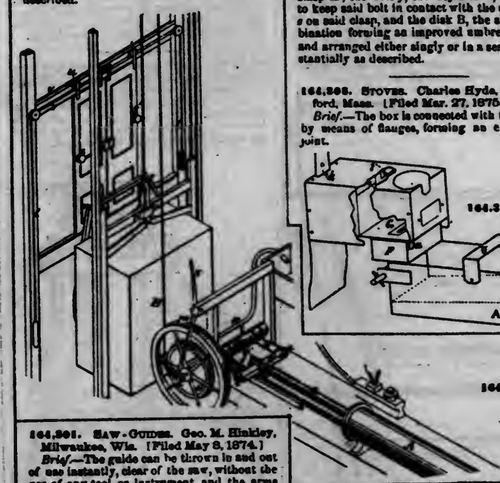
3. In combination with one or more swiveling cross-heads or yokes, C, the pulleys c, with the ropes D in pairs and winding upon the drum E spirally, substantially as and for the purpose herein described.

4. The escape-pipe N, with the branch-pipe extension O to draw away waste water from the tank M and discharge it into the tank P, substantially as herein described.

5. The device consisting of the inclined planes or arms r r, secured to the cage, and the pulleys or rollers s s upon the sliding doors, together with the cords t and the weight or springs for opening and closing the doors as the cage arrives opposite to them and departs, substantially as herein described.

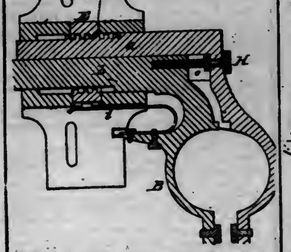
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6. The roller s, mounted upon a vibrating shaft, and the arm w and bell-crank lever x, to constructed as to operate as a latch, which is operated by the arm v, substantially as herein described.



164,001. SAW-GUIDES. Geo. M. Hinkley, Milwaukee, Wis. [Filed May 8, 1874.]

Brief.—The guide can be thrown in and out of use instantly, clear of the saw, without the use of any tool or instrument, and the arms of the guide can be adjusted with relation to each other, or laterally, without changing their relative position.

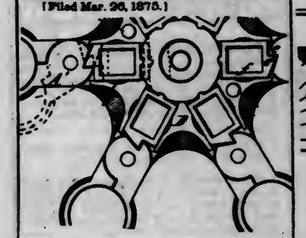


1. A saw-guide constructed substantially as shown and described, and operated in the manner set forth.

2. The saw-guide consisting of the arm A, having the grooved and threaded shank a, the arm B, having the shank b fitted into the shank a, the screw H, and the bed-plate C, having the nut E mounted therein.

3. In combination with the arms A B, having the shanks a b, constructed and arranged as shown, the support C, nut E, and spring i, arranged as shown.

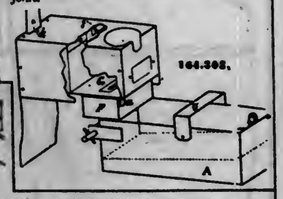
164,002. UMBRELLA-STANDS. William H. Hovey, Springfield, Mass., assignor to himself and Francis Hovey, New York city. [Filed Mar. 26, 1875.]



The combination of the following elements: The support C, the plate D, having the fixed projection A thereon, the pivoted swinging clasp A^1, the bolt f, the key-hub m, a spring to keep said bolt in contact with the shoulder g on said clasp, and the disk B, the said combination forming an improved umbrella-rack, and arranged either singly or in a series, substantially as described.

164,003. STOVES. Charles Hyde, Chelmsford, Mass. [Filed Mar. 27, 1875.]

Brief.—The box is connected with the stove by means of flanges, forming an extension-joint.

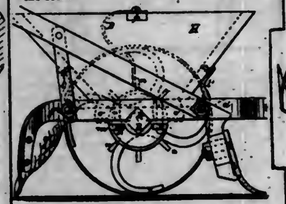




In a stove substantially such as described, the box F, in combination with the tank A^1, tube G, body a, and funnel M, provided with the cap O, substantially as and for the purpose specified.

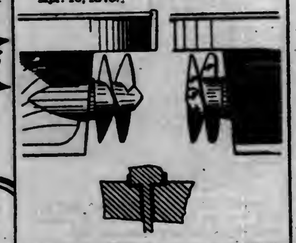
164,004. COTTON-SEED PLANTERS. Joseph C. Jenkins, Lebanon, Tenn., assignor of one-half his right to James G. Jolley, same place. [Filed Apr. 20, 1875.]

Brief.—Depending from a cross-piece into the hopper is a leaf-spring, that is struck by paddles on the revolving cylinder to agitate the seed.



The combination, in a cotton-seed planter, of the hopper H, the leaf-spring D, depending from the cross-piece p, and the cylinder O with its paddles or feeders n, as described.

164,005. SCREW-PROPELLERS. John Kelly, Baltimore, Md., assignor of one-half his right to Jos. H. Barker, same place. [Filed Apr. 10, 1875.]



1. A propeller-wheel having a tapering or conical hub, and provided with spiral blades or projections, said blades being arranged in relation to the hub and to each other, so as to form sections of a full screw, substantially as and for the purpose set forth.

2. A propeller-wheel having a series of spirally-projecting blades or projections so arranged that the outer or terminal points of each shall be in advance of the point where the next of the series starts from the largest part of the hub, substantially as and for the purpose set forth.

3. The socket B for the reception of the hub A, in combination with a propeller-wheel and a vessel, substantially as set forth.

164,006. STOVE PIPES AND DRUMS. John Kelshaw, Indianapolis, Ind. [Filed Mar. 10, 1875.]

Brief.—To retard the circulation, and produce a vertical or whirling motion, which is designed to render more certain the consumption of the gases.



A vertical flue, F, formed by a series of alternately projecting diagonal aprons or shelves, in combination with a pipe or drum, substantially as herein shown and described, to operate in the manner set forth.

164,007. IMPLEMENTS FOR HOLDING HOT COAL. Robert G. J. Kennard, Brooklyn, N. Y. [Filed Mar. 26, 1875.]

1. The handle B, provided with the shank A, and plates D, attached to the sides of the shank, in combination with the levers C, pivoted between the plates D, and with springs E for pressing the jaws of the levers apart, substantially as described.



2. The caps or casings G, attached to the plates D, for protecting and concealing the working parts of the implement, substantially as described.

164,008. DRAUGHTSMEN'S MIXING-CUPS. Harry King, Washington, D. C. [Filed Apr. 1, 1875.]

Brief.—The ink is puddled at any side by turning the top upon the diagonal base, and the cover is lifted by pressing down the lever.



1. In a draughtsman's mixing-cup, the combination, substantially as set forth, of a two-part frame, which is diagonally divided, and paddles the ink by rotation of one part on the other, and a compound lever mechanism, which lifts the top by depressing the end of the lever.

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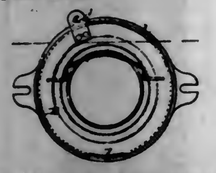
2. In a draftsman's mixing-cup, the combination, substantially as described, of the cup-frame, the top clamp, the link, and the hand lever, these members being constructed and operating so as to lift the top from the cup by means of pressure of the hand on the lever, in the manner set forth.

3. In a draftsman's mixing-cup, the combination, substantially as described, of the lid-lifting mechanism and adjustable stop, whereby the opening sweep of the lid may be limited.

4. In a draftsman's mixing-cup, the combination, substantially as described, of the lid-lifting mechanism and adjustable clamps, whereby cups of various diameters may be used, in the manner set forth.

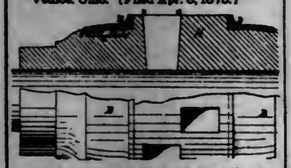
164,309. SETTING-RINGS. Jos. G. Lamb, Norwich, Conn. [Filed Apr. 19, 1875.]

Brief.—The annular plate or upper part of the ring is applied by inserting its edge at one side under one of the lugs, dropping its opposite side, by means of a recess therein, past the opposite lug, and turning it by means of the projection. The shoulders prevent it being turned too far.



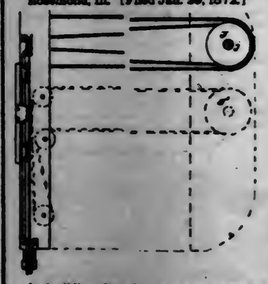
The shell or lower and outer section A of the ring, provided on its upper edge with overlapping lugs or catches and shoulders, in combination with the annular plate B, provided with a projection, *c*, and a bar-traveler arranged within the ring, substantially as described.

164,310. BANDS FOR HUBS. C. H. Liedke, Venice, Ohio. [Filed Apr. 3, 1875.]



As a fastening for wheel-hub bands, the combination, with the band B, of the wedge-shaped bars *b*, having sharpened lower edge *c*, right-angled outer end *c*, and rounded bluntedged inner end *c'*, substantially as set forth.

164,311. STREET-CARS. Samuel H. Little, Rosemond, Ill. [Filed Jan. 20, 1872.]

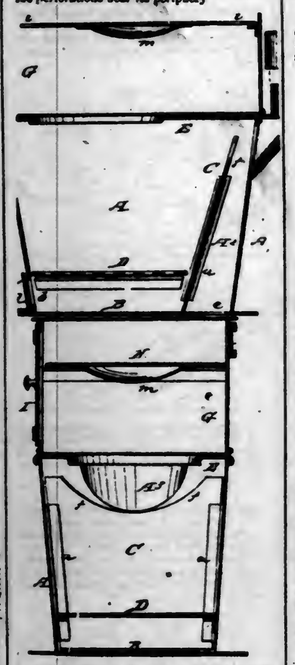


1. A sliding door for street-cars, operated in both directions by means of a continuous cord arranged within reach of the driver.

2. The combination of the door B, cord or strap *c c'*, and drum J, with necessary intervening pulleys, to enable the opening and closing of the door by the driver on the front platform, substantially as described.

164,312. PORTABLE FURNACES. Eli H. Lord and Barnabas D. Evans, Petersburg, Va. [Filed May 19, 1875.]

Brief.—The draft can be modified by adjusting the fire-back. The stove can be placed upon an ordinary stove having flat top with aperture, and the draft allowed to pass down through such aperture, in which case the cap is placed upon the collar. The convex surface beneath the shelf deflects hot air toward the perforations near its periphery

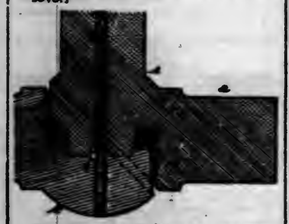


1. The stove or furnace A, provided with the movable fire-back C, forming a partition to divide it into the fire-chamber A^1 and flue A^2, substantially as and for the purposes herein set forth.

2. The combination of the stove A, movable fire-back C, grate D, extension A^3, and collar *h* with cap h^1 and the openings *b c*, substantially as and for the purposes herein set forth.

3. The combination, with a portable stove or furnace, A, of the oven G, shelf H, having perforations *i* and convex surface *m*, the door I, and damper *p*, substantially as and for the purposes herein set forth.

164,313. SAND-CORES FOR CASTINGS. *N.* Lemkenheimer, Cincinnati, Ohio, and A. Ziegler, Newport, Ky. [Filed Apr. 12, 1875.]



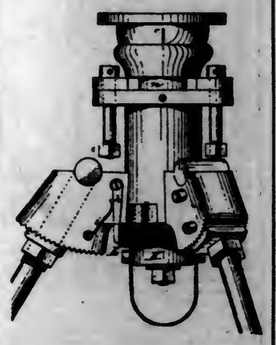
In combination with a two-part sand-core, A A *c c*, the molten-metal plug B, substantially as and for the purpose specified.

164,314. PAINT COMPOUNDS. Asa T. Lyon, Cincinnati, Ohio. [Filed Apr. 23, 1875.]

The paint compound consisting of caustic lime, alum, sulphate of zinc, coal-ashes, whiting, asbestus, and boiled linseed-oil, in the proportions named, substantially as described.

164,315. ADJUSTABLE TRIPODS FOR MINING-DRILLS. James H. Mandeville, Washington, D. C. [Filed May 27, 1875.]

Brief.—The drill-cylinder is adjustably secured to a rotating cylinder by means of a ball-and-socket joint. The legs of the tripod are secured at any angle by lock-nuts.



1. The combination, with a tripod, of a rotating cylinder and a ball-and-socket-joint fastening, for adjusting a drill to work at any angle, substantially as described.

2. A rotating cylinder, in combination with a ball-and-socket-joint fastening, when constructed substantially as described.

3. The combination, with a rotating cylinder, of a table and clamping device, substantially as described.

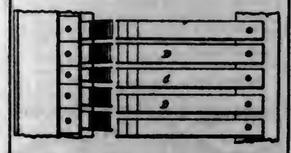
4. In a tripod for mining-drills, the combination of a stop mechanism with a rotating cylinder, substantially as described.

5. The swinging ball, or its equivalent, in combination with the sleeve or with the tripod, substantially as described.

6. The combination, with a serrated hub, of the T-headed legs, the serrated washers, and the fastening-nuts, substantially as described.

164,316. COTTON-GINS. Orren W. Massey, Macon, Ga. [Filed Apr. 26, 1875.]

Brief.—By inclining the ribs toward the center, new surfaces of the roll of unginned cotton are constantly presented to the saws, and the roll compressed endwise, thus lessening the friction of the roll against the ends of the feed box.



The center rib C, made gradually narrower from the upper bend above the saws to the top, in combination with the inclined side ribs D D, inclining from the bend above the saws to the top or center-rib, substantially as shown and described, for the purpose set forth.

164,317. SKIRTS. John McGowan, New York, N. Y. [Filed Apr. 27, 1875.]

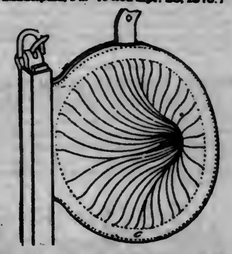
As a new article of manufacture, a felt skirt having an imitation quilted facing embossed in color directly on, and indented into, the cloth of which the skirt is made, substantially as and for the purposes set forth.

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164,317.



164,318. BRIDLE-WINKERS. P. McFadden, Philadelphia, Pa. [Filed Apr. 28, 1875.]



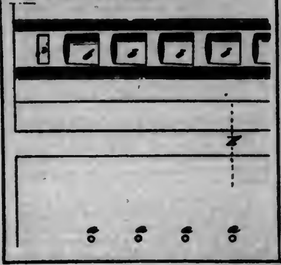
As a new article of manufacture, a bridle-winker having a central elevated portion, C, entirely surrounded at its base by a flange, *c*, produced by two rows of stitching, substantially as described.

164,319. SPIKE-MACHINES. Dennis H. McGookin, Philadelphia, Pa. [Filed Apr. 15, 1875.]

In a spike-machine, the eccentric rolls 18 and 19, constructed with the respective offsets, eccentric and concentric curves, in their perimeters, and arranged to operate together upon the hot bar of iron Z, as described, and shown in Figs. 12, 13, 14, and 15, for the purposes specified.

164,320. DIES FOR MANUFACTURING BOLSTERS FOR POCKET-KNIVES. William H. Miller and Geo. W. Miller, Meriden, Conn. [Filed Dec. 3, 1874.]

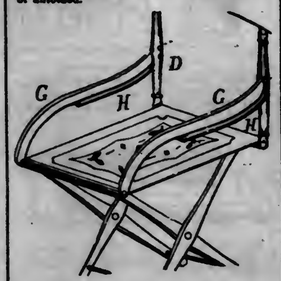
Brief.—The lower die has the impress of a series of half-bolsters, with a shallow recess on each side of the series, to receive the excess surplus metal. The upper die has a plane surface, with a number of circular indentations, that serve to form rivets by which to unite the bolster to the scale.



As a means of forging a series of bolsters, at one operation, from a single bar of metal, the counter-die B provided with a series of cavities, *b*, and the recess *c* and the die A provided with the series of holes *a*, substantially as herein set forth.

164,321. FOLDING CHAIRS. C. D. Cutman, New York, N. Y. [Filed Mar. 13, 1874.]

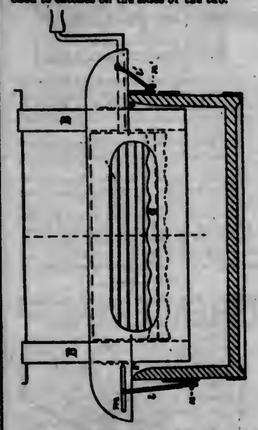
Brief.—Slotted metallic plates are applied to the under side of the arm-rests, so that the guiding and holding screws on the back will move freely in such slots as the chair is folded or unfolded.



In a folding chair, having a hinged back, D, and arm-rests G, the slotted metallic plates H, rigidly secured to said arm-rests and connecting with the back, substantially as and for the purpose set forth.

164,322. WASHING-MACHINES. A. O'Dell, Liverpool, Ohio. [Filed May 2, 1874.]

Brief.—The machine has one main roller, ribbed and grooved longitudinally, having its bearings in a frame or casing directly above, and in contact with a number of smaller rollers, ribbed and grooved transversely; said smaller rollers being likewise journaled within the casing, and receiving motion by contact with the clothes as they pass between them and the main roller. The machine is secured to the tub by means of side pieces provided with springs, which are sprung on and fastened to catches on the sides of the tub.

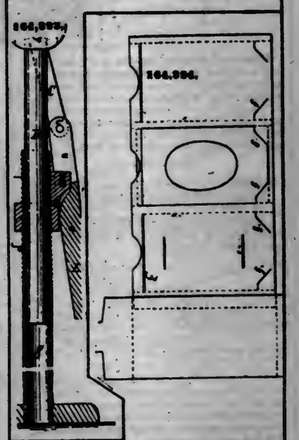


1. In a washing-machine, the combination of the side pieces having the extensions *b b'* and slots *m*, the rectangular-hooked spring-fastening *l*, pin *n*, loop *l'*, catch *n'*, and tub, constructed as shown.

2. In a washing-machine having the end pieces B, the combination of the main roller C, grooved lengthwise, as shown, and the small rollers *e*, ribbed or corrugated transversely, as shown, for the purposes set forth.

164,323. LIFTING-JACKS. Lewis O'Hara, Oswego, N. Y. [Filed May 20, 1875.]

The combination, in a lifting-jack, of the hollow standard S, with its main screw *b*, the rod E, the lever L, with its bifurcated short arm *a'*, the connecting-rods O C, and the screw-slide *c*, as described.



164,324. PHOTOGRAPH-WRAPPERS. Chas. Parker, Newark, N. J. [Filed Sept. 19, 1874.]

As a new article of manufacture, a photograph-wrapper, formed of one thickness of paper, made or folded in two or more sections, having graduated spaces between them, and provided with the transverse openings *c*, and oblique openings *f*, and the tuck-cover, substantially as and for the purposes specified.

164,325. WIRE RACKS FOR EXHIBITING SHIRTS. William D. Phelan, Pittsburg, Pa. [Filed May 17, 1875.]



1. In a rack for displaying shirts, the combination of the two pivoted adjustable frames or sections *a a' a'*, the section *a* being formed or provided with retaining loops or devices to hold the shirt in position, substantially as described.

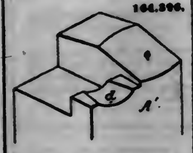
2. The combination, with the pivoted frames *a a' a'*, constructed substantially as shown, of the spring *c*, as and for the purpose specified.

3. As a new article of manufacture, a shirt-rack, consisting of the pivoted adjustable wire frames or sections *a a' a'*, the section *a* having the loops *b b d d e e* and spring *c*, and the section *a'* having the eyes *c*, all as and for the purpose specified.

164,326. DIES FOR FORMING THE RIMS OF HARNESS. John Pinkerton, Philadelphia, Pa. [Filed Apr. 20, 1874.]

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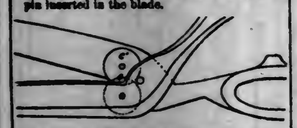
164,206.



The combination of the dies A A', each having a hollow face, *d*, constructed toward the rear end, and a concave face, *c*, inclined from its rear edge *a* downward toward the front of the die, when the said dies are constructed and arranged relative to each other to permit the transfer of the article being forged from one face to the other, all as set forth.

164,207. TAILORS' SHEARS. Maurice B. Pleas, North Manchester, Ind. [Filed May 15, 1875.]

Brief.—At the rear end of each blade a circular rotating cutting-disk is secured upon a pin inserted in the blade.



In a pair of shears, the rotating circular cutters *c c'*, attached, respectively, to the rear end of each blade in such manner that their exposed surfaces shall be on a line with the inner sides of the blades, substantially as and for the purpose set forth.

164,208. GAME APPARATUS. Nicholaus Reis, Dayton, Ohio, assignor of one-half his right to J. D. Arres, same place. [Filed Feb. 28, 1875.]

Brief.—Dice with two faces only figured, the other faces being blanks to increase the risk.



As an improvement in game apparatus, a cubical die or dice having four blank faces, and upon the remaining two faces a star, stripe, or other device, substantially as described, and for the purpose set forth.

164,209. MACHINES FOR POLISHING SHEET-IRON. David M. Reynolds, Port Deposit, Md. [Filed Mar. 3, 1875.]

Brief.—The cylinders have blades of india-rubber inserted in their outer surfaces, that operate as polishers; and hinged aprons m, extending across the sheet and actuated by weights, constantly press the passing sheet down upon the upper surface of the inclined table B, and up against the lower surface of the table C.

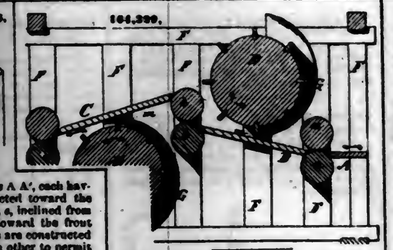
1. In a machine for cleaning and polishing sheet metal, the cylinders D E, having adjustable gum plates or rubbing-surfaces, substantially as described, for the purpose specified.

2. The two rubbing and polishing cylinders D E, combined with the feed-rolls *a a b b*, and inclines B C, arranged and combined to polish the metal sheets on both sides, substantially as described.

3. The combination of the rubbing and polishing cylinders D or E with the inclines B or C, the feed-rolls, and the weighted plates *m*, arranged and operating substantially as and for the purposes set forth.

4. The concave G, combined with the cylinder D, feed-rolls *a a*, and incline B, substantially as and for the purposes set forth.

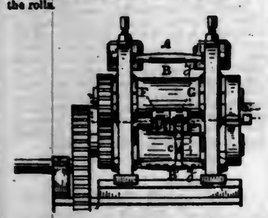
164,210.



The combination of the buffer B, draw-bar D, slides *b* and *c*, spring *g*, and box U, substantially as set forth.

164,211. MANUFACTURE OF TROWELS. J. C. Richardson, Manlius, N. Y. [Filed Nov. 26, 1874.]

Brief.—Diamond-shaped blanks are cut from plate metal. The shank is formed at one point, and the central portion of the blade thinned under a drop-die. The handle is then bent, and the article finished by the operation of the rolls.



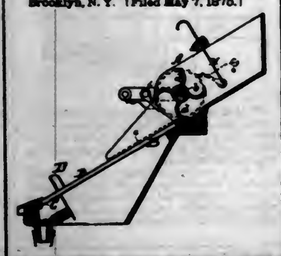
1. The improvement in the manufacture of trowels involved in the successive forging operations stated, and illustrated in Figs. 1 to 11 and 1° to 1', inclusive, for the purpose set forth.

2. The dies A'', with working faces *a''* *a'''* *a''''*, substantially as and for the purpose set forth.

3. The dies B'', with working faces *b''* *b'''* *b''''*, substantially as and for the purpose set forth.

4. The die F, with groove *a*, die G, with groove *b*, and the roll B', with groove *c*, continuous of the groove *b*, in combination with the upper guide H and lower guide H', substantially as and for the purpose set forth.

164,212. NAIL-FEED ATTACHMENTS FOR NAILING-MACHINES. Ferdinand Rochow, Brooklyn, N. Y. [Filed May 7, 1875.]



1. The hopper A, constructed with the converging side plates *a a*, for receiving the nails from the transverse feed-wheel *d*, in combination with the slotted nail-guide B, all substantially as and for the purpose stated.

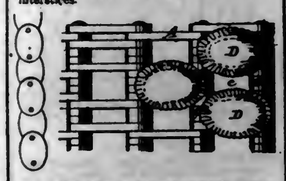
2. The transverse shields D D, in combination with the inclined slotted guide B of the nail-feed, substantially as and for the purpose specified.

3. The reciprocating notched nail-conveyer C, for receiving the nail from the guide and delivering it to the nail-tube, in combination with the guide B, nail-funnel E, and stationary wiper *h*, mounted above the conveyer, and adapted to dislodge the nail from the notch when brought directly over the tube, all substantially as shown and described.

4. The slotted nail-guide B, constructed with beveled sides, as shown, to prevent the nails from resting upon its upper surface between the hopper and conveyer, as set forth.

164,213. FLOOR-MATS. Chas. M. Roullier, Paris, France. [Filed Apr. 12, 1875.]

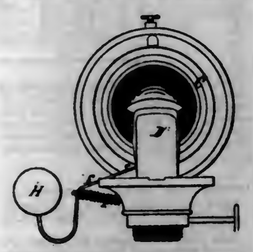
Brief.—This mat may be rolled or folded as woven carpets are, being formed of short links in longitudinal direction, held or hinged upon transverse rods reaching from side to side. The links may be made small to produce meshes, or brushes may be held in alternate interstices.



A self-cleaning mat or carpet, having an interticed articulated foundation, substantially as described.

164,214. LAMP-EXTINGUISHERS. John O. Soderstrom, Pepin, Wis. [Filed Apr. 14, 1875.]

Brief.—The jaws, supported by the curved springs, are kept apart by the arms of the weighted lever, while the lamp is undisturbed.



1. The opposite concave jaws D D, sliding one within the other over the burning wick, as and for the purpose specified.

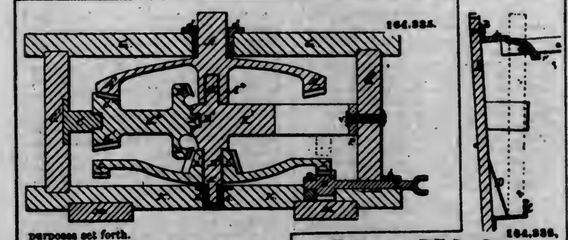
2. The combination, with sliding jaws, of diverging arms *c c*, arranged to vibrate on the inside of and unattached to said jaws, as and for the purpose set forth.

3. The combination, with lever E, having arms *c c*, of rod weight H and spring F, arranged to hold the jaws back from the wick-tube, or allow them to be slid over it by the spring.

164,215. HORSE-POWERS. Lewis Stewart, Camp Hill, Pa. [Filed Apr. 24, 1875.]

Brief.—A three-way bracket serves as an axle for the large gears inserted loosely thereon, and as an inner support for the inner gear-shaft.

1. The spider or bracket structure K' F, provided with the journals B B', and the bearing B', as a central support for the members A' L and C' C' D D', its parts being constructed and arranged substantially as and for the

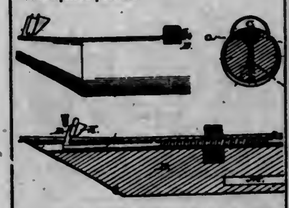


purposes set forth.

2. The combination of the bracket structure K' F, the multiplying members A' L and C' C' D D', all arranged and supported in the frame G G' G' K, and operating to rotate the shaft H by pinion H', substantially in the manner as and for the purpose herein set forth

164,216. STITCH-RIPPERS. Geo. St. George, Jr., Philadelphia, Pa. [Filed May 4, 1875.]

Brief.—The cone is placed in the hem, or between the two pieces of fabric, forming an open seam, and the adjustable knife fixed at the required position.



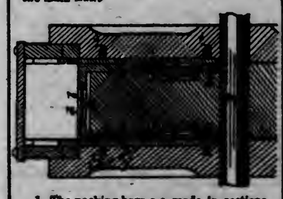
1. The cone A, formed with the opening C and channel *a*, in combination with the slit handle B, substantially as and for the purpose set forth.

2. The combination, with the cone, of the knife D, having an adjustable or sliding movement on the cone, substantially as and for the purpose set forth.

3. The guard-lips L, in combination with the knife D, substantially as and for the purpose set forth.

164,217. ROTARY ENGINES. Timothy B. Stuart, Boston, and John A. Emery, Cambridge, Mass. [Filed Apr. 24, 1875.]

Brief.—Steel plates are inserted at the overlapping joints of the packing-bars, to allow said bars to expand and contract, and prevent the ingress of steam behind them. The abutment is raised and lowered through intermediate mechanism attached to an eccentric on the main shaft

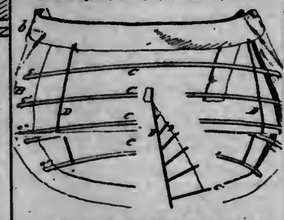


1. The packing-bars *a a*, made in sections, with overlapping joints, provided with steel plates *d* in the joints, and pressed outward by means of springs *b b*, substantially as and for the purposes herein set forth.

2. The combination, with the abutment G of the rod A, adjustable link H, arm I, bar E, steel *k*, with roller *i*, and the eccentric J, all substantially as and for the purposes herein set forth.

3. In a rotary engine, the combination, with the cut-off valve P and its rod *t*, of the slotted adjustable link E, the arm V, and eccentric W, for operating the valve, and the rod *o*, extending through the link E, and forming a handle, S, to catch into the rack *w*, for adjusting the valve substantially as herein set forth.

164,218.



1. The rim B, bent or curved to form upward extensions, which proceed to the waistband, and rest against the person of the wearer, in combination with the upwardly-folding transverse bows C C', &c., connected to said rim, as shown, so as to form an acute angle on their upper sides, and facilitate the closing, substantially as set forth.

2. The rim B, constructed to rest against the person of the wearer, its ends being secured to the waistband, in combination with folding transverse bows C C', &c., attached to it, substantially as described, so that said transverse bows when folded toward the waistband will produce a torsion in the rim, or cause it to bend, so as to produce a spring, substantially as described.

164,219. BUSTLES. Amos W. Thomas, Philadelphia, Pa. [Filed Oct. 17, 1874.]

1. In a bustle, a base-bow, F, formed or combined with upright extensions or ribs F', which rest against the person of the wearer, and provided with spiral curves *f f*, arranged so as to permit said bow to fold upwardly toward the waistband, and cause it to spring downwardly when impost is released, substantially as shown and set forth.

2. In a bustle having a muslin or equivalent back, a bow having its ends bent toward each other, and secured to said back by metal clamps or other fastening devices, substantially as shown and described.

3. The base-bow F, bent to form, or combined with, upward extensions to rest against the person of the wearer, in combination with the transverse bows D D, having their ends attached to a muslin or equivalent back, and a cord or tape, G, confining said bows D D and F, substantially as shown and described.

164,220.

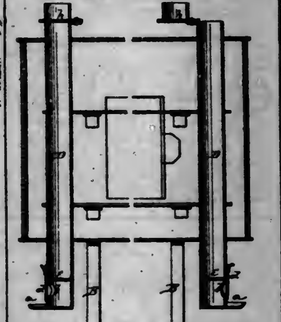


4. In a bustle having vertical ribs or equivalent supports to rest against the person of the wearer, the transverse bows C C', having their ends connected to a fibrous or equivalent back independently of such ribs, so that their bulge or center shall be vertically nearer the waistband than their extremities, as shown and described.

5. The rib F', extending downward vertically from the waistband, forming a base, which rests against the person of the wearer, for the attachment of the transverse folding bows D D, and bulging outwardly from the corners *f f* to form a bow which will fold on its base upwardly toward the waistband, as shown and described.

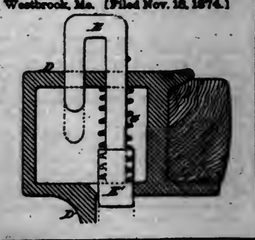
6. The cords G' G', for holding the bustle in position and preventing displacement, substantially as set forth, said cord being attached to the lower extremity or base of the bustle, as shown.

164,221. PORTABLE STOVES. S. Thompson, Pecatonica, Ill. [Filed Apr. 23, 1875.]



The combination of the stove A, having door C, and interior shelves E E, and the vertical pipes D, with hinged caps *h h* at the top, and provided with hearth *a*, draft-aperture *b*, slides *d*, and grates *e* at or near their lower ends, all substantially as and for the purposes herein set forth.

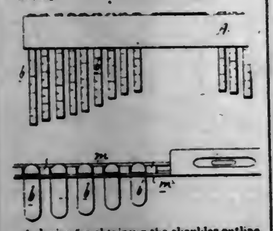
164,222. HORSE-COLLARS. Wm. J. Thorn, Westbrook, Me. [Filed Nov. 12, 1874.]



1. The U-shaped bolt E, with unequal arms, in combination with the spring G, and parts C D recessed to receive it, substantially as herein specified.

2. The shield D', on the part D, arranged, as shown, relatively to the bolt E and spring G, for the purposes specified.

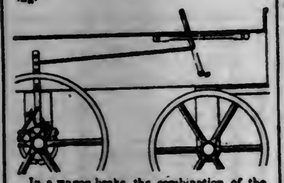
164,343. TAILORS' DEVICES FOR LAYING OUT GARMENTS. Geo. E. Tiffany, Indianapolis, Ind., assignor of one-half his right to Wm. H. Richardson, same place. [Filed Apr. 7, 1875.]



A device for obtaining the shoulder-outline for garments, consisting of the frame A, the two sets of guide-rods b, the rods of each set having bent ends of different lengths, the springs n, and the spirit-level d, all combined substantially as set forth.

164,344. WAGON-BRAKES. J. C. Trullinger, Portland, Oreg. [Filed Mar. 22, 1875.]

Brief.—Friction applied at hub, instead of at circumference, by devices shown in drawing.



In a wagon-brake, the combination of the clutch A, the hub b, the rock-shaft C, the levers L and l, and the connecting-rods c and d, whereby friction is applied to the wheels of a vehicle at the hub or side of the wheel, substantially as set forth.

3. The combination, with the clamp depressor E, by means of which the wire is clamped to the spindle, of a hand stop-lever device, whereby the operator is enabled to relieve the clamp-depressor from the action of the cam E^3, and control the operation of driving the screws without stopping the machine.

4. The combination, with the hand controlling-lever device T^2 T', and its spring-pin u, of the fixed and loose arms T E^2, and the interlocking projection t^2, whereby the fixed and loose arms are locked and unlocked to receive the action of the cam E^3 to operate the clamp depressor E, and to render such action non effective in relation to the depressor, as set forth.

5. The combination, with the spindle and its operating cam H, connected for operation substantially as described, of a take-up device, whereby any backlash or play of the spindle is prevented while cutting the screws, and the latter thereby formed free of blanks or irregular threads.

6. The combination, with the cam H, the spindle C, and the rock shaft connection therewith, of the take-up cam S, and an adjustable lever, S_1, on said rock-shaft, whereby to effect a perfect adjustment in preventing backlash of the screwing-spindle, substantially as here in set forth.

7. The combination, with the treadle O and a fixed stop, r, of a pivoted spring-treadle latch, for joint operation with said treadle, substantially as and for the purpose stated.

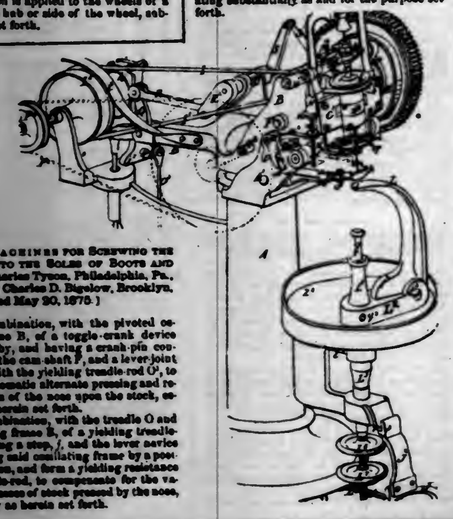
8. The combination, with the pivoted oscillating frame, the nose which it carries, and the treadle O O^2 of the pivoted spring-treadle latch $J J^2$, and the fixed stop r, substantially as and for the purpose herein set forth.

9. The combination, with the spindle-connecting devices, and the rod N n, uniting the detent therewith, of the detent-arm n^1, having a free or sliding connection upon the rod n, whereby the detent-points are caused to operate as an escapement with rigid coacting points, as herein set forth, and for the purpose stated.

10. The combination, with the detent-carriers, of the connecting-spring n^2 and the arresting device M, whereby both the detent and the arrester are held in proper positions for joint operation.

11. The combination, with the treadle O, and its yielding rod O^1, of the carrier-frame P, having a movement with the treadle-rod O and the band-shifter O^4, and a slight movement independent of them when the treadle is depressed, as set forth, and for the purpose stated.

12. The combination, with the pivoted oscillating frame, and its pressing-nose, of the yielding treadle-rod O, its adjustable stop j, and the carrier-frame P, connected and operating substantially as and for the purpose set forth.



164,345. MACHINES FOR SCREWING THE UPPERS ONTO THE SOLES OF BOOTS AND SHOES. Charles Tyson, Philadelphia, Pa., assignor to Charles D. Bigelow, Brooklyn, N. Y. [Filed May 20, 1875.]

1. The combination, with the pivoted oscillating frame B, of a toggle-crank device carried thereby, and having a crank-pin connection with the cam-shaft F, and a lever-joint connection with the yielding treadle-rod O^1, to effect the automatic alternate pressing and releasing action of the nose upon the stock, essentially as herein set forth.

2. The combination, with the treadle O and the oscillating frame B, of a yielding treadle-rod, O^1, having a stop, j, and the lever series Q, for uniting said oscillating frame by a positive connection, and form a yielding resistance by the treadle-rod, to compensate for the varying thicknesses of stock pressed by the nose, substantially as herein set forth.

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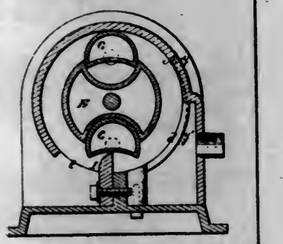
13. The combination of the pivoted band-shifter i, and the stops i^2 i with the rod O^4, its spring O^5 and O^6, and the treadle, for the purpose stated.

14. The combination, with the rotatable work-supporting horn L, of a guard pan, Z^1, to catch and hold the brass cuttings, as described.

15. In a sole screwing machine, the combination, with the cutter-stem p, of the separate cutter-point 3, having its shank 4 soldered in an open angular socket in the stem, to render the cutter point solid, and allow it to be removed and renewed when broken, and without requiring a new cutter-stem.

164,346. ROTARY PRESSURE-BLOWERS. T. L. Varne, Kokomo, Ind. [Filed May 12, 1875.]

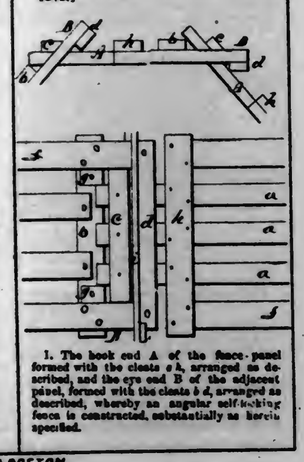
Brief.—Improvement on patent to Wm. Pruett, No. 153,202, and consists in placing the gate and inlet and outlet in the lowest part of the outer cylinder, as requiring the wings always to hang evenly balanced, with their concave side downward. The outer cylinder, for a little way above the outlet, is bored out eccentrically, to allow a leakage of air backward to equalize pressures.



1. In a rotary blower, having an interior revolving cylinder, E, with two wings, G G, operating therein at opposite sides, the gate or cut-off I, arranged in a vertical position at the bottom of the stationary case or cylinder, in combination with the wings G G, hung with their concave sides downward, substantially as and for the purposes herein set forth.

2. In a rotary blower, having a revolving cylinder and rotating wings operating within an interior cylinder, the stationary cylinder A, made eccentric on its interior from y to y', substantially as and for the purposes herein set forth.

164,347. PORTABLE FENCES. Charles Von De Mark, Hillsdale, Mich. [Filed Apr. 9, 1875.]



1. The hook end A of the fence-panel formed with the cleats a b, arranged as described, and the eye end B of the adjacent panel, formed with the cleats b d, arranged as described, whereby an angular self-locking fence is constructed, substantially as herein specified.

2. The hook-end A of the fence-panel formed with the cleat c, overlapped by the boards a a, and the eye end B of the adjacent panel, formed with the cleat b, overlapping the boards a a, and provided with blocks g g, whereby a straight self-locking fence is constructed, substantially as herein specified.

3. In combination with the fence-panels constructed as herein described, the brace C, formed with its sides f f overlapping the top of the fence to form a rider-notch, l, and with notches l m n, substantially as herein specified.

164,348. EARTH-CLOSETS. C. A. Wakefield Pittsfield, Mass. [Filed Mar. 17, 1875.]

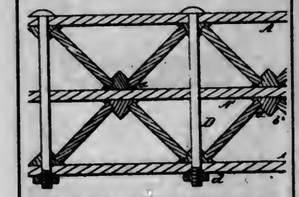
Brief.—The lower compartment has a door having beveled or inclined upper and lower edges, and irregular portion near the center of each side. The door fits into a correspondingly-shaped opening in the casing.



The door I J, having the beveled or inclined upper and lower edges i and zigzag or irregular portion i^2, in combination with the correspondingly-shaped opening in the casing, substantially as and for the purpose shown and described.

164,349. BRIDGE-TRUSSES. Jonathan Wall, Wilmington, Ohio. [Filed Mar. 27, 1875.]

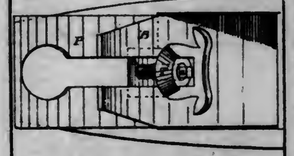
Brief.—A truss for bridges, consisting of three horizontal plates held together by bolts, and braced by short diagonal struts fitted into angle-blocks, which are recessed to receive the ends of said struts.



The combination, in a truss, of the three plates A A' B, short diagonal struts C, recessed angle-blocks $b b' b^2$, and tension-bolts D, said struts being arranged on lines intersecting at or near the middle of the plate A' with their ends resting in the recesses a of the angle-blocks b^2, and the latter arranged on opposite sides, respectively, of the plate A', all substantially as shown and described.

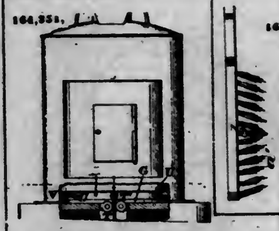
164,350. SHOOK-PLANES. Thos. H. Wall, New Bedford, Mass. [Filed Apr. 20, 1875.]

Brief.—The plane-iron can be readily and conveniently adjusted, and securely held in position, by means of a screw set in the bed of the plane, and extending upward in a line perpendicular to the surface of the bed through a slot in the plane-iron, and a corresponding slot in the break-iron, in connection with a thumb-nut arranged to turn down upon the screw.



The combination, as a plane-iron fastener, of the screw S, set in the bed A, the plane-iron P, and the thumb-nut T, as described.

164,351. SIGNAL-LANTERNS. Geo. Walton and William F. Merrill, Cincinnati, Ohio. [Filed Mar. 22, 1875.]



In a signal-lantern having an outside stationary case and an inside revolving case or screen, adapted to be operated from a distance by means of cords passing to the operator, the combination of the weight S with the inside screen, for returning the latter to its normal position when the operating-cord is released, substantially as described.

164,352. HORSE-POWERS. Z. D. Waters, Brookville, Md. [Filed May 22, 1875.]

Brief.—A cylindrical body is provided with two internal rows of gear-teeth, a combination of wheels and pinions revolving therein around and about a central shaft. The sweeps are provided with rollers engaging under a flange on the body.

1. In combination with the stationary body or shell A, having the two rows of teeth a and b, the central shaft C, the frame M, provided with the pinions N, the frame J, provided with the central pinion K and planetary pinions L, the pinion G, and wheel D, constructed and operating substantially as shown and described.

2. In a horse-power, the combination of an outside circular body or shell, provided with two internal rows of teeth, with two series of planet-wheels and central pinions, substantially as shown and described.

3. In combination with the shouldered central shaft C, having the wheel and pinion D G mounted thereon, the recessed plate H, supported on the shoulder of the shaft, and the gear-frame J, provided with the central hub-bearing in the plate, as shown.

4. In a horse-power, a rotary pinion-carrying frame, consisting of an upper plate and a lower plate, one of said plates being provided with lugs t, and the two plates being united by bolts w, as shown.

5. In combination with the pinions, having central hubs on their under sides, the frames provided with oil cups or recesses to receive said hubs, as shown and described.

6. In a horse-power, the combination of a vertical central shaft, having two or more pinions or pinion-frames mounted thereon, a foot-plate, d, provided with a recess or oil-cup, e, and a wheel or pinion supported by a hub, f, bearing in said recess, substantially as shown, so that the oil descending on the shaft is finally caught at its foot and applied to the bottom pinion.

7. The gear-carrying frame M, supported by the central screw P, bearing upon the upper end of the shaft C, as shown.

8. In combination with the body A, provided with a flange, s, the gear-frame M, provided with the sweeps or draft-bars O, having the rollers m attached thereto, and arranged to bear under the flange, as shown.

164,353. TOOTH-BRUSHES. Joseph Wayne, Philadelphia, Pa. [Filed Apr. 17, 1875.]

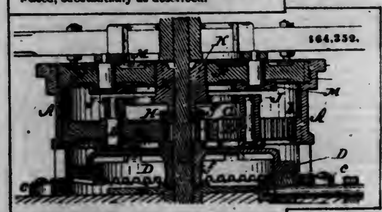
Brief.—The bristles are inclined toward the center of the brush, to produce a better effect in cleaning the teeth.



A tooth-brush having the body of its bristles divided into two sections, a a', each section having its bristles parallel to each other, and inclined toward the other section, the space between the sections being occupied by a central tuft of bristles perpendicular to the base of the brush, substantially as described, and for the purpose set forth.

164,354. CULINARY UTENSILS. John H. Weare and Nathan Weare, Cincinnati, Ohio. [Filed Mar. 20, 1875.]

1. The vessel A, in combination with the plate C, suitably attached at the top, and provided with the lugs g g, adapted to engage inside of the rim a, to effect the bottom fastening, substantially as and for the purpose specified.



2. The vessel A, in combination with the detachable plate C, having flange d, substantially as and for the purpose specified.

3. The combination of vessel A, having clamping flanges B B and laterally-applicable plate C, constructed and operating substantially as and for the purpose specified.

164,355. TRAM-STAVES. Samuel B. Williams, Bridgeport, Ohio, assignor of one-half his right to Seymour C. W. Dunlevy, same place. [Filed Mar. 6, 1875.]

Brief.—Swinging freely on a vertical spindle, and adjustable by a top screw, is an upright piece extended below into two horizontal arms. To the under side of the arms is attached a guide-bar extending across the face of the stone. By adjustable screws a quill on the bar is put in contact with all points of the circumference. The implement, when adjusted, is fixed by screws on the bottom of the spindle.



The combination of the tram-staff A, bracket B, standard C C^1 C^2, shaft D D^1, and crank-screw E, all constructed and arranged substantially as and for the purpose specified.

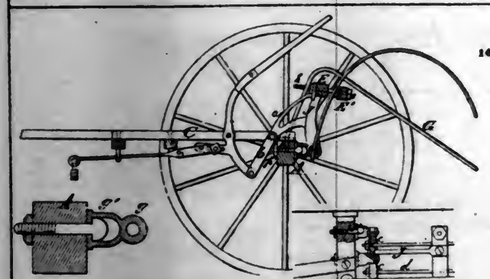
164,356. HORSE HAY-RAKES. Robert Wilson, Ithaca, N. Y. [Filed May 7, 1875.]

Brief.—Each tooth is separately fastened to its own head, which has its bearings in two eye-brackets rigidly secured to the axle. The eye-brackets, by reason of their hollow slotted bases, may be removed by simply loosening the nuts of the securing-bolts.

1. The holding-down bar E and the adjustable under bar E^1 in combination with the raking-teeth, whereby the raking ends of the teeth can be adjusted and set at any desired height from the ground, substantially as described.

2. Angular clearing-teeth G projecting above the axle of the rake, then extending backward and downward over the bars E E^1, substantially as described.

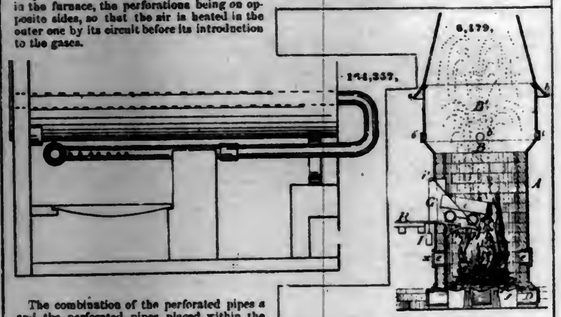
3. The eye-brackets g formed with hollow slotted bases g^1, as and for the purposes set forth.



141,356.

141,356. DEVICES FOR FEEDING AIR TO FURNACES. Joseph L. Winslow, Deering, Me. (Filed May 3, 1875.)

Brief.—A perforated air-tube is concentrically located within another, and both placed in the furnace, the perforations being on opposite sides, so that the air is heated in the outer one by its circuit before its introduction to the gases.



141,357.

6,179.

The combination of the perforated pipes *a* and the perforated pipes placed within the same, the perforations being made upon opposite sides of the respective pipes, for the purpose of transmitting a forced and heated current of pure air into the gases arising from combustion in a furnace or other heating device, as and for the purposes herein described.

141,358. DEVICES FOR HOLDING AND DISPLAYING BROOMS. Jno. W. Yewell, Washington, D. C. (Filed May 3, 1875.)



As a new article of manufacture, the hereinbefore-described holder, constructed of wire in the general form of a triangle, the ends of said wire meeting at one side, and provided with suitable engaging-hooks, substantially as and for the purpose specified.



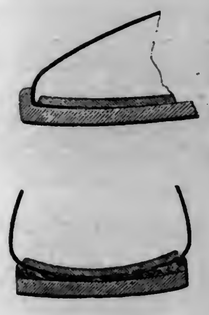
1. The door H, hinged at its bottom edge, and provided with rails, upon which a truck or car travels, having their upper ends curved to stop the car, as and for the purpose described.

2. The cold-air openings b' b', located in section B', and above the combustion-chamber of a refuse-burning furnace, substantially as and for the purposes described.

3. The combination of railway R and truck or car R' with a furnace having opening G and door H, constructed to close automatically, substantially as and for the purpose described.

4. A furnace for burning refuse matter, composed of sections A, B, B', and C, constructed to be supplied in refuse, and the combustion thereof regulated, in the manner and by the means substantially as described.

6,360. MANUFACTURE OF BOOTS AND SHOES. Joseph L. Joyce, New Haven, Conn., assignor to the Joyce Protection-Toe Association, same place. Patent No. 141,357, dated July 29, 1873. (Filed May 4, 1875.)

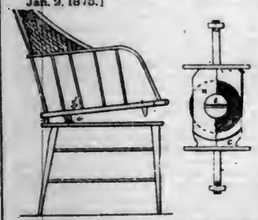


1. In the manufacture of boots and shoes, the insole beveled from the lower side back toward the top and from the upper, or so as to form a space between the edge of the insole and the upper, substantially as and for the purpose specified.

2. In the manufacture of boots and shoes from leather, the sole constructed with a recess, into which the insole and the upper at the edge of the insole are embedded, the surrounding edge of said recess formed from the sole itself, within and so as to preserve the outer edge of the said sole, to show as the whole or part of the principal or outer sole, substantially as described.

REISSUES.

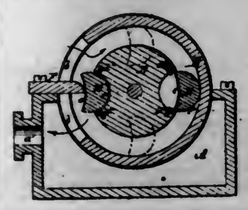
6,479. TILTING CHAIRS. Osmore A. Bingham, Keene, N. H., assignor to George C. Winchester, Ashburnham, Mass. Patent No. 147,891, dated Feb. 24, 1874. (Filed Jan. 2, 1875.)



The flat spring, coiled as described, its outer end carried by and moving with the seat, and its inner end at the center of the coil connected with a pivot-pin, on which the seat turns, in combination with the seat-frame, its support and pivot-pin, and with a side plate, to prevent the spring from moving away from the center of the chair and off from the pivot-pin, substantially as and for the purpose described.

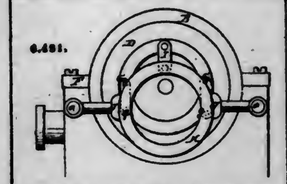
6,479. REFUSE-BURNERS. William Glue, Muskegon, Mich. Patent No. 145,861, dated Dec. 23, 1873. (Filed May 19, 1875.)

Brief.—The door is opened by the loaded car, and, falling to nearly a horizontal position, allows the car to run into the furnace until it is arrested by the curved ends of the track. The cold air openings are above the combustion-chamber, and supply air to keep the upper part of the furnace comparatively cool.



6,481. ROTARY PRESSURE-BLOWERS. Wm. Pruett, Kokomo, Ind., assignor to Tobias L. Varns and Andrew F. Dayhuff. Patent No. 153,202, dated July 21, 1874. (Filed May 22, 1875.)

Brief.—The inner cylinder is longitudinally recessed to receive concavo-convex wings, which are journaled in the cylinder-heads, all revolving together. The concave sides are presented outward as they pass a fixed gate or abutment. Motion of the wings is controlled by an external ring connected by bars to the axes of the wings, and itself controlled by a steadying bar and shoes.



6,481.

1. The combination, in a rotary pressure-blower, of the revolving wheel or cylinder D, having semicircular recesses on opposite sides, and the revolving wings E E, constructed with one concave side, *e*, and one convex side, *e'*, and placed in the recesses on the cylinder D, a gate or cut-off, and mechanism to communicate the described motion to the wings, substantially as and for the purposes herein set forth.

2. The combination of the recessed revolving cylinder D, the revolving concavo-convex wings E E, and the adjustable gate or cut-off F, substantially as and for the purposes herein set forth.

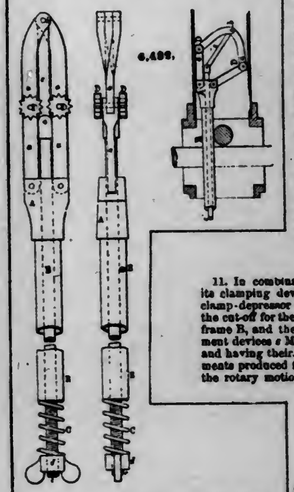
3. In a rotary blower, the combination of the cylinder B and the cylinder D, with heads *d d*, having circumferential grooves, and the packing-rings *d' d'* therein, all substantially as and for the purposes herein set forth.

4. The combination, with the cylinder D and wings E E, of the connecting-rods G G and I and ring H, for the purposes herein set forth.

5. The combination of the ring H, connecting-rods G G, guiding-rod I, and steadying-shoes J J, as herein set forth.

6,482. BOILER-TUBE CLEANERS. Charles Schmandt, Baltimore, Md., assignor of one-half interest to Charles Mittendorff, same place. Patent No. 161,556, dated Mar. 30, 1875. (Filed Apr. 26, 1875.)

Brief.—The jointed arms of the cleaner are provided with revolving cutters, to cut the scale upon the inside of the flues.



6,482.

1. The combination of the wheels D with the jointed arms of a tube or flue cleaner, substantially as and for the purpose specified.

2. The jointed arms a pivoted to the block A, and provided with the revolving wheels D, in combination with the rods *e*, substantially as set forth.

3. The combination of the block A, jointed arms *a*, cutters D, rod *e*, pipe B, spiral spring C, and thumb-nut *d*, substantially as and for the purposes specified.

6,482. MACHINES FOR SCREWING THE UPPERS ONTO THE SOLES OF BOOTS AND SHOES. Charles Tyson, Philadelphia, Pa., assignor, by mesne assignments, to Chas. D. Bigelow, Brooklyn, N. Y. Patent No. 149,007, dated Mar. 24, 1874. (Filed May 27, 1875.)

Brief.—Mechanism is provided for automatically feeding the wire, cutting a screw-thread thereon, determining the length of screw required, proportionate to the varying thicknesses of parts to be united, for inserting the screw, and setering it after insertion.

1. In a machine for screwing the uppers onto the soles of boots and shoes, a clamp, D, for the wire, having a rising and falling movement upon the screwing-spindle, in combination with the spindle C, having an axial and revolving motion, essentially as and for the purpose stated.

2. The combination of the sliding clamp-head D with the toggle-clamp for the wire, and the screwing-spindle, operating substantially as described.

3. The combination of the clamping device for the wire with a depressing device, E, or its equivalent, for operating the clamping device, essentially as described.

4. The combination of the clamping device for the wire and its operating device E, with an arresting device, M, for releasing the wire from the clamp, essentially as described.

5. The arresting device M, for releasing the wire from the clamp, in combination with a holding-and-tripping or escapement device, *s* M', for holding the arrester and allowing it to drop out of the way of the clamp, for the purpose stated.

6. In combination, the depressor E, clamp D for the wire, arrester M, and nose K, and the beak-iron L, operating substantially as and for the purpose described.

7. The combination, in a sole-screwing machine, of the depressor E, the clamp for the wire, the arrester M, the presser-nose K, and the fixed horn, with their operating mechanism, whereby the distance between the nose and the horn will be made equal to that between the depressor and the arrester, to determine the length of each screw by the thickness of the material which may be at the time between the horn and the nose.

8. The escapement-detent *s*, and the stop M', arranged upon the fixed frame, in combination with the screwing-spindle and the operating-cam H, arranged upon the tilting frame B, connected, substantially as described, and for joint operation to release the arrester M at the moment the wire is unclamped, to free the arrester for the farther descent of the spindle, essentially as described.

9. The arrester M, in combination with the escapement devices and the weighted arm *f*, whereby the arrester is raised in position to be held by the detent during the ascent of the spindle, for the purpose, and essentially as described.

10. The combination, with the cam H, of the adjustable connecting-rod N, and the escapement-detent device *s* M', operating substantially as described, and for the purpose set forth.

11. In combination, the screwing-spindle, its clamping device D, for the wire, and the clamp-depressor E, the presser-nose K, and the cut-off for the screw, carried by the tilting frame B, and the arrester M and its escapement devices *s* M', carried by the fixed frame, and having their several and distinct movements produced from the cam-shaft F (except the rotary motion of the spindle) automatically, and in their respective successive relations to each other, for the purpose, and essentially as described.

12. The combination, in a sole-screwing machine, of the oscillating pivoted frame B, with mechanism by which the presser-nose K is alternately depressed and elevated automatically at the insertion of each screw during the operation of the machine, substantially as herein set forth.

13. The combination of the reciprocating frame T with the oscillating pivoted frame B, and the treadle-rod O', to effect the automatic alternate pressing and releasing action of the nose K upon the stock, essentially as described.

14. The combination, with the oscillating pivoted frame and its pressing-nose of the adjustable stop *j*, treadle-rod O', and treadle, whereby the descent of the nose is regulated within fixed limits, to afford working freedom with the horn, as set forth.

15. The combination, with the oscillating frame B, the treadle-rod O', and the treadle O, of the connected side rod O², provided with the springs O³ and O⁴, and the pivoted band-shifter *i*, whereby the band-shifter has a cushioned connection with the treadle and the shifting of the band made by the act of bringing the nose into working position, as herein set forth.

16. The combination, with the treadle and its rod O', of the yielding connecting-rod U, of the reciprocating frame T, and the oscillating pivoted frame B, whereby the nose is made to press upon different thickness of work, as set forth.

17. The combination, with the adjustable treadle-stop *j* and the pressing-nose K, of the vertically adjustable horn-stem L², whereby both the horn and the nose have fixed adjustments in relation to each other, as set forth.

18. The cutter Y, for severing the screw, having a screw-stem, Y', and nut *n* for adjustment, as described.

19. The removable plates *a a'* of the nose K, arranged and secured as described, and for the purpose stated.

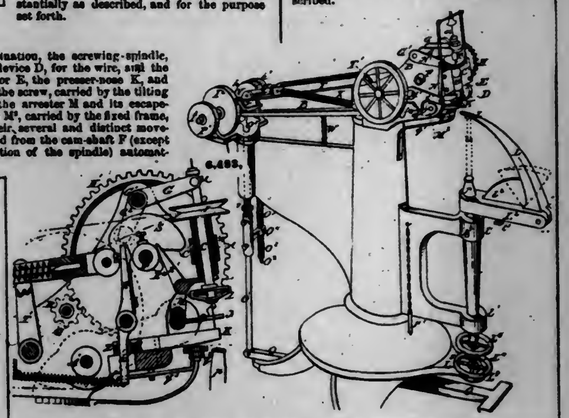
20. The combination of the spindle C for rotating the wire with the lever G connected with said spindle, and an escapement-detent, substantially as described, with the clamping device D, and a screw-cutter, Y, whereby the thread is cut upon the wire without a screw-spindle.

21. The beak-iron L, pivoted as described, in combination with the stem-adjusting screw L³ and its lock-nut L⁴, as and for the purpose described.

22. The socketed stem L² of the beak-iron, in combination with the extensible post *p*, essentially as described, and for the purpose stated.

23. The combination of the socketed extensible post *p* with the removable supporting-pin *p'* for said post, as described.

24. The combination, with the driving-pulley F and the oscillating frame B, of the brake *r*, arranged to be operated by the said oscillating frame in the manner and for the purpose described.



6,482.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 24. TUESDAY, JUNE 15, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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ERRATA.

On page 961 of last week's GAZETTE, (June 8,) in fifth line from top of second column, after "granted," insert *and*.

On page 962, thirty-third line from top, for "only limitation" read *only intention*.

COMMISSIONER'S DECISIONS.

BALDWIN *vs.* BIGELOW.—*Appeal.*

[*Appeal from the Examiners-in-Chief in the matter of the interference between the application of Stephen W. Baldwin and the patent of Horace H. Bigelow, for an* "IMPROVEMENT IN MACHINES FOR MAKING HEELS FOR BOOTS AND SHOES."—*Decided May* 1, 1875.]

An applicant first to conceive, complete, and practically test an invention in a full-sized working machine, which he preserved, held to be the first inventor, although, before he made his application for patent, an independent inventor had procured a patent comprehending the same invention.

Where, for the purpose of practically testing complicated mechanism a slight use of it was made, held that such use was experimental, and not a public use that would work abandonment of the invention, if a patent was not applied for within two years.

The practical utility of some inventions will appear upon inspection; but complicated machinery often requires actual use to demonstrate its success. The statute should not be so applied that such a test would prevent the grant of a patent unless applied for within two years from the time it was made.

THACHER, *Commissioner:*

There seems to be no occasion for entering into an extended review of the testimony in this case, as both the Examiner of Interferences and the Examiners-in-Chief have decided the question of priority in favor of Baldwin, which finding is not seriously questioned. The following brief summary in the facts in the case by the Examiners-in-Chief is sufficient for present purposes:

Baldwin's application was filed August 8, 1871, long after Bigelow had obtained his patent. His application can only be allowed therefore on such evidence as would defeat a suit at law on Bigelow's patent.

His case is a very plain one, leaving no room for doubt, except upon a single point. One McKay had come to an understanding during the war of the rebellion with the War Department, upon the strength of which he undertook to get up machinery for the manufacture of boots and shoes for the use of the army, which he was to supply the government. In carrying out this arrangement he employed Baldwin to get up the machine in question, which was to be employed with others in the production of the articles to be furnished. Baldwin entered upon the construction of it, and there is no doubt had it perfected, so as to operate successfully in the spring of 1865. Something like sixty heels were made, and it was unquestionably complete for practical use. Some slight alterations were made in it, but all within a short time, and none of them affected the principle of its operation.

The close of the war put an entire end to McKay's expectations of making sales of army shoes to the government. It had a large stock on hand, and the market was glutted with them for a long time. McKay at once suspended his preparations to manufacture, and the machine in question was stored away without any further use being made of it. No step was taken afterward in prosecuting the invention for six years, when his application was filed on the 8th of August, 1871.

In the meanwhile Bigelow had constructed his machine, had not merely introduced it into use, but had operated it extensively; had produced a large number of shoes embodying the results of the invention, and sold them in market.

From this statement it is perfectly clear that Baldwin first conceived, completed, and practically tested the invention in a full-sized working machine, which is now in existence. There can be no hesitation in declaring him the prior inventor.

In their decision the Examiners-in-Chief express the opinion that the application of Baldwin—

should be referred to the Primary Examiner to consider whether Baldwin has not so used his invention more than two years before applying for a patent as to lose his right to it under the statute.

The recommendation of the Board was adopted, the Interference suspended, and Baldwin's application remanded to the Principal Examiner for the consideration and determination of the question of public use.

In a very full and elaborate opinion, the Examiner decided that the evidence in the case did not show such use as would operate to bar the grant of a patent to applicant.

After a question of this kind has been determined in the ordinary way by an Examiner I am not disposed to review the matter unless it is apparent that a gross error has been committed. In this case, however, the interests at stake are apparently so important, and the contest has been so vigorous, that I have carefully examined this question with the purpose of satisfying myself whether the decision of the Examiner is correct.

I fully concur in his opinion that there is no evidence of public use which would bar the grant of a patent to Baldwin. Only fifty or sixty heels were made upon the machine, and this use was simply for the purpose of testing the practical working of the apparatus. Such a test, in the case of complicated machinery, is necessary to a satisfactory demonstration of the completion and perfection of the invention. There are many inventions, the practical utility of which will be recognized upon mere inspection, and in such cases there is no occasion for any application of the test of use; but all inventions cannot be judged by the same test. A machine involving the combination of many devices will almost invariably require demonstration of its practical success by actual use. If such a test should be used to prevent the issue of a patent to the inventor, unless he applies within two years thereafter, (no other use of the machine having intervened,) it would in my opinion be gross injustice, and such an application of the law as was never intended or warranted by any decision with which I am familiar. The completion of the invention by Baldwin, and the demonstration by experimental use that it was practical and adapted to the purpose for which it was designed, gave to him an indefeasible right thereto, which would prevent the issue of a valid patent to any subsequent inventor. As there was only this experimental use of the machine for the purpose of testing its utility before the application for a patent was made, there was no forfeiture by Baldwin of his right to a patent unless he distinctly dedicated his invention to the public, evidence of which is entirely wanting.

Priority of invention and the right to a patent are awarded to the applicant, Stephen W. Baldwin.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

CHRISTOPHER MEYER AND JOHN EVANS *vs.* STEPHEN PRITCHARD.

[*In equity.—Before* BLATCHFORD, *J.—May*, 1874.]

The invention covered by the letters patent to Christopher Meyer and John Evans, July 16, 1872, for an "improvement in rubber overshoes," which claims, "As a new article of manufacture, india-rubber shoes, with strengthening or other pieces homogeneous with the body, formed by thickening up the said substance in forming the sheet, substantially as specified," is, to thicken up the plastic india-rubber in desired places, in the sheet, as the sheet is being formed between two rolls, by means of grooves and ribs on one of the rolls, the other roll being plain, so as to leave the sheet thicker where the india-rubber has entered the grooves than it is in the other parts, and thus make a sheet which is a flat plane on one side and has raised ribs or projections on the other side, and to make such ribs or projections on that part of the sheet which is to be used to form the upper part of the shoe.

As the process of making the sheet into the shoe and vulcanizing the shoe is not different from the process used to make a sheet into a shoe and vulcanize the shoe when the ribs or projections are formed by pasting the strips on by hand, it follows that the patented invention is really complete when the sheet is made by the means described, ready to be made up into a shoe and to be vulcanized.

A sheet out of which to cut the upper part of an india-rubber shoe, such sheet and such upper part having a variety of thickness in different parts, and being formed in one piece at a single operation by the use of rollers, one of which has a surface the reverse of the form to be produced, is an analogous manufacture in all respects to the sheet out of which to cut the sole of an india-rubber shoe, as described in the patent of Hyatt and Meyer of January 17, 1854, such sheet and sole having a variety of thickness in different parts, and being formed in the manner above described.

The shoe having the material of the upper part so thickened up is not a new article of manufacture in view of the prior shoe having the material of the sole so thickened up.

The fabric not being new, the application of it to make the upper part of the shoe is a mere double use of the same invention.

[*S. D. Law*, for complainants.
George Harding and *J. H. Ackerman*, for defendant.]

BLATCHFORD, *J.*:

This suit is brought on reissued letters patent granted to the plaintiffs, July 16, 1872, for an "improvement in rubber overshoes," the original letters patent having been granted to them, as inventors, February 21, 1871. The specification says:

Our invention relates to the strengthening-ribs employed upon the uppers of india-rubber shoes, and consists in an improvement which will be hereinafter described, and subsequently specified in claim.

Figures 1 and 3 represent plan views of two modifications of these ribs, and Fig. 2 a sectional view of forming-rolls, with the plastic substance passing therethrough. Fig. 4 is a section of Fig. 1.

A A, in Fig. 1, represent plain ribs, inclosing a space, in configuration similar to the openings in the uppers of ordinary rubbers. B represents a rib around the top or mouth of the shoe. *b* is an imitation thread passing around each rib. A' A', in Fig. 3, represent the ribs arranged in the form of a single ornamental buckle. B', in Fig. 3, represents rolls, of which the lower is plain, and the upper ribbed or pointed at *d*, and grooved at *c*, to make the strengthening-ribs A A' or B, and the rows of imitation-stitches *b*, which said ribs and grooves will be in any form or shape and location on the roller, according to the form or location of the rib or other device it is desired to produce. The imitation-stitches may consist either of indentations formed in the surface of the sheet or points projecting above the surface—the one will be formed by projections on the rollers, and the other by indentations. *a a* represent the ribs formed from plastic rubber as it is carried through the rolls, and it will be observed that they are not corrugations, like the strengthening-ribs used upon metal, but a thickening up of the substance in certain lines or directions. *a'*, in this figure, represents the indentations to imitate thread-stitches.

The process through which the material passes, to bring it into the form required, is as follows: The mass of plastic rubber is forced into the opening between the molding or shaping rolls, and drawn out into a sheet, with the ribs and points or indentations completely shaped. It is then made up into the shoe or sandal and vulcanized.

We thus produce these ribs or figures in homogeneous connection with the other part of the sheet. They are, therefore, better than when of separate strips, pasted on in the gummy state after the sheet is formed and secured to it in the vulcanizing process, as in the common way; and, being formed at the same time the sheet is rolled, and by the same operation, it is done without expense other than the preparing of the grooves, indentations, and points in the rollers. Moreover, the said ribs or figures will be much more perfect and uniform than when done by hand. The same is true in regard to the imitation-stitching, also, which has heretofore been made by a pointed wheel rolled alongside of the ribs by hand.

The claim is in these words:

As a new article of manufacture, india-rubber shoes, with strengthening or other ribs homogeneous with the substance of the body, formed by thickening up the said substance in the forming of the sheet, substantially as specified.

The invention set forth in this specification, as shown by the description and the claim, is to thicken up the plastic india-rubber, in desired places, in the sheet, as the sheet is being formed between two rolls, by means of grooves and ribs on one of the rolls, the other roll being plain, so as to leave the sheet thicker where the india-rubber has entered the grooves than it is in the other parts of it, and thus make a sheet which is a flat plane on one side, and has raised ribs or projections on the other side. The application of this idea, developed in the specification, is, to make these ribs or projections on that part of the sheet which is to be used to form the upper part of the shoe—that part which covers the top of the foot, and that part which surrounds the opening through which the foot enters the shoe. The advantage set forth is, that the ribs or projections thus made are of one substance with the rest of the material, and in homogeneous connection with it, and, therefore, better and more cheaply, uniformly, and perfectly made, than when made by pasting on strips by hand to form the ribs or projections. The patented invention is really complete when the sheet is made by the means described, ready to be made up into a shoe and to be vulcanized. The process of making the sheet into the shoe and vulcanizing the shoe is no different from the process used to make a sheet into a shoe and vulcanize the shoe, when the ribs or projections are formed by pasting strips on the sheet by hand.

With this view of the invention, it is impossible to say that there is anything of patentable novelty or patentable invention in it beyond what is fully shown in the patent granted to Elias C. Hyatt and Christopher Meyer, January 17, 1854, for an "improvement in the manufacture of boot and shoe soles of gutta percha or india-rubber." The specification of this patent describes the use of two rollers. One of them is a smooth roller. The other roller, called the soling-roller, has three distinct circumferences, which produce three different thicknesses of the sole. The material, in a soft state, is passed between the rollers in a continuous sheet. The smooth roller produces a smooth surface on one side of the soling. The other roller produces, of different thicknesses, the fore part, the shank, and the heel of the sole. Thus, in one operation is performed what had previously been done in three distinct processes, and the soling is formed in one continuous sheet. The specification goes on to say:

Heretofore india-rubber soling has been made one strip of equal thickness throughout, or by several strips of different thicknesses for heel, shank, and forepart, cemented together at their ends, or of one strip having the length and breadth of the sole, with separate pieces cemented thereon to give proper thickness to the heel and forepart of the sole. It is at once evident that the first is an inferior sole, and requires more material than the others; and that the second and third require additional labor in the manufacture, and that the parts are liable to become separated in the process of manufacture, or afterward, causing loss to the manufacturer or consumer. It is equally obvious that all these inconveniences and imperfections are avoided by making the sole in one piece, as above described, by one process, and that such sole is thus produced at once, better and cheaper than heretofore. We are aware that india-rubber has long since been reduced to sheets by rolling, and that the rollers used for this purpose have sometimes been engraved to produce a figured surface, analogous to that often cemented to the heels and fore parts of shoes; but these sheets have been of substantially uniform thickness, varying only in the slight indentations, &c., required to produce an ornamental or figured surface. This we do not claim. But we are not aware that india-rubber has ever been rolled into sheets having a substantial variety of thickness in its different parts. Nor are we aware that shoe-soles, having the proper variety of thickness, have ever been rolled out or made in one solid piece before our invention. Nor was it known that such forms could be produced as we have produced them in india-rubber, until our experiment practically illustrated the fact.

The claims of this patent, three in number, are in these words:

1. Producing a shoe-sole, or other analogous manufacture, in india-rubber or gutta-percha, in one piece, having variety of thickness in its different parts, by the use of rollers, whose surfaces present the reverse of the forms to be produced, at a single operation, substantially as herein described.

2. Forming soling of india-rubber or gutta-percha, with shanks, fore parts, and heels of appropriate differences of thickness, in one solid piece, and at one operation, as described, thus producing a useful, economical, and novel manufacture.

3. We also claim such soling or analogous manufacture in continuous sheets, at one operation, by rolling, as described.

The specification of this patent to Hyatt and Meyer fully instructs those engaged in the manufacture of india-rubber shoes how to roll unvulcanized india-rubber into a sheet having a substantial variety of thickness in its different parts, the sheet being made in one solid piece, the variety of thickness being produced by a thickening up of the material in any desired place, one face of the sheet being smooth and the other face having projections upon it, the projections having a homogeneous connection with the other parts of the sheet, with the advantage of cheapness and durability, as contradistinguished from giving the increased thickness by pasting on, or cementing on, separate strips or pieces of the material, and the result being produced by the use of rollers, one of which is smooth and the other is of such configuration on its surface as to admit of more material in thickness being left at one place than at another. A person who makes a sheet according to the patent sued on makes it strictly in accordance with the directions of the earlier patent, without any addition. A sheet out of which to cut the upper part of an india-rubber shoe, such sheet and such upper part having a variety of thickness in different parts, and being formed in one piece, at a single operation, by the use of rollers, one of which has a surface the reverse of the form to be produced, is an analogous manufacture, in all respects, to a sheet out of which to cut the sole of an india-rubber shoe, the sheet and the sole having a variety of thickness in different parts, and being formed in the manner above described. When the sheet is prepared from which to make the upper part of the shoe, such upper part is cut and made from it in the same manner in which the sole is cut and made from the prepared sheet from which to make the sole. The shoe having the substance or material of the upper part so thickened up is not a new article of manufacture, in view of the prior shoe having the substance or material of the sole so thickened up. It is a mere double use of the same invention. The fabric not being new, the application of it to make the upper part of a shoe is not invention, nothing novel being required to adapt it to make such upper part. The fabric which is described in the plaintiffs' patent is directly within the first and third claims of the earlier patent. The fabric of the earlier patent includes the whole of the invention set forth in the plaintiffs' patent. (*Smith vs. Elliott*, 9 Blatchf. C. C. R., 400.)

The bill must be dismissed, with costs.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date June 15, 1875.]

8,386.—Chapeau-Block.—THOMAS AGENS and JOHN C. POST, Newark, N. J. Application filed February 1, 1873. Term of patent 7 years.

8,387.—Glassware.—WILLIAM LEIGHTON, Jr., Wheeling, W. Va. Application filed May 27, 1875. Term of patent 14 years.

8,388.—Medal.—JOSEPH W. LINCO, Philadelphia, Pa. Application filed April 28, 1875. Term of patent 7 years.

8,389.—Handles of Table-Knives.—LUCAS J. MARCH, Deerfield, assignor to JOHN RUSSELL CUTLERY COMPANY, Turner's Falls, Mass. Application filed April 3, 1875. Term of patent 7 years.

8,390.—Beer-Mugs, Ale-Glasses, &c.—THOMAS C. PEARS, Pittsburg, Pa. Application filed May 31, 1875. Term of patent 7 years.

8,391.—Locomotive Head-Lights.—THOMAS S. RAY and CHARLES T. HAM, Buffalo, New York. Application filed June 3, 1875. Term of patent 3½ years.

8,393.—Drinking-Fountain.—WILLIAM TWEEDDALE, Brooklyn, N. Y. Application filed May 28, 1875. Term of patent 7 years.

8,393.—Plates of Range.—NICHOLAS S. VEDDER and TOMAS S. HEISTER, Troy, N. Y., assignors to CHARLES NOBLE, M. D., CHARLES NOBLE, and FRANCIS P. NICHOLSON, Philadelphia, Pa. Application filed June 4, 1875. Term of patent 14 years.

8,394.—Range.—HENRY A. WOOD, Bangor, Me. Application filed April 3, 1875. Term of patent 7 years.

8,395.—Coffin-Handles.—MARTIN H. CRANE, Cincinnati, Ohio, assignor to CRANE, BREED & Co., same place.—Case B. Application filed May 12, 1875. Term of patent 7 years.

8,396 and 8,397.—Chain-Pump Curb.—HENRY L. FRY, Cincinnati, Ohio, assignor to JAMES L. HAVEN & Co., same place.—Cases A and B. Applications filed April 10, 1875. Term of patents 14 years.

8,398.—Game-Board.—CHARLES G. HARGER, Jr., Watertown, N. Y. Application filed May 28, 1875. Term of patent 14 years.

8,399 to 8,403, inclusive.—Oil-Cloths.—JAMES HUTCHISON, Newark, N. J., assignor to THOMAS POTTER, SONS & Co., Philadelphia, Pa.—Cases A, B, C, D, and E. Applications filed June 8, 1875. Term of patents 3½ years.

8,404 and 8,405.—Carpets.—THOMAS J. STEARNS, Boston, Mass., assignor to THE ROXBURY CARPET COMPANY, same place.—Cases H and I. Applications filed June 8, 1875. Term of patents 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date June 15, 1875.]

2,665.—Salted, Pickled, and Preserved Salmon.—J. W. & V. COOK, Clifton, Oregon. Application filed June 5, 1875.

"a design representing the imperial crown of Great Britain, having the words 'Crown Brand' printed upon its base band."

2,666.—Cigars.—F. DE BARY & Co., New York, N. Y. Application filed May 12, 1875.

"words 'La Perla,' with the other features of the fac-simile, as described."

2,667.—Coffee.—GILLESPIE, ZELLER & Co., Philadelphia, Pa. Application filed June 2, 1875.

"the representation of two coffee-bags, one lying across the other, on the upper one of which are the letters 'G. Z. & Co.'"

2,668.—Anti-Friction Metal.—GEORGE S. HUNT, Sacramento, Cal., and BENJAMIN F. HUNT, St. Louis, Mo. Application filed May 24, 1875.

"word 'diamond.'"

2,669.—Medicated Belts.—LOVE & WILLSON, Atlanta, Ga. Application filed June 8, 1875.

"the representation of an anchor."

2,670.—Gin.—M. E. OSBORN & Co., Cincinnati, Ohio. Application filed June 4, 1875.

"words 'CRYSTAL WAVE.'"

2,671.—Summer-Furnaces.—CHRISTOPHER RIEGNER, Washington, D. C. Application filed June 9, 1875.

"words 'SUMMER QUEEN.'"

2,672.—Camp-Lounges.—THE CAMP-LOUNGE COMPANY, Troy, N. Y. Application filed January 18, 1875.

"a pictorial representation of our camp-lounge folded and ready for transportation."

2,673.—Pans.—A. A. VANTINE & Co., New York, N. Y. Application filed April 30, 1875.

"the pictorial representation of the main building of the Centennial Exposition Buildings at Philadelphia."

2,674.—Flour.—M. R. BORTREE & Co., Chicago, Ill. Application filed April 19, 1875.

"words 'Fancy Loaf,' and the size and style of the letters in the word Fancy and in the word Loaf, the figures 196, the XXXX, the word Palmyra, and the letters M and O."

2,675.—Bosom-Shirts.—GEORGE B. CLUETT, BRO. & Co., Troy, N. Y. Application filed June 7, 1875.

"words 'Monarch Shirts,' and the cut of a crown interposed between, or similarly placed near them."

2,676.—Pavements.—LEWIS S. FILBERT, Philadelphia, Pa. Application filed May 6, 1875.

"words 'Vulcanite Pavement.'"

2,677.—Cigars.—FOSTER, HILSON & Co., New York, N. Y. Application filed May 15, 1875.

"the representation of a lion, with a figure of a boy resting in graceful position on the body of the same, being allegorically expressive of reliance in strength."

2,678.—Combined Planing and Matching Machines.—FRANK & Co., Buffalo, N. Y. Application filed April 29, 1875.

"word 'ECONOMIST.'"

2,679.—Articles of Ladies' and Children's Wear.—GEORGE FROST & Co., Boston, Massachusetts. Application filed June 8, 1875.

"Maltese cross."

2,680.—Hosiery.—JOHN J. GLAZIER, BROTHER & Co., Philadelphia, Pa. Application filed May 17, 1875.

"word 'CENTENNIAL.'"

2,681.—Toy Balloons.—GEORGE F. HEIDET, New York, N.Y. Case A. Application filed May 20, 1875.

"the representation of the front elevation of the proposed Centennial Exhibition Building at Philadelphia."

2,682.—Toy Balloons.—GEORGE F. HEIDET, New York, N. Y. Case B. Application filed May 20, 1875.

"word Centennial.'"

2,683.—Medicine.—HENRY C. HOUGH, Providence, R. I. Application filed May 28, 1875.

"words 'Dr. Hough's Anti Scrofula Syrup or Matchless Purifier of the Blood' and a correct likeness of myself."

2,684.—Brandy.—IVES, BEECHER & Co., New York, N. Y. Application filed May 15, 1875.

"words 'Renault & Co., Cognac.' Over said letters is an armorial crest, consisting of a lion rampant standing on a crown."

2,685.—Hosiery.—KIBBE, CHAFFEE & Co., Philadelphia, Pa. Application filed June 5, 1875.

"letters 'K, S, C, and B,' arranged in the form of a diamond, with an arrow in the open space between."

2,686.—Cigars.—A. LICHTENSTEIN & BROTHER, New York, N. Y.—Case A. Application filed May 31, 1875.

"the representation of the head of an elk."

2,687.—Cigars.—A. LICHTENSTEIN & BROTHER, New York, N. Y.—Case B. Application filed May 31, 1875.

"word 'ELK.'"

2,688.—Hats.—MALLORY MANUFACTURING COMPANY, Bridgeport, Conn. Application filed May 24, 1875.

"the figure of a twisted drooping spring-hoop, such as is inserted in the brims of hats to cause the brims to droop at the front and rear and rise at the sides."

2,689.—Medicine.—WILLIAM H. PANCOAST, Millstone, N. J. Application filed April 30, 1875.

"words 'Shake No More.'"

2,690.—Toilet-Powder.—OTTO TOUCHÉ, New Orleans, La. Application filed May 8, 1875.

"words 'Ladies' Favorite' and a female bust with arms and hands, in the latter of which is shown a package, upon which is inscribed the words 'Ladies' Favorite.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date June 15, 1875.]

256.—Title: **"Great Fever Remedy—Ten-Day-Ague Cure."**—ANNIE M. COBB, Newark, N. J. Application filed May 11, 1875.

257.—Title: **"The Standard Desk-Pad."**—H. T. JOHNSON & Co., Boston, Mass. Application filed May 27, 1875.

258.—Title: **"Dr. Evans' Herb Syrup."**—ELIZA MILLER and EMELINE E. EDWARDS, Philadelphia, Pa. Application filed May 13, 1875.

COPIES OF DRAWINGS OF BACK ISSUES.

Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 13, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)	6,500
SEWING-MACHINES and attachments	2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes	4,000
PRINTING; including presses, type, and printers' furniture	2,500
FELTING and HATS; including caps, bonnets, flock, &c.	1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs	1,400
CARRIAGES and WAGONS	6,000
BRIDGES; including ferry-guards, girders and columns, piers	400
CARDING, CLOTH, CORDAGE, KNITTING, SILK, SPINNING, WEAVING	4,800
RAILWAYS, complete, about	3,500
ELECTRICITY, (in progress,) to July, 1871	888
TEXTILE, (in progress,) to July, 1871, about	4,800

APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., May 19, 1875.

On the petition of ANN JENNETTE HATHAWAY, of Milwaukee, Wis., executrix of JOSHUA HATHAWAY, deceased, authorized by act of Congress approved February 18, 1875, praying for the extension of a patent granted to the said JOSHUA HATHAWAY, on the 3d day of April, 1860, for an Improvement in Devices for Converting Reciprocating into Rotary Motion,

It is ordered that the testimony in the case be closed on the 20th day of July next; that the time for filing arguments and the Examiner's report be limited to the 30th day of July next; and that said petition be heard on the 4th day of August next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

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	Class No.	No. of Patent.
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Swasey, J. H., Recumbent chair	164,607
Tallman and Beaver	164,417
Tappey, W. H., A. Steel, and C. J. Beasley, Cotton and hay press	165,608
Taylor and Farley Organ Company, assignee	164,472
Taylor, T. C., Composition for coating blocks of caustic alkali	164,405
Ten Eyck, S. R., assignee	164,506
Terwilliger, A. H., assignee	164,506
Thomas, J. F., Fastening wheels and pulleys to shafts	164,609
Thompson, C. H., Die for molding cultivator axles	164,610
Thompson, O. B., Fifth wheel	164,611
Tooker, R. N., Fire alarm signal box	164,406
Torr, C. C., assignee	164,512
Toncey, J. M., W. H. Smith, and W. Buchanan, Switch signaling apparatus	164,612
Truesdale, C., Stove reservoir	164,613
Turneaure, R., Boot tree	164,496
Turner, I. P., Bank check, &c	164,614
Uncles, E., Mail bag catch	164,616
Van De Mark, C., Motor	164,407
Van Duzer, I. F., Plumber's joint, (reissue)	6,488
Van Zandt, R. S., Fountain brush	164,498
Von Elsner, H. E. E., Car coupling	164,615
Wall, J. C., and C. Ludington, Shirt collar	164,617
Walters, D. J., assignee	164,521
Wannieck, F., and H. Koeppner, Valve gear	164,618
Waterman, J. S., Burial casket case	164,619
Watson, J. A., Portable lighter	164,620
Watson, W. M., Roll for welding plow irons	164,621
Weeden, W. N., Lamp burner spring	164,622
Weirich, B., Windmill	164,623
Wells, C., Printing press	164,499
Welshans, J. L., Portable fence	164,500
Welter, J. K., Corn planter	164,624
Westcott, C., Chemise	164,408
Weston, E. R., Lubricator for photographs	164,625
Whipple, L. W., Napped fabric	164,626
White, G. W., Hot air furnace	164,627
Wiggin, J. E., Eyeleting machine, (reissue)	6,489
Wilde and Johnson	164,564
Winey, B. F., Trace buckle	164,501
Wingrave, J., Construction of walls of buildings	164,628
Wise, J., and P. Lane, Washing machine	164,502
Wolfe, G. G., Reservoir cooking stove	164,629
Wolfe, G. G., Portable range	164,630
Wood, W. H., Weather threshold	164,503
Woodworth, M., and J. B. Fredricks, Car mover	164,504
Wright, J. C., Nut lock	164,505

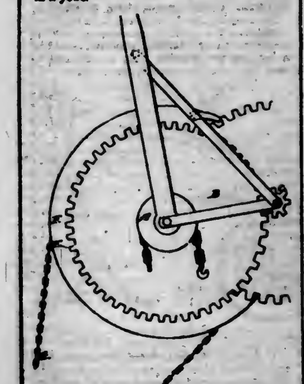
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED JUNE 15, 1875

164,380. ELEVATORS. Dexter S. Bailey, Dover, Me. [Filed May 4, 1875.]

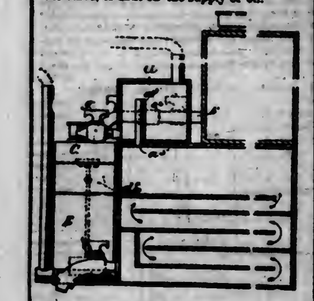
Brief.—The pinion of a sprocket wheel gears with a wheel on which is another pinion, which gears with a wheel on the shaft on which the sprocket-wheel revolves, the whole suspended in a yoke.



The combination of the sprocket-wheel A, and multiplying-gear B O D E, with the grooved wheel F, and band-chain G, all arranged and suspended in a yoke, substantially as set forth and described.

164,381. CARBURETERS. Joseph H. Bean, Cincinnati, Ohio. [Filed Apr. 27, 1875.]

Brief.—The liquid hydrocarbon flows from the reservoir through the filter into the valve-box, thence into the carburetor. An excess of oil in the carburetor flows into the float-chamber, where it raises the float operating the valve, to shut off the supply of oil.



1. The condensation-chamber G, having the draw-off cock g', in combination with the supply-pipe e^2 and delivery-pipe f, whereby the waters of condensation from the service-pipe are caught and prevented from entering into the carburetor and float-chamber, as described.

2. The combination of the reservoir B, having pipe b^2, with the filtering-chamber C, having pipe c and the union c^2, as described.

3. The combination, with the valve-chamber, of the filtering-chamber, as described.

4. In combination with the carburetor described, the float-chamber H and filter-chamber C, placed on the outside of the carburetor proper, and connected therewith by suitable openings, as shown.

164,382. DEVICES FOR OPERATING CURTAIN-ROLLERS. Freeman H. Bottys, Rochester, N. Y., assignor to S. E. Rowe, Jr., same place. [Filed May 15, 1875.]



1. In combination with the roller R, spring a, spindle S, revolving head A, and pawls f and f', the fixed primary head or cap d, provided with a notched rim, e, substantially in the manner and for the purposes set forth.

2. In combination with the revolving head A, pawls f and f', and fixed primary cap d, the secondary cap c, substantially as and for the purposes set forth.

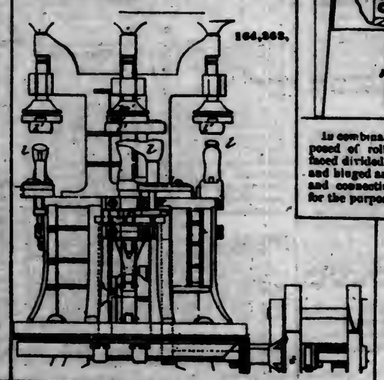
3. In combination with the notched rim e of the cap d, the pivoted or swinging pawls, provided with the stop-notch n, as and for the purposes set forth.

164,383. KNIT FABRICS. Freeman A. Colby, Graniteville, Mass., assignor to C. G. Sargent, same place. [Filed Jan. 18, 1875.]

Brief.—The fabric is made on the Lamb machine by drawing in or out of action the right-hand front stop, and drawing down out of operation every alternate needle in the front row.



As a new article of manufacture, the herein described fabric, consisting of alternate single and double courses of loops and bars or runners a, looped into the inner ribs, and overlying the outer loops between the ribs, substantially as shown.



164,382.

164,384. MACHINES FOR ATTACHING SOLES TO BOOTS AND SHOES. Thos W. Collyer, Marblehead, Mass. [Filed Apr. 24, 1875.]

Brief.—The machine is intended for attaching soles to the uppers where cement is employed in place of stitching. The lasted shoe is mounted upon a jack, which is of the moment depressed, and by an arrangement of treadles and stops it is elevated and brought into forcible contact with a die, and so held, as the table turns, during nearly its whole revolution

1. The combination of a traveling support with the shoe-holding jacks and independently-actuated levers and sole-pressing dies, adapted to operate substantially as described.

2. The combination of the jack and toggle-lever with the slide bar and its operative cam, substantially as described.

3. The combination, with the jack and toggle-lever of the slide-bar, its operating-cam, and the treadle for moving the cam, substantially as described.

4. The combination, with the traveling support, of the jacks pivoted thereto, the links, and the cam-projection r^2 for turning the jacks out as the support rotates, substantially as described.

5. The combination, with the traveling support, of the shipper, toggle-lever, and stop s^2, to stop the support while the toggle-lever is straightened, and to release the shipper to allow the support to be moved, substantially as described.

6. The combination, with the toggle-lever, of the shipper and its actuating-cam r' to throw back the toggle-lever, substantially as described.

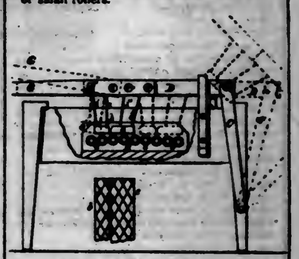
7. The removable die i, in combination with the plate i' and rubber packing and springs, substantially as described.

8. The dies i^2, in combination with their carrying-rods and adjusting-screws, substantially as described.

9. The combination, with the traveling support, of the loose pulley t or clutch and the mechanism for operating them to move the traveling support, substantially as described.

164,384. WASHING-MACHINES. W. Combs, Geneva, N. Y. [Filed Apr. 17, 1875.]

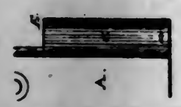
Brief.—A reciprocating divided rubber with serrated face combined with a bed composed of small rollers.



In combination with the wash-board H, composed of rollers e, the diagonally corrugated divided rubbing-board b c, rods f and f', and hinged arms G, pivoted swinging arms D, and connecting-links C, in the manner and for the purposes set forth.



164,385.



164,865. HINGE. Samuel T. Davis, Washington, D. C. [Filed Mar. 13, 1875.]

Brief.—The lower hinge of a pair or series of loose-joint hinges is slotted the entire length of the eye-piece or knuckle, thus enabling it, after the upper hinges are hung, to be placed on the pintle, after which a sliding key, preferably wedge-shaped, closes the slot; or a loose-joint hinge may be more inexpensively provided with a vertical slot along the knuckle, somewhat shorter than the pintle, so that when raised, and placed over the pintle, the door or shutter will readily drop into place, after the upper hinge or hinges are partially hung.

1. A loose-joint hinge in which the eye-piece or knuckle A is provided with a slot, E', starting from the bearing-seat for the pintle-piece, and continued a suitable distance, in order that the pintle of the lower hinge may be inserted and drop into place after the upper hinge is partially hung, all substantially as and for the purpose set forth.

2. A loose-joint hinge in which the eye-piece or knuckle A is formed with a slot, E, which is closed by a sliding key, C, substantially as and for the purpose specified.

164,866. DIES FOR MAKING THE HEADS OF CHAIN-SWIVELS. William C. Edge, Newark, N. J., assignor to Smillie, Dorrance & Edge, New York city. [Filed Apr. 16, 1875.]

Brief.—A series of dies for reducing a plain circular metal disk by successive steps to the proper shape for a chain-swivel head—the steps being, first, to make it into a cup; second, pierce the cup with a square punch; third, make the cup pear-shaped; and, last, finish between drop-dies.



1. The series of dies herein described for making the heads of chain-swivels.

2. The combination of the dies *b' b² b³ b⁴*, and molds B C, for the purpose set forth.

3. The combination of the die b^4, guide-ring c^1, plunger b^5, pin f^1 and spring f^2, arranged for the purpose of contracting the open end of the cup-shaped swivel-head blank, substantially as set forth.

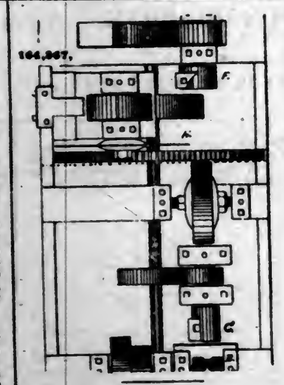
4. The reciprocating mold B, combined with the stationary mold C, the opposite faces of the two molds having cavities for the reception of a swivel-head blank, c^2, which is to be formed into a swivel-head, c^3, by the operation of the molds, substantially as specified.

164,867. MACHINES FOR MAKING PIPE AND DOWELS. Randall H. Eldridge and Orin S. Hildreth, Lowell, Mass. [Filed Jan. 19, 1874.]

Brief.—The pins are rounded by passing through a revolving cutter-head, cut to the desired length by a reciprocating circular saw, and then pointed by a revolving conical cutter.

1. The combination of the automatically-sliding shoulder saw E, the cutter C, and the cutter F, as and for the purpose herein described.

2. The combination of the feed-roller B, provided with the roughened annular groove herein described, with the revolving cutter C and the bed S, as and for the purpose herein described.



164,868. PIPE TONGS AND CUTTERS. Chas. Fenton, New York, N. Y. [Filed July 14, 1874.]



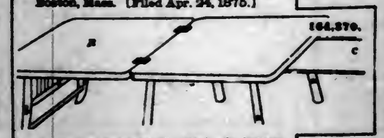
A tool adapted to be used as pipe tongs or cutter, constructed with a jaw, H, provided with an extension, H^1, formed with a female screw, H^1, and groove H^2, the said extension H^2 being adapted to slide in a body, A, provided with an extension, B, and screw b^1, the extension H^2 being drawn to and fro by means of a shaft, C, provided with screw-thread C', a head or handle, D, and collar E, the whole being constructed and operating substantially as shown and described.

164,869. RAILWAY-RAIL JOINTS. Worcester Haddock, Pittsburg, Pa. [Filed Nov. 3, 1874.]



A key or bolt for fish-bars for railways, made in two pieces, the points of which are beveled and the necks enlarged, substantially as herein described, and for the purpose set forth.

164,870. CONVERTIBLE CHAIRS. H. H. Hall, Boston, Mass. [Filed Apr. 24, 1875.]

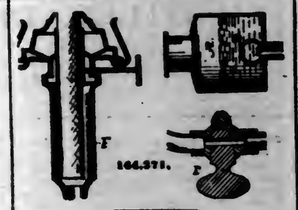


In the construction of a chair, the bottom A and supporting-legs *a*, with its sliding table C and arms *c*, in combination with a folding bottom, B, resting upon it, and secured to it by hinges or other suitable contrivance, and provided with upright posts *b*, which, with suitable cross-bars, enable the device to be used at pleasure as a chair or a bench, substantially as and for the purpose specified.

164,871. APPARATUS FOR LIGHTING AND HEATING HOUSES. F. C. Hooton, West Chester, Pa. [Filed Jan. 11, 1875.]

Brief.—The wick-tube for feeding is smaller than the bore of the tube to admit of expansion, and it is held in place by a ring in the reservoir, to which the said wick is attached.

The combination of reservoir A, ring B, tube C, wick D, cut-off E, and fount F, substantially as and for the purpose set forth.

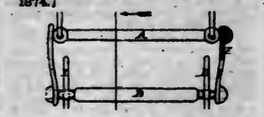


164,872. CULTIVATORS. Wm. L. Hopper, Monmouth, Ill. [Filed Jan. 5, 1875.]

Brief.—The arched connecting bar is strengthened by a backing of wood, bolted in a bracing position. A shoe is attached to each beam for transporting the machine.



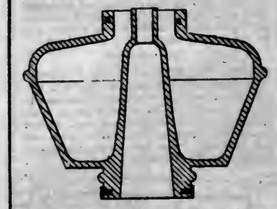
164,873. DRIVING-BITS. Chas. Huie and A. S. Jenks, Philadelphia, Pa. [Filed July 16, 1874.]



The combination, with a double-barred bit, substantially as shown and described, and in which the adjustable bar B and plates E E are adapted to revolve freely around the bar A, of the rein attachments D D and D' D', by which the severity of the bit may be lessened or increased without altering the position of the bar B.

164,874. FORMATION OF GLASS LAMPS. Jonathan J. Hoyt, Chelmsford, assignor to the Standard-Lamp and Glass-Pipe Company, Boston, Mass. [Filed Dec. 17, 1874.]

Brief.—Plastic glass in a mold is pressed upon by a plunger from above, and a pin from beneath, to form the central draft-tube, the upper portion of the body being turned inward to form the dome; also, a process of blowing the same article, combined with use of the mold

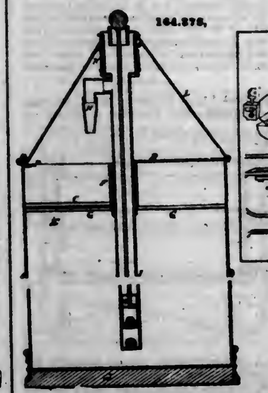


1. The process of forming the glass lamp and its glass central wick draft-tube *g* concentric with its circumference, by forming it and the said tube upon the pin B, and withdrawing the latter after the tube has cooled sufficiently to retain its form, and before it has appreciably contracted around the pin, substantially as described.

2. The process of molding the glass lamp and its glass central wick draft-tube *g*, and then adjusting the dome or top and neck of the lamp over to form the opening through the neck concentric with the upper end of the tube *g*, substantially as described.

164,875. OIL-CANS. Anson O. Kittredge, William H. Clark, and William J. Clark, Salem, Ohio, assignors to the Kittredge Cornice and Ornament Company, same place. [Filed Mar. 25, 1875.]

Brief.—An ordinary pump is provided with a detachable spout for admission to the tank, and for locking the same thereto. One-half of the inner top is fixed; the other half revolves, passing under the fixed portion on a ledge. The outer top is one-half stationary; the other half slides beneath it.

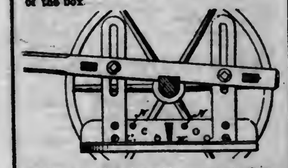


164,875.

A boiler, composed of a number of horizontal sections, placed one on the other, said sections having raised outside rims, inclosing shallow air-spaces, into which open the mouths of numerous vertical air-passages through the sections, the air-passages being surrounded by water-spaces communicating with each other, and with those of adjoining sections, through necks, as described, so that when bolted together, vertical and branching airflues are formed, intermediate with which are a suitable number of vertical water and steam passages, substantially as described.

164,876. MACHINES FOR DESTROYING POTATO-BUGS. Thos. Job, Ryon Township, Schuylkill County, Pa. [Filed Jan. 20, 1875.]

Brief.—A body or box is mounted upon a pair of wheels, and is vertically adjustable, with a slit longitudinally along the bottom, provided upon each side with flexible aprons. Cross-bars are placed above the opening, and a row of brushes inserted across each section of the box



The vertically-adjustable receptacle C, in combination with flexible aprons H, brushes O, and rods N, as and for the purpose specified.

164,877. SECTIONAL STEAM-BOILERS. A. Kipp, Jr., Sing Sing, N. Y., assignor of one-half his right to Edwd. Everett, same place. [Filed Apr. 2, 1875.]

Brief.—The boiler is made up of sections bolted together, through which are double passages, the water circulating through one series, while the flame or heat circulates through the other series.

164,877.

1. In combination with an oil-can, a revolving sink, consisting of the bottom E and side F, resting upon a ledge, O, and whereon it revolves under the stationary top D, substantially as described, and for the purpose specified.

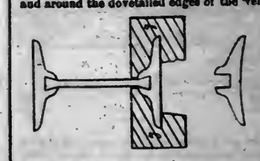
2. The combination of the can A, revolving sink C, stationary top D, conical stationary top L, and revolving door M, collar N, and sleeve O, constructed and arranged substantially in the manner as described, and for the purpose set forth.

3. The pump I, provided with a detachable spout, H, for locking the same in the can A, as and for the purpose specified.

4. The can A, receiving sink C, stationary top D, revolving door M, stationary top L, and pump I, constructed in the manner substantially as described, and for the purpose set forth.

164,878. MANUFACTURE OF METALLIC BEAMS AND GIRDERS. Andrew Kloman, Pittsburg, Pa. [Filed Mar 27, 1875.]

Brief.—The heads of the beam are first rolled to form, and then passed between other rolls, that straighten the base and throw the edges of the lips inward toward one another, thus forming a dovetailed groove. The rolled web is then passed endwise into the grooves of the heads, and the whole is then passed between rolls, that compress the lips down upon and around the dovetailed edges of the web.



The manufacture of I-beams in detached parts, with dovetail-joints united and compressed, substantially as set forth.

164,880. LAMP-SHADES. S. R. Kneeland, Boston, Mass. [Filed June 1, 1874.]



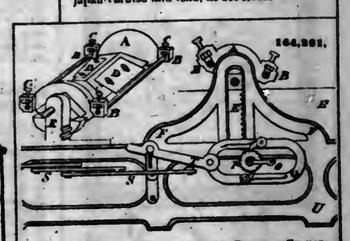
As a new article of manufacture, a glass lamp-shade consisting of a truncated conical portion, A, and diaphragm B, said diaphragm being translucent, and said conical portion being transparent and surrounded by a reflecting medium, B, protected by a layer of japan-varnish and lead, as set forth.

164,881. MACHINES FOR CUTTING SIDING. William W. Le Grande, Louisville, Ky., assignor of one-half his right to T. D. Osborne, same place. [Filed Mar. 13, 1875.]

Brief.—Weather-boards and veneers are cut from a bolt of wood placed upon a reciprocating bed, and automatically fed under an angular-shaped oscillating cutter-head, provided with adjustable cutters, which cut a board from the bolt at each reciprocation of the bed. The cutter-head is mounted in adjustable bearings, which drop automatically the required distance each time a board is cut from the bolt

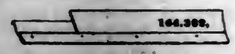
1. The oscillating cutter-head A, with its pressure-rollers B B, adjusting-screws C C, and adjustable knives D D, as above described, in combination with the rocks E E, shaft and pinion N, ratchet-wheel P, yoke Q, and cam-hook T, by which it is operated, when arranged, constructed, and operated substantially as and for the purpose set forth.

2. The combination of the carriage G, shaft and pinion L, wheel M, pulleys J J and K, with the shifting-levers B B B, bed-frame U, and bearing-stands F F, when arranged, constructed, and operated substantially as and for the purpose herein before set forth.



164,881.

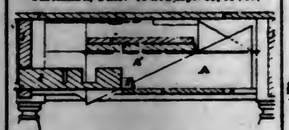
164,882. WEATHER-STRIPS. N. Liddell, La Fayette, N. Y. [Filed Apr. 16, 1875.]



164,892.

The construction of the flanged backing to the elastic material, as and for the purpose described.

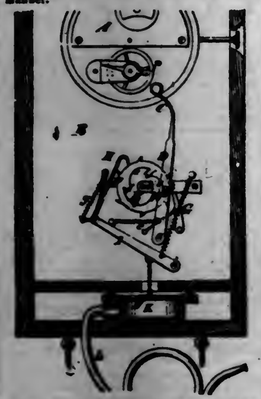
164,893. EXTENSION-TABLES. W. Mann, Cincinnati, Ohio. [Filed Apr. 10, 1875.]



In an extension-table, the combination of the centrally-located leaves *c c*, one of which has inclined projections A' A' upon its under surface, a slide, *e*, which has reversed inclines upon its upper surface, and a handle or rod, *d*, arranged to operate substantially as described, whereby it may be used to move the slide *e* and lock it in any desired position, substantially as set forth.

164,894. TIME-RECORDING INSTRUMENTS. Theophilus Mayhew, Poughkeepsie, N. Y. [Filed Jan. 23, 1875.]

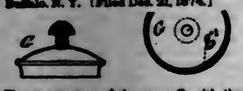
Brief.—A time-recording instrument operated by pneumatic pressure upon a friction brake, in which, when both hands are engaged, the pressure may be applied by a tube placed in the mouth, or exerted in any other suitable manner.



1. A pneumatic time-recording instrument, consisting of the combination of a pneumatic device, the works and index of a time-recorder, a lever-connection between the same, and an fastening-cam, the said instrument being adapted to be worn upon the person, and to be operated by a tube held in the mouth, substantially as and for the purposes herein specified.

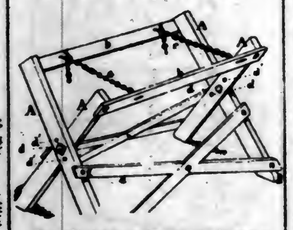
2. The combination of the following elements: A timer or time-recording instrument, A, arranged in case or box B, brake C, brake-lever D, cam E, ratchet-wheel F, pawls G and H, lever I, and the pneumatic device K N L, substantially as and for the purposes herein specified.

164,895. TEA-KETTLES. W. A. Monnet, Buffalo, N. Y. [Filed Dec. 22, 1874.]



The combination of the cover G with the rim, formed slightly elliptical, and having its diameter smaller at *g* than at *g'*, substantially as and for the purposes described.

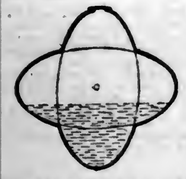
164,896. WASH-BENCHES. O. M. Merrick, Chillicothe, Ill. [Filed Feb 3, 1875.]



The adjustable washing-trestle, composed of the cross-legs A A, having several change able pivots, *d' d'*, with bolt *d*, cross-braces *c c*, upper bars *b b*, and stay chain or chains *e e*, with hooks *i i*, substantially as described.

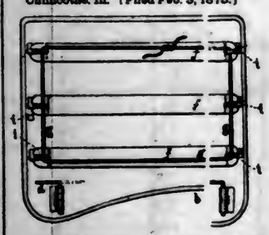
164,897. ROTARY CHURNS. O. M. Merrick, Chillicothe, Ill. [Filed Feb. 3, 1875.]

Brief.—Formed of two equal elliptical vessels, united to form one reservoir, in such manner that the corresponding axes are perpendicular each to each, and containing an interior device.



A rotary churn formed of two equal-sized elliptic vessels, joined to form one reservoir, in such a manner that the corresponding axes shall be at right angles with each other, and with the usual cream-openings and ventilator, and equal axes of trunnions and crank, with which to rotate it, substantially as described.

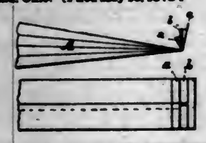
164,898. LAP-BOARDS. O. M. Merrick, Chillicothe, Ill. [Filed Feb. 3, 1875.]



1. The convertible metallic lap-board and kneading-board A, having a curved front, *b*, in combination with adjustable bars *f*, eyes or staples *i*, and stops *d*, substantially as and for the purposes described.

2. The combination of the metal board A, stops *d*, adjustable bars *f*, slotted at either end, the eyes or staples *i*, and the cord *g*, as described.

164,899. PAPER BAGS. Edwd. Mill, Cleveland, Ohio. [Filed May 18, 1875.]

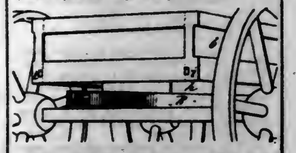


1. A paper bag folded into a flat shape substantially as described, with two plications upon each of its edges, whereby the paper composing the bag is, in the operation of filling, distended into a cylindrical package with a hexagonal shaped bottom, substantially as and for the purpose described.

2. The process of forming a cylindrical paper bag with a hexagonal shaped bottom, consisting of first forming upon a sheet or tube of paper the lapels *a*, *c*, and *i*, then folding the said tube with two longitudinal plications upon each edge, and finally simultaneously pasting down the lapels, in the manner and for the purpose substantially as set forth.

164,900. TOY WAGONS. Fredk W Porter, Springfield, Vt. [Filed Apr. 10, 1875.]

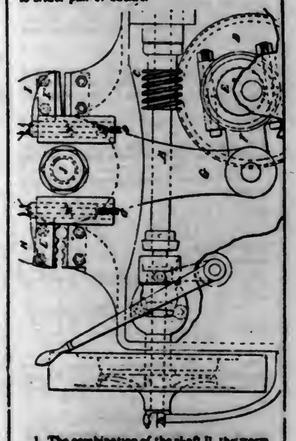
Brief.—A strip of wood, having the grooves on the inside near the lower edge, in which fits the floor of the wagon, has also a central outside and larger groove, which, when the side and end pieces are joined, forms end panels upon the wagon-body.



The combination, in a toy wagon, of the four side and end pieces, made from a strip provided with the grooves *b* and *i*, the bottom piece *n*, the intermediate piece *h*, and the panels B, all constructed and arranged substantially as described, and for the purpose set forth.

163,901. METAL-SHEARING MACHINES. F. A. Pratt, Hartford, Conn., assignor to the Pratt & Whitney Company, same place. [Filed Mar. 10, 1875.]

Brief.—The lever is pivoted, near its upper end, midway between the two horizontal arms, each carrying the moving blade of a pair of shears. The lever is oscillated, and the shears brought alternately into action, by a worm on the pulley-shaft gearing into a worm wheel on a shaft carrying an eccentric that connects through a pitman with the lever. Adjustable bars situated in front of the shears serve to prevent the bar from rising as it is cut. At the back of the machine is a gage, adjustable to either pair of shears.

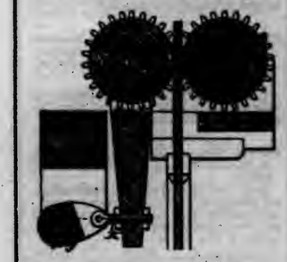


1. The combination of the shaft B, the worm C, the wheel D, the eccentric E, and the connecting-rod F with the arm G, and the shears H and I, substantially as described.

2. The gage L, with its sliding stem in the socket N, and the screw O, in combination with the cutting-shears, substantially as herein described.

164,902. DROP-HAMMERS. F. A. Pratt, Hartford, Conn., assignor to the Pratt & Whitney Company, same place. [Filed Mar. 10, 1875.]

Brief.—The roller is carried in a rocking frame, and is caused to approach toward and recede from the strap by an eccentric connected adjustably with said frame. An arm projecting from the eccentric is connected with a lever which carries an adjustable dog, against which a lug on the hammer strikes in ascending, turns the eccentric, and draws the rocking frame and roll away from the strap.

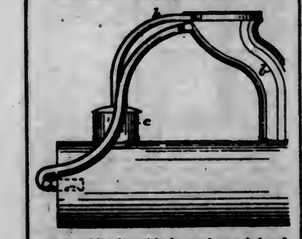


1. The combination of the eccentric I, adjustable connecting device J K, rocking frame H, and roller D, as herein shown and described.

2. The combination of the rod and dog M O with the eccentric I and the adjustable connecting device J K, for the purpose of operating the rocking frame, substantially in the manner described.

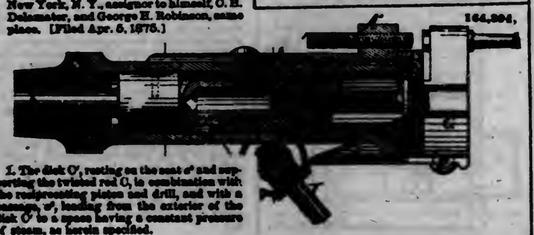
3. The combination of the treadle T with the rod M and the devices O I J K, for turning the rocking frame H and releasing the weight, substantially as described.

164,903. SPARK-ARRESTERS. David B. Proctor, Gloucester, Mass., assignor to the Proctor Spark-Arrester Company, same place. [Filed Apr. 28, 1875.]

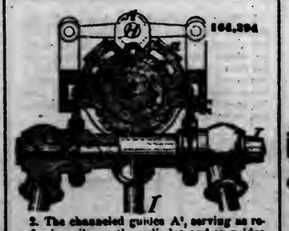


In combination with the smoke-stack *b* and its screens *d* and *g*, the independent pipe *e*, leading from an aperture in the smoke-stack below the screen *d* to the furnace, and the independent pipe *h*, leading from an aperture in the smoke-stack below the screen *g* to the mud-box *c* or suitable receptacle, as and for the purpose herein set forth and described.

164,904. ROCK-DRILLS. Geo. H. Reynolds, New York, N. Y., assignor to himself, C. H. Delamater, and George H. Robinson, same place. [Filed Apr. 5, 1875.]



1. The disk O', resting on the seat *o'* and supporting the twisted rod O, in combination with the reciprocating piston and drill, and with a passage, *m'*, leading from the exterior of the disk O' to a space having a constant pressure of steam, as herein specified.

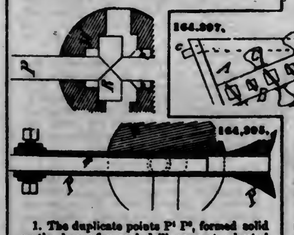


164,894.

2. The channeled guides A', serving as reinforcing ribs on the cylinder and as guides for the cylinder, in combination with the longitudinal bolts E, as herein specified.

3. In combination with the bolts E, extending from the lower end and taking hold of the flange of the cylinder, the head A', formed with recesses adapted to take hold of and confine the nuts *e* on said bolts, as herein specified.

164,905. TRIPODS FOR ROCK-DRILLS. Geo. H. Reynolds, New York, N. Y., assignor to himself, C. H. Delamater, and C. H. Robinson, same place. [Filed Apr. 13, 1875.]



164,905.

1. The duplicate points P' P', formed solid on the legs of a rock-drill support, adapted to allow of reversing in position, as and for the purposes specified.

2. The tripod-leg P E, in combination with the weight W, having grooves adapted to match thereon, substantially as and for the purposes herein specified.

3. A tripod-leg the outer end carrying the weight, and allowing the leg to be lengthened and shortened, while the weight remains undisturbed, as herein specified.

4. The rock-drill tripod with telescopic legs, arranged with the tubular or female part outermost, and provided with means for attaching steadying-weights thereon, as specified.

164,906. ROCK-DRILL TRIPODS. George H. Reynolds, New York, N. Y., assignor to himself, C. H. Delamater, and C. H. Robinson, same place. [Filed Apr. 7, 1875.]

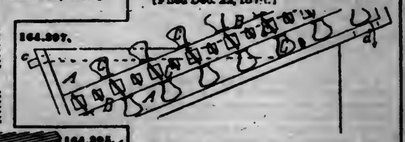
1. The frame or cradle G, made in two separate pieces, and adapted to be pinched or clamped by the legs, as specified.

2. The confining-bolt, in combination with the legs and cradle, the bolt performing the double office of holding the legs I J J and supporting the two sides of the cradle G, as specified.

3. The leg I, with its cross-piece I', adapted to serve as one of the legs of the tripod, and also as a support for the cheeks of the frame G, as herein specified.

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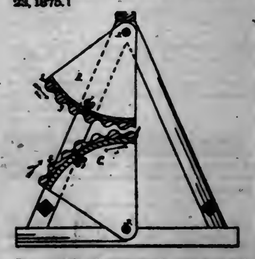
The inclined trough A, with an overflow, *c*, and a sand-drop, *d*, in combination with the inclined shaft B and blades C, substantially as and for the purpose shown and described.

164,908. SAFETY SWITCH-RODS. D. Rowe, Louisiana, Mo. [Filed May 13, 1875.]



The combination, in a railroad safety switch-rod, of the bifurcated rod E, provided with collars *b b'*, with the rod F, provided with washers *c c*, and spring *a*, substantially as described.

164,909. MACHINES FOR CORRUGATING SHEET METAL. Wm. B. Scaife and O. P. Scaife, Allegheny, Pa., assignors to Wm. B. Scaife & Sons, same place. [Filed Jan. 23, 1875.]

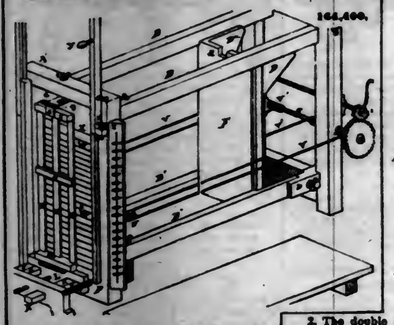


In a machine for corrugating sheet metal, the combination of the oscillating segmental sections B C, pivoted at D D, and having detachable corrugated face-plates *g g*, respectively, substantially as and for the purpose hereinbefore described and set forth.

164,910. SOAP-CUTTING MACHINES. Chas. F. Ehrhart, Harrisburg, assignor of one-half his right to Harrison Miller, Lancaster, Pa. [Filed May 20, 1875.]

Brief.—A follower feeds the block of soap against a fixed cutter-frame, composed of wires graduated to the width of the desired slabs. A hinged gage is graduated to admit of the slabs passing the fixed cutter-frame any desired distance, thus determining the width of the bars cut off the ends of the slabs by the vertically-sliding cutting frame, which plies in the grooved ways. A pin is withdrawn, the gage is swung down, and the bars are conveyed away, to admit of another operation of the machine.

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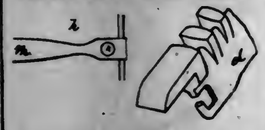
1. In combination with a fixed frame, A', provided with the slotted side pieces Z and adjustable wires W, the combined gage M O F, hinged to the sliding base L, foot-block H, graduated connections J, and adjusting-screw I, and slide-arms K, substantially as and for the purpose specified.

2. In combination with the grooved ways p on the outer face of the fixed cutter-frame A', the vertically-sliding frame Y, with its single wire X, for cutting off a vertical series of bars of soap from the front of the mass, the whole constructed and operating substantially in the manner set forth.

3. In combination with the frames A A' and top and bottom rails B B' of the machine, the upright follower F, with its notch *d*, and rear guide-brackets D, above and below on each side, sliding on and between the upper rails B and lower fore-and-back rails B', operated back and forth by a single windlass or shaft, S, by means of the separate ropes V V' and gearing *e e*, the whole constructed substantially as and for the purpose specified.

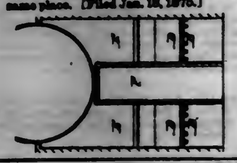
164,401. GRATE-BARS. James A. Sinclair, Bridgeport, Ohio, assignor to Abram Leah and A. D. Newland. [Filed Sept. 24, 1874.]

Brief.—The aperture in the shaker is placed over the leg on the bar. The projections from the sides of the shaker engage with the legs of the adjacent bars.



The bars, having bearings *d* and projecting legs *g*, in combination with the operating-lever A, having a handle, *w*, and aperture *h*, into which the legs *g* are inserted, as and for the purpose described.

164,402. FURNACE. Horatio M. Smith, Chicago, Ill., assignor of two-thirds his right to M. W. Lester and Franklin Lester, same place. [Filed Jan. 18, 1875.]



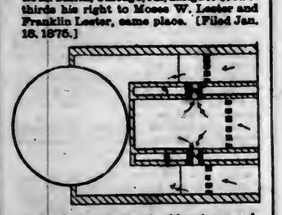
1. The coking chamber or chambers E, constructed with a large in-draft air-supply opening, *f*, located at the upper part of the chamber above the coal, and communicating with the pure external air, and constructed with a downward discharge in the combustion chamber or chambers, in combination with said combustion chamber or chambers located below, as specified.

164,402.



2. The double furnace, consisting of the combustion-chambers D D, above which are the open-mouthed coking-chambers E E, in combination with the central air-chamber F, which admits air into both coking-chambers at or near the rear thereof, and which air-chamber receives air by a regulable opening, *f*, substantially as specified.

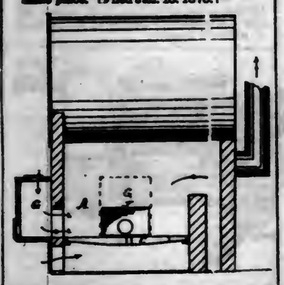
164,403. STEAM-BOILER FURNACES. Horatio M. Smith, Chicago, Ill., assignor of two-thirds his right to Moses W. Lester and Franklin Lester, same place. [Filed Jan. 18, 1875.]



1. In a furnace for burning bituminous coal, a close coking-chamber, provided with grates and with inlets for fresh air and outlets for the mixture of air and gases arising from the coal, substantially as specified.

2. The combination, with a grate-supplied coking-chamber, having inlets for air and outlets for the mixture of air and gas, of one or more combustion-chambers, into which said outlet debouches, substantially as specified.

164,404. FURNACES. Horatio M. Smith, Chicago, Ill., assignor of two-thirds his right to M. W. Lester and Franklin Lester, same place. [Filed Jan. 18, 1875.]



1. The external fuel pocket or pockets, constructed to receive fuel from above, provided with a downward draft from the top, and having an imperforate or gateless base, in combination with the independent combustion-chamber A, from which said pocket or pockets are separated by inverted bridge-walls J, as specified, producing separate and distinct coking and combustion chambers and the several results enumerated.

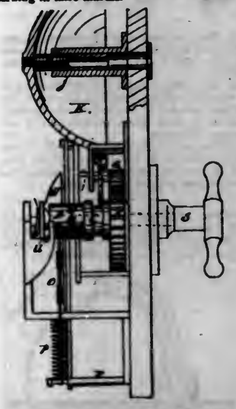
2. The combination of the combustion-chamber A and the four pockets G, arranged as shown, one at each side of the fire-door in front and one at each side at the sides of the furnace, substantially as specified.

164,405. COMPOSITIONS FOR COATING BLOCKS OF CAUSTIC ALKALI. T. Chalkley Taylor, Philadelphia, Pa. [Filed Oct. 14, 1874.]

A coating for blocks of caustic alkali, consisting of a fine earth and an oil mixed together in about the proportions specified.

164,406. FIRE-ALARM SIGNAL-BOXES. R. N. Toozer, Chicago, Ill. [Filed Mar. 12, 1875.]

Brief.—Bell or gong attached to signal-box, and sounded by mechanism actuated by turning the handle to unlatch the door. Designed to prevent maliciously-disposed persons from turning in false alarms.



1. The combination, with a fire-alarm signal-box, of an alarm-bell or its equivalent located at the box and sounded by a mechanism which is set in motion by the operation of the device which allows the box to be opened, substantially as specified.

2. The combination, with the bell or gong, of the handle, the hammer *l*, and the intervening mechanism by which the motion of the handle is imparted to said hammer, substantially as specified.

3. The combination, with a fire-alarm box, of the handle, the shaft S, the arm U, and the curved catch *m*, substantially as specified.

4. The combination, with a fire-alarm box, of the arm U, the drum D, both being carried by the same shaft, the chain O, spiral spring P, (which is held at its anchor end,) catch *m*, upright spring P', provided with the shoulder *b*, and the lug *g*, substantially as specified, whereby the door is automatically latched.

5. The combination, with a fire-alarm signal-box, of the gong R, screw *f*, sleeve *j*, and aperture *n'*, substantially as specified.

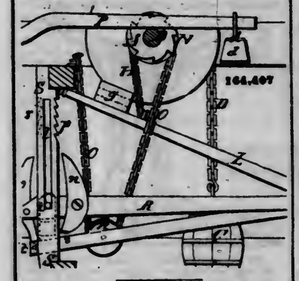
164,407. MOTORS. Charles Van De Mark, Hillsdale, Mich. [Filed May 5, 1875.]

1. The combination of revolving driving-wheels G F on a driving-shaft, B, weight-platforms L M, and cords or chains H O, connecting the respective wheels and platforms, for producing a continuous revolving motion by the weight of a person or persons, substantially as and for the purpose herein specified.

2. In combination with an ascending and descending weight-platform, M, a lever, E, pawl or pawls *n o*, and ratchet-teeth *p r*, substantially as and for the purpose herein specified.

3. The combination of a revolving driving-wheel, N, a rope or chain, O, fixed at one end *e*, and a body-weight platform, M, provided with an anti-friction pulley, *h*, substantially as and for the purpose herein specified.

4. In combination with the shaft B, provided with a driving wheel or wheels, G M, operated by body-weight platforms L M, and pawl and ratchet-lever E, a brake-lever, P, provided with an adjustable weight, *d*, substantially as and for the purpose herein specified.



164,407

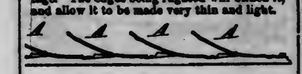
164,408. CHEMISES. Caroline Westcott, Chicago, Ill. [Filed Mar. 1, 1875.]



In a chemise composed of the waist A, skirt B, and belt C, having buttons E, the tabs D, attached to the under side of the belt, substantially as and for the purpose set forth.

164,409. WIND-WHEELS. L. D. Abrams, Tuscola, Ill. [Filed May 15, 1875.]

Brief.—The blade is concave transversely, and has rugated edges, whereby the wind will operate upon it to a much better advantage. The edges being rugated will stiffen it, and allow it to be made very thin and light.



A wind-wheel blade, A, which is concave transversely, and which is stiffened by rugating or crimping its edges, as and for the purpose set forth

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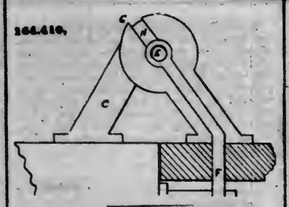
164,410. LOCK-HINGES. John Aikman, Norwich Township, Oxford County, Canada. [Filed May 5, 1875.]

Brief.—A detachable lever or latch interposed between the two parts of a shutter-hinge, one end passing over and working upon the pintle of the hinge, while the other projects through the shutter or door, engaging with a holder or catch on the inside, and likewise serving as a lifting device. There is also a slot in the lower part of the hinge, and a shoulder, so arranged that the lever or latch drops into the slot, and presses against the shoulder, to fasten the hinge when the shutter or door is wide open.

1. The detachable lever or latch F, working in the hinge on the pivot or pintle E, and fitting through the stile of the blind B, in combination with the holder or catch I on the window-frame, substantially as shown and described

2. The slot H in the lower part of the hinge C, in combination with the detachable lever or latch F and the shoulder O, all operating together substantially as and for the purposes above set forth.

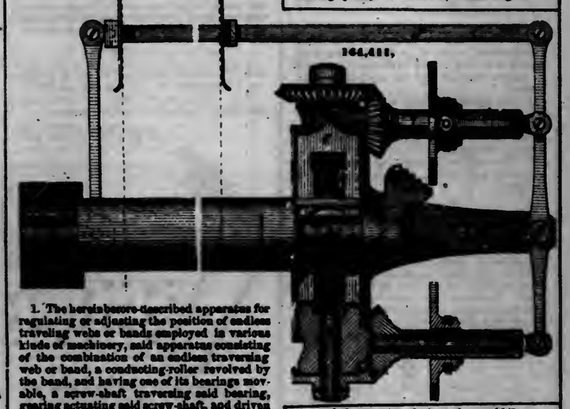
164,410.



164,411. REGULATING AND ADJUSTING BANDS USED IN DRIVING MACHINERY. Charles Anderson, Fettykil, Leslie, North Britain, assignor of two-thirds his right to Pusey, Jones & Co., Wilmington, Del., and C. Hofmann, Carlsruhe, Germany. [Filed Apr. 29, 1875.]

Brief.—Any lateral movement of the band carries the guide-plates and the rocking lever and star-wheels with it, so that one of the latter would be brought within range of the crank-arm, and will be revolved by it, thereby revolving the screw-shaft and moving the bush longitwise of the box, thus moving one end of the guiding-roller laterally, and stretching the band on that side, which change not only prevents further lateral displacement of the band, but corrects the tendency to such displacements, and restores the band to its normal position.

164,411.



1. The herein-above-described apparatus for regulating or adjusting the position of endless traveling webs or bands employed in various kinds of machinery, said apparatus consisting of the combination of an endless traversing web or band, a conducting-roller revolved by the band, and having one of its bearings movable, a screw-shaft traversing said bearing, gearing actuating said screw-shaft, and driven by a rotating arm on the conducting-roller, and clutch mechanism operated by the lateral deflection of the web or band itself, to actuate the gearing, substantially as herein before set forth.

2. The combination of the endless traversing web or band, the conducting-roller, actuated thereby, the movable bearing of the conducting-roller, the screw-shaft traversing said bearing, a revolving arm or crank on the conducting-roller, gearing for actuating the screw-shaft on each end thereof, and clutch mechanism actuated by the lateral deflection of the guide itself, arranged on opposite sides of the revolving arm, whereby the screw-shaft is revolved in opposite directions, according as the web or band is deflected to one side or the other by means of a crank-arm revolving continuously in one direction.

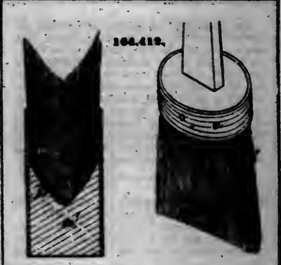
164,412. MECHANICAL MOVEMENTS. Wm. F. Barnes and John Barnes, Rockford, Ill. [Filed May 17, 1875.]

1. The driven-wheel, constructed as described, with a ratchet-hub and a smooth surfaced annulus for the traverse of a friction-roller, substantially as set forth.

2. The driving mechanism hereinbefore described, consisting of the combination of the sleeve or thimble, its annular rim or flange, the pawl pivoted thereon, and the friction-roller carried by the pawl.

3. The mechanical movement hereinbefore described, consisting of the combination of a shaft, a driven-wheel mounted thereon, a driving-pulley or thimble, consisting of a

164,412.



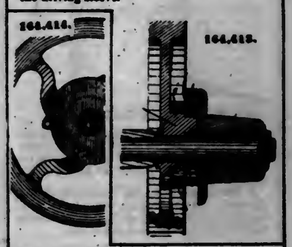
flanged sleeve, a pawl pivoted on said flange, and a friction arm or roller carried by the pawl.

4. The combination, substantially as herein-before set forth, of the driving pulley or sleeve, a pawl pivoted thereon, and a guide-way on the driven wheel, which throws the pawl out of gear on a backward movement of the driving-sleeve.

164,413. MECHANICAL MOVEMENTS. Wm. F. Barnes and John Barnes, Rockford, Ill. [Filed May 17, 1875.]

164,413.

164,414.

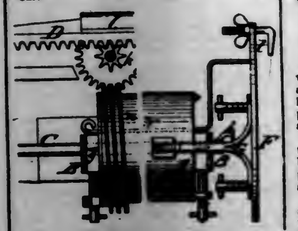


The mechanical movement hereinbefore described, consisting of the combination of a shaft, a driven wheel or pulley mounted thereon, a driving pulley or sleeve also mounted on said shaft, a pawl pivoted on the driving pulley or sleeve, and connected with and controlled by an idle ring mounted upon the extended hub portion of the wheel or pulley, these members being constructed to operate in combination, substantially as set forth, whereby an oscillating or treadle motion may be converted into a continuous rotary motion

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164,415. HUB-BORERS. Austin Bascom, Norwalk, Ohio. [Filed Dec. 12, 1874.]

Brief.—The wheel is attached to a revolving frame, and the hub bored out by an adjustable cutter at the end of a reciprocating bar.



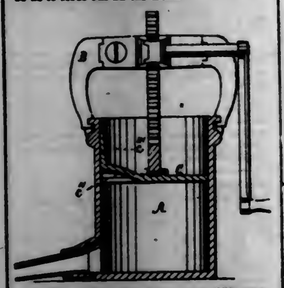
1. The hollow rotary drum E, carrying arms G and adjustable plate F, and having a worm-thread, *n*, on it, in combination with wheels *m k*, rack D, and cutter-carrying shaft C, substantially as and for the purposes described.

2. The stationary drum A, having pointers *g g*, and adjustable bearings B B, in combination with the rotary drum E, having face plate F and screws H, substantially as and for the purposes set forth.

3. The gage-rod N, formed as described, and combined with the machine, constructed as set forth.

164,416. SAUERKRAUT-MACHINES. J. H. Beam, Philadelphia, Pa. [Filed June 3, 1875.]

Brief.—When the follower is run up above the mouth of the receiver, it and the devices used for operating it can be pushed or slid back to allow the receiver to be filled with meat. Boxes on the receiver and yoke prevent the plunger, when slid back over the receiver, from being carried too far. The lower face of the plunger is recessed and flanged, so as to force out all the meat.



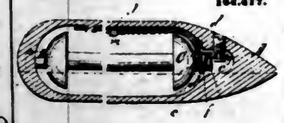
1. The combination, in a sausage-filling machine, substantially as described, of the sliding yoke B and plunger *c''* with the meat-receiving vessel A, as and for the purpose hereinbefore set forth.

2. The recess *c'* in the under side of the plunger C, in combination with the vertical flange *c''*, substantially as and for the purpose hereinbefore set forth and described.

164,417. SHUTTLES FOR SEWING-MACHINES. John Beaver and J. M. Talmage, Elon, N. Y. [Filed Apr. 17, 1875.]

Brief.—The shuttle is provided with a shallow recess at the forward end of the bobbin chamber, into which abuts the movable end of the tension spring. This spring, pivoted to the wall of the shuttle, and provided with apertures for passing the thread, including a channel for coarse thread, has a projection, which passes over the bobbin spindle, and a groove embracing the sides of a screw, by means of which the tension of the spring is regulated

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1. The shuttle-case having its point provided with the extended shallow recess *e* and shoulder *d*, in combination with the combined latch-tension spring D, provided with the parts *f* and *g*, as and for the purpose described.

2. The tension-spring D, constructed with the part *f*, adapted to extend across the bobbin-spindle, and the part *g*, adapted to be pressed or engaged by a screw, substantially as and for the purpose described.

3. The tension-spring, provided with suitable threading-eyes for fine thread, and with the coarse-thread channel *m*, which extends from the thread-hole *f* to the edge of the spring, substantially as and for the purpose described.

164,418. SHUTTERS FOR GRATES. F. S. Biesell, Pittsburg, Pa. [Filed Apr. 24, 1875.]

Brief.—The shutter is kept in place by the angle-piece wedged between the jambs.



1. In combination with the vertical sash-screen or shutter A, a flange projecting at an angle therefrom, and formed substantially as described, to wedge with the jambs and to brace and retain the screen in position.

2. In combination with the vertical sash-screen A, the guard-plate B, secured to the screen, substantially as described.

164,419. CAR-COUPLINGS. H. Blackmore, Pittsburg, Pa. [Filed Mar. 25, 1875.]

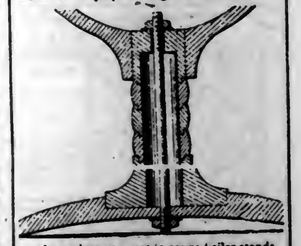
164,419.



The combination of buffer A, provided with pin-holder C, with pivoted trigger D, having weight *f*, projection *h*, and pendant *l*, with the link *j* and pin *g*, all substantially as and for the purpose set forth.

164,420. RANGE BOILER-STANDS. Ludwig Brandeis, Brooklyn, N. Y. [Filed Mar. 3 1875.]

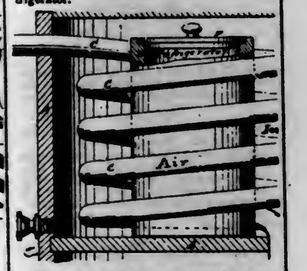
Brief.—The removable sections furnish means for varying the height of the stand.



As an improvement in range boiler-stands, the leg, standard, or support, formed of hollow or perforated washers or sections, combined with a screw-threaded bolt, substantially as described and shown.

164,421. COOLING APPARATUS FOR ROOMS. Wm. Braeunlich, New York, N. Y. [Filed May 15, 1875.]

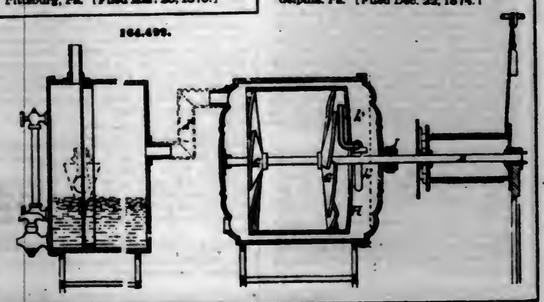
Brief.—A combined cooler for rooms and refrigerator.



The combination of outer tank A B for the freezing-agent, the intermediate coiled pipe C, inner preserving-tank D F, and a force-blast blower, substantially as and for the purpose specified.

164,422. MACHINES FOR MANUFACTURING VAPOR-GAS. George B. Caldwell, Philadelphia, Pa. [Filed Dec. 22, 1874.]

164,422.



The combination, with an air-forcing apparatus consisting of air-cylinder H, pipe G pipe A^1, and air-entry pipe A^2, of the horizontal cylinder F, provided with a series of vertical absorbing fibrous surfaces, K, the same being tightly drawn over and secured to metal hoops or rings *b*, fitting closely against the interior surface of the cylinder, substantially as and for the purpose set forth.

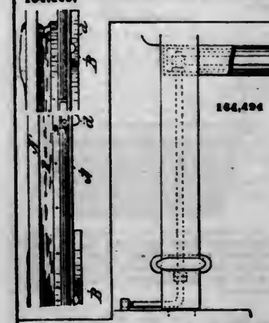
164,423. BATH-TUBS. Ephm. Chamberlain, Weymouth, Mass. [Filed May 12, 1875.]

Brief.—A portable bath-tub made of suitable flexible water-proof material, and having end, side, bottom, and top supports, as shown.

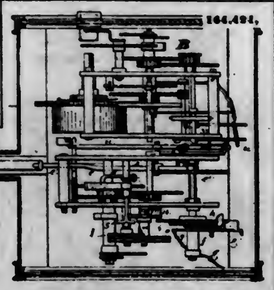
1. In combination with flexible waterproof bath-tub E, base A, upper frame-work A^1, flange D, attached in the form and manner substantially as described.

2. In combination with bath E, supporting-ends B B, auxiliary supports C C, hook *e*, pin *e'*, knobs *d*, constructed and arranged substantially in the form and manner and for the purposes described.

164,423.



164,424.



1. In combination with an electric signaling apparatus, a revolving pinion or gear-wheel, which is moved directly by a key or other winding device, in combination with a gear-wheel, sector, rack, or other shaped device, connected directly with the driving-weight, its support or shaft connected with a spring, for the purpose of raising the weight or winding the spring, substantially as hereinbefore described.

2. In combination with any automatic electric signal apparatus, a cog wheel, pinion, or equivalent device, revolving and sliding to and fro upon either a fixed or movable shaft, to be turned by means of a key or equivalent implement, the end of which engages in slots or obstacles provided therefor on the end of the said pinion, for the purpose of winding up weights or springs, substantially as hereinbefore described.

3. The combination of an independent pinion or equivalent device with a wheel, sector, or rack, and a key or equivalent implement which may pass through an orifice in a closed door, for the purpose of winding a spring or raising a weight.

4. The arrangement of ratchet-wheel or equivalent device in the closed door or cover, to prevent the key from being turned except in one direction, substantially in the manner and for the purposes hereinabove set forth.

5. In combination with any inclosed rotating device to be operated by a key, the combination of a slotted movable shaft, F, spring or equivalent retaining-pin *e*, and slotted wheel R, to render a peculiarly-shaped key necessary to operate the combination, substantially in the manner and for the purposes hereinbefore described.

6. The combination of a swinging plate or equivalent device with a magnet placed within a closed box, to close and open a key-hole or orifice in said box at certain desired times, substantially in the manner and for the purposes as hereinbefore described.

7. The combination of magnet, armature-bar, and any device for closing the key-hole of the signal-box connected therewith, and to be moved thereby, with telegraph-line having connections with more than one series of batteries, so that when the apparatus is in circuit with the lesser battery the magnet shall be competent to hold the armature against its face, and retain the movable device in one fixed position so long as the circuit remains unbroken; but if the armature-bar be, by any cause, removed to its extreme reverse position, thus carrying with it the movable device to a second or third position, the magnet will not be competent to withdraw the armature-bar from said reverse position until the said lesser or normal battery be temporarily augmented by the addition of extra series of battery therefor provided.

164,425. ROTARY MEASURES. Adam Chambers, Pueblo, Colo. [Filed Apr. 7, 1875.]

1. The two disks *a* and *d*, with their respective stops turning upon the shaft of the wheel A, in combination with the sleeve *f*, lever *g'*, stationary incline 25, second counting-wheel *l*, and its incline 40, substantially as and for the purposes set forth.

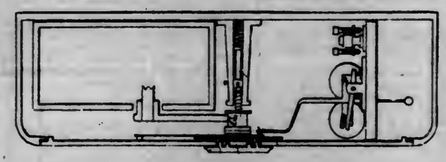
2. The combination, with the odometer, of a clock-movement and a stop, operated by the odometer so as to compute the period of time in which the vehicle is in motion, as set forth.

3. The fly-stop *t*, slide 34, and ejector 35, operated by the spring-lever *u*, that receives motion from the lever *c*, in combination with the clock-movement and odometer-register, substantially as set forth.

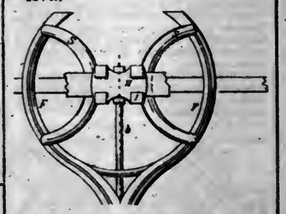
164,426. FIRE-ALARM SIGNAL-BOXES. Stephen Chester, Elizabeth, N. J. [Filed Dec. 21, 1874.]

Brief.—Weight attached to an arm of gear-sector, and raised by an independent pinion gearing with the sector, and operated by a key inserted through an aperture in the door of the box. A swinging plate on inside of door, normally held from in front of key-hole by an extension of armature-lever; but when circuit is broken by transmission of signal from any box, the armatures in all the boxes fall away from their magnets, and thus allow the swinging plates to cover the key-holes. Armatures fall away to such a distance that they can only be restored by the introduction of extra battery-force at central station after the signal is completed.

164,425.



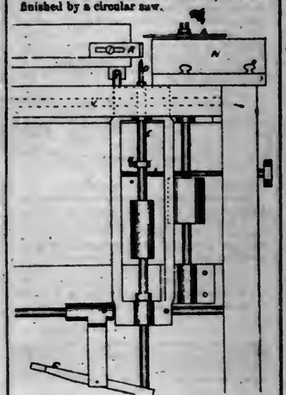
164,426. FIFTH-WHEELS FOR CARRIAGES. John Chubb, Seneca, N. Y. [Filed Dec. 22, 1874.]



The combination of the upper half U of the fifth-wheel F, formed by halving an extension of the reach R, the head-block H, consisting of the segments S, united by the rectangular block B, and solid with the rim P, with the lower half F', clip *c''*, and brace *b*, all arranged for the purpose substantially as herein set forth.

164,427. RELISHING-MACHINES. Geo. W. Conlee, Oshkosh, Wis. assignor of one-third his right to H. H. Dyer, same place. [Filed Apr. 21, 1875.]

Brief.—A vertically reciprocating boring-tool cuts the shoulder of the tenon, which is finished by a circular saw.



The adjustable bit-shaft E, and adjusting-screw L with treadle G and adjustable collar H, the adjustable stops N and R, and the adjustable slitting-saw A, all combined substantially as shown and described, for the purpose specified.

164,428. ROTARY CULTIVATORS. James H. Coon, Des Moines, Iowa. [Filed Aug. 6, 1874.]

Brief.—By a series of gear and crank wheels a spading motion is given to a series of shovels placed in a nearly vertical position in a frame, which, by wheels and crank-pins, rise and fall eccentrically. From the main shaft arms and braces extend to the rear, and support a pair of rotary cutting-cylinders, operated by a belt, which pulverize the earth thrown upon them by the spades. A hand-wheel and gearing raise the spades and rotary cutters simultaneously.

1. The auxiliary frame E, carrying the cog-wheels Nos. 1 and 3, and the crank-wheels *g*, in combination with the cog-wheels Nos. 2 and pinions *f*, substantially as described, to suspend and operate a series of spades.

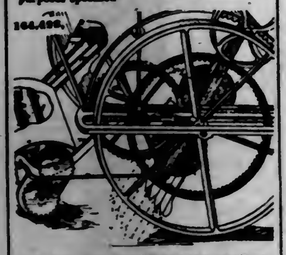
2. The combination of the spade-carrying case F with the crank-wheels *g*, substantially as described, to alternately thrust down and raise up a series of spades.

3. The sliding frame G, carrying the series of spades *h*, in combination with the suspended case F, substantially as described.

4. The frame or forked bars a a, when pivoted to the fixed shaft d at their upper and front ends, and connected with pitmen or rods e e, extending from their lower and rear ends to the adjustable auxiliary frame E, for the purpose of carrying rotary cutting-cylinders and adjusting them relative to the cwiss of spokes b, substantially as and for the purposes specified.

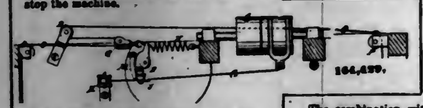
5. The combination of the hand-wheel M, pinions f, shaft x, auxiliary frame E, and rack u, substantially as described, and for the purposes specified

164,428.



164,429. STOPPING MECHANISMS FOR SPINNING-JACKS. Fredk. H. Crocker, Goulc, N. H. [Filed Apr. 3, 1875.]

Brief.—When the squaring-band breaks the extensions thereof become slack, and the spring vibrates the lever and the pawl, so that the latter throws the stop on the weighted cord out of the notch in the end of the lever, and the weighted cord draws the shipper, so as to transfer the belt to the loose pulley and stop the machine.



164,429.

The squaring-band, provided with the extensions O, in combination with the pulleys R Q, notched lever H, spring N, pawl M, the weighted cord G, provided with the stop J, and the shipper-lever D, all substantially as specified.

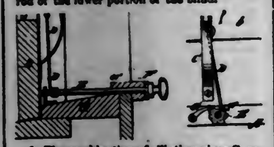
164,430. MAGIC-PENCIL CASES. A. T. Cross, Providence, R. I. [Filed Mar. 1, 1875.]



The spirally-formed feather F, attached to the screw-tube E in a magic-pencil case, in combination with the tube D, having the screw-slot *d*.

164,431. BLIND-STOPS. Thomas T. Duffy, Dubuque, Iowa. [Filed Nov. 30, 1874.]

Brief.—An elliptic spring attached at one end to the rod, and at the other to the frame, actuates the blind-slats, and detachably combined with this spring is a rod or shaft, ratchet-wheel and pawl, and a winding-cord, by means of which, when connected, the slats may be adjusted from the inside without raising the window. A similar spring on the upper half of the blind may be operated at the same time by a detachable cord-connection with the rod of the lower portion of the blind.



1. The combination of elliptic springs C, secured at one end to the rod and at the other end to the frame, with the slat-rods b' of a window-blind, to hold the slats b' closed, substantially as herein shown and described.

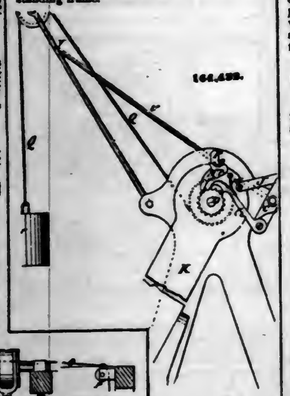
2. The combination of the cord D, rod or shaft E, ratchet-wheel F, and pawl G with the lower slat-rod b' and its spring C, substantially as herein shown and described.

3. The combination of the connecting-cord H with the upper and lower slat-rods and their springs, and with the cord D, rod or shaft E, ratchet-wheel F, and pawl G, substantially as herein shown and described.

164,432. HOISTING-MACHINES. Victor Dubaniel, Easton, Pa. [Filed May 1, 1875.]

Brief.—A derrick-crane operated by a pendulum, ratchet, and pawl. The boom adapted, by detachment of its brace, to fold over the standing frame.

164,432.



The combination, with cord Q, for attachment to the weight, passing over a pulley, E, the shaft D, having drum and ratchet, and a pendulum, K, having pawl N, of the pawl G, lever H, and strap J, substantially as and for the purpose specified.

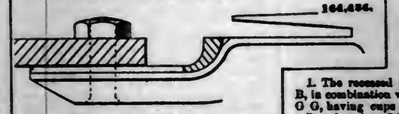
164,433. COMPOSITIONS FOR DENTIFRICE. Albert C. Dunn, New York, N. Y. [Filed Apr. 9, 1875.]

Brief.—The abrading materials consist of pumice-stone and carbonate of lime.

The composition of salicylic acid, orris root, and abrading material, substantially in the proportions specified.

164,434. HARVESTER-CUTTERS. R. Dutton, Yonkers, N. Y. [Filed Nov. 13, 1874.]

164,434.



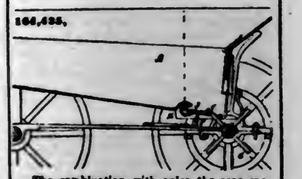
1. A cross-bar constructed with rearwardly-projecting teeth, as herein set forth, and adapted to conform to the shoulders of the guard-fingers.

2. The combination, substantially as hereinbefore set forth, of the finger-beam, the guard-fingers, the cross-bar, having rearwardly-extending teeth, and the clamp bolts or rivets passing through said teeth, finger-bar, and guard-fingers.

164,435. FERTILIZER CRUSHERS AND DISTRIBUTERS. Wm. Moll. Dye, Cairo, Egypt. [Filed Feb. 20, 1875.]

Brief.—Upon axles, and inclining rearwardly, is secured a wagon-box having a hole cut in its bottom, and its rear end-board slotted, through which work arms secured to and revolving with the axle, for carrying out the fertilizer. The flow can be diminished by a double pivoted gate secured just in front of the axle.

164,435.



The combination, with axles, the rear one provided with arms O, of body A, inclined downwardly from front to rear, the slotted plates J K, supported on studs P, and the lever fulcrumed in slotted plate N, all constructed and arranged substantially as and for the purpose specified.

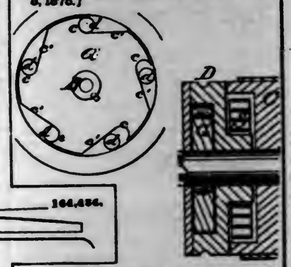
164,436. FLOUR-SIFTER. Geo. C. Eastman, Lewiston, Me. [Filed Feb. 27, 1875.]

Brief.—Strengthening cross-ribs are arranged in the interior of the wire body of the sifter.



In a hand-sifter of the kind described, the combination of the woven-wire body A, the peripheral rim B, and the arched handle C with the supporting-cross E E', arranged in the said body and fastened to the rim, all as explained.

164,437. TREADLES. Sterling Elliott, New Haven, Conn., assignor to the Sterling Treadle Company, same place. [Filed May 8, 1875.]



1. The recessed drum C, applied on shaft B, in combination with the pulleys D D, cams O O, having cups *c* and inclined planes *c'*, rollers *d*, springs S S, and clamp J, having set-screw *k*, whereby the tension of the springs S S may be varied at pleasure, substantially as described.

2. The stationary shaft L, provided with eccentric sleeves *l l'*, rotating on said shaft, in combination with the pin *n*, treadles K K', arms *n n'*, and pulleys D D, substantially as described, and for the purpose set forth.

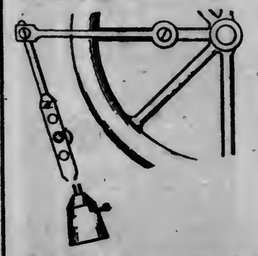
164,438. MOLDS FOR SHAPING WAX COMB-GUIDES FOR HIVES. John F. Ervin, Vinton, Iowa. [Filed Apr. 10, 1875.]

Brief.—A mold with flaring top is pressed against the walls, and retained until the wax has been poured in and cooled.



The mold C, having funnel end D and end plate E, as and for the purpose specified.

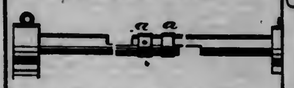
164,439. MOTORS FOR SEWING-MACHINES. Geo. R. Everson, Cincinnati, Ohio. [Filed Jan. 25, 1875.]



In a motor for a sewing-machine, the arrangement of the pawls I and J, shaped as shown, and working in their line of operation across each other, both being on the same side of the motor ratchet-wheel Q, in combination with a support, K, upholding both pawls, substantially as and for the purpose set forth.

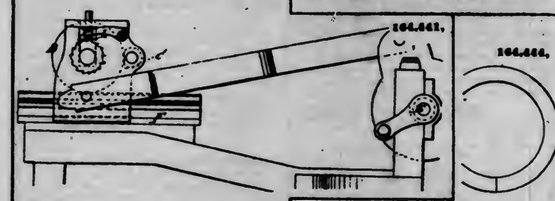
164,440. EXTENSION CURTAIN-ROLLERS. Oliver P. Furman, Corning, N. Y. [Filed Feb. 10, 1875.]

Brief.—The semi-cylindrical portions of the roller are spliced together by means of metal bands attached to the ends thereof.



A certain roller composed of adjustable halved sections connected together by means of bands *a a*, substantially as described.

164,441. IRONING APPARATUS. J. W. Gardner, Troy, N. Y. [Filed May 15, 1875.]



The carrier C of a reciprocating iron, B, mounted on ways F, substantially as specified.

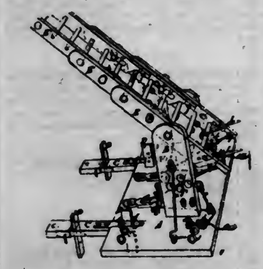
164,442. REFRIGERATOR-LADDERS. Robt. Gilchrist, Louisville, Ky. [Filed Mar. 13, 1875.]

Brief.—The lower section is pivoted to two upright posts, and the ladder is raised to its proper inclination by drawing the base of the same down and forward by means of ropes and pulleys. The several sections are pivoted together by a cross-bar, which also serves as a round. The sections are held rigid by means of thumb-bolts.

1. Two or more ladders, E E', pivoted together and applied one within the other, the pivot-bolts serving as stepping-rounds and bearings, in combination with finger bolts h, having pieces h' pivoted to them, substantially as described.

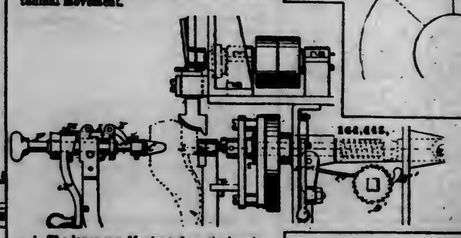
2. Pulleys O O, with their ropes combined with eyes j, and ladders which are pivoted to standards B, and which are also pivoted together, substantially as described.

164,443.



164,443. HEEL-POLISHING MACHINES. Leopold Graf, Newark, N. J. [Filed May 15, 1875.]

Brief.—The shoe-supporting yoke is pivoted to a shaft provided with vertical and longitudinal movement.



1. The lever-cam M, pivoted on the bearing G, in combination with the yoke A, dog L, pawl K, and the clamp C F, substantially as specified.

2. The combination of the eccentrically-rotating plate E with the yoke-holder, substantially as specified.

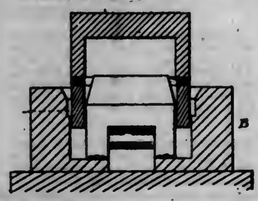
3. The ratchet-wheel D' and holding-pawl E', combined with the lifting-spring O' of the yoke-holder, substantially as specified.

164,444.

164,444. LEATHER WASHERS. C. T. Grilley, Boston, Mass. [Filed Apr. 7, 1875.]

As a new article of manufacture, a leather washer formed of a strip of leather of single thickness, connected directly end to end, and presenting the grain or edge of the leather for the working-surface, as set forth.

164,445. MECHANISMS FOR FORMING LEATHER WASHERS. C. T. Grilley, Boston, Mass. [Filed Apr. 14, 1875.]



1. The mechanism for forming leather washers, consisting of the die B, core, and plunger, constructed and operating substantially as described.

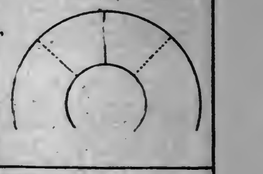
2. The combination, with the dies and core, of the follower and spring, substantially as described.

3. The process of forming leather washers composed of a single layer or thickness of leather, consisting in cutting the strip into the desired length and thickness, then bending the strip into annular form and completing it in dies under pressure, substantially as described.

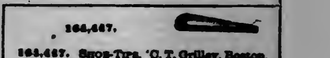
164,446. LEATHER WASHERS. C. T. Grilley, Boston, Mass. [Filed May 15, 1875.]

A washer composed of superimposed layers of leather, united by means of cement, and with the abutting or free ends of each piece or layer placed opposite a solid or unbroken portion of its adjacent layer, all substantially as described.

164,446.



164,445.

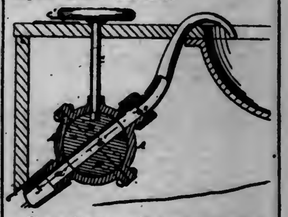


164,447. SHOE-TIPS. C. T. Grilley, Boston, Mass. [Filed May 18, 1875.]

A shoe-tip composed of layers of india-rubber compound, the outer layer at the end of the tip being softer than the inner or stiffening layer, substantially as described.

164,448. FAUCETS. Robert L. Hallett, Brooklyn, N. Y. [Filed Apr. 22, 1875.]

Brief.—Hot and cold water, or two kinds of liquid, either at the same time and mixed, or separately, may be drawn from their reservoirs, and discharged through the same discharge-pipe by the operation of the valve provided with a single passage, and its shell having two inlets and one outlet.

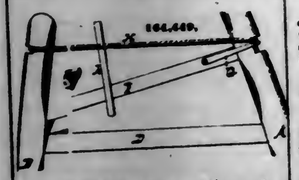


The combination, with the case A, having inlets *a'* and *a''* and a single outlet, *a'''*, of the spherical valve B, having a passage, *b'*, the stem C, and the hand-wheel D, substantially as described.

164,449. SAW-FRAMES. William Hankin, Scalyville, Pa. [Filed May 21, 1875.]

Brief.—A diagonal brace is detachably secured to a hack-saw frame by a pivoted clip or bow at the upper end, a strut-pin connecting the lower end to the horizontal bar by the projecting part of the pin fitting in sockets in the brace and bar. The ends of the brace are tapered, and fit in suitable mortises in each of the side pieces of the frame.

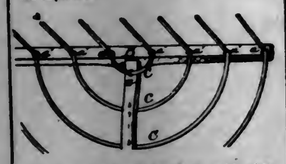
164,449.



The combination of the brace F, having the pivoted bow or clip G, side pieces A B, socket f, horizontal bar D, having the stud or pin E, and twisted rope H and lever A, or their equivalents, when constructed to operate as and for the purpose set forth.

164,450. RAKE. Frederick W. Hawkins, Ypsilanti, Mich. [Filed Oct. 1, 1874.]

Brief.—The bows and each pair of teeth are composed of one piece of wire, and are secured to the handle and head by staples embracing the wire at the points of contact. A part of the bows are below and a part above the handle, thus giving additional strength to the implement.



In combination with handle A, and head B, the braces C C, bent as described, and secured by means of staples a a', the braces nearest the head being secured to the under side of the handle, while the remaining ones are fastened to the upper side thereof, thus rigidly binding the parts together, and guarding the handle from the strain to which it is subjected, substantially as herein set forth.

164,451. LIQUOR TESTERS, FILTERERS, AND SPITTERS COMBINED. William F. Heiler, Baltimore, Md., assignor to himself and Charles McCann, same place. [Filed Apr. 26, 1875.]

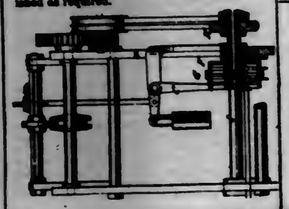
Brief.—A tube having a curved emptying-spout flap-valve falling upon a ledge or flange, and a gauze filter at the bottom.



The tubular tester A, with its curved emptying-spout C at top, valve-lid D, flange E, and filtering-sleeve G below, constructed, combined, and operating as herein described, and for the purposes set forth.

164,452. REGULATORS FOR HEMP-SPINNING MACHINES. Christopher Herschaft, Brooklyn, N. Y. [Filed May 8, 1875.]

Brief.—The rise and fall of the upper condensing-roll, caused by variations in the size of the sliver, shifts the belt to one or the other of the drivers, so that the gill-bars will be driven by one or the other of the differential pulleys, and their speed increased or diminished as required.



The differential pulleys K L and their drivers F G on the counter-shaft, in combination with the driver M for the gill-bars, and the automatic belt-shifter, substantially as specified.

164,453. WRENCHES. Isaac W Reysinger, Philadelphia, Pa. [Filed Aug. 26, 1874.]

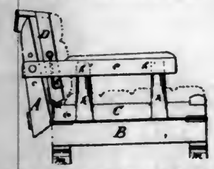
Brief.—The movable jaw is connected to the stationary jaw by means of a T shaped projection and a clamping screw arranged at its opposite ends.



1. The combination of the slotted toothed bar A, the movable toothed bar B, provided with the button F, and lug H, and the clamping-screw C, substantially as described.

2. The clamping-screw C, passing through a slot in the main bar A, into the lug H, and the rear portion of the movable bar B, substantially as described.

164,454. SOFA-BEDSTEADS. Axel Holmers, Boston, Mass. [Filed Dec. 5, 1874.]



1. The head part A, having two arms, e e, on a common connecting-rod, f, and the section C, having braces h, each hinged to an opposite side of the section B, as and for the purpose described.

2. The part D, having hooks k, hinged to a section, C, having buttons i, and folding back against head A, as and for the purpose set forth.

164,455. CAR-STARTERS. George Hunter, Payson, Ill. [Filed May 22, 1875.]

Brief.—Transverse shaft carrying coiled spring is alternately connected, by hinged arms having pinions at their ends, with the wheels. One wheel winds; the other receives the force of expansion, starting the car; also, detaining-pawl and ratchet, and levers for operating the same, and hinged ends of shaft.



The combination of the gear-wheels D H and E I, the jointed shaft F, the ratchet-wheel, pawl, and spring N O P, and the three levers J K Q, and the three catch-bars L M R, with each other and with the frame, the axle and the wheels of a car, substantially as herein shown and described.

164,456. STEAM-ENGINE VALVE-GEARS. James A. Hutchison and John W. Govier, Pittsburg, Pa.; said Govier assignor to said Hutchison. [Filed May 11, 1875.]

164,456.



1. The combination of an auxiliary plunger or piston, the entire stroke of which is effected by steam alone, a single D-valve for opening and closing the steam and exhaust ports, and a pinion or equivalent intermediate mechanism for causing the valve to move in a reverse direction from the piston by which it is operated, substantially as specified.

2. In combination with piston F, two or more ports or passages at each end of the auxiliary cylinder or steam-chest, arranged so that one of each set is alternately opened and closed by the travel of the piston, substantially as and for the purpose specified.

3. In combination with the auxiliary valve-chamber, having port e', which communicates with the live-steam chamber, and ports e e, which communicate with the cylinder G and the exhaust-port, a solid valve and independent tappet for operating the valve, substantially as and for the purpose specified.

164,457. DISSOLVING TRIBASIC PHOSPHATE OF LIME IN WATER CONTAINING CARBONIC ACID. Auguste Jas, New Orleans, La. [Filed Feb. 6, 1875.]

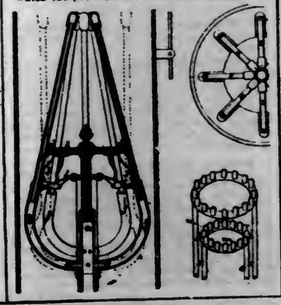
Brief.—Uses water impregnated with carbonic-acid gas as a solvent for tribasic phosphate of lime.

The mode or process above set forth and described of dissolving tribasic phosphate of lime in water containing carbonic acid

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164,458. PYROPHONES. O. E. F. Kastner, Paris, France. [Filed Dec. 24, 1874.]

Brief.—The flame-jet is placed within a keyed tube to obtain different sounds. The jets are also arranged two or more in a tube, and made adjustable with each other, by connection with a piano action, to make and break the correspondence of position, upon which the production of the tone depends.



1. A musical instrument, composed of a tube, A, and of two or more burners, arranged thereon, one or more of said burners being movable, substantially as and for the purpose herein shown and described.

2. The musical instrument, composed of the tube A, perforated, and of one or more burners within said tube, substantially as specified.

164,459. MACHINES FOR UPSETTING METALLIC BARS AND RODS. Edwd Kaylor, Pittsburg, Pa. [Filed Feb. 17, 1873.]

Brief.—The gripping die is actuated by a toggle-bar and a chain—the former through the medium of a rack and pinion to close the die, and the latter by winding upon the pulley-shaft when turning to raise the rack and bar to withdraw it. The several dies on the blocks are dissimilar, and designed for different purposes, and the upsetting is effected by the direct action of a steam engine.



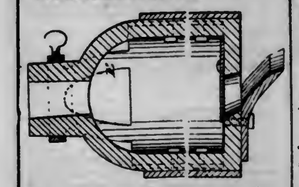
1. The reversible dies R R, supported in a suitable frame, in combination with plunger h, arranged in line with said dies, supported in guides, and operated by the direct thrust of a steam-piston, substantially as specified.

2. In combination with the movable die of a pair of gripping dies, a toggle-arm, i, and chain o', and suitable devices for raising and lowering the former, and winding and unwinding the latter, substantially as set forth.

3. The reversible dies R R, having the cavities a a' a' a', substantially as and for the purpose specified.

164,460. EARTH-AUGERS. John T. Kemper, Hannibal, Mo. [Filed Apr. 24, 1875.]

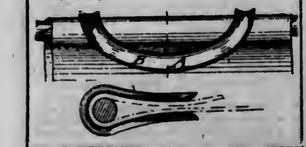
Brief.—An earth-auger consisting of a body with a socket, parallel sides, and bottom, made of one piece, with flat steel reaming face-plates and detachable cap-sections, applied by supporting-arms, and top collar, and set-screw, to close the sides of the bucket.



1. An earth-auger for boring wells, &c., constructed of a pot or body with sockets, parallel sides, and bottom made of one piece casting, and having steel-reaming face-plates attached to the sides, substantially in the manner and for the purpose set forth.

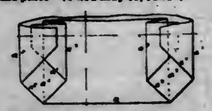
2. The combination of the auger body with the detachable cap-section applied by supporting-arms, top collar, and set-screw, to close open side parts of auger, substantially for the purpose set forth.

164,461. CLOTHES-PINS. E. F. Kreiwitz, Humboldt, Mich., assignor to himself and Joseph Mitchell, same place. [Filed May 1, 1875.]



A clothes-pin made of one continuous strip of sheet metal, being bent and corrugated to at the line at the yoke parts, and form side spring clamps or jaws below the same, substantially as and for the purpose set forth.

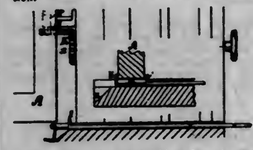
164,462. PAPER BAGS. Emil Langgasser, Atlanta, Ga., assignor to Elsas, May & Co same place. [Filed May 10, 1875.]



A paper bag made in one piece, with a common satchel bottom, which is folded on the lines a', a', a', a', and a', as shown and described.

164,463. SHUTTER-WORKERS. William M Lanphere, Waterloo, Iowa. [Filed Apr 3, 1875.]

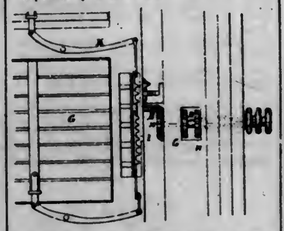
Brief.—A hinged angle-plate, carried by a push-rod, is employed in indirect combination with the ordinary bevel-gear shutter worker, for starting or unlocking the shutter when bound by frost or other slight obstructions, the construction of the hinged plate being such as to let it fall when the blind or shutter opens, and to swing it up again when it closes, so that it may engage with the lower edge of the shutter, and fasten it firmly in closed position.



The combination of the hinged angle-plate K and rod N with the shutter A and casing B, as and for the purpose set forth.

164,464. BLIND-SLAT ADJUSTERS. William M. Lanphere, Waterloo, Iowa. [Filed Apr 3, 1875.]

Brief.—The tubular shafts are arranged on the main shaft of an ordinary bevel-gear shutter-worker, and these tubular shafts carry toothed wheels at their outer ends, which gear with and engage toothed racks on the blinds, there being suitable levers and connecting-rods. One set of these devices is provided each for the upper and lower sections, that the blind-slats may work and be adjusted independently of each other.



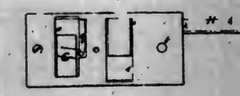
The combination of toothed racks I J on the blind, connected to the upper and lower slats for operating them, with toothed wheels G H on tubular shafts D F in the window-frame for working it, substantially as specified.

164,465. SASH-FASTENERS. Alfred C. Manning, Hartford, Conn. [Filed June 5, 1875.]

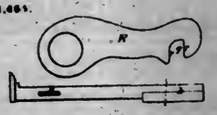
Brief.—As an improvement on the double-lock sash-fastener heretofore patented, (No. 104,974, July 5, 1870.) The operating-shaft is now made with parallel sides, forming a keyseat for a peculiarly shaped notched detachable key, which is introduced through a narrow slot made in the inner guide-strip of the side of the window-frame.

164,466. CYLINDERS FOR PAPER-MAKING MACHINES. Robert McMurray, Brooklyn, N. Y. [Filed Dec. 1, 1874.]

The wire-cloth cylinder A, in combination with the adjustable and removable stiffening-frame E, substantially as set forth.



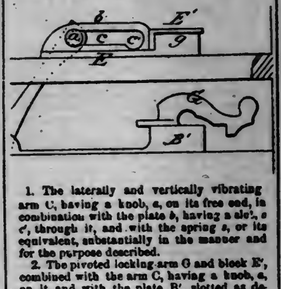
164,461.



The tumbler or operating shaft D, having an extension, h, or key seat provided with parallel sides, and arranged to extend across and at right angles with the key-slot i, in combination with the plate-key R, having the notch g, with parallel sides, substantially as specified.

164,466. VENTILATING-FASTENERS FOR SASHES. Alfred C. Manning, Hartford, Conn. [Filed June 5, 1875.]

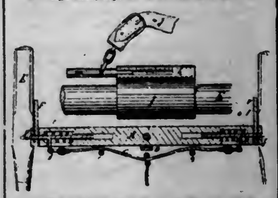
Brief.—A long arm upon one sash carries a button at one end which passes into a slotted plate upon the meeting rail of the other sash. The slot has a circular opening at one end, into which the button can only pass when both the sashes are entirely closed. With this fastening both sashes may be slightly opened, with no possibility of being opened to their full extent from the outside.



1. The laterally and vertically vibrating arm C, having a knob, c, on its free end, in combination with the plate b, having a slot, c c', through it, and with the spring c, or its equivalent, substantially in the manner and for the purpose described.

2. The pivoted locking-arm G and block E', combined with the arm C, having a knob, c, on it, and with the plate B', slotted as described.

164,467. HORSE-DETACHERS. Jos. A. Mase, Owingsville, Ky. [Filed Oct. 20, 1874.]

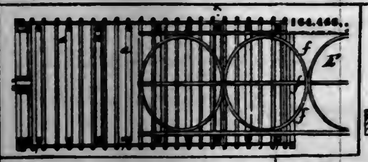


1. The combination, in a whiffletree, of the recess l, the disk f, the pin e, the coil-spring b, the arm d, the strap G, the staples g and g', anti-friction rollers, strap H, having anti-friction connection with the strap G, all substantially as set forth.

2. The combination of the shaft E, the clamp I, the socket k, the bolt m, with its staple n, and the holdback-strap J, all substantially as and for the purpose set forth.

164,468. CYLINDERS FOR PAPER-MAKING MACHINES. Robert McMurray, Brooklyn, N. Y. [Filed Dec. 1, 1874.]

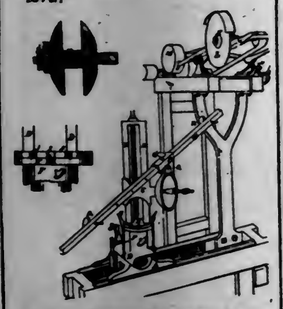
The wire-cloth cylinder A, in combination with the adjustable and removable stiffening-frame E, substantially as set forth.



164,469. PAINT COMPOUNDS. I. L. Morrell, San Francisco, Cal. [Filed Aug. 7, 1874.]

A paint composed consisting of steatite, oxided lime, dry lead, varnish, oil, and liquid isinglass, in about the proportions set forth.

164,470. SAW-SHARPENING MACHINES. J. A. Miller, Oshkosh, Wis. [Filed Sept. 4, 1874.]



1. The combination of the horizontal carrier A, transverse carriers B, and vertical carrier C, substantially as shown, for the purposes specified.

2. The combination of the disks E E', constructed with slots I I' and J J', substantially as described, for the purpose specified.

3. The arm O and thimble P, constructed substantially as shown, with set-screws Q and Q', E and E', for the purposes specified.

4. The independent reversible collar W V, constructed substantially as shown, for the purpose of reversing the grinding-wheel of a saw-sharpening machine.

5. The sliding cam c, constructed substantially as shown, in combination with the angular or bay-coated rod c, lifting-bar d, movable collar h, and slotted plate g, substantially as and for the purposes set forth.

164,471. PLOWS. Christian Myers, Marysville, Cal., assignor of one-half his right to Geo. B. Horsish, same place. [Filed Apr. 21, 1875.]

Brief.—The share, with a section of the land-side, slips into place, and is held by a dovetailed groove.



The plowshare G, having the land-side wing L and mold-board wing F, beveled upon their upper edges, and the latter wing provided with the tongue H, in combination with the mold-board A, beveled upon its lower edge, the land-side B, cut away to receive the wing L, and the frog D, having the lip or projection I upon its lower mold-board edge, the several parts being constructed and operating substantially as and for the purpose hereinbefore described.

164,472. CORAL-BEEDS. Jabez B. Norton, Worcester, Mass., assignor to Taylor & Farley Organ Company, same place. [Filed Feb. 20, 1875.]

Brief.—A curved metallic shell or roof to the reed-block. It may also be detached and slid into grooves in the sides of the reed-cell.

164,473.



1. The combination, with the reed-chamber c, of the metallic lining h, arranged to be supported by the sides of the said chamber, substantially in the manner and for the purpose above set forth.

2. In combination with the reed-block c, the metallic lining h', secured to, or formed with, said block, substantially as described.

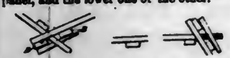
164,473. HORSE-POWER LINKS. B. L. Olds, Highgate, Vt. [Filed May 1, 1875.]



The horse-power link composed of the cast-iron body and wrought-iron back, the latter terminating at each end in a curve, forming a bearing for a journal within it, as shown and described.

164,474. PORTABLE FENCES. S. Olmstead, Brooks, Ind. [Filed Apr. 3, 1875.]

Brief.—The posts are extended at one end of panel above and at the other below the rails, to receive the upper rail of one adjacent panel, and the lower one of the other.



A fence-panel having a pair of posts, B B, at each end of panel, the pair at one end projecting above and at the other end below the rails, as and for the purpose specified.

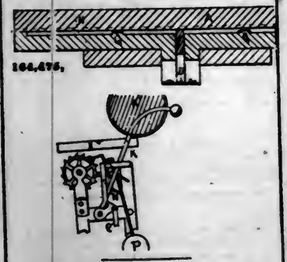
164,476. RAILWAY TIME-SIGNALS. John C. Paige, Stoneham, Mass. [Filed May 12, 1874.]

Brief.—The rail has rigid bearings at the ends of the chair, while the recesses under the rail allow the latter to spring down when a train passes over, whereby the lever is operated which sets the signal.

1. The combination of the long chair B, provided with the rail-bearings F and F', the recesses H H', and the positive resting-point G G, with the rail A, operating substantially as described, and for the purpose set forth.

2. The combination of the rail A, chair B, positive resting-points G G, pintle C, and the lever D, operating together substantially as described, and for the purpose set forth.

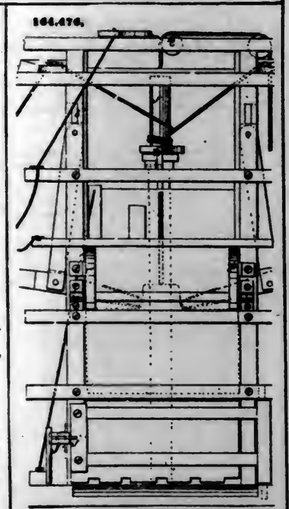
164,475.



164,476. HAY-PRESSES. Wm. H. Pennington, Fox, Mo. [Filed Mar. 20, 1875.]

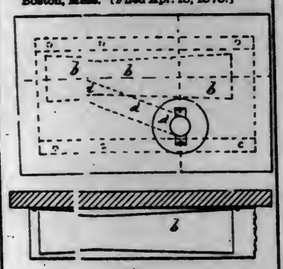
Brief.—A horse-power shaft is, at top, connected by bracing to the top of the press. Levers on the press, with ropes leading to the power, operate the follower. Doors fastened by projections on a revolving bar.

164,476.



A hay-press provided with loose baling-box H', supported by shaft J' and inclined bar N', as shown and described, for the purpose specified.

164,477. DEVICES FOR AUTOMATICALLY DISCHARGING WATER FROM SHIPS, &c. William D. Peters and George H. Holt, Boston, Mass. [Filed Apr. 15, 1875.]



The combination, with a pipe or tube, b, arranged beneath the bottom of a vessel, of the conductor or pipe d, the said pipes b and d being connected at an acute angle, as shown, and the pipe b extending in both directions beyond the point where the said pipes are connected, substantially as herein specified.

164,478. PERMANENT FLOUR OF CAMPHOR. Ira M. Phelps, Philadelphia, Pa., assignor of one-half his right to John H. Scott, Jr., same place. [Filed Apr. 24, 1875.]

Brief.—The glycerinated camphor may be compressed into blocks, so as to retard evaporation.

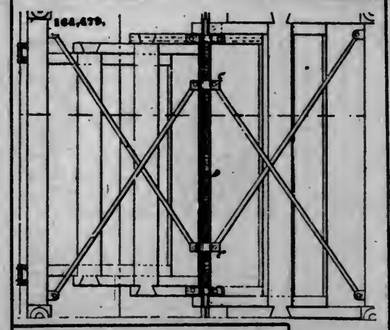
1. The process of making pulverulent camphor, consisting in subliming crude camphor, in combination with glycerine, substantially as described.

2. As a new article of manufacture, glycerinated camphor condensed in blocks, substantially as described.

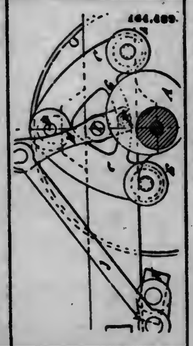
164,479. EXTENSION-TABLES. J. Poolman, Providence, R. I. [Filed Apr. 24, 1875.]

The combination of two pairs of toggles with a median screw, D, and travelling nuts C, arranged in connection with table, as shown and described.

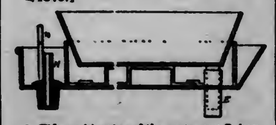
164,479.



164,480.



164,480. MILK-COOLERS. Perry Read and John H. Allen, Hinesburg, Vt. [Filed May 1, 1875.]



1. The combination of the water-vat B, having outlets E and I, with the removable outlet-tube H, provided with handle n, substantially as described and for the purpose set forth.

2. The water-vat B, constructed as set forth, in combination with the milk-pan A, removable corrugated supports D, and cleats c, substantially as described and for the purpose set forth.

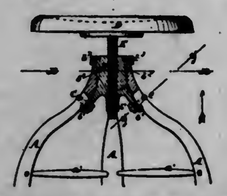
164,481. SCREW-CUTTING DIES. Virginius J. Reece, Greenfield, Mass. [Filed Feb. 20, 1875.]

Brief.—Two semicircular dies in a circular holder, and four screws passing through said holder—two with conical points passing between the dies to hold them apart, and the other two intermediate with the first, to keep them together.



The combination, substantially as shown and described, of the die-sections A, with holder B, screw C, and wedge-pointed screws D, the screws passing through the holder at right angles to the axis of the die, and the wedge-points between the edges of the die-sections, as and for the purpose set forth.

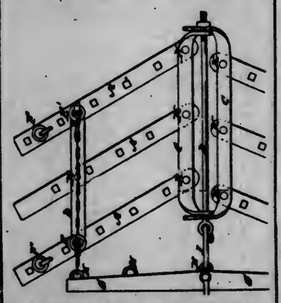
164,482. ROTARY STOOLS. Aaron Rice, Fitchburg, Mass., assignor to Walter Heywood Chair Company, same place. [Filed May 8, 1875.]



The socket B, provided with the grooved arms b', the ribs or grooves b', and the recessed flange b', to adapt it to receive the legs A, and the screw or pivot of the seat D, substantially as herein shown and described.

164,483. HARROWS. Joseph Rioth, Mount Sterling, Ill. [Filed May 8, 1875.]

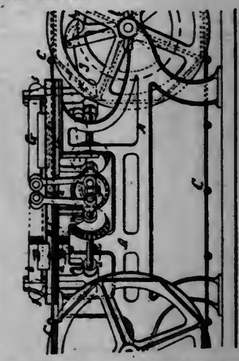
Brief.—The harrow is formed by the combination with each other of two sets of parallel bars carrying the teeth, two connecting-bars turned up at both ends for the reception of a coupling rod, which also forms a center draft-rod, and a draft-bar connected by chains to the ends of the teeth-bars.



An improved harrow, formed by the combination, with each other, of the two sets of parallel bars A, the connecting-bars B, the connecting and coupling bars C, the coupling-rod D, the two sets of rings E E' F, the draft-bar G, provided with five staples or eyebolts, H, the draft-rod I, and the two draft-chains J, substantially as herein shown and described.

164,484. SUGAR-CUTTING MACHINES. F. Rochow, Brooklyn, N. Y. [Filed May 26, 1875.]

Brief.—A perforated carrier receives intermittent motion from two large drums. The sugar block, placed within the carrier, moves along a fixed table, coming to the first set of knives. These knives, through a slot in the table, by eccentric and cam attachments, are made to come close together, thus cutting the blocks into prisms. The width of the prisms is regulated by the action of the carrier. The intermittent motion is secured by a pawl and ratchet-wheel. When the carrier delivers the cut prisms to the second set of knives, placed at right angles to the first, they come together as in the first case, and divide the prisms into cubes.



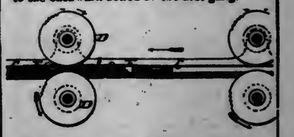
1. In a sugar-cutting machine, the combination of a perforated sugar-carrier, C, with two cutting or clipping tools, between which said carrier passes, substantially as herein shown and described.

2. The perforated sugar-carrier C, combined with a stationary slotted table, a, and with the cutting or clipping tools D D, placed, respectively, above and below the table and carrier, substantially as herein shown and described.

3. The combination of the perforated sugar-carrier C with two several series of cutting or clipping tools, by which the sugar slabs held in and fed by the carrier are first reduced into bars by one set of cutters, and the bars into cubes by the second set of cutters, all without removing the sugar from or changing the motion of the carrier, substantially as specified.

164,485. SUGAR-CUTTING MACHINES. F. Rochow, Brooklyn, N. Y. [Filed May 26, 1875.]

Brief.—The carrier, perforated to receive the sugar block, passes continuously between two double gangs of parallel saws; each gang being in sets, one above, the other below, the stationary table, slotted to admit of the action of the saws. The carrier is provided with disks or turn-table plates, which admit of the sugar block's quarter-revolution after having been cut into bars. This device secures the cutting of the bars into cubes by the advance of the carrier; or the second gang of saws may be dispensed with, and the bars submitted to the backward action of the first gang.



1. In combination with the carrier C, which is perforated to receive a slab or slabs of sugar, and continuously moving in one direction, the two double gangs of saws D D and E E, all parallel to each other, substantially as described.

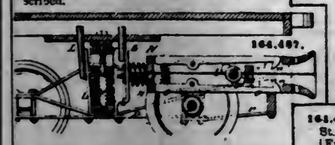
2. The carrier C, provided with a rotary disk, F, which is perforated to receive a slab of sugar, and turn the same after it has passed between a pair of cutting-tools, substantially as and for the purpose specified.

3. In combination with a double gang of circular saws, D D, a reciprocating carrier, C, containing the perforated turn table F, substantially as herein shown and described.

4. The spring catches *d d*, attached to the carrier C, and combined with the projecting pin *e* of the turn-table F, substantially as and for the purpose specified.

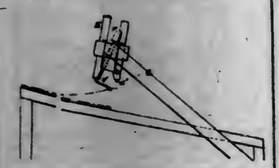
164,487. CAR-COUPLINGS. John G. Rogers, Victoria, Mo. [Filed Apr. 3, 1875.]

The combination of the bumper N and U bar L with the front cross bar E and the central stationary cross bar F of the truck-frame, substantially as herein shown and described.



164,487.

164,488. PAPER-FEEDING MACHINES. Socrates Scholfield, Providence, R. I., and C. E. Baker, Mont Clair, N. J. [Filed Mar. 13, 1876.]

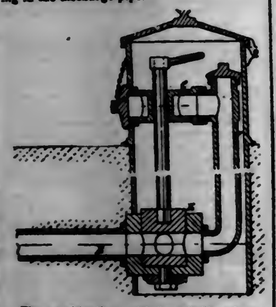


1. The combination of a lifting-pin, *c'*, and a cutter, *c*, with each other in such a way that the cutter may first make a hole and rise to allow the lifting-pin to enter and raise the edge of the sheet, substantially as described.

2. The combination of a holder, F, with the cutter *c* and the inclined lifting-pin *c'*, substantially as described.

164,489. HYDRANTS. Walter Scott, Passaic, assignor to Joseph Chadwick, Boiling Spring, N. J., and Henry Dale, New York city. [Filed Mar. 29, 1875.]

Brief.—The hydrant has a three-way cock provided with a stem having its upper bearing in the discharge-pipe.



The combination, with branch B and escape I, of three-way cock B, provided with stem F, having its upper bearing in pipe G, as and for the purpose specified.

164,490. BROOM-BRACES. Joseph B. Sharp, Vineland, N. J. [Filed May 26, 1875.]

Brief.—The side straps are capable of adjustment to fit the brace to all sizes of brooms, and the upper eyes are obtained upon opposite sides of the broom by a link connecting their lower edges, whereby the brace is made to clamp the broom.

1. In a broom-brace, the arched or yoke pieces A, constructed with the inward bent spiral eyes *g'*, combined with the hooks C C and cross-rods B *b*, the hook C holding the eye at its lower or single part, as and for the purpose set forth.

2. In combination with a broom brace, and with the rods B B and hooks C C, the adjusting-straps D D, substantially as and for the purpose set forth.

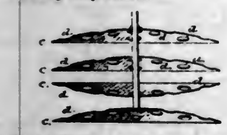
3. The broom brace described, consisting essentially of the parts A A, B B, C C C, and the adjusting straps, constructed and connected substantially as set forth.



164,490.

164,491. CHURN-DASHERS. Wm. H. Silver, St. Louis, Mo., assignor to Ann Silver. [Filed Mar. 26, 1875.]

Brief.—Consisting of four concave disks attached to a dasher-shaft, the two extreme ones having their concavities facing downward, the two middle ones having their concavities facing each other, and separated sufficiently to admit of being easily cleansed.



A churn-dasher, composed of the four independent and separate disks *c*, the upper and lower having their concavities facing in the same direction, while the concavities of the middle ones face each other, and the disks separated a short distance from each other, and all attached to a central solid rod. *b*, as and for the purposes described.

164,492. SPINNING-RINGS. W. W. Stearns, Norwich, Conn. [Filed Oct. 21, 1874.]

Brief.—An improvement in class of rings shown in Potter's Patent No. 64,104. The slot enables the traveler to be inserted without removing the top flange of the ring.



A spinning-ring of the character shown and described, provided with the slot D through its inner part, substantially as and for the purposes herein set forth.

164,493. LOOM-SHUTTLES. E. M. Stevens, Boston, Mass. [Filed Mar. 13, 1876.]

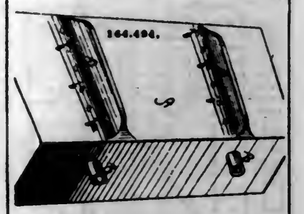


1. The swinging heel-plate A, provided with the projecting lugs *h h*, constructed to receive the yielding spindle, as described, in combination with the spring-catches *g g*, attached to the shuttle, for engaging with one of the lugs on the heel-plate, as and for the purpose specified.

2. In combination with a swinging heel-plate, a spring or springs arranged to allow the spindle to yield in both directions of its length, as and for the purpose set forth.

164,494. FIRE-BRICKS FOR FURNACES. P. Strattner, Wilmington, Del. [Filed Dec. 10, 1874.]

Brief.—Perforations in the brick correspond with the openings in the tubes.



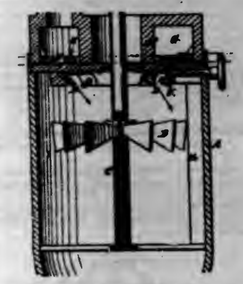
164,494.

1. A fire-brick, in combination with a perforated metallic frame incased within said brick, and having channels or passages corresponding with the perforations in the frame, substantially as and for the purpose specified.

2. The combination of the fire brick A, having ledges D D and channels or passages *b b*, and the hollow metallic frame B C, provided with perforations *a a*, all substantially as and for the purposes herein set forth.

164,495. WATER-WHEELS. Chas. H. Sturgee, Saratoga Springs, N. Y. [Filed May 6, 1875.]

Brief.—In combination with this water-wheel, two reverse series of jets and a gate contrived to open the jets of either series, and successively close the others in the same manner.



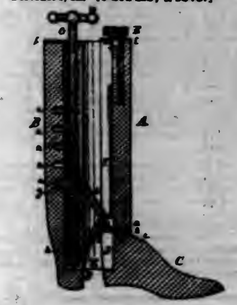
1. The combination of a series of jets, D, and a gate contrived to open and close them in succession, with a wheel, B C, substantially as specified.

2. The combination of two reverse series of jets with a wheel, B C, substantially as specified.

3. The combination, with two reverse series of jets, of a gate contrived to open the jets of either series, and successively close the others in the same manner, substantially as specified.

4. The reservoir G, gate H, jets D, wheel B C, and case A, substantially as specified.

164,496. BOOT-TREES. Robert Turnesure, Belvidere, Ill. [Filed May 1, 1875.]



1. The detachable hinge-joint and locking device, in combination with the shin A and foot C, substantially as and for the purpose set forth.

2. The combination of the toggle-jointed levers, screw-rod G, and ratchet-plate F, for the purpose of expanding a boot-tree, and forcing the shin A and foot C upward during the expansion, substantially as set forth.

3. The combination of the screw-rod G and toggle-levers, one of which is adapted to engage with the teeth of the ratchet-plate F, by means of which both screw-rod and levers are made vertically adjustable, substantially as shown and described.

4. The combination of the screw E, ratchet slide-plate F, and toggle levers, substantially as described, for the purpose of forcing the shin A and the foot upward, or relieving the upper pressure exerted on the shin portion of the tree by the expanding device, as set forth.

164,497. MANUFACTURE OF METAL-TUBING. William L. McNair, Allegheny, Pa. [Filed Mar. 20, 1876.]



The method described of forming pipes by taking a blank the length of the pipe to be formed, rolling grooves in its edges, bending it into a circular form, and passing it through suitable welding-rolls, the joint being perfectly straight, so as to run with the plane of motion in welding, substantially as specified.

164,498. FOUNTAIN-BRUSHES. Robert S. Van Zandt, Williamsburg, N. Y. [Filed Apr. 24, 1875.]

Brief.—The handle of the brush is the reservoir, and it slides within the part that holds the brush, whereby the flow of liquid is regulated by an open conical end fitting into a closed conical receptacle.

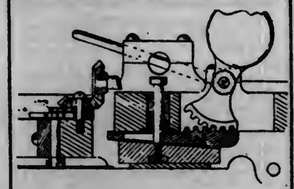


1. A fountain-brush, constructed with a reservoir-tube, G, provided with a valve, *i*, and passage *f'*, and adapted to slide within a tube, A, formed at its lower end with a tube, *h*, and brush K, and having a perforated plate or support, *d*, extending across its lower end, and supporting a funnel-shaped vessel, *c*, to position to receive the nozzle *i*, substantially as shown and described.

2. In a fountain-brush the combination, with a tube or cylinder, A, provided with a tube or nozzle, *h*, and brush K, and having a vessel, *c*, supported at the lower end thereof, of a reservoir-tube, G, adapted to slide within the tube A, and provided with a mouth or funnel, *j*, and a nozzle, *i*, adapted to be received and have its opening *i* closed and regulated by a vessel, *c*, in the manner and for the purpose described.

164,499. PRINTING-PRESSES. Chas Wells, Cincinnati, Ohio. [Filed Aug. 10, 1874.]

Brief.—The back of the vertical bed-plate is inclined, and is spring-pressed against a sliding wedge, which, acted on by a hand-lever, enables the form to be withdrawn and clear from contact with the plates and inking-rollers, the bearers for the latter being stationary. A vertically-reciprocating bar carries the inking-rollers over the form, and, by a rack on its rear side, gears with a wheel, from which extend crank-arms to oscillate the plates. The square ink plate receives a quarter-revolution after each impression.

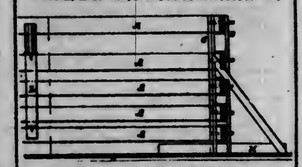


1. The combination of slotted disk *i* and crank *j*, with its pin working in the slots of the disk, as shown and described, for turning the ink-table a quarter-revolution after each rolling.

2. The combination, in a printing-press in which the roller-bearers are stationary, of a movable type-bed, with a lever and a wedge for operating the same, so that the bed may be withdrawn from the rolling or impression at the will of the operator, substantially as described.

3. The combination of crank-wheel A, pitman B, reciprocating rack C, and ink-rollers D attached to the rack, as shown and described.

164,500. PORTABLE FENCES. Jos. L. Welcham, Aullville, Mo. [Filed Mar. 13, 1875.]



A portable fence-panel, composed of rails A, pivoted in the posts B B', and secured in a central clamp, L, which is tied near top and bottom, and the braces H I, all combined substantially as shown and described, for the purpose specified.

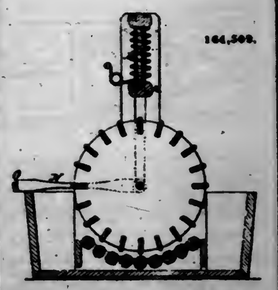
164,501. TRACE-BUCKLES. Benj. F. Winey, Donahoe, Iowa. [Filed Mar. 27, 1875.]

Brief.—The buckle is constructed upon the principle of a key-hasp, and when closed it clamps the strap.

1. The combination of the pivoted and jointed plates A A', and plates B, and intermediate pressure-plate F, having tongue *f* and hook *h*, substantially as specified.

2. The jointed and pivoted side plates A A', in combination with transverse connecting-plates B, to form gripping-jaws at the ends of a buckle, substantially as specified.

164,502. WASHING-MACHINES. James Wise and Peter Lane, Elwood, Ind. [Filed Nov. 14, 1874.]



164,502.

The combination of the swinging lever or supplementary handle frame N O, with the constant-actuated rubbing-cylinder, adapted to be locked to and unlocked from said frame, as and for the purpose specified.

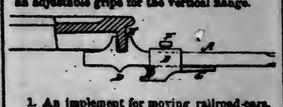
164,503. WEATHER-THRESHOLDS. Wm. H. Wood, Trenton, N. J. [Filed Apr. 6, 1876.]



The groove G in the bottom of a door, in combination with water-trough E and the diagonal water-ways O O O O, substantially as specified.

164,504. CAR-MOVERS. Milton Woodworth and Jerome B. Fredricks, Conneaut, Ohio. [Filed May 8, 1875.]

Brief.—For the purpose of rotating the wheel, one side of the lever has jaws adapted to pass onto the rim, and the other side has an adjustable gripe for the vertical flange.

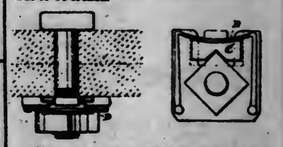


1. An implement for moving railroad-cars, consisting of a lever, A, having a projection, D, and the adjustable gripe B C, substantially as shown and described.

2. The lever A, having the jaw E, as shown and described.

164,505. NUT-LOCKS. Jos. C. Wright, Monocacy Station, Pa. [Filed Apr. 24, 1875.]

Brief.—A clevis-shaped spring is riveted at its extremities to the upper surface of the washer, and holds a dovetail slide against the nut to be locked.

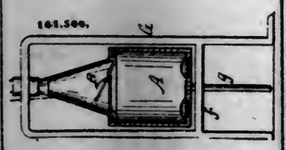


The combination of the sliding locking-block C and spring D with the washer and nut, substantially as specified.

164,506. PUMPS. Eugene F. Adsitt, Waterloo, N. Y., assignee of two-thirds his right to A. H. Terwilliger and S. R. Van Hyck, same place. [Filed Apr. 2, 1875.]

Brief.—The reciprocating bucket or cylinder is guided in its movement by a rod attached to its bottom, and passing through a cross-bar forming part of the main frame.

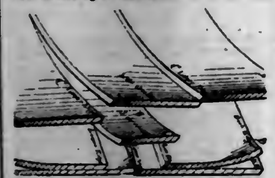
164,506.



In combination with the bucket A, and piston B, the inclosing-frame C, sustaining the said parts, and provided with the cross-bar *f*, through which runs the guide-rod *g*, attached to the bottom of the bucket, as shown and described, and for the purpose specified.

164,507. LEATHER BELTING. C. H. Alexander, H. W. Alexander, and E. P. Alexander, Philadelphia, Pa. [Filed May 1, 1875.]

Brief.—The firmer part of the leather is placed at the outer edges of the belt, and the yielding part in the center, so as to conform to the curved face of the pulley, and to prevent stretching of the belt.



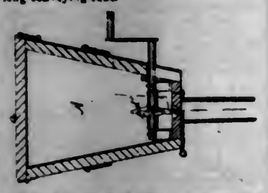
A belt made of middle hide-strips, having the firm edges B on the outside, and the yielding ones C on the inside, as and for the purpose specified.

164,508. PLAYING-CARDS. Phillip D. Aub, New York, N. Y., assignor of one-half his right to A. Heinemann, same place. [Filed Nov. 30, 1874.]

As a new article of manufacture, a playing-card, constructed of two or more layers of muslin, or other textile fabric, combined and united together by means of glue, starch, spermaceti, or such other suitable sizing material, and having the symbols or characters printed or painted thereon, substantially as described, for the purpose set forth.

164,509. FERTILISER-DISTRIBUTERS. C. Bailey, Kinston, N. C., assignor to himself, T. A. Harvey, and J. P. Bryan, same place. [Filed May 18, 1875.]

Brief.—A hand fertilizer provided with a revolving shaft, upon which are obliquely-arranged blades, (just over the adjustable delivery hole,) that force the material into the long conveying-tube.

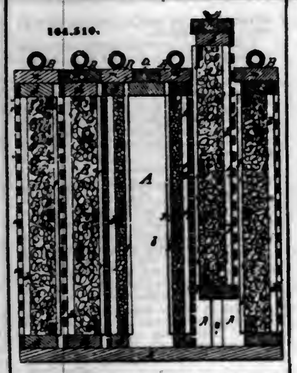


A hand sower for fertilizers, consisting of hopper A, having bottom slot *a'*, and crank-shaft D, having obliquely-arranged blades *d* and the long tube B, all in combination, as shown and described.

164,510. WATER-FILTERS. Phinehas Ball, Worcester, Mass. [Filed Feb 25, 1875.]

Brief.—An outer case with open ends and top, and with vertical guiding-grooves in its sides, to receive slatted filtering-sections filled with "excelsior," or other known agents. Said sections can be removed to be refilled without stopping the flow of water.

164,510.



1. A filter constructed with open ends a and c, and provided with shavings or the woody fiber known as excelsior, for the purpose set forth.

2. A filter constructed with open ends a and c, and provided with one or more boxes, B, filled with shavings or the woody fiber known as excelsior, for the mechanical purification of the water, and with one or more other boxes filled with known agents for the chemical purification of the water, substantially as set forth.

3. A filter-box, A, constructed with an open top, and with open entrance and exit ends c and e, in combination with two or more separate and independent sections, B, through which the water has uninterrupted or free access from the one to the other, and each capable of being separately removed from the filter without shutting off the flow of water or stopping the filtering process through the other, substantially as and for the purpose set forth.

4. A removable filtering-box, B, consisting of a slatted frame, *d*, and cap-piece *m*, substantially as set forth.

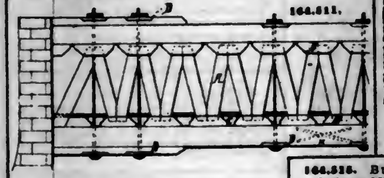
5. A removable filtering-box, B, consisting of frame-head *d*, slatted on one side, and provided with a removable slatted cover, *g*, substantially as and for the purpose set forth.

6. The combination of a filter-box, A, provided with recesses *c*, with one or more removable filter-boxes, B, constructed and arranged substantially as and for the purpose set forth.

164,511. TRUSS-BRIDGES. Henry Barton, Washington, D. C. [Filed June 5, 1875.]

Brief.—A bridge constructed of angular beveled end uprights, which fit into flanged boxes above and below, with cross-ties between each box, and held together by flanged plates and stay-rods.

164,511.

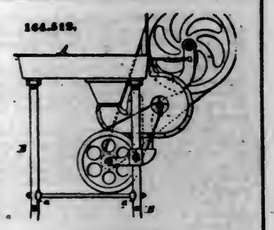


The combination of the angular and beveled end uprights A, fitting into their angular and flanged boxes B above and below, with their cross-ties C between each box, and flanged plates D supporting the stay-rods G, as herein described, and for the purposes set forth.

164,512. PORTABLE FORGES. De Witt C. Baxter, Philadelphia, Pa., assignor to himself, Charles C. Torr, and Cochran Forbes, same place. [Filed Nov. 1, 1871.]

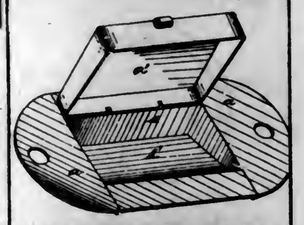
The combination, in a portable forge, of the hearth-plate A and tubular legs B B B B, connected to each other, and extending into and secured to the hearth-plate, substantially as set forth.

164,512.



164,513. SAD-IRON HEATERS. Jas. S. Bitler, Delaware, Ohio. [Filed Feb. 12, 1875.]

Brief.—The bottom is inclined to receive a more direct impact of the rearwardly-drawn products of combustion, and the top is made nearly parallel.



An improved sad-iron heater, consisting of the receptacle A, having the inclined bottom A' and supporting-flange *a*, constructed as shown and described, in combination with the inclined topped cover *a'*, substantially as specified.

164,514. SIGNS. Henry J. Blowney, South Bend, Ind. [Filed Apr. 6, 1875.]

The combination of the glass front B, back C, frame F, metallic molding E, and cement D, substantially as described.

164,514.



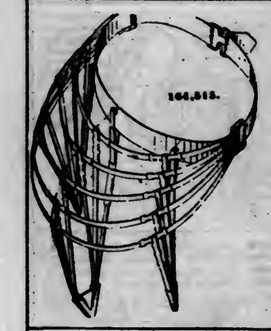
164,515. BUSTLES. Moses K. Bortree, Jackson, Mich. [Filed Mar. 6, 1875.]

1. In a bustle, a series of elastic bows, B, having their ends secured to buckles C, arranged to slide on the waist-belt, substantially as described.

2. The combination, in a bustle, of a series of elastic bows, each supported at intervals by a brace, which in turn is suspended from a waist-belt by a hanger, which has a limited movement in the direction of its length, independently of said waist-belt, substantially as described.

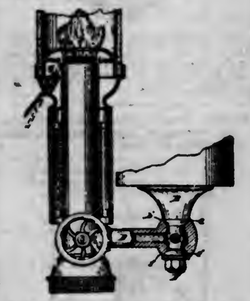
3. The combination, in a bustle, of the elastic bows, two or more separate or independent braces for each bow, a clip-casket to receive each group of braces, and a hanger to suspend them from the waist-belt, which hangers are arranged to move or yield in the direction of their length, substantially as described.

164,515.



164,516. LOCOMOTIVE HEAD-LIGHTS. Wm. H. Briggs, Chicago, Ill., and A. B. Briggs, Cincinnati, Ohio, assignors, by mesne assignments, to Jos. Briggs and Post & Co., Cincinnati, Ohio. [Filed Mar. 6, 1875.]

Brief.—The hinged match-plate closes the aperture automatically on the withdrawal of the match.

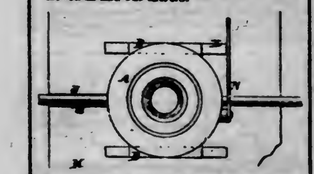


1. The combination of shank B and pipe D, the former having tapering joint-face *b* and tapering nut F *f*, and the latter two tapering seats, *c c'*, to match, substantially as and for the purpose specified.

2. The match-striking plate G, hinged angularly behind aperture *e*, substantially as and for the purpose specified.

164,517. MOLDS FOR GLASS, &c. Aries P. Brooks, Bayonne, N. J., assignor to James M. Brookfield, New York city. [Filed May 12, 1875.]

Brief.—The bottom part of the mold is divided from its main body in a horizontal plane, and the dies are arranged between them, resting on the lower part, and guided thereon in the recess, which extends through the bottom mold from side to side, so that the dies can be moved in and out therein.



1. The glass-mold, constructed of the solid upper and lower sections A A', in combination with the dies B, arranged between said sections, substantially as and for the purpose described.

2. The mold A, having its lower edge rabbeted, as at D, in combination with the lower section A', having the curved rims E, horizontal pins G for connecting the sections together, and the dies B arranged between the latter, as and for the purpose described.

164,518. ORGAN-STOP KNOBS. Riley Burdett, Erie, Pa. [Filed May 27, 1875.]

Brief.—To prevent the tangling of the porcelain name-plate from its handle, the plate is clamped to a wood, paper, or other backing, by means of which it is firmly secured to the back of the recess in which it is placed.

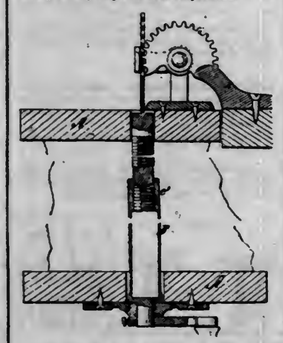
In combination with the recessed stop-rod, register-handle, or knob, A, the porcelain name-plate or scalp B, provided with a paper, pasteboard, or other suitable backing, D, and the metal rim or banding C, substantially as described, and for the purpose set forth.



164,515. B

164,519. SHUTTER-WORKERS. Thomas J. Carroll, Bridgeport, Conn., assignor to F. Armstrong. [Filed May 20, 1875.]

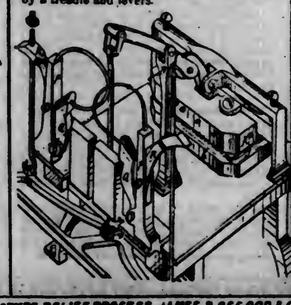
Brief.—A suitable tube, having at its inner end a female screw, and operated by a crank-handle, is secured within the casing. A male screw formed on an iron bar connects with this cylinder, while the outer end of the bar is formed into a flattened plate, having rectangular perforations, which mesh with and engage the cogged teeth of a sector or half-wheel attached to the shutter; the construction allowing the rack-plate to slide or work within the tube, as well as to hold the shutter firmly at any angle in desired position.



The tube B, having a screw-head, as at *c'*, in combination with the bar D, rack E, and toothed wheel *f*, substantially as and for the purpose described.

164,520. PAN-FORMING MACHINES. Wm. Chalmers, Detroit, Mich. [Filed Sept. 18, 1874.]

Brief.—Hinged jaws operating in connection with supporting-blocks for lapping over the corners of pans. The jaws are operated by a treadle and levers.



The adjustable plates N N, blocks O O, standards P P, forming jaws Q Q, levers R R, and rods S S, in combination with the table and treadle, substantially as and for the purpose set forth.

164,521. TOY PISTOLS. Robt. W. Churchill, Bridgeport, Conn., assignor of one-third his right to David J. Walters, same place. [Filed Apr. 12, 1875.]



1. The combination, in a toy pistol, of the spring C, the follower E, the rack F, the hammer G, and rod *d*, with a trigger, to disengage the said rod *d*, substantially as described.

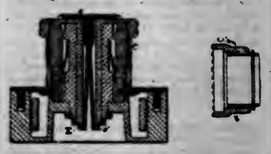
2. The combination, in a toy pistol, of the spring C, the follower E, the rack F, and pawl L, with a trigger, to disengage the said pawl, substantially as described.

3. The combination, in a toy pistol, of the spring C, the follower E, the rack F, the rod *d*, and the pawl L, with a trigger, to release the said pawl, substantially as described.

4. In a toy pistol, the follower E, provided with an elastic device, substantially such as described, to hold the torpedo.

5. In a toy pistol, the follower E, provided with a cushion, R, upon its outer end, substantially as and for the purpose described.

164,522. COMBINATION SEAL-LOCKS. Henry Clarke, Baltimore, Md. [Filed Dec 16, 1874.]



1. The seal-holding plate *c*, having its circumferential limit indented for the entrance of a portion of each tumbler, as shown, thus enabling the said plate to hold down the seal while it is being punctured by the tumblers, in combination with the dial D, perforated for the occupancy and movement therein of the said tumblers, the said plate and dial being incorporated in a seal-lock, substantially in the manner herein specified.

2. The indented seal-holding plate and bolt *c c'*, in combination with the dial D, perforated for the tumblers, said dial having as a part thereof the hollow bolt E, relatively arranged as parts of a seal-lock, substantially as and for the purposes herein specified.

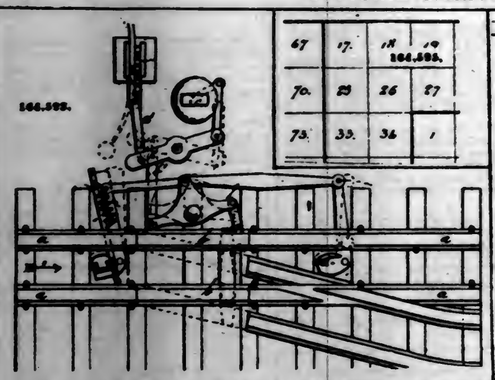
3. The combination of the band C, compensating lining *c'*, slotted as set forth, and sleeve B, provided with the projecting stop *a*, relatively arranged within the lock, substantially as and for the purpose specified.

4. The lock-case recessed at the back, as shown, in combination with the dial-bolt E, said bolt tying or holding together the lock-case and dial, substantially as specified.

164,523. RAILWAY-SWITCHES. William W. Colley, Philadelphia, Pa. [Filed Apr 26, 1875.]

Brief.—A railroad switch in which a cam rigidly attached to the short arm of an angular lever is employed, in combination with a hinged cam on a similar lever. A train approaching the siding on main line, in case the switch is set for the siding, will shift the switch to main line by wheels acting on hinged cam; but if desired to go onto siding the cam is turned over in its hinge by means of a hand attachment, which frees it from contact with the passing wheels, and the switch-rails are not actuated. In coming in the opposite direction, if the switch is wrongly set, the wheels act upon the stationary cam on the vibrating angle-arm, and shift the rails into line. The hinged cam is returned to its normal position by a spring.

164,502.

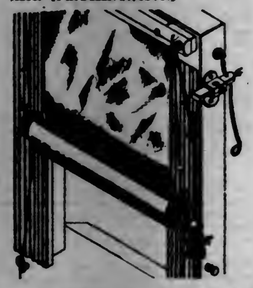


1. The cam *g*, movable in its bearings, arranged, with relation to the main track, as shown, in combination with the hand-lever *e*, whereby the position of said cam with relation to the rail is changed, and cars are allowed to pass onto the siding without affecting the levers employed to operate the switch, substantially as set forth.

2. The combination of the main track *a*, the cam *d*, fixed in its bearing, the movable cam *g*, the switch *b*, and a system of levers for connecting said cams with said switch, whereby the switch is automatically or by hand brought into direct line with the main track, whether the car approaches from one or the other direction on said main track, substantially as set forth.

3. The combination of the main track *a*, the cam *d*, fixed in its bearings, the switch *b*, and a system of levers for connecting said cam *d* with said switch, whereby the switch is automatically or by hand brought into direct line with the main track when the car approaches the switch from the direction of said cam *d*, substantially as set forth.

164,504. CURTAIN-FIXTURES. Henry M. Converse, Waterloo, Canada, assignor of one-half his right to George S. Codd, same place. [Filed Mar. 17, 1875.]



The combination, with a curtain attached permanently to the frame at its upper end, of the roller D, with pulleys D' and journals *c*, the bars *b*, cords *d*, with tassel K, and the bands *h*, with weighted tassels G, and a device attached to the window-frame, which automatically holds the curtain at any desired point, all substantially as and for the purposes herein set forth.

164,505. TARGETS. Thomas B. Connery, New York, N. Y., assignor to J. G. Bennett, same place. [Filed May 10, 1875.]

The improved target herein described, having its surface subdivided into minute squares, or other shaped divisions, which are each provided with a specific number or sign to adapt the same to be speedily read and reported, substantially as described, and for the purpose set forth.

164,506. MACHINES FOR MAKING WOODEN PINS. George W. Conies, Oshkosh, Wis., assignor of one-third his right to Hiram M. Dyer, same place. [Filed Mar. 23, 1875.]

Brief.—The pins are formed by passing the material through the saws twice, so as to make cuts at right angles to each other.



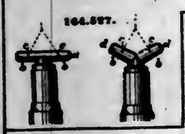
In combination with saws B B and slitting saws A A the adjusting-washers J J, substantially as specified.

164,507. GAS-BURNERS. Isaac Cook, St. Louis, Mo., assignor of one-half his right to Jacob R. Sprague, same place. [Filed Mar. 1, 1875.]

Brief.—Removable plugs in the horns of the burner.

The removable stoppers or plugs *d*, in combination with a gas-burner having horns *b*, and gas-vents *c*, substantially as described.

164,507.



164,508.



164,509. GAS-BURNERS. Isaac Cook, St. Louis, Mo., assignor of one-half his right to Jacob R. Sprague, same place. [Filed Jan. 18, 1875.]

As a new article of manufacture, the duplex gas-burner provided with the thin adjustable necks or branches B B, as and for the purpose set forth.

164,509. SEWING-MACHINES. C. S. Cushman, Philadelphia, Pa., assignor to N. D. Stoops, same place. [Filed Apr. 14, 1875.]

Brief.—The cam-shaft that gives the usual motion to the feed has pins near its end that strike the pattern-cam, which, through gear-wheels, turns the shaft carrying a sleeve that imparts lateral movement to the feed through a cam-groove on the shaft and pin on the sleeve.

1. The combination of the wheel J, having teeth *i* and *i'*, teeth-wheels K and K', spur-wheels K'' and K''', and the cylinder M, having a curvilinear cam-groove, *r*, with the sleeve N, having pins for giving a reciprocal lateral movement to the feed-surface P, for producing ornamental stitching, substantially as set forth.

2. The wheel J, having teeth *i* and *i'*, in combination with teeth-wheels K and K', constructed as described, for giving an intermittent rotary motion to the pattern-cam of a sewing-machine, substantially as described.

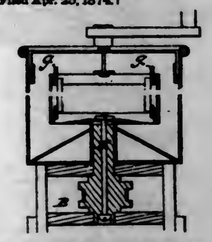
164,510. COFFEE-STEEPERS. R. R. Daken, Coldwater, Mich. [Filed Jan. 22, 1875.]

Brief.—The alcohol to be consumed is poured in through the opening *d*.



The combination of the base *A*, provided with a fire-cup, B, with the cup D, supported by the perforated shield C, which is provided with an opening, *d*, substantially as and for the purpose set forth.

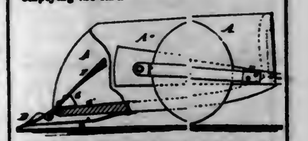
164,511. CENTRIFUGAL HORSE-RETRACTORS. Absalom W. Dawley, Mankato, Minn. [Filed Apr. 26, 1874.]



The removable racks *g g*, having slots *g' g'* projecting inward to secure the proper transverse location and spacing of the comb-frames, and at the same time to facilitate their removal, in combination with the rotary basket D and the outer stationary vessel A, provided with the cock K, substantially as and for the purpose set forth.

164,512. SCRAPERS. Elbridge Dickinson, Marshall, Mo. [Filed May 1, 1875.]

Brief.—The body is provided with a scraper-plate, with upper and lower supporting-bars to brace it. Parallel inclined bars connected to a cross-bar are pivoted to the scraper-plate by a hinge-bolt, so as to turn out of the way when emptying the cart.



1. The scraper-plate D and its upper and lower supporting-bars *d' d'*, in combination with the bottom of the body or box A of the scraper, substantially as herein shown and described.

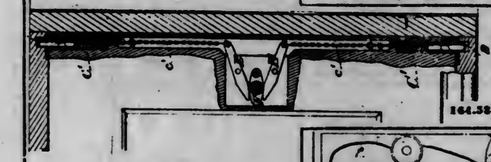
2. The combination of the parallel inclined bars F, the cross-bar G, and the hinge-bolt H with the scraper-plate D, the supporting-bars *d' d'*, and the bottom of the body or box A, substantially as herein shown and described.

164,522. INSECT DESTROYING COMPOSITIONS. Jos. B. Douglass and E. S. Green, Columbia, Mo. [Filed Mar. 20, 1875.]

The improved compound herein described for protecting trees from boring insects, consisting of sugar of lead, alcohol, spirits of turpentine, aqua ammonia, and gum arabic and camphor, in about the proportions specified.

164,524. CAR-WINDOWS. J. L. M. Du Four, Boundbrook, N. J. [Filed Apr. 28, 1875.]

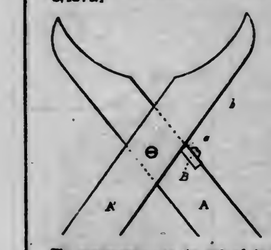
Brief.—The window is provided at each side with spring-bolts and keepers, as shown, the bolts being operated by cam and lever attachments. When one side is swung open, the other acts as a pivot. The lower casing has guide and lock mechanism.



1. The combination of window A, pairs of spring-bolts C *c* C', keepers D, chains *c'*, levers E, and cams F, substantially as and for the purpose specified.

2. The horizontally-swinging window A *g g*, in combination with the slotted arms G *g'*, one of which has an angular notched leaf, G' *g''*, and spring-catch H *h*, substantially as and for the purpose specified.

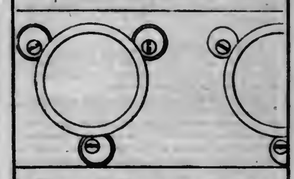
164,525. STANDS FOR BARREL-CHURNS. J. H. Dunbar, Philadelphia, Pa. [Filed Feb. 3, 1874.]



The projections *a a* on the ends of the bar B, in combination with the edges *b b* of the outer legs A' A', to form steps for the same, substantially in the manner and for the purpose above described.

164,526. HOLDING AND ADJUSTING DEVICES FOR SPINNING-RINGS. Frank J. Dutcher, Hopedale, Mass. [Filed May 22, 1875.]

Brief.—The grooves or flanges of the eccentrics receive a flange projecting from the ring, and confine the latter to the rail, and by turning the eccentrics on their screws the rings may be adjusted.



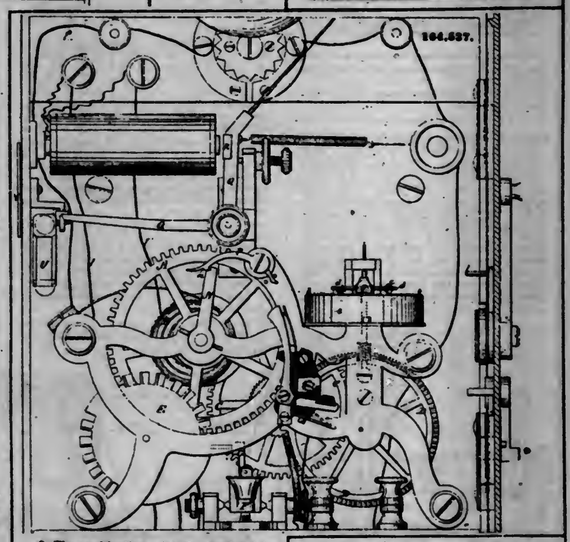
The grooved or flanged eccentrics and their clamp-screws, combined with and applied to a spinning-frame ring and its support-rail, substantially as specified.

164,527. FIRE-ALARM SIGNAL-BOXES. W. H. Facer, Toronto, Canada. [Filed Apr. 20, 1875.]

Brief.—Transmitting-key operated by the motion of notched die in one direction only. Current shunted momentarily from bell-magnet on depression of winding-arm. A pivoted double stop prevents the operation of winding-arm a second time, until transmitting mechanism has returned to starting-point. Doors of all boxes but that from which signal is sent are locked by means of a pivoted segment and a mercury-balance, operated by an extension of armature-lever on breaking of circuit.

1. The disk E, having its notches arranged diagonally, so as to form cams, in combination with the transmitting-key F and the elbow-lever G, having a pin, *h*, substantially as and for the purpose described.

164,527.



2. The combination, with the insulated lever K and spring L, having contact-points, of the crank N, substantially as and for the purpose described.

3. The combination, with the notched disk E, the main driving-spring, and the intervening train of gear-wheels, of the friction-governor, consisting of a disk, *a*, having pivoted segments *b*, springs *c*, and an adjusting-bar, *d*, all contained within the frame *e*, substantially as and for the purpose described.

4. The combination, with the crank N and the setting-crank O, carrying a spring and a stud, *i*, of a pivoted double stop, P, substantially as and for the purpose described.

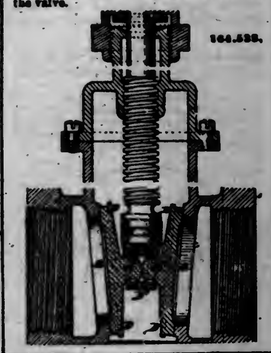
5. The combination of the pivoted locking-segment V and the mercury-balance U with the armature of the magnets, and the stud *o* upon the door-bolt, as and for the purpose described.

6. The combination of the locking-segment V, carrying stud X, with the spring-metal lever-catch W upon the inside of the outer case, and the stud Y upon the door, substantially as and for the purpose described.

164,528. STOP-COCKS. John L. Frisbie, New York, N. Y., assignor to himself and Thomas J. Nottingham, Cincinnati, Ohio. [Filed May 19, 1875.]

Brief.—The stem is swiveled to concave-headed projections formed upon the backs of the valve.

164,528.

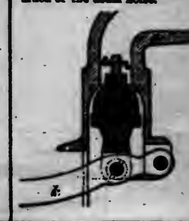


164,527.

In combination with the inclined faces a a and carrier F, the valves D D, having swiveling projections *d d'*, with convex ends in contact, substantially as and for the purpose specified.

164,529. TANK-REGULATORS. Alva Fuller, Brooklyn, N. Y. [Filed May 17, 1875.]

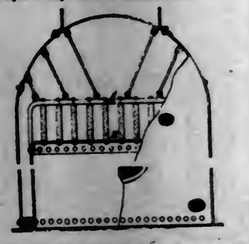
Brief.—The conical rubber valve is pressed to its seat by the lever rising with the float. The guide-arms steady the valve and prevent much of the usual noise.



The conical rubber valve *f* with the guide-arms *e* upon the valve-stem, in combination with the parallel water-way *b* valve-seat *c*, lever *k*, and float *m*, substantially as set forth.

164,540. CROWN-SHEETS FOR STEAM-BOILERS. Solomon B. Gance, Columbus, Ohio. [Filed Dec. 4, 1874.]

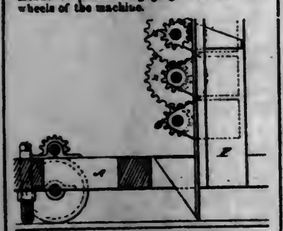
Brief.—A subsidiary crown-sheet is located some distance above the crown-sheet proper, between which a continuous circulation of water takes place, by which the crown-sheet proper is kept clear of sediment.



The shield or secondary crown-sheet A, solid over the entire extent of its horizontal area, in combination with the crown-sheet B of a boiler-furnace, substantially as and for the purpose specified.

164,541. DRIVERS FOR SHEET-PILING. E. Gardner, New York, N. Y., assignor to E. Howe, same place. [Filed May 31, 1875.]

Brief.—A machine for forcing sheet-piles into the ground by mechanical pressure exerted through gearing. Upon a four-wheeled frame is mounted a vertical sliding-rack pressbar, with a laterally-projecting arm, which rests upon the top of the slab to be forced down; said slab and arm being guided between vertical uprights. A cutting-edge is attached to the press-bar at one side. The frame is moved along upon a track or way by means of pinions engaging with the front wheels of the machine.



The carriage A A A A, in connection with the press-bar G, and the gearing for operating it, arranged and connected with the uprights F F, substantially as described and illustrated, and for the purpose specified.

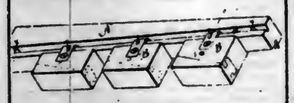
164,542. VENTILATING-BASSINET. Elijah B. Georgia, Clifton, Va., assignor to himself and Margaret Hotsel, same place. [Filed Apr. 6, 1874.]



1. A fruit keg or barrel having longitudinal apertures in the body of the stave, and at a distance from the joint of any two, as and for the purpose described.

2. The within-described barrel, made tight at and near the middle, where it has the largest diameter, and having openings where the barrel is reduced in diameter, all as set forth.

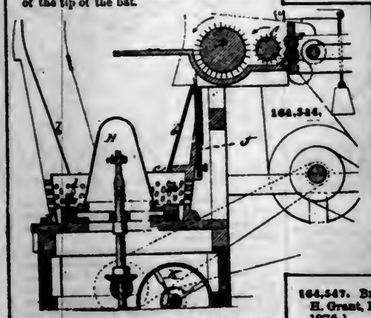
164,543. PRINTERS' SIDE-STICKS AND QUOINS. William Gilbert, Catskill, N. Y. [Filed Oct. 27, 1874.]



The combination of the two-part quoin B C, one part having a tongue and the other a groove, the pin *i*, L-shaped pieces *b*, and the stick A, with grooves *a*, all substantially as and for the purposes herein set forth.

164,544. MACHINES FOR FORMING HAT-BODIES. John Gill, Orange, N. J. [Filed July 6, 1874.]

Brief.—The present invention is an improvement on applicant's patent, granted January 13, 1857; and consists in providing inlet air-openings around the lower part of the chamber surrounding the perilous cone or former, whereby the brim portion of the hat-body is caused to receive less fur than the middle portion thereof. The lower part of the chamber in which the perforations are formed is constructed of larger internal diameter than the inverted conical portion immediately above, to form a cavity wherein the jets of air entering through the openings are broken up and diffused, and a better distribution of the non-fur-bearing air around the lower part of the cone or former is obtained, and also preventing the fur from lodging in the lower part of the chamber. By reason of the cut-off board, over which the fur is supplied to the chamber, and a slide and air-inlet arranged in the upper side of the chamber and beneath said cut-off board, the quantity of fur to be deposited upon the cone or former is regulated, and caused to pass farther over and lower down on the same, thereby reducing the thickness of the tip of the hat.



1. The perforated lower portion of the chamber G, of larger diameter than the lower part of the inverted conical portion *b* above said perforated portion, substantially as and for the purpose herein specified.

2. The slide J, applied to the inlet air-opening under the cut-off board E, in combination with the cone H and chamber G, essentially as and for the purpose herein set forth.

164,545. FAUCETS. Henry Gneelli, Detroit, Mich. [Filed May 4, 1875.]

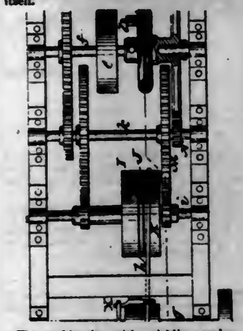


1. The combination, with the faucet A A', of the valve-case C, air-valve E, consisting of the hollow stem *e*, having the openings *c' c''*, opened by the faucet and closed by a spring, the tube D, and check-valve *c*, substantially as described and shown.

2. The combination, with the faucet A A', of the air-valve E, having the spring *f*, tube D, check-valve *c*, plug B, having the cam *e*, and the rod F, having the head *i* and spring G, substantially as described and shown.

164,546. REGULATORS FOR HEMP-DRAWING AND SPINNING MACHINES. John Good, Brooklyn, N. Y. [Filed May 3, 1875.]

Brief.—For varying the velocity and stopping the motion of the gill-belt, which feeds the slivers to the flier of the twisting mechanism, by variations in the position of the condenser, through which the sliver passes, caused by irregularity in the size of the sliver itself.



The combination, with a yielding condenser, of a slip-clutch, Q R, the shaft *f*, the loose and fast pulleys I J K, the band *h*, a belt-shifter, X, and differential gear for communicating the power from said band to actuate the shaft *f* at different velocities, essentially as described.

164,547. BLACKBOARD-ERASERS. George H. Grant, Richmond, Ind. [Filed Apr. 29, 1875.]

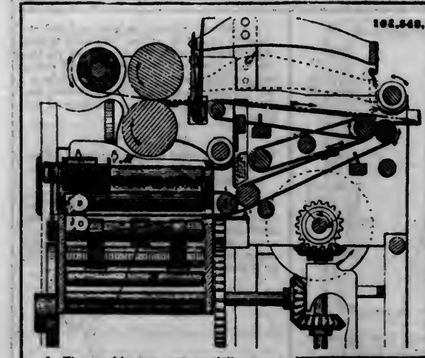
Brief.—The pressure upon the handle while in use is sufficient to prevent the rotation of the brush.



1. The cylindrical rubber or brush A B, handle C, and frictional end bars D D, combined and arranged to operate substantially as and for the purpose specified.

2. The combination of the oval or eccentrically-pivoted handle C with the cylindrical rubber or brush A B, end bars D D, and pivotal bolts or screws *d d*, all arranged to operate substantially as and for the purpose specified.

164,548. PAPER-BAG MACHINES. Thomas W. Grinter, Cincinnati, Ohio, assignor to himself and Joseph F. Jewett, same place. [Filed Feb. 23, 1874.]





1. The combination, substantially as set forth, of intermittently-moving feed-rolls, a fixed cutter, a movable cutter, a holding-clamp or bearer moving with said movable cutter, and bridge-springs interposed between the roller and cutters, whereby the paper web, while being cut, is clamped upon the springs and its front end presented in proper relation to the carrying-apron when the feed is resumed.

2. The combination, substantially as set forth, of feed-rollers holding clamps, cutters, and a pasting and creasing knife, all moving intermittently, with continuously-and rapidly moving feed-tapes and pressing-rollers, whereby each blank, after being severed from the web, gains on the following one the distance necessary for the proper performance of the successive operation.

3. The combination of feed-rollers, cutters, and first and second pasters and creasers, all moving intermittently, with continuously-moving carrying-tapes and pressing-rollers, these members being constructed to operate in combination, substantially as set forth, whereby the blank is pasted on one side, folded, reversed, and then pasted on the opposite side of its bottom folds.

4. The combination of the cam-wheel G, its slide-bar and cross-head, the movable cutter, the first and second creasers and pasters, and their paste-applying rollers, these members being constructed and operating substantially as set forth.

5. The combination, substantially as set forth, of the first and second creasers and pasters, forming the bottom folds of the bag, and their carrying-tapes and pressing-rolls, with the third creaser and paster, and its carrying-tapes and pressing-rollers, whereby the bottom is twice pasted at proper points, twice folded upon the body, again pasted, and the body folded longitudinally.

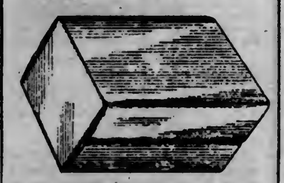
6. The combination of the third and fourth creasers and pasters, mounted upon a common support, and actuated by a single cam, and the paste-rollers M O', substantially as set forth.

7. The combination of the first and second creasers and pasters, operating in parallel planes, with the third and fourth creasers and pasters, likewise operating in parallel planes transverse to and during the pause in the movement of the first two, these members being constructed and operating substantially as set forth.

8. The combination, substantially as set forth, of a cutter and two creasers, moving in parallel planes, and operating simultaneously, with creasers moving transversely thereto, and acting in unison during the pause in the operation of the cutter and first creaser, whereby a series of blanks are simultaneously subjected to successive stages of manipulation, as set forth.

164,549. CLOTH BAGS. Thomas W. Grinter, Cincinnati, Ohio, assignor to himself and Joseph F. Jewett, same place. [Filed May 1, 1875.]

A satchel-bottomed cloth bag, made from a tubular blank by doubling over diagonally a lap on each side of the bottom of the bag, and securing the laps by stitching across the bag near its bottom, substantially as hereinbefore set forth.



164,550. CLOTH BAGS. Thomas W. Grinter, Cincinnati, Ohio, assignor to himself and Joseph F. Jewett, same place. [Filed May 1, 1875.]

A bellows-fold satchel-bottomed cloth bag constructed by doubling the cloth strip or blank upon itself, folding over a lap at the bottom, and stitching the lap and the sides of the bag together, substantially as hereinbefore set forth.

164,551. HOLDERS OR FASTENERS FOR HALTER-STRAPS. A. Hagny and S. L. Hagny, Keokuk, Iowa. [Filed Apr. 10, 1875.]

Brief.—The holder has a rigid metal loop at one end and a ring at the other. The ring is secured around a bolt, which is constructed with flanges to prevent wear. The strap is slotted and fastened by slipping it over the loop, and is held in place by passing the end of the staple through the loop above it.



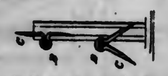
1. The holder having the staple A, the ring M, and the loop E, arranged to operate substantially as set forth.

2. The combination of the loop E, having the rigid projection F, the staple A, the flexible tongue I, and the part V, substantially as set forth.

3. The bolt L with the projections L' to hold the ring M, substantially as set forth.

164,552. WIRE FENCES. Jacob Hauk, De Kalb, Ill. [Filed May 27, 1875.]

Brief.—A wire, pointed at both ends, is doubled, and each leg is then bent at right angle outwardly, leaving a nearly complete circle at one side, into which circle the long wire enters when the loop is pressed close upon it.



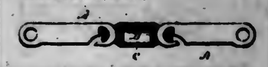
In a wire-fence, the combination of the staple wires B B, and the pointed wires or barbs C C, bent into the loops or eyes *a' a''*, and mounted on the wires B B, substantially as and for the purposes specified.

164,553. MANUFACTURE OF TILING. F. H. Hall, Zanesville, Ohio. [Filed Mar. 16, 1875.]

1. In a process for making tiling, preparing the clay by dissolving it to a consistency about equal to that of cream, then passing the same through a sieve, and then boiling the same until the gases are expelled, substantially as set forth.

2. A process for making a tiling, consisting of purifying the clay in the manner described, evaporating the same to dryness, then crushing and grinding the same to a fine powder, then dampening it, and then pressing the same into molds and burning it, either with or without a flux mixed therewith, substantially as set forth.

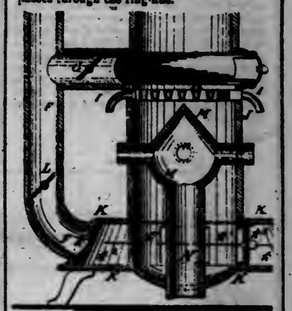
164,554. BRIDLE-BITS. La Fayette Harteon and James W. Bronson, Wyoming, Iowa. [Filed May 15, 1875.]



A bridle-bit consisting of the hollow center-piece, provided with perforations and opening U, in connection with the hook-ed end pieces, all constructed and arranged as herein shown and set forth.

164,555. BASE-BURNING STOVES. Melville C. Hawley and William Lennox, Mattoon, Ill. [Filed May 3, 1875.]

Brief.—The hollow arms are inclined alternately upwardly and downwardly, to promote circulation of air. The indirect draft passes through the ring-flue.

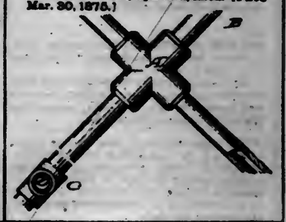


1. The hollow grate H, provided with tubular arms I, to allow the air to circulate through the bars of said grate, in combination with the walls of the stove, substantially as herein shown and described.

2. The combination of the conical chamber M, the inlet pipe or flue N, and the outlet pipes or flues O with the grate H, the lower fire-chamber J, and the base K of the stove, substantially as herein shown and described.

3. The ring-flue K^2, formed in the base K around the ash-chamber K^1, without the diameter of the stove, and connected with the ash-chamber K^1 and the pipe P by openings in its opposite sides, substantially as herein shown and described.

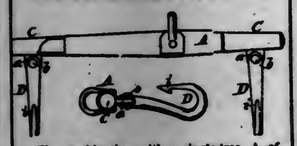
164,556. SAW-BUCKS. Rob C. Hayton and Chas. A. Herbert, Ypsilanti, Mich. [Filed Mar. 30, 1875.]



Brief.—The saw-back is formed of sections of metal tubing, which are secured in place by two hollow metal crosses, forming sockets for the reception of the ends of the sections, and a foot-brace of the same attached to the legs of the back by a T-shaped socket-joint.

The combination of the cross A, arms B, T-joints C, and foot-brace D, all substantially as and for the purposes herein set forth.

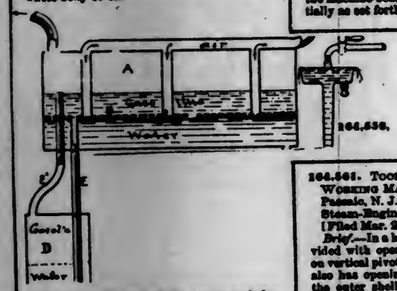
164,547. WRENCH-STRIPPER. Wm. G. Hearn, Dyer's Station, Tenn., assignor of two-thirds his right to James L. Berry and M. Hutchison. [Filed May 6, 1875.]



The combination, with a single-tree, A, of the ferrule C, provided with a lug, *a*, on its front side, and the hook D, formed with a spur, *b*, and having its rear or shank end slotted or forked horizontally, and pivoted to the lug *a* by a pin, *b*, all substantially as and for the purposes herein set forth.

164,548. CARBURETTERS. John C. Henderson, San Francisco, Cal., assignor to the Carbureted-Gas-Machine Company, same place. [Filed Mar. 13, 1875.]

Brief.—Water passes from the supply-vessel by a siphon until it reaches the level of the perforated diaphragm, when it overflows by a pipe leading to the bottom of the oil-supply tank, and displaces the oil which passes by a pipe opening in the carburetor at a higher level than the overflow. The water and oil in the carburetor balances the water in the supply-tank. The diaphragm compels the air admitted beneath it to bubble up through the whole body of oil.



1. The supply-tank D, having water-induction pipe E and ejection-pipe E', in combination with a carburetor, wherein layers of water and of volatile hydrocarbon oil or fluid are used, as before specified.

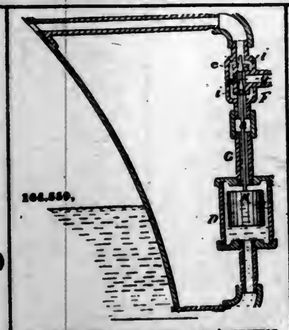
2. The water-tank F, with its siphon-pipe *g*, in combination with a carburetor-tank or casing, A, constructed and operating substantially as herein before described.

3. In a casing or tank, A, the perforated diaphragm or partition B, in combination with pipes E and E' and supply-tank D, for the purpose as hereinbefore fully described.

164,549. FEED-WATER REGULATORS. Geo. HENRY, Lonsdale, Canada. [Filed May 11, 1875.]

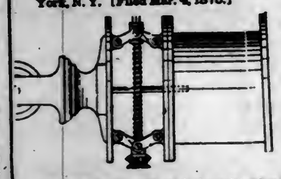
Brief.—As the water in the boiler and float-chamber becomes lower, the float descends and opens the valves, allowing steam from the boiler to pass to the pump.

The water-chamber D, float E, stem *c*, and valves *a a*, in combination with the valve-chamber F, having steam-passage *d*, communicating openly by pipe G with the water-chamber D, and provided with valve-seats *f f* and branch *g*, all substantially as and for the purpose specified.



164,550.

164,550. MECHANISMS FOR ADJUSTING LATHE-BEDS TO DIFFERENT HEIGHTS. W. H. Hoffman, Passaic, N. J., assignor to the New York Steam-Engine Company, New York, N. Y. [Filed Mar. 4, 1875.]

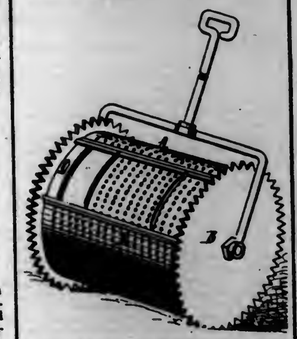


The combination, with the bed or table of an engine-lathe or other machinery, of knuckle-jointed levers, interposed between the bed and the support upon which it rests, connected together in pairs or sets by screw adjusting-shafts, by which the said levers are operated to effect the lifting or lowering of the machine-bed, as the case may be, substantially as set forth.

A combined machine-support and tool-receptacle consisting of two concentric shells, one of which is capable of rotation on the common axis of the two shells, the said shells being formed with corresponding openings, and the inner shell provided with shelves, under the arrangement and for operation as set forth.

164,552. DEVICES FOR DISTRIBUTING ASHES ON ICY SIDEWALKS. William W. Hughes, Philadelphia, Pa. [Filed May 18, 1875.]

Brief.—A perforated hollow cylinder with door, furnished with toothed wheels at the ends, and a handle, by which it can be drawn over the pavement so as to revolve. Sifted ashes are placed inside, which are by this means equally distributed over icy sidewalks, to prevent slipping.



The combination, substantially as described, of the perforated or wire-gauze cylinder A with the toothed plates B and appliances for drawing the same over the ground.

164,553. PUMP AND CHECK VALVE. Abm. W. Johnson and Hermon A. Matteson, New Haven, Conn.; said Matteson assignor to said Johnson, and said Johnson assignor of one-half his right to John Matthewman, same place. [Filed Nov. 14, 1874.]

Brief.—The tubular valve is caused to collapse by the action of the piston of the pump. A hinged guard-plate is arranged in the pipe in such a manner as to protect the end of the elastic valve, and prevent it from being forced out of the cylinder containing it.

1. In a pump, the tubular collapsible valves B, folded down and secured at one end within cylinders in the inlet and outlet tubes of such pump, and operating substantially as and for the purpose described.

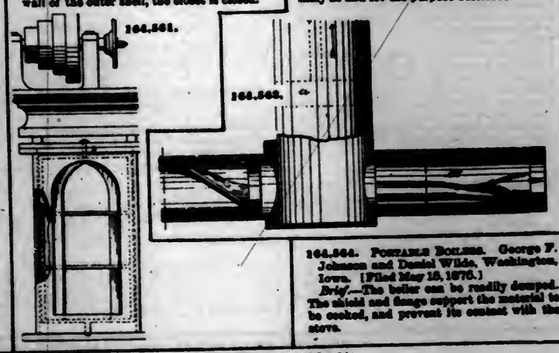
2. In combination with tubular elastic valves arranged within a pump, the hinged metallic guard-plates F, interconnected with said valves, but operating in concert therewith, substantially as and for the purpose described.

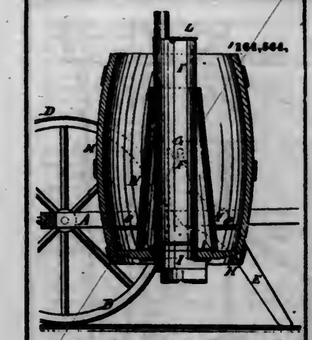
164,554. PORTABLE BOILERS. George F. Johnson and Daniel Wilde, Washington, Iowa. [Filed May 15, 1875.]

Brief.—The boiler can be readily dumped. The shield and flange support the material to be cooked, and prevent its contact with the stove.

164,561. TOOL-RECEPTACLES FOR METAL-WORKING MACHINES. Wm. H. Hoffman, Passaic, N. J., assignor to the New York Steam-Engine Company, New York, N. Y. [Filed Mar. 2, 1875.]

Brief.—In a hollow cylindrical support, provided with openings on opposite sides, rests, on vertical pivots, a secondary cylinder, which also has openings corresponding to those in the outer shell. The inner cylinder is provided with shelves, and by turning it upon its axis until the openings are opposite the solid wall of the outer shell, the closet is closed.





1. The combination of the side bars A, the cross-bars B C, the wheels D, the legs E, the standards F, the barrel H, provided with gudgeons G, and the cylindrical stove I, with each other, substantially as herein shown and described.

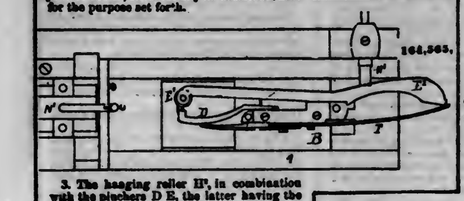
2. The combination of the perforated conical shield N and the perforated flange O with the stove I, the barrel H, the frame-work A B C E F, and the wheels D, substantially as herein shown and described.

164,565. HAIR-WEAVING LOOMS. Martin R. Kenyon, Providence, R. I., assignor of thirteen-twentieths his right to Nathan B. Hall and Edwd. J. Bicknall, same place. [Filed Nov. 14, 1874.]

Brief.—One of the jaws of the hair-inserting nippers is provided with a loose wheel, adapted, when pressed upon a narrow bead, to seize a single hair. The other jaw carries a pin for holding some of the hairs in position to be taken by the nippers, which are opened by coming against a pendent roller, so arranged as to yield when the nippers are to be closed. The bunch of hair is held in an adjustable clamp, which carries a standard with an elastic strap for supporting the end of the bunch, and preventing the hairs from spreading.

1. In a hair-weaving loom, the combination of the loose wheel E' with the jaws E and D, operating substantially as described, and for the purpose set forth.

2. The combination of the pin F with the jaws E and D, substantially as described, and for the purpose set forth.



3. The hanging roller H', in combination with the pinchers D E, the latter having the curved part E', substantially as described, and for the purpose set forth.

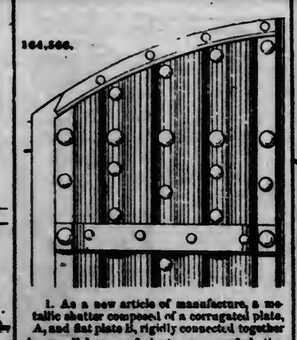
4. The vertically-adjustable jaw N' N', provided with A-shaped opening, in combination with the lower jaw M M', provided with V-shaped opening, substantially as and for the purpose set forth.

5. The combination of the hair-holding device M M' N' N' N' N' with the standard K and elastic strap K', all operating substantially as described, and for the purpose set forth.

164,566. FIRE-PROOF SHUTTERS. George F. Kiesam, New York, N. Y., assignor to J. D. Kiesam, same place. [Filed May 22, 1875.]

Brief.—A shutter composed of one plain sheet of metal, to which is riveted a corrugated sheet. The openings at the top are closed by an angle-bar, while the lower end of the flat plate is bent over to cover the openings at the lower edge. The access of moisture is thus prevented.

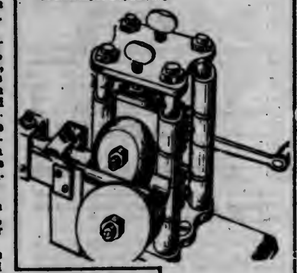
164,566.



1. As a new article of manufacture, a metallic shutter composed of a corrugated plate, A, and flat plate B, rigidly connected together by parallel rows of rivets, as specified, the openings formed by the corrugations being closed at both top and bottom, substantially as and for the purpose set forth.

2. The shutter herein described, consisting of the corrugated plate A and the flat plate B, the latter having a flange, *b*, turned thereon, and an angle-bar, *c*, secured thereto, for closing the openings in the corrugated plate, for the purpose specified.

164,567. MACHINES FOR MAKING EAVES-TROUGHS. Walter W. Laing, Holley, Mich. [Filed Apr. 27, 1875.]



In a machine for forming eaves-trough, substantially as herein described, the combination of the forming-rolls geared together, the guide-trough and block, and one or more pairs of rollers for flanging the edges of the eaves-trough, substantially as described.

164,568. BREECH-LOADING ORDNANCE. P. B. Lawson, Cold Spring, N. Y., assignor to G. Paulding, same place. [Filed Mar. 4, 1875.]

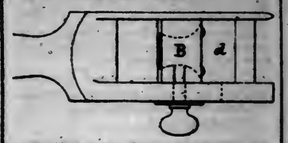


164,569.



The combination, in breech-loading ordnance, of the hollow plug B, provided with the external screw-thread *b* and the internal longitudinal grooves *b'*, with the wing-headed breech-pin C, and the carrier D, having a cavity for the reception of the head of the breech-pin, substantially as described, for the purpose specified.

164,569. SHOE-SOLE-EDGE TRIMMERS. J. W. Lafferty, Baltimore, Md., assignor of one-half his right to John H. Baer, same place. [Filed June 2, 1875.]



In a device for shaving or trimming the edges of the soles of shoes, &c., the adjustable block B and knife *d*, in combination with the slotted plate *b*, and thumb-screw *c*, substantially as and for the purpose set forth.

164,570. CAR-WHEELS. Geo. G. Lobdell, Wilmington, Del. [Filed May 26, 1875.]

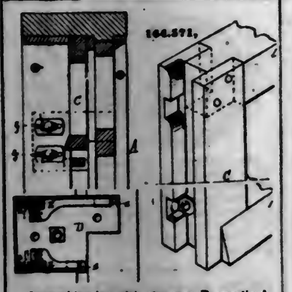
Brief.—Wrought iron bars connect the rim with the hollow part of the web next to the hub.

The within-described car-wheel, in which are combined the hollow portion I of the web, the rim D, and radial braces H, or a plate of wrought iron or steel, attached to the rim, and hollow portion I of the web, all as set forth.

164,571. SASH-FASTENERS. Aaron Long, Ann Arbor, Mich., assignor of one-half his right to George W. Bailey, same place. [Filed Jan. 22, 1875.]

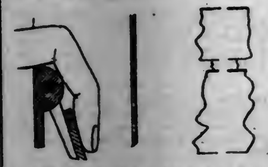
Brief.—The bent head of the two bolts, one for each sash, working in the grooves, serve as friction-holders, while notches in the grooves lock the device in desired position.

164,571.



In combination with the case D, mortised within the window-casing, and provided with the bolts E E, each having a head, *e*, bent outward at right angles, and playing through the slot *d*, the springs *c c*, and knobs *f*, the window sash sides, having vertical groove C, in which the bent head of the bolt moves, and notches *i*, all substantially as described and shown, for the purpose set forth.

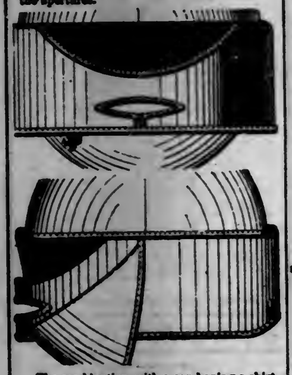
164,572. MORTISE-LOCKS FOR SLIDING DOORS. B. Mallory, New Haven, Conn. [Filed June 2, 1875.]



In combination with the face-plate *c* of a lock or pull for sliding doors, constructed with a finger opening and recess in rear of said plate, a self-closing flap for said opening, substantially as described.

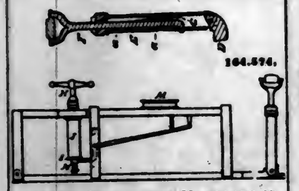
164,573. MASK-CAPS. Marcus Marks, New York, N. Y. [Filed May 19, 1875.]

Brief.—To the lower edge of the crown is attached a circular skirt, provided, with eye and mouth apertures, the former being covered by foraminous flexible material. The skirt, in turn, has a throat-piece attached to it, which folds up flush with the skirt and over the apertures.



The combination, with a cap having a skirt constructed with a mouth and eye openings, and a foraminous shield for covering the eye-openings and protecting the eyes, of a chin and throat protector attached to the skirt of the cap, and constructed to be turned up to conceal the mouth and eye openings and shield, when the cap is to be used as an ordinary head-covering, as set forth.

164,574.



164,575. EXERCISING-MACHINES OR HEALTH-LIFTS. James P. Marsh, Chicago, Ill. [Filed Apr. 24, 1875.]

1. The combination, substantially as specified, of the yielding post or bar H, adjustable collar I, mounted on the said post, spring J, confined at one end by the said collar, and by a fixed stop at the other, and the lifting-lever, for the purposes set forth.

2. The combination, substantially as specified, of the yielding post or bar H, adjustable collar I, mounted on the said post, spring J, confined at one end by the said collar, and by a fixed stop at the other, the lifting-lever, and the gage M having its operating lever connected to the collar I, for the purposes set forth.

3. The combination of the lifting-lever of a health-lift, the tubular and perforated parts B B, and the hook-shaped and yield-rods F F, provided with handles, substantially as and for the purposes specified.

164,576. WIRE FENCES. Luther Merrill and John C. Merrill, Turkey River Station, Iowa. [Filed Mar. 19, 1875.]

Brief.—By means of weighted linked couplings or connections suspended between high posts, and to which are secured the ends of the sectional horizontal wires, the expansion or contraction of said wires due to changes of temperature is compensated for.



The combination, with a sectional suspended wire fence, of flexible couplings between the sections, consisting of links and rings, substantially as described, and one or more weights suspended from each coupling, for the purposes herein set forth.

164,577. GRAIN-ELEVATORS. J. S. Metcalf, Indianapolis, Ind. [Filed May 1, 1875.]

Brief.—Grain is elevated into a weighing-hopper located at the terminus of the elevating-chain, from whence it passes into any of the series of bins arranged in the lower portion of the building, from either of which the stored grain can be run out through spouts connecting said bins with the lower weighing-hopper, distributing it to any desired place through the sliding and adjustable bifurcated spout.

1. The combination and arrangement of the weighing-hopper B and the storage-bins placed above it, so that the grain may be drawn from them, weighed, and loaded without re-elevating.

2. The bin D', provided with an opening, *d*, in one side, so placed that all the grain above it may be run into the weighing-hopper B, as and for the purpose set forth.

3. The sliding bifurcated spout H, provided with the hinged ends *g*, in combination with the ways I and hopper B, substantially as and for the purpose specified.

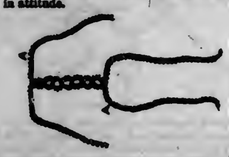
4. The bifurcated spout H, having a reciprocating and lateral motion, as set forth.

5. The looking-hook *a*, in combination with the lever *e'* and sliding valve *f'* of the hopper B, as and for the purpose specified.

6. The rope *d*, in combination with the spout H and lever *e'*, for the purpose of operating the valve *f'*, as set forth.

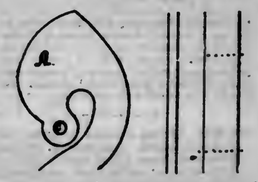
164,578. AUGER-BITS. Wesley Miller, New York, N. Y., assignor of his right to Jos. Banigan, same place. [Filed Dec. 14, 1874.]

Brief.—The rubber doll is made with a soft metal or spring skeleton, to admit of change in attitude.



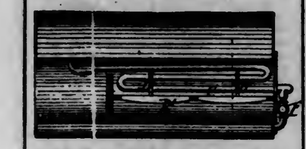
As a new article of manufacture, a hollow flexible rubber doll, provided with the wire frame A, substantially as and for the purpose set forth.

164,579. MANUFACTURE OF PRUNING-SHEARS. Stephen S. Miles, Rome, N. Y. [Filed Feb. 10, 1875.]



The improvements in the art of fabricating pruning-shears hands described, consisting in commencing the fabrication of the cutting-blade, with its shank and pivotal portion, from a bar of steel of suitable size for the said shanks, upsetting and spreading the same to form the blade A, making the apertures for the pivot *c* in the end *b* of the bar, bending the bar thus fashioned into the form shown in Fig. 5, and uniting the same to the other half of the shears, thus forming the instrument shown in Fig. 6, substantially as specified.

164,580. CIRCULATION IN STEAM-GENERATORS. Richard Mill, Island of Jersey, England. [Filed Jan. 9, 1874.]



The combination, with an ordinary boiler, A, having a flue, B, and a furnace, B', of the coiled pipes C C and the arched bridge D, supporting said coiled pipes beneath the crown of the furnace, and directly above the grate of the furnace, the said coiled pipes communicating with the upper water-space of the boiler at its rear end, and at the front end of the same below the water-level, and provided with circulation-cocks F, all substantially as and for the object specified.

164,581. PROCESSES OF PRODUCING PLATES FOR PRINTING. Leonard H. Miller, Crawfordsville, Ind., assignor of one-half his right to Frank Seaman, Savannah, Ga. [Filed Apr. 4, 1874.]

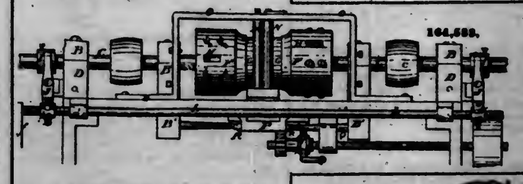
1. In the process of producing designs, drawings, writings, &c., in high relief on paper or card-board, the employment of a field consisting essentially of glycerine, and sifting thereon first an adhesive powder, and above that a mineral powder, substantially as specified.

2. The process of producing a plate or block for printing, embossing, or stamping, consisting of first protecting the design in high relief on paper or card-board, by means of a field consisting essentially of glycerine and an adhesive powder, and then taking a cast direct therefrom in suitable metal, substantially as specified.

164,582. GRINDING-MACHINES. Eli Morris, New Haven, Conn. [Filed May 23, 1874.]

Brief.—Annular stones arranged in cylindrical heads mounted on hollow shafts operate on either side of the saw or other article. Water is supplied to the stones through the hollow shafts. The stones are supported on pivoted frames, said frames being controlled in their movement by a pattern arranged on the feeding mechanism.

164,583.



1. The combination, with the cylindrical head F of the cylindrical-chambered grindstone G, constructed and operating substantially in the manner described and specified.

2. The combination, with the cylindrical head F and cylindrical-chambered grindstone G, of the hollow shaft C for supplying the stones with water at their center, constructed and operating substantially in the manner described and specified.

3. The combination, with the pivoted bearings B B', of the pattern E, for operating the stones in grinding different gages in saws, &c., constructed and operating substantially in the manner described and specified.

4. The combination, with the shaft C, forked arms J, and right and left hand screw-shaft L, for setting the stones, of the adjustable collar I, constructed and operating substantially in the manner described.

5. The combination, with the feed-rolls and grinding-stones, of the pattern E secured to the rest P, operating the feed-rolls, whereby the gaging of the article ground is made dependent on its feeding, substantially in the manner described and specified.

164,584. WEATHER-BOARD GAGES. David Neff, Indianapolis, Ind. [Filed Nov. 21, 1874.]

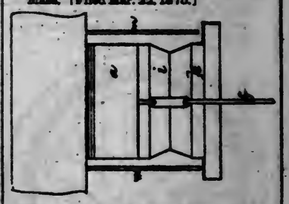
Brief.—The body of the gage has a lever pivoted to it, the front end of which is forked for engaging with a notch upon the fastening-nail, so that the nail can be withdrawn without injury.



1. A weather-board gage, A, provided with a perforated leg, B, and lever E, having a notch, *f*, in combination with the nail U, having lateral notches *e'*, with rounded upper and lower edges, substantially as and for the purpose set forth.

2. The nail C, having the lateral notches *e'*, with rounded upper and lower edges and shoulder *e*, substantially as and for the purpose set forth.

164,585. ORGAN-VALVES. Gustavus V. Nordstrom and Geo. S. Hutchings, Boston, Mass. [Filed Mar. 22, 1875.]

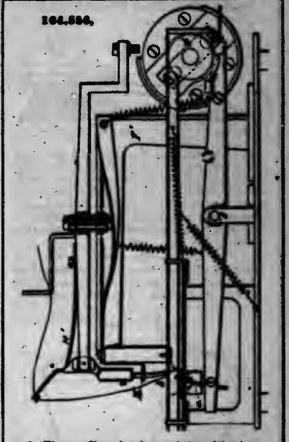


The improvement in organ-valves, as herein described and shown, consisting of the valve *a*, perforations *b b*, flexible bag *f*, bottom *h*, and the operating rods *n n*, as and for the purpose set forth.

164,586. CROCHET-MACHINES. S. L. Otis, Birmingham, Conn. [Filed Apr. 12, 1875.]

Brief.—For finishing or stitching the edge of stockings.

164,587.



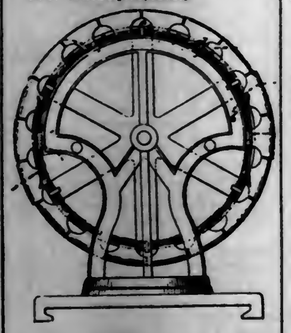
1. The needle *a*, having an intermittent vertical and transverse movement, and the thread-carrier *b*, having a corresponding transverse movement, combined with a work-plate, feed, and presser-foot, substantially as set forth.

2. In combination with a work-plate, feed, and presser-foot, substantially such as described, the needle *a*, having an intermittent vertical and transverse movement, the thread-carrier *b*, having a corresponding transverse movement, the guard H, and the spring H', substantially as described.

3. In combination with a work-plate, feed, and presser-foot, substantially such as described, the needle *a*, having an intermittent vertical and transverse movement, the thread-carrier *b*, having a corresponding transverse movement, the shoulder *d* on the needle, and the finger P, substantially as described.

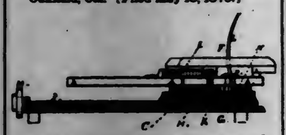
4. In combination with a work-plate, feed, and presser-foot, substantially such as described, the needle *a*, having an intermittent vertical and transverse movement, the thread-carrier *b*, having a corresponding transverse movement, and the finger *f*.

161,387. MACHINES FOR TENTERING CLOTH. Wm. H. Palmer, Jr., Middletown, Conn., assignor to Herbert F. Palmer, New York, N. Y. [Filed Apr. 3, 1875.]



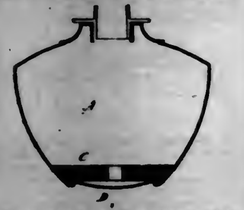
The combination, with a selvage-carrying wheel, having its axis parallel with the fabric, of the series of radially-arranged spring-jaws attached around the rim of the wheel, and each jaw constructed to clamp over the peripheral portion of the wheel, as and for the purpose described.

164,388. HORSE-POWERS. H. Parkhurst, Oakland, Cal. [Filed May 18, 1875.]



The lever-frame A, the combined bed-plate and master-wheel B, the pinion C, the spur-wheel E, the pinion F, the shaft S, the bevel-wheel G, the pinion H, the shaft J, the sliding frame P, attached to the lever-frame A, and having the pinion N operated by the lever L, the whole being combined and operated as set forth.

164,389. OILERS. Russell B. Perkins, West Meriden, Conn., assignor to Edward Miller & Co., same place. [Filed May 4, 1875.]

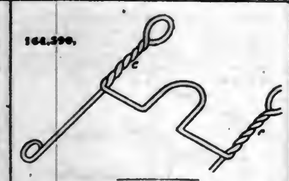


The combination of the perforated weight C and the convex-convex elastic disk D with it, and so as to form the bottom of, an oil-flask, A, substantially as described.

164,390. BRIDLE-BITS. Jacob G. Peterson, Morganton, N. C. [Filed Mar. 22, 1875.]

A bridle-bit, constructed of a single piece of steel wire, by bending and doubling the same at right angles with the bar, and twisting the doubled portions *c* together, substantially as specified.

164,390.



164,391. ARTIFICIAL PALATES. Jacob Peyer, Berne, Switzerland. [Filed Apr 3, 1875.]

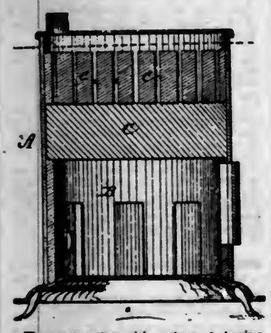
Brief.—A hard rubber valve has a sheath, and sliding plate arranged in said sheath, and wings pivoted upon each side, and held apart by coil-spring. This device is placed in a congenital opening of the palate, and is intended to act as a palate and uvula.



The valve constructed of the oval plate *e*, having a sheath, *d*, in combination with the sliding plate *e*, arranged in said sheath, the wings *d*, pivoted to the said oval plate *e*, and the spring *f*, for pressing said wings outward, all substantially as and for the object specified.

164,392. HEATING-STOVES. Marvin Pierce, Minneapolis, Minn. [Filed Dec. 14, 1874.]

Brief.—Slabs of soapstone, or similar material, are placed within the stove, to absorb and retain the heat.

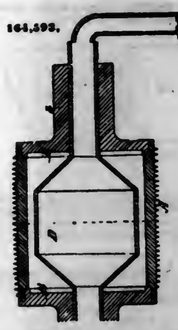


The combination, with a stove, A, having fire-chamber B, of the sectional filling C of brick, stone, or other suitable material, arranged above the fire-chamber, and in layers to form the flues *a a* through and around the same, substantially as set forth.

164,393. CYLINDERS FOR WOOL CARDING AND COMBING MACHINES. Josiah K. Procter, Philadelphia, Pa., assignee of one-half his right to James Smith & Co., same place. [Filed Nov. 26, 1874.]

Brief.—The steam-chest inside the cylinder is stationary, or does not revolve with it, thereby obviating the necessity of stuffing-boxes for the pipes which pass through the journals, and avoiding the jarring which would result from carrying the water of condensation around with the cylinder in its revolution.

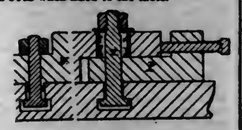
164,393.



In combination with a close cylinder, A, having a movable head or heads, B B, constructed with tubular journals *b b*, a stationary tight metallic steam-chest, D, having inlet and outlet pipes C C passing through said journals without being stuffed therein, substantially as shown and described.

164,394. WORK-HOLDING DEVICES FOR METAL-PLANERS. Augustus B. Prouty, Worcester, Mass. [Filed Sept. 9, 1874.]

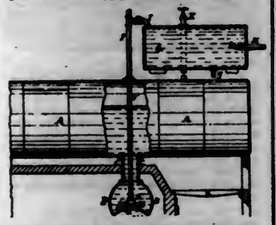
Brief.—The jaw and bed-piece are both adjustable around the bolt, which also clamps them both when fixed to the table.



The improved device, consisting of the parts O P, screw-bolt T, nut Y, and screw R, constructed and combined substantially as herein shown and described.

164,395. BOILER-FURNACE. Thomas Reese, St. Louis, Mo. [Filed May 17, 1875.]

Brief.—The boiler is supplied with water through a pipe in the mud-drum; said pipe having side openings, and connected to a reservoir by means of a pipe passing vertically through the boiler. The reservoir is provided with supply and discharge pipes.



1. The discharge-pipe D, having a number of side discharge-openings, *d*, in combination with boiler A and mud-drum B, substantially as set forth.

2. The discharge-pipe D, having discharge-openings *d*, in combination with the mud-drum B, having blow-off pipes E, arranged substantially as described.

3. The discharge-pipe D, having discharge-openings *d*, in combination with mud-drum B and vertical supply-pipe F, substantially as set forth.

4. The discharge-pipe D and vertical pipe F, in combination with settling-chamber G, discharge-pipe I, and supply-pipe H, having side discharges *h*, substantially as set forth.

5. The chamber G, having blow-off pipes *g*, in combination with the steam-pipe K, discharge-pipe I, and supply-pipe H, having side discharges *h*, substantially as set forth.

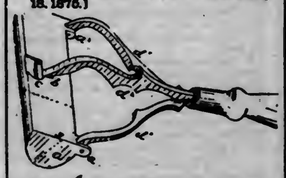
164,396. RAILWAY-RAIL CHAIRS. Geo. O. Ross, Marion, Ohio. [Filed May 10, 1875.]

Brief.—A rail-chair in which the base-plate and tread-plate are of one piece, and are combined with a detachable fish-plate, which is held in place by a separate flat key passing through the fish-plate, tread-plate, and rails, and secured by a spike which passes through it and the chair-base.



The railroad-chair herein described, consisting of the base-plate B, with stationary flange C, formed in one piece, and loose flange D, all constructed as described, in combination with the rails A A, having slots *a* and elongated bolt-holes *b*, the independent and removable key E, and spike G, all substantially as and for the purposes set forth.

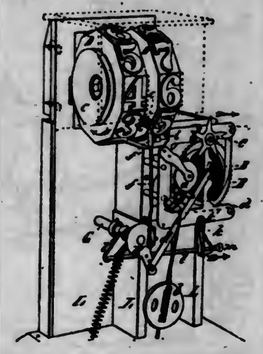
164,397. POLISHING OR SAD IRONS. Wm. B. Sanders, Look Haven, Pa. [Filed May 18, 1875.]



The improved polishing-iron composed of the iron *a*, having legs *a*¹, mortise *b*, and button *c*, and the handle *d*, having the arms *d*¹, constructed as described, and arm *d*², having the extension *d*³, all arranged to operate as and for the purpose specified.

164,398. FIRE-ALARM REGISTERS. Willard W. Sawyer, Springfield, Mass., assignor to himself and Geo. M. Stebbins. [Filed Feb. 6, 1875.]

Brief.—For registering upon indicating-wheels the number of the box announced by the bell in engine-houses.



1. The combination of the stop-wheel *c*, having prongs or projections thereon, with the push-rod *d* as a means of determining or changing the position of the tripping-rod, substantially as described.

2. The combination of the push-bar *d*, the stop-wheel *c*, the rack and pinion *i*, as equivalent connection, and the tripping-rod *f*, whereby the desired combination of numerals or characters is made upon two or more wheels, D, substantially as set forth.

164,399. CLAMPS FOR CANDLE-HOLDERS. F. A. Schroeder, Jersey City Heights, N. J. [Filed May 10, 1875.]

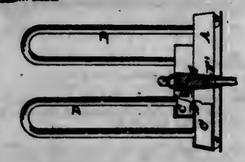
Brief.—A single wire, both ends of which are soldered to the holder, forming two parallel loops, bent so that a light in the wire will embrace the loops.



The wire clasp B, composed of the loops C E, held together by means of the light D, substantially as described.

164,400. STEAM-RADIATORS. J. Shackleton, Rahway, N. J. [Filed June 2, 1875.]

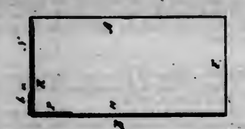
Brief.—The cock opens and closes the steam-inlet, and the outlet for condensed water at same time.



1. The bent connecting-pipes D, in combination with the base A, divided into an upper and lower chamber, C C′, for the inlet and outlet of steam, substantially as described.

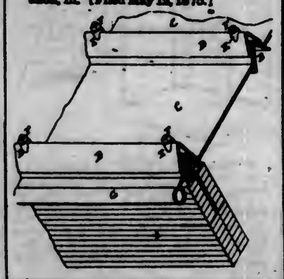
2. In combination with the base A, divided into an upper and lower chamber, C C′, as set forth, the double two-way cock E, communicating with the upper and lower chambers, substantially as described.

164,401. PAPER BOXES. R. De F. Shelton, Birmingham, Conn., assignor to Cornell & Shelton, same place. [Filed May 20, 1875.]



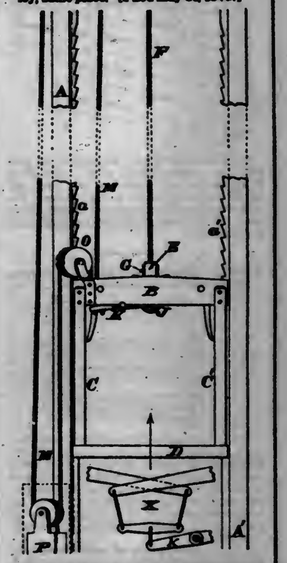
In paper boxes, the combination of the folding slitted end N and tuck P upon the extreme of one side, combined with the tuck L upon the extreme of the opposite side, to overlap the tuck P and enter the slit in the end N, substantially as described.

164,402. HOOPS. Merrill A. Shepard, Lebanon, Ill. [Filed May 13, 1875.]



The angular or A-shaped iron rafter or beam B connected by an anchor, H, to the wall of the building, the roof-plates C, the clamp-piece D, bolts or rivets F, washers E, cornice G, the connecting-block I, the splice-bar J, all combined as shown, and for the purpose hereinbefore set forth.

164,403. AUTOMATIC BRAKES FOR ELEVATORS. Samuel B. Smith and Edwd. Myers, Cincinnati, Ohio, assignors to Lane & Bodley, same place. [Filed May 31, 1875.]

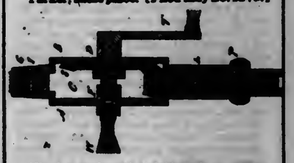


1. The combination, with an elevator-platform, of a weight, P, so arranged as to remain quiescent in the ordinary condition of the elevator, and to move in the same direction as the platform on the precipitation of the latter by cessation of the cable-action, said weight being connected, by suitable rope M, with the described brake mechanism K J I H H′ *a a′*, substantially as set forth.

2. The combination of loaded sheave P in the bight of a rope, M, whose extremities pass over sheaves N O on the hatch and platform, respectively, and are both attached to the tripping-lever K of the represented brake K J I H H′ *a a′*.

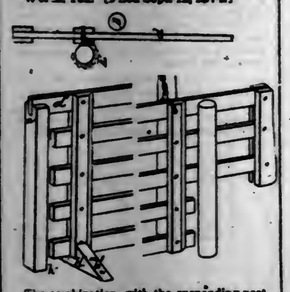
3. In combination with a pair of brake-levers, H H′, having the equalising-cord I and sheave J, the trip bar or lever K.

164,404. DRILLS FOR DRILLING METAL. H. Smith, Meriden, Conn., assignor to Chas. Parker, same place. [Filed May 20, 1875.]



The herein-described drill-stock, consisting of the inclining-case A B, constructed with bearings F D, for the driving-shaft, with the sleeve G upon the upper side to receive the head, and sleeve L upon the lower side to form a bearing for and hold the spindle N, the said case constructed in two parts secured together, substantially as described, and combined with the driving-shaft E, crank T, gear and pinion S E, substantially as set forth.

164,605. FARM-GATES. Tunis Snider, Fort Worth, Tex. [Filed Sept. 12, 1874.]



The combination, with the suspending-post and the counterweighted gate, of the chain E, suspending said gate from said post, and having sufficient length to twine around the post as the gate is opened, and untwining to close the latter automatically, substantially as specified.

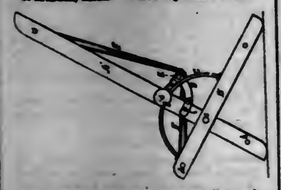
164,606. TRANSPARENT SOAPS. S. SPERR, Pittsburg, Pa. [Filed June 1, 1875.]



1. The process herein described of manufacturing transparent ornamental soap with different-colored names, stripes, or other ornaments, by printing or impressing them on part of the cake of soap, and coating the transparent coat around it, and, finally, coating the finishing coat around it, so as to give it the appearance of a picture in a frame, substantially as specified.

2. As a new article of manufacture, the transparent ornamental soap herein described, representing names, stripes, letters, or ornaments, to give it the appearance of a picture in a frame, arranged substantially as herein shown and described.

164,607. RECLINING CHAIRS. J. H. SWEENY, Waltham, Mass. [Filed Apr. 20, 1875.]



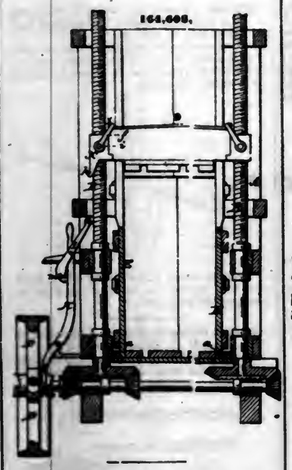
The reclining chair, substantially as described, composed of the footboard apron or seat and back-piece F, two sets of bars, A A' B D, rod E, perforated sectoral arms D D, arched rods C C, and their clamping screws or devices d' f g, all arranged, connected, and combined essentially as explained and represented.

164,608. COTTON AND HAY PRESSES. WM. H. TOPPEY, Alexander Steel, and CHAS. J. BEASLEY, Petersburg, Va.; said Beasley assignor to said Toppey and Steel. [Filed Apr. 17, 1875.]

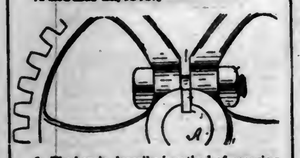
Brief.—In the descent of the follower, a projection on the same comes in contact with a pivoted arm on the end of a clutch-lever, with the effect of stopping further descent.

The combination, with the shifting-lever B, of the finger I, pivoted thereto and forked at its upper end, and the projection h, formed on the nut K, substantially as and for the purpose herein set forth.

164,609.



164,609. FASTENING WHEELS AND PULLEYS TO SHAFTS. John F. Thomas, Ilion, N. Y. [Filed May 22, 1875.]

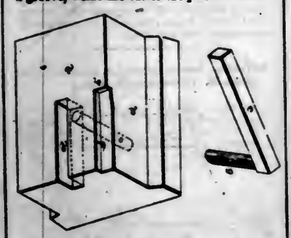


1. The herein-described method of securing wheels, pulleys, &c., upon their shafts—that is to say, by means of a key held in a slit in the hub or disk, and a bolt arranged to draw the parts together, substantially as described.

2. The combination of the notched key, with the shaft A, and wheel or plate having a slit and a tightening-bolt, all constructed to operate substantially as and for the purpose set forth.

164,610. DIES FOR WELDING CULTIVATOR-AXLES. Chas. H. Thompson, Chicago, Ill. [Filed May 14, 1875.]

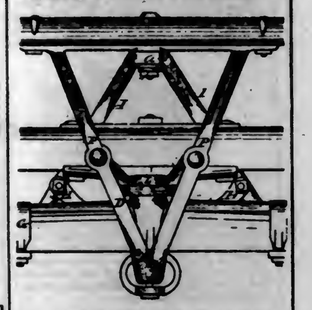
Brief.—The square bar has first its end flattened and broadened in the die, and it is then placed in groove d, with its broadened end resting on the top of a pin previously placed upright in hole. The counter-die is then dropped, and a tongue upon its face, entering a groove, welds the bar to the pin.



1. The blocks a A, having the recesses b i d, hole e at right angles to the recess d, and flange f, substantially as shown and described.

2. The block a, having the recess d and hole e at right angles thereto, in combination with the block A, having the flange f, the flange serving both to weld the bars c g together, and to straighten the upset end of the bar c, substantially as set forth.

164,611. FIFTH-WHEELS. Orrin B. Thompson, White Ash, assignor to the Dexter Spring Company, Hulton, Pa. [Filed Apr. 3, 1875.]



1. A fifth-wheel for vehicles, constructed to form three centers or pivots, A, D L, and a, on which the axle turns, substantially as set forth.

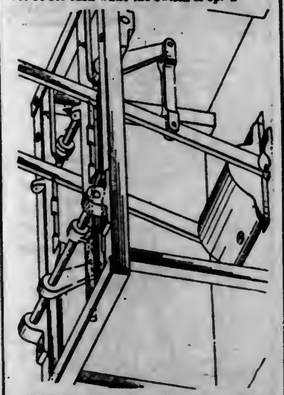
2. The combination of friction-plates D and L, provided, respectively, with the arms H H and R R, substantially as and for the purposes set forth.

3. The combination of the lower friction-plate D with arms H H, braces I I, clips G G, and hub a, all constructed substantially as and purposes set forth.

4. The combination of the upper friction-plate L with arms R R, braces P P, plate J, and hub A, all constructed substantially as and for the purposes set forth.

164,612. SWITCH-SIGNALING APPARATUS. John M. Toncey and Wm. H. Smith, New York, and Wm. Buchanan, Yonkers, N. Y. [Filed Jan. 7, 1875.]

Brief.—The switch-lever is securely locked when the signal denotes safety, and the switch cannot be opened without first setting the signal. The movement of the signal-lever unlocks the switch-lever, which may then be operated to open the switch, and the movement of the switch-lever to open the switch locks the signal-lever, so that the signal cannot be set back while the switch is open.

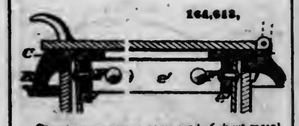


The combination of switch and signal levers, locking-bars A E, and shafts carrying collars or stops, being constructed to operate substantially as and for the purpose above set forth.

164,613. STOVE-RESERVOIRS. Chas. Tressdale, Cincinnati, Ohio, assignor to William Razor & Co., same place. [Filed May 5, 1875.]

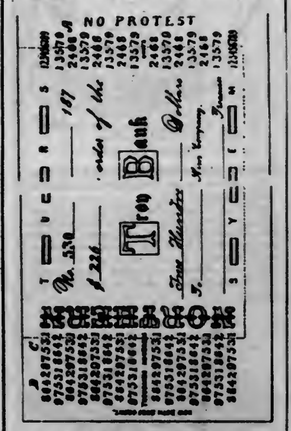
Brief.—The inner horizontal flange of the rim affords a means of raising the reservoir when the outer flange rests in the rabbet.

164,614.



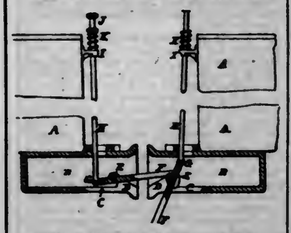
The stove-reservoir composed of sheet-metal body D and cast rim E e e', formed and constructed as described, in combination with a casing, B, having a rabbet, C, of a cooking-stove.

164,614. BANK-CHECKS, &c. I. P. TURNER, Troy, N. Y. [Filed Mar. 1, 1875.]



A draft, check, bill of exchange, or other paper used in monetary transactions, provided at each end with a duplicate series of alternating odd and even numbers, and at the bottom with a duplicate series of alternating lines or marks, arranged substantially as herein shown and described, for the purpose specified.

164,615. CAR-COUPLINGS. Hugo B. B. Von Elsner, St. Louis, Mo. [Filed May 1, 1875.]



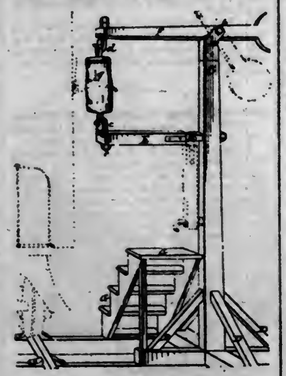
1. The combination of draw-head B, horizontal pivot and draft-pin E and coupler, having forked end with down-turned hooks F, all substantially as set forth.

2. The combination of the coupler F G, rod H, bearing I, and spring K, all constructed and arranged substantially as and for the purpose set forth.

3. In combination with the coupler F G, rod H and spring K, the draw-head having an opening or gap, C, substantially as and for the purpose set forth.

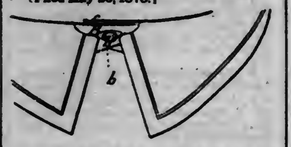
4. In combination with the coupler F G, and draw-head B, with bottom opening C, and draft-pin E, the inclines D D, at the sides of the opening, to carry up the hooks F F onto the pin E, substantially as set forth.

164,616. MAIL-BAG CATCHES. Benjamin Uncles, Baltimore, Md., assignor of one-half his right to Charles Kelly, same place. [Filed May 1, 1875.]



In combination with the two hinged arms E F, the hooks e d, having spring-tongues, and studs c that move in V-shaped recesses in their respective arms, all substantially as and for the purpose set forth.

164,617. SHIRT-COLLARS. John C. Wall and Cola Ludington, Washington, D. C. [Filed May 26, 1875.]



A collar having its outside or turn-down lap cut at the inner corners of both ends to form an opening, B, that will allow an unconfined movement of the collar ends upon their pivot-fastening b, substantially as and for the purposes set forth.

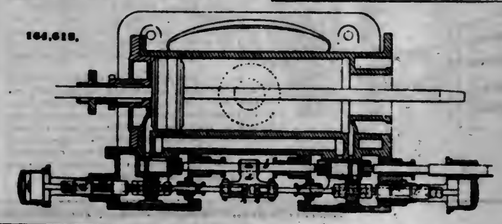
164,618. VALVE-GEARS. Friedrich Wannieck and Hermann Koeppner, Brunn, Austro-Hungarian Empire. [Filed Mar 23, 1875.]

Brief.—The cut-off valves are moved in one direction by and with the main valve, tripped by the governing device, and driven back by steam-pressure from the inside of the chest, operating on small pistons.

1. The combination of the movable buttpins or stops e e', the main valve-rod cross-head d, and latches g g', with the expansion valves c, pistons f, and boxes m, in direct communication with the steam-chest, said parts being constructed and arranged for joint operation, as shown and described.

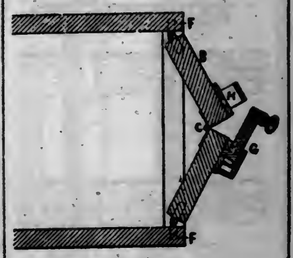
2. In combination with the expansion-valve, and piston connected therewith, and operated on by steam-pressure to return said valve to its normal position, the means herein shown and described, whereby the back stroke of said expansion-valve and piston is regulated.

164,618.



164,619. BURIAL-CASKET CASES. Jos. S. Waterman, Boston, Mass. [Filed Oct. 27, 1874.]

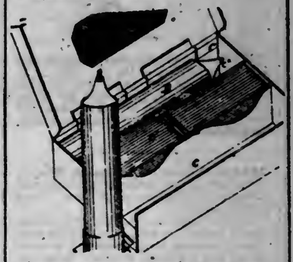
Brief.—The case is closed save at one end, and this is provided with a door hinged at its center, and held in the coffin end by dowel pins. When the door is forced in position, a central fastening prevents it from opening, and thus locking the dowels.



As a new article of manufacture, a casket-case, A, provided with a removable end piece, consisting of two pieces, B B, hinged together by butt-hinges C C, their outer edges being provided with dowels E E, which enter the holes F F in the end of the case A when placed in position, the said pieces B B being connected rigidly together by the catch G B, all being constructed and arranged substantially in the manner described, as and for the purposes set forth.

164,620. PORTABLE LIGHTERS. John A. Watson, Lexington, Miss. [Filed May 13, 1875.]

Brief.—The inner walls are flexible, to facilitate handling the candle.



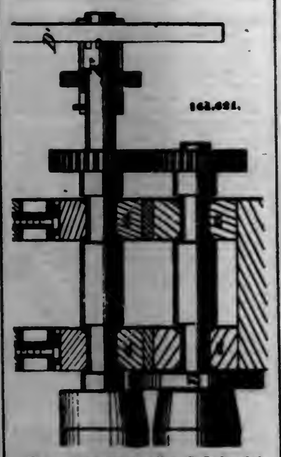
The combination, in a match-box, of three cells, c c' c'', of which the middle one is movable at its center, as shown and described, for the purpose of holding matches, a candle, and a hinged candlestick, in separate compartments.

164,621. ROLLS FOR WELDING PLOW-IRONS. William Madd Watson, Tonica, Ill. [Filed May 1, 1875.]

Brief.—Two overhanging rolls, one having the beveled portion only partially around, and the other having the beveled portion all the way around.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

163,681.



The combination of rollers C C', beveled, substantially as described, with a collar, D, for the purpose set forth.

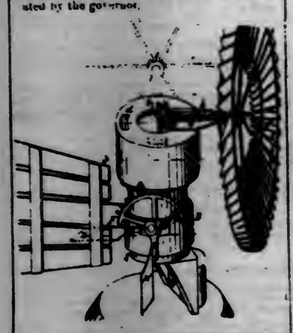
164,682. LAMP-BURNER SPRINGS. William N. Weeder, Waterbury, Conn., assignor to Benedict & Burnham Manufacturing Company, same place. [Filed Jan. 7, 1875.]



In a lamp-burner, the spring securing the chimney, consisting of the two parts A B, both elastic, the outer ends of the two parts secured together, and the inner end of the part A secured to the burner, the inner end of the part B turned up over the chimney-rest, substantially as described.

164,683. WINDMILLS. Benedict Weirich, Middlebury, Ind., assignor to himself and Jacob J. Hochstetter, same place. [Filed Mar. 6, 1875.]

Brief.—Wind-wheel so constructed as to be turned partially or entirely out of the wind when it increases beyond a given force or velocity; and it consists, generally, in the combination of a governing-sail geared with the turn-table, and hung on the sleeve which rotates on the standard, the turn-table being so sleeved on the latter as to be susceptible of an axial rotation thereon, derived from or actuated by the governor.



1. The combination of the tubular standard A, sleeve B, carrying a guide-vane, and turn table C, carrying the wind wheel, with the geared quadrant F, segment G, and governor-vane H, substantially as and for the purpose set forth.

2. The combination of the standard A, having the ring c, with the sleeve B, having the slot E, turn-table C, having the slot d, and friction-rollers a b, substantially as described.

164,684. CORN-PLANTERS. J. K. Welter, Chicago, Ill., assignor to Jas. Rayburn and Robert W. King. [Filed Apr. 9, 1875.]

Brief.—Flexible cut-off made from a slotted block, having spring standards with lower ends turned in, to form rests. Adjustable coverers pivoted to rear of openers. Machine raised bodily by wheels on adjustable standards. Pivoted tongue, rear end moving vertically in flanged gateway; dropper and driver's seat upon the same beam, secured to the rear of tongue.



1. The flexible cut-off, consisting of the slotted block K, and curved spring J, having its extreme ends curved inward, in combination with the slotted plate I, slide I, with holes a b, and the box or hopper D, with hole e in its bottom, all substantially as and for the purposes herein set forth.

2. The covering-plate L, provided with the inclined top flanges f f, forked at its front end, and pivoted to the conductor O, and adjusted by means of the adjustable braces k k, substantially as and for the purposes herein set forth.

3. The combination of the corn-planter frame with adjustable stands N N and wheels O O, the pivoted tongue P, flanged casting m, arm R, with seats S S', and pivoted notched lever T, all substantially as and for the purposes herein set forth.

164,685. LUBRICATORS FOR PHOTOGRAPHS. Emile B. Wesson, Bangor, Me., assignor to Joseph P. Bass, same place. [Filed Apr. 14, 1875.]

The within-described lubricator for photographs, consisting of a mixture of castile-soap and alcohol, in about the proportions herein specified.

164,686. NAPPED FABRICS. L. W. Whipple, New York, N. Y. [Filed May 27, 1875.]

The improved fabric described, consisting of a body of woven or textile goods, into or through which the fibers of a bat are incorporated, substantially in the manner set forth.

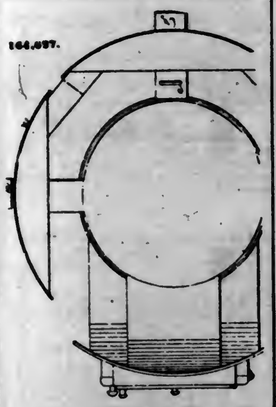
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164,687. HOT-AIR FURNACES. G. W. White, Malden, Mass. [Filed Apr. 15, 1875.]

Brief.—The direct exit being closed, the products pass into the side radiators at the top, and out at the bottom, thus reaching the exit after passing through the radiator at the rear.

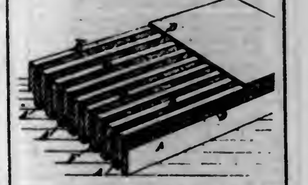
An air-heating furnace or stove provided with radiators, constructed substantially as described, and connected with the combustion chamber, and with each other, and with the smoke outlet, whereby the products of combustion pass into the radiators at the sides of the combustion chamber, and then downward into the intermediate radiator, and into the smoke outlet, as set forth.

164,688.



164,688. CONSTRUCTION OF WALLS OF BUILDINGS. John Wingrave, Chicago, Ill. [Filed June 3, 1875.]

Brief.—Walls of buildings formed of boards or laths nailed together side to side, so as to form alternate projections and recesses on both sides, which sides are then covered with a composite mortar. The edges of the projecting strips have nails driven through them, passing into the recesses, to assist in retaining the mortar.



1. The culls, boards, planks, or laths A C, nailed together side to side to form alternate projections and recesses, or tongues and grooves, on both sides, coated with composite mortar, substantially as and for the purpose set forth.

2. In combination with the sheet-flue K, descending flue H, and direct-draft flue N, the horizontal flue-strip h, placed between the rear part of said flue H and the lower side of said flue K, and operating to prevent the current of heated gases from entering said descending flue at such point when the direct draft is employed, and to cause the heat to be evenly distributed beneath the boiler holes, substantially as shown.

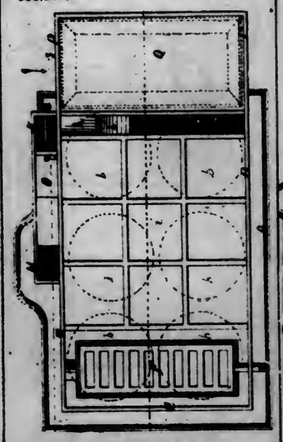
3. The culls, boards, planks, or laths A C, nailed together side by side to form the projections or tongues F, and recesses or grooves F, said projections F having the nails D driven through them near their edges, so as to traverse the recesses or grooves F, either wholly or partially, substantially as and for the purpose set forth.

164,689. REGENERATIVE COOKING-STOVES. Gurdon G. Wolfe, Troy, N. Y. [Filed Feb. 27, 1875.]

Brief.—By the use of the damper the current of smoke, in its passage to the exit-flue, may be directed down the rear flue, and under the oven.

1. In combination with the descending flue H and exit-flue M', the direct-draft flue N, leading from the rear upper portion of said descending flue to said exit flue, by means of which the heated escaping products of combustion are caused to pass beneath all of the sheet-flue I descending flue N, ascending flue O, and flue-strip M, by means of which the heated escaping products of combustion pass beneath each boiler-hole before entering said flues, when the reverse draft is employed, substantially as and for the purpose set forth.

161,699.



3. In combination with the sheet-flue K, descending flue H, and exit-flue N, the inclined flue-strip h', which extends downward from the upper end of said descending flue H, and compels the heated escaping products of combustion to descend in front of said flue-strip before passing into said exit-flue N, substantially as and for the purpose set forth.

4. In combination with the descending flue H and direct-draft flue N, the damper O, operating to control the course of the heated escaping products of combustion, and cause the same to pass beneath the oven, or to escape from said descending flue directly into said direct-draft flue N, substantially as and for the purpose shown and described.

5. A water-reservoir chamber, Q, located outside of and combined with a descending flue, H, which at its rear upper portion communicates with the direct-draft flue N, substantially as and for the purpose specified.

6. A water-reservoir chamber, Q, located beside and combined with a descending flue, H, which at its rear side and upper end is separated from the top oven-flue by means of a horizontal flue-strip, h, substantially as and for the purpose shown.

7. A water-reservoir chamber, Q, located beside and combined with a descending flue, H, which has at its rear upper portion an inclined flue-strip, h', beneath which the heated escaping products of combustion are compelled to pass before passing into the direct-draft flue N, substantially as and for the purpose set forth.

164,690. PORTABLE RANGES. Gurdon G. Wolfe, Troy, N. Y. [Filed Feb. 20, 1875.]

Brief.—Smoke may be sent directly to the exit at the side, or to the diving-flue, and thence either around the oven or into the reservoir-space, which communicates by a side flue with the exit. The dust-flue is without the wall of the stove, and connects the ash-pit and exit-flue.

1. In combination with the reservoir-chamber R, the descending flue N and the ascending flue O, constructed as described, a dampered opening, a, formed in and through the wall which separates said parts, substantially as and for the purpose shown.

2. In combination with the chamber R, reservoir S, and flue N, the inclined dampered portion a' of the partition which separates said chamber and flue, substantially as and for the purpose shown and described.

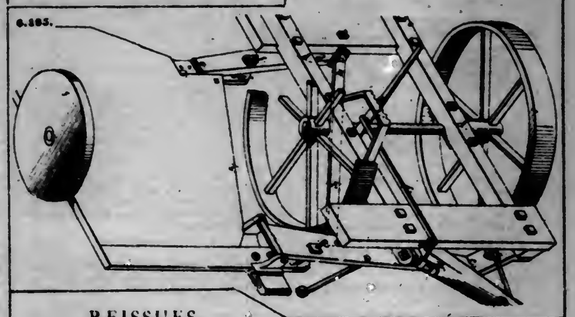
3. In combination with the ash-pit G and exit-flue K', the dust-flue T, extending between said parts, located outside of the back plate F, and provided with a damper, U, by means of which communication between said parts may be cut off when desired, substantially as and for the purpose specified.

4. In a portable range having a fuel-chamber at one end, descending and ascending flues at its opposite end, and an exit-flue at the center of its rear side, the combination of the

161,630.



6,485.



REISSUES.

6,484. ROLLS FOR UTILIZING THE FAG-ENDS OF RAILROAD-RAILS. Henry Chisholm, Cleveland, Ohio. Patent No. 124,116, dated Feb. 27, 1872. [Filed Feb. 15, 1875.]

6,481.



1. The rolls A B, having a series of irregular-shaped and graduated grooves of the form in construction shown at e e d, operating essentially as and for the purpose substantially as described.

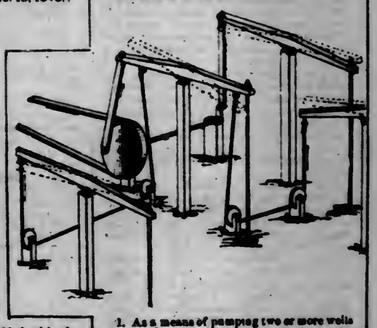
2. The manufacture of bars of steel homogeneous in texture, from old rails, butts, or fag-ends by a process or method substantially such as that hereinbefore described—that is to say: rerolling said old rails, butts, or fag-ends, by means of rollers having grooves so constructed that the body of the rail, butt, or fag end shall, by this operation upon it, be gradually contracted transversely and increasingly extended longitudinally without violent rupture and without plication of the surface.

6,483. HARVESTERS. Lewis Miller and Jacob Miller, Canton, Ohio, assignors to C. Aultman & Co. Patent No. 24,700, dated July 5, 1859. [Filed May 19, 1875.]

1. In a two-wheeled harvesting-machine, having a double-hinged connection, an extension of the finger-bar or platform or arm to a point of suspension outside of the inner hinge, for the purpose of carrying the point of vibration of said bar between the two wheels.

2. In a two-wheeled harvesting-machine, having a finger-beam, with a double-hinged connection to the main frame, a suspending device for controlling the action of the hinge nearest the finger-beam, whereby said hinge is made flexible in an upward direction, and is prevented from being flexed in the direction of the ground.

6,486. MEANS FOR PUMPING WELLS. Aibt. E. Nickerson and Levi C. Streeter, Allegheny Township, Venango County, Pa. Patent No. 162,406, dated Apr. 20, 1875. [Filed May 31, 1875.]



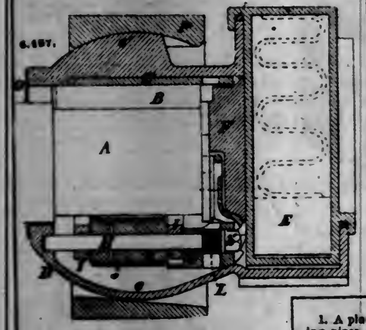
1. As a means of pumping two or more wells simultaneously by a single motor, the combination of a wheel, A, or equivalent, and connecting-levers, walking-beams, and ropes or chains, substantially as described, whereby the walking-beams move in different directions from each other, to equalize the strain on the motor, for the purpose set forth.

2. The combination, with the wheel A, operated by a suitable motor, of the crank shaft C, connected by pitmen with two independent walking beams, and one of said walking beams connected by ropes or chains passing around suitable pulleys, with two other independent walking-beams, substantially as and for the purposes herein set forth.

6,487. RAILWAY-AXLE BOXES. J. N. Smith, Jersey City, N. J. Patent No. 161,069, dated Mar. 23, 1875. [Filed Apr. 20, 1875.]

Brief.—A housing incloses the bearing-axle, and stopping-bar, and lubricating devices. The housing and slide have a ball-and-socket connection, so that the housing is allowed to move in the slide, and insure a true bearing on the axle.

6,487.



1. In a railroad-car truck, in combination with the ball-jointed housing D, the slide F, substantially as and for the purposes set forth.

2. In a railroad-car truck, the ball-jointed housing D, having flat sides, to prevent its turning around in its seat, substantially as and for the purpose set forth.

3. In a railroad-car truck, the housing D, having vertical cylindrical swells *b' b'* on its sides, to permit it to turn or swivel in its seat on a vertical axis, while it is prevented from turning on a horizontal axis by the said vertical sides, substantially as and for the purpose set forth.

4. In a railroad-car truck, in combination with the ball-jointed housing D and journal A, the stopping-bar F, substantially as and for the purpose set forth.

5. In a railroad-car truck, in combination with the housing and axle, a stopping-bar, having an opening extending across the center of the axle, substantially as and for the purpose set forth.

6. In a railroad-car truck, in combination with the stopping-bar F, having a recess in its bearing-face, through which to supply oil to the bearing and oiling-wick a, the counterweight or tumbler m, substantially as and for the purpose set forth.

7. The combination with the stopping-bar, having a recess in its bearing-face extending beyond the center of the axle, of the web S, tumbler m, roller L, and bolt H, substantially as and for the purpose set forth.

8. The combination of the bolt H, roller K, tumbler I, web J, and oil-well *s*, for oiling the journal, substantially as and for the purpose set forth.

9. In a railroad-car truck, in combination with the housing D, the oil-tank E, in which the oil is held by atmospheric pressure, and fed out automatically, so as to maintain the oil in the oil-well *s* at a given height, substantially as and for the purpose set forth.

10. In combination with the oil-tank E and housing D, the valve *h* and spring *i*, substantially as and for the purpose set forth.

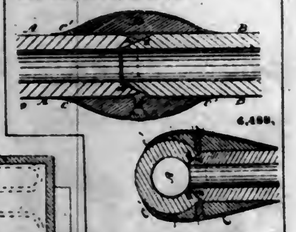
11. The combination, with the oil-tank E and housing D, of the packing *h*, and hinge *f*, for excluding dust from the housing, substantially as set forth.

12. The combination of the stops *i*, with the housing D and stopping-bar F, substantially as and for the purpose set forth.

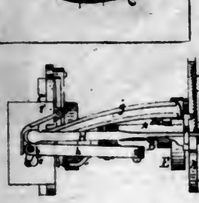
13. In combination with the ball-jointed housing D and axle A, the sliding cover O, for excluding dust, &c., substantially as set forth.

6,488. PLUMBERS' JOINTS. I. F. Van Duser, Middletown, N. Y. Patent No. 150,100, dated Apr. 21, 1874. [Filed Oct. 16, 1874.]

Brief.—The body or stiffening of the joint is constituted by a block of lead of suitable form, loosely fitting upon the parts. Molten solder is then "wiped" over all into the crevices, solidly uniting all the parts.



6,488.



1. A plumbers' joint, constructed by uniting pipes A B within a coupler, D, forming the base or body of the joint, and coating or covering and uniting the parts by means of a layer of solder, C, applied externally of the coupler D, in the manner and for the purpose described.

2. A coupler, D, for forming the base or body of a plumbers' joint, constructed with lips or extensions *d*, channel or groove D', and opening *d'*, substantially as and for the purpose described.

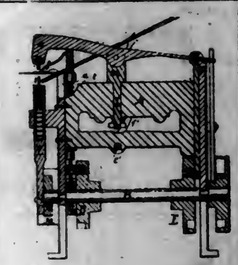
3. The combination, with a pipe, A, formed with a conical seating, *a*, and a pipe, B, having a conical end, *b*, of a coupling, D, substantially as and for the purpose described.

4. The combination, with a pipe, A, and a branch pipe, B, placed at an angle thereto, of the coupler D, having a groove or channel, D', to receive the pipe A, and aperture *d'* to receive the pipe B, as and for the purpose described.

6,489. EYELETING-MACHINE. J. H. Wiggin, Stoneham, Mass., assignor to H. H. Mawhinney, same place. Patent No. 126,016, dated May 21, 1872. [Filed Apr. 20, 1875.]

Brief.—The entire operation is automatic. An eyelet is deposited upon a receiving-pin rising from the end of the vertical compressor. The stock resting upon the bed in position is perforated by the descent of the punch, when the punch and upsetting-anvil receive a simultaneous lateral movement, bringing the anvil over the perforation; the anvil then descends, and by a simultaneous lateral movement in the opposite direction of both anvil and punch the stock is fed, bringing the perforation directly over the eyelet. The compressor rises, forcing the anvil up through the perforation and against the anvil, securing it in position, the punch being left in position for continuous operation.

6,489.



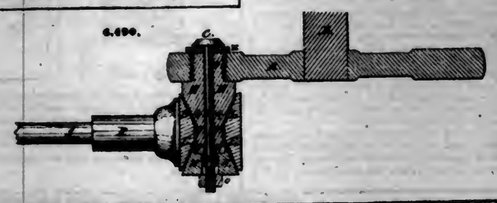
1. In an eyelet-setting machine the upsetting-anvil *e*, operating from above the work-supporting platform, in combination with its actuating mechanism, whereby it is adapted to automatically feed the stock after the eyelet hole has been punched, and to set the eyelet, substantially as described.

2. The combination of the punch *b*, bed *c*, and anvil *e*, with their actuating mechanism, whereby they are given a simultaneous lateral reciprocating movement, and caused to automatically punch and feed forward the stock, substantially as set forth.

3. The combination, with the stock-feeding and eyelet-setting anvil *e*, of the presser *f*, all substantially as and for the purpose set forth.

6,490. HARVESTER CRANES AND PINS. Jacob Kline, Camp Hill, Pa., assignor, by mesne assignments, to himself, Wilson Bear, J. A. Moore, and M. N. Grove. Patent No. 101,194, dated Mar. 22, 1870. [Filed Feb. 9, 1870.]

6,490.



1. In a compensating wrist-pin, journal, or axle, the device of a removable screw-bolt, whereby a follower-cone, N, may be fed up closer to or upon a butt-cone, Q, to compensate for the wear of the journal and its bearings in hub L L', without jamming and sticking the parts, substantially as set forth.

2. The wrist-pin, journal, or axle proper, composed of bolt H, butt-cone Q, round arm F, and square tip *b*, in combination with the follower-cone N, recessed roundly at its focal end to admit therein said arm F, and perforated squarely at its butt-end to admit therein said tip *b*, as described.

3. The wrist-pin or journal body, constructed with attaching-shank D, butt-cone Q, arm F, and tip *b*, with reference to attaching it, and mounting thereon the hub L L' and the follower-cone N by means of a removable screw-bolt, H, substantially as set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 25. TUESDAY, JUNE 22, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

GEORGE RICHARDSON.—*Appeal.*

[*Appeal from the decision of the Examiners-in-Chief in the matter of the application of George Richardson for Letters Patent for* "IMPROVEMENT IN SPINDLE-BOLSTERS FOR SPINNING MACHINES." *Decided April* 23, 1875.]

A reissued patent cannot be overlooked if matter be found in it the same as that claimed in a subsequent application, even though the subject-matter referred to had been improperly introduced into the patent upon reissue.

Parts essential to the completeness of a structure, if omitted in the terms of a claim, must be understood, if the specification by which the claim is to be interpreted will justify it.

SPEAR, *Acting Commissioner:*

Of the references cited by the Examiner in this case, two appear to be most relied upon, and are those which alone merit serious consideration. These are the patent of Pearl, reissued September 1, 1874, No. 6,036, and that of Sawyer, No. 113,575. The patent of Pearl is given as anticipating the first claim, and that of Sawyer as mainly anticipating the second.

It was held by the Board that the bobbin shown and claimed in this application is also shown in the reissued patent of Pearl, which has been cited, and specifically claimed in the second clause of his claims. Some question was raised as to the propriety of this claim, by reason of the subject-matter not having been shown in the original application upon which this patent was founded.

I agree with the Board that the reissued patent could not be overlooked, if matter were found in it the same as that claimed in an application made subsequent to that patent, even though the subject-matter referred to had been improperly introduced into the patent upon reissue.

It remains, therefore, to examine this reissued patent of Pearl, in order to discover whether or not the precise thing claimed by this applicant in the first clause of claim is to be found in that patent.

The first claim of Richardson is as follows:

The ring-spinning bobbin constructed with a middle adhesive spindle-bearing, D, and the two chambers *c d*, open at their outer ends, without having at either of such ends an adhesive spindle-bearing, all being substantially as specified.

It appears that this bobbin relies for its support against crushing at the ends only upon the strength of the shell itself, and that the bearing at the central part is made sufficient to maintain the bobbin in place upon the spindle, and furnish sufficient adhesive friction for the purpose of its operation. Now, I do not find precisely this in the patent of Pearl. In that patent there are two bearings, *k i*, one at the lower extremity, and the other at the middle, or a little above the middle, and, besides, the upper end is plugged for additional strength. Nowhere in the specification is there any hint that the central bearing would be sufficient, as the bobbin is organized and proportioned to the length of the bearing, to maintain the bobbin in its position during the operation of the machine. It is not stated anywhere that the lower bearing may be omitted.

I do not assert that the mere omission of the lower bearing, without any other change in the parts or proportions, without any change or extension of the central bearing or thickening of the shell, would be sufficient to maintain a valid patent; but I must suppose that Richardson has done something more than this mere omission, for Pearl had not found, as far as appears from his specification, that the middle bearing *i* could be made sufficient for his purpose, or thought of making a bobbin strengthened only by the central bearing. He represents the two as necessary to set the bobbin upon the spindle. But Richardson appears to have so proportioned the parts, and made the central bearing of such length, compared with the length of the bobbin, as of itself to hold the bobbin in place.

The extension of the central bearing *i*, after the discovery that such extension would serve the purpose, and with the new and improved result, is unquestionably a patentable invention.

That an improved result is attained appears to be

made out. As compared with Pearl's bobbin, this is of simpler construction, and admits the upper end of the bolster. As compared with Sawyer's, it is lighter, and makes it possible to use a shorter spindle.

Referring to the second claim of Pearl, which appears to have been most relied upon, both by the Examiner and the Board, as covering the invention, I do not find that it necessarily includes such a bobbin as Richardson describes and claims. Certainly no foundation is laid in the specification for such an interpretation, nor is such an interpretation made necessary by the terms in the claim itself. It is true that the lower bearing is not specified. The claim is for—

The combination of the bobbin, the intermediate adhesive bearing *i*, and the blade of the spindle, made shorter than the bobbin from the bolster D, substantially as described.

A careful analysis of this claim, and reference to the specification, shows that the invention here referred to, and evidently intended to be covered, is the relative length of the blade of the spindle as compared with the bobbin and its central bearing. In order to express this construction and combination, it was unnecessary to refer to the lower bearing. The reference to the bolster, the blade of the spindle, and the bearing *i* is all that was needed.

I find nothing, therefore, in Pearl's patent to indicate that he contemplated a central bearing sufficient of itself to maintain the bobbin on the spindle, or such a construction of the bobbin that the end pieces could be dispensed with.

A claim must always be interpreted by the specification, and parts of the structure essential to its completeness, or some known equivalent of those parts, must be understood, if omitted in the terms of the claim. Such an interpretation is not unnecessarily to be put on a claim as would render the alleged invention useless without reorganization.

In the present case the claim in Pearl's patent omits the lower bearing. But the patentee has distinctly specified that these plugs or bushings *k* and *l* serve to strengthen the shell, otherwise made so thin as to be liable to be crushed, and that the lower is a part of the bearing of the bobbin.

It follows, then, that, as organized by Pearl, this bobbin is not operative and perfect with the central bearing alone. It needs no forced construction of the language to make the claim consistent and intelligible. It refers evidently, as before remarked, to that new arrangement of the parts specified—the bolster D, bearing *i*, and spindle—in distinction from the old form shown in Fig. 2, in which the spindle extends all the way through the bobbin.

The second claim of Richardson includes, as one of the elements, an element shown by Sawyer. If this element were at all modified by the others, I should not think this claim fairly anticipated; but, so far as I can see, the chamber in the bobbin and the stationary bearings are precisely the same in Sawyer's patent as in this application, so far as concerns the admission of the upper end of the bolster. The operation is the same, and it is not affected in applicant's device by the other parts specified in the claim in any way whatever different from the operation of the apparatus shown in the patent.

I have no objection to the admission of the claim proposed instead of the one acted on by the Board of Examiners-in-Chief, and have considered the argument filed with the new claim. It does not, however, in my judgment, place the matter in materially different light. It is a mere aggregation that is claimed, and the effects of the whole are the sum of the effects of the other parts.

Richardson admits his bolster into the spindle for precisely the same purpose as Sawyer, and, so far as appears, with precisely the same effect.

I must, therefore, affirm the decision of the Examiners-in-Chief upon the second claim, but reverse it upon the first.

SEELEY M. SHERMAN.—*Interlocutory Appeal.*

[*Appeal from the Principal Examiner in the matter of the application of Seeley M. Sherman for Letters Patent for* "IMPROVEMENT IN MACHINES FOR CUTTING WINDOW BLINDS, SLATS, &C."—*Decided May* 21, 1875.]

The question considered of collocation and co-operation of different parts or machines as distinguished from mere aggregation.

SPEAR, *Acting Commissioner:*

This appeal is taken on the requirement made by the Examiner that applicant divide the application, or eliminate from it that part held not to be a part of the leading invention set forth in the specification.

Upon examination, I find the machine, or leading feature of it, to be only for the purpose of forming the metallic tips or clasps, which hold the ends of the blind-slats. This somewhat complicated mechanism is located upon a stand or table, and moved by a shaft placed beneath it. The subordinate invention, alleged to be independent, and to have no necessary connection with this leading invention, as shown in the drawing, and described in the specification, consists of a knife, or chisel rather, located on one edge of the table, sliding longitudinally, with its sharpened edge arranged vertically, and passing by the end in such a manner as to cut a slat placed at right angles thereto in guides located upon the side adjoining this upon which the knife slides. The knife is moved by a lever, which is connected with some moving part of the other mechanism located upon the table. Further, there is a spring on that side where the slat is placed, which, when the cutting operation has been performed, is made to throw out the slat and give place to another.

The position taken by the Examiner in respect to the apparatus described above is, that the device for making the metallic bearings is all that may be properly called the machine; that the knife is simply a tool attached for convenience, perhaps, to the machine. He insists that the tool and the machine do not co-operate in any patentable sense. This lack of co-operation in the action of the parts is too plain to require discussion; and if appellant's case rested upon this alone, I should, without hesitation, decide against him. But there are cases where invention may be exercised, and useful results accomplished, in the collocation of machines or devices which do not in any sense co-operate in what may be strictly called their action. Cases of such mere aggregation have been heretofore fully discussed, as in

the Commissioner's decision upon the application of Linus Yale, 1869, and that in the case of Lehmann, 1870, and of Abel Combs, 1871. An exception, however, was referred to by the Commissioner, in considering the Lehmann case, in relation to—

Combined implements which use certain parts in common, and so save the expense of duplicating such parts.

The Commissioner was of the opinion that such inventions are useful, and, if new, undoubtedly patentable. Exactly of this nature appears to me to be the structure shown and described by this appellant.

The sixth and seventh claims cover precisely the arrangement of parts shown in the drawings. This arrangement is such that upon the same table, without interfering with the devices which form the metallic bearings, the knife and the device for holding the slat to be cut are all conveniently located, both for receiving motive power from the main machine, and for approach and easy manipulation by the attendant. This is something more than mere aggregation. The combination is such that the same table which supports the central machine is made without any enlargement to support the auxiliary machine.

Had the appellant simply made a table of double size required for the central machine, and upon one-half located that, and upon the other the slat-cutting machine, or tool, as the Examiner calls it, there would have been no exercise of invention, nor, so far as I can see, any useful result. There are, however, manifestly useful results in the construction now shown, saving in expense of table and shop-room, and a compactness and accessibility in the machine.

The particular construction and combination which accomplishes this are claimed in the sixth and seventh clauses of claim, which I think should be allowed to stand in the application, and be examined upon their merits.

The second claim, however, is not limited to this particular construction and arrangement of parts, wherein, as I have indicated, all that is material, in my judgment, is included. It is broadly for an aggregation of two independent machines, without any limitation such as I have discussed above; and I agree with the Examiner, that this claim should be erased.

The case is remanded to the Examiner for such further action as may be necessary.

DECISIONS OF THE COURTS.

SUPREME COURT OF THE UNITED STATES.

CHARLES M. TREMAIN AND WILLIAM B. TREMAIN, APPELLANTS, *vs.* ALONZO HITCHCOCK, GEORGE G. SAXE, AND JAMES H. ROBERTSON, AND ALONZO HITCHCOCK *et al.*, APPELLANTS, *vs.* CHARLES M. TREMAIN *et al.*

[*In equity.—Appeals from the Circuit Court of the United States for the Southern District of New York.—October Term*, 1874.]

An amendment which changes the character of a bill ought not, generally, to be allowed after a case has been set for a hearing, and still less after it has been heard. The answer might become inapplicable if such an amendment were permitted.

Where the original bill set up only the first reissue of a patent that had been twice reissued, but the proofs, both for final hearing and before the master on the accounting had reference to the second reissue, as also the proceedings upon the master's report, an order of court directing that the record be amended by inserting in the bill an averment of the second reissue was properly made, even after the final decree.

Where defendants were dealers in musical instruments, and some of the instruments bought and sold by them contained a tremolo attachment which infringed complainants' patent, and others not, defendants were properly allowed, in the ascertainment of the profits made by them from the sales, to prove the general expenses of their business incurred in effecting the sales of all musical instruments, and deduct a ratable proportion from the gross profits made by the sale of the attachments.

[This was a suit under a reissue of letters patent for a tremolo attachment for musical instruments granted to R. W. Carpenter, June 27, 1865, the complainants being Alonzo Hitchcock, George G. Saxe, and James H. Robertson.

The case as decided in the court below is reported in 9 Blatchf., 385; also in 4 Fisher, 508, and 5 Fisher, 310.]

[*F. H. Betts*, for complainants.
B. F. Valentine, for defendants.]

STRONG, *J.:*

The bill filed by the complainants in the court below set forth that a patent for a "tremolo attachment" to musical instruments was granted on the 27th day of June, 1865, to R. W. Carpenter; that subsequently the patentee assigned the letters patent to the complainants; that on the 18th day of May, 1869, they surrendered the patent, and obtained a reissue to themselves, (numbered 3,444,) and that the defendants had been guilty of infringing their rights under the patent.

To the complaint thus exhibited, the defendants answered admitting the grant of the letters to Carpenter, but denying all knowledge as to the truth of the allegations that Carpenter had at any time assigned his interest to the complainants, or to any one or more of them, and, *therefore*, denying that the complainant had any interest in the said letters patent or to the "*reissues*" of the same as set forth in the bill of complaint.

The answer further averred that Carpenter was not the original inventor of the tremolo attachment, but that it was known and was in use before his alleged invention was made. Still further, the answer denied that the defendants had infringed upon the rights and privileges granted by the patent dated June 27, 1865, "*or by any of the reissues of the same.*"

To this answer a general replication was put in, and the parties went to trial, when the complainants gave in evidence, without objection, reissued Letters Patent No. 3,665, dated October 5, 1869, which had been granted on the surrender of the first reissue No. 3,444. This second reissue was not set out in the bill; but it is plain both parties supposed it was through all the progress of the trial. As we have noticed, the answer denied infringement, not of the single reissue mentioned in the bill, but of any of the reissues. No other than No. 3,665 was put in evidence. The decretal order to account expressly mentioned it. The evidence taken by the master under the order of reference related solely to attachments sold by the defendants after the second reissue was granted. In the exceptions taken by them to the master's report no intimation was made that the rights of the complainants under the reissue 3,665 were not on trial, and not even when the final decree was made was it suggested that the parties had been trying the case on an issue not made by the pleadings. Prac-

tically, indeed, the rights of the complainants under the second reissue, and the defendants' infringement thereof, were in issue under the answer and the replication.

We think, therefore, the order of the court directing that the record be amended by inserting in the bill an averment of the second reissue was properly made under the circumstances of the case, though made after the final decree. It deprived the defendants of no rights which they had not enjoyed during all the progress of the trial. It may well be denominated only an amendment of form, because it introduced no other cause of action than that which had been tried. It is true that an amendment which changes the character of the bill ought not generally to be allowed after a case has been set for a hearing, and still less after it has been heard. The reason is that the answer may become inapplicable if such an amendment be permitted. But in this case the defendants were not prejudiced. They had every advantage they could have had if the bill had originally averred the second reissue. The case is undoubtedly anomalous, but we think justice would not be subserved by denying to the circuit court the power to order such an amendment as was made after the cause was tried precisely as it must have been tried if the bill had originally contained the averment inserted by the amendment.

We come then to the errors assigned by complainants. They relate to the estimate of profits reported by the master and confirmed by the court. The defendants were vendors of musical instruments, including organs and melodeons, which they purchased from the manufacturers. Some of these instruments contained the tremolo attachment, and others did not. For those containing such attachments they paid an additional price, and they sold them also for an increased price. In the ascertainment of the profits made by them from the sales, they were allowed to prove the general expenses of their business incurred in effecting the sales of all musical instruments, and deduct a ratable proportion from the profits made by the sale of tremolo attachments. It is of this allowance the complainants now complain.

It is said the patent infringed was not for the tremolo itself, but for the combination of the organ and tremolo, and it is argued that if the defendants obtained an extra price for the organ combined with the tremolo without incurring any additional expense, the whole of that extra price was obtained from the addition of the combination; and it is further insisted that the true rule in cases like the present is, that, if the infringing device is an integral part of the whole instrument, without which it is incapable of use, and for which a single charge is made, then in ascertaining profits on a part of the organization general expenses are to be apportioned according to the cost, or by some other equitable rule; but when the infringing device is an optional one, used or not at pleasure, and an extra price is charged and received for it when used, the true profit made is the extra sum received for the addition, deducting only such expenses as are incurred by reason of the addition. We think such a rule, even if it may sometimes be just, is inapplicable to the present case. We cannot see why the general expenses incurred by the defendants in carrying on their business, such expenses as store rent, clerk hire, fuel, gas, porterage, &c., do not concern one part of their business as much as another. It may be said that the selling a tremolo attachment did not add to their expenses, and, therefore, that no part of those expenses should be deducted from the price obtained for such an attachment. This is, however, but a partial view. The store rent, the clerk hire, &c., may, it is true, have been the same if that single attachment had never been bought or sold. So it is true that the general expenses of their business would have been the same, if, instead of buying and selling one hundred organs, they had bought and sold only ninety-nine; but will it be contended that because buying and selling an additional organ involved no increase in the general expenses, the price obtained for that organ above the price paid was all profit? Can any part of the whole number sold be singled out as justly chargeable with all the expenses of the business? Assuredly no. The organ with a tremolo attachment is a single piece of mechanism, though composed of many parts. It was bought and sold as a whole by the defendants. It may be said the general expenses of the business would have been the same if any one of these parts had been absent from the instrument sold. If, therefore, in estimating profits, every part is not chargeable with a proportionate share of the expenses, no part can be. But such a result would be an injustice that no one would defend. We think it very plain, therefore, that there was no error in the rule adopted for the ascertainment of the profits made by the defendants out of their infringement of the complainants' patent.

We think also the master's report, confirmed by the court, was correct in its ascertainment of the general expenses. At least there is nothing before us to show that it did not conform to the second decretal order. The defendants submitted analyses of their books, from which it is to be presumed the master distinguished general from particular expenses.

It follows that neither the appeal of the defendants nor the cross appeal of the complainants can be sustained.

The decree of the circuit court is affirmed, and it is ordered that the costs of each appeal be paid by the appellants.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date June 22, 1875.]

8,406 to **8,408**, inclusive.—**Breastpin.**—LEONARD S. BEALS, Astoria, New York.—Cases A', B', and C'. Applications filed June 2, 1875. Term of patents 3½ years.

8,409.—Scarf-Ring.—LEONARD S. BEALS, Astoria, N. Y. Application filed June 2, 1875. Term of patent 3½ years.

8,410.—Picture-Frame.—EDWARD BECK and STEPHEN BIRD, of Lockport, N. Y. Application filed June 5, 1875. Term of patent 3½ years.

8,411 and **8,412.—Embroidery-Pattern.**—EMIL CRISAND, New Haven, Conn., assignor to HENRY ST. JOHN, same place. Cases DD and EE. Applications filed June 11, 1875. Term of patents 3½ years.

8,413.—Comb.—GEORGE G. MILLER, Philadelphia, Pa. Application filed June 9, 1875. Term of patent 3½ years.

8,414.—Ornamental Border for Silver-Ware.—CHARLES OSBORNE, of North Attleborough, Mass., assignor to THE WHITING MANUFACTURING COMPANY. Application filed May 28, 1875. Term of patent 7 years.

8,415.—Vase.—CHARLES F. PIKE, Philadelphia, Pa. Application filed May 13, 1875. Term of patent 3½ years.

8,416.—Desks.—CHARLES RICHTER, Dedham, assignor to ALDEN BATCHELDER, Reading, Mass. Application filed May 11, 1875. Term of patent 7 years.

8,417.—Bottles.—JOB TRUAX, Mt. Union, Pa. Application filed June 9, 1875. Term of patent 7 years.

8,418.—Cassimeres.—EDWARD C. CLARK, Rockville, Conn. Application filed June 8, 1875. Term of patent 7 years.

8,419.—Printing-Type.—JAMES M. CONNER, Greenville, N. J. Application filed May 24, 1875. Term of patent 14 years.

8,420.—Font of Printing-Type.—PETER A. JORDAN, Philadelphia, Pa., assignor to MACKELLAR, SMITHS & JORDAN, same place. Application filed June 14, 1875.

8,421.—Thermometers.—CHARLES KITSCHELT, New York, N. Y., assignor to NICHOLAS MULLER'S SONS, same place. Application filed May 14, 1875. Term of patent 7 years.

8,422 to **8,425**, inclusive.—**Oil-Cloths.**—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Applications filed June 17, 1875. Term of patents 3½ years.

8,426.—Ornamentation of Stove-Doors.—JASPER VAN WORMER and MICHAEL MCGARVEY, Albany, N. Y. Application filed May 20, 1875. Term of patent 7 years.

8,427.—Bird-Houses.—JOSEPH WHITE, Philadelphia, Pa. Application filed May 17, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date June 22, 1875.]

2,691.—Cordials, Sirups, and Preserves.—G. W. DUNBAR & SONS, New Orleans, La. Application filed May 31, 1875.

"a monogram formed by a combination of the letters 'G,' 'W,' 'D,' and 'S,' printed within a circle about the center of the label. Around the upper part of this circle we print in one line the name of the firm, viz., 'G. W. Dunbar and Sons,' while below the said circle we print in one line 'French Cordials,' 'Sirups,' and 'Preserves,' and below this the name of our city, 'New Orleans.' On either side of the circle surrounding the monogram, and filling the spaces between the ends of the upper and lower lines of the lettering, we print fac-similes of the gold medal awarded us by the Louisiana State fair association."

2,692.—Agricultural Forks.—FRANKLIN P. SHUMWAY, Leominster, Mass. (Re-registration.) Application filed March 20, 1872.

"words 'The Partridge Fork.'

2,693.—Gin.—THOMAS L. SMITH, Boston, Mass. (Re-registration.) Application filed October 30, 1871.

"the design of a strawberry or a cluster of strawberries, with or without the leaves and stems."

2,694.—Castor-Oil.—STOCKDALE, SMITH & CO., Baltimore, Md. Application filed June 17, 1875.

"word 'KASTROYLE.'"

2,695.—Commercial Fertilizers.—WALTON, WHANN & CO., Wilmington, Del. (Re-registration.) Application filed November 1, 1871.

"words 'Carolina Peanut Guano.'"

APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., May 19, 1875.

On the petition of ANN JENNETTE HATHAWAY, of Milwaukee, Wis., executrix of JOSHUA HATHAWAY, deceased, authorized by act of Congress approved February 18, 1875, praying for the extension of a patent granted to the said JOSHUA HATHAWAY, on the 3d day of April, 1860, for an Improvement in Devices for Converting Reciprocating into Rotary Motion,

It is ordered that the testimony in the case be closed on the 20th day of July next; that the time for filing arguments and the Examiner's report be limited to the 30th day of July next; and that said petition be heard on the 4th day of August next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

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Lewis, M., Stamp canceler	164,687
Lindsley, I., assignee	164,716
Locke, J. R., Molding machine	164,650
Loeser, L., Shawl strap handle	164,848
Lumley and Stevens	164 663
Lundy, W., Lifting gate	164,849
Lyon, A. T., Composition for building purposes	164,850
Lyon, A. T., Paint compound	164,851
Males, S., Cider mill, (reissue)	6,504
Mansfield, C. W., Car truck	164,651
Marcus, W. N., assignee	164,697
Marks, L., Door securer	164,688
Marks, W. D., Governor	164,745
Marsden and Blamires	164,796
Marsland, E., Liquid meter	164,852
Marthens, W. F., Nut lock	164,747
Martin, J., assignee	164,890
Martin, J. T., Ice breaking attachment for vessels	164,746
Martin, O., Earth boring apparatus	164,689
Mason, J. L., Smoke stack	164,652
Mason, J. L., and A. and J. M. Sinclair, Refrigerator	164,653
May and Withey, assignees	164,667
McBurney, W. H., Hay, cotton, and wool press	164,748
McDaniel, D., Roofing material	164,749
McDaniel, F., Fountain brush	164 853
McDowell, P. L., Machine for cutting fats for rendering	164,854
McElroy, J. B., Belt fastener	164,855
McGregor and Wescott	164,787
McIntyre, J. H., assignee	164,872
McMillan, W. H., Hydrant	164,856
McOmber, S. W., Fruit can	164,857
Mehling, G. F., Grafting wood	164,858
Merriam, Doty, and Osborn	164,758
Merrill, F. M., Governor for steam engines	164,859
Merriman, A. H., Clutch for power presses	164,690
Meyer, P., Sash fastener	164,750
Meyer, W., and H. Freiburg, Boot and shoe	164,860
Michalet, F., and P. Bourget, Embroidering machine	164,751
Minton, S. F., Speed measurer	164,861
Misso, R., and B. J. Warner, Car coupling	164,753
Mix, F. W., Bag lock	164,752
Moehler, A., Stringing pianos	164,862
Moss, J. T. and G. J., Flooring clamp	164,754
Moulton, N. W., Game table	164,654
Murdock, J. G., Hydrant	164,864
Murphy, J. W., Device for increasing traction of locomotive tires	164,863
Myers and Colman	164,718
Nagler, H. M., assignee	164,805
Needham, E. P., & Son, assignees	164,869
Neeley, J. W., Hydrocarbon burner	164,655
Newsham, W. L., Valve gear	164,865
Newton, M., Washing machine	164,755
Nicholson File Company, assignee	164,656
Nicholson, W. T., Apparatus for tempering files	164,656
Nickerson, A. E., and L. C. Streeter, Pumping wells	164,756
Nilson, N., Car coupling	164,866
North, C. H., Cooler and condenser or heater	164,757
Norton, J., Wrench	164,867
Oak and Wierhold	164,801
Olden, W. P., Nut lock	164,868
Oleson, N., assignee	164,893
Osborn, L. W., E. D. Merriam, and P. B. Doty, Manufacture of artificial stone	164,758
Overend, J. A. T., Type casting machine, (reissue)	6,505
Overend, J. A. T., Type casting machine, (reissue)	6,506
Pack, W. H., and J. S. Vanhorn, Paper clip	164,657
Pain, R. W., Tremolo for reed organs	164,869
Palmer, D., Clamp for dental rubber dams	164,870
Parker, S., Window screen	164,691
Parker, W. D., Tremolo for organs	164,871
Patterson, E. J., Railway crossing	164,759
Pease, S. W., assignee	164,634
Pence, G., Invalid bedstead	164,760
Pennypacker, W. G., Centrifugal machine for making paper barrels	164,761
Piehl, J. F., Stove pipe elbow	164,872
Poindexter, R. E., Saw jointer and gage	164,762
Powers, C. H., Chuck	164,658
Putnam, H. M., and W. Esty, Grinding wheel	164,692
Rockhow, I., and W. H. Stafford, Preparing pickles	164,659
Reeds, J. A., Spring bed bottom	164,693
Reeves, G. P., Piano tuning pin lock	164,763
Reid, W. I., Paper cutting machine	164,660
Reynolds and Reynolds, assignees	164,873
Reynolds, I., Blank book	164,873
Rhind, F., Die for forming screw heads	164,764
Richardson, W., Bell pull	164,874
Rieth, J., Wash boiler	164,875
Roberts, W., Combined lamp and oil can	164,766
Robbins, F., Photographic dark trunk	164,765
Robinson and Acker	164,703
Rochow, F., Sugar cutting machine	164,767
Rogers, Foster, and Carroll	164,673
Rogers, W., Apparatus for supplying gas as fuel to metallurgic furnaces	164,876
Ross, A. Q., Road rammer	164,877
Rounds, R. A., assignee	164,719
Rowe, W. H., Bath tub showering attachment	164,768
Rumley, C., assignee	164,763
Russell, C. H., and J. Sax, Electrical billiard register	164,661
Salter, J. T., assignee	164,822
Sampson, W. S., Lime kiln, (reissue)	6,494
Sampson, W. S., Lime kiln, (reissue)	6,495
Sanders, G. N. Spike	164,878
Sanders, J. E., Scaffold	164,771
Sandgren, J. J., Bob sled	164,770
Sanford, D., Fire escape ladder	164,769
Sargeant, A. V., Harness saddle	164,772
Sax and Russell	164,661
Schmidt, A. T., Refining oils	164,694
Schofield, S., assignee	164,716
Schrink, J., Bottle stopper or cork	164,879
Scofield, D. B., Carpet cleaner	164,773
Scott, S., Sheet metal hinge	164,774
Scott, W., Machine for cutting and delivering printed paper	164,695
Shachno, C., assignee	164 849
Shapley, M. W., Steam boiler reissue	6,501
Sharkey, J., Monument, (design reissue)	6,507
Sharp, J. L., Coal oil stove	164,775
Sheehy, R. J., Electrical apparatus for timing races	164,696
Sheldon, C. B., Joint support for street railway rails	164,776
Sheldon, J. H., assignee	164,822
Shelton, E. T., Tobacco knife	164,880
Shinn, J., Cloth steaming machine	164,697
Sinclair and Mason	164,653
Sisum, W. H. H., Belt shifter, (reissue)	6,496
Sladdin, J., Loom harness	164,777
Sloan, E., Planking set for ship carpenters	164,881
Smith, W. B., assignee	164,660
Spang, H. W., Electric railway signal	164,778
Sparks, W. H., Curtain fixture	164,882
Stafford and Reckhow	164,659
Stamour, J. B., Car coupling	164,698
Stamp, W., Spark arrester	164,662
Starr, H. D., assignee	164,861
Stearns, J. B., Duplex telegraph and circuit therefor, (reissue)	6,508
Stephens, H. A., assignee	164,832
Stevens, D. E., and R. F. Lumley, Fruit jar	164,663
Stokes, J. C., Baling press	164,779
Stow, O. W., Door latch	164,780
Streeter and Nickerson	164,756
Strong, C., Casket handle, (reissue)	6,497
Strong Manufacturing Company, assignee, (reissue)	6 497
Suppert, G., Bedstead fastening	164,883
Swallow, W. B., Sash fastener	164,884
Swan, G. W., Veneer cutting machine	164,699
Sweet, N. A., Heel shave	164,885
Symmes, J. R., Seed drill	164,781
Taylor, J. E., assignee	164,872
Tenney, C. F., and T. J. Hobbs, Combined carriage and chair for children	164,782
Thompson, C. H., Die for making landsides for plows	164,664
Thompson, Perley, and Waite, assignees	164,782
Tilton, S., Instrument to prevent calves from sucking	164,665
Tompkins, C. R., Planing machine	164,666
Tracy and Galt	164,644
Turner, G., Device for converting motion	164,783
Vanhorn and Pack	164,657
Walker, J., Railway switch	164,886
Wallis, T., and O. J. Case, Plow colter cleaner	164,784
Walter, W., Water elevator	164,887
Walworth, C. C., Application of steam pipes to buildings	164,700
Warner and Misso	164,753
Weed, J. A., Burglar alarm	164,888
Wekey, S. and A. F., Cylinder washing machine	164,785
Werni, P., Compound for preserving wood	164,786
Wescott, E. J., and W. H. McGregor, Scroll sawing machine	164,787
Western Union Telegraph Company, assignee, (reissue)	6,508
Wheelock, L. M., Farm fence	164,788
Whidden, H. F., Shoe nail	164,889
Whitcomb, L. G., assignee	164,783
White, M. V. B., Cartridge box	164,890
Wieterhold, V., and E. Oak, Wagon brake block	164,891
Willis, W. H., Door check	164,701
Wilmarth, M. P., Belt twisting apparatus	164,702
Wilmot Manufacturing Company, assignee	164,892
Wilmot, S. R., Making sheet metal rings	164,892
Wilson, B. D., Shot cartridge	164,894
Wilson, H. J., Hame fastener	164,893
Winslow, J. H., Cake cutter	164,667
Wintherlich, H. J., Stove	164,789
Wissler, G., Sewing machine binder	164,895
Wissler, G., Sewing machine binder attachment	164,896
Wood, A., Machine for grinding pulleys	164,897

TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED JUNE 22, 1875.

164,631. PUMPS. Samuel Arndt and Wallace S. Ayres, Easton, Pa. [Filed May 20, 1873.]

Brief.—Provides a small air-passage, with or without a valve, in the pipe or chamber, on the receiving side of the inlet-valve, by which a small quantity of air is admitted, and minutely subdivided, rendering the water in a degree elastic. The valve, when employed, is secured as to its movement by a slot and pin.

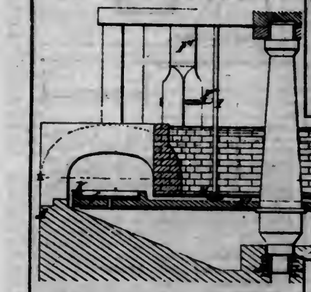


1. The combination, with the supply-pipe or chamber of feed-water and force-pumps, of an air-passage or an air-valve on the receiving side of the induction-valve, substantially as and for the purposes set forth.

2. The combination, with a tap-plug, of an air-passage or an air-valve, as K, Fig. 3, substantially as and for the purposes set forth.

3. The combination, with a tap-plug and the air-valve K, of the slot S and pin P, substantially as and for the purposes set forth.

164,632. GLASS-ANNEALING OVENS. Thos. B. Atterbury, Pittsburg, Pa., assignor of one-half his right to James S. Atterbury, same place. [Filed May 24, 1875.]



1. The circular oven, provided with a fire-chamber and passages for introducing and withdrawing the glass-ware, and a tunnel within its inner wall, one side of the top of the tunnel resting on a suspended plate, in combination with a pan fastened to a central revolving shaft, substantially as and for the purposes described.

2. The oven, with the openings for introducing and withdrawing the glass-ware, in combination with the transverse partition Q and the fire-chamber C, substantially as described.

3. The partition, with a space below its edge and a gate hung at its bottom, in combination with the oven, having the form of a circular tunnel, whereby the fire is diffused over the glass, substantially as described.

4. The revolving pan K, having a lining of clay to hasten the heat at the bottom of the pan, in the process of annealing glass, substantially as described.

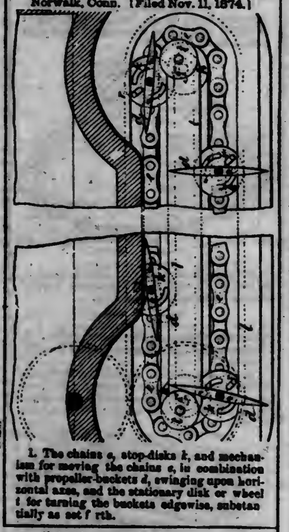
5. The fire-chamber, located in the specified relation to the receiving-passage B', for the purpose of heating the clay-pan preparatory to placing the glass upon the pan, substantially as described.

6. The hinged gate E, for preventing the air passing upon the heated glass in the direction of the motion of the pan, substantially as described.

7. The chimney F', in combination with the chimney F and the oven and fire-chamber, substantially as described.

8. The revolving shaft with its pan, substantially as and for the purposes described.

164,633. CHAIN-PROPELLERS. E. B. Austin, Norwalk, Conn. [Filed Nov. 11, 1874.]



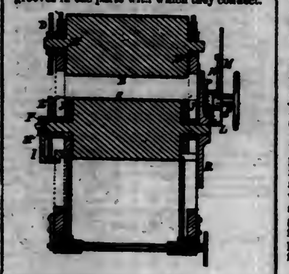
1. The chains a, stop-disks b, and mechanism for moving the chains a, in combination with propeller-buckets d, swinging upon horizontal axes, and the stationary disk or wheel f for turning the buckets edgewise, substantially as set forth.



2. The disk b, made to turn upon the same axes as the buckets, and provided with stops for such buckets, in combination with the chain c, secondary chain f, and arms r, for turning said stop-disks b, substantially as set forth.

164,634. PLANING-MACHINES. R. Benjamin, Chicago, Ill., assignor of one-half his right to Samuel W. Pease, same place. [Filed Apr. 19, 1875.]

Brief.—The wear of the joints of the expansion-gear, except in the adjustment of the rollers, is obviated by means of connecting-bars provided with annular projections on their inner faces, which fit in corresponding grooves in the parts with which they connect.

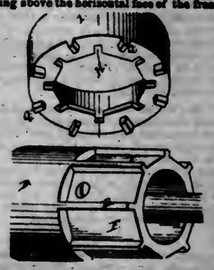


1. The bar F, provided with annular bearing H H, in combination with the bar f, bridge I, gearing D Z X E, and rollers B C, as set forth.

2. The lever M I, carrying the pinions P S, in combination with the bridge I, carriage J, spur-wheel E, rollers B C, and rack N, as and for the purpose specified.

164,635. SEEDING-MACHINES. J. R. Rushnell, Fond du Lac, Wis. [Filed May 13, 1875.]

Brief.—The feeding-cylinder is made of two different diameters, the larger one being provided with vertical radial flanges upon its grain face, and the smaller portion with horizontal flanges, upon a portion of its exterior surface, with recesses between said flanges. The lower portion of the seed-cup is provided with a shoulder, that converges inwardly and laterally from its center to the point where the seed is discharged, and also having its concave interior converging from the upper inner edge downwardly to its longitudinal center. The semicircular dial-plate is provided with a finger secured to the frame parallel with the driving-shaft, and has its straight edge projecting above the horizontal face of the frame.



1. In a seeding-machine, a combined horizontal and vertical force-feed, consisting of a cylinder of two different diameters, the larger portion being provided with vertical radial flanges or projections upon its grain-face, and the smaller portion being provided, with horizontal flanges upon a portion of its exterior surface, with recesses between said flanges, substantially as and for the purpose set forth.

2. The cylinder D, provided with the horizontal flanges E and recesses F, and adapted to be adjusted longitudinally with the driving-shaft C, in combination with the annular rim or hollow cylinder I, having the radial flanges or projections Q and recesses H, substantially as and for the purposes set forth.

3. The lower portion of the seed cup or case K, having the shoulder R, which converges inwardly and laterally from its center or point S to the point where the seed is discharged, and also having its concave interior surface converging from the upper inner edge downwardly to its longitudinal center, or in line with the point S, in combination with the cylinder D and hollow cylinder I, substantially as and for the purposes set forth.

4. The dial-plate b, secured to the frame A parallel with the driving-shaft C, and having its upper edge adapted to form a guide for the adjusting-arm U, in combination with the adjusting-arm U, adjustably secured to the frame A and connected to the driving-shaft C, substantially as and for the purposes set forth.

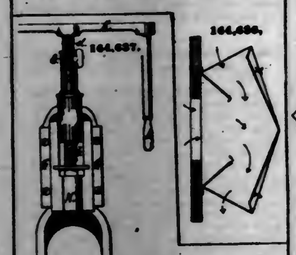
5. The semicircular dial-plate b, provided with the finger a and secured to the frame A parallel with the driving-shaft C, and having its straight edge projecting above the horizontal face of that portion of the frame to which it is attached, in combination with the adjusting-arm U, provided with the slot X, groove W, yoke Y, and rib Z, secured to the frame A, connected to the driving-shaft C, and provided with the lever f, substantially as and for the purposes set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

164,636. SIDE-WALL VENTILATORS. Wm. G. Cressmer, Brooklyn, N. Y. [Filed Nov. 17, 1874.]

Brief.—This ventilator is stationary in all its parts, and by the movement of the car or boat to which it is attached, and the passage of a current of air through the apertures in either direction, or when the car is stationary, and the wind blowing at right angles with the side of the car or boat, shall produce an outward current from the inside of the car or boat.

The two side deflectors, with the covering-top and bottom, in connection with outer deflecting covering, substantially as shown.



164,637. SCREW-PRESSES. Jos. H. Clapp, Providence, R. I. [Filed May 6, 1875.]

Brief.—The screw of a fly-press is provided at its upper end with a fine screw-thread than that which operates the die, upon which is placed an open nut, threaded to correspond, and clamped at any point by a set-screw, said nut acting as a stop.

1. The combination of the screw-spindle, having a screw-thread of the usual pitch for screw die-presses, and above the same a screw, either right or left handed, having less pitch, with the concentric sleeve-stop O and the clamp E F, as and for the purposes set forth.

2. In combination with the screw-spindle b, the nut-barrel A, the stop C, the fine screw-thread d, and cross-head F, the adjustable slides g g, substantially as described.

164,638. SCREW-DRIVERS. I. C. Cowles, Syracuse, N. Y. [Filed Oct. 21, 1874.]

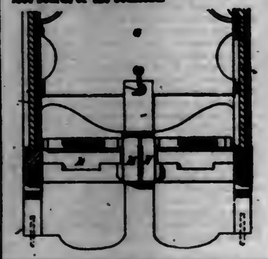
Brief.—The blade of a screw-driver is provided with two curved cutting-edges for tipping screws and cutting thread.



The screw-driver herein described, consisting of a blade provided upon each of its sides with the cutting-edges A A, when constructed to operate as shown, and for the purposes set forth.

164,639. COMBINED CRADLES AND BEDSTEADS. Curtis W. Chamberlain, Denver, Colo. [Filed May 14, 1875.]

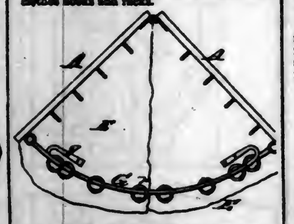
Brief.—By the removal of the end pieces and rockers, the end rails can be extended to form the side rails of the bedstead, the side pieces of the cradle becoming the head and foot boards of the bedstead.



A combined cradle and bedstead, composed of the side pieces A A, end rails H H, end pieces G G, and anchor-shaped rockers I I, constructed to permit the removal of the end pieces G G and anchor-shaped rockers I I, and the extension of the hinged end rails H H, substantially as and for the purposes set forth.

164,640. WARDROBES. Melville B. Coburn, Bull's Dale, Pa. [Filed Oct. 3, 1874.]

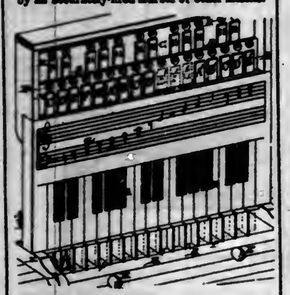
Brief.—Two hinged arms provided with pivoted detachable curtain-bows, having hooked or looped ends. Said arms are provided with clothes hooks and racks.



A wardrobe consisting of hinged arms A A, pivoted bows G G, and curtains E, combined substantially as described.

164,641. MUSICAL-GAME APPARATUS. E. Deagre, London, Canada. [Filed Dec. 22, 1874.]

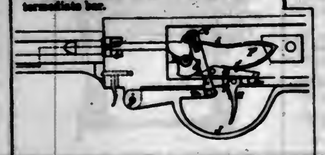
Brief.—A series of spring-sliders answering to the keys of a piano are arranged in a vertical frame, and each slider may be disengaged by an accurately-fired marble or other missile.



The apparatus described and shown, consisting of the slides B B, with the letters of the musical scale placed thereon, and the springs I I attached thereto, the tuned bells D D, or their equivalents, the balls E E, the guards F F, the cross-bars H H, and the supports L L, in combination with a musical staff and key-board, as shown, when constructed and arranged substantially as described, and for the purpose set forth.

164,642. BREECH-LOADING FIRE-ARMS. Bernard Fraenkl, Albany, N. Y. [Filed Dec. 4, 1874.]

Brief.—The firing-pin is provided at its front end with an enlarged head, which works in a recess in the frame of the breech. The force of the exploding cap upon this head forces the firing-pin back against the hammer, and cocks the same. The gun may also be cocked by throwing down the guard-lever, which is connected to the hammer by an intermediate bar.



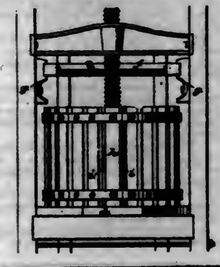
1. The combination, with the car A and the movable platform B, of a portable trestle, whereby the device is adapted to the carrying forward of an excavation, such as sewers, cuts, laying of pipes, &c., substantially as and for the purpose described.

2. The combination, with the movable platform B' and the standards D, of the slits E, extending across the excavation at the bottom of each standard, and uniting the base of the said standards, whereby the gage of the tracks C' is maintained, substantially as and for the purpose described.

3. The combination, with the movable platform B' and the standards D, of the slits D' and braces F, substantially as and for the purpose described

164,644. CHEESE-MILLS. Thos. A. Galt and George S. Tracy, Sterling, Ill. [Filed Apr. 20, 1875.]

Brief.—The follower and screw-nut detachably connected by buttons on the former overlapping a flange on the latter. A strong casting on each front post receives in a recess the side beams, and is curved inwardly to hold down in its place the receiver.



1. The clamps l l, constructed substantially as and for the purpose described.

2. The brackets g g, substantially as and for the purpose specified.

3. The receiver h, follower i, clamps l l, brackets g g in combination with the press-screw, substantially as and for the purpose mentioned.

164,645. VALVES FOR WATER-TANKS. Jos. Hadfield, New York, N. Y. [Filed Apr. 9, 1875.]

Brief.—When the water in the tank falls below the desired point, the float descends, carrying with it the valve on the end of the rod attached to it. Water from the reservoir raises the leather disk, and discharges through the orifices beneath it. When the water reaches the proper height in the tank, the small valve is closed, water passes through the small hole in the disk, fills the space above it, presses the same upon the orifices beneath it, and cuts off the supply of water.



The combination, with the float F, valve-rod f, and valve h, of the upper-piece C, having waste-outlets c, and the leather disk D, with central opening e, and plate A, having openings a, and supply-pipe B, substantially as and for the purpose set forth.

164,646. BOOK-CLASPS. Newton Marion, Washington, D. C. [Filed Nov. 20, 1874.]

Brief.—The hasp is made in two sections, each screw-threaded, the upper one being adjustable within the lower one, and connecting with a lock secured to one of the covers, while the lower section is pivoted to a plate connected to the opposite cover. When the book is unlocked the hasp can be folded down parallel with the cover, so as to not obstruct the manipulation of the leaves.



1. In a book-locking clasp, the combination of the extensible stem D with its screw-threaded receiving-sleeve A, whereby the fastening-stem is inclosed, braced, and made adjustable within said receiving-sleeve to suit books of different thicknesses, constructed and arranged substantially as described, for the purpose specified.

2. In a book-locking clasp, the hasp A, pivoted to its attaching-plate, whereby it may be folded down parallel with the book-cover, so as not to obstruct the manipulation of the leaves, substantially as described.

3. The combination, in a book-locking clasp, of the extensible stem D and pivoted receiving-sleeve A with the lock B, all constructed and arranged substantially as described, for the purpose specified.

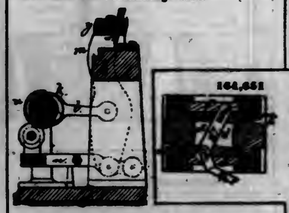
164,647. PROCESSES FOR PRINTING IN COLORS. Winslow H. Holmes, Hastings, Mich. [Filed Jan. 20, 1874.]

Brief.—For printing two or more colors from one plate or form. Impression in first color is taken from the whole form upon the surface of sheets secured to the platen, from which are then cut out such parts of the design as are to be printed in another color; the sheets or cards in printing them receiving no impression over the cut-out portions of the platen. For the second color, from new platen-sheets the parts printed in the first color are cut out.

The within-described process of printing in two or more colors from one plate, block, or form by cutting away certain parts of the plate-sheets, so as to prevent any impression from being taken of the corresponding parts of the plate, block, or form, substantially as herein set forth.

164,648. COMB-CUTTING MACHINES. John W. Hyatt and Isaiah Smith Hyatt, Newark, N. J. [Filed Nov. 11, 1874.]

Brief.—The teeth of the comb are cut by tools held in an oscillating frame.



1. In a comb-cutting machine, a series of engraving-tools contained within a head, in combination with a rest for the comb and mechanism for giving motion to the tools and head, substantially as set forth.

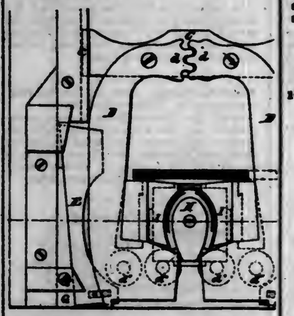
2. The combination of the engraving tools or cutters w, head y, frames m e, screw sectional cone u, and eccentrics b, connecting the vibrating frame with the main shaft, substantially as set forth.

3. The arrangement in a comb-cutting machine of two sets of engraving-tools in reverse positions, in combination with a rest for holding two combs in similar positions, substantially as and for the purposes set forth.

4. In a comb-cutting machine a series of engraving-tools in a head that swings upon centers located at the opposite side of the comb to the cutters, substantially as set forth.

164,649. MACHINES FOR BENDING HORSE-SHOES. Harrison Levy, Millesburg, Pa. [Filed Feb. 18, 1875.]

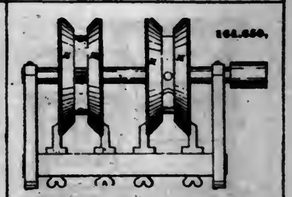
Brief.—Pivoted to a reciprocating bar are two arms, toothed at their lower ends, which carry the rollers that bend the bar around the former. Removable dies for clamping and holding the bent shoe around the former, while it is being swaged and punched, are also carried by said arms.



In a horseshoe-machine, the combination, as herein described and shown, of the cross-bar C, pivoted arms D D, provided with teeth at d, and carrying rollers d' d'', removable dies I I, die H, and adjustable guides E E, said parts being constructed for joint operation, as set forth.

164,650. MOLDING-MACHINES. J. B. Locke, Amesbury, Mass. [Filed May 7, 1872.]

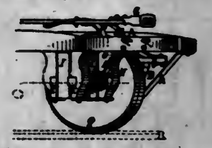
Brief.—Two adjustable rings surround the cutter-head upon its opposite ends, so that a greater or less width of its cutting-edge may be exposed.



The circular adjustable rests M M, operated in slot O by means of thumb-screws N N, substantially as described.

164,651. CAR-TRUCKS. C. W. Mansfield, Braintree, Mass. [Filed May 26, 1875.]

Brief.—The draw-bar is connected with tapering sliding pieces, and by pulling them forces the bearing-blocks sidewise, so as to turn the inner ends of the divided axle, and accommodate the wheel to the curvature of the track.



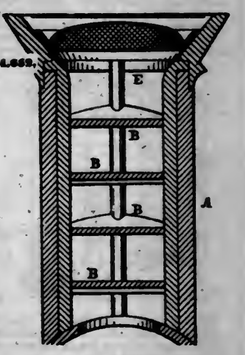
1. In combination with the wheel Q, mounted upon an independent axle, the swiveling box F, sliding boxes I I, key-bars K K', lever d, arms O P, and draw-bar G, combined to operate substantially as set forth.

2. The auxiliary lever R, in combination with the bar G and swiveling box F, substantially as set forth and specified.

164,652. SMOKE-STACKS. John L. Mason, New Brunswick, N. J. [Filed Oct. 31, 1874.]

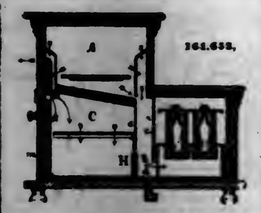
1. The combination, with the smoke-stack A of a locomotive engine, of the series of shelves B, projecting inwardly and overhanging one another and inclined toward the bottom of the stack, substantially as and for the purpose set forth.

2. The shelves B and uprights E, connected to each other and made removable from the stack A, substantially as and for the purpose set forth.



164,653. REFRIGERATORS. John L. Mason, New Brunswick, and Andw. Sinclair and J. M. Sinclair, Camden, assignors to John L. Mason, New Brunswick, N. J. [Filed July 27, 1874.]

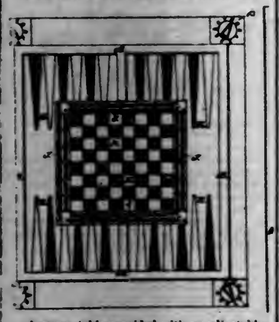
Brief.—Both food-chambers receive cool air from a common ice-box, and may be cleaned by use of the side door and a central bottom passage between them.



164,653.

The ice-chamber A, the two receiving-chambers C D, and the partition c, with a space, d, below it, in combination with the partition e, having a door, H, at its bottom, in line with the door m of the chamber, and the space d below the partition e, substantially as and for the purpose set forth.

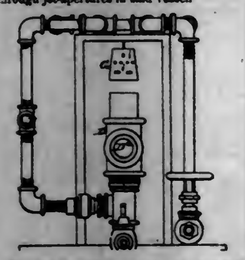
164,654. GAME-TABLES. N. W. Moulton, New York, N. Y. [Filed Apr. 27, 1875.]



A game-table provided with an adjustable border, A, backgammon-board E, checker-board K, counters G, and cribbage-counters J, the whole constructed and arranged to operate substantially as and for the purpose specified.

164,655. HYDROCARBON-BURNERS. John W. Neeley, Petrolia, Pa. [Filed July 26, 1874.]

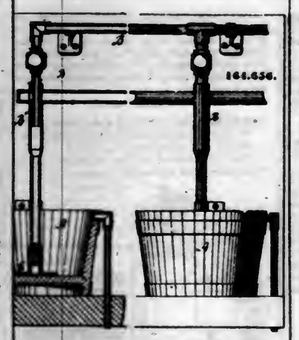
Brief.—A perforated bell-shaped inverted vessel is suspended over superheated steam, air, and oil nozzle, whereby the gas emanating from the nozzles is disseminated in the furnace through jet-apertures in said vessel.



The bell-shaped generator and burner G, provided with apertures f, in combination with the oil, steam, and air pipes, as described, and for the purposes set forth.

164,656. APPARATUS FOR TEMPERING FILES. Wm. T. Nicholson, Providence, R. I., assignor to the Nicholson File Company, same place. [Filed May 17, 1875.]

Brief.—Injects cool air into the incoming stream of tempering material, and through a distributer (which may be a perforated bulb) at the bottom of the vat.

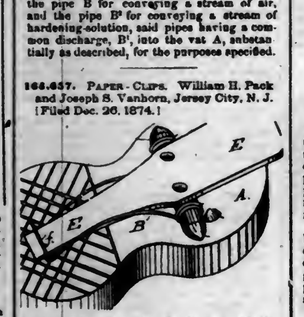


164,656.

1. The combination of an air-pipe, B, whether with or without a distributer, C, and a vat, A, containing a hardening-solution, whereby the particles of the solution are kept in constant agitation to produce uniformity of temperature and quality, substantially as described.

2. The combination of a vat, A, for containing a bath for hardening heated steel articles, the pipe B for conveying a stream of air, and the pipe B^1 for conveying a stream of hardening-solution, said pipes having a common discharge, B^1, into the vat A, substantially as described, for the purposes specified.

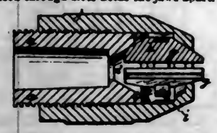
164,657. PAPER-CLIPS. William H. Pack and Joseph S. Vanhorn, Jersey City, N. J. [Filed Dec. 26, 1874.]



In combination with the base A and the doubled spring B, fastened to such base, the lever E, having its forward end projecting beneath the double *f* of the spring, and its rear end serving as its lifting-handle.

164,658. CHUCKS. Chas. H. Powers, Philadelphia, Pa. [Filed Jan. 4, 1875.]

Brief.—The jaws are forced forward by the plunger, and held from revolving with it by grooves in the outer shell, being guided at their inner ends by a slotted piece, which is swiveled in the plunger. A circular spring passed through slots holds the jaws apart.



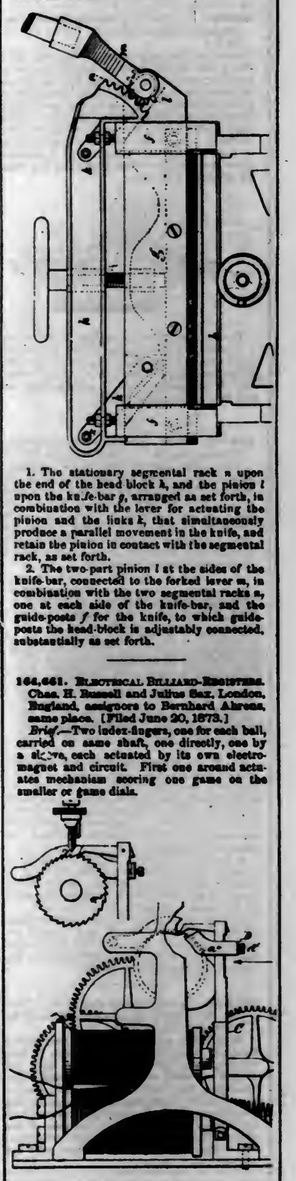
The plunger a, provided with a seat, b, and a conical recess, d, the back-guide e, the jaws f, spring i, and the nut or sleeve j, provided with radial slots s, in combination, as and for the purpose set forth.

164,659. PROCESSES OF PREPARING PICKLES. Isaac Beckhow and William H. Stafford, Brooklyn, N. Y. [Filed May 17, 1875.]

The process of preparing pickles by first salting and washing them, then soaking them in alum solution, and finally coloring by saccharine matter in vinegar, substantially as described.

164,660. PAPER-CUTTING MACHINES. Wm. I. Reid, Palmyra, N. Y., assignor to W. B. Smith, Omaha, Nebr. [Filed Oct. 8, 1874.]

Brief.—The knife is operated through the medium of a lever and twin pinions having the same axis, and attached to one end of the knife-bar. The pinions mesh into a twin segmental rack attached to or forming a part of the head-block.



1. The stationary segmental rack n upon the end of the head-block h, and the pinion l upon the knife-bar g, arranged as set forth, in combination with the lever for actuating the pinion and the links k, that simultaneously produce a parallel movement in the knife, and retain the pinion in contact with the segmental rack, as set forth.

2. The two-part pinion l at the sides of the knife-bar, connected to the forked lever m, in combination with the two segmental racks n, one at each side of the knife-bar, and the guide-posts f for the knife, to which guide-posts the head-block is adjustably connected, substantially as set forth.

164,661. ELECTRICAL BILLIARD-REGISTERS. Chas. H. Russell and Julius Sax, London, England, assignors to Bernhard Ahrens, same place. [Filed June 20, 1873.]

Brief.—Two index-fingers, one for each ball, carried on same shaft, one directly, one by a sleeve, each actuated by its own electro-magnet and circuit. First one around actuates mechanism scoring one game on the smaller or game dials.

1. The combination of the armature-levers C G, the intermediate gearing c^1 c^2, and the index-hands, substantially as described.

2. The combination of the armature-levers, the intermediate gearing, and the index-hands, with the game-recording mechanism, consisting, essentially, of the loose pulley M with its disks and stops, the intermediate gearing, and the recording dial and index, as described.

3. The combination of the pusher-lever C, and the stop d^3 for limiting its backward movement, as described.

4. The combination of the pusher-lever C, and the stop d^3 for limiting its forward movement, substantially as described.

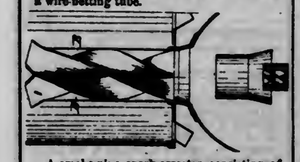
5. The combination of the pusher-lever C, and the stops d^3 d^4 for limiting its forward and backward movement.

6. The combination of the index-hands c^1 c^2, and the gearing c^1 c^2, having the weight E, as described.

7. The combination of the studs N, the spring-stops n^1, the loose pinion M, and the connecting-gearing, as described.

164,662. SPARK-ARRESTERS. Wm. Stamp, Susquehanna Depot, Pa. [Filed Nov. 21, 1874.]

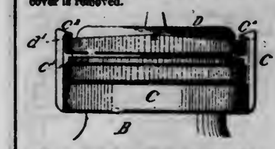
Brief.—A spirally-partitioned pipe is placed in the uptake of a boiler-furnace, whereby the sparks and cinders are given a rotary motion, and are trapped at the sides of the stack by a wire-netting tube.



A smoke-pipe spark-arrester, consisting of the spirally-channeled inside pipe B, outside pipe or case C, and outlet-tube D, combined as and for the purpose set forth.

164,663. FRUIT-JARS. David B. Stevens and Richard F. Lumley, Newark, Ohio. [Filed Mar. 12, 1875.]

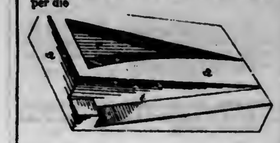
Brief.—A spring-clamp or spanner, with upwardly-projecting lugs, is attached to the neck of the jar below the rim, so as to turn about the neck, and remain in place when the cover is removed.



The combination of lid D, provided with inclined portion *d*, slots d^1, and handle d^2, and clamp C^2 C^3, securely attached to the neck B of the jar A, and a permanent fixture thereof, as and for the purposes described.

164,664. DIES FOR MAKING LAND-SIDES FOR PLOWS. Charles H. Thompson, Moline, Ill. [Filed June 3, 1874.]

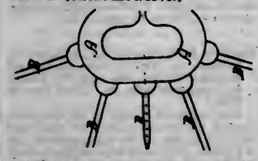
Brief.—The lower die is formed with a wedge-shaped recess, which gradually deepens until near the sharp end, where it suddenly deepens, so as to form the point of the land-side. The bottom of the recess is made with a triangular groove, in which is formed the ridge upon the upper inner edge of the land-side. In the side of the said die is another recess, corresponding to the shape of the land-side, in which the share and land-side are welded together by the action of the upper die



1. Dies for forming land-sides, constructed with the herein-described recess for making the land-side and the recess and raised ridge upon the die and die-head, respectively, for welding the land-side formed in the first-named recess to the share, substantially as shown and set forth.

2. The die *a*, having the recess *c* and triangular groove *g*, extending along the curved side of said recess *c* for forming a raised flange on the side of the land-side, substantially as herein shown and specified.

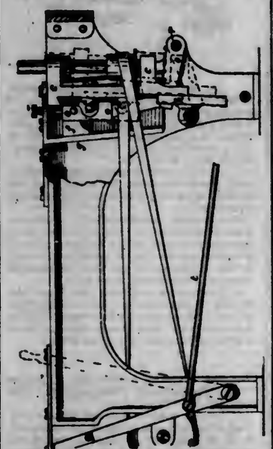
164,665. INSTRUMENTS TO PREVENT CALVES FROM SUCKING. Emilie Tilton, Atlantic, Iowa. [Filed June 1, 1875.]



A clasp or instrument, A, composed of an elastic material, and having pointed projections B B elastically embedded therein, substantially as and for the purpose herein specified.

164,666. PLANING-MACHINES. Charles R. Tompkins, Rochester, N. Y. [Filed Apr. 13, 1875.]

Brief.—The matcher heads are made vertically adjustable, for the purpose of changing the machine from a matcher to a surfacing-machine, and vice versa, without altering the position of the matcher-heads with reference to the width of the material being operated upon, stopping the machine or removing the belts.



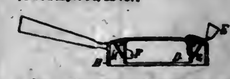
1. The bar *e*, provided with the projecting points *e*, in combination with the adjusting-screws *w*, for regulating the vertical movement of the matcher-heads, substantially as and for the purposes shown and described.

2. The oblique slides *g* and pivoted blocks *f*, in combination with the bar *e*, oscillating slides *h*, and spindle carriers *e*, substantially as shown and described.

3. The combination and arrangement of the yoke *n*, screw *j*, gears *k k*, shaft *l*, and pivotal box *m*, as and for the purpose specified.

4. The combination, with the bar *e*, carrying the matching cutter-heads of a planing and matching machine, of the rock-shaft *r*, provided with arms *o o*, the arm *u*, rod *t*, and lever *s*, substantially as shown and described, for the purpose set forth.

164,667. CAKE-CUTTERS. James H. Winslow, Lynn, Mass., assignor of two-thirds his right to May & Withey, same place. [Filed Apr. 14, 1875.]



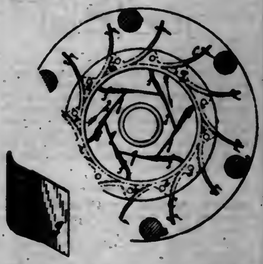
1. In a cake-cutter, substantially such as described, the knife D, provided with the handle E, arranged to operate substantially as and for the purpose specified.

2. In a cake-cutter, substantially such as described, the pin F, in combination with the knife D, and handle E, substantially as and for the purpose set forth.

3. In a cake-cutter, substantially such as described, the knives B D and presser C, combined to operate substantially as and for the purpose stated.

164,668. TURBINE WATER-WHEELS. Geo. Arrowsmith, Buffalo, N. Y. [Filed Apr. 20, 1875.]

Brief.—Each bucket is provided with an auxiliary spring, which projects forward, and when the latter are in position in the wheel they are converted into spring-buckets, which, projecting forward from the main buckets, meet or almost meet the back of the adjacent buckets, whereby a back action of the water is secured, and when the pressure of water is too great, the spring auxiliary buckets will open and permit the passage of the surplus water, and when the pressure which effects this has been removed the auxiliary buckets resume their position.



The buckets *f*, provided with the springs *g*, projecting forwardly from and beyond the ends of the buckets, substantially as described, whereby, when the buckets are in position in the wheel, the said springs will form auxiliary buckets, and, projecting forward, will meet, or almost meet, the back of the adjacent bucket, for the object herein stated.

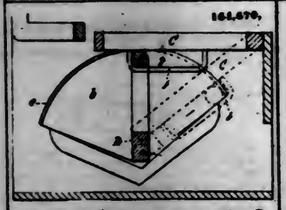
164,669. LAMPS. James S. Atterbury and Thos. S. Atterbury, Pittsburg, Pa. [Filed Apr. 19, 1875.]



The article of glassware having a pressed glass foot or standard terminated with a rounded convex form at its upper end, and a glass bowl blown upon said rounded end of the foot, the article thus produced being solely of glass, and the requisite tight joint formed by a union of the glass, as set forth.

164,670. DROP-GRATES FOR COOKING-RANGES. John B. Baum, Freeland, Pa. [Filed Apr. 8, 1875.]

164,670.

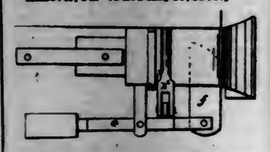


1. The combination of the crank-bar D, (shown in Figs. 2, 3, 4, and 5,) having elbows or stops *b b* and pins *d d*, with the grate C, substantially as and for the purpose set forth.

2. The side plates B B, having recesses *e e*, in combination with the elbows *b b* of the crank-bar D, whereby the elbows are cut of the way, and the jamming of coal or cinders between them and the side plates is avoided, substantially as set forth.

3. The yoke *f*, forming slots or openings *g*, in combination with the crank-bar D, substantially in the manner and for the purpose set forth.

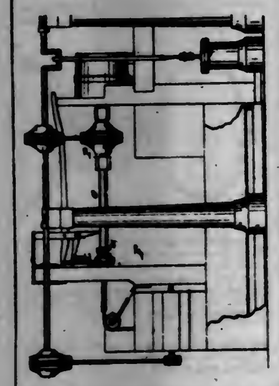
164,671. CAR-COUPLINGS. Chas. Bowman, Hanover, Pa. [Filed May 10, 1875.]



The herein-described self-coupling and self-uncoupling device, constructed with a lever-bar, *c*, carrying at one end the key *f*, and at the other a weight, arranged to rest upon the truck-frame, as described, whereby the said lever may be operated for the purpose of uncoupling cars either by arms *h h'* or by an upward tilt of the truck-frame; substantially as shown and specified.

164,672. APPARATUS FOR PURIFYING PARAFFINE, &c. Francis X. Byerley, Cleveland, Ohio. [Filed Sept. 14, 1874.]

Brief.—Each crystallizing-cylinder has a removable solid bottom, below which is a strainer. After crystallization the solid bottom is removed by a cord passing out at the top of the cylinder, and the liquid is allowed to drain off. The shaft, bearing the knife for cutting crystallized paraffine, has a screw-thread where it passes through a divided nut, which causes the shaft to advance as it turns. The divided nut is automatically opened, and allows the shaft to be drawn back by a cord and weight.



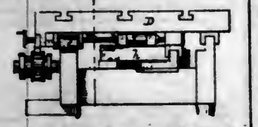
1. In an apparatus for crystallizing and purifying paraffine and the like, the crystallizing-tank F, provided with a perforated bottom, in combination with straining-cylinders L, provided with removable bottoms, substantially as and for the purpose described.

2. The within-described method of purifying and crystallizing paraffine and the like, consisting in crystallizing the substance in closed cylinders by heat or cold, and straining off the waste, then purifying such crystallized substance in a receiver having a filter-bottom, with the proper solvents, substantially as specified.

3. The shaft G, knife H, divided nut *k*, tongs I, jointed lever *l*, spring *t*, worm-screw stop *m*, and right angle lever *n*, weight and cord O, and pulley P, all combined, and operating as and for the purpose set forth.

164,673. MACHINES FOR PUNCHING BOILER-PLATES. De Witt C. Carroll and David Rogers, Pittsburg, and Alex. W. Foster, Jr., Temperanceville, Pa. [Filed Apr. 16, 1875.]

Brief.—Table, supported by the side pieces through the medium of swiveled blocks and rolls, has a rack on one edge, meshing with box-pinion, which latter is spined to the shaft, and is free to slide thereon as it may be impelled by the rack when the bed is moving in a circle. Table is guided by the parallel way, and an adjustable way placed oblique thereto, and the point at which the table is arrested for the descent of the punch is indicated by a rack-bar oblique to the ways, and a long pawl that co-operates therewith; and in order that the rack-bar and pawl may be made to indicate different orders of intervals between the holes to be punched, the pawl is made long and capable of adjustment to different angles to the rack-bar, it being hinged to the end of an arm, which at the other end is swiveled to an adjusting-screw.



The feed-table D and the driving mechanism for imparting to the table a forward motion on the main guide-rail, in combination with a guide attached to said table, and playing on an inclined guide-rail for giving the table a swinging motion in its forward travel, substantially as set forth.

2. A pinion, moving laterally on its driving-shaft, in combination with a toothed rack and horizontally-swinging feed-table, substantially as set forth.

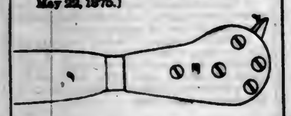
3. A toothed rack-bar, fixedly secured in place, in combination with a pivoted pawl, whereby the angle of the engaging edge of the pawl with the line of the rack-teeth may, by the adjustment of the pawl, be varied at pleasure, substantially as set forth.

4. The vertically-swinging pawl A, attached to, and in combination with, a horizontally-swinging block, *g*, and with suitable devices for setting the latter at any desired point of adjustment, substantially as set forth.

164,674. MEDICAL COMPOUNDS. J. Cooper, San Francisco, Cal. [Filed Sept. 30, 1874.]

A medical compound consisting of an extract from the leaves of the yerba santa, procured by boiling them in diluted alcohol, and an alcoholic extract from the buds or flowers of the *Grindelia robusta*, mixed in equal proportions, substantially as and for the purpose set forth.

164,675. SHIPS-KNEES. Henry S. Cushman, Milford, Mass., assignor to himself and James B. Cross, same place. [Filed May 22, 1875.]

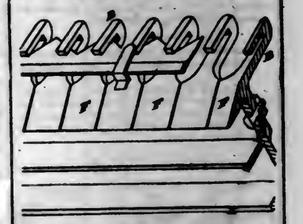


1. A shoe-knife composed of the handle D, and plate-jaws B C, and a blade, A, secured between such jaws, near their outer ends, by screws, as described, and arranged obliquely with reference to the jaws, all essentially as represented.

2. The plate-jaws B C, rounded or molded to serve as a cutting guide or gage, and provided with a handle, D, as set forth, in combination with the blade A, arranged obliquely between such jaws, and secured to them by clamp-screws, all as specified.

164,676. FINGER-BARS FOR HARVESTERS. Victor N. Collins, Nordhoff, Cal. [Filed Apr. 27, 1875.]

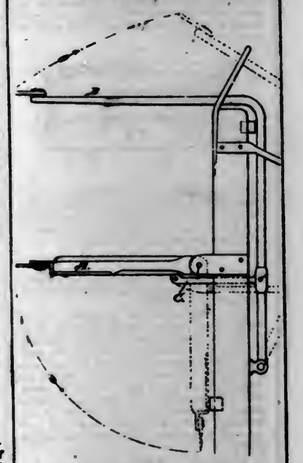
Brief.—Improvement in construction on Patent No. 146,804; separately detachable guard-fingers having a rearward extension projecting beyond the bar, to form the wall of the guide for the carrier-belt.



The guard or finger B, having formed with it the projection F, which serves to secure the position of the fingers on the bar, and acts as a wall for the carrier-guide, and the projecting lugs C, by which it is secured to the finger-bar, substantially as herein described.

164,677. MAIL-BAG CATCHER. Herman M. Dick, Shelby, Ohio. [Filed July 7, 1874.]

Brief.—Removal of bag destroys balance of parts, when lower arm drops down in front and upper arm slides over behind. Thus the apparatus is removed by its own gravity out of reach of passing trains.



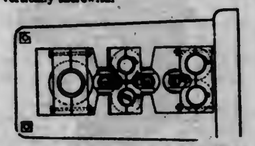
The mail-bag discharger, composed of the hinged arms A B and the toggle-arm C, the whole constructed to operate in the manner substantially as described.

164,678. BROOM-DRESSINGS FOR LEATHER. Edwd. H. Fennessy, Newton, Mass. [Filed May 21, 1875.]

A bronze leather-dressing, consisting of one or more aniline colors and gelatine or other suitable gum compounded with acid, substantially as described.

164,679. ROLLING-MILLS. Ignatius Hahn, Pittsburg, Pa. [Filed Apr. 6, 1875.]

Brief.—Two work-rolls connected by an adjustable link cause one roll to properly impinge against the brace-rolls, and be adjusted vertically therewith.

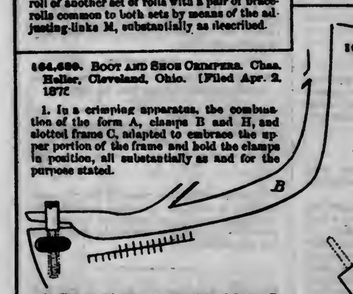


1. The combination, with the two brace-rolls, of a work-roll suspended by adjusting-links, whereby the work-roll will at all times align itself properly, and be held in contact with the brace-rolls, substantially as specified.

2. The combination of the upper working-roll of one set of rolls and the lower working-roll of another set of rolls with a pair of brace-rolls common to both sets by means of the adjusting-links M, substantially as described.

164,680. BOOT AND SHOE CRIMPERS. Chas. Heller, Cleveland, Ohio. [Filed Apr. 2, 1875.]

1. In a crimping apparatus, the combination of the form A, clamps B and H, and slotted frame C, adapted to embrace the upper portion of the frame and hold the clamps in position, all substantially as and for the purpose stated.



2. The combination of the slotted frame C, pivoted to the forward clamp, and holding the rear clamp by means of a thumb-screw, with the clamps B and H, as shown and described.

164,681. STREET-LAMPS. John Henrich, Buffalo, N. Y. [Filed June 7, 1875.]



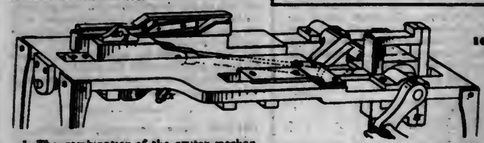
1. The combination, with a lamp-body, A, of the perforated dome B, perforated inner chamber D, annular space F, and the duct G, all arranged and constructed substantially as described, and for the use and purpose set forth.

2. The combination, with the dome B, of the annular space F and a series of conduits, I, arranged within the lamp-body A, substantially in the manner and for the use and purpose as set forth and described.

3. The combination, with the lamp-body A, of the perforated dome B, provided with the conduits I, inner perforated shell D, arranged to produce the annular space F, conduits I, deflector K, and the upper dome-extension H, provided with the duct G, the whole when constructed and arranged substantially as described, for the use and purpose set forth.

164,682. MACHINES FOR FORMING LIPS. John Henry Helm, Allegheny, Pa. [Filed May 12, 1875.]

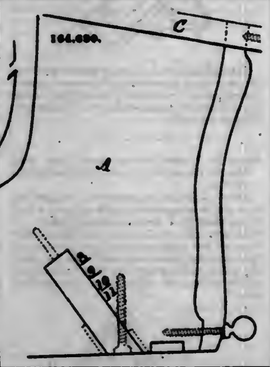
Brief.—A mandrel in the carrier D is reciprocated by cranks, and is projected below the lower face of the machine (all the bending and cutting devices being on said lower face) on its forward movement, in order to bend the blank supported by the bending-levers, and withdrawn on its back stroke, to pass over the next blank by means of pin riding over and under the cam or switch.



164,683.

1. The combination of the switch mechanism with the traversing die B and its carrier, for the purpose of raising said die in its carrier on its rearward movement, to pass over the blank which was previously fed in and is to form the next succeeding link, substantially as described and represented.

2. The combination of the cutters *e f*, guide and gage *g*, traversing die B, and bending-levers K K, as and for the purpose described and represented.



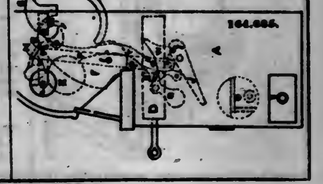
3. The combination of the traversing die B, the bend-die L, and the double-hinged dies L L, as at *a a*, with their spurs and recesses, for lapping the beveled ends of the blank, as and for the purpose described and represented.

4. The combination of the yielding holder 9 with the reciprocating and rising and falling die B, as and for the purpose described and represented.

164,684. STEP-LADDERS. R. G. Hildreth, Wilmington, Del. [Filed Dec. 29, 1874.]

Brief.—The metallic bands that unite the upper section to the lower section are formed so as to permit the lower end of the upper section, when retracted, to be thrown out, to form a brace prop for the ladder. The spring-catches hold the parts extended by engaging on the upper edge of the metallic bands.

164,685.



1. The combination of the L-irons B' with sections A' and A', for holding the sections together, guiding them in the expansion and contraction of said sections, and holding section A' in the position seen in Figs. 1 and 2, substantially as set forth.

2. The combination and arrangement of the spring-catches C and C', respectively, with the sections A' and A', and the clasping-irons B and B', whereby, when either section is brought to its elevated position, its spring-catches are caused to rest upon the upper edges of the clasping-irons of the next section beneath it, to hold it in its elevated position, substantially as set forth.

3. The combination of section A', having pins *a' a'*, with section A', having irons B' B', provided with flanges *c c*, constructed and arranged substantially as set forth, whereby the ladder is held firmly in a secure position.

164,686. COMPOUNDS FOR SIZING PAPER. James Hogben, Cleveland, Ohio. [Filed Apr. 14, 1875.]

Brief.—Soda-ash, three hundred pounds; salt, five pounds; linseed-oil, two gallons; silicate soda, thirty-six gallons; resin, twelve hundred pounds.

The herein-described compound for sizing paper, consisting of the ingredients specified, viz., soda-ash, carbonate of soda, resin, chloride of sodium, linseed-oil, and silicate of soda, or their equivalents, in about the proportions set forth, and compounded in the manner substantially as described, and for the purpose specified.

164,687. FARE-BOXES. Asa B. Hovey, San Francisco, Cal. [Filed Mar. 13, 1875.]

Brief.—The passenger depresses the counter, sounding a gong, when the driver, operating the inspection-plate, drops the previous fare onto the second inspection-plate, and, throwing back the apron, opens the passage to the first inspection-plate, and closes the one to the second. If the fare is incorrect, the passenger may pass his hand over the counter and remove the fare from the first inspection-plate. If the driver does not operate the apron, the fare will fall onto the curved tray before the passenger, who can recover it. All having paid, the driver operates the second inspection-plate, depositing the fares into the locked drawer.

1. The fare-box A, provided with a sliding tray, D, counter G, and apron F, operating together in the manner described, for the purpose of receiving fares.

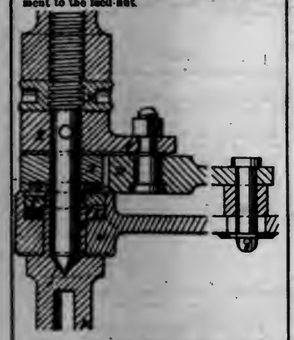
2. The swinging cover J, with its pin *j*, in combination with the arms T and W, operating together, for the purpose of closing the passage to deposited fares when the apron is thrown back, substantially as described.

3. The combination of the hooked lever P, depended from the frame N of the counter G, latch Q, attached to the side of the sliding tray D, and arm T from side of apron, as a means of opening the box to receive a fare, substantially as described.

164,688.

164,686. RATCHET-DRILLS. J. M. Koeberle, Philadelphia, Pa. (Filed Feb. 19, 1875.)

Brief.—The stock or socket-piece terminates at the top surface of lever, and upon its upper end, in a chamber in the bob of the lever, is a disk with teeth on its upper and lower surfaces, that is turned alternately, but in the same direction, by two pawls, one attached to a lever, and the other to a gear that is operated by a toothed arm loosely connected at its outer end to a lever. The lower end of the feed screw, here denuded of threads, is stepped into stock, and extends upward within a stationary sleeve, through which is effected the pressure upon the drill, it serving as an abutment to the feed-nut.



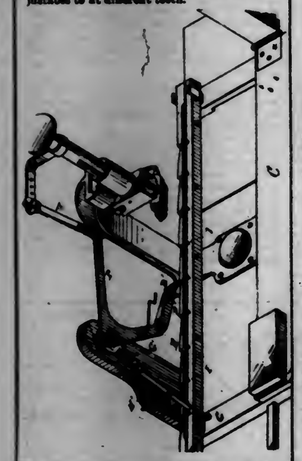
1. In a ratchet-drill, the stationary barrel-stock I, provided with a frog, J, or equivalent device for holding it in a fixed position, and a screw-rod, C, for the longitudinal movement of the bit-stock, substantially as set forth.

2. The bit-stock A, having a double ratchet-wheel, F, in combination with the stationary barrel I and feed-screw rod C, having an adjustable nut, H, substantially as and for the purpose set forth.

3. The combination of the levers B and B', wheels D D', spring-pawls G G', and double ratchet-wheel F, for giving a continuous rotary movement to the bit-stock A, substantially as set forth.

164,687. STAMP-CANCELLERS. Myer Lewis, San Francisco, Cal. (Filed May 4, 1875.)

Brief.—A sheet of stamps may be clamped upon the table, and will be fed forward one tooth of the rack with each stroke of the plunger. The ratchet-bar which feeds the table is interchangeable, and the pawl is adjustable to fit different teeth.

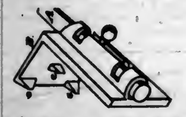


1. The combination, with a table, C, provided with a ratchet-bar having stops I for each notch, of an ordinary hand-stamp, an arm, U', connected with the plunger of the stamp, the link V, the lever P, carrying the pawl E', and the stop-bar H' for engaging the stops I, to limit the forward movement of the ratchet-bar, all substantially as described.

2. The combination, substantially as described, of the interchangeable ratchet-bars, provided with stops I, a pawl connected with the plunger of a hand-stamp for moving the ratchet-bar forward, and an adjustable stop-bar connected with the said plunger, for successively engaging with the stops I, to limit the ratchet-bar in its forward movement, all substantially as described.

164,688. DOOR-SECURERS. Louis Marks, San Francisco, Cal. (Filed May 6, 1875.)

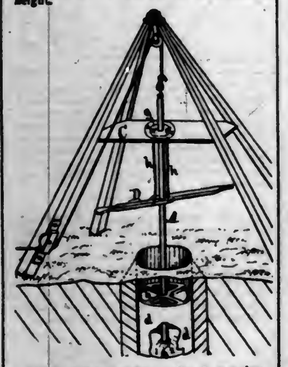
Brief.—A small sliding door-bolt is provided with a right-angled flange, having teeth or spurs for temporary attachment, and pierced with screw-holes for permanently attaching it to the door when desired, thus serving interchangeably for a fixture or a portable door-securer.



The sliding bolt A, in combination with the flange or plate B, provided with spurs *e e*, and with means for permanently attaching it to the door, if desired, substantially as and for the purpose set forth.

164,689. EARTH-BORING APPARATUS. Orin Martin, Bloomfield, Iowa. (Filed Apr. 19, 1875.)

Brief.—The bucket has inclined twisted cutters, and is secured on a shaft carrying a centering-point by a skeleton sliding collar and set-screw. The shaft passes through a collar rotating in a fixed platform, and is operated by a clamping-lever suspended from the rotating collar, which guides the shaft by cords, by which it may be adjusted to the required height.



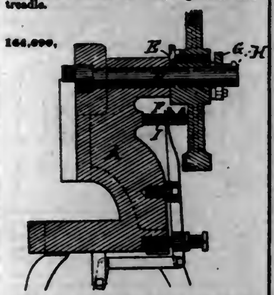
1. The skeleton sliding collar *b*, carrying set-screw *c* and the bucket *d d*, having two inclined edges at its bottom in twisted positions relative to each other, when combined with the shaft A, carrying cutters 1 and 2 and a centering-point, *a*, substantially as and for the purposes shown and described.

2. The rotating collar *g* in the elevated fixed platform O, the horizontal lever D, suspended by cords *h*, and the shaft A, passing through the collar *g* and lever D, when arranged and combined as and for the purposes shown and described.

164,690. OLOTURES FOR POWER-PRESSES. A. H. Merriman, West Meriden, Conn. (Filed May 10, 1875.)

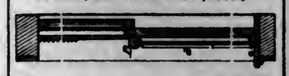
Brief.—A shaft having thereon a fly-wheel and clutch-collar, the fly-wheel loose and the clutch-collar keyed to the shaft. A pin passing through the hub of the fly-wheel, to connect it with the clutch-collar, is operated to and from said collar by a guide suitably grooved by means of a spring-lever and treadle.

164,690.



In a press, substantially as herein described, the wheel D, sliding pin E, collar G, key H, guide-plate F, bracket I, plate J, and spring-treadle, all combined to operate substantially as herein set forth.

164,691. WINDOW-SCREENS. S. Parker, Sheffield, Ind. (Filed Feb. 19, 1875.)



In combination with screen B, the rib *a* and cleats *d d*, covering the space between the screen and casing, and arranged to form the grooves *c c*, adapted to receive the ends of the rib, as specified.

164,692. GRINDING-WHEELS. H. Marshall Putnam and Wm. Esty, Fitchburg, Mass. (Filed Mar. 31, 1875.)



1. An emery-wheel provided with a central water-supply, whereby the water introduced into the center of the wheel will, by reason of capillary attraction and centrifugal force, percolate through the same and moisten its outer surface, substantially as specified.

2. In an emery grinding-wheel, an inclosed water-chamber, in combination with a hollow shaft for supplying water thereto, whereby the outer surface of the wheel is moistened by the percolation of water from the chamber through the wheel, substantially in the manner described.

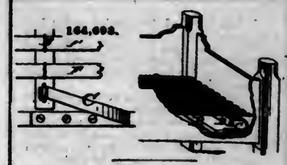
3. In an emery-wheel, the combination of the spindle B, tube *a*, and chambers *b d*, connected by the holes *c*, all constructed substantially as and for the purpose set forth.

164,693. SPRING BED-BOTTOMS. John A. Reeds, Lawrence, Kans. (Filed Feb. 23, 1875.)

Brief.—The springs are secured to a supporting-frame within the bedstead, and the bars are suspended from the hooked ends thereof by staples, the slats also passing through staples on the bars

The vibrating bars D, provided with staples *a* E, in combination with the slats F and twisted springs C, provided with hook ends, substantially as and for the purposes set forth.

164,694.



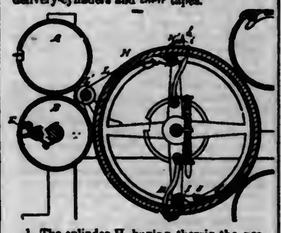
164,694. REFINING OILS. A. T. Schmidt, Pittsburg, Pa. (Filed Jan. 4, 1875.)

1. In refining oils, the process of subjecting the oils to distillation in the presence of a sulphite or hyposulphite, substantially as and for the purpose specified.

2. In treating oils, the process of washing the distillate in a bath of water holding a hyposulphite or hypophosphite in solution, substantially as and for the purpose specified.

164,695. MACHINES FOR CUTTING AND DELIVERING PRINTED PAPER. Walter Scott, Chicago, Ill. (Filed Dec. 4, 1874.)

Brief.—The printed web is perforated between two cylinders, and thence passes to grippers on a cylinder having projections on its surface, which, meeting a yielding bleged section of the female cylinder, tear off the sheets, which are thence passed alternately to two delivery-cylinders and their tapes.



1. The cylinder H, having therein the projecting parts or web-breakers H' H', either with or without the blades *h h*, in combination with the cylinder B, having therein the movable or receding part or section E, substantially as described, the cylinder H being also provided with means for seizing the previously-perforated web and delivering it to a subsequent cylinder, for the purposes set forth.

2. The combination, of the cylinder A provided with a cutting-blade, the cylinder B, having therein the receding section E, and of the cylinder H, having an increased periphery H' and carrying the gripers *i i*, all substantially as and for the purposes specified.

3. The combination, substantially as specified, of the cylinder B, having therein the receding section E, the cylinder H carrying the web-breakers H' H' and the gripers *i i*, and of the tapes L L, arranged substantially as described, with relation to the cylinders H and B, for the purpose of thereby operating upon the previously-perforated web, in the manner set forth.

164,696. ELECTRICAL APPARATUS FOR TIMING RACES. R. J. Sheehy, Boston, Mass. (Filed Apr. 20, 1875.)

Brief.—Projection carried by vehicle strikes an overhead wire at starting-post, causing closure of an electric circuit to a magnet controlling starting of time-piece. On passing quarter-posts causes closures to magnets controlling alarms, and to one acting as switch to throw circuit from starting-magnet to one controlling stoppage of time-piece. Main time-piece controls, by proper circuits, a secondary one carrying a dial, on which marks are caused to be made indicating time of events of the race.

1. In combination with a time-piece or stop-watch, mechanism, substantially as described, for moving, through the agency of electricity, the starting and stopping stud or device of said time-piece or watch, for the purpose of starting the watch at the commencement of a race-heat, and stopping it at the termination thereof, such mechanism consisting of the perforated arm *b*, the two electro-magnets G H, their circuit-wires, switch *o*, key, and actuator *f*, all to operate essentially as specified.

2. The combination of the auxiliary electro magnet I, its circuit-wires, armature *n*, and the lever *y* thereof, essentially as described, with the furcated arm *b*, the two electro magnets G H, their circuits, the switch *o*, the key, and actuator *f*, all being to operate, in connection with the stop watch and race-course, substantially as specified.

3. The combination of the alarm or bell K with the auxiliary magnet I, its circuit-wire, armature, and the lever thereof, combined with the main magnets G H, their circuits, the furcated arm *b*, the switch *o*, the key, and the actuator *f*, all substantially as described.

4. The combination of the alarm or bell L, its hammer *v*, spring armature *w*, and electro-magnet M, with the above-described mechanism, for starting the watch at the commencement of a race-heat, and stopping it at the termination thereof

5 In combination with the mechanism for starting the watch at the commencement of the heat, and stopping it at the termination thereof, the spring *f'*, wire *g'*, and the electro-magnet alarm or apparatus applied to the distance-posts E E', such consisting of the electro-magnet N, with its circuit or circuit-wires *x y*, armature *b'*, hammer *z*, and bell *a'*, all being to operate essentially as specified.

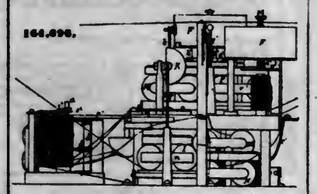
6. The flag lever O and curved arm or catch *c'*, in combination with the spring *f'* and line *g'*, and the electro-magnetic alarm applied to the distance-posts, and with the mechanism for starting the watch at the commencement of a race-heat, and stopping it at the termination thereof, all as explained.

7. In combination with the mechanism for starting the watch at the commencement of a race-heat, and stopping it at the termination thereof, the mechanism for actuating the setting slide or knob *p'* of the stop watch, in order to cause the second-hand to be thrown back to zero or the starting-point of the dial, such last-mentioned mechanism being the electro magnet P, armature *r'*, and lever *q'*, such magnet P being in circuit with the wires of the distance-posts, as described.

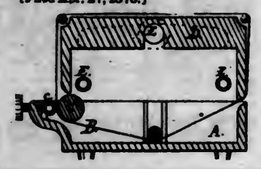
8. In combination with the stop-watch, and mechanism for starting it at the commencement of a race-heat, and stopping it at the termination thereof, as set forth, the apparatus for recording the time or times of the heat or race, such consisting in the electro-magnet R, the disk-armature w^2, rod w', spring v^2, and the pencil or marker w^3, and spring x', applied to said stop-watch, or to an auxiliary stop-watch, F', as described.

9. In combination with the stop-watch, and the electro-magnetic mechanism for starting it at the commencement of a race-heat, and stopping at the termination thereof, recording mechanism, consisting of the arbor b^2 c^2 d^2, as described, the hard-rubber annulus or disk c^3, spring g^3, wires f^3 k^3, electro-magnet *s*, armature i^3, escapement-lever m^3, toothed wheel n^3, shaft o^3, table p^3, springs q^3 r^3, electro-magnet T, armature s^3, spring t^3, and marker u^3, such electro-magnets having circuit-wires, and all being to operate substantially as specified.

164,696.



164,697. CLOTH-STEAMING MACHINES. John Shinn, Philadelphia, Pa., assignor to himself, Geo. W. Lehman, Wm. N. Marcus, and Dudley E. Bradlee, same place. (Filed Apr. 27, 1875.)

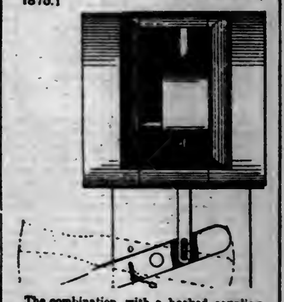


1. A steaming apparatus, combined of the following parts: a tank, A, endless cloth B, and heating-box D, as above described.

2. In combination with endless cloth B and tank A, the wringing-rollers *c c'*, as and for the above-described purposes.

3. The combination of the pipe F, corrugated box D, and tubular smoothing-iron F, as described, box for the above purpose.

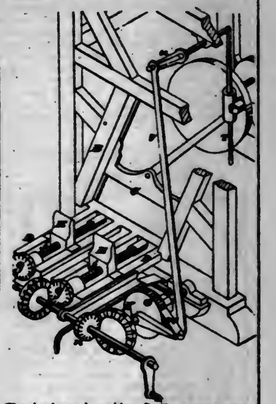
164,698. CAR-COUPLINGS. J. B. Stamour, Philadelphia, Pa., assignor of one-half his right to Gruver Automatic Car-Coupling Company, Baltimore, Md. (Filed May 20, 1875.)



The combination, with a hooked coupling-bar and an uncoupling-lever constructed to be locked in position when the couplings are coupled, of a slotted or notched link or arm connected with the coupling-bar and the said lever, and constructed to limit the lateral play of the coupling-bar in either direction, as and for the purpose described.

164,699. VENEER-CUTTING MACHINES. G. W. Swan, San Francisco, Cal. (Filed Apr. 27, 1875.)

Brief.—A shearing cut across the entire length of the bolt is obtained by securing the cutter to an angular frame operating between inclined guides, the edge of the cutter always maintaining a horizontal position. The bolts are fed to the cutter by feeding-screws automatically operated by suitable gearing, and to which are secured slides or dogs working in horizontal guides.



The horizontal guides D D, having the slides or dogs E operated by screws *f*, with their pinions *g* and shaft H provided with the toothed wheels I I and pinion *a* in combination with the shaft K with its ratchet-wheel O, loosely-attached sleeve *r*, with its tube S, rock-shaft T, with its slotted crank *u*, connecting rod V, and pawl holder W, all combined and arranged to operate as and for the purpose described.

164,700. APPLICATION OF STEAM-PIPES TO BUILDINGS. Caleb C Walworth, Boston, Mass. [Filed Apr 23, 1875.]

Brief.—The flanged thimble and flanged screw-cap embrace the plastering between their flanges. The cap-plate and screw-cap make a close joint with the ends of the packing tube.



1. The combination, with a steam-pipe passing up through a ceiling and contiguous floor of a building, of a protecting sleeve, packed as described, and having each of its ends provided with a flanged fastening cap, the lower one having a screw-cap, *g*, screwing into its inferior end and against the plastering, the whole being constructed and applied in manner as shown, and for the purpose set forth

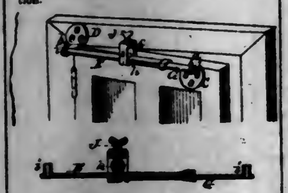
2. The combination, with a steam-pipe passing up through a ceiling and a contiguous floor of a building, of a sectional sleeve or two sleeves, each provided with a packing-chamber and packed as described, the upper one of such sleeves being provided with a fastening-flange and a screw-cap, and the lower one having a fastening-flange and a screw-cap to screw into the inferior end of the sleeve and against the outer face of the plastering, the whole being substantially as and for the purpose set forth.

3. The combination, with a steam-conducting pipe, of a circumscribing sleeve packed with asbestos or other non-combustible material, such packing impinging against the pipe, and filling the space between the latter and the sleeve, as and for the purposes set forth.

4. The combination with a steam-pipe, D, of the tube or thimble *d*, provided with a flange, *e*, and the screw-cap *f*, provided with a flange, *g*, the said flanges being, respectively, applied to the under surface of the furring and the lower face of the plastering, substantially as shown and described.

164,701. DOOR-CHECKS. Wm. H. Willis, Forest City, Mo. [Filed May 5, 1875.]

Brief.—Two straight bars, sliding one upon the other, are impinged upon by an elastic roller carried in a stirrup, and regulated by a set-screw. This device is attached near the top of the door by suitable plates and swiveled pins or studs passing through short vertical tubes on the ends of the bars, and, being secured jointly to the door and door frame, serves to regulate the movement of the door, prevent slamming, or hold it in desired position.



1. In a door-check, the combination of the bars E G, sliding one upon the other, and the pressure-roller *h*, arranged thereon by any suitable mechanism, substantially as and for the purposes herein set forth.

2. The combination of the sliding bars E G, stirrup I, set-screw J, frame *c*, and rubber roller *h*, substantially as and for the purposes herein set forth.

3. The combination of the sliding bars E G and their pressure-roller *h*, arranged thereon as described, the plates *d d*, and the plates O D, with their pins or studs *a b*, all substantially as and for the purposes herein set forth.

164,702. BELT-TWISTING APPARATUS. M P. Wilmarth, Pawtucket, R. I., assignor to James Davis & Son, same place. [Filed May 10, 1875.]

In belt-twisting apparatus or machines for twisting belts, the combination of the revolving rack *c*, provided with the reel *e*, tubular projection *g*, and inserted spindle *k*, with the receiving-drum *r*, all substantially as shown, and for the purpose describ



164,702.

164,702. CORNERS FOR VEHICLE-BODIES. Stephen Acker and N L. Robinson, Batchellerville, N. Y. [Filed Apr 23 1875.]

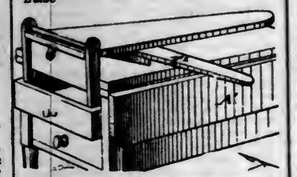


The metal corner A, with dovetail grooves *a a*, and ribs *b b*, substantially as and for the purpose set forth.

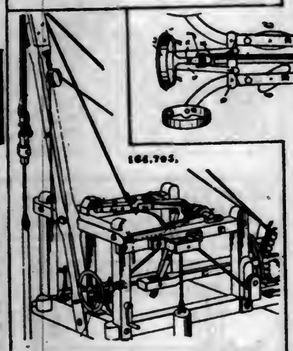
In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

164,704. IRONING AND KITCHEN TABLES. Andrew Aitken, Wells River, Vt. [Filed Apr. 24, 1875.]

Brief.—A kitchen table with a frame pivoted to fold in a drawer, to which an ironing-board is attached, to rest on the table and frame



The combination of a table and a swinging frame pivoted for folding into a sliding drawer, with an ironing-board supported on frame and table, substantially in the manner and for the purpose set forth.



164,705.

164,705. ROCK-DRILLING MECHANISMS. Addis B. Allen, Perch River, N. Y. [Filed Mar. 6, 1876.]

1. The described combination, in the drilling-machine, of the sand-pump reel and mechanism, substantially as shown and described, to throw said reel into or out of gear at pleasure with the driving mechanism of the drilling-machine.

2. In feed mechanism of drilling machines, the combination, with the feed-drum, to which is attached the feed or drop rope, of a worm-wheel and worm, by which said drum is rotated to effect the feed of the drill, substantially as and for the purposes set forth

3. The worm-wheel and worm, in combination with the feed drum, connected with the worm-wheel by a ratchet-and-pawl connection, as described, which permits the drum to be rotated by a crank-handle or otherwise independently of the worm-wheel, to effect the winding up of the feed-rope.

4. In combination with the feed-drum and feed rope, the capstan on the angle lever shaft, interposed between the feed drum and the drop, to take the strain from the feed works, substantially as set forth

5. In combination with the angle-lever shaft, the feed-rope capstan loose thereon, and the lever, pawl, and ratchet mechanism, for holding said capstan in place, and taking up slack in the drop-rope, as set forth.

6. The combination, with the vibratory angle-lever, of the feed or drop rope, operated by said lever, as described, and the feed mechanism, whereby said rope can be let out or taken up during the movement of said lever, and without stoppage of the machine, substantially as set forth.

7. The feed-rope, the feed mechanism for taking up and letting out the same while the machine is in motion, and the drop mechanism by which said rope is operated to raise and let fall the drill, as described, in combination with the main rope attached to the drill, and normally loose on its capstan when the machine is in operation, as set forth.

8. The combination, in a drilling-machine, of a drop-rope, by which the drill is intermittently operated, and a main rope connected with the drill, but normally loose on its capstan during the working of the drill, substantially as and for the purposes set forth.

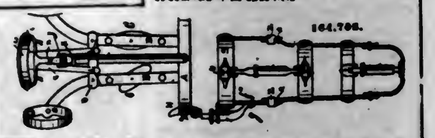
164,706. BOOT-REACHS. Horace R. Allen, Indianapolis, Ind. [Filed Feb. 24, 1875.]

Brief.—The head-rest is sustained upon a forked bearing, which latter is swiveled to the body of the brace. The main uprights of the brace are curved to rest behind each shoulder. Swiveled joints connect the upper and lower parts of the brace. A peculiar adjustment is used for the foot-rest.

1. The swiveled joint J, in combination with the fork H H, adjusting-screw *a*, head-supporter G, and elastic band M, substantially as specified.

2. The rotating pivoted pads C C, in combination with the upright bars B B, substantially as described.

3. The curved bars B B, in combination with the lower cross-bar A and upper cross-bar D, substantially as specified.



164,706.

4. The combination of the cross shoulder bars E E and straps F F with the curved ends of the bars B B, substantially as specified

5. The angle-plate *f*", riveted to the bar B and provided with a hole to receive the tube Q, substantially as specified.

6. The sliding band Z on the joints *a a'*, constructed and operated substantially as specified.

164,707. HOG-CATCHING IMPLEMENTS. W. R. Ames, Nebraska City, Nebr. [Filed Aug. 14, 1874.]

Brief.—The leg of the animal is seized with forceps, which form an ellipse when closed, the grasping parts of which are fortified by exterior ridges of metal, and the impinging parts of which, at closing, have chisel-formed shoulders, to admit of tighter closing by pressure.

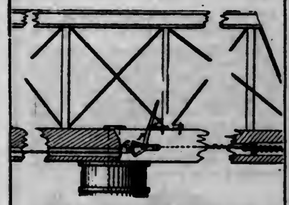


164,707.

The jaws A B, provided with tapering points overlapping each other, and meeting at the shoulders *c c'*, and forming an elliptical opening for receiving the leg of the animal, the stay-ribs *b b*, the handle C with eye *d*, and handle D' with eye *d'*, and socket E, all substantially as described, and herein set forth.

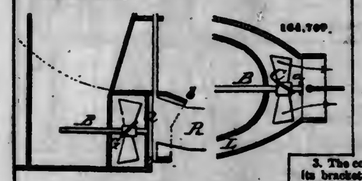
164,708. DRAW-BRIDGE FASTENINGS. C. J. Atkins, Louisiana, Mo. [Filed Mar. 20, 1875.]

Brief.—The draw of the bridge is secured in place by spring-actuated lock-bolts, connected by chains with a winding-shaft, and operated by a lever.



The combination, with draw A and rests C C, of spring-actuated lock-bolts D D, connected by chains with a winding-shaft, G, as shown and described, whereby the bolts automatically lock the draw to the rests as the chain slackens.

164,709. CONSTRUCTION OF CANAL-BOATS. William Ball, New Vienna, Ohio. [Filed Aug. 15, 1874.]



164,709.

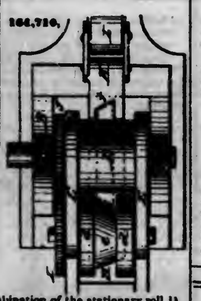
The propeller-jacket herein described, having the funnel-shaped induction-branches L L, extending forward along the sides of the boat beyond the point where said sides become parallel, the tops of said branches extending upward above the water-line in front, and gradually descending to the propeller-tube, terminating in the deflecting-hood *h*, as shown and described

164,710. MACHINES FOR BENDING CIRCULAR FILE-BLANKS. L. Beyer and R. Heunsch, Washington, D. C. [Filed May 15, 1875.]

Brief.—A former-roll, stationary; a rotatable bending-roll, articulated to and revolvable around the former-roll by means of gears and a stirrup prolonged into a handle; and a clamp actuated by a cam. In use the bending-roll is swung around, so that the blank may be passed between the rolls, and its end projected into the notch of the clamp, when it is made fast, and the roll H is then carried by the handle around in the opposite direction.

1. The combination of the stationary roll D and the roll H, formed with the conical enlargement *e* and flanges *d d*, and having a twofold motion—viz., one around its own axis, and the other around the roll D—substantially as and for the purposes herein set forth.

164,710.



2. The combination of the stationary roll D and stationary cog-wheel J with the lever G E, rotating roll H, and cog-wheel I, substantially as and for the purposes herein set forth.

3. The combination of the rolls D H, slide K, with die *f*, and lever L, as and for the purpose described.

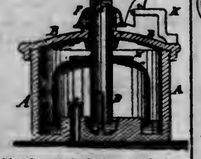
164,711. GAS-EXTINGUISHERS FOR STREET-LAMPS. Lewis Boore, Buffalo, N. Y. [Filed May 26, 1875.]

Brief.—When the right pressure of the gas is turned on, the cover is raised out of the liquid, and the gas passes to the burner. When the right pressure is turned off, the cover settles into the liquid, and the ordinary pressure is not sufficient to lift it.

1. The combination of the case A, provided with a grooved and recessed bottom, and an inlet-pipe, I, the cover B, provided with outwardly and inwardly projecting flanges *b' b'*, around a hole formed through its center, the inverted cap C, provided with an outlet-tube, D, and the burner-tip E, substantially as herein shown and described.

2. The combination of the inclined ring-flange F with the outlet-tube D of the device, and with the outer flange of the cover *b'*, substantially as herein shown and described.

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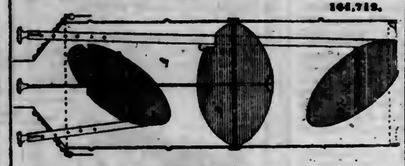


3. The combination of the look-catch J and its bracket K with the cover B and with the inclined flange F, formed upon the outlet-tube D of the device, substantially as herein shown and described.

164,712. SMOKE-DRUMS. Jacob Bowman, Harrisburg, Canada. [Filed Nov. 7, 1874.]

Brief.—Soot is removed or air admitted through the registered openings.

164,712.



1. In a smoke-drum in which the products of combustion pass from the stove into the said drum for increasing and utilizing the heat, the combination of the series of dampers mounted upon transverse shafts journaled in the drum, and each damper being provided with a vertical rod passing through the top of the drum, which is provided with a series of openings and with a pin for supporting it at its adjusted position, substantially as described.

2. The combination, with the drum A, having the opening or openings K, of the bottom plate P and slide L, substantially as and for the purpose described.

164,713. HARROWS. Charles Brodrick, Champaign County, Ill. [Filed Mar. 12, 1875.]

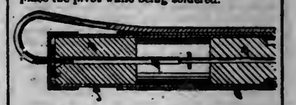
Brief.—The teeth are secured in single wooden beam. A series of these are connected together by two sets of perforated bars rigidly fixed to the top side of the beams, and connected by links of flat iron bars having two sets of holes, so that by using two bolts the coupling may be made rigid, or rendered flexible by removing the inner bolts.



The coupling or connecting links, provided with a series of holes and bolts, as shown in Figs. 2 and 3, for flexible or rigid connection of the teeth-bars, in combination with the said bars, as shown and described.

164,714. TOOLS FOR PIVOTING WATCH-WHEELS. Frank E. Bucklin, East Tilton, N. H. [Filed May 6, 1875.]

Brief.—A plunger or piston is provided in its outer end with a seat to receive the pivot and post of a wheel to be repaired, the wheel being held in place by a retaining-cap, through which the post to be repaired projects. Above the cap is a retaining-socket, in line with the socket in the plunger, to contain and hold in place the pivot while being soldered.

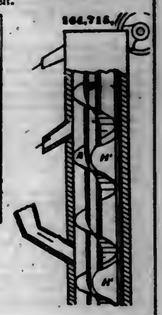


The combination of the handled tube A, plug B, centering-spindle E, centering copper rod F, cap H, and tube G, substantially as specified.

164,715. GRAIN-CONVEYERS. Henry W. Caldwell, Indianapolis, Ind. [Filed Apr. 13, 1876.]

Brief.—The conveyer-shaft is hollow and vertical, the screw-blade being formed of disks with a central hole and one radial cut, to permit of their being drawn out to the full pitch. Vertical followers intersect the screw, traveling on an endless belt.

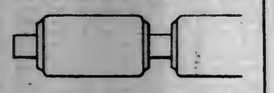
164,715.



1. The conveyer-screw arranged in an upright position in a tight box, in combination with the followers H' H', operated substantially as specified.

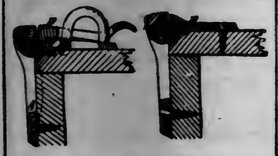
2. The flights A, constructed and applied to the hollow shaft C, substantially as described.

164,716. TOP ROLLS FOR SPINNING-MACHINES, &c. Edward Card, Pawtucket, assignor to himself, Isaac Lindsley, and B. Borden, same place, and S. Schofield, Providence, R. I. [Filed May 11, 1870.]



A top roll covered with the outer bark of the white birch, as a new article of manufacture.

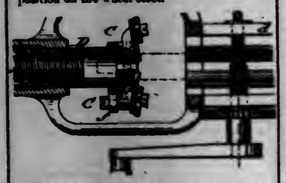
164,717. FASTENINGS FOR BUTTER-TUBS. Henry C. Carter, New York, N. Y. [Filed Jan. 18, 1875.]



The combination of the plate C, having elongated recesses c' c', the hook D, provided with gudgeons d' d', and the slotted ear A, with the body and cover of a butter-tub, substantially as herein described.

164,718. MACHINES FOR TENONING SPOKES. Joshua R. Coleman and Samuel Myers, Galion, Ohio. [Filed Mar. 1, 1875.]

Brief.—The clamping and cutting mechanisms are coincidently adjustable in the main supporting-frame. The tubular stem of the cutter-head and the shaft operating the same are locked together during the operation of cutting the tenon, and the length of the tenon is determined by a burr or screw-collar adjustable on the threaded portion of the crank-shaft which operates the cutter-head; the purpose of the aforesaid devices being to accurately tenon all the spokes of a wheel without handling the same or changing its position on the wheel-stool.

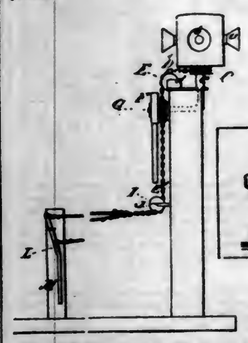


1. In the tenoning-machine herein described, the combination, with the tubular guide-stock A, of screw-threaded shaft D^1, the tubular stem D, carrying cutter-head C, and threaded internally, as specified, and the burr d, adjustable on the threaded portion of said shaft, all constructed and arranged as shown and described, whereby the parts D^1 and D are locked together during the operation of cutting the tenon, and the length of the latter is determined by their relative adjustment, as set forth.

2. In the improved tenoning-machine herein described, the angular clamping-plates B B, right-and-left screw-shafts a a, and meshing-gears f', in combination with the angular jaws E E, bolts f^2, tubular stem D, screw-shaft D^1, and burr d, all constructed and arranged to operate as shown and described, whereby the clamping and cutting mechanisms are coincidently adjustable in the frame A, as and for the purpose specified.

164,719. SIGNAL-OPERATING DEVICES. Francis Oulham, Thedford, Canada, assignor of one-half his right to R. A. Rounds, Grand Rapids, Mich. [Filed Mar. 13, 1875.]

Brief.—When the operating-lever, by which the lantern is turned, is released, a weighted lever or arm returns the lantern to its normal position.

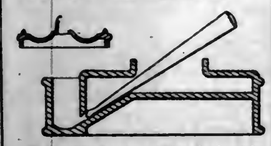


The shaft B, a, having keyed thereon the lantern a, grooved wheel C, grooved pulley F, and weighted lever H, in combination with the chains D, E, and E', the rods K and K', and actuating-lever L.

164,720. METHODS OF PRODUCING ETCHINGS ON GLASS. Ernest Dalleinne, New York, N. Y. [Filed May 22, 1875.]

The method herein described of producing etched glass plates, consisting mainly in transferring the design from the original or positive plate to a second or negative plate, coated with varnish and bichromate of potash, then removing the ground by means of turpentine, then using the negative to produce the ornaments, in similar manner, on any number of glass plates, and finally etching the same with fluoric acid, substantially in the manner and for the purpose set forth.

164,721. INKSTANDS. Saml. Darling, Providence, R. I. [Filed Mar. 20, 1875.]



The combination, in an inkstand, of an ink-reservoir, a dipping-cup, which is made outside of but in the same piece with the reservoir, and extending below the bottom thereof, and a cap, provided with a vent, for the free circulation of air to and from the interior of the reservoir, causing the ink to stand at its natural level, substantially as described, and for the purpose herein set forth.

164,722. FOOT-POWER LASTERS. Fredk. J. Davis, Newport, Vt. [Filed June 7, 1875.]

Brief.—The lever-handles are adapted to receive a strap, so that the griping power shall be applied by the foot.

164,722.



The jawed jaws A C, provided with slotted lever-handles B D, in combination with strap E, all substantially as and for the purpose specified.

164,723. ELECTRIC TOYS. Wm. J. Decker, New York, N. Y. [Filed May 12, 1875.]

Brief.—Electrical excitation in the glass, resulting from rubbing, causes the figures to dance and execute various gymnastic feats.

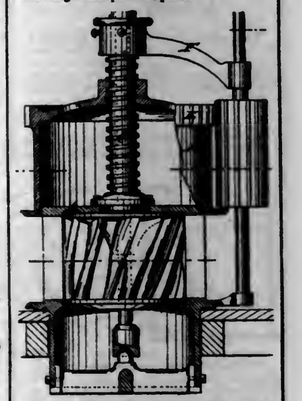
The electric toy composed of the glass plate A, which is supported on legs B, and of the rubber C, combined to affect the figures D D, which are placed beneath the glass, substantially in the manner herein shown and described.

164,723.



164,724. TURBINE WATER-WHEELS. Jas. M. Denson, Columbus, Ga. [Filed Apr. 9, 1875.]

Brief.—The gate is made of cylindrical shape, covering the entire wheel and wheel-case to a point below the chutes, and moves by an internally-threaded hub on the hollow screw-column. An outer gearing of the gate meshes with an actuating-pinion of equal height, whose shaft turns in bearings of the casing, and of a top arm attached to the end of the column. The gate may be raised or lowered to any desired height along the wheel, according to the power required

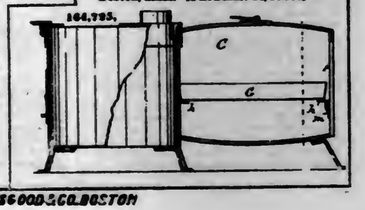


1. A turbine water-wheel provided with a rotary upwardly-movable gate, inclosing and covering the chutes or water-ways, substantially as shown and described.

2. The combination, with gate E, having circumferential spur-wheel E^1, and adjustable on a central screw, C, of a hand-shaft provided with pinion E^2, as and for the purpose specified.

164,725. CAMP-STOVES. H. L. Dunckles, Boston, Mass. [Filed Mar. 31, 1875.]

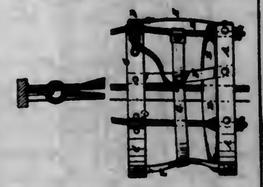
164,725.



1. The combination, with a camp-stove having a removable top or bottom, of an oven hinged to the exterior of the stove, and constructed to have a swinging motion for removing or detaching it, and adapted to be arranged, after removal, within the said stove, as and for the purpose described.

2. The combination, in a camp-stove provided with the oven C, having the flanges m, of the removable flanges k, for supporting the shelf or pan G, substantially as described.

164,726. CHILDREN'S SWINGS. G. A. Fanjoy, Williamsburg, N. Y. [Filed May 22, 1875.]



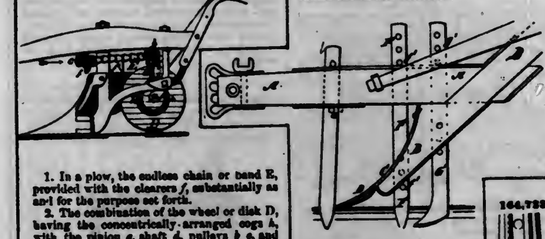
1. An elastic back, C, for a swing-seat, made of a strip of hard elastic wood, bent into proper form, and having a strip of metal attached to its outer side, substantially as herein shown and described.

2. The combination of the straps D E with the ends of the elastic back C, and with the forward edge of the seat A, substantially as herein shown and described.

3. The combination of the straps F G with the elastic back C, and with the side and rear edge of the seat A, substantially as herein shown and described.

164,727. PLOWS. Ole J. Glasoe, Lanesborough, Minn. [Filed Mar. 26, 1875.]

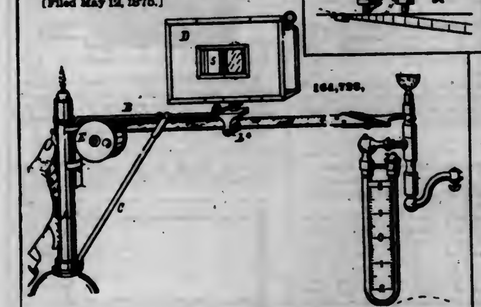
Brief.—A belt or endless chain is operated by an oblique land-side wheel. The chain carries cutter-blades or cleavers projecting downward.



1. In a plow, the endless chain or band E, provided with the cleavers f, substantially as and for the purpose set forth.

2. The combination of the wheel or disk D, having the concentrically-arranged cogs A, with the pinion g, shaft d, pulleys b c, and chain E, having cutters F, substantially as and for the purpose set forth.

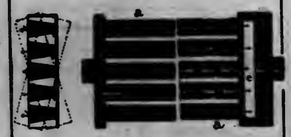
164,728. PORTABLE OR HAND PHOTOMETERS. Wm. Wallace Goodwin, Philadelphia, Pa. [Filed May 12, 1875.]



In a portable or hand photometer, substantially as described, the flexible steel scale F, the take-up spring-cylinder E, and the sight-box supporter b'' and friction-roller b', permanently secured together, as described, in combination with the detachable candle-stand A, arm B, supporting-brace C, and sight box D, the said fixed and detachable parts being constructed and arranged to be carried and operated in hand, in connection with a gas-burner, for the purpose set forth.

164,729. HOLLOW GRATE-BARS. Wm. L. Gregg, Chicago, Ill. [Filed Feb. 20, 1875.]

Brief.—The grate is made in sections of hollow perforated bars, at the end of which is formed an air-chamber having a hollow journal, by which means the sections are rocked and air supplied to the bars.



1. In grate-bars, the section a, consisting of a number of hollow perforated bars, an air-chamber, and journals, substantially as shown.

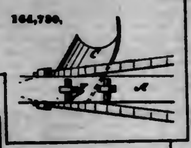
2. A section of hollow grate-bars, having an air-chamber in one end communicating with all the bars, substantially as set forth.

164,730. PLOWS. Augustus Griggs, La Fayette, Tenn. [Filed May 1, 1875.]

Brief.—A bar passes downward through the plow-beam and mold-board, serving both as a brace for the standard and a colter for the subsoiler.

The combination of the standard B, made with a concaved shoulder or offset upon the forward side of its lower part, the mold-board C, the point D, and the cutter and brace F, with the beam A, in substantially the manner herein shown and described.

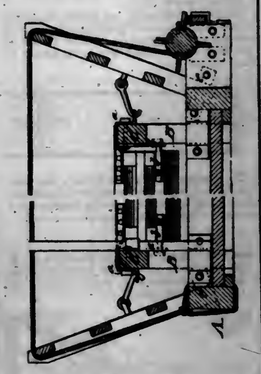
164,730.

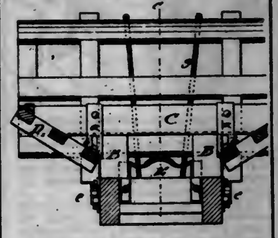


164,731.



164,731. HAT-RACKS. Joseph Hall, Riverside, Nebr. [Filed May 1, 1872.]





The combination of bed-frame A, having standards B and side sockets a, the cross-beams C C, having slotted heads c, and the frames D D', having fasteners, substantially as and for the purpose specified.

164,732. POLISHING-WHEELS. H. Hard, Wadsworth, Ohio. [Filed Dec. 16, 1872.]

Brief.—The strip of polishing material is connected to a roller arranged in the body of the wheel, to tighten and secure it.

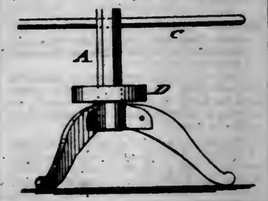


1. The combination of a roller with a wheel or drum or cylinder, for the purpose of holding and tightening the sand-paper, in the manner already described.

2. The combination of the disk G, roller E, plates C C', and bolt D, substantially as and for the purpose hereinbefore expressed.

164,733. CLOTHES-DRIERS. Conrad Hauser, New York, N. Y. [Filed May 26, 1875.]

The combination, with standard A, of the socket-plate D and fastener E to hold detachable arms C, in the manner described.



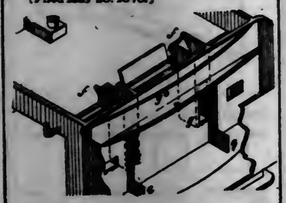
164,726. COMPOUND BOX-GIRDER. Adam Hay, Newark, N. J., assignor of one-half his right to Paul G. Batticher, same place. [Filed June 8, 1875.]

Brief.—A compound box-girder, consisting of cast-iron base with transverse ribs cast on the same, or fitting into dovetail tenons on the base, and wrought-iron sides united by bolts to the ribs.



The compound girder embracing the cast-iron base B, and ribs C, and the wrought-iron sides A, united by the bolts D, substantially as and for the purposes specified.

164,735. RESERVOIR COOKING-STOVES. R. M. Hermance, Half Moon, assignor of one-half his right to A. E. Fales, Troy, N. Y. [Filed May 20, 1875.]



1. The combination, substantially as before set forth, of an air-flue passing through the center of the top sheet-flue, a reservoir located in rear of the ordinary pipe-collar, and a reservoir-casing provided with outlets for the heated air, which are located beneath the plane of the top plate of the stove.

2. The combination, substantially as before set forth, of an air-flue passing through the center of the top sheet-flue, a reservoir-casing situated in rear of the rear flues, and the descending flue, into which the air escapes after imparting its heat to the reservoir.

3. The combination, substantially as before set forth, of an air-flue passing through the center of the top sheet-flue, a reservoir-casing located in rear of the rear flues and provided with division-strips, and the descending flues, into which the heated air escapes.

4. The combination, substantially as before set forth, of an air-flue passing through the center of the top sheet-flue, a reservoir-casing located in the rear of the rear flues and provided with division-strips, and a port or ports leading from said casing, and permitting the air to escape at a point below the top plate of the stove.

5. The combination, substantially as before set forth, of the bridge or part D and its subjacent hot-air flue.

6. The combination, substantially as before set forth, of the air-flue passing through the center of the top sheet-flue, carrying heated air to the reservoir-casing, and the protecting-chamber located between the oven O and fire-box G.

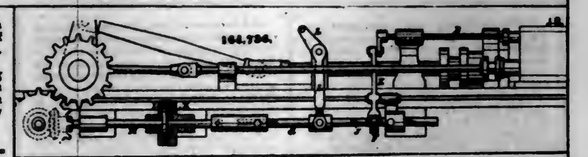
7. The combination, substantially as before set forth, of the reservoir-casing and the bifurcated air-flue leading from the front of the stove to said casing, and passing the draft-damper, as described.

8. The combination, substantially as before set forth, of the flues *e e' e''*, casing B, and flue *f*, formed by the strips *q q*.

164,736. VALVE-GEARS FOR STEAM-ENGINES. Margaret V. Hewes, Newark, N. J., administratrix of Jos. L. Hewes, deceased. [Filed Mar. 6, 1875.]

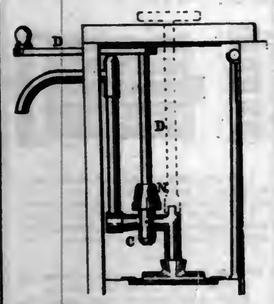
Brief.—The valve-movement is geared to the main shaft. The small shaft that transmits the motion is divided into two parts, revolving in different planes, and connected together by a pin.

The combination of the independent shafts H G, placed out of line with each other, and connected by a crank-pin, J, and slotted disk K, with the cam F, lever E, rock-shaft D, and cut-off valve, substantially as herein shown, for the purpose set forth.



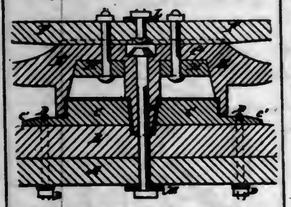
164,737. HYDRANTS. George Hillegass, Philadelphia, Pa. [Filed July 31, 1874.]

Brief.—A cap sliding on the key covers the supply-cock, and prevents dirt, dust, &c., reaching the same and affecting the joint thereof.



The cap N, sliding on the key D, and covering the supply-cock C, substantially as and for the purpose set forth.

164,738. FLUTE-WHEELS. Jacob Hodge, Springfield, Ill. [Filed Apr. 24, 1875.]



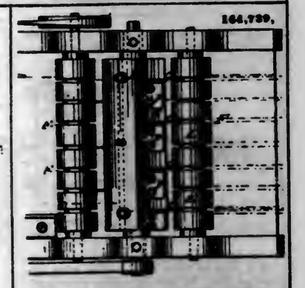
1. The fifth-wheel C, having a slightly convex face, a central hole, and the side lugs *c'*, and the head-block E, made with a recess, having a slightly convexed face to receive the said fifth-wheel C, the hub *c'*, the grooved transverse rib *c''*, the flanges *c²*, the rear flanged projection *c³*, and the forward projection *c⁴* in combination with each other, and with the axle A B, the spring F, the reach I, and the king-bolt R, substantially as herein shown and described.

2. The combination of the straps K L M, and the bolts N O Q, with the fifth-wheel C, the head-block E, the spring F, the reach I, and the axle A B, substantially as herein shown and described.

3. The combination of the wooden blocks H with the recessed head-block E, and with the bolts G that secure the said head-block to the spring F, substantially as herein shown and described.

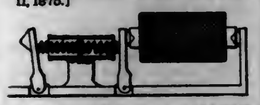
164,739. PLANING-MACHINES. Henry C. Holloway, San Diego, Cal., assignor to himself and John S. Harbison, same place. [Filed Mar. 1, 1875.]

Brief.—The radial saws are attached to the planing-cylinder by means of right-angled plates and T-head cover-bolts, the heads of which are inserted in dovetail or undercut grooves formed in the sides of the cylinder, and extending from end to end of the same, for the purpose of slitting the stuff into pieces of any desired width simultaneously with the planing or surfacing operation.



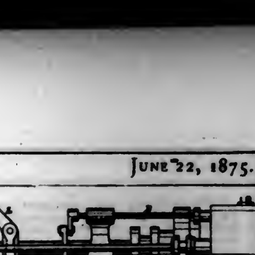
The angle-plates F, in combination with the slitting-saws C, bolts D, and grooved plane-carrying cylinder, all constructed and arranged as and for the purpose specified.

164,740. PIECING-WARP HOLDERS. H. S. Houghton, Smithville, Mass. [Filed May 11, 1875.]



A piecing-warp holder consisting of projections to center and support spools or bobbins, and to produce tension thereon, and adapted to operate in connection with warps being unwound from a warp-beam in a loom, to piece the warps when broken, substantially as described.

164,741. SAUSAGE-MACHINES. David J. Howenstine, Canal Fulton, Ohio, assignor of one-half his right to George N. Elliott, same place. [Filed Feb. 3, 1875.]



A sausage-filling machine, consisting of the external hollow cylinder, A, and the eccentrically-pivoted internal cylinder, B, provided with the ribs *r r r r*, scrapers *e e e e*, and rods *s s*, arranged and operated as set forth.

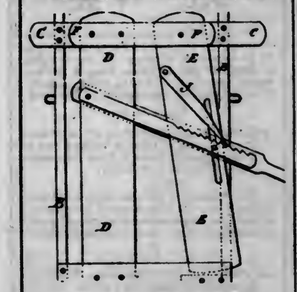
164,742. PAPER BOXES. Louis A. Kettle, Philadelphia, Pa. [Filed Dec. 12, 1874.]



HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

The lid D, formed with tongues E, which lock with inwardly-projecting rims of the body of the box, substantially as and for the purpose set forth.

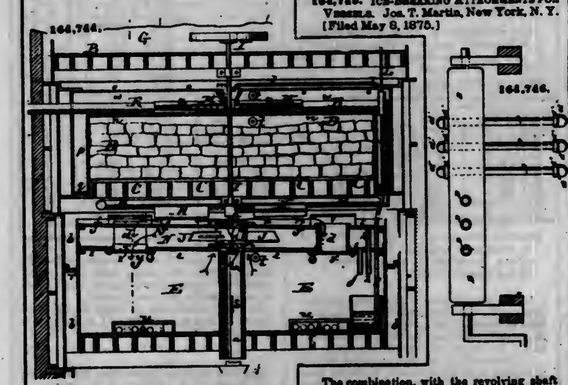
164,743. HOG-TRAPS. John M. Kimball, Wyoming, Iowa. [Filed May 22, 1875.]



The combination of the base A, posts B, cross-bars C F G H, stationary board D, pivoted and slotted board E, lever I, and pawl J, with each other to adapt them for use in catching and holding hogs, substantially as herein shown and described.

164,744. REFRIGERATOR-BUILDINGS. Theodore Kranech, New York, N. Y. [Filed Aug. 29, 1874.]

Brief.—One fan draws warm air from the lowermost cooling-chamber upward through a central flue, and spreads it laterally against the bottom of the ice, whence, cooled, it descends into both the middle and the lowest cooling-chambers. Another fan makes an air-circuit from the middle cooling-chamber centrally upward against and along the under side of the drip-floor, and downward into the same chamber. A third fan above the ice-chamber receives the drip-water from a pump, and sprays it to cool the air over the ice-chamber.



1. The combination of the drip-floor *f*, separated from the bottom C of the ice-chamber, with the ceiling *e* and the sides of the cooling-chamber E, whereby an air-chamber, N, is formed, substantially as shown and described.

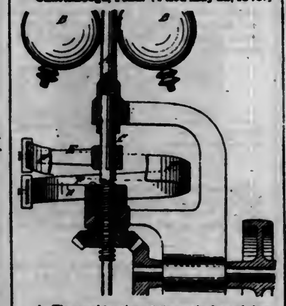
2. The combination of the fan J with the drip-floor *f*, ceiling *e*, and with the sides of the chamber E, forming the chamber N, for operation substantially as specified.

3. The air-passages *d* and *g* in the drip-floor *f* and ceiling *e*, combined with the fans H and J, whereby cool air is circulated from the central flue to the air-chamber under the ice, and to cool the air-space N under the drip-floor, and thence back into the cooling-chamber, as described.

4. The hollow fan N, having perforated tubes *r* secured in its blades, and connecting with a central opening of said fan, substantially as and for the purpose herein shown and described.

5. The drip-tub *i* of the ice-house, combined with the pump L and hollow fan N, as set forth.

164,745. GOVERNORS. William D Marks, Chattanooga, Tenn. [Filed May 22, 1875.]



1. The combination of the conical pendulum B with the spring E and screw-spindle C, substantially as described.

2. The combination of the screw-spindle C passing through the wheel G and the spring E, so attached to the spindle C and the wheel G as to raise and lower the valve by the yielding of the spring E, substantially as described.

3. The combination of the screw-spindle C, wheel G, spring E, and conical pendulum B with a valve, so as to regulate the speed of an engine or other prime mover, by using the inertia of the conical pendulum B to close the valve, and its extra-acquired momentum to open the valve when a change of speed is attempted, the valve movement preceding the action of the pendulum, substantially as and for the purpose described.

164,746. ICE-BREAKING ATTACHMENTS FOR VESSELS. Jos. T. Martin, New York, N. Y. [Filed May 6, 1875.]

The combination, with the revolving shaft B, of the transverse sliding shafts D, provided with heads *d²* and cushions *d³*, placed at right angles with each other and with the shaft B, substantially as herein shown and described, and for the purpose set forth.

164,747. NUT-LOCKS. Walter F. Matthews, Pittsburg, Pa. [Filed Mar. 20, 1875.]

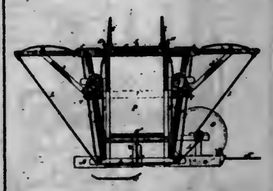
Brief.—A plate, with an inwardly-projecting pawl to engage with a ratchet formed on the screw-bolt, is pivoted, so that a spring occupying a recess in the upper side of the nut, and attached rigidly by one leg to the under side of the plate, acts to hold the pawl and ratchet engaged or disengaged, as desired.



The combination of the pivoted locking-plate C, having an inner lip, *g*, with the nut B, and the coil-spring arranged in recess A, and having one of its legs secured to the nut and the other to the locking-plate, as shown and described, to operate as specified.

164,748. HAT, COTTON, AND WOOL PRESSES. Maria McBurney, Sacramento, Cal., administratrix of Wm. H. McBurney, deceased. [Filed Apr. 3, 1874.]

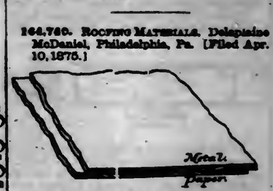
Brief.—In a vertical frame. Ends of side levers drawn down by ropes on a working-shaft. Descending bars pivoted to the middle of the levers draw down other ropes passing over pulleys, and attached to protruding ends of the follower to draw it upward.



1. The vibrating hooked levers G', in combination with a hinged door, having a barbed catch, *f*, and a press-frame, having stationary staples H, substantially as specified.

2. The vertically-movable follower H', having a brace, A, cords I I', pulleys J, connecting-rods J', and actuating-levers K, in combination with the windlasses M W, whereby the winding of the rope around one windlass will unwind the rope coiled upon the other, substantially as specified.

164,749. ROOFING MATERIALS. Delapaine McDaniel, Philadelphia, Pa. [Filed Apr. 10, 1875.]



As a new article of manufacture, the roofing material consisting of the metallic sheet and fibrous lining sheet united by suitable adhesive material under compression, substantially as specified.

164,750. SASH-FASTENERS. Peter Meyer, Iowa City, Iowa. [Filed May 22, 1875.]

Brief.—Is fastened through its fastened upper end to the sash, its lower end curving to form a handle for conveniently raising or lowering the sash. The middle part of this spring-latch, bearing on the window-frame, is perforated, so that it may engage over pins at suitable distances on the frame, thus fastening down the sash, or holding it at intermediate heights, in desired position.

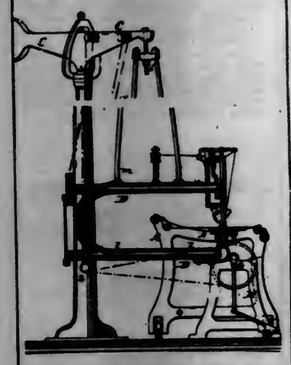


HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

A seal-fastener composed of a spring bead or latch, C, attached to the sash, and provided with a perforation, C', at its middle part, and a lower handle part, in combination with the locking-pins D of the window frame, to be operated substantially as shown and described.

164,751. EMBROIDERING-MACHINES. P. Michalet and Pascal Bourget, Lyons, France. [Filed Feb 26, 1875.]

Brief.—A sewing-machine hung in a pivoted frame can be moved in any direction to conform to the pattern to be embroidered on the material, which is carried on a traveling frame, that allows the material to rest on the bed-plate of the machine.



In an embroidering-machine, the combination, with the balanced lever C, adapted to be turned upon the vertical pivots i i, and the U-shaped embroidering-frame D, of the rods m m, vertical pivot O, and nut O*, substantially as herein shown and described.

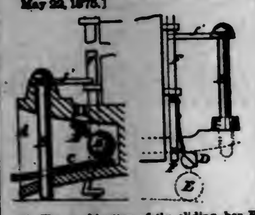
164,752. BAG-LOCKS. Frank W. Mix, Terryville, Conn., assignor to the Eagle Lock Company, same place. [Filed Apr. 20, 1875.]



1. The spring-dog c, pivoted upon the base A, and provided with mechanism for holding it to either side, in combination with the legs b n of the slide D, all operating together within the case, substantially as described.

2. The combination of the case B, slide D, and its legs b n, handle E, spring d, catch C, and swinging dog a b, pivoted upon the base-plate A, all substantially as described.

164,753. CAR-COUPLINGS. Rocco Misco and Bishop J. Warner, Macon, Miss. [Filed May 22, 1875.]

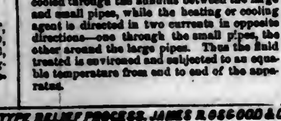


1. The combination of the sliding bar F, provided with an arm, f', the rock-bar D, having its outer end notched, and the bell B, with the bumper-head A and the coupling-pin B, of a car-coupling, substantially as herein shown and described.

2. The coupling-link C, having its end parts filled up, leaving a slot or cavity in its mid dle part, in combination with the bell E, rock shaft D, sliding bar F, arm f', coupling-pin B, and bumper-head A, substantially as herein shown and described.

164,754. FLOORING-CLAMPS. Jno T Moss and G. J. Moss, Ashborough, Ind. [Filed Dec. 28, 1874.]

Brief.—The clamp consists of a peculiar shaped clamping lever, provided upon its rear part with a pawl and two extensible gripingplates, adapted for attachment to joists of different sizes.



The combination, with lever G, having pawl H, of plate A, having extension E, and grooved plate F, having lip C, the former adjustable in the latter, as and for the purpose specified.

164,755. WASHING-MACHINES. M. Newton, Kentland, Ind. [Filed May 17 1875.]



The combination of the perforated cylinder A B, T-shaped beckets D D, angular bars E E, and perforated band or roll G, all constructed and arranged substantially as and for the purpose herein set forth

164,756. MEANS FOR PUMPING WELLS. A. E. Nickerson and Levi C. Streeter, Allegheny Township, Venango County, Pa. [Filed May 31, 1875.]



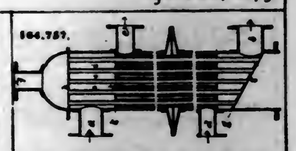
1. The combination of the band-wheel B with crank c, the pitman b, walking-beam A', rope or chain d, pulley e, and walking-beam A', having depending braces C, substantially as and for the purposes herein set forth.

2. The combination, with the band-wheel B and crank c, of the pitman f, T-shaped lever D, rods h A, L-shaped levers E F, rods i i, and walking-beams A' A', substantially as and for the purposes herein set forth.

164,757. COOLERS AND CONDENSERS OR HEATERS. Charles H. North, Somerville, Mass. [Filed May 13, 1875.]

Brief.—Passes the fluid to be heated or cooled through the annulus between the large and small pipes, while the heating or cooling agent is directed in two currents in opposite directions—one through the small pipes, the other around the large pipes. Thus the fluid treated is environed and subjected to an equable temperature from end to end of the apparatus.

164,759.



The apparatus above described, consisting of the inlet a and outlet b for the fluid or gas to be cooled, the plates g h i k, the two sets of pipes, the pair of inlets c and d, and the pair of outlets e and f for the cooling medium, arranged together substantially as described.

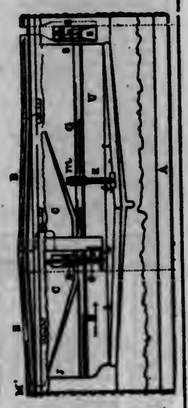
164,758. MANUFACTURE OF ARTIFICIAL STONE. Luke W. Osborn, Morgan, and H. D. Merriam and Peter B. Doty, Conneaut, Ohio [Filed Dec 19. 1874.]

The combination of sand, resin, brimstone, and coal tar, with or without oil and plaster-of-paris, for the manufacture of artificial stone, substantially in the manner herein described.

164,759. RAILWAY-CROSSINGS. Emmet J. Patterson, Chicago, Ill. [Filed Oct. 17, 1874.]

Brief.—A railroad-crossing in which the flange-space is filled while a train crosses a line by a plug, which is elevated into the space by the weight of the approaching train upon an elevated section of the line-rails, acting through appropriate mechanism. When the plug is thus elevated, a stop-block is forced under it, and when the train has passed a spring returns the raised rails, likewise withdrawing the stop-block, and permitting the plug to fall.

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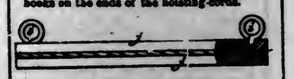


1. The panels C C and supporting-rails B B, in combination with arm D, rod and spring F e, cam-levers 3 and 6, shaft G, plug e, and block h, as and for the purpose specified.

2. The combination of shaft G, rod and spring H, arm m, and stripe I I, substantially as set forth

164,760. INVALID-BEDSTEADS. Geo. Pence, Gilman, Iowa. [Filed July 11, 1874.]

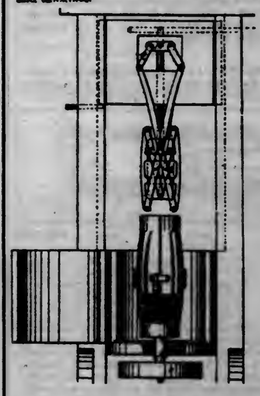
Brief.—The ends of the sheet are clamped between the sections of the rod, and the eye-screws, by which the sections are secured together, furnish points of attachment for the hooks on the ends of the hoisting-cords.



The combination of the eye-screws i i with the sections j j of the rods J, sheet H, and hooks k k upon the ends of the cords K, substantially as specified.

164,761. CENTRIFUGAL MACHINES FOR MAKING PAPER BARRELS. W. G. Pennypacker, Wilmington, Del. [Filed Apr. 24, 1875.]

Brief.—The pulp is placed in the sectional cylinder. The strikes are lowered into it and gradually expanded as the cylinder is made to rotate, thus reducing pulp to the proper shape and thickness



The combination of rotary centrifugal cylinder and circumjacent case, both made in sections that open and close longitudinally, as and for the purpose specified.

164,762. SAW JOINTERS AND GAGES. R. H. Poindexter, Anderson, Ind. [Filed Dec. 11, 1874.]

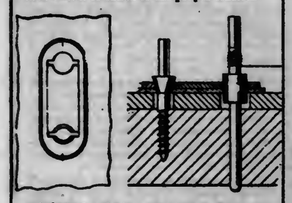


1. A saw jointer and gage provided with a laterally-adjustable plate, e, whereby the tooth is prevented from springing while being filed, substantially as set forth.

2. The metal frame a, having the flanged surfaces g and g', projections f, clamp d, adjustable plate e, and set-gage s, substantially as specified.

164,763. PIANO-TUNING-PIN LOCKS. Geo. P. Reeves, Helena, Mont., assignor to himself and Chas. Bramley, same place. [Filed Mar. 29, 1875.]

Brief.—A link-plate connects the tuning-pin with the setting-pin, the latter having a cone-shaped head, that crowds a slide-plate against the tuning-pin after its string has been drawn or tuned to the proper tension.



A fastening device or "tone-lock," for tuning-pins of pianos and other stringed instruments, consisting of the combination of the insulated tuning-pin with insulated fixed and sliding jaw-plates and an adjustable locking pin or key with conical wedge part, arranged and applied substantially as and for the purpose set forth.

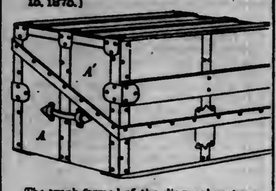
164,764. DIES FOR FORMING SCREW-THREADS. Frank Rhind, Brooklyn, N. Y., assignor to Bristol Brass and Clock Company, Bristol, Conn. [Filed Jan. 13, 1875.]

Brief.—Stamping screw-threads on sheet-metal collars by means of dies, each having a screw-thread thereon.

1. The combination of the recessed block A, divided dies B and E, and wedge F, substantially as shown.

2. The die E, formed in four pieces, all of which are pivoted so as to close inward, substantially as described.

164,765. PHOTOGRAPHIC DARK-TRUNKS. Frank Robbins, Oil City, Pa. [Filed May 15, 1875.]



The trunk formed of the diagonal sections A and A', and provided with hood B, frame C, and curtain D, substantially as specified.

164,766. COMBINED LAMPS AND OIL-CANS. William Roberts, Quincy, Ill. [Filed Mar. 20, 1875.]

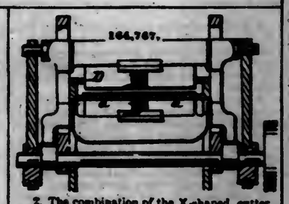


1. The lever M supported at its power end by a spring on the handle of the oil-can, resting with the other end upon and holding down an air-valve, substantially as and for the purpose specified.

164,767. SUGAR-CUTTING MACHINES. F. Rochow, Brooklyn, N. Y. [Filed May 26, 1875.]

Brief.—The knives or clipping-tools operate by cams and eccentrics, from above and below a fixed table, through slots. The sugar-block is carried forward by the intermittently-moving carrier, being firmly clasped by the same, and is thus separated into cakes of desired size.

1. In a sugar-cutting machine, the combination of a reciprocating cutter, D, with the intermittently-moving carrier C, which is provided with apertures that grasp the edges of the slabs of sugar to be cut, and with the stationary table d, substantially as herein shown and described.

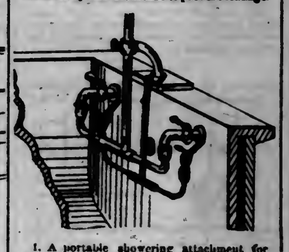


164,767.

2. The combination of the X-shaped cutter D, placed beneath the slotted table e, with the carrier C, and with the upper X-shaped cutter D, all substantially as herein shown and described.

164,768. SHOWERING ATTACHMENTS FOR BATH-TUBS. William H. Rowe, Washington, D. C., assignor of one-half his right to Quinton Corwine, same place. [Filed June 9, 1875.]

Brief.—The stand-pipe having the sprinkler is joined to the cocks of the bath-tub by telescopic-pipe arrangement, thus allowing it to be used in any tub. The pipe is supported by a bracket, as shown, being held by a set-screw, while the connections with the cocks are made by suitable means to prevent leakage.



1. A portable showering attachment for bath-tubs having a rigid stand-pipe, provided with a sprinkler and device for connecting with the faucet, so that it may be readily attached or removed therefrom, substantially as described

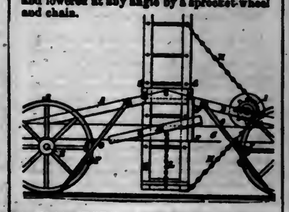
164,768.

2. The combination of the stand-pipe, provided at its upper end with a sprinkler, a branch pipe or pipes for connecting with the faucet or faucets, and a bracket for holding it in position, substantially as described, for the purpose specified.

3. The combination of the stand-pipe, arms for connecting with the faucets, the bracket for holding the pipe in place, and device for jamming the pipes firmly upon the faucets.

164,769. FIRE-ESCAPE LADDERS. David Sanford, Ashton, Ill. [Filed Mar. 6, 1875.]

Brief.—A hollow square ladder pivoted to the timbers of the truck-frame at or near the center thereof, in gimbal-bearings, and raised and lowered at any angle by a sprocket-wheel and chain.



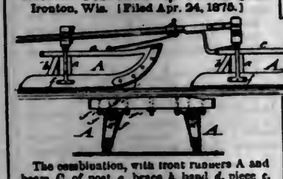
1. The combination of the inclined parts D D of the wheeled frame, and the hollow ladder E, pivoted between the bars, and at the angle thereof, by means of gimbal-coupling F G, as shown and described, for the purpose specified.

2. The combination of the chain H, spur-wheel I, and crank-shaft J, with the ladder E, gimbal F G, and carriage-frame C D, substantially as herein shown and described.

3. The combination of the chains L, levers M, and ratchet-bars N, with the ladder E, the gimbal F G, and the carriage-frame C D, substantially as herein shown and described.

4. The combination of the swiveled braces O, and the chains P, with the carriage A B C D, of the pivoted ladder E, substantially as herein shown and described.

164,770. BOB-SLEDS. John J. Sandgren, Ironton, Wis. [Filed Apr. 24, 1875.]



The combination, with front runners A and beam C, of post a, brace b, band d, piece e, side braces f, and eyebolts f', as and for the purpose specified.

164,771. SCAFFOLDS. John R. Sanders, Indianapolis, Ind. [Filed Apr. 20, 1875.]

1. The combination of the sliding bar F, provided with an arm, f', the rock-bar D, having its outer end notched, and the bell B, with the bumper-head A and the coupling-pin B, of a car-coupling, substantially as herein shown and described.

4. A metallic back-band loop, L, constructed with a raised plane surface, r, around its apertures l, as described, in combination with the tree and back-band, substantially as and for the purpose herein specified.

5. A harness-saddle tree provided with upwardly-inclined pins s s, cast with the frame, and projecting from its lower ends, substantially as and for the purpose herein specified.

164,772. CARPET-CLEANERS. D. B. Scofield, Baker City, Oreg. [Filed Apr. 10, 1875.]

Brief.—A device for extracting grease-spots from carpets by suction.



A device for removing spots from carpets, consisting of tube A, provided with the ring-cap E, the wire cloth F, and sponge G, or their equivalents, the two holes a' a', the valve I, and the piston and piston-rod B C, substantially as herein shown and described.

164,773. SHEET-METAL HINGES. Samuel Scott, Springfield, Ohio, assignor to Wm. A. Dodge, New York, N. Y. [Filed June 29, 1874.]

Brief.—In a sheet-metal hinge that portion of one of the leaves which is ordinarily cut away to make room for the hub of the other leaf is bent out, and utilized to form a rigid arm or auxiliary leaf, standing at or near right angles to the main leaves, preventing wastage, and materially strengthening the hinge.

1. In an oil-stove, the combination of the perforated plate E, plate G, having the projections f to guide the air to the flames, the perforated plate H, air-chamber h, and perforated rim I, substantially as shown and described.

2. The combination of the air-reservoir B, hollow plate D, with asbestus packing, the air-space b, vent-tube d, and valve e, all constructed substantially as and for the purposes herein set forth.

164,774. JOINT-SUPPORTS FOR STREET-RAILWAY RAILS. Cevedra B. Sheldon, New York, N. Y. [Filed May 3, 1875.]

164,774.

164,775.

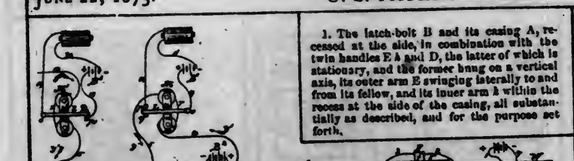


Brief.—A chair for street-railway rails, consisting of a plate conforming to the shape of the under side of the rail, and having upper and lower flanges on its edges, which prevent lateral displacement of rail, and also of the plate or chair upon the stringer or longitudinal timber. A bolt secures the end of each rail to plate.

1. A splice-plate for rails laid on stringers, firmly bolted to both rail ends, and having flanges to prevent lateral play on the stringer, also flanges to prevent lateral play of the rails, substantially as specified.

2. The splice-plate for rails laid on stringers having a crowning middle portion of the web corresponding with and fitting in the under side of the rail, in combination with ribs g for preventing lateral movement of the rails, substantially as specified.

164,776. LATCHES. Thomas Bell, Jr., Cincinnati, Ohio. [Filed Apr. 26, 1875.]



1. The latch-bolt B and its casing A, recessed at the side, in combination with the twin handles E A and D, the latter of which is stationary, and the former hung on a vertical axis, its outer arm E swinging laterally to and from its fellow, and its inner arm h within the recess at the side of the casing, all substantially as described, and for the purpose set forth.

2. The barrel A, having the square end plate d, in combination with the latch-bolt B and fastening-plate C, having the hub e, which fits within the mouth of the barrel, all substantially as described.

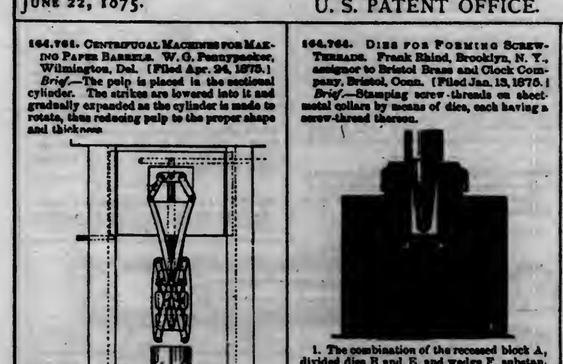
164,777. BALING-PRESSES. John C. Stokes, Villanow, Ga., assignor to himself and Jos. W. Cavender, same place. [Filed Mar. 6, 1875.]

Brief.—The pawls have long notches with concave shoulders formed in their forward upper ends, to receive the pins of the driving-wheel. Two sets of notches in their lower ends receive the pins of the operating-lever. The ratchet-wheel is adapted to be turned in either direction by means of the pawls.

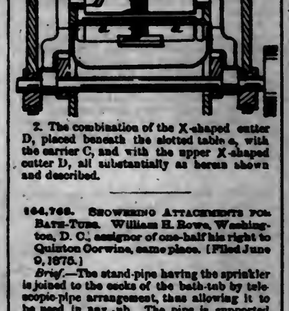
164,778. SEED-DRILLS. Jos. R. Symmes, Hamilton, Ohio. [Filed Sept. 20, 1874.]

Brief.—Scrapers upon the bottom of the drill-tubes sweep away a place upon the surface of the ground for the seed, which is afterward covered by plows following closely in rear, and leaving deep furrows between each ridge.

164,778.



164,779. DEVICES FOR CONVERTING MOTION. George Turner, Kalamazoo, Mich., assignor of one-half his right to Le Grand Whitcomb, same place. [Filed Mar. 27, 1875.]



The spurred rings D D', clamped between two circular plates, E E, each plate having inclined planes c c, which terminate in semi-circular recesses d, and the balls c, in combination with the racked pitman C and operating mechanism.

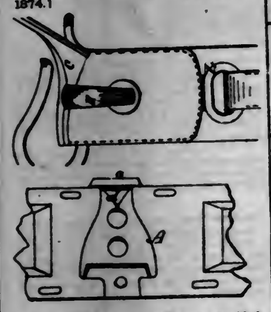
164,780. PLOW-COULTER CLEANERS. Theodore Wallis, Scipio, and Oscar J. Case, Auburn, N. Y. [Filed Mar. 13, 1875.]



The combination, with the sod-cutter D and the wheel H, of the crank-rod I, the loop J, formed of one and the same piece with the

An adjustable bracket formed of one piece of casting, with corel receptacles for the uprights B, cross-ties C, C', and J, constructed and operated substantially as specified.

164,776. HARNESS-SADDLES. Abraham V. Sargeant, Newark, N. J. [Filed Aug. 7, 1874.]

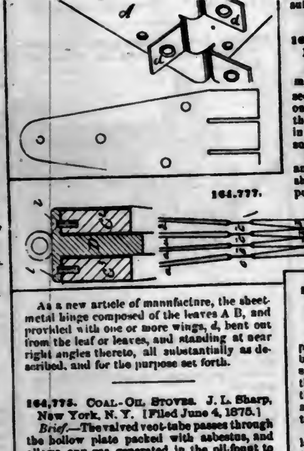


1. A metallic harness-saddle tree provided with a cast projection, *a*, to serve as an immediate support for the upper points *b b* of the jockeys, substantially as herein specified.

2. The wedge-shaped projection *c* on the seat C, in combination with a corresponding cavity, *d*, in the upper surface of the tree, substantially as and for the purpose herein specified.

3. A harness-saddle tree having right-angled pin-projections *h h* cast upon its inner faces, for supporting the saddle-skirts in position, substantially as and for the purpose herein specified.

164,777. LOOM-HARNESS. Joseph Sladdin, Lawrence, Mass. [Filed May 20, 1875.]



164,777.

1. A loom-harness, having its heddle-eyes made from lengths of yarn, and these yarns secured to three rig-bands, of which rig-bands one is at one side and two at the other side of the harness, whereby the eyes are arranged in four series in different vertical planes, all substantially as and for the purpose described.

2. The blocks D, provided with an eye, *e*, and applied and secured to the loom-harness shafts C C, substantially as described, for the purpose specified.

As a new article of manufacture, the sheet-metal hinge composed of the leaves A B, and provided with one or more wings, *d*, bent out from the leaf or leaves, and standing at near right angles thereto, all substantially as described, and for the purpose set forth.

164,778. ELECTRIC RAILWAY-SIGNALS. H. W. Spang, Reading, Pa. [Filed Mar. 24, 1874.]

1. The combination of a series of batteries, polarized relays, and means for making or breaking the circuits of the batteries, arranged substantially as set forth, whereby any one of the relays will be operatively affected only by the current from its own designated battery, and not by the current from either of the batteries adjacent to such designated battery.

2. The combination and arrangement of polarized relay M, section of track A A, and battery B with polarized relay M', section of track A^1 A^1, and battery B^1, so that should current of battery B^1 pass over relay M a safety-signal will not be given, as set forth.

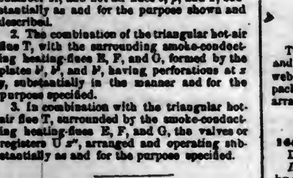
3. Circuit-closer and breaker E and wire 6, in combination with rails F^2 F^2, as set forth.

4. Switch-rails E^2 E^2, in combination with rails F^1 F^2 R, wire 2, circuit-closer F, or plate *f*, wire 3, and rails R^1, as and for the purpose set forth.

5. Rails E^1 F^2 F^2 of section A^1 A^1 of branch track or siding, and wire 4, in combination with frog H, or wire 12, and rails E^1 F^2 F^2 of main track A A, as set forth.

164,779. COAL-OIL STOVES. J. L. Sharp, New York, N. Y. [Filed June 4, 1875.]

Brief.—The valved vent-tube passes through the hollow plate packed with asbestos, and allows any gas generated in the oil-fount to escape and be drawn into the wick-flame.



164,780. BELL TOYS. Francis Arnold, Chatham, Conn. [Filed May 4, 1875.]



The combination of the barrel *a*, cylindrical throughout, or at or near its ends only, the bells d d^2, attached to the inside of the cylinder or ends by connections d^3, and the bail *c*, its ends entering the centers of the ends of the cylinder, the whole constructed substantially as shown and described.

164,781. TOYS. Charles A. Bailey, Cobalt, Conn. [Filed May 31, 1875.]



The herein-described toy ball, consisting of the spherical shell with one or more bells permanently suspended therein, substantially as described.

164,782. PROCESSES OF TANNING HIDES. Edgar A. Baldwin, Phelps County, and C. A. Holcombe, Lincoln, Nebr. [Filed May 21, 1875.]

In tanning hides or skins, the plant *Polygonum fimbriatum*, (Eaton,) treated in the manner herein described.

164,783. RAILWAY-TRACKS. R. Sanolas, Madrid, Spain. [Filed May 17, 1875.]

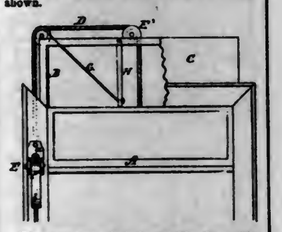
Brief.—An improvement in railroad-tracks, in which a compound rail with detachable head and web, bolted to a permanent base and web, is secured to an I-shaped cross-tie, the intervals between the sections of the rail and the base of rail and the tie being provided with an elastic packing.

164,784.

The combination, with the I-iron ties H and rubber packing J, of the base or foot A, web *a*, cap or head B, web *b*, and interposed packing J, the whole being constructed and arranged as and for the purpose specified.

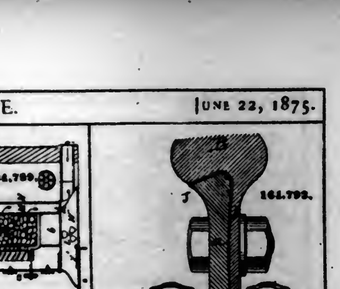
164,784. TRANSOMS FOR DOORS. J. Berndt, Denver, Colo. [Filed May 18, 1875.]

Brief.—The transom is raised and lowered by a rope running on pulleys. It is held down by lock-bar, so that it cannot be opened from the outside. The rope, holding the transom in any desired place, is locked fast by the device shown.



The transom-sash A, in combination with the casing C, the cord D, pulleys E E^1 E^2, fastening F, branch cord G, and the locking-bar H, substantially as and for the purpose described.

164,785. HARVESTER-RIBBLS. Jas. F. Black, Oshkosh, Wis. [Filed Mar. 13, 1875.]



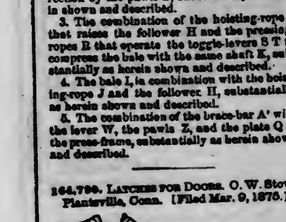
164,785.

The flat reel, consisting of the shafts 13 and 17, drums 15, 15' and 16, 16', swing-beam 18, tighteners 27, and rollers 28, endless chains 24 24', sockets 6, and standards 25, all arranged and operating substantially as and for the purpose set forth.

164,786. CARDING-MACHINES. Thomas Howard Blamires, Henry Blamires, and Harry Marsden, Huddersfield, England. [Filed Mar. 16, 1874.]

Brief.—For delivering the fleece from a carding-engine in folds, and winding it in the form of a lap, which is to be removed and fed into another engine.

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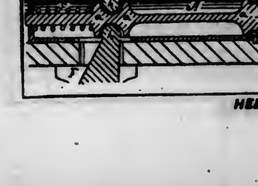


164,786.

The creeper B, in combination with the crank C, rod D, pressing-roller G, creeper E, roller J, rollers or drums K K', bevel-wheels L N N', ratchet-wheel D', shaft L', and lever O, all arranged and constructed to operate substantially as described, and for the purposes set forth.

164,787. PRESERVING EFFERVESCENT LIQUIDS. John G. L. Boettcher, Brooklyn, N. Y. [Filed Apr. 29, 1875.]

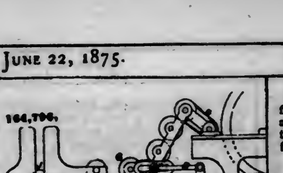
Brief.—The gas is automatically supplied from a proper receptacle to the liquid to be preserved. It is introduced below the level of the liquid by the means shown.



In an apparatus for supplying carbonic-acid gas to a vessel containing beer or other liquid to be preserved, the combination of a portable closed vessel in which carbonic-acid gas is stored, with a pipe and faucet, said pipe extending from the vessel containing carbonic-acid gas under pressure and connected with the faucet, which is constructed to be secured to the vessel below the level of the liquid, substantially as herein shown and described, whereby the carbonic-acid gas in the portable closed vessel is automatically supplied to the liquid in the vessel through the faucet, as set forth.

164,788. MACHINES FOR MAKING BOXES. John W. Bowers, South Carver, Mass. [Filed Mar. 17, 1875.]

Brief.—The device facilitates the making of boxes by holding the different pieces of which it is composed in their proper position with relation to each other while being nailed together.



1. The combination, in a box gaging and holding frame, of the wings B B', having springs *d d*, whereby they form both clamps and guides on their outside and inside surfaces, respectively, the opening *e* beneath the one wing, the posts or stops C C', and the shoulders or projections *c c*, substantially as and for the purposes herein set forth.

2. The combination, with the plate or connecting-piece D, of the wings B B', forming combined clamps and guides, made adjustable toward or from each other, essentially as described.

3. The combination of the extension-bart C' C' with the wings B B', substantially as specified.

4. The adjustable blocks, stops, or pieces *f f'*, in combination with the posts C C' and bar C', connected with or forming parts of the wings B B', essentially as described.

5. The extension-bar D', in combination with the plate D and wings B B', substantially as specified.

6. The box gaging and clamping or holding frame, constructed substantially as described, and pivoted to a fixed bench, substantially in the manner and for the purpose herein set forth.

164,789. HARVESTERS. H. H. Bridenthall, Jr., Latrobe, Pa. [Filed May 26, 1874.]

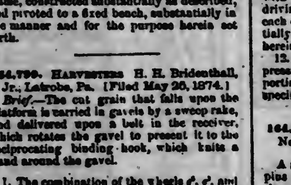
Brief.—The cut grain that falls upon the platform is carried in gavels by a sweep-rake, and delivered upon a belt in the receiver, which rotates the gavel to present it to the reciprocating binding-hook, which knits a band around the gavel.

1. The combination of the wheels c^1, c^2, and c^3, clutch c^4, shipper-lever O, arm o^1, rod P, and the toothed segmental arm J, with each other and with the driving-shaft E and the compressing-belt M, substantially as herein described, and for the purposes set forth.

In a grain-drill, the combination of the surface-sweeping grain-distributers with the ridge-forming covering-plows, substantially as and for the purpose herein specified.

164,790. COMBINED CARRIAGES AND CHAIRS FOR CHILDREN. Chas. F. Tenny and Thos. J. Hobbs, Baldwinsville, Mass., assignors to Thompson, Farley & Waite, same place. [Filed Mar. 17, 1875.]

Brief.—The pivoted legs can be adjusted with relation to the seat of the chair, so that the latter can be used either as a chair or carriage, and the pivoted table or play-shelf can be used as a handle, by which to push the carriage when desired.



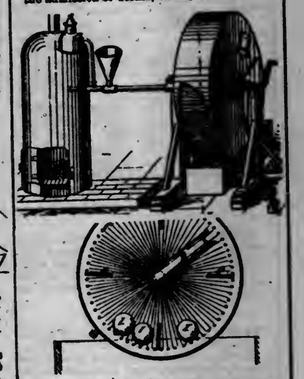
1. A child's carriage, composed of a seat, *a a'*, legs *b* connected with the seat, legs *c* pivoted to legs *b*, and wheels, all combined to operate substantially as described, and to be converted into a high chair, as set forth.

2. The combination, with the seat and its hinged legs *b*, of the legs *c* pivoted to legs *b* and the pivoted guard, connected with legs *c*, as described, whereby downward pressure on the guard throws it back against the seat, substantially as described.

3. The combination, with the carriage, of the table or play-shelf *i*, substantially as described.

164,791. CYLINDER WASHING-MACHINES. Sigismund Wehoy and Agnes F. Wehoy, New York, N. Y. [Filed May 1, 1875.]

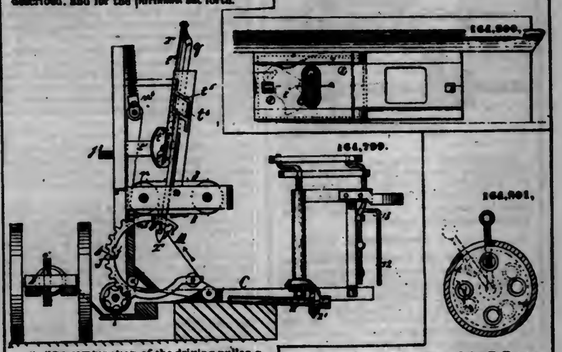
Brief.—A closed revolving cylinder with an inclosed cylinder of cane-rods, within which are shelves arranged radially, and loose balls. On one side the cylinder revolves on a hollow axle, which opens into a perforated tube for the admission of steam, water, &c.



1. In a washing-machine, the combination of the closed revolving cylinder A, having an open concentric cylinder C of elastic cane rods, leaving an uninterrupted space between them and balls I, whereby the clothes are washed, rinsed, and moisture expelled therefrom, in the manner described.

164,792. SEAL-ESCUTCHEONS. R. J. Brooks, New York, N. Y. [Filed May 15, 1875.]

A seal-escutcheon, having a tearing pin or pins attached to an automatic fastening for the seal-cover, whereby the seal will be torn in the act of releasing the seal-cover, substantially as set forth.



164,799.

164,800.

164,801.

164,801. SOAP-HOLDERS. John F. Bryan, Canton, Ohio. [Filed Mar. 6, 1875.]

Brief.—A holder for powdered soap, having a sliding valve-bottom, and provided with a bracket to attach it to the wall of a room.

1. A powdered-soap holder, provided with a sliding valve, *d*, and combined with a suitable bracket attached thereto, whereby the device may be secured to the wall, substantially as and for the purpose described.

2. The powdered-soap dish, consisting of holder B, cover A, valve-opening bottom *b*, and bracket C, substantially as and for the purpose described.

164,802. FRICTION-SLIDES FOR DROP-LIGHTS. John T. Bruen, Brooklyn, N. Y. [Filed Mar. 17, 1875.]

Brief.—Vibrating levers having clamping-jaws on inner end, and male centers resting in lugs upon the adjustable frame.



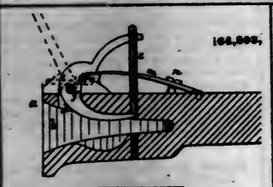
1. The combination, with the frame A, of the vibrating-levers D, having the clamping-jaws E formed on their inner ends for clamping the pipe or spindle C, and having their outer ends formed with male centers engaging with female centers in the lugs G on the frame, as herein shown and described.

2. The combination, with the frame A and levers D, of the adjustable sliding blocks H, for regulating the pressure of the clamping-jaws, substantially as described.

164,803. CAR-COUPLINGS. W. S. Burton, Maryville, Tenn., assignor of one-third his right to John S. Lawrence, same place. [Filed May 27, 1875.]

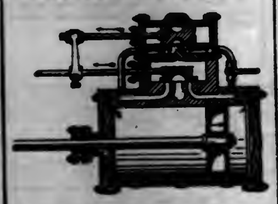
The combination, with the buffer *a* and pin *c*, of the cam *f*, constructed as described, having the projection *l* on its shaft, and the spring *m*, all arranged and operating substantially as and for the purposes set forth.

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164,803.

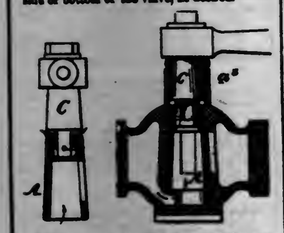
164,804. STEAM-ENGINES. Hiram P. Case, Detroit, Mich. [Filed Dec. 30, 1874.]



The combination, with a steam-engine, of an independent valve and valve-chest and pipes, for transferring a portion of the exhaust steam to the steam side of the piston, at or near the completion of each stroke of the piston, substantially as described.

164,805. FAUCETS. Louis Chaine, San Jose, Cal., assignor of one-half his right to H. M. Magee, same place. [Filed Apr. 30, 1875.]

Brief.—Water is admitted to the space between the plugs, to prevent them from becoming jammed in the valve-chest. The supply-pipe may be attached to the inlet on the side or bottom of the valve, as desired.



1. The combination in a faucet of the two plugs A and C, loosely connected together, the plug A being open at its large end to the inlet, and having a passage through it to the space between the two plugs, all substantially as and for the purpose set forth.

2. The combination of the outer casing or chest, and its open plug, A, with the branches a' and a^2, both communicating with the said plug and with a screw-plug, E, adapted to both branches, as set forth for the purpose specified.

164,806. CASES FOR PRESERVING CIGARS. William B. Chandlee and Edwin H. King, Washington, D. C. [Filed Mar. 12, 1875.]

Brief.—Cigars, intact in their packages, are deposited upon skeleton shelves. Water is kept in shallow vessels beneath. Air is admitted at the base, and ascends through the top under regulations.

1. The process of fruhing and preserving the freshness of cigars, without removing them from their original boxes, by inclosing or enveloping the same in a confined atmosphere, which is supplied with different degrees of moisture or humidity at different heights by contact with water-surfaces, as herein set forth.

2. A close, upright case, having one or more pans or trays adapted to expose large surfaces of water within the case, as means for fruhing and preserving the freshness of cigars and tobacco, in the manner herein set forth.



3. A close, upright case, having one or more horizontal pans or trays exposing water-surfaces, which supply moisture to the air within the case, and impermeable lining to prevent the walls from absorbing moisture, substantially as herein illustrated and set forth, for fruhing and preserving the freshness of cigars and tobacco in the manner specified.

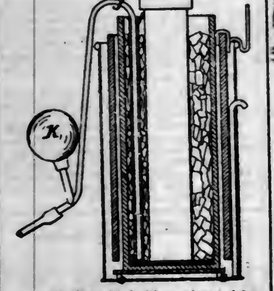
4. The combination, in a close upright case, of the water pans or trays P, (one or more,) operating as described, and two or more open shelves S, for supporting boxes of cigars at different distances from the water surfaces or surfaces, substantially as herein shown and set forth.

5. The combination of walls and doors W D, metallic lining *l*, one or more water pans or trays P, and supporting shelves at different distances from the water pans or trays, substantially as herein shown and described for the purpose specified.

6. The combination, in a case for fruhing and preserving the freshness of cigars and tobacco, of two or more pans P, and waste-pipes *d* for emptying or partially emptying one or all of the pans, as means for regulating the operation of the case by varying the area or extent of exposed water-surface, as herein set forth.

164,807. GALVANIC BATTERIES. Theophile Chatenay, Paris, France. [Filed May 12, 1875.]

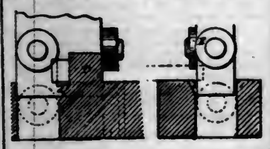
Brief.—For withdrawing the spent liquid.



The tube J, provided with an exhaust-globe, K, and extending down into and secured in a tube, *f*, which is secured in and extends to the bottom of the porous cup, and is made of non-conducting material, substantially as and for the purpose set forth.

164,808. DIES FOR FORMING SPURS ON TOE-CALKS FOR HORSESHOES. Thos. M. Clarke and D. B. Chase, Winsted, Conn. [Filed Jan. 22, 1876.]

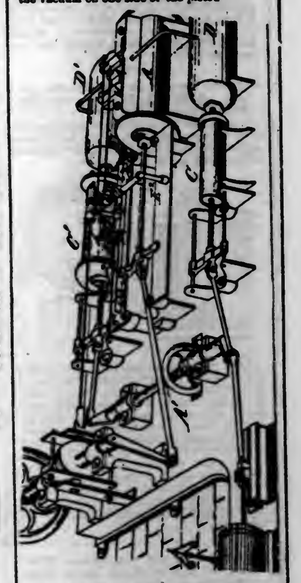
Brief.—Improvement on their Patent No. 157,494, December 8, 1874; and consists in providing the upper dies with rolling-surfaces.



In a die for forming the spurs on toe-calks, the cavities *b d*, one or both, combined with their respective vertically moving and guided rolls E C, substantially as described.

164,809. PNEUMATIC ENGINES. P. M. Connelly, St. Louis, Mo. [Filed Feb. 6, 1875.]

Brief.—A steam-engine exhausts the air from two tanks. Said tanks are alternately put in connection with each end of the atmospheric engine. One of said tanks exhausts the air from the cylinder, and the other maintains the vacuum on one side of the piston

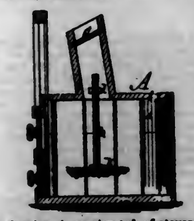


1. An improved pneumatic engine, consisting of the cylinder A, having ports *a a' a² g g'*, valves F H H', operated in the manner herein shown and described.

2. The vacuum-vessel D, exhaust-vessel D', pumps C C', in combination with an auxiliary motor, substantially as and for the purpose set forth.

164,810. INCUBATORS. Adolphe Corbett, Hicksville, N. Y. [Filed July 16, 1874.]

Brief.—The device is composed of staves, with openings left between them, so that manure piled around its sides supplies the necessary heat by fermentation.

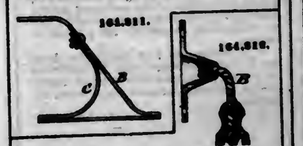


The chamber A, constructed of staves attached to the bottom and top pieces, the vertical chimney F, projecting from the top of the chamber, having the slide G, in combination with the artificial mother K, provided with the vertical screw *k*, working in a yoke, *l*, for adjusting the same, all substantially as herein shown and described.

164,811. SPRING-CHAINS. A. W. Coates, Alliance, Ohio. [Filed Jan. 25, 1875.]

Brief.—The main leaf is provided with an auxiliary spring, slotted at the end, and sliding on a pin, thus yielding to ordinary weight without causing the auxiliary leaf to act.

The combination, with the supporting-spring B, of an auxiliary spring, C, loosely connected by means of a slot and pin with the supporting-spring, and operating with the same to reinforce it only when the said supporting-spring is borne down below its usual range of vibration, substantially as described



164,812. COFFIN-HANDLES. M. H. Crane, Cincinnati, Ohio, assignor to Crane, Breed & Co., same place. [Filed May 15, 1875.]

Brief.—The handle is made up of a hollow ear, secured to the coffin to receive a knot in the end of a cord, and a hollow handle, which is held also to the outer end of the cord by a concealed knot, and depends from the ear.

The pendent coffin-handle, composed of a projected hollow conical ear, A, a cord, B, and a tubular handle proper upon the end of said cord.

164,813. GAS VENTS AND STOPPLES. E. M. Crandal, Chicago, Ill. [Filed Feb. 3, 1875.]

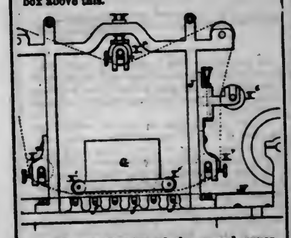
Brief.—The stopple is turned around, and the recess registers with the opening communicating with the interior of the car through the chamber and tube.



The combination of the stopple F, provided with the recess H, and the opening E in the top of the nozzle, chamber C, and the tube B, substantially as and for the purpose described.

164,814. PAPER-MACHINES. Chas. L. Crum, Winchester, Va. [Filed May 19, 1875.]

Brief.—A Fourdrinier machine with an upper wire-cloth above the web, and a suction-box above this.

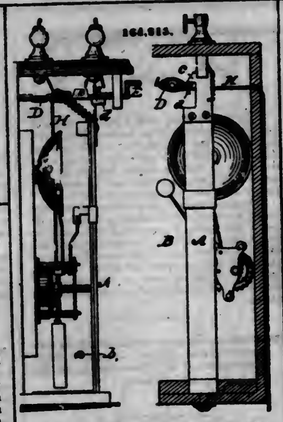


1. The combination of the second upper wire-cloth H and suction-box G with the Fourdrinier machine, substantially as described.

2. The combination of the second upper wire-cloth H, box G, rolls X^1, X^2, X^4, X^5, X^6, and X^7 with the Fourdrinier, substantially as described.

164,815. AUTOMATIC HEAT-REGULATORS AND ALARMS. Selden Allen Day, Bowling Green, Ohio. [Filed May 13, 1875.]

Brief.—The compound bar is bent by the unequal contraction or expansion of its constituents, and this movement of the bar releases the drum, so that the weight operates the register by means of the crank and slotted pitman.



1. The combination of a register or equivalent device for controlling the temperature in an apartment, mechanism, substantially such as herein described, tending constantly to operate said regulating device, and an expansion-bar arranged to detain and release said mechanism as the temperature varies, substantially as shown and described.

2. The combination of the register G, or its described equivalent, the compound bar A, drum D, weighted cord H, crank E, and pitman F.

3. In combination with the laterally-moving catch c, the drum D, provided with the lips *d e*, and connected with the register or its described equivalent, for the purpose of opening and closing the same, substantially as shown and described.

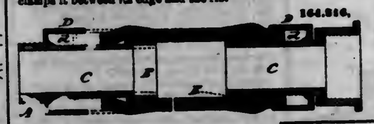
4. The flattened drum, provided with lips *d e*, in combination with the weighted cord H and the catch *c*.

5. In combination with the crank E and register G, the slotted pitman F.

6. In combination with the bar A, constructed and arranged to operate in connection with the heat-controlling devices, substantially as described, one or more alarms to give warning of an extremely high or low temperature.

164,816. HOSE-COUPLINGS. Edwin Dayton, Meriden, Conn. [Filed Mar. 9, 1875.]

Brief.—Each part of the coupling is constructed with an externally-threaded tube, to enter the hose, and to enter also an internally-threaded rib within the hose end, and with a flange and a plain external ring, all in one piece. Upon screwing the tube into the rib, the external ring envelops the hose end, and clamps it between its edge and the rib.



The hollow-threaded plug C, formed upon or attached to the respective parts of the coupling, and the flange D on said plug combined with the socket E, substantially as described.

164,817. BALE-TIES. Henry K. Du Bose and Edgar W. Charles, Jr., Camden, S. C. [Filed May 22, 1875.]



The combination of tongueless buckle B and fastener D, having two cross-slots, obliqued toward each other, with a flexible bale-band, as and for the purpose specified.

164,818. LIFE-PRESERVING APPARATUS. H. A. Duc, Jr., Charleston, S. C. [Filed May 17, 1875.]



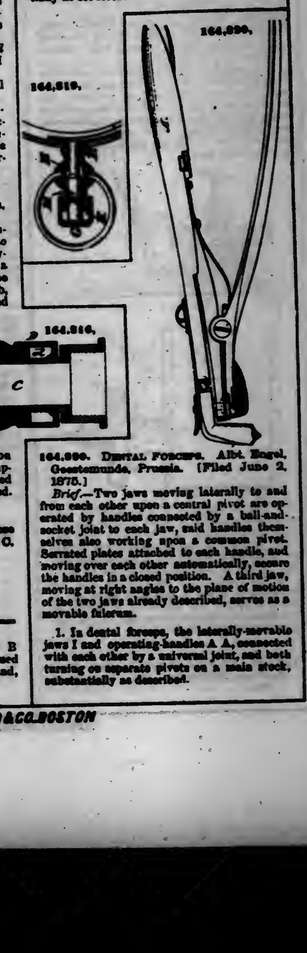
1. A life-preserving apparatus which shall become automatically inflated and buoyant by its immersion in water, substantially as set forth.

2. The combination of an inflatable bag and a receptacle containing chemicals that will generate gas by being dissolved in water, substantially as and for the purposes herein set forth.

3. The combination of an inflatable bag, G, flask A, valves V B, and exterior perforated case F, substantially as and for the purposes herein set forth.

164,819. WATCH-KEYS. John C. Dueber, Cincinnati, Ohio. [Filed Apr. 26, 1875.]

The combination of pendant B E M with exterior screw K, and removable key or pushpin F G H with interior screw J, substantially as set forth.



164,820. DENTAL FORCEPS. Alb. Hanel, Geestemunde, Prussia. [Filed June 2, 1875.]

Brief.—Two jaws moving laterally to and from each other upon a central pivot are operated by handles connected by a ball-and-socket joint to each jaw, said handles themselves also working upon a common pivot. Serrated plates attached to each handle, and moving over each other automatically, secure the handles in a closed position. A third jaw, moving at right angles to the plane of motion of the two jaws already described, serves as a movable fulcrum.

1. In dental forceps, the laterally-movable jaws I and operating-handles A A, connected with each other by a universal joint, and both turning on separate pivots on a main stock, substantially as described.

2. The laterally-detachable jaws I I, in combination with the pivot-pin J and retaining-plates D E, as and for the purpose described.

3. The fixed and hinged serrated plates F F' and lever or finger-piece G, in combination with the laterally-movable jaws A A, jaws I I, and main stock H, as and for the purpose described.

164,923. BALE-TIES. Adolph Eichholz, St. Louis, Mo. [Filed May 10, 1875.]



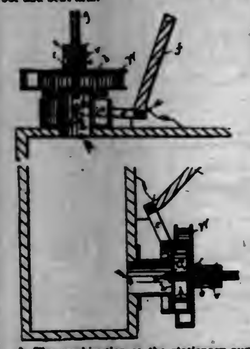
The buckle part formed to have a coupling bar A' with lug a and the V shaped edge d, in combination with the complement buckle part formed to have the opening b, slot b', and edge c, all constructed to form a bale-tie or buckle, as herein shown and set forth.

164,924. PROCESSES FOR THE MANUFACTURE OF ILLUMINATING-GAS. Fredk. H. Eichbaum, Detroit, Mich., assignor of two-thirds his right to Wm. W. Horton, J. T. Salter, J. H. Sheldon, and James Aiken, Chicago, Ill. [Filed Jan. 13, 1875.]

The process of producing, at a single operation, a fixed or permanent illuminating-gas of a required candle-power by the simultaneous destructive distillation of wood and a definite quantity of hydrocarbons at a high temperature common to both distillations, substantially as described.

164,925. WATER-WHEELS. John Erikson, Minneapolis, Minn., assignor of one-half his right to Nelson Olsson, same place. [Filed Jan. 14, 1874.]

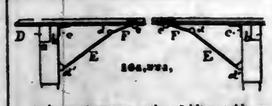
Brief.—Used with equal efficiency either in a horizontal or vertical position, and by simply adjusting the shaft, either on the pivot and bent arm or in the bar and bent arm, which is easily done by the collars with their set-screws, the shaft is entirely clear of the flume, and the points of friction are the bearings in the bar and bent arm.



1. The combination of the stationary pipe a, skeleton cylinder b, wheel W, and sleeve C with the adjustable shaft p, having the collar f and set-screw r, and all arranged exteriorly to the flume or water-pipe A, substantially as and for the purpose hereinbefore set forth.

2. The sleeve C, in combination with the arms e and e, bar d, and long lever-arm f, when arranged and operating exteriorly to the flume A, substantially as and for the purpose hereinbefore set forth.

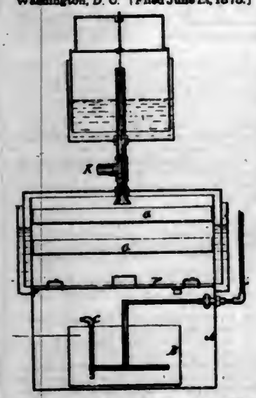
164,926. FOLDING WORK-TABLES. Benj. Fairchild, Washington, D. C. [Filed Feb. 1, 1875.]



1. In combination with a folding table or lap board, a jointed brace having a long arm, E, hinged to the cross plate or rail, and a short arm, F, attached to the table-top, the said arms arranged to fold outwardly and to lie flat against each other and against the under surface of the table, substantially as described

2. In combination with a folding table or lap board, a jointed brace having a long arm, E, and a short arm, F, connected by a hinge, d, having a stop shoulder, c', on the outside of the hinge, the lower end of the brace attached to the rail C and the upper end to the table-top, and the brace adjusted to fold outwardly from the rail, substantially as described and shown.

164,927. APPARATUS FOR CARBURETING AND PURIFYING GAS AND AIR. Leander E. Fish, Washington, D. C. [Filed June 12, 1875.]



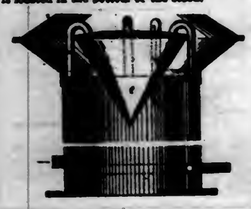
1. The combination, with the case A, of the detachable oil-chest B, the inlet oil-pipe C, the gage-pipe D, and the inlet air and gas pipe E, terminating in the bottom of the oil-chest in a perforated section, substantially as and for the purpose described.

2. The combination of the case A, the detachable oil-chest B, the pipes C D E, the detachable cover F, and the purifying-pans G G', as and for the purpose specified.

3. The combination of case A, oil-chest B, pipes C D E, cover F, pans G G', detachable water-sealed cover H, and the pressure-regulator J, as and for the purpose set forth.

164,928. FEED-WATER HEATERS FOR STEAM-BOILERS. S. W. France, Brooklyn, N. Y. [Filed Aug. 27, 1873.]

Brief.—An uptake is formed of an inner and outer wall, forming a water-space, over which and within the hood is suspended a hollow inverted cone, communicating with said water-space and the boiler by proper pipes. The water is heated in the cone by the waste products of combustion passing to the atmosphere. A perforated sediment-discharge pipe is located in the bottom of the stack.



164,929. CAR-FASTENERS. C. B. Gardiner, Westerly, R. I. [Filed Feb. 22, 1875.]

Brief.—A face-plate with inwardly-projecting ears is mortised into the edge of the sash, and carries a pivoted lever, which is connected with and actuates a latch-bolt. This latch-bolt has projecting sides, notched for the connecting-pin, and to enable the bolt to assume an upright position when withdrawn into the face-plate; and there is a suitable spring to force down the long arm of the lever, so that the latch-bolt may automatically engage in a suitable recess of the window-frame.

The combination of the mortise-plate A, provided with projections a, the lever B pivoted to the projections a, the latch-bolt C, provided with projecting sides D, in which notches are cut for the purpose described, and the spring S, all operating together, as described.

164,930. FISHING-RODS. John L. Greves, Springfield, Mass. [Filed May 15, 1875.]



1. The hollow butt A, having a perforation, G or G', through which the cord passes, and the solid wooden plug J, constructed with a base, knob, or cap, K, as and for the purpose described.

2. The combination of hollow sections or reaches A B C, of any suitable number, and the solid tip or upper reach D, grooved at L for the passage of the line F, as described.

3. The method of forming the opening or hollow E through the rod-joints, consisting of slitting a groove from the outside, and then inserting the wedge piece or strip H, as described.

164,931. EXCAVATORS. J. W. Gunoe, Jackson County, Ala. [Filed Mar. 1, 1875.]

Brief.—The plow, endless carrier and discharging-chutes are of the ordinary form. The axle is bent upward to allow room for the carrier. Adjustment for depth of cut is made by a pivoted arm carrying a pinion meshing into a looped rack, and operated by a hand-lever.

1. The combination of the bent axle A, frame C, rock I, arm L, plow-beams E, standards L, and plow E, substantially as and for the purpose specified.

2. The combination of the bent axle A, having the bearings a a', shaft n, crank q, friction-pulley c, and lever N, substantially as and for the purpose specified.

164,932. IRON FENCES. Philip Haffa, Philadelphia, Pa. [Filed Apr. 3, 1875.]

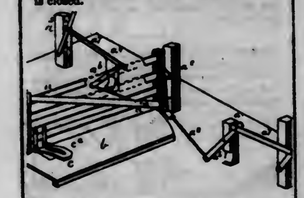


The pale A, having for the reception of each rail a full hole, b, in the middle of its width, and a recess, d, at each edge, so arranged out of line with the hole b as to cause the rail to bind hard upon the bottoms of the recesses and on the opposite side of the hole, substantially in the manner and for the purposes set forth

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164,933. AUTOMATIC GATES. H. Hammond, Smithfield, Ohio. [Filed Apr. 20, 1875.]

Brief.—In approaching the gate, when closed, the lever a^2 is moved in proper direction, which, acting on the other lever, a^1, and connecting-rods, causes the block b^2 to pass under the end of the weight c^1, and thus raise the catch c and release the latch. At the same time the bar d turns on its pivot, and the pin d^1, acting in the slot c^2, throws the gate open. By a reverse movement of lever a^2 the gate is closed.



1. The combination, with the gate a and the levers a^2 a^1, and their connecting-rods, of the arm c, provided with the slot c^2, and the swinging arm or lever d, provided with pin d^1, substantially as and for the purpose specified.

2. The combination, with the catch c and the levers a^2 a^1, and their connecting-rods, of the bar d, provided with the block b^2, and the weight c^1, substantially as and for the purpose set forth.

164,934. MACHINERY FOR COMPRESSION OR CONSOLIDATION OF BLOCKS OF FUEL OR OTHER MATERIAL. Felix John Hamel, London, England. [Filed May 29, 1873.]

Brief.—A table rotating by a ratchet and pawl, with several series of molds. The first series receives the material from hoppers, which then pass between descending and ascending plungers—the latter attached to a vertically-reciprocating frame over the table, which has also pieces passing through the table, to strike downward, and levers which operate the under plungers. Further rotation brings the molds under other plungers, which expel the contents onto a tilting table beneath, from whence it slides onto an endless belt.

1. The combination of iron L, curved supports M M, socket-plate, F, treadle B, central spring S, and pendant T, having rack t, as and for the purpose set forth.

2. The ironing-board F, having rollers H H, attached contiguously and rigidly to each edge thereof, as and for the purpose set forth.

3. The combination of the carriage D, ironing-board F, supports B G, hinged to said carriage, and forming rigid bearings, substantially as and for the purpose set forth.

4. The combination of ironing-table F, carriage D, rollers C, rack I, spur-wheel and crank J K, and shield U, substantially as and for the purpose set forth.



164,935. POSTAGE-STAMP HOLDERS. P. W. Hall, St. Louis, Mo. [Filed May 11, 1875.]

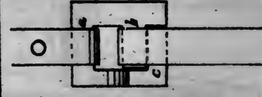
Brief.—Is composed of several apartments for stamps of different denominations.



1. In a stamp-holder, the spring D and followers E E, placed one on each side of the spring, in combination with the flanges e e of the side pieces, between which they are placed, and the end pieces B B, with beveled edges d d, substantially as and for the purpose herein set forth.

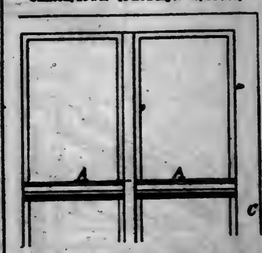
2. The combination of the side pieces A A, having flanges a a, with cut-out spaces n, the end pieces B B, having beveled edges d, the lids C, springs D, and plates or spreads E, all constructed and arranged to form a holder for several different denominations of stamps, substantially as herein set forth.

164,936. BALE-TIES. John H. Hardman, Allegheny, Pa. [Filed May 6, 1875.]



In a bale-tie buckle having an end bar, a, and a middle bar, b, with the end at side d free, the bar c, having one end attached to the side d and the other end free, substantially as and for the purposes described.

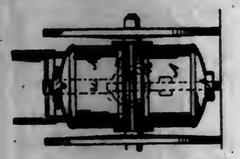
164,937. WINDOW-SASHES. L. P. Haradon, Clinton, Iowa. [Filed Apr. 24, 1875.]



An improved window-sash, having a round muntin, or division-bar, A, inserted in a round hole, and set in from the surface of the sash, and provided with grooves C, to receive and hold the glass, substantially as and for the purposes described and shown.

164,837. CHEMICAL FIRE-EXTINGUISHER. Alex. B. Hughes, New Albany, Ind., assignor to the Great American Fire-Extinguisher Company, Louisville, Ky. [Filed Feb. 10, 1875.]

Brief.—The tank is divided into two by bottoms so inserted that the axle may pass between them. The tank rotates and is held in its several positions by spring-catches, so that one chamber may be recharged while the other is discharging.



1. In a chemical fire-extinguisher, the rotating tank or cylinder, made with two chambers, adapted to be successively charged and discharged without interfering with either operation in the other, substantially as described.

2. In a mounted chemical fire-extinguisher, a double rotating tank, A, in combination with the frame and axle of the main wheels, substantially as and for the purpose described.

3. In a chemical fire-extinguisher, the double rotating tank A, in combination with the retaining-loops *t u*, substantially as shown and described.

4. A mounted chemical fire-extinguisher, composed of the truck, rotating tank, and charge-box, constructed and arranged substantially as shown and described.

164,838. MACHINES FOR CUTTING FAN-LEAVES. Philip Hubland, Mount Vernon, N. Y. [Filed Apr. 9, 1875.]

Brief.—Fan-leaves of uniform thickness can be cut by means of a reciprocating knife and its carriage, in connection with a spring-clamp capable of a reciprocating motion, and admitting of an intermittent feeding of the material under the knife. Leaves of any desired thickness can be cut by adjusting the intermittent feed mechanism to the extent of its motion.



1. The combination of an adjustable intermittent feed mechanism, a reciprocating knife-carriage, a spring-clamp for holding the work, the whole being constructed for operation, as herein shown and described.

2. The combination, with the reciprocating knife-carriage and spring clamp L, of the feed mechanism, consisting of the feeder Q, screw-shaft K, driving gear S T, ratchet-wheel U, eccentric V, and pawl *e*, substantially as and for the purpose described.

164,839. MANUFACTURE OF FANS. Philip Hubland, Mount Vernon, N. Y. [Filed May 10, 1875.]

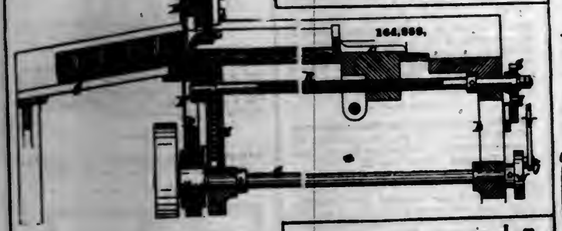
Brief.—The blocks of wood for making fans are first prepared of sufficient length and width for the fan-leaves, and of suitable thickness for two or more complete sets of leaves. They are then split into sheets of the required size, the sheets being left to adhere to each other at one edge. The split blocks are then exposed to the action of a suitable die for producing the shape required, by which a complete set of leaves is cut by one stroke of the die.

The within-described process of manufacturing wooden fans by first preparing blocks of wood of sufficient length, width, and thickness; then splitting these blocks into sheets of the required size, said sheets being left to adhere at one edge; then separating the block into blanks, each for a full set of fan-leaves, and finally exposing these blanks to the action of a suitable die, substantially as set forth.

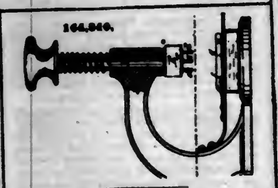
164,840. MACHINES FOR SPOTTING DOMINOS. Isaiah S. Hyatt and John W. Hyatt, Newark, N. J., and Charles M. Hyatt, Albany, N. Y., assignors to the Embossing Company. [Filed Apr. 23, 1875.]

1. A machine for spotting dominos, in which is combined a spotting-die, a reciprocating die-carrier or plunger, a fixed perforated platform for holding and retaining the dominos, and a cistern located beneath the same, the whole being constructed and arranged for operation substantially as described.

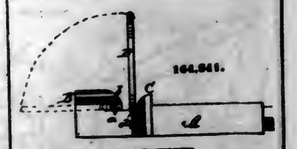
2. The guide *f*, and retaining springs *g g*, in combination with the platform B and spotter F, substantially as described.



164,841. CAR-COUPLINGS. Jacob Jacobsen St. Joseph, Mich. [Filed Nov. 21, 1874.]

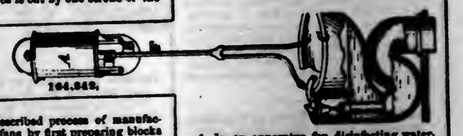


The combination of the draw-bar A, having recess *d*, flag-catcher B, groove *c*, lip *b*, and the shoulder C, with the ring D, all substantially as and for the purposes set forth.



164,842. APPARATUS FOR DISINFECTING WATER-CLOSETS. George Jennings, Stangate, London, Great Britain. [Filed Dec. 17, 1874.]

Brief.—In combination with the reservoir containing the disinfecting liquid, a gaging-vessel, from which the liquid discharges by a siphon connected with the water-service pipe, in such a manner that as the water passes through the service-pipe a suction is created, whereby the disinfecting liquid is caused to discharge through the siphon.

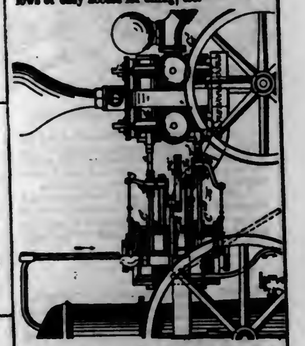


1. In an apparatus for disinfecting water-closets and other conduits, the reservoir A, with which is combined a gaging-vessel, D, provided with a siphon, F, by which the liquid discharges, and which is connected to the water-service pipe, substantially as herein described.

2. The combination, with the gaging-vessel D, of an air-pipe, H, and of a supply-pipe, E, the diameter of which is smaller than that of the siphon, substantially as and for the purpose specified.

164,843. STEAM FIRE-ENGINE. W. Knaust, Vienna, Austria. [Filed June 9, 1875.]

Brief.—The vertical position of the engines and pumps, the fly-wheel being horizontal, allows of easy access for oiling, &c.

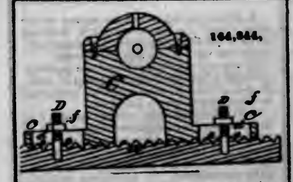


In combination with the steam-cylinders C C, and with the pump-cylinders G G, which are placed in a vertical plane, and with the feed-pump E placed between the steam-cylinders, the vertical crank-shaft I, carrying the horizontal fly-wheel M, substantially as herein shown and described, and for the purpose specified.

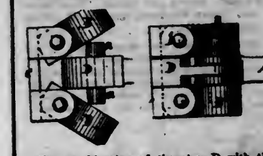
164,844. COTTON-GIN. William Koehl, Mentzville, Tex. [Filed Mar. 13, 1875.]

Brief.—The invention is in the means by which the brush-drum is adjustable toward the saws as the brushes become worn.

The brush-drum, journal-bearing C, adjustable in relation to the fixed saw-shaft bearing B by means of the serrations *a a*, slotted flanges *c*, bolts D, and nuts *f*, as and for the purpose specified.

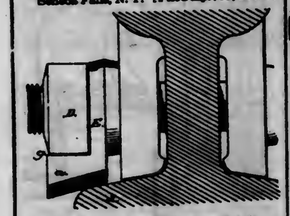


164,845. TRUSS-COUPLINGS. Geo. W. Ladd, New York, N. Y. [Filed Nov. 28, 1874.]



The combination of the stop D with the eyes B, one or both of which are hinged, and with the shaft A, having gudgeons *a* at its inner end, substantially in the manner and for the purpose set forth.

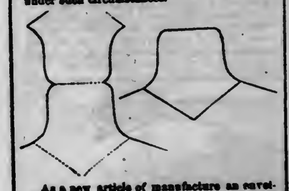
164,846. NUT-LOCKS. Obadiah B. Latham, Seneca Falls, N. Y. [Filed Apr. 12, 1875.]



The washer E, with gravitating extension *a* and recess or seat *g*, in combination with the nut D and bolt C, substantially as and for the purpose herein before described and set forth.

164,847. ENVELOPES. Alexander N. Lewis, Brooklyn, N. Y. [Filed June 10, 1875.]

Brief.—Re-enforces the tongue or tack of the closing flap, so as to admit of lighter paper being used in the manufacture of the article, and to facilitate the introduction of the tack under such circumstances.



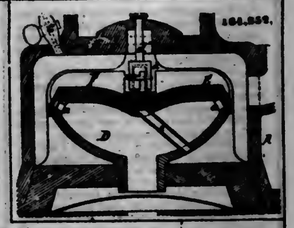
As a new article of manufacture an envelope having a re-enforced gummed tack or tongue, substantially as described.

164,848. SHAWL-STRAP HANDLES. Lemuel Looser, New York, N. Y., assignor to Chas. Staehlee and Henriette Looser, same place. [Filed May 28, 1875.]

Brief.—Spring-latches are secured to a hollow handle, and operate in such manner that by pulling the binding-strap in one direction they are retained automatically by the spring-latches.

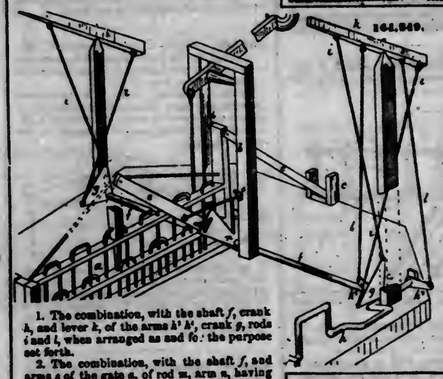


In a strap for shawls and other articles, the combination of the hollow bar A, spring-latches E, guide-loops C C, and straps D D, all constructed and operating substantially in the manner herein shown and described.



164,849. LIFTING-GATES. William Lundy, Atalissa, Iowa. [Filed Apr. 3, 1875.]

Brief.—By a peculiar arrangement of cranks and levers, the gate is raised or lowered upon driving over the proper crank in a crank-rod placed transversely with respect to the road. The latch of the gate is opened by the same mechanism before any pressure is brought to bear upon the gate.



1. The combination, with the shaft *f*, crank A, and lever *k*, of the arms A^1 A^2, crank *g*, rods *i* and *l*, when arranged as and for the purpose set forth.

2. The combination, with the shaft *f*, and arms *s* of the gate *c*, of rod *m*, arm *n*, having the spring *w*, for the purposes set forth.



164,850. COMPOSITIONS FOR BUILDING PURPOSES. Aras T. Lyon, Cincinnati, Ohio, assignor to the Indestructible Building Material Company. [Filed June 17, 1875.]

The composition of matter for building purposes, consisting of asbestos, hydraulic cement, coal-ashes, air-slaked lime, and plaster-of-paris, about in the proportions specified, and thoroughly mixed and incorporated with water, and molded or applied as specified, and saturated with soluble silicate of soda or potash, substantially as described.

164,851. PAINT COMPOUNDS. Aras T. Lyon, Cincinnati, Ohio, assignor to the Indestructible Building Material Company of Ohio. [Filed June 17, 1875.]

A paint or mastic composition consisting of caustic lime, zinc, sulphate of zinc, bisulphide of carbon, chloride of zinc, nitrate of lead, chloride of sodium, whiting, and white lead, compounded and mixed with boiled linseed-oil and a suitable coloring matter, substantially as set forth.

164,852. LIQUID-METERS. Edwd. Marsland, Sing Sing, N. Y. [Filed Sept. 12, 1874.]

Brief.—The case has an air-escape. The rod connecting with the registering apparatus is coupled with the float by means of a cross-bar and sleeve, by means of which the connecting-rod is prevented from being thrown out of place by any sudden change in the pressure. A tube is arranged to carry off all sediment that may collect under the float.

1. A liquid-meter having its case A provided with a vent-tube, G, in combination with the chamber D and revolving disk H, having wings F, substantially as and for the purpose shown and described.

2. A liquid-meter provided with a tube, *c*, to carry off all sediment from under the float H, substantially as shown and described.

3. A liquid-meter having the rod *d* connecting with the registering apparatus, coupled or connected with the float H by means of a crosshead, *e*, and sleeve *d*, in which there are vertical and lateral slits or slots, substantially as shown and described.

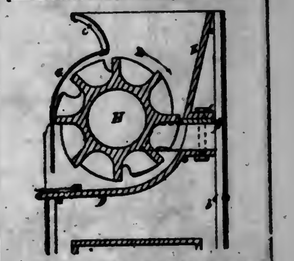
164,853. FOUNTAIN-BRUSHES. Francis McDaniel, Philadelphia, Pa. [Filed Oct. 10, 1874.]

Brief.—The T-shaped tube is provided with perforations, and connected to a reservoir by a rubber hose, and is applied to any brush without changing the construction of the latter.

The detachable brush-moistening apparatus, consisting of the T-tube B, having perforated arms, provided with eyes *b* for attachment to the side of the ordinary brush, substantially as shown and described.

164,854. MACHINES FOR CUTTING FATS FOR RENDERING. Philip Lee McDowall, Keokuk, Ohio. [Filed Mar. 22, 1875.]

Brief.—The frame bearing the cutting devices is attached to the heating apparatus in such manner as to form a heating-chamber under the cutter. The flue passes through the revolving cutter to keep it heated. The fats are first cut into strips by the revolving cutter and the cutter bar or plate, and afterward the strips are cut into small pieces by knives which pass into slots in the revolving cutter.



1. In a machine for cutting fats for rendering purposes, the rotary cutting-cylinder H, having a hollow axis and provided with a series of cutters or knives arranged spirally around said axis in such a manner as to form a slot between each two cutters or knives, substantially as described, and for the purposes specified.

2. The combination, with the knives I and blocks i, of the cutter bar or plate K, bed-plate D, and back-plate E, arranged in relation to each other substantially as described, and for the purposes specified.

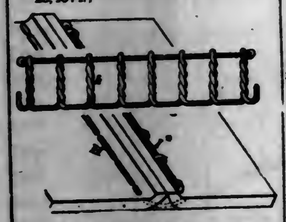
3. The combination of the cutter H with the adjustable cutter bar or plate K, substantially as set forth.

4. The combination of the cutter bar or plate K with the bed plate D, and the set-screws F F, as and for the purposes specified.

5. The combination of the knives I and the cutter-plate E with the cutter H, when constructed and arranged to operate substantially as specified.

6. The combination of the frame of a machine for cutting furs for rendering purfloes with the heating apparatus to form a heating-chamber beneath the cutting devices, as and for the purposes specified.

164,853. BELT-FASTENING. Josiah B. McElroy, Charlestown, W. Va. [Filed July 26, 1874.]



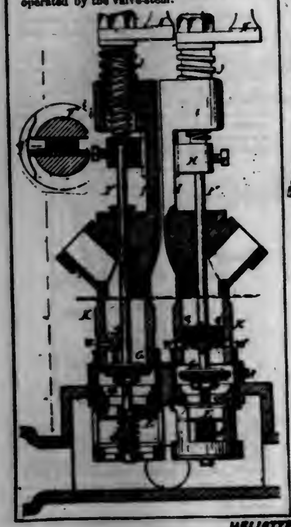
1. A belt fastener or lock-stitch stock, H, formed of wire, with twisted shanks A, and closed eyes, substantially as described.

2. The combination, with a metallic belt-fastener, of the welt O, as and for the purposes set forth.

3. The combination of the lock-stitch or twisted-wire stock H, with the rod I, substantially as described.

164,854. HYDRANTS. William H. McMillan, Philadelphia, Pa. [Filed May 14, 1875.]

Brief.—The chest at the intersection of two or more street-mains is united with hydrant or plug barrels, the barrels being provided with valves, as shown. When the barrels are unscrewed from the chest the water-way is closed by a valve pressed upward by a spring. The wasteway is closed by segmental valves operated by the valve-stem.



1. The chest A at the intersection of two or more street-mains, combined with two or more hydrant or plug barrels, K, communicating with said chest and provided with valves, all as set forth.

2. The combination of the chest A, barrels K, and valves E, arranged to be closed upon the removal of the barrels from the chest.

3. The combination of the valve-spindle with the openings w in the barrel K, and with segmental spring valves g g', for closing or uncloseing the said openings.

4. The combination of the valve-spindle F of a fire-plug or hydrant with the externally and internally threaded tube J, adapted to the threaded projection i, and to the threaded stem M of the guided slide H, attached to the said spindle, all substantially as set forth.

164,857. FRUIT-CANS. Sanford W McOmber, North Manchester, Ind., assignor of one-half his right to J. M. Burdge, same place. [Filed Apr. 17, 1875.]

Brief.—A spring-rod, with transverse grooves near each end to prevent slipping, is placed over a convex cover by means of a detachable key, which is a continuation at one end of the rod.



The spring-rod E, grooved at both extremities, and provided at one end with the reduced portion f, in combination with the detachable lever or key G, the convex cover H and can A, having the eye and hook C D, substantially as described.

164,858. PROCESSES OF GRAINING WOOD. George F. Mehling, Detroit, Mich. [Filed Mar. 18, 1875.]

The within-described process for enamel ing wood, consisting essentially of coating the wood with boiled oil and a transparent drier, and preparing the same, (which closes the pores with fine dust,) drying the wood, and then coating it with a transparent enamel, applying the different coloring graining materials, and then applying a crumpled cloth saturated with a liquid drier, as described, over the surface, and then passing a haircloth roller over the same, and polishing said surface, all substantially as herein set forth.

164,859. GOVERNORS FOR STEAM-ENGINES. Frank M. Merrill, Marysville, Cal. [Filed Dec. 17, 1874.]

Brief.—The governor controls a small valve, which admits water under pressure to one side or the other of a piston working in a cylinder. Said piston is connected to the valve which admits steam to the engine.



1. The valve J, constructed as shown, in combination with its chamber p, said chamber having the annular passages q r s t and the ports q' r' s' t', for admitting and discharging the fluid to and from the cylinder H, substantially as herein described.

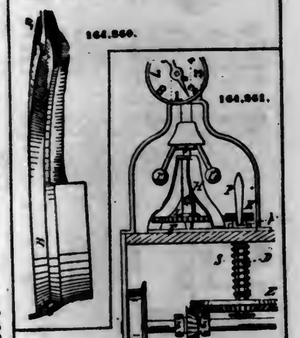
2. The adjusting device, consisting of the head W and the hinged portion X, with the screw a and returning-spring b, substantially as and for the purposes herein described.

3. The supply-chamber K and the pressure-chamber L, together with the pump N, valve J, and cylinder D, when combined to operate substantially as herein described.

4. The longitudinally moving spindle f of the governor, in combination with the arm 1, holding-plate 2, and spring 4, arranged so as to close the valve and stop the engine by the displacement of the governor-belt, substantially as described.

164,860. BOOTS AND SHOES. Wm. Meyer and Henry Freiburg, Quincy, Ill. [Filed Dec. 28, 1874.]

A wooden heel and shank, made in one piece, and provided with a groove, B, to receive and secure the edges of the upper, and having an angular recess, D, to receive the insole, for the purpose of stiffening the connection of the leather with the wood, substantially as described.



164,861. SPEED-MEASURES. Stephen F. Minton, Prairie Plain, assignor of one-half his right to Henry D. Starr, Texana, Tex. [Filed July 18, 1874.]

Brief.—The shaft carrying the governor which actuates the dial-indicator is so geared with the axis of a locomotive or car as to be thrown in or out of gear.

1. The combination of the spring S with the vertically-playing shaft D, having cog-wheels E E', substantially as specified.

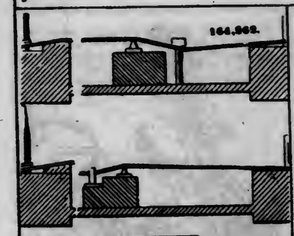
2. The angular lever P, having a fulcrum, p, hinged to the angle of the weight and power-arms thereof, in combination with the cog-wheels E E' of the actuating-spindle D, and the spring S, substantially as specified.

164,862. STRINGING PIANOS. A. Moeller, Hartford, Conn. [Filed Mar. 27, 1875.]

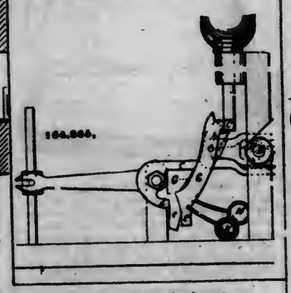
Brief.—A lifting and a pressure strain is exerted upon the sound-board and its bridge, one being arranged to somewhat exceed the other, so as to give a bearing upon or connection with the sound-board.

As an improvement in stringing pianos, the agraffe and the string or wire combined and arranged with the frame and sounding-board, substantially as described, so as to give the downward bend to the wire at the bridge, and a combined lifting and downward strain upon the sounding-board.

164,862.



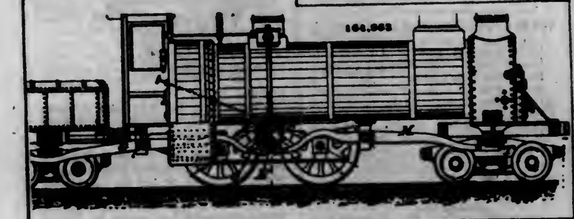
164,863. VALVE-GEARS. W. L. Newsham Philadelphia, Pa. [Filed May 11 1875.



164,864.

164,863. DEVICES FOR INCREASING TRACTION OF LOCOMOTIVES. John W. Murphy Baltimore, Md. [Filed Dec. 10, 1874.]

Brief.—Throws weight of tender, and also of forward part of locomotive, on driving wheels.

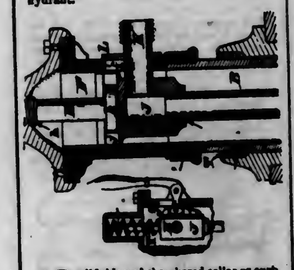


1. The combination of vertical cylinder C, piston D E, cross-head F, and longitudinal levers G G, substantially as and for the purpose set forth.

2. The combination of the cylinder C, piston D E, cross-head F, and two sets of levers, G G H H, substantially as and for the purposes set forth.

164,864. HYDRANTS. John G. Murdock, Cincinnati, Ohio. [Filed Apr. 26, 1875.]

Brief.—The hydrant has a moving waterway, operated by the mechanisms shown. A slidable ring surrounds the stock, fastened to it by suitable means, and imparting finish and stability to the hydrant. The valve-bridge and ports are cast with the shell, as shown. The wasteway communicates with a perforated sediment-chamber situated below the hydrant.



1. The slidable and chambered collar or curb S s, surrounding the stock B, and adapted to contain a filling, T, as and for the purpose stated.

2. The combination of bent lever or handle W, pivoted to the head at X, and having a cam, w, which engages with lugs f f' of the yoke J, said yoke being depressed, so as to shut off the water, by a spring, p, coiled around a stem, Y, in the manner set forth.

3. In combination with the perforated or slotted base A E or A E' E', the perforated sediment-chamber V v v', as and for the object stated.

4. The valve-bridge O and ports o o', cast with the shell N, as and for the purpose set forth.

The combination of the lever I, having arms c e and d d, with the lifters G G, having extensions e e, whereby to trip the lifters, when the lever is caused to drop by a derangement of the governor, and thus to disconnect the lifters from the valve-rods and close the valves, substantially as set forth.

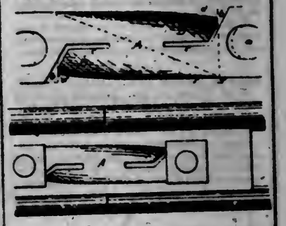
164,865. CAR-COUPLINGS. Nils Nilson, Minneapolis, Minn. [Filed Jan 21, 1875.]



1. The combination of the draw-bar B, having the head C and catches C', with the double-acting spring E, between sliding collars e e', substantially as and for the purpose shown and described.

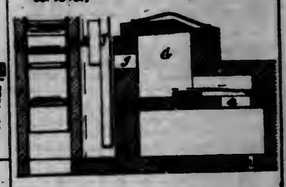
2. The combination of a recessed draw-head, C', with the projecting beveled catches C', pivoted to the sides thereof, so as to be thrown into or out of operation, substantially as and for the purpose before set forth.

164,866. NUT-LOCKS. William P. Olden Springfield Ill. [Filed Nov 23. 1874.]



A nut-lock consisting of the plate A, having the arms B formed by the slots b c, said arms being bent into a concave or spoon shape, as and for the purpose set forth.

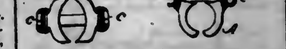
164,869. TREMOLOS FOR REED-ORGANS. R. W Pain, New York, N. Y., assignor to R. P. Needham & Son, same place. [Filed Mar 26. 1875.]



The combination with the swell-chamber G, having an opening, g, in its side, of the revolving tremolo-wheel J, arranged outside of the swell-chamber, and the whole constructed substantially as described, whereby the air is alternately partially shut in and let out of the swell-chamber by the revolution of the said wheel, as set forth.

164,870. CLAMPS FOR DENTAL RUBBER DAMS. Delos Palmer, New York, N. Y. [Filed Aug. 31, 1874.]

Brief.—The perforations for inserting the forceps, in placing and removing the clamp, are formed in lugs turned over from a part of the clamp itself.



The dental clamps A, having the projecting ears c, constructed substantially as described.

164,871. TREMOLOS FOR ORGANS. William D. Parker, Worcester, Mass., assignor of one-half his right to Gustavus W. Ingalls, same place. [Filed Apr. 20, 1875.]

1. A valve to operate as a tremolo, when constructed to play freely up and down through its air passage or opening, and applied to the reed-chamber in the manner substantially as

164,867.



164,871.



1. The combination of the wrench-handle A with interior oil-chamber B, having passage b, the screw J, with valve a, and the outlet d, all substantially as and for the purpose herein set forth.

2. The stationary head E, provided with a T-shaped or dovetailed groove, fitting over the end of the stem, the two parts secured by means of a screw, D, substantially as and for the purpose set forth.

2. A free valve, *f*, and its opening, *i*, in combination with the fan *m*, and adjustable weights *n*, the whole arranged to operate substantially as set forth.

3. A free tremolo-valve, made out of the same piece of metal as its frame, in the manner and for the purpose substantially as set forth.

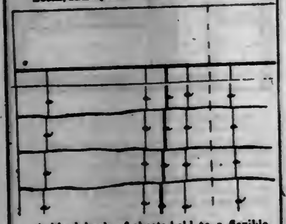
164,872. STOVE-PIPE ELBOWS. John F Piehl, Richmond, Ind., assignor of part of his right to John H McIntyre and James B. Taylor, same place, and George Krick, Philadelphia, Pa. [Filed Dec. 23, 1874.]

Brief.—A smooth continuous surface is produced on both sides of the shorter curved wall. No pockets are left on the inside for the accumulation of soot or condensed moisture.



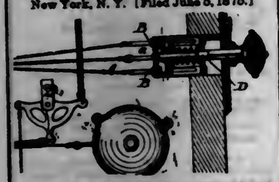
A crimped stove-pipe elbow having the crimps or folds of the shorter curved wall upon the inside of the pipe folded entirely downward, and presenting a smooth and continuous surface on both the out and in side, substantially as and for the purpose described.

164,873. BLANK-BOOKS. Ira Reynolds, Dayton, Ohio, assignor to Reynolds & Reynolds, same place. [Filed May 31, 1875.]



A blank-book of sheets held to a flexible cover by a line of stitching through the center, with the ruled spaces consecutively changing from inside to cover, so that the ruling shall register, or nearly so, when the book is closed, substantially as herein set forth.

164,874. BELL-PULLS. Wm. Richardson, New York, N. Y. [Filed June 5, 1875.]



1. A bell-pull or handle constructed, and operating substantially as described, to operate at will either of two or more bells.

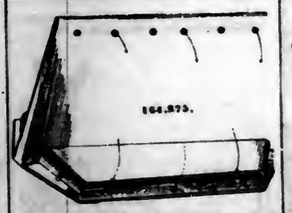
2. The combination, substantially as herein shown and described, of a pull or handle arranged to operate separately two or more bells, and an indicator arranged to give an audible report for the purpose of guiding the operator at night in the adjustment of the pull to operate the particular bell required.

3. In combination with the sliding and rotating spindle D, provided with the lip *c*, the series of slides, E, having the bell-wires attached thereto.

4. In combination with the spindle, arranged to operate as described, the dial-plate D, and pointer I.

164,875. WASH-BOILERS. John Bleth, Lansing, Iowa. [Filed Mar. 11, 1875.]

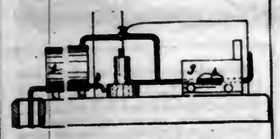
Brief.—The clothes are kept clear of the perforated lateral flanges of the fountain by means of an interposed plate extending entirely over said perforations.



The combination, with an ordinary wash-boiler attachment consisting of the vertical chamber perforated at its top, and provided with lateral perforated flanges at its bottom, of the guards or shields projecting from the body of the vertical chamber, and entirely covering the lateral perforated flanges, substantially as and for the purpose described.

164,876. APPARATUS FOR SUPPLYING GAS AS A FUEL TO METALLURGIC FURNACES. William Rogers, Loochburg, assignor to himself and T. J. Burchfield, Allegheny, Pa. [Filed June 3, 1874.]

Brief.—The gas is passed through the water-trap to free it from moisture, then through a heating chamber, and finally to the furnace or fire-chamber, where it is burned in lieu of coal. An air pump between the water-trap and heating chamber adds air to the gas.



1. The process of treating gas from oil wells or gas-generators for use as fuel in furnaces used for manufacturing iron or steel, consisting in passing the gas through a reservoir to eliminate watery particles, then subjecting it to heat, and finally conducting it into the fire-chamber with or without the injection of air, substantially as herein described.

2. The combination of the reservoir A and heater *g*, with the furnace *m*, substantially as herein described and for the purpose set forth.

164,877. ROAD-RAMMERS. Abbott Q. Ross, Cincinnati, Ohio. [Filed Apr. 12, 1875.]

Brief.—A road roller and rammer, in which the rammers have a vertical rising and falling motion, and also a swinging motion, the upper ends of the swinging rammers being secured to trunnions with spring-cushions, guided by sliding heads upon vertical guideways. To throw the rammers forward or backward in the direction in which the machine is traveling, and thereby permit them to rest on the ground while the machine is progressing, until each time as they are again raised and lowered, a series of adjustable springs are employed, which are made to bear upon either side of the falling rammer-rods, depending upon the direction traveled. When not to be used, the rammers are suspended by tilting spring-hooks. The rammer-head is grooved, and a saw-toothed shoe, with ribs corresponding to said grooves, is slipped on the heads and secured by a set-screw. The peripheries of the rollers are provided with concavities.

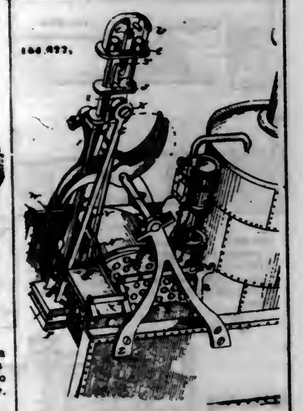
1. The combination of sliding head J H and swinging rammers F G, operating substantially as and for the purpose specified.

2. In combination with the swinging rammers F G, the spring V or W operating substantially as and for the purpose specified.

3. In combination with the swinging-rammers F G, the alternating springs V W, operated substantially as and for the purpose specified.

4. The combination of rammer-hook S, pivoted hook T, spring *t'*, and cross-shaft U, substantially as and for the purpose specified.

5. In combination with the rammer-heads F the cylinder N, spring *n*, and plunger *n'*, operating substantially as and for the purpose specified.



6. The combination of cylinder N, spring *n*, plunger *n'*, and lever *o*, connected and operating substantially as and for the purpose specified.

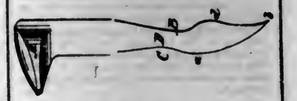
7. The rammer-head F constructed with grooves *f*, for attachment of interchangeable shoes, substantially as and for the purpose specified.

8. The shoe or spade *e d*, having projecting teeth *e*, substantially as and for the purpose specified.

9. The combination of sliding head J *l*, trunnion-shaft I, and rubber springs L, operating substantially as and for the purpose specified.

10. The roller or rollers B having concavities or circular indentations *b*, substantially as and for the purpose specified.

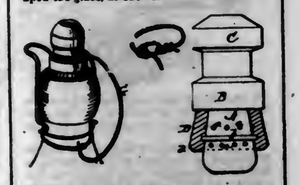
164,878. SPIKES. George N Sanders, New York, N. Y. [Filed May 6, 1875.]



The improved curve-spike A D, with the neck D, formed by the two depressions B and C, and with the convex bevel *a b*, substantially as and for the purposes described.

164,879. BOTTLE-STOPPERS OR CORKS FOR BOTTLES. John Schrink, Toledo, Ohio. [Filed May 10, 1875.]

Brief.—The stopper consists of a glass body and rubber gasket. The gasket is held in place by the central collar and the projections upon the glass, as shown.

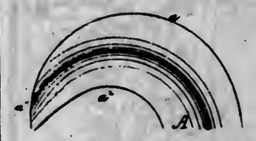


1. The glass stopper A, provided with top C and center collar B, and having its lower part made conical and provided with spurs or teats *a a*, and circumferential bead *b*, substantially as and for the purposes herein set forth.

2. In a bottle-stopper the conical rubber gasket D, having its lower edge *d* beveled, as shown, in combination with the core A, substantially as and for the purposes herein set forth.

161,866. TOBACCO-KNIVES. E. T. Shelton, Laurel Grove, Va. [Filed Dec. 28, 1874.]

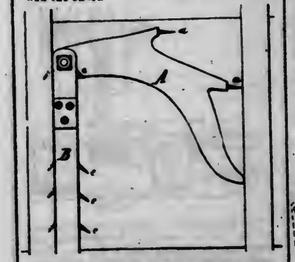
Brief.—The knife and handle form a letter S. The curved blade has a dulled portion upon its outer end, so that the leaves may not be cut in pushing the convex side through a stalk to split it.



A tobacco-knife, having the curved blade A, with push-cutting edge *a*, draw-cutting edge *a'*, and intermediate bleat edge *a''*, constructed and arranged as and for the purpose specified.

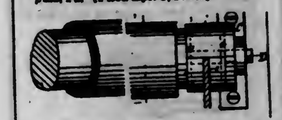
164,861. PLANKING-SETS FOR SHIP-CARPENTERS. Edward Sloan, Trenton, Mich. [Filed Dec. 30, 1874.]

Brief.—The clamp consists of a curved dog, having on its extremity and convex edge several spiked serrations, and at its heel a pivoted draw-bar, two of the sides of which are provided with short spikes, and the free end of the same with an overlapping offset. Planks are set against the edges of the preceding ones by placing the dog between two of the ribs of the vessel being planked, and driving a wedge between the free edge of the plank and the offset.



The planking-set herein described, consisting of the dog A having the serrations *a*, and pivoted to the draw-bar B, which is provided with spikes *c* and offset *b* and the wedge C, all substantially as and for the purpose set forth.

164,862. CURTAIN-FIXTURES. William H. Sparks, Camden, N. J., assignor of one-half his right to Thomas D. Coulston, Philadelphia, Pa. [Filed Apr. 8, 1875.]



1. The case G, having a cam, *g*, on its periphery, and a pivot-hole, *f*, in combination with the pivot D, having eccentric flanges *e* and *e'*, and the bracket C, having a shoulder, A, for holding the curtain B in its adjusted position, substantially as set forth.

2. The case G, having the slot *c* in its periphery, in combination with the cord F for tripping the cam *g*, to admit of the winding up and unwinding of the curtain, substantially as set forth.

164,863. BEDSTEAD-FASTENINGS. George Sweet, Williamsport, Pa. [Filed Jan. 6, 1875.]

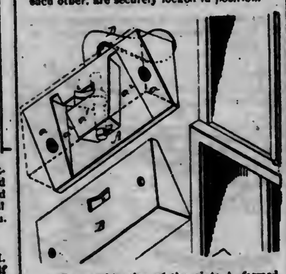
Brief.—The two parts of the socket-iron are secured in the post-mortise by a wedging action of their inner beveled ends on each other, and the peculiar form of the hook-iron shown adapts it to be readily inserted in the end of the rail, and to be secured more firmly therein.

1. The bedstead socket-irons A A in two parts, the separate parts having their inner ends made with corresponding bevels adapted to fit together and their outer ends with diverging bevels, substantially as and for the purposes set forth.

2. The hook-iron B, constructed of the form substantially as described, for the purposes set forth.

164,864. FASTENERS FOR THE MEETING-RAILS OF SASHES. William B. Swallow, Flemington, N. J., assignor of one-third his right to Andrew T. Connet, same place. [Filed May 19, 1875.]

Brief.—A shell or case formed in two wedge-shaped halves, provided with dovetailed projections and corresponding grooves or recesses, is mortised between the meeting-rails, one-half on either side. Through the center of one of these passes a vertical shaft, having an outwardly-projecting crank-handle, and a short arm engaging with an inclined slot on the opposite half, whereby the plates, when slid into each other, are securely locked in position.



1. The combination of the plate A, formed with the wedge-shaped parts *a a*, center dovetailed wedge *a'*, and grooves *a'' a'''*, and the plate B, formed with the wedge-shaped parts *b b*, center dovetailed recess *b'*, and wedges *b'' b'''*, substantially as and for the purposes herein set forth.

2. In combination with the plates A and B, constructed as herein described, the shaft *d* with handle D, and arm *i*, and the inclined slot *x* in the plate B, as and for the purposes herein set forth.

164,865. HEEL-SHAVES. Nathan A. Swett, Westbrook, Me. [Filed May 13, 1875.]



1. The heel-shave stock A, having handles A' A' set at equal but opposite angles, substantially as shown, and for the purpose described.

2. A heel-shave stock, A, arranged obliquely with reference to its handles A' A', substantially as shown, and for the purpose described.

3. In a heel-shave the combination of a curved oblique blade, B, with the stock A and handles A' A', substantially as shown and described.

164,866. RAILWAY-SWITCHES. J. Walker, Vincennes, Ind. [Filed Feb. 8, 1875.]

Brief.—A railway switch in which a trough with divergent sides is employed, in combination with crank-arms and levers for shifting the movable rails; said trough being operated upon by projecting arms on a rotating cylinder placed upon the front of the locomotive-truck. The cylinder-arms are arranged at different angles on the shaft.

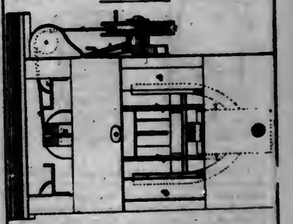


1. The combination, with the main rails A, side rails B, and switch-rails A*, of the divergent clutch-bar E, having side flanges *a a*, as described, elbow-levers F, connecting-bar O, levers C C, and sliding-bar M, all constructed and arranged substantially as and for the purposes herein set forth.

2. The combination of the shaft B, with studs and rollers *b b*, set at varying angles, the connecting-rod K and lever L, all arranged on a locomotive to operate the divergence clutch-bars, as and for the purposes set forth.

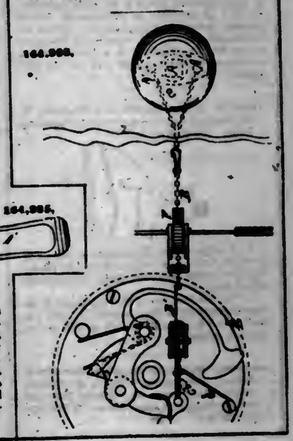
164,867. WATER-ELEVATORS. W Walter, Latrobe, Pa. [Filed May 11, 1875.]

Brief.—Two rods suspended from the center block above, and having their lower ends notched, engage with pins projecting from the sides of the discharge of the bucket, when it is near its highest elevation; when completing its elevation, tilts and empties the bucket.



The combination of the bucket B, slides *b*, rods *f*, pins *d*, and guides *a*, substantially as described.

164,868.



164,888. BURGLAR-ALARMS. James A. Weed, Binghamton, N. Y., assignor to H. H. Doubleday, Washington, D. C. [Filed May 3, 1875.]

Brief.—By connecting or disconnecting the chain which connects the bell mechanism with the spindle of the lock, the device may be used as a burglar-alarm, to be operated by turning the lock-spindle or opening the door, or as a door-bell only.

1. The combination, with the chain c^2 and chain or link B^1, of the guide d, substantially as set forth.

2. The combination, with the tripping-lever C, of the chains c^1 B c a, link B^1, spindle A, lever A', and the detachable fastening a', whereby the bell E may be used as a door bell only, or as a door-bell and burglar alarm, substantially as set forth.

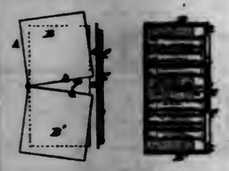
3. The combination, with the lever A', the striking mechanism, and the connecting-chains, of the pulley F, by which the opening of the door serves to operate the alarm, substantially as set forth.



164,889. SHOE-NAILS. Hosea F. Whidden, South Abington, Mass. [Filed June 5, 1875.]

A shoe-nail having a serrated shank and a frusto-conical head elongated, substantially as described.

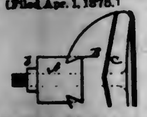
164,890. CARTRIDGE-BOXES. Martin V. B. White, Albany, N. Y., assignor of one-half his right to J. Martin, same place. [Filed Mar. 2, 1875.]



1. In combination with the stationary cylindrical cartridge-block F, and the revolving front side C, provided with the opening D and slide E, the casing consisting of the segmental pieces B B^1, having the rims c, and secured to the pieces A A^1, substantially as and for the purpose set forth.

2. The case, comprised by the rear pieces A A^1 and segmental pieces B B^1, having projecting lips or flanges c, in combination with a detachable revolving front piece C, having an adjustable opening, and capable of being removed for the insertion of a block holding cartridges, substantially as and for the purpose set forth.

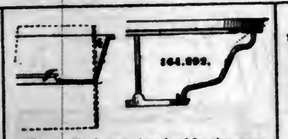
164,891. BRAKE-BLOCKS FOR WAGONS. V. Westerhold and Hexander Calz, Hamburg, Iowa. [Filed Apr. 1, 1875.]



1. A wagon-brake block made in two parts, in combination with bolts and nuts for clamping the leather between them, substantially as set forth.

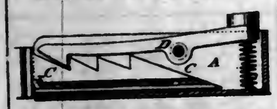
2. The combination of the brake-bar A, bifurcated brake-block B C, leather D, bolts a c, and nuts b b, all substantially as and for the purpose set forth.

164,892. MODES OF MAKING SHEET-METAL SIGNS. Samuel B. Wilmot, Bridgeport, Conn., assignor to the Wilmot Manufacturing Company, same place. [Filed Apr. 10, 1875.]



The within-described mode of forming rings for supporting lamp-shades, the same consisting in first bringing the strip into the form of a hoop, and then subjecting said hoop to pressure in a die of the desired shape, as herein shown and described, for the purpose specified.

164,893. HAME-FASTENERS. H. J. Wilson, Mason, Mich. [Filed May 17, 1875.]



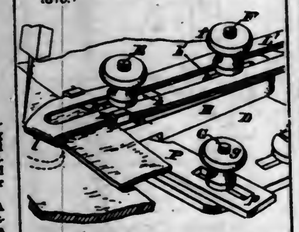
The combination of the sheath A, with its bead or guide i, and the toothed slide C, with its groove x, substantially as and for the purpose herein set forth.

164,894. SHOT-CARTRIDGES. R. D. Wilcox, Shreveport, La. [Filed Mar. 2, 1875.]



The combination, with a metallic loading shell or tube for breech-loading shot-guns, of an undivided, continuous, and detachable lining of paper, substantially as and for the purpose described.

164,895. SEWING-MACHINE BINDERS. Georg Wiesler, Cincinnati, Ohio. [Filed Apr. 29, 1875.]



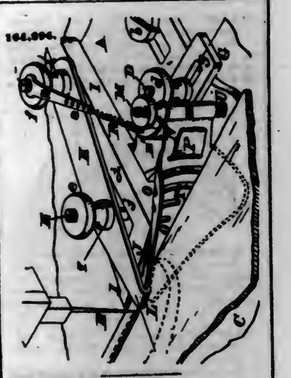
In combination with the bed-plates A, retaining devices E e F f G g P p, and wedge-block H h h', the slotted plates L M, L' M' l, and slidable gage-bar N, as and for the purpose stated.

164,896. SEWING-MACHINE ATTACHMENTS FOR SEWING-MACHINES. Georg Wiesler, Cincinnati, Ohio. [Filed Apr. 29, 1875.]

Brief.—A binder attachment consisting of a bed-plate, to which is adjusted a slotted wedge-shaped block, with a concave bearing on the end nearest the needle. Underneath the aforesaid bed-plate is fastened an edge-turner or lip, and a corresponding one is secured to the upper side of the wedge-block by the same common adjusting devices, one of which serves to regulate the longitudinal action of a slotted shackle upon the wedge-block, the other being connected with a tension-spring, which acts upon a vertically-slotted guide.

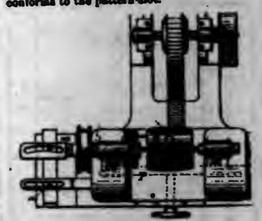
1. In combination with the bed-plate A and the lipped bars K L K' L', the wedge-block I j j', and retaining device D d, E e, F f, and G g, as and for the purpose specified.

2. In combination with the concave bearing J and the edge-turners or lips L L', the guide O M and tension-spring S, as and for the object herein designated.



164,897. MACHINES FOR GRINDING PULLEYS. Aurin Wood, Worcester, Mass. [Filed Dec. 5, 1874.]

Brief.—The supporting-carriage is centrally pivoted, and is provided with a projecting arm, in which is a pattern-slot, engaging with a stud fixed in a slide on the bed of the machine. The carriage, in transverse movement, conforms to the pattern-slot.



The combination of a supporting-carriage for the pulley, having a longitudinal and transverse movement, and a pattern, P', to impart a predetermined oscillating movement to the supports M M', and a grinding-wheel, B', the combination and arrangement being substantially such as described.

REISSUES.

6,491. ARGAND GAS-BURNERS. E. P. Gleason, New York, N. Y. Patent No. 72,167, dated Dec. 17, 1867. [Filed Sept. 24, 1870.]

Brief.—The lever operates as an index of the position of the valve.



1. A valve or stopper provided with screw-threads, or a device by means of which the valve is opened and closed by a partial turn or shifting movement, as described.

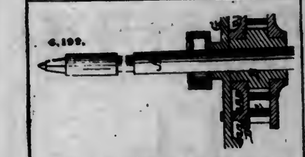
2. In an argand gas-burner, the lever D, as described, by means of which the adjustment of the valve is effected, and as an indicator of the valve's opening.

3. In an argand gas-burner, the combination of the inlet, the valve, and the lever D, substantially as described.

6,492. MILL-SPINDLES. John A. Hafner, Pittsburg, Pa. Patent No. 140,093, dated Dec. 30, 1873. [Filed May 31, 1875.]

Brief.—A bolt keyed to the spindle is passed centrally through two circular plates, partially lying between them, and having around it, to connect them with the plates, a spiral spring. A leg on it also enters a recess in the top plate.

6,489.



1. The combination of the hub B, having the leg i, and the plate D, provided with the groove d, having stop x, substantially as and for the purposes herein set forth.

2. The grooved plate D, having the projections b, in combination with the plate E, spring C, hub B, and spindle A, substantially as shown.

6,493. FLY-TRAPS. James M. Harper, El Paso, Ill. Patent No. 131,096, dated Sept. 3, 1872. [Filed May 15, 1875.]

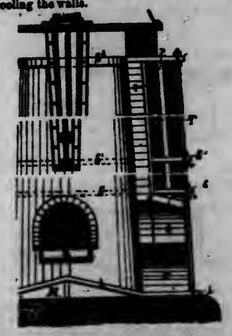


1. The concave base-block H, having extensions z and shoulders s, in combination with the cylinder A and its cone B, substantially as described.

2. The base H, having passages a in its periphery and a concavity inside thereof, in combination with cylinder A, substantially as described.

6,494. LIMEKILNS. William S. Sampson, New York, N. Y., assignor of one-half interest to Homer S. Beardsley, same place. Patent No. 140,415, dated Apr. 7, 1874. [Filed Jan. 21, 1875.]

Brief.—The bond-plates are perforated to allow circulation through the air-space for cooling the walls.

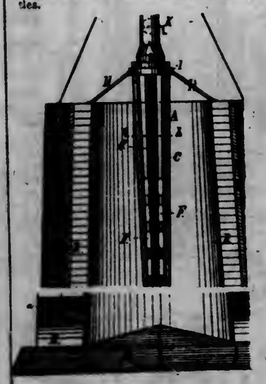


1. In a furnace or kiln designed for the calcining of lime, the roasting of ores, and the burning of cement and plaster, or similar materials, the combination of the cone-shaped bond-plate L at the bottom of a furnace or kiln, the series of bond-plates B, B^1, B^2, and B^3, more or less in number, all provided with the slots or openings V, with the horizontally-divided sections of the masonry, composing the walls G and G^1, the whole rigidly tied together by means of a series of tie-rods T, and nuts v, all substantially as and for the purposes as herein shown and described.

2. In a furnace or kiln, the walls of which are divided into a series of horizontal sections by means of bond-plates, and constructed as herein described, the air-space P formed between each walls from apex to base, as and for the purposes as set forth.

6,495. LIMEKILNS. William S. Sampson, New York, N. Y., assignor of one-half interest to Homer S. Beardsley, same place. Patent No. 140,415, dated Apr. 7, 1874. [Filed Apr. 10, 1875.]

Brief.—The central draft-flue is extended upward by the dampered smoke-stack. The downwardly-tapering form of the flue tends to relieve it from friction when the lime settles.

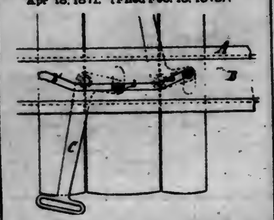


1. In a perpetual furnace or kiln arranged and adapted for the calcining of lime, the roasting of ores, the burning of cement and plaster, and other similar materials, said furnace or kiln being provided with one or more fire-chambers and ash-pits in its circumference near its base, the combination, with such furnace or kiln and its fire-chambers, of a centrally-suspended draft-flue, made tapering from top to bottom, and by means of which the heat, gases, and flame are drawn from the fire-chambers, through the charge of stone or ore, toward the center of the furnace or kiln to such flue, and escaping therefrom substantially as and for the purposes herein shown and set forth.

2. A draft-flue to be suspended in a furnace or kiln arranged for the calcining of lime, roasting of ores, &c., made tapering from its apex to its base, provided with longitudinal flanges C, having returning flanges B constructed in the sections B, B^1, B^2, and B^3, the whole combined, arranged, and operating substantially as and for the purposes as herein shown and described.

3. In combination with a draft-flue, suspended in a furnace or kiln, as herein described, the smoke stack or chimney J provided with damper K, arranged and operating as and for the purposes as set forth.

6,496. BELT-SHIFTERS. Wm. H. H. Simm, Newark, N. J. Patent No. 113,939, dated Apr 18, 1871. [Filed Feb. 15, 1875.]



1. The inclines b^1 b^2 on the movable piece B, in combination with the connections, guides for guiding the belts, and adapted to shift them in succession from one pulley to another with a simple movement of the shifter B, substantially as herein specified.

2. The connecting part b of the slot b b^1 b^2 in the movable piece B, adapted to hold the belts firmly in position when they are not in the act of being shifted, as herein specified.

6,497. CASKET-HANDLES. C. Strong, Winsted, Conn., assignor to the Strong Manufacturing Company. Patent No. 126,500, dated May 7, 1872. [Filed May 24, 1875.]

Brief.—The handle is composed of an inner tube of cheap strong metal, and an outer one of soft metal placed over or cast upon it, and variously ornamented.



1. The construction of the bar or hand-piece by employing two tubes, in combination with the swinging levers C C, substantially as and for the purpose set forth.

2. The tubular hand piece, Fig. 2, having shoulders a a formed upon its ends to adapt it to a firm connection with the swinging levers C C and the ornamental tips D D, substantially as herein shown and described.

6,498. BENCH-PLANES. Leonard Bailey, New Britain, Conn. Patent No. 67,396, dated Aug. 6, 1867. [Filed June 13, 1874.]

Brief.—The plane-stock is formed in two sections, each provided with a throat for the iron. To compensate for the unequal wear of one part upon the other the upper section is made longitudinally adjustable upon the other. The plane-iron is adjusted by means of a cap-plate provided with an aperture near its upper end, a pivoted bifurcated lever, and an annularly grooved thumb-nut working upon a vertical screw, the relative position of the adjusting device and cap-plate being always the same, while the relations of it and the plane-iron can be varied as the iron wears away.



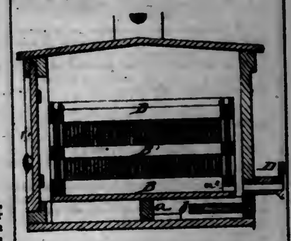
1. The combination and arrangement of the two parts a b of the stock together by means of the clamp-screws d s running through the slots f, as described, whereby each parts may be adjusted with reference to each other and clamped together, as and for the purpose specified.

2. The combination of the screw s, nut n, lever m, and the plane-stock, substantially as described.

3. The combination of the nut n, lever m, and plate h with the plane-iron, substantially as described.

4. The combination of the plane-iron, plate h, and lever m, substantially as described.

6,499. BIRD-HIVES. Edson Getty, Garden City, Minn. Patent No. 161,606, dated Apr 6, 1876. [Filed May 18, 1875.]



1. The extended entrance D, forming passage a^1, in combination with the sections having passages a^2, and the chamber a and tube b, leading into the chamber a, and the entrance for the rays of light, all as and for the purposes set forth.

2. The sections, substantially as described, having passages *d d*, in combination with the reversible board G and case A, as and for the purposes set forth.

3. The sections B, provided with a perforated frame around the top, with blocks *f*, in combination with the board H, with cut corners and chambers *e*, perforations *e'*, and open edge *d*, forming a bee-feeder and a honey board, all as and for the purposes set forth.

6,502. STOVES. Alexander Hamilton, Creston, Iowa, assignor of one-half interest to Asa Beadle and Benj. Hartung. Patent No. 156,730, dated Nov 10, 1874. [Filed May 24, 1874.]

Brief.—For burning straw, hay, leaves, and other light substances in a compressed state.



The combination, with the fire chamber C and vertically adjustable grate K, of the press follower B rising to the top of said chamber, to receive the fuel thereinto, and operate as and for the purpose described.

6,503. STEAM-BOILERS. Martin W. Shapley, Binghamton, N. Y. Patent No. 147,497, dated Feb. 10, 1874. [Filed June 8, 1875.]

Brief.—The horizontal and vertical flues are readily cleaned by removing the detachable fire section.



1. The combination of the boiler, constructed substantially as described, and the conical fire-box, with the cross and upright tubes and jacket and chamber, as and for the purpose set forth.

2. The combination of the boiler composed of parts *a a'*, and the cross and upright tubes opening into the chamber *c*, with the removable jacket, whereby the tubes may be quickly and easily cleaned by removing the jacket, substantially as described.

6,502. MANUFACTURE OF PAPER-BOARDS. Benj. F. Field, Beloit, Wis. Patent No. 105,790, dated July 26, 1870. [Filed July 10, 1874.]



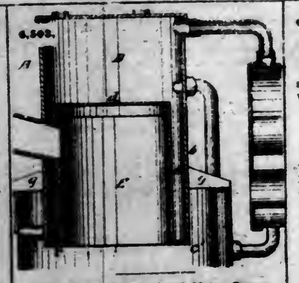
The combination of a machine for making paper-board continuously from pulp with a machine or attachment for applying to such board in the process of its manufacture, and by means of paste and pressure, a sheet of this lining-paper previously made.

6,503. FURNACES. William B. Barton, Kewanee, Ill. Patent No. 100,178, dated Jan. 26, 1870. (Filed Apr. 17, 1875.)

1. The boiler A, fire-box B, chute F, and legs or supports *g*, in combination with the boiler B forming the space *e'*, for the passage of heat and smoke, and furnishing a support for the boiler A, substantially as and for the purposes specified.

2. The combination of the single upright boiler A, water-jacket or boiler B, and horizontal boiler C, the upper boiler connected to horizontal boiler C with suitable pipes, all constructed and operating substantially as and for the purposes specified.

6,504. CIDER-MILLS. Saml Maios, Cincinnati, Ohio. Patent No. 52,583, dated Feb 13, 1866; reissue No. 5,877, dated May 19, 1874. [Filed May 11, 1875.]



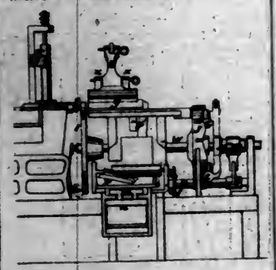
1. The crushing-rollers H G, provided with cylindrical segments I, ribs J, and grooves K, substantially as and for the purpose specified.

2. In combination with the crushing-rollers H and G and break-roller E, the gear-wheels F F' F'', with interdental spaces, whose bottoms *f* are chamfered or sloped outward, substantially as and for the purpose specified.

3. The herein-described relative arrangement between the gear-wheels and crushing-rollers—that is to say, having at least one rib of one roller register with a tooth on its gear-wheel, while at least one groove in the other roller registers with a space between two adjacent teeth of its gear-wheel, all substantially as and for the purpose specified.

6,505. TYPE-CASTING MACHINES. John A. T. Overend, San Francisco, Cal. Patent No. 136,091, dated Feb. 18, 1873. [Filed May 13, 1875.]

Brief.—The cast type are carried from the matrices between smoothing-planes, and delivered in a finished condition.

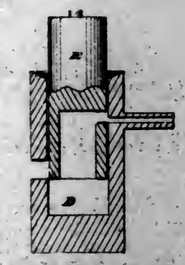


1. The sliding plate N, arranged as described, so as to carry the type between the rubbers P P, in combination with the carrier I, clamp L, and table K, constructed and operated substantially as and for the purpose set forth.

2. The cam J and the arm U, constructed and operated substantially as described, for the purpose of giving the carrier I, the mold *g* and the matrix *f* a side movement, and making a tight joint.

6,506. TYPE-CASTING MACHINES. John A. T. Overend, San Francisco, Cal. Patent No. 136,091, dated Feb. 18, 1871. [Filed May 13, 1875.]

Brief.—A pump for forcing hot metal in small jets by a plunger, which acts without valves.



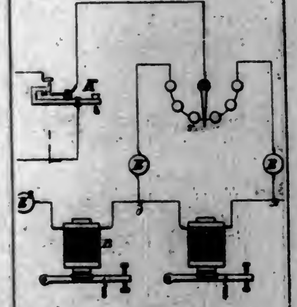
The pump-cylinder D, provided with an opening to admit the liquid to the pump without the use of valves, in combination with the piston E, chambered as shown, substantially as herein described.

6,507. MONUMENTS. Jas. Sharkey, Brooklyn, N. Y. Design No. 7,416, dated May 5, 1874. [Filed June 5, 1875.]

The design for a monument, in which the tablets and pedestal are curved, in connection with said surmounted by arches E resting on ornamental trusses F, substantially as shown and described.

6,508. DUPLEX TELEGRAPHS AND CIRCUITS THEREFOR. Jos. B. Stearns, Boston, Mass., assignor to the Western Union Telegraph Company. Patent No. 132,932, dated Nov. 12, 1872. [Filed Mar. 20, 1875.]

Brief.—"Bridge duplex" circuits arranged to pass currents of sending station around receiver of such station.



1. A duplex telegraph having a receiving instrument placed between the main line and an artificial line, and a connection from the transmitting-key to both sides of the receiving instrument, so that such receiving-instrument is may be at a neutral point with reference to the electric pulsations produced at that station, substantially as set forth.

2. A duplex telegraph containing a receiving-instrument placed at a neutral point, and an electro-magnet in the artificial line, substantially as set forth.

3. The combination of the receiving-instrument with the resistances R R' R'', in the manner and for the purpose set forth.

4. The combination of the receiving-instrument and the resistances R R' R'' with a series of smaller resistances, r, as and for the purpose set forth.

5. The combination of the receiving-instrument A with the electro-magnet B, as and for the purpose set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 7.—NO. 26. TUESDAY, JUNE 29, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

FREDERICK W. DAHNE.—*Interlocutory Appeal.*

Appeal from the Principal Examiner in the matter of the application of Frederick W. Dahne for Letters Patent for "IMPROVEMENT IN PROCESS OF EXTRACTING GOLD FROM ORES," &c.—*Decided May* 26, 1875.]

Descriptions and claims must be unambiguous; but the Office neither prescribes nor proscribes any particular form or phrase.

SPEAR, *Acting Commissioner:*

The Examiner's objections are made against the form of the claims, or, rather, against certain words used in the claims. I do not understand him to say that the claims are ambiguous; that any doubt exists in his mind as to the nature of the invention claimed, whether it be a process or manufacture. Indeed he appears at one time to have rejected them upon their merits, thereby certainly implying an understanding of their import. He objects simply that they contain certain tabooed words—words which have been prohibited in claims of all descriptions, and which may not be used, no matter what the subject-matter described.

He speaks of the "recognized practice of the Office discountenancing this form of claim." I do not think it proper to say that the recognized practice of the Office discountenances any particular form of claim. The mere form itself is of little or no consequence; and it is impossible to decide that, because the form is bad in one case, it will be bad in every other. It is the uniform practice of the Office to discountenance in a particular case any form of claim which does not set forth clearly the nature of the invention, but leaves in uncertainty the thing which is to be patented.

I would not be understood as counseling any relaxation of vigilance on the part of the Examiner in scrutinizing the form of claims in cases that come before him for examination. It is as important that the invention should be clearly described and distinctly claimed as that it should be now. A patent may be as certainly void for ambiguity as for lack of novelty; but it is essential that the Office should not be hampered by any false traditions that certain words and phrases in the language are not, under any circumstances, to be used in claims. There is no foundation for such traditions. The decisions of the Commissioner afford no basis for them, but, on the contrary, plainly contradict them. Thus in the *ex-parte* case of *Hoppes*, (OFFICIAL GAZETTE, vol. 2, p. 4,) the then Acting Commissioner, considering a claim, which was, in substance, "increasing the area of the water-surface," &c., held that it was not "indeterminate in substance," as the Examiner had supposed, and that it was not functional, as was held in *ex-parte Simonds*, C. D., 1870, where claims made in participial form had been less guardedly condemned; but he sustained the Examiner on the true ground that in that connection, and in relation to the subject matter under consideration, the claim was not in such "clear, concise, and exact terms" as the law required.

In the case of *The Collins Company*, (OFFICIAL GAZETTE, vol. 2, p. 617,) the Commissioner said, referring to the words "substantially as described:"

There is no artificial significance to be set up for them by which they are to be considered either as desirable or dangerous. There is no objection whatever to their use where they make sense.

Again, in the case of *Daniel F. Haasz* the same doctrine was stated with great force and distinctness. The Commissioner said:

I know of no rule or reason for prescribing or proscribing the use of any particular word or phrase in connection with a specification or claim.

From the very nature of the case no rule can be given of general application, either in relation to words or phrases, or anything else by which the exercise of his own judgment and intelligence and careful and critical analysis can be dispensed with by the Examiner in the examination of each particular case, with reference to the clearness or ambiguity of the claims.

In the present case the alleged invention appears to be a process, and the cases cited by the Examiner to sustain his action are not therefore pertinent to this, for they

both relate to manufactures, and in the case of Mayall the objection was simply against an ambiguity of the claim. The leading phrase in the claim was "the employment of canvas," and that, in connection with the other parts, was held to be such as to leave it doubtful whether the claim was for a process or a manufacture. The objection was not primarily to the word "employment," but to the ambiguity which arose from the word used in that connection; and now, without any regard to that case, the question arises in this, as it did in that, whether or not this claim is clear and precise. For my own part, having read the specification, I think there can be little doubt as to what the claim in this case (I speak of the first) is intended to cover. To avoid all possibility of error, however, it might be well to prefix to the claim the words "in the process for extracting gold from ores," to which phrase I understand applicant to make no objection.

The second claim appears to me unobjectionable as it stands, so far as form is concerned. These processes may be old, or they may be impracticable or inoperative. Of these matters I have no means of judging, and, indeed, am not called upon to judge at this time. Only the form of the claim in relation to clearness or ambiguity is to be considered. The expression "continuous use," in its connection with the other parts of the claim, and in the light of the specification, is intelligible. Unquestionably applicant is claiming a process. If that be an invention and new, the claim should be allowed, and, with the addition suggested above, both claims should be examined upon their merits to determine the patentability of the alleged invention.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

DAVID M. WESTON *et al. vs.* NATHANIEL C. NASH *et al.*

[*In equity.—Before* SHEPLEY, *J.—Decided April*, 1875.]

The fifth claim of reissued patent of David M. Weston for "Improvement in Centrifugal Machines for Draining Sugar," &c., dated January 14, 1868, (original dated April 9, 1867,)—viz: "The construction of the openings I in the bottom of the cylinder in such machines, and the valve J for the purpose of closing the same, substantially as described"—is not limited to such centrifugal machines only as are constructed in all respects like those described in the specification.

The term "such machines" in this claim means such centrifugal machines as are so constructed as to admit of the application and operation of the claimed devices in substantially the described mode and by substantially the described means.

The unauthorized use of complainants' openings and valve would be an infringement if used in centrifugal machines, to which they could be usefully applied by reason of there being an unobstructed space at the bottom of the machine, into which the sugar could fall, although the cylinders were not suspended as shown in the patent.

The Weston invention is not anticipated by the device shown in the British patent of Hardman, of 1843, in which the openings in the bottom plate of the rotary cylinder are closed by a disk or plate held up against them while the machine is in operation by a nut and spring, and simply lowered, without being removed, so as to leave a free and unobstructed space, when the sugar is to be discharged.

Nor by the Alliott machine, described in English patent of February 3, 1851, in which the bearings of the shaft and its foundations are directly under the cylinder, so as to render impossible a free and unobstructed space below the cylinder into which the sugar may be discharged.

Although defendants' valve is operated by turning on the shaft, and, in this respect, may be an improvement upon the valve of the patent, which moves up and down on the shaft, this is not a substantial difference. It is but another form of the same device, with the same mode of operation, so far as the operation is concerned to which the whole device relates—that of discharging through the bottom of the cylinder the purged contents of the charge.

[*George L. Roberts*, for complainants.
James B. Robb, for defendants.]

SHEPLEY, *J.*:

Letters patent, reissue No. 2,845, issued January 14, 1868, to David M. Weston, for improvement in centrifugal machines for draining sugar and other substances.

Centrifugal machines had been long known and used prior to the date of his invention for the purpose of separating liquid from solid constituents when mechanically intermixed in the same masses. A metallic drum, with its cylindrical periphery perforated to form a strainer to retain the solid matter while permitting liquids to escape when subjected to centrifugal action, was so arranged and operated as to rotate with great velocity on its axis. The cylindrical strainer was surrounded by a casing, which received and carried off the liquids thrown through the apertures of the strainer. When used for purging sugar from the menstruum of sirup or molasses in which it had been crystallized by boiling, the mass of sirup and sugar was introduced into the rotary perforated cylinder or basket and revolved at a high rate of speed. The centrifugal force in a few minutes eliminated all the sirup through the sieve, leaving the crystals of the sugar standing in a perpendicular wall around the inner surface of the cylindrical sieve.

The invention of Weston embraced two contrivances, one to obviate the tendency of the basket to vibrate in its bearings when carrying an unbalanced load, and the other means for the rapid and easy removal of the sugar from the basket after it had been purged from the sirup.

The inquiry in the present case relates to the complainants' mode of—

construction of the cylinder, by means of which the contents of the same may be more readily discharged than by the method usually employed; and consists in forming openings in the bottom of the cylinder around the shaft, which are closed by a valve or cover, as will be more particularly described.

The method usually employed to discharge the sugar had been to take it out of the same opening at the top of the cylinder through which the sirupy mass had been introduced to be operated upon. Weston constructed openings in the bottom of the cylinder, in the annular space surrounding the shaft, and between the shaft and the perpendicular wall of the sugar. These openings are closed by a movable cover, which surrounds the shaft, and is formed with a sleeve extending upward around the shaft a sufficient height to prevent any liquid matters that may be put into the cylinder from escaping between the valve and the shaft. The valve with its sleeve slides loosely up and down on the shaft which it surrounds. After the materials contained in the revolving cylinder have been acted upon, and the liquids separated and discharged through the

apertures in the sides by the centrifugal force thus created, the valve is raised, sliding upward freely on the shaft, out of the way, and the contents of the cylinder are discharged through the openings in the bottom.

The centrifugal cylinder in the Weston machine is suspended from a flexible elastic bearing, which supports the rotating parts of the machine and its contents in such a manner as to permit them to revolve about an axis, varying in position according to the weight of the material in motion. The rotary cylinder is actuated on a hollow shaft, which is supported and runs upon a spindle or axle within it suspended from the elastic bearing above. These contrivances for suspending and rotating the cylinder, which form a separate and important portion of the Weston improvements, are not in controversy in this case, and are only alluded to in this connection from the incidental connection they have with the means of discharging the cylinder, by reason of the fact that this mode of suspending the cylinder leaves a free and unobstructed space beneath the openings in the bottom of the cylinder, so that, when the contents are discharged through the openings, they fall by gravity entirely clear of the machine.

The claim in the patent is as follows:

5. The construction of the openings I in the bottom of the cylinder in such machines, and the valve J, for the purpose of closing the same, substantially as described.

The words "in such machines" in this claim undoubtedly refer to centrifugal machines. It is claimed by respondents that they refer to such centrifugal machines only as are constructed in all respects like those described in the specification. This, I think, is too narrow a construction of the claim. The true construction of the claim is that which makes it coextensive with the invention. "Such machines" means such centrifugal machines as are so constructed as to admit of the application and operation of the claimed devices in substantially the described mode and by substantially the described means. The unauthorized use of the complainants' openings and valve would be an infringement if used in centrifugal machines, to which they could be usefully applied by reason of there being an unobstructed space at the bottom of the machine into which the sugar could fall, although the cylinders were not suspended from a flexible elastic bearing like that described in the complainants' patent. The claim covers the application to centrifugal machines, so constructed in other respects as to be adapted to the application and proper working of the patented devices hereafter named, of openings in the bottom of the cylinder and a valve for closing such openings, such openings and such valves being constructed substantially as described.

The British patent granted to Hardman October 5, 1843, shows a bottom plate with openings or valves for the discharge of the sugar. A disk or plate is kept up against the under side of the bottom, so as to close the openings when the machine is in operation, by means of a nut and spring, and by the same means is withdrawn after the operation is completed, giving vent to the discharge-valves. There is no evidence that this Hardman machine ever went into practical use. It did not possess any advantage in construction over the centrifugal machines in the use of which the sugar was discharged by lifting it over the top of the basket. The evidence proves that it would take more than double the time to discharge the sugar in this mode than by the old way of discharging it over the top, and ten times as long as to discharge from the Weston centrifugal cylinder. It differs from the Weston contrivance in the essential particulars of being without a practically unobstructed place for the discharge of the sugar. The plate, when withdrawn as far as possible from the openings, still remains directly under them, so much so as to obstruct the free discharge of the sugar. This is an important element in the operation, for the crystals of sugar, when first discharged, are moistened on their surface with some adhering sirup, and do not glide or fall freely away from inclined planes, but accumulate and remain at rest. The manipulation of the nut from below the cylinder and the keeping the plate clear from the falling mass below the cylinder, while, at the same time, the operator must be concentrating the sugar over the openings from the upper side of the bottom plate, would be attended with great difficulty and inconvenience; and various other differences make this an impracticable contrivance.

Many of these observations apply with equal force to the Alliott patent, (also an English patent, granted February 3, 1851,) though in some particulars the Alliott device more nearly resembles that of Weston. But the Alliott cylinder had the bearings of the shaft and its foundations directly under the cylinder; consequently there was no free unobstructed space below the cylinder into which the sugar could be discharged. A funnel is arranged in the pan or casing to receive the sugar, and this is too contracted to allow the sugar to flow freely through it. The cylinder must be rotated to bring the hole over the funnel, and held there while the sugar is being discharged; otherwise the sugar would fall into the sirup in the pan. Without the aid of the drawings or a model it is not very easy to point out intelligibly all the differences between the Hardman and Alliott devices and the invention of Weston; but an inspection of models and drawings exhibits readily to the eye not only the diversities between Weston's device for discharging the sugar and those which preceded it, but also shows the impracticability of both Hardman's and Alliott's. This entire failure of either of those devices to accomplish the result aimed at by them and arrived at in the Weston device is proved by the fact that, while there is no evidence that either Hardman's or Alliott's device went into practical use, the Weston device has been almost universally adopted in this country, and extensively in Great Britain, France, and Germany, and to a very considerable extent in all sugar-producing countries.

The proof of infringement in this case depends upon the question whether the valves and openings of the defendants are substantially like those of the complainants in construction and operation, differing only in form.

The Weston and Hepworth devices for discharging the sugar are alike in the following characteristics of construction and mode of operation: Each has central openings around the shaft, through which the sugar is discharged into a space below it practically free and unobstructed. These apertures in each are opened and closed from the interior of the basket, and not from below the bottom. Each has a central opening through

the bottom of the casing or curb to permit the discharge of the sugar into a receptacle below the machine. The apertures in both are opened and closed by a central valve surrounding the shaft, extending above the surface of the liquid mass when introduced into the machine. The construction and mode of operation in discharging is substantially the same, differing only in the manner of opening and closing the valves, by turning the Hepworth valve on the shaft, while the Weston valve is raised and lowered. This is not a substantial difference, even if it be an improvement. It is but another form of the same device, with the same mode of operation, so far as the operation is concerned to which the whole device relates—that of discharging through the bottom of the cylinder the purged contents of the charge.

Decree that defendants infringe the fifth claim of complainants' patent, and for injunction and account.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

WILLIAM WICKE *vs.* HENRY AND BARBARA KLEINKNECHT.

[*In equity.—Before* BLATCHFORD, *J.—December*, 1874.]

Where a machine was licensed for use in a particular territory:

Held, that the use of it, by subsequent purchasers, in territory other than that for which it was licensed, was unlawful.

The mere fact that the agent of the patentee, after the transfer of the machine to the unlicensed territory, demanded of the purchasers the back royalties due upon it, conferred no right to use it outside the territory named in the license.

[*A. V. Briesen*, for complainant.
J. Van Santvoord and *F. Forbes*, for defendants.]

[This was an action brought by the complainant, as assignee of certain territory under the patent of George Wicke, granted to the latter June 16, 1863, for a "box-nailing machine." The facts were as follows: The complainant, by assignment, acquired the exclusive right under said patent for the State of New York. The remaining territory was owned by the original patentee, but the complainant was his attorney authorized to collect royalties and grant licenses for said territory. Under this power of attorney he licensed one Oppel to use one of the patented machines in Newark, New Jersey. Oppel sold this machine to the defendants, who took the same to New York, and there used it. Suit was brought, and defendants pleaded an implied license, which they claim they derived from the complainant through his demand on them for payment of certain royalties due from Oppel at the time he sold the machine.]

BLATCHFORD, *J.*:

The evidence in this case leaves no doubt that the plaintiff is entitled to a decree. By the purchase by one of the defendants from Oppel of the machine in question, and by the transfer from Oppel to such defendants of the rights of Oppel under the written license given by George Wicke to Oppel, neither of the defendants acquired any right to use such machine in the territory belonging to the plaintiff under the patent.

The plaintiff was the agent of George Wicke in respect to the license to Oppel, and he never demanded any license fee from either of the defendants, in respect of any other use of the machine than a use of it under and in accordance with the terms of the license to Oppel, which did not embrace a use of it in territory owned by the plaintiff.

Oppel had no right to use the machine in the plaintiff's territory, and could convey none. The plaintiff has given no license, direct or indirect, express or implied, to either of the defendants to use the machine in his territory.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date June 29, 1875.]

8,428 to 8,439, inclusive.—Carpets.—ROBERT ALLAN, Yonkers, N. Y., assignor to ALEXANDER SMITH & SONS' CARPET COMPANY, same place. Applications filed June 19, 1875. Term of patents 3½ years each.

8,440.—Piano-Stools.—GEORGE W. ARCHER, Rochester, N. Y. Application filed December 22, 1874. Term of patent 7 years.

8,441.—Stoves.—WILLIAM BURROWS, New York, N. Y., assignor to J. L. MOTT IRON WORKS, same place. Application filed June 5, 1875. Term of patent 7 years.

8,442.—Dish of Pottery-Ware.—THOMAS H. COPELAND, Geddes, N. Y., assignor to ONONDAGA POTTERY COMPANY, same place. Application filed June 14, 1875. Term of patent 3½ years.

8,443.—Card of Buttons.—GEORGE P. FARMER, Brooklyn, N. Y., assignor to ERASMUS C. PRATT and JOHN H. PRATT, England, and GEORGE P. FARMER, New York, N. Y. Application filed May 7, 1875. Term of patent 14 years.

8,444 and 8,445.—Carpets.—HEINRICH F. GOETZE, Boston, Mass., assignor to THE ROXBURY CARPET COMPANY, same place.—Cases N and M. Applications filed June 21, 1875. Term of patents 3½ years each.

8,446 and 8,447.—Printing-Types.—CARL EMIL HEYER, Boston, Mass.—Cases A and B. Applications filed June 5, 1875. Term of patents 3½ years each.

8,448.—Coffin-Plates.—WILLIAM PARKIN, Taunton, Mass., assignor to REED & BARTON, same place.—Case L. Application filed May 27, 1875. Term of patent 7 years.

8,449.—Advertising-Lantern.—FRANCIS L. PISCH, New York, N. Y. Application filed May 22, 1875. Term of patent 7 years.

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date June 29, 1875.]

259.—Title: "**Liquid of Borates Compound.**"—CHARLES G. AM ENDE, Hoboken, N. J. Application filed June 24, 1875.

260.—Title: "**Anderson's Toothache Specific.**"—CHRISTIAN ANDERSON, Dayton, Ohio. Application filed June 12, 1875.

261.—Title: "**The Dress-Reform Corset-Waist and Skirt-Supporter.**"—GEORGE FROST and GEORGE H. PHELPS, Boston, Mass. Application filed June 16, 1875.

262.—Title: "**Home Made Shirt.**"—JOHN HARRINGTON & Co., Boston, Mass. Application filed June 17, 1875.

263.—Title: "**Warranted 12 Yards.**"—LEISLER & SOMMERHOFF, New York, N. Y. Application filed June 26, 1875.

264.—Title: "**Gillet's Laundry Castile Soap.**"—GILLET, MCCULLOCH & Co., Chicago, Ill. Application filed June 23, 1875.

265.—Title: "**Patent Single Thread Chain-Stitch Attachment.**"—S. H. MILLER & Co., Brooklyn, N. Y. Application filed June 24, 1875.

266.—Title: "**Moore's Pilules.**"—CHAS. C. MOORE, Elizabeth, N. J. Application filed June 22, 1875

267.—Title: "**Dr. O. T. Patt's Veterinary Ointment.**"—OTIS T. PATT, Woonsocket, R. I. Application filed June 19, 1875.

BOUND VOLUMES OF PATENTS.

The bound volumes of patents, containing the specifications and drawings of patents in full from May 30, 1871, to within a few months of date, may be consulted at the following places:

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APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., May 19, 1875.

On the petition of ANN JENNETTE HATHAWAY, of Milwaukee, Wis., executrix of JOSHUA HATHAWAY, deceased, authorised by act of Congress approved February 18, 1875, praying for the extension of a patent granted to the said JOSHUA HATHAWAY, on the 3d day of April, 1860, for an Improvement in Devices for Converting Reciprocating into Rotary Motion,

It is ordered that the testimony in the case be closed on the 20th day of July next; that the time for filing arguments and the Examiner's report be limited to the 30th day of July next; and that said petition be heard on the 4th day of August next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

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Faulkner, E. H., assignee	164,949
Faxon, J. W., Valve for steam radiators	164,985
Felt, H., and P. P. Child, Rotary churn	165,086
Fisher, S. L., Gateway	164,986
Fisk, A. J., Spring setting machine	165,087
Forbes, H. D., Combined stopper and paddle for blacking bottles	164,912
Forshee, J. M., assignee	165,081
Fox, M., Reversible cap	164,987
Frawley, D. and W. J., assignees	165,117
Fuller, L. K., Drying apparatus	165,088
Gatennie, F., assignee, (reissue)	6,509
Galloway, J. D., Gas fitter's lamp	165,089
Gardiner, S., Jr., Burner for electrical gas lighting	165,090
Gardner, A. G., Piano stringing device	164,988
Garrett, G. C., Dropping bottle	165,091
Garrick, T., Eyelet, (reissue)	6,512
Gates, W. H., Artificial teeth	164,913
Gibson and Lawton	165,105
Gilmore, H. H., Horseshoe blank bar	164,914
Githeus, J. C., Steam rock drill	164,990
Githens, J. C., Chuck for rock drills	164,991
Goldstein, J., Key hole guard	164,992
Goodwin, J. M., Locomotive for burning hydrocarbon	164,915
Gore and Edgcomb	164,911
Graham, J. S., Wood planing machine	164,989
Graham, M., assignee, (reissue)	6,520, 6,521
Grahl and Epeneter	165,083
Gregg, R. R., Pneumatic railway	165,092
Griswold, G. G., Umbrella	165,093
Hahn, I., Machine for making hollow beams and tubes	165,094
Hallberg, L. G., Combined hot air furnace and range	164,916
Hamilton, A., Burning hay, straw, leaves, &c	164,993
Hanks, W. R., Gas burner for heating purposes	165,095
Harrell, S. L., Package strap handle	164,994
Hartley, M., assignee, (reissue)	6,520, 6,521
Harvey and Ford, assignees, (reissue)	6,513
Harvey, J., Bone handle for canes, &c., (reissue)	6,513
Hawkes, E., Furnace and stove	164,995
Hayes, I., Dreamer for painters' use	164,996
Hayward, D. S., Glove stretcher	165,096
Hearn, J. H., Brick and soap press	164,997
Hein and Isidor	165,100
Hendry, J. C., Vehicle hub	165,097
Herrington, E. F., Harvester pitman, guide, and holder, (reissue)	6,514
Hersome, C., assignee, (reissue)	6,522
Hoadley, J. C., Governor for steam engines	164,917
Hoadley, J. C., Company, assignee	164,917, 164,942
Hollister, G. E., Ironing board	164,998
Holt, G. L., Bit for boring wood	164,999
Hopkins, C. W., Safety catch for revolvers	165,098
Hopkins, I. N., Watch case spring and catch	164,918
Hoyt, J. W., Securing metallic lathing	164,919
Huestes, H., assignee	165,106
Huey, W., assignee	164,986
Huggins and Aldrich	164,955
Hurlburt, C. A., Buck saw frame	165,099
Hyde, W., assignee	165,025
Isidor, M., and F. Hein, Hat and cap	165,100
Jackson, E. A., Stand for fire irons	165,101
Jackson, T. S., assignee	165,128
Jamison, S. W., Machine for crimping leather for boots and shoes, (reissue)	6,525
Jamison, S. W., Crimping machine, (reissue)	6,526

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Jamison, S. W., Boot and Shoe Crimping Machine Company, assignee, (reissue)	6,525, 6,536
Jarboe, J. W., Paper barrel, (reissue)	6,515
Jarves, H. D., assignee, (reissue)	6,516
Joecken, Bohm, and Stuhr	164,962
Johnson, J. S., Flower pot	165,000
Johnson, W., Bung and bush	165,001
Johnson, W. H., Milk cooler	165,102
Jonasson, C. J., Smoking pipe	165,002
Jones, J. L., Plug tobacco machine, (reissue)	6,517
Jordan, F. H., assignee	164,924
Joyce, S., Air tight can	165,003
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Kalmbach, C. L., Electric fuse	164,921
Karn, J. W. and E. W., Device for bending sleigh runner frames	165,103
Kennedy, J. C., Apparatus for charging beer with gas	165,004
Kidd and Critchlow	165,068
Kiley, H., assignee	165,004
King, G. E., Trimming, (reissue)	6,518
Kirk, L., Hay and straw press	164,922
Kopp, C., assignee	165,116
Knoup, A. F., Soda bottle carrier	165,005
Kurzhoedt, F. A., assignee, (reissue)	6,518
La Force, N., assignee	165,076
Lane, A., and J. H. Cullom, Tobacco knife	165,104
Lauby, G., Windmill	164,923
Lawton, J., and J. A. Gibson, Upright boiler for ranges, stoves, &c	165,105
Leavitt, E. D., Jr., Steam boiler	165,006
Lehman and Riegel	165,016
Leich, A., assignee, (reissue)	6,524
Lillie, D. E., Foot treadle	165,007
Linscott, J. M., Loom	164,924
List and Swift	165,039
Littlefield, S. P., Car brake	165,008
Longley, E., Addressing machine	164,925
Ludlow, W. L, Pencil case	165,009
Mackinney, H. G., Umbrella handle	165,106
Manning, G. A., Belt coupling	165,010
Marsh, J. S., Harvester rake	164,926
Marsters, E. J., Folding table	165,011
Martin, H. M., assignee	165,141
Martin, J. F., Extension table	165,107
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Matthiessen, F. O., assignee	165,077
McClarty, J., Apparatus for manufacturing illuminating gas from petroleum	165,012
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Mentzel, H. D., Tag machine	165,109
Mercer, W., Turbine water wheel	164,927
Meriden Britannia Company, assignee	165,142
Merrill, C. C., Photographic vignetting machine	165,017
Merwin, Hulbert & Co., assignees	165,098
Messer, L., Clasp for pocket books	165,110
Mihan, P., Ventilating halls, &c	164,928
Miles, H., Wire stretcher	165,019
Miller and Reynolds	165,120
Miller, C. H., Water sprinkling nozzle	165,111
Millmann, H. J., Case for exhibiting yarn	165,018
Mills, C. W., Pump governor	165,112
Mindeleff, D., Treating ores, (reissue)	6,519
Moore, G., Sulky plow	164,929
Moore, J., Jr., Stove grate	165,020
Morsell, S. T. G., Metallic roofing	164,113
Mott, J. L., Iron Works, assignee	165,020, 165,134
Mudge, C., assignee, (reissue)	6,509
Munson, A. K., Grain tally	165,021
Murdoch, R., Scale and balance stand	165,114
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Newton, M., Check row attachment for corn planters	165,115
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Norton, O., Manufacture of shears	164,930
Nott, A. B., Combined fork and skimmer	165,117
Noyes, J. W., assignee, (reissue)	6,509
Openheimer, L. M., assignee	165,091
Osborne, E. F., Steam radiator	165,118
Page, G., & Co., assignees	165,065
Page, W. C. D., and J. L. Fahy, Instruments for extracting corks from bottles	164,931
Page and Barbour	165,055
Painter, P. A., assignee	165,132
Parsons, T. D., Lamp burner	164,932
Payne, R., Machine for necking cartridge cases, (reissue)	6,520
Payne, R., Necking cartridge cases, (reissue)	6,521
Phillipson, R., assignee	164,992
Peters, D., Carpet stretcher and holder	165,022
Peters, W., Covering for steam boilers, (reissue)	6,516
Pitcher, H. A., assignee	165,102
Pitkin, A. P., Heating and ventilating public buildings	164,933
Pool and Bailey	165,052
Porter, J. C., Self setting animal trap	165,023
Powell, T., Boot and shoe, (reissue)	6,522
Powell and Dyer	164,983
Pratt, M., Manufacture of key boards for organs, &c	165,024
Prosser, T. T., Relief valve	165,119
Prouty, A. P., L. Coes, and G. C. Taft, Planer chuck	164,934
Raleeback, L. D., assignee	165,056
Ramage, C. E., Car coupling	165,025
Rand, McSherry & Co., assignees	165,107
Ray, F. A., assignee	165,102
Reed, G. E., assignee	164,932
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Richardson, I. C., Steam heating apparatus	164,935
Richey, A. H., Tailors' measuring apparatus	165,026
Riley, C. W., Air hand engine	165,027
Rimes, A., Hub	164,936
Robertson, J. T., Picture frame	164,937
Robertson, T. J. W., Toy chromatrope	165,123
Robinson, A. J., Chimney cowl	165,028
Robinson, G. H., assignee	165,120
Robinson, W. F., assignee	164,966
Robinson, W. T., Scale beam	164,938
Roemer, W., Catch plate for bag locks	164,939
Rounsville, W., assignee	165,117
Rowe, W. H., Vehicle hood	165,125
Rowley and Curtis	165,071
Rubber Tip Pencil Company, assignee, (reissue)	6,510
Rugg, H. H., assignee	168,087
Ryder, A., Train telegraph	164,940
Rykert, A. G., Tool holding device	165,124
Salter, J., Paddle wheel	165,029
Sanders, J., Windmill	165,030
Schneeloch, O., Breech loading fire arm	165,031
Schneider, C. G., Catch for cupboards, &c	164,941
Schroeder, N., assignee	164,910
Schuyler, J. R., assignee, (reissue)	6,520 6,521
Sears, G. E., assignee, (reissue)	6,509 6,515
Seiberling, J. F., assignee, (reissue)	165,135
Sellers, W., assignee	165,032
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Shattuck, G. H., assignee	165 033
Shelton, J. J., Rotary churn	165,126
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Shive, J., Hopple	164 942
Sims, G. C., Steam engine governor	165,036
Smith, A., Anchor	165,128
Smith, A. C., Corn stalk cutter	165,106
Smith, A. J., assignee	165,943
Smith, F. B., Tailors' measure	165,129
Smith, H., Treatment of leather	165,035
Smith, W., Pneumatic dredger	165,034
Smith, W. B., Show case	164,944
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Spencer, F. M., Photographic head rest	165,038
Spencer, F. M., Camera stand	6,523
Stackpole, G., Shoe and glove buttoner, (reissue)	165,130
Stamp, W., Exhaust mechanism for locomotives	6,509
Stevenson, J. A., assignee, (reissue)	6,524
Stilson, L. B., Harvester, (reissue)	164,946
Stone, J. M., Hydraulic hose	164,947
Stover, D. C., Wire fence	164,962
Stuhr, Joecken, and Bohm	165,039
Swift, R. B., and T. J. List, Flask for casting propeller wheels	164,948
Taft, G. E., Beater for cotton pickers	164,934
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Talcott, S. C., Measuring packaged fabrics	165,132
Taylor, H. P., Guide for bench planes	165,040
Taylor, J. R., Pitman	165,133
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Turpie, J., Filling hook for weaving hair cloth	165,134
Tweeddale, W., Fire place	165,135
Tweddell, R. H., Riveting machine	165,041
Unverzagt, W., Lock for doors	165,136
Vandegrift, T. F. and W., Cultivator	165,137
Van Vechten, J. R., Paper box	165,042
Varney, A. S., assignee	165,136
Wade, O., assignee	165,138
Wagoner, E., Feed cutter	165,042
Watkins, A. H., Reservoir street lantern	165,043
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Weis, W., Fastening for egg and fruit box covers	164,950
Wells, W., Trace fastener	165,139
West, D. K., Steam engine	165,140
Weston, E. R., Burnisher for photographs	165,045
Wheeler, S. H., Stave basket	164,951
White, L. B., Plow	164,952
White, L. B., Plow	165,141
White, W. H., Scrubber and condenser for illuminating gas	165,046
Wiard, G., Casting plow points	165,077
Wiecher's Sugar Refining Company, assignee	165,142
Wilcox, H. C., Match safe	165,075
Wilkin and Deneef	164,953
Willig, F., Expansible bit	164,954
Wilson, J. S., Air port for vessels	164,901
Winchester, G. C., assignee	165,069
Winship, L., assignee	165,047
Wolf, U. S., Wicker basket	165,143
Woodward, E., Culinary grater	165,048
Woolfolk, L. B., Heat reflector	165,144
Zengel, J., Apparatus for transmitting and regulating motion	165,145
Zinsser, W., Compound for preserving beer, &c	

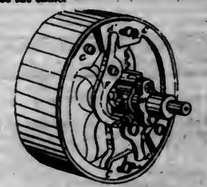
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED JUNE 29 1875

164,900. FRICTION-CLUTCHES. I. Arnold, Fitchburg, Mass. [Filed June 9, 1875.]

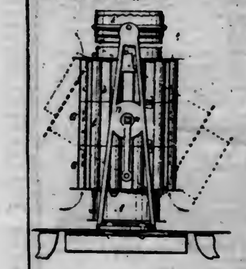
Brief.—The short arms of the levers engage in the slots of the ring-segments, and operate to expand them to clutch the pulley, or to reduce the diameter of the clutch, and release the same.



The pivoted ring-segments C C, provided with the slots *d* and *d'*, in combination with the adjustable levers F and sleeve H, provided with the beveled arms *i i*, all constructed to operate substantially in the manner described, and for the purpose set forth.

164,900. HEATING-STOVES. J. K. Babcock, Phelps, N. Y. [Filed Mar. 22, 1875.]

Brief.—Kindlings can be put on top of the fuel in the fire-pot, a duplicate grate inserted, and the fire-pot inverted, when the kindlings and fuel can be ignited.



1. The inversible fire-pot or cylinder, having a detachable grate, J, for heating-stoves, composed of one or more annular sections, G, of vertical air-flues *i*, and provided with suitable trunnions *n*, substantially as and for the purposes shown and described.

2. In combination with the inversible fire-pot, and pipe E, the vertically-adjustable pipe-section F, operating conjointly, substantially as and for the purposes set forth.

3. In combination with the inversible fire-pot, provided with a detachable grate, J, constructed and arranged to be operated substantially as shown and described, the detachable ash-box A, as and for the purposes set forth.

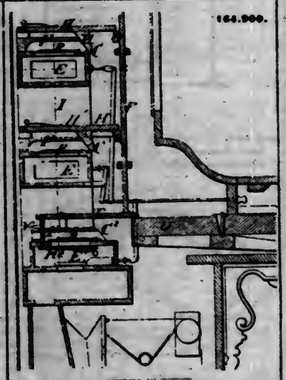
164,900. REED-ORGANS. Nicolas Svendsen Bach and Martin Paulsen Berg, Boston, Mass. [Filed Apr. 20, 1875.]

1. In a reed-organ, the combination of a vertical series of reed-cells, C C C, with the independent sound-board B, arranged near to, but not in contact with, the reed-board or the wind-passages, substantially as described.

2. The combination of the horizontal reed-cells C C C, wind-boxes E E', and flues I I J with the bellows of a reed-organ, when constructed and arranged substantially as described.

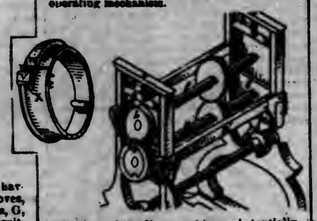
3. The combination of the bevled reed-tubes F, valves H H', levers H', rods P, levers T, pins V, and keys U, substantially as and for the purpose specified.

164,900.



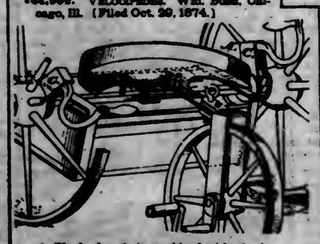
164,901. MACHINES FOR BENDING WOOD. William Briggs, Ashburnham, Mass., assignor to Geo. C. Winchester, same place. [Filed Apr. 6, 1875.]

Brief.—Blanks for chair-staff or hoops that have been previously steamed can be bent by means of a former of irregular form, provided upon its exterior edge with a socket and tapering flange, and upon its inner surface with one or more splines, corresponding with grooves upon the outer edge of a face-plate, upon which the former is arranged, and a cam, the periphery of which conforms reversely with the former, in connection with suitable operating mechanism.



In a wood-bending machine substantially such as described, the former N, provided with the socket X and tapering flange W, combined to operate with the cam L, shafts C D, and plate M, substantially as and for the purpose set forth.

164,902. VELOCIPEDE. Wm. Bush, Chicago, Ill. [Filed Oct. 20, 1874.]



1. The brakes A A, combined with the levers C, substantially as and for the purposes set forth.

2. The seat D, attached to and combined with the bridge and axle, substantially as and for the purposes set forth.

3. The method of propelling a vehicle by the lever attachments to the rear wheels, and a crank attachment to the front wheel, singly or combined, substantially as and for the purpose set forth.

164,903. COTTON-COMPRESSORS. J. Joseph Cahoon, Memphis, Tenn., assignor of one-fourth his right to Thos. H. Cahoon, Cleveland, Ohio. [Filed May 24, 1875.]

Brief.—Along each edge of the faces of the upper and lower platens are right angular-shaped blocks, hinged at the angle outside. Pressure of the bale on the platens causes also the closing in of the blocks with side pressure thereon, the upper and lower series interlocking.



1. The bale-compress consisting of the platens A and the jaws B hinged thereto, whereby a bale interposed between the two platens is, by forcing the platens together, simultaneously pressed both laterally and vertically, substantially as and for the purpose described.

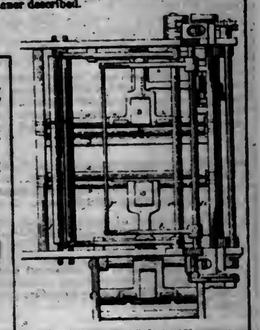
2. The combination, with the platens A, of jaws B hinged thereto, the said jaws upon the upper platen formed, as respects the jaws upon the lower platen, so that they will mesh together as the platens approach each other, substantially as and for the purpose described.

3. The combination, with the platen A and hinged jaws B, of locos pins D, whereby the jaws are automatically opened, substantially as and for the purpose described.

164,904. MACHINES FOR FOLDING COVERING, AND PASTING PAPER. C. Chambers, Jr., Philadelphia, Pa. [Filed June 11, 1873.]

Brief.—Adapted for folding a sheet of paper and a cover separately, and uniting the two to form a pamphlet.

1. In a machine for folding and pasting paper, the adjustable paste-fountain C, in combination with the paste-blade F, and the mechanism for operating the same, all as constructed and arranged that they may be adjusted together for the purpose of adapting the machine to paste the various sizes of paper it is designed to fold, all substantially in the manner described.



HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

2. The adjustable slotted strip G applied to the feed-table in the line of the back fold of the sheet, as and for the purpose stated.

3. The paste-blade F, with its shaft D and arms E, all constructed and operating as specified, in combination with the rod I and turning-guide J, as and for the purpose specified.

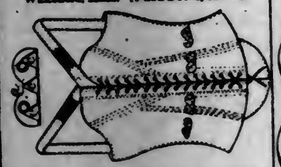
4. In combination with paste-blade F, the stripper H for holding down the sheet during the operation of the paste-blade, as set forth.

5. The paste-box B, provided with the serrated paste-blade *j*, and rollers *r r* for operating the same, as described and represented.

6. The combination of a paste-box with the arm carrying the folding-blade of a folding-machine, in the manner described and shown.

7. In combination with a paper folding and pasting machine, the supplemental frame A', with its table, drop-roller, paste-box, and guides, arranged as described, for the purpose of supporting, feeding, and pasting the covering-sheets, in the manner specified

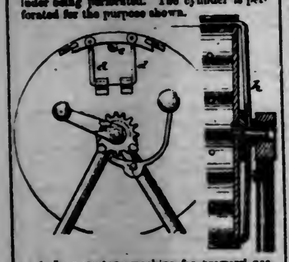
164,905. SKIRT-SUPPORTERS. C. P. Clark, Wakefield, Mass. [Filed Dec. 1, 1874.]



A skirt-supporter consisting of the vertical serrations *a*, horizontal portion *b*, and vertical portion *c* adapted to be attached to a corset, substantially as described, for the purpose specified.

164,906. WASHING-MACHINES FOR BREWERS' USE. Friedrich Oramme, New York, N. Y. [Filed Apr. 27, 1875.]

Brief.—A corrugated metallic cylinder having suitable door and journals. From the hollow journal extend pipes to near the periphery of said cylinder, and thence longitudinally through the same, the portions within the cylinder being perforated. The cylinder is perforated for the purpose shown.



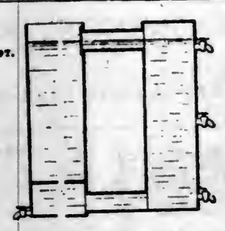
1. In a washing-machine for brewers' use, the revolving cylinder A, provided with the hollow journal *c*, and the pipes *h h* leading therefrom to near the periphery of the cylinder, and then longitudinally through the same, the portions within the cylinder being perforated, all substantially as and for the purposes herein set forth.

2. The combination, with the perforated revolving cylinder A, of the door or damp D, flanged castings *b b*, hinged arms *d d*, and button *e*, as and for the purposes herein set forth.

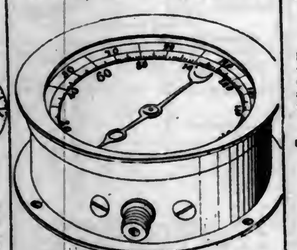
164,907. PROCESSES OF SEPARATING FATS. Charles M. Cresson, Philadelphia, Pa., assignor to Robert P. Deehert, trustee, same place. [Filed June 1, 1874.]

The within-described process of separating fats and oils into their component parts—that is to say, by means of convective currents of warm liquid at such low temperatures as will insure the separation of the component part of the fat desired without destructive chemical action, and without producing secondary products, as set forth.

164,907.



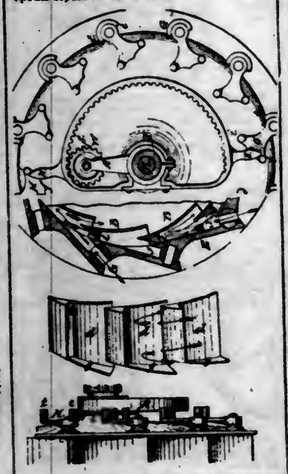
164,908. GAGE-DIALS. George H. Crosby, East Somerville, and Albert C. Moody, Charlestown, Mass. [Filed June 3, 1875.]



A steam or vacuum gage dial made of waterproofed card or leather board, *papier maché*, or equivalent material, substantially as described.

164,909. WATER-WHEELS. E. B. Cope, West Chester, Pa. [Filed Apr. 27, 1875.]

Brief.—A series of chutes and buckets so constructed that the percussion-face of each bucket shall be at right angles, or nearly so, to the direction of the water impinging upon it. The front of the bucket is in the form of a wedge, with the edge forward, the back of the wedge forming the percussion-face of the bucket, the object being to secure the full force of the water due to its impact or percussion. The gates are so constructed and arranged that they open and close the chutes or spouts separately or in pairs.

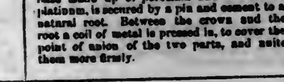


1. The bucket having its front part made wedge-shaped, and tail *d g* curved, as shown, to form a central and downward discharge, substantially as shown and described.

2. The combination of the tapering gate O, straight opening *f*, arms O, projections *i i*, shoulders *i i*, chute J, and guides E E, substantially as and for the purpose set forth.

3. The combination of shaft S, wheel W, segment R, bands N and P, arms O and H, pins *i i* and *l l*, and gates O, substantially as and for the purpose hereinbefore set forth.

164,910. IMPLEMENTS FOR STRETCHING FENCE-WIRES. J. F. Duffy, Chicago, Ill., assignor of one-half his right to N. Schroeder, same place. [Filed May 27, 1875.]



The lever or handle A, consisting of the bars *c c*, united by means of the perforated web *c'*, and provided at one end with a forked reel, and at the other with the prongs C C, arranged as shown, substantially as specified, and for the purposes set forth.

164,911. FOOT-RESTS. Geo. W. Edgecomb, Lima, and Henry A. Gore, Goshen, Ind. [Filed Feb. 16, 1875.]



A foot-rest, consisting of the standards A A, slipper-case B, provided with the hooks *c c* and the top-piece D, the standards A A, having suitable apertures formed therein for the reception of the hooks, the whole being combined and arranged substantially as shown and described.

164,912. ARTIFICIAL TEETH. W. H. Gates, Philadelphia, Pa. [Filed Sept. 1, 1874.]

Brief.—A vertically open shell of a peculiar configuration, and having the perimeter of its base made up of porcelain and a band of platinum, is secured by a pin and cement to a natural root. Between the crown and the root a coil of metal is pressed in, to cover the point of union of the two parts, and unite them more firmly.

164,913. GOVERNORS FOR STEAM-ENGINES. J. C. Hoadley, Lawrence, Mass., assignor to the J. C. Hoadley Company, same place. [Filed May 22, 1875.]

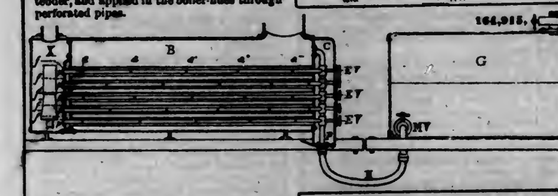


164,914. HORSESHOE-BLANK BARS. Henry H. Gilmore, Cambridgeport, Mass. [Filed Feb. 12, 1875.]

As an improved manufacture, a horseshoe-blank bar, rolled with or having a transverse section, substantially as shown at *a b c d e f* in Fig. 2, in which case the outer edge of the bar, in part, is square to the tread, as shown at *e f*, and below such slopes, as shown at *f c*, inward to an obtuse angle with the lower surface of the bar.

164,915. LOCOMOTIVES FOR BURNING HYDROCARBON. John M. Goodwin, Cleveland, Ohio. [Filed June 29, 1874.]

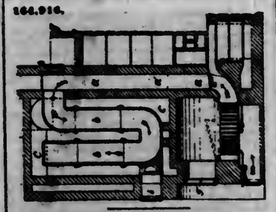
Brief.—The gas is carried in a tank on the tender, and applied in the boiler-flues through perforated pipes.



1. The combination with boiler B, provided with suitable air-chamber C and flues *f f*, of a gas-tank, G, hose or connection H, and pipes P P P P, with orifices *a a a*, substantially as and for the purposes set forth.

2. The combination with boiler B, flues *f f*, and gas-tank G, of pipes P P P P, orifices *a a a*, and suitable valves working in the pipes P P in the air-chamber C, whereby the supply of gas to any series of burners may be governed or cut off entirely, substantially as and for the purposes set forth.

164,916.



The links *h h' h'*, in combination with the sleeves *c c* and the sliding plate *k*, all substantially as set forth herein.

164,917. WATCH-CASE SPRINGS AND CATCHES. Isaac N. Hopkins, Lockport, assignor of one-half his right to G. H. Shattuck, Medina, N. Y. [Filed Apr. 17, 1875.]

Brief.—New spring may be inserted without removing the catch for cover, the catch being attached to the push-pin.



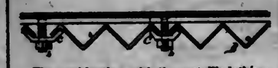
1. A plain spring, A, having the nib *a* for raising the cover near its center, in combination with the catch C, attached to and moving with the thumb-piece *h*, as and for the purpose shown and described.

2. The pin *f*, sleeve *h*, catch *g*, screw *e*, and spring A, combined and arranged substantially as described.

3. The combination, with a push-pin, of a catch for the lid attached thereto, and a lifting-spring, substantially as set forth.

164,918. MODES OF SECURING METALLIC LATHING. J. W. Hoyt, Springfield, Mass. [Filed Oct. 20, 1874.]

Brief.—The lathe are corrugated and perforated, and are held to the furrings by means of metal clamps secured by bolts and nuts.



The combination, with the metallic lathing B, of the clamps C, bolts *b*, secured in the furring, and nuts *c* for holding said clamps and lathing together, constructed and arranged substantially in the manner specified.

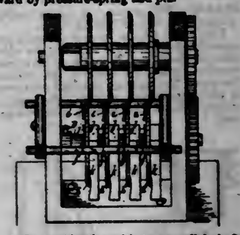
164,919. COMBINED STOPPERS AND PADDLES FOR BLACKING-BOTTLES. Henry D. Forbes, Cambridge, Mass. [Filed Apr. 14, 1875.]



The combination of the elastic annular disk E with the paddle-stopper H B, substantially as described, and for the purpose set forth.

164,920. ROTARY PAPER-CUTTERS. Asaf Judson, Newark, N. J., assignor of one-half his right to D. Howard Judson, same place. [Filed June 9, 1875.]

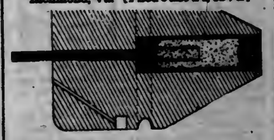
Brief.—Lower series of knives are held loosely on shaft, and their tops inclined inward by pressure-spring and pin.



1. In combination with two parallel shafts and a series of disk paper-cutters fixed on one of them, a series of disk cutters on the other shaft, and revolving therewith, but adapted to be adjusted to an inclination to the plane of revolution of the other series, substantially as and for the purpose set forth.

2. In combination with the shaft D and its loosely-attached cutters B, the springs *f*, guide-pins *i*, and stops *k*, applied and operating relatively to the cutters, substantially as and for the purpose described

164,921. ELECTRIC FUSES. C. L. Kalmbach, Richmond, Va. [Filed June 24, 1874.]

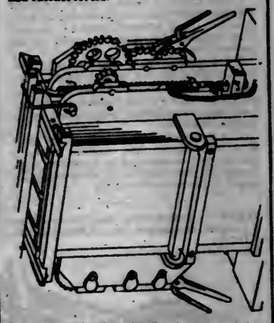


1. A fulminate primer constructed by sealing a glass vial containing the fulminate of mercury hermetically in a chambered wooden block, substantially as set forth.

2. In combination with the firing-wires, a quill within which the ends of the wires are adjusted in proper relation to one another, substantially as set forth.

164,922. HAT AND STRAW PRESSES. Lewis Kirk, Rising Sun, Md. [Filed May 12, 1875.]

Brief.—The platen has at each end a rack made in sections, attached to wrought-iron backing, and hinged to the platen to permit swinging longitudinally. Raised by gearing and ratchet-levers.



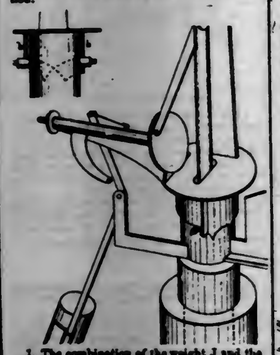
1. In combination with the platen A and the rack-bars *j*, the plate-link connection *i* forming two pivotal joints, but restraining of the swaying of the platen, to adjust itself to unequal strain, to a movement in the plane of said link only, as and for the purpose described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON
HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON

2. In combination with the press the rack-bars *j*, composed of the wrought-iron back *m*, and the short cast-iron rack-sections *n* riveted to said back, and interlocked at their junction or ends *o*, as and for the purpose described and represented.

164,923. WINDMILLS. G. Lasby, Broadhead, Wis. [Filed Dec. 22, 1874.]

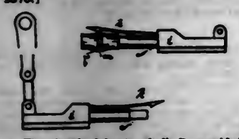
Brief.—The tubular form of the cams performs the double office of adjusting the windmill and shedding rain, so that no ice can accumulate around the shaft on the inside of the vane. The cams are provided with stops or lateral projections, to operate as cheeks to the wheel in its reciprocating horizontal motion.



1. The combination of the weight J and the adjustable vertical shaft D, provided with tubular or cylindrical cams *b b* at the top thereof, and the said vane, substantially as and for the purpose hereinbefore set forth.

2. The combination and arrangement of the said stops *q* with the said inner projection P of the said vane, substantially as and for the purpose hereinbefore set forth.

164,924. LOOMS. John M. Linscott, Buxton, assignor of one-half his right to Frank E. Jordan, Portland, Me. [Filed Mar. 12, 1875.]

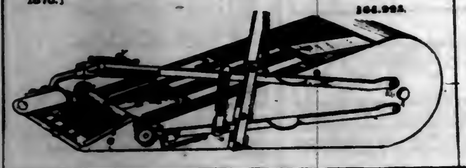


1. The shuttle *l*, having bulb *F*, provided with a groove, *m*, and combined with the shuttle-arms *j j*, and spring-clutches *k k*, all operating together, substantially as and for the purposes set forth.

2. The combination of shuttle-arms *j j*, having spring-clutches *k k*, and the shuttle *l*, constructed as described, with levers *n n* and *q q*, arms *p p*, cranks *r r*, and eccentric gears *s* and *t*, all operating together, substantially in the manner described.

3. In combination with the lay *b*, the arms *d*, the crank-shaft *c*, and eccentric gears *s f*, the shuttle *l*, constructed as described, shuttle-arms *j j*, and clutches *k k*, all operating together in the manner set forth.

164,925. ADDRESSING-MACHINES. Miles Longley, Cincinnati, Ohio. [Filed Jan. 16, 1875.]



1. In a machine for addressing papers and other packages, the combination of a spring for returning the movable shear-blade to its open position after it has been closed down upon the fixed blade, a lever for operating the movable shear-blade, another lever for operating the feed and pasting rollers, a slotted link for connecting the lever which operates the shear to the one which operates the rollers, two rollers for feeding the label-strip to the shear, a roller for pasting said strip and for sliding in carrying it forward, and shears for cutting the same, the parts being arranged to operate substantially as and for the purpose set forth.

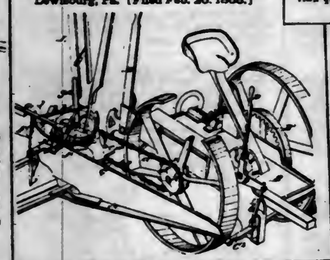
2. The combination of the lever N, the socket P, spring *d*, arm K, and movable blade J, whereby said blade is kept in position while being used, substantially as set forth.

3. The combination, in a machine for addressing papers, of two feeding-rollers and a pasting-roller, said pasting-roller being operated by the feed-rollers, and arranged between them and the slip-cutting mechanism, whereby it is made to act as an auxiliary feed-roller, substantially as set forth.

4. The hinged and flanged guide B, in combination with the feed-rollers, substantially as and for the purpose set forth.

5. The removable paste-reservoir D, having a neck for extending to the paste-roller, and a serrated mouth, in combination with a pasting-roller, substantially as set forth.

164,926. HARVESTER-RAKES. J. S. Marsh, Lewisburg, Pa. [Filed Feb. 26, 1866.]



1. The combination of the continuously-revolving crown-wheel, carrying rake and reel arms, with the standard G, as and for the purpose described.

2. The rake attached to the revolving hub or wheel H by means of the bar g^1, bent backward from the line of attachment, for the purpose of depositing the gavel farther from the standing grain, substantially as described.

3. The rake and reel arms pivoted at their inner ends to the hub or crown-wheel H by means of the screw heads or bars fitting into suitable cavities in said hub or wheel, substantially as described.

4. The standard G, for supporting the revolving rake and reel, having one leg connected to the platform, and the other leg connected to the drag-bar and straddling the connection between the finger-bar, platform, and drag-bar, substantially as described.

5. The arrangement of the pivoted rake-head K and the angular spring-lever *j j* and rake-arm g^1, in the manner and for the purpose described.

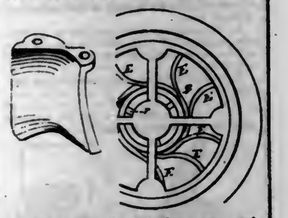
6. The spring-guide J^1, applied to the cam-rail J, substantially as described.

7. The laterally-adjustable blade L', applied to a beater-arm, for the purpose set forth.

8. The vertically-adjustable secondary reel or beater arm L'', in combination with arm L, substantially as described.

164,927. TURBINE WATER-WHEELS. Wm. Mercer, Christiana, Pa. [Filed Apr. 8, 1876.]

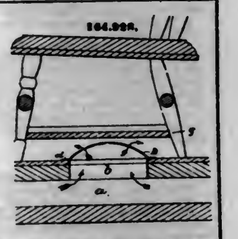
Brief.—On the lower side of a circular plate a series of buckets are secured, and they are of such form that when placed together their inner curvature forms a continuous inside wall for the wheel, while the outside curvature is such that when the water is on, it produces an upward tendency, and relieves the pressure on the step, thereby lessening the friction.



1. The buckets E of the form shown and described, so that when placed together their inner curvature shall form the wall of the wheel, as specified.

2. The wheel, substantially as herein described, consisting of the buckets E, plate D, ring *g*, and bolts *r*, as set forth.

164,928.



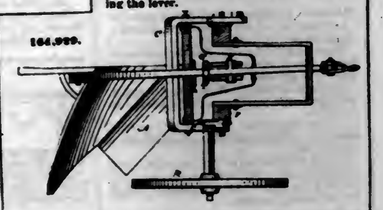
164,929. VENTILATING HALLS, &c. Patrick Mihan, Cambridgeport, Mass. [Filed Apr. 23, 1875.]

Brief.—The air is distributed under each seat. The distributing-cups have their upper parts perforated for the passage of the air, and their lower portions plain, to prevent entrance of dust. Above each cup is arranged a deflecting-plate.

In a system of ventilating halls, &c., substantially as described, an air-supplying chamber, *a*, located beneath the floor, and provided with a supply-port, *b*, opening under each seat, a distributing-cup, D, disposed over the supply-port, and a deflector, *g*, arranged over the said cup, the whole being combined and arranged in manner as shown and described.

164,930. SULEY-PLOWS. Gilpin Moore, Rock Island, Ill. [Filed Mar. 20, 1875.]

Brief.—The plow-beam has transitions, which rest upon wedge-shaped ribs of the carrying-plate inclined in opposite directions. By sliding the beam longitudinally, the plow is tilted to either side. The arch of the axle is horizontal, and its arms of unequal length, the frame resting upon it, one side in front and the other in rear of the center line, to balance the weight of frame and driver while operating the lever.



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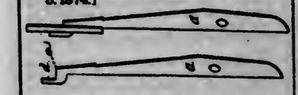
1. In combination with a plow-beam and carrying-plate, the wedge-shaped projections I, inclined in opposite directions, to tilt the plow laterally, substantially as shown and specified.

2. In a sulky-plow, the crank-axle C, having the arms *c c'* arranged and pivoted to the arch or frame F, and connected with and supporting the axle of the wheels E E eccentrically, substantially in the manner and for the purposes described.

3. The plate G, having the projections *e e' e' e'* and inclines I, and hinged to the arms *c c'* of the crank-axle C, substantially as shown, and for the purposes specified.

4. The combination, with the beam B, of the plate G, provided with inclines I and projections *e e'*, substantially as and for the purpose set forth.

164,930. MANUFACTURE OF SHEARS. Otis Norton, New Britain, Conn. [Filed Sept. 5, 1874.]



As an improvement in the art of attaching the blades of scissors and shears to their handles, the construction of the handle with the hook or tag *d* and shoulder *d'*, and the blade with the mortice *e*, for more conveniently retaining the parts in their proper relative positions preparatory to welding.

164,931. INSTRUMENTS FOR EXTRACTING CORKS FROM BOTTLES. Wm. C. D. Page and John L. Fahy, East Cambridge, Mass., assignors to John L. Fahy, same place. [Filed Oct. 22, 1874.]



1. Our improved bottle-cork extractor, substantially as described, consisting of the spear A, shoulders *b d*, head B, and the series of hooked prongs C C C C, arranged and combined as set forth and shown.

2. The combination of the spear A, shoulder *b*, head B, and prongs C, arranged as specified.

164,932. LAMP-BURNERS. T. D. Parsons, Bristol, Conn., assignor of one-half his right to Geo. B. Reed, same place. [Filed May 17, 1875.]

Brief.—The larger scroll, embracing the smaller, furnishes a stop when the plates are at right angles.



1. The plate C, provided with a scroll, E, in combination with the plate D, provided with the scroll F, substantially as and for the purpose set forth.

2. In a lamp-burner, the base A, and chimney-holder B, united by a hinge composed of the plates C D, provided with the scrolls E F, constructed and arranged to operate substantially as and for the purpose set forth and specified.

164,933. HEATING AND VENTILATING PUBLIC BUILDINGS. Alfd. P. Pitkin, Hartford, Conn. [Filed Jan. 26, 1875.]

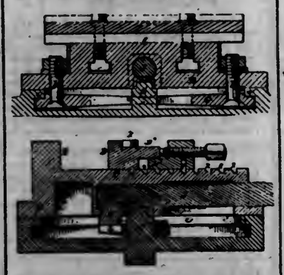
Brief.—Fresh air is admitted by means of the adjusters or registers, which are placed below the heating-pipes under each seat.



The heating-pipes *f*, combined with seats *g* and floors *a*, having apertures or openings *e*, and with the adjusters *c* opening into air-space *d*, the whole forming a system of heating and ventilation, and constructed and operating substantially as set forth.

164,934. PLANER-CHUCKS. A. B. Prouty, Loring Coes, and Geo. C. Taft, Worcester, Mass.; said Coes and Taft assignors to said Prouty. [Filed Dec. 19, 1873.]

Brief.—Two levers, G, are attached to the upper plate B by screws *b*. When it is desired to lock the upper and lower plates together, the inner ends of said levers are pressed against the lower plate by a cam or other mechanism attached to the upper plate. The locking-piece N is adjusted in position by the pawl-bar P working in the notches R, and the movable jaw D is adjusted by means of the set-screws in the locking-piece N



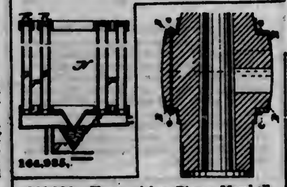
1. The combination, with the movable jaw D and grooved work-bed C, of the locking-piece N, dog or catch bar F, and set-screws O, substantially as and for the purpose set forth.

2. The combination of the bottom plate A and top plate B, with the bolts *b*, levers G, and mechanism for depressing said levers against the bottom plate, substantially as shown and described.

164,935. STEAM-HEATING APPARATUS. I. C. Richardson, Nashua, N. H. [Filed Mar. 27, 1875.]

Brief.—The transverse flue forms a receptacle for condensed water, and thereby arrests the passage of incoming steam directly across the base-chamber, and deflects it upward into the concentric chambers.

The radiators N, composed of the concentric chambers O O, separated by annular air-spaces P P, and held in position by flanged and grooved rings E E and the transverse-angled flue S, combined with the tubes M T and boiler B, substantially as described, for the purpose specified.



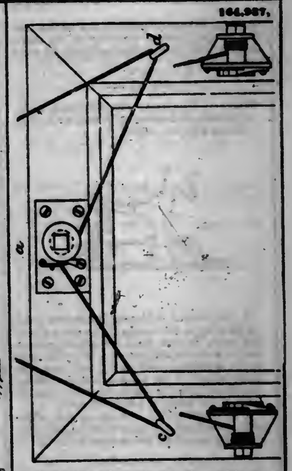
164,936. HUBS. Adam Rimes, Marshall, Mich., assignor of one-half his right to T. N. Austin, same place. [Filed Apr. 3, 1875.]

The combination of band B formed of two conical bands of different diameters united by a vertical web, all in one piece, with a wooden hub and bolts *c*, substantially as set forth.

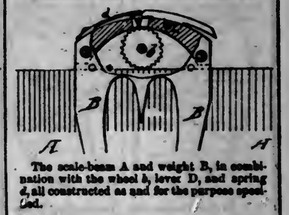
164,937. PICTURE-HANGERS. J. Toure Robertson, New York, N. Y. [Filed Jan. 20, 1875.]

1. A picture-frame provided with the cord-catches *c d* and the tightening-barrel *e*, the latter secured in any position by a pawl and ratchet, as and for the purpose described.

2. A picture-frame having the cord-mounts *c f* placed one on each side thereof, as shown, and held from revolution by a pawl and ratchet, for the purpose described.

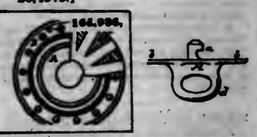


164,938. SCALE-BEAMS. W. T. Robinson, Huntsville, Tex. [Filed May 14, 1875.]



The scale-beam A and weight B, in combination with the wheel *b*, lever D, and spring *d*, all constructed as and for the purpose specified.

164,939. CATCH-PLATES FOR BAG-LOCKS. Wm. Roemer, Newark, N. J. [Filed May 20, 1876.]



A catch-plate for bag-locks consisting of the plate A, catch *c*, perforated lips *b b*, and bent handle *d*, made in one piece of metal, substantially as described.

164,940. TRAIN-TELEGRAPHS. A. Ryder, Oakland, Cal. [Filed Jan. 18, 1876.]

Brief.—Designed for use with that class of signals in which the breaking of an electric circuit extending from end to end of the train sounds a signal upon the engine.



The plugs or pistons E moving in the case A A, and provided with a guiding-slot, *c*, and spring *e*, so that after the plug has been drawn back the swing-arms cause the two ends of

the cable to become resulted, and perfect contact be had between the wires of the cable, substantially in the manner as herein set forth and specified.

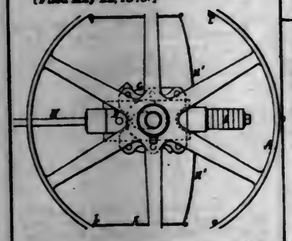
164,941. CATCHES FOR CUPBOARDS, &c. Christian G. Schneider, Washington, D. C. [Filed Apr. 24, 1875.]



1. The plate A, with rear depressions *b* and an opening, *a*, continuous of the space *a'*, and the catch B, with head *c*, operating-piece *d*, neck *e*, and solid axial pintle *f*, in combination with the spring *g*, said spring, head, and piece being outside of the plate A, and the pintle *f* introduced into the rear depressions from the front of the plate, as herein set forth.

2. The combination, with the catch B, of the back plate A and rear plate C, with lips *h*, substantially as and for the purpose set forth.

164,942. GOVERNORS FOR STEAM-ENGINES. G. C. Sims, Lawrence, Mass., assignor to the J. C. Hoadley Company, same place. [Filed May 22, 1875.]

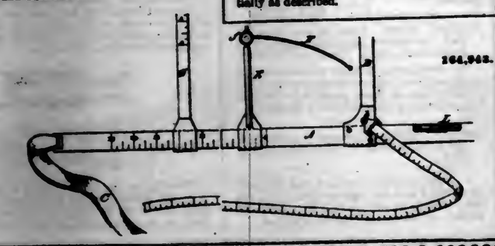


1. In combination with the eccentric F, its tubular shaft, and the carrier or slide D thereof, applied to the fly-wheel, and provided with the weight, as described, the spring H', fastened at its middle to the slide, and at its ends connected to the fly-wheel, all being substantially as shown and described.

2. In combination with the spring H' and its connection-arms K K, the fly or band wheel, provided with the two sets of hooks L L L' L', and the slide D, provided with the mortises in its two heads for reception of the spring, as specified.

164,943. TAILORS' MEASURES. F. B. Smith, Washington, D. C. [Filed June 2, 1874.]

The tailor's measure, consisting of the flexible blade A provided with level L, and having at ends a suitable strap and buckle, detachable arm B, pivoted tape-line T, graduated arm G, and arm E, with adjustable curved arm F, all constructed and arranged substantially as shown and described.



164,944.

164,945. PREPARING VENEERS FOR BUTTER-BOXES. Stephen F. Spaulding, Jericho, Conn. [Filed Sept. 8, 1874.]

Brief.—Boils the veneers in brine before making into boxes, to remove any extractive matters which would affect the taste of the butter.

The process of treating wooden butter-boxes to remove any extractive matter which would affect the taste of the butter, said process consisting of boiling the wood in brine, substantially in the manner and for the purposes set forth.

164,946. HYDRAULIC HOSE. Jos. M. Stone, North Andover, Mass. [Filed Mar. 18, 1875.]



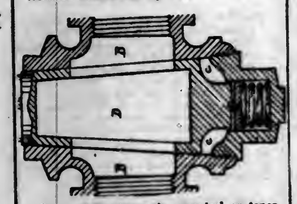
1. The process of making hose by first forming a tube of canvas covered with India-rubber prepared for vulcanizing in the usual way, and then winding upon the outside thereof a helical strip of canvas also prepared for vulcanizing, the parts being united by cement, and the whole then vulcanized in the usual way.

2. The hose described, consisting of the convolute foundation and the helical exterior cover, the whole being vulcanized, substantially as described.

164,947.

164,948. STOP-COCKS. August Snyder, Allegheny, Pa. [Filed Apr. 16, 1875.]

Brief.—The plug is tapered, and is held in its seat by a spring and step. The small port of the casing is open, so that the plug may be loosened from its seat by a blow.



In a rotary stop-cock, a conical or taper seat, open at its smaller end, in combination with a plug, D, having its turning head at the smaller end, and a spring, *c*, and step *e* at its larger end, whereby not only can the cock be loosened by a blow or pressure on its smaller end, but also will operate with a minimum of friction, and be pressed to its seat by the spring under the varying diameters caused by wear and regrinding, substantially as set forth.

164,949. WIRE FENCES. Daniel C. Stover, Freeport, Ill. [Filed May 22, 1875.]

Brief.—An acute-ovoid plate of wrought-iron is slotted at one side to pass upon the wire, when the slot is tamped at its outer extremities. The wire, being heated, takes the form of slot after tamping.



1. The barb *a*, for a wire-fence, having an opening, *b*, upon one side, and projecting points *c d* upon each side of each opening, as formed that the barb can be secured to the wire by hammering or pressing one or both points upon the wire, substantially as specified.

2. The process herein described of securing the barbs to the wire by first heating the wires and applying the barbs thereto while the wire is hot, substantially as and for the purposes specified.

164,950. PREPARING VENEERS FOR BUTTER-BOXES. Stephen F. Spaulding, Jericho, Conn. [Filed Sept. 8, 1874.]

Brief.—Boils the veneers in brine before making into boxes, to remove any extractive matters which would affect the taste of the butter.

The process of treating wooden butter-boxes to remove any extractive matter which would affect the taste of the butter, said process consisting of boiling the wood in brine, substantially in the manner and for the purposes set forth.

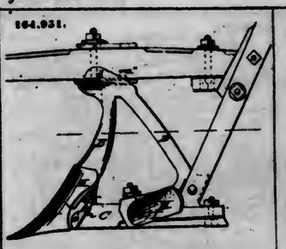
164,951. PLOWS. Lewis B. White, Norfolk, Va., assignor to himself and S. R. White, same place. [Filed May 8, 1875.]

Brief.—Devices for changing the pitch of the horizontal cutters, and for securing the parts together without passing the bolts through the wearing-surface.

164,952.

164,952. PLOWS. Lewis B. White, Norfolk, Va., assignor to himself and S. R. White, same place. [Filed May 8, 1875.]

Brief.—The shoe or flange of the reversible land-side is made thicker at one end, so as to fit reversely after being worn down. Devices for adjusting the beam and handles.



1. The tapering concave flange *d*, formed on the lower edge of the frame B, in combination with the reversible double-pointed land-side C, provided with tapering flanges *h*, made thicker on one end than on the other, substantially as and for the purpose specified.

2. The frame B, provided with flanges *a' a'* and edge *f'*, in combination with the slotted and corrugated wedge B and handles P, all as and for the purpose herein specified.

3. The casting S, having recessed and slotted projection *f'*, flanges or ribs *i' i'*, slot *r''*, and slot for bolts *t*, in combination with handles P, beam A, and block *h*, all as and for the purpose set forth.

164,953. EXPANSIBLE BITS. Fredk. Willig, Joliet, Ill. [Filed Apr. 17, 1875.]

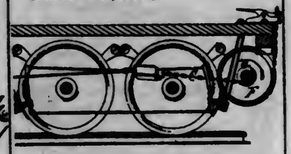
Brief.—An auxiliary cutting-bit is pivoted in a transverse dovetail recess in the auger-shaft, and, by means of a set-screw operating at the upper part of the shaft, can be adjusted to bore holes of any size consistent with the size of the auger.

The shaft *c*, provided with the dovetail *c* and center-pin *i*, in combination with the part *a*, having the slot *a* and set-screw *g*, and provided with a cutting-lip, and pivoted to the shaft *c*, and operating in the dovetails *c* and *a*, in the manner and for the purpose specified.

164,954. AIR-PORTS FOR VESSELS. Joseph Shields Wilson, Philadelphia, Pa. [Filed Apr. 16, 1875.]

The combination of the recessed ring A, the flush-cover C, the hinged cross-bar D, the bolt E, and sunken nut G, for the purpose of closing the man-hole on the opposite side to the cross-bar, substantially as herein described.

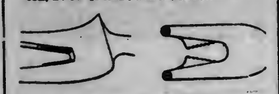
164,955. CAR-BRAKES. Martin V. Aldrich and Geo. F. Huggins, East Saginaw, Mich. [Filed June 16, 1875.]



1. The shaft *a*, journal under the platform of a car, the pulley F, chain G, and a stop, in combination with the interlocked elastic stirrups H H, and the tension-chain of a car-brake, substantially as described.

2. The interlocked stirrups H H, inclosing an elastic block, I, in combination with the tension-chain of a car-brake, substantially as described.

164,956. COMBINED FORKS AND SKEWER-PULLS. Edward W. Anderson, Washington, D. C. [Filed June 16, 1875.]



1. A fork having claws, teeth, or biting-edges adapted to extract skewers from meat, substantially as specified.

2. A fork having teeth or biting-edges extending inwardly at the base of the tines, substantially as specified.

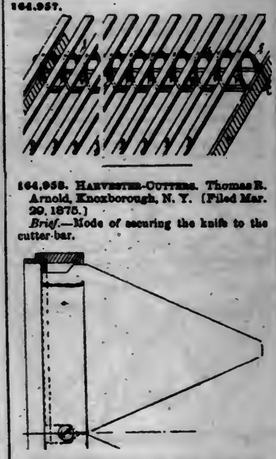
164,957. SPRING BED-BOTTOMS. James C. Anderson, Pittsburg, Pa. [Filed July 6, 1874.]

Brief.—The hoop-springs are held in place at the bottom by the cross-bars, and at the top they are connected to the slats and to transverse stay-springs by rivets. The bars within the hoops prevent their being compressed far enough to become set or broken.

The hoop or O spring E, in combination with the cross-bars B C, the frame A, the stay-spring F, and slats D, the whole being constructed and arranged substantially in the manner and for the purposes herein set forth.

164,958. HARVESTER-CUTTERS. Thomas R. Arnold, Knoxborough, N. Y. [Filed Mar. 29, 1875.]

Brief.—Mode of securing the knife to the cutter-bar.



The combination of grooved knife-bar, knives, shouldered at the rear edge and recessed at the rear corners, the clamping-bar, and the fastening-screws, as and for the purpose specified.

164,959. FEED-WATER HEATERS FOR STEAM-BOILERS. Jas. Armstrong, Toledo, Ohio. [Filed Mar. 4, 1875.]



1. The feed-water heater and purifier, constructed as hereinbefore set forth, having a chamber in which the water is heated, a purifying-chamber communicating with the heating-chamber by an opening in the lower portion of its shell, a series of partitions crossing the purifying-chamber, extending alternately from the bottom of said chamber upward to near its top, and from its top downward below the tops of said upwardly-projecting partitions, and a pipe for drawing off the water after having passed over the last partition, whereby the sediment in the feed-water is deposited according to its weight upon the bottom of the heating-chamber, between the shell of the heating-chamber and the first partition in the purifying-chamber, and upon the bottom of the purifying-chamber between the partitions.

2. The combination of the purifying-chamber, partitions therein for directing the flow of the water, and cloth or absorbent material, arranged substantially as described, in contact with the water flowing through the chamber, whereby grease is caught without passing the water through filtering material.

3. The combination of the purifying-chamber, a series of partitions crossing the chamber and projecting alternately from the bottom of the chamber upward to near its top, and from the top downward below the tops of the upwardly-projecting partitions, and a filter, extending between the last two partitions and supported thereby, through which the water passes on its way to the pipe by which it leaves the chamber, these members being constructed and operating substantially as set forth.

164,931.

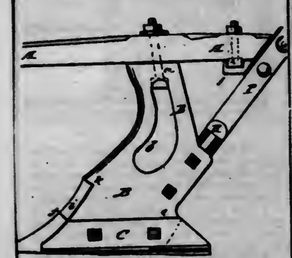
1. The standard B, curved base C, and brace D, as shown, in combination with the curved weeder-stock G, the adjoining surface being provided with teeth or corrugations, as and for the purpose described.

2. The standard B, curved brace C, brace D, and weeder-stock G, the adjoining surfaces being provided with teeth or corrugations, in combination with the wings H H, having curved shoulders *a*, bolt-holes *f*, teeth *i i*, reversible blades I, the inner ends having segmental racks A, all as and for the purpose specified.

3. The plow share or points J, provided with a projection running back along the base, and secured thereto, and having the recessed ears, in combination with the mold-boards K, having dovetailed slides *m* to receive the bolts *n*, whereby the share and mold-boards are secured firmly in place without any bolt or bolts passing through the surface of the plow, all constructed as and for the purpose specified.

164,932. PLOWS. Lewis B. White, Norfolk, Va., assignor to himself and S. R. White, same place. [Filed May 8, 1875.]

Brief.—The shoe or flange of the reversible land-side is made thicker at one end, so as to fit reversely after being worn down. Devices for adjusting the beam and handles.



1. The tapering concave flange *d*, formed on the lower edge of the frame B, in combination with the reversible double-pointed land-side C, provided with tapering flanges *h*, made thicker on one end than on the other, substantially as and for the purpose specified.

2. The frame B, provided with flanges *a' a'* and edge *f'*, in combination with the slotted and corrugated wedge B and handles P, all as and for the purpose herein specified.

3. The casting S, having recessed and slotted projection *f'*, flanges or ribs *i' i'*, slot *r''*, and slot for bolts *t*, in combination with handles P, beam A, and block *h*, all as and for the purpose set forth.

164,933. EXPANSIBLE BITS. Fredk. Willig, Joliet, Ill. [Filed Apr. 17, 1875.]

Brief.—An auxiliary cutting-bit is pivoted in a transverse dovetail recess in the auger-shaft, and, by means of a set-screw operating at the upper part of the shaft, can be adjusted to bore holes of any size consistent with the size of the auger.

The shaft *c*, provided with the dovetail *c* and center-pin *i*, in combination with the part *a*, having the slot *a* and set-screw *g*, and provided with a cutting-lip, and pivoted to the shaft *c*, and operating in the dovetails *c* and *a*, in the manner and for the purpose specified.

164,934. AIR-PORTS FOR VESSELS. Joseph Shields Wilson, Philadelphia, Pa. [Filed Apr. 16, 1875.]

The combination of the recessed ring A, the flush-cover C, the hinged cross-bar D, the bolt E, and sunken nut G, for the purpose of closing the man-hole on the opposite side to the cross-bar, substantially as herein described.

164,935. CAR-BRAKES. Martin V. Aldrich and Geo. F. Huggins, East Saginaw, Mich. [Filed June 16, 1875.]

1. The shaft *a*, journal under the platform of a car, the pulley F, chain G, and a stop, in combination with the interlocked elastic stirrups H H, and the tension-chain of a car-brake, substantially as described.

2. The interlocked stirrups H H, inclosing an elastic block, I, in combination with the tension-chain of a car-brake, substantially as described.

164,936. COMBINED FORKS AND SKEWER-PULLS. Edward W. Anderson, Washington, D. C. [Filed June 16, 1875.]

1. A fork having claws, teeth, or biting-edges adapted to extract skewers from meat, substantially as specified.

2. A fork having teeth or biting-edges extending inwardly at the base of the tines, substantially as specified.

164,937. SPRING BED-BOTTOMS. James C. Anderson, Pittsburg, Pa. [Filed July 6, 1874.]

Brief.—The hoop-springs are held in place at the bottom by the cross-bars, and at the top they are connected to the slats and to transverse stay-springs by rivets. The bars within the hoops prevent their being compressed far enough to become set or broken.

The hoop or O spring E, in combination with the cross-bars B C, the frame A, the stay-spring F, and slats D, the whole being constructed and arranged substantially in the manner and for the purposes herein set forth.

164,938. HARVESTER-CUTTERS. Thomas R. Arnold, Knoxborough, N. Y. [Filed Mar. 29, 1875.]

Brief.—Mode of securing the knife to the cutter-bar.

The combination of grooved knife-bar, knives, shouldered at the rear edge and recessed at the rear corners, the clamping-bar, and the fastening-screws, as and for the purpose specified.

164,939. FEED-WATER HEATERS FOR STEAM-BOILERS. Jas. Armstrong, Toledo, Ohio. [Filed Mar. 4, 1875.]

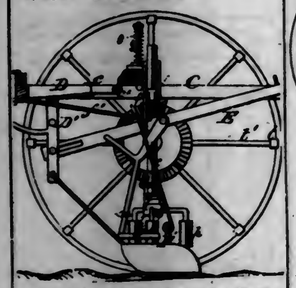
1. The feed-water heater and purifier, constructed as hereinbefore set forth, having a chamber in which the water is heated, a purifying-chamber communicating with the heating-chamber by an opening in the lower portion of its shell, a series of partitions crossing the purifying-chamber, extending alternately from the bottom of said chamber upward to near its top, and from its top downward below the tops of said upwardly-projecting partitions, and a pipe for drawing off the water after having passed over the last partition, whereby the sediment in the feed-water is deposited according to its weight upon the bottom of the heating-chamber, between the shell of the heating-chamber and the first partition in the purifying-chamber, and upon the bottom of the purifying-chamber between the partitions.

2. The combination of the purifying-chamber, partitions therein for directing the flow of the water, and cloth or absorbent material, arranged substantially as described, in contact with the water flowing through the chamber, whereby grease is caught without passing the water through filtering material.

3. The combination of the purifying-chamber, a series of partitions crossing the chamber and projecting alternately from the bottom of the chamber upward to near its top, and from the top downward below the tops of the upwardly-projecting partitions, and a filter, extending between the last two partitions and supported thereby, through which the water passes on its way to the pipe by which it leaves the chamber, these members being constructed and operating substantially as set forth.

164,960. CORN-CULTIVATORS. Alexander F. Batchelor, Cedar Falls, Iowa. [Filed Apr. 24, 1875.]

Brief.—The wheels and the vertical shafts of the rotary plows may be adjusted at various distances apart. The plows are raised by handles pivoted at their front ends, and at their centers linked to the plow-shafts, and also suspended by spring-connections from the axle. The plows have rolling cleaners operated by a curved segment-rack attached by rigid hangers to the handles.

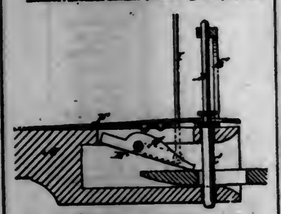


1. Longitudinally-adjustable axles *a*, in combination with laterally and vertically adjustable spindles G hung from the axle B, substantially as described.

2. Handles E, adjustably pivoted to frame D', and connected to the spindles G, in combination with the suspension-links *c*, rods *e*, and spring *d*, substantially as described.

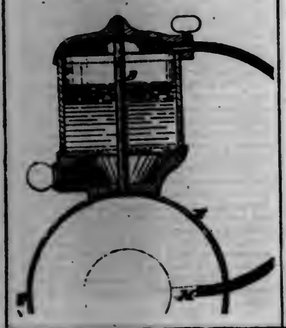
3. In combination with the revolving plows *h*, the rolling-cleaners *p*, and the segment-rack J, substantially as described.

164,961. CAR-COUPLINGS. Wm. H. Bodenhamer, Xenia, Kans. [Filed Apr. 17, 1875.]



The spring F, placed on top of draw-head, and provided with subjacent notch J, combined with a tripper, G, arranged on crank of shaft H, as and for the purpose specified.

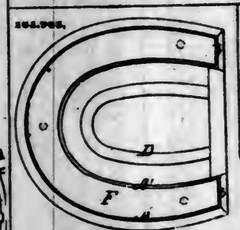
164,962. CHAIRS. Henry S. Bowman, Herman Stahr, and Peter J. Jacobus, Cleveland, Ohio. [Filed May 15, 1875.]



1. The combination of the clamping-band E with the oil-cup and feed-tube, substantially as specified.

2. The clamping-band, secured to the cup by the bolt D, which fastens the parts of the cup together, substantially as specified.

164,963.

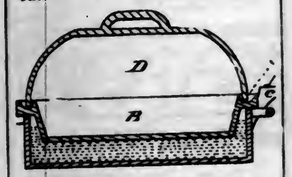


164,963. DIES FOR CUTTING BOOT AND SHOE BANDS. Chas. H. Brigham, Marlborough, Mass. [Filed Feb. 27, 1875.]

In an apparatus for cutting boot-rands for boots and shoes, the combination of a series of semicircular cutters, A A', and cutters *b b*, and spring-ejector F, adapted to cut at one operation rands varying in size, substantially as described.

164,964. FOOD-PRESERVERS. C. Brown, Hartford, Conn. [Filed May 26, 1875.]

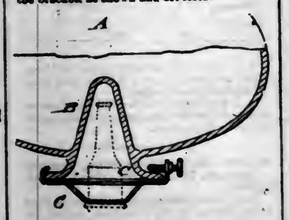
Brief.—The moisture condensed on the inside of the cover runs down to the channel, and thence through an opening into the vessel below.



In combination with the vessels A B and cover D, the channel *c'* and springs *e* and *g*, substantially as described

164,965. LAMP-FOUNTS. Edward Brown, New York, N. Y. [Filed May 15, 1875.]

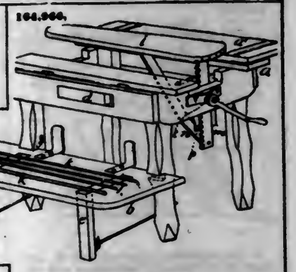
The combination, with the globe-bracket, of the lamp-fount A, provided with the thin circular outwardly and downwardly projecting flange C around the inner conical cavity B, a space being left between the flange and body of the fount to receive the fastening-screw of the bracket, as shown and set forth.



164,966. IRONING-TABLES. John L. Brown, Boston, Mass., assignor of one-half his right to William F. Robinson, same place. [Filed Oct. 22, 1874.]

Brief.—A table with folding leaf in the center, under which is an ironing-board that may be raised by a vertical rack and pinion. On one side of the table is detachable leaf with legs, that may be used for a wash-bench.

164,966.

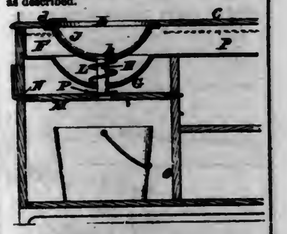


1. The combined kitchen-table, ironing-board, and wash-bench, above described, and consisting of the table *a a'*, ironing-board *l*, detachable and reversible leaf *b*, hinged legs *c c*, and stripe *k*, arranged and operating as above set forth.

2. The combination of the ironing-board *l*, rack and pinion *m n*, and brace *n*, with the guides *e p*, substantially as and for the purpose set forth above.

164,967. WASH-STANDS. M. P. Brown, Lexington, Mo. [Filed May 14, 1875.]

Brief.—The wash-basin is filled to any desired limit by depressing it in the concealed tank. The basin may be shifted vertically or horizontally, or rotated axially. The waste-pipe is opened by turning the rocking beam, the same being provided with a diaphragm, as described.



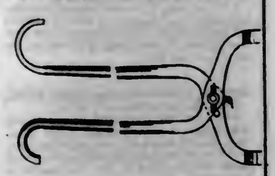
1. In combination with the stand A and its inclosed tank F, the shiftable wash bowl or basin J, adapted to be filled from said tank by the described motion therein, and to be emptied substantially in the manner explained.

2. The described combination of tank F, pit G, stand-pipe H A, gasket I, vertically-shiftable bowl J K, and elevating-spring L, as and for the purpose set forth.

3. The combination of rocking beam M N *n* N', diaphragm P, and spring-catch S *s*, as and for the objects stated.

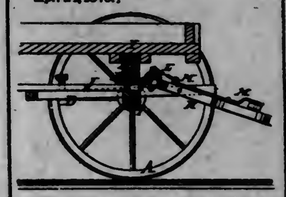
4. The combination of case A, hinged leaf *a a'* O E, and hinged lid D *d d'*, when located above the tank F and basin J, as and for the purpose herein set forth.

164,968. JAR-LIFTERS. Wm. W. Brown, New York, N. Y. [Filed Feb. 13, 1875.]



As a new article of manufacture, a jar-lifter consisting of two rods made adjustable at the point of intersection, B, and bifurcated below, forming the legs B' B', which carry rubber-faced arc-jaws C C, made fast to the inside of their lower ends, as shown and described.

164,969. VEHICLE-TONGUE SUPPORTS. G. W. Burnside, Prairieburg, Iowa. [Filed Apr. 24, 1875.]



The combination of the hook-plate K, chain L, pulley N, and adjustable piece O with the king-bolt I, the sliding hammer-strap M, connected with the whiffletree, and the tongue H, substantially as herein shown and described.

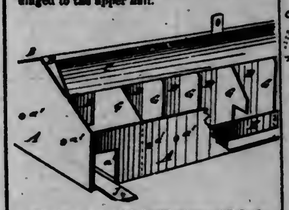
164,970. BED-BOTTOMS. Michael Cain, Neversink, N. Y. [Filed Sept. 23, 1874.]



As an improvement upon the patent granted to J. J. Robinson March 31, 1871, the combination of the plates *c*, screw-bolt *e*, jaws *d*, tongue-piece *g*, and spring *h*, all to operate as and for the purposes described.

164,971. HINGE NUTS. Julia P. Clement, Williamston, S. C. [Filed Apr. 17, 1875.]

Brief.—The eggs can only be taken out by raising the lower half of the roof, which is hinged to the upper half.



The box A, provided with the roof B C, the openings *a' a'*, and the division-boards D E G, to form the nest-spaces F, and the passages H I, substantially as herein shown and described.

164,972. WEATHER-BOARDINGS. Hugh L. Clippenger, Martinsburg, W. Va. [Filed May 19, 1875.]



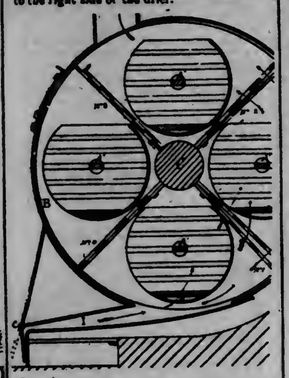
In the construction of weather-board, the ogee mold *c*, in combination with the interlapping tongues *d d*, arranged to more effectually shed the water, substantially as described.

164,973.



164,973. DRIERS AND BAKERS. W. P. Corse, Milford, Del. [Filed Jan. 26, 1875.]

Brief.—While the drier revolves the swinging trays are always in proper position. The automatic damper closes by gravity when at the highest position, and the hot air is forced to the right side of the drier.



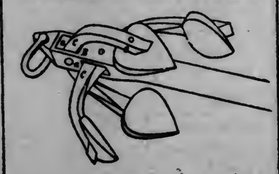
1. A vertically-revolving drier and baker having a series of tray-holders pivoted and counter-weighted, as shown and described, to maintain the trays in a horizontal position.

2. The registering screen or partition operating automatically, substantially as and for the purpose described.

3. The air-passage I, opening or entrance door *c*, and flue *b*, in combination with the drier H, substantially as and for the purpose described.

4. In a drier or baker, the combination of the swinging tray-holders, the self-registering and automatic partitions or screens, and the air and smoke passages, substantially as and for the purpose described.

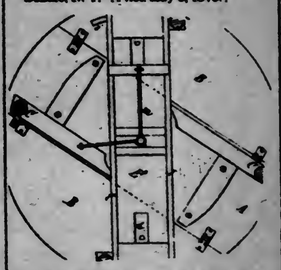
164,975. ANCHORS. William A. Currier, Newburyport, Mass. [Filed Apr. 6, 1875.]



1. An anchor having two throat-pieces or connecting-bars, U C, pivoted in the crown and working independently of each other, substantially as and for the purpose hereinbefore set forth.

2. The combination of the crown B, having the two mortises *a a*, with the throat-pieces U C, each having one or both of the flukes removable, substantially as and for the purpose hereinbefore set forth.

164,976. PARLOR-TABLES. Fred H. Cutler, Buffalo, N. Y. [Filed May 5, 1875.]



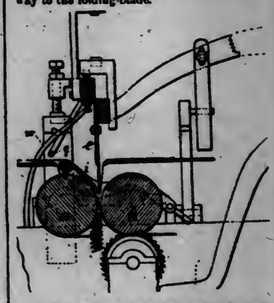
1. The combination, with the bed A, hinged leaves B B, and legs C C, of the swinging frame E, provided with legs D D at diagonal corners, and pivoted to the bed, so as to form a support for the leaves when open, and a support for the bed when closed, substantially as hereinbefore set forth.

2. The combination, with the bed A, leaves B B, fixed legs C C, and connected swinging legs D D, of the spring *m*, for automatically opening the swinging legs when the leaves are raised, substantially as hereinbefore set forth.

3. The combination, with the bed A, leaves B B, fixed legs C C, and swinging legs D D, of the spring-catch *l*, and releasing-arm *k*, substantially as and for the purpose hereinbefore set forth.

164,977. PAPER-FOLDING MACHINES. Wm. Daniels, Brooklyn, N. Y. [Filed Apr. 10, 1875.]

Brief.—Perforates the sheet at the line of fold, so that it can be easily separated. Provides the knife with a guard to shield the hand of the operator. The paper is supported, while being perforated, on fingers which give way to the folding-blade.



1. In a machine for folding paper, the combination, with the folding-blade, *c*, of an independent blade with penetrating-points to perforate the sheet in the line of the fold, but previous to the folding operation, substantially as set forth.

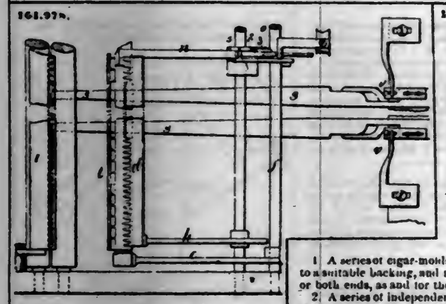
2. The supporting-fingers *f* and perforating-knife *e*, in combination with the folding-blade and actuating mechanism in the paper-folding machine, substantially as set forth.

3. The guard-bar *g* and actuating-cams *w*, in combination with the perforating-knife *e* and the folding-blade, substantially as set forth

164,978. PAPER-FOLDING MACHINES. Wm. Daniels and Charles Daniels, Brooklyn, N. Y. [Filed June 18, 1875.]

Brief.—The plate acts as a holder, stripper, and hand-protector, and is operated by the projection upon the knife-arm fitting into the leg on the knife-shaft, so as to cause the holder and knife to move together, except when the holder is resting upon the paper, the projection having been lifted from the leg. The knife perforates the sheet, and the tongues, which are provided with cutting-edges, sever it completely when the second fold is made.

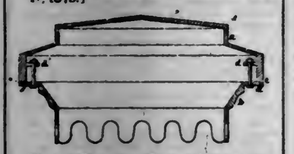
164,978.



1. The combination, with the perforating-knife *d* and plate *f*, forming a holder, a guard, and a cleaner, of the wedge *e* and its actuating-lever, substantially as and for the purposes set forth.

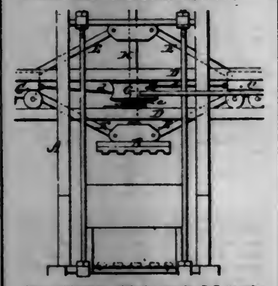
2. The tongue *s*, provided with a suitable cutting-edge, *r*, combined with the folding mechanism, and applied between the first and second folds to separate the paper, as specified.

164,979. METAL CAPS FOR POSTS. John Davenport, Stamford, Conn. [Filed Apr. 17, 1875.]



The metallic post-cap B, made in two parts, *a b*, jointed at *c*, and provided with fastening-bolts C, passing through flange *d* and lugs *d'* as and for the purpose described.

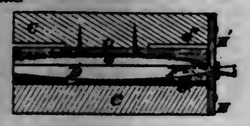
164,980. COTTON-PRESSES. Solon Dike, Detroit, Mich. [Filed Dec. 24, 1874.]



In combination with the trucks C C, toggle-levers E E, follower B, and vertical guide-rod H, the drum G having recess *i*, the bolts *a a*, cords *d d*, and lever I, all substantially as and for the purposes herein set forth.

164,981. CIGAR-MOLDS. N. Du Brul, Cincinnati, Ohio. [Filed May 26, 1875.]

Brief.—The molds are made flexible at the ends, in order to make the cigar burn and draw free. The backing serves as a gage to limit the movement of the free ends of the mold.



1. A series of cigar-molds centrally attached to a suitable backing, and made flexible at one or both ends, as and for the purpose set forth.

2. A series of independent matrices or cigar-molds, centrally attached to a suitable backing, and made flexible at one or both ends, as and for the purpose set forth.

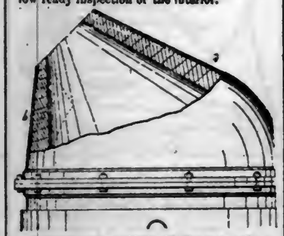
3. A cigar-mold having a kerf or groove at the back near the ends of the compressing-surfaces, for the purpose described and set forth.

4. In combination with a cigar-mold made flexible at one or both ends, the solid backing *e''*, affording a guard or stop, substantially as set forth.

5. The guide or guard-plates H H', applied to the cigar-mould on each side of the kerf F, as and for the purpose specified and set forth.

164,982. BESSEMER CONVERTERS. Almon S. Dunning, Joliet, Ill. [Filed May 8, 1875.]

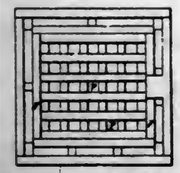
Brief.—The nose of the converter is a straight continuation of the front side, to dispense with the angle, and so save the lining, prevent loss of metal by overflowing, and allow ready inspection of the interior.



A converter provided with the perpendicular inside face *b*, as and for the purpose specified.

164,983. DEEP-TROUGHS FOR ICE-BOXES. Isaac T. Dyer and Geo. Powell, Streator, Ill. [Filed Apr. 20, 1875.]

Brief.—As constructed and individually removable.

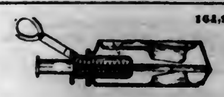


The removable troughs P, provided with closed ends *m*, and overlapping each other, in combination with guide-plates *r*, bearers T S, discharge-trough K, and ice-box, as and for the purpose set forth.

164,984. COMBINED CIGAR-TIP CUTTERS AND WATCH-CHARMS. Emil F. W. Eisenmann, New York, N. Y. [Filed June 5, 1875.]

Brief.—The locket carries a cutting-knife, which can be operated by pressure upon the stem under its ring, to sever the tip, the two meeting sides or edges of the locket forming a stationary cutter.

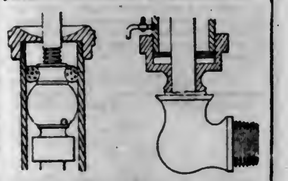
164,981.



A watch-charm locket, having the cigar-tip cutter applied in the manner substantially as and for the purpose described.

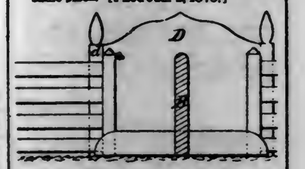
164,985. VALVES FOR STEAM-RADIATORS. James W. Faxon, Boston, Mass. [Filed Apr. 24, 1875.]

Brief.—Cold air is expelled through the space surrounding the valve-stem, and afterward steam is allowed to escape at the same point.



The combination, with the interior steam-pipe and valve, of the outer tube, cap, and standard, constructed and applied with relation to each other and to the pipe and valve, as described, to allow the cold air to pass out and steam to escape into the apartment, and to catch and retain the water of condensation.

164,986. GATEWAYS. Simeon L. Fisher, Prinfield, Ill., assignor of two-thirds his right to Webster Huey and T. W. Cowles, same place. [Filed Jan. 2, 1875.]



The combination, with a passage-way in a fence, of the close fronts D E, connected together by the central partition B, one of the fronts being within and the other without the fence, and extending beyond the passage-way, whereby a double short turn is made at each side of the partition B, substantially as and for the purpose described.

164,987. REVERSIBLE CAPS. Morris Fox New York, N. Y. [Filed June 5, 1875.]



A reversible cap composed of double-folded rear crown-section B, supplementary swinging front crown-piece C, and double-folding front piece D, arranged substantially in the manner and for the purpose set forth.

164,988. PIANO-STRINGING DEVICES. A. G. Gardner, New Orleans, La. [Filed Sept. 30, 1874.]



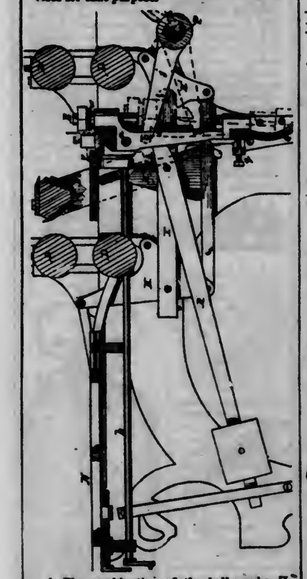
164,922.



As an improvement in stringing devices for piano-fortes the wrest-plank bridge C of steel, and having the flanges *d e*, in combination with the sounding-board-bridge agraffe A B, the latter plate B of which is provided with the flanges 1 2, when all said parts are constructed and arranged substantially as and for the purpose set forth.

164,989. WOOD-PLANING MACHINES. J. S. Graham, Rochester, N. Y. [Filed Jan. 13, 1875.]

Brief.—The weights which hold down the pressure-rolls are made to exert their force equally upon them through a system of shafts, bell-cranks, and levers. The matching-heads are also elevated and depressed by means of an oscillating shaft provided with suitable devices for that purpose.



1. The combination of the bell-cranks H and H', feed-rollers D and D', and suitable connecting-links, and the common adjusting-handle P, screw-shaft, and table N, operating substantially as set forth.

2. The combination of the yielding fulcrum-bar I, weighted lever R, bell-cranks H and H', feed-rollers D and D', and suitable connecting-links, operating substantially in the manner described.

3. The combination of the bell-cranks H, H', and H,'' suitably linked to each other and to the rollers D and D' and cutter-head E, and the adjusting-handle P and table N, whereby said rollers and cutter-head may be simultaneously adjusted.

4. In combination with the independent matcher-frame F, the sleeve S, and its eccentric supporting-shaft *p*, and connecting-bars *j*, arranged to operate conjointly for the purposes set forth.

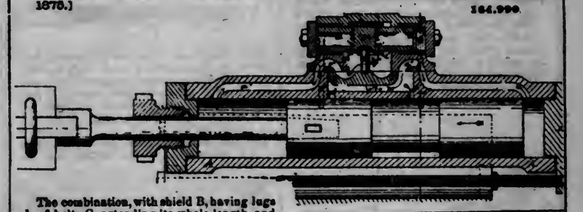
5. The chip-breaker T, provided with the lips *v*, and detachably hung upon the matcher-shaft E as an axial center, in combination with the spring *t* and frame F, substantially as and for the purposes shown and described.

6. The matcher-frame F, carrying the matcher-shaft E, in combination with the gears upon the adjusting-screw *a* and rod *b*, as and for the purposes shown and described.

7. The matcher-frame F, resting in the curved grooves *o*, and so arranged as to receive its horizontal and vertical movements by means of the lever *s* and cam or eccentric *j*, whereby the said frame is retained in a vertical or nearly vertical position at all times, as shown and described.

164,990. STEAM ROCK-DRILLS. Joseph C. Githens, New York, N. Y. [Filed Apr. 17, 1875.]

164,990.



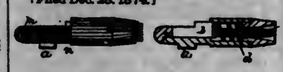
The combination, with shield B, having lugs *b*, of bolts C, extending its whole length, and the cross-bar D, to which the turning mechanism is attached, all arranged substantially as and for the purpose specified.

164,991. CHUCKS FOR ROCK-DRILLS. Jos. C. Githens, New York, N. Y. [Filed May 15, 1875.]



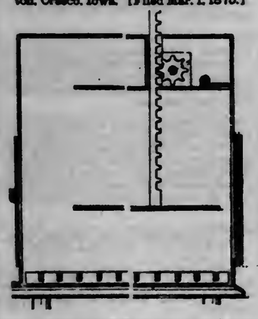
The combination of the grooved and notched key B, and the U-bolt D, with the grooved enlarged end of the piston-rod A, substantially as herein shown and described.

164,992. KEY-HOLE GUARDS. Jacob Goldstein, Chicago, Ill., assignor of one-half his right to Raphael Phillipson, same place. [Filed Dec. 28, 1874.]



A key-hole protector provided with the stem *m*, having a guard, *c*, and shoulder *n*, in combination with a sliding bar or bolt, *b*, and spring *d*, all substantially as and for the purpose specified.

164,993. METHODS OF BURNING HAY, STRAW, LEAVES, &c. Alexander Hamilton, Oreseo, Iowa. [Filed Mar. 1, 1875.]



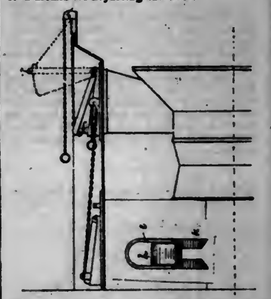
The process of burning in a stove straw, hay, leaves, and analogous material while under pressure, as set forth.

164,994. PACKAGE STRAP-HANDLES. S. L. Harrell, Chicago, Ill., assignor of one-half his right to T. E. Bryant, same place. [Filed Mar. 26, 1875.]

The package strap-handle, herein described, consisting of the curved rigid bar A, enlarged laterally, and mortised at its ends, and provided with depending pivots *e e*, adapted to take into, or bear upon, the flexible and slotted bar C, in combination with said bar and straps D D and E, all constructed and arranged substantially as specified.

164,995. FURNACES AND STOVES. Ezra Hawkes, Boston, Mass. [Filed May 28, 1874.]

Brief.—The chain and notched bracket afford means for adjusting the door.



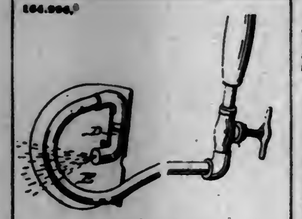
In combination with the door having the side flanges, and applied to the mouth of the fire-pot, as described, the adjusting linked chain with its pulley *h*, and its bracket *i*, the latter being notched at *k* to adapt it to arrest and hold any link of the chain, as and for the purpose set forth.

164,996. BREAKERS FOR PAINTERS' USE. Ivory Hayes, Philadelphia, Pa. [Filed May 15, 1875.]

Brief.—The shield is provided with an orifice for supplying air to the flame.

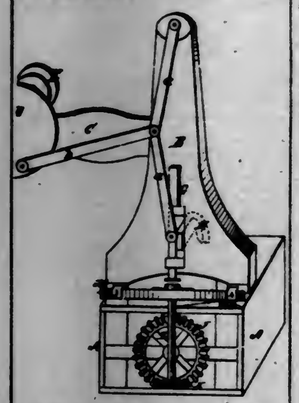
The combination, in a breaming implement, burning gas or vapor, substantially as described, of the flame-protector E, with the jet-burner D, substantially constructed as and for the purpose hereinbefore set forth.

164,996. [illegible]



164,997. BRICK AND SOAP PRESSES. Jacob H. Sears, Marshalltown, Iowa. [Filed Mar. 23, 1875.]

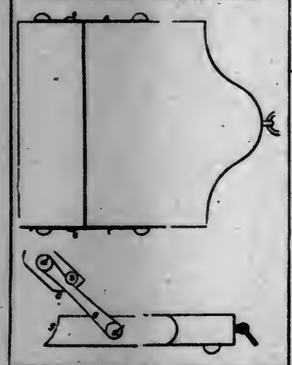
Brief.—The reciprocating motion of the plunger rotates and holds the table, carrying the molds, at the point required, to subject the substances in the molds to the action of the descending plunger.



1. The combination of frame A, post B, arm C, wheels D and E, connecting-link b, toggle-joint a a, and plunger G, when arranged substantially as and for the purposes shown and described.

2. The plunger G, carrying the cam h and rack c, the sector A, and bevel-gear wheel J on the shaft f, the pinion K and table M on the shaft J, and the spring-latch n on the frame A, arranged and combined substantially as and for the purposes shown and described.

164,998. IRONING-BOARDS. G. B. Hollister, Kalamazoo, Mich. [Filed May 1, 1875.]



The shirt-ironing board, having the concave edge g, the concave cam-clamp c, rotating on its own pivots, the pivoted connecting arms e, and the stops s, constructed and arranged as specified.

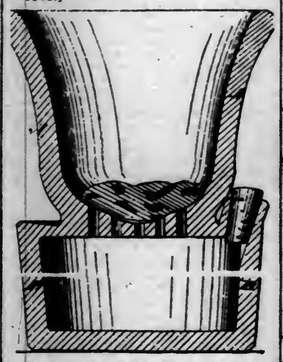
164,999. BITS FOR BORING WOOD. G. L. Holt, Springfield, Mass. [Filed July 30, 1874.]

Brief.—The bit consists of a detachable screw-threaded head or socket, and a rod provided at one end with an enlargement, upon which is a screw-thread for securing it in the head, and at the other with a sharp reamer-point. Two spiral grooves, having sharp edges, extend from the point along a portion of the length of the rod.



The combination of the rod f, provided with the sharp-edged grooves e, the sharp reamer-point c, and the enlarged threaded part a, and the threaded head or socket-piece s, all constructed and arranged as herein set forth

164,000. FLOWER-POTS. Joe Sephus Johnson, Somerville, Tenn. [Filed Mar. 20, 1875.]



As a new article of manufacture, an earthen flower-pot, consisting of body A, hollow base B, and perforated partition, all made up in one piece, as shown and described.

165,001. BUNGS AND BUSHES. Wm. Johnson, Ossuikee, Wis. [Filed Mar. 18, 1875.]

Brief.—The bung consists, substantially, of two pieces. When the two conical metallic earthens are brought closer together the rubber between them is made to form a conical ring, having its base pressed tightly against the bush.

A bung consisting of cone-shaped pieces B and D, in combination with rubber C and nut E, sunken in piece D, substantially as described.

165,002. SMOKING-PIPES. C. J. Jonasson, Warren, Pa. [Filed May 8, 1875.]

Brief.—The stem is hinged to the bowl, so that when not in use the pipe can be folded into a small compass.

1. The combination of the hinged stem with the bowl of the pipe, as shown and described.

2. The stem and bowl, connected by a ball-and-socket joint, and the pivoted fastening-link C, arranged to lock the parts together by engaging with a projecting portion of the bowl, all combined as shown and described.

165,003. AIR-TIGHT CANS. Stephen Joyce, New York, N. Y. [Filed Mar. 13, 1875.]

The described combination of body A, having top flare G and ears I, with two-part cover C D and rubber band F, for the purpose specified.

165,004. APPARATUS FOR CHARGING BEER WITH GAS. John C. Kennedy, Chicago, Ill., assignor of one-half his right to H. Kiley, Toledo, Ohio. [Filed June 4, 1875.]

Brief.—The gas passes to the cask from the regulating-chamber of the generator, said chamber being provided with a flexible diaphragm and mechanism to regulate the flow of gas therein. At the upper part of the generator there is a dial to indicate pressure of the gas in the main case and regulating-chamber.

1. In combination with the main case A, the depending tubes D and F, tube D provided with the open-ended tube d internally arranged and communicating with the chamber of the main case, as specified.

2. In combination with the main case A, the inner case E, adapted to receive the ingredients from which the gas is generated, and arranged to form the reservoir receiving the gas between it and the walls of the main case, as specified.

3. The elastic band f, arranged to close the openings e in tube F, the ends of the band connected by a strip of paper or other material, which will allow the band to disengage itself from the tube when saturated by the water in case E, as and for the purpose specified.

4. In combination with cap G, provided with the indicating-dial g, the elastic diaphragm H', spring P', and cap M, carrying the indicator R, arranged to graduate and determine the flow of gas into the equalizing-chamber, as specified.

5. The indicator R, substantially connected to cap M, whereby the same is adjusted to correspond with the tension of spring P', relative to the figures on the dial, as specified.

165,005.



165,006.



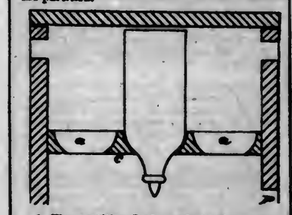
6. The soft-rubber or flexible valve m, arranged within the metal ring n, and attached to stem m', in combination with the inverted conical valve-seat n', as specified.

7. The combination of tubes T and T', arranged to communicate with the equalizing-chamber J, and interior of the main case A, and the mechanism for actuating the indicator-hands, whereby the pressure of gas in the main case and equalizing-chamber is indicated respectively on one dial-plate, as specified.

5. In combination with the main case the cup O, provided with the elastic diaphragm H', plate O', spindle r, and spring r', arranged to indicate the pressure of gas in the main case, as specified.

165,005. SODA-BOTTLE CARRIERS. Albert F. Knorp, San Francisco, Cal. [Filed May 26, 1875.]

Brief.—The box has a single partition with concave openings, so that the bulge of the bottle fits firmly therein, and the need of a second support is dispensed with. The box has suitable cover, and a waste-space below the partition.



1. The partition C of a soda-bottle carrier, having the tapering hole c, with its concave side, which is made to fit the shoulder of the bottle, substantially as and for the purpose described.

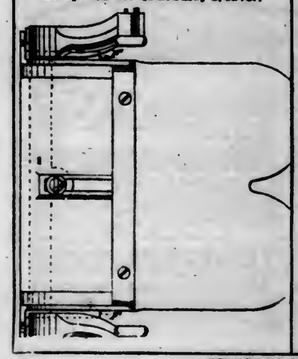
2. A case or carrier for soda-bottles, having the single partition C, with its tapering concave holes c, and provided with the opening P below the partition, substantially as and for the purpose described.

165,006. STEAM-BOILERS. R. D. Loevitt, Jr., Cambridge, Mass. [Filed Jan. 13, 1876.]

1. The combination and arrangement of a set of two or more boilers in two tiers, each lower boiler being connected with an upper one by two rows of water-legs, one of them attached to the top of the lower boiler and toward the side of the upper one, and the other row attached to the bottom of the upper boiler and toward the side of the lower one, substantially as described.

2. The combination with the lower boiler of two duplicate rows of water-legs, each duplicate series operating as described, and each being connected with a separate boiler of the upper tier, substantially as described.

165,007. FOOT-TREADLES. Daniel H. Ellis, Lockport, N. Y. [Filed May 6, 1875.]

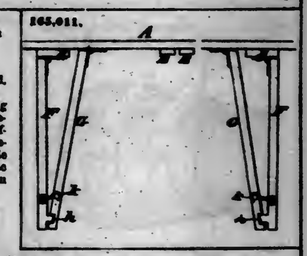


A treadle foot-plate, B, having a rib, F, on each edge, as and for the purpose specified.

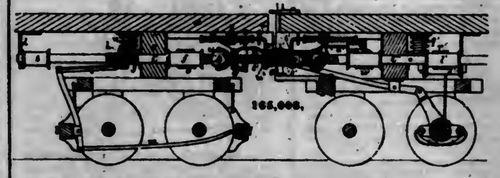
165,008. CAR-BRAKES. Silas P. Littlefield, Lynn, Mass. [Filed May 22, 1875.]

Brief.—Brakes operated by nut traveling on screw-shaft, which is rotated by brakeman through crank and rope. Shafts of different cars coupled so as to permit independent vertical and lateral motion, while transmitting rotation. Device for automatic breaking of car if disconnected on down grade.

165,011.



165,009.

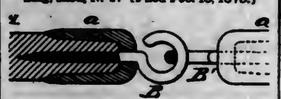


1. In combination with the shafts c c' and their coupling-spindles t g', provided with a catch-lever, and constructed substantially as described, the spring s', the slide-cap S', and the system of levers s' P', applied to the spindle t and the truck, as set forth.

2. The spring u and its chain or cord u', in combination with the shaft c, provided with mechanism, as described, for setting the brakes up to the wheels, such mechanism consisting of the rod m, lever k, furnished arm i, nut h, screw g, barrel e, chain or rope o, barrel f, and the hand-wheel shaft q.

3. In combination with the shaft C and the car-wheel axle, the mechanism applied thereto for revolving the shaft c', to effect stopping the car on a descending grade, such mechanism consisting of the barrel f', its ratchets v w', the pawls o' g', and the mechanism, as described, for throwing either pawl into or out of action with its ratchet, this latter mechanism being the shafts x' c', arms s', teeth d', caps s' f', slide g', levers h' P', and springs h' P', all being arranged and applied substantially as specified.

165,010. BELT-COUPLINGS. Geo. A. Manning, Rice, N. Y. [Filed Feb. 13, 1875.]



In combination with the compressed ends of a belt, the ferrules a, the adjustable screw-hook B, and adjustable screw-eye B', substantially as shown and described.

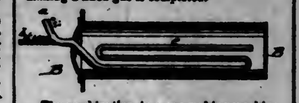
In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

165,012. FOLDING TABLES. E. J. Marsters, Stockton, Cal. [Filed May 17, 1875.]

The table A with its legs F, and angularly hinged braces G with the lugs h and slot i, and the hooks k, the whole constructed to operate substantially as and for the purpose herein described.

165,013. APPARATUS FOR MANUFACTURING ILLUMINATING-GAS FROM PETROLEUM. J. McClarty, Racine, Wis. [Filed Mar. 13, 1876.]

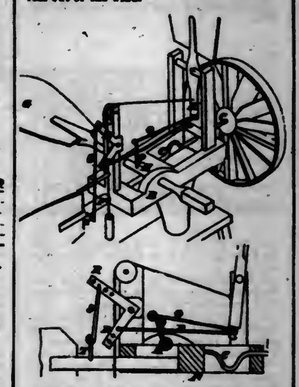
Brief.—The steam-pipe enters the oil-pipe near its place of entrance to the retort. The oil and steam pass together through a coil in the retort. The semi-fixed gas from the first retort passes through pipes to near the back ends of other retorts, where the process of making a fixed gas is completed.



The combination, in a gas-making machine, of the oil-supply pipe a, steam-pipe b, coil c, and retort B, with a bench of gas-retorts, provided with pipes f g g', as and for the purpose specified.

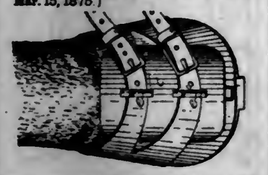
165,014. WINDMILLS. Joseph McGovern, Modesto, Cal. [Filed May 3, 1875.]

Brief.—The hinged vertical vane is connected directly with the tail-vane and side vane. Any increase in the wind will act upon the vertical vane, and by its connections turn the other vanes, and throw the mill more or less out of the wind.



The vanes E, G, and J, mounted as shown, together with the connecting-rods O, P, and R, the arms Q and T, and the bell-crank lever K, whereby power is transmitted directly from the hinged vane J to each of the vanes E and G, substantially as herein described.

165,014. TOE-WEIGHTS AND QUARTER-BOOT ATTACHMENTS FOR HORSES. Henry D. McKinney, Jonesville, Wis. [Filed Mar. 15, 1875.]



The weight C provided with loops *c c* and spur *c*, in combination with the socket *b* in the shoe and the fastening-straps, substantially as herein shown and described, and for the purposes set forth.

165,015. GRAIN-DRILLS. Edwin D. Mead, Shortsville, N. Y. [Filed Nov. 21, 1874.]

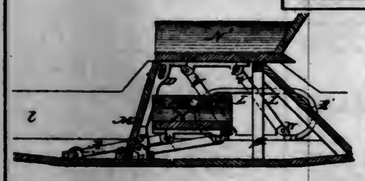
Brief.—Within and transversely to the concave feed-wheel is fitted the adjustable semicircular cut-off, for graduating the flow of seed without changing the speed of the wheel.



The semicircular cut-off C, with its lever A, in combination with the concave feed-wheel E, for regulating the flow of seed, substantially as set forth.

165,016. CARRIAGE-SEATS. Christian K. Mellinger, Harrisburg, Pa., assignor of two-thirds his right to Henry C. Shaffner and Lehman & Riegel, same place. [Filed Jan. 28, 1875.]

Brief.—Adapts seats to fold under one another.



1. The sill-iron K Q, in combination with the stump joist D S, as and for the purpose set forth.

2. The sill-iron K Q, in combination with the hinged stump-joint D S, and the full-sweep panel M, substantially as set forth.

3. The extended stump-joint D S O', in combination with the latch F, keeper h, and the full-sweep panel M, substantially as and for the purpose set forth.

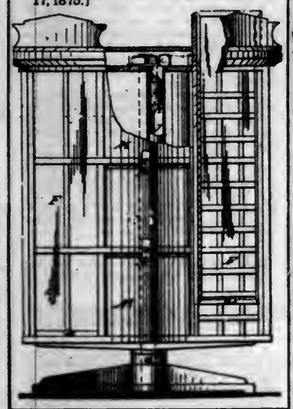
4. The rear-cast sill-iron L X, having the double-bow extension and slot R R', in combination with the supports V V', as and for the purpose set forth.

165,017. PHOTOGRAPHIC VIGNETTING-MACHINES. Chester C. Merrill, Port Jervis, N. Y. [Filed Feb. 20, 1875.]



The vignette B, having apertures H, serrated opening D and colored border E, combined with suspended name-plate G, as and for the purpose specified.

165,018. CASES FOR EXHIBITING YARN. H. J. Millmann, Milwaukee, Wis. [Filed Apr. 17, 1875.]



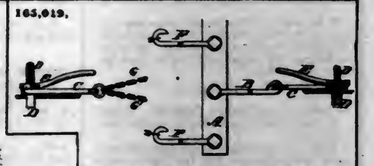
1. The combination, in a show-case, of glass doors sliding in ways up and down through the top, the weights J, and the cords I sliding in tubular recesses H, all arranged substantially as and for the purposes specified.

2. In a show-case, the compartments E, having transparent doors in front, and subdivided into sub-compartments F, as and for the purposes set forth.

3. In a show-case having compartments E, the intermediate angular boxes *m*, arranged as and for the purpose specified.

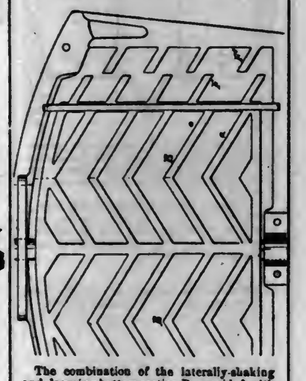
165,019. WIRE-STRETCHERS. Henry Miles, Springdale, Iowa. [Filed Apr. 10, 1875.]

165,020.



The combination of the lever A, the three hooks B F F, the two chains G, and the two clamps C D E with each other, substantially as herein above and described.

165,020. STOVE-GRATES. Jonathan Moore, Jr., Brooklyn, N. Y., assignor to J. L. Mott Iron-Works, New York city. [Filed Apr. 17, 1875.]



The combination of the laterally-shaking and dumping bottom section B, provided with clinker-breaking points F, with the stationary top section, having breaking-points F', as and for the purpose set forth.

165,021. GRAIN-TALLIES. A. K. Munson, Marysville, Kans. [Filed June 20, 1874.]

Brief.—An adjustable gate or striker, which can be raised or lowered in order that the grain may be struck off more or less closely, according as the weight of the grain is more or less.



The combination of the adjustable striker D with the box A and measure B, substantially as herein shown and described.

165,022.



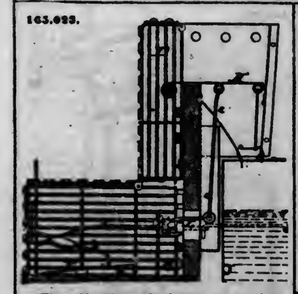
165,022. CARPET STRETCHERS AND HOLDERS. D. Peters, Cincinnati, Ohio. [Filed May 5, 1875.]

As a new article of manufacture, the carpet stretcher and holder herein described, consisting of the handle A, double-pronged iron B, having toothed ends *b b*, and the bent prong D, all constructed as shown, and for the purpose set forth.

165,023. SELF-SETTING ANIMAL-TRAPS. John C. Porter, New York, N. Y. [Filed Sept. 17, 1874.]

Brief.—The trap is closed by a tilting platform. It is reset by means of another tilting platform, which precipitates the victim into a tank.

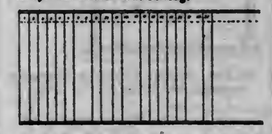
165,023.



The self-setting animal-trap, composed of the sliding gate C, tilting platform E, arm *b*, weighted platform H, rod *c*, lever L, and the tank J, all arranged for operation substantially as herein shown and described.

165,024. MANUFACTURE OF KEY-BOARDS FOR ORGANS, &c. Milon Pratt, Deep River, Conn. [Filed Oct. 14, 1874.]

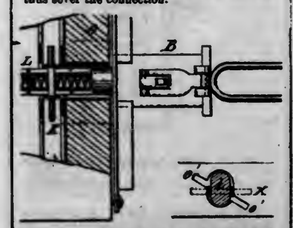
Brief.—To avoid "side sawing."



As an improvement in the manufacture of key-boards for musical instruments, the preliminary preparation of the pieces for the bodies of the sharp keys, of substantially the width of the sharp spaces in the desired scale, and then gluing said sharp-key pieces to the pieces for the natural keys at the outer ends only—that is, from the front ends of the natural keys to the line where the front ends of the sharp keys will fall, substantially as described.

165,025. CAR-COUPLINGS. C. B. Pamage, Sherman, Tex., assignor to himself and W. Heyde, same place. [Filed Oct. 17, 1874.]

Brief.—When the draw-head is turned by a car leaving the track, it will pull out, and thus sever the connection.



1. The combination of the draw-head B, shank or rear extension L, and draft-bar K, with the car timber or beam O, provided with an oblique slot, O', as and for the purpose described.

2. The angle-plate or spring I in combination with the draw-head, substantially as and for the purposes described.

165,026. TAILORS' MEASURING APPARATUS. Albt. H. Richey, Lebanon, Pa. [Filed Jan. 20, 1875.]

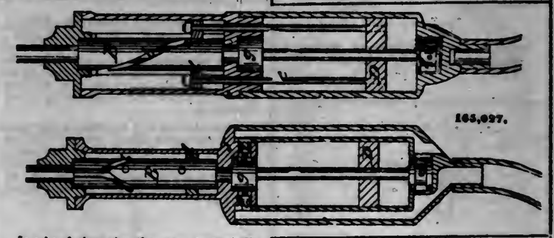
Brief.—A tailor's measuring apparatus provided with shifting-arms with registers thereon, which are first correctly adjusted to the body, and afterward transferred to the material as a guide for cutting the same.

In combination with the main arm D, the vibrating arms A, B, and C, slide F, and horizontal bar H, provided with appropriate scales and registers, and with open hooks for connecting the parts together, all constructed and arranged, substantially as and for the purpose specified.

165,027. AIR HAND-ENGINES. C. W. Riley, Philadelphia, Pa. [Filed Mar. 27, 1875.]

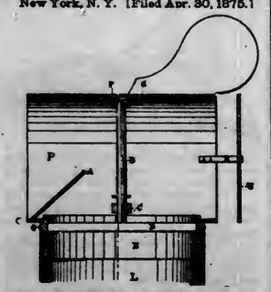
Brief.—A double spiral bar and two rotary valves are rigidly secured to the operating-tool. The rotary valves govern the induction and eduction of steam to a reciprocating piston, while the piston, by means of intermediate mechanism, serves to rotate the drill.

165,027.



In a hand air-engine, the rotary tool-spindle B, having oblique grooves *b b*, in combination with the yoke *d*, having a feather, *c*, and connected with the piston D, valves *g g'*, and induction and eduction ports, substantially as described.

165,028. CHIMNEY-COWLS. A. J. Robinson, New York, N. Y. [Filed Apr. 30, 1875.]

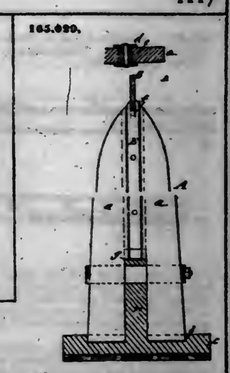


1. A chimney-cowl in which is combined the hood P, provided with the inclined partition A, shield H, and socket G in its top, and cross-bar C near its bottom; a vertical shaft, B; a collar E, constructed to fit within the exhaust-pipe L, and having the cross-bar D, all substantially as shown and described.

2. The combination of the exhaust-pipe L, the collar E, constructed to fit within the said pipe, and provided with the cross-bar D, the hood provided with a circular opening, fitting over the collar E, and a vertical shaft, B, resting on the cross-bar D, and fitting a socket in the top of the hood, all substantially as described.

3. The collar E, constructed to fit the pipe L, and having the peripheral rib *e*, to limit its insertion in said pipe, and a cross-bar, D, to support the vertical shaft, which supports the revolving hood, the whole being constructed and combined as and for the purpose described.

165,029. PADDLE-WHEELS. James Salter, Brooklyn, E. D., N. Y. [Filed May 8, 1875.]



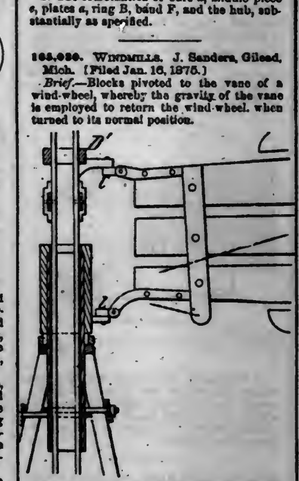
1. Taper-pointed paddles of continuous or entire plates, in combination with an outer stay-ring, B, constructed substantially as specified.

2. The plates *a*, arms E, hub C D, ring B, and band or yoke F, combined and arranged substantially as specified.

3. The combination of bars *d*, middle piece *e*, plates *a*, ring B, band F, and the hub, substantially as specified.

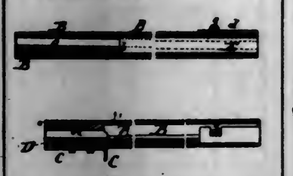
165,030. WINDMILLS. J. Sanders, Gilead, Mich. [Filed Jan. 16, 1875.]

Brief.—Blocks pivoted to the vane of a wind-wheel, whereby the gravity of the vane is employed to return the wind-wheel, when turned to its normal position.



The blocks *l l*, pivoted to projections on the arm D', and also pivoted to the inner ends of the vane, in combination with the chain *n* and pulleys *p p'*, by means of which the vane rises and descends as it swings around, substantially as described.

165,031. BREECH-LOADING FIRE-ARMS. Otto Schneeloch, Williamsburg, N. Y. [Filed Jan. 16, 1875.]

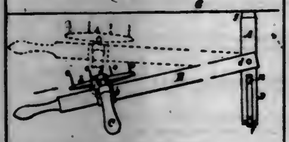


1. In combination with the barrel B of a breech-loading fire-arm, the secondary interior barrel A, made with a bore which is eccentric to the bore of the main barrel, substantially as and for the purpose herein shown and described.

2. The secondary barrel A, provided with a cartridge-extractor, D, and combined with the extractor C of the main barrel B, substantially as and for the purpose set forth.

3. The tube E, placed in the main barrel B, in combination with the secondary barrel A, as specified.

165,032. CARPET-STRETCHERS. Edward P. Shaffer, Rochester, N. Y. [Filed Apr. 17, 1874.]

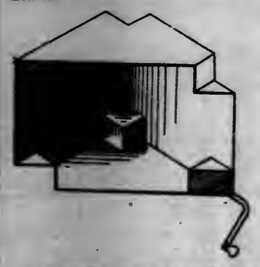


1. In combination with the head A, clamping-dog D, and lever B, the cushion *g*, as and for the purpose set forth.

2. In combination with the pivoted lever B, having a vertical axis, the sliding clasp *b*, having the tooth-head *h* hinged or otherwise attached thereto, substantially as and for the purpose set forth.

165,033. ROTARY CHURNS. J. J. Shelton, Washington, Mo. [Filed June 22, 1875.]

Brief.—The corners being re-entrant present edges and surfaces to milk, increasing the action. The blocks set in the corners at the axles serve to render the churn-body symmetrical.

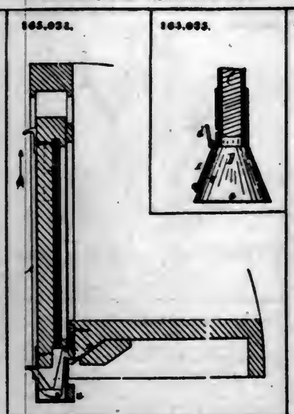


A rectangular churn body rotating upon angles situated at two diagonally-opposite corners, those corners being re-enforced by blocks set in, inside the churn body, the remaining corners being re-entrant, as and for the purpose specified.

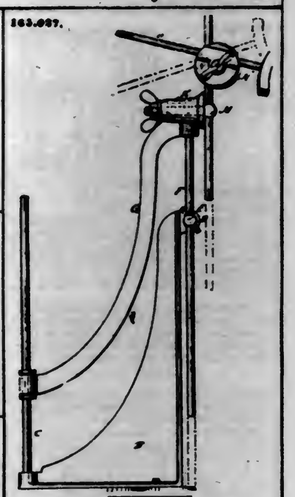
165,034. SHOW-CASES. William B. Smith, New York, N. Y. [Filed May 1, 1875.]

In a show-case, in combination with the sliding door provided with the strip C, the packing-strip D, for keeping the case dust-tight, as described.

165,035.



165,037.

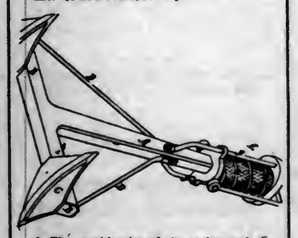


165,036. PNEUMATIC DREDGERS. William Smith, Chicago, Ill. [Filed Feb. 19, 1875.]

Brief.—A boat with a suction-pump and flexible non-collapsible pipe, provided at its lower end with a weighted nozzle, having an opening in its side above the lower end, and covered by a valve that is operated by a cord from above.

In combination with the pump A, the flexible non-collapsible pipe C, provided with the weighted nozzle D, having the opening *c* formed through its side above the lower end, and provided with valve E and cord *f*, all arranged to operate as and for the purpose specified.

165,038. ANCHORS. Amos Smith, Bangor, Me. [Filed Oct. 1, 1874.]



1. The combination of the anchor and the surge-reliever E, directly applied to it, all being substantially as described and represented.

2. The combination and arrangement of the guard and guide rods *g g* with the anchor and the surge-reliever E, applied to such anchor, as specified.

3. The anchor having the double-pointed flukes C C arranged with its arms B B, and such arms arranged with the stock A, all substantially as described.

4. The arrangement and combination of the guard-braces D D with the arms B B, the stock A, and the double-pointed flukes C C, arranged as set forth.

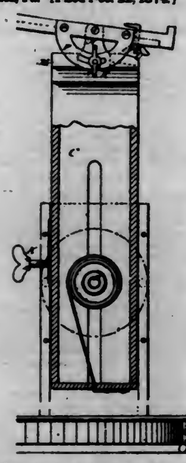
165,039. PHOTOGRAPHIC HEAD-RESTS. F. M. Spencer, Mansfield, Pa. [Filed Dec. 22, 1874.]

Brief.—The particular arrangement of the uprights and brace permits of an adjustment of parts that is adapted to suit the different height of persons.

1. A head-rest consisting of the uprights B C, attached to the base A, the rods F L, and brace G, combined and arranged substantially as described.

2. In combination with the head-rest, constructed substantially as described, the clamping devices K, H, D, M, and N', as and for the purposes set forth.

165,040. CAMERA-STANDS. F. M. Spencer, Mansfield, Pa. [Filed Dec. 22, 1874.]



1. A camera-stand having an adjustable standard composed of the pieces B and C, the one sliding within the other, and provided with a spring G, shaft D, pulley E, and strap F, all arranged as described, for the purpose set forth.

2. In a camera-stand constructed substantially as described, the adjustable table or rest O, supported on the standards N N, and provided with the slotted half-circles P, thumb-screw S, bolt R, and hook T, substantially as specified, and for the purposes set forth.

165,041. FLASKS FOR CASTING PROPELLER-WHEELS. Rufus B. Swift and Thos. J. List, Cleveland, Ohio. [Filed Mar. 29, 1875.]

1. A flask for casting propeller-wheels, the blade portion composed of a cope, A, and drag B, constructed substantially as described, the said blade portion A B made adjustable with respect to the hub portions, whereby the pitch or lead of the blade may be altered without altering the flask, substantially as and for the purposes described.

2. In a flask for casting propeller-wheels, the combination, with the cope and drag A B, respectively, of corresponding neck and hub portions, adjustable substantially as described, whereby the mold for the blades, necks, and hubs, is formed complete by uniting the separate flasks, substantially as for the purpose described.

3. The cope A, drag B, and end pieces C C', constructed and connected together with adjustable joints, substantially as and for the purpose described.

4. The double reversible pedestal, adapted for wheels of different sizes, substantially as and for the purpose described.

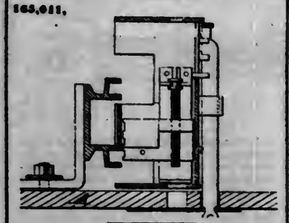
5. The combination, with the pedestal, of studs I in connection with slots *i* in the flask, whereby the flask is readily adjusted to its proper position, substantially as and for the purpose described.

6. The combination, with the adjustable flask, of the adjustable undersetth support, substantially as and for the purpose described.

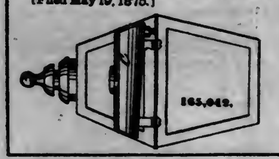
7. The combination, with the blade and end portions of the flask, of intermediate circular, revolving, slotted washers C', substantially as and for the purpose described.

8. The combination, with the blade-pattern, of the wedges L, bolts M, plates *w*, and nuts *w'*, whereby the blade-pattern is held firmly in place during the ramming of the drag, without the use of the follow-board, substantially as and for the purpose described.

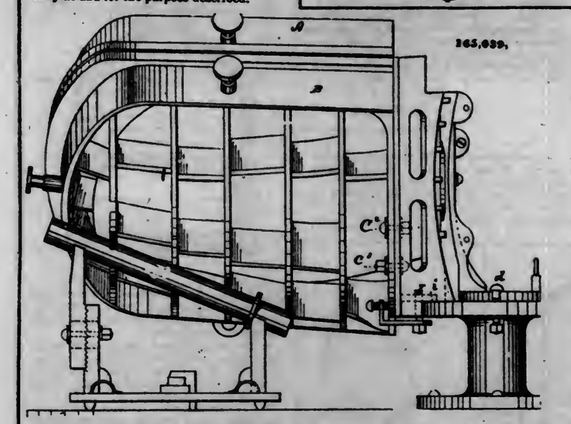
165,041.



165,042. RESERVOIR FOR STREET-LANTERNS. Albt. H. Watkins, Boston, Mass. [Filed May 19, 1875.]



165,039.



165,044. PITMEN. John R. Taylor, Eagle Point, Ill. [Filed Apr. 26, 1874.]

Brief.—The pitman is pivoted to a short beam resting on the frame, that has its other end connected to the sickle-bar by a ball-and-socket joint, the boxing of which is adjusted by a bolt having one side of its head inclined, acting, when the bolt is tightening, on an inclined surface.



The combination of an adjustable slotted bearing-block, having an inclined notch, a fixed bearing-block, an adjustable bolt provided with an inclined or tapering head, and a locking-bolt for the adjustable bearing, all the parts being constructed and relatively arranged in respect to a pitman and its connections, in the manner herein set forth.

165,045. LOCKS FOR DOORS. Wm. Universagt, Memphis, Tenn., assignor to himself and I. A. Chase, same place. [Filed May 22, 1875.]

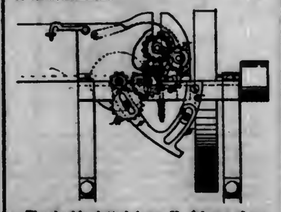
1. The sliding tumbler, having adjustable front plate to be set to varying distances from safe-door by screw-bolt and set-key, substantially as set forth.

2. The sliding tumblers having side projecting lugs at rear part, in combination with the controlling slide-piece passing to the outside of safe-door for changing position of tumblers, for the purpose set forth.

The tapering reservoir C, having its outlet end of larger area in cross-section than its opposite end, and its bottom inclined down toward the outlet, substantially as and for the purpose described.

165,046. FEED-CUTTERS. Thomas Welsh, Elyria, Ohio. [Filed Jan. 18, 1875.]

Brief.—An intermediate pinion between the crank-shaft and the train, by which the rollers are revolved, is suspended on a lever having its fixed end sleeved upon the crank-shaft, and its remote end, which is slotted for adjustment, held by a set-screw at the place of its attachment.



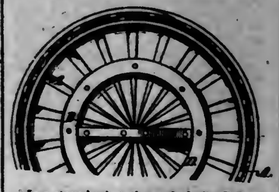
The double-slotted lever N, fulcrumed on shaft J, provided with pinion M, and adjustable on fixed plate Q, as and for the purpose set forth.

165,044. FASTENINGS FOR EGG AND FRUIT BOX COVERS. Wendelin Weis, St. Paul, Minn. [Filed May 1, 1875.]



As an improvement in fastenings for egg and fruit box covers, the combination of the recessed side strips of the lid, provided with double-acting band-spring hooks, with staples of the outer side strips of the box, substantially as and for the purpose set forth.

165,043. STAVE-BASKETS. S. H. Wheeler, Niles, Mich. [Filed Oct. 22, 1873.]



In a stave-basket, the arched ribs B B, arranged across the center of the basket-bottom, one above and one below said bottom, united together and to the points of the staves interposed between them by nails, in combination with upper and under hoops D D and staves A A, as and for the purposes specified.

165,046. CASTING PLOW-POINTS. George Wiard, East Avon, N. Y., assignor of one-half his right to C. W. Hough, same place. [Filed May 11, 1875.]

Brief.—To facilitate casting, a recess is formed in the pattern near the intersecting point of the converging flanges on the rear side. A bridge or support is formed in the mold, corresponding to the recess in the pattern, to strengthen or brace the tip of the wedge-shaped portion. It also furnishes an escape for the air and gases.



A plow-point provided on its rear side with flanges B B' and notch *d*, substantially as and for the purpose hereinbefore set forth.

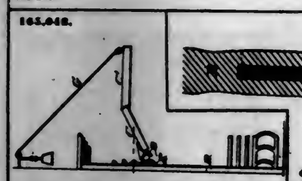
165,047. WICKER-BASKETS. U. S. Wolf, Otto, Ind. [Filed Sept. 12, 1874.]



The wicker-basket A, having exterior and interior sides *a* and *b* tapering to its bottom, in combination with the handle D, wedge-shaped at both ends, and inserted between the walls *a b*, and extending to the bottom of the basket, rivets D, applied near the bottom of the basket with overlapping washers, and willow wrapping C, substantially as and for the purpose set forth.

165,048. HEAT-REFLECTORS. L. B. Woolfolk, Lexington, Ky. [Filed Dec. 17, 1874.]

165,048.



In combination with the heat-reflector, composed of the two surfaces O O', forming an obtuse angle with each other, the hinge D, support G, and frame E, sustaining the reflector in position for use, or permitting it to be raised up, substantially as described.

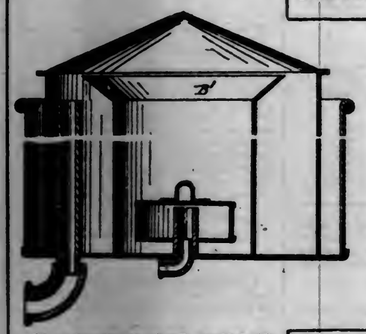
165,049. PROCESSES IN THE MANUFACTURE OF FIRE-BRICK. J. P. Alexander, Akron, Ohio. [Filed Apr. 30, 1875.]

1. The process of the manufacture of fire-brick, consisting in thoroughly separating white pebble from sand and other substances in conglomerate rock, pulverizing the same, thoroughly mixing or kneading with from five to forty per cent. of fire-clay, molded, and subjected to heavy pressure in steel molds, then drying and burning in kilns in a very high degree of heat, as and for the purposes set forth.

2. The compound herein described for the manufacture of fire-brick, consisting of pure pulverized white pebble and fire-clay, prepared and compounded in the proportions substantially as and for the purpose described.

165,050. CARBURETERS. John R. Allen, Pittsburg, Pa. [Filed May 31, 1875.]

Brief.—A small air-chamber or float in the bottom of the carburetor fits over the end of the air-induction pipe, and distributes air through its perforated bottom to the hydrocarbon oil.

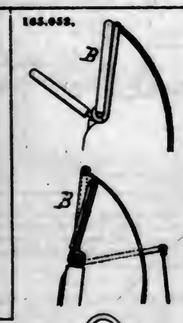


The carbureting-chamber B, provided with an open flaring mouth, B', to prevent the escape of hydrocarbon liquid, in combination with outer chamber A, forming an intervening annular water-space, as and for the purposes set forth.

165,051. HANDLES FOR CROSSCUT-SAWS. B. Andrews, Williamsport, Pa. [Filed Dec. 6, 1872.]

Brief.—The handle has a longitudinal cylindrical central opening, to receive a straining-rod, the lower part of which forms a hook, and the upper part has a left-hand screw-thread cut upon it, and at right angles to said opening another opening, in which is placed a round-ended nut, having a corresponding screw-thread. The saw is attached to the handle by means of a slot formed in the plate near its end, to receive the hooked part of the rod, in connection with a chambered and adjustable cap, provided with a slot, in which the heel of the saw rests, and ferrule having shoulders and a tapering neck to fit said cap. By turning the handle to the right the saw is firmly clamped in place.

165,052.

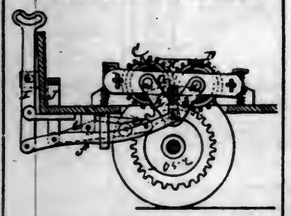


1. The combination, in a handle for crescent-saws, of the straining-rod F, with its upper end cut with left hand threads, and a corresponding threaded nut, C, substantially as set forth.

2. The movable cap E, provided with a central opening and a groove upon one side of the same across its greatest diameter, substantially as set forth

165,053. CAR-STARTERS. Gilbert S. Bailey, Chicago, Ill., and Harris Pool, Monroe, Wis. [Filed Mar. 9, 1875.]

Brief.—Devices for throwing into gear cog-wheels on spring-drums. Recoil starts car.



In combination with the movable frame G, carrying the cog-wheels C D, the lever I, connecting-rod *f*, arms *h h*, foot-lever J, links *e e*, and arm *i*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

165,054. MEASURING-BOTTLES. Frank S. Baldwin, Philadelphia, Pa. [Filed May 27, 1875.]

Brief.—A measuring-bottle so constructed that a given portion only of its contents can be poured out each time the bottle is tilted, and having a registering device to the number of times the bottle is tilted.



1. A measuring-bottle, in which a perforated bottom, G, is combined with a flexible diaphragm, I, substantially in the manner and for the purpose described.

2. The combination of the bottle, its perforated bottom, and flexible diaphragm with the detachable mouth-piece B, with which a circuitous passage is formed, substantially as and for the purpose described.

3. The combination of the exterior tube *c* of the mouth-piece B with the spiral passage *b*, tube E, and inverted cup F, all substantially as set forth.

4. The combination of the bottle, its perforated bottom, the annular base H and adjustable disk or plate J.

5. The combination of the flexible diaphragm, the pallet-lever L, and pallet-wheel K with mechanism substantially as described, through the medium of which motion is communicated by the diaphragm to the said lever.

6. The combination of the pallet-wheel K, having figures arranged in tens, and in a circle with a plate, J, having an opening, *f*, and marks and figures indicating units on the edge of the opening, as and for the purpose set forth.

165,055. TELEGRAPH-WIRE COUPLINGS. Samuel M. Barbour and Frank A. Page, Philadelphia, Pa.; said Page assignor to said Barbour. [Filed Apr. 20, 1874.]



A block of metal having two apertures for the passage of the wires, and provided with shouldered chambers adapted to retain the ends of the wires after they are bent back upon themselves, as set forth and described.

165,056. FRUIT-PICKERS. James Bailey, Farmington, Me. [Filed Jan. 2, 1875.]

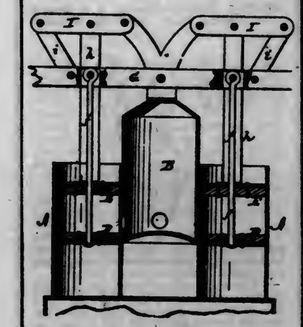
Brief.—The picking device consists of wire jaws operated by a cord extending along the handle of the implement. The moving jaw is of less diameter than the stationary one, and is retracted by means of a spring. The staff or handle is inclosed in the flexible tube through which the fruit is conveyed to the basket.

1. In a fruit-picker, the combination, with the loop *c*, of movable wire jaw C, hinged to the lower rail of a fixed wire jaw, B, and adapted to be vibrated through and into the same, substantially as specified.

2. The pole A, arranged within the tube E, substantially as and for the purpose specified.

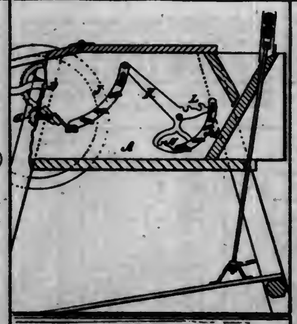
165,056. FIRE-ENGINES. John Bean, Hudson, Mich., assignor of three-fourths his right to Aaron Chandler and L. D. Ralesback, Davenport, Iowa, and R. A. Bean, Hudson, Mich. [Filed Apr. 23, 1875.]

Brief.—A solid and a valved piston in each cylinder are operated by a combination of levers that give to the solid one half the stroke of the other.



1. The arrangement of the double levers G and I I in combination with the buckets D and E and connecting-rods *f h i*, for the purposes herein set forth.

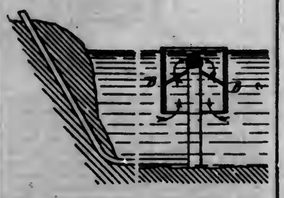
2. The combination of the cylinders A A and air-chamber B with their inlets and outlets, as described, the buckets D E in each cylinder, and the double levers G and I I, with connecting-rods *f*, h, and *i*, all substantially as and for the purposes herein set forth.



The combination of the pivoted levers K K, having extensions L and segments N, with the compound reciprocating rubbers J and the adjustable rubbers M, substantially as and for the purpose described.

165,059. PREVENTING THE OBSTRUCTION OF WATER-CHANNELS. Lewis H. Beebe, Hudson, Mich. [Filed Dec. 7, 1874.]

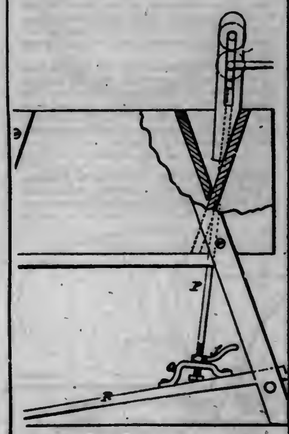
Brief.—A strainer is attached to the end of a supply-pipe, and surrounded by a box or casing extending considerably below the strainer, and above the surface of the water in the basin or reservoir.



The combination, with the opening of a channel through which water is drawn from a river or reservoir, of a box or casing, B, extending to a point below the said opening, and to a point above the surface of the water, all substantially as and for the purpose set forth.

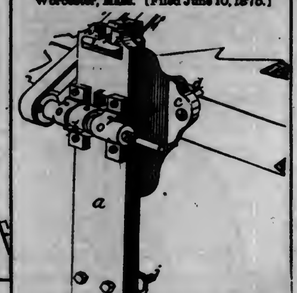
165,057. WRINGERS. L. Booker, York, Pa. [Filed May 26, 1875.]

Brief.—The journals of the lower roll are connected with a rod, screw-threaded at its lower end, and bearing against a lever, which is pivoted at one extremity to the tub, and rests upon the floor at the other. Screwing down upon the nut throws part of the weight of the tub upon the rod, which transmits the pressure to the rolls.



The combination, with the body of the washer and the bearings of the adjustable wringer-roll, of the vertical rod P, the strap Q, lever R, and adjusting-nut *f* substantially as and for the purpose described.

165,058. WASHING-MACHINES. L. Booker, York, Pa. [Filed May 18, 1875.]



1. A device for hammering the sole-edges of boots and shoes, consisting of a bench-bracket hanger, a, provided with a support or rest, *i*, for the work, and a spring-hammer, *e*, automatically operating to deliver the blows upon the sole-edge, through a guide, *h*, by means of a power-driven cam-shaft, *n*, attachment to the bracket, substantially as herein specified.

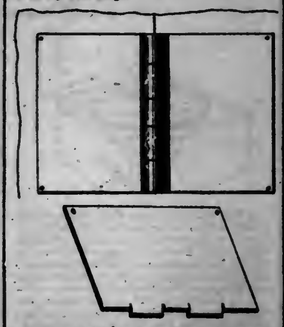
2. The combination, in a power device for hammering the sole-edges of boots and shoes, of a spring trip-hammer, *e f*, with an adjusting-screw, *i*, and rubber cushion *s*, whereby the hammer may be adjusted to project more or less through and beyond its guide, and the noise from the blows avoided, as herein set forth.

3. The combination, in a power device for hammering the sole-edges of boots and shoes, of a spring trip-hammer, *e f*, attached to its carrying bracket-hanger *a*, with screws *j j*, for adjusting the spring to increase or diminish the force of the blow delivered upon the sole-edges, as set forth.

4. The combination, in a power-machine for hammering the sole-edges of boots and shoes, of a rest, *i*, for the sole of the work, a face-support, h^2, in the guide-head, for the edge of the sole, and the hammer *e*, operating through a guide-opening, h^1, upon the sole-edge, substantially as herein set forth.

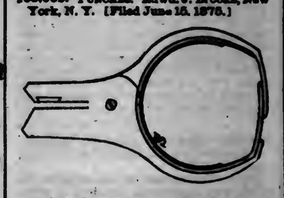
165,061. COVERING-PLATES FOR HINGES. Henry T. Blake, New Haven, Conn. [Filed Mar. 29, 1870.]

Brief.—A thin sheet-metal plate is formed with bent tongues upon its inner edge, which engage with and pass beneath the corresponding parts of the knuckle of a hinge. The covering-plate is then bent over, and its opposite edge or corners secured by small tacks or other suitable fastenings—the method furnishing a simple and inexpensive covering for the ordinary butt-hinge.



The herein-described covering-plate for butt-hinges, consisting of a thin plate of sheet metal, with bent tongues upon its edge, to pass beneath the parts of the knuckle of the hinge, to secure the inner edge, combined with means, substantially as described, to secure the opposite edge, all substantially as set forth.

165,062. PUNCHES. Edwd. J. Brooks, New York, N. Y. [Filed June 16, 1875.]



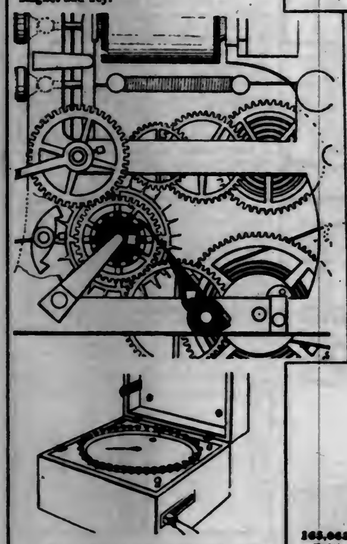
1. A hand-punch, having its handles formed into a closed suspension-loop, by overlapping extensions of the same, substantially as herein illustrated and described.

2. A hand-punch, with overlapping extension-handles, provided upon their inner surfaces with grooves and indentations, as shown, for the purpose set forth.

3. In combination with the overlapping extension-handles, provided with grooves and indentations, as shown, the spring S, for the purpose stated.

165,063. DIAL ELECTRIC TELEGRAPHS. C. T. Chester, Englewood, N. J. [Filed Mar. 30, 1875.]

Brief.—One train, controlled by electro-magnetic escapement, actuates pointer, another, controlled by the keys, the transmitting break-wheel, both brought to a common axis, N. On lid of containing-box is placed ordinary key and bell-magnet. Leg on lid, when closed, taking on switch, breaks circuit to dial-magnets, and closes circuit to bell-magnet and key.



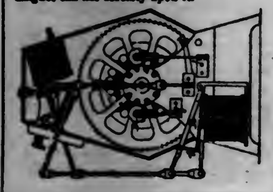
1. The combination of a shaft turning within a fixed tube or sleeve, and another hollow or tubular shaft turning without the said fixed tube, with mechanically-driven trains of wheels, for the purpose of causing independently-driven shafts, wheels, or devices to revolve upon a common axis of motion.

2. In connection with electric telegraphic circuits, the combination of two independent motors, carrying, respectively, a circuit-breaking device, and recording or receiving devices controlled by a magneto-escapement, and so arranged that the shaft governing the motion of the circuit-breaking device and the shaft causing the recording devices shall have a common axis of motion for the purpose of electro-telegraphy, substantially as set forth.

3. In combination with any electro-telegraphic apparatus contained in a box, wherein two or more devices having separate magnets may be alternately called into use, an attachment fastened to and moving with the lid of the box, and a switch or commutator within the box, so that the movement caused by the opening or closing of the box shall cause connections with the circuit to be made alternately with one or the other magnets, substantially in the manner and for the purposes hereinbefore described.

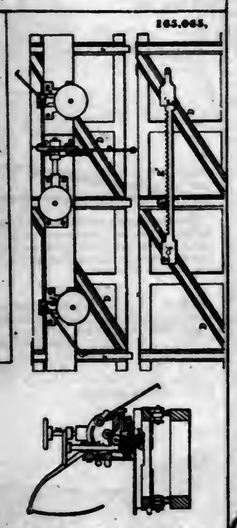
164,664. ELECTRO-MAGNETIC ENGINES. Theophile Chetsenx, Paris, France. [Filed May 26, 1875.]

Brief.—The two parts of the armature are acted upon successively, the lower drawing down the upper to a point where the electro-magnet can act forcibly upon it.



In an electro-magnetic engine, the armature-lever E, constructed in two parts, hinged at one end to the frame of the apparatus, one part being connected at its opposite end to the connecting-rod S of the walking-beam, and the other provided with a hook, *k*, adapted to work within the first-mentioned part, substantially as herein specified.

165,665.



165,665. HEAD-BLOCKS. John F. Cook, Baltimore, Md., assignor to George Page & Co., same place. [Filed May 10, 1875.]

Brief.—The log-beam, to which the log is indirectly secured, is moved laterally of the carriage on which it rests by means of diagonal slides provided with longitudinal grooves for the reception of suitable rollers projecting from the under side of the cross-heads. The set-nuts are adjustable independently of the log-beam, which can be moved laterally in two ways

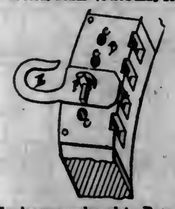
1. The log-beam B, cross-heads and rack E F, grooved diagonal slides D, rollers r, pinion *l*, and shaft *l*, combined substantially as and for the purposes specified.

2. The combination of the log-beam B, frame *m*, shaft *i*, pinion *k*, gears *n* *n'*, and handle F, whereby the log-beam can be moved laterally on two ways, substantially as herein described.

3. The log-beam B, provided with the slides *d*, and spirally-toothed racks A, in combination with the set-nuts C, having the worm-wheels *e*, and spirally-toothed pinions *g*, substantially as and for the purposes specified.

The combination of the beater-blades and the spring-arms, the two being connected together as described, so that the blades may be allowed to yield by the spring action of the arms, and the striking edges to cant or turn and strike at all times in the same circle, substantially as set forth.

165,667. HARNESS-HAMES. A. H. Creasap, Jr., Trenton, Tenn. [Filed May 15, 1875.]



1. The hame angular plate B, as shown, provided with the recesses *a*, holes *c*, and the double-bearing lips *b*, constructed as described, and applied for the purpose set forth.

2. The combination of the hame A having the recesses *a*, and row of bolt-holes *c*, the plate B, constructed and applied as described, and the bolt F, as and for the purpose set forth.

165,666. APPARATUS FOR CASTING STEEL. Thomas Critchlow and James Kidd, Baldwin, Pa. [Filed June 16, 1875.]

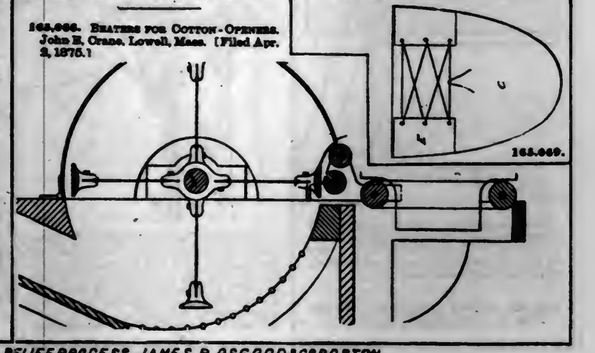
Brief.—The molten metal, being placed in a closed hopper, is allowed to fall through a circular opening into the mold below, and in which a vacuum is maintained.



1. The combination, with a flask in which a vacuum is maintained, of the closed hopper C, provided with a valve, the valve-opening constructed to allow the molten metal to flow into the flask in a thin stratum, for the purposes set forth.

2. The combination, with the flanged base B, of the flask A, provided with the air-pipe I, and annular shoulder near the top, the hopper C, with closed top and flanged base and valve-opening E, and the circular valve *a*, connected to the vertical sliding sleeve D, all substantially as set forth.

165,668. BUSTLES. Chauncey O. Crosby, New Haven, Conn., assignor to Leonard Winship and Saml. E. Barney, same place. [Filed May 31, 1875.]



165,669.

165,669. BEATERS FOR COTTON-OPENERS. John E. Crane, Lowell, Mass. [Filed Apr. 2, 1875.]



1. The bustle frame, formed from wire, or other suitable material, and consisting of the transverse upper part A, and the vertical or body-supporting part B, substantially as described.

2. A bustle consisting of the frame A B, constructed as described, and the pocket C, combined and arranged substantially as and for the purpose set forth.

3. In combination with the distending frame A B, and the pocket C, the flaps E E, and means, substantially such as described, for adjusting the said flaps to extend or contract the bustle.

4. The distending frame and pocket C of a bustle, combined with the flap D, substantially as and for the purpose described.

165,670. CAR-STARTERS. George S. Curtis, Chicago, Ill. [Filed Feb. 16, 1875.]

Brief.—Draft forces cam against collar on hub, and so turns wheel. Collar made in two sections, so as to be easily attached and detached.

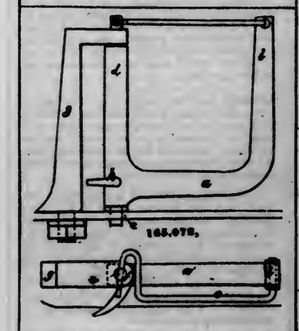


The combination of the axle B, collar D, made in two parts, and having hubs *a* *a*, stirrups E E, horizontal lever G, pivoted to the stirrups, and having eccentric *b*, the chain *d*, pulley H, and sliding draw-bar I, substantially as and for the purposes set forth.

165,671. LADLES. Stephen Curtis and R. H. Bowley, New York, N. Y. [Filed Nov. 2, 1874.]



As an article of manufacture, a ladle consisting of a bowl of an internally-enameled lining or body of hard metal to retain its proper shape, and an external covering of soft metal spun over and upon the lining or body, and secured thereon by bending its upper edge down over the edge of the lining-piece and enameled lining, as and for the purpose herein shown and described.



165,672. ROWLOCKS. Michael F Davis, Portland, Me. [Filed Apr. 7, 1874.]

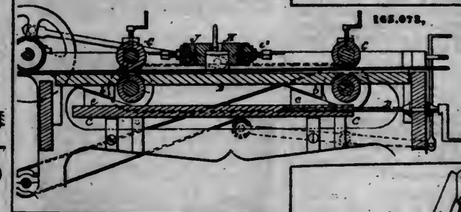
1. The combination of the brace or arm *g*, affixed to the boat, with the rowlock *a* *b* *d*, and pivoted or hinged top piece *c*, hook *h*, and stud *i*, substantially in the manner and for the purposes set forth.

2. In combination with a rowlock, substantially as described, the spur *k*.

165,673. MACHINES FOR POLISHING MOLDINGS. John A. Dayton, Brooklyn, N. Y. [Filed May 7, 1875.]

Brief.—In a machine for polishing articles of varying thickness, the polishing rubber or pad can be adjusted to the inequalities of the article being polished by means of a vertically-adjustable bed, in connection with a reciprocating carrier provided with an oscillating polishing-stock, to which the rubber or pad is attached. The work is fed to the polisher by means of two sets of feed-rolls, covered with india-rubber, one set at either end of the bed, which are journaled in bearings attached to the bed, so as to rise and fall therewith. The lower rolls protrude through openings in the bed sufficiently far to engage with the work.

165,673.



1. The combination, with the reciprocating carrier H, provided with the polishing-stock A, and pivoted within a carrying-frame, J, whereby the said carrier and its polishing-stock may be oscillated within the carrying-frame in a direction transverse to its line of travel, as and for the purpose specified.

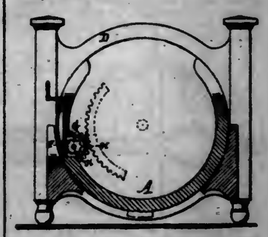
2. The combination, with the reciprocating polisher, of the bed B, having inclined planes *b*, and the vertically-adjustable rollers G G, of the frame C, having the inclined planes *a*, and the operating screw D, for adjusting said frame to elevate or lower the bed B, substantially as described.

165,674. FEEDING DEVICES FOR POLISHING-MACHINES. John A. Dayton, Brooklyn, N. Y. [Filed May 7, 1875.]



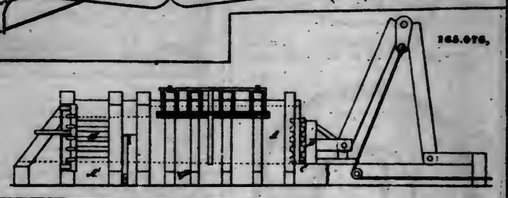
The polishing device consisting of a hollow stock for holding the polishing material, having a removable top and perforated bottom, to the latter of which a perforated pad is secured, the perforations in the stock being adapted to be opened and closed by means of a sliding gate, operated by a lever extending through the top, in order to distribute the material to the surface of the article being polished, substantially as described.

165,675. INVALID-BEDSTEADS. J. Deneeff and Felix Wilkin, Liege, Belgium. [Filed Apr. 10, 1875.]



The combination, with the swinging bed A and fixed frame D, of a stationary rack, I, attached to the frame, and a toothed wheel, H, a horizontal shaft, G, a pinion, K, and a worm, F, attached to and moving with the swinging bed, for oscillating said bed on its longitudinal axis, as herein shown and described.

165,676.



165,676. HAY AND COTTON PRESSES. John L. De Witt, Gardner, Ill., assignor of one-half his right to Nelson La Force, same place. [Filed Oct. 23, 1874.]

Brief.—The follower C is grooved on both faces, and serves alternately as a follower and platen. The spring-catch allows the follower to pass forward, but effectually bars its backward movement.

1. The combination, with press-box A and reciprocating head B, of loose pieces C, serving successively as follower and platen, in the manner described.

2. The combination, with unfastened follower C, of spring-catches E, having rear inclined and perpendicular front face, as and for the purpose specified.

165,677. CENTRIFUGAL MACHINES. George Dinkel, Jersey City, N. J., assignor to F. O. Matthiessen & Wiechers Sugar-Refining Company, same place. [Filed May 17, 1875.]



A revolving drum or basket for centrifugal machines, constructed with perforated walls of a continuous polygonal shape, substantially as described, whereby a perfect and uniform draining of the mass is effected, and enabling the flat outer sides of the molded mass to be cut more economically, as set forth.

165,678. EXTINGUISHERS FOR OIL-TANKS. Robt. Dittrich, Pittsburg, Pa. [Filed Apr. 26, 1875.]

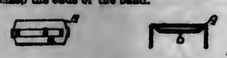
Brief.—A steam-pipe, surrounded part way by another pipe, has its issue above the level of the oil in the tank. The pipe has its terminus inside a metallic cap filled with water. Another cap surmounts the first. The steam issuing from the annular orifice is diffused equally, and extinguishes the fire.



The apparatus for extinguishing fires in tanks by the introduction of steam, consisting of the pipes A *a* and cups B C, the former adapted to contain water, substantially as described.

165,079. BAND-FASTENERS. Edwin Dresser, Cambridge, assignor to Cambridgeport Dairy Company, Cambridgeport, Mass. [Filed Feb. 3, 1875.]

Brief.—A plate having a prong at each end has a bar struck from its center and bent downward, thus forming a slot to receive and clasp the ends of the band.



A fastener, A, for holding the ends of elastic and other bands, provided with a slot, *c*, and retaining-bar *b*, substantially as and for the purpose herein specified.

165,080. SPARK-ARRESTERS. Charles L. Eastman, Concord, N. H. [Filed Apr. 8, 1875.]



1. The combination, with the main smoke stack or flue, of a continuing flue, formed substantially as shown and described, to carry the contents of said smoke-stack from the perpendicular line of ascent thereof to the opposite side of descent thereof, upon a circle or curve, and from thence upon a diminished circle or curve to the points of discharge.

2. The combination of a smoke stack or flue for a locomotive or other engine, with a return pipe or pipes connecting with the fire-box of the engine and the pipes for the discharge of the smoke, steam, and gases, arranged with respect to each other, substantially as shown and described, so that any reaction from the expansion of the steam shall be upward and in the direction of said discharge-pipes for the smoke, steam, and gases, and downward and through the said return pipe or pipes for the sparks, cinders, and unconsumed fuel, substantially as described.

3. The deflector, in combination with such smoke stack or flue, the discharge-pipe, and return pipe or pipes to the fire-box of the engine, substantially as described.

165,081. BALE-TIES. William P. Elliott, Wilmington, N. C., assignor to himself and James Magie Fonshee, same place. [Filed Jan. 21, 1875.]



A wire bale-tie constructed in approximately the form of a figure 8, with crossed central portions, and ends bent inward, so that they will be drawn over the band by the effect of its own draft or pressure, as explained.

165,082. CAR-REPLACERS. William Elms, Dover, assignor to Alfred S. Varney, Old Town, Me. [Filed Jan 9, 1875.]

Brief.—A car-replacer consisting of two blocks having inclined ends, one block being flat on top, and the other beveled with a slope toward the adjacent main rail.



1. The block A in a car-replacing device, beveled at one or both ends, and upon one side, *b*, as described and shown.

2. In combination with said block A, the block B; beveled at one or both ends, and having its top somewhat higher than the top of the rail, as and for the purpose set forth.

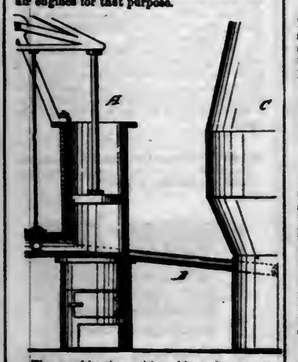
165,083. SIEVES. John Epeneter and Carl B. Grahl, Council Bluffs, Iowa. [Filed Apr. 6, 1875.]



The removable round sieve-bottom, consisting of the rim C, with the flange *d* bent outward and downward, and the wire-cloth D, fastened therein by a double fold, in combination with the exterior hoop A, provided with flange B and bead *a*, substantially as and for the purposes herein set forth.

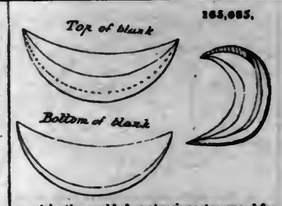
165,084. HOT-BLAST APPARATUS. H. Essex, Meadville, Pa. [Filed Dec. 11, 1874.]

Brief.—Makes a hot blast for blast and cupola furnaces by using the exhaust of hot-air engines for that purpose.



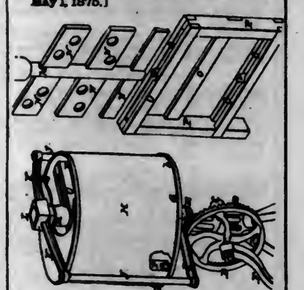
The combination, with a blast-furnace or cupola, C, of one or more hot-air engines, A, and one or more pipes, B, connecting the exhaust of the engines with the furnace or cupola, for the purposes herein set forth.

165,085. TOE-PROTECTORS FOR BOOTS AND SHOES. Robert Britt and John Evitt, Baltimore, Md. [Filed June 5, 1875.]



A leather molded or struck-up toe-guard for boots and shoes, made from a blank of crescent form, having its curved edges skived on opposite sides, and with its inner thin curved edge intact, and molded into form, as described.

165,086. ROTARY CHURNS. Hannibal Felt, Odin, and P. P. Child, Carlyle, Ill. [Filed May 1, 1875.]



1. The combination of the driving-gear D E F, rotating frame J K, dasher M N O P, cream-vessel G, and stand A B H, substantially as set forth.

2. The dasher constructed with a rotary frame, M N, having bearings in a removable frame, O P, substantially as set forth.

3. The combination of dasher, constructed as set forth, with the cream-vessel having lugs Q, as and for the purpose set forth.

165,087. SPRING-SETTING MACHINES. Asa J. Fisk, Akron, Ohio, assignor of one-half his right to Henry H. Bugg, same place. [Filed May 20, 1875.]

Brief.—For setting the shorter leaves, while hot, to the longer inner leaf, which latter is supported in the center upon a table, concave side downward, with ends confined after being sprung downward beyond their normal position.



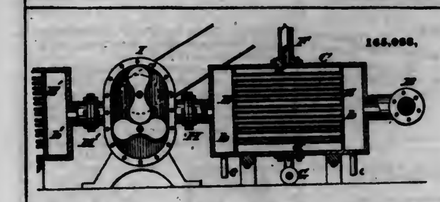
The combination of jointed levers A and B with adjustable grooved wheels E E', substantially as described, whereby the said wheels are caused to approach each other by moving the levers toward each other, as and for the purpose specified.

165,088. DRYING APPARATUS. L. K. Fuller, Brattleborough, Vt. [Filed May 17, 1875.]

Brief.—Air is drawn through pipes surrounded by running water, to condense its moisture. It is then heated and passed into the drier, from which it passes again to the condenser and to the heater.

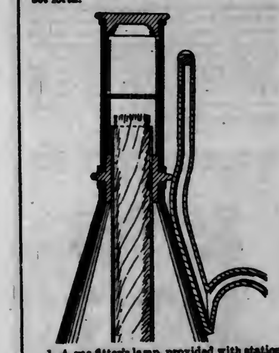
1. The within-described apparatus for devaporizing and heating the air of a drying-chamber, consisting essentially of a condenser, C, a blower, I, a heater, D, and pipes B B', constructed and arranged to operate in the manner substantially as shown, and for the purposes set forth.

2. For use in the process of devaporizing the air of drying chambers or kilns, the combination of a condenser, C, and blower, I, substantially as specified.



165,089. GAS-FITTERS' LAMPS. Joseph D. Galloway, Philadelphia, Pa. [Filed May 22, 1875.]

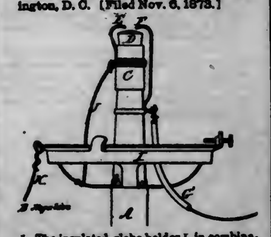
Brief.—The lamp has at the side a stationary blow-pipe, formed in the shape of a handle, a flexible pipe being swiveled thereto, as shown. The wick-tube is closed by a white-lead box, forming a cap-piece, for the purpose set forth.



1. A gas-fitter's lamp, provided with stationary blow-pipe at the side of the same, formed in the shape of a handle, in connection with a flexible air-tube swiveled thereto, substantially as and for the purpose set forth.

2. The combination of the wick-tube of the lamp with the closing white-lead box, serving as cap-pieces of the same, substantially as described.

165,090. BURNERS FOR ELECTRICAL GAS-LIGHTING. Samuel Gardiner, Jr., Washington, D. C. [Filed Nov. 6, 1873.]



1. The insulated globe-holder I, in combination with the wires J and K, the one connecting with one burner, A, through its electrode F, and the other with the next succeeding burner by the electrode F, with the said holders in the circuit throughout the series of burners, substantially as described.

2. The negative electrode E, as a part of, and a prolongation of, the separate metallic nipple C, and in combination with the burner-tip D, substantially as and for the purposes herein set forth.

3. The combination, with the burner and the metallic globe-holder I, of the wires J K, connecting said globe-holder with the negative electrode E and the insulated wire G' of the positive pole passing through and beneath the globe-holder, whereby a single burner may be lighted through the medium of said globe-holder, as herein set forth.

165,091. DROPPING-BOTTLES. Charles C. Garrett, Calvert, Tex., assignor of one-half his right to L. M. Openheimer, same place. [Filed Mar. 27, 1875.]



The bottle A, having eduction fluid-groove *d* and induction air-aperture *e*, and a stopper, B, having an eduction-groove, *c*, and an induction air-groove, *c*, combined and arranged substantially as and for the purpose specified.

165,092. PNEUMATIC RAILWAYS. Rollin R. Gregg, Buffalo, N.Y. [Filed Mar. 16, 1874.]

Brief.—The tube is composed of longitudinal stringers, cross-ties and planks forming the bottom, from which springs the arched shell, composed of planks, tongued and grooved, and fastened by clamping-bands. The stringers form a continuous guard by the side of the rails, to keep the train on the track. Water-guards J protect the timbers from wet. The propelling-diaphragm fits and nearly fills the tube, and is made in sections hinged on a line passing nearly through the center of area, but so that the slight excess of pressure on one side may hold them closed. By opening a valve in the section this preponderance is reversed, so that the segments open and stand edgewise to the line of force, thus relieving the pressure on the diaphragm to any desired extent. The valve-doors of the tunnel are made tight by rubber.

1. A pneumatic-railway tube formed of the longitudinal stringers O O, with cross-ties A A, and planks *b b* bolted thereto, in combination with the circular arched shell composed of the pieces *d d* and bands *e e*, constructed and arranged as and for the purposes set forth.

2. In combination with the track, the stringers O' O' forming a continuous guard the entire length of the road, to prevent the wheels jumping the track, as set forth.

3. In combination with the segmental sections A A, the auxiliary valves *i i*, arranged and operating substantially as and for the purpose shown and described.

4. In combination with the curved sides *d d* and longitudinal stringers C C, the inclined water-guard J, as and for the purpose set forth.

5. The angular ribs *f f* in combination with the flat rubber strips *l l*, for excluding air from the pneumatic tube when the doors L L are closed, substantially as set forth.

6. A diaphragm for a pneumatic-railway car, portions of which are formed of hinged sections A A, substantially as and for the purpose set forth.

165,093. UMBRELLAS. G. G. Griswold, New York, N. Y. [Filed Feb. 19, 1875.]

1. The slotted hollow top notch or ring A, having its slots *a* constructed as described, and formed with locking corrugations *c* on its upper edge, substantially as specified.

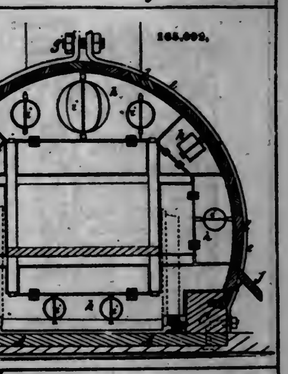
2. The cap D, having locking indentations *d*, in combination with the slotted hollow top notch or ring A, having corrugations *c* on its upper edge, essentially as described.

3. The split-barrel G of the runner, constructed with annular corrugations *g* at its opposite ends or throughout its length, in combination with the wire-rings A, applied internally or externally thereto, substantially as described.

4. The combination of the upper annular corrugations *g* of the runner with the slotted hollow notch or ring A' and the stretchers H, essentially as specified.

5. The trough-shaped ribs B, indented from the outside, as at *a*, in combination with the stretchers H, constructed to receive the internal projections formed by said indentations within them, to unite the ribs and stretchers, substantially as shown and described.

6. The spring L, having hook *n* on its free end applied to the surface of the stick, in combination with the hole *l*, of enlarged size, on the one side of the stick, essentially as specified.

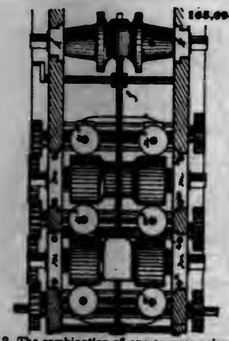


165,094. MACHINES FOR MAKING HOLLOW BEAMS AND TUBES. Ignatius Hahn, Pittsburg, Pa. [Filed Mar. 9, 1875.]

Brief.—Three pairs of vertical rolls, independently adjustable laterally at both ends; two pairs of intermediate horizontal rolls, whose operative surfaces are regulated, as to length, by screw-collars; a pair of circularly-grooved welding-rolls, and two or more mandrels. A skelp is first passed through the welding-rolls and over a round mandrel, which welds the joint, and then successively through the other rolls and over other mandrels, by which the tube—at first cylindrical—is gradually converted into a rectangular or other angled tube.

1. A series of two high horizontal plain rolls, and one or more pairs of vertical plain rolls, arranged in line, and combined with a pair of welding-rolls, substantially as and for the purpose specified.

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2. The combination of one or more pairs of horizontal rolls with one or more pairs of vertical rolls, any two or all of the rolls being provided with universal couplings, the coupling spindles whereof are adjustable and provided with suitable devices, by which they are retained in a parallel position at all times, substantially as and for the purpose specified.

3. The combination of one or more pairs of two high horizontal plain rolls with one or more pairs of vertical plain rolls, and with a mandrel located centrally of the rolls, substantially as and for the purpose specified.

4. In a mill for rolling metals, the combination of two rolls, one or both of which are provided with universal couplings and coupling-spindles, the coupling-spindles being journaled in adjustable boxes, which preserve the parallelism of the coupling-spindles, substantially as and for the purpose specified.

5. In combination with the rolls having threaded shafts, the adjustable collars and jam-nuts, substantially as and for the purpose specified.

6. In combination with rolls having oscillating boxes *r r* and universal couplings *w w'*, the right-and-left-hand-threaded bolt *s*ⁿ and independent screws *t t*, for the purpose specified.

7. The combination of two rolls, one or more of said rolls having universal couplings *w w'* and oscillating boxes *r*, substantially as and for the purpose specified.

165,095. GAS-BURNERS FOR HEATING PURPOSES. Wm. B. Hanks, Wellesley, Mass., assignor to Samuel G. Reed, same place. [Filed Dec. 22, 1874.]

Brief.—A central gas-passage encircled by a series of air-passages parallel therewith.



The combination of the tube *a* with the removable end ring *f*, having a central gas-passage and a series of air-passages encircling the gas-passage, and leading into a chamber, substantially as described.

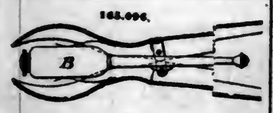
165,096. GLOVE-STRETCHERS. David S. Hayward, New York, N. Y. [Filed June 11, 1875.]

1. A glove-stretcher composed of tubular or hollow sections, substantially as and for the purpose specified.

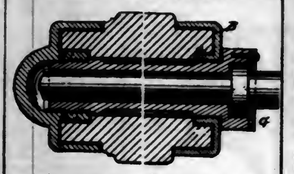
2. The combination of a glove-stretcher with a powder-receptacle, B, either elastic or non-elastic, attached to said stretcher, and arranged to operate in connection therewith, in such a manner that the powder may be ejected in the interior of the glove while the jaws of the stretcher are expanded therein.

3. The spring device shown in Fig. 4, consisting of the spring *h* and hinging-piece *f f*, made in one piece, and perforated at *i i* to receive the hinging-rivet *e*, substantially as shown.

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165,097. VEHICLE-HUBS. John C. Heaney, Boston, Mass. [Filed May 6, 1875.]



The combination, with the wooden hub A, of the metallic bands or caps B and C, provided with interior and exterior flanges, as shown and described, and for the purposes herein set forth.

165,098. SAFETY-CATCHES FOR REVOLVERS. Charles W. Hopkins, Norwich, Conn., assignor of one-half his right to Merwin, Hulbert & Co., New York, N. Y. [Filed June 7, 1875.]

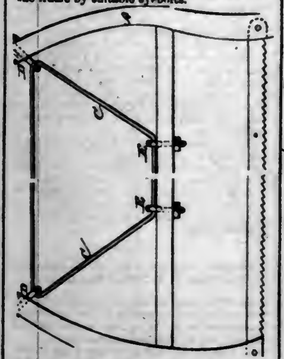


1. In a revolver fire-arm, a locking device on the anterior of the hammer, constructed to operate with the axial pin of the cylinder, as and for the purpose described.

2. The combination of the axial pin A, provided with the annular notches *s s'*, the stop-lever *d*, and the locking-pin C on the hammer B, as and for the purpose described.

165,099. BUCK-SAW FRAMES. Charles A. Hurlburt, Ypsilanti, Mich. [Filed May 6, 1876.]

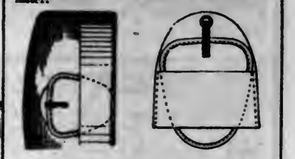
Brief.—The saw-blade is strained by means of a continuous metal rod attached to the upper ends of the side pieces and cross-bar of the frame by suitable eyebolts.



In a saw-frame, the combination of the continuous rod C, with the eyebolts E E and D D, and bars A A, and cross-bar B, constructed and arranged to operate as shown and described, and for the purposes specified.

165,100. HATS AND CAPS. Moritz Isidor and Ferdinand Hein, New York, N. Y. [Filed June 2, 1875.]

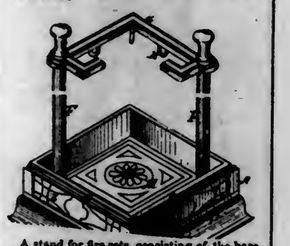
Brief.—The ear-protectors are connected to the inside of a hat or cap by a retracting-spring, and slide in a pocket formed between the sweat-band and side crown. They may be also connected to an independent guide-frame, in the same manner as they are to the hat, the frame, in turn, being connected to the latter.



1. The combination of a supporting guide-frame with an ear-protector which slides in said frame, and with a spring which forms the connection between the ear-protector and the frame, all constructed and operating substantially in the manner shown and described.

2. The combination of an ear-protector and a connecting-spring with a pocket constructed in a head-covering, said ear-protector adapted to be vertically moved in and out of the pocket, substantially as described.

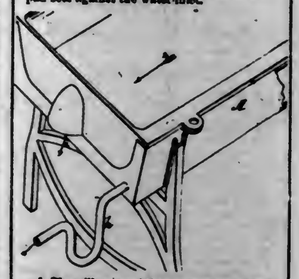
165,101. STANDS FOR FIRE-IRONS. Edwin A. Jackson, New York, N. Y. [Filed July 5, 1873.]



A stand for fire-sets, consisting of the base A, constructed as specified, having the tile floor M, the standards F F, and cross-piece or rest G, all as and for the purpose herein set forth.

165,102. MILK-COOLERS. Wm. H. Johnson, Delhi, N. Y., assignor of one-half his right to H. A. Pitcher and F. A. Ray, same place. [Filed May 31, 1875.]

Brief.—The connected metallic milk-pan sets into one end of the water-vat, and has an overhanging outlet. The outlet of the vat regulates the height of the water by turning in its screw-threaded bearing. An ice or cream pan sets against the water-inlet.



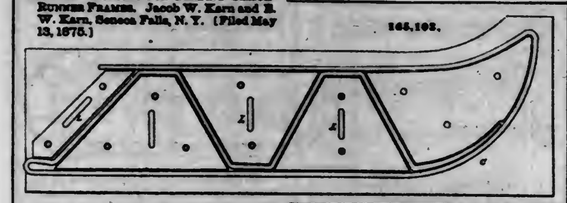
1. The milk-pan and the water-vat combined, the discharging end of the pan forming the major part of the discharging end of the vat, and fitted by a tight joint upon the end portion of the vat, and the pan having its discharge-passage outside of the vat, above the bottom of the same, substantially as described.

2. The combination of the flanged ice or cream box, the water-vat and the milk-pan, all constructed substantially in the manner shown and described.

3. The combination of the adjustable regulating bent pipe *h*, water-vat A, and milk-pan B, substantially as and for the purpose described.

165,103. DEVICES FOR BENDING SLEIGH-RUNNER FRAMES. Jacob W. Karn and B. W. Karn, Seneca Falls, N. Y. [Filed May 13, 1875.]

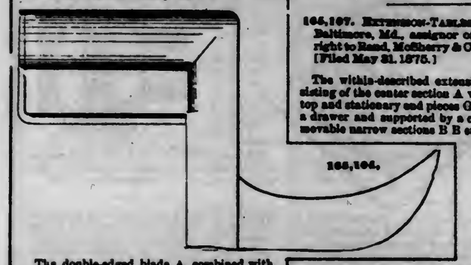
165,103.



The base-plate G, provided with holes, in combination with the detachable segmental plates having dowel-pins O and handles L, substantially as and for the purpose described.

165,104. TOBACCO-KNIVES. Alfred Lane and J. H. Cullom, Charlotte, Tenn. [Filed July 12, 1874.]

Brief.—The handle is of a single piece of wood, with two parts at right angles to each other. In the end of one part the blade is secured in a slot, and the other is furnished with a metallic guard for the finger. The knife is to be used first for splitting open the stalk, and then for cutting it off.

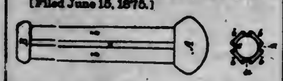


The double-edged blade A, combined with the guarded handle, whose two parts, of same piece of wood, are at right angles with each other, all as and for the purposes described.

165,105. UPRIGHT BOILERS FOR RANGES, STOVES, &c. James Lawton and James A. Gibson, Cincinnati, Ohio. [Filed Aug. 14, 1874.]

The combination, in an upright boiler, of feed-pipe E and heater-pipe D, the pipe E being placed directly over pipe D, as for the purpose set forth.

165,106. UMBRELLA-HANDLES. Herbert G. Mackinney, North Attleborough, Mass., assignor to Albert J. Smith, Hervey Hoestis, and Herbert G. Mackinney, same place. [Filed June 15, 1875.]



The handle, composed of the two series of flanged strips *a b*, the socketed body or tube *c*, the cap ring B, and the socketed knob A, all constructed, combined, and arranged substantially as described.

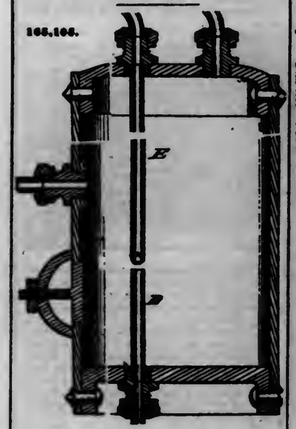
165,107. EXTENSION-TABLES. J. F. Martin, Baltimore, Md., assignor of one-half his right to Rand, McSherry & Co., same place. [Filed May 31, 1875.]

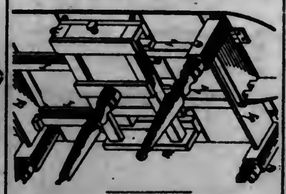
The within-described extension-table, consisting of the center section A with stationary top and stationary end pieces G G, containing a drawer and supported by a central leg, the movable narrow sections B B supported upon

165,104.

legs D D and side pieces E E, and the slides I I connected to the sections B B, and movable directly under the stationary top of the central section and over the drawer, all constructed substantially as set forth.

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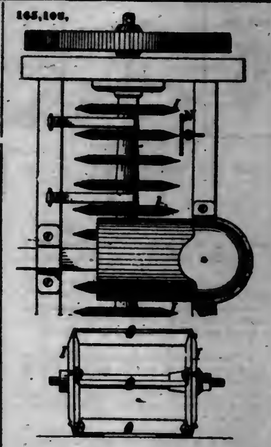




165,108. HARROWS. John Masters, West Alexandria, Ohio. [Filed Apr. 17, 1876.]

Brief.—The frame consists of a rectangular parallelogram mounted on wheels, and having a tongue secured to the front and rear beams at their middle. Two sets of slotted hangers depend from the frame, and in these are boxes, which easily move up and down, and in which are mounted revolving shafts. Upon these shafts are placed at short intervals, separated by thimbles, cutting and revolving disks. By removing all but the two outer disks on each shaft, and bolting to these a series of cutting-knives, a stalk-cutter is produced. Adjustable markers are attached to the rear beam of the frame.

165,109.

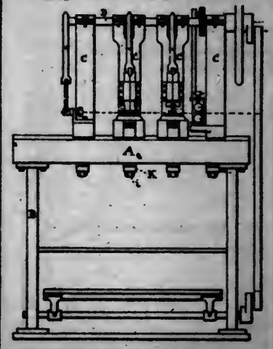


1. In combination with the outer collars I and J of each section, the cutters O O, adapted to be secured at their ends to said collars, and having their cutting-edges upon a line with the peripheries of the same, substantially as and for the purpose shown.

2. In combination with the main frame of the harver, the check-row markers E and M, pivoted to or upon the rear side of said frame, and capable of being brought into or removed from contact with the ground, substantially as and for the purpose set forth.

165,109. TAG-MACHINES. H. D. Mentzel, Baltimore, Md. [Filed Mar. 23, 1876.]

Brief.—The parts are made interchangeable and adjustable for different-sized tags.



The longitudinally-grooved shaft D, carrying the punch, cutter-shear, and intermittent feed-actuating mechanism, undergrooved stands C, bed A, having the raised edges fitting the grooved stands, and stand-securing devices K and *i*, all combined and operating substantially as and for the purposes herein specified.

165,110. CLASPS FOR POCKET-BOOKS. I. Messer, New York, N. Y. [Filed May 20, 1875.]

The cap B, provided with a radiating tail, *c*, and laterally-projecting arms *c*, said tail and arms being made out of one and the same piece of sheet metal with the cap, in combination with a chamber, *b*, formed in the supporting-plate A, and with a spring, *f*, and stud *d*, all constructed and operating substantially in the manner shown and described.

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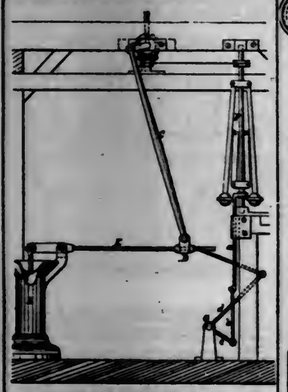
165,111. WATER-SPRINKLING NOZZLES. C. H. Miller, Buffalo, N. Y. [Filed June 6, 1874.]

Brief.—By turning the rose-head upon the jet tube, so that the water-passages in the former will register with corresponding passages in the latter, either a spray or a jet, or a spray and jet combined, may be thrown.

1. The center B, in combination with tube A, substantially as and for the purposes described.
2. The movable closely-fitting outer cover L for said center B and tube A, substantially as and for the purposes specified.
3. The combination of the openings or holes *c*, *o*, and K in the center B with the openings or holes *n* and *r* and the cavity *x* in the outer cover L, for the purposes described.
4. The movable outer cover L and center B as a shut-off, when arranged and combined substantially as described.

166,112. PUMP-GOVERNORS. C. W. Mills, Rochester, N. Y. [Filed Mar. 20, 1875.]

Brief.—The vertical windmill-shaft connects by pulleys and belt to a common governor; also, by crank-shaft and connecting-rod, to a sliding block on the pump-lever. The governor, by rods and levers, connects with the slide, and by its own action adjusts it on the pump-lever, giving the mill more or less work, as the wind is stronger or lighter.

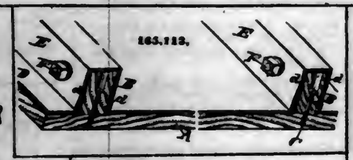


1. The combination, substantially as herein set forth, of lever E, slide D, rod C, and governor F, with the necessary connecting devices, all arranged to automatically increase or decrease the stroke of a pump.
2. The combination of slide D, pump-lever B, crank-rod C, rocker-shaft O, with its arms and connecting-rods *a b c d e*, for the purpose substantially as described.

166,113. MINERALIZED ROOFINGS. Samuel T. G. Mowell, Washington, D. C. [Filed June 18, 1875.]

The combination of the sheathing A, vertical ribs B, roof-sheets D, vertically-upturned edges *d*, the sheet-metal caps E, and through-bolts F, all as herein described, for the purposes set forth.

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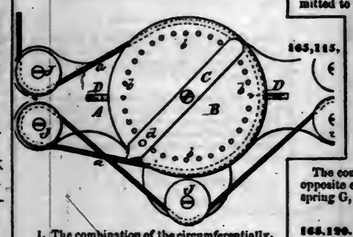


165,112. SCALE AND BALANCE STANDS. R. Murdoch, Baltimore, Md. [Filed Aug. 31, 1874.]



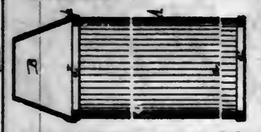
1. The balance-stand herein described, consisting of the removable U-shaped base B, removable upright C, horizontal arm E, provided with the vertically-adjustable hook-rod *b*, from which the scale-beam J is suspended, and the removable arms F G and H I, constructed and operating as and for the purposes set forth.
2. The removable upright C, having the arm E, provided with the vertically-adjustable hook-rod *b*, for suspending and adjusting the scale-beam J, as set forth.

165,115. CHECK-ROW ATTACHMENTS FOR CORN-PLANTERS. Madison Newton, Kentland, Ind. [Filed June 17, 1875.]



1. The combination of the circumferentially-grooved wheel E, provided with a concentric series of holes, *b*, and the adjustable eccentric bar C, for the purposes herein set forth.
2. The combination of the grooved wheel E, with holes *b*, adjustable eccentric *c*, cord *a*, and pulleys J, all arranged on a frame, A, to operate the handles D D of a corn-planter, substantially as and for the purposes herein set forth.

166,116. LAMP-CHIMNEYS. George Niedermair, Chicago, Ill., assignor of one-half his right to Charles Kopp, same place. [Filed Apr. 20, 1875.]



The combination of the chimney A, composed of separate glass rods *a*, secured in metallic channel-rings, with the glass cone B, substantially as described and shown.

165,117. COMBINED FORKS AND SKIMMERS. Aaron B. Nott, Fairhaven, Mass., assignor of part of his right to D. Frawley, Wm. J. Frawley, O. H. Bowen, and W. Bonneville, same place. [Filed Dec. 26, 1874.]

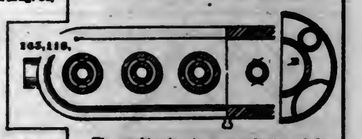


The fork A, having a slot, *c*, in its handle, in combination with the perforated skimmer B, pivoted in said slot, and provided with a shank, *e*, having a cam, *p*, and spring, *r*, substantially as described, and for the purposes set forth.

165,118. STEAM-RADIATORS. R. F. Osborne, St. Paul, Minn. [Filed May 31, 1875.]

Brief.—The annular steam-space between the steam and air tubes is divided into cells by the small tubes or diaphragms.

165,116.



The combination, in a steam-heater, of the exterior tubes C and the interior tubes D, having the intervening chamber or space between the two divided into a series of passages, for creating a circulation of steam in the said space, substantially as and for the purpose described.

165,119. RELIEF-VALVES. Trent T. Prosser, Chicago, Ill. [Filed Mar. 1, 1875.]

Brief.—Within the valve case are placed cores, to which is fastened a spring. Screws pass through the valves into said cores, by means of which the tension of the spring is increased or diminished to resist a greater or less degree of pressure. When the pressure of the fluid exceeds the tension of the spring, the valves are opened, and the excess permitted to escape.

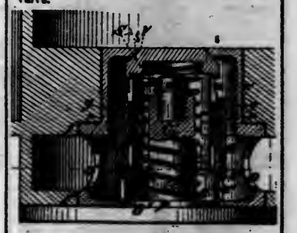
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The combination of the valves E, arranged opposite each other within the coupling, and spring G, as and for the purpose specified.

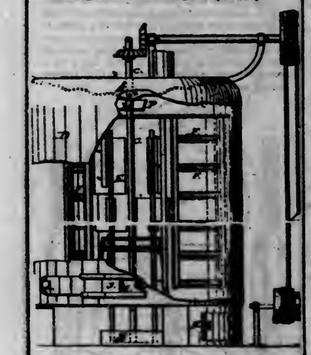
166,120. VALVES AND BOXES FOR AIR-COMPRESSORS. George H. Reynolds and James Miller, New York, N. Y., assignors of one-half their right to C. H. Delamater and G. H. Robinson, same place. [Filed Apr. 26, 1875.]

Brief.—The valve is provided with cutting-edges, and the valve-guide with grooves, to prevent sticking. The spring-guide has a rubber cushion in the upper port, to cushion the valve.



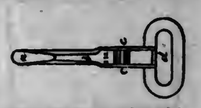
1. The combination of the hollow cylindrical valve V, having the scraping openings, with the outer cylindrical seat G, constructed with grooves *g*, having scraping edges, all substantially as described.
2. The bonnet B having the disk *p*, in combination with the valve-box C C', having the valve-seat *s* and lower opening O', in which the disk *p* fits, the valve-spring guide G' rising from the said disk C, and provided at its upper end with a spring, S', and the valve V arranged over said guide, all substantially as and for the purpose described.

165,121. FRUIT-DRIERS. A. J. Reynolds, Chicago, Ill. [Filed June 25, 1875.]



1. In a fruit-drier, a condenser extending centrally through the entire length of the dry-house, and also filling, or nearly filling, the top thereof, substantially as and for the purposes herein set forth.
2. The revolving shelf-frame F, in combination with the fans E, operated by hollow shaft C, for the purposes herein set forth.
3. The combination of the shelf-frame F and fans E with the furnace K and condenser A C, substantially as and for the purposes herein set forth.
4. The combination of the drip-pan P with the condenser A and hollow shaft C, substantially as and for the purposes herein set forth.

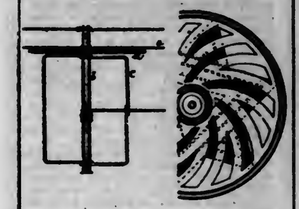
165,122. SNAP-HOOKS. George Reynolds, Unionville, Conn. [Filed May 21, 1875.]



1. The sliding hook *g*, in combination with the recessed tongue *b*, whereby the said tongue may be opened, closed, and locked, in the manner and for the purpose specified.
2. The slide *c*, with its hook *g*, in combination with the recess *b'*, upon the rear end of the tongue *b*, and a spring, *e*, placed within the hollow rear chamber of a snap-hook, for opening, closing, and locking the tongue, substantially as herein described.

165,123. TOY CHROMATROPES. Thos. J. W. Robertson, Washington, D. C. [Filed Apr. 27, 1875.]

Brief.—In connection with the stem of a whirling toy, loose disks, colored or marked, are employed, and a skeleton disk arranged to be secured to the tapered point of the stem, so as to leave room between for the light to strike the surface of the outer disks.



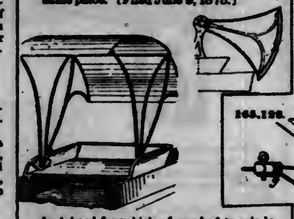
1. The combination of a spindle or disk, having a device by which it may be continuously revolved alternately in opposite directions, with a skeleton chromatropic disk and a loose disk or disks suitably colored and arranged to revolve independently of said skeleton chromatropic disk, substantially as set forth.
2. In combination with a skeleton chromatropic disk, having a device to give it a positive alternating revolving motion, a colored loose disk, card, or plate, arranged to revolve independently of the skeleton disk, substantially as set forth.
3. The combination of the disk *a*, firmly secured to spindle *b*, loose handle *c*, cord *d*, and the colored loose disk *e*, substantially as described.
4. The combination of the subject matter of the last claim with a skeleton chromatropic disk arranged to be secured to spindle *b* and move therewith, substantially as set forth.

166,124. TOOL-HOLDING DEVICES. Alvaro G. Eybert, Attica, N. Y. [Filed Mar. 11, 1875.]



1. The combination of the swiveled bent rod D, ball-end socket-joint clamp E, grinding-rod F, and a tool-holder, G, substantially as and for the purpose described.
2. In combination with the tool-holder G, the adjustable tool-clamp H, having the pieces *j j*, legs *k k*, pivoted jaws *l l*, wedges *n n*, and springs *s s*, all as and for the purpose specified.

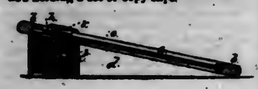
165,125. HOODS FOR VEHICLES. William H. Rowe, Washington, D. C., assignor of one-half his right to Quinton Corwine, same place. [Filed June 9, 1875.]



1. A hood for vehicles formed of two independent sections, one of said sections being hinged and arranged to be thrown to the front or rear of the other section, substantially as described.
2. The hood, formed of two separate sections, arranged as above described, and hinged to the body or seat of the vehicle, so that both sections may be thrown back of the seat, substantially as and for the purpose set forth.

166,126. SLATES. Chas. C. Shepherd, Passaic, N. J. [Filed Nov. 24, 1874.]

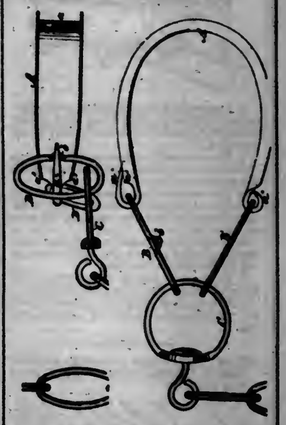
Brief.—A slate and portable desk combined, and holding a set of copy-slips.



1. The slate *a* and frame *b*, with the box *c*, projecting below the plane of the slate to form a support, and the movable copy-slate *d*, all combined and arranged substantially as and for the purposes set forth.
2. The combination, with a slate-frame, of the spring *i*, strip or tape *v*, incline *c*, and movable copy-slat *d*, substantially as set forth.

Dated November 19, 1874.

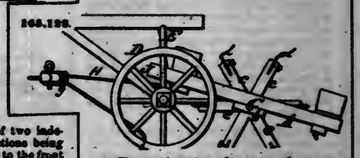
166,127. HOPPLES. John Shive, Centre Hill, Ark. [Filed May 27, 1875.]



A hopple, formed of one unjointed arc-piece shouldered at *c'*, and the three links B C B, constructed and connected as and for the purpose specified.

166,128. CORN-STALK CUTTERS. Albert C. Smith, Fort Madison, Iowa, assignor of one-half his right to T. B. Jackson, same place. [Filed Mar. 13, 1875.]

Brief.—A pair of wheels, an arched axle-tree, a tongue, and braces constitute the frame-work of the machine. The stalk-cutter, consisting of a shaft with radial arms, armed with knives, and mounted upon a rectangular frame, is secured to the arched axle-tree by a single link. Boxes are mounted upon the frame for increasing the weight by means of stones or other matter. Hooks to straighten the stalks upon the ground are attached to the double-tree.



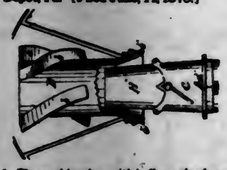
1. The combination of a cutter-frame, A, transporting-carriage D E, and link G, loosely connecting the frame and the carriage, whereby the former is allowed to oscillate on its draft-axis to adapt itself to the inequalities of the soil, substantially as specified.
2. The cutter-bearing frame A, provided with laterally-adjustable arms J, in combination with the crank-arm E of a transporting-carriage, substantially as specified.

166,129. TREATMENT OF LEATHER. Hugh Smith, Newark, N. J. [Filed Dec. 16, 1874.]

Brief.—First compound: Glue, starch or flour, and glycerine, with any suitable coloring material. Second compound: Gum-shellac, India-rubber, and glycerine, with naphtha as a solvent.

As an improvement in the art of treating leather, the compounds composed of the ingredients named, in about the proportion given, for the purpose specified.

165,120. EXHAUST MECHANISMS FOR LOCOMOTIVES. William Stamp, Susquehanna Depot, Pa. [Filed June, 14, 1875.]



1. The combination, with boiler and exhaust-pipes a a, of the tube C, provided with adjustable spring-plates D D, as and for the purpose described.

2. The combination, with plates D D in tubes C, of the intermediate cam-shaft, as and for the purpose set forth.

3. The described combination of doubled spring-plate D, grooved cross-bar F, and detachable pin G to hold the spring, in the manner specified.

4. A tube, C, provided with spring, cam-shaft, and pin d, made in two half-sections, as and for the purpose described.

5. The pipe B, having the external spiral flanges b, as and for the purpose set forth.

6. The nozzle H, having one or more internal spiral flanges, as and for the purpose specified.

165,121. MEASURING PACKAGED FABRICS. Emmi. C. Talcott, Ashtabula, Ohio. [Filed July 3, 1875.]

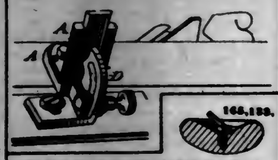


As an improvement in the art of measuring fabrics, indicating in graduated numbers the yards the belt contains, the numbers being printed, stamped, or otherwise arranged upon or in the edge of the fabric, and on the yard folds thereof, substantially as and for the purpose specified.

165,122. GUIDE FOR BENCH-PLANES. H. P. Taylor, Minerva, Ohio, assignor to himself and F. A. Painter, same place. [Filed May 26, 1875.]

Brief.—The double adjustable guide can be readily set to any angle, and to any part of the face of the plane, so that the whole width of the bit can be used, and the true face of the plane preserved by means of a rectangular plate having a dovetail groove in its under side, adjustably attached to the side of the plane, and to which is pivoted a slotted and graduated quadrantal piece, which can be set to any angle by a single set-screw, and is attached to the beveled guide-strip by a slotted base-plate.

The combination of plate A, slide C, single set-screw C', and quadrant D, all constructed and arranged as and for the purpose specified.

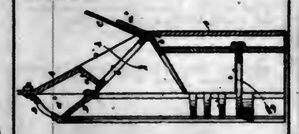


165,123. TRUSSES. Marshall Turley, Council Bluffs, Iowa. [Filed Apr. 16, 1875.]

Brief.—A coil-spring carries a sponge-covered pad, and is secured by a boat portion of its base, so as to slide upon the body-belt.

The conical spiral spring B, having a concavo-convex pad, covered with sponge, secured to one end as described, the other end being formed into a D-shaped loop, as set forth, by means of which the pad may be attached to the belt; A, and slide freely on the same, substantially as and for the purposes herein specified.

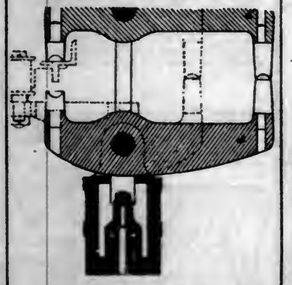
165,124. FIRE-PLACES. Wm. Tweeddale, Brooklyn, N. Y., assignor to J. L. Mott Iron-Works, New York city. [Filed Mar. 6, 1875.]



The combination of the back plate A, inclined forward at the top, forward and outward at the sides, and provided with an opening, a^1, and flanges a^2 a^3, the middle plate B, inclined forward at the sides and top, and provided with an opening, b^1, the front plate D, secured to the middle and back plates, and the damper C, all constructed and relatively arranged as herein set forth.

165,125. RIVETING-MACHINES. Ralph H. Tweddell, Sunderland, Great Britain, assignor to Wm. Sellers, Philadelphia, Pa. [Filed June 26, 1872.]

Brief.—The machine is portable, and consists of a riveting-die and holder, one or the other attached to and moved by a piston in a cylinder that communicates with an accumulator through the medium of a valve, not self-acting, but moved by the operator. It operates without a blow, with uniform pressure, that may be modified, prolonged, or discontinued at will, but which heads the rivet at one single progressive movement.



1. The combination of a cylinder and a piston, a riveting-die and a holder, an inlet and an outlet valve, and an accumulator, the combination being and operating substantially as set forth.

2. The combination of a cylinder and a piston, a riveting-die and a holder, a retracting-cylinder, and an accumulator, the combination being and operating substantially as set forth.

3. The combination of the compressing-cylinder, its piston, and two levers, one carrying a die and the other a holder, substantially as set forth.

4. The combination of a compressing-cylinder, its piston, two levers, and an adjustable connection, substantially as and for the purposes set forth.

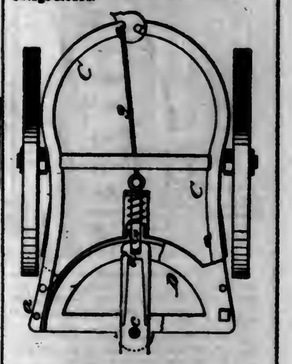
5. The combination of two levers of the third order, provided with ball-and-socket supports at one end, and a die and a holder at the other, substantially as and for the purposes set forth.

6. The flexible self-packing hydraulic-pressure cylindrical-joint connection, substantially as described, and shown in Figs. 9 and 16.

7. The flexible self-packing hydraulic-pressure ball-and-socket-joint connection, substantially as described, and shown in Figs. 9 and 16.

165,126. CULTIVATORS. Theodore F Vandegrift and William Vandegrift, Wabash, Ind., assignees of one-half their right to O. Wade, same place. [Filed May 1, 1875.]

Brief.—A box or double cross-piece connects the curved frame. Between its members the tongue is pivoted, and held rigid by a spring-catch. When released the tongue swings around.



The frame C, provided with bounds a a, formed of a single piece, in combination with the box D, recessed and pivoted tongue E, spring-latch g, and lever d, substantially as described, and for the purpose set forth.

165,127. PAPER BOXES. J. R. Van Vechten, Brooklyn, N. Y. [Filed June 11, 1875.]



A paper box having its body composed of a tube, A, and its head of a separate piece, B, supported, re-enforced, and secured to the body by means of the crimped and tarsel in portion c, and having the central portion of the head countersunk within said portion c, substantially as shown and described.

165,128. FEED-CUTTERS. Elijah Wagoner, Westminster, Md. [Filed Mar. 17, 1875.]

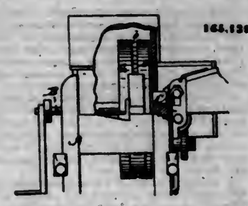
Brief.—A cutting and grinding disk revolves upon a horizontal shaft. On the cutting side this shaft carries a pinion, which connects with other gear-wheels, and gives motion to a smooth lower feed-roller and an upper flexible shaft, which revolves an upper fluted feed-roller. The material thus presented to the knives is cut and delivered through openings to the grinding side of the revolving disk, where the surface-teeth act by concert with corresponding teeth on a fixed plate. The fixed plate is cut away to permit the escape of the cut feed, and to facilitate the removal of the cutting-wheel with its shaft.

1. In combination with the corrugated yielding feed-roller I, the journal i, having square tenon s, the operating-pinion y', shaft h of the operating-pinion, having also square tenon s, and the connecting-shaft p, having square recesses or sockets in its ends, substantially as and for the purposes herein set forth.

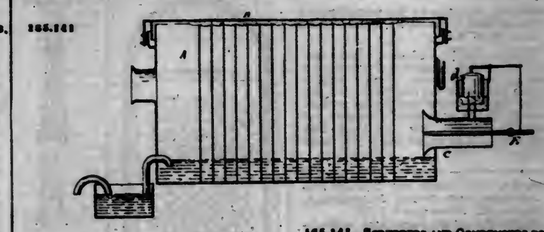
2. The combination of the revolving disk D, provided with slots e', knives E, and teeth or projections b, and the circular stationary toothed plate G, having a cut or opening, substantially as and for the purposes herein set forth.

3. The arrangement of the guard or fender I, secured to the frame A, with relation to the disks D and G, as and for the purposes set forth.

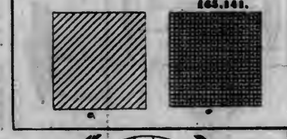
165,139.



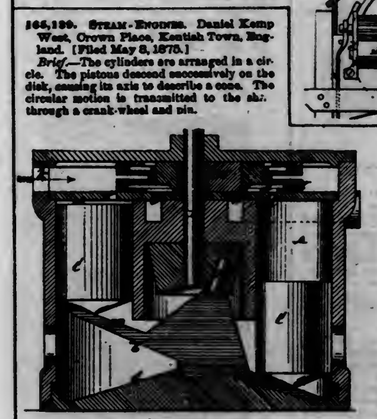
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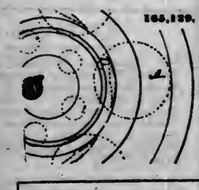
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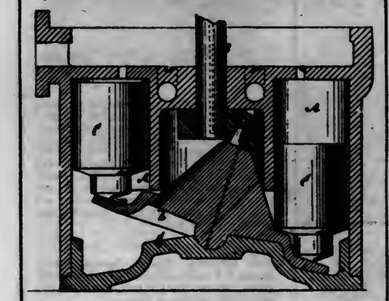
165,140.



165,139.



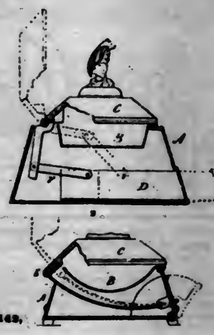
165,140.



165,140.



165,142.



165,140. BURNISHERS FOR PHOTOGRAPHS. Emile R. Weston, Bangor, Me., assignor to J. P. Bass, same place. [Filed Apr. 8, 1874.]

In a burnishing-machine, the flange C, projecting downward from the burnisher-supporting plate A, substantially as described and shown.

165,141. SCRUBBERS AND CONDENSERS FOR ILLUMINATING-GAS. William H. White, Brooklyn, N. Y., assignor of two-thirds his right to Charles E. Nellson and Henry M. Martin. [Filed May 1, 1875.]

Brief.—The screens are set vertically, and are separately adjustable and removable.

1. The process of scrubbing, condensing, and purifying crude gas, which consists in passing it through a number of screens, having their orifices relatively arranged as described, said screens being placed vertically, so that the impurities shall collect upon the surfaces of the screens and present a moist and dripping surface to the passing gas, and attract further impurities until their accumulation causes them to trickle down, all substantially as described.

2. The process of preventing the deposit of the light-giving elements of illuminating-gas by condensation, which consists in scrubbing the crude gas by passing it through a number of screens in a closed case, the friction and pressure generating heat, substantially as described.

3. The process of cleaning the scrubber by passing steam through the same automatically when required.

4. The combined scrubber, condenser, and purifier, consisting of a box having inlet and outlet pipes for gas, and provided with vertical screens, as described.

5. The case A, packing F, and removable top B, sealed, as described.

6. The combination of the scrubber, the steam-pipe E, entering the scrubber, and provided with a suitable valve, and the gas-inlet pipe C, as and for the purpose described.

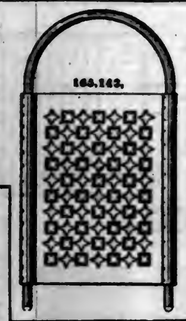
7. The combination of the pressure-gage on the scrubber with the valve in the steam-pipe described, for the purpose of automatically regulating the supply of steam, as set forth.

165,142. MATCH-SAFES. Horace C. Wilcox, West Meriden, Conn., assignor to the Meriden Britannia Company, same place. [Filed June 17, 1875.]

The case A, constructed to form the match-receiver B, and the space for waste below, combined with the hinged cover C, in connection with the device for closing the said waste-space, substantially as described, so that the opening and closing of the cover correspondingly opens and closes the waste-space beneath.

165,142. CULINARY GRATERS. Erastus Woodward, Charlestown, Mass. [Filed June 12, 1872.]

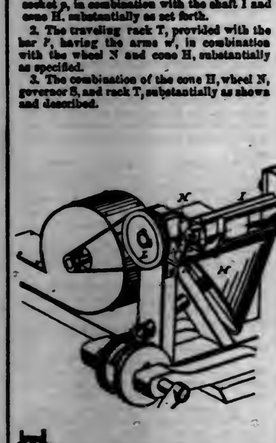
As an article of manufacture, a grater constructed as above described, consisting of a thin metallic plate having its edges rolled to receive the ends of the wire handle, and provided with rectangular perforations punched through from opposite sides alternately, and each alternate perforation being placed diagonally of the plate, as and for the purpose set forth.



165,144. APPARATUS FOR TRANSMITTING AND REGULATING MOTION. Joseph Rengel, Quincy, Ill. [Filed Apr. 6, 1875.]

Brief.—The motion transmitted to the device to be operated is automatically reversible, by means of the traveling rack engaging with the pinion upon the main gear-wheel shaft

1. The wheel N, provided with the ball and socket *p*, in combination with the shaft I and cone H, substantially as set forth.
2. The traveling rack T, provided with the bar F, having the arms *w*, in combination with the wheel N and cone H, substantially as specified.
3. The combination of the cone H, wheel N, governor S, and rack T, substantially as shown and described.





165,143. COMPOUNDS FOR PRESERVING BEER, &c. Wm. Risser, New York, N. Y. [Filed June 9, 1875.]

A compound for preserving beer and other liquids from souring, made of salicylic acid and bicarbonate of soda mixed together, substantially in the manner and about in the proportion set forth.

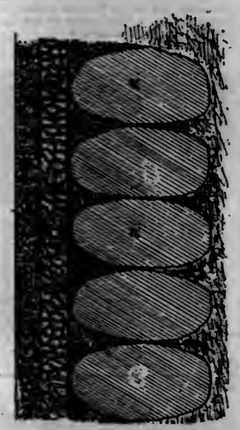
6,510. RUBBER HOLDERS FOR LEAD-PENCILS. John B. Blair, Philadelphia, Pa., assignor, by mesne assignments, to the Rubber Tip Pencil Company, New York city. Patent No. 66,982, dated July 23, 1867. [Filed Apr. 1, 1875.]

Brief.—Combines with a lead-pencil a solid elastic erasive head, provided with a longitudinal socket to receive and grasp the end of the pencil.

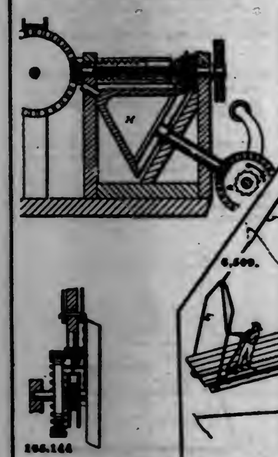


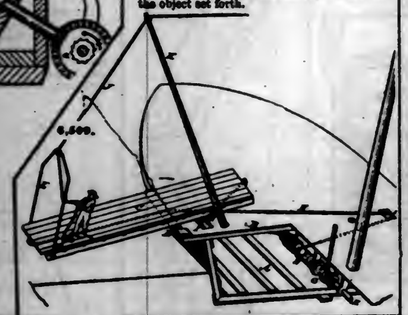
1. The combination, with a pencil or other similar article, of a solid elastic erasive head, provided with a socket longitudinally in the same, to receive and grasp one end of the pencil or other similar article, or a tenon extending from it, substantially in the manner and for the purpose shown and described.
2. A solid elastic erasive head for a lead-pencil or other similar article, provided with a socket to receive one end of the lead-pencil or other similar article, or a tenon extending from it, and made with projecting erasive surfaces or swells, substantially in the manner and for the purpose set forth.
3. The combination of a stem tapering down to a sharp edge, or nearly so, with a solid elastic erasive head for a lead-pencil or other similar article, said stem being provided with a socket to receive one end of the lead-pencil or other similar article, or a tenon extending from it, while the head is made with projecting erasive surfaces or swells, substantially in the manner and for the purpose set forth.
4. The combination, with a pencil, of a solid elastic erasive head, made with projecting erasive surfaces or swells, and provided with a socket longitudinally to receive and grasp one end of the pencil or other similar article, or a tenon extending from it, substantially as shown and described.

6,511. COMPOSITION PAVEMENTS. John P. Cranford, Brooklyn, N. Y., assignor, by mesne assignments, to himself and Nathan B. Abbott. Patent No. 86,139, dated Mar. 23, 1869. [Filed Apr. 2, 1875.]



1. The method herein described of surfacing old pavement, by cleaning the surface of such pavement, applying a bituminous composition, and subjecting the same to heavy pressure, substantially as set forth.
2. The method herein described of surfacing old pavement by cleaning the surface of such pavement, coating the same with liquid bitumen, applying a bituminous composition, and subjecting the same to a heavy pressure, substantially as specified.





6,509.

REISSUES.

6,509. STEAMBOAT-STAGING. A. J. Ball, Ashland, Ky., assignor, by mesne assignments, to Carson Mudge, E. K. Converse, John A. Stevenson, J. W. Noyes, Frank Gaiennie, George B. Sears, and Lizzie D. Clarke, administratrix of Thos. L. Clarke, deceased. Patent No. 31,147, dated Jan. 22, 1861; extended seven years. [Filed June 14, 1875.]

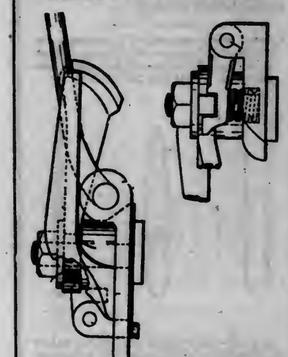
1. In combination with a gang plank or staging, a suitable supporting crane or mast and a hoisting and lowering mechanism, substantially as described.
2. The arrangement of staging C, perch-windlass B F G H I, and supporting apparatus J K L, the whole being constructed and operating together, substantially as and for the object set forth.

6,512. BONE HANDLES FOR CANES, &c. Jos. Harvey, Philadelphia, Pa., assignor to Harvey & Ford. Patent No. 66,580, dated July 9, 1867. [Filed Apr. 10, 1875.]



1. A bone handle for parasols, umbrellas, and canes, consisting of longitudinal sections C, fastened substantially as described.
2. A bone handle for parasols, umbrellas, and canes, made of end sections B D and median sections C C, connected by ferrules E E, as shown and described.

6,514. HARVESTER-FINGER GUIDES AND HOLDERS. Ephraim F. Herrington, West Hoosick, N. Y. Patent No. 153,436, dated July 28, 1874. [Filed Feb. 8, 1875.]

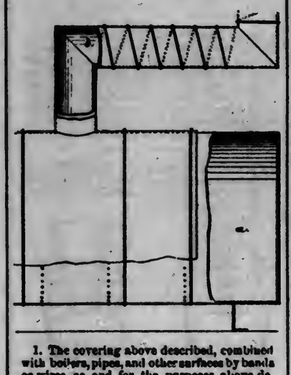


1. A pitman-guide mounted upon the clip, substantially as hereinbefore set forth.
2. The combination, substantially as hereinbefore set forth, of the clip or base, the holding arm or horn, and the guide pivoted to the clip.
3. The combination, substantially as hereinbefore set forth, of the clip, post, a holding arm or horn, a pivoted guide, and the spring stop or catch to hold the guide in position.
4. The combination, substantially as hereinbefore set forth, of the clip, the post, the pivoted guide, its arm, and the spring-stop acting on the arm.

6,515. PAPER BARRELS. John Wm. Jarboe, Green Point, N. Y., assignor, by mesne assignments, to J. F. Seiberling, trustee. Patent No. 76,771, dated Apr. 14, 1868. [Filed June 9, 1874.]

1. A cask or barrel made of paper, as a new article of manufacture.
2. The body or cylinder of a cask or barrel made of paper, in combination with heads or ends, and stiffening bands or hoops applied thereto, substantially as described.
3. The heads of the barrel made of paper, and provided with flanges or rims for stiffening and strengthening the heads, and for uniting the same to the ends of the body or cylinder, as described.
4. The body of a cask or barrel made of paper, in combination with heads of stiffer material.

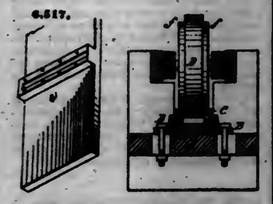
6,516. COVERINGS FOR STEAM-BOILERS. Horatio D. Jarves, Boston, Mass., assignee, by mesne assignments, to William Peters. Patent No. 36,322, dated Aug. 26, 1862. [Filed June 5, 1875.]



1. The covering above described, combined with boilers, pipes, and other surfaces by bands or wires, as and for the purposes above described.
2. Asbestus and suitable animal or vegetable fiber or material or mineral substances combined, and combined with and applied to boilers, pipes, and other surfaces, as and for the purposes above described.

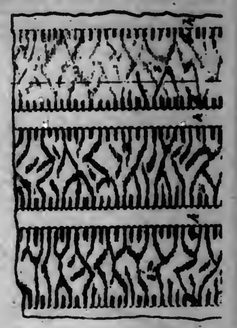
6,517. PLUG-TOBACCO MACHINES. John L. Jones, Oxford, N. C. Patent No. 141,562, dated Aug. 6, 1873. [Filed Jan. 21, 1875.]

Brief.—The trough confines the tobacco from lateral expansion, and the knives from endwise movement, the latter severing the mass into plugs, while the plate that carries them performs the pressing.

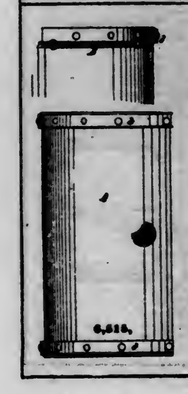


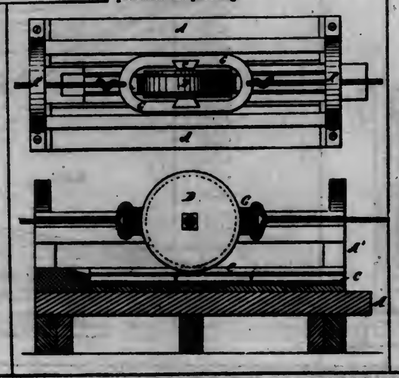
1. The combination of a trough, C, for receiving and holding the tobacco, a mechanism for pressing or packing the same in the trough, and a series of cutting-knives, operated by the pressing mechanism, for severing the tobacco into the desired size while under pressure, substantially as described.
2. The combination, in a machine for making plug-tobacco, of a trough, a supplemental removable bottom, *a*, thereto, a plate carrying a series of cutting-knives, and a pressing mechanism, substantially as described.
3. The combination of a trough, C, for receiving and holding the tobacco, a traveling weight for pressing the tobacco in the trough, and a series of knives operated by said weight, whereby the plug is formed, pressed, and cut simultaneously, substantially as described.
4. The combination, with the trough C, of wheel D, provided with shoulders or flanges *f f*, and arranged in vertically-movable bents in a horizontally-moving frame or carriage, substantially as described.

6,518. TENDERS. George B. King, New York, N. Y., assignor to F. A. Kurzheedt, same place. Patent No. 62,492, dated Feb. 26, 1867; reissue No. 3,001, dated June 28, 1868. [Filed Apr. 20, 1875.]



1. The new article of manufacture herein described, consisting of two rows of plaiting, two of fluting, and one of puffing, arranged with reference to each other as described.
2. The new article of manufacture consisting of the combination or arrangement on one piece of fabric of a series of two or more strips of fluted puffing, substantially as described, each of such strips consisting of two rows of plaiting, two of fluting, and one of puffing, arranged with reference to each other as described.
3. The new article of manufacture consisting of the combination or arrangement on one piece of fabric of a series of two or more strips of fluted puffing, substantially as described, each of such strips consisting of two rows of plaiting, two of fluting, and one of puffing, arranged with reference to each other as described, the flattened or plaited rows between each strips being doubled and stitched by tapes or narrow strips of goods stitched near each flattened portions.





4. A strip of muslin or other fabric having a row of plaiting on each edge, and on the inner side of each of said rows a row of fluting, the said rows of fluting being separated from each other by puffed, gathered, wrinkled, or wavy material, and the four rows being arranged with reference to each other as described.

5. A piece of muslin or other fabric having two rows of flattened gathering or plaiting, and two of fluting, bordering upon a strip having a fullness greater than that produced merely by the fluting or gathering of the fabric, substantially as described.

6,519. PROCESSES OF TREATING ORES. D. Mindeleff, Washington, D. C., assignor to himself and T. H. Alexander, same place. Patent No. 152,300, dated June 23, 1874. [Filed June 19, 1875.]

Brief.—Heats the ore in a closed retort, through which a stream of marsh-gas (CH_4) is passed, by which means the sulphur, oxygen, &c., are removed.

1. The process, herein described, of reducing metals contained in gold, silver, copper, lead, or zinc ores or metals, in combination with non-metallic substances, by the combined effects of heat and marsh-gas, substantially as herein set forth.

2. The method, herein described, of treating alloys of silver by-first dissolving in sulphuric acid, then converting the sulphate of silver into chloride of silver by an addition of chlorids of sodium, then treating with marsh-gas and heat, substantially as herein set forth.

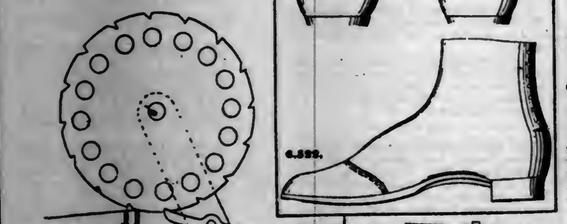
6,520. MACHINES FOR NECKING CARTRIDGE-CASES. Brigham Payne, Hartford, Conn., assignor to J. R. Schuyler, M. Hartley, and M. Graham. Patent No. 50,490, dated Oct 17, 1865; reissue No. 3,793, dated Jan. 11, 1870. [Filed Sept. 4, 1872.]

Brief.—A horizontal intermittingly-rotating disk with a series of pockets near the edge, in which the shells to be necked are placed; a hollow former or die that is forced down around the open end of the shell to contract its diameter, and a stationary rod that arrests the upward movement of the shell when the former is withdrawn, and thus removes the shell from the die.

1. The reciprocating plunger D, provided with the tubular die m, said die having its interior so formed as to permit the shell to protrude up into it as the latter is compressed, as herein set forth.

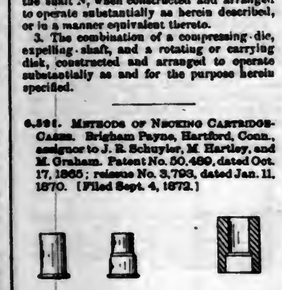
2. The combination of the tubular die m and the shaft N, when constructed and arranged to operate substantially as herein described, or in a manner equivalent thereto.

3. The combination of a compressing-die, expelling-shaft, and a rotating or carrying disk, constructed and arranged to operate substantially as and for the purpose herein specified.



6,520.

6,521. METHODS OF NECKING CARTRIDGE-CASES. Brigham Payne, Hartford, Conn., assignor to J. R. Schuyler, M. Hartley, and M. Graham. Patent No. 50,490, dated Oct. 17, 1865; reissue No. 3,793, dated Jan. 11, 1870. [Filed Sept. 4, 1872.]

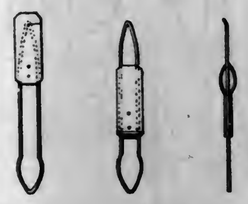


As my improvement in the art of manufacturing metallic cartridge-cases, a process of necking or reduction of a portion of the shell to a lesser diameter, executed by a hollow die and the application of force to drive the case partly into the die, (or, as the equivalent thereof, to drive the die upon and around the case,) and thus forces said case to contract in its diameter, substantially as herein set forth.

6,522. BOOTS AND SHOES. Thomas Powell, Martinsville, Ind., assignor to C. Hersome. Patent No. 50,030, dated Sept. 19, 1865. [Filed June 12, 1875.]

6,522.

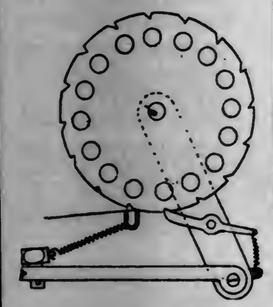
6,523. SHOE AND GLOVE BUTTONERS. C. Stackpole, Elizabeth, N. J., assignor to C. D. Collard. Patent No. 101,546, dated Mar. 30, 1870. [Filed May 26, 1875.]



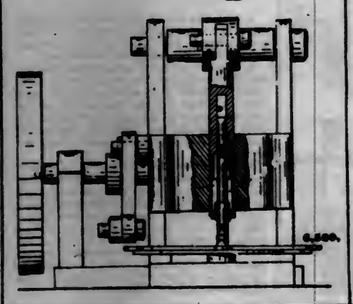
A double-end buttoner fitted with a sliding handle, substantially as described, for the purpose specified.

6,524. HARVESTERS. Lyman B. Stilson, Minneapolis, Minn., assignor to himself and August Leich. Patent No. 99,990, dated Oct. 6, 1869. [Filed Apr. 1, 1875.]

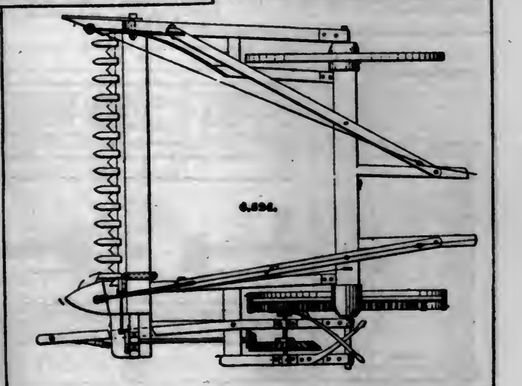
Brief.—The finger-bar is hinged to a gear-frame at one end, and to a supporting-arm at the other, and is located in front of the driving and supporting wheels, so that it can rise and fall at either end independent of the other.



6,524.



6,525.



6,524.

1. A shoe or gaiter having a vertical and horizontal opening at the rear, the front portions overlapping the back portion, and so curved about the ankle by a suitable fastening passing across the back, substantially as described.

2. A shoe or gaiter the exterior of which is formed with a vertical opening at the rear and horizontal openings at the sides thereof, substantially as set forth.

3. A shoe or gaiter having an external vertical and horizontal opening at the rear part thereof, and a tongue or back stitched below and forward of the horizontal opening, substantially as set forth.

4. A shoe or gaiter having a vertical and horizontal opening at the rear part thereof, and a folding tongue or back, substantially as described.

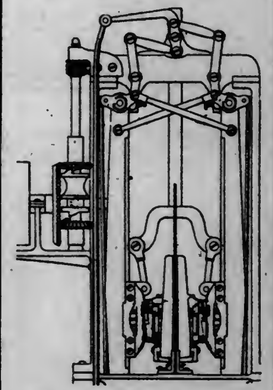
5. A gaiter or shoe with front portions overlapping the back portion, the said front terminating in flaps at the rear part of the foot, formed by the horizontal and vertical cuts, substantially as described.

6. In a shoe or gaiter, the combination of a folding back with two independent flaps extending back from the front, and divided from the counter.

7. In a shoe or gaiter, the combination of a folding back with two independent flaps extending back from the front, and fastening together outside of the back.

A gear-frame vibrating about the main axle, and having one end of the finger-bar hinged thereto and propelled over the ground thereby, in combination with an independently-vibrating thrust-arm, connected to and carrying forward the other end of the finger-bar, whereby each end of the cutting apparatus, which is arranged in front of the main carrying-wheels, and cuts the grass between said wheels, is free to rise and fall independently, substantially as set forth.

6,525. MACHINES FOR CRIMPING LEATHER FOR BOOTS AND SHOES. Samuel W. Jamison, Newark, N. J., assignor, by mesne assignments, to the S. W. Jamison Boot and Shoe Crimping Machine Company, New York city. Patent No. 139,717, dated June 10, 1873. [Filed June 18, 1875.]



1. The crimping-jaws, each formed with a projecting beak or point, and inwardly beveled on each side thereof, substantially as shown and described, so that when the jaws descend the material, when first acted on, shall bag the beaks or points only of the jaws, without clinging to the beveled sides.

2. In a machine or apparatus for crimping leather for boot and shoe fronts, a crimping-jaw, the acting face of which is provided, between the toe and leg portions, and at the point where it crimps the leather over the bend in the tree or form, with upwardly-curved corrugations, arranged substantially as described, to concentrate or crowd the leather toward the heel or lower rear point of the boot-front during the descent of the jaw, substantially as herein shown and set forth.

3. A crimping-jaw for crimping boot and shoe fronts, formed with a projecting beak or point, and inwardly beveled on each side thereof, and provided with upwardly-curved corrugations, with or without toe and leg corrugations, substantially as herein shown and described.

4. A crimping-jaw constructed with toe and leg portions, and with a central part provided with upwardly-curved corrugations, substantially as described, the said central part being of such relative dimensions to the toe and leg portions that, during the descent of the jaw, it will have traversed only about one-half the boot and shoe front when the toe and leg portions of the jaw are about to release or quit the same.

5. In a crimping-jaw for crimping boot and shoe fronts, the combination of the central upwardly-curved corrugations with toe and leg corrugations, formed substantially as shown and described, so as to divert from the heel or lower point of the front of the material on each side of said central corrugations, for the purposes set forth.

6. In a crimping-machine, the combination, with the crimping tree or form, of a series of pairs of jaws, which act in succession on the material to be crimped, and a corresponding series of adjustably-weighted levers, by which the pressure of each pair of jaws upon the material may be regulated independently of the others, substantially as set forth.

7. In a crimping-machine, a series of pairs of independently-adjustable jaws, each pair of which jaws exercises upon the material to be crimped a yielding pressure, induced by adjustably-weighted levers, substantially as set forth.

8. In a crimping-machine, the combination, with the crimping-jaws, of finishing-jaws, following said crimping-jaws, and acting on the crimped front as it leaves the latter set of jaws, substantially as shown and described.

9. The finishing-jaws, having such a contour as to fit or come in contact simultaneously at all points of their lower edges with the toes or the crimped front thereon, and arranged immediately above the crimping-jaws, to take hold of the crimped front before it is entirely released by the crimping-jaws, substantially as shown and set forth.

10. The finishing-jaws, formed substantially as described, with toe and leg portions, which may be adjusted or set out more or less to conform to irregularities in the thickness of the crimped front.

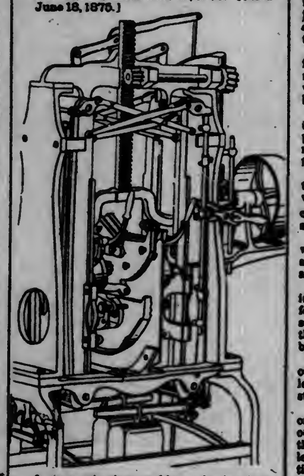
11. In combination with the crimping-jaws and finishing-jaws, the hinged independent ways, upon which said sets of jaws respectively slide, and the independent and separate systems of levers, connecting-rods, and weights for drawing together said ways, substantially as shown and described.

12. The combination, with the finishing-jaws, of mechanism, substantially as described, for setting them at different distances apart to accommodate different thicknesses of leather, and for maintaining their parallelism when thus adjusted.

13. The combination, with the crimping-jaws and their hinged ways, of independent hinged ways, and finishing-jaws sliding thereon, the said crimping-jaws and finishing-jaws being so connected that, while moving together up and down, the jaws of either set may move laterally apart independently of and without interference with the other set.

14. In combination with the finishing-jaws, jointed at their lower ends to their supporting-brackets, the devices herein described for connecting the upper ends of said jaws to their brackets, and the levers, whereby said devices may be operated to tilt the said jaws toward or away from each other, as desired, substantially as and for the purposes shown and set forth.

6,526. CRIMPING-MACHINES. Samuel W. Jamison, Newark, N. J., assignor to the S. W. Jamison Boot and Shoe Crimping Machine Company, New York city. Patent No. 99,906, dated Feb. 15, 1870. [Filed June 18, 1875.]



1. In a crimping-machine, crimping-jaws whose pressure upon the material to be crimped is induced by a system of levers, adjustably weighted, as described, to regulate the degree of pressure exercised by the jaws, substantially as set forth.

2. The combination of the following elements—namely, crimping-jaws, levers adjustably weighted to regulate the degree of pressure exercised by the jaws, and a treadle mechanism—whereby this pressure may be relieved in whole or in part, substantially as herein shown and set forth.

3. In a crimping-machine, the combination of a system of levers, adjustably weighted to regulate the degree of pressure, and crimping-jaws, adjustable to and from one another independently of said system of levers, substantially as set forth.

4. In a crimping-machine, the combination, with the crimping-jaws, the crimping form or tree, and the driving mechanism, of the stop mechanism, whereby the motion of the working parts is automatically arrested at a time when the jaws are above and out of contact with the form, substantially as and for the purposes set forth.

5. The combination, in a crimping-machine, of the sliding cross-head, which carries the crimping-jaws, with the tripping-rod, clutch, and system of gearing for transmitting motion to said cross-head under the arrangement, substantially as described, whereby the movement of the cross-head may be reversed or arrested at pleasure, as set forth.

6. The combination of the reversing gears and clutch, by which motion is communicated to the sliding cross-head with the large and small gear-wheels which impart movement to said reversing-gears, substantially as described, so that the cross-head shall be caused to ascend more rapidly than it descends, for the purposes stated.

7. The crimping-jaws arranged to move upon two axes, the one horizontal the other vertical, substantially in the manner set forth, so that they may be tilted or rocked endwise to conform to the position of the crimping-form, and may also vibrate upon a vertical axis to allow for inequalities in the material to be crimped.

8. The combination, with the laterally-vibrating jaws, of stops or set-screws to limit the vibration of the jaws and to hold them in close contact with any portion of the leather to be crimped, substantially in the manner as shown and set forth.

9. The combination of the crimping-jaws, the set-screws, and slotted-plate by which it is supported, and the socketed plate and spindle by which said slotted-plate is held in position, substantially as shown and set forth.

10. The combination, with the crimping-jaws, of the double-helical cam-disks, the brackets provided with corresponding cams, and the set-screws or spindles and nuts for maintaining said parts in position under the arrangement, substantially as described, so that the jaws may be set and held at a greater or less distance apart to conform to the thickness of the material to be crimped.

11. In a crimping-machine, an adjustable form or tree arranged so that the toe can be more or less elevated, in order to crimp at various angles, according to the shape of the leather or other material operated on.

12. The combination, with the adjustable tree or form of crimping-jaws oscillating in a plane parallel with the tree, so that said jaws may be adjusted to conform to whatever position the tree may occupy, as set forth.

13. The adjustable tree or form, arranged so that it shall move in the arc of a circle, of which the pivot or point of oscillation of the crimping-jaws is the center, substantially as set forth.

14. In a crimping-machine the combination, with crimping jaws or plates, of a laterally-adjustable crimping form or tree, substantially as set forth.

15. The combination, with the tree or crimping-form of laterally self-adjusting brackets for supporting the same, substantially as described, so as to equalize or distribute evenly the pressure of the jaws upon the leather on both sides of the form.

16. The combination, with the crimping-jaw of the sliding-clamp or corner-stretcher and lever and cam for operating the same, substantially as set forth.

17. The combination, with the hinged ways of a system of levers operated by a treadle or otherwise to spread said ways, so as to relieve the pressure and strain of the jaws on the leather or form whenever necessary, substantially as shown and set forth.

18. The combination, with the hinged ways, of the set-screws and pointers or gages for limiting the movement and determining the parallelism of the ways, substantially as set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

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DIGEST OF DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND

DECISIONS OF UNITED STATES COURTS

IN THE MATTER OF

PATENTS AND TRADE-MARKS.

OFFICIAL GAZETTE—January—June, 1875.

DIGEST OF DECISIONS.

[Court decisions indicated by an asterisk, (*).]

ABANDONED CASES.

(See Practice, 4.)

ABANDONED EXPERIMENTS.

There is a distinction to be made, in ascertaining priority of invention, between an abandoned experiment and a perfected invention.

[Case vs. Hastings, 557.

ABANDONMENT.

(A) In general.

(B) Under the statute.

(A) *In general.*

Cummings applied for a patent in April, 1855, and was rejected in 1856. He filed a new application in 1864, and the patent was then granted. The invention went into public use in 1859. *Held*, that where successive applications are made in the procuration of a patent, where there is no proof of actual abandonment, the subsequent application will be deemed a continuation of the first.

[*Goodyear Dental Vulcanite Co. *et al.* vs. Geo. Willis, 41.

(See Construction of Specifications and Patents, 3; Diligence, 2.)

(B) *Under the statute.*

1. Where an applicant for patent had filed his application in 1855, and after its rejection had withdrawn it, and it afterward became abandoned by operation of the 3d proviso of the 35th section of the act of July 8, 1870: *Held*, that the applicant was barred from prosecuting a new application for patent for the same invention, an application being analogous to an action at law to establish a right of property, and the statute being in the nature of a statute of limitations upon the right of action.

[A. Mills, 961.

2. The word "abandoned" in the body of the proviso referred to applies to the application alone; but in the last clause the word "abandonment" has a wider signification, referring both to the application and the invention.

[A. Mills, 961.

3. The practical utility of some inventions will appear upon inspection; but complicated machinery often requires actual use to demonstrate its success. The statute should not be so applied that such a test would prevent the grant of a patent unless applied for within two years from the time it was made.

[Baldwin vs. Bigelow, 1011.

(See Experimental Use.)

AFFIDAVITS.

When an application is made for a patent upon a device which is shown in an abandoned application, the Office will ascertain, if practicable, whether the invention has gone into public use, and will receive affidavits to that effect, *ex parte*, if necessary.

[Rouse and Stoddard, 169.

AMENDMENTS.

(See Pleadings and Practice, 5, 7, 8, 11.)

APPEAL.

The circumstances of the appeal to the Supreme Court in the case of Gardner vs. Goodyear Dental Vulcanite Company (3 Patent Office Gazette, 295) considered.

[*Goodyear Dental Vulcanite Co. vs. Geo. Willis, 41.

(See Practice, 7.)

ARTICLES OF MANUFACTURE.

(See Manufactures, 1, 2.)

ASSIGNMENTS AND ASSIGNEES.

1. The power of assignment under the statute has been so construed by the courts as to confine it to the transfer of an entire patent, an undivided part thereof, or the entire interest of the patentee, or undivided part thereof, within and throughout a certain specified portion of the United States.

[*Littlefield and Jagger vs. Perry, 964.

2. One holding such an assignment is an assignee within the meaning of the statute, and may prosecute in the circuit court any action that may be necessary to protect his rights under the patent.

[*Littlefield and Jagger vs. Perry, 964.

3. An agreement to account and pay a specified royalty, contained in an instrument of assignment, forms part of the consideration of the assignment, and does not reduce the grantee to the position of a licensee.

[*Littlefield and Jagger vs. Perry, 964.

4. Neither does a clause of forfeiture for non-performance, contained in an assignment, reduce the grantee to the position of a licensee. For the non-payment or other non-performance a forfeiture may be enforced as for condition broken; but until it is enforced the title granted remains in the assignee.

[*Littlefield and Jagger vs. Perry, 964.

5. An instrument purporting to convey inventions not yet in esse is not an assignment, but only an executory contract.

[T. A. Edison, 423.

6. It would seem that where, in enforcing specific performance of a contract to assign an interest in a future invention, equity may (after the invention has been perfected and patented) carve out an undivided interest in the patent, a valid assignment to a third party will afterward take effect upon the interest remaining in the patentee.

[T. A. Edison, 423.

7. The object of the statute requiring assignments of interests in patents to be recorded within three months from their dates is for the protection of *bona fide* purchasers, without notice of previous assignments. Therefore, an assignment by the patentee of a right under the patent would be valid as between the parties thereto without being recorded.

[*Turnbull vs. The Weir Plow Co., 173.

8. Where the patentee, Littlefield, under letters patent relating to stoves, executed with Treadwell and Perry a "grant" and a "supplemental agreement" on the same day, by the former of which, for the consideration therein named and of the agreements contained in the supplemental paper, he made conveyance of an absolute interest in his patent for a specified territory, said deed being duly recorded in the Patent Office, while in the supplemental agreement it was stipulated that nothing contained in the grant should give the grantees the right to use the principle of the patent in furnaces erected in cellars, &c., which supplemental paper was never recorded: *Held*, that the "grant" was to be treated as an assignment, and that the grantees and those claiming under them could sue in the circuit court in their own names to prevent an infringement of their rights.

[*Littlefield and Jagger vs. Perry, 964.

9. An assignment of an imperfect invention, with all the improvements upon it that the inventor may make, is equivalent in equity to an assignment of the perfected results. In such cases the assignees become in equity the owners of the patent issued upon the invention when perfected, and, if the assignor takes the legal title, he holds it in trust for them, and should convey.

[*Littlefield and Jagger vs. Perry, 964.

10. Where there is a residuary interest left in the assignor under a patent within the territory mentioned, the words "all the *right, title, and interest*" of the patentee, in the conveying clause of an assignment, must be construed as only conveying such residuary interest.

[*Turnbull vs. Weir Plow Co., 173.

11. This rule would hold even though the prior deed of assign-

ment, by which the patentee had alienated a part of his original interest in the territory specified, had not been recorded when the later assignment was made.

[*Turnbull *vs.* Weir Plow Co., 173.

12. The provisions of the 36th section of the Patent Act of 1870, with regard to the recording of assignments of patents, are substantially the same as those of the 11th section of the act of 1836, as construed by the courts.

[*Turnbull *vs.* Weir Plow Co., 173.

13. In a contest between an assignor in equity and his assignee a court of equity will give the same effect to an equitable title that it would to one that was legal.

[*Littlefield and Jagger *vs.* Perry, 964.

CASES COMMENTED UPON.

1. Gardner *vs.* Goodyear Dental Vulcanite Co., 3 Pat. Off. Gas., 295. Hotchkiss *vs.* Greenwood, 11 Howard, 248. Hicks *vs.* Kelsey, 18 Wall. 670.

[*Goodyear Dental Vulcanite Co. *vs.* Geo. Willis, 41.

2. Stoddard *vs.* Perry, 6 Off. Gaz., 33.

[Case *vs.* Hastings, 557.

3. Wallace and Sons *vs.* Holmes *et al.*, 9 Blatch., 65.

[*Saxe *vs.* Hammond, 781.

CAVEAT.

Where a party has a caveat pending in the Office, if another obtains a patent for the same invention without notice to the former, he will gain no advantage by it, but must establish his case in an interference as if he were an applicant.

[Ware *vs.* Bullock, 39.

CLAIMS.

1. Descriptions and claims must be unambiguous; but the Office neither prescribes nor proscribes any particular form or phrase.

[F. W. Dahne, 1095.

2. Parts essential to the completeness of a structure, if omitted in the terms of a claim, must be understood, if the specification by which the claim is to be interpreted will justify it.

[G. Richardson, 1053.

3. The patentee having disclaimed a revolving cutter, his claim to "the cutter A, constructed substantially as shown and described, and for the purposes set forth," is a claim to the particular form, shape, and angles of the cutter, which adapted it to the purposes of a glass-cutter, and is as exact and accurate as the nature of the subject will permit.

[*Monce and Ives *vs.* Adams, 177.

4. Where the fair interpretation of the words employed to describe an invention or discovery includes matters not in the mind of the patentee at the time, he is as fully authorized to claim the unlooked-for as he is the anticipated results.

[*Welling *vs.* Rubber-Harness Trimming Co., 606.

5. Where a claim covers a process not described in the specification, there is much reason for holding that it is invalid.

[*Needham *vs.* Washburn *et al.*, 649.

(See Construction of Claims; Novelty, 2.)

COMPOSITION OF MATTER.

Where a new ingredient is added to an existing composition of matter, and the composition is thereby materially changed in form and quality, it is patentable.

[Horlick and Horlick, 898.

COMBINATIONS.

1. The question considered of collocation and co-operation of different parts or machines as distinguished from mere aggregation.

[S. M. Sherman, 1054.

2. An invention which consists of a combination of elements is not complete until all the elements are combined.

[Baker *vs.* Atwood and Moore, 697.

3. Inasmuch as defendant employs a combination of a rocker with a bed by loose journals projecting on each side the picker-staff, and the combination is effected by means of a journal-bearing arm, it is immaterial that the form of his journal-bearing arm is unlike that of complainant's, or that its mode of attachment is different, so long as it performs the same function in substantially the same way.

[*Mason *vs.* Graham and Rouse, 833.

4. The combination of old devices, which constitutes the invention set forth in the Westlake Patent, is anticipated by the English patent to Isaac Evans in 1861.

[*Dane *et al. vs.* Chicago Manufacturing Co., 924.

(See Infringements, 7, 8, 9.)

COMMISSIONER OF PATENTS.

1. Powers and duties of the Commissioner of Patents declared.

[*Hull *vs.* Commissioner of Patents, 559.

2. A favorable decision of an Examiner or of the Board of Examiners-in-Chief in the Patent Office, upon an application for a patent, is not conclusive upon the Commissioner of Patents, and it does not follow thereupon that he has only the ministerial duty to perform of countersigning and sealing the patent.

[*Hull *vs.* Commissioner of Patents, 559.

3. The statute nowhere prescribes the duties of Examiners and their assistants. They are appointed upon nomination of the Commissioner, and their duties are such as he is authorized to prescribe under the 19th section of the patent act. (Sec. 483 Revised Statutes.)

[*Hull *vs.* Commissioner of Patents, 559.

4. The result of an examination is to be reported to the Commissioner, and if it should appear to him, upon inspection of the report, that the alleged invention is neither novel nor meritorious, he would be bound in duty, under section 31, not to issue the patent. (Sec. 4:33 Revised Statutes.)

[*Hull *vs.* Commissioner of Patents, 559.

5. If to decide that a claimant is justly entitled to a patent, and that his invention is sufficiently useful and important, be the office of Examiners, then, by section 7 of the statute, it is made the duty of the Commissioner to superintend the performance of these duties by the Examiners.

[*Hull *vs.* Commissioner of Patents, 559.

6. Under the 23d section of the act (sec. 4885 Revised Statutes) it is not the duty of Examiners to pass and allow patents. It is the duty of the Commissioner alone, after the examination has been reported, to say whether the patent shall be allowed and passed.

[*Hull *vs.* Commissioner of Patents, 559.

7. The 53d section of the act contains an express recognition of power in the Commissioner to refuse patents, and an *ex parte* bill in equity is given applicants as a remedy for such refusal. This section provides for a different class of cases from those which come before the Commissioner by appeal from the Examiners under sections 47 and 48—cases in which the Commissioner may refuse patents after favorable decisions by his subordinates, by virtue of his general supervisory authority. (Secs. 4910, 4911, and 4915 Revised Statutes.)

[*Hull *vs.* Commissioner of Patents, 559.

8. The Commissioner of Patents may suspend, temporarily, proceedings in interferences, when the evidence used therein tends to show that the first inventor, who is also the applicant, had abandoned his invention before applying for a patent, and to refer the application back to the Primary Examiner to ascertain the fact of such abandonment.

[*Bigelow *vs.* Commissioner of Patents, 603.

CONSTRUCTION OF THE STATUTE.

Section 58 of the patent act of 1870 authorizes the court, in a suit thereunder, to review both patents on their merits, and to decree the cancellation of either or both; and this on the ground of lack of novelty as to either or both, or any other ground that in an action for infringement would affect the validity of either.

[*Foster *vs.* Lindsay and Kalb, 514.

CONSTRUCTION OF CLAIMS.

1. The word "independent" in the claim of the patent of R. L. Webb, December 31 1867, does not mean that the latch and its mechanism operate without any contributory aid from the main case or adjuncts thereto. All that it imports is that there is an outer case and a separate inner frame or case in which the latch mechanism is arranged and held in position.

[*Russell and Irwin Manufacturing Co. *vs.* The Corbin Manufacturing Co. and North, 363.

2. The patentee having described a wooden bung rendered impervious by the application of a coating to its end, and having pointed out the particular material which he regards as the most suitable for the purpose, his claim for "A wooden bung rendered impervious to the passage of fluids through the pores of the wood by means of the described *or other suitable substance*" will not be held void as being too broad.

[*Goires *vs.* Goetinger, 563.

3. The first claim of the reissued patent of Walter Hunt, of October 29, 1872, (original July 25, 1854,) which is for "a shirt-collar composed of paper and muslin, or its equivalent, so united that the muslin will counteract the fragile character of the paper," construed to be for "a shirt-collar composed of paper and muslin, or its equivalent, united by paste, glue, or other appropriate sizing, by means of which union the fragility of the paper is re-enforced by the fibrous strength of the muslin, and the necessary cohesiveness of the fabric thus secured."

[*Union Paper Collar Co. *vs.* White, 696, 877.

4. The claim for "a shirt-collar composed of paper and muslin, or its equivalent, so united that the muslin will counteract the fragile character of the paper," is not for the mere effect resulting from the union of paper and muslin, nor for the fabric thus produced, nor for the special mode of preparing it; but it covers the use of it for making collars, where its constituents are incorporated with each other, so that the textile strength of the one is made available to re-enforce the fragility of the other.

[*Union Paper Collar Co. *vs.* White, 696, 877.

5. The original patent of Hunt described a standing collar composed of cloth with paper on both sides; but both the invention and the claim are more comprehensive than this, and include a collar with paper on one side only, and this, too, when the collar is *turned over*, so as to expose the cloth surface only to observation.

[*Union Paper Collar Co. *vs.* White, 696, 877.

6. The fifth claim of reissued patent of David M. Weston for "Improvement in Centrifugal Machine for Draining Sugar," &c., dated January 14, 1868, (original dated April 9, 1867,)—viz: "The construction of the openings I in the bottom of the cylinder of such machines, and the valve J for the purpose of closing the same, substantially as described"—is not limited to such centrifugal machines only as are constructed in all respects like those described in the specification.

[*Weston *vs.* Nash, 1096.

7. The term "such machines" in this claim means such centrifugal machines as are so constructed as to admit of the application and operation of the claimed devices in substantially the described mode and by substantially the described means.

[*Weston *vs.* Nash, 1096.

CONSTRUCTION OF SPECIFICATIONS AND PATENTS.

1. While patents are to be construed liberally, they should not be so construed as to enable patentees to reach out and cover every improvement or invention which, after seeing the same, they conclude they might have embraced within their patent, but which was not so embraced and included.

[*Trader *vs.* Messmore, 365.

2. The general rule is that the *first* in a series of applications for a patent is the one on which the patent, when granted, depends.

[*Pelton and Taylor *vs.* Waters, 495.

3. If, between the first and a second application for a patent, the patentee has manifested an actual intention to abandon the first, his patent will have relation to the last one only. His actual intention severs the proceedings.

[*Pelton and Taylor *vs.* Waters, 495.

4. Where the defense against a reissued patent is that it is for a different invention from the original, it cannot be doubted that the latter may be the subject of reference, as to a repealed statute, to aid in the construction of the new patent issued upon the corrected specification.

[*Reedy *vs.* Scott, 463.

5. Where the invention is a very limited improvement upon an old device, a former patent covering such device will not be held to embrace the improvement unless it is distinctly described therein.

[*Arnold *vs.* Wilcox, 356.

6. The patent is not void for ambiguity because the specification merely says that the cutter is to be "hardened" without specifying what degree of hardness is to be given to it.

[*Monce and Ives *vs.* Adams, 177.

7. Where a patentee describes a martingale-ring formed by enveloping a metal ring, by means of dies, with a plastic composition known as "factitious ivory," or "any similar compound," the claim being for "the ring for martingales, &c., manufactured as set forth, with a metal ring enveloped in composition, as and for the purposes specified," *Held*, That the patent would include the application of hard rubber to a metal ring by means of dies.

[*Welling *vs.* Rubber-Harness Trimming Co., 606.

8. The fact that the rubber must necessarily undergo the additional process of vulcanization does not exempt it from the control of the patent. Though not the same substance, in its essence and constituents, as the "factitious ivory," it is a similar material as regards its capability of being adapted to the purposes for which the latter is used.

[*Welling *vs.* Rubber-Harness Trimming Co., 606.

9. The Welling patent of March 17, 1863, for an "Improvement in Rings for Martingales," construed to be for a metal ring surrounded with some plastic composition like artificial ivory, capable of being compressed, solidified, and polished by the action of dies, and which is, in fact, subjected to such action, whereby a martingale-ring is produced with an exterior surface more durable and more highly polished than had before been obtained by different processes.

[*Welling *vs.* Rubber-Harness Trimming Co., 606.

10. Where complainants had used their device for thirteen years without ascertaining that their patent covered such a device as that which formed the alleged infringement, and this latter had become the subject of a patent and possessed superior utility to that of complainants: *Held*, That the patent sued on should be interpreted strictly.

[Trader *vs.* Messmore, 365.

11. It becomes important, in interpreting the language of a patent, to know what construction the patentee himself placed upon it; and to this end recourse may be had to the files of the application, to ascertain what changes were made in the original specification and claims, and the significance of those changes as revealed by the history of the case.

[Trader *vs.* Messmore, 365.

COPYRIGHT.

1. The owner of the copyright of a book having agreed with the author of certain notes and additions to the same, embraced in two editions of the same prepared by him, that he would make no use of such notes and additions in subsequent editions of the work, but the author might use the same as he pleased; it was thereupon decreed that he should have the exclusive benefit of the copyright for the same.

[*Lawrence *vs.* Dana *et al.*, 81.

2. Where the editor of subsequent editions makes notes and additions which can be clearly separated and distinguished from the notes and additions in the previous ones, he is entitled to use them and have a monopoly of them.

[*Lawrence *vs.* Dana *et al.*, 81.

3. But if they cannot be thus separated and distinguished from the former notes, he cannot use them without violating the copyright for the former notes.

[*Lawrence *vs.* Dana *et al.*, 81.

4. The editor of a subsequent edition cannot borrow from citations introduced into the previous ones by another editor without infringing the copyright for them, though they are not accompanied by the extracts previously presented with the citations; nor can he borrow citations of authorities, although without remarks or comments, even when prefixed or appended to notes not otherwise objectionable.

[*Lawrence *vs.* Dana *et al.*, 81.

5. Where notes are partly original and partly copied, the latter may be published if they can be distinguished and separated, otherwise the publication must be restrained.

[*Lawrence *vs.* Dana *et al.*, 81.

(See Infringements, 1, 2.)

DAMAGES.

1. Where defendant had been in the habit of selling the infringing picker-staff motion both separately and attached to looms, in ascertaining his profits upon those sold with the looms, regard should be had to his profits upon those sold separately, rather than to the aggregate profits made by him upon the loom and attachment combined.

[*Mason *vs.* Graham and Rouse, 833.

2. If defendant has cheapened the cost of producing the infringing device by an improvement of his own, he is entitled to a corresponding credit in the ascertainment of the profits which complainants are entitled to recover.

[*Mason *vs.* Graham and Rouse, 833.

3. When the patent on which a recovery is based is for a combination, the complainant may recover simply for the value of the improvement or element that he has added to what was before old.

[*Ingals *vs.* Mast, 836.

4. In cases of infringement the profits actually realized, without interest, are usually the measure of unliquidated damages. Circumstances may, however, arise which would justify the addition of interest in order to give complete indemnity for losses sustained by wilful infringements.

[*Littlefield and Jagger *vs.* Perry, 964.

5. Where defendants were dealers in musical instruments, and some of the instruments bought and sold by them contained a tremolo attachment, which infringed complainants' patent, and others not, defendants were properly allowed, in the ascertainment of the profits made by them from the sales, to prove the general expenses of their business incurred in effecting the sales of all musical instruments, and deduct a ratable proportion from the gross profits made by the sale of the attachments.

[*Tremain and Tremain *vs.* Hitchcock *et al.*, 1055.

DESIGNS.

Although the applicant may have discovered how to give his design a peculiar shade when worked into the surface of articles of enameled iron ware, that does not give him any better title to a patent for a design.

[Niedringhaus and Niedringhaus, 171.

DILIGENCE.

1. Where, after making a model, the inventor took no further steps for five years, although able to apply for a patent, and another in the meantime obtained a patent, the first party must be held to have been wanting in diligence; and it is no excuse for his delay that his employers declined to adopt his improvement and put it in practice.

[Hammond *vs.* Laird, 170.

2. Where an inventor employed and paid an attorney to file his application for patent, and was deceived by false representations that it had been done, the delay thus fraudulently caused was not unreasonable delay by the inventor, such as to work forfeiture or abandonment of his invention.

[Case *vs.* Hastings, 557.

DOUBLE USE.

1. The practice of plating articles of metal with nickel in order to harden their surfaces and give them a polish is common, and to apply it to pens is a mere double use, and is not entitled to a patent.

[B. Brower, 40.

2. A sheet out of which to cut the upper part of an india-rubber shoe, such sheet and such upper part having a variety of thickness in different parts, and being formed in one piece at a single operation by the use of rollers, one of which has a surface the reverse of the form to be produced, is an analogous manufacture in all respects to the sheet out of which to cut the sole of an india-rubber shoe, as described in the patent of Hyatt and Meyer of January 17, 1854, such sheet and sole having a variety of thickness in different parts, and being formed in the manner above described.

[*Myer and Evans *vs.* Pritchard, 1012.

3. The fabric not being new, the application of it to make the upper part of the shoe is a mere double use of the same invention.

[*Myer and Evans *vs.* Pritchard, 1012.

EQUIVALENTS.

(See Double Use.)

EMPLOYER AND EMPLOYÉ.

The relations of employer and employé, in regard to the origin of inventions stated.

[*Union Paper-Collar Co. *vs.* Van Deusen *et al.*, 919.

ESTOPPEL.

1. An applicant is estopped from contradicting his deed of assignment, but an estoppel by deed arises alone upon a recital of a particular fact.

[T. A. Edison, 423.

2. A party to an interference, having conceded priority of invention to his opponent in general terms, and a patent having issued in accordance with his concession and request, is estopped from claiming a new interference with the same party on the subject-matter common to the same application.

[Harlow *vs.* Guernsey, 513.

EVIDENCE.

1. Testimony of witnesses examined in a case as to alleged prior use by parties not set up in the answer, can only be considered by the court for the purpose of showing the state of the art at the time of patentee's invention. The same rule would apply to printed publications by which it is sought to anticipate the invention.

[*Geir *vs.* Goetinger, 563.

2. Evidence of what one of the parties has done in another country toward reducing the contested invention to practice is not admissible upon an interference.

[Smith *vs.* Barter, 1.

3. Mere descriptions of an invention, and fugitive sketches which have not been preserved, will receive little consideration in determining the questions of priority between two rival applicants.

[Ware *vs.* Bullock, 39.

4. The uncontradicted testimony of an applicant, supported by that of a disinterested and credible witness, that he made drawings of his invention at a certain date held sufficient, although the drawings were not preserved, to prove the conception of the invention at that date.

[Smith *vs.* Edson, 927.

5. Alleged sketches of an invention not preserved or accounted for, and not followed up by a reduction of the invention to practice, are not sufficient to establish priority of invention.

[Hart *vs.* Little, 962.

6. The invention having been patented in England by a third person: *Held*, That, in order to support the objection resting upon the issuance of a foreign patent, proof should be given connecting the complainant with its procuration.

[*Goodyear Dental Vulcanite Co. *vs.* Geo. Willis, 41.

7. Where testimony as to the expense of working a process, as compared with that of working a certain patented process was excluded by a master: *Held*, That it should have been admitted.

[*Black *et al. vs.* Thorne *et al.*, 176.

(See Presumptions, 2.)

EXPERIMENTAL USE.

Where, for the purpose of practically testing complicated mechanism, a slight use of it was made, held that such was experimental, and not a public use that would work abandonment of the invention, if a patent was not applied for within two years.

[Baldwin *vs.* Bigelow, 1011.

FOREIGN PATENTS.

(See Evidence, 6; Use in a Foreign Country.)

IMPROVEMENTS.

The inventor of an apparatus who has reduced it to actual practice and then left it, is not entitled to claim improvements upon it which have been invented and applied by others, although he may have contemplated them and labored upon them, if he never reduced them to form, nor embodied them in any visible representation.

[Trotter *vs.* Bartlett, 3.

INFRINGEMENTS.

1. Equity suits on copyrights are usually referred to a master to examine into the charge of infringement, and upon the nature and extent of it.

[*Lawrence *vs.* Dana *et al.*, 81.

2. Even when the infringement has been established on the principal hearing, it will still be referred to a master for the same purposes.

[*Lawrence *vs.* Dana *et al.*, 81.

3. A brush-head like the plaintiff's, but having an additional feature, as used by the defendant, held to be none the less an infringement because of the additional feature.

[*Murphy *vs.* Kissling, 302.

4. The claim of the letters patent granted to Rodolphus L. Webb, December 31, 1867, for an "Improvement in Reversible Locks and Latches"—namely, "The combination of a lock and latch when the latch-bolts and its operative mechanism are arranged in a case or frame independent of the main case, and constructed so that the latch-bolt may be reversed, substantially as described, without removing the said independent case from the main case," is infringed by the combination of a lock and latch in which the latch-bolts and its operative mechanism are arranged in a skeleton frame within an outer or lock case, which operates to preserve the proper relations of the yoke and tumbler while being moved forward and backward, although it does not so operate when the latch and latch mechanism are removed from the outer or lock case.

[*Russell and Irwin Manufacturing Co. *vs.* The Corbin Manufacturing Co. and North, 363.

5. Infringement is not avoided by the fact that, when the patentee's latch-bolt is drawn forward for the purpose of reversing it, the case or frame moves forward with it in a straight line, and that the defendants' frame, when the latch-bolt is drawn forward, moves in a curved line.

[*Russell and Irwin Manufacturing Co. *vs.* The Corbin Manufacturing Co. and North, 363.

6. Nor is infringement avoided by the fact that the defendants introduce a catch and spring to hold the latch and its mechanism in position, after reversal, until the knob-spindle is inserted. This superadded device may improve the aggregate structure, but it has no effect whatever upon the functions or mode of operation of the patented devices, nor does it justify the defendants in appropriating them to their own use.

[*Russell and Irwin Manufacturing Co. *vs.* The Corbin Manufacturing Co. and North, 363.

7. A patent for a combination is infringed by the use of a similar combination, although one of the elements is omitted and another substituted for it, unless the substituted device is a new one, or performs a function essentially different, or was not known at the date of the patent as a proper substitute for the one omitted.

[*Welling *vs.* Rubber Harness-Trimming Co., 606.

8. Different parties may all infringe by respectively making or selling, each of them, one of the elements of a patented combination, provided those separate elements are made for the purpose and with the intent of their being combined by a party having no right to combine them.

[*Saxe *et al. vs.* Hammond *et al.*, 781.

9. The mere manufacture of a separate element of a patented combination, unless such manufacture be proved to have been conducted for the purpose of aiding infringement, is not, in and of itself, infringement.

[*Saxe *et al. vs.* Hammond *et al.*, 781.

10. A patent which claims the application of means to a musical instrument whereby the air may be agitated to produce a tremulous note "*by agency external to the wind-chest which shall not check the flow of the air past the reeds*," so as to give a continuous tremulous note, but not cut off the sound and make a succession of notes, is not infringed by the simple making of a fan capable of revolving, and the selling of the same to a manufacturer of musical instruments.

[*Saxe *et al. vs.* Hammond *et al.*, 781.

11. Whether such a device would infringe, would depend upon the position and arrangement of it in the organ—whether or not it be placed external to the wind-chest, and whether it be placed so as to cut off the sound and produce a succession of notes, or merely to agitate the air and vary the notes without interrupting their continuity.

[*Saxe *et al. vs.* Hammond *et al.*, 781.

12. Where complainants had licensed large numbers of manufacturers to put a patented tremolo attachment upon their instruments, and had agreed to license all reputable makers who might apply: *Held*, That one who simply made and sold the attachment could not be held as an infringer, unless it appeared that the sale was to an unlicensed manufacturer.

[*Saxe *et al. vs.* Hammond *et al.*, 781.

13. The unauthorized use of complainants' openings and valve would be an infringement if used in centrifugal machines, to which they could be usefully applied by reason of there being an unobstructed space at the bottom of the machine, into which the sugar could fall, although the cylinders were not suspended as shown in the patent.

[*Weston *vs.* Nash, 1096.

14. The patent of Hunt for shirt-collar of paper and muslin is not infringed by collars of paper with a simple cloth re-enforcement at the button-holes.

[*Union Paper Collar Co. *vs.* White, 698, 877.

15. Characteristic resemblance is the fairest test of substantial identity.

[*Union Paper Collar Co. *vs.* White, 698, 877.

INJUNCTIONS.

An injunction will be ordered when there has been a reference to a master only when the infringements are few and their nature can be conveniently ascertained.

[*Lawrence *vs.* Dana, Jr., *et al.*, 81.

(See Pleadings and Practice, 9, 12.)

INTERFERENCES.

1. Where an interference is declared in the Patent Office, the examination is to be confined to "priority of invention." (Wylie and Mac Arthur, *J. J.*)

[*Bigelow *vs.* The Commissioner of Patents, 603.

2. It is not the intention of the patent law that, on a question of interference, the Examiner in charge of interferences should consider a question of abandonment. (Wylie and Mac Arthur, *J. J.*)

[*Bigelow *vs.* The Commissioner of Patents, 603.

(See Caveat; Commissioner of Patents, 8; Estoppel, 2; Evidence, 2; Judgments and Decrees; Mandamus, 2; Practice, 5.)

INVENTION AND SKILL.

1. It being a matter of common knowledge among mechanics that iron, or iron and steel, may be successfully welded without flux, there is no invention in simply omitting, in the casting of car-wheels, the flux previously used between the steel tire and the molten iron which forms the body of the wheel.

[Needham *vs.* Washburn *et al.*, 649.

2. Although paper and muslin or linen cloth were before united and used for maps, &c., this was not analogous to the use Hunt made of these materials, nor in any wise suggestive of his invention. He produced a new device by giving a new form to an old substance, and, by suitable manipulations, making its peculiar properties available for a use to which it had not before been applied. This involved invention, and, in view of the great practical benefits resulting from it, invests the product with special patentable merit.

[*Union Paper Collar Co. *vs.* White, 698, 877.

INVENTIONS.

1. The accidental making of an improved article, in a single instance, without knowledge on the part of the producer of how to accomplish it, or to produce another like it, is not invention.

[*Pelton and Taylor *vs.* Waters, 425.

2. The Weston invention is not anticipated by the device shown in the British patent of Hardman, of 1843, in which the openings in the bottom plate of the rotary cylinders are closed by a disk or plate held up against them while the machine is in operation by a nut and spring, and simply lowered, without being removed, so as to leave a free and unobstructed space, when the sugar is to be discharged.

[*Weston *vs.* Nash, 1096.

3. Nor by the Alliott machine, described in English patent of February 3, 1851, in which the bearings of the shaft and its foundations are directly under the cylinder, so as to render impossible a free and unobstructed space below the cylinder into which the sugar may be discharged.

[*Weston *vs.* Nash, 1096.

4. Although defendants' valve is operated by turning on the shaft, and, in this respect, may be an improvement upon the valve of the patent, which moves up and down on the shaft, this is not a substantial difference. It is but another form of the same device, with the same mode of operation, so far as the operation is concerned to which the whole device relates—that of discharging through the bottom of the cylinder the purged contents of the charge.

[*Weston *vs.* Nash, 1096.

(See Combinations, 2.)

JUDGMENTS AND DECREES.

In an interference, judgment of priority is conclusive, not only on interfering matters which were claimed, but on all which might have been claimed.

[Harlow *vs.* Guernsey, 513.

JUDICIAL DECISIONS.

1. The principles upon which the several circuit courts of the United States are bound by the decisions of each other examined and discussed.

[*Goodyear Dental Vulcanite Co. *et al. vs.* Geo. Willis, 41.

2. The adherence to decisions is by no means confined to those which precede the case in question in the same tribunal. Those of co-ordinate courts are equally influential.

[*Goodyear Dental Vulcanite Co. *et al. vs.* Geo. Willis, 41.

3. The circuit courts of the United States, although divided in jurisdiction geographically, constitutes a single system, and where one court has fully considered and deliberately decided a question, every suggestion of propriety and fit public action demand it should be followed until modified by the appellate court.

[*Goodyear Dental Vulcanite Co. *et al. vs.* Geo. Willis, 41.

LICENSE.

1. While a mere licensee cannot, in his own name, sue strangers who infringe, yet he would be permitted in a court of equity to bring suit against the patentee for the infringement of the rights secured to him by his license.

[*Littlefield and Jagger *vs.* Perry, 964.

2. Where a machine was licensed for use in a particular territory: *Held*, That the use of it, by subsequent purchasers, in territory other than that for which it was licensed, was unlawful.

[*Wicke *vs.* Kleinklecht, 1096.

3. The mere fact that the agent of the patentee, after the transfer of the machine to the unlicensed territory, demanded of the purchasers the back royalties due upon it, conferred no right to use it outside the territory named in the license.
[*Wicke *vs.* Kleinklecht, 1008.

(See Assignments, 3, 4; Infringements, 12.)

MANUFACTURES.

1. Articles of manufacture may be new in the commercial sense when they are not new in the sense of the patent law.
[*Union Paper Collar Co. *vs.* Van Deusen *et al.*, 919.

2. A shoe having the material of the upper part thickened up by a patented process is not a new article of manufacture in view of the prior shoe having the material of the sole so thickened up.
[*Myer and Evans *vs.* Pritchard, 1012.

(See Patentability, 10.)

MANDAMUS.

1. In that the 53d section supplies a remedy for a refusal of a patent by the Commissioner in such cases, it is decisive against the remedy by mandamus; for this writ will not issue where the law furnishes any other adequate specific remedy.
[*Hull *vs.* Commissioner of Patents, 559.

2. An application for a patent was put in interference with a party to whom a patent had been previously issued. On the testimony in the interference case it was contended that the applicant had abandoned his invention to the public use, and the Commissioner referred the question of such abandonment back to the Primary Examiner. And it was held that mandamus would not lie to compel the Commissioner to allow the patentee to take an appeal from the decision of such Primary Examiner to the Board of Examiners-in-Chief.
[*Bigelow *vs.* Commissioner of Patents, 603.

3. A writ of mandamus will not be allowed against the Commissioner of Patents where the law submits the subject to his opinion. (Carter, *Ch. J.*)
[*Bigelow *vs.* Commissioner of Patents, 603.

NOVELTY.

1. The invention covered by letters patent to Samuel G. Monce, June 8, 1869, for an "improved tool for cutting glass," consists, so far as the revolving steel cutter is concerned, in the fact that the sides, which are parallel at the axis, are beveled toward each other, at the perimeter, at an angle of about forty-five degrees to the axis, thus meeting about midway and forming a cutting-edge, which is approximately a right angle. Such an instrument embodies the conditions that give efficiency to the glazier's diamond, and is not anticipated by revolving cutters designed and used for other purposes, (as for dressing the surface of grindstones, the cutting of gas-pipe, or the cutting of paper or of pasteboard, or of leather,) in which the distinctive feature of the invention—the double bevel forming the right-angled edge—is present, if at all, by accident, and which, although capable in exceptional cases of being used to cut glass, will not practically perform the office of a successful glass-cutter for glaziers' purposes.
[*Monce and Ives *vs.* Adams, 177.

2. The cutter of the patent, which makes a cut at right angles to the surface of the glass, is not anticipated by the Pike cutter, which bears upon the glass in a slanting direction.
[*Monce and Ives *vs.* Adams, 177.

3. Collars and cuffs made of paper being known, and paper embossed in various modes, some of which were imitations of the surface of textile fabrics, being known, there existed no patentable novelty in the application of paper embossed in imitation of linen to the making of collars and cuffs.
[*Union Paper Collar Co. *vs.* Leland, 221.

4. The invention of Francis McLaughlin, of a brush-head, provided with an angular groove and a rubber ring fitted therein, (patented January 11, 1870,) is not anticipated by a door-stop provided with a rubber fitted in an angular groove.
[*Murphy *vs* Kissling, 302.

5. The machine covered by the patent of Charles and Andrew Spring, May 10, 1859, for Lathe for Turning Irregular Forms, the claim of which is for "The combination of a griping-chuck, by which an article can be so held at one end as to present the other free to be operated upon, with a rest preceding the cutting-tool, when it is provided with a guide-cam, or its equivalent, which modifies the movement of the cutting-tool, all operating together, for the purpose set forth," is anticipated by the Pernot lathe for turning sewing-machine needles, which had the griping-chuck, the rest, and the cutting-tool, but instead of the guide-cam a pattern, it appearing that, at the date of the patent, a fixed pattern was the equivalent, in machines of this kind, for a cam pattern or guide.
[*Spring *vs.* Packard and Howard, 341.

6. The case is nowise changed by the fact that the screw of the Pernot machine operated differently from the adjusting-screw of the patented machine, the screw not being an element in the claim of the patent, and the alleged difference not being such as would constitute a defense against the patent if the Pernot machine were later in date than the patented one.
[*Spring *vs.* Packard and Howard, 341.

7. It is immaterial that Pernot did not turn needles to *a point* on his machine, as is done in the patented one. The particular form of pattern used was not of the essence of the invention, and his lathe only needed a change of pattern to make it applicable to turning the point of needles.
[*Spring *vs.* Packard and Howard, 341.

8. Where a patent had been granted for a martingale-ring formed by enveloping a metal ring, by means of dies, with a plastic composition known as "factitious ivory:" *Held*, That such an invention is not anticipated by rings made of ivory, or of compositions known as artificial, factitious, or imitation ivory, or of metal coated with varnish, lacquer, japan, enamel, porcelain, or metallic plating, such coatings being applied with a brush or the fingers, or fused on by heat.
[*Welling *vs.* Rubber-Harness Trimming Co., 606.

9. The first claim in reissued patent for feed-water heater and filter, granted to E. R. Stilwell, August 24, 1869, which is for "filtering material F, between a series of shelves and outlet, substantially as described," held valid, notwithstanding the fact that filters had been used for freeing the feed-water for boilers from the matter held in mechanical suspension therein, and the further fact that heaters composed of a series of shelves had been used for a similar purpose to remove from the water the matter held in solution and a portion of that held in suspension.
[*Stilwell and Bierce Manufacturing Co. *vs.* Cincinnati Gas Co. *et al.*, 829.

10. Although the operation of neither the shelves nor the filter is affected by the union of the two in the same machine, a new result is produced, inasmuch as the water is passed into the boiler in a condition different from that which would have been produced by either of the devices separately.
[*Stilwell and Bierce Manufacturing Co. *vs.* Cincinnati Gas Co. *et al.*, 829.

(See Infringement, 15.)

PATENTS.

1. Both the process and the product may be included in one patent; but in such case the description of the invention in the specification and claims should disclose that the inventor had both results in his mind.
[*Welling *vs.* Rubber-Harness Trimming Co., 606.

2. The patent of E. H. Graham, of October 16, 1860, reissued May 22, 1867, for "picker-staff motion in looms," has no relation to the *mere form* of a journal-bearing arm, nor does it consist in arranging a journal-bearing arm in a slot in the rocker. It embraces every combination of a rocker with a bed and loose journal-bearing arms, arranged so as to produce the result described in the specification as affected by the combination.
[*Mason *vs.* Graham and Rouse, 833.

PATENTABILITY.

1. A hollow metal coffin-handle having its ends inserted into rings in bars on the casket, and then indented into the rings, and farther attached by inserting plugs, being found an improvement both in point of economy and security, held entitled to a patent.
[J. S. Ray, 40.

2. Claims for what are called "mechanical processes" should not be allowed when they comprehend no more than the mere functions of mechanism described; in such cases it is the apparatus only that is patentable.
[Case *vs.* Hastings, 557.

3. The conditions under which the use of one material instead of another in constructing a known machine or article may be patentable considered and explained. *Hotchkiss* vs. *Greenwood*, (11 How., 248,) and *Hicks* vs. *Kelsey*, (18 Wall., 670,) cited and discussed.
[*Goodyear Dental Vulcanite Co. *et al. vs.* Geo. Willis, 41.

4. The idea that if a pencil is inserted into a cavity in a piece of rubber smaller than itself the rubber will attach itself to the pencil, and, when so attached, become convenient for use as an eraser, is not of itself patentable; but a new device by which this idea may be made practically useful is.
[*The Rubber Tip Pencil Co. *vs.* Howard *et al.*, 172.

5. As the rubber head described in the patent may be of any convenient external form, and is not limited as to either the form or the longitudinal extent of its socket, it is not new; and, as it was previously well known that if a solid substance was inserted into a cavity in a piece of rubber smaller than itself the rubber would cling to it, the size of the socket in the head, as compared with that of the pencil, does not add to the patentable character of the invention.
[*The Rubber Tip Pencil Co. *vs.* Howard *et al.*, 172.

6. The reissued patent of W. E. Lockwood, January 28, 1873, (original dated April 26, 1859,) for ladies' cuffs and collars, the claim of which is for "a collar having a paper surface imitative of the textile face and fiber of a dressed linen collar, as set forth," held, in view of the state of the art, not to cover patentable subject-matter.
[*Union Paper Collar Co. *vs.* Leland, 221.

7. Car-wheels having been made by placing a heated tire of cast-steel in a mold, and then pouring in molten cast-iron *at the center of the mold*, thus producing a weld or union between the iron and the steel, it did not require invention, and was not patentable to introduce the molten iron through openings or "sprues" *just inside the heated rim or tire*. Nor can it make any difference that a *series* of such openings or holes are used, instead of a *single* opening.
[*Needham *vs.* Washburn *et al.*, 649.

8. The Stilwell patent is not invalidated by the earlier English patent of Wagner, since it is doubtful whether the Wagner device could be practically used with success.
[*Stilwell and Bierce Manufacturing Co. *vs.* Cincinnati Gas Co. *et al.*, 829.

9. There is no force in the objection that the Stilwell patent does not specify what filtering material is to be used. The patent permits the use of any suitable filtering material, and persons skilled in the art could at once use the invention without experiment or additional invention.
[*Stilwell and Bierce Manufacturing Co. *vs.* Cincinnati Gas Co. *et al.*, 829.

10. New articles of commerce are not patentable as new manufactures unless it appears in the given case that the production of the new article involved the exercise of invention or discovery beyond what was necessary to construct the apparatus for its manufacture.
[*Union Paper Collar Co. *vs.* Van Deusen *et al.*, 919.

11. It appearing that the collars made by Evans, apart from the paper composing them, were identical in form, structure, and arrangement with collars previously made of linen, paper of different quality, and of other fabrics, and that Evans did not invent the special paper used by him, nor the process by which it was obtained: *Held*, That he was not entitled to a patent for the collars as a new manufacture.
[*Union Paper Collar Co. *vs.* Van Deusen *et al.*, 919.

12. The object in turning down a collar on a curved line instead of a straight line is precisely the same, whether the collar be all paper, paper and linen, or all linen. Hence, where it appeared that linen collars had been turned over on a curved line to prevent wrinkling, and to afford space for the cravat: *Held*, That it was not patentable to apply the same mode of turning down to collars of paper or paper and linen.
[*Union Paper Collar Co. *vs.* Van Deusen *et al.*, 919.

(See Invention and Skill, 2.)

PLEADINGS AND PRACTICE.

1. Where a suit in equity under a patent is pending at the time of the reissue, a supplemental bill setting up the reissued patent is not a proper pleading to revive such a suit, as nothing can be recovered, either as damages or profits, for the infringement of the surrendered patent.
[*Reedy *vs.* Scott, 463.

2. The infringement of the reissued patent becomes a new cause of action, for which, in the absence of any agreement or implied acquiescence of the respondent, no remedy can be had except by the commencement of a new suit.
[*Reedy *vs.* Scott, 463.

3. But where the complainant, having reissued his patent pending a suit, set up this fact in a supplemental bill, all the proofs in the case being taken thereafter, and neither the respondent nor the court below made any objection to the irregularity of the pleadings, the irregularity was also disregarded by the court on appeal.
[*Reedy *vs.* Scott, 463.

4. In a suit brought under section 58 of the act of 1870, to repeal an interfering patent, motion was made to strike out such part of defendants' answer as related to an alleged lack of novelty in the invention covered by complainant's patent, on the general ground that the object of the statute was merely to enable the complainant to determine the question of priority as between himself and his adversary prior to going before the public to test the validity of the patent on its merits: *Held*, That this allegation of the answer was admissible. The motion was overruled.
[*Foster *vs.* Lindsay and Kalb, 514.

5. If it should appear that as to prior use not set up in the answer, testimony clearly establish the invalidity of the patent, the court might grant the respondents leave to amend.
[*Geier *vs.* Goetzinger, 563.

6. Where the patented improvement formed a part only of the infringing stoves made by the defendants, the inquiry in the accounting before the master should have been confined to an account of the profits received by the defendants as the direct result of the improper use of the improvements, and could not include all the profits received from the manufacture of the stoves embracing such improvements.
[*Littlefield and Jagger *vs.* Perry, 964.

7. An amendment which changes the character of a bill ought not, generally, to be allowed after a case has been set for a hearing, and still less after it has been heard. The answer might become inapplicable if such an amendment were permitted.
[*Tremain and Tremain *vs.* Hitchcock *et al.*, 1055.

8. Where the original bill set up only the first reissue of a patent that had been twice reissued, but the proofs, both for final hearing and before the master on the accounting had reference to the second reissue, as also the proceedings upon the master's report, an order of court directing that the record be amended by inserting in the bill an averment of the second reissue was properly made, even after the final decree.
[*Tremain and Tremain *vs.* Hitchcock *et al.*, 1055.

9. An injunction having issued against the defendants because of their manufacture of rings, a motion for an attachment against them for the manufacture of *terrets, buckles, and hooks* was denied; but the master, notwithstanding, was instructed to state a separate account of such trimmings, with view to a reconsideration of the questions involved upon the hearing of the exceptions to the report.
[*Willing *vs.* Rubber Coated Harness-Trimming Co., 606.

10. Whether, in a suit brought against the respondents *as copartners* but in which the proofs fail to show a partnership, but do show that the respondents with others were organized into a corporation, with the same name as the alleged copartnership, it would be competent for the court to enter a decree against the *corporation, quære.*
[*Needham *vs.* Washburn *et al.*, 649.

11. In such case the court will not delay the hearing of the cause; since the defect, if it be one, may be cured by an amendment.
[*Needham *vs.* Washburn *et al.*, 649.

12. Where acquiescence alone is relied on as a basis for a motion for a preliminary injunction, the infringement must be palpable.
[*Burleigh Rock-Drill Co. *vs.* Lobdell *et al.*, 836.

13. The fact that a defendant is using a machine openly made and sold, under patents, and which the manufacturers have in good faith put in open competition with the machines made by complainant, honestly believing that they were not trespassing on any rights of complainant, though no defense if he is adjudged at final hearing to infringe, is a reason why the court should hesitate to interfere before the final decree in a case where there is no suggestion of any irremediable injury in the intervening time, or any want of ability to respond to any judgment which may finally be recovered.
[*Burleigh Rock-Drill Co. *vs.* Lobdell *et al.*, 836.

(See Evidence, 7.)

PRACTICE IN THE PATENT OFFICE.

1. Where the Examiner and the Board agree in their findings upon the facts in interferences, it is not necessary for the Commissioner to minutely review the testimony.
[Case *vs.* Hastings, 557.

2. An application for a design patent should not be entertained by the Examiner if the specification and claim are wholly wanting in clearness, exactness, and particularity. Such an application will not be allowed.
[Niedringhaus and Niedringhaus, 171.

3. The expressions in the statute "intend to adopt" and "intended to be applied and used," held to authorize the registration of a trade-mark which has been devised and is intended to be used.
[J. W. Rothschild, 220.

4. Where applicants file new applications, such as have been before filed by them and abandoned under the 2d proviso of the 35th section of the act of 1870, the proper action for Examiners is not to reject them on reference to the former application, but to refuse to consider them on the ground that the right to file them no longer exists.
[A. Mills, 961.

5. Where two parties have each an application pending at the same time before the Office, and one of them obtains a patent, he will derive no advantage from it if an interference is declared afterward between it and the other application; but he must establish his title by the same proof as if he was still an applicant.
[Smith *vs.* Barter, 1.

6. The decisions, rulings, and practice of the Patent Office will be made conformable to the decisions of the courts.
[Rouse and Stoddard, 169.

7. According to the organization of the Patent Office, the ques-

tion of patentability of an alleged invention is to be referred for examination first to one of the Primary Examiners. If his decision be unfavorable the applicant has the right of appeal to the Examiners-in-Chief; and then (in case of unfavorable decisions) to the Commissioner and to the Supreme Court District of Columbia.

[*Hull *vs.* Commissioner of Patents, 559.

(See Abandonment, A and B, 1, 2; Patentability, 2; Claims, 1, 4; Interferences, 2.)

PRESUMPTIONS OF LAW.

1. The presumptions of the law are in favor of the patent and the utility of the invention.

[*Geier *vs.* Goetinger, 563.

2. Patents granted by the Commissioner pursuant to the provisions of the statute relating thereto offered a *prima facie* presumption, when introduced in evidence, that the patentee is the original and first inventor of what is therein described as his invention or discovery.

[*Needham *vs.* Washburn *et al.*, 649.

(See Reissues, 3.)

PRIORITY OF INVENTION.

1. The mere making of a model of an invention held not to constitute invention, as against a patent subsequently granted to another for the same thing.

[*Stilwell and Bierce Manufacturing Co. *vs.* Cincinnati Gas Co. *et al.*, 829.

2. W. and T. having filed applications for patents showing substantially the same device, at the respective dates March 31 and April 21, 1868, were rejected. T. persisted in his claim, and upon appeal secured his patent, while W. amended his application, excluding from his claim the common device, and thus, without appeal, obtained a patent of narrow scope. Subsequently, learning of T.'s patent, he filed a second application, broad enough to include the device previously omitted, and, in the consequent interference proceedings with T., was adjudged the prior inventor, and thereupon obtained a broad patent: *Held*, in a suit brought by T. against W., that W.'s second application was the commencement of a *new proceeding*, and that alone upon which the patent granted in pursuance of it depends; and, therfore, that the presumption, as regards priority of invention, was with T.

[*Pelton and Taylor *vs.* Waters, 425.

3. The party who first reduces an invention to actual use is entitled to the patent for it, although the other may have first conceived it, if he did not exercise reasonable diligence in reducing it to practice.

[Smith *vs.* Barter, 1.

4. If the party who first conceived a machine followed up the idea diligently, and was the first to reduce it to actual practice, he is entitled to a patent for it, although his competitors had complete working drawings of it previously prepared, and had obtained a patent.

[Rees *vs.* Richards and Berry, 37.

5. Whoever first reduces an invention to practice and makes an application of it to use will usually be held the prior inventor.

[Ware *vs.* Bullock, 39.

6. In order to defeat a patent the courts require it to be shown that another not only conceived the invention in dispute before the patentee, but was also the first to perfect and adapt the same to practical use, or was using reasonable diligence for that purpose.

[Hammond *vs.* Laird, 170.

7. In accordance with this the Office uniformly requires an applicant to adduce the same evidence when he attempts to obtain a patent for an invention for which another has already obtained one in good faith.

[Hammond *vs.* Laird, 170.

8. The parties who first embodied an invention in a machine which they kept in operation afterward for actual use, besides manufacturing and selling other machines, are *prima facie* entitled to the patent.

[Crane *vs.* Whitehead and Atherton, 219.

9. In order to overcome their title their competitor must show that he had not only conceived the invention before them, but had exercised reasonable diligence in perfecting it, and had continued to do so until he had reduced the invention to practice.

[Crane *vs.* Whitehead and Atherton, 219.

10. He is the inventor, entitled to the protection of the patent law, who is first to complete the invention and publish it to the world, and not he who confines the knowledge of it to his closet.

[Arnold *vs.* Wilcox, 558.

11. Where an invention consists of a combination of elements the date when all the elements are combined is the date of the invention.

[Baker *vs.* Atwood and Moore, 697.

12. Where an applicant was first to conceive an invention, to reduce it to a working drawing and model, and to make application for a patent upon it, held that he was the first inventor, his opponent not having reduced the invention to practice.

[Smith *vs.* Edson, 827.

13. Where one is first to conceive an invention, but throws aside all evidence of the conception, makes no effort to complete or introduce the invention to the public, and delays making application for a patent for nearly four years after another has brought it into extensive use, he has no standing as an inventor.

[Hart *vs.* Little, 962.

14. An applicant first to conceive, complete, and practically test an invention in a full-sized working machine, which he preserved, held to be the first inventor, although, before he made his application for a patent, an independent inventor had procured a patent comprehending the same invention.

[Baldwin *vs.* Bigelow, 1011.

(See Evidence, 3, 5.)

PUBLIC USE.

(See Affidavits.)

REDUCTION TO PRACTICE.

1. Embodying an invention in a model is not a reduction of it to practice.

[Hammond *vs.* Laird, 170.

2. The mere filing in the Patent Office of an application for a patent describing the invention, will not be considered a reduction of it to practice.

[Crane *vs.* Whitehead and Atherton, 219.

REISSUES.

1. A reissued patent cannot be overlooked if matter be found in it the same as that claimed in a subsequent application, even though the subject-matter referred to had been improperly introduced into the patent upon reissue.

[G. Richardson, 1053.

2. Where the original patent related to *ornamented* paper collars and cuffs, but the description pointed out that the *surface* of the linen or other textile fabric would be imitated as well as the ornaments: *Held*, that the patent was lawfully reissued, so as to claim the imitated *surface* as well as the imitated *ornaments*.

[*Union Paper Collar Co. *vs.* Leland, 221.

3. Notwithstanding the fact that the patent has been reissued seven times, the law presumes that the last patent was granted to correct accidental or inadvertent mistakes in the original. The only test of the validity of the Commissioner's action is whether he has allowed a reissue for a different invention from that covered by the original patent, or for what was not therein described, claimed, or indicated.

[*Union Paper Collar Co. *vs.* White, 908, 877.

4. The purpose of a reissue is to render effectual the actual invention for which the original patent should have been granted—not to introduce new features.

[*Union Paper Collar Co. *vs.* Van Deusen *et al.*, 919.

5. Therefore, in an application for reissue, parol testimony is not admissible to enlarge the scope of the invention beyond what was described, suggested, or substantially indicated in the original specification, drawings, or Patent Office model.

[*Union Paper Collar Co. *vs.* Van Deusen *et al.*, 919.

6. Whether a reissued patent is for the same invention as the original depends upon whether the specification and drawings of the reissued patent are substantially the same as those of the original; and, if not, whether the omissions or additions are or are not greater than the law allows to cure the defect of the original.

[*Union Paper Collar Co. *vs.* Van Deusen *et al.*, 919.

7. Where the original patent for improvement in paper shirt-collars, granted to Andrew A. Evans, May 26, 1863, stated the invention to consist, first, in making the collars of parchment-paper, or paper prepared with animal-sizing; and, second, in coating one or both sides of the collar with a thin varnish of bleached shellac to give smoothness, strength, and stiffness, and to repel moisture, the claim being for "a shirt-collar made of parchment-paper, and coated with varnish of bleached shellac, substantially as described, and for the objects specified:" *Held*, that a reissue thereof which describes a paper or other than parchment-paper, or one prepared with animal-sizing, and which does not require either side of the collars to be coated with a varnish of bleached shellac for any purpose, the claim being for "a collar made of long-fiber paper, substantially such as is above described," is for a different invention from that embodied in the original patent.

[*Union Paper Collar Co. *vs.* Van Deusen, *et al.*, 919.

REJECTED APPLICATIONS.

A rejected application will no longer be considered, therefore, a bar to a new application for a patent for the same invention.

[Rouse and Stoddard, 169.

SPECIFICATIONS.

(See Construction of Specifications and Patents.)

SURRENDER OF PATENTS.

The surrender of a patent to the Commissioner is an act which, in judgment of law, extinguishes it. It is a legal cancellation of it; and hence the patent can no more be the foundation for the assertion of a right, after the surrender, than could an act of Congress which has been repealed; and it has frequently been determined that suits pending which rest upon an act of Congress fall with the repeal of it. Antecedent suits depend upon the patent existing at the time they were commenced, and unless it exists and is in force at the time of the trial and judgment, the suits fail.

[*Reedy *vs.* Scott, 463.

TO WHOM A PATENT SHALL ISSUE.

In determining to whom a patent shall issue, where assignments have been made, the Commissioner of Patents must be governed by the record. He cannot regard mere equitable claims, but must issue the patent to the person or persons having the legal title, the requirements of the Office having been complied with.

[T. A. Edison, 423.

TRADE-MARKS.

The right under the statute to adopt and register, distinguished from the common-law right acquired by use.

[J. W. Rothschild, 220.

USE IN A FOREIGN COUNTRY.

The right of an inventor in this country to a patent is not impaired by anything of the same nature as his invention which has been achieved abroad, provided it has not been patented nor described in any printed publication.

[Smith *vs.* Barter, 1.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

VOLUME VIII.

JULY 6 TO DECEMBER 28, INCLUSIVE,

1875.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1876.

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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

JULY—DECEMBER—1875.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 1. TUESDAY, JULY 6, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

BECKER *vs.* THROOP.—*Interference.*

[*Appeal from the Examiner of Interferences in the matter of the interference of Becker vs. Throop.* GRAIN-CLEANING MACHINES.—*Decided July 7, 1875.*]

Where an interference had been declared between an application for a reissue of a patent granted in 1873, and a patent of a subsequent date: *Held*, that the interference was without authority of law, and should be dissolved.

The Commissioner of Patents must be governed, in regulating the practice of the Patent Office, by the decisions of the United States courts, so far as they apply.

The decision of the Supreme Court of the District of Columbia in *ex-parte* Mayall in effect abrogates the last paragraph of Rule 51 of the Rules of Practice of the Patent Office; and hereafter Rule 51 may be regarded as amended, so that applications for reissue will, under no circumstances, be put in interference with patents granted subsequently to the date of original patents sought to be reissued.

THACHER, *Commissioner:*

This is an appeal from a decision of the Examiner of Interferences denying a motion to dissolve the interference. The motion is based upon the fact that the interference was declared between Throop's application for reissue of a patent granted February 11, 1873, and a patent granted to Becker subsequently, to wit, June 2, 1874, which proceeding, it is insisted, is without authority of law. The interference was declared under the authority of the fifty-first rule promulgated by the Commissioner of Patents, with the approval of the Secretary of the Interior; but in a recent case (*ex parte* Mayall) heard on appeal by the Supreme Court of the District of Columbia, it was decided by the court that the Commissioner of Patents has no authority of law to declare an interference between an application for reissue and a patent granted subsequently to the original patent sought to be reissued.

As I have frequently stated in decisions already published, the Commissioner of Patents must be governed in his practice by the decisions of the courts.

The decision referred to above must control the Patent Office, therefore, in the declaration of interferences hereafter, so far as it applies. Its effect is to strike out the fourth case cited under Rule 51, in which an interference will be declared.

Rule 51 may be regarded as amended by my decision in this appeal to the extent of striking out the last paragraph thereof.

Applications for reissue will not hereafter be put in interference with patents granted subsequently to the date of the original patent, under any circumstances whatever, and all interferences of this character now pending may be dissolved without further proceedings.

The decision of the Examiner of Interferences in the present case is overruled, and the interference dissolved.

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Josiah Holmes for Letters Patent for* "RAKE-TOOTH."—*Decided June 1, 1875.*]

JOSIAH HOLMES.—*Appeal.*

The change from a round to an oval cross-section at different portions of a rake-tooth, compared with a similar construction in a hay-fork tooth. The construction and purpose being the same, the different use of the tool is immaterial.

SPEAR, *Acting Commissioner:*

The objection made by the Examiner to the allowance of the claim presented by applicant appears to be twofold. In the first place he says that the "feature claimed in this case is regarded as a matter of judgment and not of invention;" further, that "the particular form of tooth claimed is not new in analogous implements," and cites the model in the patent of Matthewson. More fully stated, I understand the reason first offered by the Examiner to be that the expedient resorted to to strengthen the rake-tooth at the bent part is an expedient in common use for the same purpose—that is to

say, if it were deemed desirable to lighten a round rake-tooth without diminishing its strength—any ordinary workman ought to be aware that this could be accomplished by increasing the diameter in the line of the pressure to be resisted, while the diameter at right angles might be lessened. Certainly this expedient is a part of the common stock of information among artisans of ordinary skill, and I cannot regard it as an invention, to apply it in this particular case. I have no doubt that the expedient was resorted to for the same purpose in the hay-fork cited by the Examiner. In that case the same conditions exist. There is a necessity for increased strength in the upper part of the prongs, and like necessity for easy delivery at and near the points; accordingly, we find the points and the lower parts rounded and the upper parts flattened. It seems to me an altogether forced and unreasonable conjecture to regard this as an accidental and meaningless construction, and I do not see why, if the device were patentable, the patentee in this case might not, under the law, reissue, amending his drawings and specification by the model, and claiming the precise device claimed by the applicant in the present case, for the tooth or prongs in this respect are the same, though one be applied to a hay-fork and the other to a hay-rake; but I regard the first objection as fatal to the application. This applicant has not made an invention. He has used an old device for an old and well-known purpose. The fact that the tooth to which he applies it is inserted in a different machine and put to a slightly-different use affords him no relief.

For these reasons I must affirm the decision of the Examiners-in-Chief.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

GILBERT & BARKER MANUFACTURING COMPANY *vs.* OAKES TIRRELL.

[*In equity.—Before* WOODRUFF, *Cir. J.—Decided June*, 1874.]

The chief feature of the improvement set forth in the patent granted to J. F. Barker and C. N. Gilbert, August 3, 1869, for an "Improved Apparatus for Carbureting Air," is the placing of the carbureter under ground in a vault separate from the building to be lighted, at any desired or convenient distance therefrom, while the power and the motor, by means of which atmospheric air is forced through pipes leading into the carbureter, are placed in an apartment in the building, or near thereto, conveniently accessible with or without a light, as occasion may require, whenever, for adjusting the motive power or the machinery thereof, it is desirable to do so.

Such isolation of the carbureter under ground prevents danger from explosion, secures an even, regular supply of the gas, unaffected by changes of temperature above ground, and effects a preliminary condensation of the gas before it enters the distributing-pipes.

This is more than a mere change in the location of an old device. By the new arrangement the patentees bring into contributory and effective co-operation, with a carbureter and the machinery for supplying air thereto, the earth and its even temperature below. This is more than merely making use of the natural state of the ground or the natural laws, which, operating below the surface, make such new location desirable, as a matter of mere judgment. It brings into conjoint operation new elements, working both actively and passively to produce the result, and to produce the ultimate and final result in a better manner—in a manner which combines safety with convenience and utility, as had never before been done.

The new arrangement of the carbureter was patentable, and the claim—viz, "The arrangement of the carbureter with a motor-wheel, said wheel being driven by a descending weight or other equivalent mechanical power, applied to force the air through the carbureter to the burners, said carbureter being placed within a vault by itself, separate from the building to be lighted, the whole arranged and connected with pipes, substantially as herein described and set forth"—is valid.

Mere differences in the mode of constructing the carbureter held not to avoid the patent, so long as the moderate temperature of the earth and the underground passage of the gas are availed of.

[*E. W. Stoughton* and *William Stanley*, for complainant.
Edmund Wetmore, for defendant.]

WOODRUFF, *Circuit J:*

The bill herein is filed to restrain the infringement of a patent granted to J. F. Barker and C. N. Gilbert on the 3d of August, 1869, for an approved apparatus for carbureting air.

By means of this apparatus it is claimed that gas is produced from petroleum and similar volatile oils employed for carbureting atmospheric air, thus rendering it combustible, light-producing, and suitable for lighting houses, manufactories, &c.

Neither the process nor the chief parts of the apparatus are claimed to be new. The claim in the patent which the defendant is charged with infringing is in these words:

> The arrangement of the carbureter with a motor-wheel, said motor-wheel being driven by a descending weight or other equivalent mechanical power applied to force the air through the carbureter to the burners, said carbureter being placed within a vault by itself, separate from the building to be lighted, the whole arranged and connected with pipes, substantially as herein—i. e., in the specification—described and set forth.

It appears by the proofs that, prior to the invention of the patentees, attempts to produce and bring into general use gas manufactured by forcing atmospheric air through or in contact with volatile oils under such pressure that it was suitably impregnated or carbureted were liable to two difficulties.

The chief of these was that, under any already-devised arrangement, the danger of explosion, as an incidental result of the escape of gas from the carbureter, was very great; and this not only *per se* hindered its use, but made it difficult or impossible to procure insurance upon buildings so lighted. Another difficulty lay in the fact that, in passing the gas from the carbureter through the distributing-pipes, whenever the temperature of the pipes was lower than that of the carbureter condensation occurred, which produced in the pipes not an obstruction merely, but a highly inflammable liquid, greatly inconvenient and dangerous.

If an attempt was made to obviate these objections by locating the apparatus in apartments separate from the building lighted, there was a necessity to provide for the changes of temperature in our ever-varying climate, which were liable to cool the carbureter to a degree which made it practically inoperative; or, if the apartment was artificially heated, the danger of explosion was not avoided.

I shall not enter very fully or minutely into a discussion of the details of the patented apparatus, since most of them are confessedly old.

The chief feature of the improvement is in the placing of the carbureter under ground, in a vault separate from the building to be lighted, at any desired or convenient distance therefrom, while the power and the motor, by means whereof the atmospheric air is forced through pipes leading into the carbureter, is placed in an apartment in the building, or near thereto, conveniently accessible with or without a light, as occasion may require, whenever for adjusting the motive power or machinery thereof it is desired to do so. Such apartment being thus wholly separated by walls or intermediate earth, or both, no gas from the carbureter pervades it, and no danger of explosion arises.

Besides this result, which may be claimed to be purely incidental, and perhaps not novel, because it would result from any mere separation of the two parts of the apparatus by placing them in different apartments, a most important result is effected in making such separation practicable, and at the same time producing an even, regular supply of the gas by the carbureter, unaffected by changes of temperature above ground, and effecting also a preliminary condensation before the gas enters the distributing pipes, which relieves the operation of the apparatus from the objection secondly above named.

Three questions are hereupon raised. Was this new arrangement patentable? Was it new, and were the patentees the first inventors? Does the defendant infringe?

1. Upon the first question it is insisted that the patentees merely changed the location of the carbureter, and that the mere change in the location of an old device is not patentable.

In *Marsh et al.* vs. *The Dodge and Stevenson Manufacturing Company*, in the Northern District, at the June term, 1873, (5 OFFICIAL GAZETTE, 398,) I had occasion to say that "mere change of location is not invention." But it was also held that "where change of location involves the employment of new devices to adapt an apparatus for use in the new position, and a beneficial result is produced, then this location, in its connection with such new devices—that is, the means by which the result is produced, and not the result itself—is patentable; and where such change of location brings into existence a new combination of devices, operating by reason of such new combination to produce a new and useful result, such new combination is patentable."

This illustrates the nature and patentable character of the arrangement described in the patent in this case. By the new arrangement the patentees bring into contributory and effective co-operation, with a carbureter and the machinery for supplying atmospheric air thereto, the earth and its even temperature below the surface, and obtain protection from the efflux of gas from the carbureter and its accumulation in the frequently visited location of the motor, and from the danger of consequent explosion, and secure, by the passage of the gas from the carbureter through a cooler medium, the preliminary condensation, which makes the use of the gas in the building and its passage through the distributing-pipes safe, convenient, and valuable.

It is no impeachment of the patent to say that this is only making use of the natural state of the ground, or the natural laws which, operating below the surface, make such new location desirable as a matter of mere judgment. It is more than that. It brings into conjoint operation and effect new elements, working actively and also operating passively to produce the result, and to produce the ultimate and final result in a better manner—in a manner which combines safety with convenience and utility as had never before been done.

The most important inventions ever made consist in subordinating natural elements or controlling natural laws to the production of useful results.

I cannot doubt that the invention of the patentees was patentable, as truly so as it is abundantly proved to be greatly useful and valuable.

2. The questions of fact—was this arrangement new, and were the patentees the first inventors—must be answered in the affirmative.

I cannot, in a brief opinion, review in detail the evidence. I must content myself with saying that, after a careful examination of the testimony and attention to the very full argument of the counsel, the conclusion seems to me clear that no prior devices or arrangements anticipated the patentees.

3. Does the defendant infringe? It was but feebly, if at all, insisted that, if the arrangement of devices by the patentees was entitled to be called invention, and was patentable, as above explained, the defendant did not employ its distinguishing features or characteristics. The details in the construction of his carbureter were not precisely like that used by the complainant, but those specific features were not claimed. The substantial operation of his carbureter and the mode of impregnating the atmospheric air are alike in both.

The difference between the apparatus of the defendant and that of the patentees chiefly relied upon is that, whereas the latter make the cavity below the ground a vault having surrounding walls, the defendant, having inserted his carbureter in the cavity, surrounds it with earth in direct contact therewith, and carries up to the surface a pipe through which to replenish the carbureter with oil, instead of having a removable opening to the vault below employed by the patentees.

The substance of the invention the defendant uses. The means of its effective useful operation are the same. The even, moderate temperature of the earth, the underground passage of the gas, and the effect thereof are alike used in both. The difference in the construction of the carbureter used by the patentees, as described in the drawings, may make a more permanent opening about its sides desirable; but I cannot regard these details as of the substance of the invention. The apparatus of the defendant does substantially operate by the same means, in the same way, and to produce the same result.

The complainant must have a decree for an injunction and account in the usual form.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date July 6, 1875.]

8,450.—Glass Dishes for Table Use.—JAMES S. ATTERBURY and THOMAS B. ATTERBURY, Pittsburg, Pa. Application filed June 10, 1875. Term of patent 7 years.

8,451.—Metal Case for Electro-Magnetic Machine.—WILLIAM H. BURNAP, Jersey City, N. J. Application filed May 15, 1875. Term of patent 7 years.

8,452.—Writing-Paper.—HENRY D. CONE, Stockbridge, Mass. Application filed May 31, 1875. Term of patent 14 years.

8,453.—Coffin-Plates.—WILLIAM PARKIN, Taunton, Mass., assignor to REED & BARTON, same place.—Case B. Application filed May 27, 1875. Term of patent 7 years.

8,454.—Printing-Type.—JULIUS HERRIET, New York, N. Y., assignor to DAVID WOLFE BRUCE, same place. Application filed June 23, 1875. Term of patent 14 years.

8,455 and 8,456.—Nubia.—JAMES PHIPPS, Philadelphia, Pa. Cases A and B. Applications filed June 7, 1875. Term of patents 3½ years each.

8,457.—Carpets.—THOMAS J. STEARNS, Boston, Mass., assignor to THE ROXBURY CARPET COMPANY, same place.—Case J. Application filed June 21, 1875. Term of patent 3½ years.

8,458.—Stoves.—JASPER VAN WORMER and MICHAEL MCGARVEY, Albany, N. Y. Application filed January 16, 1875. Term of patent 7 years.

8,459.—Stove.—NICHOLAS S. VEDDER, Troy, N. Y., assignor to COMSTOCK, CASTLE & CO., Quincy, Ill. Application filed June 26, 1875. Term of patent 3½ years.

8,460.—Stove.—ALEXANDER WEMYSS, Philadelphia, Pa., assignor to JESSE OKE, JOHN R. PAINTER, WILLIAM GRANDER, P. W. NAGLE, H. C. POSEY, WILLIAM H. SCHICK, ELIJAH BULL, JASPER SCHEELER, and WILLIAM M. STAUFFER, Reading, Pa. Application filed June 28, 1875. Term of patent 7 years.

8,461.—Embroidery-Patterns.—EMIL CRIGAND, New Haven, Conn., assignor to HENRY ST. JOHN, same place.—Case FF. Application filed June 26, 1875. Term of patent 3½ years.

8,462.—Reservoir Cooking-Stove.—JAMES DWYER, Detroit, Mich., assignor to DETROIT STOVE WORKS, same place. Case B. Application filed June 3, 1875. Term of patent 7 years.

8,463.—Printing-Types.—WILLIAM W. JACKSON, Philadelphia, Pa., assignor to DAVID WOLF BRUCE, same place. Application filed June 23, 1875. Term of patent 14 years.

8,464.—Glassware.—JAMES B. LYON, Pittsburg, Pa. Application filed June 17, 1875. Term of patent 3½ years.

8,465.—Base of Glassware.—JAMES B. LYON, Pittsburg, Pa. Case B. Application filed June 17, 1875. Term of patent 3½ years.

8,466.—Letter or Toy Building-Blocks.—SEYMOUR LYMAN, Leominster, Mass. Application filed May 17, 1875. Term of patent 14 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Certificate bearing date July 6, 1875.]

2,696.—Toy Balloons.—GEORGE F. HEIDET, New York, N. Y.—Case C. Application filed May 20, 1875.
"a portrait of George Washington."

2,697.—Tea.—MACONDRAY & Co., San Francisco, Cal.—Case A. Application filed May 1, 1875.
"word 'Comet' in black letters, straight, surrounded by a scroll."

2,698.—Tea.—MACONDRAY & Co., San Francisco, Cal.—Case B. Application filed May 1, 1875.
"an X-shaped character and the letters 'M M & Co.'"

2,699.—Agricultural Implements.—GEORGE W. & M. STROUSE, Avon, N. Y. Application filed April 19, 1875.
"letter 'S' and an arrow."

2,700.—Mince-Meat.—ATMORE & SON, Philadelphia, Pa. (Re-registration.) Application filed July 21, 1871.
"the steer, with the words 'Atmore's Mince-Meat.'"

2,701.—Chiccory.—BLUME & Co., New York, N. Y. (Re-registration.) Application filed January 31, 1875.
"an eagle between the letters 'B C.'"

2,702.—Fly-Catcher.—CHARLES F. BURKS, Fresno, Cal. Application filed May 31, 1875.
"'KLU-KLUX.'"

2,703.—Cutlery and Surgical Instruments.—WILHELM CLAUBERG, Solingen, Prussia. (Re-registration.) Application filed May 11, 1872.
"the figure of a soldier on foot."

2,704.—Anisette.—G. W. DUNBAR & SONS, New Orleans, La. Case A. Application filed May 24, 1875.
"the words 'Plantation Anisette,' and a monogram compounded of the following letters: 'G. W. D. & S.'"

2,705.—Anisette.—G. W. DUNBAR & SONS, New Orleans, La. Case B. Application filed May 24, 1875.
"words 'Bird's Eye,' 'Anisette,' and a monogram compounded of the following words, viz: 'G. W. D. & S.'"

2,706.—Cooking-Stove.—GILES F. FILLEY, St. Louis, Mo. (Re-registration.) Application filed May 13, 1871.
"'Charter-Oak.'"

2,707.—Locks and Hardware.—HILLEBRAND & WOLF, Philadelphia, Pa. (Re-registration.) Application filed February 11, 1871.
"a star and suspended key."

2,708.—Medal.—JOHN H. HOBART, Jr., Catawissa, Pa. Application filed September 12, 1874.
"a view of the Centennial Memorial Building."

2,709.—Whisky.—HOFFHEIMER BROTHERS, Cincinnati, Ohio. Application filed, June 9, 1875.
"word 'Fairfax.'"

2,710.—Atomizers for Perfuming, &c.—THOMAS J. HOLMES, Boston, Mass. (Re-registration.) Application filed August 24, 1871.
"words 'Holmes' Boston Perfumer.'"

2,711.—Fertilizers.—JOSHUA HORNER, Jr., Baltimore, Md. (Re-registration.) Application filed October 14, 1871.
"the figure of a plow and the name 'Maryland Super-Phosphates.'"

2,712.—Cigars, Cheroots, Cigarettes, and Smoking-Tobacco.—FRANCIS S. KINNEY, New York, N. Y.—Case E. Application filed May 22, 1875.
"two figures, ½ ½, each expressing the number one-half, and joined by the character &."

2,713.—Smoking-Tobacco.—A. M. LYON & Co. Richmond, Va. Application filed May 3, 1875.
"words 'Short Horn Smoking Tobacco,' and the figure of a lion with a bull's head in his fore paws."

2,714.—Table-Sauce.—JOHN K. MACGOWAN & Co., Philadelphia, Pa. (Re-registration.) Application filed January 29, 1873.
"words 'Champion of America.'"

2,715.—Wood-Working.—MCBETH, BENTEL & MARGEDANT, Hamilton, Ohio. (Re-registration.) Application filed June 10, 1871.
"'The Universal Wood Worker.'"

2,716.—Paper Patterns for Cutting Garments.—JAMES MCCALL, New York, N. Y. Application filed June 22, 1875.
"words 'BAZAR PATTERNS.'"

2,717.—Bells.—E. A. & G. R. MENEELY, West Troy, N. Y. (Re-registration.) Application filed January 7, 1871.
"'The Meneely Bell-Foundry.'"

2,718.—Cassimeres and Clothing Fabrics.—NEW ENGLAND COMPANY, Rockville, Conn. Application filed June 26, 1875.
"the figures '76.'"

2,719.—Gin.—I. D. RICHARDS & SONS, Boston, Mass. (Re-registration.) Application filed August 17, 1871.
"the representation of a shell, as embodied in the figure, or the words, or both combined."

2,720.—Cloth or Men's Wear.—EDWARD T. STEEL & Co., Philadelphia, Pa. (Re-registration.) Application filed January 9, 1871.
"the letters 'H. W. & H.'"

2,721.—Polishing Compound.—STREETER & RIKER, New York, N. Y. Application filed June 23, 1875.
"words 'Golden Polisher.'"

2,722.—Saws.—THE BISSELL & MOORE MANUFACTURING COMPANY, New York, N. Y. (Re-registration.) Application filed May 2, 1871.
"words 'The Electric.'"

2,723.—Metal.—THE PATENT METAL COMPANY, Philadelphia, Pa. (Re-registration.) Application filed November 3, 1870.
"monogram GLS."

2,724.—Yeast-Powder.—H. K. THURBER & Co., New York, N. Y. (Re-registration.) Application filed October 1, 1870.
"a representation of a loaf of bread, on a preferably dark background, with the words 'The Best Yeast-Powder' printed upon or near the same."

2,725.—Cotton Flannels.—TREMONT AND SUFFOLK MILLS, Lowell, Mass. Application filed July 1, 1875.
"the words, letters, and numerals, 'Progress,' 'T M,' 1870.'"

2,726.—Whisky.—VIDVARD & SHEEHAN, Utica, N. Y. (Re-registration.) Application filed January 24, 1871.
"Mehan's Malt Potteen,' arranged in the form of a circle around the figure of an Irish harp."

2,727.—Whiskey.—VIDVARD & SHEEHAN, Utica, N. Y. (Re-registration.) Application filed March 28, 1871.
"a representation of a medal having stars on its face accompanied by the words 'Gold Medal Kentucky Malt Bourbon,' the words 'Gold Medal' being arranged in an arch over the medal, and the three words 'Kentucky Malt Bourbon' being arranged in as many straight lines thereunder."

2,728.—Electro-Voltaic Bands.—VOLTA BELT COMPANY, Cincinnati, Ohio. Application filed April 23, 1875.
"a symbol consisting of the words 'Electricity is life,' printed across the figure of a globe, and beneath clouds from which lightning-flashes proceed."

2,729.—Fertilizer.—WALTON, WHANN & Co., Wilmington, Del. (Re-registration.) Application filed May 15, 1871.
"words 'Virginia Tobacco Guano.'"

2,730.—Fertilizer.—WALTON, WHANN & Co., Wilmington, Del. (Re-registration.) Application filed November 3, 1870.
"words 'The Great Fertilizer—Whann's Rawbone Superphosphate.'"

2,731.—Cigars.—WESTFIELD CIGAR-MAKERS' CO-OPERATIVE ASSOCIATION, Westfield, Mass. Application filed June 21, 1875.
"the name of said association and the picture of said mountain and scenery, and the word 'Ætna.'"

2,732.—Wire Goods.—WOODS, SHERWOOD & Co., Lowell, Mass. Application filed January 8, 1875.
"word 'Lustral.'"

TO CORRESPONDENTS.

Persons ordering drawings of patents, or making inquiries in regard to patents, must always state the name of the inventor, subject-matter, and date. In making inquiries in regard to applications for patents letters must state the name of the applicant, subject-matter, and date of filing. In ordering drawings by classes, under the subject-matter index of September, 1871, (furnished gratis on application,) it will be understood that the Office cannot take upon itself to make selections of certain lines of inventions, embracing portions only of the patents in the classes as specified. The number of classes has been made as ample as the conduct of the business in this office will readily permit. An order should, therefore, embrace the entirety of a given class or classes. They cannot be subdivided unless ordered specifically by number, name, and date.

The cheapness of the copies, and the comparatively small number of patents in each of the one hundred and seventy-six classes, render an order by class by no means an onerous undertaking.

APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., May 19, 1875.

On the petition of ANN JENNETTE HATHAWAY, of Milwaukee, Wis., executrix of JOSHUA HATHAWAY, deceased, authorized by act of Congress approved February 16, 1875, praying for the extension of a patent granted to the said JOSHUA HATHAWAY, on the 3d day of April, 1860, for an Improvement in Devices for Converting Reciprocating into Rotary Motion,

It is ordered that the testimony in the case be closed on the 20th day of July next; that the time for filing arguments and the Examiner's report be limited to the 30th day of July next; and that said petition be heard on the 4th day of August next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

REMITTANCES.

All money sent by mail, either to or from the Patent Office, will be at the risk of the owner. In no case should money be sent inclosed with models. All payments to or by the Office must be paid in specie, Treasury notes, national bank-notes, certificates of deposit, or post-office money-orders.

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Young, W., Plane iron	165,291
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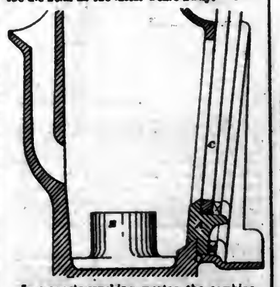
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED JULY 6, 1875

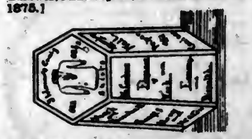
165,146. QUARTZ-MORTARS. August W. Anderson, Lyon County, Nev. (Filed Mar. 4, 1875.)

Brief.—A series of pieces of varying heights are used successively to support the screen, so as always to keep it at the same level with the die-head as the latter wears away.



In a quartz-crushing mortar, the combination of the die or dies B, screen C, and two or more interchangeable supports, A, of varying heights, substantially as described.

165,147. ADVERTISING MEDIUMS. Horace Baldwin, Philadelphia, Pa. (Filed Mar. 19, 1875.)

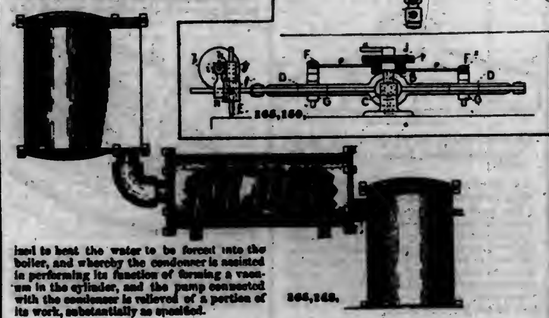


1. A glass vessel, A, having spaces *b* therein, in combination with advertising cards *b'* applied with their printed faces against such spaces, substantially as and for the purpose described.

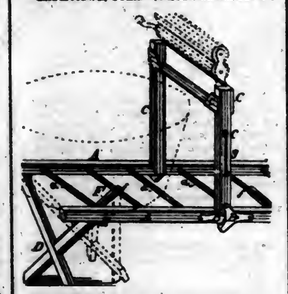
2. A glass vessel having advertising-cards held in place against its interior by filling the vessel with plaster-paris, substantially as described.

165,148. CONDENSING-ENGINES. John F. Barker, Springfield, Mass. (Filed Sept. 16, 1874.)

The steam-cylinder A, condenser E, and the heating-cylinder D, containing a heating vessel or coil, *a*, provided with an inlet and outlet, *b* and *b'*, all the said parts being combined and arranged substantially as described, whereby the heat of the exhaust steam is utilized to heat the water to be forced into the boiler, and whereby the condenser is assisted in performing its function of forming a vacuum in the cylinder, and the pump connected with the condenser is relieved of a portion of its work, substantially as specified.



165,149. WASH-BENCHES. G. Bauman, Middletown, Conn. (Filed Feb. 21, 1874.)

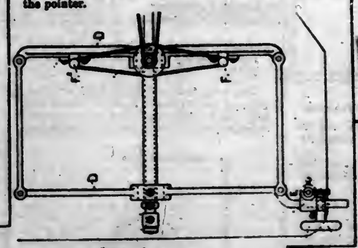


1. The combination of strips A A' with the vertical pieces C and the hinges B B', substantially as and for the purposes set forth.

2. The wash-bench herein described, consisting of strips A A', hinges B B', wringer-support C C', hinged legs D, and movable braces F, the several parts constructed and combined substantially as described.

165,150. MACHINES FOR CARVING WOOD. John P. Blackman, Brooklyn, N. Y. (Filed May 26, 1875.)

Brief.—By means of a frame centered upon a bar pivoted at one end to a standard on the table, and provided at its outer end with a foot-piece and roller, and passing through the middle of the frame, which has a rocking and horizontal motion, the main cutter is caused to follow the course of an adjustable pointer, whether the frame is in a vertical or horizontal position. A reverse or left of the pattern can be produced by securing the auxiliary cutter in a hollow standard, moving the adjustable pointer over the pattern, and moving the cutter in an opposite direction to that of the pointer.



1. The frame D, constructed and operating substantially as described, in combination with an adjustable pointer, E, and cutter F, substantially as and for the purposes set forth.

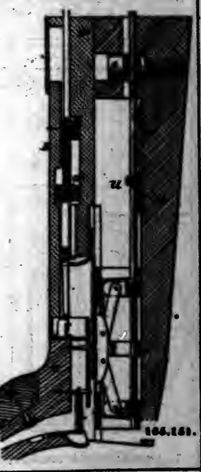
2. The combination of the frame D, constructed and operating substantially as described, the adjustable pointer E, and the cutters F and F', as and for the purposes set forth.

165,151. BOOT-TREES. Thomas Brannigan, Beloit, Wis. (Filed Nov. 19, 1874.)

Brief.—The tree is provided with an interchangeable instep-piece, that a single form may be applied to both right and left boots.

1. In a boot-tree, the reversible right-and-left instep-shaping piece Q, substantially as and for the purpose set forth.

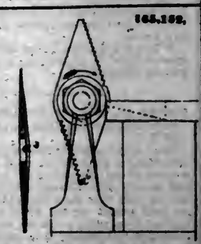
2. The rod E, collar U, rack V, spring-bearing *t*, in combination with parts A, B, C, and D, and intermediate mechanism, all substantially as and for the purpose described.



165,152. SAWS. C. A. Brown, Brooklyn, and C. B. Sedore, New York, N. Y. (Filed Jan. 9, 1875.)

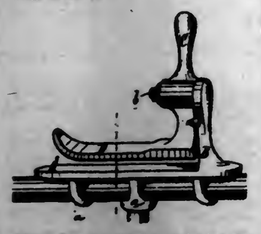
Brief.—A cauiform notch can be cut in a plank or other article by means of a rhomboidal-shaped saw-blade, having teeth on two of its parallel edges, and tapering in thickness from the middle to the ends.

A rhomboidal saw-blade having teeth on two of its parallel edges, and tapering in thickness from the middle to the ends, substantially as described.



HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON

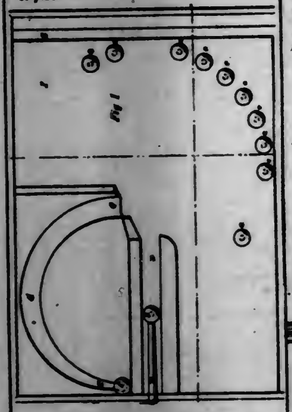
165,156. REIN-HOLDERS. Jas. Bulger and Nicholas Inglis, Muskegon, Mich. (Filed Aug 12, 1874.)



The combination of a plate, A, having clips c, and a standard, B, provided with a horizontal stud, b, and lever C, having a horizontal toe, D, and a spring, c, with the end-board or dash-board of a wagon to form a rein-holder, all substantially as set forth.

165,157. GAME APPARATUS. J. D. Butler, Lancaster, Mass. (Filed Nov. 12, 1874.)

Brief.—The principal object-ball is first set rolling; it is then struck by the cue-ball, if possible, so as to dislodge other object-balls or pins.



1. A game apparatus consisting of the table I, the two balls A and B, the inclines C, and the marbles c, or their equivalents, substantially as described.

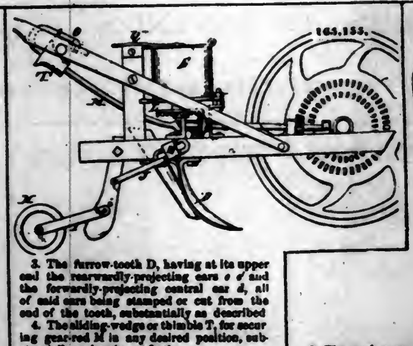
2. The combination, in the table I, of the grooves C and D, substantially as and for the purpose described.

165,158. PLOT-WHEEL CORE-DRILLS. Jas. Campbell, Harrison, Ohio. (Filed Dec. 19, 1874.)

Brief.—On the longitudinal shaft is adjustably secured a small pinion, which gears with a pinion on the lower end of the vertical shaft that imparts motion to the mud-wheel. Extending back from the adjustable pinion is a rod bent around the rod for connecting the handles, upon which a thimble, for adjusting the pinion and holding it in position, is secured. To the hinged cover of the mud-box is secured an arm that extends rearwardly, and has a projection, which fits into a T-slot in the cross-bar, for holding it down.

1. The adjustable pinion I, in combination with the pinion L on the mud-box H, adapted to rise to allow a change of speed when the drill is in operation, substantially as herein set forth.

2. The combination of the pinion I, slide-rod H G, with pinion L, and pivoted grain box H, constructed and arranged substantially as herein set forth.



165,155.



165,156.

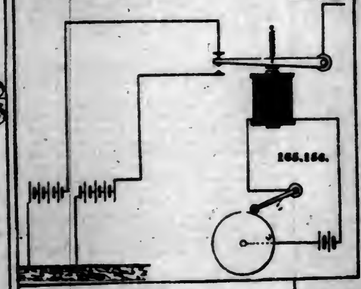
3. The furrow-tooth D, having at its upper end the rearwardly-projecting ears *c c'* and the forwardly-projecting central ear *d*, all of said ears being stamped or cut from the end of the tooth, substantially as described

4. The sliding-wedge or thimble T, for securing gearered M in any desired position, substantially as herein set forth.

5. The fastening device shown in Fig. 3, constructed and arranged as herein set forth.

2. The mechanism consisting of the lower or base roller B, the upper roller F, and bar E, pivoted together as explained, the bent lever *d*, pivoted at one end to the bar E, and with its opposite end engaging the tubular rock-shaft *j* or a pinion affixed to the latter; and, lastly, the pointer *l* and dial-plate *m*, with its index engressed upon it, the whole being substantially as and for purposes stated.

165,159. HYDRAULIC HOSE. Lovewell H. Downing, North Andover, Mass., assignor to John A. Wiley, same place. (Filed May 22, 1875.)



165,164.

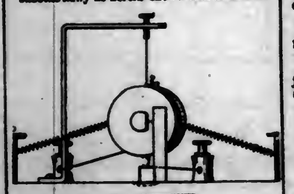


165,160. AUTOMATIC TELEGRAPH. Patrick B. Delaney, Jersey City, N. J. (Filed Oct. 21, 1874.

The combination, with an automatic transmitter, of a relay which connects the line on one movement of its armature to the signaling battery, and upon the other to the earth or to a reversing-battery, substantially as and for the purposes set forth.

165,167. TELEGRAPH-RELAYS. Patrick B. Delaney, Jersey City, N. J. (Filed Dec. 11, 1874.)

The combination, with a fixed armature, plain or electro-magnetic, of an electro-magnetic coil, movably suspended above the same, substantially as herein shown and described.



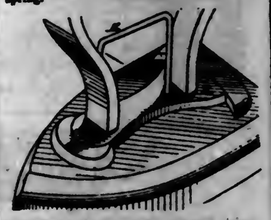
165,166. METAL OR PAPER GAGES. E. W. Donelson, Boston, Mass. (Filed Apr. 26, 1875.)

1. In an instrument for gaging paper and other materials, a stationary roller or bed on a base upon which the material to be gaged passes, in combination with a yielding or sliding roller or block, disposed over and bearing the first, and connected in a suitable manner with an index and pointer, to register the extent to which the two rollers or bearings are separated by the introduction of an object between them, the whole being substantially as and for the purposes stated.

A base, A, made of cloth, covered with vulcanized rubber or composition, and provided with a re-enforce or strip, B, as described, folded back upon itself, and applied to opposite sides of a lap, a, and extended beyond its edge, and cemented together in the extension, and to the parts of the base in contact with such re-enforce, all substantially as shown and explained.

165,168. SAD-IRONS. Stephen Elliott, Indianapolis, Ind. (Filed Dec. 26, 1874.)

Brief.—A detachable handle fitting in projecting grooves in the end-iron, and held by a spring.

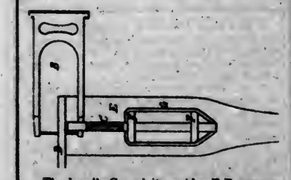


The combination, with a sad-iron, of the dovetail circular projections C D, the plates G H, and the bolt E rigidly attached to the standard of the handle F, substantially as and for the purpose described and shown.

165,161. DIAPHRAGMS FOR GAS-GOVERNORS. Walter Frost, Newark, N. J. (Filed Mar. 25, 1875.)

A process for treating leather for diaphragms for gas-regulators with a composition of about equal parts of glycerine and castor-oil, as and for the purpose specified.

165,162. JIG-SAWS. Sylvester B. Fuller, Lynn, Mass. (Filed June 1, 1875.)

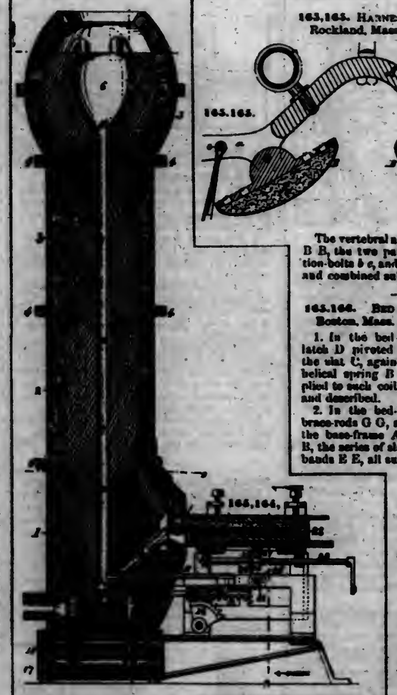


The handle C, and its guides F F, and operative spring G, arranged and combined with the saw-carrier B, and the supporting-frame D E, all substantially in manner and to operate as shown and described.

165,163. MACHINES FOR COMPRESSING HARRELS. Elihu J. Granger, Brooklyn, N. Y. (Filed June 2, 1875.)

Brief.—The two compressing and hooping machines are operated alternately by means of continuously-revolving cams.

1. The combination of two stationary barrel-compressing dies with two movable barrel-compressing dies, and a cam or cams for simultaneously imparting a reciprocating rectilinear motion to the said movable dies, the one movable die acting in conjunction with its opposed stationary die, to compress and hoop a barrel, while the other movable die is being withdrawn from its opposed stationary die, for the purpose of permitting another barrel-cylinder to be placed in position to be operated upon, the whole constructed substantially as described.

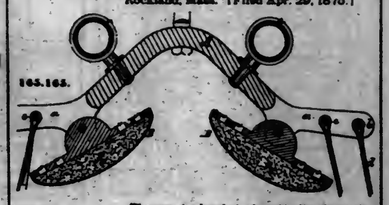


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2. In combination with barrel-compressing dies, substantially such as described, the pusher T, for facilitating the dislodgment of the barrel from the dies at the conclusion of the compressing and forming operation, substantially as set forth.

165,165. HARNESS-SADDLES. H. H. Hallett, Rockland, Mass. (Filed Apr. 29, 1875.)



The vertebral arch A, the self-adjusting pads B B, the two pairs of arms a a, the connection-bolts b c, and the four straps d d, arranged and combined substantially as specified.

165,166. BED-BOTTOMS. Livorus Hull, Boston, Mass. (Filed Jan. 30, 1875.)

1. In the bed-bottom, the rotary duplex latch D pivoted at its middle to the side of the slat C, against which the end coil of the helical spring B is to rest or bear, and applied to such coil, all substantially as shown and described.

2. In the bed-bottom, the two pairs of brace-rods G G, arranged and combined with the base-frame A, the sets of spiral springs B, the series of slats C, and their connection-bands E E, all substantially as specified.



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2. The combination of a valve, 12, with a stand-pipe, 7, and ascending duct 13, operating substantially as set forth.

3. In an apparatus for casting refractory metals, the valve 12, constructed of porcelain and working, within a suitable sleeve or casing, in contact with the molten metal, the whole surrounded by a protecting body of crucible stuff or other non-conducting material to prevent the too rapid heating of the porcelain, substantially as set forth.

4. The porcelain coupling-tubes 10, employed substantially as set forth, in combination with the sectional stand-pipe 7, and a surrounding body of crucible stuff, or other non-conducting material to protect the porcelain in an apparatus for casting refractory metal.

5. The porcelain mouth-pieces 14, constructed and applied as herein set forth, surrounded by a protecting body of crucible stuff or other non-conducting material within the furnace-walls.

6. The flanges 8 and 9, employed to center and support the crucible 6 and pipes 7, respectively, substantially as set forth.

7. The combination of the crucible 6, stand-pipe 7, valve 12, duct 13, and mouth-piece 14 within a suitable furnace, constituting a self-acting fountain for the delivery of molten metal for casting purposes.

8. The adjustable table 33, operated by racks and pinions 34, 36, 37, 38, substantially as described, for the purpose set forth.

165,167. NUT-LOCKS. David D. Jones, Pittsburg, Pa. (Filed Apr. 6, 1875.)

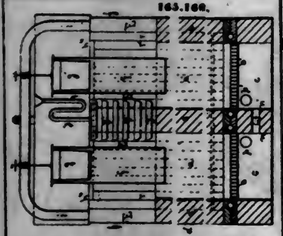
Brief.—The locking-washer is provided with legs that bear upon the flange of the rail, to retain it in position. The legs are bent upward, and when the nut is removed the washer turns with it.

The improved nut-locking washer, consisting of the spring plate C, having the elastic oblique tongues c sprung outwardly, as described, and having their inner edges perpendicular to the radius of the central opening, said plate being formed with the legs d, all as shown and specified.

165,168. COAL-GAS APPARATUS. Moses W. Kidder, Boston, Mass., assignor of one-half his right to F. Noyes, same place. (Filed Sept. 1, 1874.)

Brief.—The gas-generating and combustion chambers are connected at the top by a trunk. The anthracite coal and charcoal being ignited in both chambers, the steam and air pipes to one are opened and the gas pipe closed, while the steam and air pipes to the other are closed and its gas-pipe opened. The gas produced in one passes down through the other. They are then operated alternately, one as a generator and the other as a purifier

165,168.



1. The combination, in a gas making furnace, of a trunk, E, connecting the top of one combustion-chamber with another, and serving the double purpose of a conductor for gases, and as a receptacle for hydrocarbon-trays, substantially as described.

2. In combination with a gas-generating apparatus, constructed with two or more compartments or combustion-chambers, a a', connected at their tops by a trunk, E, as described, a pipe, m, with branches n n', and a cock or valve, o, for the admission of air into either ash-pit, for the purpose of reversing the current of air from one ash-pit to the other, substantially as described.

3. The steam-conduits n n, formed by the apposition of the two plates v and v', having inner grooves u and steam-outlets or fissures 8, for the purpose of delivering steam horizontally upon, and about on a level with, the tops of the grates, substantially in the manner and for the purpose described.

4. The coal-feeding hoppers, constructed as described, with fixed extensions f f' depending to or near a level with the tops of the combustion-chambers, in combination with and passing through the connecting-trunk E, and provided with gates k k', having external operating mechanisms, and with covers g g', substantially as described.

5. In combination with a gas-generating apparatus constructed with two or more compartments or combustion-chambers, having free and open communication one with the other by a trunk, E, as described, one or more evaporating plates, p', within the trunk E, and a pipe, p, leading to the space above the upper plate, for the purpose and substantially as described.

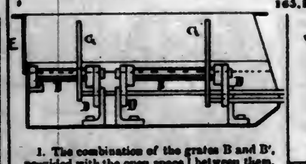
6. In combination with a gas-generating apparatus constructed with two or more combustion-chambers, connected by a trunk, E, as described, a steam-generator composed of a series of pipes, r, and a connected steam-receptacle, S, with pipes t t' t'' and valves T T', communicating with the steam-conduits n n', and an air-pipe, m, with branches n n' leading to each ash-pit, substantially as described.

7. The gas-outlet pipes p p' p'', provided with suitable valve or valves, in combination with a gas-generating furnace having two or more combustion-chambers, a a', and a trunk, E, and ash-pits c c', for the purpose of conveying gas from either ash-pit, substantially as described.

8. The combination, in a coal-gas apparatus, of the following instrumentalities, viz: First, a coal combustion-chamber, a, wherein to produce gas from coal in a state of combustion, as set forth; second, a gas-purifying chamber, a', containing incandescent coal, operating to screen and purify the gas, as specified; and, third, a connecting-trunk, E, operating to convey the gas from the combustion-chamber a to the gas-purifier a', all constructed and operating substantially as described.

9. The smoke-pipe X, with its valve X', in combination with the trunk E and the two connected combustion-chambers a a', for the purpose of conveying smoke and arresting the gases from the chambers a a' through the trunk E, substantially as described.

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1. The combination of the grates B and B', provided with the open space l between them, substantially as set forth and specified.

2. The combination of the grates B and B', having the open space l, with the ash-pan made adjustable by means of the extension-legs D D, substantially as set forth and specified.

3. The grates B and B' when provided with the open space l, in combination with the rakes G G', arranged to operate substantially as described.

4. The hood or bonnet feeding device, with its compressing-plate K, in combination with means for enlarging the entrance, consisting of the screws L L, substantially as set forth and specified.

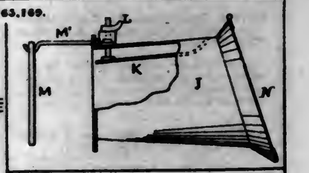
5. In combination with the hood J on the furnace and its adjustable flap K, constructed as set forth, the swinging plate M, suspended from the arms M' M' within the furnace, for the purpose of controlling and regulating the supply of straw, as described and specified.

6. The perforated screens O O, in combination with the extension ash-pan A, substantially as and for the purpose specified.

165,170. STEAM PILE-DRIVERS. Thomas T. Loomis, Chicago, Ill. (Filed Mar. 15, 1875.)

Brief.—Small auxiliary cylinders and pistons connected to the slide-valve stem move the valve by steam admitted from the main cylinder. A small primary valve on the lower auxiliary cylinder is operated by tappets on the valve-stem and a lug on the concussion-block. The hammer-frame consists of two side and two end bars, secured to lugs on the steam-cylinder above, and to a plate below. A spring concussion-block in the side of the hammer takes up the shock.

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1. In a steam pile-driver, the combination of the cut-off valve and stem E with the primary cylinders D D and piston-head F F', arranged to open and close the cut-off valve by the impact of steam, as specified.

2. In a steam pile-driver, the primary valve K, arranged to alternately open and close the ports d s of the primary cylinder D' by the ascending or descending movement of the hammer.

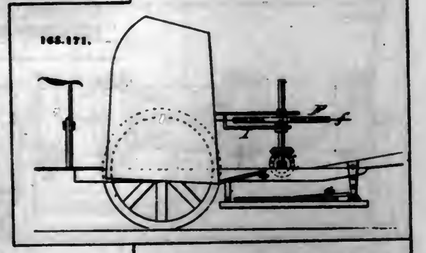
3. The spring concussion-block M, having the lug n, in combination with valve-stem l, having the arms g for operating the primary cut-off valve, as specified.

4. The hammer-frame, consisting of the bars A A and B B', the bars A A and B extending to the upper end of the cylinder and bolted to the sides of the same, as specified.

165,171. CORN AND CANE HARVESTERS. T. Merrell, Dixon, Ill. (Filed Mar. 26, 1875.)

Brief.—Improvement on Nos. 124,757 and 133,327. The fingers of the rotating disks force the stalks against the cutters, and throw the cut stalks upon the droppers. In addition to the lower guards used in the machines of which this is an improvement, the upper guards are used in corn-harvesting, to prevent the ears from interfering with the gatherer.

The combination and arrangement of the revolving disks or wheels F with their fingers f, the cutters C, and the guards I K, as described and set forth.



165,171.

165,172. FERTILIZERS. Charles H. North, Somerville, Mass. (Filed Apr. 24, 1875.)

Brief.—Evaporates nearly all the water contained in the "soap" by moderate heat; then subjects the mass to a temperature of about 300° Fahrenheit for four hours, thus converting the soap into a hard brittle mass, which is easily pulverized, and mixed, if desired, with commercial fertilizers.

1. As an improvement in the art of manufacturing fertilizers, the process of treating the soap obtained upon rendering offal, consisting in heating it, when the water is nearly all evaporated, to about 300° Fahrenheit for about four hours, substantially as described.

2. The fertilizer produced by heating the soap obtained upon rendering offal to about 300° Fahrenheit after the water is mostly evaporated from it, as above described.



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165,166. FURNACES FOR BURNING STRAW. James R. King, Modesto, Cal. (Filed Nov. 20, 1874.)

Brief.—A space is provided between the two grates to receive the cinders, ashes, &c., from the tubes into a vertically adjustable ash-pit. The admission of straw into the furnace through the hood is controlled by an adjustable flap. The tube sheet is protected from the sticky cinder raised by the draft by means of a perforated sliding deflector on the inner grate. Hanging screens prevent the loose straw outside the furnace from igniting.

165,173. MACHINES FOR STRINGING TAGS. Wm. L. Nye, Boston, Mass. (Filed Apr. 20, 1875.)

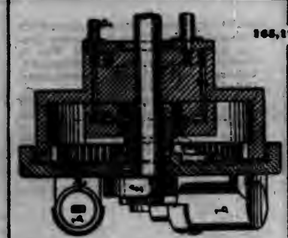
Brief.—An inclined trough with adjustable bottom has a hollow needle parallel with the bottom. The tags are strung upon the needle, and drawn off singly. A portion of the twine passing through the tag is secured by a bit of metal folded around its ends.

1. In machinery for stringing tags, the combination, with a tubular tag-carrying and cord-conducting sheath or rod, of a plate arranged beneath said sheath, upon which the tags in passing along the sheath may rest, substantially as described.

2. The combination of the tubular tag-carrying and cord-conducting sheath and the tag guide or trough, provided with a bottom adjustable toward and from said sheath, substantially as set forth.

3. A machine for stringing tags, comprising the following elements in combination, namely: a tag-carrying and string-conducting tube, a tag supporting or guiding plate or trough, a clamp-holding mechanism, and a knife intermediate between said mechanism and the said sheath, substantially as described.

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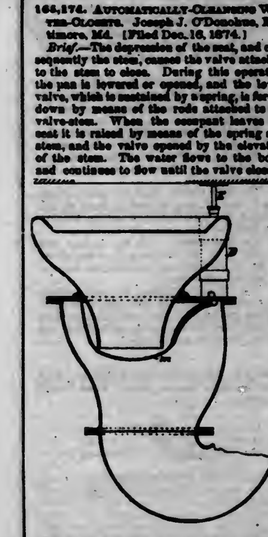
1. Revolving cylinders b, with fixed bearings, together with pistons e, when arranged to operate tangentially to the line of revolution of the crank-wheels f, in combination with gearing i, pinions j, crank-wheels f, crank-pins s, and slotted cross-heads d, substantially as set forth.

2. Segments c, as described, with tubes v, when arranged to operate in combination with the parts p and e, substantially as set forth.

165,174. AUTOMATICALLY-CLEANSING WATER-CLOSETS. Joseph J. O'Donohoe, Baltimore, Md. (Filed Dec. 16, 1874.)

Brief.—The depression of the seat, and consequently the stem, causes the valve attached to the stem to close. During this operation the pan is lowered or opened, and the lower valve, which is sustained by a spring, is forced down by means of the rods attached to the valve-stem. When the occupant leaves the seat it is raised by means of the spring and stem, and the valve opened by the elevation of the stem. The water flows to the bowl, and continues to flow until the valve closes.

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1. In a water-closet, the movable seat C, in combination with the valve-stem E, upper valve g, and valve-plate b', substantially as shown.

2. The valve-case D, in which is secured the valve-plate b', connected, by the tube d, to the partition c, in combination with the valve e, spiral spring f, and valve g, provided with the rods n, substantially as set forth.

3. The stem E with collar l thereupon, in combination with the spiral spring k and valve-case D, substantially as specified.

4. The combination of the pan m and rod i with the vertically-moving valve-stem E, substantially as described.

5. The valve-case D, divided into separate compartments or chambers, as shown, in combination with the inlet and outlet pipes a and b, and provided with the combination of valves connected and operated as described, substantially as and for the purpose set forth.

165,175. SNOW-BOOMS AND SNOW-PLOWS. Thomas Reeder and Albert Fetterhoff, Oskaloosa, Iowa. (Filed Nov. 19, 1874.)

Brief.—Light snow carried to dividing-plow, and by it thrown aside. If too heavy therefor, the plow is removed, and snow carried over into box with divided bottom.



1. The combination of the gathering-plow K, gathering-reel L b b, endless carrier C, and double plow O, substantially as and for the purposes set forth.

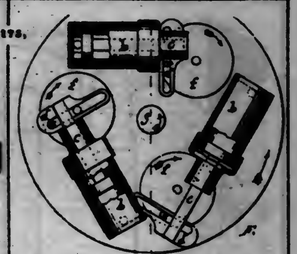
2. The combination of the gathering-plow K, gathering-reel L b b, endless carrier C, and divided box P R, having hinged bottoms S, substantially as and for the purposes set forth.

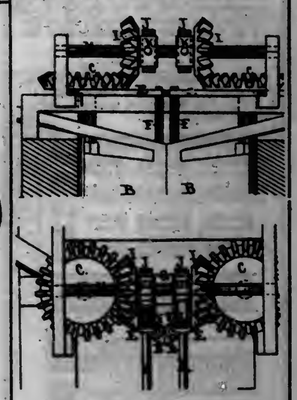
165,176. WHIFFLETREE-PLATES. R. S. Porter, Ottawa, Ill. (Filed Mar. 30, 1875.)

The combination of the plate A, provided with hollow central hub a, for the reception of a bolt, f, and circumferential rim b, having interior flanges d d, with the plate B, provided with central aperture c, and annular projection h, with exterior flanges i i, substantially as and for the purposes herein set forth.

165,178. CANAL-LOCK GATES. J. B. Beak, Albany, N. Y. (Filed Apr. 14, 1875.)

Brief.—The gates of the lock are operated simultaneously through bevel-gears on the quoin-posts, and on a transverse shaft, which is actuated by pawl-levers acting on ratchet-wheels on the shaft.

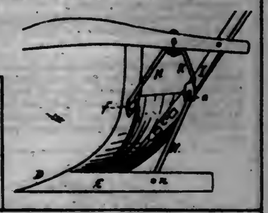




The gates B, in combination with the wheels C, pinions I, shaft H, ratchet-wheels J, levers K, and pawls L, when arranged to operate in the manner and for the purpose herein specified.

165,179. PLOWS. Gerhard Ringen, Smith City, Mo. (Filed June 28, 1874.)

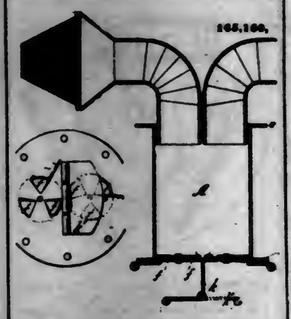
In a plow, a continuous brace, consisting of the rounded portions H, K, and N, and of the flattened points f, s, r, and u, the part N being the prolongation of the left-hand handle L, and the whole adapted to the brace, standard, beam, handle, and land-side by a single brace, substantially as herein described.



165,180. RAILROAD-CAR VENTILATORS. B. Benson, Rutland, Vt. (Filed May 28, 1875.)

Brief.—The air-chamber has a director, by which the air may be directed to the front or rear of the car, as desired. The draft is regulated by circular openings and plates.

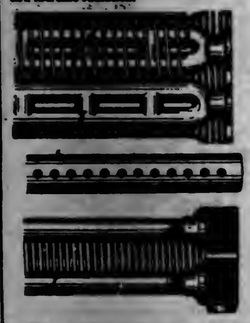
165,180.



In a ventilator for railroad-cars, a single air-director, *b'*, by which alone the air may be directed either to the front or rear of the car, in combination with the air-chamber A and openings *f*, and circular plates *f'*, for regulating the draft of air from said chamber, substantially as described.

165,181. RADIATORS. Edmund Bussell, Brooklyn, N. Y. (Filed May 27, 1875.)

Brief.—The coils allow circulation of air and increase radiation.



1. In combination with a group of loop-pipe radiators, arranged in relation to each other substantially as shown and described, coils of metallic wire introduced between the loop-pipes, as and for the purpose specified.

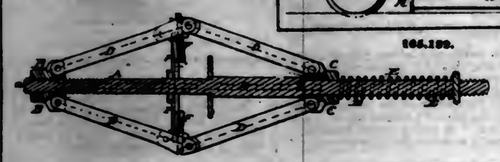
2. In combination with a group of loop-pipe radiators, a coiled sheet of perforated metal, substantially as shown and described.

3. In combination with a loop-pipe radiator, a coil of metallic wire wound around the loop-pipe, as and for the purpose specified.

165,182. BOILER-TUBE CLEANERS. Minard M. Smith, New York, N. Y., assignor of one-half his right to Lewis C. Tufts, same place. (Filed May 17, 1875.)

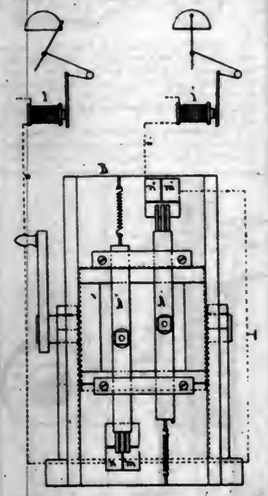
Brief.—The scrapers are mounted on toggle-arms, and made adjustable by sliding caps and springs.

The combination of the spindle A, adjusting screw-nut B, working on the screw-threaded extremity a of the spindle, collar C, toggle-joints D, provided with scrapers F, and helical spring E, constructed and operating substantially in the manner described and specified.

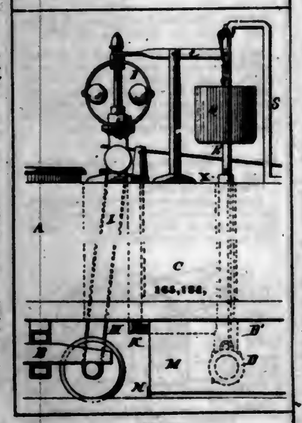


165,183. ELECTRIC SIGNAL APPARATUS FOR STEAM-VESSELS. Chas. A. Stearns, Boston, Mass., assignor to himself, Wm. H. Torbert, Philadelphia, Pa., and Edmund B. Vanneter and O. H. Dolbear, Boston, Mass. (Filed Nov. 27, 1874.)

Brief.—The shaft or other moving part of the machinery has a stud affixed to it, which operates upon a circuit-closing apparatus, so arranged that one circuit is closed when the shaft moves in one direction, and the other circuit when in the other. An indicator is placed at any distance to show the direction, which will also show the rapidity of the revolutions.



The combination of the shaft E, projection F, bent levers D D', sliding bars A A', plates *n n' n n'*, battery M B, circuits *w w'*, and indicators I I', substantially as and for the purpose set forth.



165,184.

1. A railroad-sprinkler, consisting of the tank A, mounted upon car-trucks B, and provided with a sprinkler, D, and valve for governing the flow of water into the sprinkler, and the governor for regulating the operation of the valve to conform to the speed of the car, substantially as and for the purpose described.

2. In combination with a railroad-sprinkler, the box or case M, surrounding the said sprinkler, substantially as and for the purpose described.

3. In a railroad-sprinkler, the combination, with the box M, of the canvas, or its equivalent N, substantially as and for the purposes described.

4. The combination, with the tank of a sprinkler, pivoted at its middle point, and provided with a suitable mechanism, Q R T, whereby it may be maintained in a level position, substantially as and for the purposes described.

5. The combination, with the pivoted sprinkler, of the weight Q, pivoted bar R, standard S, and rods T, substantially as and for the purposes described.

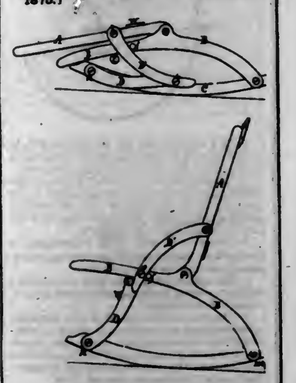
6. The combination, with the valve, of a float, U, lever V, and suitable mechanism Z F *s*, whereby the float is made to vary the valve-opening, substantially as and for the purpose described.

7. The combination, with the valve, of the float U, lever V, toggle-joint Z, band H, and governor F, substantially as and for the purpose described.

8. The combination, with the tank A and sprinkler D, of the vent-pipe K, rising above the top of the tank, substantially as and for the purposes described.

9. In a railroad-sprinkler, the combination, with the car-axle and the valve-rod, of an intermediate governor, F, for regulating the flow of water into the sprinkler, substantially as and for the purposes described.

165,185. FOLDING ROCKING-CHAIRS. Alex. W. Stewart, Boston, Mass. (Filed May 10, 1875.)



1. The front legs D and braces D', in combination with the rockers, seat, and back of a rocking-chair, when said legs D are pivoted to the rockers C and to braces D', and the braces D' are connected to the back, substantially as described.

2. The bar E and pins *f*, when said bar and pins are arranged to guide the movements of pieces D and D', and to hold them in position, substantially as described.

165,186. VALVE-GEARS. George B. Tower, Annapolis, Md., assignor of one-eighth his right to Eli P. Wetherwax, West Sandlake, N. Y. (Filed Apr. 27, 1875.)

Brief.—A spiral rod in the hollow shaft is moved longitudinally by the governor, which causes a small cam to protrude more or less from the face of the main cam, to cut off steam.



1. The combination, with the hollow rotary cam-shaft S, of the collar T and its pin *t*, and a spiral rod within said shaft, and rotated by it by means of said collar and pin, said rod being bounded longitudinally by helicoidal faces, and neither helically grooved or threaded, nor longitudinally toothed, whereby rotary motion is transmitted by said rod to the cut-off cam of the engine, in the manner substantially as described and set forth.

2. The combination of a spiral rod, *s'*, contained within the hollow rotary cam-shaft S, with the cut-off cam *s*, sliding collar T, and pin *t*, and any suitable adjusting device for said collar, whereby said cam is adjusted to cut off the steam in proportion to the work to be performed, in the manner substantially as described and set forth.

3. The combination of the three-sided spiral rod *s'*, gib or step *g*, and adjusting-screw *s* with the hub of an eccentric, wheel, or cam, whereby the rod is allowed a longitudinal spiral motion through said hub, and provision is made for tightening the hub on the rod, in the manner substantially as described and set forth.

4. The combination of the three sided spiral rod *s'* and cut-off cam *s*, provided with the adjusting device *s g*, whereby provision is made for the wear of the cam and the rod, in the manner substantially as described and set forth.

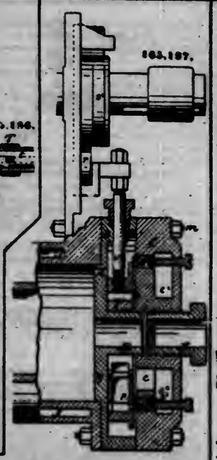
5. The combination of the differential rollers *r r'*, mounted in a suitable rocker or carriage, with the cams *s s'*, whereby motion is transmitted from both cams by the longer roller, and from the full-stroke cam only, by the shorter roller, in the manner and for the purpose substantially as described and set forth.

6. The combination of a full-stroke cam, having a portion of one side of its rear face cut away, a cut-off cam contained within it, and the rollers *r r'*, of different depths, mounted in a suitable rocker or carriage, whereby allowance is made for the contact and clearance of said cams and rollers, in the manner and for the purpose substantially as described and set forth.

7. The combination, with the cross-bar H and rocker R, of the vibrating auxiliary arm L, connected to said rocker by any suitable device, whereby the parallelism of the cross-bar is preserved, in the manner substantially as described and set forth.

8. The combination, with a cut-off valve, of the cross-bar H, the cut-off cam *s'*, and the elliptic spring P interposed between said bar and the steam-chest, whereby the valve is reopened, if required, after cutting off the steam before the end of the stroke, and lost motion in the joints of the valve-gear taken up, in the manner substantially as described and set forth.

165,187. VALVES FOR STEAM-ENGINES. George B. Tower, Annapolis, Md., assignor of one-eighth his right to R. W. Bell, Seboodook Landing, N.Y. (Filed Nov. 20, 1874.)



1. Plate or disk valves, having a rectilinear reciprocating motion, in combination with the two cylinder-heads of a steam-engine, whereby the steam is suitably controlled in its entrance to and exit from the cylinder in actuating the piston thereof.

2. A box-valve V, provided with peripheral steam-ports *v*, and axial exhaust-ports *v'*, whereby the valve is rendered capable of receiving either rectilinear or angular motion, in the manner substantially as described, for the purposes set forth.

3. The combination, with the cylinder-head of a steam-engine, of a box-valve, V, centrally slotted for the passage through it of the piston-rod and the allowance of its own rectilinear motion, in the manner substantially as described, for the purposes set forth.

4. A combined cylinder-head and steam-chest, B, provided with respective steam and exhaust passages *b b'* and ports *a*, in the manner substantially as described, for the purposes set forth.

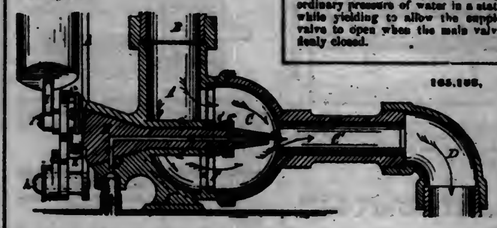
5. A steam-chest cover, C, provided with inner exhaust-ports *c*, annular exhaust-chamber and parking-space *c'*, and outer exhaust-passage *c''*, in the manner substantially as described, for the purposes set forth.

6. The combination of the cylinder-head B and steam-chest cover C, each constructed substantially as described, whereby a suitable valve-chamber is provided for the valve V, and a stuffing-box provided for the piston-rod, all in the manner substantially as described, for the purposes set forth.

165,188. AUTOMATIC MIXING-VALVES FOR GAS-MACHINES. Lovias D. Townley, Cincinnati, Ohio. (Filed May 4, 1875.)

Brief.—The air-valve is secured by rectangular bearings, and by a helical spring and nut, to the oil-vapor valve-plug, and turns with it, and the air and vapor are thus shut off simultaneously.

1. The cylinder C, having diaphragm *a* and valve F, in combination with pipes *a* C', and oil-vapor supply mechanism, substantially as and for the purpose hereinbefore described and set forth.



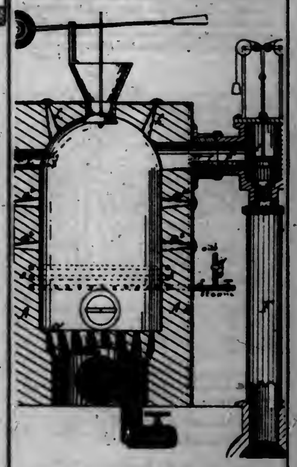
2. The cylinder C, having diaphragm *a* and valve F, and air-supply pipe *a*, in combination with the valve-plug E, and the mechanism herein described for regulating the supply of gas, substantially as and for the purpose described and set forth.

3. The oil-vapor valve-plug E, having the bore *c' c''*, and contracted nozzle *c*, in combination with oil-vapor supply pipe, C, substantially as hereinbefore described and set forth.

4. The mechanism for operating and regulating the valve, composed of lever I connected with the gas-holder, the arm H having projections *h' h''* engaging the pin *e*, the connecting-rod *l* and the spring J, substantially as hereinbefore described and set forth.

5. The combination of the adjustable connecting-rod *l* with the arm H, spring J, and piston L, substantially as hereinbefore described and set forth.

165,189. MANUFACTURE OF GAS. Herbert W. C. Tweddle, Pittsburg, Pa. (Filed Mar. 6, 1875.)



As an improvement in the manufacture of illuminating-gas, the process herein described, viz., superheating an admixture of hydro-carbon vapor and steam, and then passing the same through an incandescent mass of mixed carbonaceous and decomposing material contained within a closed chamber, substantially as specified.

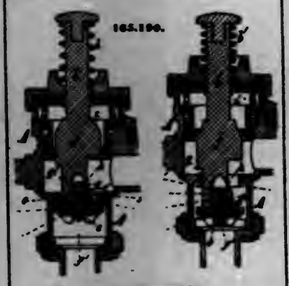
165,190. COMBINED COCKS AND ANTI-CONCUSSION VALVES. I. F. Van Duzer, Middletown, assignor to Charles Harrison, New York, N. Y. (Filed June 19, 1875.)

Brief.—The cock is closed by the pressure of the water. Any tendency to produce a jar by the valve closing suddenly is relieved by the small supplementary valve.

In a cock for fluids, the combination of the main valve with a supplementary valve and a spring so graduated in strength as to hold the supplementary valve upon its seat against the ordinary pressure of water in a state of rest, while yielding to allow the supplementary valve to open when the main valve is suddenly closed.

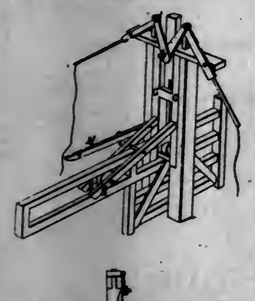
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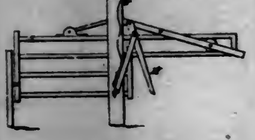
165,190.



165,191. FARM-GATES. Wm. Waggoner, Creston, Iowa. [Filed May 1, 1875.]

Brief.—The gate can be vertically adjusted for passage of small stock by the lever without affecting the operative mechanism by which it is glided across the road.

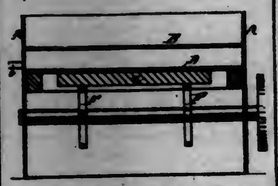




In combination with a farm-gate, constructed as described, the frame G G, provided with the arms *g g*, and the lever H for raising the gate, substantially as and for the purpose set forth.

165,192. PAPER-PULP SCREENS. John S. Warren, Wilmington, Del. [Filed Apr. 20, 1875.]

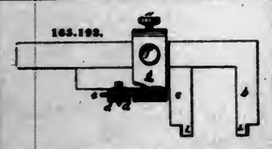
Brief.—An elastic diaphragm under the screen is jogged by an irregular cam underneath.



The diaphragm D, with bottom piece *c*, and the axle F, with disks F F, in combination with the screen B and frame A, substantially as described, and for the purpose set forth.

165,193. CALENDER-GAGES. Geo. B. Weld, Providence, R. I. [Filed Feb. 3, 1875.]

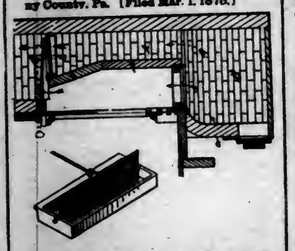
165,193.



1. The combination of the stirrup *g*, having the clamp-screws F and A, the screw *e*, fixed to the stirrup, and carrying the adjusting-nut screwed between the abutments *d d* of the arm *c*, when used for final adjustment of a gage, substantially as and for the purpose herein set forth.

2. A caliber-gage consisting of the fixed arm *a b*, the sliding arm *c*, provided with the abutments *d d*, the stirrup *g*, having the thumb-screws *f* and *h* for securing the stirrup to the arm *c*, and the screw *e*, secured to the stirrup and carrying the adjusting-nut, when operating together substantially as and for the purpose herein described.

165,194. FIRE-PLACES. James Adair, Killbuck Township, (Pittsburg P. O.,) Allegheny County, Pa. [Filed Mar. 1, 1875.]



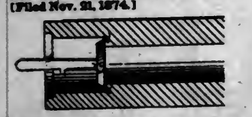
In combination with an air-supplying ash-pit, a fire-chamber, an interposed low-down grate, and an independent flue leading from such ash-pit past the fire-chamber into the chimney, and provided with a damper, all arranged substantially as set forth, whereby, when the damper is open, the main line of draft shall be up such independent flue, but when closed shall be through the fire.

165,195. BRUSHES. Wm. A. Albaugh and John Toole, Baltimore, Md. [Filed Apr. 3, 1875.]



A whitewash-brush constructed with abrupt edged ca[illegible] or ledges *a a* raised above the general surface of the sides of the brush-block A, substantially as and for the purposes herein specified.

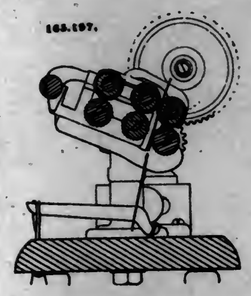
165,196. MODES OF BLACKWASHING MOLDS. John B. Aston, Pittsburg, Pa. [Filed Nov. 21, 1874.]



The mode herein described of blackwashing bowl-pipe molds by means of the disk or valve O, constructed to seat on the shoulder *a*, as shown.

165,197. TOP-ROLL COVERINGS FOR DRAWING AND SPINNING FRAMES. Edwd. Atkinson, Brookline, and Ernest Edwards, Boston, Mass. [Filed Jan. 22, 1875.]

165,197.

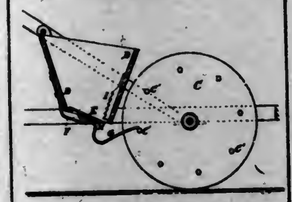


1. As an article of manufacture, a roll for spinning and other textile machinery, having a covering formed from a gelatinous compound, prepared substantially as described.

2. In machinery for treating cotton and other fibers, the combination of the fluted roll with the top roll, prepared substantially as described.

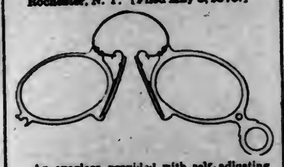
165,198. SEED-PLANTERS AND FERTILIZER-DISTRIBUTERS. David F. Belentine, Mount Gallagher, S. C. [Filed May 15, 1875.]

Brief.—Hopper-bottom hinged, with a graduated opening, and vibrated by an arm struck by pins on the bearing-wheel. Within the hopper is a vertical serrated plate for preventing the seed from rising with the vibrating bottom.



The combination of the hinged bottom E, the toothed plate I, the spring F, and the arm G, with the hopper D, and pins *d'* on the wheel C of the machine, substantially as herein shown and described.

165,199. EYEGLASSES. John J. Bausch, Rochester, N. Y. [Filed May 8, 1875.]



An eyeglass provided with self-adjusting nose-pieces closed at both ends, as and for the purpose described.

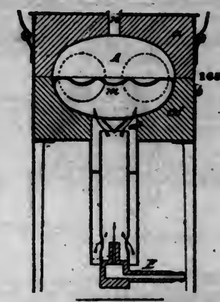
165,200. FURNACES FOR HEATING SOLDERING-IRONS. Pascal P. Beals, Buffalo, N. Y. [Filed May 21, 1875.]

Brief.—The bridge on which the points of the irons rest prevent their overheating.

1. The combination, with the gas-burner E, of the metallic case *b* and heating-chamber A, constructed of fire-bricks *a a'*, and provided with flame and escape apertures *d' e*, substantially as and for the purpose hereinbefore set forth.

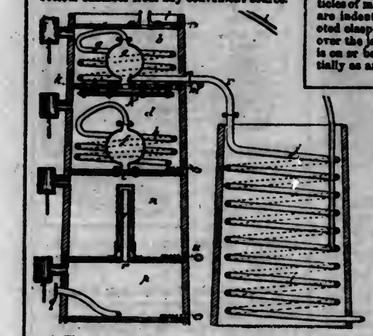
2. The combination, with the heating-chamber A and gas-burner E, of the bridge *w*, for supporting and protecting the points of the soldering-irons, substantially as herein before set forth.

165,200.



165,201. STILLS FOR THE MANUFACTURE OF ALCOHOLIC SPIRITS. John H. Beam and Joseph B. Beam, Bardstown, Ky. [Filed Feb. 3, 1875.]

Brief.—The mash is admitted cold into the upper chamber, and treated by the vapors of distillation contained in the receiving-vessel and connected coil while on their way to the condenser through the singlings-worm. A worm also conveys the vapors from this vessel to the condenser. The mash is let down into the next chamber, being further treated therein by the vapors of distillation and the free steam generated by the operation. A perforated partition separates to the two chambers, to which is attached a false head to prevent "spewing." A pipe and hood in the third chamber pass the vapors and steam into the mash. Automatic valves prevent collapsing when the contents of the chambers are charged down. Steam is admitted into the bottom chamber from any convenient source.



1. The combination of a centrally-located head and vapor receiving vessel, *c*, and the coil *g*, leading from and surrounding it, with the charging-chamber A, said vessels communicating with the chambers below and the singlings-worm *j*, whereby the spirits and steam are caused to pass upward and out through said vessel, and the cold incoming beer brought to a boil by the central heating-surface and the coils near the walls of said chamber, substantially as herein set forth.

2. The centrally-located vessel *f* and coil *h* leading from and surrounding it within the chamber *d*, and opening therein, whereby the vapors are discharged from the chamber *a* directly into the beer in the chamber *d* to partially distill it, substantially as herein set forth.

3. The combination, with the chambers *b d*, of the central heating-vessels *c f* and their surrounding coils *g h*, the coil *h* opening into the bottom of the chamber *d*, to let out the hot vapors therein, and the coil *g* terminating in the singlings-worm *j*, for the discharge of the spirits therein, as set forth.

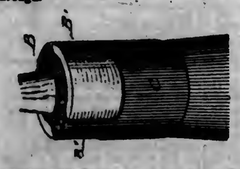
4. The combination, with the closed chambers *b* and *d* and the vapor-receiving vessel *c*, of the closed head *k* and false head *k'*, whereby the beer is prevented from being thrown up into the singlings-worm, and carried out with the singlings, by too great agitation in the charging-chamber, substantially as herein set forth.

5. The combination, with the charging-chamber *b* and the centrally-located heat and vapor receiving vessel *c* therein, of the singlings-pipe *i* and the condensing-coil *j*, whereby the vapors generated by the hot vessel *c* and its coil *g* in the charging-chamber pass off during the preliminary heating and boiling of the beer, substantially as herein set forth.

6. The combination of the centrally-located vessel *f* and its coil *h* with the centrally-located vessel *c* and its coil *g* by means of the wall of the still and the perforated head *k* and false bottom *k'*, substantially as herein set forth.

165,202. BRUSH-HOLDERS. John Blair, Boston, Mass. [Filed May 1, 1875.]

Brief.—The device is composed of one piece of rubber, and is cut away upon the sides, and has a central yoke that the handle passes through.

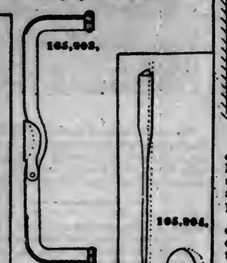


The brush-holder herein described, comprising the cylindrical tube C, and centrally-perforated yoke B B', made of one piece of india-rubber, as and for the purpose set forth.

165,203. POCKET-BOOK FRAMES. Bart M. J. Bleek, Jersey City Heights, N. J., assignor to Morris Rubens, New York city. [Filed Mar. 20, 1875.]

A frame for pocket-books and similar articles of manufacture in which the hinged jaws are indented to about the length of the pivoted clasp at the point where the same binds over the jaws, so that the clasp, when locked, is on or below the level of the jaws, substantially as and for the purpose set forth.

165,203.

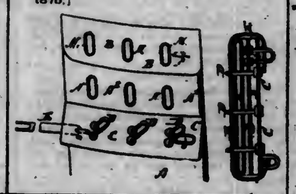


165,204.

165,204. SEWING-MACHINE NEEDLES. Geo. H. Bialoch, Springfield, Mass. [Filed Jan. 8, 1875.]

The sewing-machine needle, as described, with a portion of its shank removed at the shuttle or looper side of the needle, and rounded to the same arc of a circle, or nearly so, as the other portions of the shank, for the purposes set forth.

165,205. MAIL BAGS. John Boyle and E. Stephens, Brooklyn, N. Y.; said Stephens assignor to said Boyle. [Filed June 16, 1875.]



The combination of the flap B, formed by an extension of the side A', and having the staples F and slots M, the upper portion of the front of the body of the bag A', having the slots N, and the back, having the slots N', the flap C, having staples D D D and *e*, and the closing-strap E, all constructed substantially as and for the purpose specified.

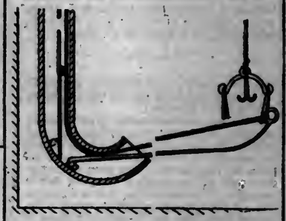
165,206. PICTURE-FRAME HANGERS. A. Brown, Rochester, N. Y. [Filed Mar. 6, 1875.]



As a new article of manufacture, the picture-hanger A, formed from a single piece of metal, with the tongue *b* and teeth *a a* struck out on the two opposite sides, and the said teeth forming hooks, which stand angular to the plate to strike into and hold in the wall, and made broadest at their points to prevent crumbling of the plaster, as herein shown and described.

165,207. PUMP-CHAIN ADJUSTERS. James B. Brown, Hannibal, Mo. [Filed May 22, 1875.]

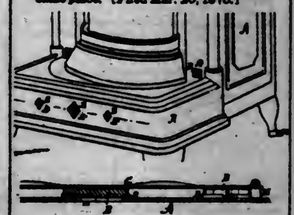
Brief.—A device consisting of a chain or rod having grappling-hook at one end, and spear-shaped head at the other. A flexible wire, as shown, is used in connection with it. By this device any difficulty arising from a broken chain, or from the knotting, wedging, or twisting of the same in the tube, is overcome.



1. The adjusting device for chain-pumps, composed of an adjusting chain or rod, with hook and spear ends, a flexible conductor, and a grappling-cord attached thereto, to be operated substantially in the manner and for the purpose set forth.

2. The spear-shaped end of the adjusting chain or rod, in combination with the socket-eye of the conductor, for forcing the same through the chain-tube and bottom shoe, as specified.

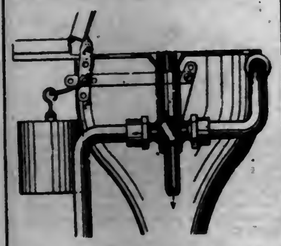
165,208. STOVES. William Burrows, New York, N. Y., assignor to Jordan L. Mott, same place. [Filed Mar. 30, 1875.]



As an improvement in ornamenting stoves, a stove composed of cast plates A, provided with openings A', and having the flanges D and legs F cast thereon, in combination with the ornamenting tile B and slotted bar C, whereby the tile are removably secured in place, all as and for the purpose herein set forth.

165,909. AUTOMATIC SHUT-OFF ATTACHMENTS FOR WATER-CLOSETS. James Cavanagh, New York, N. Y. [Filed June 12, 1875.]

Brief.—When the seat is depressed the adjustable weighted lever turns the cock, and admits a supply of water. When the pressure is removed the return movement of the lever shuts off the water. The valve may be easily removed, and has the means of lubrication shown.



1. An automatic shut-off attachment for water-closets, consisting of a water-supply pipe, with regulating stop-cock, connected by adjustable lever mechanism with the hinged and weighted cover that operates thereby the stop cock, substantially in the manner and for the purpose set forth.

2. The combination of the stop-cock by a supporting-tube and fastening-nut with the flange of the bowl, to be readily detached for repairs, substantially as specified.

3. The supporting-tube of the stop-cock, forming a lubricating-chamber, and having bottom aperture to supply oil to stop-cock, substantially in the manner set forth.

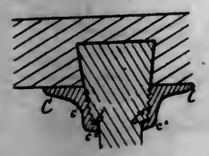
165,910. GALVANIC BATTERIES. Joseph C. Clamond and L. A. Guibe, Paris, France. [Filed Nov. 6, 1874.]

Brief.—An artificial carbon is produced by calcining a mixture of graphite, tar, and sugar. The carbon thus prepared is immersed in a solution of perchloride of iron, or of acetates and incorporated in the pores of the carbon other salt of sesquioxide of iron, and then in ammonia. The sesquioxide of iron is precipitated. By this means the porous vessel is dispensed with, and the depolarizing agent is chemically produced in the pores of the carbon itself.

1. The improved sesquioxide-of-iron battery, containing sesquioxide of iron, in combination with zinc and an ammoniacal salt, as specified.

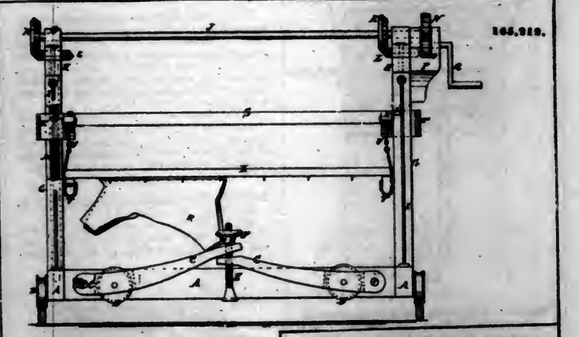
2. The method herein described of preparing a sesquioxide-of-iron battery by mixing sesquioxide of iron with coke, or fixing it in the pores of carbon, substantially as specified.

165,911. WHEELS FOR VEHICLES. William Currie, Rochester, N. Y. [Filed Apr. 21, 1874.]



The enlarged inclined angular end *b* of the spoken, having the shoulders *b' b'*, in combination with the flanges C C, having the inclined angular inner surfaces *c' c'* and shoulders *c' c'*, overlapping the shoulders on the spoken, and all constructed substantially as shown and described.

165,912. MACHINERY FOR RAISING AND TRANSFERRING BRICK FROM VATS. Wm. Coupe, South Attleborough, Mass. [Filed June 6, 1873.]



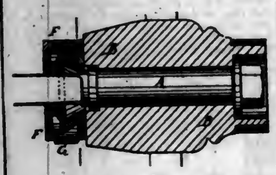
165,912.

1. The combination, with the frame A G H, provided with wheels E, and bars for suspending the hides, of the pivoted levers C, carrying-wheels D, the screw-rod R, and nut F, as shown and described.

2. The combination of the gearing J K L, N O Q, and the swiveled screws M with the frame-work A G H, for raising and lowering the hides, substantially as herein shown and described.

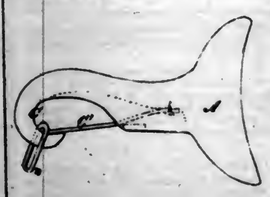
3. The combination of the cross-heads R, connecting-bars S, nuts T, and the chains and hooks U V with the swiveled screws M, for connecting the hides with the operating gearing, substantially as herein shown and described.

165,913. AXLE-PROTECTORS. C. G. Cowell, Plainfield, Ill. [Filed May 22, 1875.]



The combination of the flaring sand-band D, the flaring wheel E, the cap F, having an opening in the lower part, and the scraper G, with each other, and with the hub B and axle A, substantially as herein shown and described.

165,914. BREAST-STRAP SLIDES. Thos. C. Crenshaw, Lexington, assignor of one-half his right to Cotton H. Allen, St. Louis, Mo. [Filed Dec. 26, 1874.]

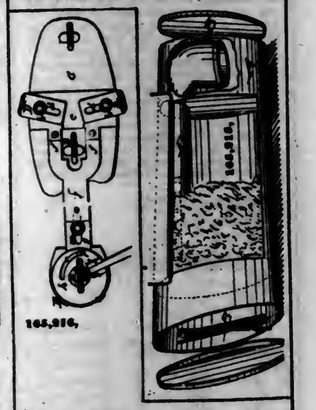


The breast-strap slide A, snap-hook C and O, and the martingale-bar E, constructed and combined substantially as described, and for the purpose set forth.

165,915. SMOKING-CASES. H. W. Dana, West Troy, N. Y. [Filed May 22, 1875.]

Brief.—The case has a central space for the tobacco, with a side cover leading thereto, and at each end is a receptacle for matches and the pipe, the latter having a tube that extends into the main case for the stem of the pipe.

A new article of manufacture, consisting of case B, divided into three compartments, having a separate cover at each end, as well as in the middle, and provided with pipe-tube D, as shown and described.



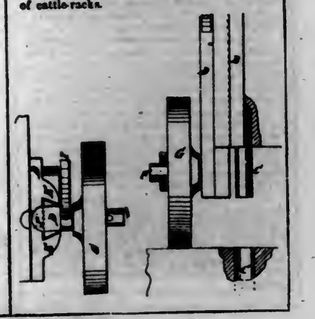
165,916.

165,916. SKATES. John C. Dexter and E. V. Tanner, Florence, Mass. [Filed May 31, 187

The combination of the foot-plate C, having the slots *a*, clamps D, carrier-plate *e*, connecting-rod *f*, slotted plate *g*, adjustable clamp E, pin *p*, and plate *h*, having the circular slot *r*, substantially as shown and described.

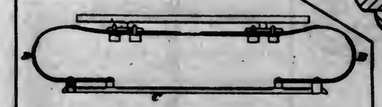
165,917. DEVICES FOR RAISING AND LOWERING CATTLE-RACKS ON PLATFORM-SCALES. Preston C. Dockstader, Lyndon, Ill. [Filed May 10, 1875.]

Brief.—A device for the easy manipulation of cattle-racks.



The combination, with cattle-rack A, of plate B, having pin C and button I, the slide D having rib H and stop J, and the axle F having wheel G, all constructed and arranged as and for the purpose specified.

165,918. VEHICLE-SPRINGS. Fran: F. Doland and Francis Scherb, Sacramento, Cal. [Filed Apr. 15, 1875.]



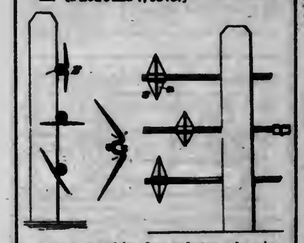
In combination with the reaches C, the C-springs D D, extended at their top so as to unite, substantially as and for the purpose set forth

165,919. METHODS OF FORMING PILES OR FAGOTS OF OLD RAILWAY-RAILS. Joseph Downing, Sr., Allentown, Pa. [Filed May 15, 1875.]



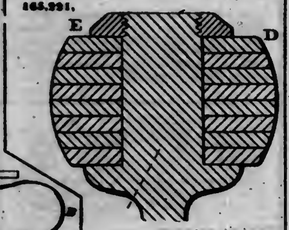
A pile of old railroad-rails, constructed of one whole rail and two part-rails, divided by cutting longitudinally along the middle of web, the web portion of said parts being placed in the pile, so as to abut against the web of the whole rail, and the interstices being filled with extra pieces of metal, one or more, substantially as and for the purpose described.

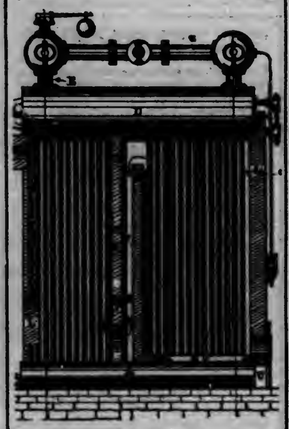
165,920. RAKES FOR WIRE FENCES. James F. Duffy and Nicholas Schroeder, Chicago, Ill. [Filed June 7, 1875.]



As a new article of manufacture, the wire-fence barb B, made of sheet metal, pointed at the ends and stiffened by means of the longitudinal groove or furrow *a*, and having the central loop or arch *a'* therein for receiving the wires of the fence, substantially as shown and described.

165,921. STEAM-GENERATORS. Jos. Firmenich and George Firmenich, Buffalo, N. Y., assignees of one-third their right to Frank Firmenich, same place. [Filed Apr. 15, 1875.]





1. The arrangement, with the steam and water receptacle D, of the circulating end tubes C, inclosed by the brick wall or walls L, and a mud-drum, A, situated below the fire-line of the steam-generator, substantially as described, and for the use and purpose set forth.

2. The combination, in a steam-generator, as described, of the front, commingling, and rear chambers having the partitions M and N, arranged as shown, and provided with the air-ducts P, and outlets Q, substantially as described, and for the use and purpose set forth.

3. The combination, with the series of mud-drums A and steam and water drums D, of the series of heating-tubes C, and the fire-grate S, when the said fire-grate is arranged between the said series of heating-tubes C and above the mud-drums A, substantially as described, and for the use and purpose set forth.

4. The combination, with the mud-drums A, having the flue-sheet B, of the series of heating-tubes C, steam and water drums D, with the connections E, steam-domes F, with the connections G, and the setting of the steam-generator, consisting of the front and rear walls L and partition M, the whole when arranged substantially as described, and for the use and purpose set forth.

165,922. MALLETS. Albt. G. Fellows, Philadelphia, Pa. [Filed May 14, 1875.]

Brief.—The mallet consists of a metallic handle formed with a collar and screw-threaded shank, and a series of disks of prepared paper or other suitable material fitted in the shank, and clamped between the collar and a nut working in the end of the shank.

The handle A with shank C and collar B intermediate thereof, all formed in one piece of metal, in combination with the series of disks D and the clamping-nut E at the outer end of the shank, all constructed to operate substantially as and for the purpose set forth.

165,923. EVAPORATING-PANS. P. B. Fox, Marlow, N. H. [Filed May 24, 1875.]

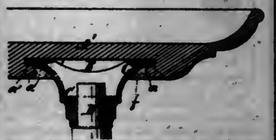
Brief.—Pans of graduated sizes are united into a connected series by means of tubular bolts, lap-edges, and connecting-rods. When done using, the connection is broken, and the pans are stored in a small compass for future use.



An evaporating-pan composed of a series of narrow pans connected together by means of the rods *b b*, tubular connections *c d*, and lap *e*, substantially as and for the purpose described.

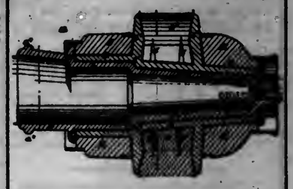
165,924. REVOLVING SAUCERS FOR FLOWER-POT BRACKETS. Stephen Freeman and Geo. H. Smith, Racine, Wis. [Filed June 21, 1875.]

Brief.—The saucer is made with a recessed bottom, with projecting lips at regular intervals, and into this is fitted a socket with projections, which pass beneath the lips and into the recess, in which position it can be secured by plaster or otherwise. The socket, being of hard material, rests upon a round tenon, and thus turns freely with wear of the softer material of the saucer.



The revolving saucer made of wood, earthy, vitreous, or other light analogous materials, and with a socket, E, notches *b*, and ledges *e'*, in combination with a metallic flanged thimble, C C', united to it by means of the flanges on the thimble, the lips on the saucer, and cement or other retaining agent, substantially as and for the purpose described.

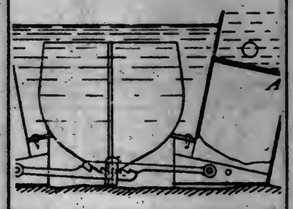
165,925. HUBS. Edward F. Friend, Marianna, Ark. [Filed Apr. 2, 1875.]



1. The axle-skein A, having shoulders a^2 a^2 and ring-flanges a^3 a^3, substantially as and for the purpose set forth.

2. The axle-box B, having shoulders b^1 and ring-flanges b^2, flaring upon the outer part and dovetailed upon the inner part of their inner surfaces, and connected by wedge-shaped partitions b^3, substantially as set forth.

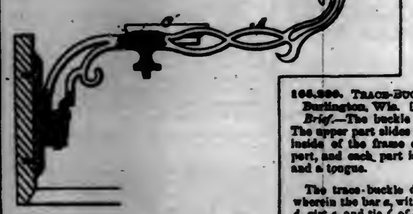
165,926. APPARATUS FOR RAISING SUNKEN VESSELS. J. Nelson Furman, Patchogue, N. Y. [Filed Apr. 17, 1875.]



The combination of a pair of tanks, A, and contrivances for locking them together, the tanks being constructed with inclined bottoms to haul over, and when rising gripe the sides of the vessel to be raised.

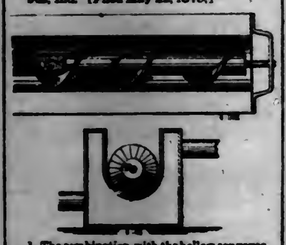
165,927. FLOWER-BRACKETS. A. J. Gardner, Lee, Mass. [Filed Feb. 20, 1875.]

Brief.—The main arm of the bracket is pivoted to a wall-piece in the usual manner, so as to swing around to the right or left, as desired. A dovetail notch is formed at about the middle portion of the main arm upon the upper side. A pin rising from the center of the depression forms an additional security for the supplemental arms, which are rigidly attached to each other, and fitted to the dovetailed depression, their arms extending forward, so as to bring the center of gravity of the flower-pot cup forward of the point of attachment.



The combination, with the main pivoted arm A, having the attachment-notch D, with central pin *p* and rear dovetail wall *d'*, of the transverse cross bracket-bar C *c*, constructed entire, with its center of gravity in front of the attachment-notch, and provided with a corresponding perforated dovetail brace, substantially as specified.

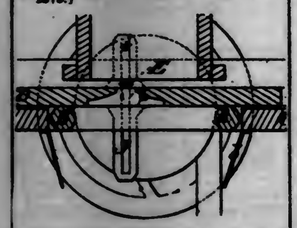
165,928. DRYER. Joseph F. Gent, Columbus, Ind. [Filed May 22, 1875.]



1. The combination, with the hollow conveyer-trough for reception of steam for drying the grain, of the spiral flanged shaft and brushes G, substantially as shown and described.

2. The brushes G, (one or more,) in combination with a conveyer, for the purposes described.

165,929. VEGETABLE-CUTTERS. Samuel Hauck, Jr., Lebanon, Pa., assignor of two-thirds his right to A. B. Hauck and Chas. B. Andrews, same place. [Filed May 15, 1875.]



In a vegetable cutting machine, the combination, with the topper F, of the horizontally-reciprocating platform D, provided with an adjustable cutter, E, and rollers B, mounted upon an extensible frame, substantially as and for the purpose set forth.

165,930.

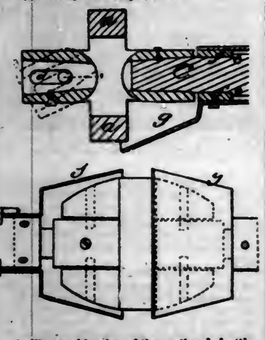


165,930. TRACE-BUCKLES. Miles T. Hayes, Burlington, Wis. [Filed Jan. 26, 1874.]

Brief.—The buckle is made in two parts. The upper part slides underneath lugs on the inside of the frame of the lower or under part, and each part is provided with a loop and a tongue.

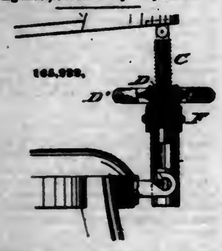
The trace-buckle described, in two parts, wherein the bar *a*, with the tongue *b*, the sides *d*, girt *e*, and tie *f*, of one part, and the bed *h*, tongue *i*, and girt *k*, of the other part, are constructed and arranged substantially as described.

165,931. KNUCKLE-COUPLINGS FOR TUMBLING-SHAFTS. Oscar D. Herrick, Ottumwa, Iowa. [Filed May 1, 1875.]



1. The combination of the sectional sheathing K with a sectional and folding tumbling-shaft, substantially as specified.

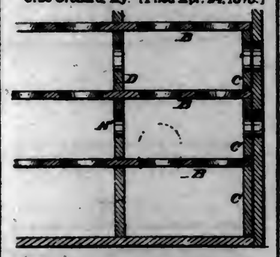
2. The sectional metallic sheathing E, having bearing-rings *f* and swells or enlargements *g* in the form of half a conical frustum, adapted for use in connection with a folding sectional tumbling-shaft, substantially as specified.



165,932. BARBERS' CHAIRS. Wm. Hoehn, New York, N. Y., assignor to A. Schwaab, same place. [Filed Apr. 24, 1875.]

The combination in a barber's chair of pivoted screw C, nut D, hand-wheel D', and sleeve F, with a tube, E, trunnioned in bearings *b*, as and for the purpose specified.

165,933. BOO-BOXES. Wm. H. Holdam, Crab Orchard, Ky. [Filed Apr. 24, 1875.]



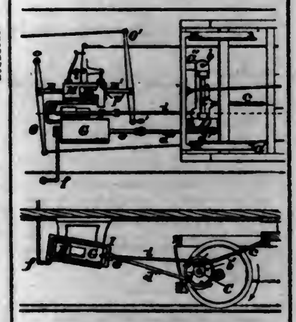
The box A, having detachable egg-holders B, provided with adjacent spacing and supporting end pieces C C, as shown and described, so that each may be conveniently placed on a floor or table, and filled with eggs before being inserted in box.

165,934. GRINDING-WHEELS. John W. Hyatt and Isaiah S. Hyatt, Newark, N. J., assignors to the Celluloid Manufacturing Company, New York, N. Y. [Filed Dec. 1, 1874.]

The grinding-wheel made of emery or similar particles united together by celluloid or pyroxyline, or their compounds, as set forth.

165,935. AUTOMATIC AIR-BRAKES FOR CARS. Alex. James, Seymour, Ind. [Filed May 31, 1875.]

Brief.—The air-pump is actuated by a friction crank-wheel, which is automatically thrown in and out of contact with the axle of the car-wheel, according as the pressure in the receiver is increased or diminished. The air-pump is supplied with air through a pipe leading to the roof of the car.



1. The combination of swinging frame B *b b'*, shaft C, spring *c*, driving-wheel D, pump *d'* E *e*, receiver G *g*, cylinder H H', plunger *h h'*, yoke I *i*, regulating-valve K L, cylinder M, and oppositely-acting pistons N N', for operating the levers O O of the brake apparatus, substantially as herein explained.

2. In combination with the cylinder H H' and retracting devices *k* l, the adjustable perforated nut J *j*, valve K *k*, cock L, and the inlet-pipe P, which communicates with the receiver G, substantially as described.

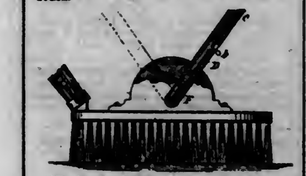
3. In combination with the cylinder M and its oppositely-acting pistons N N', the port *m*, channel *m'*, inlet-valve P, outlet-valve P', exhaust-port *p'*, and the pipe *p*, leading to the receiver G, substantially as and for the purpose set forth.

4. The described combination of pivoted levers T *t* T' *t'*, rods U U', and connection S, for operating the bell-crank Q from either end of the car, for the purpose stated.

5. The suction-pipe *f* of pump E, when carried up within the car, so as to draw off the vitiated air from the same, substantially as set forth.

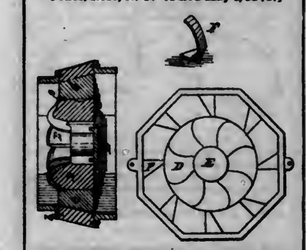
165,936. BRUSHES. Orlando Jenness, Alton, N. H. [Filed May 12, 1875.]

Brief.—The handle is bifurcated and pivoted to the back of the brush, and carries a sliding pin, which engages various holes, to set the handle at different inclinations to the brush.



The handle G, bifurcated at one end for attachment to the angle segmental piece F, and carrying the spring-catch D in a central longitudinal opening, having a slot at one side thereof for the operating-knob *b* to work in, all combined and arranged substantially as shown and set forth.

165,937. CASTING TURBINE WHEELS. G. H. Jones, Ross, N. Y. [Filed May 1, 1875.]



1. The water-wheel pattern, consisting of the sections D, provided with grooves *d*, the hub E, and ring *g*, substantially as and for the purpose specified.

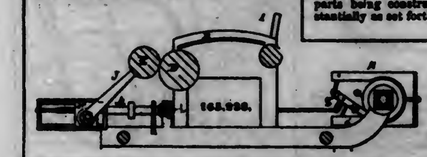
2. The partition-plates F, constructed and applied substantially as and for the purpose set forth.

165,938. PAPER-DAMPING MACHINES. C. Kahler, Chicago, Ill., assignor to himself, M. C. Barnes, Wm. L. Ogden, W. Severin, and Philipp Ruraith, same place. [Filed Apr. 17, 1875.]

Brief.—Makes the shaft carrying the roll upon which the paper is wound adjustable.

1. The combination of the roller E, journaled on the swinging arms J, with the adjustable shaft K and the driving shaft or roller D, substantially as specified.

2. The combination of the shaft L, screw shafts M, and sliding blocks N with the shaft K, arms J, roller E, and beveled wheels *a b*, substantially as set forth.



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3. The combination of the brake B, wheel Q, and spool-shaft F with the sliding board E, driving shaft or roller D, and swinging and adjustable roller E, arms J, and adjusting shaft K, for regulating the tension of the paper and controlling the speed, substantially as specified.

165,939. LOCKS FOR POCKET-BOOKS. P. Elias, New York, N. Y., assignor to Wm. Boyd, same place. [Filed June 2, 1875.]

Brief.—The metallic tongue of the closing flap is constructed with ears or projections, and seated in a recessed base-piece connected to the body of the book, having notches to receive its ears, and is held therein by a pivoted lever-clamp impinging upon its ears



In a lock for pocket book, &c., the combination of the metal tongue *a* having one or more outwardly-projecting shoulders, *c*, with the mortised or recessed plate *b* having one or more inwardly-projecting shoulders *d*, and with the cam lever *f*, the rigid tongue *e* fitting into the recess or mortise of the plate *b*, all substantially as herein shown and described.

165,940. MIDDLINGS-PURIFIERS. Jacob C. Encobel and Fred C. Encobel, Belleville, Ill. [Filed Apr. 10, 1875.]

Brief.—As the material is directed by the cant-boards to the neighborhood of the air-inlet openings, the slopes prevent its passage out through said openings. An exhaust-fan communicates with the outer diving-flue, to produce the necessary currents



1. The combination of the cant-boards E and slope F in a case having air-inlet passages K and outlet-passages I, with regulating-valves J, substantially as specified.

2. The combination of the diving passage G H and passage L with the case having the cant-boards E and outlet-passages I, substantially as specified.

165,941. STEREOSCOPES. Henry J. Lewis, Green Point, Brooklyn, N. Y., assignor to H. and E. T. Anthony & Co., New York city. [Filed June 7, 1875.]

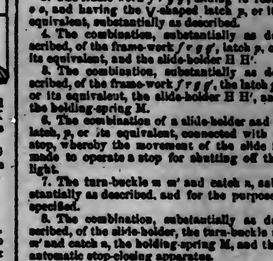
1. The base for the graphoscope made of the two portions *a* and *b*, that are hinged together and form the inclosing-box, substantially as set forth.

2. The rods *e'* for the picture-holder *d*, hinged at their lower ends to the cross-bar *e*, sliding within the base *b*, in combination with the friction-spring 3 and eyes 2, that guide the holder when in use, substantially as set forth.

3. The stereoscope-lens frame *g'*, hinged to the front edge of the base *a*, in combination with the hinged leg *r* at the back of such lens frame *g'*, substantially as set forth.

4. The base *a b* of the graphoscope, hinged to the stand by a folding strut, substantially as set forth.

5. The picture-holder *d*, hinged to the sliding cross-piece *e*, and the sliding stereoscope-holder *m*, in combination with the folding lens-holders and box *a b*, forming the base, the parts being constructed and arranged substantially as set forth.



165,942. MAGIC LANTERNS. L. J. Mercy, Philadelphia, Pa. [Filed June 16, 1875.]

1. The stop *a*, or its equivalent, when placed immediately in front of the source of illumination.

2. The combination of the stop *a*, or its equivalent, in the position specified, with the long lever *d*, substantially as described.

3. The frame-work *f r g g'*, sliding in rests *o o*, and having the V-shaped latch *p*, or its equivalent, substantially as described.

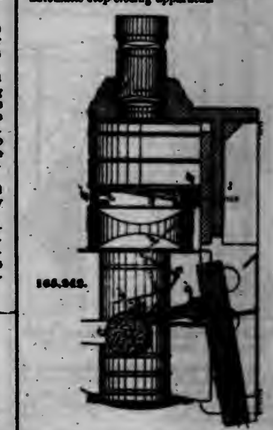
4. The combination, substantially as described, of the frame-work *f r g g'*, latch *p*, or its equivalent, and the slide-holder H H'.

5. The combination, substantially as described, of the frame-work *f r g g'*, the latch *p*, or its equivalent, the slide-holder H H', and the holding-spring M.

6. The combination of a slide-holder and a latch, *p*, or its equivalent, connected with a stop, whereby the movement of the slide is made to operate a stop for shutting off the light.

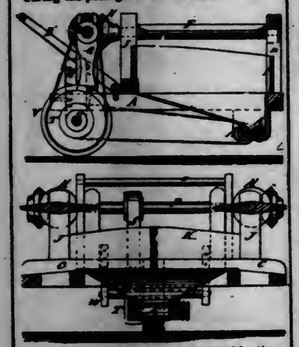
7. The turn-buckle *m m'* and catch *n*, substantially as described, and for the purposes specified.

8. The combination, substantially as described, of the slide-holder, the turn-buckle *m m'* and catch *n*, the holding-spring M, and the automatic stop-closing apparatus.



165,942. MACHINES FOR CATCHING AND DESTROYING POTATO-BUGS. C. B. Mathewson and Harvey T. Mills, Franklin Corners, Pa. [Filed May 1, 1875.]

Brief.—The machine is supported on two wheels, one in rear of the other. The body is hopper-shaped, with a pair of crushing-rollers in the bottom. On each side are revolving vanes, which sweep the insects into the hopper, and, in addition to these, there are two gathering-fingers, which support the vines during the passage of the machine.



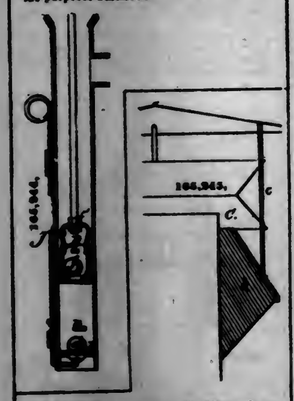
1. In an insect-destroyer, the combination of the inclined side bars A and the guards or fingers E with the frame-work B O D G H J of the machine, substantially as herein shown and described.

2. In an insect-destroyer, the combination of the vines F with the guards or fingers E, the side bars A, and the frame-work B O D G H J of the machine, substantially as herein shown and described.

165,944. PUMPS. Edward McDermott, Minneapolis, Minn. [Filed May 8, 1875.]

Brief.—A bar or pin projecting across the cylinder just above the lower valve prevents undue displacement of the lower ball, and raises the other when the piston is depressed to its lowest point. A bent rod operated outside the cylinder then lifts the lower ball, and the pump clears by gravity of its contents.

In combination with the rod J, and the two valves *d j*, the rod a, substantially as and for the purposes described.



165,945. VENTILATORS. P. Milan, Cambridgeport, Mass. [Filed Mar. 11, 1875.]

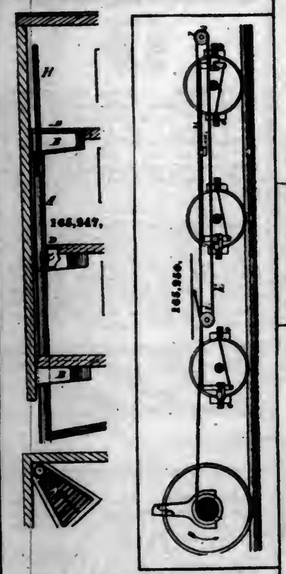
The combination, with the main pipe A, of the coats frustums E F, the storm-guard or frustums G G', and dome D, the whole being constructed and arranged substantially as shown and described.

165,946. FLUXES FOR WELDING IRON AND STEEL. David Miles, Kingston, Pa., assignor to himself and William H. Squarey, same place. [Filed Mar. 26, 1874.]

A flux for welding and working iron and steel, made of slag, substantially as described.

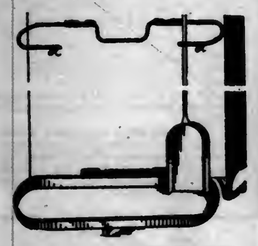
165,947. FLOODWATE FOR WAREHOUSES. John H. Merrell, New York, N. Y. [Filed May 26, 1875.]

Brief.—A means of protecting fire-proof warehouses from damage by water, consisting of vertical pipes connecting the eaves and floors, and provided with openings and sinks in the corners, covered by gratings. Said pipes connect with the sewer-pipe below.



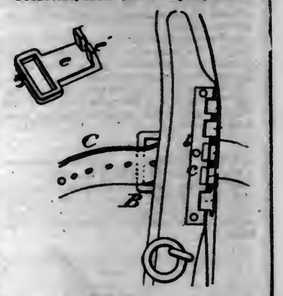
The pipes A, extending up through the building and having the openings C, in combination with the sinks B, covered by gratings D, upon each floor, the said pipes A communicating with the eaves-pipe above, the sewer-pipe below, and with all of the sinks through the openings C, substantially as described, and for the purpose set forth.

165,948. COAL-VASES AND FIRE-IRON STANDARDS. George J. Munschenser, Buffalo, N. Y. [Filed May 13, 1875.]



The combination, with a coal-scuttle, of the curved pivoted arms *a a* near the top of the scuttle, and the dish or plate *b* hinged near the base of the scuttle, all substantially as and for the object specified.

165,949. HAMES. James D. L. Nunnaley, Centreville, Tenn., and W. E. Kirkney, Booneville, Miss. [Filed May 24, 1875.]



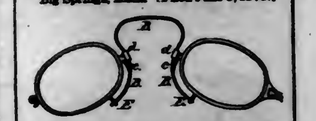
In a hame, the adjustable loop B, constructed with a shank, *c*, and lugs *c' c'*, in combination with the notched plate *c* and strap C, substantially as described.

165,950. CAR-BRAKES. Richard C. O'Hara, Houston, Tex. [Filed Feb. 13, 1875.]

Brief.—Applies brakes to rear car first.

The combination of chain-drums *i*, chains *v*, brake-levers *m*, chain-wheels *i*, and chain *l*, leading from the rear car to the winding drum *f*, all substantially as and for the purpose set forth.

165,951. EYEGLASSES. Wm. H. Peckham, Big Springs, Kans. [Filed June 9, 1875.]

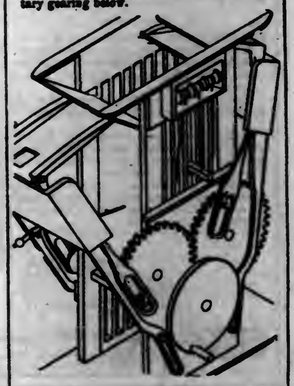


1. The small spring *c*, in combination with the nose-spring B, substantially as described, and for the purposes specified.

2. The nose-spring B, having the small spring *c*, in combination with slotted post *d* and lug E, substantially as shown and described, and for the purpose specified.

165,952. BALING-PRESSES. Harvey L. Pike, Seattle, Wash. [Filed May 21, 1875.]

Brief.—The material, thrown in continuously at the top of a vertical frame, is passed over and drawn down by a pressure-plate on each side, attached at right angles to downward-extending levers, operated alternately by rotary gearing below.



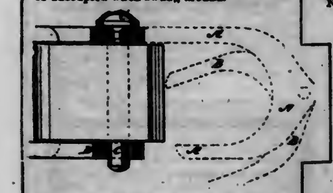
1. The pressing-plate C, with their connecting-arms E, guide-rods G, and cranks F, for the purpose of giving the plates a downward motion, and withdrawing them from the press alternately, substantially as and for the purpose herein described.

2. The connecting-rods E, extending from the plates C to the crank F, and the guide-rod G, together with the connecting-latch *m*, and the stationary pin P, for the purpose of alternately uniting and releasing the rods as they move, substantially as herein described.

3. The feeding-tables B, hinged at their outer ends, and having their inner ends alternately depressed and elevated by the movement of the presser C, so that the material can be fed beneath each presser alternately, substantially as herein described.

165,953. SAFETY-CLEVISES. Charles N. Poundstone, Grand Ridge, Ill. [Filed May 6, 1875.]

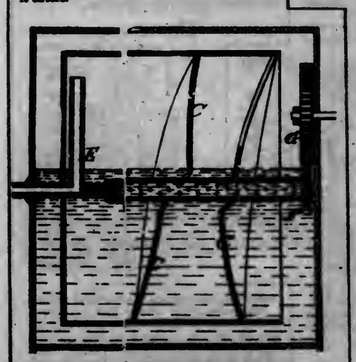
Brief.—Each rear arm of the clevis is made whole, but becomes a half-section at the center or front, where the two arms are pivoted together. From the pivot each half tapers around the curve, and runs out a little short of the other rear end. The bolt-hole is near the rear of the crescent, allowing the clevis to be uncoupled when swung around.



The clevis formed of the two hook-shaped parts A B, pivoted to each other at their heads, and the pin C, swiveled to the long arm of one of the parts A B, and working loosely in the long arm of the other part, substantially as herein shown and described.

165,954. AIR-BLOWERS FOR CARBURETORS. William H. Reed, Chicago, Ill., assignor to himself, W. A. Wells, H. G. Hoyt, Dan. J. Small, Henry Jones, and L. P. Converse, same place. [Filed June 4, 1875.]

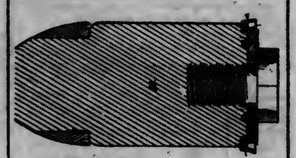
Brief.—The perforated hollow shaft within the blower-drum allows the water to return, as the air is carried by the helical flange to the exit-pipe at the opposite end from which it enters.



1. In an apparatus for supplying air regularly to gas-carburetors, the helical flange C, provided with web *a*, and cone B, combined with the case A, having an induction-passage, *g*, and an educion-pipe, E, and rotated substantially as described.

2. The helix C, having web *a*, in combination with the perforated shaft D, and cone B, open at one end, substantially as and for the purpose set forth.

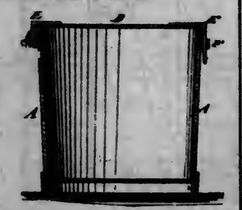
165,955. PROJECTILES FOR ORDNANCE. H. Reilly, Brooklyn, N. Y. [Filed Feb. 19, 1875.]



1. A sabot, with a thin expansible edge attached to the projectile by a removable plate, being prevented from turning upon the projectile by fitting around a projection from the base of the projectile, as described.

2. A sabot, provided with perforations to allow the escape of gas, substantially as herein before set forth.

165,956. METALLIC BUSHES-PACKAGES. M. C. Roberts and K. D. Briggs, Great Bend, N. Y. [Filed Apr. 24, 1875.]



The combination of strips E and loops or keepers F with cover D and body A of the package, as shown and described, for the purpose specified.

165,957. OIL-CANS. Thos. Boddick, Stranraer, Scotland. [Filed Apr. 24, 1873.]

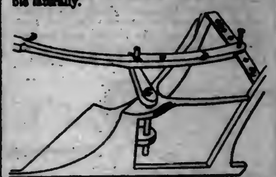
Brief.—The annular disk secured within the oil-can forms an air-chamber. The can is provided with air-tubes opposite each other—one in the collar of the neck of the can, the other in line therewith below—so that a wire can be inserted through them in case they should get clogged up with impurities.



The combination and arrangement of the can *a*, annular disk *c*, annular air-chamber *b*, neck *a*, with its collar *f* and air-tube A, located directly above the air-tube *d* leading from the chamber *b* to the oil-receptacle *a*, substantially as and for the purpose set forth.

165,958. VINEYARD-PLOWS. Milton Rose, San Jose, Cal. [Filed Feb. 18, 1875.]

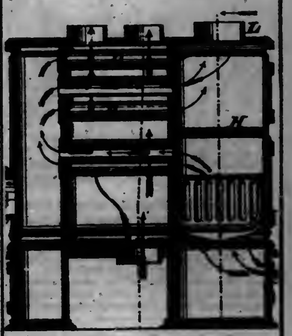
Brief.—The beam mounted upon a standard having a crank, and its rear end also adjustable laterally.



A plow, having the rear end of its beam D adjustable between the handles, in combination with the crank G for shifting its middle and forward end, substantially as and for the purpose above described.

165,959. HEATING-STOVES. H. J. Sutton, Cobourg, Canada. [Filed Dec. 14, 1874.]

Brief.—The draft may be direct through the front trunk, or direct through the rear trunk, or indirect through both rear and front.

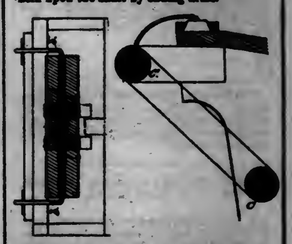


1. The combination of the collar J, for direct-draft attachment, with the rear trunk B, and the tubes O D, constructed and operating as described.

2. The combination of the removable plate H in the stove, constructed herein described, with two trunks, A B, connecting-tubes O D, and two collars, J L, for either direct or reversed draft.

165,960. MACHINES FOR POLISHING THE BEARS OF BOOT AND SHOE HEELS. Joshua H. Ryder, Brockton, Mass. [Filed Jan. 6, 1875.]

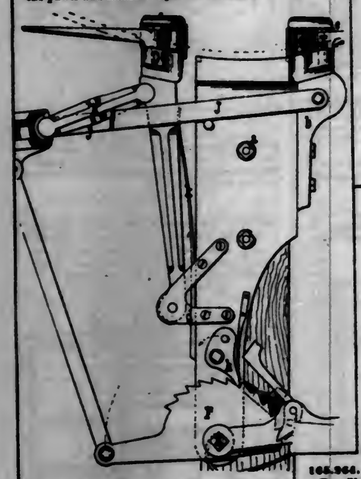
Brief.—The removable polishing-rolls are held upon the shaft by sliding arms.



In a heel-edge scouring-machine, the combination of the shaft D, rolls E E, pulley C, and sliding arms *b b*, the whole being constructed and arranged substantially as and for the purpose set forth.

165,961. TIRE-UPSETTING MACHINES. M. G. Schenck, Marlborough, N. J. [Filed May 19, 1875.]

Brief.—A movable jaw operated toward the anvil by means of a reverse lever. A foot-lever connected to the lever by suitable ratchet-and-pawl devices shortens the length of each throw by repeating the throws, said ratchet-and-pawl mechanism having trips to hold back the pawls and loosen the jaw when desired.



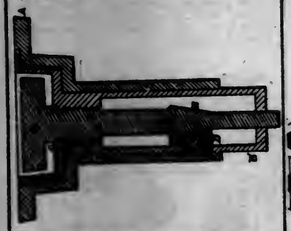
1. In combination with the clamps of a tire-upsetting machine, the levers K and J, and foot-lever G, substantially as described.

2. In combination with the levers K and J, the ratchet-lever F with pawls *h* and *i*, and foot-lever G, substantially as described.

3. The combination of the ratchet-lever F and foot-lever G with pawls *h* and *i*, having trip-pins and stops, substantially as described.

165,962. BENCH-HOOKS. Chas. B. Smith, Lowell, Mass. [Filed Jan. 16, 1875.]

Brief.—The dog is retained at any desired elevation above the bench by means of a holding-block, seated upon by a conical screw-wedge, which forces it into the corrugations of the case.

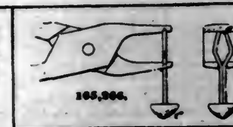


The bed-plate A, provided with the extension A', in combination with the hook B B', thumb-screw C, with its conical wedge E, and wedge-block D, substantially as and for the purpose specified.

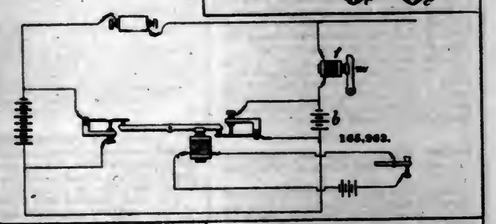
165,963. DUPLEX TELEGRAPHS. O. Smith, Astoria, N. Y. [Filed Dec. 29, 1874.]

1. The two batteries *a* and *b* of unequal power, connected with the same poles to the line, in combination with the adjustable rheostat between the larger battery and the line, the receiving instrument between the smaller battery and the line, and the key for simultaneously opening and closing the circuits from both batteries, substantially as specified.

2. In a duplex telegraph the arrangement of the batteries *a* and *b*, receiving instrument *f*, and rheostat, substantially as specified, so that the batteries shall neutralize each other at the receiving instrument, and act together on the line substantially as set forth.



165,964.



165,965.



165,966. PLANING-MACHINES. J. K. Smith, Burrillville, R. I. [Filed May 1, 1875.]

Brief.—The rotating cutters are carried upon the end of a vibrating arm, and controlled in their movements by a weight and guide.

The combination of the table A, having an arc-shaped slot, *a*, pivoted and weighted horizontal arm B, revolving cutter C, and pivoted side guide-strip E, as and for the purpose set forth.

165,967. COMBINED GRAVE, COFFIN, AND MONUMENT. L. M. Speere and A. Clark, Newberry, S. C. [Filed May 26, 1875.]

A combined grave, coffin, and monument, formed of the recessed lower part A, the grooved cover B, made thicker at its head end, and having an opening formed through it, in which is cemented a single, double, or triple glass plate, C, and the cover D, all constructed substantially as herein above and described.

165,968. GAS APPARATUS. Robert Paulson Spice, Westminster, Great Britain. [Filed Mar. 6, 1875.]

The combination of the superheater W with the fire-box C and arch P, extending down the sides of the fire-box, as shown.



165,969. TABLE-LEAF LIFTERS AND SUPPORTERS. Tilton B. Smith, Attica, Mich., assignor to himself and Charles J. Locker, same place. [Filed May 22, 1875.]

Brief.—A movable bar is connected with two sliding lifters by means of hook-rods and a center-pin.



A device for lifting and supporting table-leaves, consisting of the bar C, lifters F F, hooks G G, and center-pin B, in combination with a frame, A, all arranged to operate as described.

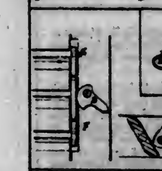
165,970. HOG-RINGING APPARATUS. Silas Sparks and John W. Sparks, Bowensville, Ohio. [Filed May 15, 1875.]

An apparatus consisting of a pliers, the jaws of which are grooved and slotted, as described, and a doubled wire having an inverted cone, C, (or other-shaped piece of metal,) at one end, and an opening, D, at the other, substantially as described, for ringing hogs, as set forth.

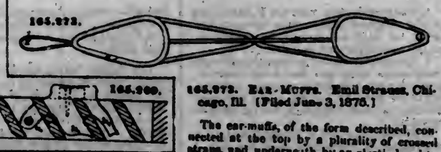
165,971. BLIND-STOPS. Charles H. Steller, Milwaukee, Wis. [Filed May 15, 1875.]

Brief.—As an improvement on former patent, No. 159,830. A thin metal plate, suitably notched, is arranged between the inner edge of one of the stiles of the blind and the ends of one or more of the blind-slats, so as to slightly oscillate, and combined with this vibrating plate is a cam-button, secured to the stile in such manner that by turning the button against the plate the slats will be held by friction in any desired position.

The combination, with cam-button D, of the notched plate C, having arms F extended between slats and beyond the slat-pivot, as and for the purpose specified.



165,972.



165,969.

165,973. EAR-MUFFS. Emil Strauss, Chicago, Ill. [Filed June 3, 1875.]

The ear-muffs, of the form described, connected at the top by a plurality of crossed straps, and underneath by an elastic band to pass below the chin, so that when said muffs are secured over the ears by the tension of the said crossed straps they will assume a concave form, thereby entirely inclosing the ears, substantially as described.

165,974. SMOKING-PIPE COVERS. Fredk. L. Suter, Brooklyn, N. Y. [Filed June 12, 1875.]



A pipe cover and guard consisting of a wire screen, with handle and downward-extending spring legs or guides, all bent of one piece, substantially as specified.

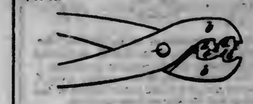
165,975. SAFETY-PINIONS FOR WATCHES. Lyman W. Thompson, Cherry Valley, N. Y. [Filed Apr. 26, 1874.]

Brief.—A safety-wheel in which the recoil, when the mainspring breaks, acts upon a flat curved spring, causing a stud attached thereto to rise from the inclined notch in the third wheel, thus releasing said wheel from connection with the train.

The safety-pinion herein described, consisting of the shaft *a*, the pinion B, the flanged and threaded hub J, and screw-cap C, all rigidly connected, the flat curved spring S carrying the latch-pin *c*, and the loose wheel A seated on said hub, and having the chamfered notch *n*, all constructed and arranged as specified.

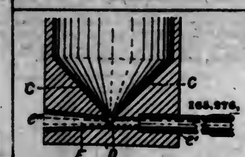


165,975.



1. The frame-cap A, having a groove in the upper portion, furnishing an entire support for the balls, in combination with the recessed revolving head B, having a depending flange, *a*, whereby the balls are supported free from the shaft and protected, substantially as and for the purpose herein specified.

2. The weights H and I, arranged so that the weight H moves independently a certain distance before the weight I is raised, then both raised by the same power, in combination with a vane and mechanism for raising the weights, substantially as herein specified.



165,976.

165,976. INSECT-POWDER BOXES. William J. Van Patten, Burlington, Vt., assignor to Wells, Richardson & Co., same place. [Filed Mar. 17, 1875.]

Brief.—A box or package for holding insect-powders is so constructed that each individual box is ready for use by removing the corks from the apertures, and inserting a blow-pipe or mouth-piece into one of the apertures.

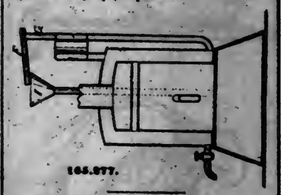
1. A powder-box constructed in one piece, and having a cone-shaped bottom, C, a vertical aperture, D, connecting with a horizontal aperture; E, the latter being formed with shoulder *c'* at one end, and a funnel-shaped outlet, *c''*, at the other end.

2. A powder-box constructed as above described, and in combination with a mouth-piece or tube to force the contents through and out of the horizontal aperture E, as specified.

165,977. HOT-WATER HEATING APPARATUS. Ernest P. Weckwitz, New York, N. Y. [Filed Apr. 24, 1875.]

Brief.—Steam escapes from the upper end of the cross-pipe, and water is returned to the boiler through the lower end.

The combination, with heater, of overflow-pipe G, open-ended cross-pipe F, and funnel I, as for the purpose specified.



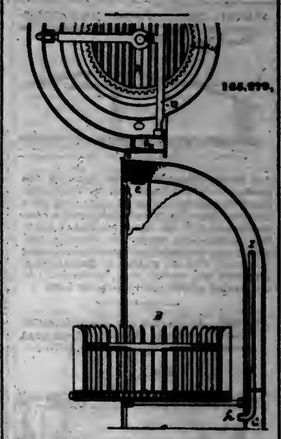
165,977.

165,978. HOUSEMOUSE. John Wanstall, Washington, D. C. [Filed June 17, 1875.]

Brief.—A tapering groove for the securing-pin is arranged across the upper surface of the shoe, with its greatest depth on the inner edge, where the least wear occurs.



In combination with a horseshoe provided with vertical slots and tapering grooves, the calks with slotted shanks, and the securing-nail, substantially as and for the purposes described.



165,979.

165,979. GRATES. James Warmington and John Forrester, Chicago, Ill. [Filed June 11, 1875.]

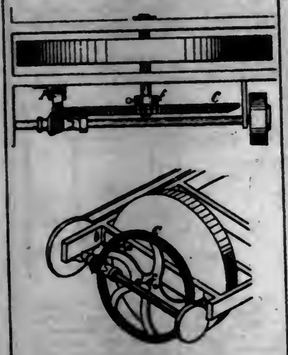
Brief.—The grate is turned in one direction, and the fire-pot in the opposite. The fires provide for an indirect draft.

1. The combination, in a grate, of the vertical section B and horizontal section D with the spurs or teeth *f f'* and wheel *e*, substantially as and for the purposes specified.

2. The fires E F G and openings *a b*, in combination with the dampers *c d* and grate, substantially as and for the purpose herein described.

3. The fires E F G and heating-space H, in combination with the grate and the air-heating pipe I, all constructed and arranged as and for the purpose herein specified.

165,880. HARVESTERS. J. B. Webster and Wm. A. Dorr, Stockton, and M. McClenathan, Merced, Cal. [Filed Nov. 6, 1874.]



1. The bevel gear-wheel C, having the partial keyway c, in combination with the pin or rib e, on the end of the shaft d, and the sliding ring or collar f, with its set-screw O, substantially as and for the purpose above described.

2. The gear-wheel C, in combination with the adjustable pressing-roller p, substantially as and for the purpose above described.

3. The lever S, with its wear-plate W and projecting circular rim R, in combination with the beam U, with its wear-plate t, and the bolt or pin X, substantially as described, for the purpose specified.

165,881. CIRCUIT-CLOSERS FOR RAILWAY-SIGNALS. Saml. Weeks, New Orleans, La. [Filed June 6, 1876.]



A circuit-closing device for signaling the passage of railway-trains over the track, composed of a spring-supported connecting-plate insulated from the ground, and placed in communication with the line-wires, and of a central contact-plate supported below the contact-plate and connected to the earth for closing the circuit with the station by the contact of connector and central plate, substantially in the manner and for the purpose set forth.

165,882. APPARATUS FOR MEASURING DISTANCES. Francis Waldon, Moninabad, Deccan, India. [Filed Mar. 20, 1875.]



The bar A B H, having sights B and H, and a graduated scale thereon, the limb C D K, having also sights at its extremities, and the indicator D F I, all combined and arranged, as shown and described, to form an apparatus for measuring distances.

165,883. AUTOMATIC FEED-WATER REGULATORS. Joseph Wertheim, Frankfort-on-the-Main, Germany. [Filed June 6, 1875.]

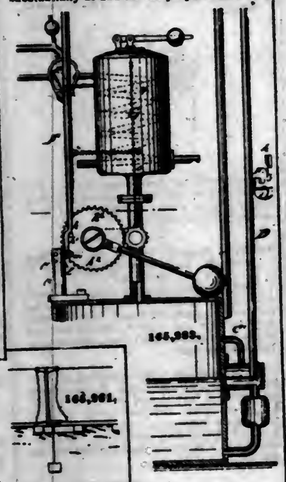
Brief.—The valves are operated by the contraction and expansion of a pipe alternately filled with water and steam. A steam-pipe passes through the tank to heat the water.

1. The combination, with rod F, having leg m, of the recessed spring-catch l, having spring-arm l', the pin P, and the wheel having pin h', as and for the purpose specified.

2. The combination of governing-rod F with waste-steam valve and feed water reservoir, producing the alternating warming and cooling of the same, for heating up the water and creating the suction-vacuum, for the purpose specified.

3. The governing-rod F, having shoulder h, in combination with projecting-pin h', of weighted cog wheel h', and stop-cock pinion for opening and closing the stop-cock on expansion of tube D at low-water level, substantially as set forth.

4. The combination of spring-acted governing-rod F, having projecting-leg m at lower most end, with recessed and spring-acted elbow-catch l, and the weighted stop-cock gear to respond to small variations of the main tube, substantially as and for the purpose set forth.

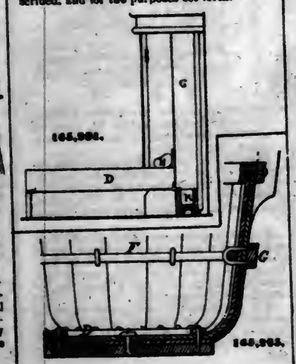


165,883.

165,884. BEDSTEADS. Wm. West, Toronto, Canada, assignor of one-half his right to G. West, same place. [Filed Feb. 3, 1875.]

Brief.—The front portion of the case is designed for permanent use as a wardrobe or book-case, and the bed is drawn out at the side from a recess in the rear portion of the case.

The main case, having the front portion thereof constructed and arranged as described, and having the recess G in its rear portion, in combination with the sliding frame F, drawer K, and folding bed D, substantially as described, and for the purposed set forth.

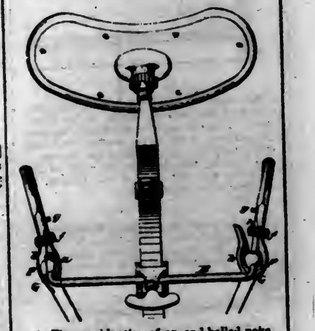


165,884.

165,885. STAVE BASKETS. R. B. Wheeler, Niles, Mich., assignor of one-half his right to Henry Lardner, same place. [Filed Jan. 23, 1874.]

The basket herein described, having the bottom board B, extending from the center of the bottom to the head of the staves, the double series of tapering staves, united by the outer hoop G, the inner wire hoop F, and staples E, and meeting point to point, and lying flat on the bottom board within their bends, the inside hoop D, and the center nail C, having a large head covering all the stave-points, and securing the same in their relation to each other and to the bottom board, as shown and described.

165,886. HEAD-RESTS. Otis C. White, Hopkinton, Mass. [Filed May 22, 1875.]



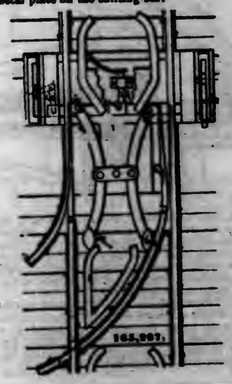
1. The combination of an end-bolted yoke, E, crooked at G G, with rods D D, having socket F, as and for the purpose described.

2. The combination, with a sliding ring, f, of grooved pieces a b, the latter hinged to the former, as and for the purpose set forth.

3. The slide-ring f, notched at h, in combination with rods D, having stud g, as and for the purpose specified.

165,887. RAILWAY-SWITCHES. John C. Wilhelm, Petersburg, Pa. [Filed June 18, 1874.]

Brief.—A railroad-switch which is operated through vertical jointed striking-levers, the lower ends of which are connected to the movable switch-bar by a bell-crank lever; said bar also being connected to horizontal curved striking-levers, which lie alongside the rails, and are operated by the passing wheels in case the switch is misplaced. The switch is secured in position by a spring-bolt having a wedge-shaped projection, which takes into correspondingly-shaped notches in a metal plate on the shifting-bar.



165,887.

1. In a railroad-switch, a bar, E, with the doubly-sloped bearing e, and the bolt L, with the spring b, substantially as specified.

2. The switch levers M, springs m^1, bell-crank levers G H, and coupling bar E, in combination with the levers P Q, having thrust-blocks p' q', connecting-piece R, and switch-tongues C D, all operating in the manner substantially as described.

165,888. BUTTER-PRESERVING FIRKINS. J. Wilhelm, Orville, Ohio. [Filed Apr. 24, 1875.]



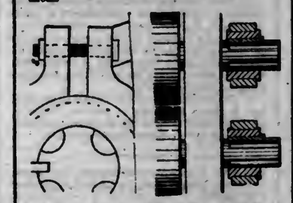
The combination of the heads B E, having cross-bars or cleats b' e' attached to their outer sides, and the hoops C D, one, two, or more, having cleats c' d' attached to their outer sides, with an ordinary butter-firkin, A, substantially as herein shown and described.

165,889. INSECT-DESTROYING COMPOUNDS. Edward Wilkins, Chestertown, Md. [Filed Jan. 21, 1875.]

The compound of chloride of sodium and hyposulphite of soda for use as an insecticide, substantially as set forth.

165,890. METAL-ROLLING MILLS. John I. Williams, Millvale Borough, (Bennett P. O.,) Pa. [Filed Feb. 18, 1875.]

Brief.—The purpose of the brake is to prevent reboun[illegible] or accelerated velocity of the rolls on the sudden cessation of resistance that happens at the moment the bloom or bar leaves them.



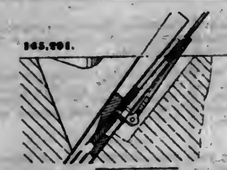
In combination with the rolls of a rolling-mill and their driving mechanism, a brake or brakes arranged in the line of the driving power, at or outside of the driving-pinions, upon the axis or an extension thereof of one or more of the rolls, substantially as and for the purpose specified.

165,891. PLANE-IRONS. William Young, Mahon, Nova Scotia. [Filed May 18, 1875.]

Brief.—The plane-iron is provided with guide-slots, and has an adjustable cap-piece, which is locked in place by an eccentric lever pivoted to a post sliding in the central slot of the iron, and secured by a countersunk base-plate to the cap-piece, for the purpose of quickly adjusting and locking the cap-piece, and give the plane more iron.

The combination of a plane-iron, having guide-slots, with the cap-piece, adjusted and secured by an eccentric lever pivoted to post of the same, substantially as and for the purpose set forth

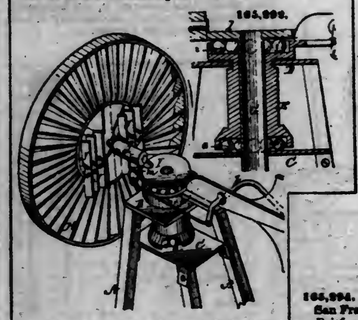
165,891.



165,892. WINDMILLS. William H. Aldrich, Beloit, Wis. [Filed May 3, 1875.]

Brief.—A stationary regulating-vane is placed immediately in rear of the wind-wheel, to throw the wheel wholly or partially out of the wind, according to the force thereof. As the force decreases, a counter-balance throws the wheel into the wind again.

165,892.



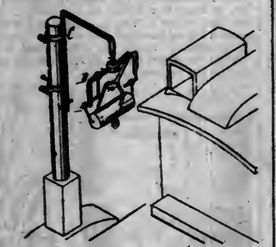
1. In combination with a wind-wheel, a stationary regulating-vane, located directly behind and opposite the central opening of the wheel, for throwing the same more or less out of the wind, for the purposes herein set forth.

2. The combination with a wind-wheel, of a stationary regulating-vane, located immediately in rear of the wheel, and a counter-balance connected with the wheel, substantially as and for the purposes herein set forth.

3. The combination of the vane-pivot E, having a central opening, made cup-shaped at the top and bottom, and inclosing balls f and a, the plates B and C, the wheel pivot G, with plate I, all constructed substantially as and for the purposes herein set forth.

165,893. MAIL-BAG CATCHERS. Edward Amrock and Chester Judson, West Newton, Mass. [Filed May 11, 1875.]

Brief.—When open end of box on car strikes the bag it is carried off the horizontal arms into the receptacle, through the hinged bottom of which it falls into the body of the mail-car. The ratchet is turned away from the pawl at the same time, and thus the bifurcated guide is thrown out of contact.



1. The yoke or holder D for supporting a mail-bag, provided with the two arms 10 and hooks f and 11, in combination with the pivoted bifurcated guide p and a crane, C, erected near the railroad-track, all constructed to operate substantially in the manner and for the purpose set forth.

2. The adjustable sliding arm i, in combination with the holder D and crane C, substantially as described, for the purpose specified.

3. The bifurcated guide p, with its ratchet p and pawl q, in combination with the holder D operating as and for the purpose set forth.



165,894. MORTISING-MACHINES. J. Berry, San Francisco, Cal. [Filed Jan. 4, 1876.]

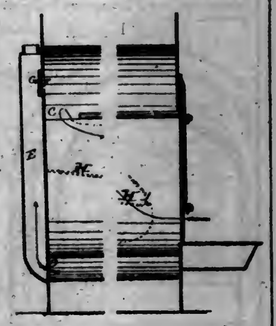
Brief.—The mortise is cut by an endless chain-saw, which is put in motion by a sprocket-wheel, and retained in the proper position for operation by a vertical guide-bar, provided with a guiding-roll at its lower end.

1. The endless chain-saw, consisting of the single and double teeth d e so united that a groove, f, and slots f are formed along its inner edge, to receive the guide-plates or ways b b and teeth a a upon the plate J, and the periphery or edge of the disk L, as set forth and specified.

2. The loosely-fitted grading-disk L, in combination with the plate K and endless chain-saw, all the parts being constructed and operating substantially as herein set forth and specified.

3. The combination of the endless chain-saw, having double and single teeth d e, slot f, and groove f, with the actuating-disk J and guiding disk or plate L, when constructed substantially in the manner as herein set forth and specified.

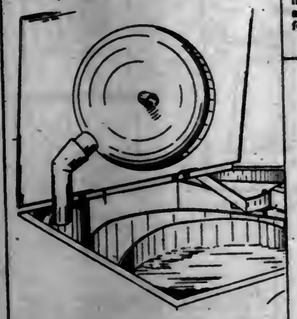
165,895. HEATING-STOVES. Alex. Botten, Warrensburg, Mo. [Filed Jan. 7, 1875.]



In a heating-stove, the combination of the oval or nearly cylindrical exterior case, the lining or inner wall B, arranged parallel thereto, and provided with openings at the top, near the rear end of the combustion-chamber, the diaphragm H, cut away at *h*, the flap E, joined to and forming an integral part of the case, and the openings D and F, the latter provided with a valve, G, all as shown and described.

165,296. WASH-STANDS. Nathan C. Bond, Fairfax Court-House, Va. [Filed June 2, 1875.]

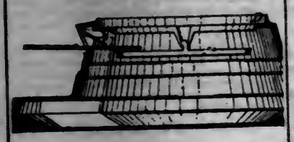
Brief.—The stand has suitable bowl and semicircular reservoir. The waste-bucket is raised up under the bowl by a parallel action, so that when the former receptacle is full, notice is given by the foul water appearing in the bowl.



1. In a portable wash-stand, the combination of a reservoir, operated by a pump, with a waste-bucket, which is lifted up under the bowl and held in that position, substantially as and for the purposes specified.

2. The draw F, when constructed to feed a tank or reservoir from the side thereof, substantially as specified.

165,297. SELF-CLOSING DOORS FOR STOVES. Nathaniel A. Boynton, New York. N. Y. [Filed Apr. 16, 1875.]



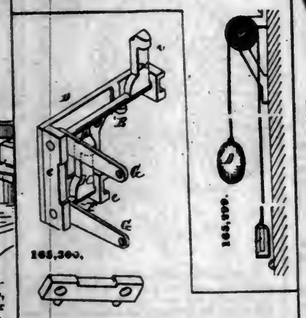
In combination with a stove body or base, having an aperture in its wall opposite the annular space between the grate and fire-pot, a self-closing door applied to said opening, substantially in the manner and for the purposes set forth.

165,298. FRAMES FOR FIRE-PLACE HEATERS. Nathaniel A. Boynton, New York, N. Y. [Filed Apr. 16, 1875.]

The deflector or shield B, having an aperture, C, in the upper part, provided with a cover, and combined with the stove-frame, substantially as and for the purposes set forth.

165,299. CURTAIN-FIXTURES. J. S. Brown, Washington, D. C. [Filed June 21, 1875.]

The combination of a coiling, self-balancing, flat band, C, and counter-weight D, with a weighted shade, A, and its roller B, the said band winding upon itself, and thus varying its acting distance from the center of revolution in proportion to the variations in the active weight of the shade, the said distance decreasing as the shade is wound up and increasing as the shade is lowered, substantially as and for the purpose herein specified.



165,300. SASH-FASTENERS. Wm. Brown, Duncannon, Pa. [Filed Apr. 6, 1875.]

Brief.—Improvement on Patent No. 82,797. The metal frame and its lugs are cast in a single piece, and a separate end piece, having projecting pins, is attached thereto, in such manner that the operating-shaft is readily secured in place, and the construction of the entire device simplified and strengthened.

The plate D, cast with its lugs *c c*, and having perforations *x x*, combined with the bar *c'*, having pins *y y*, which pass through the holes *x x*, and are rivoted thereto, all substantially as and for the purposes set forth.

165,301. VESSELS FOR MEASURING AND HANDLING ICE-CREAM, &c. T. Burkhard, New York, N. Y. [Filed May 17, 1875.]

As an article of manufacture, a vessel for molding, measuring, and handling ice-cream, &c., in which is combined an outer vessel, B, provided with a bottom, C, constructed with an opening, as described, and an inner vessel, A, suspended within the outer vessel for holding the frozen cream, all substantially as and for the purpose described.



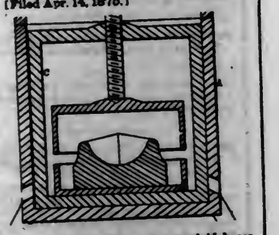
165,302. WATER-TRAPS. Wm. A. Butler, New York, N. Y. [Filed June 11, 1875.]

Brief.—The trap is made in halves, and has the seam or rib in the form and position shown.



A metal trap composed of two similar portions or halves, united by a seam which extends directly along the trap and from front to back in a plane centrally intersecting the trap, substantially as herein described.

165,303. PROCESSES AND APPARATUS FOR TREATING CELLULOID BASES FOR ARTIFICIAL TEETH. John G. Cannon, York, Pa. [Filed Apr. 14, 1875.]



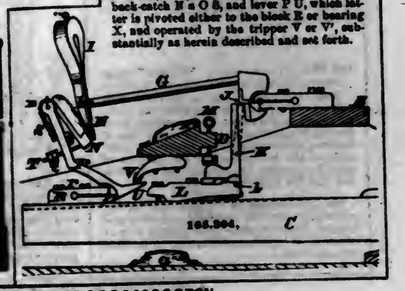
1. The process of rendering celluloid bases plastic to admit of their attachment to artificial teeth, and by causing the bases to conform to the contour of the mouth casts, by subjecting the plastic bases to a current of heated air through the medium of a ventilated chamber surrounding the said bases, substantially as herein set forth.

2. The combination of the ventilating-chamber A, clamp O sliding in grooves, screw *o*, and perforated hinged lids *c*, all substantially as and for the purposes herein specified.

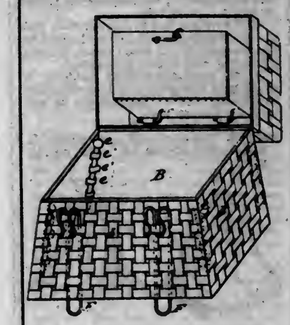
165,304. PIANO-FORTE ACTIONS. Theddeus P. Carr, Yellow Springs, Ohio. [Filed May 6, 1875.]

Brief.—Greater elasticity and range is given to the back catch.

In combination with a piano-key, C, hammer G H I J, and jack K *k*, the pivoted adjustable back-catch E *a* O S, and lever P U, which latter is pivoted either to the block R or bearing X, and operated by the tripper V or V', substantially as herein described and set forth.



165,305. CONVERTIBLE LUNCH BASKETS AND TABLES. Emma B. Carver, Philadelphia, Pa. [Filed Apr. 23, 1875.]



1. The lunch-basket body B, constructed of the sections *a b*, hinged together and provided with devices to lock it in position, either when folded as a lunch basket or box or extended as a table top, substantially as specified.

2. The tray A, having the loops *d'*, in combination with the box D, having the sliding pins *d'*, substantially as shown and described.

3. The detachable case D, in combination with the tray A, substantially as and for the purpose specified.

4. The combination of the mat *a*, sections *b*, loops *d'*, and pins *c*, forming the basket B, as shown.

5. The sliding loops F and buttons *f*, in combination with the mat *a* and sections *b*, constituting a table top, substantially as described.

6. The pins *e* and loops d^2 d^2, in combination with the mat *a* and sections *b*, constituting a table top, and provided with means for the attachment of legs, substantially as described and shown.

7. The folding legs G, in combination with the folding table top, consisting of the mat *a* and hinged sections *b b*, substantially as specified.

165,306. POWER-PRESSES. John R. Coffin, Mystic River, Conn. [Filed June 17, 1875.]

Brief.—The platen is lowered, and ordinary pressure given to it by a pinion and shaft in bearings thereon, gearing with a wheel rotating a vertical screw. The added pressure is given by a supplemental head-block loose between collars on the screw, and a lever pivoted thereto, to operate toggle-levers by intermediate links.

1. The combination with a screw-press, substantially as described, of an auxiliary lever-press, whereby an extended movement can be given to the platen to effect a compress, substantially as specified.

2. The combination, with the head-block F and platen *b*, of the compound toggle-jointed levers *f f g g* and operating-lever L, substantially as described.

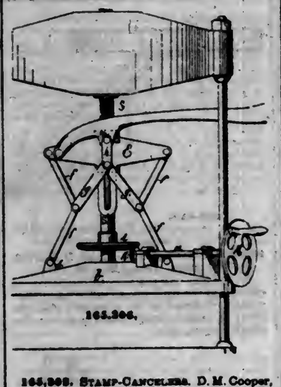
3. The combination, in a power-press, of the adjustable platen *b*, the screw S, the supplemental head-block E, and the toggle-jointed links *f f*, operated by suitable mechanical means, substantially as described.

4. The combination of the platen *b*, the driving-pinion *h*, supported by the platen, the gear-wheel *i*, and the screw S, substantially as described.

165,307. PROCESSES OF BLEACHING JUTE FOR PAPER-PULP. Edward Conley, Cincinnati, Ohio. [Filed Feb. 10, 1874.]

Brief.—Boils jute in caustic alkali of 70 to 80° Baumé, under pressure of eighty pounds, for ten hours.

The process of producing white pulp for paper, from jute, said process consisting in boiling the specified quantity of stock in a close vessel, of the degree of pressure and in caustic alkali of the strength and quantity indicated, and subsequently washing the same in warm water, as described.



165,308. STAMP-CANCELERS. D. M. Cooper, Georgetown, D. C. [Filed June 22, 1875.]



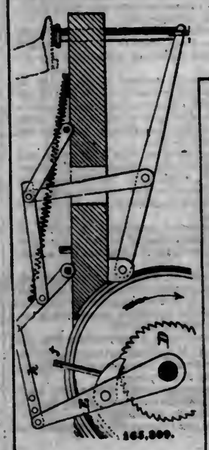
The yielding non-rotating impression-ring *r*, the rotating abrading-disk A, and the adjustable spring *s*, combined with the rotating spring-stem *a* made in one piece, and the slotted tubular handle *b*, substantially as described, for the purpose specified.

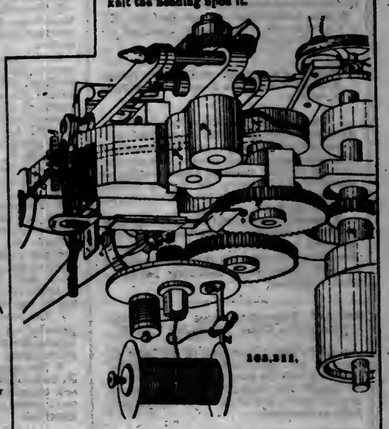
165,309. CAR-STARTERS. Samuel Corse, New York, N. Y. [Filed June 11, 1875.]

Brief.—By pressing treadle spring is stretched. Its contraction operates lever bearing pawl, which turns ratchet fast on wheel, and thereby starts car.

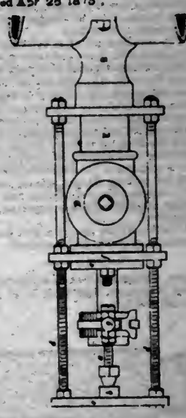
1. The combination, with the pawl G and ratchet D, of the levers E H, connecting-link *h*, toggle-levers I J, connecting-link *i*, levers M N, and foot-bar P, arranged and operating as shown and described, for the purpose specified.

2. The combination of the ratchet D, pawl G, levers E H, and their connecting-link, and the spring R, as shown and described, for the purpose specified.





165,310. DEVICES FOR TAPPING WATER-MAINS. James Curran, Baltimore, Md. [Filed Apr. 26, 1875.]



1. The boring-bar F, having a cylindrical cup end to receive the piece cut from the main, and provided upon its annular edge with cutters or serrations, as described, combined with the ratchet and feed mechanism herein described, as and for the purposes specified.

2. The branch B, pipe and valve E D, flange *f*, cross-bar *c*, and screw-bolts *d*, with their nuts, combined substantially as and for the purposes set forth.

3. The combination of the branch B, pipe and valve E D, gland *e*, flange *f*, screw-rods *d*, cross-bar *c*, boring-bar F, and the ratchet and feed mechanism, all substantially as and for the purposes herein set forth.

165,311. KNITTING-MACHINES FOR MAKING BULLION-FRINGE. Edwd. P. Curtiss, Norwalk, Ohio. [Filed June 7, 1875.]

Brief.—The roving to form the skirt of a fringe passes from a spool through the hollow axis of the rotating twister and between drawing-rolls, whereby a twist is imparted to it. It passes thence through a take-up, and through an eye in a reciprocating carrier, whereby it is folded around a hook, which reciprocates vertically to alternately hold and release it, and is laid in front of the needles, which, operating upon additional threads, knit the bending upon it.

1. The combination of a carrier, O, take-up F, and adjustable hook *n*, with the needles and thread-guides of a warp-knitting machine for the manufacture of fringes and gimps, substantially as described.

2. The combination of a twisting device, carrier, adjustable hook, and take-up with the needles and thread-guides of a warp-knitting machine for the manufacture of balloon-fringes and gimps, substantially as described.

3. The combination of the twister, carrier, take-up, adjustable hook, and drawing-rolls E, with the needles and thread-guides of a warp-knitting machine, for making fringes, gimps, and the like, substantially as described.

4. In a machine of the character herein described, for making fringes, gimps, and the like, the combination of a twisting and covering device, constructed and arranged as shown and described.

5. A balloon-fringe, having a knit heading, substantially as shown and described.

165,812. POLES FOR GALVANIC BATTERIES. Hewel. P. Deshert. New York. N. Y. [Filed June 26. 1874.]



A battery-pole consisting of a conducting skeleton or perforated frame or jacket, containing broken carbon or a carbon-plate, substantially as and for the purpose described.

165,813. MACHINES FOR CUTTING SHINGLES. Geo. M. Dogeway, Brooklyn, N. Y., assignor to himself and Reuben G. Grover, same place. [Filed May 17, 1875.]

Brief.—The cutters are placed in a horizontally-revolving disk, and the material fed to them through openings in the cover of the machine.



1. The combination, with the revolving table C, knives G, and adjustable plates H, of the adjustable screws J, substantially as and for the purpose herein described.

2. The combination, with the feed-port K, of the adjustable throat-plate L, arranged as shown and described.

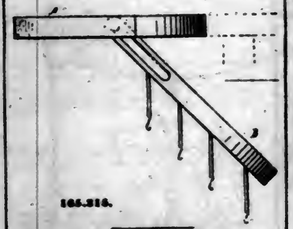
165,814. PROCESSES OF TANNING HIDES. A. de Mortimer, Paris, France. [Filed June 11, 1875.]

1. The described method of tanning hides, which consists in arranging the wet bark and hides in alternate layers between positive and negative anodes, which connect with an electric pile or other source of electric action, as described, and passing the electric current through the charge, all in the manner substantially as set forth.

2. As an improvement in the art of tanning, the arrangement of the hides and wet bark in alternate horizontal layers, the one resting on the other, between zinc or its equivalent on top, and carbon or its equivalent below, as herein described.

165,815. SHIRT-ELEVATORS. G. W. Denny, New Haven, Conn. [Filed Jan. 7, 1875.]

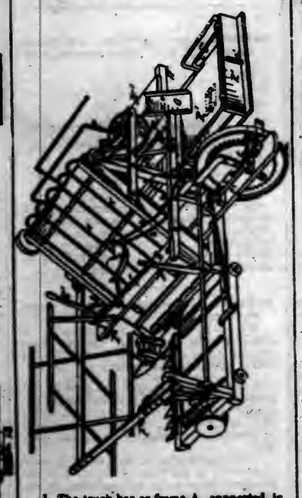
A shirt-elevator composed of the band A, provided with pockets *a* on opposite sides, combined with the hasp B, the ends of which are slotted and jointed to the band A, so as to pass into or out of said pockets, substantially as described.



165,816.

165,816. HARVESTERS. John H. Hward, St. Paul, Minn. [Filed Mar. 26, 1875.]

Brief.—The cut grain is delivered by an elevator to the receiver, and, after being compressed, is bound by the attendant, when the sheaf is automatically discharged into the sheaf-dumping tray.



1. The truck-bar or frame A, supported in front and rear of the main frame C, in combination with the said main frame pivoted centrally to and vibrating upon said truck-frame, substantially as described.

2. The main frame C C', connected with the truck-frame A by means of the link *d* and *d*, arranged and operating substantially as described.

3. The upright endless apron G, or its equivalent, arranged at the inner end of the platform, and operating substantially as described for moving the butts of the grain backward to clear the forward guard of the elevator, as set forth.

4. The combination, with the elevator and the compressing rods or wires *n*, of the dodder-apron W, overhanging the grain-receiver and the upper end of the elevator, and operating substantially as and for the purpose set forth.

5. The concave grain-receiving arms or hooks adjustably secured to the inclined delivery board or chute H, substantially as described.

6. The receiving arm or hook H' extended outward and upward, and connected with the rod or shaft J, in combination with the arm J', arranged and operating substantially as and for the purpose set forth.

7. The receiving and compressing arm H', provided with the jointed extension I, for releasing the bundle, arranged and operating substantially as described.

8. The compressing and discharging arms J', made adjustable upon the rotating shaft J, and operating in combination with the receiving-arm and fulcrum H', substantially as described.

9. The combination, with the jointed arm H', of the locking-spring I' and the spur *i*, and tripping-slide *p*, operated by a cam or projection on the shaft J, for releasing the jointed extension I, as set forth.

10. The rods or bars P, in combination with the discharging-arm J', for giving direction to the movement of the bound bundle in being discharged, substantially as described.

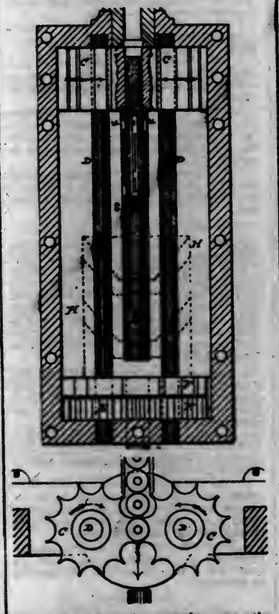
11. The adjustable inclined chute O, in combination with the adjustable receiving and compressing arm H', substantially as and for the purpose set forth.

165,817. CHARMS FOR WATCH-CHAINS. B. B. Baker, Philadelphia, Pa. [Filed Apr. 15, 1875.]



The charm for watch-chains, consisting of the bell A, the swiveled cannon E, and the clapper-bolt H, said clapper-bolt formed with a hook at its end above the cannon, constructed as herein described, for the purpose specified.

165,818. MACHINE-GUNS. De Witt C. Farrington, Lowell, Mass. [Filed July 2, 1875.]



1. In an automatic or machine gun, the intermittently-rotating fluted carrier-rolls, adapted to take one cartridge at a time and place it in line between the plunger and the barrel, and hold it there until the same is forced into the barrel for discharge, and then, upon the empty shell being extracted, the rolls permit the shell to drop, in combination with the plungers and other mechanical means, as above described, by which each cartridge is presented singly to, and forced into, the chamber and discharged, and the empty shell withdrawn, substantially as set forth.

2. The combination of one or more barrels, fluted carrier-rolls for cartridges and cartridge-shells, an operating-cam, and plunger, to operate substantially as and for the purpose described.

3. The pawl or stop, in combination with the driving-knob and other means above described for imparting movement to the carrier-rolls, whereby an intermittent rotary movement is given to said rolls, so as to successively bring cartridges singly into position in front of the plunger, as set forth, and for the purpose described.

4. In an automatic or machine gun having a rotative operating-cam hung loosely upon the driving-shaft, a cocking-plate rigidly secured to said shaft, in combination with the loose driving-cam, said cam being constructed to permit a relative movement between the cocking-plate and the cam, whereby the hammer-stud will be switched and the gun cocked and fired when operated in one direction, but when reversed the hammer-stud may be permitted to move freely, substantially as set forth.

5. In a machine-gun, a series of barrels hung in a frame, as described, and adapted to be successively brought into position at the will of the operator, after a plurality of shots have been fired from one of the barrels, substantially as and for the purpose set forth.

165,819. RAILROAD-WHEELS. James B. Finley, Delphi, assignor to himself, M. Simpson, and J. H. Cobbs, La Fayette, Ind. [Filed Mar. 24, 1875.]

Brief.—The instrument is held in place by a foot-lever and eccentric clamps, and operated by a ratchet-lever.



The combination of clamp-frame B C D, revolving cheek E, and short cheek G with the eccentrics I I and foot-piece H, all constructed and arranged to operate substantially as and for the purposes set forth.

165,820. TUBE-EXPANDERS. Patrick Fitzgibbons, Oswego, N. Y. [Filed Mar. 16, 1875.]

Brief.—The device is held in place by the laterally-expanding toothed jaws, while the head carrying the beading-rollers is operated.



165,820.

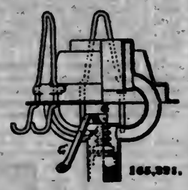
1. In combination with the hollow mandrel A A', provided with the radial openings *e'' e''*, &c., the toothed jaws B B, &c., placed within said openings, and the mandrel C, fitted into the axial opening *e'* within said mandrel A, provided with the nut D, and having its tapered portion *c* bearing against the inner faces of said jaws, substantially as and for the purpose specified.

2. The mandrel A, A', *a*, *a'*, and *a''*, the jaws B B, &c., the mandrel C *c c'*, the head E, carrying the grooved rollers F F, &c., the nuts D and H, and the washer I, all constructed and combined to operate in the manner and for the purpose substantially as set forth.

165,821. ARGAND GAS-BURNERS. Jim Bill-Hagan Fuller, Brooklyn, N. Y. [Filed June 10, 1875.]

1. In an Argand gas-burner, constructed as described, the upper annular ring, provided with holes for the escape of the gas, drilled through the metal thereof previous to the removal of said form, thereby preventing the formation of burr around the inner edge of said holes, as set forth.

2. The valve P of the eccentric G, and the lever G', combined and arranged substantially as above described, so that a vertical motion of said lever opens and closes the valve, while, by a horizontal motion of the lever, it can, without opening or closing the valve, be adjusted in any required position for convenient operation.



165,821.

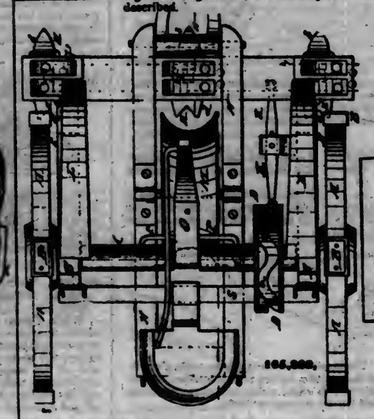
165,822. CORN-PLANTERS. W. R. Gorsuch, Springfield, Mo. [Filed May 1, 1875.]

Brief.—Bearing-wheels provided with bosses for passing the earth about the seed. A concave central roller serves to carry the machine while turning, and also to cover the seed of a central row when desired.

1. The wheels A A, provided upon their periphery with the pressing-bosses B B, said bosses arranged at regular intervals, to operate as and for the purpose set forth.

2. The wheel D, with zigzag grooves *d*, combined with axle C and wheels A A, having bosses B B, all arranged to deliver the grain, substantially in the manner set forth.

3. The plow H, constructed to form opener *b* and coverer *d d*, and arranged to have a tilting or rocking motion, substantially as herein described.



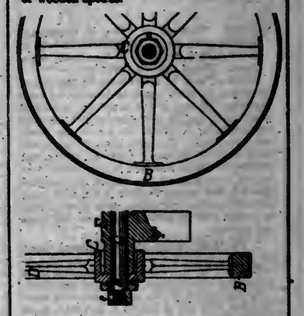
165,822.

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4. In a corn-dropper, the wheels A A, having boxes B B, axle C, wheel D, with its zigzag groove *a*, center wheel M, lever O, and ball P, all constructed and arranged as herein set forth.

165,823. BAND-SAW WHEELS. F. Gleason, Philadelphia, Pa. [Filed Mar. 16, 1875.]

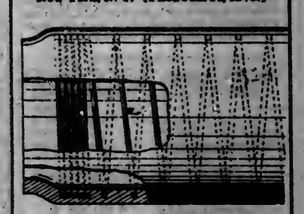
Brief.—To obviate the expansion and contraction, and the consequent warping and twisting of the rim of a band-saw wheel, the rim is constructed of compressed paper-pulp. The wheel is provided with a hollow hub, which is connected to the rim by solid metal or wooden spokes.



1. In a band-saw wheel, the rim B of compressed paper-pulp, substantially as described.

2. In a band-saw wheel, the combination of the rim, solid arms, and a hollow hub, as shown and described.

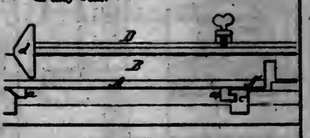
165,824. BURNER HOOD. John Grauson, Jr., New York, N. Y. [Filed Jan. 14, 1875.]



A suction-hood, constructed with tempered steel wire, the ends of the wire being waterproofed, and wrapped around the ends of the hood in a succession of rings lying closely together and at right angles to the axis of the hood, whereby the ends of the hood are reinforced, substantially as and for the purpose described.

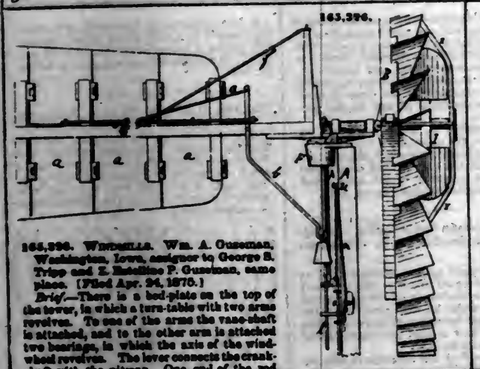
165,825. SAWING-MACHINES. Otto T. Grauer, Baltimore, Md. [Filed Mar. 12, 1875.]

Brief.—The slides of the saw-table are so constructed as to prevent lateral movement as they wear.



1. A sliding table provided with beveled way *a* and L-shaped way *a'*, in combination with correspondingly constructed way *c c'*, as and for the purpose described.

2. The gage D, having end step *d*, and tongues upon each side, in combination with grooved guide B, as and for the purpose specified.



165,226. WINDMILL. Wm. A. Gunsman, Washington, Iowa, assignor to George S. Tripp and S. Bataline P. Gunsman, same place. [Filed Apr. 24, 1875.]

Brief.—There is a bed-plate on the top of the tower, in which a turn-table with two arms revolves. To one of the arms the vane-shaft is attached, and to the other arm is attached two bearings, in which the axis of the wind-wheel revolves. The lever connects the crank-shaft with the pitman. One end of the rod moving in loops fastened to the tower is so looped as to slide on the pitman and support the rod, also looped to slide in a similar manner. There are two ropes, each passing over a pulley, and by pulling on them the vanes are opened.

1. The combination of the sectional vanes on the vane-shaft, arranged with relation to each other as described, and operated by a weight, as hereinbefore shown and described.

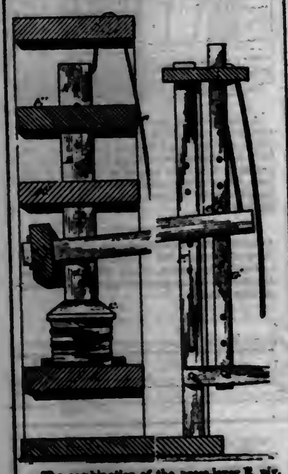
2. The rope *n*, pulley *o*, and rod *o*, in combination with rod *p*, pulley *r*, and cord *m*, as herein specified and set forth.

3. In a windmill, the additional vane I, in combination with the wind-wheel B, vane C, and tower A.

4. The turn-table K, provided with one arm for supporting the vane-shaft, and another arm for supporting the bearings of the wind-wheel, each on opposite sides of the tower and in vertical parallel planes to each other.

5. The tower A, wind-wheel B, additional vane I, braces *s s*, shaft *k*, slotted lever *r*, bed-plate P, vane-shaft C, provided with sectional vanes *a a*, rods *b c d e*, and weight D, and rods *o p* and their connections for closing and opening the vane-sections, as before shown.

165,227. PRESSES. Anthy. W. Harrington, Berkeyville, Ky. [Filed Apr. 2, 1875.]

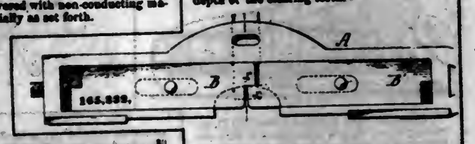


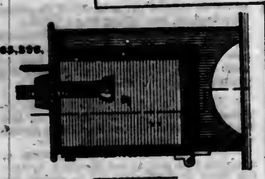
The combination of the press-lever B, pivoted or fulcrumed in the head-block C, with the adjustable plunger-shaft D, plunger G, guide-bar F, adjustable connecting-bar G', and operating-lever I, substantially as and for the purpose hereinbefore described and set forth.

165,228. DENTAL VULCANIZING APPARATUS. Ferdinand Heindsmann, New York, N. Y., assignor to Samuel S. White, Philadelphia, Pa. [Filed June 26, 1875.]

Brief.—The article to be heated is placed in the oven, and clamped by the screw. The door is then closed and heat applied by inserting a lamp or burner under the bottom of the oven. The plaster prevents the bottom from heating too rapidly.

The dental heater hereinbefore described, consisting of the combination of the open-bottom perforated casing, and the oven, having its door covered with non-conducting material, substantially as set forth.





165,229. MATCH-BOXES. Oliver H. Hicks, Baltimore, Md. [Filed June 5, 1875.]



A match-box, provided with the tray C, having the legs *c c* and capable of being inverted for the purpose of emptying its contents, substantially as set forth.

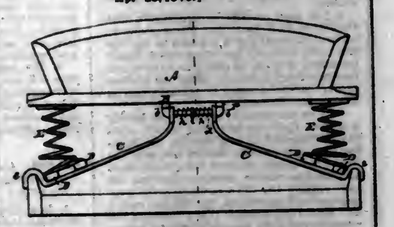
165,230. LASTS FOR BOOTS AND SHOES. Chas. F. Hill, Baltimore, Md. [Filed May 21, 1875.]

Brief.—The sharpened edge of the points is intended to facilitate the withdrawal of the last by slightly gashing the sole when the last is pulled.



The combination, with the metallic plate B, of the points *a*, having their rear sides reduced to a knife edge, substantially as described, and for the purpose set forth.

165,231. VEHICLE-SEATS. John R. Hill, Republic, assignor of one-half his right to Joseph M. Dorke, Fostoria, Ohio. [Filed Apr 23, 1875.]



In combination with the seat A, spiral springs F, and slats D, the arms C, rods *d*, with center collars *i*, springs A, and cross-bars E, with legs *b*, all constructed as described, and for the purpose set forth.

165,232. SAW-SETS. Adolph B. Hoffman, Philadelphia, Pa. [Filed Apr. 16, 1875.]

Brief.—The dies are alike at both ends, with the exception that their corners are cut away to a greater or less extent, in virtue of which the amount of set imparted may be varied. A plate arranged in a vertical opening in the frame always bears against the teeth adjoining that being operated upon, and insures the proper position of the dies upon the teeth which they embrace. Projections on the frame can be used as a gage for determining the depth of the clearing-teeth.

1. The frame A, constructed with a suitable handle at one end, having a set-screw at the other, and a recess for the reception and guidance of dies, all substantially as set forth.

2. The combination of the frame and its recess with the sliding dies confined by set-screws B B, which pass through elongated openings in the said frame, all substantially as specified.

3. The combination of the frame and dies with the adjustable plate F.

4. The dies having projecting ends *s*, that of one die for overlapping the other, as and for the purpose set forth.

5. The combination of the flanges *s s* on the frame with the dies B B', and the space formed by the discontinuation of the flange *s'*, all substantially as and for the purpose set forth.

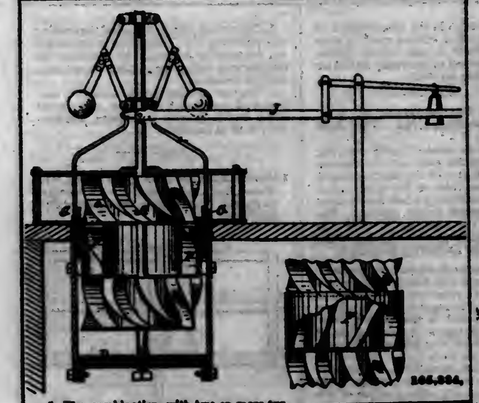
165,233. SNAP-HOOKS. Chas. E. Jackson, Middletown, Conn. [Filed Mar. 19, 1875.]



The combination of the buckle-frame C, cross-bars *c*, *d*, and *e*, and the body of the snap-hook A, all cast in one and the same piece, and the tongue E, substantially as and for the purpose described.

165,234. TURBINE WATER-WHEELS. S. R. Jenner, Milltown, Ind. [Filed Mar. 26, 1875.]

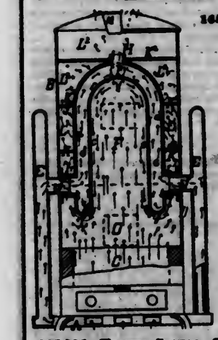
Brief.—Two or more turbine water-wheels attached to the same shaft, in combination with alternating stationary water-ways, which deliver the water transversely to the inclination of the buckets. If also consists in the combination, with the stationary water-ways and the turbine wheels, of a cylindrical cut-off and a counter-balance.

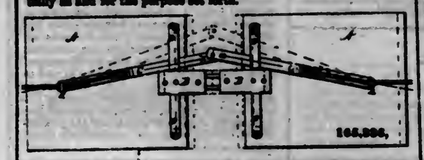




1. The combination, with two or more turbine water-wheels attached to one and the same shaft, of alternating stationary water-ways, which deliver their water transversely to the inclination of the turbine-buckets, substantially as and for the purpose described.

2. The combination, with the turbine-wheels and the alternating stationary water-ways, of the cylindrical cut-off O, the lever J, and the weight K, substantially as and for the purpose described.





165,236. AUTOMATIC AIR-BRAKES. Story B. Ladd, Washington, D. C. [Filed Feb. 22, 1875.]

Brief.—A friction crank-wheel, operating an air-pump, is attached to an axle having vertically-moving bearings. The friction-wheel is forced against a wheel secured to the car-wheel axle by a spiral spring. When the desired pressure of air is stored in the receiver, the friction-wheel is raised by means of a lever actuated by the piston-rod of an auxiliary cylinder, in which the pressure is equal to that of the receiver.

1. The wheels A and B, the latter sliding in the vertical bearings *b b*, in combination with the pump E, provided with the pipes F and G, and the cylinder H, all constructed to operate substantially as and for the purpose set forth.

2. The wheels A and B, constructed as described, and pump E, provided with the pipes F and G, in combination with the cylinder H and lever D, substantially as and for the purpose set forth.

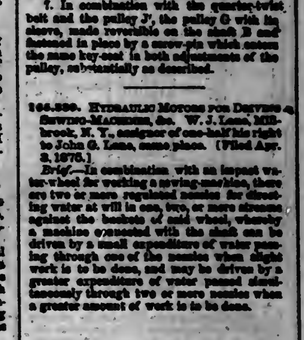
165,235. HEATING-STOVES. S. H. Kridler Philadelphia, Pa. [Filed July 31, 1874.]

1. The combination of the base A, shell B, air-pipes E, heater F, division-plate E', and the chamber L', having an annular register, F, as shown and described.

2. The combination of the base A, shell B, air-pipes E, heater F, and the division-plates K K' K'', substantially as and for the purpose shown and described.

165,236. DEVICES FOR OPERATING CAR-BRAKES. Story B. Ladd, Washington, D. C. [Filed June 14, 1875.]

The arms O O, pivoted in the rear of the buffers, and having a lateral motion, and provided with the guide-rings *d d* and *d'*, in combination with the cord H and supports D D, so as to allow the arms to be changed from one side of the buffer to the other, substantially as and for the purpose set forth.



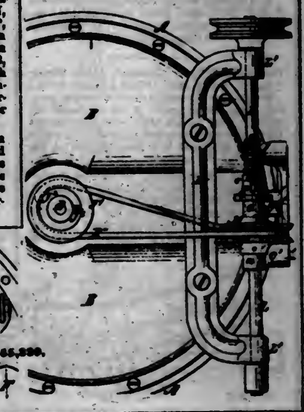
1. The combination of a motor-shaft, B, a loose pulley, J', a clutch, K, a counter-shaft, H, a shifter, N, a pitman, Q, and a treadle, P, whereby the counter-shaft is suspended from the water-wheel or power-shaft and its motion arrested without stopping the power-shaft B, and the said shafts again geared with each other, by the simple application and withdrawal of the pressure of the foot of the operator from the treadle, substantially as and for the purpose described.

2. The rocking-shifter N, in combination with the friction-clutch K with its slotted sleeve, loose pulley J', and shaft H with its pin *n* and spring L, whereby the shaft H is stopped as soon as it is suspended from the power-shaft, substantially as and for the purpose described.



165,238. HYDRAULIC MOTORS FOR DRIVING SEWING-MACHINES, &c. W. J. Lane, Millbrook, N. Y., assignor of one-half his right to John B. Lane, same place. [Filed Apr. 2, 1875.]

Brief.—In combination with an impact water-wheel for working a sewing-machine, there are two or more regulated nozzles for directing water at will in one, two, or more streams against the buckets of said wheel, whereby a machine connected with the latter can be driven by a small expenditure of water passing through one of the nozzles when slight work is to be done, and may be driven by a greater expenditure of water passed simultaneously through two or more nozzles when a greater amount of work is to be done.



165,239. MOTOR FOR DRIVING SEWING AND OTHER LIGHT MACHINERY. W. J. Lane, Millbrook, N. Y., assignor to Lane Brothers, same place. [Filed May 26, 1875.]

Brief.—Belting on the pulley of a vertical shaft of a water-wheel gives rotation to a pulley loose on a horizontal shaft lying on the casing of such wheel. A spring holds a clutch in contact with the pulley, a treadle and connecting-rod releasing them, and permitting the water-wheel to rotate while the sewing is stopped.

1. The combination of a motor-shaft, B, a loose pulley, J', a clutch, K, a counter-shaft, H, a shifter, N, a pitman, Q, and a treadle, P, whereby the counter-shaft is suspended from the water-wheel or power-shaft and its motion arrested without stopping the power-shaft B, and the said shafts again geared with each other, by the simple application and withdrawal of the pressure of the foot of the operator from the treadle, substantially as and for the purpose described.

2. The rocking-shifter N, in combination with the friction-clutch K with its slotted sleeve, loose pulley J', and shaft H with its pin *n* and spring L, whereby the shaft H is stopped as soon as it is suspended from the power-shaft, substantially as and for the purpose described.

1. The nozzles I F, through which the water is allowed to pass in regulated quantities, as described, in combination with an impact water-wheel, substantially as described.

2. The nozzles I F, made with different diameters, and through which water is allowed to pass, as described, in combination with an impact water-wheel, substantially as described.

3. The nozzle or nozzles, and their regulating-cock proper, constructed entirely within the case A B, and operated by a stem, E, from the outside of the case, substantially as described.

4. The case constructed with the rib J, in combination with the water-wheel, substantially as described.

5. The combination of the swinging arm F', stationary stem F' of the foot-piece B F, and the stud F of the water-wheel case, substantially as described.

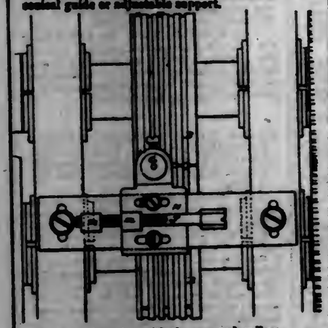
165,840. APPLE-FRUITOID COMPOUNDS FOR BEVERAGES. Lebbeus W. Lathrop and T. A. Weber, New York, N. Y. [Filed May 17, 1875.]

Brief.—Heats sugar to about 400°, and while stirring adds graphite, and incorporates thoroughly, and presses in a die to the required shape.

The compound, consisting of carbonized sugar and graphite, as described, for purposes specified.

165,841. MACHINES FOR ROLLING WIRE. James Law and Saml. Law, Cheshunt, England. [Filed May 31, 1875.]

Brief.—Rollers laterally adjustable to enable the grooves thereon to register, and a central guide or adjustable support.



1. In combination with the grooved rollers B B, the adjusting-cams B F, for the purpose of adjusting the grooves of the two rolls relatively to each other laterally, substantially as specified.

2. The combination, with the grooved rollers B B, of the central guide G, adjustable support H, and adjusting-screw J, substantially as and for the purpose specified.

165,842. POTATO-DIGGER. John Henry Leach, Beach, Ind. [Filed Apr. 26, 1875.]

Brief.—An adjustable share raises the potatoes from the ground. A set of curved revolving arms carries them over and delivers them upon an endless-belt conveyor, by which they are deposited in a receiving-box at the rear end of the machine.

1. In a potato-digger, the endless carrier consisting of a series of bars, a a, provided at their ends with downwardly-projecting crank-plates a a, pivoted together, and every alternate bar provided with projecting teeth or arms p p, substantially as and for the purposes herein set forth.



165,843.

2. The combination in the potato-digger of the adjustable plow d, curved rotating arms b b, slotted platform G, and endless carrier a a p, all constructed substantially as and for the purposes herein set forth.

165,844. SODA-WATER APPARATUS. Wm. Loughridge, Baltimore, Md. [Filed June 12, 1875.]

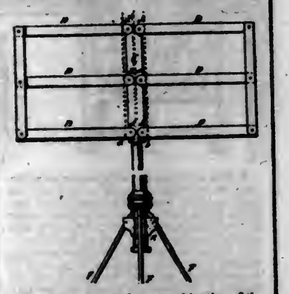
Brief.—When the aerated liquid is passing to the bottle from the reservoir, the pressure becomes less on the top of the diaphragm, and it rises, lifting the valve on the upper end of the spindle, and admitting a new supply, thus making the pressure nearly constant. The valve may be regulated by the screw, as shown. The diaphragm has a spring on the under side to allow its moving as desired.

1. In a soda-water apparatus, the combination of the generator A, fountain B, and cut-off or regulator C, substantially as described.

2. In the cut-off or regulator C, the valve e, adapted to be opened in the upward movement of the diaphragm f, and spring f' through the medium of the rod e and stem d, substantially as set forth.

3. The cap h and connections, made adjustable in height to regulate the position of the valve e, independently of any action of the gas, by means of the threaded pipe h', substantially as specified.

165,845. MUSIC-STANDS. John Lyons, New Haven, Conn., assignor of one-half his right to Pedro S. Crofut, same place. [Filed Feb. 18, 1875.]



1. In a music-stand, the combination of the center-bar C, hinged to the upright, and the bars D to the said bar C, so that the said bars D will fold toward and in same plane as the bar C, and down upon the upright, substantially as described.

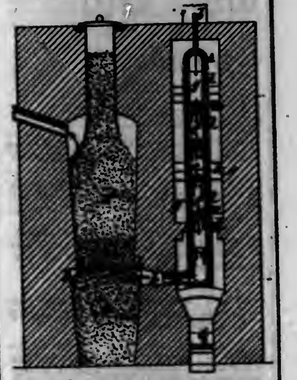
2. In a music-stand, the combination of the legs F, hinged to the socket E, loose upon the upright, so as to allow the upright when free to pass down through the socket, and the upper end of the legs extending up to grasp the upright above the hinged point, substantially as described.

165,846. PROCESSES OF MANUFACTURING ANIMAL CHARCOAL. Oregio Lago, Jersey City, N. J. [Filed June 29, 1875.]

Brief.—Treats the bones, &c., with bisulphide of carbon or benzine, to remove oils, fats, &c.; then cleans the bones. The solution of fats in benzine may be subsequently evaporated, in order to separate the benzine therefrom.

The process herein described for producing bone-black or animal charcoal, consisting in removing the oxide and fats from the bones by means of solvents such as described, and then charring, all substantially as set forth.

165,847. MANUFACTURE OF GAS. Philip W. Mackenzie, Mountville, N. Y. [Filed May 8, 1875.]



The process of generating hydrogen and carbonic-oxide gases, which consists in burning coke, anthracite coal, or like carbonaceous material until it is at a white heat, then secluding the incandescent material from the outer air, and then passing into the material, solely so heated, and continuously so secluded, and from time to time fed with additional material, the gases derived from steam heated to its decomposing temperature, while those gases are at such temperature, whereby the high heat of the carbonaceous material, the application of the hot gases, and the production of the final gases are continuously maintained, as set forth.

165,848. PERFUMERIES. Orazio Lago, Jersey City, N. J., assignor to J. R. McPherson, same place. [Filed June 26, 1875.]

Brief.—Congeines blood by heat and agitation, separates the serum, and treats the albumen with any metallic salt, such as sulphate of tin, and dries in a centrifugal machine.

165,849. PROCESSES OF PREPARING OR TANNING SKINS. Emanuel Manasse, Napa, Cal. [Filed May 3, 1875.]

Brief.—Solution No. 1: Salt, white-rock potash, water. Solution No. 2: Hard-soap, neat's-foot oil, water.

1. The tanning solution, No. 1 and No. 2, composed of the ingredients named, in about the proportions stated.

2. As an improvement in the art of tanning, the application of the solutions named to animal skins, substantially in the manner and order stated.

165,850. STEAM-VALVES. H. B. Marchand, Pittsburg, Pa. [Filed Apr. 26, 1875.]

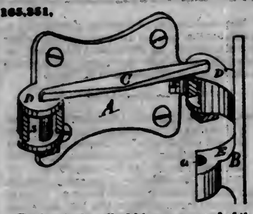


1. A reciprocating valve constructed with two exhaust-ports, one passing partly around the same to exhaust the steam from the back of the piston in the main cylinder, and the other port passing directly through the center of the valve for exhausting the steam from the rear of the valve, as described, and both of said exhausts being adapted to communicate with the main exhaust in the valve-box, substantially as shown and described.

2. The valve D, constructed with the central port D' and ports D' D', branching laterally therefrom, the recesses F extending across one side of said valve, and the port E extending directly through the center of the valve, as described, in combination with the ports H H leading from each end of the valve-box to the center thereof, and opening into the recess I in the valve D, as and for the object specified.

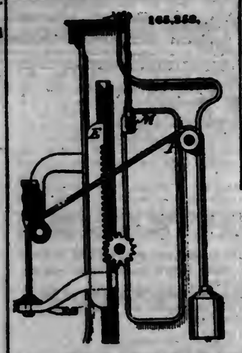
3. The valve-box having the ports H H and G G and the valve D, constructed with the port E extending through the same, the central port D and the branching ports D' D' and recess I, in combination with the hollow oscillating cut-off K, having its open end resting in the recess I in the valve D, and constructed with the slot n opening into said hollow cut-off, and adapted to communicate with the exhaust-port of the valve-box, as and for the object specified.

165,851.

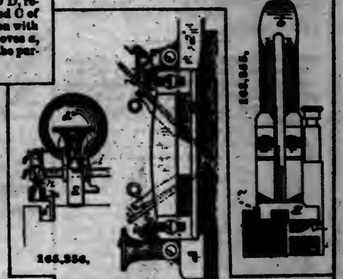


The herein-described hinge composed of the plates A B, provided with the heads D D, recessed at c c, and connected by the rod C of one piece with the plates, in combination with the legs E, having flanges c c and grooves c, arranged and operating as shown, for the purpose set forth.

165,852.



165,856.

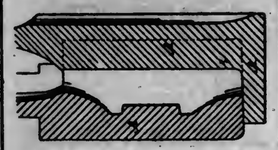


165,855.

165,852. STANCHIONS. Thomas Mayer, Providence, R. I. [Filed July 16, 1874.]

The combination, with the shifting-rod G, the weighted lever I, and the arm M, of the lever K, connected by a chain or its equivalent with the arm M, so that by moving the lever K in the proper direction the arm M is raised and the spreader stopped, substantially as and for the purpose specified.

165,853. CASTING BROOMS. G. B. Mossely, West Troy, N. Y. [Filed Feb. 15, 1875.]



The process of casting "crome journal-box bearings in copper molds, for the purpose of producing greater density in the broom metal than can be obtained by casting in sand, substantially as described.

165,854. STRAINERS FOR POTS. P. Michels, Brooklyn, N. Y. [Filed May 12, 1875.]

Brief.—The spring is readily inserted in the plate, and the whole is adapted to spouts of different sizes.



The combination, with a tea or coffee pot, of the arc-shaped spring b and strainer C, having the openings c c as or about its center to receive and seat the spring, as and for the purpose specified.

165,855. TONGUING AND GROOVING PLANES. Charles G. Miller, New Britain, Conn., assignor to the Stanley Rule and Level Company, same place. [Filed Apr. 6, 1875.]

Brief.—By means of a shifting guide, eccentrically attached to a vertical shaft, hung and rotating in a socket secured to the side of the stock, which can be adjusted so as to cover or uncover the planing-bits, the tool can be used for tonguing or grooving the edges of boards.

In combination with the body or stock a and the chisels b' b', the guide f, having adjustments to cover and uncover one of the chisels, substantially as shown and described.

165,856. DADO-PLANES. Charles G. Miller and Leonard Bailey, New Britain, Conn.; said Miller assignor to said Bailey. [Filed Feb. 24, 1875.]

Brief.—The "dado" is provided with a gravitating side guide, which is laterally and vertically adjustable, and a detachable and reversible depth-gage, which can be used in the right or left side of the body of the tool, as may be desired.

1. The combination of the stock a, rods f f, bar g, sockets f' f', rods n n, having free play, within limits, in sockets f', and the guide m, all substantially as described.

2. The combination of the body a with the depth-gage d and side guide m, which can be used upon either side of the body a, substantially as shown and described.

165,857. WATER-COOLERS. Gaety I. Miz, Yalesville, Conn. [Filed Apr. 20, 1875.]

Brief.—Exposes the outside of the iron vessel, to prevent its corrosion by the packing of calcined plaster.



1. In a water-cooler, the combination of an iron vessel, covered internally and externally with porcelain, with a solid inclosing covering of calcined plaster, substantially as and for the purpose specified.

2. In a water-cooler, the combination of an iron vessel, covered interiorly and exteriorly with porcelain, a sheet-metal inclosing casing and a solid filling of calcined plaster between said vessel and casing, substantially as and for the purpose shown.

165,859. WASHING-MACHINE. J. Myers, Prospect, Ill. [Filed May 17, 1875.]

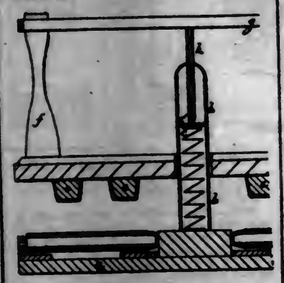
Brief.—The wooden base of the lower rubber has openings for water, and is covered with a perforated metallic plate of radial ribs of different lengths.



The combination of the metallic cover A, and the wood bottom B, when the former is provided with the raised radial ribs B, and perforated with the openings *c c*, and the latter is cut away under such openings, substantially as specified.

165,860. WASHING-MACHINE. J. Myers, Cedar Falls, Iowa. [Filed Jan. 12, 1875.]

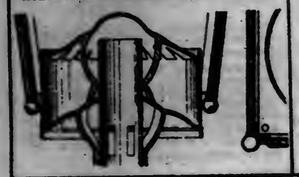
Brief.—A lower disk with radial rollers, and a vertical hollow column, in which is a spring, an upper disk with knobs, a pivot-rod, and standards.



The combination of the base *a*, composed of radial rollers, as specified, the hollow column *b*, containing the spring *c*, the follower-disk *d*, provided upon its under surface with the knobs *e e*, standards *f f*, cross-bar *g*, and pivot-rod *h*, resting upon said spring, substantially as specified.

165,861. LAMP-CHIMNEYS. Robert Norris Anna, Ill., assignor of one-half his right to C. Kirkpatrick and W. Kirkpatrick, same place. [Filed Mar. 16, 1876.]

Brief.—The glasses can readily be replaced from the outside without change in the frame.



165,862. BUNGS FOR BARRELS. Charles F. Norris and Peter J. Hickey, New York, N. Y. [Filed June 8, 1875.]

Brief.—The bush has the flaring opening and projections shown, while the bung is provided with slots and inclined threads. When the projections of the bush pass over the inclines of the bung, a water-tight joint is formed.



The casing A, provided with a flaring mouth and lugs *c c*, in combination with the bung D, having recessed head, barrel G, slots *e e*, and partial threads *i i*, all constructed substantially as and for the purposes herein set forth.

The combination of tapering glasses with a frame having tapered grooves opening on the outside thereof, as shown and described, to allow the glasses to be entered or removed without separating the parts of frame.

165,863. SOLDERING APPARATUS. George H. Perkins, Philadelphia, Pa., assignor to himself and Joseph Le Comte, New York city, and Atlantic Refining Company, Philadelphia, Pa. [Filed Mar. 24, 1875.]

Brief.—A pivoted bar is provided with an arm that serves as a counter-balance. Spring-fingers are arranged upon the bar, and press upon the cups to be soldered.



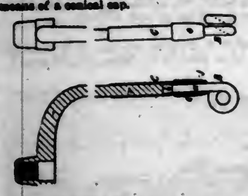
1. The combination of the pivoted and weighted box or frame with the elastic fingers *x*.

2. The pivoted and weighted box or frame and its elastic fingers, in combination with the weighted arm E.

3. The combination of the pivoted box or frame and its fingers, and arm E, with the stops *d* and *a*.

165,864. FLIERS FOR SPINNING-MACHINES. Chas. K. Fuvey, Worcester, Mass. [Filed June 10, 1875.]

Brief.—The hook of the flier is of glass, and is secured by being inserted in the split end of a tube attached to the flier-arm, the tube being compressed against the shank of the hook, or a rubber tube surrounding it, by means of a conical cap.



1. The combination of the flier A, the separate anti-friction hook B, and the coupling C *c*, substantially as described.

2. The elastic sleeve *f*, combined with the anti-friction hook B, and the jawed coupling C *c*, as specified.

3. The anti-friction hook B, provided with the tapering head *b*, in combination with the flier A, and the coupling C *c*, as set forth.

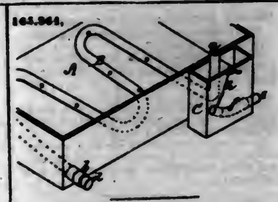
4. The combination of an anti-friction hook B, and a coupling, C *c*, substantially as described.

165,865. MILK-COOLERS. Edward N. Fuller and Melville B. Eaton, Morrisville, Vt. [Filed Jan. 28, 1875.]

1. An adjustable flexible pipe attached to the inner end of the outlet-pipe of a milk-cooler, for regulating the height of the water in the cooler, as herein set forth.

2. The combination, with the milk-cooler A, tortuous perforated pipe B, having short tube *b*, and upward-bent pipe *c*, of the pocket C, outlet-pipe *e*, flexible pipe *f*, and chain or cord *h*, all constructed substantially as set forth.

165,866.



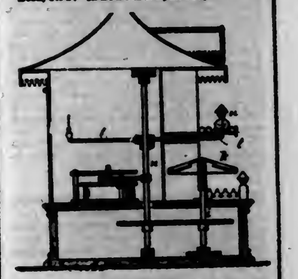
The spoke and felly connection consisting of the support C, provided with the ears *a a* and socket D, in combination with the spoke A, felly B, and rivet *b*, substantially as and for the purposes set forth.

165,866. SPOKE-SOCKETS. Britton Poulson, Fort Wayne, Ind. [Filed Apr. 16, 1875.]

Brief.—The felly is not entered by the spoke.



165,867. REVOLVING SAMPLE-HOLDERS. James H. Procter, Brooklyn, N. Y., assignor to Wright Gillies and Gilbert B. Scott, New York city, and Jos. M. Gillies, Plainfield, N. J. [Filed June 5, 1875.]



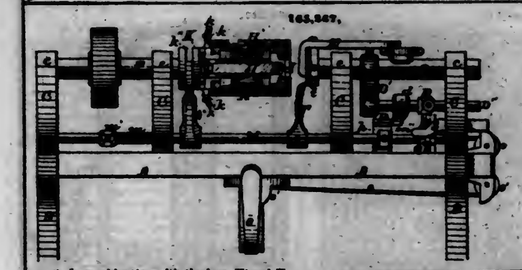
The revolving sample-holder A, sustained upon a vertical shaft, 4, and placed in a recess in the structure representing a pagoda, in combination with the shaft a, provided with arms *t*, having figures *u* attached thereto, which are operated as set forth.

165,868. MACHINES FOR THREADING WOOD-SCREWS. Franklin B. Priddy, Southington, and John T. Kennedy, Mount Carmel, Conn. [Filed May 1, 1875.]

Brief.—The machine contains two sets, three each, of threading-cutters, on levers pivoted in radial slots in the cutter-head—one set for threading the body of the blank, and the other, a little in the rear of the first, for threading the point only. The two sets of levers are actuated by two sliding cones, the one fitted in slots in the other. The actuating mechanism is so constructed as to first cut the body-dies on the blank, and when the blank drawn in by them commences to enter the printing-dies, these latter gradually open in proportion as the entering portion becomes larger, and, after they have passed over and threaded the point, cease operation by being still further separated.

1. In combination with the revolving head G, the pivoted bars H and H' and the radially-moving threading and point-threading cutters I' and I, respectively, substantially as and for the purposes specified.

165,867.



2. In combination with the bars H' and H, pivoted within the head G and carrying upon their forward ends the threading-cutters I' and I', the cone K', fitted into and sliding longitudinally within a recess in the forward end of the cone K, having its forward motion limited by the headed studs *l*, *l*, and caused to maintain such position by means of the springs *p* and *p'*, substantially as and for the purpose set forth.

3. In combination with the cones K and K', the bar M, vertical arm N, collar *n''*, spring-pawl *p' p''*, bar D'', arm *d d'*, arm Q, spring-pawl *q q'*, collar E, and inclined bar S, substantially as and for the purpose shown and described.

4. In combination with the holder U and with the head H'', provided with the recess *h'''*, the block W, fitted within said recess, held in place by the screw *u* and nut *w'*, and caused to bear against said holder by means of the set-screw *w''*, substantially as and for the purpose specified.

5. In combination with the bar H and with the cutter-holder U, the head H'', pivoted upon the forward end of said bar, and rendered circumferentially adjustable by means of the set-screws *h'''* and *h'''*, substantially as and for the purpose shown.

6. In combination with the holder U, fitted into the recess *h'''* of the head H'', and held in place by means of the radially-adjustable block W, the radial wedge-shaped bar X, fitted between the rear side of said recess and the inclined back face of said holder, and made longitudinally adjustable, substantially as and for the purpose set forth.

165,868. HARVESTERS. J. M. Rosebrook, Hoosick Falls, N. Y., assignor to Walter A. Wood Mowing and Reaping Machine Company, same place. [Filed Nov. 20, 1874.]

1. The driving-wheel mounted on an axle connected with the vibrating sector plate or arm, in combination with the windlass, arranged on said axle for adjusting the height of the main frame, and operating substantially as described.

2. The seat and lever plate or arm E mounted on the drive-wheel axle, and combined with the main and pole frames by means of the sector-rods, and the links A E', and lever H, substantially as and for the purpose described.

3. The removable lever D, provided with the socket *d*, whereby it is adapted to rotate the windlass for elevating the frame, as described.

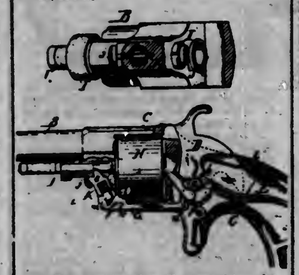
4. The heel plate I, to which the finger-bar is bolted, hinged to the rigid shoe A', in combination with the through-bolt *s*, whereby the cutting apparatus can be either rigidly connected with the shoe, or folded up on its hinge connection therewith for transportation, as described.

5. The eccentric cam plate O, with its inverted cam-rim and pivoted gate *p* applied to the upper end of the rake-pivot, in combination with the upwardly-projecting heel-extension of the rake and reel arms, substantially as described.

6. The latch Q, arranged over the cam-plate O, in combination with the hollow or grooved axle or rake-shaft, and the tripping cord or wire passing through said shaft, substantially as described.

7. The rake arm or elbow E, provided with the socket for the reception of the rake-staff, and the slot, and through-bolt, permitting the adjustment of the same, and with the removable pivot-plate *p* applied thereto and operating, as described.

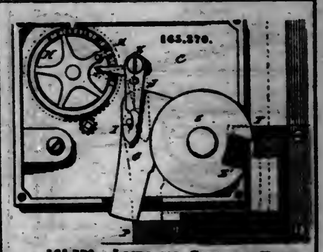
165,869. REVOLVING FIRE-ARMS. Jacob Reparton, Philadelphia, Pa. [Filed Sept. 16, 1874.]



1. The retaining-plate K, adapted to a slot in the frame, and to the tubular breech-pin I, and combined with the spring-pin *n* and lever G, all substantially as set forth.

2. The combination described of the hammer, the lever G, and projection *s* of the trigger.

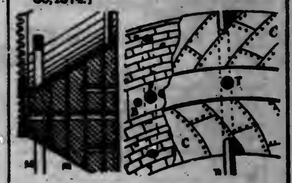
165,870. LOCKS FOR SAFE AND VAULT DOORS. James Sargent, Rochester, N. Y. [Filed June 5, 1875.]



1. The combination, substantially as hereinbefore set forth, of a time-lock and a combination-lock, both constructed to be applied upon a safe, vault, or other door, to have their bolts in contact with or rest against the bolt-work of the door, and arranged in such respect to each other that the locking of the combination-lock will lock the time-lock.

2. The combination, substantially as hereinbefore set forth, of a time-lock and a combination-lock, both constructed to be applied upon a safe, vault, or other door, to have their bolts operate upon or rest against the bolt-work thereof, and combined therewith so that the locking of the combination-lock will lock the time-lock, and cause its bolt to connect with the time-movement, and prevent the bolt-work of the door being operated until both locks are unlocked.

165,871. CONSTRUCTION OF DAMS. Wm. Schmoln, San Francisco, Cal. [Filed Nov. 30, 1874.]

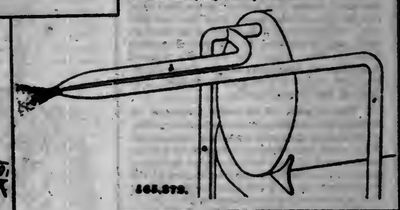


A dam adapted for use in rapid rivers or streams, wherein a body composed of masonry tied together by iron rods and filled with rubble, earth, or other suitable material, and having an exterior sloping backward and curved up stream, is wholly covered by iron plates, substantially as described and shown.

165,872. CARBURETING-MACHINES. Emanl. Schoenberg, Baltimore, Md. [Filed June 17, 1875.]

Brief.—For use in heating soldering-instruments, &c.

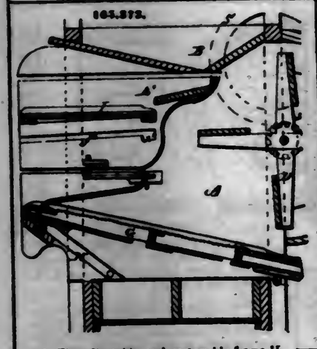
In combination with the air-forcing and carbureting chambers of a gas-machine, the extra air and gas pipes *b* and *c*, running together, as and for the purposes specified.



165,873. GRAIN-SEPARATORS. Herbert H. Staley, Fenwick, Mich., assignee of one-half his right to Alex. Ferguson. [Filed Mar. 26, 1875.]

Brief.—Novelty in construction of lower shoe, and in means for adjusting its inclination.

165,272.

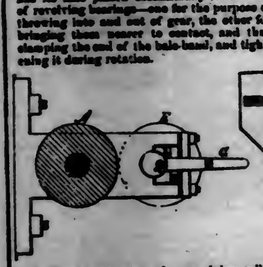


1. The adjustable and removable frame H, provided with pins f and tenons h, in combination with the sides of the frame A, having grooves f, with notches x, and the lower screw G and rod K, all substantially as and for the purposes herein set forth.

2. The lower shoe O, provided with the trap-doors b b and springs d d, substantially as and for the purposes herein set forth.

165,274. BALE-BAND TIGHTENERS. John L. Sheppard, Charleston, S. C. [Filed June 12, 1875.]

Brief.—One of each of two pairs of rollers has its axis placed eccentrically to the axis of revolving bearings—one for the purpose of throwing into and out of gear, the other for bringing them nearer to contact, and thus clamping the end of the bale-band, and tightening it during rotation.



1. The combination of a revolving roller, pivoted concentrically, with the other smaller roller, journaled eccentrically in movable bearings, substantially as and for the purpose described.

2. The combination of the roller A, the smaller rollers E, the spring S, and the lever G, substantially as and for the purpose described.

165,275. PROCESSES AND FURNACES FOR MANUFACTURING IRON. George J. Skinner and Samuel J. Skinner, Milton, Pa. [Filed Mar. 10, 1875.]

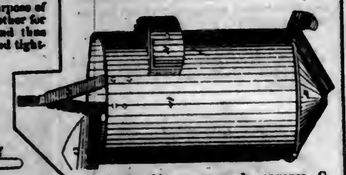
Brief.—The ore is fed into the lower part of the stack, where it is melted by the heat from the burning of the gases from the coal-and fire. When melted it flows down the inclined shelf, and is reduced by the reducing-gases from the fire. From the shelf the reduced melted metal drops into the revolving chamber, from which it is tapped, as desired. The front of the furnace opens.

1. The process of reducing iron ore to wrought-iron in one operation, consisting, first, in subjecting the ore in a liquid or molten condition to the combining influence of a blast containing hydrogen or carbureted hydrogen gases, and, secondly, in making the ore by the subsequent action of the same blast admixed with atmospheric air, as described.

2. In a metallurgic furnace, the combination of the heating-furnace A, the forming-chamber J, inclined passage H, and smelting-chamber A, the latter having a floor cavity or depression from which the melted ore overflows and passes down the contiguous incline to chamber J, being thus subjected to the action of the blast in the desired manner, all as shown and described, to produce the result specified.

165,276. EARTH-AUGERS. J. P. Simmons, Tiffin, Ohio. [Filed May 24, 1875.]

Brief.—The strip is pivoted in a slot in the lower edge of the door, and consists of a piece of rubber confined between the jaws of a bent strip of metal, so hung as to overbalance the rubber. When the rubber comes in contact with the boss c by the closing of the door, the strip assumes a vertical position, closing the weather-opening.



1. A movable reamer and conveyer, C, hinged to the bucket at one end, and adjusted by blocks I and bolts, substantially as herein set forth and described.

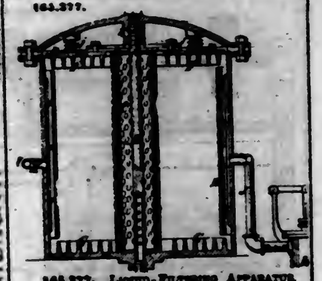
2. Any number of movable blocks H attached to the sides of the cylinder, substantially as described.

3. The hinged bit B secured by hook D and eye P to the bucket A, constructed substantially as herein described.

4. The small self-adjustable bit F and valve K, substantially as herein described.

5. The combination of the cylinder A, bit B, movable reamer and conveyer G, movable blocks H, small self-adjustable bit F, and valve K, substantially as and for the purposes herein set forth and described.

165,277.



165,277. LIQUID-FILTERING APPARATUS. Thos. R. Sinclaire, Brooklyn, N. Y. [Filed May 31, 1875.]

Brief.—The water is supplied to the filtering-vessel by a circular and branch pipes, and the entering currents are met by spreading-plates, which dispose the water externally about the body of filtering material, whence it is forced inward to the receiver at the center of the mass.

1. The combination, with a filtering-vessel, A, of liquid-spreading plates or deflectors, substantially as and for the purpose herein specified.

2. The combination of the filtering-vessel, the liquid-spreading plates or deflectors, and the receiver, substantially as herein specified.

3. The combination of the following elements: The filtering-vessel, the liquid-spreading plates or deflectors, the receiver, and the top and bottom rings or ledges, any or all, substantially as herein specified.

4. The combination of the following elements: The filtering-vessel, the receiver, the liquid-spreading plates or deflectors, and the forcing apparatus, with its connecting feed-pipes, substantially as and for the purpose specified.

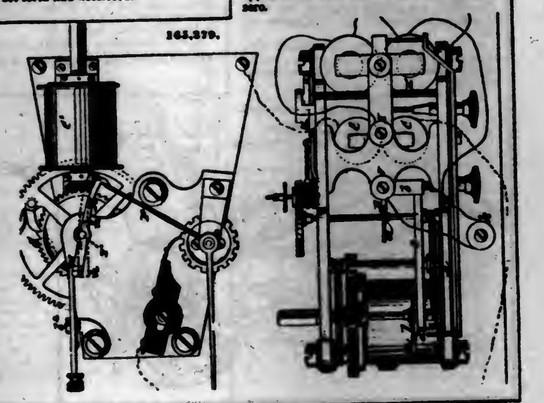
165,278. COMPOUNDS FOR WELDING, HARDENING, AND TEMPERING STEEL. Sarah Slater, Philadelphia, Pa., assignor to herself, Henry W. Gray, and Moses Smiley, same place. [Filed Apr. 28, 1875.]

A compound for welding, hardening, and tempering steel and iron, consisting of a mixture of wrought-iron filings, borax, muriate of ammonia, cyanide of potassium, prussiate of potash, corrosive sublimate, and alcohol, in the proportions as set forth.

165,279. PRINTING-TELEGRAPHS. John R. Smith, New York, N. Y. [Filed May 31, 1875.]

Brief.—Type-wheel revolved both on make and break of circuit. One coil of printing-magnets in a local closed by escapement-lever on prolonged closure of main circuit, other in a local ditto on prolonged breaking. Unison applied to stop-transmitter automatically at zero.

165,279.



1. In a printing-telegraph, the arrangement of one-half or portion of the wire of the printing-magnets in one local circuit or branch of a local circuit, and the other half or portion of the wire of said magnets in another local circuit or branch of a local circuit, in combination with a circuit-breaker that acts, during the rotation of the type-wheel, to open and close the circuit or circuits alternately through the two parts of the printing-magnet, substantially as set forth.

2. In a printing-telegraph, a printing-magnet in a local circuit or circuits, a type-wheel magnet in a main circuit, and an escapement-wheel that allows the type-wheel to advance a whole character at a single movement of the escapement-pallet, in combination with a lever that serves the double purpose of liberating the type-wheel and closing the local printing-circuit, to effect an impression by either a prolonged opening or closing of the main circuit.

3. In a printing-telegraph, the ratchet-wheel *l* and the pawl *m*, in combination with the lever *f*, substantially as described.

4. The springs *c* and *e*, in combination with an electro-magnet and a train of wheels for letting into an electric circuit a resistance either measurable or infinite.

5. The magnet C, pallet B, springs *c* and *e*, resistance *k*, lever *f*, ratchet-wheel *l*, and pawl *m*, in combination with a train of wheels, substantially as set forth.

6. In the transmitter of a printing-telegraph, the combination, with a train of wheels, of the arm F and the loosely-fitted lever E, substantially as and for the purposes set forth.

7. The lever U, in combination with the lever E, substantially as set forth.

8. In printing-telegraph apparatus, a self-locking transmitter, in combination with a self-locking printer.

165,280. ART OF MAKING CHISEL-POINTED NAILS. George Stacey, Montreal, Canada, assignor of two-thirds his right to Henry Mulholland and Harley D. Cowles, same place. [Filed Oct. 10, 1873.]

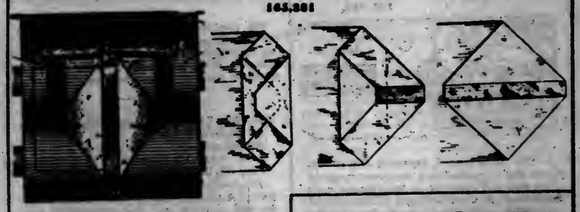


The described improvement in the art of manufacturing chisel-pointed nails, which consists in operating, in the manner described, with a pair of cutting-dies of the structure and configuration herein specified, upon a square-edged nail-plate that is turned over after each cut, to be again operated on by the same dies, as and for the purposes set forth.

165,281. PAPER-BAG MACHINES. Charles B. Stilwell, Worcester, Mass. [Filed Feb. 26, 1875.]

Brief.—A paper tube has its forward end opened by means which carry the plies in opposite directions on the peripheries of two rollers. This stretches the mouth and doubles the sides of the tube, so as to form the side angular folds of the bottom. One lip is then detached, while the tube is fed upward by the other to and between rolls which press and paste the bottom. The final triangular folds are then creased and folded the one by a folder traveling in the same direction, but at greater speed than the tube, and the other by passing the finishing-rolls

165,281



1. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method, hereinbefore set forth, of opening the end of a tubular blank, and forming the first fold thereof, by means of the conjoint action of two adjacent diverging surfaces, substantially as described, between which the blank is continuously fed, and to which surfaces the contiguous sides of the blank are caused temporarily to conform, (as they move over said surfaces,) by means substantially such as described, whereby the fold is formed while the blank is in motion, simply by the strain upon the paper itself.

2. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method, hereinbefore set forth, of determining the form of the bottom of the bag by means of the conjoint operation of a series of knives, operating successively upon the blank, substantially in the manner described, and of two diverging surfaces, between which the blank is continuously fed, and to which surfaces the contiguous sides of the blank are automatically caused temporarily to conform as they move over said surfaces, by means substantially such as described.

3. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method, hereinbefore set forth, of pressing down the first fold of the tubular blank by means of the conjoint operation of two adjacent diverging surfaces, between which the blank is continuously fed, to which surfaces the contiguous sides of the blank are caused temporarily to conform as they move over said surfaces, by means substantially such as described, and upon which surfaces the fold is formed, while the blank is in motion, by the strain upon the paper itself, and a compressor, substantially such as described, whereby the fold is pressed flat upon the blank immediately after being formed.

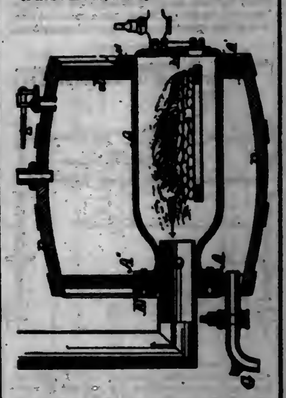
4. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method, hereinbefore set forth, of forming the first of the final folds of the blank by means of the conjoint operation of knives, substantially such as described, which hold the edges of the blank outside of the portions to be folded, while passing continuously through the machine, and a following folder, substantially such as described, which travels continuously faster than the blank on an independent carrier, and in the same direction therewith while forming the fold.

5. As an improvement in the art of forming satchel-bottomed paper bags by machinery, the method, hereinbefore set forth, of forming the finishing fold of the blank by means of the conjoint operation of bands, substantially such as described, which hold the edges of the blank outside of the portions to be folded, while passing continuously through the machine, and finishing-rolls or compressing-surfaces, substantially such as described, between which the blank is guide by the bands, at an angle with the line of motion of the blank, and compressed while being held thereby.



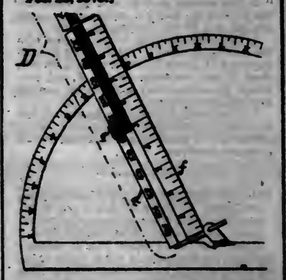
165,281.

165,282. AGRICULTURAL BOILERS. Wm. A. Swarthout, Aurora, Ill., assignor to himself and Roswell W. Gates, same place. [Filed June 18, 1875.]



In combination with the barrel D, provided with the gage-cock F, blow-off cock G, safety-valve H, and steam-tube I, the furnace A, provided with the flanges A' and A'', the door B, and the grate L, said parts being constructed in the manner and for the purpose substantially as specified.

165,283. TAILORS' MEASURES. William De Gant Tilney, Crawfordsville, Ind. [Filed Feb. 20, 1875.]



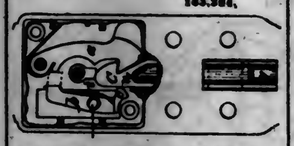
1. An instrument for marking out clothing or patterns for the same, consisting of the graduated dial A, and the expanding-measure D, constructed and operating all substantially as and for the purpose herein set forth.

2. The within-described expanding-measure, in which are combined the sliding strip *a*, graduated and perforated strip *d*, and elastic hasp *f*, all substantially as set forth.

165,284. SEAL-LOCKS. Lyman I. Todd, Chicago, Ill. [Filed Mar. 20, 1875.]

Brief.—An elbow-lever provided with an inclined arm, and having one end projecting through a hole in a seal-chamber, to lock the seal in place; said lever being operated by a sliding bolt.

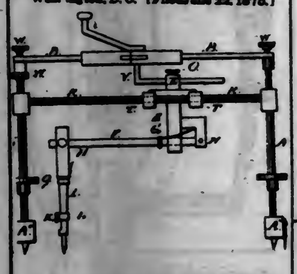
165,886.



1. The elbow-lever *h*, provided with the inclined arm *a*, pivoted in a chamber alongside of the seal and chamber, in combination with the sliding bolt U and spring *i*, all constructed to operate substantially as shown and described.

2. The plate *J*, provided with the rib *h*, in combination with the spring *i*, said plate being pivoted so as to swing over the keyhole and be shoved back into a recess in the face of the lock-case, as shown and described.

165,886. ELLIPTOGRAPHER. M. Toulman, Washington, D. C. [Filed June 22, 1875.]



1. The end pieces A A' A'', in combination with the slide-rods B B, carriage T, sliding thereon and supporting the pen-bar F, substantially as described, and for the purpose set forth.

2. The pointers S, as described, and for the purposes set forth.

3. The arms B B, middle plate C, and cranks V and U, pivoted together, and at the points D D combined with adjustable shaft E, arm F, and pen-holder H, substantially as described, and for the purposes set forth.

4. The slide T, having an annular opening in its center, substantially as described, and for the purposes set forth.

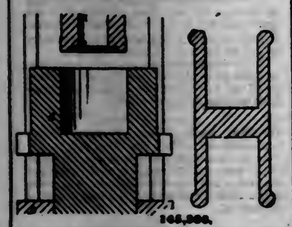
5. The vertical shaft E, with its horizontal bar F, with the spring G, substantially as described, and for the purposes set forth.

6. The slide-rods B B, in combination with the carriage T, cranks V and U, bars B, binding-screw D, pivots D, center plate C, vertical shaft E, and horizontal pen-bar F, and pen-holder H, substantially as described, and for the purposes set forth.

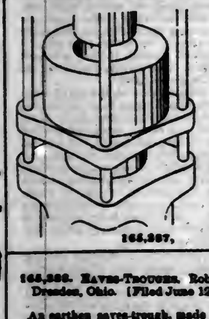
7. The arms B B, pivoted to the plate C, and to A'' at D, adjustable shaft E, having arm F, crank V, slide T, and bars B B, as and for the purposes described

165,887. DEVICES FOR THE MANUFACTURE OF CAMES. C. G. Treay, New York, N. Y., assignor to the Shaw & Rogers Lead Company, same place. [Filed May 20, 1875.]

Brief.—The device differs from an ordinary lead-pipe machine only in the omission of the die and mandrel, and the substitution of a die of the shape of a came.



165,887.



The combination, for the manufacture of cames in the manner set forth, of the die having the structure and configuration specified, with the metal-containing cylinder and the piston or plunger, substantially as described.

165,887. DEVICES FOR THE MANUFACTURE OF PRINTERS' LEADS. Lewis W. Tracy, Brooklyn, assignor to the Shaw & Rogers Lead Company, New York, N. Y. [Filed May 20, 1875.]

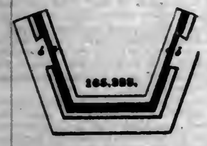
Brief.—The device differs from an ordinary lead-pipe machine only in the omission of the die and mandrel, and the substitution of a die corresponding to that of a printer's lead.

The combination, with the metal-containing cylinder and the piston or plunger, of the die having the structure and configuration specified, when used in the manufacture of printers' leads, in the manner set forth.

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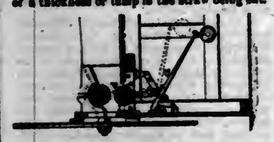
165,888. HAVEN-TROUGHS. Robt. Tyhurst, Dresden, Ohio. [Filed June 12, 1875.]

An earthen eaves-trough, made of sections having grooves *a a'*, and coupling U having tongues *b*, as shown and described.



165,889. STRAW-CUTTERS. A. Vahldieck, Johannesville, Wis. [Filed Apr. 15, 1875.]

Brief.—By a peculiar arrangement of bars, through which the action of the weight is transmitted to the rollers, the machine is protected from jarring when the roller passes off of a thickness or lump in the straw being cut.

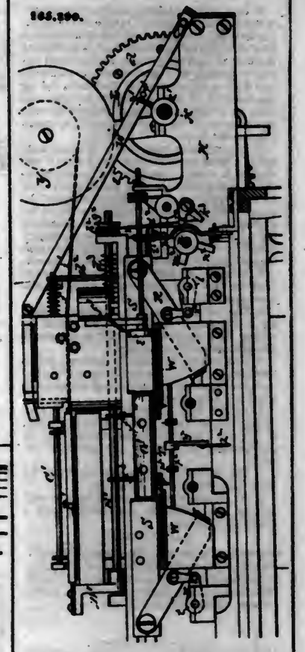


The combination of the rollers *a d*, slotted lever *a*, rods *e e*, and weighted lever G, whereby the straw and hay being cut is held more firmly and the frame prevented from being jarred and shaken by the falling of the weight after having been raised, substantially as set forth.

165,890. PAPER-BAG MACHINES. Casper Van Mecom, New York, N. Y. [Filed Mar. 31, 1874.]

Brief.—Makes a bag provided with a wire at one end to serve as a fastening. The machine consists of two distinct sets of mechanisms, operated by adjustable segments on the main driving-wheel. One set feeds the paper into and the completed bag out of the machine, and the other set pastes, folds, cuts, and wires the bag, the one being at rest while the other is in operation.

165,890.



1. In combination with the paper cutting, folding, and pasting mechanism, operating together as set forth, and the paper-feeding mechanism, which operates alternately with the former, each being at rest during the operation of the other, the wiring mechanism, substantially as and for the purpose set forth.

2. The combination of the rack O and pinion *n* with the crank *f* and pitman *h* and suitable driving-shaft, whereby the punting, folding, and cutting mechanisms are brought into action during the advance of the rack and returned to their normal positions by the retreat thereof prior to the operation of the feeding-mechanism, substantially as and for the purpose set forth.

3. The combination of the driving-wheel L, toothed segment *d* with cam *h*, spring M with pin *g*, and crank *f*, substantially as and for the purposes herein set forth.

4. The combination of the spring M and spring-catch N, for locking and holding at rest the crank *f*, as herein set forth.

5. The folding-wings W W on each side of the folding-plate T, and operated by means of the crank-arms *g g*, adjustable arms *s s*, and rollers *a' a'*, substantially as and for the purposes herein set forth.

6. The spiral spring *S*, in combination with the folding-wings W W, for the purposes herein set forth.

7. The combination of the wire-cutter *S*, angle-bar *c'*, rod *w'*, pins *o' p'*, collar *s'*, and spring *S'*, all constructed substantially as and for the purposes herein set forth.

8. The combination of the wire-carrier A' and L-shaped strip B', for the purposes herein set forth.

9. The combination of the wire and paste carrier A' with the forming-plate T and folding-wing G', substantially as and for the purposes set forth.

10. The curved hooks *a' a'*, in combination with the forming-plate T, wire-carrier A', and folding-wing G', for the purposes herein set forth.

11. The toothed segment *e*, made in sections and attached to the main driving-wheel L, substantially as and for the purposes herein set forth.

12. The combination of the segment *e*, cam *f'*, spring *k'*, and cog-wheel *w'*, having pins on its side, all substantially as and for the purposes herein set forth.

13. The combination of the forming-plate T, plate X, belt *s'*, belt-wheels V' W', and the intermittent reciprocating shaft *s'*, substantially as and for the purposes herein set forth.

14. The combination of the continuous rollers O' and F' with the sectional roller E', adapted to bite through the notched bottom end of the forming-plate, whereby the paper of the bottom of the formed bag is grasped to feed it out of the machine and pull forward the last formed bag and the web, to which it is still attached, substantially as and for the purposes set forth.

15. The combination of a paper cutting, folding, pasting, and wiring mechanism with a paper-feeding mechanism, when the same operate alternately, substantially as herein set forth.

165,891. APPARATUS FOR DISPENSING EFFERVESCENT LIQUIDS. Thomas Warner, New York, N. Y. [Filed Dec. 24, 1874.]

Brief.—When the receiving-vessel, which is provided with inclined hooks, is placed over the stem of the discharge-valve, the hooks are caused to engage with the inclines of a disk attached to the upper end of a valve-chamber, and thereby the discharge-valve is forced from its seat, and the liquid from the fountain is free to pass into the receiving-vessel.



The disk C and hooks *b b*, in combination with the receiving-vessel D, valve-chamber A, and valve B, all constructed and operating substantially in the manner and for the purpose herein shown and described.

165,892. PROCESSES OF MANUFACTURING WHISKY. Edward Wernight, Monee, Ill. [Filed Apr. 8, 1875.]

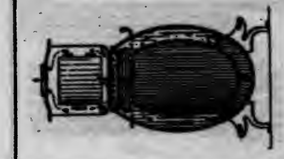
Brief.—Treats the mash with any solution of tannin, (such as extract of Aleppo galls,) muriatic acid, and bitartrate of potash.

1. As an improvement in the manufacture of distilled spirits, the process of increasing the production of finest oils, and improving the flavor of the liquor by the employment of tannin in the preparation of the mash, substantially as described.

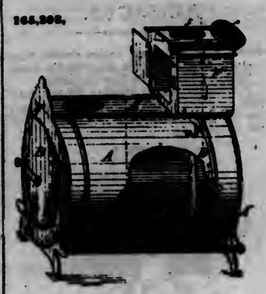
2. The process of improving the flavor and quality of liquor distilled from grain by the employment of tannin, muriatic acid, and bitartrate of potassa, in the preparation of the mash thereof, substantially in the proportions and manner set forth.

165,893. PARLOR COOK-STOVES. Alexander White, Rural Hill, Ill., assignor of one-half his right to Alex. H. Hammond, same place. [Filed May 12, 1875.]

Brief.—A "Todd" stove having a sheet-iron body and cast-iron top. The flue-strip, with its damper, provides for a direct and an indirect draft.



165,893.



1. The rear vertical flue-strip D, in combination with the lining C, and body and casing of the stove, substantially as described.

2. In the horizontal parlor cook-stove, substantially as herein described, the end plates A'', sheet-iron body A, and cast-iron plate-top A', with suitable holes for culinary vessels combined, substantially as and for the purposes set forth.

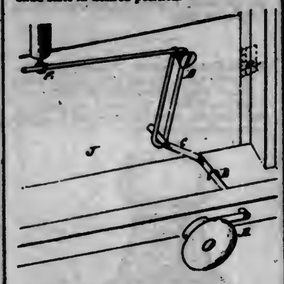
3. The combination of the stove proper A A' A'', lining C, and flue-strip D, having a suitable damper, with the detachable oven F, substantially as and for the purposes set forth.

4. The combination of the flat cast-iron top plate, having inclined flanges on its sides, with the sheet-iron horizontal body, substantially as described.

5. The combination of the vertical end plates A'' A'', body A, and top A', with lining C and flue-strip D, having damper E, the several parts arranged and operating substantially as described.

165,894. BLIND-SLAT ADJUSTERS. John G. White, Charlotte, Mich. [Filed Feb. 16, 1875.]

Brief.—The slat-bar is arranged at one side, and operated by an elbow-lever pad, slotted arm, with which a crank-shaft and crank-knob from inside the room connect, and engage in such manner as to readily adjust the blind-slats in desired position.



The combination with a blind-frame, J, pivoted slats L L, and slat-bar F, attached to the slats outside of the center and provided with the eye-screw *d*, of the elbow-lever, having long arm E, and slotted arm D, and the shaft B having crank-knob A and crank C, all substantially as and for the purposes herein set forth.

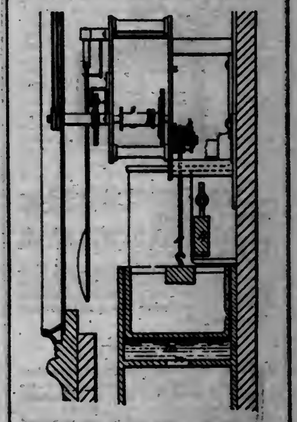
165,895. DRAFT-EVENERS. Amos Whitemore, Cambridgeport, Mass. [Filed Dec. 26, 1874.]

1. The draft-rods E E, above and below the thills, pivoted to whiffletrees D D, and connected together at their front ends, in combination with bearings *b* and pins *c*, substantially as and for the purposes described.

2. The draft portions *g* below the thills, in combination with the containing-rod *g'*, substantially as described.

165,896. ELECTRIC WINDING MECHANISMS FOR CLOCK-WORK. John Wm. Wignall, Manchester, Great Britain. [Filed Dec. 7, 1874.]

Brief.—Running down of motor allows battery-plates to lower into liquid, sending current around magnets, operating, when charged, to wind up the motor and withdraw plates.

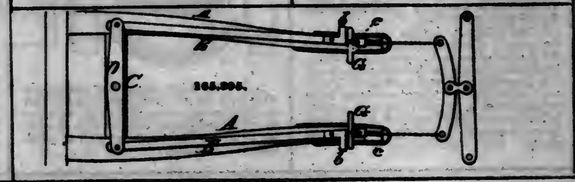


The combination in a clock operated by a weight, of an armature, *k*, of an electro-magnet, connected to the shaft of the winding-drum, with mechanism substantially as described for putting the battery into and out of action, as for the purpose set forth.

165,897. BEARINGS FOR JOURNALS. Aaron B. G. A. Williams, Goshen, Ind., assignee of one-half his right to Reed M. Johnson, same place. [Filed May 7, 1875.]



The combination of the journal-box A, the sleeve D rigidly connected to the shaft B, and the removable head or bands C, applied to the journal-box, and each provided with packing-recesses F, for preventing wear of the sleeve and the escape of oil, substantially as described.



165,898.

163,999. PROCESSES FOR CLEANING GAS-RETORTS. Horace S. Wolf, South Bend, Ind. (Filed Mar. 9, 1876.)

The within-described process of cleansing gas-retorts by the use of potatoes, substantially in the manner and for the purpose set forth.

163,999. STAND FOR OIL-CASKS. Frank C. Wyckoff, New York, N. Y. (Filed Mar. 28, 1876.)

Brief.—The oil-barrel is mounted upon a skid frame-work, which holds a drip-tray, with well at the end, to convey the leakage by means of pump back to the delivery tray, thence into the barrel.



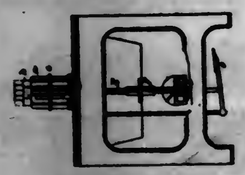
1. The pan C, provided with a well, D, combined with the skids B for an oil-barrel, substantially as set forth.

2. The pan or sled B, provided with a single funnel-neck, *e*, and legs *f f*, combined with the pump F, as set forth.

3. An oil-cabinet composed of a pan, C, secured to the skids B, and provided with the well D, combined with the sled E, constructed with legs *f f* and funnel-neck *e*, and provided with a pump, F.

163,999. MACHINES FOR STRETCHING HAT-BODIES. George Tate, Newark, N. J., assignor of one-half his right to C. Crossley, same place. (Filed Oct. 21, 1874.)

Brief.—The stretcher-arms are composed of two sets, the one arranged concentrically with the other. The inner set is hinged to the upper section of the tank-frame, and surrounded by the outer set, which is hinged to a loose sleeve upon the vertically-reciprocating shaft, which is provided with a central head for operating both sets of arms. Their relation to each other is maintained by a spring surrounding them.



1. The combination of the expansive hinged stretcher-arms a and sliding hinged stretchers or formers b, with the vertical-acting shaft E, provided with a head, *d*, substantially as set forth.

2. The combination of the expansive stretchers and formers a and b, and the vertical shaft E, provided with an enlargement or head, and the adjusting device, consisting of a right and left thread and nut, substantially as and for the purposes set forth.

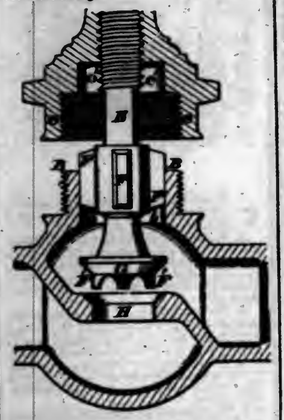
3. The treadle c and its connections, in combination with the stretching-formers b, for the purpose of vertically operating the latter, substantially as and for the purposes set forth.

4. In combination with the hinged stretchers a and sliding and hinged stretchers b, the centered shaft E, provided with right and left left threads and adjusting-nut F, driving-shaft D, and a suitable device for connecting the shafts.

REISSUES.

6,587. GLOBE-COCKS. James Powell, Cincinnati, Ohio. Patent No. 47,555, dated May 2, 1865. (Filed May 14, 1875.)

Brief.—To facilitate grinding the valve and seat, wings are formed solid on the valve-stem, the same adapted to snugly fit the neck of the valve-casing.



1. The combined valve and valve-stem E G, constructed as set forth and guided in the smooth neck B of the body, substantially in the manner designated.

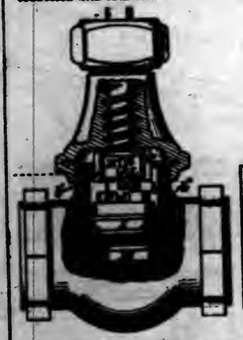
2. The valve-stem of a globe-cock, provided with wings (or collar) F, combined with the neck of the globe or body, in the manner substantially as set forth, and for the purpose designated.

3. The valve of a globe-cock, provided with downward projections F', in combination with the passage-way H and a valve-stem guided at its upper end.

4. The described combination of a guided valve, G, passage H, stem E, neck B, and permanent handle I, substantially as and for the purpose set forth.

6,588. GLOBE-VALVE. James Powell, Cincinnati, Ohio. Patent No. 47,702, dated Feb. 6, 1865. (Filed May 20, 1875.)

Brief.—When it is desired to grind the valve-seat, the valve and stem may be rigidly connected with each other.



1. In combination with a screw-stem adapted to maintain an axial position in the neck of a globe-cock, a loose disk-valve constructed substantially as set forth, so as to be capable of being locked for the purpose of grinding.

2. In the described combination with a valve-stem adapted to maintain an axial position independently of its screw, and provided with a self-adjusting valve, the locking-piece K, or its equivalent, adapted to operate as set forth.

3. In the described combination, the following elements, to wit: a valve-stem having guides for preserving its axial position when released from the screw-cap; a self-adjusting valve, and the tongued and adjustable piece K, adapted to enter the cavity J in the valve, and to be secured either in or out of lock, substantially as and for the purpose set forth.

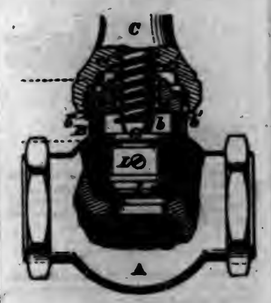
4. In combination with a screw-stem, adapted to maintain an axial position in the neck of a globe-cock, a loose disk-valve so constructed as to be guided at its lower end, substantially as and for the purpose designated.

5. The described downward prolongation *b'* of the interior wall of the neck B, in combination with a screw-stem adapted to be guided within the same, as and for the purpose explained.

6. The spring-collar G, in combination with screw-stem E, valve I, and plug H, for the purpose described.

7. The combination, in a globe-cock, of a lockable loose valve, I, valve-seat M, screw-stem E, and handle N, for the purpose set forth.

6,589. GLOBE-VALVES. James Powell, Cincinnati, Ohio. Patent No. 77,912, dated May 12, 1868. (Filed May 21, 1875.)



1. The loose collar or guiding rim F, fitting and being supported by the counterbored interior *b b'* of the globe-valve neck, substantially in the manner described.

2. The packing-collar G in combination with the loose disk-valve and the hub C, as described and set forth.

3. The described loose disk-valve I, lock-pin L, stem E, fast collar G, and loose collar F, combined and arranged as set forth.

4. The valve I, loose guide-collar F, counterbored neck *b b'*, screw-stem E, and handle J, combined and arranged substantially as described.

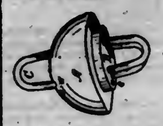
6,590. PRESSURE-GAGES. John W. Stiles, New York, N. Y. Patent No. 127,261, dated May 1, 1872. (Filed May 22, 1875.)



A pressure-gage, having the steam-piston B in combination with a float, E, moving in a chamber containing a weighing-fluid, by the rise and fall of which the amount of pressure is indicated, all operating substantially in the manner and for the purpose shown and described.

6,581. BUCKETS FOR CHAIN-PUMPS. W. C. Barker, Millport, N. Y. Patent No. 116,139, dated June 20, 1871; reissue No. 6,978, dated May 19, 1874. (Filed Feb. 17, 1875.)

Brief.—A solid elastic bucket for chain-pumps having an elastic edge and an upper portion contracted from said edge. This form allows the bucket to be easily drawn up the pump-tube, but prevents its being drawn or thrust downward. To prevent the water remaining in the tube, the bucket is provided with a leak-hole.



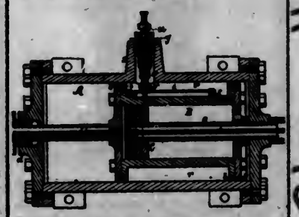
1. An elastic bucket for chain-pumps, adapted to fit and work in the bore of a pump-tube to raise the water by suction, provided with a suitable orifice or outlet through which the water remaining in the pump-tube above the bucket is allowed to escape down to the source of supply, substantially as and for the purpose set forth.

2. A solid elastic bucket, having an elastic bearing-edge, and its upper portion convex or contracted from said edge, whereby the bucket will readily yield to any irregularities in the pump-tube, and admit of its being easily drawn up, while at the same time it will resist moving downward, substantially as and for the purpose specified.

3. In combination with an elastic bucket and suitable button or washer, a link of the form substantially as described, whereby the ends, after insertion through the bucket and button, are capable of being turned up to form a rest for the button, which in turn forms a rest or support for the bucket, as set forth.

6,582. STEAM-ENGINES. S. F. Davenport, Hallowell, Me. Patent No. 60,851, dated Jan. 1, 1867. (Filed June 15, 1875.)

Brief.—The piston is moved in either direction by live and expanded steam.



1. The compound engine, substantially as described, consisting of the cylinder A, the internal movable piston-cylinder B, and the stationary piston C, all arranged as represented, and provided with valves and steam-passages, to operate to cause the cylinder B to be moved within the cylinder A and on the piston C by the steam, essentially as explained.

2. The piston C, provided with the passages *e f g*, and the valve *b'* arranged in it, as described, in combination with the piston-cylinder B, provided with the valves *l m* and the steam-passages *k n* for each of said valves, all as set forth.

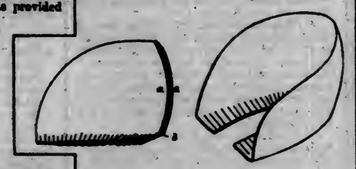
6,583. DEVICES FOR PROTECTING THE ENDS OF ROLLS OF PAPER, &c. Joseph L. Firth, New York, N. Y. Patent No. 160,176, dated Feb. 23, 1875. (Filed June 6, 1876.)



6,583.

A roll-protector, composed of two caps and a connecting rod combined, substantially as and for the object specified.

6,584. COUNTER-STIFFENERS FOR BOOTS AND SHOES. James L. Hatch, Rochester, N. Y. Patent No. 146,252, dated Jan. 6, 1874. (Filed Apr. 7, 1875.)



1. As a new article of manufacture a waterproof stiffening for boots and shoes, composed of leather and leather-board, and an interior or rubber rim, substantially as described.

2. A stiffener composed of a layer of leather-board, skived about its edges, and combined with a layer of leather cemented or secured to the skived face of the leather-board by an india-rubber cement or rim, substantially as described.

3. The process of forming heel-stiffeners of leather and leather-board, consisting in first skiving the edges of the leather-board, then coating the leather and the skived face of the leather-board with an india-rubber cement, which by penetrating the leather and leather-board, renders them elastic and pliable, then uniting the leather and leather-board, and then forming the stiffener by bending the same into shape, substantially as described.

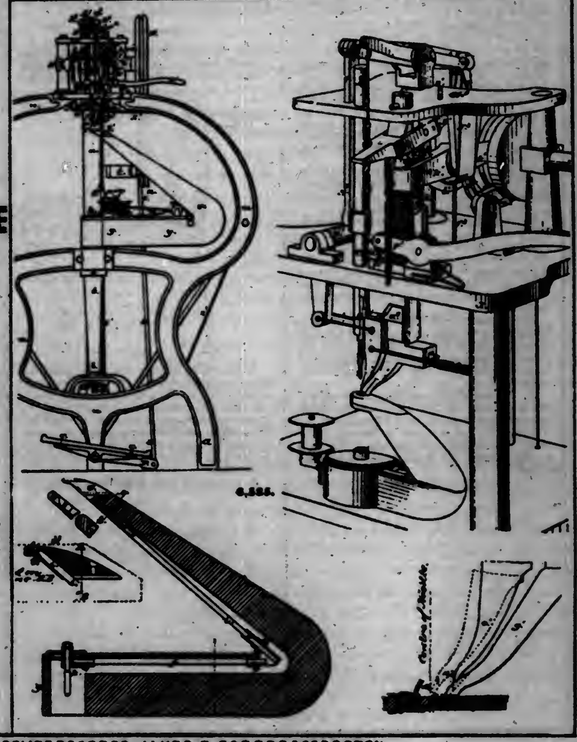
6,585. SEWING-MACHINES. Gordon McKay, Cambridge, and Robt. H. Mathieu, Boston, Mass., assignors, by mesne assignments, to Gordon McKay, trustee of the McKay Sewing-Machine Association. Patent No. 30,163, dated Aug. 12, 1862. (Filed June 26, 1875.)

Brief.—This machine is adapted to connect the soles and uppers of boots and shoes by means of a chain-stitch. The thread to form the stitch is supplied from a spool carried by a rotating horn. A rotating whirl lays the thread in the eye of the hooked needle, and the loop of thread is drawn from the whirl up through the material, the chain being formed in a channel made in the sole. The horn is capable of being rotated about an axis coincident with the axis of the needle, which inserts the stitch that fastens the sole and upper, and by moving the horn about the axis, and also the shoe on the horn, all parts of the shoe may be readily presented to the action of the needle. The length of thread drawn off from the spool is made to correspond with the thickness of the material being joined, and the throw of the needle and its carrier, together with the movements of the feed, presser, and cast-off or closing slide, is automatically varied to adapt them to material of different thicknesses.

1. In a machine for uniting soles to uppers, a rotating horn provided with a supporting-surface substantially in line with the axis of the horn, and adapted to enter and support a shoe with its sole substantially at right angles to the axis about which the horn rotates, substantially as described.

2. The combination, with a rotating horn adapted to enter and support a shoe while the upper is being united to the sole, of a feed adapted to engage and move the sole over the rotating horn, substantially as described.

3. The combination of a rotating horn adapted to enter and sustain a boot or shoe, as described, with a presser to hold the sole down on the horn, substantially as described.



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4. The combination of a presser and a feeder with a rotating horn, substantially as described.

5. The combination, with a sewing mechanism, of a rotating projecting horn and a whirl or looper carried in the end of the horn, and adapted to lay its thread into the hook of the needle, substantially as described.

6. The combination, with a rotating projecting horn and a whirl or looper, of a thread spool or bobbin, adapted to move with the horn, substantially as described.

7. The combination, with a rotating horn, of a tension device adapted to produce tension on the thread carried by the horn, substantially as described.

8. A rotary whirl or looper, combined with a rotating horn and with mechanism adapted to operate the whirl, whereby, while the whirl has an intermittent rotary movement with relation to the needle, the horn can be rotated without changing the relation of the whirl and needle to each other—or, in other words, so that rotation of the horn shall not rotate the whirl, though supported by and held in the horn, and so that rotation of the horn shall not effect the intermittent rotary movement of the whirl.

9. The combination of the needle-carrier and its operating lever with a movable fulcrum for the lever, adapted to move for the purpose of changing the throw of the carrier, substantially as set forth.

10. The means described for varying the stroke of the needle to conform to change in the length of the stitch, the same consisting of a stop made adjustable on the fulcrum bar to vary the distance between said stop and the fulcrum.

11. The combination, with a presser-foot, of a needle and needle-carrier automatically adjustable as to its stroke, substantially as described, to regulate the amount of the thread drawn from the spool by the needle, whereby the amount of thread so drawn is made to conform to varying thicknesses of stock at or near the point where the needle and presser operate, substantially as set forth.

12. The combination of a horn adapted to support a shoe or boot with an instrument acting on the upper surface of the shoe, calipering the thickness of the stock between such instrument and the surface of the horn, and adapted to regulate automatically the length of the material used for uniting the upper and sole, and the length of the stroke of the carrier, that while one terminus of it is at a fixed point in relation to the horn the other terminus shall automatically change in accordance with the variations in the thickness of the material to be united, substantially as described.

13. The combination, with the presser-foot, of a mechanism adapted to lift it a fixed amount from the surface of the stock, no matter what its thickness, substantially as described.

14. The presser-foot, combined with the needle and connected mechanism, whereby the resistance offered to the upward movement of the needle resists upon the presser to prevent it from being forced upward by the upward strain upon the stock, the presser being prevented from downward motion, substantially as described.

15. The presser and its operating lever, combined with a movable and adjustable fulcrum, whereby more or less lift can be given the presser by the positive movement imparted by a cam or other equivalent motor, substantially as set forth.

16. The combination of the closing slide of the needle with the needle and with the mechanism, shown and described, for operating the closing slide, and adapted to increase or diminish automatically the stroke of the slide as the stroke of the needle is increased or diminished.

17. The closing slide of the needle, combined with the needle, substantially by the means described or by their equivalents, adapted to operate the slide to cover the eye or hook of the needle while emerging from the stock, and to move with the needle, keeping its eye or hook covered until at or near the termination of the upward stroke of the needle, when the slide moves relatively to the needle, uncovering its eye, and then by moving downward with the needle keeps its eye uncovered until the needle punctures the stock.

18. The combination and arrangement of the separate instruments, the needle, the presser, and feeder in line, substantially as described, and in the plane of the feeding vibrations of the feeder and above the stock to be sewed, whereby they are adapted to operate on the upper surface thereof, said plane passing through the axial line of the needle, as and for the purpose described.

19. The combination, with the presser and feeder, of an inclined surface, variable in height with the presser, substantially as described.

20. The combination of the feeder, the horizontally-adjustable presser-foot and its bar, links *e'*, provided with projections *e''*, and an inclined surface variable in position with the presser-bar, and adapted to operate substantially as set forth.

21. The combination and arrangement of the spring *f* with the parts connected with the needle-lever, whereby the weight of said parts are counterbalanced to retain the needle at its upstroke until the check *f'* operates on the plate *d*.

22. The combination of the presser-foot and feeder, adapted to operate in the channel of the sole to guide the line of stitching in conformity with the channel, substantially as described.

23. In a machine for uniting soles to uppers, a rotating horn constructed, substantially as shown and described, and positioned with reference to and combined with the operating head of the machine, substantially as shown, whereby the horn always presents its supporting surface at the point where the sole and upper are being united.

6,826. SCHOOL SETTEES AND DESKS. John Peard, Brooklyn, N.Y. Patent No. 66,824, dated July 2, 1867. [Filed Apr. 23, 1875.]



1. The combination, with a school-settee and a swinging desk, of bearings on the side pieces of the settee, said bearings serving to support the desk when the same is in position for use at points intermediate between its back and front edges, substantially as described, whereby, when the front or outer edge of said desk is raised, its top face is turned toward the back of the settee.

2. The sliding desk E, provided with guiding cams *d d*, projecting from its ends and catching in guide-grooves in the side pieces A A of a settee, substantially as set forth.

3. The pivoted seat F, provided with slotted bars or stripes *f* at its ends, in combination with the pivoted supports G G, having pins *h*, to work in the slots of the bars or stripes *f*, substantially as shown and described.

4. The arrangement of book and slate racks C D between the side pieces A A of a school-settee, substantially as and for the purpose set forth.

6,827. PUMPS. Albert M. Putnam, Antrim, assignor, by mesne assignments, to himself and Charles H. Carter, same place, and C. P. Fox, Peterborough, N. H. Patent No. 94,336, dated Aug. 31, 1869. [Filed Jan. 22, 1876.]

Brief.—The pump-barrel is extended above the discharge-nozzle, and provided with an adjustable packed cover. A transverse rocking shaft is mounted in a packed journal-bearing communicating with the interior of the air-chamber; the shaft being connected to the piston-rod and the operating-brake, whereby the pump may be converted at pleasure into a lifting or force pump.



1. The combination, with a pump-barrel, having a close air-chamber above the delivery-nozzle, formed by a vertically upward extension of the barrel, of a transverse rocking-shaft, *b*, mounted in a packed journal-bearing, formed on the side of said communicating with the interior of the air-chamber, the said rocking-shaft being connected within the barrel to the piston-rod, and on the outside thereof to the operating-brake, substantially as described.

2. The combination, in a pump, of a barrel, which has an upward extension, and a transverse rocking-shaft for operating the pump-piston, mounted in a packed journal-box, as described, with an adjustable cap or cover, *d*, whereby a close air-chamber can be formed, and the pump be converted at pleasure from a simple lifting-pump to a force-pump, substantially as specified.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 2. TUESDAY, JULY 13, 1875. PRICE { $5,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D.C.

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COMMISSIONER'S DECISIONS.

JOHN HASELTINE.—*Extension.*

[*In the matter of the application of John Haseltine, for extension of patent granted March* 25, 1856, *No.* 14,535, *for new and useful* WATER-WHEEL.—*Decided June* 15, 1875.]

The wheel of applicant having fallen into the hands of another person, who added improvements of his own, the "statement" of the value of the invention should have distinguished how much of the value was due to the portions patented by applicant.

A general statement that *the* wheel "added one-twelfth to the power of former wheels" is not sufficiently definite when the merits due to the devices of the applicant, and those of the subsequent patentee, are not definitely ascertained.

Examination of the specific points of each, and the apparent disuse of some of the applicant's devices, considered as bearing upon the questions of novelty and of value to the public.

SPEAR, *Acting Commissioner:*

This application is made under authority of an act of Congress, approved February 18, 1875, permitting the applicant, John Haseltine, "to make application to the Commissioner of Patents for the extension of his patent for a new and useful water-wheel."

In respect to the novelty of the invention covered by the claim in the patent under consideration, the report of the examiner may be considered favorable, and, indeed, the novelty of the precise invention claimed is not seriously questioned by the remonstrants. Nor am I disposed to call in question the insufficiency of the remuneration; nor to inquire very strictly into the causes of the failure to receive adequate remuneration, farther than the inactivity of applicant may bear upon the question of the value and importance of the invention, as it existed at the time when it was relinquished by this inventor, and passed into the hands of his assignee, Whitney.

This application was assailed most seriously upon two points: First, that the applicant had not furnished a written statement, under oath, of the ascertained value of the invention or discovery, as the law requires; and, second, that the invention, as originally made by Haseltine, and as described and claimed in his patent, is not valuable or important to the public. In his statement of the ascertained value of his invention he puts the number of wheels, containing his invention, manufactured and sold in this country as being, on an average, thirty each year since 1856. Now, it appears from the testimony of Whitney himself that most of these wheels were not made in the precise form shown and claimed in the patent under consideration. They were made, with few exceptions, in accordance with the patent granted to Whitney himself, to whom the patent of Haseltine was assigned about the date of its issue, and who took upon himself the whole business of manufacturing. Now, this patent of Whitney shows marked changes in the wheel as compared with that patented to Haseltine, changes which appear to be of considerable importance, and the nature of which I shall have occasion more particularly to consider hereafter.

Referring to these wheels, there is no statement or calculation to indicate how much an improvement this Whitney wheel was upon the old form existing prior to Haseltine's wheel, and nothing to indicate what part of the improvement is due to Haseltine, and what part is due to Whitney. There is nothing, beyond what appears to be a rough guess, that applicant added one-twelfth to the power of wheels which preceded his. This estimate might serve the purpose, and be taken as based upon applicant's former experiments, if the wheel used, and the number of which enters as an element into the computation, were the same wheel as that upon which Haseltine formerly experimented, in order to ascertain the amount of power gained. But the change in the form of the wheel from that patented to Haseltine to that patented to Whitney vitiates the whole calculation, and I cannot base any conclusion upon it.

The second point is very closely connected with the first, and many of the same class of facts bear alike on

both. As before remarked, the Whitney wheel, as shown in his patent, appears to differ in essential points from that of Haseltine: First, Whitney in the place of the flat cover, which Haseltine placed over the floats, substituted a crown in the shape of the segment of a cone made hollow and inverted, so as to turn the water gradually downward upon the lower outwardly-bent part of the float. In the second place, Whitney distends the band, and locates it about the outer limits of the wheel around the end of the floats, so as to give an amount of discharge commensurate with the diameter of the wheel. The third change, of greater importance, and one about which there is some dispute, consists in the total or partial omission of the radial portion of the floats. These are a marked characteristic in the patent of Haseltine, and constitute one of the leading elements of his claim. In the model of Whitney's patent, and in the cuts which Whitney caused to be made to represent his patent, this radial portion does not appear, or not to any extent worthy of note. In his patent, and as appears from his testimony, in most of the wheels made by him, the water was conducted to the wheels through chutes arranged entirely around the wheel, and at such an angle to the floats that no radial portion appears to be necessary, as it was in a construction shown in the patent of Haseltine. It would appear from Whitney's patent, and from the cuts referred to, that practically the radial portion was omitted, and the testimony on this point does not satisfy me that the contrary is true. But as this was the wheel upon which applicant expends his efforts to make a showing of value and importance, no weight can be given to that evidence, unless it appear that the wheel of Whitney has all the elements which were the invention of Haseltine, and which Haseltine might claim upon reissue. Now, the only remaining features in common with the Whitney and the Haseltine wheel are the tangential floats and the downward and outwardly turned edges of those floats. It is insisted, and it is undoubtedly true, that the outwardly-turned or lower portion of the floats in the Haseltine wheel are of such position, in relation to the center of the wheel, that the water is turned partially away from the center. Now this is the same, both in the Haseltine and in the Whitney wheels; but the question arises as to whether Haseltine could claim this upon reissue. Certainly he made no pretensions to such a claim in his original application, nor did Commissioner Mason, in allowing the patent, give any intimation that Haseltine was, in the judgment of the office at that time, the inventor of these two elements last specified. I have carefully examined the model and drawing and specification of the Dripp's wheel, referred to by the remonstrants in this case, and I am satisfied that it contains these two elements. Indeed, it is singularly like the Whitney wheel. That it has the tangential floats there can be no question, and this I do not understand applicant to deny. There was some question as to whether the lower portion of the floats turned outward from the center, as is the case in the Haseltine wheel. If the lower edges of the floats were parallel with the upper, the lower and bent portions of the floats would still give an amount of outward inclination proportioned to the amount of inclination of the tangential line to a radial line. But it is expressely stated in Dripp's specification that the lower edge of the floats is not parallel with the upper, but is at a greater angle, or in lines tangential to a larger circle than the upper circle, to which the upper lines are tangent, thus making what may be called a twist outward in the float. This, and an inspection of the model, convince me that the lower portion of the float has a positive outward turn, and to this extent it anticipates the invention of Haseltine, who is, therefore, not entitled, under any circumstances, to claim the two elements which remain after the omission of the radial portion. All the testimony of the expert, Waters, in regard to the arrangement of the chutes for pitching water upon the wheels does not appear to me to bear upon the merits of the case, for the reason that it constitutes no part of the invention under consideration. It is the wheel, and the wheel alone, which Haseltine claims to have improved, and with which I have compared the wheel of Dripp, disregarding altogether the other portion of Dripp's invention, as having no relevancy to this case. It appears clear to me, therefore, that all that Haseltine was originally entitled to claim, and all that he did claim, was not of value. In harmony with this view is his early and not very reluctant abandonment of the enterprise, and in like accordance are the marked improvements of Whitney, patented as they were without reference to the Haseltine wheel.

With these views of the case I deem it unnecessary to discuss other points raised at the hearing.

The applicant has not, in my judgment, furnished sufficient foundation for the grant of an extension of his Letters Patent, and his petition is accordingly denied.

DECISIONS OF THE COURTS.

SUPREME COURT, DISTRICT OF COLUMBIA.

[*In general term.—April*, 1875.]

STEPHEN HULL *vs.* THE COMMISSIONER OF PATENTS.

[*Mandamus.*]

On a rehearing, the doctrine is again affirmed that this court will not compel the Commissioner of Patents to issue a patent even in a case where the Examiners-in-Chief have rendered a decision in favor of the applicant.

STATEMENT OF THE CASE.

This case was heard and decided at the last term of the court; but one of the judges having intimated a desire to have the case reargued, it was again heard before a full bench. The facts of the case, as set forth on the original hearing, are as follows:

A motion is made in this matter for a mandamus commanding the Commissioner of Patents to issue a patent to the relator, Stephen Holl. The facts upon which the application is based are stated in the petition and the return of the Commissioner to be that Stephen Hull, of Ponghkeepsie, in the State of New York, on or about the 1st day of March, 1869, filed in the United States Patent Office an application for a patent for an improvement in harvesters, of which he believed himself the original and first inventor; that said application

having been twice rejected by the Primary Examiner, an appeal was taken to the Board of Examiners-in-Chief, as provided by law. That on or about the 28th of August following, notice having been received that the decision of the Primary Examiner had been overruled and the patent allowed, he paid into the Patent Office the final fee of $20, which he considered was all that was necessary on his part to entitle him to the possession of the said patent; but the Commissioner of Patents directed the said patent to be withheld, and the case sent back to the Board of Examiners-in-Chief for reconsideration, in view of certain decisions which had then been recently made by himself; that said board did proceed to reconsider their said decision accordingly, but reaffirmed the same, and held that the patent should be allowed. Nevertheless, the said Commissioner still refused to allow the said patent to issue, and on the 14th of April, 1870, made the following order: "Further action in this case is suspended until the further order of the Commissioner;" and no notice of the order was ever given to said Hull or his attorneys, nor was its existence known to either himself or them until within the past three months; and that the "further order" here contemplated has never been made. He again applied to the present Commissioner of Patents, (Leggett,) requesting him to direct the patent to issue in accordance with the decision of the Board of Examiners-in-Chief above referred to. But the said Commissioner, after having fully considered said application, denied the request therein presented, mainly, as he (Hull) believes, on account of the length of time that had elapsed since the aforesaid order of April 14, 1870, was made, and also on account of the rule that one Commissioner will not review and reverse the rulings of his predecessor, (Fisher,) the former incumbent.

Believing that the facts above stated leave no discretion with the Commissioner of Patents; that under the circumstances of this case the law definitely prescribes this duty, which is the performance of a mere ministerial act, petitioner asks that a writ of mandamus may issue under the seal and authority of this honorable court, commanding the said Commissioner of Patents to issue said patent, or to show cause why he declines to do the same, or to do such other acts and things as his official duty shall require, and such as shall be in accordance with the general principles of jurisprudence that are applicable to such cases.

The return of the Commissioner gives a history of the application of the petitioner from September 25, 1856, when he filed his first application, down to April 14, 1870, when the Commissioner (Fisher) placed the written order on file suspending further proceedings until his further order, but of which no notice was sent to Hull, although it is stated he had actual knowledge of such order. On February 11, 1874, relator moved Commissioner Leggett to issue the patent, which he declined to do, for the following reasons:

First, my predecessor had evidently deliberately decided that a patent could not be granted, and under the practice in all the departments, which, if not statutory, has the force of law, I am not at liberty to review his decision; and, second, the delay of nearly four years between the last action of my predecessor and the filing of the present request for reconsideration, works abandonment under existing statutes.

Upon an examination of the merits of the case, I am inclined to the belief that there are no equities in the case that should lead to any forced construction of the statute in favor of the applicant.

The Commissioner, in his return, resists the application for the writ of mandamus upon the following grounds:

The respondent denies that upon the facts of the case his predecessor was left nothing but a mere ministerial act to perform—viz., to deliver the patent; or that he, as successor, is left in that position; and he says that, inasmuch as a patent never was executed, there remains still a judicial discretion to be exercised by him, in determining whether or not all the conditions prescribed by law were complied with in every respect, so as to authorize him to lawfully execute and deliver the patent.

He denies that the decision of the Board of Examiners-in-Chief, upon the single point appealed to them from the Primary Examiner, concluded him upon that point, or upon other points which the law makes conditions precedent to the grant of patents, and charges him with the duty of determining.

He denies that the writ of mandamus should issue from the honorable court, as petitioned for, to compel him to execute and deliver the patent sought by the relator previous to a regular appeal to the court, and an adjudication in his favor, as provided for in the forty-eighth and fiftieth sections of the patent act, and says that such a remedy, if ever available before the complete execution of a patent, is now barred in this case by the delay of the relator in invoking it.

The principal question to be determined upon this state of facts is, whether the court will require the Commissioner of Patents to issue a patent where the Board of Examiners-in-Chief have twice decided in favor of the applicant.

[*Charles Mason*, for the relator.
Marcus S. Hopkins, for the Commissioner.]

HUMPHREYS, J.:

This case has been reheard, and the majority of the court find no reason to alter the judgment of the last term.

The petitioner filed his application for the writ of mandamus requiring the Commissioner to issue a patent for "an improvement in harvesters." The Patent Office is attached to the Department of the Interior, and the Commissioner of Patents, under the direction of the Secretary of the Interior, is required to superintend or perform all duties respecting the granting and issuing of patents directed by law. (Sections 475, 481, Revised Statutes.) The Commissioner of Patents and three Examiners-in Chief are nominated and appointed by the President and Senate. (Sec. 476.)

The language of section 482 is as follows:

The Examiners-in-Chief shall be persons of competent legal knowledge and scientific ability, whose duty it shall be, on the written petition of the appellant, to revise and determine upon the validity of the adverse decisions of examiners upon applications for patents, and for reissues of patents, and in interference cases; and, when required by the Commissioner, they shall hear and report upon claims for extensions, and perform such other like duties as he may assign them.

Section 4904 authorizes an appeal to the Board of Examiners-in-Chief and the Commissioner in interference cases.

Section 4909 provides for an appeal to the Board of Examiners-in-Chief, in three classes of cases, the application originally, the application for a reissue, and in interference. Section 4910 provides for an appeal from the decision of the Examiners in-Chief to the Commissioner in person. These are the only sections making any provision for the action of the Board of Examiners-in-Chief.

In the case before us the relator, Hull, states that his application was twice rejected by the Primary Examiner, whereupon he appealed to the Board of Examiners-in-Chief, and they determined that he was entitled to a patent; that in August, 1869, he paid into the Office twenty dollars, the fee required by law; that notwithstanding this the Commissioner of Patents re-

fused to grant the patent, and sent the matter back to the Examiners-in-Chief, who reaffirmed their opinion, or decision, that the patent should be allowed; that on April 14, 1870, the Commissioner issued the following: "Further action in this case is suspended until the further order of the Commissioner."

The relator further states, that he has applied to the Commissioner to issue the patent, who, "after having fully considered the application, denied the request," &c. It is contended by the relator that the Commissioner is bound to issue the patent, because the Board of chief examiners has pronounced that it should be done; that his duty is a mere ministerial one, and he, having declined to perform that duty, this court must order him to sign the patent; that he is without remedy except this order.

Section 4911 provides that if any applicant for a patent is dissatisfied with the decision of the Commissioner he may appeal to this court.

Section 4914 provides for the hearing the appeal and determining the same. No appeal having been taken in this matter, it is not necessary to decide whether it is a proper case for an appeal; for, apart from that consideration, the question is presented whether a mandamus can be issued. On an appeal we are instructed by the statute what to try.

The relator asks this court to order the Commissioner to issue a patent before placing before us in a regular judicial mode the evidence that one ought to issue. He contends that because the chief examiners have determined that a patent ought to issue, therefore the Commissioner must perform the clerical ministerial act of doing so.

Section 481 is in the following language:

> The Commissioner of Patents, under the direction of the Secretary of the Interior, shall superintend or perform all duties respecting the granting and issuing of patents directed by law; and he shall have charge of all books, records, papers, models, machines, and other things belonging to the Patent Office.

The law is explicit and mandatory that if certain things exist a patent for certain objects shall be granted. The law is alike explicit who is to determine if these facts exist. The law designates the judge who is to superintend, and he may even perform all the work. Certain officers have been assigned—paid out of the Treasury — to whom he can intrust examinations. Even all this the Commissioner does under the direction of the Secretary of the Interior.

In the very inception of a matter for a patent the Commissioner controls the application, by express enactment, and he is the officer to cause an examination to be made, and could even do it himself. Section 4893—

> The Commissioner of Patents, subject to the approval of the Secretary of the Interior, may, from time to time, establish regulations, not inconsistent with law, for the conduct of proceedings in the Patent Office.

Section 483, we are not appealed to to determine upon the facts and evidences in the application whether the relator is entitled to a patent for an invention or discovery of a new and useful improvement of harvesters, for we have not that case before us. The position of the relator is that as the Board of Examiners-in Chief has decided that he is entitled to a patent, therefore this court must order the Commissioner to issue the patent. If the whole case was before us, we might find that the Primary Examiner and the Commissioner were right and the board wrong, or *vice versa*. The final judgment is the action of the Commissioner. That is not appealed from, nor are its merits presented to us. We are asked to decide that he is not entitled to any judgment, but that his duties are merely clerical and ministerial. This would be an unfair interpretation of the powers, attitude, and design of a very important officer of a highly important office of a prominent department for the orderly regulation of the interests of the country. As an appellate tribunal, we certainly have jurisdiction over the judgments of the Commissioner; but we must have his judgments before us, and the party seeking to reverse must appeal to us in the proper manner.

Section 4915 may apply to cases of applicants residing in any of the States whose claims have been rejected both by the Commissioner and this court; also to cases rejected by the Commissioner in interference applications.

When this case was heard at the last term of this court the members thereof were divided in opinion; a bare majority were of the opinion that we could not grant the writ. I thought that this was ground sufficient to raise a doubt. And under the rules of the organization of a tribunal for the proper adjustment of controversies, this fact being made to appear, we had the right and organic power to call upon counsel, learned and experienced in the law, to come before us the second time and present arguments why the judgment should be reconsidered. We have reconsidered our former determination.

Counsel have been heard at length a second time after full opportunity for preparation.

This case presented facts, somewhat novel of the first impression, for the application of well-known principles.

The majority of the court is of the opinion that this is not a case proper for a mandamus to issue, and so far as I am concerned I am much better satisfied of the correctness of this conclusion than on former hearings. Each case must depend upon the facts thereof, and we cannot undertake to require other departments to do that which in their judgment they ought not to do, unless we are in the full possession of all the facts and merits of any application. An appeal ordinarily brings before a court the entire merits of a cause, and action may be had understandingly.

Mandamus refused.

Ch. J. CARTTER and MAC ARTHUR, J., dissenting.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date July 13, 1875.]

8,467 to 8,480, inclusive.—Carpets.—JOHN T. WEBSTER, Philadelphia, Pa., assignor to JOHN and JAMES DOBSON, same place. Applications filed July 1, 1875. Term of patents 3½ years each.

8,481.—Lamp-Pedestals.—NATHANIEL L. BRADLEY, West Meriden, Conn., assignor to THE BRADLEY & HUBBARD MANUFACTURING COMPANY, same place. Application filed July 6, 1875. Term of patent 14 years.

8,482.—Paper-Weight.—HOMER LEE, New York, N. Y. Application filed June 26, 1875. Term of patent 7 years.

8,483.—Heating-Stove.—ROBERT SCORER and ROBERT HAM, Troy, N. Y., assignors to SCORER, HAM & WILKINSON, same place. Application filed June 4, 1875. Term of patent 3½ years.

8,484.—Stove-Cover Lifter.—HENRY C. BROWN, New York, N. Y. Application filed November 5, 1874. Term of patent 3½ years.

8,485.—Printing-Type.—ANDREW LITTLE, New York, N. Y. Application filed June 29, 1875. Term of patent 7 years.

8,486.—Rubber Eraser.—CHRISTOPHER ROBERTS, Newark, N. J. Application filed June 11, 1875. Term of patent 14 years.

8,487.—Neck of Broom-Heads.—CHRISTOPHER VAN SLYCK and HENRY S. DE FOREST, Schenectady, N. Y. Application filed June 26, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Certificate bearing date July 13, 1875.]

2,733.—Saws.—E. C. ATKINS & Co., Indianapolis, Ind. Application filed July 2, 1875.
"words 'SILVER STEEL, SHEFFIELD.'"

2,734.—Canned Plum Pudding.—ATMORE & SON, Philadelphia, Pa. Application filed June 12, 1875.
"the representation of the head of a lion."

2,735.—Roasted and Ground Coffee and Ground Spices.—COYLE, LAUGHLIN & Co., Philadelphia, Pa. Application filed June 28, 1875.
"the Brazilian flag, with a streamer attached to the same staff and floating below it."

2,736.—Wine.—L. FOX & KOHN, New York, N. Y. Application filed June 21, 1875.
"the letters L. F. & K. above the figure of a fox represented as looking above at some bunches of grapes."

2,737.—Roach and Insect Powders.—HUGH I. HART, Washington, D. C. Application filed June 30, 1875.
"words 'Hart's Roach Powder,' and the pictorial representation of a roach."

2,738.—Platform-Scales.—JONES & LYMAN, Cleveland, Ohio. Application filed May 8, 1875.
"two parallel scale-beams, in connection with a dial-indicator and the words 'Cleveland Scale Works.'"

2,739.—Knitted Goods.—LEWIS, BROWN & Co., Boston, Mass. Application filed June 29, 1875.
"three bent mailed legs radiating from a central rosette."

2,740.—Rupture Cure.—HENRY T. MITCHELL, Brooklyn, N. Y. Application filed July 1, 1875.
"the representation of an ancient knee-buckle, in connection with the words 'Mitchell's Goldeu Rupture Cure,' with the words trade-mark inside of buckle."

2,741.—Medicine.—CARRIE L. REX, Newark, N. J. Application filed June 24, 1875.
"monogram 'Rex' and the words 'Malarial Specific.'"

2,742.—Soap.—ROBINSON BROS. & Co., Boston, Mass.—Case B. Application filed July 6, 1875.
"compound word 'RICE-FLOUR.'"

2,743.—Lye and Potash.—I. N. STERN, Keokuk, Iowa. Application filed May 15, 1875.
"figure Vishnu, a goddess of ancient mythology, represented as a preserver, said figure being inclosed in a circle."

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date July 13, 1875.]

268.—Title: **"Carter's Aromatic Scotch Bitters."**—L. F. CARTER, Georgetown, Mass. Application filed July 6, 1875.

269.—Title: **"Fisk, Clark & Flagg, City Made."**—FISK, CLARK & FLAGG, New York, N. Y. Application filed June 3, 1875.

270.—Title: **"Dr. C. C. Frost's Indian Vegetable Cough and Humor Cure."**—C. C. FROST & Co., Manchester, N. H. Application filed June 14, 1875.

271.—Title: **"Holyoke Sarsaparilla Cream."**—CARL D. S. FAUH, Philadelphia, Pa. Application filed June 29, 1875.

272.—Title: **"Gill's Bilious and Liver Pills."**—EBENEZER GILL, Great Bend, Pa. Application filed July 1, 1875.

273.—Title: **"The Leader Shirt."**—WILLIAM HARRISON, Lawrence, Mass. Application filed February 11, 1875.

274.—Title: **"Dublin Laundry Blue."**—SAMUEL LOAG, Philadelphia, Pa. Application filed June 16, 1875.

275.—Title: **"Morgan's Polish Reviver."**—A. MORGAN, Cambridge, Mass. Application filed May 31, 1875.

276.—Title: **"The Adjustable Shirt Front with Fitting Neckband for Shirt."**—MORRIS POPPER, New York, N. Y. Application filed July 3, 1875.

277.—Title: **"Waite's Patent White Felt Wicking."**—JAMES M. STEWART, Franklin, Mass. Application filed July 8, 1875.

278.—Title: **"Dr. Scott's Compound Sugar Coated May-Apple Pills."**—JANE SCOTT, New York, N. Y. Application filed February 23, 1875.

279.—Title: **"Chinese Catarrh Remedy."**—ADELINE W. WILDES, Boston, Mass. Application filed June 26, 1875.

280.—Title: **"The Celebrated Cooke's Favorite Tomato."**—JONES YERKES, Morristown, N. J. Application filed June 2, 1875.

APPLICATION FOR EXTENSION.

UNITED STATES PATENT OFFICE,
Washington, D. C., May 19, 1875.

On the petition of ANN JENNETTE HATHAWAY, of Milwaukee, Wis., executrix of JOSHUA HATHAWAY, deceased, authorized by act of Congress approved February 18, 1875, praying for the extension of a patent granted to the said JOSHUA HATHAWAY, on the 3d day of April, 1860, for an Improvement in Devices for Converting Reciprocating into Rotary Motion,

It is ordered that the testimony in the case be closed on the 20th day of July next; that the time for filing arguments and the Examiner's report be limited to the 30th day of July next; and that said petition be heard on the 4th day of August next.

Any person may oppose this extension.

J. M. THACHER, *Commissioner.*

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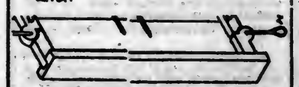
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TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED JULY 13, 1875.

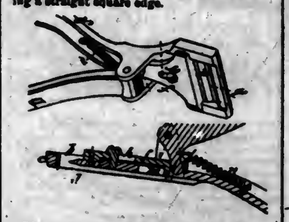
165,401. NEWSPAPER-FILES. Franklin B. Alderson, San Jose, Cal. [Filed Jan. 23, 1875.]



The rule-jointed stop *c* and arms *a*, in combination with the bars *A B* of a temporary binder, said bars being recessed to receive said stops or standards, as described.

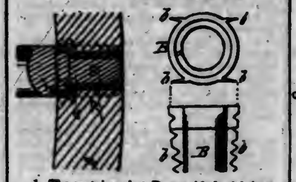
165,402. WICK-TRIMMER. D. T. Bates, Hollister, Mass. [Filed Jan. 2, 1875.]

Brief.—A stationary handle, having a knife-bed at the front of an opening therein, is provided with a sliding knife or cutter, which moves at right angles to the line of movement of the handle, and is operated by a suitable lever and spring; the construction permitting a flat lamp-wick to be introduced between the knife and its bed, where it is trimmed, leaving a straight square edge.



The combination of the stock or handle A, with its opening *b*, the pivoted lever B, acting directly on the slide *f*, the cutter *d*, which moves in a line at right angles to the line of movement of the handles, and the spring *e*, all constructed and arranged to operate substantially in the manner and for the purpose set forth.

165,403. SPOKE-SOCKETS. John L. Blair, Reading, Pa. [Filed Dec. 16, 1874.]



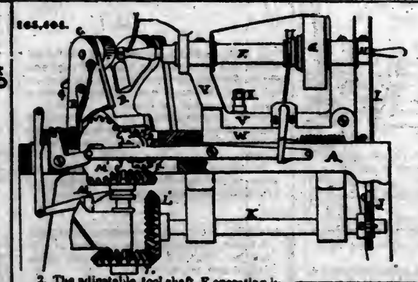
1. The metal socket B, provided with interior shoulder *a* and exterior toothed or corrugated ribs *b b*, substantially as and for the purposes set forth.

2. The combination, of the felly A, metal socket B, with ribs *b*, and the spoke C, with tenon D, all constructed substantially as and for the purposes set forth.

165,404. MACHINES FOR CHECKING GUN-STOCKS. Josiah A. Blake, Providence, R. I. [Filed June 9, 1875.]

Brief.—The machine is especially designed for checking that portion of the stock upon which the thumb of the right hand rests in firing. The stock is carried in a reversing swing, and acted upon by a rotating cutter.

1. The tera-plate B, having perpendicular posts C and C', supporting a swing, D, the whole arranged and operating substantially as described, for the purpose of holding and presenting the receiver to the action of the cutting-tool.

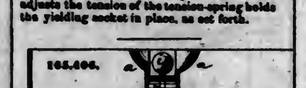


2. The adjustable tool-shaft F operating in combination with the tera-plate B and swing D, the whole constructed and arranged in the manner substantially as described.

3. The feeding mechanism, consisting of the crank H, reciprocating lever I, ratchet J, shaft K, miter-wheels M M' and L L', pinion N, or its equivalent, in combination with the rack O, and swing D, and shaft F, the whole constructed and operating in the manner substantially as described, for the purposes specified.

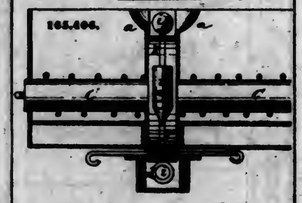
165,405. SHUTTLES FOR SEWING-MACHINES. Chas. E. Billings, Hartford, Conn. [Filed May 17, 1875.]

Brief.—A sewing-machine shuttle having an adjustable screw in its forward end, which, respectively, serves to regulate the tension of the sliding socket for bobbin and of the tension-spring.



The combination of the screw F, the socket D, and the tension-spring C, the several parts being constructed and relatively arranged as shown and described, whereby the screw which adjusts the tension of the tension-spring holds the yielding socket in place, as set forth.

165,406.



165,406. SAND-SCREWS. John Burke, Sycamore, Ill. [Filed Apr. 19, 1875.]

by Letters Patent, is as follows:

1. In a seed-planter, the partition-wings D, with the corners turned at a ew as to form an opening to give access to the seed-cups, substantially as specified.

2. The springing or elastic shell *i* of the seed-cup, substantially as and for the purpose described.

3. The combination of the springing shell *i*, having stops at its rear end, with the cover *h* and stop *j*, substantially as and for the purposes set forth.

4. In a seed-planter, the partition-wings D, with turbed corners to form an opening for the cups, in combination with the flanged feed-wheel F *h* and stops *i*, substantially as and for the purpose set forth.

165,407.

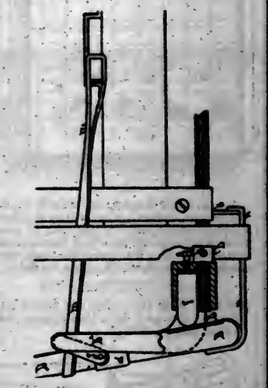


165,407. BALE-TIES. Paul R. Dawson, Brenham, Tex. [Filed Apr. 16, 1875.]

A cotton-bale tie, consisting of the loop A, provided at one end thereof with the elongated apertures B, and at the other end thereof with the transverse aperture C, the lug K on the inner side of the loop, and the lug D, one side of which is inclined or cut away to allow the end of the loop to freely pass, combined together, as and for the purposes described.

In testimony that I claim the foregoing, I have hereunto set my hand.

165,408. LOOM PICKING MECHANISMS. D. M. Collins, Lowell, Mass. [Filed May 1, 1875.]



1. The forked stand B, constructed as described, with divisions B' B'', in combination with the arms *g g* and picker-staff D, provided with the picker *b*, whereby the said picker is caused to travel in a line parallel with the shuttle-race, as described.

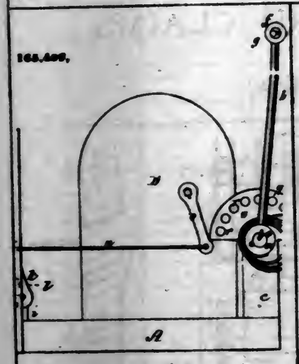
2. The forked stand B, constructed as described, with divisions B' B'', and a notch for the fulcrum *f*, in combination with the rocker-shaft A, picker-staff D, and arms *g g*, substantially as described.

3. The adjustable fulcrum *f* and its set-screw *e*, in combination with the forked stand B, picker-staff D, and arms *g g*, as described.

4. The clasp *d*, constructed as described, with opposite studs *c*, in combination with the picker-staff D, the arms *g g*, and the forked stand A, as described.

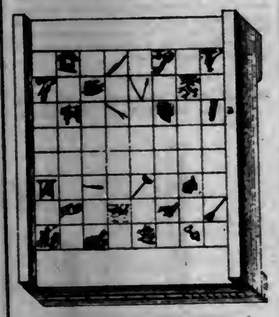
165,409. AUTOMATIC FIRE-LIGHTERS. M. Curran, Manhua, N. H. [Filed June 22, 1875.]

165,409.



The combination of the adjustable stop q, the arm D, with its match-holder f and spring d, the lever E, operated by clock-work, and the friction-plate E, substantially as and for the purpose set forth.

165,410. GAME-BOARDS. C. B. Edwards, Buffalo, N. Y. [Filed Feb. 20, 1875.]



A game-board divided into squares, the alternate squares being provided with enigmatical pictures suggestive of proverbs, in combination with checker-men, each having a picture corresponding with one on the board, substantially as and for the purposes set forth.

165,411. PEG-CUTTERS FOR BOOTS AND SHOES. George L. Ellis, New Albany, Ind. [Filed May 14, 1875.]

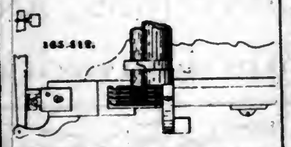


In an apparatus for cutting pegs from boots and shoes, the frame A, having a serrated under surface and an end guard, B, in combination with the adjustable corrugated cutter C, provided with the slot D and set-screw E, substantially as shown and described.

165,412. SEWING AND WELT-SPLITTING MACHINES. John W. Field, North Brookfield, Mass. [Filed Apr. 28, 1875.]

1. The combination, with the main and auxiliary feed-wheels, of the sectional presser-foot, substantially as described.

2. The removed sectional presser-foot combined with the auxiliary feed-wheels, and arranged with relation to each other substantially as described.

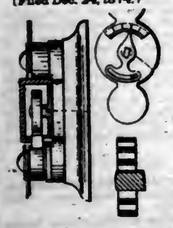


3. The combination, with the sectional presser-foot and auxiliary feed-wheels, of a series of levers, adapted to bear upon the sections of the foot with like or with varying degrees of force, substantially as described.

4. The combination of the removable knife-bearing table with the main and auxiliary feed-wheels and presser-foot, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

165,413. ELECTRIC THERMOSTATS. Edwd. J. Frost, Philadelphia, Pa., assignor of one-half his right to J. Hoehnlen, same place. [Filed Dec. 24, 1874.]



1. The thermostat consisting of a compound strip formed into a flat spiral, a central adjusting-screw, and the casing or covering, substantially as set forth.

2. The combination, with the spiral compound strip and central adjusting-screw, of the index plate and index concealed in a hollow in the base of the thermostat, substantially as set forth.

165,414. HEATING-STOVES. Henry C. Giles, Troy, N. Y. [Filed Apr. 7, 1873.]

Brief.—The draft passes over the magazine and under the oven. The magazine is fed through the oven. Hot air is carried in pipes to the oven from heating-flues surrounding the base of the magazine.



165,414.

1. The oven A, flue or flues B, and aperture E, in combination with a feeding-magazine, M.

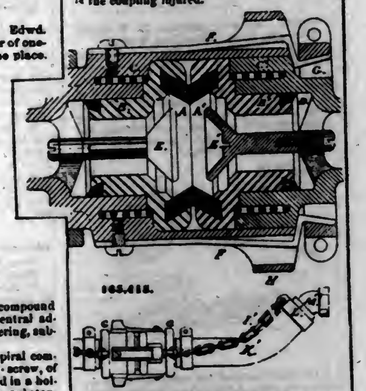
2. The oven space C, aperture E, and flue G, in combination with a feeding-magazine, M.

3. The oven-space C, flue or flues B, aperture E, and exit-flue F, in combination with a feeding-magazine, M.

4. The top K, flue or flues B, and lid L, in combination with a feeding-magazine, M.

165,415. HOSE-COUPLINGS. Wm. M. Henderson, Philadelphia, Pa. [Filed June 5, 1875.]

Brief.—The cone-shaped elastic rings form the facial joints, and fit into grooves turned in the faces of the movable seats, which fit the cylindrical shells. The shells have packing-rings at their extreme ends, to prevent leakage, as shown. The coupling has suitable clutch-springs and clamp-rings, so that when separated by accident no leakage occurs, nor is the coupling injured.



165,415.

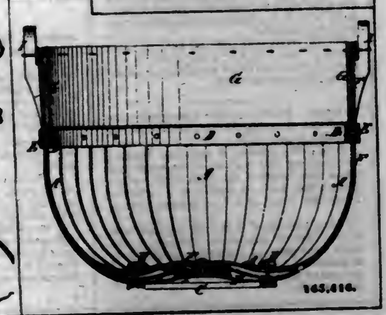
1. The fixed plugs or stoppers E E', in combination with the shells C C' and movable seats B B', whereby the vent or passage through the coupling is made at or near the mouth of each half of the coupling by the direct agency of contact of the facial joint, all as herein set forth, for the purpose specified.

2. In a hose coupling, as described, the internally-beveled slotted clamp-rings G G' and flared clutch-springs F F', combined and acting with and upon each other, as and for the purposes specified.

3. The internally-beveled slotted clamp-rings G G' and flared clutch-springs F F', combined with the coupling C, flexible hose K K', forked check-chains I I', and hose-clamps L L', all connected and acting with and upon each other, as and for the purposes herein set forth.

4. In a hose coupling, as described, the combination of the springs F with the horn-plates N, with or without the guards H, substantially in the manner and for the purpose specified.

165,416.



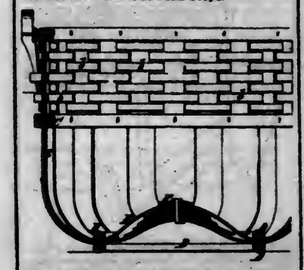
165,416.

165,416. STAVE BASKETS. Horace C. Jones, Dowagiac, Mich. [Filed Feb. 26, 1875.]

The stave basket, having long outside staves F, short interior staves A, extending from the bottom of the basket to the inner and outer hoops D E, which embrace the center of the basket, and secured between said hoops by rivets, and the broad interior skirting-board O, extending from the top of the basket to about the top of the outer hoop, fastened at its upper edge to the basket, but left free at its lower edge, whereby the shrinkage or warping of the skirting-board will not affect the staves of the basket, substantially as set forth.

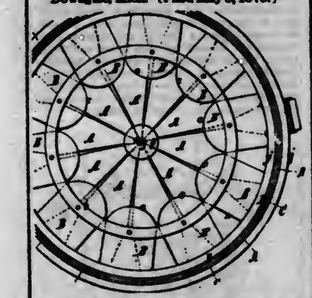
165,417. GRAIN-BASKETS. Horace C. Jones, Dowagiac, Mich. [Filed Apr. 8, 1875.]

Brief.—The inner and outer staves are both reduced to splints above the middle hoops, and are interwoven with horizontal splints between the middle and rim hoops.



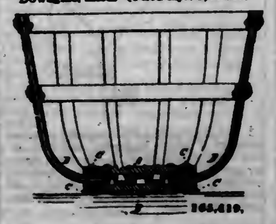
A stave-basket, as herein set forth, made up of horizontal splints and inner and outer staves, the upper ends of both the inner and outer staves being reduced to splints between the middle and the rim hoops, all combined substantially as and for the purpose described.

165,418. STAVE BASKETS. Horace C. Jones, Dowagiac, Mich. [Filed May 8, 1875.]



A basket formed of short intermediate tapered staves A, inner staves B, and outer staves C, arranged and united together substantially as described.

165,419. STAVE BASKETS. Horace C. Jones, Dowagiac, Mich. [Filed Apr. 8, 1875.]

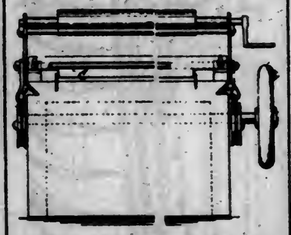


165,419.

A stave-basket, consisting of the staves D, passing between hoops C C, one on the inner, the other on the outer side, and disks A B, surrounded by said hoops, both hoops and disks being bolted together by rivets passing through the staves, and being also united by nails driven laterally into each disk through its surrounding hoop, substantially as described.

165,420. MANUFACTURE OF IMITATION FABRICS. Charles H. Knelles, New York, N. Y., assignor to New York Manufacturing Leather Company, same place. [Filed Dec. 4, 1874.]

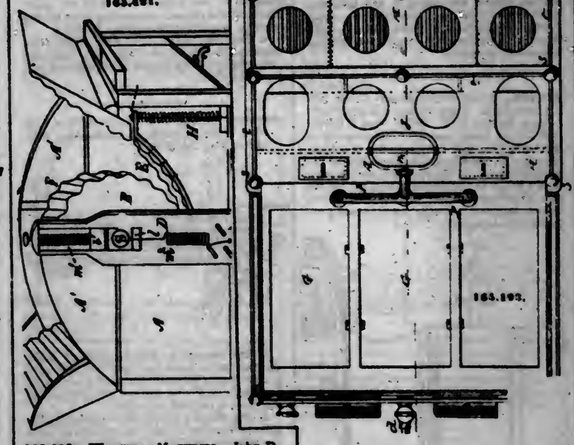
Brief.—Spreads composition on molding-table, then draws cloth screen table, enwinding it from a roll, and pressing it into the compound by a blade.



1. The process of producing a fabric from a mold in the manner described, so that the compound and the backing shall be applied to the face of the mold at the same time, substantially as set forth.

2. The combination of a blade suspended in a frame above a table a distance of the thickness of a mold and the compound and backing composing the fabric, in combination with a roller for carrying the backing, and with the said table each frame being capable of motion across the table, substantially as described.

165,421. WASHING-MACHINES. John D. Lawlor, Montreal, Canada. [Filed June 2, 1875.]



In a washing-machine, constructed as herein before described, the combination of the rectangular box A, adjustable sides A', inclined wash-boards C' and C², concave wash-board E, cylinder B, spring-rod m², having a regulating-spring, m³, and spring-rod H, the several parts being constructed, combined, and arranged to operate substantially in the manner and for the purpose set forth.

165,422. BUCKLES. William Lesser, Cincinnati, Ohio. [Filed July 29, 1874.]



A buckle, the frame of which consists of one piece of metal, slotted at the front, and provided with tongues, and having at the rear an elliptical opening, beneath which the cam-lever H is journaled in depending ears, substantially as shown and specified.

165,423. SIEVE GALLEYS. James A. Lusby and John V. Smith, Washington, D. C., assignors of one-half their right to Walton Brothers, New York city. [Filed June 10, 1875.]

Brief.—The products of combustion can be sent from either fire place to both sides or to either side of the elevated oven.

1. The fire-boxes B B' and warming-oven I, in combination with the partition e, oven H, perforated partition f, dampers h h', oven H, and partition m, extending into the stove-pipe collar J, all as and for the purpose set forth.

2. The flues E and E', in combination with the flues P and P', damper i, partition f, boilers G, and oven H, all constructed and operating as and for the purpose specified.

3. The combination, in a ship's galley, of the front and rear fire-boxes B B', ovens I H, partitions e, f, and m, flues P P' and E E', and the dampers h i, all arranged substantially as and for the purposes herein set forth.

4. The railing S on the galley, provided with hinged end pieces t, substantially as and for the purposes herein set forth.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

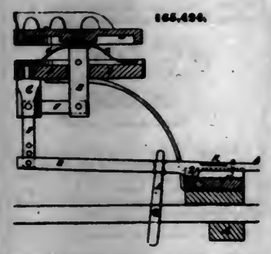
165,424. SAFETY-SEATS FOR HARVESTERS. William R. Mattison, New Brunswick, N. J., assignor to William R. Mattison and Edwin Gulick, same place. [Filed Oct. 24, 1874.]

Brief.—In addition to the weight of the driver in his seat, the clutch is held engaged by a foot-lock, which is released when the driver leaves the machine.

165,421.

165,424.

165,426.



The bar H, formed with the shoulder h', and carrying the foot-rest K, in combination with the elbow-lever F, the bar E, the seat D, the spring C, the plunger B, and the lever I, substantially as herein shown and described.

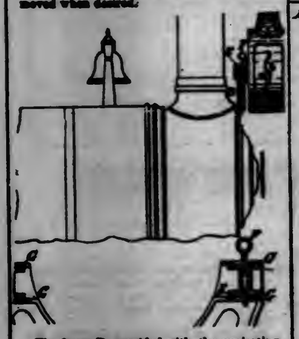
165,427. METAL-TURNING LATHE. Henry M. Quackenbush, Herkimer, N. Y. [Filed May 20, 1875.]



The construction of parts, substantially as herein shown—that is, constructing the main bearing of a bab or sleeve, c, mounted adjustably upon the arbor D, or secured to or making part of the pulley E, and both susceptible of end-wise adjustment upon the arbor D, whereby the tapering plug d of the nut is fitted to its seat, and advantages are obtained essentially as stated.

165,428. LOCOMOTIVE HEAD-LIGHT ATTACHMENT. Thos. S. Ray and Charles T. Hess, Buffalo, N. Y. [Filed June 7, 1875.]

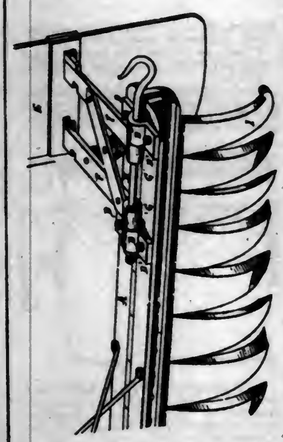
Brief.—A frame connected permanently to the locomotive and two projecting pieces on the lamp, so arranged that either side of the attachment may be disconnected, and thereby form a hinge on the opposite side, so that the face of the lamp may be turned to either side of the road, and the lamp itself be easily removed when desired.



The frame E, provided with the projecting pieces G, in combination with the parts E, removable pins F, and lamp D, substantially as and for the purposes specified.

165,429. ICE-PLOWS. Rodman W. Sanborn, Rochester, N. Y. [Filed Dec. 3, 1874.]

Brief.—An adjustable and detachable gage may be turned to either side of the plow-beam. Diagonally-faced teeth plow the outside of the groove in the ice, while a diamond-pointed tooth plows the center of the ice-groove.



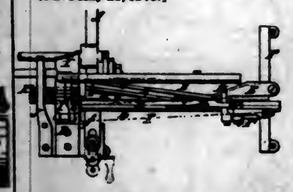
1. The combination, with an ice-plow, of a gage or guide plate, hinged or pivoted to the plow-beam, and capable of being turned on its axis, for bringing it to either side of the plow, substantially as described, for the purpose specified.

2. The combination of the pivoted support-ing-arms F and horizontally-adjustable gage-board E, as and for the purpose specified.

3. The combination, in an ice-plow, of the thimble D and draft-rod H, with the gage-board E and pivoted supporting-arms having eyes G, as and for the purpose specified.

4. The combination, in an ice-plow, of a diamond-pointed tooth or teeth, with right and left cutting chisels or teeth, as and for the purpose described.

165,430. LOOMS FOR WEAVING PILE FABRICS. Stephen Sanford, Amsterdam, N. Y. [Filed May 20, 1875.]



1. The stationary wire-supporting table, elevated at its outer end, and provided with a wire motion, in combination with a shuttle-box made rigid with the lay, substantially as and for the purpose described.

2. The yielding wire-table, for relieving the shuttle-box when the shuttle is caught between the table and the box, substantially as and for the purpose described.

3. The adjusting cam or lever f, in combination with the yielding wire-supporting table, substantially as and for the purpose described.

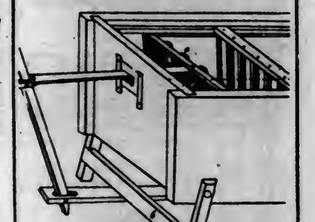
4. The combination of a wire-severing latch and an inserting-pusher, and a stationary wire-supporting table, having a groove in line with the point of withdrawal, and a groove leading to the point of insertion, and a spring-switch so arranged as to bear upon the wire head, and place the wire in position for insertion in the shed, as and for the purpose described.

5. The combination of the wire guide or guides I and J with a stationary wire-supporting table, which is elevated at its outer end, and is provided with a wire motion, and constructed to permit a shuttle-box, which is rigid with the lay to be used, substantially as and for the purpose described.

6. The spring-guards m and n, in combination with the stationary grooved wire-supporting table, substantially as and for the purpose described.

165,431. WASHING-MACHINES. Ernest H. F. Schneider, Lawrence, Kans. [Filed Jan. 14, 1876.]

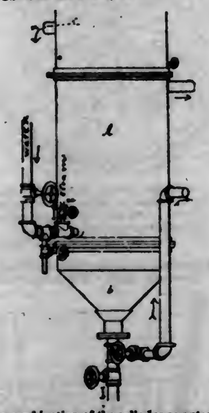
Brief.—Within a wash-box, having a central slatted partition and beveled cleats at each end, is a reciprocating box with a slatted bottom and ribbed ends.



In combination with the reciprocating box B, having open slat bottom e, and at its ends vertical bars c and elongated opening g g of the tub A, provided with the stationary partition composed of vertical bars b, and having at its ends bevel-cleats f f, substantially as described.

165,432. LIQUID-COOLERS. Benj. F. Shaw, Cambridge, Mass., assignor to himself, E. Kendall, and Geo. B. Roberts, same place. [Filed Apr. 14, 1875.]

Brief.—The cooling-tubes have removable cores suspended from cross-bars, which enter eyes or open rims at their upper ends. Liquid to be cooled passes through the strainer and the annular passage between tubes and their cores. Has an overflow just below the strainer. May be delivered, overflow or original flow, to strainer by pump, and an automatic float may regulate quantity to be delivered. Annulenses, when clogged, are cleared by steam.



1. The combination of the cylinder or outer vessel of a cooling apparatus and strainer, with tubes, and cores within the tubes, forming annular passages of small capacity to operate in connection with the liquid to be cooled, and with the cooling medium, substantially as described.

2. The combination of the strainer, the cylinder or outer vessel A, vertical cylindrical tubes and removable cores, with a liquid-receiving chamber or portion, c, and a chamber, b, for the reception of the cooled liquid, substantially as described.

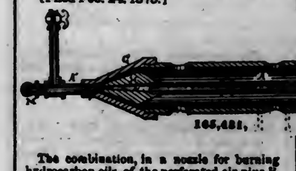
3. The combination of the strainer, and cylinder or outer vessel A, and tubes and cores for conducting the melted liquid, with a pipe and adjustable inlet or valve to regulate the flow of the cooling liquid, and an adjustable outlet or valve, and pipe to regulate the flow of the liquid to be cooled, substantially as described.

4. The combination of a cylinder containing the cooling medium, and internal tubes for the passage of the liquid to be cooled, with a chamber for the reception of the liquid to be cooled, and provided with an outlet for the overflow of the liquid to be cooled, substantially as described.

5. The combination, with the strainer and the cylinder to contain the cooling medium, of internal tubes for the passage of the melted liquid to be cooled, pipe and valve to control the flow of the cooling medium, and a pipe and valve to control the admission of steam into the cylinder, substantially as and for the purpose described.

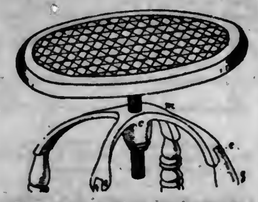
In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

165,433. NOZZLES FOR HYDROCARBON-FURNACES. Henry Stacey, Indianapolis, Ind. [Filed Feb. 24, 1875.]



The combination, in a nozzle for burning hydrocarbon-oils, of the perforated air-pipe E, steam-pipe A, conical nozzles H and G, whereby the quantity of air is controlled, with the oil-supply pipe N, in front of the combined air and steam-pipes, by which means the oil is introduced into the furnace in the form of spray, substantially as specified.

165,434. STOOLS. George C. Winchester, Ashburnham, Mass. [Filed Jan. 2, 1875.]



The arched supporting-cross m, having dovetailed sockets s, combined with the legs p, having dovetailed upper ends f, all as and for the purpose set forth.

165,435. FEEDING APPARATUS FOR STEAM-BOILERS. Nicolas Yagn, Syzran, Russia. [Filed Aug. 11, 1874.]

Brief.—Steam from the boiler forces water out of the lower reservoir into said boiler. When the water in the pipe which communicates with the upper part of both reservoirs falls below the lower bend therein, steam ascends. Said steam and the water in the pipe are divided into small columns by the partitions in said pipe. The water in the upper is then forced into the lower reservoir, where a vacuum is produced, which holds the valve in the pipe leading to the boiler to its seat. The upper reservoir then refills, and the operation is continued automatically.

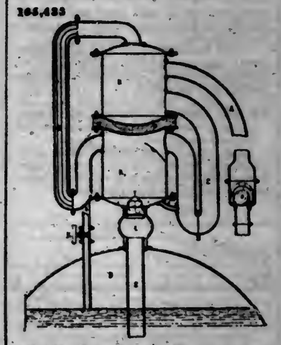
1. A self-acting feeding apparatus having two reservoirs, E E', placed one above the other, and communicating with each by means of pipes B C, with the boiler by pipes f E, and with a well or cistern by means of a pipe, A, substantially as herein described.

2. The combination, with the chambers E E', of the pipe B, provided with partitions c c, as and for the purpose described.

3. The combination, with a pair of reservoirs, R R', supported one above the other, with an intervening cushion, O, as described, of the pipes A B C d E f, when constructed and operating substantially as described.

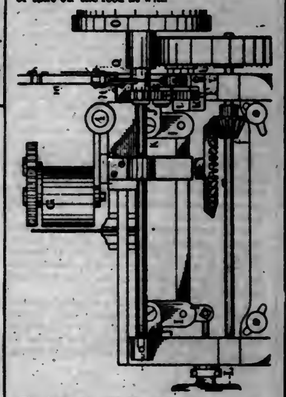
4. In feed-water apparatus for steam-boilers a feed or supply pipe or conduit, B, provided with radial partitions c c, substantially as and for the purpose described.

165,436.



165,436. RESAWING-MACHINES. E. Benjaman, Chicago, Ill. [Filed Dec. 19, 1874.]

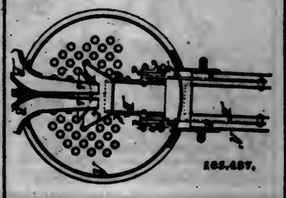
Brief.—The lumber for resawing can be run back rapidly from the saw, when desired, by means of a friction back-gear, in connection with an intermittent gear and suitable feed-gear. A lever attachment is used to reverse or take off the feed at will.



The lever m, with its weighted arm l, in combination with the friction-rollers a b, wheel c, pulley O, slotted plate R, and gear T g W f, as and for the purpose set forth.

165,437. EXHAUST MECHANISMS. George Bonker, Port Jervis, N. Y. [Filed June 12, 1875.]

Brief.—An adjustable pipe is arranged within the petticoat-pipe of a locomotive, and is constructed to be raised or lowered to produce the desired draft.



165,437.

165,438. CALENDAR-CLOCKS. W. A. Terry, Bristol, Conn. [Filed May 14, 1875.]

Brief.—A perpetual calendar in which the varying changes of the months and years are regulated by the contact of a compound lever with certain stop devices.



1. A pawl or lever, which operates the month-wheel, arranged to move a distance varying to correspond with the length of the months, in combination with a pin or other particular point of engagement with or upon the month-wheel, substantially as set forth.

2. The wheel A, provided with the pin for regulating the number of days in the month, in combination with the wheel B, cam C, lever E (and F and d, all operating together substantially as described.

3. The spring-pin g, in combination with the wheels A E, and lantern b of the frame D, all operating together substantially as described.

4. The combination of the wheels A B, cam C, lever E F, wheel G, and points 2, all operating together substantially as described.

5. The wheels G H, revolving together with a differential motion, in combination with the adjustable leap-year point, substantially as and for the purpose described.

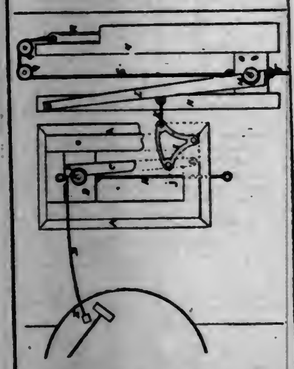
1. The tapering-formed shell B', arranged as shown, relatively to the blast-nozzles *b* and movable pipe D, and receiving the lower edge of the latter on its swelled surface, and compelling it to rest concentrically thereon, for the purposes specified.

2. The movable sections D' D², and means for elevating and depressing them, in combination with the petticoat-pipe C, blast-nozzles *b*, and a stop-disk or shell, all arranged to operate relatively to each other and to the inclosing-chimney A, as and for the purposes herein specified.

3. The flaring mouth C' and the petticoat-pipe C, arranged, as shown, relatively to the lower section D² and to the nozzles *b* and stop-surface B', as specified.

165,439. GONG ATTACHMENTS FOR ENGINE-HOUSES. Robt. Bragg, San Francisco, Cal. [Filed June 16, 1873.]

Brief.—When alarm of fire is struck on engine-house bell, first blow releases a trigger, letting fall a weight, which withdraws halter-bolts, releasing the engine-horses.



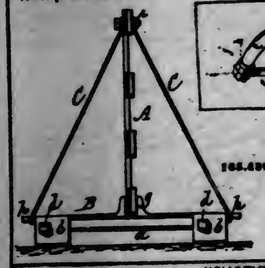
1. The rod, with its knob E and the oscillating lever C, for the purpose of releasing a suspended weight by the direct action of a gong-hammer, substantially as and for the purpose herein described.

2. In combination with the rod D and the recessed oscillating lever C, pivoted as described, the weight B and its roller G, for the purpose of relieving friction and removing the rod D from the action of the gong-hammer, substantially as herein described.

3. In combination with the weight B, caused to fall, as shown, the bell-crank lever I, cord K, and lever L, for releasing the slide O and weight R, and thus releasing the horses by means of the cord T, substantially as herein described.

165,440. PORTABLE FENCES. M. Burliess, Seneca Falls, N. Y. [Filed May 24, 1875.]

Brief.—Two triangular hollow iron bases, provided with sockets, through which iron pins are driven to hold them firmly to the ground, are connected by an iron beam, on the upper side of which is a socket to support the lower part of the fence.

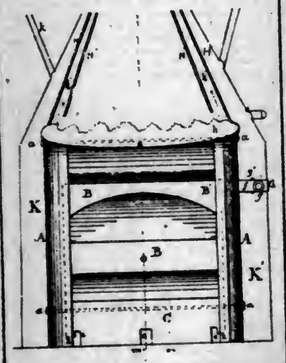


165,439.

The cast-iron base B, consisting of the bar *a*, and hollow angular feet *b b*, constructed with the sockets *c c* for receiving the angular stakes *d d*, and with the socket *g* for holding the panels of fence, as herein shown and described.

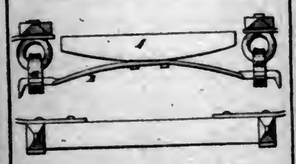
165,440. FIRE-PLACES. Michl. Fitzpatrick, St. Louis, Mo., assignor to Wm. Cassidy, same place. [Filed Dec. 22, 1874.]

Brief.—By means of the double smoke-flue the hotter central current of smoke is separated from the external current, and can be carried higher before imparting its heat.



The double smoke-flue in the sheet-iron hood, in combination with a fire-place or grate, substantially as and for the purpose described.

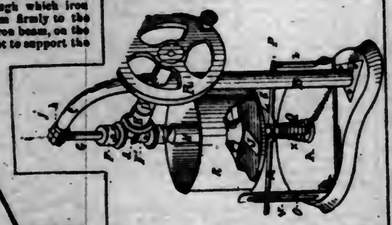
165,441. VEHICLE-SPRINGS. S. E. Foster, Minneapolis, Minn. [Filed May 21, 1875.]



In combination with the rubber spring *c*, the semi-elliptical spring-hooks B, substantially as and for the purpose set forth.

165,442. MEAT-CUTTERS. H. P. Goddard, Orange, Mass. [Filed June 2, 1875.]

Brief.—The meat to be chopped is put in a receptacle which is vertically adjustable. In this receptacle are two rotating knives—one moving to the right, the other to the left—which chop the meat.



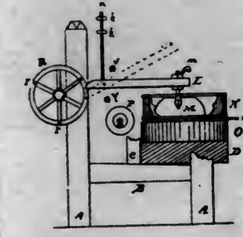
1. In a chopping mechanism, substantially such as described, the shaft G, provided with the knife J and gear F, and the sleeve H, provided with the gear F', and knife I, in combination with the tub K, gear E, standard B, and step Q, constructed and arranged to operate substantially as and for the purpose set forth.

2. In a chopping mechanism, substantially such as described, the tub K, arranged to slide vertically in relation to the knives I J, substantially as set forth and specified.

3. In a chopping mechanism, substantially such as described, the lever M, spring *x*, and serrated standard N, combined and arranged to operate substantially as and for the purpose set forth and specified.

165,443. MEAT-CUTTERS. A. B. Good, Conestoga, Pa. [Filed June 24, 1875.]

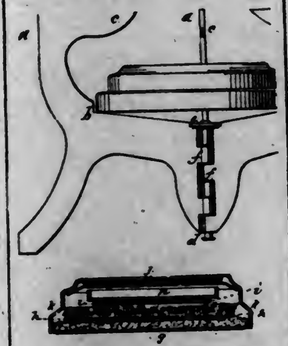
Brief.—The levers carrying the knives strike against a bar situated under the rear ends of the levers, and the descent of the knives is accelerated by the reaction of the bar.



The combination of the knife-carrying levers I, and the arresting-bar Y, arranged and operated substantially as and for the purpose specified.

165,444. NURSERY-LAMPS. Clark I. Gorham and E. J. Cubley, Chicago, Ill.; said Cubley assignor to said Gorham. [Filed June 4, 1875.]

Brief.—The leaves are held in relative position by means of the slits in the pintle-head.



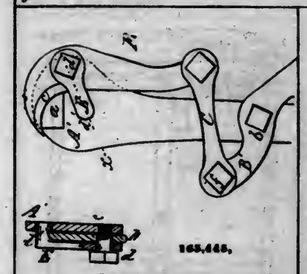
1. The pintle *d*, having a head, *e*, provided with slits *c*, in combination with the leaves *a*, substantially as and for the purposes specified.

2. In combination with a nursery-lamp, the plate *h*, located between the cotton and asbestos, and the disk *i* above the layer of asbestos, all substantially as and for the purpose set forth.

165,445. BOLT-TRIMMERS. Alex. Graham, Mumford, N. Y. [Filed Apr. 21, 1874.]

Brief.—The yoke E is constructed with a tenon passing loosely through the main bar, and is adjusted by a clamp-screw passing through the holding and cutting levers.

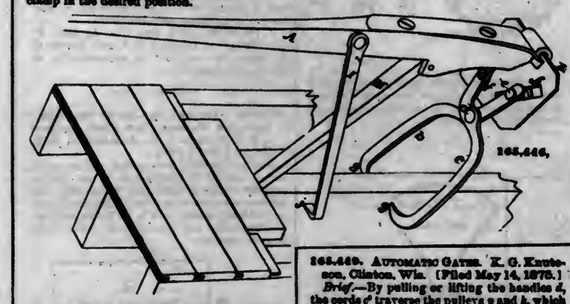
The combination of the lever A, provided with the recess *a* for holding the nut, with the cutting-blade D and adjustable yoke E, constructed and arranged to operate as set forth.



165,445.

165,446. FLOOR-CLAMPS. Elijah Hickman, Red Bluff, Cal. [Filed Apr. 15, 1875.]

Brief.—The clamp consists of a handle or lever, to one end of which is secured a hinged plate provided with two inclined slots, and to which are attached, by rivets working in said slots, two pivoted gripping-jaws, which clamp the sides of the joist, a pivoted brace-bar for pressing the boards together, and a retaining-bar pivoted to the lever, and provided at its lower end with a hook, for holding the clamp in the desired position.



165,446.

The handle or lever A, having the loosely-attached plate E, provided with the converging slots *f*, in combination with the shear-like gripping-jaws *b c*, headed slides or rivets *e*, brace-bar H, and retaining-bar I, constructed to operate substantially as and for the purpose above described.

165,447. LIQUID-MEASURING APPARATUS. James M. Hopkins, Louisville, Ky. [Filed June 28, 1875.]



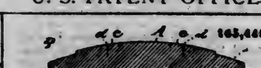
1. A cock that is provided with an opening to permit an inflow of liquid into the tank *a*, and an air-hole to permit the air to escape from the tank, and an air-hole to permit the air to escape from the gage-tube, substantially as shown.

2. In a measuring apparatus, a cock, provided with an air-hole for admitting air into the tank as the liquor is drawn off, and an air-hole for admitting air to the gage-tube, substantially as described.

165,448. MANUFACTURE OF BUTTONS. E. H. Libell, New Milford, Conn. [Filed Feb. 9, 1875.]



165,448.

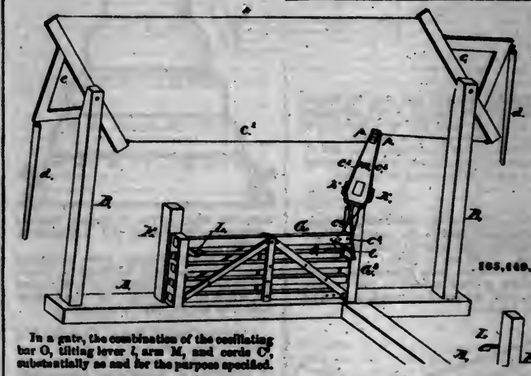


1. As a new article of manufacture, a button made of one piece, on the surface of which is produced variously-formed and variously-colored figures, the figures being separated from the surrounding surface by divisions extending into the substance of the material, substantially as described.

2. The process for making colored and figured buttons, as described, consisting in dyeing the solid uncolored buttons, subjecting them to a softening operation, if the button be of a rigid material, depressing certain portions of the surface of the button by the instrumentality of engraved dies or stamps, removing the color from that portion of the surface of the previously-dyed button to which it is desired to give a different color or shade, and again dyeing, so as to affect directly the surfaces from which the color has been removed by the previous operation, which second dyeing may or may not affect the previously-dyed portions, which still contain a contrasting color.

165,449. AUTOMATIC GATES. K. G. Knutesen, Clinton, Wis. [Filed May 14, 1875.]

Brief.—By pulling or lifting the handles *d*, the cords *c'* traverse the pulleys *p* and *h*, which first causes the latch-bar O to oscillate and become unlatched from the latch-posts; then, by continued pulling upon the cords, the gate is swung open in one way or shut.



165,449.

In a gate, the combination of the oscillating bar O, tilting lever *l*, arm M, and cords C', substantially as and for the purpose specified.

165,450. CAR-COUPLINGS. Edwd. Marsden Law, Bell Ewart, Canada, assignor of one-half his right to Holland Bo'ger, same place. [Filed Feb. 12, 1875.]



165,450.

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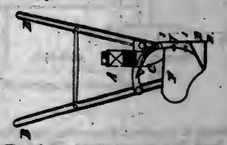
1. The angular compression-bar H, in combination with a hooked draw-bar, A, and the spring C, as set forth.

2. The angular compression-bar H, in combination with the buffer-bar F and spring G, substantially as set forth.

3. The cross-bar O, in combination with the sliding plate *p*, buffer-bar F, angular bar H, and spring G, substantially as set forth.

165,451. PLOWS. Wm. S. Lawrence, Kalamazoo, Mich., assignor of one-half his right to Lebeus C. Chapin, same place. [Filed Sept. 27, 1874.]

Brief.—A plate triangular in cross-section forms the colter of the plow, or front extension of both mold-board and land-side. A long upward extension curves over the furrow to clear the plow.



1. The plow-colter I, forming the forward extension of the mold-board and land-side, and having its top extended up and curved over the mold-board beyond the plow-standard, forming a clearer to carry the straw, &c., under the furrow, as specified.

2. The plow-standard C, extending up straight to form an attachment and support for the colter, and having an offset carrying the top of the standard back under the plow-beam, in combination with the plate K of the colter, as specified and shown.

165,452. GALVANIC BATTERIES. George L. Leclanche, Paris, France, assignor to H. L. Roosevelt. [Filed Dec. 16, 1874.]

Brief.—Incorporates the depolarizing substance with the negative element in the manner specified in claims, thus dispensing with the use of a porous cup.

1. A galvanic battery in which the use of a porous cup is dispensed with, and in which an insoluble or slightly soluble depolarizing substance, as above defined, rendered solid, (with or without cement, by pressure,) is combined with a conductor and negative pole, substantially as and for the purposes set forth.

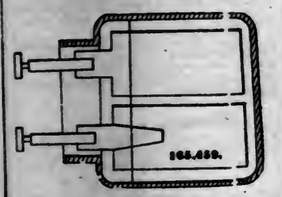
165,449.

2. A depolarizing body for connection with the negative pole of a galvanic battery, consisting, in whole or in part, of an insoluble or slightly soluble depolarizing substance, rendered solid, with or without cement, by pressure in a mold, substantially as and for the purposes set forth.

3. A galvanic battery in which the use of a porous cup or diaphragm, or its equivalent, is dispensed with, and in which the negative element consists of a mixture of an insoluble

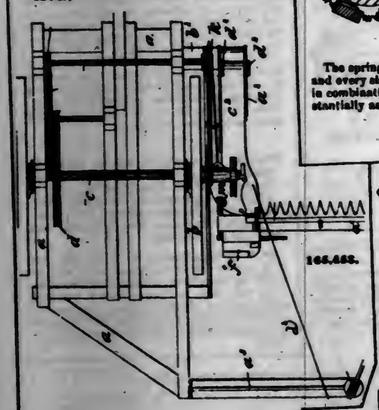
or slightly soluble depolarizing substance, as hereinbefore defined, and a conductor, with or without cement, rendered solid by pressure, substantially as and for the purposes set forth.

4. A negative element for a galvanic battery, consisting, in whole or in part, of a mixture of insoluble or slightly soluble depolarizing substance, as above defined, and a conductor, with or without cement, rendered solid by pressure in a mold, substantially as and for the purposes set forth.



165,453.

165,453. MOWING-MACHINES. David Lochhead, Hochelaga, Canada. [Filed Mar. 14, 1874.]



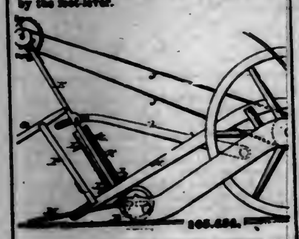
165,454.

1. The link-frame c^1, and chair c^2, hinged together on one side by a ball-and-socket joint, b^1, on the other side by a cam-shaped plate, f^1 a^2, all operating as specified.

2. The finger-bar a^1, and supporting-arm c^2, in combination with the converging gathering-bars c^3 and d^3, substantially as specified.

165,454. HARVESTER-DROPPER. Thomas McDonough, Ottawa, Ill., assignor of one-fourth his right to B. K. Walbridge, same place. [Filed Apr. 6, 1870.]

Brief.—The cut grain is conducted by the adjustable inclined carrier to the dropper, which, with the guard or cut-off, is operated by the foot-lever.



165,454.

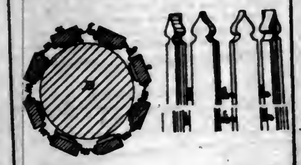
1. The inclined adjustable frame E, with brace G, rollers F and G, and apron K, as an attachment to a reaper, substantially as and for the purpose described.

2. The inclined adjustable frame E, in combination with the dropper M and lever N, substantially as and for the purpose described.

3. The inclined adjustable frame E and dropper M, in combination with the guard O and rod P, substantially as and for the purpose described

165,455. TREE-BOXES. Edward Russell, Davenport, Iowa. [Filed May 4, 1875.]

Brief.—Each slat is provided with a pad at each end, which form contact with the body of the tree, leaving a space between the slat and tree. The slats are secured together, both at top and bottom, by coiled springs, hooks, and eyes, so that any one or more slats can be removed at pleasure.



The spring or elastic band e between each and every slat, or strip, or section of tree-box, in combination with the slats and pads, substantially as described



165,456.

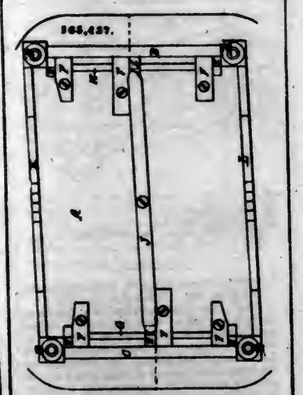
165,456. STANDS FOR FLOWERS. Samuel Vanstone, Providence, R. I. [Filed Sept. 9, 1874.]

Brief.—A conical-shaped vase, consisting of a series of chambers for containing water, and each having a perforated cover to receive the stems of cut flowers, the whole, when filled with flowers, forming a pyramid.

A standard for cut flowers, consisting of a series of water-vessels with perforated covers for receiving the stems of the flowers arranged in pyramidal or similar form, substantially as described.

165,457. FOLDING TABLES. Jos. Walton, Boston, assignor of one-half his right to Henry F. Rich, Haverhill, Mass. [Filed Dec. 28, 1874.]

Brief.—The same strip of wood that braces the legs when the table is set up serves to hold the legs against the under side of the table when it is folded. The legs are attached to the table by means of brackets and dovels.



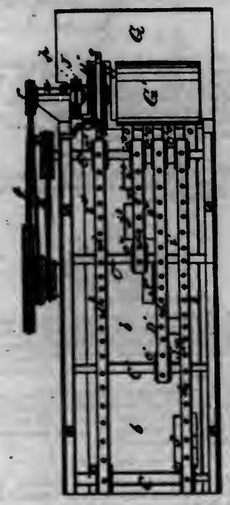
165,457.

1. A folding table composed of the top A, legs B, stretchers C D, and stretcher J, substantially as shown and described.

2. In combination, the top A, legs B, stretchers C D, brackets E F, and dowels G H, with the stretcher J, substantially as shown and described.

165,458. BROOM-CORN-SEEING MACHINES. Alphonso Walrath, Fort Plain, assignor to E. D. Bronson & Co., Amsterdam, N. Y. [Filed Apr. 17, 1875.]

Brief.—The belts are sparred, and are of different lengths, to correspond to the various lengths of the broom-corn, which they distribute into the various bins. The corn is supported horizontally as it is fed to the machine automatically, and the stalks are cut off while in such position.



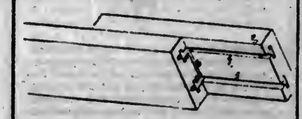
165,458.

1. The sparred and distributing belts D D^1 D^2 D^3, of different lengths, except the outer belts D D^3, which are of the same length, and the guide-strips f f^1 f^2 f^3, in combination with the bin, divided into several compartments, substantially as described.

2. The sparred feeding-wheels H H^1, in combination with the spring-fingers g g^1, supporting-plate G', and cutter J, substantially as specified.

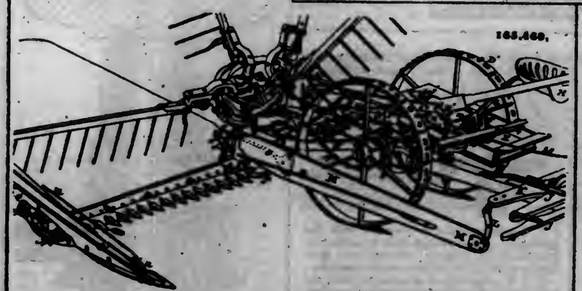
165,459. SLIDES FOR EXTENSION-TABLES. Anthony Weaver, Syracuse, N. Y. [Filed Jan. 12, 1874.]

Brief.—The H-formed metallic slides are notched on one side to accommodate the holding-pins.



The H-formed metallic slides, each consisting of the flanged side pieces a a a, notched or recessed on one side to accommodate the holding-pins p, and connected by a web, A, in combination with the wooden rails grooved to receive the side pieces a a a, and recessed to accommodate the web A, while permitting the faces of the said wooden rails to work in close contact at the edges.

165,460. HARVESTERS. Cyrenus Wheeler, Jr., Auburn, N. Y. [Filed June 4, 1874.]



165,460.

1. The hinged supports B B' for the outside supporting-wheel T, in combination with the adjustable slide S, for raising or lowering said wheel upon its supports, substantially as described.

2. The rake-stand 24, with its branched legs 26 28, in combination with the legs a^2 a^3, wrist-studs b^2 b^3, and eyebolts 26 28, for the purpose of readily attaching and detaching said rake-stand and its connected parts to or from the inside shoe, as described.

3. The hinged and swinging shield-board M, with its spring-arm a, to crowd the grain toward the platform, and prevent it from clogging or slugging, as and for the purpose described.

4. The vertically-adjustable rail 30, in combination with the rake-reels, for the purpose of adapting said rake-reels to the platform, as described.

5. The windlass or drum C', with its ratchet n^1, for adjusting the length of the chain k, by which the raising, lowering, and holding the rear of the cutter-frame at a regulated height above the ground is effected, as described and represented.

6. The vibrating beam E', pivoted to a stand, F, on the rear-frame, in combination with the lever G', links J', and chain-connection k^1, as and for the purposes described.

7. The clearer 23, rigidly attached to the frame B, and projecting into the groove of the chain-wheel 18, for forcing the chain out of said groove, should it clog thereto, as described.

165,461. MOWING-MACHINES. Cyrenus Wheeler, Jr., Auburn, N. Y. [Filed Mar. 17, 1875.]

1. The gag-lever f, in combination with the lever G', vibrating beam E', rocking bar d^1, and its crank-arms d^2 and b^1, and chain and link attachment, so as to be operated by the driver from his seat, substantially as described.

2. The pendent gag g^1, attached to the frame A, in combination with the projection f^1 on the frame B, to limit the free upward motion of frame B, as described and represented.

3. The hinged coupling-piece Z, for connecting the cutting apparatus to the cutter-frame, the said coupling serving also as a shield for the arm d^1 and rock-shaft d^2, as described and represented.

4. The combination of the frame B, wrought-iron Y-shaped frame W, and cross-braces X Y, to form a support for the coupling-piece Z, as and for the purpose described.

5. The construction of the gear-box, projecting rearward of the main axle, and slotted, as at 15, to allow the sleeve B to enter and play through, as and for the purpose described and represented.

6. The quadrant or arc W' on the rear frame, but projected over and forward of the axle C, in combination with the lever l^1, hinged to the rear frame below the axle, so as to bring said lever within convenient reach of the driver upon his seat, as and for the purpose described and represented.

7. The slotted abutment F, in combination with the seat-support G, for the purpose of transposing, reversing, and locking the seat, substantially as and for the purpose described.

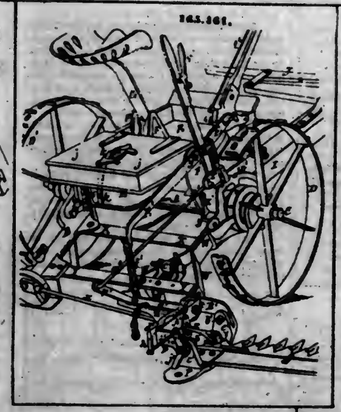
8. The rod q^1, in combination with the lever l^1 and arm r^1 on the coupling-piece Z, for the purpose of tipping the points of the guards or rocking the cutting apparatus about the pivotal rod or bar c, as described.

9. The gear-cover E and tool-box cover j, separately hinged, but both fastened by the same hook or hasp k l, as described and shown.

165,462. ORE-CONCENTRATORS. George W. White, San Francisco, Cal., assignor to Jas. M. Thompson, same place. [Filed Jan. 10, 1874.]

Brief.—The triple cam G, together with spring c on rod C, gives a concussive motion to the suspended cradle, while the double eccentrics F F and triple cam G give a rocking motion at the same time.

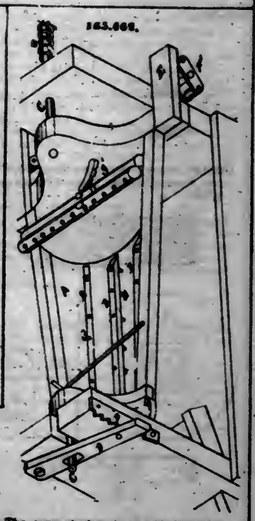
1. The concentrator A, having the double eccentrics F F, triple cam G, and rod C, with spring c, by means of which it has imparted to it oscillating and concussive movements, substantially as described.



165,461.

2. The concentrator A, provided with the suspended or raised longitudinal ledges or riffles B B, operating substantially as described, and for the purpose set forth.

3. The concentrator A, with its arms E E, adjustable suspending-rods C C', spring c, and adjustable lever D, with pawl and ratchet D^1, in combination with the shaft F', with its double eccentrics F F and triple cam G, substantially as described, and for the purpose set forth.



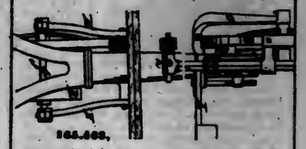
165,462.

165,463. BAND SAWING-MACHINES. R. D. Whitney, Winchendon, Mass. [Filed Sept. 21, 1874.]

Brief.—The axles of the wheels upon which the saw runs are provided with removable bearings placed in front of the saw.

1. The yoke C, having bearings on both sides of the wheel E, in combination with the adjusting and compensating device, consisting of the slide D and the lever L, with its sliding weight W, the fulcrum of said lever being directly in the plane of the strain of the saw, substantially as herein shown and described.

2. The arrangement of the journal-boxes H H on both sides of the lower saw-wheel J, in the manner and for the purpose substantially as herein shown and described.



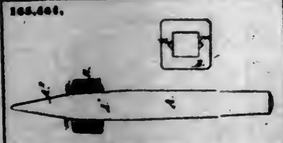
165,463.

165,464. SAW-SETS. Joseph B. Whiting, Harford, Pa. [Filed Dec. 4, 1874.]

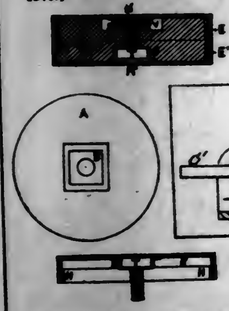
Brief.—A stock or body, A, having two inclines, A^1 A^2, on each side, the angle formed by their junction being at the point where the grooves a a are when the sleeve B is driven on, the difference between their inclinations being the amount of set given to each tooth.

The swage-set composed of two pieces, as described, the main part having diversely-beveled surfaces A^1 A^2, and the additional and inclosing part being beveled to correspond with the bevel A^2, and provided with notches a a, all adapted to serve as and for the purpose herein specified.

165,665.



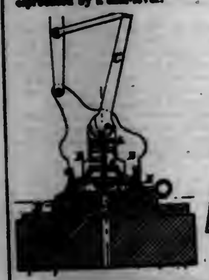
165,666. PAPER-WEIGHTS. Frank E. Whitney, Cumberlandport, Mass. [Filed Jan. 18, 1875.]



As a new article of manufacture, the paper-weight consisting of the core or weight A, having cavities B C, said core A being inclosed within two thin metal caps, E E', each cap being secured together by an interior screw-bolt, f, and nut a, and provided with corrugations H H', which entirely surround and inclose all of the former, substantially as described, and for the purposes specified.

165,667. METAL-PUNCHING MACHINES. D. W. Beer, Richland Centre, Wis., assignor to Wm. T. Miller, same place. [Filed Apr. 10, 1875.]

Brief.—A sliding removable die-block, carrying a headed punch, which is operated by inserting the head in a groove in a grooved head-block, the head-block being vertically reciprocated by a cam-lever.



1. The die-block B, fitted in the channel A, between the bearings B, and having a stop-pin l, lever J, and spring K, combined with it, substantially as specified.

2. The combination, in a punching-machine, of the head-block L having an open-ended channel, B, and the bearings B provided with a channel, A, with the removable die-block B, headed punch M, and cam-lever C, as and for the purpose set forth.

165,668. APPARATUS FOR TAPPING BARRELS OR CASES OF PUMPKIN LIQUORS. John Barrett, Boston, N. J., assignor of one-half his right to Jos. H. Ellis, same place. [Filed Feb. 26, 1875.]

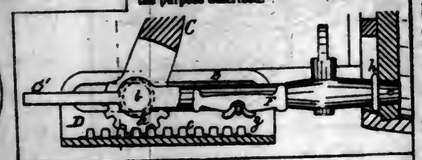
Brief.—An adjustable frame adapted to be fitted under the projecting edges of the chines of the cask or barrel, and provided with an auxiliary frame, having a lever operating in connection with other parts for the adjustment of the faucet within the head of the cask or barrel.

1. The hereinbefore-described apparatus for tapping casks or barrels of fermented liquors, consisting of the Y-shaped frame A, adjusted to the head of the barrel by means of a thumb-screw, and auxiliary frame D, provided with the lever c, post c', rollers d, shaft b, cogs a and e, all arranged to operate substantially in the manner and for the purpose set forth.

2. The Y-shaped frame A, having one foot or leg, B, made adjustable by means of a thumb-screw, so as to fit under the projecting edges of the cask, substantially as described.

3. The combination of the lever c, shaft b, rollers d, cogs a and e, and post c', with the punch F, provided with the spring-clamps, operated by the thumb-screw g, substantially as and for the purposes described.

4. The punch E, provided with the rim or collar l, and handle D', in combination with the notched post c', substantially as and for the purpose described.



165,669. VAPOR-BURNERS. Joseph Benson, Boston, Mass. [Filed June 3, 1875.]



1. The burner-tube d, provided with the openings f, in combination with an inside contraction or the passage l through said tube, substantially as and for the purpose described.

2. The burner-tube d, constructed with the openings f and inside contraction, as described, in combination with the chamber F surrounding the burner-tube, substantially as described, for the purpose specified.

165,669.

165,669. DEVICES FOR REGULATING CAR-VENTILATORS. George W. Birmingham, New York, N. Y. [Filed June 12, 1875.]

Brief.—The device consists of levers pivoted to a bracket. The former are joined to the windows by pivoted links. The windows are kept in desired position by springs, as shown.

The combination of lever A pivoted to bracket, and having projecting shoulders, the pivoted link C, and the brake-spring E, all arranged on the inside of car, as and for the purpose specified.

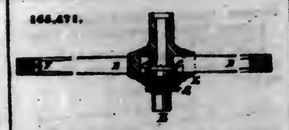
165,670. NAILS FOR SHOEMAKING. Lyman R. Blake, Brooklyn, N. Y. [Filed Mar. 6, 1874.]



A headless nail having, in combination with a tapering point, a single notch, substantially as and located as described.

165,671. VELOCIPEDE-WHEELS. S. L. Reed, Columbia, S. C. [Filed May 1, 1875.]

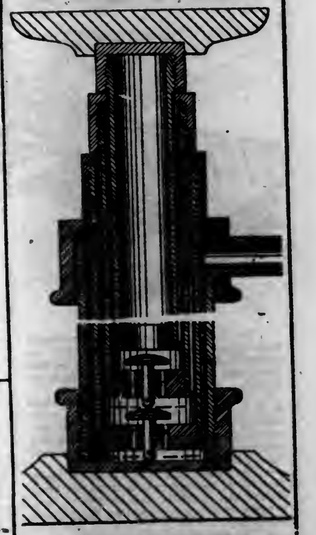
165,671.



The combination of the threaded extension B, the internally and externally threaded nut A, screwed thereon against wedges C, and the face-plate E, screwed on the nut and against the spokes D, all constructed and arranged substantially as and for the purpose specified.

165,672. ELEVATORS. H. W. Brinckerhoff, Brooklyn, N. Y. [Filed Mar. 29, 1875.]

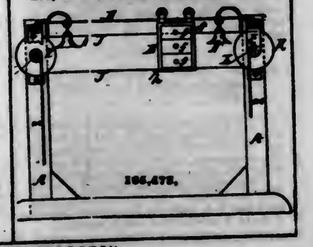
Brief.—The lower ends of the sections are provided with perforated caps, the orifices bearing such a proportion to the area of the caps that (if valves are not employed) all the sections will start together, and if valves are used the lowest space will fill first, then the next, and so on, the same order being preserved in exhausting when the elevator descends.



1. In a telescopic elevator, the sectional tubes thereof, partially closed, with diaphragms, as shown and described, for checking the free flow of the fluid through said sectional tubes.

2. In a telescopic elevator, a check-valve, combined with perforations in the diaphragms, covering the inner ends of the sections, and arranged to be opened by such sections successively, constituting their descent substantially as specified.

165,673. APPARATUS FOR TRANSMISSION OF GOODS, PACKAGES, &c. D. Brown, Lebanon, N. J. [Filed Feb. 1, 1875.]



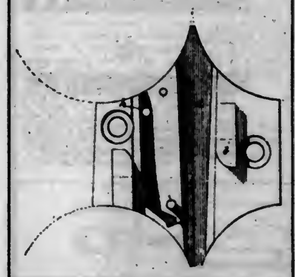
165,673.

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The mode of transmitting a package-carriage between two given points, by aid of wire rail D, endless rope J, and pulleys K, substantially as described and set forth.

165,676. CONDUCTORS FOR NAIL-ROLLING MACHINES. R. E. Cady, Boston, Mass., assignor to Globe Nail Company, same place. [Filed May 18, 1875.]

Brief.—A pivoted channel-piece is pressed back against the resilience of a spring when the channel becomes unduly crowded. A finger on the channel-piece, projecting through a slot in the removable front plate, disengages the intercepter-spring from its notched holder, and permits the intercepter to fall and cut off the supply to the conductor, when the locking-bar is turned, the front plate taken off, and the nails removed.



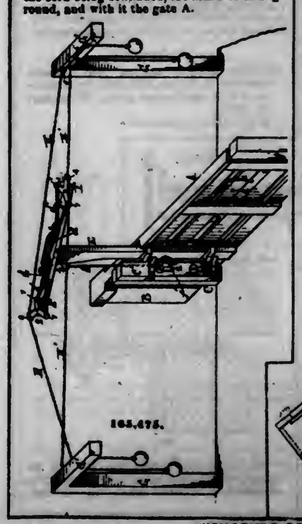
1. A conductor for nail-rolling machines, consisting of the back plate and the removable front plate and locking-bar, adapted to operate substantially as described.

2. In a conductor for nail-rolling machines, the removable front plate and the movable channel-piece and finger projecting therefrom, substantially as described.

3. The combination of the back plate e and the movable spring-operated channel-piece and its finger with the front plate and the notched holding-pin n, all adapted to operate substantially as described.

165,675. AUTOMATIC GATES. O. P. Clinton, Menasha, Wis. [Filed Oct. 2, 1874.]

Brief.—By pulling the shorter cord e chain when approaching the gate, the lever e turns on its axis, and by means of the levers f f' and rods g g', releasing the bolt h, the tension on the cord being continued, the arm F is swung round, and with it the gate A.



165,675.

The combination, with the cross-bar F upon the upright E of the balanced gate A, of the weighted cords or chains B B', the three-armed levers c, connected by the bifurcated cords or chains d d' d d', pulleys e, and the levers f f and rods g g', for operating the latch h and gate A, substantially as shown and described.

165,676. TRILEAF SCALES. L. H. Crane and Albert A. Miner, Brattleborough, Vt. [Filed June 12, 1875.]

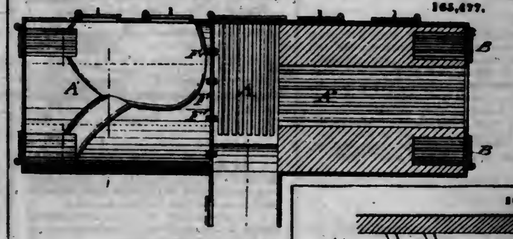


A "trileaf scale" having a central core (or rod) with the leaves grooved into it, substantially as shown and described, so that one or more may be withdrawn wholly or in part, as specified, for the purposes set forth.

165,677. SMELTING-FURNACES. Henry C. Creal, Cheyenne City, Wyo. [Filed Feb. 20, 1875.]

Brief.—The central fire and the lower-end fires make a draft up the main flue, and aid in heating the furnaces. The smaller upper-end furnaces act like the fires of reverberating furnaces.

165,677.



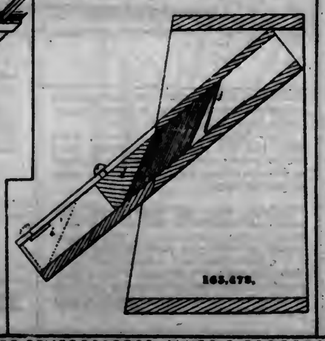
1. The combination of the lower central fire-place A and side fire-places A'' and A''', located beneath the ore-melting furnace A', all as specified.

2. The combination of the lower fire-places and flues with the furnaces above the same, being arranged symmetrically to the central fire-place, and with the separate direct acting fire-places at both ends, for accelerating the action of the furnaces, as shown and described.

3. The combination of the furnaces A', and their separate upper fire-places B, with the main flue, arranged at right angles thereto, and the partition-walls F, having openings F', as shown and described.

165,678. TICKET-CASES. W. H. Crowther, Boston, Mass. [Filed June 15, 1875.]

Brief.—A trough or box, with an inclined faced pusher and a bent spring for ticket-support, is used to insert tickets between inclined shelves, where they are held by detaining-springs, the bent spring serving as a follower.



165,678.

1. A filer, substantially as described, combined with a ticket-support, and adapted to insert tickets in a guideway, as set forth.

2. The combination of a stationary shelf and a filer with a movable ticket-support, substantially as described, to sustain the tickets on end or edge, both in the filer and on the shelf, and permit them to be drawn, as set forth.

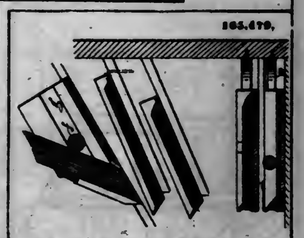
3. The stationary shelves for local tickets, placed, as described, to guide the upper and lower edges of the tickets, combined with spring-gages at the forward ends of the division-plates of the guideways, and with spring-supports for the tickets to be drawn, all constructed substantially as described.

4. The filer, in combination with the hinged piece g to prevent the tickets rising from the filer, and with the inclined support f to sustain the tickets from being upset when moved by the inclined-faced pusher i, substantially as set forth.

165,679. TICKET-CASES. W. H. Crowther and T. Collins, Boston, Mass. [Filed Apr. 14, 1875.]

Brief.—The coupon-drawers are set one under the other at an incline, and have inclined fronts. A cylindrical follower-bolt is in grooves is provided for the stiff ticket drawers.

165,679.



1. Two or more inclined coupon drawers or shelves, with fronts beveled inside and out from the top edge of the front downward, and backward toward the back of the case, to facilitate the drawing of tickets, and to show their printed destination, substantially as described.

2. The ticket-drawers, provided with grooved side pieces, as at g, in combination with the follower-rod f, to press the tickets forward, as set forth.

3. A ticket-case, consisting of coupon drawers or shelves, beveled outwardly from the inside, to facilitate the withdrawal of tickets, and provided with gages, and of drawers to contain local or stiff tickets, and provided with followers to hold the local or stiff tickets against the gage-strips, all combined, arranged, and operating substantially as described.

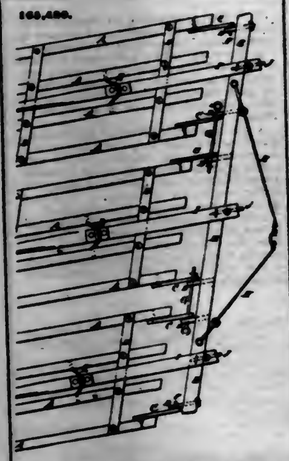
165,680. HARROWS. Adolphus W. Davis, Dwight, Ill. [Filed May 22, 1875.]

Brief.—Three independent frames are separately secured to a single draft-bar. Each section has a handle secured to the same draft-bar, having a hinged fulcrum a little forward of the middle of the frame. By lifting upon the handles the section is wholly raised from the ground, and by bearing down upon the handle the forward end of the section is raised.

1. The combination of the three diamond shaped sections A B of the harrow-frame, the pivoted connecting-bars C, the pivoting-pins F G, the eyebolts D, and the long draft-bar E, with each other, substantially as herein shown and described.

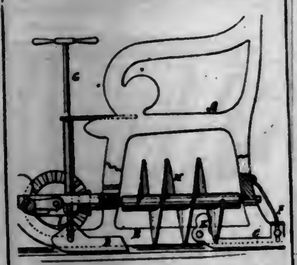
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165,490.



2. The combination of the levers I, the long hooks J, the cycloids or staples K, and the U-shaped pivoted standards L, with the draft-bar E, and the sections A B of the harrow-frame, substantially as herein shown and described.

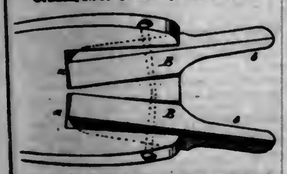
165,491. ICE-VELOCIPEDE. Chas. M. Day, Elizabeth, N. J. [Filed Apr. 17, 1875.]



1. The combination, with sled, of revolving spiral propeller H, extending from front to rear, and the shaft I, having treadle-cranks J, the said shaft being connected with propeller-shaft by bevel-gears, as shown and described.

2. The body of the carriage, connected to the runners by springs, in combination with a screw-propeller, arranged to run at the edge of the blades or vanes on the surface of the ice, substantially as specified.

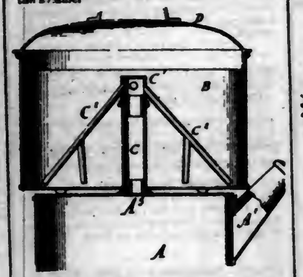
165,492. BOOT-JACKS. A. M. De Bass, Orrstill, N. J. [Filed Apr. 26, 1875.]



A boot-jack having beveled jaws, pivoted in longitudinal slots, which converge in rear of the pivotal point, and are braced in the block so as to diverge vertically, substantially as shown and described.

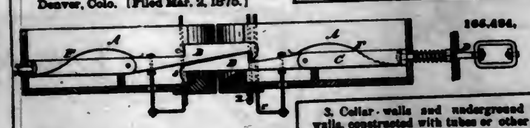
165,493. CULINARY VESSELS. J. Dumcan, Somerset, Ind. [Filed May 19, 1875.]

Brief.—Steam is conducted from the boiler through the branched pipe to the bottom of the steamer.



The combination of the boiler and steamer and intercommunicating steam-pipe with the bend C' and branch pipe C², substantially as set forth.

165,494. CAR-COUPLINGS. J. Dinsmore, Denver, Colo. [Filed Mar. 2, 1875.]



1. The double-catch latches B, pivoted to the square link or clevis C, in combination with the catches a of the draw-head, substantially as and for the purpose specified.

2. In combination with the double-catch latches B, the rods E and E', substantially as and for the purpose specified.

3. In combination with the double-catch latches, the strap-spring F, substantially as and for the purpose specified.

4. In a car-coupling the double-catch latches B, draw-head A, draw-head catches a, link or clevis C, draw-bar D, spring F, rods E and E', all arranged to operate in the manner set forth, and for the purpose specified.

165,495. LIFTING-JACKS. John B. Fayette and Lorenzo Meeker, Oswego, N. Y. [Filed June 26, 1875.]

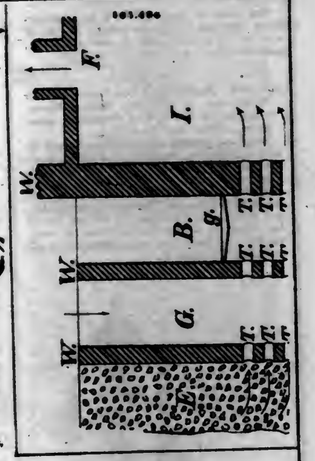
An improved lifting-jack, formed by the combination of the tube A, provided with the base B, and the vertical and inclined slots a' a², the sliding tube C, provided with the cross-pin c', the sliding rod or tube D, provided with a head, E, the pivoted connecting-bar F, the lever G, and the pivot, stop, and guard H I J, substantially as herein shown and described.

165,496. CONSTRUCTING, VENTILATING, AND COOLING CELLARS. Jos. K. Frick, Evansville, Ind. [Filed Mar. 16, 1875.]

Brief.—Suitable openings are made in the cellar-wall, and pipes extend through them into the porous earth. The draft is obtained by flues extending from the top of the cellar up into the house.

1. Cellar-walls and underground vault-walls, constructed with tubes or other equivalent openings, communicating with the earth outside, as and for the purposes described.

2. Cellar-floors and underground vault-floors, constructed with tubes or other equivalent openings communicating with the porous earth underneath the floor, as and for the purposes described.



3. Cellar-walls and underground vault-walls, constructed with tubes or other equivalent openings extending into the earth, in combination with flues or other equivalent openings from the interior of the cellar to the external air, as and for the purposes described.

4. Cellar-floors and underground vault-floors, constructed with tubes or other openings communicating with the porous earth underneath the floor, in combination with flues or other equivalent openings from the interior of the cellar to the external air, as and for the purposes described.

5. The combination and arrangement of the coil G, with or without tubes or other equivalent openings communicating to the surrounding earth and passing through the outside wall, the ice-coil B, and its tubes or equivalent openings communicating with the coil G on one side and the interior of the cellar I on the other side, the cellar-wall W, constructed with tubes or other openings into the ice-coil B, together with the flues or other openings from the interior of the cellar to the external air, as and for the purposes specified.

165,497. WAGON-BRAKES. Geo. S. Garth and Wm. H. Rosser, Mill Hall, Pa., assignors to G. S. Garth, same place. [Filed Mar. 20, 1875.]

Brief.—Guides brake-bar.

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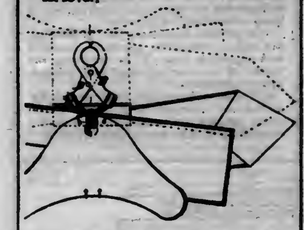


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The combination of the plates F J, and the block I, with the lock-bar G and the bounds D, substantially as herein shown and described.

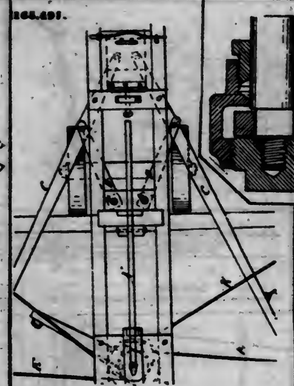
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165,490. NECK-TIE FASTENERS. James H. Harrington, Providence, R. I. [Filed June 19, 1875.]



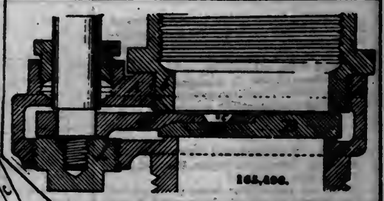
A neck tie fastener consisting of cross-pivoted fingers, curved at their upper ends to form an aperture for stud-shank, and connected at their other ends, by a spring, to each other, and to the lower edge of a neck-tie shield, substantially in the manner and for the purpose specified.

165,491. ICE-VELOCIPEDE. Chas. M. Day, Elizabeth, N. J. [Filed Apr. 17, 1875.]



The combination, with follower-levers C C, of arms having pulleys E E, the ropes K K, and a windlass having drums I J, as and for the purpose specified.

165,490.



165,494. KNOCK-DOWN BUREAUS AND WASH-STANDS. Wm. S. Moses, Lebanon, N. H. [Filed June 5, 1875.]



1. The rails for the front support of the drawers in a knock-down bureau or wash-stand, constructed in two parts, B D, and the part B permanently framed in the front A, and the part D being removable together with the other portion of the drawer-supporting frame, substantially as specified.

2. In a knock-down bureau, the combination of the front, sides, back, and top, connected by sliding dovetail joints, and arranged to lock the front, sides, and back by the top, and to lock the top by the back and the same L, substantially as specified.

165,498. WEATHER-STRIPS. David L. Hoffman and Parker M. Shoemate, Aullville, Mo., assignors to G. W. Ennis, same place. [Filed Feb. 1, 1875.]



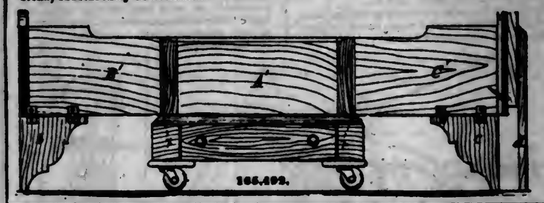
1. In combination with the weather-strip D, hinged and laying in a groove or recess e in the carpet-strip C', the door A, provided in its bottom edge with a deep groove or gutter, A', and curved hooks or catches a a, as and for the purposes described.

2. The weather-threshold herein described, consisting of the hinged strip D d, recessed carpet-strip C' e e, and door A, the bottom edge of which is deeply slotted, A', and provided with hooks a a, all constructed, arranged, and adapted to operate, as and for the purposes set forth.

165,492. FOLDING BEDSTEADS. H. Krieto, Newport, Ky. [Filed May 6, 1875.]

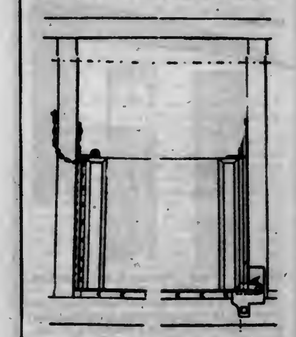
Brief.—The head-section of the bedstead is provided with a hinged mirror having legs attached thereto, which aid in supporting the head-section when the parts are unfolded, and hold the mirror in proper position for use when the parts are folded.

The hinged mirror D provided with legs d d, forming stops for said mirror, in combination with the head section of a folding bedstead, substantially as described.



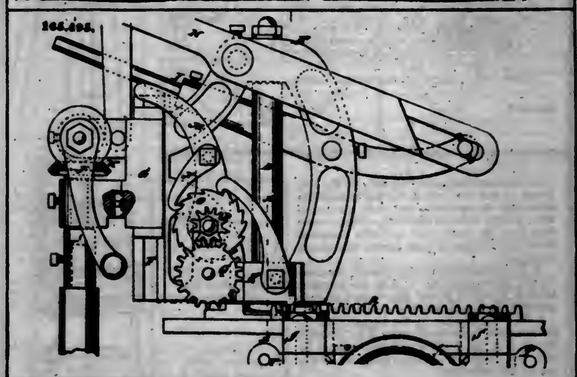
165,496. DOORS FOR GRAIN-CARS. Fredk. J. Kimball, Philadelphia, Pa. [Filed May 6, 1875.]

Brief.—Side standard pivoted at top swings outward when bottom catch is removed.



The swinging bar E, latch G, and permanent bars D and B, combined with the door, substantially as specified.

165,495.



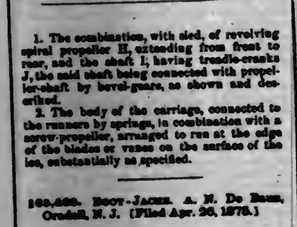
165,499. SHOP-VALVES. Jos. Otis Moran, Englewood, N. J. [Filed May 20, 1875.]

The combination of the vibrating disk, the valve-spindle upon which the said disk is loosely mounted, and the two valve-seats arranged at a greater distance apart than the thickness of the valve-disk, substantially as before set forth.

165,500. BORING AND MORTISING MACHINES. Henry Neumann, Central City, Colo. [Filed May 28, 1875.]

Brief.—The machine is intended for making mortises in timber, and is provided with rollers, so that it may be easily moved from one mortise to the next; it also has suitable clamping devices for holding it in position while in operation.

491. Ice-Velocipede. Chas. M. Day, Elizabeth, N. J. [Filed Apr. 17, 1875.]



1. The combination, with sled, of revolving spiral propeller H, extending from front to rear, and the shaft I, having treadle-cranks J, the said shaft being connected with propeller-shaft by bevel-gears, as shown and described.

2. The body of the carriage, connected to the runners by springs, in combination with a screw-propeller, arranged to run at the edge of the blades or vanes on the surface of the ice, substantially as specified.

492. Boot-Jacks. A. M. De Bass, Orrstill, N. J. [Filed Apr. 26, 1875.]

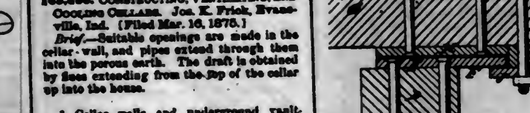
A boot-jack having beveled jaws, pivoted in longitudinal slots, which converge in rear of the pivotal point, and are braced in the block so as to diverge vertically, substantially as shown and described.

493. Culinary Vessels. J. Dumcan, Somerset, Ind. [Filed May 19, 1875.]

Brief.—Steam is conducted from the boiler through the branched pipe to the bottom of the steamer.

The combination of the boiler and steamer and intercommunicating steam-pipe with the bend C' and branch pipe C², substantially as set forth.

494. Car-Couplings. J. Dinsmore, Denver, Colo. [Filed Mar. 2, 1875.]



1. The double-catch latches B, pivoted to the square link or clevis C, in combination with the catches a of the draw-head, substantially as and for the purpose specified.

2. In combination with the double-catch latches B, the rods E and E', substantially as and for the purpose specified.

3. In combination with the double-catch latches, the strap-spring F, substantially as and for the purpose specified.

4. In a car-coupling the double-catch latches B, draw-head A, draw-head catches a, link or clevis C, draw-bar D, spring F, rods E and E', all arranged to operate in the manner set forth, and for the purpose specified.

495. Lifting-Jacks. John B. Fayette and Lorenzo Meeker, Oswego, N. Y. [Filed June 26, 1875.]

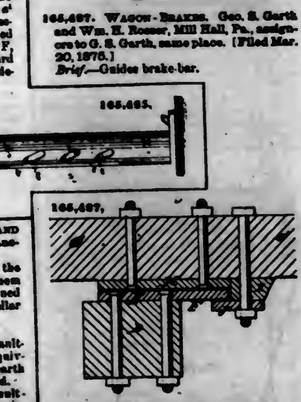
An improved lifting-jack, formed by the combination of the tube A, provided with the base B, and the vertical and inclined slots a' a², the sliding tube C, provided with the cross-pin c', the sliding rod or tube D, provided with a head, E, the pivoted connecting-bar F, the lever G, and the pivot, stop, and guard H I J, substantially as herein shown and described.

496. Constructing, Ventilating, and Cooling Cellars. Jos. K. Frick, Evansville, Ind. [Filed Mar. 16, 1875.]

Brief.—Suitable openings are made in the cellar-wall, and pipes extend through them into the porous earth. The draft is obtained by flues extending from the top of the cellar up into the house.

1. Cellar-walls and underground vault-walls, constructed with tubes or other equivalent openings, communicating with the earth outside, as and for the purposes described.

2. Cellar-floors and underground vault-floors, constructed with tubes or other equivalent openings communicating with the porous earth underneath the floor, as and for the purposes described.



3. Cellar-walls and underground vault-walls, constructed with tubes or other equivalent openings extending into the earth, in combination with flues or other equivalent openings from the interior of the cellar to the external air, as and for the purposes described.

4. Cellar-floors and underground vault-floors, constructed with tubes or other openings communicating with the porous earth underneath the floor, in combination with flues or other equivalent openings from the interior of the cellar to the external air, as and for the purposes described.

5. The combination and arrangement of the coil G, with or without tubes or other equivalent openings communicating to the surrounding earth and passing through the outside wall, the ice-coil B, and its tubes or equivalent openings communicating with the coil G on one side and the interior of the cellar I on the other side, the cellar-wall W, constructed with tubes or other openings into the ice-coil B, together with the flues or other openings from the interior of the cellar to the external air, as and for the purposes specified.

497. Wagon-Brakes. Geo. S. Garth and Wm. H. Rosser, Mill Hall, Pa., assignors to G. S. Garth, same place. [Filed Mar. 20, 1875.]

Brief.—Guides brake-bar.

495.

497.

The combination of the plates F J, and the block I, with the lock-bar G and the bounds D, substantially as herein shown and described.

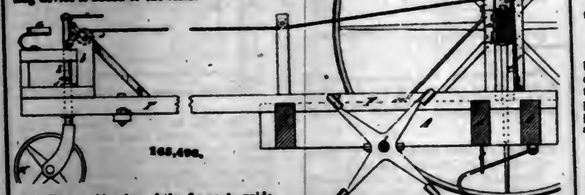
HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

The sliding tool-carrying frame E, arranged to receive horizontally, and the feed mechanism thereon, in combination with a feeding-rack, R, on both sides of the ways in which the frame slides, substantially as specified.

The clamp screws U, clamping-plates V, frame S, rollers T, and the ways A, constructed and arranged substantially as specified.

165,496. MACHINES FOR CUTTING CORN-STALKS. Terrence O'Bryan, Barnard, Mo. [Filed Nov. 10, 1874.]

Brief.—A rectangular frame is supported upon an axle and pair of wheels. This frame carries a pair of cutting-rollers and bifurcated drag-hooks. The middle beam of the frame extends rearwardly, and its rear end is supported upon a caster-wheel, near which is a windlass having a rope extending to the front of the frame, by which means the forward end of the frame is raised from the ground, upon standards erected upon the axle-tree. The cutting device is ahead of the team.



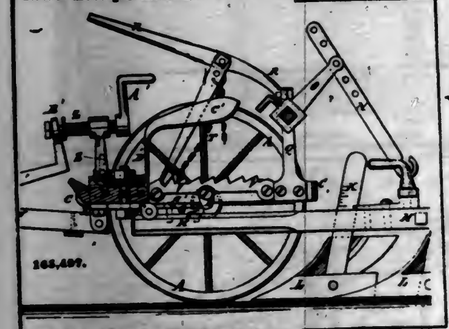
165,496.

1. The combination of the frame A, guide-standards B B, axle D, beam F, wheel H, and rotary cutters, substantially as described.

2. The windlass e, combined with axle D, standards B B, frame and bar A F, and wheel H.

165,497. GANG-PLOWS. Murry Opp, Belleville, Ill. [Filed May 1, 1875.]

Brief.—Adjustable connections for the front end of plow-beams, and crank screw adjustment of the tongue and frame.



165,497.

1. The combination of the bolts E, the eye-pieces F, and the bars G, having crank-heads upon their forward ends and short transverse slots in their widened rear ends, with the cross-bars D of the frame C D, and with the plow-beams H, substantially as herein shown and described.

2. The combination of the chain T, the pawl U, and the ratchet-bar V, with the compound lever M N O P Q R, and the frame C D, substantially as herein shown and described.

3. The combination of the lugged plate X, the standard Y, the crank-screw E A', the bent bar B', and the stud C', with the frame C D, and the tongue W, substantially as herein shown and described.

165,498. HARMONY CHAIRS. John Ott, Indianapolis, Ind. [Filed Oct. 30, 1874.]

In combination with the frame and hinged back, the hinged support H, fastened by a joint to the frame, and having a catch on the back, where it is confined by the ratchet and pawl K, substantially as set forth.

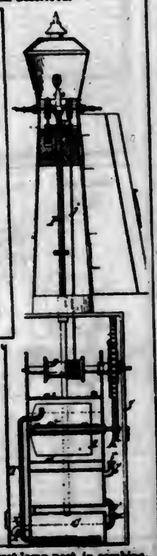


165,498.

165,500.

165,499. CONFINED STREET-LAMPS AND GAS-MACHINES. George Tracey Parry, Philadelphia, Pa. [Filed Apr. 20, 1875.]

1. The combination, with a street-lamp post, of a carbureting gas-machine, in which illuminating-gas is produced by the mixture of atmospheric air with hydrocarbon-vapor, said vapor being eliminated without the application of heat, substantially as described.



165,499.

2. A portable street-lamp post, in combination with a weight, which, through a cord and pulleys, imparts rotation to a blower, substantially as and for the purpose described.

3. A portable street-lamp post, in combination with a carbureting-machine, which has its supply of air automatically stopped at variant regulated periods of time, substantially as described.

4. A portable street-lamp post, in combination with a carbureting apparatus and with a gas-burner, which has its light automatically extinguished at variant regulated periods of time, substantially as described.

5. A portable street-lamp post, in combination with a carbureting apparatus, provided with adjustable nuts *g g'*, for regulating the number of hours the light shall burn, substantially as described.

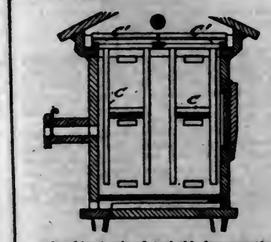
6. The street-lamp post, constructed as described, and furnished on its inside with the within-specified carbureting apparatus, substantially as and for the purpose described.

165,500. BOOK-SUPPORTS. Wm. Patton, Vevay, Ind. [Filed July 12, 1874.]

A blank-book holder composed of a bed, B, having a groove or depression, C, across its center, and a circular plate or rim, D, attached to its under side, in combination with a supporting-plate, E, provided with a central pivot, G, on which the said bed turns, substantially as herein specified.

165,501. BEE-HIVES. Hiram Pencoyer, Acme, Ill. [Filed Apr. 24, 1875.]

Brief.—The comb-frames are hung in removable frames.



A bee-hive having detachable frame-sections C, hung in central chamber from a top frame, C', movable, as and for the purpose specified.

165,502.



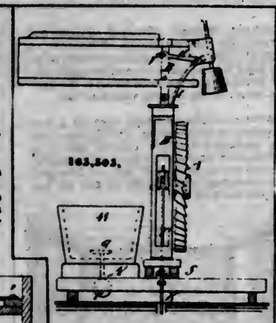
165,502. PICKS. Thomas R. Finks, Bristolville, Ohio. [Filed Apr. 28, 1875.]

Brief.—A wooden stock of suitable size, the lower end of which is square in cross-section, of diameter equal to the width of the pick, the square part being three or four inches in length. A strap of iron is bent at right angles, with a thickened portion at the middle, the parallel straps being riveted firmly to two sides of the square stock. A like-formed iron is fitted to the opposite sides of the square stock, leaving a square eye for the bit of the pick, which is secured by a pin inserted into a hole, one-half of which is in the stock, and the other half in the steel bit forming the pick.

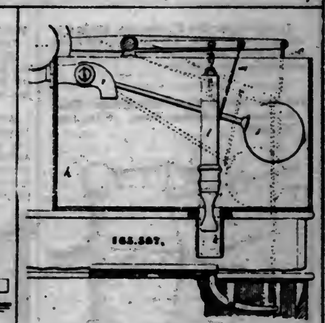
In combination with a pick a socket-handle, formed by combining the angular plates or straps B and B' with the square part of the stock or handle C, substantially in the manner as described, and for the purpose specified.

165,503. DAMPER MECHANISMS FOR PIANO-FORTES. Edward Porter, New York, N. Y. [Filed Apr. 10, 1875.]

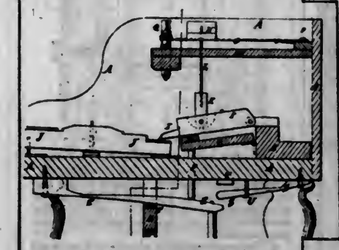
Brief.—The damper-lever lift-bar has a shoulder or raised portion, extending over sufficient of its length to raise the bass-dampers first by pressure on the pedal as far as to the spring. Further pressure raises the remainder of the damper-levers also.



165,503.



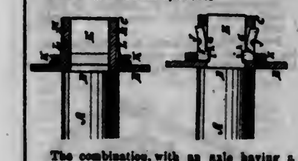
165,507.



1. The strip B, attached to the forward upper part of the lifter-rail G, and extending beneath the forward part of the damper-levers I of one or more octaves of the bass-strings, constructed and arranged substantially as herein shown and described.

2. The combination of the spring S with the damper-pedal spring E, and with the strip B, attached to the lifter-rail G, when constructed and arranged substantially as herein shown and described.

165,504. DEVICES FOR ATTACHING HUBS TO AXLES. Warren B. Pratt, Chesaning, Mich. [Filed Jan. 4, 1875.]



The combination, with an axle having a square or angular end portion, E, and recesses *f* therein, of the key-box C, washer B, shouldered keys F, the band K, and the springs L, substantially as and for the purpose set forth.

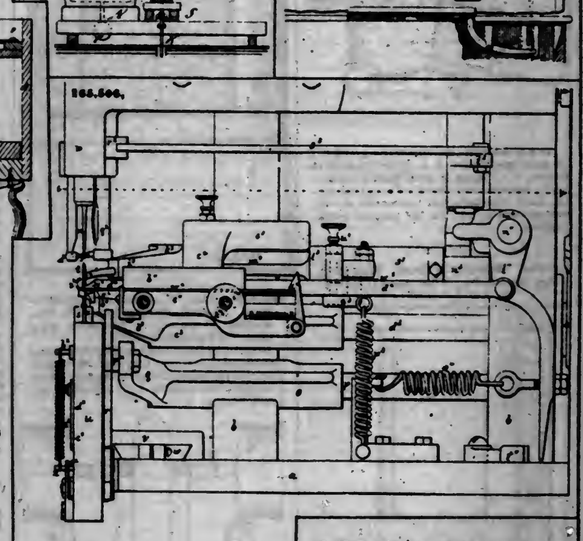
165,505. WINDMILLS AND WATERING APPARATUS. R. Richardson and F. Harkness, New Rutland, Ill. [Filed May 1, 1875.]

Brief.—The wheel has rigid vanes, and is mounted on the vertical shaft, which turns horizontally, and carries the tail-vane at its upper end, which is free to turn on the shaft. This vane has arms extending forward of the shaft, and on the outer end of the upper one the vane is pivoted, so as to be held up with its face to the wind by a weight, which is attached to its lower end. The arm of this vane is also connected below the pivot by a link and an eyebolt with the shaft eccentrically, so that when the vane is forced down the wheel and the tail-vane will be turned into the same plane, and the wheel will be held by the tail-vane with its edge to the wind.

1. The combination of tail-vane C, having arms D E, pivoted vane F, weight G, link H, bolt I, and shaft B, as and for the purpose specified.

2. The weighted regulating-vane F, pivoted to the arm of the tail-vane, and connected eccentrically to the wheel-shaft, on which the tail-vane is free to turn, substantially as specified.

3. The combination of the weighted trough M and valve Q with the receiver M, substantially as specified.



165,506.

165,506. MACHINES FOR SEWING TURNED SOLES. Everett P. Richardson, Lawrence, Mass. [Filed Dec. 1st, 1873.]

1. The combination of the rocker-sleeve *c'* and bearing *b* with the butt *r*, for imparting reciprocating movements to the needle-bar, substantially as shown and described.

2. The combination of the needle and cast-off bars with lever *d'*, arm *e'*, spring *e''*, and stops for imparting the movements to the cast-off, relatively to the movements of the needle, substantially as shown and described.

3. The combination, with the needle-bar and slotted link *r*, of mechanism for throwing the needle-bar out of connection with its actuating mechanism, substantially as shown and described.

4. The combination of the rocker-sleeve *m'* and its arms, the bender-bar *d'*, and spring *o'* for moving the bender forward, substantially as described.

5. The combination, with the adjustable shoulder-piece, of the hook *x'*, and latch *y'*, for adjusting the position of the hook and holding it, substantially as set forth.

165,507. WATER-SUPPLY APPARATUS FOR WATER-CLOSETS. Isaac Riley, Boston, Mass., assignor to Baird & Riley, same place. [Filed Mar. 17, 1875.]

Brief.—When the seat is depressed the weight on the lever rises, the rock-shaft is turned, the escape-valve seats itself, and the float, falling, opens the supply-valve. The float rises with the accumulating water, and serves to shut it off at a certain point. When pressure is removed from the seat the weight falls, the rock-shaft turns, and the escape-valve is lifted, causing flow of water through the closet.

1. The combination of the elevated tank with the inlet-valve and its operating-lever and float, and the escape-valve and lever, all adapted to operate with relation to each other to stop the flow of water while the seat is depressed, and to permit the discharge of the water from the tank when the seat is relieved, substantially as described.

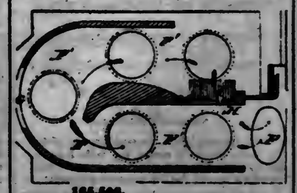
2. The combination of the seat *a* with the escape-valve *l* through intermediate mechanism, arranged to operate substantially as described.

3. The combination of the seat *a*, tank *h*, inlet-valve *i*, and escape-valve *l*, the valves being connected by intermediate mechanism, arranged to operate substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

165,508. STOVES. Jas. L. Roberts, Brunswick, Ga. [Filed May 8, 1875.]

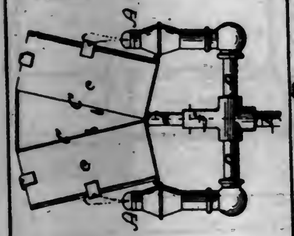
Brief.—The smoke may pass directly to the exit, or around under the pot-holes, by means of the U-shaped flue, or, passing under the pot-holes of one side, may be sent down and around the oven.



165,508.

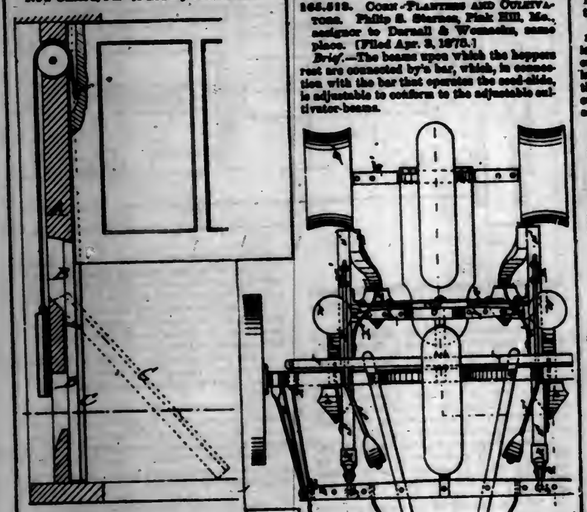
The U-shaped flue F, from the fire-box to the back of the stove, and thence to the front, having the rectangular O and H, with dampers, substantially as specified.

165,509. STREET-LAMP REFLECTORS. Chas. Robinson, Cambridge, Mass. (Filed June 28, 1875.)



In a street-lamp, the combination, with two or more gas-burners, A A, of two or more reflectors, C C, made of piano-wire b c c, concentrically arranged and placed between the burners, being removable and replaceable at will, substantially as and for the purpose herein specified.

165,510. WINDOW-FRAMES. Elias Roth, New Oxford, Pa. (Filed Apr. 17, 1875.)



The combination of the detachable strip U and the frame or casing A, having an opening at the upper end of groove B, as shown and described, for the purpose specified.

165,511. INCHING-TABLES. Chas. Emmons, Indianapolis, Ind. (Filed June 9, 1875.)

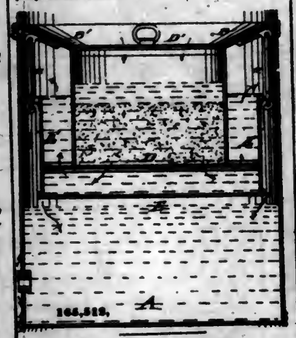


In an inching-board, the combination of the key a, the blades f and g, the bolts b and c, the diagonal slot at m, and the block r, substantially as and for the purpose set forth.

165,512. FILTERS. Henry F. Scherr, St. Louis, Mo. (Filed June 12, 1875.)

Brief.—The water is first filtered while passing down the central tube, and is again subject to the same action while rising in the pan, just before falling into the base-reservoir.

A filter composed of base reservoir A, top receptacle B, with central filtering tube, having perforated top and bottom, and of a surrounding filtering-pan fitted and secured around bottom of central tube, all arranged and operating substantially as and for the purpose set forth.



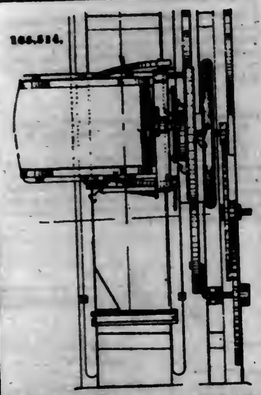
165,513. COAST-PLANTERS AND CULTIVATORS. Philip S. Stetson, Pink Hill, Mo., assignor to Darnall & Womacks, same place. (Filed Apr. 3, 1875.)

Brief.—The beams upon which the hoppers rest are connected by a bar, which, in connection with the bar that operates the seed-slide, is adjustable to conform to the adjustable cultivator-beams.

The combination of the extension-bar Y, connected with the dropping-slides X, and the extensible connecting-bar A', carrying the seed-slide-operating lever Z, with the plow-beams B and seed-hoppers W, as and for the purpose described.

165,514. STRAW-CUTTERS. C. F. Stewart and William Stewart, Muncie, Ind. (Filed May 8, 1875.)

Brief.—The box containing the straw is reciprocated in front of a rotating elevator knife. The straw is fed, to the knife automatically after a stroke is made. The mechanism operating the feed-rolls is independent of that which works the knife.



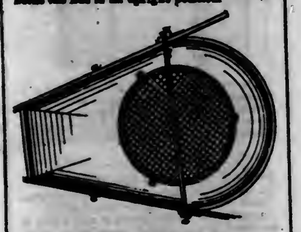
1. In straw and feed cutters, the combination of a revolving cutting disk or knife with a rock-seating feed-box, arranged to feed the material separately from the cutting-action after having passed beyond the cutting-knife, substantially in the manner and for the purpose set forth.

2. The combination of the lower fixed feed-roller with the upper sliding and spring-acted feed-roller, turning in bearings of the adjustable corrugating front gate, and with the gate, for expelling the material in compact state to the cutting-knife, as specified.

3. The reciprocating feed-box having feed-rollers, with retaining ratchets, pawls, and lever, in combination with the stationary comb of main frame, having a count of reciprocating motion of box, for the purpose of feeding the material only on the completion of the cutting action of the knife, substantially as set forth.

165,515. COAL-SCUTTLES. Richard M. Staub, Rensselaer, N. Y., assignor to himself and R. J. Hunt, same place. (Filed Oct. 20, 1874.)

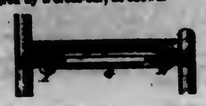
Brief.—When the device is not used for stiffing, the ball engages with the catches, and holds the lids in an upright position.



The combination of the lids a', catches c c, placed near the center of the lids, and ball b, all arranged as described, to allow the ball to be raised without raising the lids, or used to hold the lids open, all as and for the purpose set forth.

165,516. DETACHABLE SEATS FOR CHAIRS. William W. St. John, Fisgah, Mo. (Filed Mar. 29, 1875.)

Brief.—The seat is attached to slats, the outer edges of which are grooved and bear against the upper rounds of the chair, and when the slats are turned in under the bottom of the chair, the seat is strained or stretched, as may be desired, and all the parts are secured by a cross-bar, as shown.

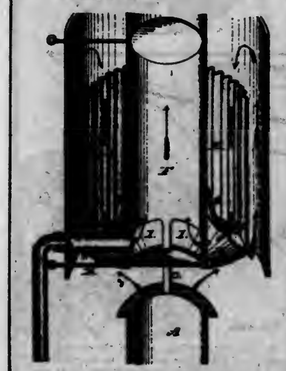


1. A seat of a chair, stool, or settee, strained and made detachable by means of slats F, substantially as described.

2. The cross bar G, connected with lower slats by a pivot-fastening at H and a hook at I, as and for the purpose specified.

165,517. STOVE-PIPE DRUMS. Benjamin F. Stockford, Sturgis, Mich., assignor of one-half his right to T. F. Thornton, same place. (Filed Apr. 3, 1875.)

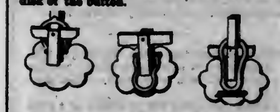
Brief.—Smoke may be made to pass up between the external and the corrugated cylinder, and down between the latter and the central ascending smoke-flue.



In combination with the stove-pipe A and with the jacket K, corrugated cylinder B and smoke-flue F, concentrically placed one within the other, and each inclosing flue or heating space, the annular space N at the bottom of the drum, and common to the spaces inclosed by the corrugated cylinder and the smoke-flue, by means of the inlet and exit openings H I, and the valve L, for turning the products of combustion through the drum, as shown by the arrows, and as described and represented.

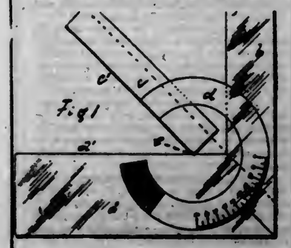
165,518. FASTENINGS FOR BUTTONS. Philipp Sass, Providence, R. I. (Filed Jan. 20, 1874.)

Brief.—A button having L-shaped arms or wings is fastened or unfastened by means of an oval-shaped latch, which is hinged to the back disk of the button.



The latch or link, in combination with the L-shaped arms and upright post or shank, the whole constructed and arranged substantially as described, for the purposes specified.

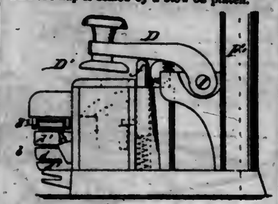
165,519. PROTRACTORS. Ambrose Swasey, Hartford, Conn. (Filed Jan. 26, 1875.)



The combination of the parallel straight-edged base-rule a, the arc d moving thereon, and the swinging rule c, all constructed and arranged substantially as shown and described.

165,520. MACHINES FOR ATTACHING STAMPS AND SEALING LETTERS. Eddy T. Thomas, Boston, Mass. (Filed Dec. 12, 1874.)

Brief.—Flap and envelope-corner are moistened by drawing across sponge. The envelope is then placed under a platen, and receives a stamp from a reservoir below at the same time the flap is sealed by a blow on platen.

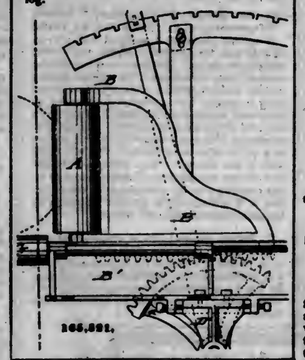


1. The combination of sponge d, guides d' d', and self-adjusting roll d', as and for the purpose specified.

2. The combination of spring-lever D, having pressure-plate D' and sliding spring-rod f actuated thereby, with the cutting E, stamp-cup F', and stamp-feeding mechanism for producing the simultaneous sealing of envelope and the affixing of stamp, substantially as specified.

165,521. SAW-MILLS. William T. Wayne, Conyngham, Pa. (Filed May 22, 1875.)

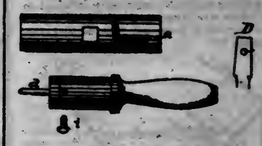
Brief.—The log is held so that any thickness of board can be cut in a uniform manner, and the spring of the board obviated by means of a vertical guide-roller turning in a sliding standard-frame, adjustable by a rack, sector-shaped pinion, and a lever that can be locked by a spring-latch to an arc-shaped guide-rack, and adjusted with the sector-shaped pinion to the exact position of a horizontal supporting-roller, bearing on the bottom part of the log.



The roller-carrying frame, having bottom rack, in combination with swinging sector-pinion, turning in adjustable hangers, an operating hand-lever with spring-latch, and an adjustable arc-shaped guide-rack, substantially as and for the purpose set forth.

165,522. AUGER-HANDLES. Frank Worts, Mahanoy City, Pa. (Filed June 1, 1875.)

Brief.—The handle is formed in two sections, one of which is provided with a pin projecting from the center of its inner end, and the other with a suitable recess for the reception of said pin. The two sections are connected together by a center connecting-sleeve, provided with an obtuse-angled slot near one of its ends, and a square slot through the middle. The auger-shank is clamped by pressing inward the section having the pin, until the pin shall have passed through a hole in the shank, when said section is turned so that the screw operating in the slot shall have reached the end of the same.

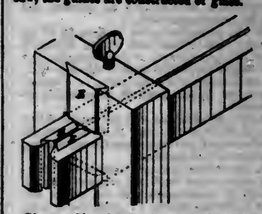


1. The combination of the handle A having the slotted sleeve c, the handle B having the pin d and screw f, and the bit-shank D, substantially as and for the purposes herein set forth.

2. In the auger-handle A B C, constructed as described, the longitudinal slot c, and inclined slot b, formed in the sleeve C, and the screw or pin f passed through the same into the movable handle B, as and for the purposes herein set forth.

165,523. BAND-SAW GUIDES. Lewis K. Young and Charles M. Ferguson, Bridgeport, Conn. (Filed May 18, 1875.)

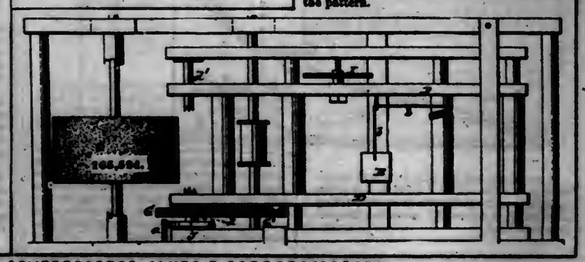
Brief.—For the purpose of diminishing the friction caused by the rapid motion of a band-saw, the guides are constructed of glass.



Glass guides for band saws, substantially as seen at E in the drawing.

165,524. MACHINES FOR DRESSING STONE AND MARBLE. Olif Abell, Walcott, Vt., assignor to Joseph Potter, Whitehall, N. Y. (Filed June 8, 1875.)

Brief.—The pattern borne on the sliding frame is held by a cord and weight against a stationary projection on the main frame, whereby the stone to be ground is presented to the emery-wheel, according to the shape of the pattern.

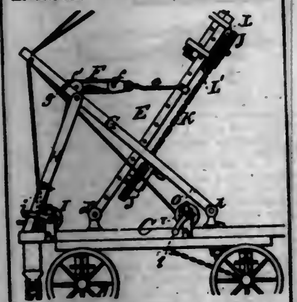


1. In a machine for grinding stone and marble, the sliding frame D, carrying the pattern and the piece to be ground, in combination with an emery-wheel and a weight, arranged substantially as and for the purposes herein set forth.

2. The combination of the sliding frame D, cord i, weight M, spindles *d d'*, gearing G G', pattern J, stop *e*, and emery-wheel C, all substantially as and for the purposes herein set forth.

165,526. FIREMEN'S EXTINGUISH-LADDERS. Adelbert Ames, Natchez, Miss. [Filed May 6, 1875.]

Brief.—The ladder is pivoted at the bottom to a turn-table, which has adjustable supporting-wheels. The sides of the ladder are provided with racks, into which pinion-wheels mesh, and are driven by a rag-wheel and chain. The ladder is raised to the proper incline by ropes and pulleys supported by a folding derrick, and when extended are locked by a spring-catch, the same being unlocked as the ladder is retracted by means of the pinion-wheels coming in contact with an endwise-movable bar.



1. The combination of the adjustable supporting-wheels D with a turn-table and a wagon-truck, substantially as specified, and for the purposes set forth.

2. The extension-ladder sections E' F', arranged face to face, each having a rack, *r*, upon the lateral edges of their uprights, and the former having the blank *a* above its rack, in combination with the pinion *l P*, supporting-ladder E, and catch M, substantially as specified.

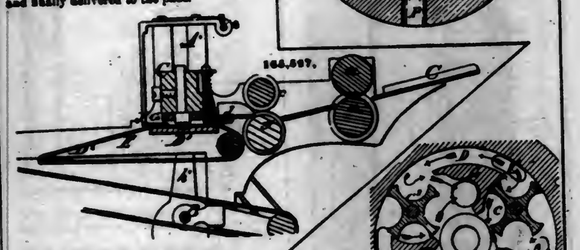
3. The combination, with an extension-ladder, E F' F', of the guys N N', and the adjusting-rope P and their respective windlasses, substantially as specified.

4. The extension-ladder sections E' F', having racks *r* upon the lateral edges of their uprights, in combination with the ladder section E, having pinions *l P*, gear-wheels L L', chain-wheels J J', and endless belt K, substantially as specified.

5. The endwise-movable unlocking-arm P, extending completely across ladder E', and adapted to be automatically actuated by piston V to thrust upon *s* of spring-arm M out of engagement with the said ladder, substantially as specified.

165,527. CRACKER-MACHINES. G. W. Baker, Wilmington, Del. [Filed May 15, 1875.]

Brief.—The sheet of dough is delivered by feeding-rolls to the splitting-rollers, by which it is cut longitudinally into ropes, which pass into guiding-troughs placed close behind the rollers. By the action of the latter mechanism the dough is pushed under a reciprocating head, which cuts off the projecting portion and throws it down upon the apron, where it is, by the same stroke, fastened to the proper size and form by the pressure of a spring-follower seated in a recess in the cutter-head. They are then carried forward by the apron over a concavity in the table, where they are "docked," after which the rows are "crossed," and finally delivered to the pans.



1. The yielding follower *e*, in combination with the cutting device *a*, substantially as described.

2. The combination of splitting-rollers *c c'*, guides *d*, cutter *a*, and a yielding follower, *e*, substantially as described.

3. In combination with the cutter *a*, having the yielding follower *e* and the stamps *l*, the bed D' and endless apron E, substantially as described.

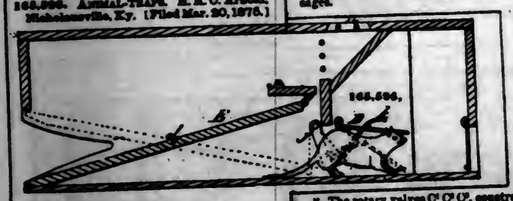
4. The bed D', having concavities *p*, in combination with the stamp *l* and the stripper G, substantially as described.

5. In a cracker-machine, the combination of the feeding and joining rollers *a a*, split rollers *c c'*, the cutter *a*, the spring follower *e*, the stamp *l*, stripper G, stationary bed D', and the endless belt, substantially as and for the purposes set forth.

165,528. ROTARY PUMPS. Henry A. Barber, Watertown, N. Y. [Filed Mar. 23, 1875.]

Brief.—A piston-disk, studded with pins on its side near its periphery, forms one side of the main chamber. The pins travel in a circular channel, and intermesh with winged rotary valves, each of which always presents one wing in contact with a curved rear face of an abutment, another curved face of which forms one wall of the circular channel. As the pins intermesh with and actuate the valves, a wing or a pin is always in contact with the outer wall of the channel. The revolution of the disk effects the suction of water through inlets opening into the channel, and the expulsion of it through ports divided therefrom by the intermeshing pins and valves.

1. Rotary valves C' C' C', constructed with radial wings, and operating in combination with abutments G and the face-armed piston *b* B, substantially as herein set forth, to transfer the water from the pumping-chamber of a rotary pump to the discharge-chamber or passages.



In an animal-trap the gate D, hinged or pivoted at its upper end, in combination with the swinging weight *j*, the arm *h*, and the tilting platform E, substantially as and for the purpose described.

2. The rotary valves C' C' C', constructed as described, and combined with the face-studded piston B *b*, to intermesh as the piston revolves and effect the rotary motion of the valves, thereby avoiding by such intermeshing the necessity of outside connecting-gearing, substantially as herein set forth.

165,529. CAR-COUPLINGS. William H. Bell, Platteville, Wis., assignor of one-half his right to C. Bell, same place. [Filed May 10, 1875.]

Brief.—The draw-bar is affixed to a head moving vertically in guides in the framing. The other end of the draw-bar is provided with an enlarged head, which passes through a T-shaped slot in the opposite draw-head, and is there held in the narrow part of the slot.

1. The combination, with a framing, A, provided with plates C D E, having slots therein, as described, of a movable draw-head, G, and draw-bar H, substantially as described.

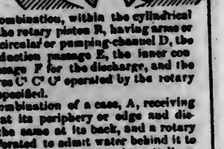
2. The combination, with a draw-head, G, capable of vertical movement in a frame, A, as described, of a draw-bar, H, provided with an enlargement or loop, H', and extending through or within the said draw-head, and restricted by a spring, I, substantially as described.

3. The combination, with the frame A, having plates C D E, formed with slots, as described, and guides *b b*, of the draw-head G, draw-bar H, rod K and ropes or chains L, or ropes and chains L and levers K', substantially as set forth.

4. The combination, with a framing, A, provided with a plate or surface, D, having a T or equivalent shaped opening, D', as described, of a draw-head, G, and draw-bar H, capable of adjustment in position, substantially as and for the purposes described.



165,530.



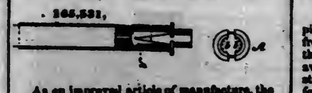
2. The combination, within the cylindrical case A, of the rotary piston B, having arms or pins *b*, the circular or pumping-channel D, the annular induction passage E, the inner concentric passage F for the discharge, and the rotary valves C' C' C' operated by the rotary piston, as specified.

4. The combination of a case, A, receiving the water at its periphery or edge and discharging the same at its back, and a rotary piston perforated to admit water behind it to equalize the pressure upon it, substantially as herein shown and described.

5. The water-waved and cored casting A, in combination with the sheeted cap A', and the water-waved cap A', to constitute the shell of the pump to receive the operating mechanism and to form the water-ways thereof, substantially as herein set forth.

6. The rotary valves and their abutments G, the piston B, and its effective surfaces arms *b*, combined for joint operation within the same chamber into which the water is pumped, and from which it is expelled, to render the pump more compact, substantially as described.

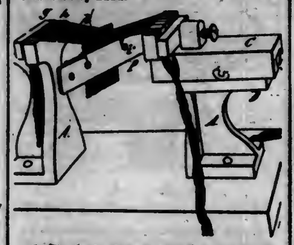
165,531. ERASER-HOLDERS. W. H. Bennett, New York, N. Y. [Filed June 17, 1875.]



As an improved article of manufacture, the herein-described eraser-holder, consisting of the V-split tube A, having inwardly-projecting edges or serrated jaws *b*, for holding the rubber.

165,532. MACHINES FOR POLISHING THE EYES OF MACHINE-NEEDLES. John Berry, Springfield, Mass., assignor to the National Needle Company, same place. [Filed Dec. 16, 1874.]

Brief.—The needles are held in a clamp with their eyes all in the same relative position. The threads, which are charged with the polishing mixture, after being passed through the eyes of the needles, are clamped by the blocks *g g'*. The clamp is reciprocated back and forth by hand.



1. The device for polishing the eyes of needles, consisting of the fixed pieces A and A', the movable jaws *g* and *g'*, operating in combination with the pieces A and A', to grasp the threads extending through the series of needles, and the clamp P, for holding the needles with the eyes all in the same relative position, substantially as described.

2. The adjustable head-block C, arranged upon the upright A, in combination with the jaws *g* and *g'*, operating in connection with the parts A and A', to grasp and hold the threads upon which the needles are strung, substantially as set forth.

165,533. COMPOSITIONS FOR STONE ORNAMENTS. Alexander Doug, Jackson, Mich., assignor of seven-eighths his right to O. P. Coats, same place. [Filed Apr. 17, 1875.]

The herein-described stone cement, made by combining saltpeter with calcined gypsum, substantially in the manner and proportions set forth, and pulverizing the compound, as described.

165,534. CORSETS. Moses K. Bertron, Jackson, Mich. [Filed Feb. 12, 1875.]



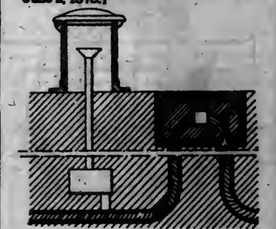
1. A corset-bone wherein two or more strips of whalebone or horn are placed one upon the other, substantially as and for the purposes set forth.

2. In combination, a corset-bone composed of two or more strips of whalebone or horn placed one upon the other, and a metallic tip, A, to hold the end of the same, substantially as and for the purposes set forth.

3. In a corset, the combination of the pieces A A' A' A' and the gores *a a'*, the several parts constructed and arranged substantially as and for the purposes described.

4. In a corset, the combination of the side pieces A' A', the bones in said pieces starting from a point under the arm, and diverging to the front and rear, avoiding the hips, the cut-away portion C, and the strap D D', all constructed and arranged substantially as and for the purpose set forth.

165,535. UNDERGROUND-TELEGRAPH LINES. David Brooks, Philadelphia, Pa. [Filed June 2, 1875.]

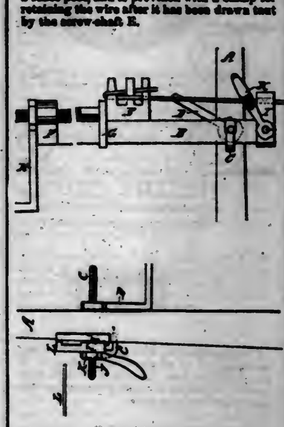


1. An underground-telegraph wire or cable clothed with absorbent material, covered with insulating substance, and contained within a pipe, in combination with a liquid insulating medium maintained under pressure within the said pipe, all substantially as set forth.

2. An underground-telegraph wire or cable surrounded by pipes arranged in sections, each section being bent upward at the ends, as set forth, and terminating in a box or receptacle, B, for the purpose specified.

165,536. FENCE-WIRE STRETCHERS. W. L. Brown and J. B. Cramer, Dunlap, Iowa. [Filed Feb. 13, 1875.]

Brief.—The device is detachably secured to a fence-post, and is provided with a clamp for retaining the wire after it has been drawn taut by the screw-shaft E.



1. The combination of the forked straining-bar and its crank-nut H with bar B, having socket F, guide-ring G, and a device for holding to the post A, substantially as described.

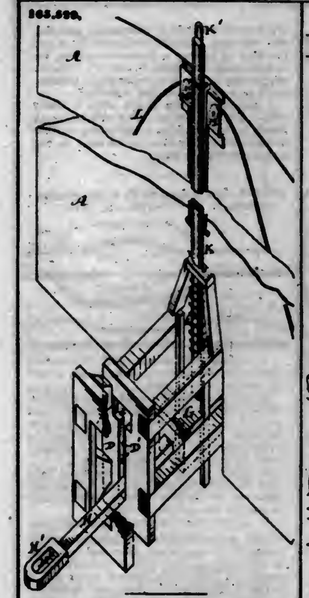
2. The combination, with bars B and forked rod B, of the open-bolt or dog (), having a portion of its shank made polygonal, and a portion screw-threaded, and head-clamping nut D, as and for the purpose described.

3. The combination of the detachable clamping-jaw I', having screw J attached, with fixed jaw I, bar B, wire-straining screw-rod K, and nut H, all as shown and described.

165,537. GLOBE-VALVES. Hugh P. Bufton, Cleveland, Ill. [Filed May 17, 1875.]

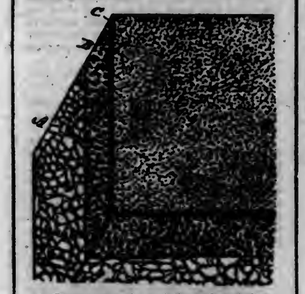
Brief.—The cheek-valve works within a bell-bow plug-valve.

165,538.



165,539. PAVEMENTS. Henry R. Bellamy, Indianapolis, Ind. [Filed Mar. 17, 1875.]

Brief.—Twenty-four pounds asphaltum and four gallons distilled coal-tar are boiled until the asphaltum is thoroughly dissolved. Five pounds of sulphur are dissolved in one gallon animal oil over a slow fire, and added to the asphaltum and coal-tar. Gravel of different degrees of fineness is then covered with this compound, and spread on a prepared foundation of gravel and broken stone, the coarser gravel beneath. A layer of the compound is spread as a top dressing, sanded and rolled in the usual manner.

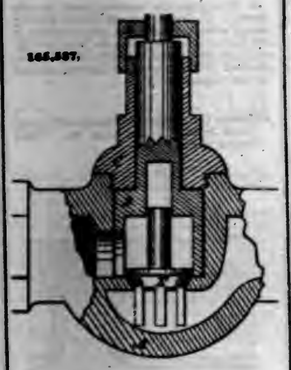


1. The compound consisting of asphaltum, sulphur, animal oil, and distilled oil of coal-tar, when combined by heat, substantially in the manner and for the purposes herein set forth.

2. The combination of asphaltum, sulphur, animal oil, and distilled oil of coal-tar mixed with gravel or stone, substantially as and for the purposes herein set forth.

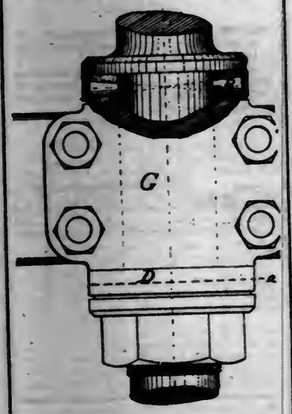
3. The within-described pavement, consisting of the coarsest grade of gravel or stone with compound A, second grade of gravel or stone with compound B, water-proof compound C, and finest grade of gravel and sand D, when combined substantially as herein set forth.

165,537.



The combination, with a hollow ping-valve, of a check-valve, having its seat in a partition formed in the valve-case, substantially as and for the purpose specified.

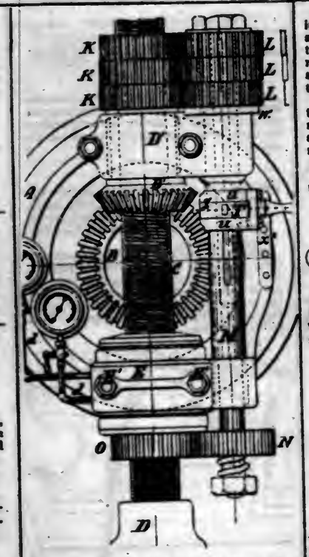
166,538. CONICAL-ROLLER THRUST-BEARING. Milan C. Bullock, New York, N. Y. [Filed May 20, 1874.]



The combination, with the disks C C and retaining-ring D, of the conical rollers B B, constructed without journals, and whose outer bases are spherical surfaces of less radius than that of the retaining-ring.

166,539. ROCK-DRILLING MACHINE. Milan C. Bullock, New York, N. Y. [Filed May 14, 1874.]

Brief.—The machine operates by rotation and continual pressure. The invention consists in the combination, with a revolving rock-drilling machine, of a screw-feed and a hydraulic vessel provided with a gage, whereby the thrust or pressure of the boring-bit upon the rock is indicated; also, in the combination, with a revolving rock-drilling machine, of a screw-feed and a hydraulic vessel provided with a gage, whereby the weight of the drill-rod is indicated; also, in the adaptation to the aforesaid vessels of a peculiar roller-bearing; and in the combination, with the differential gearing, of a shipping device, whereby the rate of feed may be changed, or the drill withdrawn, without stopping the revolution of the drill.



1. The combination, substantially as described, of a revolving rock-drill, a screw-feed, and a hydraulic vessel provided with a gage, whereby the pressure of the bit upon the rock is indicated.

2. The combination, substantially as described, of a revolving rock-drill, a screw-feed, and a hydraulic vessel provided with a gage, whereby the weight of the drill-rod is indicated.

3. The combination, with the hydraulic cylinder *c*, of the roller G and disks *a a*, one of which is fitted to slide in said cylinder like a piston, substantially as described.

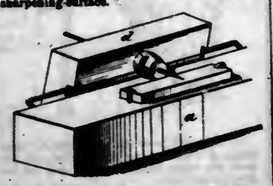
4. The combination, with the screw-shaft and feed-nut, of the gears which feed said shaft at different rates of speed, and the shipping mechanism, whereby the rate of feed may be changed without stopping the revolutions of the drill.

5. The combination, with the hubs *m m* and gears L L L, of the slotted counter-shaft M, plunger S, keys *g* and E, shipping-handle R, tube *t u*, and ring T, operating as and for the purpose described.

6. The combination, substantially as described, of the fixed hub W and the shipping mechanism.

166,540. NEEDLE-SHARPENING. Thomas D. Conkin, Montrose, Pa. [Filed Nov. 21, 1874.]

Brief.—A cone-shaped elastic disk is attached to the end of a sleeve, which is journaled so as to revolve, and which slides on a guide-way, and through which the needle to be sharpened is passed and held obliquely to the sharpening-surface.



1. The elastic wheel *g*, journaled by means of an axial tube, *f*, and attached thereto at its inner or front end, and so as to project beyond the same, for grasping the needle near the point to hold it, and for graduating the pressure of the needle while it rotates the same in contact with a sharpening-surface, as herein illustrated and set forth.

2. The combination of the base *a*, supporting a block or strip of sharpening material, and provided with a pivotal guide-bar, *c*, and the slide *d*, having a transverse orifice, for reciprocating the needle in contact with the sharpening-surface at a proper angle, substantially as herein shown and described.

3. The combination of the slide *d*, rotary tube *f*, and elastic wheel *g*, for reciprocating a needle in contact with a sharpening-surface and simultaneously rotating the same, in the manner herein set forth.

166,541. CHAIN-CABLES. C. A. Chamberlin, Camden, N. J. [Filed Mar. 13, 1875.]



1. A chain-cable composed of links having the broad inner faces *c c*, substantially as and for the purpose set forth.

2. A chain-cable composed of links with increased depth and thickness at the points of junction of the sides and bends, and flattened at those points, so that the depth will be greater than the thickness, as at *a a*, substantially as and for the purpose set forth.

3. A flexible chain-cable composed of links with flattened bends of increased depth and thickness in the line of strain, substantially as and for the purpose set forth.

4. A chain-cable composed of links constructed with increased depth and thickness at the points of junction of the sides and bends, as at *a a*, and flattened at said points, and increased in depth and thickness in the bends in the line of strain, as at *y y*, said bends being likewise flattened, substantially as and for the purpose set forth.

5. A chain-cable, the links of which have side bars with broad inner faces *c*, and of increased depth and thickness at the points of junction of the sides and bends, as at *a a*, and flattened at said points, substantially as and for the purpose set forth.

6. A chain-cable, the links of which have side bars with broad inner faces *c*, and flattened bends of increased depth and thickness in the line of strain, as at *y y*, substantially as and for the purpose set forth.

7. A chain-cable composed wholly or in part of links elliptical on the inner face, as at *c*, increased in depth and thickness at or about the points of junction of the sides and bends, as at *a a*, and increased in depth at the bends, as at *y y*, substantially as and for the purpose set forth.

166,542. DIES FOR HEADING AND SQUARING BOLTS. James B. Clark, Plantsville, Conn. [Filed May 10, 1875.]

Brief.—The blocks gripe the blanks, and the dies square the neck. Dies project above the blocks, resting on springs, and present operative faces that are not parallel, but more widely separated at the lower part than at the upper end, permitting thus no accumulation of metal at the lower end of the square, as the header upsets the metal and forces it, together with dies *b*, downward.

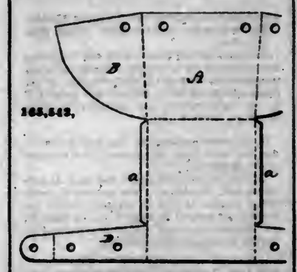


The combination of the stationary holding-dies with the movable shaping-die *a* and heading-die, all operating together substantially as described.

166,543. ELEVATOR-BUCKETS. J. B. Cline, Jefferson, Iowa. [Filed Jan. 26, 1875.]

Brief.—A single piece is struck from a plate of metal, of form described, that will, by being bent and riveted, compose an elevator-bucket.

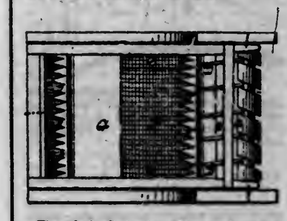
165,542.



The elevator-cup described, made from a single piece of metal, cut to form the part A, with ends B B, central piece C, with narrow strips *a a*, and bottom projecting bands D D, all as shown in Fig. 1, and then bent into shape, all substantially as set forth.

165,544. GRAIN-SEPARATORS. William S. Clymans, Burnt Cabins, Pa. [Filed May 16, 1875.]

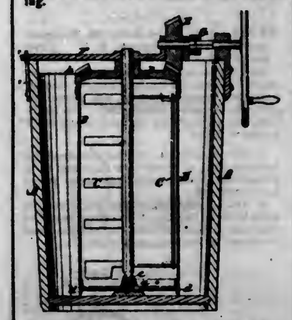
Brief.—A shaft, having cams at the ends and a series along its length of circumferential cam-grooves, imparts vibratory motion to a series of fingers pivoted to a fixed bar, and rocking motion to a separator-shoe, the rear end of which rests upon said shaft.



The shaft C, having the annular cam-grooves *d d d*, and the cams *f f*, in combination with the fingers D D D and shoe B, substantially as and for the purpose set forth.

165,545. ICE-CREAM FREEZERS. John W. Condon, Baltimore, Md. [Filed June 7, 1875.]

Brief.—A sliding sleeve detaches the power-wheel and operating-gear. The covering-plate has depending flanges, which protect the gearing.

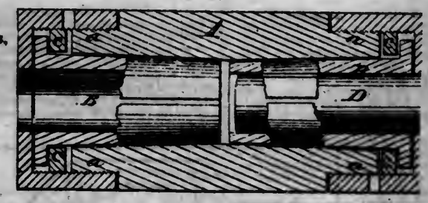


1. The combination of the top plate F, having flange *b*, with the teeth of the cover D, as and for the purpose specified.

2. The combination, with the pinion-shaft and the shaft of the driving-wheel, of the single adjustable coupling-collar G, substantially as and for the purpose described.

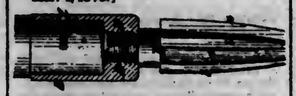
165,546. SHAFT-COUPLINGS. ASA BROWN COOK, Erie, Pa. [Filed Mar. 27, 1875.]

165,546.



The screw-threaded nut C, having the interior ring or flange *c*, in combination with a screw-threaded hub, A, and split taper-sleeve B, operating substantially as described.

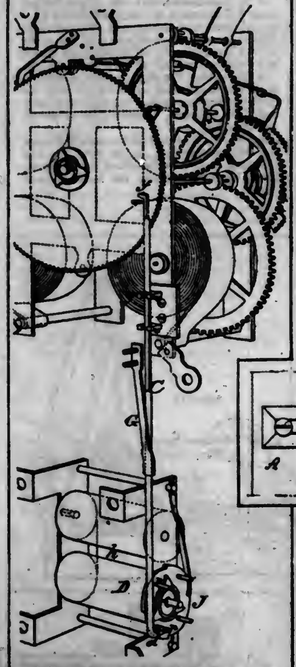
165,547. LANCES FOR PROPELLING SLEIGHS. Adolphe Corbett, Hicksville, N. Y. [Filed Mar. 4, 1875.]



The handle A and the metallic ferrule B attached thereto, and having the female screw-threaded socket D, in combination with the pointed head E having a screw nipple or boss, *c*, and longitudinal ribs *a b*, all substantially as and for the purpose set forth.

165,548. CALENDAR-CLOCKS. A. A. Cowles, New York, N. Y. [Filed May 6, 1875.]

Brief.—The cylinder, carrying the calendar for the month, is moved through the medium of a lever actuated by certain devices connected with the striking mechanism.



1. In combination with the striking mechanism of a clock the leaf *a*, toothed wheel B, rod C, and calendar mechanism, substantially as described.

2. Studded disk J on the shaft of roller D, combined with hooked lifting-rod C, spring G, and the clock-actuating mechanism, substantially as described.

165,549.

165,549. BRACKET-STANDS. A. B. Denison, Guilford, Vt. [Filed May 19, 1875.]

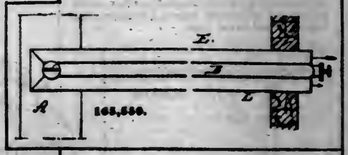


As improved bracket-stand, consisting of the platform portion A, and the support E, both braced together with the pieces *c*, and also arranged with catches *c'* for attachment to the wall, and all formed and bent from wire, substantially as set forth.

165,550. DEVICES FOR THAWING FROZEN WATER-PIPES. Robt. R. Pleis, New York, N. Y. [Filed Apr. 2, 1875.]

Brief.—A pipe or tube adjoining the service-pipe, and running parallel from the main to and through the building-wall.

The combination of the branch pipe B and a tube, E, adjoining said pipe and extending parallel, or nearly parallel, thereto from a point at or near the main to and through the wall D of a building, as specified.



165,550.

165,551. TRACE-BUCKLES. Albt. G. Dodds, Charlton, Iowa, assignor, by mesne assignments, of a part of his right to R. T. Best and A. C. Wilcox, same place. [Filed Mar. 17, 1875.]

1. In a trace-buckle in which the trace is held by a pivoted tongue, a detachable metal protecting-plate, I, placed on the tongue between the trace and the rear-end tongue-bar, substantially for the purposes herein set forth.

2. The combination of the side bars A A with wedge-shaped braces *a a*, base-tug bar B, tongue-bar D, tongue F, loops J J, rear-end tongue-bar G, and protecting-plate I, all constructed substantially as and for the purposes herein set forth.

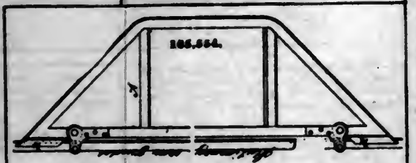
165,551.



1. A water or other similar closet, constructed with a pivoted seat, C, and a pivoted front-board, H, retained in position by a weight or spring, substantially as described.

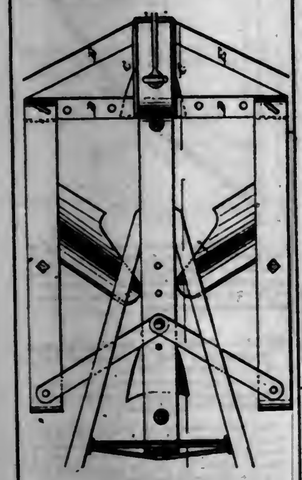
2. The combination, with a pivoted closet-seat, C, provided with an inclined end, C', of a pivoted front board, H, formed with a curved or inclined upper end, H', and retained in position by a weight or spring, substantially as and for the purpose described.

165,554.



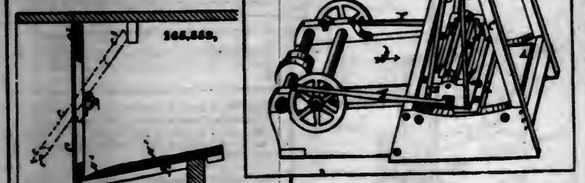
165,556. CULTIVATORS. James U. Durrenvent and W. A. Hampson, Sylvatic, Miss. [Filed Mar. 15, 1875.]

Brief.—A light triangular frame strengthened by flanges, and secured to the front end of the center beam by longitudinal plates and cross-bands.

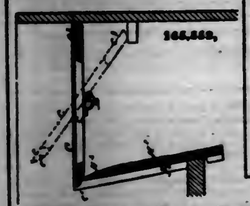


The flanged metal frame C D E, with its connecting-bands a a, adapted to allow of the adjustment of the side beams, all constructed and arranged as set forth.

165,555.



165,558.



165,559. SEATS FOR WATER-CLOSETS. Frank Feld, Galveston, Tex. [Filed May 10, 1875.]

Brief.—The seat and foot-board swing on pivots, so as to prevent persons standing on the seat; but when the occupant is in proper sitting posture the seat adjusts itself, so that it may be used.

165,564. SELF-CLOSING HATCHWAYS. John Fenson, Toronto, Canada. [Filed Nov. 4, 1873.]

Brief.—The doors are provided with pairs of rollers, that engage with flanged cams on the car, by which they are opened and closed, and a pivoted locking device, for locking the doors when closed, is secured to the sides of the hoistway, and is operated by the car in its ascent and descent.

1. The bracket G, with hinged bolt C and spring F, in combination with the projections H H' on the back of the cage A, as herein shown and described, and for the purposes set forth.

2. The bracket G, with hinged bolt C and spring F, in combination with the inner roller r' on the connection-bar D, attached to the hatch-door B, as specified and described, and for the purposes set forth.

3. In combination with the single flanged cams E E on case A, the pairs of rollers *r r' r r'* on the hatch-door, one of each pair engaging with and running on one side, and the other on the opposite side of its flange, as shown and described, and for the purposes set forth.

4. The spring F applied to a stationary part of the apparatus, and operating to hold the locking device in position to be automatically locked or unlocked, substantially as shown and described.

5. The combination, with the described cams and rollers, operating, as set forth, to close the hatch-door, of the described locking mechanism, operating to lock the hatch when so closed.

165,555. MACHINES FOR CUTTING HOOPS. Henry Fowler, Detroit, Mich. [Filed May 22, 1874.]

Brief.—The bolt from which the hoops are cut is placed in a feeding-box hung upon trunnions, so that in the reciprocation of the frame which carries it, the box will be canted by the bolt striking the cutting-knife, thus forming a beveled hoop.

1. In combination with the bolt-holder G and the bevel E, the set-screws H, for the purposes described.

2. The combination, with the bed A, provided with threats a, of the cutters B, oscillating holder or box G, pivoted within the bevel E, set-screws H, frame C, radial arms D, and connecting-rods F, all constructed and arranged as described and shown.

165,556. BOOT AND SHOE STRETCHERS. O. F. Garvey, Pawtucket, R. I. [Filed July 3, 1875.]

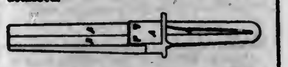
Brief.—The spur projecting from the bottom of the lower section prevents slipping, and adapts a single apparatus to varying sizes of boots and shoes.



In a last for stretching boots and shoes, the section A, provided with spurs g and slotted standards c, projecting from its bottom or lower surface, substantially as and for the purpose set forth.

165,557. FENCE-POSTS. Everard Gear, Beloit, Wis. [Filed June 23, 1875.]

Brief.—Twin posts in a metal socket, the end of which socket is driven into the ground. Each post is retained by a transverse bolt, so that by withdrawing a bolt the panels may be detached.



In a fence-post, the combination and arrangement of the twin-posts B B with the metal part A, substantially as and for the purpose herein set forth.

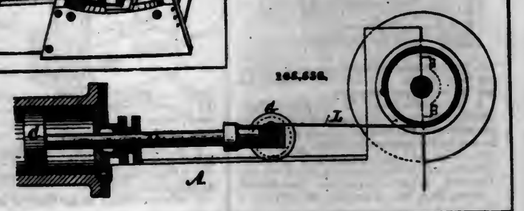
164,568. HYDRAULIC HOISTING-ENGINES. Geo. M. Gerrish, Brooklyn, N. Y. [Filed May 31, 1875.]

Brief.—The cross-head and drum are connected by flat metal bands, which, in winding upon and unwinding from the drum, are always in the direct line of draft. The bands being flat, the working diameter of the drum is least variable.

1. The combination, with the piston-rod and hoisting-drum, of one or more flat metal band connections, L, substantially as herein shown and described.

2. The combination of the piston-rod D, cross-head E, cranks G G, hoisting-drum and shaft and connections, arranged as shown and described, for the purpose specified.

165,536.



165,558. ROTARY ENGINES. Saml. Gibson, Shrewsbury, assignor of one-half his right to Hiram Young, York, Pa. [Filed Sept. 23, 1874.]

Brief.—The hollow pistons are thrown out by a pin attached to them working in a cam-groove, and are packed by steam entering an opening in the pistons. The abutment is adjusted by a screw.

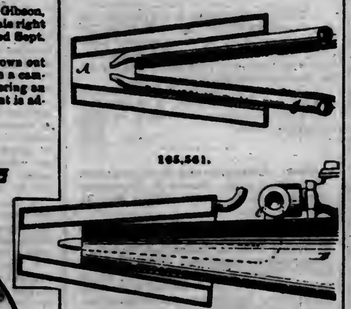


1. The combination, with the circular casing A, having the cam-groove a, as described, of the revolving wheel B, arranged within and concentric with the cylinder, and the hollow pistons C C, moving out and in in the wheel B, and provided with shoes C', and studs and rollers b to move in the cam-groove a, and with steam-inlets a, all substantially as and for the purposes herein set forth.

2. The combination of the casing A with passages *f f'*, and cam-groove a, revolving wheel B, hollow pistons C C, with shoes C C', steam-inlets a a, and studs and rollers b b, and adjustable abutment H, all substantially as and for the purposes herein set forth.

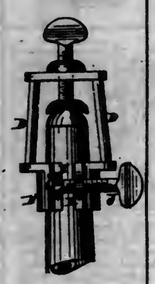
3. The combination of the casing A with passage *f f'*, cam-groove a, revolving wheel B, hollow pistons C C, adjustable abutment H, hollow cylindrical valve G, with ports *d* and *e e'*, and passages *i i'*, steam-chest D, and inlet and exhaust pipes E E, all substantially as set forth.

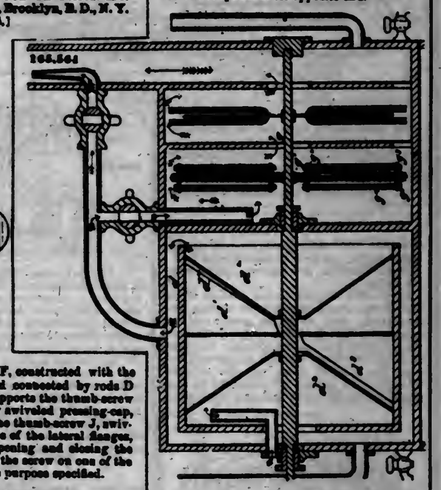
165,561.



The combination of the tuyere A, air-blast pipe B, arranged therein, and steam-tubes *c c* on the exterior of, and projecting in front of, the air-blast pipes, substantially as shown and described.

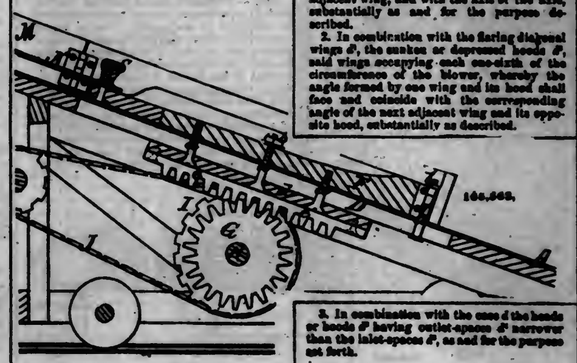
165,562. BILLIARD-CUE-TIP FASTENERS. Christian Grevelius, Brooklyn, S. D., N. Y. [Filed May 20, 1875.]





The hinged clamp F, constructed with the lateral flanges *l l*, and connected by rods D with the plate that supports the thumb-screw carrying the ordinary swiveled pressing-cap, in combination with the thumb-screw J, swiveled at one end to one of the lateral flanges, for the purpose of opening and closing the jaws by the action of the screw on one of the flanges, as and for the purpose specified.

165,563. SNOW-PLOWS. Erastus G. Graves, Rome, N. Y. [Filed June 6, 1875.]



1. The wings M, hinged to the rear end of the double mold-board E, in combination with the pivoted and longitudinally-slotted arms N N', and clamping-screw S, substantially as and for the purpose set forth.

2. The combination, with a tapering shovel-plane, A, and an adjustable double mold-board, E, having platform F, of the vibrating and adjustable arms or rods N N', and set-screw S, substantially as specified.

3. The combination of an inclined shovel, A, having slot D, and the endwise-movable mold-board E, having rack-bar *e* of the pinion G, shaft H, sprocket-wheels I, endless belts J, sprocket-wheels K, and shaft L, substantially as specified.

165,564. AIR-CARBURETORS. George L. Gray and Comegys C. Linzey, Philadelphia, Pa. [Filed Apr. 10, 1876.]

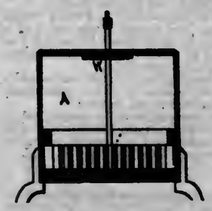
Brief.—The air-blower and carburetor-wheel in separate chambers are fixed on the same shaft. The exit air-pipe from the blower extends to the exit gas-pipe from the carburetor-chamber, and has a branch extending direct into the carburetor. Each branch is provided with a cock for controlling the air-supply. The air-blower has flat, flaring, oblique leaves, and the heads of the blower are concave. The air-inlet spaces to the blower are wider than the outlet-spaces at its opposite end.

1. The blower, having oblique wings *f*, the upper edge of each wing being in the same plane with the lower edge of the next superadjacent wing, and with the axis of the axle, substantially as and for the purpose described.

2. In combination with the flaring discharge wings *f*, the cantion or depressed hoods *F*, said wings occupying each one-sixth of the circumference of the blower, whereby the angle formed by one wing and its hood shall face and coincide with the corresponding angle of the next adjacent wing and its opposite hood, substantially as described.

165,565. DASHERS OR GAS AND AIR BEATERS FOR FURNACES. Geo. H. Goodsell, Lockhaven, Pa. [Filed May 17, 1875.]

Brief.—The small pipes on the outside of the blast-pipe conduct steam or gas in front of the nozzle, by which arrangement the blast forces the steam, &c., into the furnace.



The dasher C, in combination with bottom of box A and cross-head H, and operated in the manner as and for the purpose set forth and described.

165,566. RECIPROCATING CHURNS. Alfred Goodnough and Thomas T. Drennen, Portland, Oreg. [Filed Nov. 21, 1874.]

Brief.—The two pivoted dasher-blades are forced together in the downward stroke by the double-inclined bottom. The cream is prevented from splashing out by the cross-head, which reciprocates as the dasher is moved, and effectually closes the opening through the lid of the churn.

The dasher C, in combination with bottom of box A and cross-head H, and operated in the manner as and for the purpose set forth and described.

165,565. DASHERS OR GAS AND AIR BEATERS FOR FURNACES. Geo. H. Goodsell, Lockhaven, Pa. [Filed May 17, 1875.]

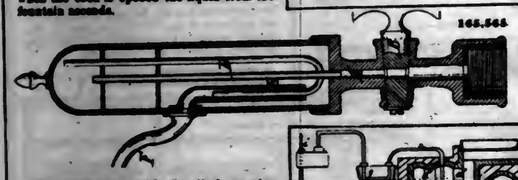
Brief.—The small pipes on the outside of the blast-pipe conduct steam or gas in front of the nozzle, by which arrangement the blast forces the steam, &c., into the furnace.

4. An evaporating-wheel composed of the disk f', central and circumferential rows of pins f' f'', and wick or other fibrous or textile material wound alternately from center to circumference, substantially as shown and described.

5. The combination, with a blower and carburetor upon a single shaft passing through the air and gasoline chambers, of a pipe leading from the blower-chamber to the outlet gas-tube, and having a branch entering the gasoline-chamber, said pipe and branch being furnished with cocks to regulate the quality of the gas, as and for the purpose specified.

165,565. APPARATUS FOR DRAWING EFFERVESCENT LIQUIDS. Charles Greiner, New York, N. Y. [Filed Dec. 17, 1874.]

Brief.—The discharge-pipe of a fountain containing effervescent liquid under pressure, in combination with a stop-cock, one or more sieves, an expansion-chamber, a siphon-shaped escape-pipe for the surplus gas, and a spout which connects with a pipe extending down near to the bottom of the expansion-chamber, and which embraces the discharge-shank of the gas-escape pipe, in such a manner that when the cock is opened the liquid from the fountain ascends.

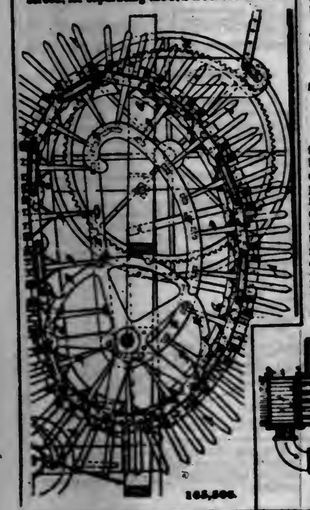


165,565.

The combination, with the discharge-pipe of a fountain containing liquid under pressure, of a stop-cock, B, a siphon-shaped gas-escape pipe, D, one or more sieves, c, a liquid-escape pipe, E, and spout F, all constructed and operating substantially in the manner shown and described.

165,566. POTATO-DIGGERS. Geo. W. Hasg, Milton, Pa., assignor to himself and Pembroke Churchill, same place. [Filed May 9, 1875.]

Brief.—The digging device consists of an endless belt armed with two sets of long concave teeth, which enter the ground by the forward movement of the machine, which is mounted upon four bearing-wheels. A system of fixed cams cause the teeth to approach beneath the potatoes, which, with the soil, are lifted from the ground and deposited upon a screen, for separating the soil from the tubers.



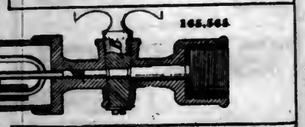
165,566.

1. The two sets of teeth A, to press into the ground and close under the roots by the forward movement of the machine, said teeth being mounted on endless chains, in combination with horizontally-elongated ways G for the chains, substantially as specified.

2. The teeth A, constructed in fluted or grooved transverse section, in combination with the endless chains and ways G, substantially as specified.

165,567. APPARATUS FOR CONCENTRATING SULPHURIC ACID. Gustav A. Hagemann, Copenhagen, Denmark. [Filed May 21, 1875.]

Brief.—One or more conical evaporating pipes or tubes extend through the flue, communicating with the cooler and condenser. These pipes are surrounded by heat from the flue. A current of air is induced by an injector in the vapor-pipe connected to the evaporating-pipe. The interior of the evaporating-pipes is provided with small chocks or rings, which serve to distribute the acid evenly over the interior surfaces, and regulate the flow. The acid-chamber is heated by the waste vapors given off.



165,567

1. In combination with a vertical flue, A', fire-places a a, one or more conical evaporating-tubes c, placed vertically within the flue, substantially as and for the purpose specified.

2. In combination with the conical tube c, within a suitable furnace, the eduction-pipe e, and a jet or injector, i, substantially as and for the purpose specified.

3. The conical evaporation-tube c, provided with a series of removable rings or chocks, c^2, substantially as and for the purpose specified.

4. The combination of the flues A' A^2, evaporating-tube c, and the evaporating-pan D, substantially as and for the purpose specified.

165,568. METHODS AND APPARATUS FOR EVAPORATING LIQUIDS. Gustav A. Hagemann, Copenhagen, Denmark. [Filed May 21, 1875.]

Brief.—The liquid escapes from the receiver through a perforated bottom, and is conducted by filaments to the cup-like mouths of the evaporating-tubes, where, by means of cuts or perforations, the fluid is distributed in a thin film over the interior surface of said pipes. A current of air, heated if desired, induced by fan or exhaust, passes up to hasten evaporation. Steam is admitted to the jacket, passing freely among the pipes, and is diffused by means of a series of diaphragms, through which the pipes pass loosely. The air passing up the pipes, becoming heated and charged with vapor, is reconducted by a pipe to the jacket and utilized.



165,568.

1. The process herein described for evaporating and concentrating liquids, consisting in exposing a thin, continuous, or flowing film of liquid to heat applied on both sides thereof, and to the action of an induced air-current, substantially as specified.

2. In an evaporator for evaporating and concentrating liquids, the combination of one or more vertical tubes or pipes, an inclosing jacket or cylinder, a series of perforated heads or diaphragms, and two or more induction and edduction pipes communicating with the jacket and vertical tubes, substantially as and for the purpose specified.

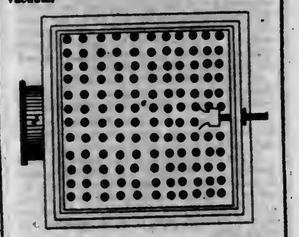
3. The combination of cylinder a, having perforated heads b c, and induction and edduction pipes t u, with tubes d, and blast or exhaust fan k, substantially as and for the purpose specified.

4. The combination of blower k, pipes d, cylinder or jacket a, having heads b c y, pipe m, and edduction-pipe u, substantially as and for the purpose specified.

5. The tubes d, having one end cut or perforated, and provided with a cup for receiving a liquid and directing it against the surface of the pipe, substantially as specified.

165,569. PNEUMATIC MACHINES. Gustav A. Hagemann, Copenhagen, Denmark. [Filed May 21, 1875.]

Brief.—The sucker-head has fine wires, crossing the chamber vertically, to make a large condensing-surface, and regulate the flow. The head is also provided with a slide covering the perforations. A Bunsen or Sprengel pump is attached to produce a vacuum.



1. In combination with the vacuum or sucker-head a series of inlet and exit pipes. s s s s, substantially as and for the purpose specified.

2. In combination with the exit-pipes s s of the sucker-head, plate h, having cup-shaped depressions, as and for the purpose specified.

3. In combination with the inlet-pipes s s of the sucker-head the conical tips s' s', substantially as and for the purpose specified.

4. The combination of the inlet and exit pipes s s s s of a sucker-head, and a series of filaments or wires within the head, substantially as and for the purpose specified.

5. As an improvement in working vacuum apparatus, the method herein described of increasing the power thereof by means of films or sheets of water within the sucker-head, substantially as specified.

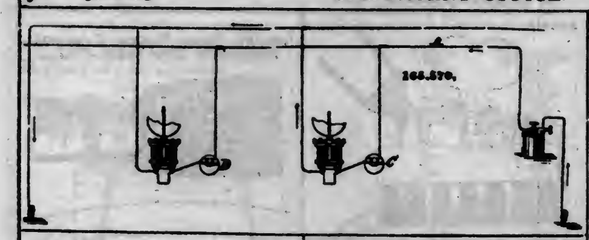
6. In combination with the water-head s, an adjustable slide or gate, c, substantially as and for the purpose specified.

7. The combination of the sucker-head siphon-pipes x y, vat v, and cross pipe w, having a suitable stop-cock, substantially as and for the purpose specified.

165,570. CIRCUITS FOR ELECTRIC SIGNALS. Thomas S. Hall and Geo. H. Snow, West Meriden, Conn. [Filed June 28, 1875.]

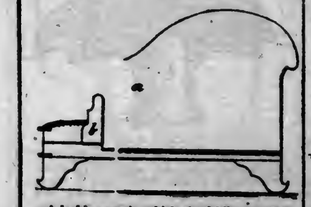
Brief.—Designed more particularly for railroad-signals, the purpose being that whenever the circuit is closed the current shall be compelled to traverse the same distance, and the resistance shall then always be the same.

The combination, with a series of keys or circuit-closers, O D, of a battery and two line-wires, A B, one pole of the battery and one of the line-wire B being grounded, while the other pole of the battery connects with the line-wire A, all constructed and operating substantially in the manner herein shown and described.



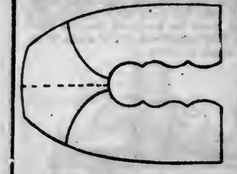
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165,571. BED-LOUNGE. Thomas Q. Hall, Indianapolis, Ind. [Filed July 6, 1874.]



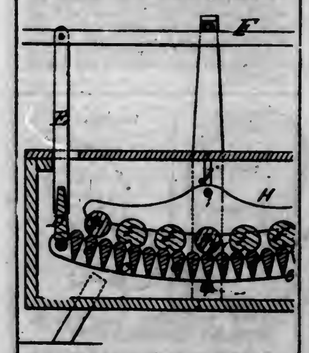
A bed-lounge, in which the folding section is provided with the leg or foot b, constructed and arranged to form a part of the back a, when the folding section is folded upon the base of the lounge, substantially as and for the purpose set forth.

165,572. MOLDS OR CUTTING BOOT-FRONTS. Joseph T. Harper, Charleston, Ill. [Filed Apr. 9, 1875.]



A boot in which the vamp is constructed of two or more pieces of material cut and united to each other and to the leg-front, in the manner and for the purpose specified.

165,573. WASHING-MACHINES. John H. Harris, Iola, Kans. [Filed Apr. 10, 1875.]



In a washing-machine, the oscillating rubbing-frame C, having transverse strips e, hinged boards D, at its ends, pivoted rods H F, actuating-lever F, in combination with the oscillating rubber-block H, having journaled ribbed strip f and rollers g.

165,574. FEATHER DUSTERS. Henry L. Harrison, East Saginaw, Mich. [Filed June 5, 1875.]

Brief.—The duster is provided with a tonka-bean to repel moths.

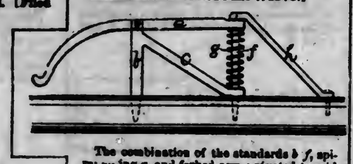
1. A feather-duster charged with a fixed moth-protector, substantially as and for the purpose specified.

2. A moth-proof feather-duster consisting of the head, brush, and the contained Tonka or moth bean, substantially as herein set forth.



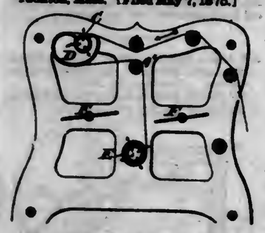
165,574.

165,575. HOLDBACKS. Willard H. Harvey, Kingston, Mo. [Filed June 7, 1875.]



The combination of the standards b f, spiral spring g, and forked arm e pivoted to said standard b as d, all operating as set forth, for the purposes described.

165,576. CLOTH STEAMING, SMOOTHING, AND DRYING. William Hebden, Boston, assignor to himself and A. Y. Conyers, Taunton, Mass. [Filed May 7, 1875.]

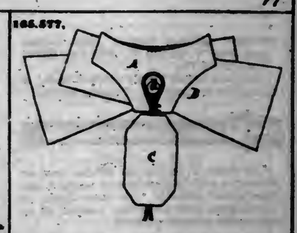


1. The combination, in a cloth steaming or sponging machine, of a stationary perforated steam-pipe, C, a smoothing-chamber, D, and a revolving perforated steam cylinder, E, substantially as and for the purposes specified.

2. The combination, in a cloth steaming or sponging machine, of the stationary perforated steam-pipe C, smoothing-chamber D, revolving perforated cylinder E, and drying fans F F, substantially as described, for the purposes specified.

3. The process of steam-sponging cloth, consisting essentially in steaming in single thickness, smoothing, steaming in bulk, and drying, substantially as described.

165,577. NECK-TIES. Adolph Hollenberg, New York, N. Y. [Filed June 22, 1875.]

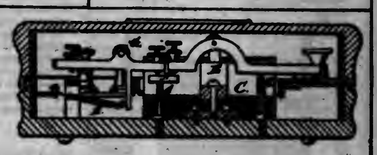


165,577.

1. The combination of a detachable and reversible cross-piece with the bow of a neck-tie, substantially as shown and described.

2. The loops b c and button d in combination with the shield A and cross-piece C of a neck-tie, substantially as set forth.

3. In combination with the neck-tie shield A and cross-piece C, a bow, B, fastened at one edge to the shield by a narrow band or equivalent fastening, and arranged so that said bow may be turned and reversed on the same side of the shield, substantially as and for the purpose described.



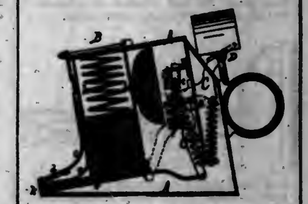
165,578. POCKET TELEGRAPH-RELAYS. R. A. Hill, Chicago, Ill., and H. J. Schneider, Philadelphia, Pa., assignors to R. A. Hill, Chicago, Ill. [Filed June 18, 1875.]

1. The combination of the magnets C, pieces E, for securing the magnets, and making a trunnion-support for the key, the stop-plate N, and the key G, as specified.

2. The combination of the magnets C, stop-plate N, sounder-lever F, spring H, and inclined thumb-piece spindle I, as specified.

165,579. FARE-BOXES. George J. Hill, Buffalo, N. Y., assignor of one-half his right to Jas. W. Roger and Augustus Roger, same place. [Filed Apr. 26, 1875.]

Brief.—Depressing the thumb-piece projects the ticket in the inspection-chamber, and forces another into its place; the recoil of the thumb-piece sounds the alarm.



1. The frame or case A having one or more compartments B, in combination with the slide c, having the catch $c g$, the lever C, connected with the said slide by the rod i, the thumb-plate D, connected with the lever C, for operating the slide and its catch, and an alarm mechanism connected with the levers U and D, for sounding an alarm when the same are operated substantially as and for the purpose described.

2. The mechanism for ringing the bell G, consisting essentially of the lever-arms r s, rod t, resting in cavities u u, hammer-v F, and spring y z, by which the single hammer operates for any number of the finger-levers, as hereinbefore specified.

3. The springs n n, in combination with the tubes J J, and delivery openings d d, by which a ticket cannot be returned through these openings, substantially as hereinbefore specified.

165,580. MINERS' TOOLS. John Holmes and Peter P. Quirin, St. Clair, Pa. [Filed June 23, 1875.]

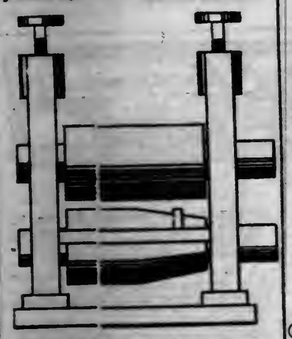
Brief.—A hollow handle screw-threaded at the end for the reception of sundry heads.



The cutter B, having the beveled head or receiver *a*, and the four beveled points *b*, and open center provided with screw-thread, in combination with the hollow handle, all as and for the purposes specified.

165,581. METHODS OF MAKING PLOW MOLD-BOARDS. Josiah Holmes, Pittsburg, Pa. [Filed Dec. 8, 1874.]

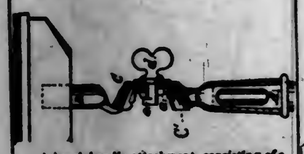
Brief.—The mold-board blank is of diamond shape, cut from a bar or plate of uniform thickness, equal to that required of the thickest part of the mold-board, and about six inches wide. This blank is passed through rolls, its major axis lying parallel to their axes, and its point abutting against the adjustable stop E.



As an improvement in the art of manufacturing plow mold-boards, the method herein described.

165,582. DEVICES FOR ATTACHING HANDLES TO BRUSHES. H. P. Hood and G. W. Joseph, Indianapolis, Ind. [Filed May 31, 1875.]

Brief.—The joint composed of the two conical plates is capable of adjustment to set the brush at different angles to the handle, and these plates are held together by a thumb-bolt having a lug working on an incline.



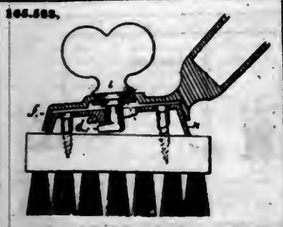
A brush-handle attachment, consisting of a socket, A, stem B, the conical plates C C', incline *c*, and clamp *d*, having lug *e*, as described.

165,583. ADJUSTABLE HANDLE-ATTACHING DEVICES. H. P. Hood and G. W. Joseph, Indianapolis, Ind. [Filed Apr. 9, 1875.]

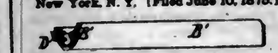
Brief.—The handle can be set at any angle desired by running its socket upon the inclined and tapering plate upon the brush. The two parts are clamped together by means of a thumb-bolt having a lug, which turns upon an inclined plane.

In a handle-attaching device, the conical and inclined plates *f* and *e*, clamped together by means of the lug-bolt *i*, provided with the lug *d*, operating upon the inclined plane *e*, substantially as shown and described.

165,584.



165,584. TEETH-PROTECTORS. A. Hopfe, New York, N. Y. [Filed June 10, 1875.]



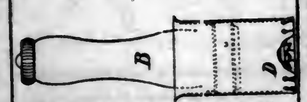
1. The channel-piece A, of rubber or analogous material, adapted to form a covering for the human teeth, substantially as and for the purposes herein specified.

2. The channel piece A, of rubber or analogous material, in combination with a backing of metal or analogous strengthening material, as herein specified.

3. An expansible covering for the teeth, composed of a soft fitting lining, A, two or more stiffening and supporting pieces, B' B', and connecting means D, adapted to allow the device to fit upon jaws of different sizes, and formed substantially in the manner and for the purposes herein set forth.

165,585. EGG-BEATERS. John Howes, Worcester, Mass. [Filed May 10, 1875.]

1. An egg beater or mixer provided with the oblique openings E *a*, giving a tangential discharge, in combination with tube A and piston B.



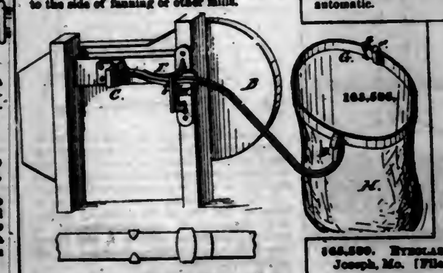
2. An egg beater or mixer consisting of the tube A, piston B, and head D, having a series of zigzag openings, as described.

3. An egg beater or mixer having a centrally-supported head, D, in combination with tube A and piston B, as set forth.

4. An egg beater or mixer consisting of the tube A and piston B, having an elastic packing, compressible by the rod and nut I without being removed from the tube A.

165,586. BAG-HOLDERS. Joseph James, Bosanquet Township, Lambton County, Canada. [Filed Apr. 17, 1875.]

Brief.—Especially adapted for attachment to the side of fanning or other mills.



A bag-holder constructed with an adjustable holding-spring, C, an arm or bracket, B, having a wedge-shaped tip, *c*, and projection *b*, held with capability of adjustment in a catch, E, by means of a spring, F, substantially as and for the purposes shown and described.

165,587. VEHICLE-WHEELS. C. Jeanteud, Paris, France. [Filed May 28, 1875.]

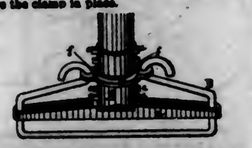




In a wheel for vehicles, the combination of a tire having a tongue or a groove on its inner surface, a metallic band, made in one or more pieces, serving as a continuous fully, and having a tongue or a groove on its outer surface, and an elastic packing-ring, interposed between said tire and band, and constructed to allow for its expansion and contraction and prevent its displacement, substantially as described.

165,588. MOPS. R. Johnson and J. Barnes, Bellington, Vt. [Filed June 3, 1875.]

Brief.—A row of studs on the handle-socket are made to pass through slots in the upper rung in forcing the head down to clamp the mop-cloth, when the torsion of the side wires turns the ring under one of the studs, to secure the clamp in place.



1. The handle-socket A, provided with the studs *a a* and the cross head *a*, combined with the clamp-wire B and collar C, with notches for the passage of the studs *a*, a partial rotation whereof will cause said collar to interlock with one of said studs, as set forth.

2. The handle-socket A, provided with the studs *a*, combined with the clamp-wire B and collar C, provided with beveled notches *f*, so adjusted in relation to the said studs that the torsion of said wire constantly tends to lock said collar and studs and make said locking automatic.

165,589.

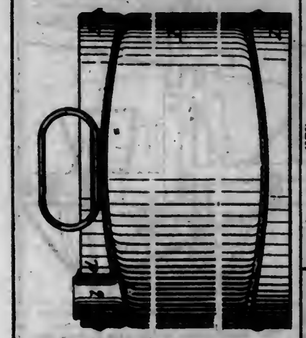


165,589. EYEGLASSES. Israel Kahn, St. Joseph, Mo. [Filed May 7, 1875.]

1. In combination with the bar-springs A, constructed as described, and free to play at their lower ends, the soft-rubber pads or strips *a*, applied thereto and held thereby, in the manner set forth.

2. The soft-rubber pads applied to, and held by their own resiliency within, cavities or bezes made in the bridge or bows of a pair of spectacles, and projecting beyond the surface of the metal, all as shown and set forth.

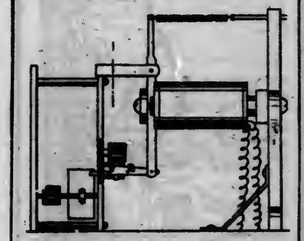
165,590. CARRIERS FOR ACIDS. Franklin H. Kalbfleisch, Brooklyn, N. Y. [Filed Jan. 26, 1875.]



A carrier for caustic acids, provided with a pouring-nozzle and lined with lead extending through the nozzle and overlapping its upper surface or edge, as shown and described.

165,591. NON-INTERFERING FIRE-ALARM TELEGRAPHS. Jos. W. Eaton, Richmond, Va. [Filed Apr. 28, 1875.]

Brief.—To prevent operating instrument from locking itself, a rack-bar carried by a pinion on a shaft of the clock mechanism comes into the path of the locking-stop.



1. The herein-described method of preventing interference of signals by connecting the instruments at the various signal-stations by a second and independent electric circuit, which is opened or closed automatically, and operates the armature of an electro-magnet carrying a stop for the purpose of locking the clock mechanism to prevent the interference of signals, substantially as described.

2. The herein-described method of automatically operating the armature provided with a stop for the clock-gearing, by a non-conducting tape disposed and operated upon the same drums with the signal-tapes, and having perforations at its extremity only, whereby the secondary circuit is closed when the instrument is not in operation, and is broken while the instrument is in operation, substantially as described.

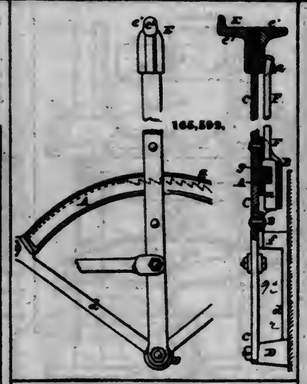
3. The stop E, having the shoulder *f*, in combination with the rack-bar *g*, spring *f*, and pinion *h*, substantially as and for the purpose described.

165,592. WAGON-BRAKES. W. Lockman, New York, N. Y. [Filed May 10, 1875.]

Brief.—Ratchets so arranged that the reins cannot catch on them when thrown over brake-lever by driver.

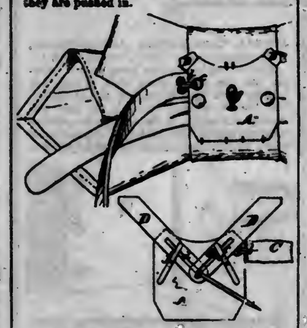
The combination of the serrated flange *g*, with the segment-bar A, lugs *f f*, hub D, arms *d d*, (the whole being cast in one piece,) with the lever C, bracket B, sliding dog *e*, rod F, spring S, and stirrup E *e'*, the whole constructed, arranged, and operated in the manner and for the purpose herein set forth.

165,592.



165,593. NECK-TIES. Adolph Landes, New York, N. Y. [Filed June 28, 1875.]

Brief.—When the bow is to be used in connection with a turn-down collar the slides are drawn out, and when with a standing collar they are pushed in.

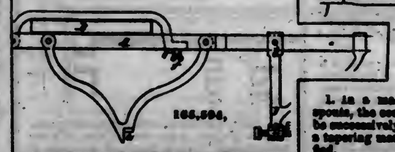


1. A shield for a neck-tie or bow provided with slides D D, arranged to operate substantially in the manner herein shown and described.

2. The combination of a shield, A, slides D D, bow B, and tie or band C, substantially in the manner set forth.

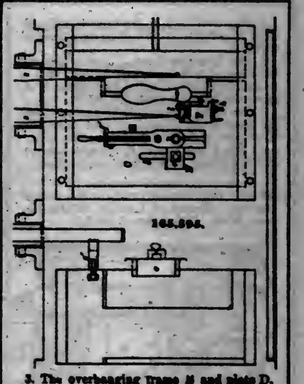
165,594. WINDOW-SCAFFOLDS. Andw. T. Large, Chicago, Ill. [Filed Apr. 14, 1875.]

In combination with bracket A and platform B, the hinged clamp-bar F, arranged to embrace and hold the platform, as specified.



165,594.

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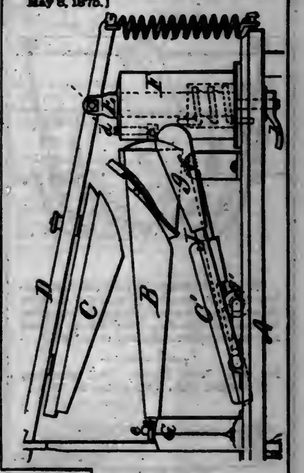


3. The overhanging frame M and plate D, bolted together, as shown, combined with the knife *f* and sliding stop *f'*, the whole being adjustably connected to the base C of the table, substantially as and for the purposes specified.

4. In the heel-cutter, the combination of the block F, adjustable knife *g*, and hook *i*, substantially as specified.

5. The knife *g* of the heel-cutter, made adjustable by means of the stops *h h'*, bolt *h*, lock-nuts *i*, and curved slot *i*, substantially as set forth.

165,595. MAKING SHEET-METAL SPOUTS. Milton S. Leidy, Richmond, Va. [Filed May 8, 1875.]



1. As a machine for making sheet-metal spouts, the grooved formers C C', adapted to be successively operated in combination with a tapering mandrel, D, substantially as specified.

2. The die-bed I, having flanges *f* and recess *f'*, in combination with a mandrel, B, and the formers C C', adapted to be actuated to inclose the same, substantially as specified.

3. The combination of a rest, *c*, and a spring, *c*, applied thereon, with a horizontally-vibrating mandrel, B, adapted to be automatically returned by spring E to its rest C, substantially as specified.

4. The tapering mandrel B, having longitudinal groove *r*, in combination with a detachable flanged die-bed, I, having flange *s*, substantially as specified.

165,596. SHOE-SOLE MACHINES. John W. Lefferts, Baltimore, Md., assignor of one-half his right to John E. Poor, same place. [Filed June 9, 1875.]

1. In a machine for trimming the edges of soles and heels of shoes, the combination of a cutter, adapted to slide upon the top thereof, and stirrup *b*, operated by means of a treadle, substantially as described.

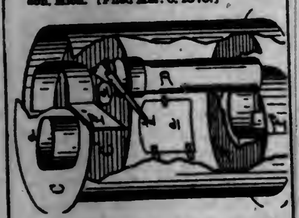
2. The rigid arm-piece *c*, in combination with the adjustable rest *c* and T-stop *c*, substantially as described.

5. The mandrel B, in combination with cylinder F, rotating on rod E, substantially as specified.

6. The U-shaped lever J, having grooved anti-friction roller f, in combination with a gravitating former G and a fixed mandrel B, substantially as specified.

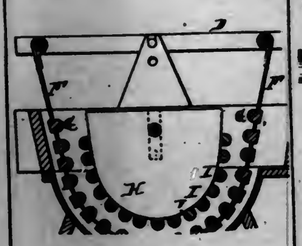
7. The sheet-metal blank K, having tapering edges k and an arrow-headed extension, k', adapted to be formed into a spout, c, having a neb, i, and flanges f', whereby it is riveted to a vessel, substantially as specified.

165,597. COMBINED STOVES AND HEAT-RADIATORS. Newton H. Lenherr, White Pigeon, Mich. [Filed Mar. 6, 1875.]



The combination of the shell A, bottom B, top U, partitions B' C', fire D, fire-strips F F', door a, socket b, collar c, damper d, and smoke-hole e, all constructed and arranged to operate as described.

165,598. WARMING-MACHINES. Samuel P. Lecraw, Chattanooga, Tenn. [Filed Apr. 12, 1875.]



The flexible straps F, provided with rubbers G G, and operated by means of the lever D, when used in combination with the rubber H, provided with slots I, and having vertical adjustment, all substantially as set forth.

165,599. SAFE-DOORS. Neil Macneale, Cincinnati, Ohio. [Filed May 25, 1875.]

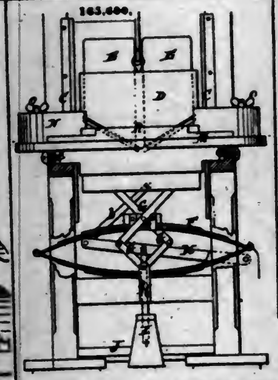


The flap D, attached to the inner wall of a safe around the door-opening, so as to entirely cover without wholly closing the joint or crevice between the door and opening, in manner substantially as set forth.

165,600. MITRE-PLANING MACHINES. Julius Mannchaeh, New York, N. Y. [Filed Apr. 28, 1875.]

Brief.—In a machine for planing mitres two or more plane-bits are attached to a reciprocating frame working between vertically-adjustable guides, and operated by a foot-lever, in connection with lazy-tongs supported upon a suitable spring, and disconnected from the frame carrying the bits, whereby a reciprocating motion is imparted to said frame, while the power exerted by the spring and foot-lever is equally distributed, and the equilibrium of the hinge is preserved at all times.

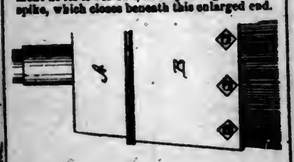
165,600.



In a miter-planing machine, the combination of the lazy-tongs G, with the foot-lever I, supporting-spring F, plane-guides C C, and plane D, carrying two or more knives, E, all constructed and operating substantially as shown and described.

165,601. CORN-BROOMS. Andrew Maurer, Evansville, Ind. [Filed June 10, 1875.]

Brief.—The broom-corn being laid in a flaring box, the lid is closed upon it, and it is held by teeth both in the box and in the lid. The handle, entered through the box and through the socket, is detained by an enlargement at its lower end, and by a large tooth or spike, which closes beneath this enlarged end.



1. In a sheet-metal box for fastening broom-corn, the hinged lid B, provided at its center with spike b', for the purpose of securing the handle and enabling it to be easily removed from the box, substantially as set forth.

2. In a sheet-metal box for fastening broom-corn, the part A, provided with small teeth a a and large teeth b b, in combination with hinged lid B, provided with small teeth a and spike b', all as and for the purpose set forth.

165,602. CIRCUITS FOR ELECTRIC ALARMS. George C. Maynard, Washington, D. C. [Filed Apr. 24, 1875.]

Brief.—For use with show-windows, cases, &c., the breaking of the glass breaking the circuit controlling an alarm.



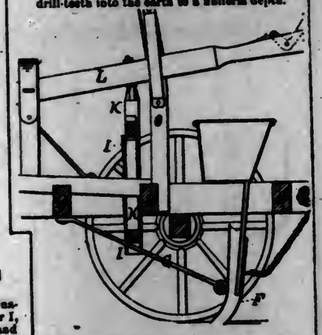
1. The combination, with a supporting base or plate of glass, in any desired form, of a metallic medium, applied thereto in the shape of letters, numerals, pictures, or ornamental work or device, and forming an electric circuit, or part of a circuit, adapted to be interrupted upon the breaking or cutting of the glass, substantially as and for the purposes set forth.

2. An electric conducting-edge formed of a conducting medium or pigment applied for an insulating base, substantially as set forth.

3. A sheet of glass of any desired form, provided with an electric conductor, arranged in the form of letters, numerals, pictures, or other ornamental work or design, substantially as set forth.

165,603. HEMP-DRILLS. W. A. McClintock, Pittsfield, Ill. [Filed Oct. 17, 1874.]

Brief.—Across the frame, and moving in vertical side guides, is an adjustable sash operated by a lever, for holding the drag-bars evenly above the surface, and pressing the drill-teeth into the earth to a uniform depth.



The combination of the hoes F, drag-bars G, guides I I, sash K, and lever L, substantially as and for the purpose specified.

165,604. FIRE-PLACES. John McHenry, Cincinnati, Ohio. [Filed Apr. 28, 1875.]



As an improvement in fire-places, the combination of external hood J, forming a blower, smoke-preventer, and reflector, the deflector I, placed athwart the chimney and inclining upward and forward, leaving a narrow passage between the rear wall and the top of the grate, the grate A, separated from the back and side walls so as to form the space F, the whole arranged to cause the commingling of the front and rear drafts in close-down contact with the incandescent mass of fuel, as set forth.

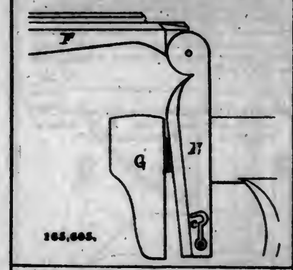
165,605. BOOT AND SHOE CRIMPING MACHINES. Joseph P. Mitchell, New Bedford, assignor to Wm. A. Brown, Lynn, Mass. [Filed Feb. 10, 1875.]

1. In a machine for crimping boots and shoes, hinged bifurcated jaws or clamps E F, curved and beveled on their interior faces, as shown, to fit one on the other and hold the material, to prevent its wrinkling as it is passed on a suitable former or last through the bifurcations of the jaws or clamps, substantially as specified.

2. In a boot and shoe crimping machine, in combination, the longitudinal screw-shaft B, former or last G, and bifurcated jaws E F, all substantially as and for the purpose described.

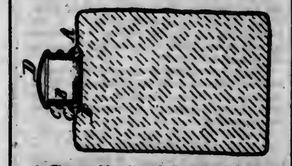
3. In a boot and shoe crimping machine, a rubber or yielding smoother attached to, around the bifurcations of, the jaw or clamp F, in combination with jaw or clamp E, former or last G, and screw-shaft B, all constructed substantially as and for the purposes specified.

4. The combination of the clamps or jaws E F, frame D, former or last G, screw-shaft B, and stand A'', all operating substantially as and for the purposes herein set forth.



165,606. MOUTH-PIECES FOR TOBACCO-POUCHES. Bernard Morahan, Brooklyn, N. Y. [Filed June 3, 1875.]

Brief.—The mouth-piece proper is a tube having a lower flange, which is placed in the flexible bag, and fitting over this tube is a screw-ring, which clamps the contracted end of the bag upon the flange. The cap or cover screws down upon the ring and upon the tube.



1. The combination of the threaded tubes B C, having flanges B' C', with the screw-cap D, and the pouch A, as and for the purposes specified.

2. The internal tube E, short external tube C, pouch A, and screw-cap D, the latter adapted to be removed without disturbing the grasp on the mouth of the pouch, as specified.

165,607. DOOR-CHECKS. Jas. Naughton, Cincinnati, Ohio. [Filed Apr. 26, 1875.]

Brief.—A small circular brush forms a yielding pad or cushion, which is held in place on the carpet or floor by a detachable spiral spring secured in a suitable plate or bracket attached to the door. The sliding attachments give vertical and lateral adjustability, and rotary adjustability is attained by a series of holes and a movable adjusting-screw. There is also a side pad or cushion arranged around the exterior edge of the brush or floor-pad, the whole serving to provide an inexpensive door-stop, with three separate adjustments.

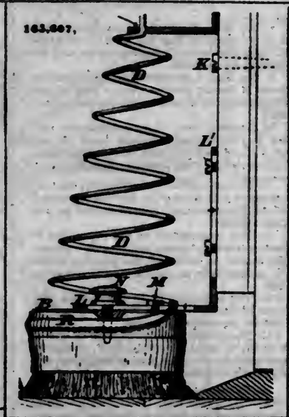
1. The improved door-stop, consisting essentially of the yielding and adjustable floor pad or brush A B, and the separable spring D, with the herein described sliding and adjustable attachments as set forth.

2. The combination, with a suitable spring and plates, of brush or pad A B, adjustable vertically, laterally, and circularly, by means of the attachment L L' and screw M, as specified.

3. The combination, in an adjustable door-stop, of brush or floor pad A B, and the side pad or cushion B, arranged and operating as set forth.



165,607.



1. A dipper-handle, which travels in its bearing on a boom and swings vertically independently of the boom, while said boom is capable of angular motion both horizontally and vertically, substantially as and for the purposes set forth.

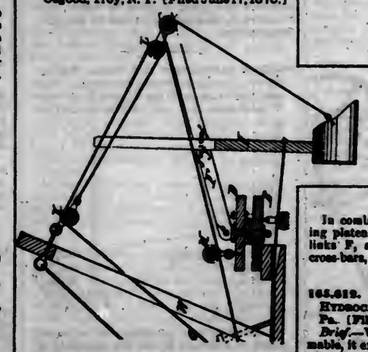
2. The turn-table, with its boom, in combination with the suspending-standard W, substantially as and for the purpose described.

3. The brace of the boom, hinged to the turn-table on a line with the hinge of the boom, substantially as and for the purpose described.

4. The self-adjusting backing-chain sleeve, applied below the support of the turn-table, in combination with the backing-chain attached to the dipper-handle, substantially as and for the purpose described.

5. The combination of the self-adjusting and balancing sheaves K and M, chains O and P, boom F, turn-table D, and dipper-handle, substantially as and for the purpose described.

165,608. DREDGING-MACHINES. Ralph R. Osgood, Troy, N. Y. [Filed June 17, 1875.]



165,609. DUMPING WAGONS OR SLEDS. Jas. Pattison, Dearnley Mill, Hurlet, N. Britain. [Filed Feb. 24, 1875.]



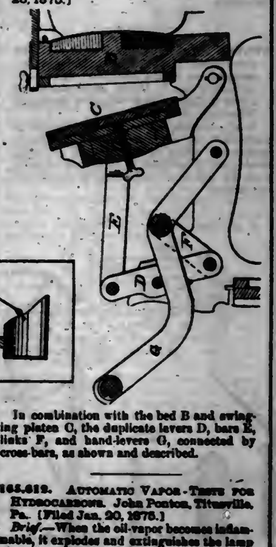
The combination in a sled or wagon of a movable platform, loosely connected at one end to the frame, and a detachable cross-bar for supporting the opposite end of the platform, all as and for the purpose set forth.

165,610. LIFE-PRESERVERS. J. F. Peck, Springfield, Mass. [Filed Dec. 16, 1874.]



A filling for life-preservers, composed of the hair from deer, elk, antelopes, mountain sheep, or mountain goats, substantially as herein set forth.

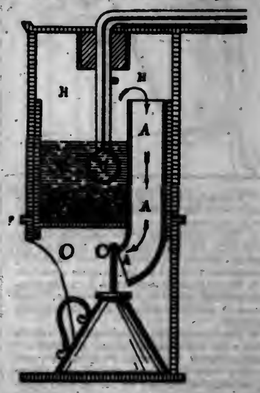
165,611. PRINTING-PRESSES. Marcellus A. Pendleton, Geneva Lake, Wis. [Filed May 28, 1875.]



In combination with the bed B and swinging platen C, the duplicate levers D, bars E, links F, and hand-levers G, connected by cross-bars, as shown and described.

165,612. AUTOMATIC VAPOR-TESTS FOR HYDROCARBONS. John Fenton, Titusville, Pa. [Filed Jan. 20, 1875.]

Brief.—When the oil-vapor becomes inflammable, it explodes and extinguishes the lamp whose heat generated it. Simultaneously a self-registering thermometer notes the temperature of the oil at the moment of explosion.



1. The method or process of determining the relative temperatures at which hydrocarbons will vaporize, by conducting the vaporized hydrocarbon to the flame of a lamp, by which they are exploded, and indicating the temperature at the time of the explosion by a registering device, substantially in the manner described.

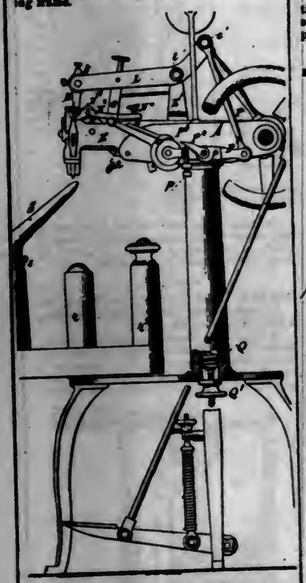
2. The automatic vapor test, consisting of the combination of an oil and water chamber, O W, for vaporizing the oil-chamber H, and descending flue A for conducting the vapor below, and lamp for heating the oil and exploding the vapor, substantially as described.

3. The combination of the oil and water chamber O W and registering-thermometer D, provided with a registering-needle, S, for the purpose of indicating the temperature at which the vapor generated from the oil explodes, substantially as herein described.

4. The combination of the lamp O, oil and water chamber O W, chamber H, flue A, and registering-thermometer D, for the purpose of vaporizing the oil, exploding the vapor, and indicating the temperature at which the explosion takes place, substantially as herein described.

165,613. MACHINES FOR PRESSING BOOTS AND SHOES. Treat T. Prosser, Chicago, Ill., assignor, by mesne assignments, to himself and Oscar L. Noble, same place, and Allen C. Calkins and Winslow Bushnell. [Filed Apr. 6, 1875.]

Brief.—The shoe-supporting horn, shaped to conform to the angle of a boot, rests loosely in a socket rising from a balanced swinging frame, and is adapted to be turned laterally from the nail-tube independent of the swinging frame.



1. The nail-tube F and its arms E, in combination with the segmental rack E^1 and pinion E^2, substantially as specified.

2. The combination of the nail-tube and its arms with the rack E^1, pinion E^2, shaft F^2, ratchet-wheels F^3, pawls F^4, and levers F^5, substantially as and for the purpose specified.

3. The adjustable cut-screws p, in combination with the pawls F^4, ratchet-wheels F^3, and levers F^5, substantially as and for the purpose specified.

4. The combination of the nail-tube and its arms with the rack E^1, pinion E^2, shaft F^2, ratchet-wheels F^3, pawls F^4, levers F^5, connecting-rods F, rocking arms L, and driver K, substantially as and for the purpose specified.

5. The swinging nail-tube and its arms, in combination with the spring Q and adjusting-nut Q^1, substantially as and for the purpose specified.

6. The horn S, adapted to turn laterally in the socket r^1 independent of the frame R, substantially as and for the purposes specified.

7. The horn S, provided with spring-catch s, in combination with the socket r^1 of frame R, having groove s^1, substantially as and for the purpose specified.

8. The horn S, supported by the balancing-frame R, having sockets r and r^1 and handle r^2, substantially as and for the purposes specified.

9. The feed-wheel N, in combination with bar O, yoke O^1, pawl o, check lever O^2, link O^3, and the nail-tube and its arms, substantially as and for the purpose specified.

10. The combination of the slotted bar $O\,o^2$, set-screw o^3, and pin o^4, in the rocking arms L of the driver, substantially as and for the purpose specified.

11. The combination of pawl o, spindle o^2, spring-crank o^3, having an inwardly projecting stud at its outer end, and groove s^1 in arm K, substantially as and for the purpose specified.

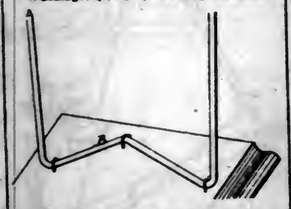
12. The feed-wheel N^1, in combination with yoke N^2, link N^3, and act N^4, substantially as and for the purpose specified.

13. The combination of the bent or curved feed-bar T, link t, loop t^1, lever T^1, pitman T^2, and trunnion k^2 on the head of the driver, substantially as specified.

14. The feed-adjusting screw t^2, in combination with the adjusting-screw t^3, for governing the stroke of the feeder at the same time, substantially as and for the purpose specified.

15. The feed-bar T and link t, in combination with the spring t^4, guide or loop t^5, and set-screw t^6, substantially as and for the purpose specified.

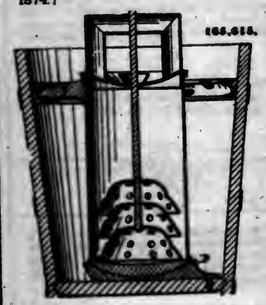
165,614. PAPER-CLIPS. C. B. Ramus, Spring Forest, Spottsylvania Court-House, Va., assignor of one-half his right to G. Osorio, Washington, D. C. [Filed May 26, 1875.]



1. A paper-clip consisting of a single jointed wire strand, A, and the foot-brace B, formed with and standing to one side of the clip, whereby the clip is both fastened and braced to its holder, substantially as herein set forth.

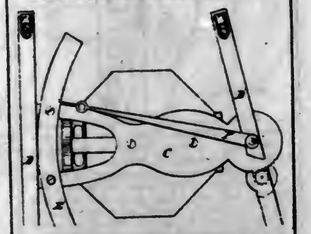
2. The combination, with a paper-clip, having the foot-brace B, formed therewith to one side of the clip-wire, and a penetrating-point, b, of the locking and transferring portion formed into a spring, having a lateral force to open the clip-branches, and a downward force to close the points when joined, substantially as herein set forth.

165,615. ICE-CREAM FREEZERS. William Redheffer, St. Louis, assignor of two-thirds his right to W. H. Chick, St. Louis, and J. S. Chick, Kansas City, Mo. [Filed Dec. 4, 1874.]



165,616.

165,616. INSTRUMENTS FOR MEASURING DISTANCES AND ALTITUDES. E. C. Roberts, Broadford, Va. [Filed June 9, 1875.]



1. An instrument for measuring altitudes and distances, consisting of a pivoted plate, C, bars D D^1, notched arc-plates E J, and pointers F I, the bar D^1 turning in a horizontal, and the arc-plate J in a vertical, plane, as shown and described.

2. The combination, in a measuring instrument for finding altitude, with a bar, D, oscillating in a vertical plane, of a rotated arc-plate, J, and stationary pointer I, as shown and described.

165,617. LARD-COOLERS. F. H. Rockstroh, Baltimore, Md., assignor of one-half his right to John N. Pons and Charles Homer, same place. [Filed Apr. 23, 1875.]

Brief.—Lard is fed into a jacketed tank, in which it is agitated by means of radially-reciprocating stirrers, a series of cold-water pipes, revolving brushes, and a roller. The brushes and roller serve the double purpose of agitating the lard and keeping the sides and bottom of the tank clear of congealed lard. Cold water is fed into the space between the walls and into a central wall.

1. A jacketed cooling tank or tub, having an inner wall or curb, c, forming a water-space in the middle of the same, in continuation of the main water-chamber, as herein specified, to extend the cooling-surface.

2. The lard-cooling tank, consisting of the inner and outer walls, provided with a manhole, M, to give access to the water-chamber for cleaning the bottom of the same, in the manner herein set forth.

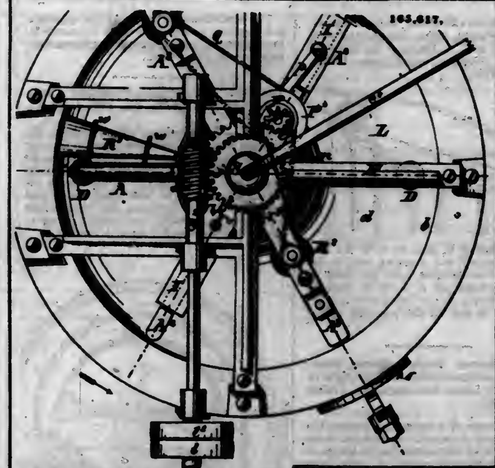
3. The hollow central shaft S, carrying the revolving arms A A, with the stirring and cooling coils C depending therefrom, in combination with the annular trough-shaped lard chamber L, as herein specified, for the purpose stated.

4. The combination of a central vertical shaft, S, having an axial cavity, m, stirring and cooling coils C leading therefrom, a water-supply pipe, s^1, leading to the axial cavity of the shaft, a central chamber, O, to receive the discharge, and an escape-pipe, f, leading from the latter.

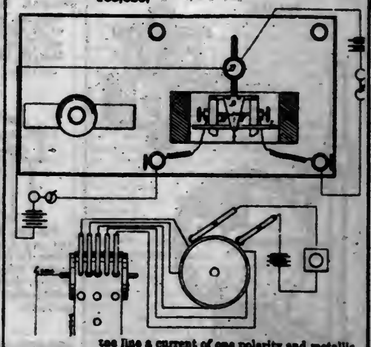
5. One or more revolving stirrers, B, reciprocated radially simultaneously with their motion around the axis of the tub or tank, for throwing or pressing the lard alternately against the opposite vertical walls of the lard chamber or trough.

6. The combination of the central vertical shaft S, carrying arms A' above the lard chamber or trough, the slide or slides I, carrying the stirring-blades B, the sun-wheel W^1, planet-pinion F, crank-shaft S^1, and connecting-rod p, for revolving and simultaneously reciprocating said stirring-blades, in the manner set forth.

165,617.



165,620.



7. The combination, in a lard-cooler, of a tank or tub having circular jacketed walls, forming cooling-surfaces, and one or more rotary brushes revolving in contact with the latter, for keeping them clear of congealed lard, in the manner set forth.

8. The combination of the central vertical shaft S, carrying arms A^3 above the lard chamber or trough, the parallel shafts S^1, having the rotary brushes B B^1 depending therefrom, the sun-wheel W^1, planet-pinion F^1, shaft S^2, pulleys P^2 P^3, and endless bands Q, for supporting and operating the rotary brushes, in the manner set forth.

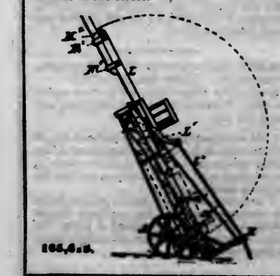
9. The combination, with the double arms A^3, of the sliding bearings c, bolts t, and slots u, for adjusting the depending rotary brushes B B^1 relatively to the surfaces they are to revolve in contact with, as described.

10. The combination, in a lard-cooler, of an annular lard chamber or trough, having a cooling-bottom, and a revolving roller, for preventing the formation of a coat of chilled lard on the latter, in the manner specified.

11. The combination of the central vertical shaft S, having arms A above the lard chamber or trough, depending stirrers C, carried thereby, and yoke w, attached to the latter, for operating a revolving crushing-roller, R^1, on the bottom of the lard chamber or trough, in the manner set forth.

165,618. FIREMEN'S EXTINGUISHER-LADDERS. James D. Rowland, Cleveland, Ohio, assignor of one-half his right to H. Hamley, same place. [Filed June 3, 1875.]

Brief.—The lower section of the ladder is secured to a truck; the next section is pivoted to this section, and provided at the pivoted end with a lever-arm, to which ropes are attached. The down-hauling of the ropes causes the section to describe a half-circle, where it stops and rests on the upper end of the first section, and is then extended for use. An adjustable support is secured to the folding base-frame, to adjust the same to any irregularities in the street.



165,618.

1. In a fire-escape, the combination, with the base-section C and frame E, of the adjustable support I, substantially as and for the purpose described.

2. The combination, with the two-wheeled truck A, support B, and base-section C, of the second section L, hinged thereto, and cords L^1, substantially as for the purpose described.

3. The combination, with the two-wheel truck A and the base-section C, of the extra length M, suspended beneath the said base-section, substantially as and for the purpose described.

4. The combination, with the hinged second section L, lever L^1, and cord L^2, of the extra length M, the clutches M^1, and grapples M^2, substantially as and for the purpose described.

165,619. HINGES. Francesco L. Sanderson, Wilmington, Ohio. [Filed Dec. 5, 1874.]

Brief.—The gate rides up when opened by means of double inclines on both upper and lower knuckles of the hinge, and projections on the upper knuckle drop into recesses in the lower, when the gate is at right angles to its closed position, thus holding the gate open in either direction.



In a gate or door hinge, the knuckle f, provided with double inclines g and notches n n, situated diametrically opposite each other, in combination with the knuckle f, having double inclines, and projection i, adapted to fit into said notches n, when the gate is swung in either direction at right angles to its closed position, substantially as and for the purpose described.

165,620. AUTOMATIC ELECTRO TELEGRAPH. Wm. H. Rowyer, Washington, D. C. [Filed Feb. 2, 1875.]

Brief.—Polarized relay adjusted to rapid work, and restored to normal condition by adjustable permanent magnet O. Thrown into line currents, battery, and secondary of opposite polarities.

165,620.

1. In a polarized-needle telegraph-relay, the combination of a polarized needle and a projecting contact-piece operating with the needle, with a sliding-bar magnet to act upon the polarized needle in the place of a spring, substantially as shown and described.

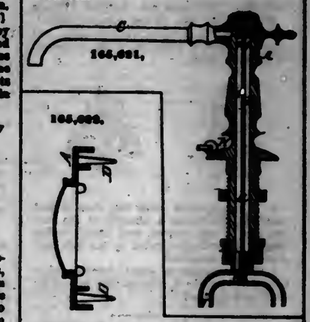
2. The combination of a line, transmitting-battery and metallic contact-point, brush, or roller thereafter, with a magneto-electric or induction-coil apparatus which throws into the line a current of one polarity and metallic contact-point, brush, or roller therefor, substantially as shown and described.

3. The combination, in an automatic or chemical telegraph, with a transmitting apparatus, of a galvanic battery so arranged that galvanic currents of one polarity will be thrown into the line, and a magneto-electric or induction apparatus so arranged as to throw into the line induced currents of opposite polarity to the galvanic-battery currents, as and for the purposes specified.

165,621. RAIL-FASTENER. Jas. F. Sheridan, New York, N. Y. [Filed June 11, 1875.]

The bifurcated coupling, provided with the flanged neck, and the vertical partition, having the groove d, in combination with the standard B, having the central partition c, formed with a lip, which rests within the groove of the partition, to form a continuous anti-creeping partition, and prevent turning, said standard and coupling constructed to be connected and drawn together by a flanged nut, substantially in the manner herein shown and described.

165,622. HINGE. Francesco L. Sanderson, Wilmington, Ohio. [Filed Dec. 5, 1874.]



165,622.

165,623. GRAVE-COVERS. Robt. H. Sipes, Everett, Pa. [Filed May 22, 1875.]

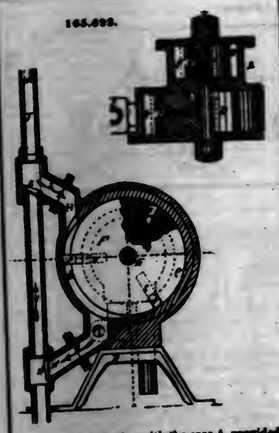
The metal cover A, constructed substantially as described, in combination with the supporting-legs D, for the purpose set forth.

165,624. BILGE-PUMPS. John P. Smethills, Chicago, Ill. [Filed Mar. 10, 1875.]

Brief.—A rotary engine and a rotary pump, both of well-known construction, are united and operate upon the same main shaft. An open pipe, extending from the vessel's deck through her bottom, is connected with inlet and outlet pipes of the engine, and with the outlet-pipe of the pump. The supply-pipe of the pump extends down to the bilge. Valves are so adjusted in the open tube that as the vessel settles in the water the lower valve closes, in the tube; but as the vessel rises, and the water in the tube seeks descent, it is diverted through the engine, and, operating it, operates the pump.

HELIOTYPE RELIEF PROCESS. JAMES R OSGOOD & CO BOSTON

165,622.



1. In combination with the case A, provided with partition C, the rotary piston-heads F and F', arranged on one and the same shaft, and provided with the sliding pistons f and f', as specified.

2. The pipes H and H', arranged to communicate one with the other through pipe J, and chamber d, in combination with the revolving piston-head F, as specified.

3. In combination with pipe J, passing through the head of the vessel, and adapted to fill with water as the vessel descends, the valves K and K', arranged to cause the column of water in the pipe above valve K to descend through chamber d when the vessel ascends, as specified.

4. The discharge-pipe L, communicating with chamber d, and pipe H', whereby the water in said chamber is discharged into pipe J, as specified.

165,623. RUNNERS FOR SLEDGES. Hugh Smith, Gray, Me. [Filed Apr. 22, 1875.]

Brief.—A metallic shoe, wooden runner, and blocks adapted to grasp the latter, connected by suitable bolts.



1. In combination with the shoe C and runner A, the blocks a, adapted to the convex face of said runner, and having a flat face, p, all confined together by the bolt, substantially as described.

2. The supplemental shoe C, having projections f and groove n, substantially as and for the object specified.

165,624. NECK-TIE. Samuel Solomon, New York, N. Y. [Filed June 28, 1875.]



1. A neck-bow made in two parts, A B, which are hinged together and to a shield, C, containing a photograph, F, or other illustration, substantially as described.

2. The combination, with the parts A B, hinged together and to the shield C, containing a photograph or other object or illustration, F, of springs E, substantially as described, for the object specified.

165,625. DOOR-SPRINGS. John B. Starkweather, Winona, Minn., assignor of part of his right to C. A. Bierce, J. H. Jenkins, and F. A. Johnston, same place. [Filed Mar. 20, 1875.]



The wire spring C, bent to form the central loop d, coils f, and arms e e, held in the frame D, in combination with the shaft a, central transverse pin b, lever E, with or without the notch s, and adjustable arm G, substantially as and for the purposes herein set forth.

165,627. SOAP. Stephen Strunz, Pittsburg, Pa., assignor of one-half his right to Christopher Lippe, Baltimore, Md. [Filed July 7, 1875.]

In the process of manufacturing soap, the employment of litmus in combination with the ordinary soap compounds, as herein specified, whereby the influence of the alkali and the oxygen of the air develops the peculiar coloring matter of the litmus, and rapidly changes the natural color of the soap upon its exposed surface, as set forth.

165,626. TRANSPARENT ADVERTISING-SOAP. Stephen Strunz, Pittsburg, Pa. [Filed June 26, 1875.]

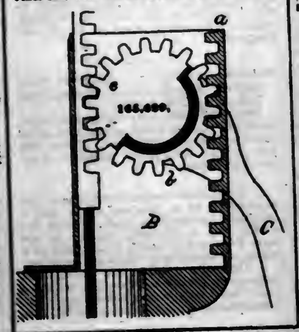
Brief.—First print the advertising matter on a thin piece of soap or transparent paper, and place these pieces in molds, and cast the transparent soap around the said pieces, and allow it to harden.



As an article of manufacture, transparent advertising-soap, representing business or show cards having an inner body bearing the printed or impressed advertising-matter, surrounded by a body of transparent soap, substantially as described.

165,629. PUMPS. Saml. B. Strong, Albion, N. Y. [Filed May 24, 1875.]

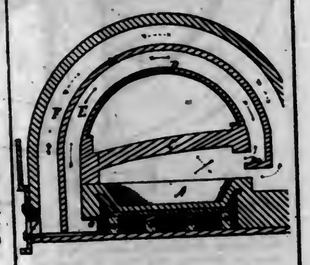
Brief.—The lever is attached to a rising and falling gear, which, on the side toward the lever, meshes with a fixed rack, and on the other side with a rack upon the piston-rod.



The combination of the racks a c, segments b b, segment c, rack D, handle C, casing E, pump-stock A, and piston-rod E, substantially as shown and described.

165,630. METALLURGIC FURNACES. Wm. Swindell, Allegheny, Pa. [Filed Feb. 15, 1875.]

Brief.—The products of combustion, air, and gas all pass in the same direction through the arched regenerator to the furnace, the air becoming heated by previously passing under the hearth. The products of combustion entering the flues H in both sides, the air and gas flows meet the incoming gas when it first enters the regenerator, thus highly heating it, and preventing the deposition of carbon.



1. In combination with the hearth A, the arched regenerator, located over the hearth and spanning the same, to permit a circulation of air over the hearth, substantially as specified.

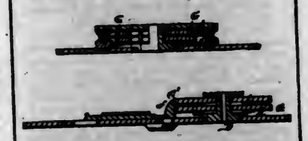
2. A regenerator having air and gas flues B and F, arranged side by side, separated by a common wall, M, and alternating with flues H for the waste products, substantially as and for the purposes specified.

3. In a regenerator-furnace, the air and gas flues B F, separated by a common wall, M, in combination with the flues H, provided with deflecting-ledges H', substantially as and for the purpose specified.

4. The throat K of the furnace, in combination with the flue F, substantially as specified, so that the waste gases escaping from the hearth shall impinge upon the gas-flue near the point where the gas is admitted.

165,631. LOCKS. Warren H. Taylor, Stamford, Conn. [Filed Jan. 28, 1875.]

Brief.—A pin in the key-hub engages with the tumblers, so as to bring them always into proper position for the insertion of the key, by turning the key-hub in one direction.



The combination of the slotted key-hub D, with pin a, and the tumblers G G', having apertures b and slots c l, as and for the purposes herein set forth.

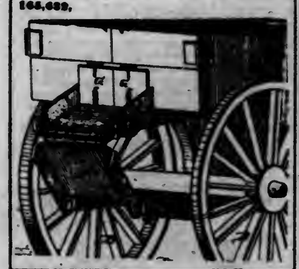
165,632. CANE-CRUTCH. W. M. Thompson, Carlisle, Pa. [Filed June 18, 1875.]

Brief.—The chute folds away underneath the body, where it is properly secured, and not in the way.

1. In combination with the inclined box D and its doors G G, the stationary spout I, the bell or finder d, and the detachable chute J, having hook a, all substantially as and for the purposes herein set forth.

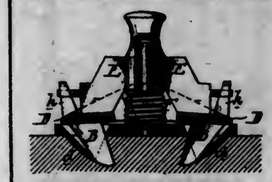
2. The combination of the box and its doors, the stationary spout I, the sectional hinged chutes J J' J'', and the finder d' under the axis for securing the chutes, all substantially as described.

165,633.



165,633. MOLDING-INSTRUMENTS. D. Walther, Reading, Pa. [Filed May 7, 1875.]

Brief.—The undercut recesses are formed by pressing upon the knob of the instrument.



1. A molding-instrument in which are combined the plate A and its recessed projections d and the pivoted frames D, with their plates B, substantially as set forth.

2. The combination of the pivoted frames D, and their studs A, the vertically-guided frame E, and the spring F, all substantially as set forth.

165,634. WINDMILLS. Wm. Walker, West Liberty, Iowa. [Filed May 6, 1875.]

Brief.—The wind-wheel is composed of a hub, radial arms, and vanes, forming the framework to support the vanes. These vanes are fastened to revolving arms, which move in journals in the rim, with the ends nearest the shaft resting in sockets in the hub. In each vane is cut a slot at or near the center on one side, which slot enables the vane to pass a circle or rim attached to the wheel-arms.



1. The combination, with the wheel A B C and circle C', of the revolving arms a a and the sails D D, attached to said arms and provided with slots b b, substantially as and for the purposes herein set forth.

2. The rod d, with collar f and spiral spring k, arranged within the hollow main shaft to form a connection between the wheel f and the governor-arm H, substantially as and for the purposes herein set forth.

3. The combination of the hollow shaft G, slotted at its outer end, and the wheel f, having its arms e operating in said slots, substantially as and for the purposes herein set forth.

4. The springs m, in combination with the arms e of the wheel f, substantially as and for the purposes herein set forth.

5. The combination of the governor-arm H with adjustable vane I I', swivel h, rod d with spring k, wheel f, connecting-rods n, and sails D, all constructed substantially as and for the purposes herein set forth.

6. In a windmill provided with the ordinary tail-vane O and governor-vane I I', the stationary supplementary vane P, arranged on the opposite side from the governor-vane, substantially as and for the purposes herein set forth.

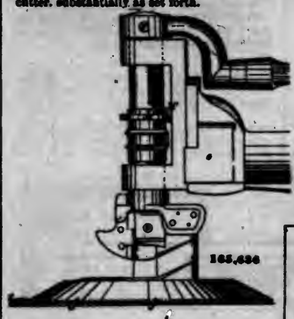
165,635. WATCH-KEY COMBINATION-TOOLS. Oliver D. Warfield, Chicopee, Mass., assignor to himself and George D. Bartlett, same place. [Filed May 19, 1875.]



The combination of the elastic-bars a a, the slide l, provided with flanges e, the knife-blade n, the pin b, and the pivoted stock f, all constructed and arranged substantially as herein described.

165,636. CLOTH-CUTTING MACHINES. Albin Warth, Stapleton, N. Y. [Filed May 20, 1875.]

1. The combination of a gravitating toe with the foot-plate which supports the cutting mechanism, said toe serving to catch beneath the material to be cut and to conduct the same up on the foot-plate and beneath the cutter, substantially as set forth.



165,636

2. The combination of two detached and reversible cutting-blades with the knife-receiver pocket, and adapted to be secured to the standard containing the cutting mechanism, or the foot-plate, substantially as described.

3. The combination, with the foot-plate and with the knife-receiver, of a raised supporting-plate to carry the material to be cut freely over the knife-receiver, substantially as described.

4. The combination, with the presser-foot and its slide, of a vertical arm and legs, which project from the standard that supports the cutting mechanism, substantially as described, for the purpose set forth.

5. The combination, with the presser-slide with the standard containing the cutting mechanism, and with the presser-foot, of a set-screw for adjusting and retaining the presser-foot positively in the required position in regard to the material to be cut, substantially as described.

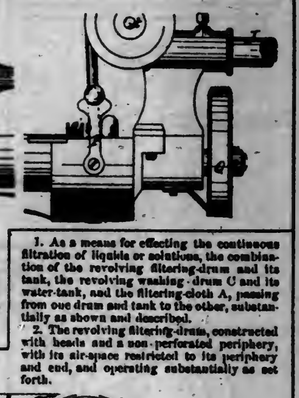
6. A perforated knife-slide provided with strengthening-rim, and with one or more cleaners extending across the slide, substantially as and for the purpose described.

7. The combination, with the eccentric wrist-pin and its supporting-disk, and with the cross-head transmitting motion from the main shaft to the knife-slide, of an oil-chamber provided with one or more doors to give free access to the bearings and to prevent the oil from dripping on the table or on the material to be cut, substantially as set forth.

8. The combination, with the supporting-arm I and with the main shaft, of a fast and loose pulley contained in a chamber formed in the supporting-arm, and of a belt-shipper pivoted to the side of said chamber, to enable the workman to stop or start the cutting mechanism at any moment, substantially as described.

165,637. APPARATUS FOR FILTERING SACCHARINE SOLUTIONS. William H. Watson and Robert A. Robertson, Glasgow, Scotland. [Filed June 4, 1875.]

Brief.—An endless cloth, as a filter, passes over guide-pulleys onto the peripheries of two hollow drums—the one half immersed in the liquid to be filtered, the other in water. The periphery of the filtering-drum is corrugated longitudinally. The liquid passes along these corrugations, beneath the endless cloth, to the end of the drum, thence into its interior, either by pressure of the head of the liquid or by exhaustion from the air-spaces around and within the drum.



165,637.

1. As a means for effecting the continuous filtration of liquids or solutions, the combination of the revolving filtering-drum and its tank, the revolving washing-drum C and its water-tank, and the filtering-cloth A, passing from one drum and tank to the other, substantially as shown and described.

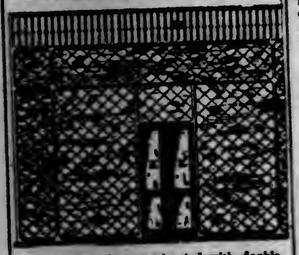
2. The revolving filtering-drum, constructed with heads and a non-perforated periphery, with its air-space restricted to its periphery and end, and operating substantially as set forth.

165,638. LEMON-SQUEEZERS. A. C. Weeks, New York, N. Y. [Filed Apr. 26, 1875.]



The frame A, provided with the perforated bowl B and vertical standards E, attached at each side of the said frame, in combination with pivoted plate C, having the plunger D, the spring or springs J, attached to the plate and to the vertical standards, and the transverse shaft f, journaled in the vertical standards and provided with the cam-lever G, all substantially as herein shown and described.

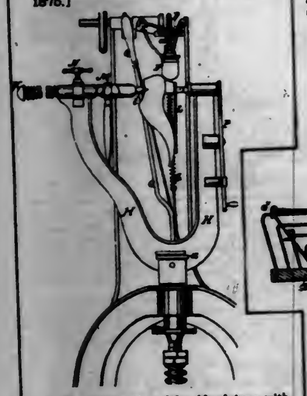
165,639. AQUARIUMS. J. Wenmackers, Philadelphia, Pa. [Filed June 23, 1875.]



1. An aquarium constructed with double walls of glass, or other transparent material, arranged to inclose an inner space or saloon, and provided with one or more passages or door-ways in its sides to afford ingress and egress to and from said saloon, substantially as described.

2. The combination, with the glass plates of an aquarium, of the metallic net-work covering, substantially as and for the purpose set forth.

165,640. HEEL-POLISHING MACHINES. W. Westcott, Syracuse, N. Y. [Filed June 10, 1875.]



1. The combination of the side plates a, with the soap-stone block b, and the pivoted attachment d, as and for the purpose specified.

2. The pivoted branched frame H, in combination with the shoe-holding devices and the clutch cushion o, as and for the purpose set forth.

3. The swivel-jointed rod I, having spring J, in combination with the pivoted branched frame H, as and for the purpose described.

4. The hand-lever and pawl Q, in combination with the rod I, and frame H, substantially as and for the purpose described.

5. The shoe-holding devices, consisting of the pivoted plate L, the rod K, cam-sleeve M, spring O, and set-screw N, all combined and arranged substantially as and for the purpose described.

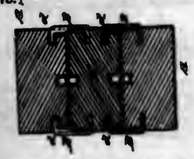
165,641. STRINGS FOR VIOLINS. Wm. F. Whitney, New Paltz, assignor of one-half his right to John C. Snyder, Kingston, N. Y. [Filed Dec. 30, 1874.]



165,641.

The combination of the front axle K, the bolster H, having its ends carved forward, and the arms G², having eyes h at their lower ends, for the reception of the carved ends of the bolster, substantially as shown and described.

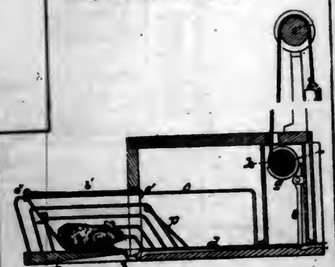
165,642. EXTENSION-TABLE SLIDE. L. N. Willard, Jamestown, N. Y. [Filed June 1, 1875.]



In combination with the section A A, having the side grooves b b, stops a a, and the tongues a a, sliding loosely in the grooves b b, the hooks B, fastened in one section, and sliding in grooves d on the adjoining section, all constructed and arranged as and for the purpose set forth.

165,643. ANIMAL-TRAPS. J. M. Wilkinson, Jackson, Tenn. [Filed Apr. 17, 1875.]

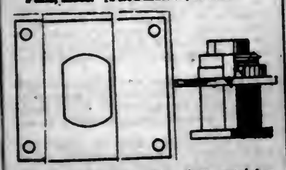
Brief.—The hinged gate is made to pass out above the victim's head, and, upon its return stroke, to force him into the cage.



1. In an animal-trap, the hinged sliding gate B b', having the eyes c c', or their equivalents, in combination with the elevated track or way a a, constructed to operate substantially as and for the purpose set forth.

2. The pivoted platform c, bell-crank or trigger b, rod d, and pawl or detent e, having the spring, in combination with the drum b', operated by a weight or spring, the axis b', cranks m m, rods n n, elevated track a a, and gate B, substantially as and for the purpose set forth.

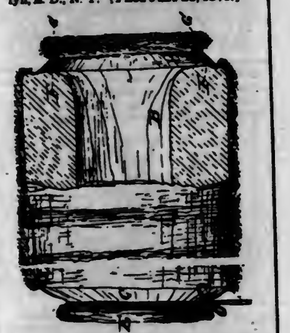
165,644. FASTENING LOCK-SHELLS TO BOLT-CASES. Henry Winn, Shelburne Falls, Mass. [Filed Mar. 17, 1875.]



1. A key combined with a shell containing tumblers and a fence, when the case has one or more grooves fitting two or more projections on the other, or one or more projections fitting two or more grooves of the other, whereby said shell is fastened, as described, to a bolt-case, to which said key is attached in different positions relative to the thickness of doors, when said shell passes freely into an opening in said bolt-case before the key is in place to fasten said shell, and is held from rotation by one or more of the sides of said opening when said key is in place to fasten said shell.

2. A key attached to a bolt-case combined with a shell containing tumblers and a fence, when the one has one or more projections fitting one or more grooves of the other, whereby said shell may be fastened, as described, in an opening in said bolt-case, when said shell is constructed to enter said opening in two positions, in the one of which it is turned a half-revolution from its place in the other, and when said shell is held from rotating by one or more of the sides of said opening in either of said positions.

165,645. MUFFS. Egbert Winkler, Brooklyn, E. D., N. Y. [Filed June 23, 1875.]

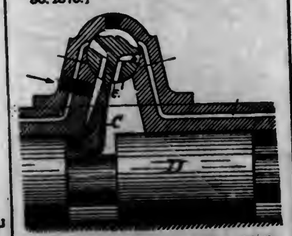




1. The wrist-protectors E, provided with the stiffening-frames F, for attaching the protectors to a muff, the whole constructed and arranged substantially as described.

2. The combination, with the stiffening-frame F and the protectors E, of supplemental frames G, constructed and arranged substantially as described, for the object specified.

165,646. ROCK-DRILLING MACHINES. H. S. Winchester, Boston, Mass. [Filed Apr. 30, 1875.]

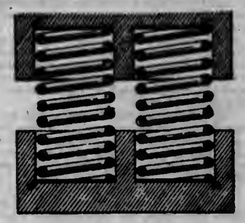


1. The solid plug-valve provided with the steam-passages c, less in diameter than the ports b, to prevent the entrance of fragments of rock or other foreign material.

2. The solid plug-valve provided with the ports b, with the steam-passages c arranged at right angles thereto, whereby elongated articles entering the passages c are prevented from passing through the ports b, as set forth.

3. In combination with the oscillating valve provided with the arm C, the inlet-passage O, arranged to deliver the inflowing steam or air directly against said arm, and thereby assist in completing the full movement of the valve, whereby the engine is prevented from stopping on its forward stroke when the piston stops short of its full movement, as set forth.

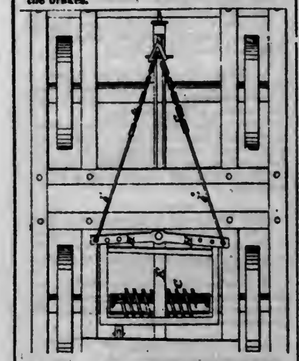
165,647. CAR-SPRINGS. John E. Wootten, Reading, Pa. [Filed Feb. 14, 1874.]



The combination of the series of spirals, the wooden cellular blocks, and metallic plates interposed between the bottoms of the cells and the ends of the spirals, as specified.

165,648. CAR-BRAKES. John B. Worthman, Mobile, Ala. [Filed Apr. 6, 1875.]

Brief.—Series of devices for bringing a pin into engagement with a worm on an axle. The lateral traveling of the pin in either direction operates the lever-chains, and finally the brakes.



1. The combination, with the worm on the axle, of the lever-arm E, adjustable pin D, the right-angular arms H H, moving with the arm E, the rods b', chains c, and the brake-lever K, substantially as and for the purpose set forth.

2. The combination of lever F, collar L, rock-shaft N, having arms M and O, the indented disk Q, connecting-rod P, pawl R, pinions e and f, ratchet-wheel g, and setting-lever S, substantially as and for the purpose set forth.

3. The combination, with a continuous rope passing the entire length of the train, of the rod J, carrying pulley k, crank-piece i, ratchet g, and spring-seated pawl h, substantially as and for the purpose set forth.

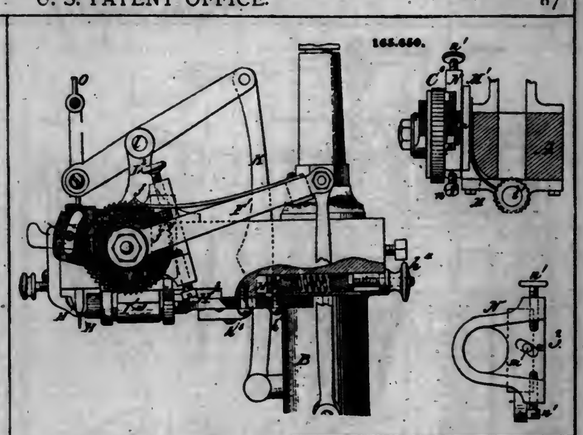
4. The combination of the worm C, lever-arm E, right-angular arms H H, lever F, pin D, sliding collar L, rock-shaft N, arms M and O, and connecting-rod P, substantially as and for the purpose described.

165,649. AIR-DRIED BRICKS. J. Wurmser, Chicago, Ill. [Filed June 22, 1875.]

As a new article of manufacture, a brick composed of lime, sawdust, ashes, and plastering-hair, substantially in the proportions set forth.

165,650. PEGGING-MACHINES. Treat T. Prosser, Chicago, Ill., assignor, by mesne assignments, to himself and O. L. Noble, same place, and Allen C. Calkins and W. Bushnell. [Filed July 21, 1874.]

1. The combination of the feed-wheels C and D, and cutters H H', with the tube E, adapted to oscillate toward one of the cutters in response to the action of the other on the wire, substantially as and for the purpose specified.



165,650.

2. In a machine for pegging boots and shoes, the combination of the following successively-acting elements, viz: A device for forcing the end of the wire into the sole; cutters for severing the nail from the wire; a feed mechanism for advancing the boot or shoe; and a plunging for forcing the previously-inserted nail home.

3. The combination of the feed-wheels C and D, oscillating tube E, cutters H H', feed-roller f, and plunger O, substantially as specified.

4. The ratchet-wheel C' and pawl F, provided with spur f', in combination with the adjustable cam-plate F' f', substantially as specified.

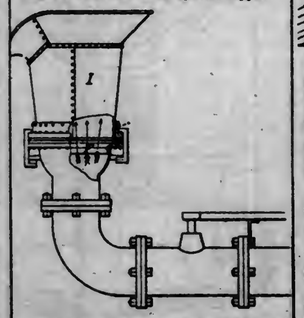
5. The combination of the oscillating arm F', oscillating yoke H a, provided with adjustable screws n' n', sliding plate M' m, pawl M, and ratchet-wheel C on the shaft I of the feed-roller f, substantially as specified.

6. The combination of the cutter H, plunger H', pivoted plate H' b', cam k on the reciprocating connecting-rod K, and springs H', connecting to the plunger H', substantially as specified.

REISSUES.

6,538. ORE-SEPARATORS. Hiram F. Minot, Chicago, Ill., assignor, by mesne assignments, to F. A. Bowen, same place. Patent No. 140,441, dated Dec. 9, 1873. [Filed Apr. 17, 1875.]

Brief.—A regulated current of the separating fluid, as water, flows upward through a screen in the bottom of the spouted hopper.

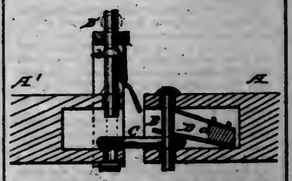


1. A separator for separating granular substances of different specific gravity by fluid agitation, consisting of a hopper or receptacle for receiving the granular substances to be separated, an overflow from the said hopper or receptacle, a perforated screen or surface, through which fluid can enter the hopper to agitate the mass, a fluid-supply pipe, and valve for regulating the supply of fluid, substantially as and for the purposes described.

2. In a separator designed for separating granular substances of different specific gravity by fluid agitation, the screen or perforated surface b, connecting directly with a tapering hopper or receptacle, I, and overflow i, substantially as and for the purpose described.

3. In a separator for separating granular substances of different specific gravity by the action of a current of fluid flowing in a direction contrary to the gravity of the particles, a hopper or receptacle for holding the substances while being acted upon, provided with the overflow b, as described, and of a form substantially as described, whereby the velocity of the fluid required to agitate the granular particles at its entrance is gradually reduced in force to that necessary for the removal of particles of lighter specific gravity, substantially as and for the purpose described.

6,539. CAR-COUPLINGS. Josiah Outland and Robt. P. Thomas, Barnesville, Ohio. Patent No. 151,615, dated June 2, 1874. [Filed Apr. 28, 1875.]



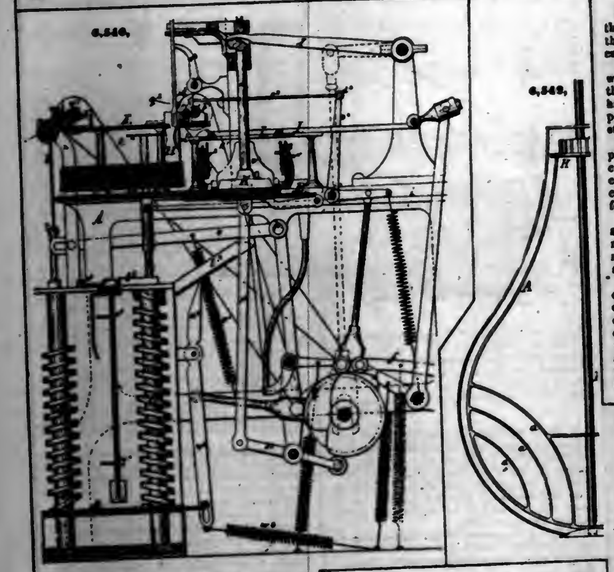
1. In combination with a draw-head, coupling-pin, and link, the reversible plate D, provided with the spring b, and placed loosely within the draw-head, substantially as and for the purposes set forth.

2. The draw-head A, pin B, and reversible plate D, with spring b, in combination with the link C and automatic coupling device, substantially as and for the purpose set forth.

6,540. ENVELOPE-MACHINES. James Ball, Brooklyn, N. Y., assignor to Saml. Raynor & Co. Patent No. 78,262, dated May 26, 1868. [Filed May 4, 1875.]

Brief.—The envelope-blank is automatically pasted, folded, dried, and delivered.

1. The combination of a revolving gummer having a suitable projection, with a reciprocating table supporting the pile of blanks, said gummer moving at a different speed from the table, substantially as described, so that the gummer in revolving against the first blank in the pile will apply the gum evenly on the seal-flap of said blank.



2. In combination with the gummer of an envelope-machine, the mechanism, substantially as described, for imparting to said gummer a compound rising and falling and revolving motion, whereby the same is depressed on the pile of blanks, and caused to revolve thereon, for the purpose of applying the gum, and then raised clear of the pile of blanks and revolved in contact with the gumming-rollers to receive a fresh supply of gum.

3. The combination of a cam-stop and weight or spring with the shaft of the revolving gummer, and with the pinions mounted on said shaft, substantially as described, whereby said pinions are always retained in the proper position to drop in gear with the appropriate pinions or racks.

4. The combination of the clamp *s* and slide *n* with the vertical rods and bracket *p*, for operating on the pile of blanks, substantially as described.

5. The combination, with the blank-supporting platform, and with the gummer and picker, of the mechanism, substantially as described, for imparting to said platform a motion under the gummer and picker, whereby the pile of blanks is alternately brought under the gummer, which applies gum to the seal-flap, and then under the picker, which applies gum to the lower flap.

6. The combination of an automatic stop-motion, substantially as described, with the gummer, the picker, and the blank-supporting platform, whereby said gummer and picker are thrown out of operation when the platform is turned out to receive new work.

7. The combination, with the creasing-box, of distinct strips, which catch over the edges of said box, substantially as described, so that the same can be set to variations in the blanks.

8. The combination of detachable bevels with the folding-wings and with the folding-table, substantially as described, so that envelopes of more or less thickness can be made to suit the demand of the trade.

9. The combination, with an envelope-folding machine, constructed substantially as described, of spiral carriers or worm-screws for carrying the envelopes until the gum on the seal-flap has dried.

10. The combination of two or more sets of spiral carriers or worm-screws running in opposite directions, substantially as and for the purpose set forth.

11. The combination of threads, having an increased pitch, with the receiving ends of the spiral carriers, to facilitate the entrance of the envelopes, substantially as described.

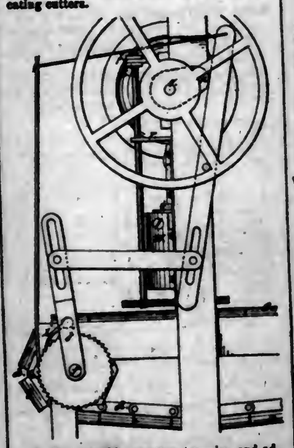
12. The combination, with a device for carrying the envelopes of a separator acting at suitable intervals on the envelopes, while the same are supported by the carrying device, substantially as and for the purpose described.

13. The combination of a reciprocating conveyer, substantially as described, with two or more sets of envelope-carriers, for transferring the envelopes from one carrier to the other.

14. The combination of a transparent panel with the receiving-table of an envelope-folding machine, and with the envelope-carriers, substantially as and for the purpose described.

6,541. MACHINES FOR SPLITTING WOOD. J. A. Conover, New York, N. Y. Patent No. 12,607, dated May 15, 1855; extended seven years. [Filed Apr. 16, 1875.]

Brief.—The blocks to be split are placed upright upon a sectional, flanged, and traveling bed, and fed forward under angular reciprocating cutters.



1. The movable carriage, carrying and advancing the block of wood under the cutter, in combination with the reciprocating cutters, operating in the line of the grain of the wood, substantially as set forth.

2. In combination with the bed or frame, the movable carriage, carrying and advancing the blocks under the cutters, and the reciprocating cutters, substantially as set forth.

3. In combination with the flanged bed, which supports the pieces of wood so that the grain is in line with the cutters, the blades having a rectilinear reciprocating movement positively communicated by the crank, substantially as set forth.

4. In combination with the bed, (which supports the wood with its grain in line with the cutters,) the blades having a rectilinear reciprocating movement, positively actuated by the crank, and a clearing-plate, substantially as set forth.

5. In combination with the blades, having a reciprocating movement positively communicated by a crank, the clearing-plate, a carriage, and an intermittent feed, substantially as set forth.

6. Providing the said clearing-plate with an elastic pad, and imparting to it an up-and-down motion, substantially as specified, in its combination with the bed or carriage and reciprocating cutters, as specified, by means of which the said plate, under the combination specified, performs the double office of holding the blocks and clearing the cutters, as specified.

6,542. BOG-BEATERS. Timothy Earle, Lincoln, R. I., assignor, by mesne assignments, to the Dover Stamping Company, Boston, Mass. Patent No. 30,154, dated July 7, 1863. [Filed June 8, 1875.]

1. The revolving beater-frame formed of thin plain blades or cutters, arranged to cut edgewise through the material by their rotation, substantially as described.

2. The combination of the fixed frame, which contains and supports the operative machinery, provided with a foot or support at the bottom, the handle at the top, and suitable mechanism for rotating the beater, substantially as described.

6,543. LINES FOR CONNECTING THE HANDLE AND PITMEN OF PUMPS. Lewis W. Olds and Clark Olds, Erie, Pa. Patent No. 130,627, dated Aug. 13, 1872. [Filed Dec. 17, 1874.]

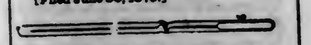
Brief.—The head is cast upon the bolt, and has an eye, which may be placed eccentrically, leaving a greater mass of metal on the side that takes the most wear.



1. The part *b*, having an eye, *d*, and cast upon the part *c*, as shown, and for the purposes mentioned.

2. The parts *a b*, with the eye *d* placed therein, in the manner and for the purposes shown.

6,544. REGISTERING-THERMOMETERS. John V. Raymond, West Hoboken, N. J., assignor of one-half interest to Adolph Bayer. Patent No. 157,633, dated Dec. 8, 1874. [Filed June 30, 1875.]



A thermometer having a twist, *d*, in its tube *a*, to operate in combination with the index *c*, substantially as shown and described.

6,545. PROCESSES FOR THE MANUFACTURE OF INDIA-RUBBER HOSE. Thos. J. Mayall, Boston, Mass. Patent No. 26,276, dated Nov. 29, 1859; reissue No. 5,111, dated Oct. 22, 1872; extended seven years. [Filed Dec. 15, 1873.]

Brief.—The canvas or fibrous foundation of the hose is treated with a solution containing an antiseptic, as carbolic acid, previously to the vulcanization of the hose.

1. In india-rubber hose, the application of the preservative compound herein mentioned, or an equivalent antiseptic, so as to preserve the same, substantially as described.

2. The improved india-rubber hose prepared by combining the substance herein named, or an equivalent antiseptic, with the fibrous material of the same, substantially as described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 3. TUESDAY, JULY 20, 1875. PRICE { $5,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

HANKINSON.—*Trade-Mark.*

[*Appeal from the Examiner of Trade-Marks in the matter of the application of William H. Hankinson for the registration of a trade-mark.—Decided June 2, 1875.*]

A carpet-cleaner is not, in the strict sense of the term, either a merchant or a manufacturer, and a mark used by him upon wagons with which he transports carpets back and forth, upon tags attached to the carpets, and upon his business-cards, circulars, bill-heads, &c., is not a trade-mark.

Although he may have a proprietary interest in his mark for the particular use to which he has appropriated it, which the courts will protect, it does not follow that it is a trade-mark registerable in the Patent Office.

To be entitled to registration, the applicant must comply specifically with all the requirements of the statute.

As carpets in the hands of a cleaner are not, as respects him and his purposes, merchandise or manufactures within the meaning of the statute, he cannot comply with the statutory requirements for registration. (*Smith* vs. *Reynolds*, 3 OFFICIAL GAZETTE, cited and followed.)

THACHER, *Commissioner:*

The applicant in this case is not, in the strict sense of the term, either a manufacturer or a trader. He represents his business to be that of cleaning carpets, in the pursuit of which business he receives from his patrons carpets to be cleaned, and, after cleansing, delivers them to their owners. Upon the wagons with which he transports these carpets back and forth, and upon the tags which he attaches to the carpets, as well as upon his cards, circulars, bill-heads, &c., he uses a certain mark, and it is this which he desires to register as a trade-mark.

As he is not a manufacturer or a trader, the goods with which he deals are not *manufactures* or *merchandise*, within the meaning of the terms as used in the statute. Applicant cannot, therefore, comply with one requirement of the statute, which is, that he shall cause to be recorded in the Patent Office—

The class of merchandise, and the particular description of goods comprised in such class, by which the trade-mark has been or is intended to be appropriated. (U. S. Rev. Stat., Sec. 4937.)

It was held in *Smith* vs. *Reynolds*, (3 OFFICIAL GAZETTE, p. 213,) that—

The certificate of the Commissioner that the parties otherwise complied with the act cannot be substituted for the judgment which a court must pass as to whether there was a declaration filed, and one under oath, and one complying, as to its contents, with the statute. The court is to judge from the "statement" whether the requirement of recording "the class of merchandise and the particular description of goods comprised in such class, by which the trade-mark has been or is intended to be appropriated," has been complied with, and whether the requirement of recording a description of the mode in which the trade-mark "has been or is intended to be applied and used" was complied with. So it is equally for the court to judge whether the requirement as to the filing of the proper declaration was complied with. The general certificate of the Commissioner cannot be taken as evidence on the subject.

Applicant may have a proprietary interest in the mark described, for the particular use to which he has appropriated it, which the courts will sustain. This is not denied. It is not a question for discussion here. But, admitting that he has, it does not necessarily follow that he can register this mark in the Patent Office as a trade-mark. Whether he can register or not has no effect upon his common-law right to the mark in question. The question of registration is to be determined by the provisions of the law, and, from the decision quoted above, it appears that unless applicant complies *specifically* with all the requirements of the law he cannot obtain a valid certificate of registration.

As this applicant, in my judgment, cannot truthfully make the statement required by law, inasmuch as the conditions of the use of his mark are not contemplated by the statute, I cannot properly grant the registration which applicant desires.

It is as plainly erroneous to register a trade-mark without compliance with requirements of the law as to grant a patent under like circumstances.

The decision of the Examiner is accordingly affirmed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

GEORGE H. TAYLOR *vs.* ALLEN L. WOOD.

[*In equity.—Before* BLATCHFORD, *J.—May*, 1874.]

The apparatus described in letters patent granted to Allen L. Wood, December 7, 1869, for an "improved apparatus for treating diseases by mechanical movement," is an infringement of the first, second, and fifth claims of Letters Patent No. 75,218, granted to George H. Taylor March 3, 1868, for an "apparatus for exercise," and of the first and fourth claims of Letters Patent No. 77,933, granted to said Taylor May 12, 1868, for an "oscillating rubbing-machine for medical uses," and of the first claim of Letters Patent No. 75,217, granted to said Taylor March 3, 1868, for an "apparatus for exercise."

Although in Patent No. 75,218 the handle and the foot-holder are described as having an *oscillating* or *vibrating* motion communicated to them, the return movement being in the same path as the outward movement, yet the to-and-fro motion in defendant's machine, in view of the action on the limb, is equally oscillating or vibrating, although the parts describe an ellipse or a circle in passing out and returning.

In each machine there is mechanical uniformity and precision, and the movements are two in number, outward to an extreme point and inward from it, and are alternating.

The muscles and joints may be brought into different play by the difference of motion; but that is aside from the mechanical operation of giving play to the muscles and joints and the particles of the legs and arms by the movement to and fro in passing rapidly from a given position and returning to the same position.

Although in Patent No. 77,933 the "rubber" is described and claimed as having an external surface of corrugated india-rubber, the patent is infringed by a rubber the external surface of which is of cloth or leather, but corrugated, and which is stuffed so as to be but slightly elastic.

Both are more or less adhesive, and they are applied similarly and with substantially the same object.

A patent cannot be defeated by a single experimental machine, when the recollection of the mechanism that constituted it has passed away from the mind of the witness, who deposes to its existence thirty-five years before, so that it cannot from such recollection be reconstructed, and there being no other record of it.

The burden of proof is on the defendant to show a prior invention, and, if the evidence is too vague and unsatisfactory to establish affirmatively, as against the patent, that the patentee was later in time of invention, the patent must stand.

[*F. H. Betts*, for complainant.
O. H. Judson, for defendant.]

BLATCHFORD, *J.*:

[This suit is brought on three several letters patent granted to the plaintiff—namely, No. 75,218, granted March 3, 1868, for an "apparatus for exercise;" No. 77,933, granted May 12, 1868, for an "oscillating rubbing-machine for medical uses;" and No. 75,217, granted March 3, 1868, for an "apparatus for exercise."]

The specification of No. 75,218 states that the plaintiff has invented an "oscillating vibrating machine for medical purposes." It refers to three figures of drawings—

Figure 1, a front view; Fig. 2, a top view; and Fig. 3, an end view.

It says:

This invention relates to the application of oscillating or vibrating motion to various parts of the human body, under the direction of a competent physician, to aid in the recovery of health by inducing the following effects—to increase the production of heat in such parts as are subjected to the action; to cause blood to flow in larger amount into such parts; to attract blood from other portions where it may be retained in too large measure to excite capillary activity; to counteract the tendency to local congestion; to restore nervous action and power; to perfect and equalize the nutritive operation of the body; and to render healthful the tissues of the body. My invention consists of, first, a handle of convenient shape and size to be grasped by the hands, to which an oscillating or vibrating motion is communicated by any suitable mechanism; second, a shoe or foot-holder, of convenient size and shape, and adjusted in a suitable position to receive and retain the foot of the person to be operated upon, the said foot-holder having oscillating or vibrating motion communicated to it by proper mechanism; * * * fifth, the combination and arrangement of the several parts or devices forming the machine, hereinafter fully described, for producing the effects stated.

The handle B is hung on a shaft, and vibrates or rocks with it; and to such shaft is hung a crank, to which is connected, by a rod, a shorter crank, on the driving-shaft F. When the shaft F revolves the shorter crank revolves with it, and gives a reciprocating or rocking motion to the shaft on which the handle B is hung and to such handle. The foot-holder B' is hung on another shaft, which is in like manner driven by two cranks and a rod, which obtain their motion from the driving-shaft F. The working parts are hung or attached to a frame. There is a pulley, H, on the driving-shaft F and a driving-pulley, G.

The machine may be driven by the hand through a crank, or by the foot through a treadle, or by power. The extent of the vibrating motion given to the hand or body may be increased or diminished by shortening or lengthening the cranks by which the handle or foot-holder is driven; and, by running the machine faster or slower, the rapidity of the vibrations may be increased or diminished to suit different cases.

The first, second, and fifth claims of this patent are those which are claimed to be infringed, and are as follows:

1. The handle B, driven by any suitable mechanism, by which a vibrating or oscillating motion is imparted to it, substantially as and for the purpose set forth.
2. The shoe or foot-holder B', driven by any suitable mechanism, by which a vibrating or oscillating motion is imparted to it, substantially as and for the purpose set forth.
5. The combination, with the handle B and foot-holder B' and their immediate connections, of the driving-shaft F, and pulleys G and H, and a suitable means for applying power, as described, the whole constituting a machine constructed and operating substantially as and to the effect set forth.

The specification of No. 77,933 says:

The object of my invention is to produce effects on different parts of the human body similar to those produced by a rubbing with the hands, and to produce these effects in an increased degree, but without the fatigue to the operator occasioned by that operation.

For this purpose my invention consists, first, in a new and improved rubber, hereinafter fully described, which, when operated by any suitable mechanism, rubs the surface to which it is applied in such a manner as to produce effects similar to those produced by the human hand; * * * fourth, in the combination, with the said rubber and the mechanical devices for imparting motion thereto, of a suitable couch, bed, or table, over which the person to be operated upon may sit or recline, the said couch having a suitable opening in it, through which the said rubber may be made to protrude, in order that it may be brought in contact with and caused to operate on that portion of the body of the patient which rests on or across said opening. * * *

A is the rubber. It consists of a core of wood or other similar material, of the form of the middle frustum of a prolate spheroid, somewhat resembling a very long cask or barrel. On this core a triangular band of india-rubber is wound from end to end, covering its entire surface, except the ends, and securely fastened to the said core; a strip or band of india-rubber of a square section may be used, by previously cutting out of the wooden core a triangular spiral groove, to receive one-half of it. India-rubber bands of other shapes may also be used in a similar manner; or the india-rubber surface, containing the requisite corrugations, or projecting points, cones, or ridges, to make it adhere to the surface to be operated upon, may be prepared in a sheet of proper size and fastened on the core; or a hollow cylinder of india-rubber having the requisite outer surface may be stretched over or secured to the core, or upon the rod or pivot upon which the rubber turns. In this last case no core would be used, but circular end plates of metal or other stout material ought to be put on at the ends of the rubber to keep it in place. The rubber is hung in the fork of a rod by means of a shaft, so as to turn freely. Such rod is hung on a pivot in a cross-piece at any convenient height, being capable of being raised or lowered by means of a series of holes, in any one of which such pivot may be placed. By shortening the upper end of such rod the lateral motion of the rubber is shortened, and the convexity of its motion is increased. The middle part of such cross-piece is made double, and such rod passes down between the two parts, such pivot passing through both, so as to have a firm and even bearing. The lower end of such rod is connected to a double crank by means of an arm, and thus has a reciprocating or vibrating motion imparted to it by a shaft on which such double crank is hung; such shaft is turned by a crank, and is hung in bearings in two bangers secured to the frame of the machine. The lower part of the machine consists of a strong rectangular frame of wood, O, with legs similar to a common lounge-frame. To this frame, at one end, is secured by hinges, a bed or couch having a hole or opening, R, through it, to permit the rubber A to work against that portion of the body of the patient which is placed over the opening. There is an arrangement for fixing and holding the couch at any desired elevation or inclination. In using the machine, the patient sits or inclines on the couch and brings a portion of the body directly over and partially resting on the rubber A; the attendant turns the crank, or connects the power by which the shaft is revolved, and sets the rubber A in motion.

The claims which are alleged to be infringed are the first and fourth. They are as follows:

1. The rubber A, composed of india-rubber, and having its outer surface coated or covered with india-rubber, the said outer surface being furnished with projecting ribs, points, or corrugations, and the said rubber A being constructed substantially as and for the purpose specified.
4. The combination, with the rubber A, driven by suitable mechanism, substantially as set forth, of the couch S, properly connected to the frame O, and having an opening, R, through it, for the said rubber A to work through, substantially as and for the purpose set forth.

The specification of No. 75,217 says that the invention is a medical kneading and vibrating machine, the purpose of which is to apply kneading and vibrating motions to the body, or any of its parts, under the direction of a competent physician, to aid in securing the following therapeutic effects: re-enforcing the circulation of the blood in weak parts and obstructed capillaries, removing congestion, promoting intestinal and digestive absorption, increasing the attraction of the products of waste for oxygen and their consequent removal from the body, solidifying the tissues, equalizing and invigorating the nutritive operations of the body. The arrangement described, so far as it is involved in this suit, is to construct a couch so arranged as to be capable of elevation and depression, so as thereby to adjust the position of the body lying thereon to the desired action and effect of the machine. The top of the couch has an opening, of size and shape suitable to admit one or more headed rods, F, which in size, shape, and position are adapted to impinge against that portion of the body resting on the couch, immediately over the before-described opening. The lower ends of the headed rods are attached to a lever at equal distances from its fulcrum, which distances may be varied to produce more or less motion, as may be desired. The fulcrum of the lever is on a vertical bar, which turns freely on pivots or centers at each end, and the lever is driven by a crank on a shaft, which gives to its ends a circular motion. The upper ends of the headed rods pass through rings, which guide them, and, in conjunction with the lever, give to the upper ends of said rods a compound motion, which is, at the same time, lateral, vertical, and circular. The distance of the rings from the axis of the swinging or pivoted bar is fixed and kept equal by a parallelogram of levers, to the outer corners of which, respectively, the rings are attached. The lower corner of the parallelogram of levers is attached to the vertical bar before mentioned by a pivot or pin, on which the two levers composing the lower corner freely swing, while the upper corner is held in position, and adjusted to any desired height, by a bolt or nut. The shaft may be driven by any suitable means, as by a crank, by a belt acting on a pulley, or by a suitable treadle. By a modification, the lever to which the lower ends of the headed rods are attached is hung on a rock-shaft, which is driven by a crank or arm, and the upper ends of the rods pass through holes in the frame of the couch, and the motion thereby imparted to the upper ends of the headed rods is thus confined to one vertical plane, being a circular reciprocating motion. Such lever may be driven, if desired, by the hand or foot, applied to an extension of one of its arms. For the purpose of producing a kneading motion the machine is driven at such a speed as will produce from fifty or less to two hundred or three hundred upward motions per minute, while, for producing a vibrating motion, consisting of or caused by a rapid succession of slight shocks or blows, the form of the machine which produces a circular reciprocating motion is used, and it is driven at a speed of from about two hundred to twelve hundred or more upward motions per minute. The effects of these two degrees of motion are different, becoming more similar as they approach the common speed of about two hundred per minute. The slow or kneading motion is, in its effects, laxative, soothing, and calculated to increase muscular action and development; while the rapid or vibrating motion stimulates absorption of the fluids, equalizes their distribution throughout the body, and promotes the excretion of all those products which in health are thrown off from the system. When it is desired to give to the machine the rapid motion above stated it is most convenient to drive it by steam or other power, or, if driven by hand, additional gearing facilitates obtaining the desired speed.

Only the first claim of this patent is alleged to be infringed. It is in these words:

1. The headed rods F, driven by any suitable mechanism for producing a reciprocating or circular motion of the headed ends of said rods, substantially as and for the purpose set forth.

The apparatus employed by the defendant, and alleged to infringe the claims above referred to, is substantially such a one as is described in a patent granted to him December 7, 1869, for an "improved apparatus for treating diseases by mechanical movement." The specification of this patent says:

The object of my invention is to devise a machine in which mechanical action is adapted to produce motion of various kinds, in a manner applicable to the treatment of various diseases, with salutary effect; and it consists essentially in the employment of certain mechanism whereby circular or rotary motion, properly converted and applied, is made to perform the several operations of rubbing, kneading, and giving vibrating and other action to the muscles and various parts of the system.

The defendant's machine has a vibrating bar, lying horizontal, which has a rotary motion at the end actuated, and the opposite extremity of it is connected with a vertical vibrating support, and it produces the operations of kneading and vibrating through the medium of fixed or removable attachments. It is capable of imparting vertical, horizontal, or circular vibrations. Tables or platforms are placed on either side of such bar, on which the patient is supported, with the part to be operated upon lying upon and across the bar, the upper surface of which is provided with a friction or rubbing device, or with cushions adapted to the particular mode of operation required. In the application of kneading, an attachment which has undulations in its upper surface is applied to the top of the vibrating bar, and the opposite end of the bar is so connected by a bolt with a disk which rotates freely that a circular vibration of such attachments is produced, and, as the patient lies on the tables in such position that the part to be operated upon is in contact with such attachment, the operation of kneading is closely simulated, the effect being heightened by the undulation on the surface of the attachments. The motion thus obtained

is an elliptical vibration, and not a regular vibration on the same plane. Special arrangements convert the motion of the vibrating bar from a circular vibration to one which is vertical, or to one which is horizontal. The latter consists of rapid vibrations on a horizonal plane, and is adapted to friction or simple rubbing, and the attachment then employed consists of a series of transverse ribs, alternated with grooves or space between. Provision is made for increasing or diminishing the rapidity of the vibrations.

The specification states that—

The attachments for friction, kneading, &c., are preferably covered on the surface with leather, and may be stuffed with any suitable material possessing but a slight amount, if any, of elasticity.

To give motion to the feet of the patient a disk is employed, to the face of which is affixed, by means of a bolt or pivot at the center of its length, a bar, having at each side of said pivot, which forms its axis, a foot-piece. To these foot-pieces the feet of the patient are secured. The rotation of the disk imparts like motion to the axis, which carries the center of the bar around in a true circle, while the extremities on which the feet rest are free to follow the uniform rotation or to oscillate. For motion to the hands and arms a bar is affixed in the same manner to another disk. This bar is grasped by the hands of the patient on either side of its axis, the motion being the same as that of the feet. The axis of these bars and of the vibrating bar may be adjusted at a greater or a less distance from the center of the disk, to increase or diminish the motion.

"Oscillate" is defined "to vibrate as a pendulum." "Oscillating" is defined "moving alternately one way and another, as a pendulum; swinging; vibrating." "Vibrate" is defined "to move or play to and fro, as a pendulum; to oscillate; to swing" "Vibrating" is defined "vibrating; moving up and down, or to and fro; oscillating." It is contended by the defendant that his apparatus does not infringe patent No. 75,218, for the reason that the plaintiff's handle and foot-holder are required to have a vibrating or oscillating motion, as contradistinguished from a rotary motion, while the defendant's handle and foot-holder have a rotary motion.

In seeking to maintain this distinction it is urged that the defendant's handle and foot-holder, because they move each in a circle, have a continuous motion in one direction. This is a fallacy; the matter must be looked at in view of the action on the arms and legs of the patient. In each machine the hand or the foot is moved from a given position with relation to the parts of the body with which, through the points, it is connected, and returns again to that portion, to start anew. The motion to and fro is equally oscillating or vibrating, in view of the action on the limb, whether such motion takes place in both directions in the same line, or whether an ellipse or a circle be described in passing away and returning. The muscles and joints may be brought into different play by the difference of motion; but that is aside from the mechanical operation of giving play to the muscles and joints, and particles of the legs and arms, by the movement to and fro in passing rapidly from a given position and returning to the same position. In the sense of the plaintiff's patent and invention, the defendant's handle and foot-holder have a vibrating motion to and fro, although the return is made in a different path from the outward path; but in each machine there is the same point of departure; an extreme point is reached by an outward movement; there is a return by an inward movement to the point of departure; between every arrival at the point of departure the path of the outward movement is gone over once and but once, and the path of the inward movement is gone over once and but once; and there is no departure from the prescribed path. There is, therefore, mechanical uniformity and precision; the movements are two in number, outward to an extreme point, and inward from it, and are alternating, vibrating, and oscillating, although the plaintiff uses one and the same path for each movement, and the defendant uses two different paths, one for each movement.

It is contended for the defendant that he does not infringe patent No. 77,933. He uses a rubber with a surface of cloth or leather, stuffed with some material, and very slightly elastic, and corrugated. It projects and is applied through an opening between two couches, the patient reclining on the two couches and across the opening, and it is driven by suitable mechanism. All these features are those of the patent; but it is contended that the plaintiff's rubber is required to be made of india-rubber on its external surface. It is said that the india-rubber surface is adhesive, and the leather or cloth surface is not, and that the corrugated india-rubber surface yields horizontally in rubbing, while there is no such horizontal yielding in the corrugated leather or cloth surface; but there is more or less adhesion in either surface. Where the adhesion is less, so that the rubber passes more readily over the surface that is being rubbed, the greater must be the corrugations to produce a given effect. The object stated in the patent is to produce, by rubbing, effects on the body similar to those produced by a rubbing with the human hand. The hand, when applied to rub, controlled by the will, is adhesive, and needs not to be corrugated, because its contact and presence, as it rubs, can be always maintained to make the rubbing continuous and effective.

Where a very adhesive substance like india-rubber is used as the surface to rub with, impelled by machinery, the corrugations necessary to maintain continuous contact in rubbing are less than when a less adhesive surface is used; the corrugations must be greater in order to compensate for the want of surface adhesiveness, by causing the surface of flesh to enter between the walls of the corrugations, and thus be rubbed in the movement of the rubber.

The patent states that the object of the corrugations or ridges is to make the surface of the rubber adhere to the surface to be operated upon.

The invention set forth in the patent granted to Charles F. Taylor December 8, 1863, for an "improvement in machines for exercising the human body," in adducing as anticipating what is claimed in patent No. 77,933; but it is sufficient to say that the Charles F. Taylor implements are not corrugated, and do not work from below through an opening in a couch, or between couches, as the patient reclines thereon and over such opening. The patient lies on a lounge, and two pads are applied to opposite sides of the person, which pads are hinged to arms capable of being adjusted higher or lower, or more or less obliquely, or in a vertical position. The pads have a reciprocating or vibrating movement imparted to them by machinery, and act upon the parts of the body to which they are applied. The pads are not represented as being at any time out of contact with the body of the patient, and the operation is strictly one of rubbing.

The defendant uses substantially the headed rod of Patent No. 75,217, driven by suitable mechanism for producing a circular motion of the headed end of the rod. The heads of the plaintiff's rods are described as being, in size, shape, and position, adapted to impinge against the portion of the body presented to it. In the kneading motion the rod is driven more slowly, and its upper end has a compound motion, which is described as being lateral, vertical, and circular at the same time, and which produces, through the motion of the end of the rod, an operation like that of kneading. The defendant performs the operation of kneading by giving a circular vibration to his kneading attachment, which has on it protuberances, the equivalents of the heads of the plaintiff's rods.

As to Williamson's evidence in regard to the horse-machine, it shows nothing which can avail to defeat any of the plaintiff's claims.

The motion of the horse-machine was so slow as not to produce any motion which can be properly called vibrating or oscillating, in the sense of the plaintiff's patents—a motion sufficiently rapid to accomplish the results accomplished by the plaintiff. Whatever there was of the horse-machine, it rose only to the dignity of an experiment, and was abandoned.

But one was built, and that more than thirty-five years ago, and the recollection of the mechanism which constituted it has passed away from the mind of the witness, if he ever knew, so that it cannot from such recollection be reconstructed, and there is no other record of it.

The defendant claims to have himself constructed and used, prior to the plaintiff, the inventions covered by the plaintiff's claims. As to Patent No. 75,218 the evidence is entirely clear that the plaintiff was prior in time. As to the other two patents, the burden of proof is on the defendant to show his priority. His evidence is too vague and unsatisfactory to establish affirmatively, as against the plaintiff's patents, that the plaintiff was later in time of invention.

There must be a decree for the plaintiff on all the claims in question.

DECREE.

GEORGE H. TAYLOR *vs.* ALLEN L. WOOD.

[At a stated term of the Circuit Court of the United States, for the southern district of New York, held in and for said district at the court-house in the city of New York, on the 30th day of May, 1874. Present, Hon. SAMUEL BLATCHFORD, District Judge.]

This cause having come on to be heard at this term, upon the pleadings and proofs, after hearing counsel for the respective parties, and due proceedings had, it is, upon consideration, ordered, adjudged, and decreed:

That the several letters patent granted to the complainant for apparatus for exercise, dated March 3, 1868, No. 75,217, March 3, 1868, No. 75,218, and May 12, 1868, No. 77,933, are good and valid in law.

That the said George H. Taylor was the first and original inventor and discoverer of the inventions described and claimed in said letters patent, and in the specifications annexed thereto, and is the exclusive owner of said letters patent.

That the defendant Allen L. Wood has infringed upon said letters patent, and upon the exclusive rights of the complainant under the same—that is to say, by making, using, and selling, without right or license from the complainant, certain machines, substantially described in letters patent granted to him, dated December 7, 1869, and machines similar thereto in certain particulars, which said machines contain and embody the inventions described and claimed in the first, second, and fifth claims of said Letters Patent No. 75,218, and in the first and fourth claims of said Letters Patent No. 75,217, and in the first claim of the said Letters Patent No. 77,933.

And it is further ordered, adjudged, and decreed that the complainant do recover of the defendant the profits, gains, and advantages which the said defendant has received or made by reason of the infringement of the complainant's patents, set forth in the bill, or either of them, by any manufacture, use, or sale, and that said complainant do also recover any and all damages he has sustained by reason of any infringement of said letters patent by the defendant.

And it is hereby referred to Joseph Gutman, Jr., one of the masters of this court, to take and state the account of said gains, profits, and advantages, and to assess such damages, and to report thereon with all convenient speed; and the defendant is hereby directed and required to attend before said master from time to time as required, and to produce before him such books, papers, and documents as relate to the matters in issue, and submit to such oral examination as the master may require.

And it is further ordered, adjudged, and decreed that a perpetual injunction issue out of and under the seal of this court, restraining the defendant, his clerks, agents, and workmen from making, using, or selling any machine or machines containing or embodying any one or more of the following features described and claimed in said letters patent—viz:

The handle B, driven by any suitable mechanism by which a vibratory or oscillating motion is imparted to it, substantially as and for the purposes set forth.

The shoe or foot-holder, driven by any suitable mechanism by which a vibratory or oscillating motion is imparted to it, substantially as and for the purposes set forth.

The combination of the handle and foot-holder and their immediate connections, of the driving-shaft, palleys, and a suitable means for applying power, as described, the whole constituting a machine constructed and operated substantially as, and to the effect, set forth.

The rubber, composed of india-rubber, and having its outer surface coated or covered with india-rubber, the said outer surface being furnished with projecting ribs, points, or corrugations, and the said rubber being constructed substantially as and for the purposes specified.

The combination, with the rubber driven by suitable mechanism, substantially as set forth, of the couch properly connected with the frame, and having one opening through it for the said rubber to work through, substantially as and for the purpose set forth.

The headed rods, driven by any suitable mechanism for producing a reciprocating or circular motion of the headed ends of said rods, substantially as and for the purpose set forth.

Or from infringing upon any of the claims of said letters patent, or either of them, in any way whatsoever.

And it is further ordered, adjudged, and decreed that the complainant do recover of the defendant the costs

of this suit, and that the question of increase of damages, and all further questions, be reserved until the coming in of the master's report.

SAMUEL BLATCHFORD.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

STEWART HARTSHORN *vs.* JAMES F. ALMY *et al.*

[*In equity.—Before* SHEPLEY, *J.—Decided April*, 1875.]

The invention covered by the reissued patent of Stewart Hartshorn, dated August 27, 1867, for "Improvement in Spring-Fixtures for Shades," consists in dispensing with the weights, counterpoises, and pulleys that had been previously employed, and also with the cord which had been employed to operate the pawl and disengage it from the ratchet-notch, and so arranging the pawl and ratchet that the shade may be stopped and retained at any desired point within the scope of its movement by a simple manipulation of the shade itself, the arrangement of the pawl and ratchet being such that the former will engage with the latter by simply checking the rotation of the roller and the upward movement of the shade under the influence of the spring.

The claim of the patent—"The application to a shade-roller, provided with a spiral spring for automatically raising or rolling up the shade, of a pawl and a ratchet or a notched hub, so arranged that the former will engage with the latter at any point or height of the shade by simply checking the rotation of the roller and the upward movement of the shade under the influence of the spring, substantially as set forth"—so construed as to include the use of a loose pin, which falls into the notch of the roller-hub by the force of gravity when the roller is revolved slowly, but which is raised from the notch and held up by *centrifugal force* when the roller is revolved rapidly, while the pawl of the patented device is raised and held up by a portion of the periphery of the hub.

[*S. D. Law*, for complainant.
J. E. Maynadier, for defendants.]

SHEPLEY, *J.*:

The bill in this case is brought for alleged infringement of reissued Letters Patent No. 2,756, dated August 27, 1867, granted to Stewart Hartshorn, for improvement in spring-fixtures for shades.

The claim is for—

The application to a shade-roller, provided with a spiral spring for automatically raising or rolling up the shade, of a pawl and a ratchet or notched hub, so arranged that the former will engage with the latter at any point or height of the shade by simply checking the rotation of the roller and the upward movement of the shade under the influence of the spring, substantially as set forth.

Upon the construction of this claim depends the question of infringement in this case. Defendants contend for a construction which will limit the claim to the peculiarly-shaped pawl and the peculiarly-shaped ratchet described in the specification of the patent. Complainant contends for a construction which will embrace, in combination with the other elements, any pawl and ratchet or notched hub so arranged that the former will engage with the latter at any point or height of the shade by simply checking the rotation of the roller and the upward movement of the shade under the influence of the spring, substantially as set forth.

The state of the art before the invention of Hartshorn was this: A roller was used, having within it a coiled spring, one end fixed to the roller and the other end to a loose journal of the roller. A pawl and ratchet were so applied to the roller that the pawl would hold the roller against turning under the action of the spring, but allow the roller to be turned against the action of the spring. The ratchet lifted and disengaged the pawl from the ratchet in a downward pull of the curtain. These rollers were adapted, like the Hartshorn, to be hung in brackets. In the form of spring-fixtures for shades, which was known as "The Conch Fixture," and in use prior to Hartshorn's invention, a cord was used to lift the pawl and disengage it from the ratchet when it was desired to allow the curtain to roll up under the action of the spring. Hartshorn's invention differed from those which had preceded it, in that it dispensed with the cord used to disengage the pawl from the ratchet when the curtain is to be rolled up, and operated the fixture wholly by means of the shade or curtain.

The operation of Hartshorn's fixture, so far as concerns winding up the curtain and stopping it at any desired height, is as follows: A pawl is attached by a pivot to one of the brackets in which the shade-roller is hung. The end of the pawl opposite the pivoted end has a tendency to fall by gravity on a hub attached to one end of the roller. Two notches are made in the periphery of this hub. The width of these notches is but slightly in excess of the width of the toe of the pawl. The ratchet supports the pawl for the full extent of its periphery, except as to the slight difference in excess between the width of the ratchet-notch and the width of the toe of the pawl. Should the roller be revolving rapidly the width of the ratchet-notch will pass under the width of the toe of the pawl before the toe of the pawl has had sufficient time to gravitate into the ratchet-notch. This space of time is very short, for it is only while the excess of width between the width of the notch and the width of the toe of the pawl is passing under the toe of the pawl. This only allows the pawl-toe to gravitate into and engage with the ratchet-notch under a slow movement of the roller. Under a quick revolution of the roller the pawl-toe will not be unsupported by the periphery of the ratchet for a space of time sufficiently long to allow it to gravitate a sufficient distance into the ratchet-notch to become engaged with it while the ratchet-notch is passing under it.

The patentee also states that, if desired, the pawl may be placed underneath, or at one side of, the hub, instead of over it, as represented, and a spring may be made to bear against it, in order that its projection may engage with the notches.

It will thus be seen that the invention of Hartshorn consisted, so far as concerned the spring-roller shade-fixture, in dispensing with the weights, counterpoises, and pulleys which had been previously employed, and also with the cord which had been employed to operate the pawl and disengage it from the ratchet-notch, and so arranging the pawl and ratchet that the shade may be stopped and retained at any desired point within the scope of its movement by a simple manipulation of the shade itself, the arrangement of the pawl and ratchet being such that the former will engage with the latter at any point by simply checking the rotation of the roller and the upward movement of the shade under the influence of the spring.

In the fixture of the defendants the pawl or pin engages with the notch by the force of gravity acting on the pin. This mode of engagement is like that in the Hartshorn fixture. In the Hartshorn fixture the pawl is kept away from its engagement in the ratchet-notch by being raised by the periphery of the hub, and kept up by portions of the periphery of the hub until the notch is under it; and it is raised so high by the non-holding wall of the notch that, when the roller is rotating freely under the action of the spring, it will not have time to fall far enough to engage with the holding-wall of the notch during the time the notch is passing under it. In the defendants' fixture the pin or pawl is kept from engagement in the ratchet by centrifugal force. It is not supported by the periphery of the hub, or raised by the non-holding wall of the ratchet, or knocked up slightly by the blow of the holding-wall of the ratchet, as in Hartshorn's fixture.

In the Almy roller there is a thimble with a side aperture, surrounding the hub, forming a closed chamber when covered by the end cap of the roller. In this chamber is placed a little roller or pin, lying horizontally, and allowed to revolve loosely, and in the rapid revolution of the roller to be thrown above the periphery of the notched hub by centrifugal force; but when the roller is revolved slowly, or its motion is arrested, the loose pin, roller, or pawl falls onto the hub and into the notch, and in rolling up the curtain it is caught between that part of the notch which is at right angles with the axis of the hub and the shoulder formed in the thimble at the pin-chamber. In this respect the pawl and ratchet in the defendants' may properly be said to have a different operation from the pawl and ratchet in the Hartshorn fixture. In a similar sense the pawl and ratchet in the Hartshorn patent operate in a different manner when actuated by a spring in one of the modes described in the patent, and when left to engage by the pawl falling into the ratchet-notch by gravitation, as in the mode stated as the preferable mode in that patent.

In both the Hartshorn and the Almy roller the pawl and ratchet are so arranged that the one will engage with the other at any point or height of the shade by simply checking the rotation of the roller and the upward movement of the shade under the influence of the spring, by simply manipulating the shade, dispensing with counterpoises, or the usual cord for operating the roller, or the cord for holding the pawl disengaged.

In this respect, wherein Hartshorn differed from all that had preceded him, the mode of operation is the same; and, even if Almy's fixture has some advantages over Hartshorn's, it clearly embraces what was his invention, and is secured by the claim of his patent, and is an infringement. As stated by Judge Blatchford in the case of *Hartshorn* vs. *Tripp et al.*, in the circuit court for the southern district of New York—

there is no difference between these two modes of operation in the withholding from engagement, *so far as regards the real invention of the plaintiff and the scope of the claim of his patent.*

Decree for complainant for injunction and account, as prayed for in the bill.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date July 20, 1875.]

8,488.—**Drinking-Fountain.**—JOSEPH W. FISKE, New York, N. Y. Application filed July 6, 1875. Term of patent 7 years.

8,489.—**Lamp-Shade.**—CHARLES F. A. HINRICHS, Brooklyn, N. Y. Application filed January 8, 1875. Term of patent 7 years.

8,490.—**Gas-Burner.**—MATHEW STEWART, Philadelphia, Pa. Application filed July 6, 1875. Term of patent 3½ years.

8,491.—**Knob-Shanks.**—ALONZO E. YOUNG, Boston, Mass. Application filed June 26, 1875. Term of patent 7 years.

8,492.—**Center-Piece.**—HENRY BERGER, New York, N. Y. Application filed July 9, 1875. Term of patent 14 years.

8,493.—**Tobacco-Pipe Stem.**—LÜDER G. HUSSMANN, Guttenberg, N. J. Application filed July 9, 1875. Term of patent, 7 years.

8,494.—**Leaves of Albums.**—WILLIAM MAYER, Brooklyn, N. Y. Application filed June 30, 1875. Term of patent, 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date July 20, 1875.]

2,744.—**Sheet or Plate Iron.**—ALAN WOOD & Co., Philadelphia, Pa. (Re-registration.) Application filed August 11, 1871.

"'Best Charcoal Bloom, from Alan Wood & Co. X X X.'"

2,745.—**Sheet and Plate Iron.**—ALAN WOOD & Co., Philadelphia, Pa. (Re-registration.) Application filed August 11, 1871.

"letters A. W."

2,746.—**Lubricating-Oil.**—FREDERICK M. BACKUS, Cleveland, Ohio. (Re-registration.) Application filed March 27, 1871.

"words 'Fine Engine Oil.'"

2,747.—**Castor-Oil.**—H. J. BAKER & BRO., New York, N. Y. (Re-registration.) Application filed June 9, 1871.

"word 'Crystal.'"

2,748.—**Castor-Oil.**—H. J. BAKER & BRO., New York, N. Y. (Re-registration.) Application filed June 9, 1871.

"letters 'A. A.'"

2,749.—**Bitters.**—F. C. CLEMSON, Philadelphia, Pa. Application filed April 23, 1875.

"the representation of Abraham Lincoln's cabinet seated around a table, and the word 'Cordial' on the table-cover front."

2,750.—**Corn and Wheat Mills.**—H. DUDLEY COLEMAN, New Orleans, La. (Re-registration.) Application filed June 11, 1872.

"words 'Maid of the South.'"

2,751.—**Braids.**—FLUEH, SPIELMANN & WOLFF, New York, N. Y. Application filed May 31, 1875.

"Below and above, on the left, the head of a man with a laurel wreath, on the right an angel holding a quadrangle, underneath which is standing an eagle in front of the angel, the figures representing two wheels. On the side of each wheel is a wing, as if a bird flying, and below on each side is a piece of ribbon hanging. The middle constitutes the front and back of the French medal awarded at the exhibition in Paris in 1867. Each side of the medal has an outspread wing. The whole rests against the sunburst.

2,752.—**Whisky.**—ALLEN H. GILLETT, Syracuse, N. Y. (Re-registration.) Application filed January 26, 1871.

"'A. H. GILLETT'S,' arranged in the arc of a circle on the upper part of the head of the barrel, and on the lower half of the head of the barrel the word 'Woodcock,' on a line with the chord of the arc above, and the word 'Rye' on a line below the word 'Woodcock' and parallel with it, with a peculiar cut of a bird in the center representing a woodcock.

2,753.—**Gimlets.**—EDWARD A. GODDARD, Brooklyn, N. Y. Application filed May 21, 1875.

"In the inside of a circle is the figure of a bee with outstretched wings, and within said circle is also contained the words 'The Bee Gimlet,' 'Trade-Mark,' around the periphery of said circle, and that on the outside of said circle, and immediately below the words 'Trade-Mark,' is the figure or cut of a gimlet with looped head or handle."

2,754.—**Cologne.**—GEO. C. GOODWIN & Co., Boston, Mass. Application filed May 28, 1875.

"the words 'American Farina Cologne' and the engraving of the English coat of arms surmounted by the American eagle."

2,755.—**Bitters.**—Dr. S. B. HARTMAN & Co., Lancaster, Pa. (Re-registration.) Application filed March 8, 1871.

"streamer, shield, scroll-work, and vines."

2,756.—**Whisky.**—DANIEL V. B. HENARIE, San Francisco, Cal. (Re-registration.) Application filed January 26, 1871.

"'J. F. Cutter's Extra Old Bourbon Whisky.'"

2,757.—Cotton Prints.—HAMILTON WOOLEN COMPANY, Southbridge, Mass. Application filed April 9, 1875.

"words 'Holland Prints,' used in connection with an ornamental figure."

2,758.—Clothiers' and Tailors' Trimmings.—HARRIS, RICHMOND & SHAFER, New York, N. Y. (Re-registration.) Application filed May 27, 1871.

"a coronet surmounting drapery, in the center of which is a shield bearing a 'Greek cross,' and with a chain embracing every side except the top.

2,759.—Clothiers' and Tailors' Trimmings.—HARRIS, RICHMOND & SHAFER, New York, N. Y. (Re-registration.) Application filed May 27, 1871.

"a representation of the continent of North America or the northern half of a hemisphere, surmounted by a spread eagle standing near the north pole, and holding in his beak a scroll.

2,760.—Leaf-Tobacco.—SIMON HERSHEIM, New Orleans, La. (Re-registration.) Application filed February 27, 1871.

2,761.—Boiler-Rivets.—HOOPES & TOWNSEND, Philadelphia, Pa. Application filed June 3, 1875.

"an outlined keystone, the keystone being raised above the surface-level of the head of the boiler-rivet.

2,762.—Double-Barrel Breech-Loading Guns.—B. KITTREDGE & CO., Cincinnati, Ohio. Application filed May 21, 1875.

"words 'CLUB GUN.'"

2,763.—Axes.—KLOMAN, PARK & CO., Pittsburg, Pa. Application filed May 5, 1875.

"words 'The Eagle Axe' and 'Kloman, Park & Co.'"

2,764.—Carbolic Acid.—CHARLES LOWE and JOHN GILL, Manchester, England. Application filed March 30, 1875.

"four arrows diverging from a common center, and all inclosed within a circle."

2,765.—Tea.—C. ADOLPHE LOW & CO., San Francisco, Cal (Re-registration.) Application filed April 15, 1871.

"letter L, inclosed within a diamond-shaped outline or lines."

2,766.—Whisky.—E. MARTIN & CO., San Francisco, Cal. (Re-registration.) Application filed January 26, 1871.

"'Miller's Extra Old Bourbon Whisky.'"

2,767.—Playing-Cards.—WILLIAM F. MILLER and FRANK D. MONTGOMERY, Boston, Mass. Application filed May 17, 1875.

"words 'The Globe Playing-Card Company' and a globe, as placed on a circular playing-card.

2,768.—Woolen Hose.—ABRAHAM P. OLZENDAM, Manchester, N. H. (Re-registration.) Application filed August 5, 1870.

2,769.—Base-Balls.—PECK & SNYDER, New York, N. Y. (Re-registration.) Application filed August 30, 1870.

2,770.—Churns.—PORTER BLANCHARD'S SONS, Concord, N. H. (Re-registration.) Application filed November 8, 1870.

"words 'The Blanchard Churn.'"

2,771.—Tobacco and Cigars.—M. J. SWANK, Philadelphia, Pa. Application filed January 16, 1875.

"words and monogram 'Happy Hours, M. J. S.'"

2,772.—Pamphlets.—GEORGE TALLCOT, Brooklyn, N. Y. Application filed June 5, 1875.

"words 'Red Book.'"

2,773.—White Lead.—THE ATLANTIC WHITE LEAD COMPANY, New York, N. Y. (Re-registration.) Application filed November 3, 1870.

"word 'Atlantic.'"

2,774.—Reduced Boiled Linseed-Oil.—THE ATLANTIC WHITE LEAD COMPANY, New York, N. Y. (Re-registration.) Application filed November 3, 1870.

"letters 'A. W. L. Co.' in capitals."

2,775.—Seamless Metal Tubes.—AMERICAN TUBE-WORKS, Boston, Mass. (Re-registration.) Application filed September 28, 1870.

2,776.—Leaf-Tobacco.—DE FORD & THAYER, Baltimore, Md. Application filed July 13, 1875.

"An arrow passing through the center of a target or ring."

2,777.—Bronze Alloy and Articles Made Therefrom. CHARLES J. A. DICK, Pittsburg, Pa. Application filed July, 10, 1874.

"words 'Phosphor Bronze.'"

2,778.—Perous Plasters.—GEORGE E. MITCHELL, Lowell Mass. Application filed January 29, 1875.

"a portrait of Geo. E. Mitchell, surrounded by a border, outside of which, surrounding the sides, top, and bottom, are the words 'Improved India Rubber Perous Plasters contain Belladonna. Compound patented Sept. 12, 1871. Genuine signed Geo. E. Mitchell,' the name being a fac-simile of the autograph of the said Mitchell."

2,779.—Leather.—GEORGE F. PAGE and CHARLES T. PAGE, Franklin, N. H. (Re-registration.) Application filed November 28, 1870.

"the representation of a 'Patna' cow, or sacred cow of India, surrounded by a serrated border inclosing the words 'Page's Patent, May 8, 1866.'"

2,780.—Leather.—GEORGE F. PAGE and CHARLES T. PAGE, Franklin, N. H. (Re-registration.) Application filed August 17, 1871.

"words 'Page's Patent Tanned Leather, manufactured under Patent May 8, 1866.'"

2,781.—Curtain-Fixtures.—SILAS S. PUTNAM, Boston, Mass., assignor to S. S. PUTNAM & CO. (Re-registration.) Application filed July 17, 1871.

"words 'The Putnam Curtain-Fixture.'"

2,782.—Gin.—I. D. RICHARDS & SONS, Boston, Mass. (Re-registration.) Application filed October 8, 1870.

"figure of the lily."

2,783.—Photographic Albums.—WILLIAM MAYER, Brooklyn, N. Y. Application filed June 30, 1875.

"words 'CENTENNIAL ALBUM.'"

2,784.—Woven Cotton Fabrics.—MINOT, HOOPER & CO., New York, N. Y.—Case B. Application filed July 17, 1875.

"the figure of Atlas supporting a globe on his shoulders, with the word 'Atlas' inscribed beneath.

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date July 20, 1875.]

281.—Title: "**Pure Medicated Brandies.**"—THOMAS DOCKUM & SON, Brooklyn, N. Y. Application filed May 22, 1875.

282.—Title: "**The Victory.**"—HANED & CO., Brooklyn, N. Y. Application filed December 31, 1874.

283.—Title: "**L. Wasmy's Alpenkrauter Thee.**"—L. HERZINGER, New York, N. Y. Application filed June 17, 1875.

284.—Title: "**Kunkel's Bitter Wine of Iron.**"—EDWIN F. KUNKEL, Philadelphia, Pa. Application filed March 3, 1875.

285.—Title: "**The Grantville Carbolic Acid.**"—F. B. NICHOLS, New York, N. Y. Application filed June 22, 1875.

286.—Title: "**Asbestos and Talc-Oil.**"—JAMES STANSBURY, Clermont Mills, Md. Application filed May 25, 1875.

LIST OF LABELS REGISTERED PREVIOUS TO MAY 11, 1875, THE DATE OF THE FIRST PUBLICATION OF REGISTERED LABELS IN THE GAZETTE.

1.—Title: "**Breakfast Hominy.**"—BALTIMORE PEARL HOMINY COMPANY, Baltimore, Md. Application filed August 1, 1874. Registered August 1, 1874.

2.—Title: "**5 Pounds Breakfast Trade-Mark Pearl Hominy.**"—BALTIMORE PEARL HOMINY COMPANY, Baltimore, Md. Application filed August 1, 1874. Registered August 1, 1874.

3.—Title: "**Madame Le Beautiller's Face-Lotion.**"—ELLEN J. O'GRADY, Louisville, Jefferson county, Ky. Application filed August 3, 1874. Registered August 10, 1874.

4.—Title: "**Directions for Using R. McMillan's Pure Essence of Jamaica Ginger.**"—ROBERT MCMILLAN, Philadelphia, Pa. Application filed August 8, 1874. Registered August 10, 1874.

5.—Title: "**Directions for Using R. McMillan's Pure Essence of Jamaica Ginger.**" (The label is printed in the English and German languages.) ROBERT MCMILLAN, Philadelphia, Pa. Application filed August 8, 1874. Registered August 10, 1874.

6.—Title: "**Colburn's A Mustard.**"—A. COLBURN & CO., Philadelphia, Pa. Application filed August 15, 1874. Registered August 17, 1874.

7.—Title: "**Colburn's Mustard.**"—A. COLBURN & CO., Philadelphia, Pa. Application filed August 15, 1874. Registered August 17, 1874.

8.—Title: "**Baltimore Pearl Hominy Company, 5 Pounds Breakfast Hominy.**"—BALTIMORE PEARL HOMINY COMPANY. Application filed August 17, 1874. Registered August 17, 1874.

9.—Title: "**Baltimore Pearl Hominy Company, 200 lbs. Pearl Hominy.**"—BALTIMORE PEARL HOMINY COMPANY, Baltimore, Md. Application filed August 17, 1874. Registered August 17, 1874.

10.—Title: "**Colborne's Medrepathic Tablets.**"—LEVI H. COLBORNE, New York, N. Y. Application filed August 17, 1874. Registered August 17, 1874.

11.—Title: "**Cummings' Ambrosial Pomade.**"—R. M. CUMMINGS, Steubenville, Ohio. Application filed August 21, 1874. Registered August 24, 1874.

12.—Title: "**Yours Truly.**"—MEDBERY & MANN, Ballston Spa, Saratoga county, N. Y. Application filed August 21, 1874. Registered August 24, 1874.

13.—Title: "**Taber's Celebrated Excelsior Salve.**"—J. N. TABER, Woonsocket, Providence, R. I. Application filed August 21, 1874. Registered August 24, 1874.

14.—Title: "**Aceite Para Maquinas, y Centrifugas Fabricado espresaments para el mercado de la Yala de Cuba.**"—WADSWORTH BROS., & CO., New York, N. Y. Application filed August 22, 1874. Registered August, 24, 1874.

15.—Title: "**Aromatic Rhubarb Troches.**"—HENRY THAYER, Cambridgeport, Mass. Application filed August 24, 1874. Registered August 25, 1874.

16.—Title: "**John T. Wilson & Co.'s Biscuit.**"—JOHN T. WILSON & CO., New York, N. Y. Application filed August 19, 1874. Registered August 25, 1874.

17.—Title: "**Shaker Liquid Soap.**"—STEELE & BOWERS, Nashua, N. H. Application filed August 26, 1874. Registered August 28, 1874.

18.—Title: "**C. O. D. $.**"—E. J. FISCHER, Philadelphia, Pa. Application filed August 28, 1874. Registered August 28, 1874.

19.—Title: "**J. Brook & Bro.'s 200 Yds. Waltham Mills.**"—WM. HENRY SMITH & CO., New York, N. Y. Application filed August 29, 1874. Registered August 29, 1874.

20.—Title: "**Exhibition Prizes.**"—WM. HENRY SMITH & CO., New York, N. Y. Application filed August 29, 1874. Registered August 29, 1874.

21.—Title: "**Brooks' Royal Patent, only First London and Paris Exhibition Prize Thread.**"—WM. HENRY SMITH & CO., New York, N. Y. Application filed August 29, 1874. Registered August 29, 1874.

22.—Title: "**Emeralds.**"—DEUTSCH BROS., Chicago, Ill. Application filed August 19, 1874. Registered September 3, 1874.

23.—Title: "**Emeralds.**"—Manufactured by DEUTSCH BROS., 278 Taylor street, Chicago, Ill. Application filed August 19, 1874. Registered September 3, 1874.

24.—Title: "**Mathis Pilldone, a substitute for Purgative Pills.**"—Application filed September 1, 1874. Registered September 3, 1874.

25.—Title: "**Home-Brewed English Ale.**"—DOLE BROTHERS, Boston, Mass. Application filed August 31, 1874. Registered September 3, 1874.

26.—Title: "**Tropical Dyspepsia-Bitters.**"—JAMES L. LE GARLEZ, New York, N. Y. Application filed September 1, 1874. Registered September 3, 1874.

27.—Title: "**New Plug.**"—SAMUEL CRUMP, New York, N. Y. Application filed August 29, 1874. Registered September 3, 1874.

28.—Title: "**Smith's Prince of Pine Bitters.**"—ANTHONY SMITH, Hobbie, Luzerne county, Pa. Application filed September 3, 1874. Registered September 5, 1874.

29.—Title: "**Bay-View Tomatoes.**"—LITTLE CREEK CANNING COMPANY, Little Creek Landing, Delaware. Application filed August 27, 1874. Registered September 5, 1874.

30.—Title: "**Geo. C. Leys' Celebrated Nipple-Wash.**"—MEEKER & QUEE, Brooklyn, N. Y. Application filed September 3, 1874. Registered September 5, 1874.

31.—Title: "**Dr. O. H. Needham's Improved Combination Breast-Pump and Nursing-Bottle.**"—ORWELL H. NEEDHAM, New York, N. Y. Application filed September 3, 1874. Registered September 5, 1874.

32.—Title: "**Dr. O. H. Needham's Patent Improved Breast-Pump.**"—ORWELL H. NEEDHAM, New York, N. Y. Application filed September 3, 1874. Registered September 5, 1874.

33.—Title: "**Eureka. Dr. Marshall's Lung-Syrup.**"—G. H. LOHMAN & CO., Kendallville, Noble county, Indiana. Application filed September 5, 1874. Registered September, 5, 1874.

34.—Title: "**The Celebrated California Liniment.**"—P. HEIBY, Delaware, Ohio, Application filed September 8, 1874. Registered September 9, 1874.

35.—Title: "**Crowned Cigar.**"—EDWARD BROS, Baltimore, Md. Application filed September 8, 1874. Registered September 9, 1874.

36.—Title: "**F. D. M. Our Mutual Friend.**"—KENDALL CLOCK & CO., Binghamton, N. Y. Application filed September 7, 1874. Registered September 9, 1874.

37.—Title: "**Superior Hops.**"—DOLE BROTHERS, Boston, Suffolk county, Mass. Application filed September 4, 1874. Registered September 9, 1874.

38.—Title: "**Try Me! M. Temple's Shoe-Knife-Strap Paste.**"—MARCUS TEMPLE, Marlborough, Mass. Application filed September 11, 1874. Registered September 16, 1874.

39.—Title: "**Improved Liquid Stove-Polish.**"—D. R. HATHAWAY & CO., Marblehead, Essex county, Mass. Application filed September 11, 1874. Registered September 12, 1874.

40.—Title: "**Town's Compound Blood-Purifier.**"—MARY S. TOUN, Cedar Rapids, Iowa. Application filed September 12, 1874. Registered September 14, 1874.

41.—Title: "**Pheretrix Tricopherous Improved.**"—WM. ARTHUR CLINTUCH, New York, N. Y. Application filed September 16, 1874. Registered September 26, 1874.

42.—Title: "**Home.**"—NICHOLS & MACDONALD, Boston, Mass. Application filed September 7, 1874. Registered September 26, 1874.

43.—Title: "**Professor Scott's Fever and Ague Destroyer.**"—THOMAS S. FRISBIE, Hartford, Conn. Application filed September 17, 1874. Registered September 26, 1874.

44.—Title: "**Red Stockings.**"—NICHOLS & MACDONALD, Boston, Mass. Application filed September 7, 1874. Registered September 26, 1874.

45.—Title: "**Dr. Hershey's Balsamic Ointment.**"—D. HERSHEY, Philadelphia, Pa. Application filed September 21, 1874. Registered September 26, 1874.

46.—Title: "**Our Girl.**"—NICHOLS & MACDONALD, Boston, Mass. Application filed September 14, 1874. Registered September 26, 1874.

47.—Title: "**Wiard's No.**"—WIARD & HOUGH, East Avon, Livingston county, N. Y. Application filed September 16, 1874. Registered September 26, 1874.

48.—Title: "**Wick's Asiatic Cordial.**"—WICKS & WHEELER, Tramansburg, Tompkins county, N. Y. Application filed September 26, 1874. Registered September 26, 1874.

49.—Title: "**The Cuban.**"—ILLGES & ROEMER, Detroit, Mich. Application filed September 17, 1874. Registered September 28, 1874.

50.—Title: "**The Centennial Enamel or Starch-Gloss.**" GEO. W. GABEL, Philadelphia, Pa. Application filed September 18, 1874. Registered September 28, 1874.

51.—Title: "**Fiske's Chemical Washing-Fluid.**"—DAVID B. FISKE, Nashua, N. H. Application filed September 21, 1874. Registered September 28, 1874.

52.—Title: "**The Genuine Bewer.**"—BRAINARD, DAVY & CO., Boston, Mass. Application filed September 16, 1874. Registered September 28, 1874.

53.—Title: "**The Genuine Peabody.**"—BRAINARD, DAVY & CO., Boston, Mass. Application filed September 28, 1874. Registered September 28, 1874.

54.—Title: "**Nature's Cough-Cure.**"—LAUSON S. WARNER, Chicago, Cook county, Ill. Application filed September 17, 1874. Registered September 28, 1874.

55.—Title: "**Old Plug.**"—SAMUEL CRUMP, New York, N. Y. Application filed September 16, 1874. Registered September 28, 1874.

56.—Title: "**Old Plug Chewing.**"—SAMUEL CRUMP, New York, N. Y. Application filed September 18, 1874. Registered September 28, 1874.

57.—Title: "**American Leather Preservative.**"—JOHN A. HACKETT, Dwight, Livingston county, Ill. Application filed September 19, 1874. Registered September 28, 1874.

58.—Title: "**The American Leather Preservative.**"—JOHN A. HACKETT, Dwight, Livingston county, Ill. Application filed September 19, 1874. Registered September 28, 1874.

59.—Title: "**Truly Yours.**"—MEDBERY & MANN, Ballston Spa, Saratoga county, N. Y. Application filed September 14, 1874. Registered September 30, 1874.

60.—Title: "**La Fayette Prints.**"—COFFIN & ALTEMUS, Philadelphia, Pa. Application filed September 16, 1874. Registered October 3, 1874.

61.—Title: "**Union Prints.**"—COFFIN & ALTEMUS, Philadelphia, Pa. Application filed September 16, 1874. Registered October 3, 1874.

62.—Title: "**Union Prints.**"—COFFIN & ALTEMUS, Philadelphia, Pa. Application filed September 16, 1874. Registered October 3, 1874.

63.—Title: "**Union Prints.**"—COFFIN & ALTEMUS, Philadelphia, Pa. Application filed September 16, 1874. Registered October 3, 1874.

64.—Title: "**Bristol New Mills.**"—CHARLES H. GRIFFIN, New York, N. Y. Application filed October 3, 1874. Registered October 3, 1874.

65.—Title: "**India Extra Cottons.**"—CHARLES H. GRIFFIN, New York, N. Y. Application filed October 3, 1874. Registered October 3, 1874.

66.—Title: "**Vignette Authors.**"—E. G. SELCHOW & Co., New York, N. Y. Application filed September 19, 1874. Registered October 3, 1874.

67.—Title: "**Kidder's Rheumatic and Bone Liniment.**" ANGELINE KIDDER, Boston, Suffolk county, Mass. Application filed September 19, 1874. Registered October 3, 1874.

68.—Title: "**The Prize.**"—FREEDMAN, HESSLEIN & Co., Detroit, Wayne county, Mich. Application filed September 19, 1874. Registered October 3, 1874.

69.—Title: "**Dawn.**"—THE PIONEER TOBACCO COMPANY, Brooklyn, N. Y. Application filed October 5, 1874. Registered October 7, 1874.

70.—Title: "**Effie Deans.**"—THE PIONEER TOBACCO COMPANY, Brooklyn, N. Y. Application filed October 5, 1874. Registered October 7, 1874.

71.—Title: "**Relief.**"—THE PIONEER TOBACCO COMPANY, Brooklyn, N. Y. Application filed October 5, 1874. Registered October 7, 1874.

72.—Title: "**Reserve.**"—THE PIONEER TOBACCO COMPANY, Brooklyn, N. Y. Application filed October 5, 1874. Registered October 7, 1874.

73.—Title: "**Twilight.**"—THE PIONEER TOBACCO COMPANY, Brooklyn, N. Y. Application filed October 5, 1874. Registered October 7, 1874.

74.—Title: "**The Royal College Medicines.**"—SYLVESTER J. SHERMAN, Brooklyn, N. Y. Application filed September 28, 1874. Registered October 8, 1874.

75.—Title: "**G. O. Taylor, Old Bourbon.**"—C. H. GRAVES & SONS, Boston, Mass. Application filed October 7, 1874. Registered October 9, 1874.

76.—Title: "**California Jelly.**"—SHERWOOD & VAN NAME, New York, N. Y. Application filed September 15, 1874. Registered October 9, 1874.

77.—Title: "**Chilli Sauce.**"—EUGENE R. DURKEE & Co., Brooklyn, N. Y. Application filed September 21, 1874. Registered October 9, 1874.

78.—Title: "**Thorpedan Bay-Rum.**"—T. P. THORPE, Philadelphia, Pa. Application filed October 6, 1874. Registered October 9, 1874.

79.—Title: "**All Over Cigar.**"—FREEDMAN, HESSLEIN & Co., Detroit, Mich. Application filed October 5, 1874. Registered October 9, 1874.

80.—Title: "**Courtesy.**"—W. J. LONG & Co., Detroit, Mich. Application filed October 5, 1874. Registered October 9, 1874.

81.—Title: "**Pennsylvania Railroad.**"—PHILIP BERNARD, Lancaster, Pa. Application filed October 7, 1874. Registered October 9, 1874.

82.—Title: "**Garden Tomatoes.**"—CHARLES VAN BENTHUYSEN & SONS, Albany, N. Y. Application filed October 3, 1874. Registered October 10, 1874.

83.—Title: "**Burt's Dyspepsia Cure and Liver-Invigorator.**"—NATHAN P. RYDER, Boston, Mass. Application filed October 8, 1874. Registered October 10, 1874.

84.—Title: "**Hallock's Celebrated Healing Liniment.**" D. C. HALLOCK, Port Jervis, Orange county, N. Y. Application filed October 9, 1874. Registered October 10, 1874.

85.—Title: "**Excelsior Family Medicine-Case.**"—CALVIN MEDICINE COMPANY, New York, N. Y. Application filed October 10, 1874. Registered October 10, 1874.

86.—Title: "**Dr. Sherman's Florida Sweet Bitters.**"—SYLVESTER J. SHERMAN, Brooklyn, N. Y. Application filed October 9, 1874. Registered October 12, 1874.

87.—Title: "**Holyoke Extra Fine Cotton.**"—CHARLES H. GRIFFIN, New York, N. Y. Application filed October 12, 1874. Registered October 12, 1874.

88.—Title: "**Harvest Queen.**"—GEO. S. HARRIS & SON, Philadelphia, Pa. Application filed October 7, 1874. Registered October 14, 1874.

89.—Title: "**Little Beauty.**"—GEO. S. HARRIS & SON, Philadelphia, Pa. Application filed October 7, 1874. Registered October 14, 1874.

90.—Title: "**Naiad.**"—GEO. S. HARRIS & SON, Philadelphia, Pa. Application filed October 7, 1874. Registered October 14, 1874.

91.—Title: "**Onward.**"—GEO. S. HARRIS & SON, Philadelphia, Pa. Application filed October 7, 1874. Registered October 7, 1874.

92.—Title: "**Pleiades.**"—GEO. S. HARRIS & SON, Philadelphia, Pa. Application filed October 7, 1874. Registered October 14, 1874.

93.—Title: "**Swain, Earle & Co.'s Patent Polished Coffee.**"—SWAIN, EARLE & CO., Boston, Mass. Application filed October 14, 1874. Registered October 19, 1874.

94.—Title: "**Dr. Walbeck's German Catarrh Cure.**"—GERRISH & BOUTWELL, Manchester, N. H. Application filed October 16, 1874. Registered October 19, 1874.

95.—Title: "**The Magic Cure for Chills and all Fevers.**"—GEORGE TALLCOT, New York, N. Y. Application filed October 15, 1874. Registered October 19, 1874.

96.—Title: "**Favorite Dressing.**"—JAMES R. CHILDS, Springfield, Mass. Application filed October 17, 1874. Registered October 19, 1874.

97.—Title: "**Mrs. Mary Brennan's Laundry-Polish.**"—MARY BRENNAN, Boston, Mass. Application filed October 15, 1874. Registered October 19, 1874.

98.—Title: "**Shear's Corn-Salve.**"—M. A. SHEAR, Brooklyn, Kings county, N. Y.

99.—Title: "**Chamber's No-Boiling or Compound Ammonia Mixture.**"—THE ROCHESTER WASHING-FLUID COMPANY, Rochester, N. Y. Application filed October 19, 1874. Registered October 19, 1874.

100.—Title: "**Wiard's No. 1 Junior.**"—WIARD & HOUGH, East Avon, Livingston county, N. Y. Application filed October 17, 1874. Registered October 19, 1874.

101.—Title: "**Wiard's No. 1 Senior.**"—WIARD & HOUGH, East Avon, Livingston county, N. Y. Application filed October 17, 1874. Registered October 19, 1874.

102.—Title: "**Wiard's No. 8 Improved, 1875.**"—WIARD & HOUGH, East Avon, Livingston county, N. Y. Application filed October 17, 1874. Registered October 19, 1874.

103.—Title: "**Wiard's No. 9 Improved, 1875.**"—WIARD & HOUGH, East Avon, Livingston county, N. Y. Application filed October 17, 1874. Registered October 19, 1874.

104.—Title: "**Ye Jolly Game of Punch and Judy.**" M. H. COWELL, Buffalo, Erie county, N. Y. Application filed October 23, 1874. Registered October 24, 1874.

105.—Title: "**Bauer's Improved Eye, Ear, and Infant Syringe.**"—JAMES J. ESSEX, Newport, R. I. Application filed October 24, 1874. Registered October 27, 1874.

106.—Title: "**Gorrell's Nicaten.**"—BONFIELD GORRELL, Hopewell, Harford county, Md. Application filed October 29, 1874. Registered October 29, 1874.

107.—Title: "**Compound Syrup of Phosphorus.**"—NORTON BROKAW, St. Joseph, Mo. Application filed October 27, 1874. Registered October 30, 1874.

108.—Title: "**Dr. R. S. Tyler's German Medicated Cough-Candy.**"—E. H. MINNICH, Gettysburg, Adams county, Pa. Application filed October 27, 1874. Registered October 30, 1874.

109.—Title: "**India Cambric.**"—CHARLES H. GRIFFIN, New York, N. Y. Application filed October 28, 1874. Registered October 28, 1874.

110.—Title: "**Staten Island Dyeing and Refinishing Establishment.**"—WM. HENRY BERNHARD, Brooklyn, Kings county, N. Y. Application filed October 30, 1874. Registered October 31, 1874.

111.—Title: "**California Cream-Tartar.**"—REUBEN VAN DE CARR, Rochester, N. Y. Application filed October 31, 1874. Registered October 31, 1874.

112.—Title: "**The Gen. R. E. Lee Pen.**"—H. R. HAYES, Philadelphia, Pa. Application filed October 3, 1874. Registered October 31, 1874.

113.—Title: "**Kunkel's Magic Hair-Restorer.**"—EDWARD F. KUNKEL, Philadelphia, Pa. Application filed October 19, 1874. Registered November 4, 1874.

114.—Title: "**Aurelian's Puritan Salve.**"—AURELIAN L. N. BROWNE, Boston, Mass. Application filed November 2, 1874. Registered November 4, 1874.

115.—Title: "**Star Sewing-Machine Oil.**"—EDWARD S. KINGSBURY, Needham, Norfolk county, Mass. Application filed November 2, 1874. Registered November 4, 1874.

116.—Title: "**Os-si-pee Medicine.**"—EUGENE EIGHMEY, Pittsfield, Mass. Application filed November 2, 1874. Registered November 7, 1874.

117.—Title: "**Cachow Lozenges for Perfuming the Breath.**"—F. BOYD & Co., Malden, Mass. Application filed November 4, 1874. Registered November 7, 1874.

118.—Title: "**Dr. J. Liverpool's Sanguinarium—the Great Indian Remedy.**"—JOSHUA LIVERPOOL, Boston, Mass. Application filed November 5, 1874. Registered November 7, 1874.

119.—Title: "**The Big Double Medicine of Wakadahahee.**"—JOSHUA LIVERPOOL, Boston, Mass. Application filed November 5, 1874. Registered November 7, 1874.

120.—Title: "**Rockland Mills Water Twist.**"—A. N. BECKWITH, Providence, R. I. Application filed October 29, 1874. Registered November 9, 1874.

121.—Title: "**Sea-Shore.**"—SCHUMACHER & ETTLINGER, New York, N. Y. Application filed November 3, 1874. Registered November 9, 1874.

122.—Title: "**The Cure.**"—CHARLES T. PRICE, New York, N. Y. Application filed November 7, 1874. Registered November 10, 1874.

123.—Title: "**Anakesis.**"—CHARLES MAYNCE, New York, N. Y. Application filed November 6, 1874. Registered November 12, 1874.

124.—Title: "**Willson's Carbolated Cod-Liver Oil.**"—WILLIAM F. KIDDER & Co., New York, N. Y. Application filed November 11, 1874. Registered November 12, 1874.

125.—Title: "**E. F. Kunkel's Vegetable Worm-Sirup.**" E. F. KUNKEL, Philadelphia, Pa. Application filed November 9, 1874. Registered November 13, 1874.

126.—Title: "**Our Best Standard D-Steel Shank.**"—C. H. THAYER & Co., Weymouth, Norfolk county, Mass. Application filed November 12, 1874. Registered November 13, 1874.

127.—Title: "**Liebig's Life-Cure.**"—T. F. BURT, New York, N. Y. Application filed November 12, 1874. Registered November 14, 1874.

128.—Title: "**Albani.**"—MEDBERY & MANN, Ballston Spa, Saratoga county, N. Y. Application filed November 2, 1874. Registered November 19, 1874.

129.—Title: "**Extra Tough Rubber.**"—JOHNSON & LUND, Philadelphia, Pa. Application filed November 18, 1874. Registered November 21, 1874.

130.—Title: "**Dixon's American Graphite.**"—THE JOSEPH DIXON CRUCIBLE COMPANY, Jersey City, N. J. Application filed November 14, 1874. Registered November 21, 1874.

131.—Title: "**Brown's Fruit Flavors, Extract of Lemon.**"—MYRON DICKSON, Indianapolis, Indiana. Application filed November 16, 1874. Registered November 24, 1874.

132.—Title: "**Brown's Fruit Flavors, Extract of Vanilla.**"—MYRON DICKSON, Indianapolis, Indiana. Application filed November 16, 1874. Registered November 24, 1874.

133.—Title: "**The Great American Leather Preserver.**"—GEORGE W. WINTERSTEEN, Port Carbon, Schuylkill county, Pa. Application filed November 21, 1874. Registered November 24, 1874.

134.—Title: "**Miller's Chicken-Cholera Powder.**"—JOHN C. MILLER, Burlington, N. J. Application filed November 24, 1874. Registered November 27, 1874.

135.—Title: "**Ever Ready Music-Roll.**"—W. H. FITCH, Brooklyn, Kings county, N. Y. Application filed December 3, 1874. Registered December 5, 1874.

136.—Title: "**196. Tayler's Best Family Flour.**"—AUGUSTUS A. TAYLOR, Londonville, Ashland county, Ohio. Application filed December 4, 1874. Registered December 5, 1874.

137.—Title: "**Good-Night" Shirts.**—IRA PERIGOS SONS New York, N. Y. Application filed October 24, 1874. Registered December 5, 1874.

138.—Title: "**Pinney's Perfezione Liniment.**"—MARCUS A. PINNEY and LEVINIA PINNEY, Ellington, Tolland county, Conn. Application filed November 27, 1874. Registered December 5, 1874.

139.—Title: "**Champion Pomade.**"—THEODORE MUELLER, Lancaster, Ohio. Application filed December 2, 1874. Registered December 5, 1874.

140.—Title: "**Houghton's Remedy for Asthma.**"—HOUGHTON & RANSOM, New York, N. Y. Application filed November 25, 1874. Registered December 5, 1874.

141.—Title: "**Improved Architectural Building-Blocks.**"—R. BLISS MANUFACTURING COMPANY, Pawtucket, R. I. Application filed December 1, 1874. Registered December 5, 1874.

142.—Title: "**Improved Architectural Building-Blocks.**"—R. BLISS MANUFACTURING COMPANY, Pawtucket, R. I. Application filed December 1, 1874. Registered December 5, 1874.

143.—Title: "**Alexis Godillot Huile D'Olivo Vierge D'Aix.**"—ALEXIS GODILLOT, New York, N. Y. Application filed October 24, 1874. Registered December 9, 1874.

144.—Title: "**Dr. Elliott's Plant Specifics.**"—JNO. A. ELLIOTT, New York, N. Y. Application filed December 5, 1874. Registered December 9, 1874.

145.—Title: "**Madam Worth's Chart.**"—MARY C. WORTH, New York, N. Y. Application filed November 17, 1874. Registered December 9, 1874.

146.—Title: "**Warranted. Patented Aug. 20, 1872.**"—L. SUTRO, New York, N. Y. Application filed December 5, 1874. Registered December 9, 1874.

147.—Title: "**Ricker's Pulmonary Cough-Balsam.**"—GEO. F. RICKER, Cambridgeport, Mass. Application filed December 11, 1874. Registered December 15, 1874.

148.—Title: "**Dental Pain Obtunder.**"—CAM & MELCHER, Chicago, Cook county, Ill. Application filed December 11, 1874. Registered December 15, 1874.

149.—Title: "**Brainard's Cougherian.**"—CHARLES C. REED, New York, N. Y. Application filed December 14, 1874. Registered December 18, 1874.

150.—Title: "**Patented June 17, 1865. Igniting-Tape.**"—WILLIAM G. MORGAN, Brooklyn, N. Y. Application filed December 16, 1874. Registered December 18, 1874.

151.—Title: "**Floating Soap.**"—EVENSON & Co., Grand Crossing, Cook county, Ill. Application filed December 18, 1874. Registered December 21, 1874.

152.—Title: "**The French Vinous Essence.**"—CHOME & Co., New York, N. Y. Application filed November 7, 1874. Registered January 6, 1875.

153.—Title: "**Igniting-Tape.**"—WM. G. MORGAN, Brooklyn, N. Y. Application filed December 26, 1874. Registered January 6 1875.

154.—Title: "**John G. Payn's Sure-Raising Flour.**"—JOHN G. PAYN, New York, N. Y. Application filed December 26, 1874. Registered January 6, 1875.

155.—Title: "**Liebig's San Antonio Meat-Extract.**"—SAN ANTONIO MEAT-EXTRACT FACTORY, San Antonio, Tex. Application filed December 26, 1874. Registered January 6, 1875.

156.—Title: "**Lavelle's Celebrated Pit-Powders.**"—MONTGOMERY & Co., Philadelphia, Pa. Application filed December 29, 1874. Registered January 6, 1875.

157.—Title: "**Ozonized Ox-Marrow.**"—BUCK & RAYNER, Chicago, Ill. Application filed December 29, 1874. Registered January 19, 1875.

158.—Title: "**The Great Pawnee Indian Remedy.**"—F. M. PETERS, Olney, Ill. Application filed January 15, 1875. Registered January 19, 1875.

159.—Title: "**The Pivot-Brace.**"—NATIONAL SUSPENDER COMPANY, New York, N. Y. Application filed December 21, 1874. Registered January 22, 1875.

160.—Title: "**Stripped—Sample Warranted.**"—FREDERICK C. LINDE & CO., New York, N. Y. Application filed January, 18, 1875. Registered January 22, 1875.

161.—Title: "**Dr. Ruttley's Great Cough and Lung Syrup.**"—JOHN HARVEY RUTTLEY, San Francisco, Cal. Application filed January 26, 1875. Registered February 2, 1875.

162.—Title: "**Kendall's Pleasant Regulating Lozenges.**"—W. H. KENDALL, Boston, Mass. Application filed January 20, 1875. Registered February 2, 1875.

163.—Title: "**The Carbonized Lamp-Wick.**"—CHARLES A. SHAW, Boston, Mass. Application filed January 22, 1875. Registered February 2, 1875.

164.—Title: "**1776. Stevens' Celebrated. 1876. German Stove-Polish.**"—BENJAMIN L. STEVENS, Philadelphia, Pa. Application filed January 22, 1875. Registered February 2, 1875.

165.—Title: "**Forest Tar in Solution.**"—FOREST TAR COMPANY, Portland, Me. Application filed February 1, 1875. Registered February 20, 1875.

166.—Title: "**Forest-Tar Troches.**"—FOREST TAR COMPANY, Portland, Me. Application filed February 1, 1875. Registered February 20, 1875.

167.—Title: "**Forest Tar for Consumption.**"—FOREST TAR COMPANY, Portland, Me. Application filed February 1, 1875. Registered February 20, 1875.

168.—Title: "**Forest-Tar Salve.**"—FOREST TAR COMPANY, Portland, Me. Application filed February 1, 1875. Registered February 20, 1875.

169.—Title: "**Sticking-Salve and Strengthening-Salve.**"—HENRY H. KELLOGG, Watertown, Jefferson county, N. Y. Application filed February 10, 1875. Registered February 20, 1875.

170.—Title: "**Gillet's Kitchen Castile-Soap.**"—GILLET MCCULLOCK & CO., Chicago, Cook county, Ill. Application filed January 25, 1875. Registered February 20, 1875.

171.—Title: "**Alexander's Texas Tonic Pills.**"—ALEXANDER & BROTHER, Austin, Travis county, Tex. Application filed February 5, 1875. Registered February 20, 1875.

172.—Title: "**Alexander's Compound Elixir of Stillingia.**"—ALEXANDER & BROTHER, Austin, Travis county, Tex. Application filed February 5, 1875. Registered February 20, 1875.

173.—Title: "**Alexander's Pectoral Syrup.**"—ALEXANDER & BRO., Austin, Travis county, Texas. Application filed February 5, 1875. Registered February 20, 1875.

174.—Title: "**Alexander's Neutralizing Cordial.**"—ALEXANDER & BRO., Austin, Travis county, Texas. Application filed February 5, 1875. Registered February 20, 1875.

175.—Title: "**Alexander's Compound Extract of Buchu.**"—ALEXANDER & BRO., Austin, Travis county, Texas. Application filed February 5, 1875. Registered February 20, 1875.

176.—Title: "**For Singer, New Family, Elias, and Home. No. B A 100-140.**"—DAVID C. COOK, Chicago, Cook county, Ill. Application filed February 8, 1875. Registered February 20, 1875.

177.—Title: "**Bronchine.**"—EDWARD K. AL BURTIS, Ridgefield, Bergen county, N. J. Application filed January 30, 1875. Registered February 20, 1875.

178.—Title: "**Rough on Rats.**"—EPHRAIM S. WELLS, Jersey City, Hudson county, N. J. Application filed February 3, 1875. Registered February 20, 1875.

179.—Title: "**Dr. Tremaine's Improved Hair-Oil.**"—GEORGE W. GATES, Providence, R. I. Application filed February 11, 1875. Registered February 20, 1875.

180.—Title: "**Frank Miller & Son's Improved French Blacking.**"—F. MILLER, SON & CO., New York, N. Y. Application filed February 12, 1875. Registered February 20, 1875.

181.—Title: "**Goodrich's Tuck-Folder.**"—H. C. GOODRICH, Philadelphia, Pa. Application filed February 10, 1875. Registered February 25, 1875.

182.—Title: "**Stall's Unrivalled Filing.**"—WILLIAM B. STALL, Providence, R. I. Application filed February 15, 1874. Registered February 25, 1875.

183.—Title: "**Pastiles Aromatic.**"—AUGUST HOHL, Philadelphia, Pa. Application filed February 15, 1875. Registered February 25, 1875.

184.—Title: "**Mrs. Van Sicklen's Carbolated Family Salve.**"—W. H. LAURENCE, Brooklyn, N. Y. Application filed February 19, 1875. Registered February 25, 1875.

185.—Title: "**George W. Hunt's Great Dyspepsia Cure.**"—GEORGE W. HUNT, West Baltimore, Preble county, Ohio. Application filed February 19, 1875. Registered February 25, 1875.

186.—Title: "**Harris' Anodyne Liniment.**"—C. P. HARRIS, Damariscotta, Me. Application filed February 23, 1875. Registered March 8, 1875.

187.—Title: "**King's German Invigorating Cordial.**"—D. G. KING, Newport, Me. Application filed February 26, 1875. Registered March 8, 1875.

188.—Title: "**SX 110 CB.**"—KEBBE, CHAFFEE & CO., Philadelphia, Pa. Application filed February 19, 1875. Registered March 8, 1875.

189.—Title: "**Rose Glycerine Jelly.**"—WM. M. BICKLEY, Philadelphia, Pa. Application filed February 23, 1875. Registered March 8, 1875.

190.—Title: "**Tyler's Compound Honey of Boneset.**" BOSWELL & HUNTINGTON, Norwich, New London county, Conn. Application filed February 23, 1875. Registered March 8, 1875.

191.—Title: "**This case has been regularly stripped and sampled.**"—F. & A. MCALEER, New York, N. Y. Application filed March 2, 1875. Registered March 8, 1875.

192.—Title: "**Stripped and Guaranteed.**"—F. & A. MCALEER, New York, N. Y. Application filed March 2, 1875. Registered March 8, 1875.

193.—Title: "**Egg Baking-Powder.**"—CHARLES D. WELD, Malden, Middlesex county, Mass. Application filed March 3, 1875. Registered March 8, 1875.

194.—Title: "**Castilian Acidulae.**"—JAMES E. WOODWARD, Boston, Mass. Application filed January 16, 1875. Registered March 8, 1875.

195.—Title: "**Alkaline Resolvent.**"—JANE SCOTT, New York, N. Y. Application filed February 23, 1875. Registered March 8, 1875.

196.—Title: "**Blood and Bone Ointment.**"—JANE SCOTT, New York, N. Y. Application filed February 23, 1875. Registered March 8, 1875.

197.—Title: "**Extract of Cancer-Plant.**"—JANE SCOTT, New York, N. Y. Application filed February 23, 1875. Registered March 8, 1875.

198.—Title: "**Catarrh Specific.**"—JANE SCOTT, New York, N. Y. Application filed February 23, 1875. Registered March 8, 1875.

199.—Title: "**Ethereal Phosphorus.**"—JANE SCOTT, New York, N. Y. Application filed February 23, 1875. Registered March 8, 1875.

200.—Title: "**Lithia.**"—JANE SCOTT, New York, N. Y. Application filed February 23, 1875. Registered March 8, 1875.

201.—Title: "**Neuralgo-Rheumatic Elixir.**"—JANE SCOTT, New York, N. Y. Application filed February 23, 1875. Registered March 8, 1875.

202.—Title: "**Nerve-Food.**"—JANE SCOTT, New York, N. Y. Application filed February 23, 1875. Registered March 8, 1875.

203.—Title: "**Pile-Extract.**"—JANE SCOTT, New York, N. Y. Application filed February 23, 1875. Registered March 8, 1875.

204.—Title: "**5-Minute Fragrant Pain-Curer.**"—JANE SCOTT, New York, N. Y. Application filed February 23, 1875. Registered March 8, 1875.

205.—Title: "**Haggi's Chewing-Gum.**"—GREAT AMERICAN CONFECTIONERY COMPANY, New York, N. Y. Application filed February 20, 1875. Registered March 16, 1875.

206.—Title: "**Hydrated Oxymel.**"—JANE SCOTT, New York, N. Y. Application filed February 25, 1875. Registered March 16, 1875.

207.—Title: "**Dr. Wengert's Ague Remedy.**"—JOHN J. RICKER & Co., York, Pa. Application filed February 26, 1875. Registered March 16, 1875.

208.—Title: "**C. T. Raynolds & Co.'s Superfine Gold-Size.**"—C. T. RAYNOLDS, New York, N. Y. Application filed March 8, 1875. Registered March 16, 1875.

209.—Title: "**Carbolic Cream.**"—P. J. NOYES, Lancaster, Coos county, New Hampshire. Application filed March 8, 1875. Registered March 16, 1875.

210.—Title: "**1-2 Doz. Coils Percussion-Primers.**"—HENRY O. MORGAN, Brooklyn, N. Y. Application filed March 15, 1875. Registered March 16, 1875.

211.—Title: "**Stir Well Before Pouring.**"—ISAAC L. BAKER, Dayton, Ohio. Application filed March 11, 1875. Registered March 17, 1875.

211 1-2.—Title: "**Stall's Consummatum Polish.**"—WILLIAM B. STALL, Providence, R. I. Application filed February 15, 1875. Registered March 18, 1875.

212.—Title: "**Dennis's Vegetable Horse Syrup.**"—WILLIAM S. DENNIS, Woodstock, Conn. Application filed October 5, 1874. Registered March 17, 1875.

212 1-2.—Title: "**Directions for Using Stall's Consummatum Polish.**"—WILLIAM B. STALL, Providence, R. I. Application filed February 15, 1875. Registered March 19, 1875.

213.—Title: "**Relief.**"—J. B. RAGLAND, Jackson, Madison county, Tenn. Application filed December 28, 1874. Registered March 17, 1875.

214.—Title: "**Judd's Medicated Liquid Cuticle.**"—CHARLES A. PELTON, Middletown, Conn. Application filed March 13, 1875. Registered March 17, 1875.

215.—Title: "**Tucker's Chafing-Powder.**"—FRANK TUCKER, Boston, Mass. Application filed March 1, 1875. Registered April 2, 1875.

216.—Title: "**Toilet Levigated Soap.**"—WILLIAM CRANSHAW, Pittsburg, Pa. Application filed February 8, 1875. Registered April 2, 1875.

217.—Title: "**Brown's American Dressing.**"—J. H. BROWN & CO., St. Louis, Mo. Application filed March 20, 1875. Registered April 2, 1875.

218.—Title: "**Drink for the Million. Bower's Sarsaparilla Mead.**"—GEORGE C. BOWER, Philadelphia, Pa. Application filed March 11, 1875. Registered April 2, 1875.

219.—Title: "**Livingston's Cough-Soother.**"—SLOCUM & WHITE, Lancaster, Ohio. Application filed March 18, 1875. Registered April 2, 1875.

220.—Title: "**Dr. Dawson's Cough-Syrup.**"—RACHEL DAWSON, canal, Winchester, Franklin county, Ohio. Application filed March 22, 1875. Registered April 2, 1875.

221.—Title: "**Levigated Toilet Soap.**"—LEVI L. MILLER, Canton, Ohio. Application filed March 15, 1875. Registered April 2, 1875.

222.—Title: "**Cleansing Fluid for Destroying Bed-Bugs, their Eggs, and Embryo.**"—JOSEPH W. HARRIS, Providence, R. I. Application filed March 16, 1875. Registered April 2, 1875.

223.—Title: "**The Leader Shirt.**"—WALTER R. ROWE, Lawrence, Mass. Application filed March 18, 1875. Registered April 2, 1875.

224.—Title: "**Warrantee.**"—HEATH, MEAD & CO., Mount Clemens, Macomb county, Mich. Application filed March 20, 1875. Registered April 2, 1875.

225.—Title: "**Chilblain Specific.**"—DRAKE & BROWN, West Lebanon, N. H. Application filed March 27, 1875. Registered April 17, 1875.

226.—Title: "**The Celebrated Ribbon Crisp Candy.**"—C. B. HILL, Roxbury, Mass. Application filed March 27, 1875. Registered April 17, 1875.

227.—Title: "**Pocare's Salve.**"—SINGER & WHEELER, Peoria, Ill. Application filed March 29, 1875. Registered April 17, 1875.

228.—Title: "**Dr. F. Girard's Liniment.**"—FRANCIS GIRARD, Philadelphia, Pa. Application filed March 25, 1875. Registered March 17, 1875.

229.—Title: "**Vitalized Phosphates.**"—F. CROSBY, New York, N. Y. Application filed March 25, 1875. Registered April 17, 1875.

230.—Title: "**Music-Manuscript Ink.**"—WM. H. WOOLLEM, New York, N. Y. Application filed April 1, 1875. Registered April 17, 1875.

231.—Title: "**Forest-Tar Soap.**"—FOREST TAR COMPANY, Portland, Cumberland county, Me. Application filed April 8, 1875. Registered April 17, 1875.

232.—Title: "**Mrs. Nichols' Cure for Nervous or Sick Headache.**"—Mrs. H. C. NICHOLS, East Cambridge, Mass. Application filed April 17, 1875. Registered May 4, 1875.

INDEX OF INVENTIONS PATENTED JULY 20, 1875.

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Alarm, burglar, Silva, Merriam, and Sedgwick	24	165,691
Anvil, E. Hodgdon	60	165,732
Auger, earth, G. Taylor	51	165,890
Baking stand, J. A. Watson	154	165,869
Barrel head, H. M. Smith	40	165,766
Bed lounge, W. H. L. Gabbe	62	165,815
Bell, door, H. A. Dierkes, (reissue)	24	6,548
Blower, rotary, T. S. Dieston	12	165,835
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Chair base, W. T. Doremus	62	165,718
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Clothes line reel, A. Thompson	91	165,696
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Spire and Frank	165,720
Sprout, L. B., Coal stove	165,694
Stevenson, W. B., Attaching T-squares to drawing boards	165,888
Stewart, W., Child's carriage, (reissue)	6,553
Stitt, J. N., Lint room floor	165,889
Stoops, N. D., assignee	165,798
Stow, H. M., Wood pavement	165,695
Talcott, S. C., assignee	165,905
Taylor, G., Earth auger	165,890
Taylor, J. F., Hydraulic press	165,891
Thomas, S. T., assignee, (reissue)	6,550
Thompson, A., Clothes line reel	165,696
Thorp, T. J., Calendar	165,769
Timmer, A. F. W., Breech loading fire arm	165,892
Troegeler and Henckler	165,894
Tullock, J., Ore stamp feeder, (reissue)	6,554
Umland, G. D., Stove pipe joint	165,893
Union Manufacturing Company, assignee	165,657
Vogeding, H. H., Vessel for removing foal water from docks, &c.	165,894
Von Behren, W. H., Spoke tenoning machine	165,895
Von Versen, F., and J. Bickel, Paving block	165,896
Wagner, F., and S. Rumyns, Shoal indicator for vessels	165,697
Waring, M. L., Steam engine lubricator	165,770
Watson, E., Metallic roof	165,771
Watson, J. A., Baking stand	165,899
Watson, J. M., Stove polish	165,898
Weed Sewing Machine Company, assignee	165,711
Weeks, A. B., Lime kiln	165,900
Welch A. T., assignee	165,744
Weyhe, W., Rotary engine	165,772
Wheeler, P. H., Watchmaker's box	165,774
Wheeler, W. F., Fertilizer distributer	165,773
Wheelock, J., Lubricator for steam engines	165,901
Whitmore, J. M., Nut lock	165,697
Whitney, E. R., Hay loader	165,902
Wiard, G. and T., Plow	165,903
Wiard, M. W., Eyeglass for watchmakers	165,904
Wiles, T. S., Heater for rollers, &c.	165 775
Williams, R. F., Tree protector	165,776
Williamson, W. H., Buckle	165,905
Willis, N. J., Loom shuttle	165,777
Wilson, J. G., Elevated railway	165,906
Wilson, J. W., Rotary road scraper, (reissue)	6,555
Wiser, D., and H. Schmieders, Spark arrester	165,907
Wood, D. C., Ice hook	165,778
Wright, D., Treating yarn to set the twist	165,779
Wunderlich, J. N., Ironing table	165,908
Wyvell, C. M., Sheet iron barrel	165,909
Young, E., Machine for sawing hoops	165,910
Zapf and Nye	165,683

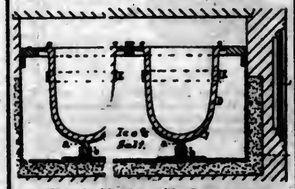
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED JULY 20, 1875.

165,651. ICE-CREAM REFRIGERATORS. Geo. D. Adams, Worcester, Mass. [Filed May 31, 1875.]

Brief.—Earthenware ice-cream holders revolve with their metallic supporting-cups.



1. The combination, with the refrigerator-box A and supporting-rings E, of the revolving cups F, substantially as and for the purposes set forth.

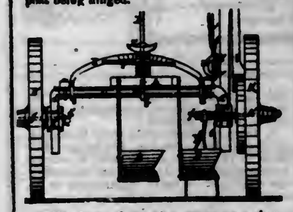
2. The combination, with the socket-piece h, of revolving cup F, having stem e, substantially as and for the purposes set forth.

3. The combination, with rings E and revolving supporting-cups F, of the ice-cream cup D, substantially as and for the purposes set forth.

4. The peculiarly-constructed earthenware ice-cream cup D, provided with a flange, e, upon its upper open end, substantially as and for the purposes set forth.

165,652. PLOWS. William K. Allen, Kansas City, Mo., assignor to Benjamin F. Hill. [Filed Oct. 23, 1874.]

Brief.—The plow-frame is balanced upon a flexible upright post or lever, which turns upon the axle, and has three motions, by rocking vertically upon the axle, horizontally upon the post, and tilting from side to side by the post being hinged.



1. The frame A, carrying one or more plow-shares, B, pivoted to the axle C, the cross-bar E, spring-bar F, and the pivoted hand-lever D, whereby the frame is capable of having either a horizontal, vertical, or tilting motion, substantially as and for the purpose set forth.

2. The combination of the middle beam G of the frame A, and the upright bar K, extending above and below the said beam, and provided with holes, as and for the purpose specified.

3. The lever G', the brake-lever H', the latch N', with its lock-piece g', having the slotted opening n', the stop-piece q', and the lever r', with its adjustable spring-lock attachment t' located in front of the axle-shaft C, combined, arranged, and operating as and for the purposes specified.

165,653. AUTOMATIC GATES. Lewis N. Allendorf, Poughkeepsie, N. Y. [Filed Jan. 26, 1876.]

The gate A, hinged at its upper end to the post a, and at its lower end to the swinging or oscillating rod c, which is connected with the latch d by means of rod e, in combination with the operating mechanism, consisting of the crank-rod h, rod and chain connections g g' i, and weight u, substantially as and for the purpose specified.



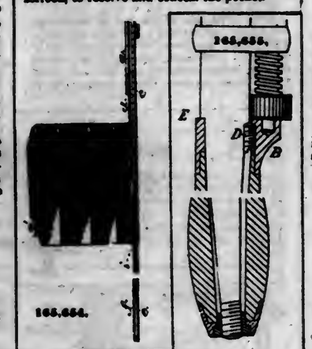
165,654. POCKET-BOOKS. C. Arms, South Deerfield, Mass. [Filed July 10, 1875.]

Brief.—Conceals a secret "note-pocket" between the back of the book and its lining, by pulling the locking or closing strap to which it is attached.

1. In a wallet or pocket-book, a secret pocket, constructed substantially as described, to slide into and be concealed between the back of the book and its lining.

2. The secret pocket, consisting of the parts e f, having the folding flap g and strap h, substantially as described.

3. The secret pocket, consisting of the parts e f, having the folding flap g and the strap h, in combination with a book or wallet having a recess, constructed substantially as described, to receive and conceal the pocket.

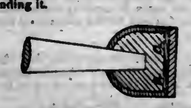


165,655. WRENCHES. Rush S. Bettles, Girard, Pa. [Filed Mar. 6, 1876.]

The ferrule B of a wrench, held in position by screw D, which enters a thread cut in part on the ferrule, and in part on the bar, substantially as shown, and for the purposes mentioned.

165,656. FELLY-PLATES. Thornton Beatty, Vermillion, Ill. [Filed Mar. 16, 1875.]

Brief.—The felly is strengthened and protected by a metallic sheathing entirely surrounding it.



In a vehicle wheel, the combination of the following elements: first, the tire; second, the felly; third, the casing A, having inwardly-projecting cylindrical parts a, and entirely inclosing and exactly fitting the exterior surface of the felly, as and for the purposes described.

165,657. CLOTH-FRINGING MACHINES. Geo. G. Bishop, Norwalk, Conn., assignor to the Union Manufacturing Company, same place. [Filed June 19, 1876.]

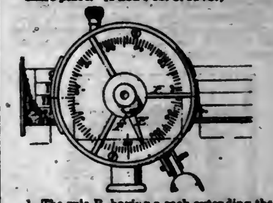
The combination of the platen F with a vulcanized gum-elastic frisker having its surface sub-divided by a series of obliquely-transverse elastic walls or partitions H, marginal wall K, and intervening depressed channels J, all constructed substantially as described, and for the purposes set forth.

165,658. COMPOUNDS FOR COATING IRON AND OTHER METALS. David B. Brownlow and Geo. W. Francis, Middletown, Conn. [Filed Dec. 29, 1874.]

Brief.—Take ordinary slag and borax and place them in a suitable vessel or retort, and apply heat between 2,000° and 3,000° Fahrenheit, to reduce them to a fluid condition. May use, instead of slag, equal parts of sulphuret of iron, arsenic, and plumbago, with borax.

A compound for coating iron and other metals, consisting of slag and borax, substantially as described.

165,659. REGISTERING BOARD-RULER. Wm. M. Bullock, La Grange, Ind., assignor of one-half his right to Adolphus Cutting, same place. [Filed Feb. 8, 1875.]



1. The rule B, having a rack extending the length of its graduated scale, in combination with a sliding registering device having a dial-plate and a register, substantially as and for the purpose described.

2. The combination of the worm-wheel P and pinion B' with the sliding rod c, the lever C', and wheel K, substantially as and for the purpose set forth.

3. The worm-wheel P and pinion B', sliding rod c, and lever C', in combination with rule B, having rack a, and with wheel K, screw H, and register J, as and for the purpose set forth.

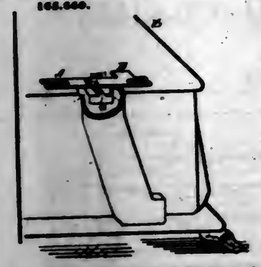
4. The screw H, provided with movable hand F and rigidly-attached hand E, in combination with register J, having longitudinal slot a, and with dial I and mechanism for operating screw, substantially as and for the purpose described.

165,660. PORTABLE RANGES. Joseph Cox and George R. Hopkins, Philadelphia, Pa., assignors to Cox, Whiteman & Cox, same place. [Filed May 31, 1875.]

Brief.—The damper in the dust-flue is operated by a sliding plate on the top of the stove, which indicates by its position whether the flue is open or closed.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

165,660.



1. The top plate E, provided with the words "open," "shut," in combination with the sliding plate and cover A and B and damper D, as and for the purpose herein set forth.

2. The damper D, provided with arms a and hang upon points at the top of the dust-flue e, as and for the purpose herein set forth.

165,661. DIVIDER FOR MAKING TABS FOR WIRE FENCES. Thomas B. Doolittle and James M. Ellis, Bridgeport, Conn. [Filed Mar. 18, 1875.]

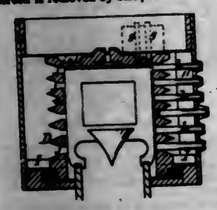
Brief.—Punches on the one block co-operate with openings in the other to form the points. A shoulder on A, along the line of its junction with the part E, cuts off the blank, and a shoulder on B, formed by an extension of said block, bends the points to a right angle.



The punches and dies for cutting sheet-metal barb-blanks, constructed as described, and so arranged relatively to the sheet-metal strip to be operated upon, as that the points shall be cut and bent, substantially as and for the purposes hereinbefore set forth.

165,662. SPARK-ARRESTERS. John Du Bois, Williamsport, Pa. [Filed June 16, 1875.]

Brief.—A cylindrical screen is adapted to be revolved, and the soot adhering to the screen is removed by scrapers.



1. A movable or revolving screen, provided with scrapers to remove all of the soot and cinders that may adhere to both the out and inside of the same, and points to clean the apertures through which the smoke and exhaust steam escape, operated by its movement or rotation, as herein set forth.

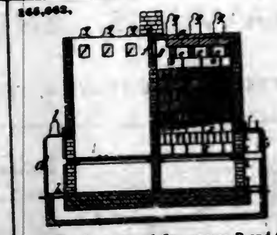
2. A revolving screen provided with series of elongated apertures around the sides and top, in combination with an outer case, substantially as and for the purposes herein shown and described.

3. The series of arms I I on the base of the screen D, to remove the soot and cinders caught in and outside of the same, and discharge them at the place provided at each revolution of the screen.

165,663. BRICK-KILNS. John G. Eberhart, Baltimore, Md. [Filed May 11, 1875.]

Brief.—To avoid the labor and expense of arched flueways, and to expedite the burning.

165,663.



1. The flueways and flue-spaces B and C and *b* and *c*, under the flat tops of the brick-kilns, and in the relation to the draft communications / between the several kilns, substantially as and for the purpose described.

2. The portable hood G^1, in combination with the ground-flue F, chimney or stack E, and kilns A^1 A^2, substantially as described.

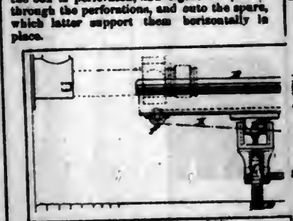
3. The portable hood G^2, in combination with the ground-flue F, chimney or stack E, and kilns A^2 and A^3, substantially as described.

4. The portable hoods G^1, G^2, and G^3, in combination with the ground-flues F F', kilns A^2 A^3, and chimney or stack E, substantially as described.

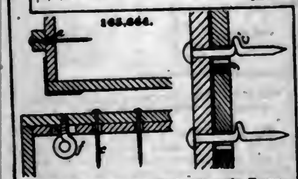
5. The portable hoods G^2 and G^3, in combination with the ground-flue F, kilns A^2 and A^3, and chimney or stack E, substantially as described.

165,664. CIGAR-BOXES. Wm. Ellis, Columbia, Pa., assignor of one-fourth his right to William G. Case, same place. [Filed May 15, 1875.]

Brief.—The side of the box is perforated, and fitting against it is a bar carrying spurs, which enter the slots. The opposite side of the box is perforated, and cigars are passed through the perforations, and onto the spurs, which latter support them horizontally in place.



165,664.



1. A cigar-box provided with racks B, perforations *r* and spurs *c*, as and for the purpose set forth.

2. A cigar-box provided with the slots *g*, racks B, and coiled spurs *c'*, as and for the purpose set forth.

3. In a cigar-box, provided with slots or perforations, racks B carrying spurs, slot *a*, and button *f*, as and for the purpose set forth.

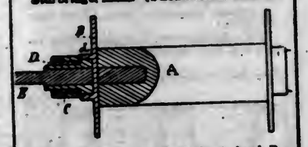
165,665. SCREEN-SUPPORTERS FOR CRIBS AND CRADLES. Henry B. Fairbanks, Manchester, N. H. [Filed Aug. 13, 1874.]



165,665.

As a new article of manufacture, a screen-supporter for cribs consisting of the parallel bars A A, connected together by the horizontal rods *a*, and having their ends bifurcated to form branching arms *b b* for supporting the frame on the side rails of the crib, substantially as and for the purpose described.

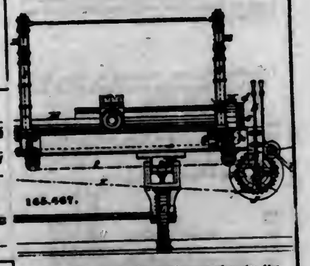
165,666. YARN-BEAMS. John A. Gould, Sturbridge, Mass. [Filed June 2, 1875.]



A yarn-beam having the body A, head B, thimble D, nut C, and journal E, constructed and arranged to operate substantially as and for the purpose set forth and specified.

165,667. APPARATUS FOR CHARGING RETORTS. William Foulis, Glasgow, North Britain. [Filed Sept. 3, 1874.]

Brief.—The hoeing-chains which operate the charging-scoop are wound on a drum. The one which moves the scoop forward also turns it over in the retort, and the one which withdraws it rights it at the end of its backward stroke.



165,667.

1. The combination of the scoop, capable of both longitudinal and rotary movements, a hoeing-chain connected at both ends to and lapped in opposite directions round the scoop, and appliances for imparting motion to the chain in either direction, substantially as and for the purpose set forth.

2. The combination of the scoop B, chain I, for imparting longitudinal and rotary movement to the scoop, and a pawl, K, moving longitudinally with the scoop and controlling the rotation of the latter, substantially as described.

165,668. ORNAMENTAL JETS FOR FOUNTAINS. Theodore Galvin, Detroit, Mich. [Filed June 8, 1875.]

Brief.—When water is admitted to the fountain, the sleeves and radial arms revolve, while water is thrown from the recess E and the sprinkler D in spray or jets.

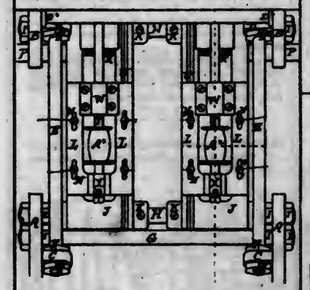


1. The compound fountain-jet, consisting of the two sets of rotating arms C, with the stationary part E and cap D, all constructed to operate substantially as described.

2. A jet for fountains, composed of a series of jets, constructed and united in sections, substantially as set forth, whereby the sections may be used separately or together, substantially as shown and described.

165,669. MOLDING MACHINES. Alonzo S. Gear, Boston, Mass. [Filed Feb. 6, 1875.]

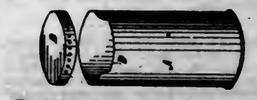
Brief.—The principal parts of the frame are composed of metallic tubes united to the bases, and caps, screw threads, and nuts.



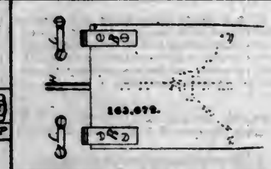
1. In a molding-machine, a frame consisting of the castings A B, held firmly in position by the hollow rods E, G, and H, said rods H forming the supports for the yokes J, and vertical spindles Y, substantially as herein described.

2. In a molding-machine, a frame made up of castings and hollow tubes, as described, in combination with the laterally-adjustable yokes J, spindles Y, and cutters Z, substantially as and for the purpose herein set forth.

165,670. DREDGING-BOXES. Frederick T. Goodwin and Addison Ives, Boston, Mass. [Filed Feb. 3, 1875.]



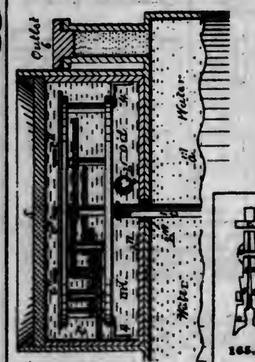
The dredging-box described, the same consisting of the body A, having the apertures D and the cover B, provided with the holes C, constructed and arranged to operate substantially as specified.



165,672.

165,673. WATER-METERS. Wm. Helme, Philadelphia, Pa. [Filed May 24, 1875.]

Brief.—The registering-apartment is filled with a transparent lubricating-oil, which always remains separate from and above the surface of the water, so preventing access of water to the registering mechanism.



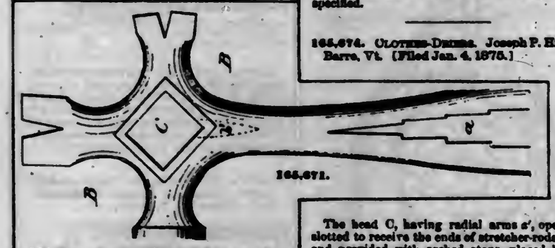
165,673.



165,676.

In combination with a water-meter, a transparent lubricating-oil supported upon the water of the measuring apartment, so as to keep the registering apparatus wholly submerged in the said oil, substantially in the manner described and set forth, and for the purpose specified.

165,674. CLOTHES-DRIERS. Joseph P. Hill, Barre, Vt. [Filed Jan. 4, 1875.]



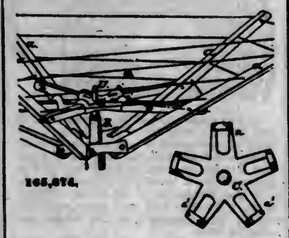
165,671.

The head C, having radial arms *c'*, open-slotted to receive the ends of stretcher-rods *b*, and provided with arched stops, placed between the pivotal points, all as and for the purpose described.

165,671. TOOLS. Thomas Hagerty, New York, N. Y. [Filed May 17, 1875.]

Brief.—A screw-driver, hammer, tack-puller, gas-meter wrench, and nail-extractor are arranged in one implement; the handle of which is slotted, and provided with shoulders upon each side of the slot, which form a graduated wrench.

The within-described tool, consisting of the handle A, with graduated notches forming wrench *a*, screw-driver *b*, body B, with wrench C, and nail-puller *b'*, hammer D, tack-puller E, and box-opener G, all as herein shown, and for the purpose set forth.



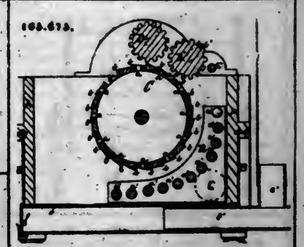
165,674.

165,675. IRONING-TABLES. Edwin S. Heath, North Hope, Pa. [Filed May 6, 1875.]

The braces F F, socket D, provided with the thumb-screw *d*, and the adjustable leg H, in combination with the ironing-board A, provided with the hooks B B and the horizontal irons C C, all constructed to operate substantially as and for the purpose set forth.

165,675. WASHING-MACHINES. T. A. Irick, Rumansville, Mo. [Filed Feb. 27, 1875.]

165,675.



1. The combination, in a washing-machine, of the perforated ribbed cylinder C, and the rack R, carrying the rollers *a'*, and provided with the air cylinder or float G, as described.

2. The combination, in a washing-machine, of the perforated ribbed cylinder C, the rack R, carrying the rollers *a*, and provided with the air cylinder or float G, and the fluted rollers D and D', when the said rollers are arranged vertically above the said cylinder C, and operate to press upon said cylinder by the force of their own weight only, as described.

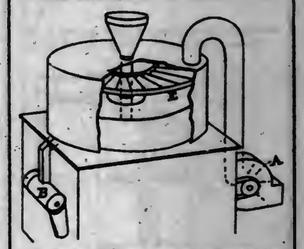
165,676. GRABS FOR REMOVING DETACHED DRILLS FROM ARTESIAN WELLS. B. Kent, Binghamton, N. Y. [Filed May 12, 1875.]

Brief.—An upward extension of the serrated jaws forms a bisected cone and stem, sliding, respectively, in a socket and slot of a bar, which also slides at its upper end in the slot of a sinker-bar, with the effect that, when the whole is dropped, the fastened tool is jarred and seized simultaneously. The upward haul causes the cone-jaws to close.

The combination of the grab A, having a tapering neck, *g*, working in a corresponding bearing in the end of the socket *e*, with the jar-bar C and its guide-extension *f*, working in the groove *i* in the sinker-bar, and the sinker-bar B, all constructed substantially as herein described, for the purpose set forth.

165,677. FLOUR-MILLS. August Lenz, Oshkosh, Wis. [Filed Dec. 3, 1874.]

Brief.—The parts are arranged to exclude the air from the stones. A section-fan removes the steam, &c.



1. The air-tight curb, provided with the screen E, combined with the exhaust-fan A and pipe, substantially as specified.

2. The fan A, conveyer B, and screen E, in combination with an air-tight curb, substantially as shown and described, when used in the manner and for the purposes set forth.

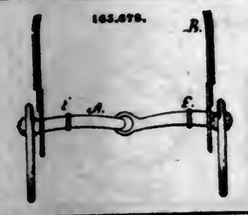
165,678. BRIDLE-BITS. Hiram Lockard and Thomas Agens, Newark, N. J.; said Lockard assignor of one-half his right to said Agens. [Filed Nov. 6, 1874.]

1. In a bridle-bit, the metal spring nose-band B, substantially as and for the purposes specified.

2. The nose-band, in combination with the stops *a a* on the mouth-piece, substantially as described, and for the purposes set forth.

3. The mouth-piece covered with an elastic coating of gutta-percha, for the purposes set forth.

165,679.



1. The combination of corrugated rollers A and B B, steel spring or springs E, and pieces C C, plates *f f*, and swivels, *g g* with the stationary coupling-piece D as part of the frame-work of the machine, substantially as described and set forth.

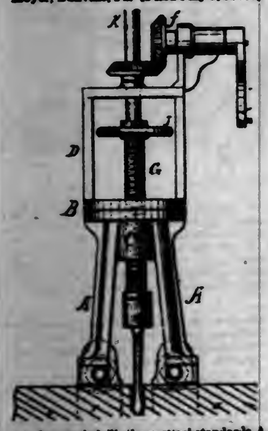
2. The combination of corrugated rollers A and B B, and pieces C C, with plate F, pieces G, and piece H, as separate and stationary fastenings on the machine and on the top, substantially as and for the purposes herein set forth.

166,680. LEATHER-DRESSING. John Miller, Philadelphia, Pa. [Filed Jan. 6, 1875.]

Brief.—Scraps of leather are dissolved in alkali, and the solution combined with any suitable coloring material.

The composition of matter consisting of a solution of leather and coloring material, substantially as and for the purpose set forth.

165,681. ROCK-DRILLING MACHINES. J. W. Moyer, Danville, Pa. [Filed July 8, 1875.]

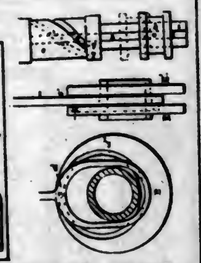


1. In a rock-drill, the vertical standards A, secured to the adjusting screw-rods E, in combination with independent separate adjusting-clamps H, threaded correspondingly with screw-rods E, substantially as and for the purposes herein set forth.

2. In a rock-drill, the frame A B C D, in combination with the screw G, drill I, wheel J, rod K, adjusting-rods E, and the independent separate adjusting plates or clamps H, and operating mechanism, substantially as and for the purpose set forth.

165,682. REVERSIBLE VALVE-GEARS. N. B. Nash, Westerly, R. I. [Filed Dec. 29, 1874.]

1. The eccentrically-grooved disk E, guard-disk E', sleeve *e*, shaft *i*, collar E, rod A, block *g*, and sliding clutch *k*, combined and operating substantially as and for the purposes herein specified.



2. In combination with the eccentrically-grooved disk E and guard-disk E', secured upon the spirally-grooved sleeve *e*, the stirrup-shaped valve-stem extension *c'*, provided with the pin *d*, substantially as set forth, for the purpose designated.

165,683. CONDUCTORS' PUNCHES. Charles H. Nye, New York, N. Y., and Edwd. Zapf, Cincinnati, assignors to Henry Nye, Cincinnati, Ohio. [Filed Jan. 30, 1875.]

Brief.—A ribbon strip of paper is stored within the case. At each reciprocation of the lever, the strip is fed forward, and a ticket or piece cut from it.



1. The combination of the register-wheel E and brake *g* with the ratchet-wheel F and pawl *f*, constructed to operate substantially as described, by which the ribbon is fed a certain distance, and then held while the knife is pressed down to sever the strip, as set forth.

2. The combination of the sliding standard J, roll *i*, provided with a set-screw, and feed-rolls D, all substantially as and for the purpose set forth.

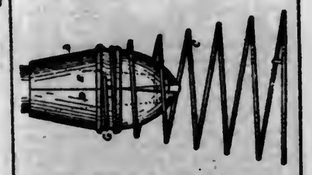
3. The lever A, in combination with pawl *f* and link *e*, whereby the strip is fed forward and the knife reciprocated, substantially as shown and described.

4. The combination of the lever A, link *e*, slotted plate *b*, vertically-reciprocating knife *a*, and stationary cutter *c*, all arranged to operate substantially as described.

5. The knife *a*, having its operating link connected to it by a lateral projection, whereby pressure on the knife tends to press it up toward the stationary lip or blade, substantially as described.

6. In combination with the feed-rolls D, having their inner edges milled, the roll *i*, provided with a central circumferential projection, substantially as described.

165,684. CHAIR-SPRING ATTACHMENTS. R. H. Ober, Garrettsville, Ohio. [Filed Apr. 19, 1875.]



1. The herein-described clamp B, consisting of the sections D, E, and F, provided with a groove, G, and blocks *c*, in combination with the spring C and the leg of a chair, A, in the manner substantially as described, and for the purpose set forth.

2. The combination of the three sections, D E F, having the projecting blocks *c*, and their corresponding notches, and bound around the middle thereof, substantially as described, whereby the fulcrums of the clamp are retained in their relative positions, in the manner set forth.

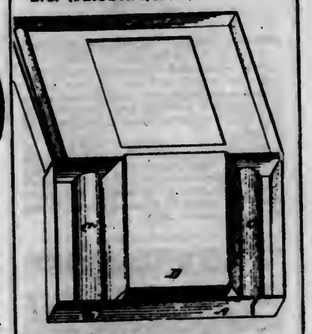
165,685. SCREW-DRIVERS. Wm. F. Patterson, Boston, Mass. [Filed June 2, 1875.]

Brief.—The main blade of a screw-driver has pivoted to its outer end an auxiliary reversible double-pointed blade, secured in position by a step, which is adjustable by means of a set-screw working in an elongated slot in the main blade, and operated by a coiled spring.



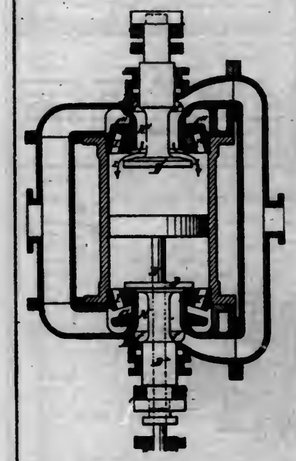
The improved screw-driver herein described, consisting of the haft A, provided with the ferrule B, body *c*, reversible double-pointed blade I, spring E, dowel or stud D, and adjustable step F, provided with the screw H, all constructed and arranged to operate substantially as and for the purpose set forth.

165,686. SKETCHING AND PHONOGRAPHIC CASES. Thomas J. Phillips, Washington, D. C. [Filed Dec. 7, 1874.]



In a sketching or phonographic apparatus, the case A, formed in two parts, (a body and a lid,) having a raised platform, D, flush with the top or lid of said case, rollers C C, and the aperture in lid of said case, whereby the tablet or paper to be sketched or written upon will be always exposed, substantially as described.

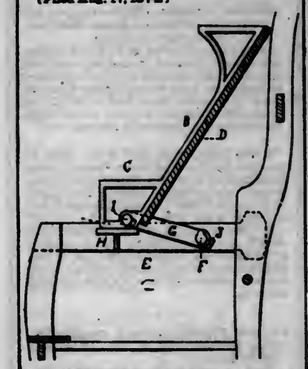
165,687. VALVES AND GEARINGS FOR STEAM-ENGINES. John A. Prince, Pittsburg, Pa. [Filed May 10, 1875.]



1. The combination of the double tubular valve-seat B', having direct passages H and I leading respectively to and from the interior of the cylinder, with the valve D and annular valve O, substantially as and for the purpose set forth.

2. The combination of the frames F and G and valves C and D, substantially as and for the purpose described.

165,688. COMBINED CHAIRS AND STEP-LADDERS. Chas. B. Rawson, Worcester, Mass. [Filed Aug. 17, 1874.]

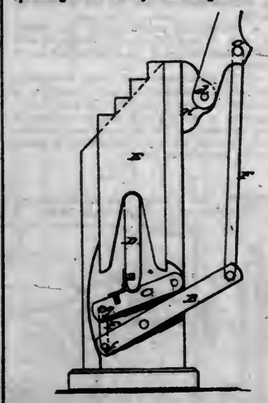


1. The combination, in a combined chair and step-ladder, of the seat B C D with the foot O, provided with a slot to receive the stud upon the link G, and projecting horizontally forward as far as the edge of the lower step, as described, and for the purpose set forth.

2. The combination, with the rail E, having a suitable rest, the seat D, and brackets C C, of a link, G, having a stud, L, with a spur, as shown and described, and hole F', with slot J, as described, and for the purpose set forth.

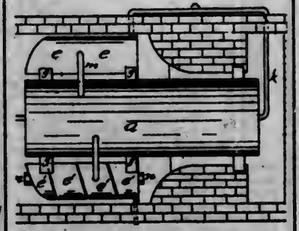
165,689. WAGON-JACKS. Joshua Sawyer, Northfield, Vt., assignor of one-half his right to Edmond W. Cochrane, same place. [Filed June 7, 1875.]

Brief.—An interior sliding block, with a sloping series of shoulders at top, has a vertical pressure given to it by an outside lever, operating foot-levers by connecting-links.



The combination of the three ...s A, B, and C, with rods F F, post D, and sheave E, substantially as and for the purpose set forth.

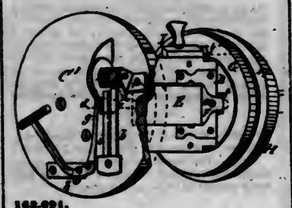
165,690. STEAM-BOILER FURNACES. Chas. D. Smith, Boston, Mass. [Filed June 4, 1875.]



The combination of two or more angular water stand-pipes or water-receptacles, each connected with a horizontal boiler by means of steam-pipes, with the fire-box of a furnace, the columns having angular passages through them from the fire-box to a space formed between the outer surfaces of the water-columns and the inner side of the wall of the furnace, substantially as and for the purpose set forth.

165,691. BURGLAR-ALARMS. Albt. F. Silva, Russell B. Merriam, and Edwin Sedgwick, Binghamton, N. Y. [Filed Mar. 12, 1875.]

Brief.—The inside knob of a lock-spindle contains a bell, which is struck through the medium of the combinations claimed, when the spindle is turned. A sliding pin connects or disconnects the parts, so that the device can be thrown into or out of gear.

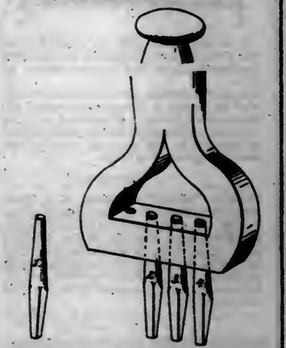


165,694.

1. The combination of the dishes G H, lever F, jaws *d*, sliding bar E, and springs *i* and *b* with the ratchet D for actuating the hammer, substantially as set forth.

2. In combination with the lever F, sliding plate E, cam D, and the dishes G H, the sliding pin I, substantially as set forth.

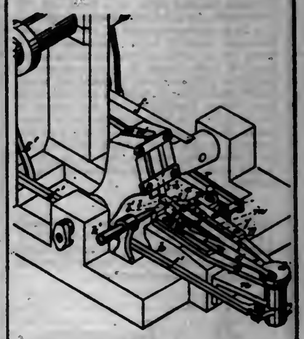
165,692. CHISELS FOR STONE-CUTTING. C. C. Simpson, Santa Clara, assignor of one-half his right to Chas. J. Martin, San Jose, Cal. [Filed Feb. 3, 1875.]



A toothed chisel for stone-cutting, having detachable teeth, substantially as and for the purposes hereinbefore set forth.

165,693. NAIL-PLATE FEEDERS. L. Soule, Taunton, Mass. [Filed May 6, 1875.]

Brief.—One of the two griping-jaws upon the plate which slides in ways on the vibrating carriage is provided with a bent arm, connected by a rod with a crank-pin projecting from a rocking disk. The pivotal swing of the said jaw is limited by a pin which fits into a slot therein. A spring presser-bar upon the upper cutter-lever holds the plate while the jaws move back to take a fresh hold. A blast-pipe is employed to blow off the waste or stub ends of the plate from the anvil.



1. The jaw *d' V*, secured to the sliding plate *m*, in combination with the vibrating frame D, cutter A, and presser-bar *i*, substantially as and for the purpose described.

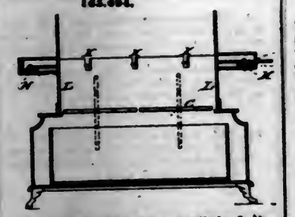
2. The jaws *d' V*, secured to the sliding plate *m*, vibrating frame D, bent lever 19, rod *c'*, shaft *c*, arm 5, rod *f'*, and lever H, in combination with the presser-bar *i* and cutter A, all constructed to operate substantially as and for the purpose set forth.

165,694. COAL-STOVES. Lewis B. Sprout, Muncy, Pa. [Filed Sept. 15, 1873.]

Brief.—The rods are thrust into the mass of fuel when it is desired to damp the grate.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co BOSTON

165,694.



1. In combination with the cylinder L, the rods G G, the movable plate H, and the lever J, substantially as and for the purpose set forth.

2. In combination with the cylinder L of a stove or furnace, a support, constructed and operating substantially as described, attached to the outside thereof to hold the rods or prongs in position, so that they will readily enter the openings in the cylinder.

165,695. WOOD PAVEMENTS. H. M Snow, San Francisco, Cal. [Filed June 19, 1875.]

Brief.—A wood pavement of round blocks of different sizes arranged so that blocks of about the same circumference are laid in the same rows or groups, and the smaller blocks are placed upon a higher foundation than the larger ones, and then rammed down to a level with the same.



1. In a pavement made of round or split blocks of wood of varied diameters or end areas, the arrangement of such blocks in lines, sections, or groups, so that those of uniform, or nearly so, end areas shall constitute such lines, sections, or groups, whereby each and every block will be capable of sustaining without sinking an uniform or equal weight with those around or adjacent to the same, substantially as described.

2. In a pavement made of round or split blocks of wood of varied diameters or end areas, the arrangement of such blocks in lines, sections, or groups, those of lesser end area being set upon a bed or foundation of a higher grade or level than those of greater end areas, and then rammed down to a level with the other blocks, as and for the purpose described.

3. In a pavement made of round or split blocks of wood of varied diameters or end areas, but of different lengths, the arrangement of such blocks in lines, sections, or groups so that the blocks of lesser end areas, but of greater length, may set upon the same level bed or foundation, and be rammed or driven down to a level with the other larger blocks, so that those of lesser end area setting upon or in a more solid bed will be capable of sustaining, without yielding, an equal weight as the larger ones, substantially as described.

165,696. CLOTHES-LINE REELS. A. Thompson, Shark, N. H. [Filed Sept. 16, 1874.]

Brief.—The flanges, hub, and shaft are made so as to be detachable from the other devices, for packing in a small compass.



1. The combination of the detachable flanges D D', with the hub A and shaft I', substantially as and for the purpose set forth.

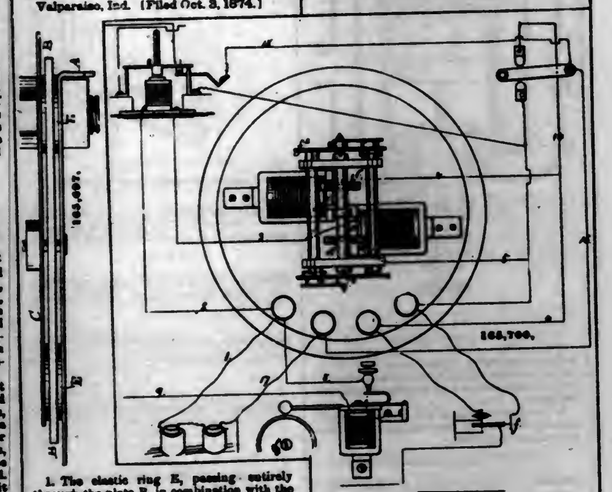
4. The hollow shaft I', provided at one end with the ratchet-wheel M and disk N, the disk projecting above the ratchet, substantially as and for the purpose described.

3. The combination of the hollow shaft I', the base F, and the arm and pawl H I, the shaft having a ratchet, M, and disk N, the base a rod, d, and slot e, and the pawl a lug, J, substantially as and for the purpose set forth.

4. The shaft I', provided with the ratchet M, disk N, and lug P, in combination with hub A and flanges B B', substantially as described.

5. The within-described device for holding the reel in position on the axle, consisting of the pawl L, having lug J, and the base F, having slot e, the pin that fastens the pawl to the base being of less circumference than the hole through the pawl, substantially as and for the purpose set forth.

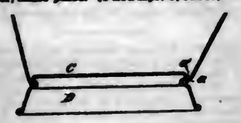
165,697. NUT-LOCKS. Joe. M. Whitmore, Valparaiso, Ind. [Filed Oct. 3, 1874.]



1. The elastic ring E, passing entirely through the plate B, in combination with the plates A and C, substantially as and for the purpose set forth.

2. The combination of the plates A B C and the interposed elastic ring E, the latter being encircled within the aperture in the plate B; and the plate A bent to prevent the nut from turning, substantially as shown and described.

165,698. COAL-HODS. U. D. Alexander, Chicago, Ill., assignor to Margaret Alexander, same place. [Filed Apr. 6, 1875.]



A coal-hod consisting of the body A, having an inwardly-turned lower edge, a, continuous therewith, combined with the bottom C and hoop D, the latter having the groove d' sunken inwardly into its periphery, and being made in one and the same piece with the bottom, the said parts being united to the body by setting down the groove d' upon the flange a, substantially as shown and described.

165,699. PIANO-FORTE CASES. Henrietta J. Baker, Chicago, Ill. [Filed Apr. 17, 1875.]

Brief.—The square piano-forte case is arranged and adapted to receive a lid and key-cover similar to those on the grand.

As an improvement in square piano-forte cases, the hinged lid A' and key-cover C, said parts being constructed, combined, and arranged substantially as described and shown, for the purpose specified.

165,700. ELECTRIC BOILER-ALARMS AND REGISTERS. William C. Baker, New York, N. Y. [Filed June 23, 1875.]

Brief.—Circuit closed by high or low pressure through magnets, controlling a dial and step-by-step escapement, thus registering how often the rules as to maximum and minimum of pressure have been violated. An intermediate magnet in same circuit closes branch circuit to self-acting magnetic bell.

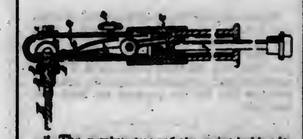
1. The combination, with a low water or pressure alarm and an electric circuit-closing apparatus, of an electro-magnet, step-by-step movement, and dial, to indicate the number of times the boiler has been neglected, substantially as set forth.

2. The combination, with a boiler-alarm and electric circuits, substantially as specified, of a branch circuit, electro-magnet, alarm-bell, and automatic circuit-breaker, operated by the hammer, substantially as and for the purposes set forth.

165,701. DENTAL PLUGGERS. Cauldius Blakers, Pittsylvania C. H., Va. (Filed May 28, 1875.)

Brief.—A point-holder is adjusted at right angles to a tubular casing. A lever is pivoted within the casing, and strikes upon the head of the point-holder, the blows being regulated by a spring and set-screw. The lever is operated by a cam-head upon a rotating shaft.

1. The combination of the adjustable guide B and the U-spring C, with the notched case A, and with the point-holder D, substantially as herein shown and described.



2. The combination of the point-holder D, the lever F, the spring G, head I, the rod J, and the cam K, with each other, and with the case A, substantially as herein shown and described.

3. The combination of the set-screw H with the case A, the spring G, and the lever F, to regulate the force of the blow, substantially as herein shown and described.

165,702. TICKET-STAMPS. L. J. Bladen, Boston, Mass. [Filed June 9, 1875.]

Brief.—Platen and bed are both movable. One operates by leverage, the other by a blow.

1. A stamp slotted to receive the tickets as set forth and arranged, to print when tipped, and to operate also as a strike-stamp, substantially as set forth.

2. The frame of the combined strike and pressure stamp provided with the opening *d*, having side guides, and with an opening, *f*, adapted to receive both local and coupon tickets to be canceled, substantially as described.

3. In a hand-stamp a pivoted frame, and a bed or carrier for the type, combined with a hand-strike and platen, substantially as described.

165,703. REVERSIBLE PLOW-POINTS. M. M. Bowers, Richmond, Va., assignor to himself and John P. Schoenerhorn, same place. [Filed Dec. 19, 1874.]

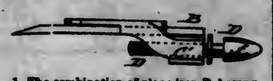
Brief.—Flanges upon either side of the shank fit over the socket. The point is reversible.



A detachable and reversible plow-point, B, made with lips upon the upper and lower edges of the sides of its shank *b'*, whether said shank be made tapering or with parallel sides, substantially as herein shown and described.

165,704. BENCH-PLANES. Chas. Bridges, Lowell, Mass. [Filed Mar. 20, 1875.]

Brief.—The plane-bit is provided with a narrow rear shank, and adjustable in a slotted holder by means of a swiveled screw-bolt working in a threaded socket of said holder, whereby the bit can be extended until worn out. The hollow-socketed handle is secured by a sliding adjustable arm-piece on wedge-pieces on the sides, and inclined ribs on the bottom of the stock, and resting on a circular partition of the same.

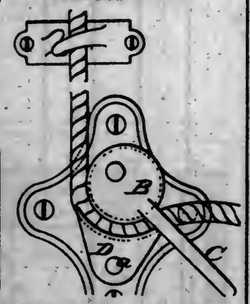


1. The combination of plane-iron B, having narrow rear shank, the holder C, having a slot to receive said shank, and the swiveled screw D *f*, working in a threaded socket of said holder, as and for the purpose described.

2. The combination of stock A, having wedge-pieces *g g* on the sides, and ribs *f f* on the bottom, with hollow handle E, having socket *i*, the screw *F*, and the arm F, having lugs *l*, as and for the purpose specified.

165,705. LINE-FASTENERS. Alden B. Brown and Perry A. Peer, Kalamazoo, Mich., said Brown assignor to said Peer. [Filed Oct 17, 1874.]

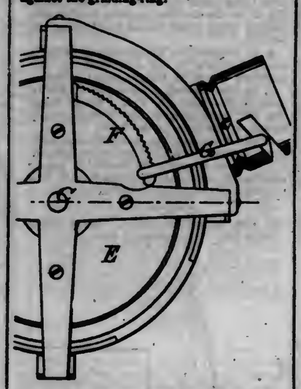
Brief.—A circular clamp with a grooved edge and handle is pivoted eccentrically above a curved and grooved pivoted jaw, so as to clamp a line between them.



The pivoted eccentric B, having a handle, C, and groove *c*, in combination with the automatic pivoted concave jaw D, by means of which a long bite on the rope is obtained, substantially as described.

165,706. PAPER-STOCK-GRINDING MACHINES. John M. Burghardt, Great Barrington, Mass. [Filed Jan. 9, 1875.]

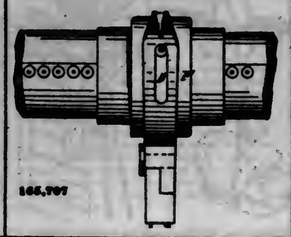
Brief.—The swinging wing, with corrugated face, holds blocks with yielding pressure against the grinding-ring.



In combination with the revolving grinding-ring B, the support E, and pan D, the pressure-wing F, actuated substantially as described.

165,707. HOOK-STAPLES. John Burke, Newburyport, Mass. [Filed Apr. 17, 1875.]

Brief.—The jaws are provided with extended slots, to receive the lugs on the coupling, and are thereby adapted to couplings of various sizes.

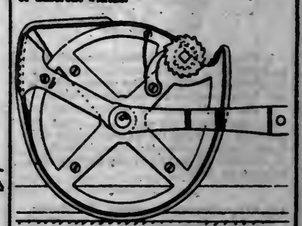


165,707

The jaws of a base-spreader, provided with slots D D at some distance back from the ends thereof, as and for the purpose specified.

165,708. GRAINING-ROLLERS. William H. Burns, Chicago, Ill. [Filed Mar. 20, 1875.]

Brief.—The shoulders enable the roller to reach into corners. One of these shoulders is adjustable to make the machine fit panels of different widths.



As an improvement in painters' graining-rollers, the combination, with a roller having a stationary projecting shoulder, of a movable shoulder for adjusting the stretched transmitting-belt to any width of panel, substantially in the manner and for the purpose set forth.

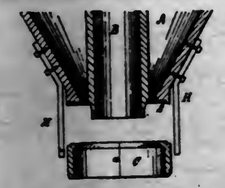
165,709. FARM-GATES. Amos Callahan, Marysville, Tenn. [Filed Jan. 11, 1875.]

Brief.—The diagonal cross-braces have hooks at their upper ends, which, after the central connecting-bolt is loosened, are shifted to the desired holes near the tops of the end braces, and again secured, whereby the front end of the gate is elevated to overcome sagging.

The combination, with horizontal bars C and vertical bars A B, having holes at the top, as specified, of the diagonal crossed bars D, their central connecting-bolt H, the straps E, and hooks G, as shown and described, whereby said hooks may be adjusted to effect the adjustment of the front or latch end of the gate.

165,710. MACHINES FOR FORMING SOCKETS OF CURVED EARTHENWARE PIPES. Horace B. Camp, Cuyahoga Falls, Ohio. [Filed Mar. 24, 1875.]

Brief.—The die for forming the socket is separate from the machine, and consists of a two-part ring, which is held in place during the formation of the socket, its upper part being held in a groove in the lower part of the outside die, and its lower part in a groove in a flanged projection extending from the base of the die which forms the inside of the socket.

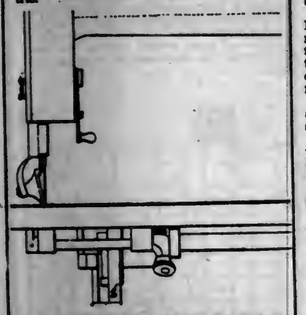


1. The divided ring C, when arranged to fit into grooves in the disc A and D, respectively, in combination with said disc, substantially as and for the purpose herein before set forth.

2. The herein-described manipulating device, consisting of the arms L L', hinged on the wrist F, carrying the segments of the ring C, and moved by the lever G and links M, N, N', substantially as and for the purpose here inbefore set forth.

166,711. SEWING-MACHINES. Jas. Carter, Hartford, Conn., assignor to the Wood Sewing-Machine Company, same place. [Filed Mar. 17, 1875.]

Brief.—The shuttle-carrier is operated by a rotating slotted link, that receives its motion from a crank on the main shaft. A pin on the crank fits into the slot, which allows the shuttle to have the desired varying speed. The lower portion of the link is fitted on an adjustable eccentric, and the positions at which the shuttle shall vary speed are regulated by adjusting the position of the eccentric.



1. The combination, with the rotating shaft and its attached crank, of an intermediate rotating crank-link, supported concentrically to the crank on the rotating shaft, and operated by the crank of the rotating shaft at a variable speed, substantially as described.

2. In combination, the rotating shaft, its attached crank, a shuttle carrier or driver, and an intermediate rotating crank-link, supported substantially as described, and operated at variable speed by the crank of the shaft, and a link for connecting the crank-link and shuttle driver or carrier, substantially as set forth.

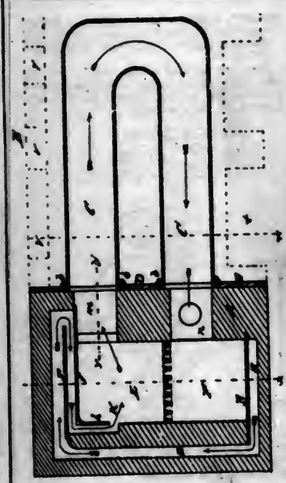
3. The combination, with the rotating shaft and its attached crank, of the adjustable bearing *e'* and slotted crank-link *g*, all constructed and operating substantially as described.

166,712. HOT-AIR FURNACES. C. R. Chase, Loudonville, Ohio. [Filed Nov. 26, 1874.]

1. The air-induction flue *a*, formed by furnace bottom, wall, and top, and diaphragms *E*, *F*, *f*, and *h*, substantially as and for the purposes set forth.

2. The furnace A, and heating-chamber B, in combination with the smoke-tubes C, shaped so that, regarding them in cross-section, the height of each is more than its width, arranged in vertical rows, and having their ingress and egress mouths attached to a common side of the fire-chamber, and free to expand from or contract toward said chamber.

3. The combination of the flue *a* and the tube C, the flue being every way smaller than the tube, and so arranged upon the latter that the edge of the tube is on every side set back from the edge of the flue, as and for the purposes set forth.



4. The sustaining-plate D, substantially as described, in combination with the ⊃-shaped heating-tubes, and the side of the fire-chamber, for the purposes set forth.

5. The combination of the hot-air chamber B, forming a chamber distinct from the furnace, and constructed with ⊃-shaped smoke-flues C, by which the entire work of heating the air for the distributing-pipes is performed, cold-air inlets *t*, and hot-air distributing orifices V.

6. In combination the chamber B, tubes C, sustaining-plate D, and a fire-chamber, substantially as and for the purposes specified.

7. In combination, a fire-chamber, flue *a*, plate D, ⊃-shaped tube C, in a hot-air chamber, and smoke-passage way *n*, substantially as and for the purposes set forth.

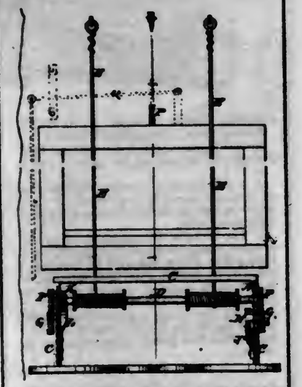
8. In combination, fire-chamber I, ash-pit F, flue *a*, formed by furnace and diaphragms *f* P *f* *h*, flues *n*, plate D, tubes C in hot-air chamber B, and smoke-passage way *n*, substantially as and for the purposes set forth.

166,713. LIFTING-JACKS. David Cilley Milo, Me. [Filed May 17, 1875.]

The improved lifting-jack described, consisting of the bar A, provided with the link I, the bar H, provided with the teeth J, the lever E, provided with the link G, and the drums B E, provided with the lever C and cords D D, all combined and arranged to operate substantially as and for the purposes set forth and specified.

166,714. FIRE-ESCAPES. A. J. Culbertson, San Andreas, Cal. [Filed June 6, 1875.]

Brief.—A platform and cage, containing a reel on which ropes are wound, attached to the side of the building. When wound up the apparatus rests above the window, but may be projected therefrom in case of fire by a lever and rope, when it drops down to the window-sill, or lower, and affords means for escape. The rapidity of descent is regulated by means of a friction-brake and screw applied by the person descending.

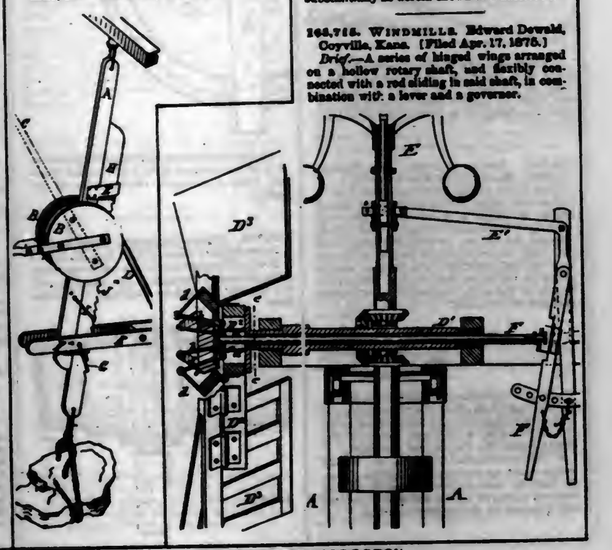


1. An improved fire-escape formed by the combination of the frame C, reel D, wires E, gear-wheels F G, friction-wheel H, brake and hand-screw I J, and ratchet-wheel and pawl K L, and a platform or strap connected with said frame, substantially as herein shown and described.

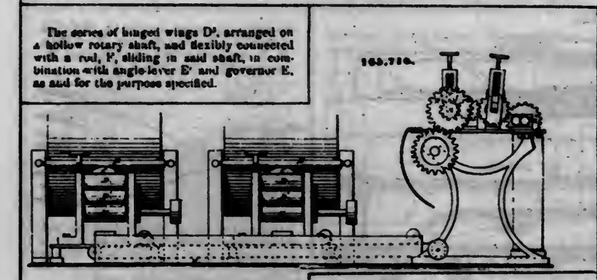
2. The combination, with the device C M, of the bent lever P and the lever and cord Q R, for pushing it from its seat above a window, substantially as herein shown and described.

166,715. WINDMILLS. Edward Dewald, Coyville, Kans. [Filed Apr. 17, 1875.]

Brief.—A series of hinged wings arranged on a hollow rotary shaft, and flexibly connected with a rod sliding in said shaft, in combination with a lever and a governor.



The series of hinged wings D', arranged on a hollow rotary shaft, and flexibly connected with a rod, F, sliding in said shaft, in combination with angle-lever E' and governor E, as and for the purpose specified.



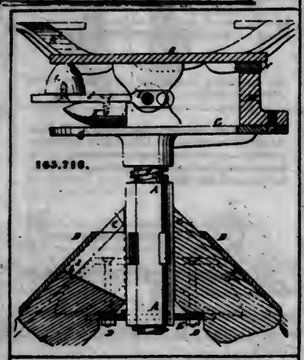
166,716. CARDING-MACHINES. John Dobson and James Dobson, Philadelphia, Pa. [Filed June 7, 1875.]

Brief.—An improvement upon their Patent No. 144,849. Between the doffer and the delivery-apron are a pair of drawing-rolls, and at the end of the apron is the delivery-head of the above-named patent, so that the fleece of wool is drawn before being delivered into the can.

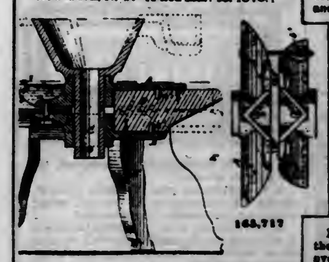
1. The combination, with a carding-cylinder and an endless apron to carry the sliver, of a pair of rolls to take the sliver of wool from the cylinder, operated by pinions or belts, and placed intermediately between the carding-cylinder and the endless carrying-apron, substantially as described.

2. The combination, with a carding-cylinder and an endless apron, of a pair of drawing-rolls set between them, and a pair of drawing-rolls situated at the other end of said carrying-apron, substantially as described.

3. The combination of a carding-cylinder and an endless apron with a pair of drawing-rolls situated between them, and weighted single rolls superincumbent upon the endless apron, substantially as described.



166,717. CHAIR-BASES. Wm. T. Doremus, New York, N. Y. [Filed Mar. 13, 1875.]



1. The plates A B, made with a central socket to receive the pivot or screw, and with angular half-sockets to receive the legs, and provided with pins and screw-holes for securing said legs in place, substantially as herein shown and described.

2. The legs D E, made in two parts, jointed to each other by two or more tapering tongues and grooves, substantially as herein shown and described.

3. The hollow pins *a' b'*, cast in the angles of the half-sockets of the plates A B, to adapt them to receive bolts for securing the legs in said sockets, and clamping the plates to each other and to the legs, substantially as herein shown and described.

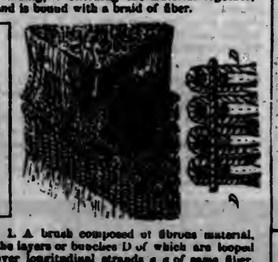
166,718. CHAIR-BASES. Wm. T. Doremus, New York, N. Y. [Filed May 10, 1875.]

1. The central tubular socket A, the surrounding face-plate B, and their connecting-ribs, the plate E, and bolts for securing or supporting the same combined, substantially as shown and described.

2. The combination of the bolt I, the arm J, and the rubber springs K L, with the plates G H, provided with perforated legs, substantially as herein shown and described.

166,719. BRUSHES. John Barnshaw, East Greenwich, R. I. [Filed Sept. 4, 1874.]

Brief.—The entire brush is composed of fibrous material, and may have woven into the back stripe of wood to stiffen the same. The back of the brush is formed by weaving, braiding, or stitching the material together, and is bound with a braid of fiber.



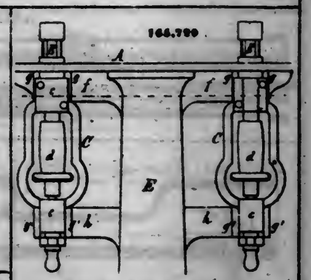
1. A brush composed of fibrous material, the layers or bunches D of which are looped over longitudinal strands *a a a* of same fiber, and are held together by the stitches or strands *c c* passed transversely through the bunches of fiber D, as shown plainly in Fig. 1, all substantially as and for the purposes as herein shown and described.

2. The back of a brush composed of fibrous material, constructed as described, reinforced by interweaving into the same a series of strips of wood, S S, substantially as herein shown and described.

3. The brush, composed of fibrous materials and constructed as described, having the binding *g* of the same fibrous material, substantially as herein shown and described.

166,720. MOLDING-MACHINES. Andrew H. Frank and George Spire, Buffalo, N. Y. [Filed June 16, 1875.]

Brief.—Two cutter-carrying spindles are mounted in vertically-adjustable frames, and supported upon a hollow column arranged centrally under the bed and between the spindles, and provided with two horizontal arms at its upper end, which support the bed, and a suitable distance below said arms with two similar arms, which support the lower ends of the spindle-frames. The arms are provided near each end with vertical guideways. The column-arms and guideways are all cast in one piece.



166,721. VENTILATING-REGISTERS. Herman Fritz, Cleveland, Ohio. [Filed May 24, 1875.]

Brief.—The springs tend to open the register, and the cord passing over pulleys holds it in any desired position.

Having described my invention, I claim—

In a register, the combination, with the sprung-hinged damper C, opening automatically, of a cord, arranged and operating as described, for the purpose of closing and retaining said damper in any desired position, substantially as specified.

166,722. SETTING GEMS. Thomas W. Fry, Providence, R. I. [Filed June 23, 1875.]

Brief.—The receiving-cup protects the gem from dust, &c.

In a setting for stones of jewelry, the combination of a crown or other open setting with a stone-receiving cup, substantially as and for the purpose described.



166,723. PEN AND PENCIL CASES. Joseph U. Gerow, Brooklyn, N. Y. [Filed Feb. 2, 1875.]

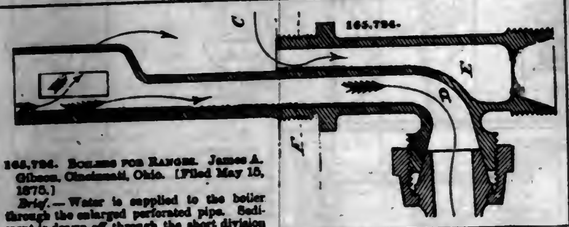
Brief.—The pencil is extended by the reverse movement of the pencil-slide, which at the same time projects the extension-tube. Projecting the pen retracts the pencil if it be extended. Either pen or pencil may be projected separately, and the pencil is retracted by pressing in the extension-tube.

The combination, with a pencil, *a*, that is projected from the case by a band, *f*, moved in the opposite direction, of a pen-holder, *c*, projected from the same end of the case as the pencil *a* by a band, *i*, around the case *g*, and of an extension-tube, *r*, at the other end of the case, passing within the pen-holding slide and surrounding the stationary tube *h*, as and for the purposes set forth.

165,722.



165,724.



165,724. BOILERS FOR RANGES. James A. Gibson, Cincinnati, Ohio. [Filed May 15, 1875.]

Brief.—Water is supplied to the boiler through the enlarged perforated pipe. Sediment is drawn off through the short division of the pipe.

In an upright boiler, the combination of pipe D, waste-pipe E, enlarged and elongated perforated pipe C, male screw F, and female screw G in the bottom of said boiler, all substantially as and for the purposes specified.

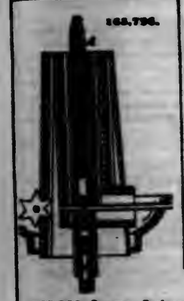
165,725. PIPE-WRENCHES. L. Glynn, Cambridgeport, Mass. [Filed Feb. 15, 1875.]

Brief.—A gripping-hook is pivoted to the actuating-lever, and pressed toward a serrated jaw, which passes adjustably through the lever between the hand and hook-pivot.

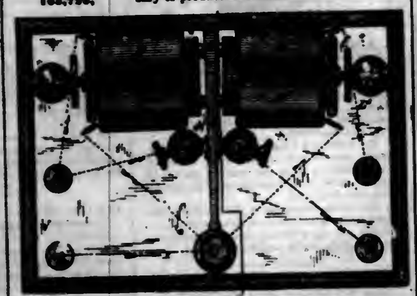
The combination of the handle a, hook-jaw b, hinge c, spring h, and adjustable toothed jaw d e f arranged and secured in a slotted opening through the handle a, substantially as and for the purpose herein shown and described.



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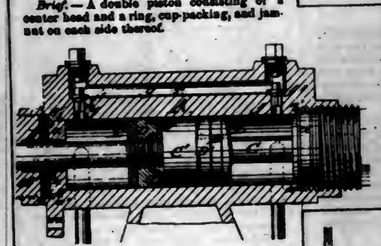
165,726. LAMPS. Joshua R. Godwin, Washington, N. C. [Filed May 1, 1875.]

Brief.—A supplementary or taper tube for a small wick, to give a sufficient light for a sick-chamber.

The taper tube A, placed in a lamp-burner parallel to, and in connection with, the ordinary wick-tube, as and for the purpose specified.

165,727. DOUBLE-ACTING PUMPS. C. Gordon, Savannah, Ga. [Filed May 8, 1875.]

Brief.—A double piston consisting of a center head and a ring, cup-packing, and jam-nut on each side thereof.



The double piston, consisting of center-head C, with packing and packing-rings D D', and jam-nut E on each side of it, and secured as shown, in combination with rod C, and the cylinder and water-ways of a pump, substantially as described.

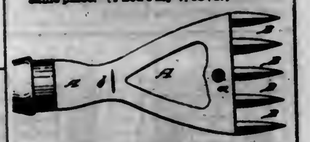
165,728. TRANSMITTERS FOR ELECTRO-HARMONIC TELEGRAPHS. Elisha Gray, Chicago, Ill. [Filed June 26, 1875.]

Brief.—For securing greater uniformity of action of the magnets upon a steel reed vibrating to produce a certain note, and to transmit upon the line electrical impulses corresponding to the number of vibrations necessary to produce such note.

1. The combination, substantially as hereinbefore set forth, of the vibrating electro-tuns and magnets arranged on opposite sides thereof, of such relative capacity as to impart impulses of equal force at equal intervals upon each side of the vibrating electro-tuns alternately, whereby its isochronous vibration is secured.

2. The combination, substantially as hereinbefore set forth, of the vibrating reed, its counterpoise-magnets, a local circuit, and the chant-wire, whereby the current is automatically changed to each set of magnets.

165,729.



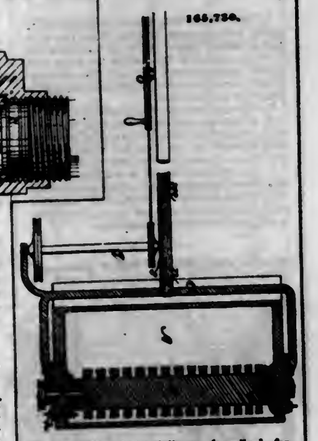
165,729. COMBINED ICE-PICKS AND CAN-OPENERS. Thomas Hagarty, New York, N. Y., assignor to Samuel Rothschild, Jr., same place. [Filed July 7, 1875.]

As a new article of manufacture, the pick and can-opener herein described, consisting of the triangular frame A, the series of teeth or picks B, pin a, and cutter b, substantially as and for the purpose herein set forth.

165,730. CARPET-SWEEPERS. Jos. J. Hastinger, Hyde Park, Mass. [Filed Apr. 20, 1875.]

1. The cage or bushings h, having the projections i, flanges k', and orifices for the reception of the journals e f, in combination with

165,730.



the brush B, substantially as described, for the purpose specified.

2. In combination with the rotary brush B, the journal f, threaded at its end, and having the pulley j, substantially as described.

3. The bent rod or bail C, having the socket n, and arms c c', in combination with the handle m, shaft q, and box or casing A, substantially as described.

4. The combination of the inclined strip t with the notched shoes v, substantially as described.

165,731. PROCESSES FOR MANUFACTURING LEATHER. George Herrick, Kilbourn City, Wis., assignor of one-half his right to F. A. Blood and Herbert on Corning, same place. [Filed June 11, 1875.]

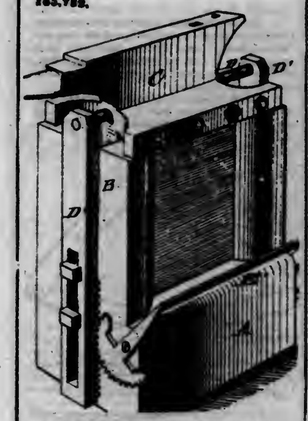
As an improvement in tanning compounds, the solution named, consisting of sulphate of potash, sulphate of soda, alum, sulphur, solar salt, common starch, tormentilla, or sept-foil, and Aleppo galls, combined with any one or more of the tanning extracts named.

165,732. ANVILS. Edwin Hodgdon, Springdale, Me., assignor to himself and Ansel J. Cheney, same place. [Filed Apr. 17, 1875.]

Brief.—The anvil, constructed of four radial sections, rests upon a base-block, slotted to receive one of the sections, while the horizontal sections rest upon the block. A shaft, passing longitudinally through the anvil, is supported at each end in two side bars, which can be raised to permit any one section being brought into position.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

165,733.

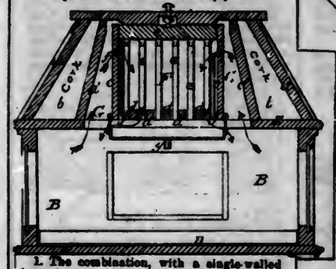


1. The combination of a rotary anvil, C, a supporting recessed base-block, the shaft D, and vertically-movable bars D', substantially as and for the purpose specified.

2. The anvil C, having radial working-faced parts or sections, in combination with the base-block A, having its top portion and central socket of a shape conformed to the said sections, whereby the anvil is firmly seated and supported when adjusted with any one of its spaces uppermost, as shown and described.

165,733. SHOW-CASE REFRIGERATORS. J. H. Hoffman, Baltimore, Md. [Filed May 26, 1875.]

Brief.—The only inside metal is the drip-pan and the bottom of the case. Air passes upward between the close sides of the ice-box and the packed chambers into the top of the ice-box, and down through the ice. Condensation passes down grooves in the slats, and off the points thereof into the drip-pan.



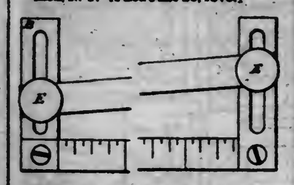
1. The combination, with a single-walled base-chamber section, B, of an upper ice-box composed of a crib, F, double end and side walls b b, and intervening chambers G G communicating with said crib all round its open bottom, substantially as and for the purpose herein set forth.

2. The combination of the chambers G G, on two opposite sides only, with the ice-crib F, having a closed top and sides, two of the latter perforated at or near their tops, and ending at their bottoms both in the horizontal plane of the bases of the double walls b b, and above the isolated drip-pan I, as and for the purpose herein set forth.

3. The combination, with the vertical walls c of the ice-crib, of the side channels f f, and the beveled or pointed ends j, substantially as described, whereby the inner side walls of the ice-crib are kept dry, and the water passed from the bar-points into the drip-pan.

4. The ice-crib F, provided with channeled and pointed wall-bars c, in combination with the drip-pan I, below and isolated from the crib, the side chambers G G, double end and side walls b b, and the single-walled receiving-chamber B, constituting the refrigerator herein described.

165,734.



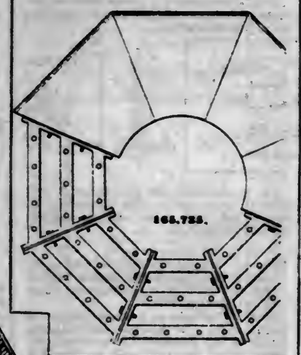
165,734. TAPER GAGES. Charles B. Hunt, Elon, N. Y. [Filed June 26, 1875.]

The taper gage, consisting of the graduating main bar A, having at its ends the graduated slotted arms B, and the adjustable sliding bar D connected with said slotted arms by the clamp screws E E, substantially as specified.

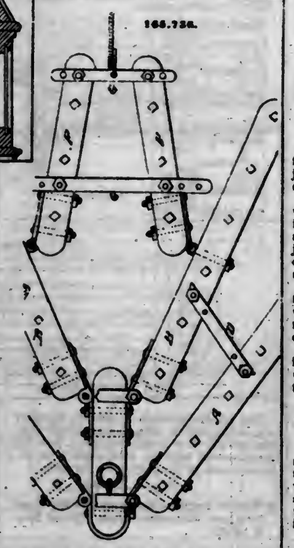
165,735. SIZING-PLANKS FOR HATTERS. M. F. Johnson, Newark, N. J. [Filed Nov. 27, 1874.]

The within-described hatters' sizing-plank, consisting of the metallic skeleton-frames D, united in sections, as shown, and provided with a wood surface attached to and arranged in sections, substantially as shown, and for the purpose set forth.

165,735.



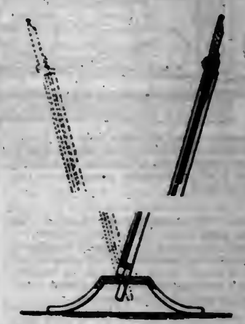
165,736.



165,736. HARROWS. Samuel G. Jones, Shawneque, Ill., assignor to himself and J. M. Jacobs, same place. [Filed June 12, 1875.]

The combination, in a harrow, of wings A B, spaced by bars D, with rearwardly-converging bars F F, spaced by bars G, as and for the purpose specified.

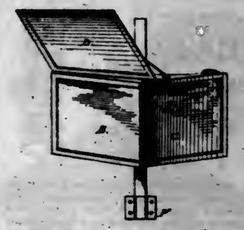
165,737. PICTURE-FRAMES. Albt. D. Judd, New Haven, Conn. [Filed May 21, 1875.]



The picture-frame made with the recess or projections below its lower edge, in combination with the base, containing holes receiving such projections, and allowing the frame to be inclined either forward or backward, substantially as set forth.

165,738. WINDOW-MIRRORS. David J. Kennedy, Philadelphia, Pa. [Filed June 23, 1875.]

Brief.—Two mirrors arranged at right angles, and provided with one or two overhanging adjustable mirrors.



1. A window-mirror having a supporting arm, A, for its attachment to the window frame, upon which the mirror-frame is adjustable horizontally to and from the window, substantially as described.

2. A window-mirror having reflectors diverging outwardly to reflect objects approaching from a distance in either direction, and a single detachable reflector, adapted to be adjusted over either horizontal mirror to reflect objects beneath it, all substantially as described.

3. A window-mirror having horizontal reflectors B C, surmounted by a reflector, D, whose angle of deflection is changeable by means of stay-rods or braces a a' and holding eyes b b a a, substantially as described.

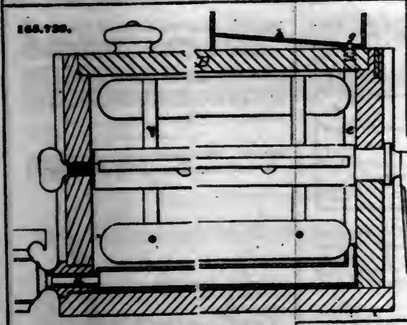
4. A window-mirror whose upper reflector is adjustable in horizontal and vertical angles with relation to the main reflector, substantially as described.

165,739. ROTARY CHURNS. Tilson Lamb, Elon, N. Y. [Filed Apr. 24, 1875.]

Brief.—On the top of the churn is placed a reservoir, from which leads a pipe to a large tube situated in the bottom of the churn, provided with a small tube passing through the end of the churn, and provided with a faucet, to regulate the flow of hot or cold water placed in the reservoir.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

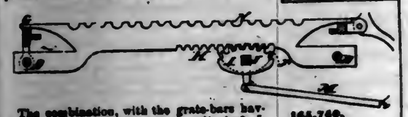
165,739.



A rotary churn furnished with the detachable water-reservoir G, the current-bottom E, the connecting tube *d*, and the discharging-faucet *F*, all substantially as and for the purpose set forth.

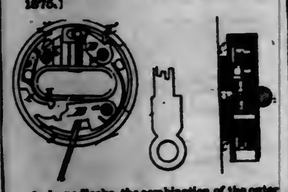
165,740. FURNACE-GRATES. Samuel J. La Boe, Russell, Mo. [Filed Mar. 6, 1875.]

Brief.—The fuel upon the grate is agitated by means of an eccentric toothed pinion operating in a rack on the bottom of the bars, by which a vertical and horizontal motion is imparted to each alternate grate-bar.



The combination, with the grate-bars having teeth H, of the pinions I, rock-shaft J, the rods M, and lever L, as shown and described, for the purpose specified.

165,741. PADLOCKS. Henry S. Lockwood, South Norwalk, Conn. [Filed June 5, 1875.]



1. In padlocks, the combination of the outer ring, having notched projecting portion at the inside and entrance slot, with a key and a number of pivoted, recessed, and spear-headed spring-tumblers, for being released from the notched inner projection and allow turning of ring, substantially in the manner and for the purposes set forth.

2. The outer rotating ring, provided with notched inner projection, in combination with a swinging bar, and the sliding and guided bolt of the lock, substantially as set forth.

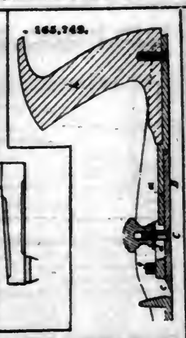
3. The combination of curved guard-arm *a* with central catch *b* and tumblers B, for declining the current of rotating motion of outer ring in either direction, substantially as shown and described.

4. The combination of the check-spring *c* with a recess, *f*, of the inner projection of rotating ring, for retaining the same when the key hole or slot is carried beyond the tumbler-recesses, substantially as and for the purpose specified.

165,742. JOURNAL-PLANER. Joseph Lock, South Abington, Mass., assignor to Blanchard, Archbald & Young, same place. [Filed Mar. 10, 1875.]

Brief.—The plane-bit is disposed oppositely parallel to the bearing-surface of the plane, and arranged within a longitudinal recess in the stock. The under surface of the bit back from the cutting-edge is slightly arched transversely. The downward arrangement of the bit is for planing across the grain of wood perpendicularly.

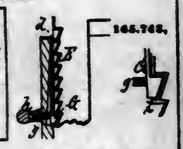
165,742.



In the improved plane, the cutter B, its receiving-recess *a*, chip-throat *c*, and holding and adjusting screws C D, *g g*, arranged in and with the slotted bottom of the stock A, all substantially as described and shown.

165,743. COMMODES OR STANDS. Fredk. Mahler, Rochester, N. Y. [Filed May 15, 1874.]

Brief.—By means of a square offset on one of the ratchet-teeth, the desk-top can be locked in the lowered position.



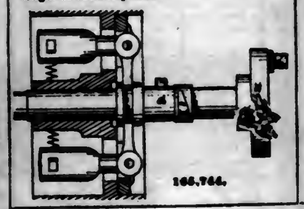
165,743.

165,740.

The combination, with the ratchet E and catch G, of the square offset or shoulder *d*, screw *g* and nut A of the catch, as and for the purpose specified.

165,744. ENGINE-GOVERNORS. Hiram S. Maxim, Brooklyn, N. Y., assignor of one-half his right to A. T. Welch, same place. [Filed Mar. 17, 1875.]

Brief.—Two cams on a sleeve operate the throttle-valve. The cams have inclined ends, so that as they are moved forward or back by the governor the valve will be opened a longer or shorter period.

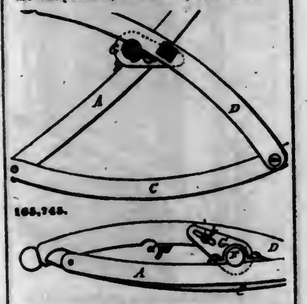


165,744.

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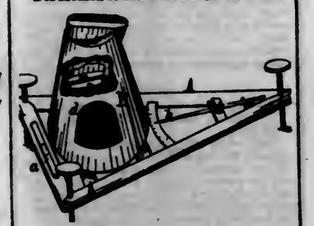
1. The combination, with the rockers C, of the pivoted and extended legs A D, respectively forming parts of the back and seat frames, and a link-connection, as described, to allow for the play in folding the chair, substantially as specified.

2. The combination, with the extended legs A B, of the fulcrum-bar F, the rests *d*, and the link-plates G, substantially as specified.



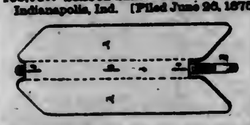
165,745.

165,746. SUN-DIALS. William H. McCoy, Des Moines, Iowa. [Filed Sept. 10, 1874.]



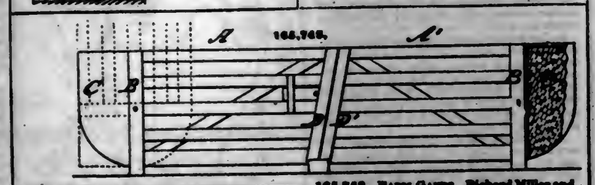
The tubular case B, carrying shades *h*, *m*, and *n*, and having opening *d*, substantially as described, mounted upon an adjustable stand, A, provided with a level, *e*, and magnetic needle *k*, substantially as and for the purpose set forth.

165,747. SCHOOL-SLATES. C. D. Meigs, Jr., Indianapolis, Ind. [Filed June 26, 1875.]



In combination with the frame F of a slate, E, the cover A, when provided with a flexible backing, *h*, and attached to the slate-frame by means of staples *s*, substantially as and for the purpose specified.

165,748. FARM-GATES. Richard Miller and Jas. D. Hilleon, Stephensville, Wis. [Filed June 27, 1874.]



165,748.

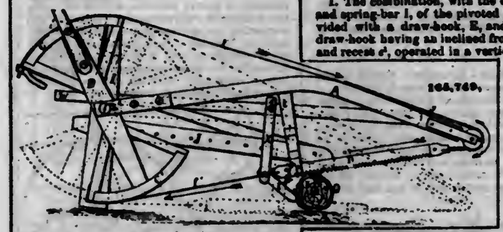
A gate constructed with the sections 'A A,' pivoted as shown, having their meeting ends D D' inclined, and with weight-bars C C on their outer ends, and hung so as to vibrate vertically, whereby a tight joint is secured and a central post dispensed with, substantially as shown and described.

The adjustable sleeve G, carrying the cams *n n*, having spiral ends, in combination with the cut-off valve *d*, the dash-pot I, and the three-armed lever E, substantially as described, and for the purpose as set forth.

165,749. FOLDING ROCKING-CHAIRS. Geo. McAleer, Worcester, Mass. [Filed May 8, 1875.]

165,749. DRAG-SAWS. Horace H. Miller, Lyndon, Vt. [Filed Sept. 23, 1874.]

Brief.—The saw is driven by bands connected with its ends, and with the arch heads of a vibrating lever.



165,749.

1. The drag-saw frame, consisting of the beam A, the pulley *c*, and the vibrating segmental lever B, in combination with the drag-saw D, metallic bands or straps *f* and *f'*, and chain *g*, in such manner that a reciprocating motion can be given to the saw without imparting said motion to the frame, substantially as herein described.

2. In combination with a drag-saw and its frame, the standard I, pivot E, bar J, levers *k* and *l*, chain I', dogs *o*, and lever *w*, substantially as and for the purposes set forth.

165,750. CORN-SHELLERS. B. C. Morgan, Valdosta, Ga. [Filed Dec. 3, 1874.]



1. The combination, with a revolving tapering screw-pin, *c*, of a pivoted yielding breast or conduit, *f*, arranged to embrace and close with the opposite sides of the screw-pin, whereby the latter will revolve within the trough, while said trough swings over the pin, substantially as and for the purpose herein set forth.

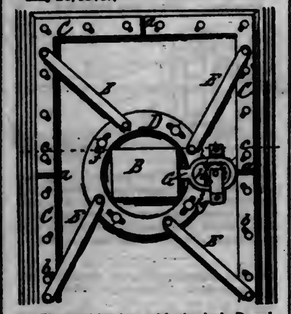
2. The combination, with the revolving tapering screw-pin *c*, of the pivoted yielding breast or conduit *f*, formed with downwardly-tapering sides *f'* *f'* and back *f''*, as and for the purpose described.

165,751. CAR-COUPLINGS. Frank W. Nash, Plano, assignor of one-fourth his right to Wm. Fraser, Sandwich, Ill. [Filed June 11, 1875.]

1. The combination, with the draw-head C, and spring-bar I, of the pivoted lever D, provided with a draw-hook, E, and pin *c'*, said draw-hook having an inclined front surface, *e*, and recess *e'*, operated in a vertical direction, and retained in position by means of a rod or other connecting means, F, substantially as described.

2. The combination, with the draw-head C, spring-bar I, and the pivoted lever D, provided with a draw-hook, E, (having an inclined front surface *e* and recess *e'*,) operated vertically, of the rod or connecting means F, lever G, rods L M, and hooked projection or catch H, substantially as and for the purposes described.

165,752. BOLT-WORKS FOR SAFE AND VAULT DOORS. James Naylor, Jr., and Edward Brooks, Rochester, N. Y. [Filed May 26, 1875.]

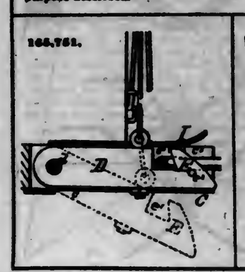


1. The combination, with the lock B and ring D, of the stirrup-bolt G, connected with the ring through the medium of the pinion *h* and gears *k g*, and constituting an automatic shifting device for locking the door-bolts in position when the safe-lock is locked, as herein shown and described.

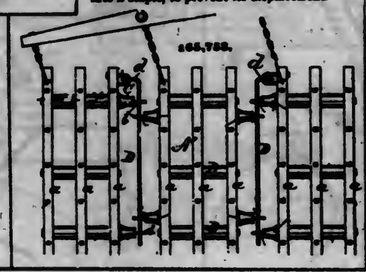
2. The toothed ring D, pinion *h*, stirrup-bolt G, connections E E, and elbow-plates C C, combined and arranged to operate in the manner and for the purpose specified.

165,753. HARROWS. William H. Parlin, Canton, Ill., assignor to Parlin & Orendorff, same place. [Filed May 11, 1875.]

Brief.—The harrow is made of three sections, the inner sides of which are provided with eyebolts, stay-blocks, and connecting-rods, having a hook upon one end to hook into a staple, to prevent its displacement.

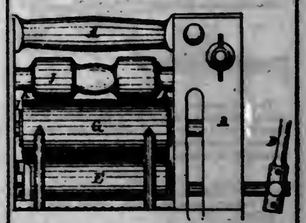


165,753.



The harrow-sections A A', provided with stay-blocks, eyebolts, and staples, substantially as described, in combination with the rods D, having hooks *d* on their ends, for the purpose specified.

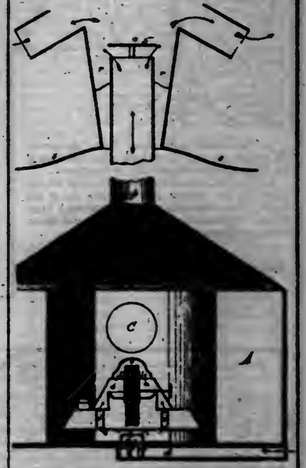
165,754. WRENCHES. Milo A. Richardson, Bridgeport, Conn. [Filed May 28, 1875.]



The large soft-rubber roller G, loosely placed on a small smooth round shaft, in combination with the pressure-roller J, and friction-roller E, all set in the frame A, and operated by the crank D, and wedge N, substantially as and for the purposes herein set forth.

165,755. CAR-LAMPS. Frank Rhind, Brooklyn, assignor of two-thirds his right to Keys P. Coal, New York, N. Y., and Jane E. Smith, Crawford, N. J. [Filed Feb. 11, 1875.]

Brief.—A tube from without communicating with tubes passing through the lamp to the flame; a rod with valve at one end to close the outer tube, and a catch on the other to fasten the door, and tubes with surrounding jacket and plate surmounting the case.



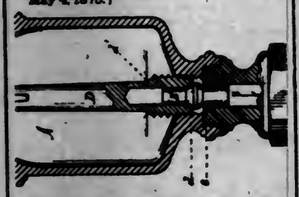
1. The frame A, having the air-tube *d*, in combination with a lamp having one or more air-tubes passing through it, substantially as described.

2. In combination with the door *a*, the rod *f*, having the valve *w* secured to its inner end, and a catch on its outer end, whereby the valve is opened when the door is locked, and closed when the door is opened, substantially as set forth.

3. In a lamp for street-cars, the combination of the air-tubes *i*, perforated plate *l*, and covering *c*, substantially as shown.

4. In combination with a lamp for street-cars, the tube *p*, jacket *r*, tubes *s*, and plate *t*, whereby the flame is prevented from being extinguished by currents of air, substantially as described.

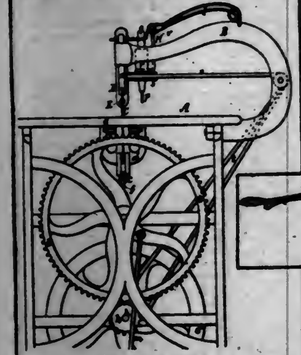
165,756. LUBRICATORS. Joseph Richter and Gustaf Merkel, Cincinnati, Ohio. [Filed May 4, 1875.]



The adjustable sleeve D, having concave valve-seat *d* and inlets *d'*, in combination with double-seated valve E and concave seat *e* within stem C, substantially as and for purpose herein before described and set forth.

165,757. SCROLL-SAWING MACHINES. John H. Roberts, Boston, Mass. [Filed Apr. 20, 1875.]

Brief.—The machine is provided with a boring-tool, for the purpose of forming an opening in the material for the passage of the saw.



1. The pitched point screw E and its carrier D, combined and arranged, with the arm B and fly-screw *c*, substantially as specified.

2. The boring-tool spindle depressor H, applied to the spindle and the arm B, as set forth, in combination with the spring I fixed to said depressor and arm, and arranged therewith as represented.

165,758. PROCESSES OF PRESERVING WOOD. Louis S. Robbins, New York, N. Y. [Filed Apr. 2, 1875.]

The process herein specified of curing wood by heating the same to a temperature of about 212° Fahrenheit in a vessel to expel the atmosphere from the pores of the wood, then increasing the temperature and simultaneously increasing the pressure in about the proportion specified by forcing into such vessel atmosphere or gas, for the purposes and substantially as set forth.

165,759. SASH-HOLDERS. Oliver Rock, Hudson, Mass. [Filed June 2, 1875.]

Brief.—An interposed concave-faced pressure-block bears against the loose-fitting friction-roller, and is acted on by a suitable spring, the whole suitably housed and fitted in an auger-hole of the frame or sash, thereby dispensing with journals, and bringing the force of the concave pressure-block to bear all the time upon the entire face of one-half of the roller.



In a sash-holder, the combination of recessed holder *d*, spring *e*, concave-faced pressure-block *f*, and loose friction-roller *g*, substantially as shown and described, for the purpose set forth.

165,760. CHEESE-CUTTERS. John W. Row, Lewisburg, Pa., assignor of two-thirds of his right to Edwin C. Nogel and Peter W. Himebrech. [Filed May 31, 1875.]



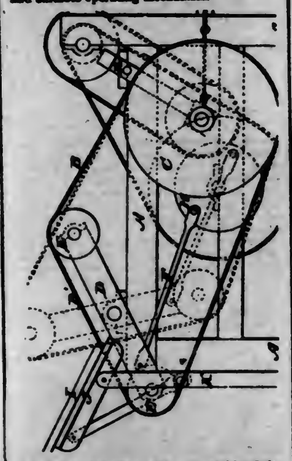
In a cheese-cutter, the knife F, with its heel *f*, and pinion-like appendage G, lever I, and pinion-like fulcrum-head H, standard E, base A' A, in combination with the revolving table D, the whole substantially constructed and operating as and for the purpose specified.

165,761. DRYING FOR PAINT. Oscar Burrell, Sycamore, Ill. [Filed July 1, 1875.]

The herein-described process of preparing drying for paints, consisting in first boiling refuse paint; then adding turpentine in about the proportion herein stated; then reducing the compound to ashes, and then grinding said ashes to powder, substantially as and for the purpose hereinbefore set forth.

165,762. SAND-FEATHERING-MACHINES. Oliver Sawyer, Winchendon, Mass. [Filed Mar. 27, 1875.]

Brief.—The smoothing-belt of a polishing-machine is automatically operated upon rounded or convex surfaces, without changing the position of such surfaces, by means of two supporting-pulleys pivoted upon an oscillating arm, adapted to be automatically reciprocated simultaneously in opposite directions, for oscillating the intermediate portion of the belt in connection with an adjustable table and suitable operating mechanism.



1. In combination with a smoothing-belt, two supporting-pulleys, E E, adapted to be automatically reciprocated simultaneously in opposite directions, and thereby oscillate the intermediate portion of the belt, substantially as described, for the purpose specified.

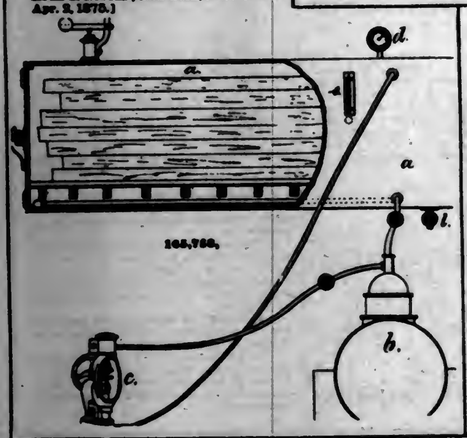
2. The combination of the pivoted oscillatory arm D, having the supporting-pulleys E E, with the smoothing-belt B and driving-pulleys C, substantially as described, for the purpose specified.

3. The combination of the arm D, having the pulleys E E, supporting the belt B, with the pitman F and disk H, substantially as and for the purpose specified.

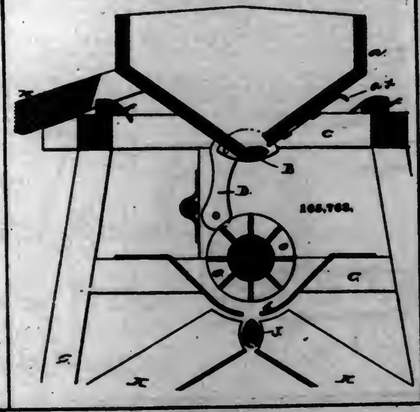
4. The combination of the adjustable shelf or table J with the oscillating belt B, substantially as described.

5. The combination of the pendent frame E, spring S, and pulley C with the belt B, substantially as described.

165,763. GRAIN-TALLIES. Wm. Schnebly, Hackensack, N. J. [Filed Apr. 21, 1875.]

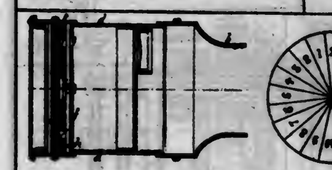


165,763.



165,763.

The combination of the swinging hopper, the compartment-wheel, the fixed or silent hopper and port, the shifting valve, the inclined troughs, and registering apparatus, substantially as and for the purpose represented and described.



165,764. PHOTOMETERS. Otto Schnotte, Paris, France. [Filed June 16, 1875.]

Brief.—Rotating disk of sections of varying degrees of transparency. Sections successively brought between the eye and a lens and the light to be tested. The power of a given light determined by the section through which its rays are powerful enough to pass, and just enable the marks thereon to be read.

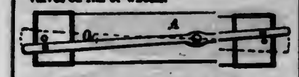
1. The photometric disk *a*, or its equivalent, constructed with a graduated series of varying degrees of transparency, and with its numbers corresponding with its various thicknesses.

2. The instrument, or its equivalent, composed of the stationary parts *b d e f* and the rotating disk *a*, with or without a focusing-tube.

3. The rotating cap *k*, provided with holes *i*, in combination with the piece *f*, as and for the purpose set forth.

165,765. CORN-PLANTERS. Geo. W. Sheppard, Afton, Iowa. [Filed Jan. 2, 1875.]

Brief.—Cams on wheels operate pivoted bar working through seed-hoppers. Branch tube on hollow spokes for receiving and discharging seed. Projecting valves on outside of rim of wheels, one fixed and the other operated by levers, to discharge seed in ground. Scrapers conforming in shape with projecting valves on rim of wheels.



1. In a seed-planter, the combination of the pivoted bar *a c*, having seed-cups in its ends, the seed-boxes Nos. 1 and 2, and the carriage-wheels D D, having fingers *e e* in diverse positions, substantially as and for the purposes shown and described.

2. The branch tube *b* on the hollow spoke of the seed-wheel, to form a cup and U-shaped seed carrier and conductor, substantially as shown and described.

3. The valves *d d f g*, in combination with the spoke-branch *b* and U-shaped conveyors, substantially as and for the purposes shown and described.

4. The scrapers *k k m*, conforming in shape with the projecting valves *d d*, and pivoted to the rock-shaft A, as and for the purposes shown and described.

5. The bench A, carrying the seed-boxes Nos. 1 and 2 and the pivoted bar *a c*, the carriage-frame B B, carrying the cams *g g*, the wheels D D, carrying the fingers *e e*, and branch spokes *b b*, forming U-shaped conveyers, and the valves *d d f g*, arranged and combined substantially as and for the purposes shown and described.

165,766. BARREL-HEADS. H. M. Smith, Chicago, Ill. [Filed Apr. 1, 1875.]

Brief.—A barrel, the sides of which are made of paper, straw-board, or similar flexible sheets, is provided with a solid head, having upon its outer surface a central circular cavity, which forms an unobstructed shoulder, serving as a grasp for the head or a grapple.

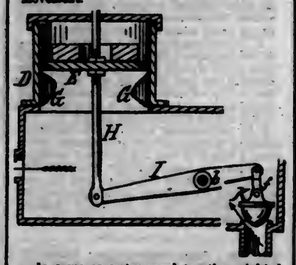


The rigid or wooden head for barrels with flexible sides, made with the exterior central circular cavity *a*, forming the unobstructed shoulder *b*, substantially as and for the purpose specified.



165,767. GAS AND WATER REGULATORS. Andrew L. Smith, Geneva, N. Y. [Filed Dec. 22, 1874.]

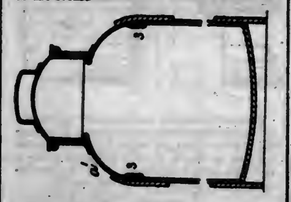
Brief.—The weights on the plates can be changed without opening the case. The flexible bellows-packing allows extended vertical movement.



In a gas or water regulator, the weighted plates E and bellows-packing G, resting loosely in the cylinder D outside of the case, in combination with the connecting-rod H, attached fast to the said plates, and the pivoted lever I, carrying the valve K inside of the case, as herein shown and described, and for the purpose specified.

165,768. MILK-CANS. Jay W. Smith, Philadelphia, Pa. [Filed June 9, 1875.]

Brief.—The cylindrical can and its breast are united by invaginations of the sheet-metal, and an external hoop of cylindrical form is swaged at its upper side, to fit the convexity of the breast.



The combination, with the body A and its hemispherical top *a'* and joint 3, of the band *a''*, provided with the curved inwardly-contracted upper edge, substantially as and for the purpose hereinbefore set forth and described.

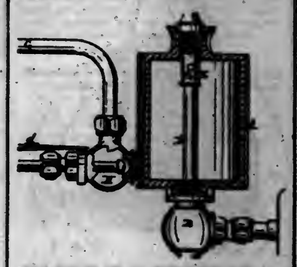
165,769. CALENDARS. Thomas J. Thorpe, Novara, Ohio. [Filed Dec. 21, 1874.]



The combination of the disk A, having recess, annular flange *f*, and hub *g*, with the disk B, and the disk C having central slot *h*, all connected by the screw *a*, substantially as set forth.

165,770. STEAM-ENGINE LUBRICATORS. M. L. Waring, Detroit, Mich., assignor to himself and C. B. Palmer, same place. [Filed Feb. 24, 1874.]

Brief.—The supply-stem within the cup has upon its top a valve-case, within which a valve is inclosed, its square end projecting above the case and engaging with the screw, by means of which, and the apparatus in the valve-case and the valve, the flow of oil is regulated.

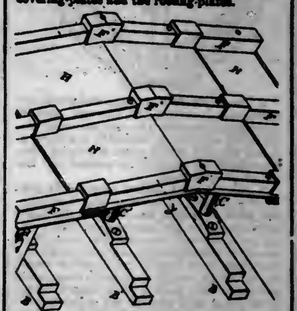


1. In combination with the valve-case E, having aperture *a'* and opening *a''*, the cup-valve F, fitting inside the valve E and having the aperture *a* and angular head *c*, the latter being adapted to be turned by means of its square head from the outside of the cup A, to regulate the size of the opening, and, consequently, the flow of the oil, as and for the purpose set forth.

2. The combination, with the cup A, valve B, plug C, and stem D, of the case E, cup-valve F, pipe G, and valve H, as and for the purpose set forth.

165,771. METALLIC ROOFS. Elphalet Watson, Northwood Centre, N. H. [Filed Apr. 17, 1875.]

Brief.—A metal roof supported by beams and posts, having an elongated base and a cap with recess for the rib of the beams. The bearers are provided with ribs and side projections, having elongated orifices to allow of contraction and expansion. The wall-pieces have a deep groove, into which the covering-plates fit to prevent leakage. The supporting-plates on the wall are connected to the covering-plates and the roofing-plates.



1. The supporting-posts C, having the elongated base, and enlarged cap with the recess *d* for the reception of the rib *c* of the bearers D, as specified.

2. The bearers D, provided with the ribs *c* and projections *f*, the latter being perforated by the elongated orifices *g*, as and for the purpose set forth.

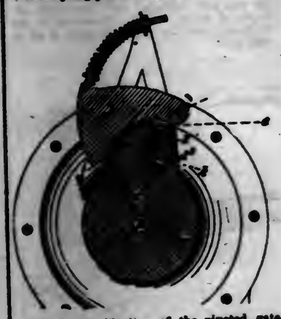
3. The wall-pieces I, provided with the deep groove, as described, in combination with the covering-plates H and gutters G, as and for the purpose set forth.

4. The supporting-plates E resting upon the wall A, in combination with the roofing-plates H and the covering-pieces F, as set forth.

5. The combination of the beams B with the supports C, bearers D, roofing-plates H H', and covering-pieces F and F', all being constructed and arranged as and for the purpose specified.

165,772. ROTARY ENGINES. W. Weyhe, Bremen, Germany. [Filed July 3, 1875.]

Brief.—The end of the swing-gate is rounded, and the piston is grooved, so as to make a close fit, and prevent steam passing from the induction to the eduction port. The coiled spring pushes the piston.

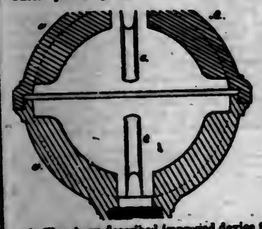


1. The combination of the pivoted gate-valve *f* with the elongated grooved piston, substantially as and for the purposes set forth.

2. The combination of the coiled spring *e* with the piston *d*, provided with the perforations *h h h h* in its face, substantially as and for the purpose described.

165,773. FERTILIZER-DISTRIBUTERS. Wm. F. Wheeler, Dorchester, Mass. [Filed Apr. 7, 1875.]

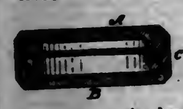
Brief.—The fertilizer compound is formed into a homogeneous mass, and placed in a reservoir, through which water is forced by a hose, the water wearing away the compound, which is discharged from a nozzle with the water upon the plants.



1. The above-described improved device for attachment to a hose-pipe or other conduit through which water is to pass, the same consisting of a holder, A, formed in two parts, *a a*, and provided with a series of internal ribs, *g*, arranged substantially in manner and for the purpose set forth.

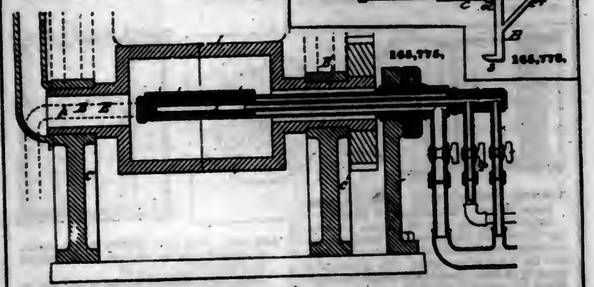
2. The improved method of gradually and speedily impregnating water with fertilizing and other materials, and diffusing the same upon plants, &c., the same consisting in forming the elements or materials into a solidified or semi-solidified homogeneous mass, and placing the same, so formed, in a holder or chamber connected with or arranged in a hose-pipe or other conduit, through which water is forced or caused to pass, whereby the action or friction of the water shall gradually disintegrate the compound, and the impregnated water be diffused, substantially in manner and for the purpose set forth.

165,774. WATCH-MAKERS' SOCKS. Phillip H. Wheeler, Rockford, Ill. [Filed Oct. 21, 1874.]



A transparent or glass box for watch-makers, composed of parts A and B and packing-ring C in groove *b'*, constructed substantially as and for the purposes described.

165,775. HEATERS FOR ROLLERS, &c. Thos. S. Wiles, Albany, N. Y., assignor of one-half his right to Alonzo P. Adams, same place. [Filed June 26, 1875.]



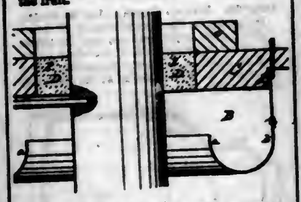
1. A burner having a jet-aperture in communication with a supply of mixed gas and air under artificial pressure, and an adjacent outside jet-aperture in communication with a supply of air under artificial pressure.

2. In combination with a chamber having an exit-passage, a burner having an aperture from which a jet of mixed gas and air is discharged into said chamber, and an aperture from which air under artificial pressure is discharged into said chamber in a jet alongside of the said jet of mixed gas and air.

3. In combination with a roller having a chamber therein, and an exit-passage therefrom, a burner in said chamber, and having a jet-aperture in communication with a conduit for supplying gas or mixed gas and air, and also having an adjacent outside jet-aperture communicating with an air-supply passage, substantially as set forth.

165,776. TREE-PROTECTORS. Robert F. Williams, Hampton, N. H. [Filed May 20, 1875.]

Brief.—Around and in the tree is secured a trough by supporting-rods, for the reception of poison *fluid*, the outer wall being somewhat higher than the inner wall. The space between the tree and the trough is filled with an elastic substance. The trough is covered with an adjustable flanged cover to protect the fruit.



The combination, substantially as herein shown and described, of the trough B, having the walls *a b*, flanged cover C, with a central opening or space, D, and supporting-rods *c*, and the elastic substance E filled into the space D, for the purpose described.

165,777. LOOM-SHUTTLES. Newell J. Wilkin, Cumberlandport, assignor to himself and W. H. Potter, Tunstown, Mass. [Filed June 16, 1875.]



The described improved loom-shuttle body, composed of two cores, A A', the two outer B B', of layers or thickness, *a*, of leather or analogous material, and the connection-plates H H', all arranged and applied substantially as specified.

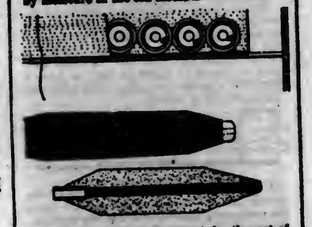
165,778. ICE-HOOKS. Daniel C. Wood, Quincy, Ill. [Filed Apr. 28, 1875.]

1. The improved ice-hook, consisting of the handle A, attachments *a a'*, and laterally-projecting cant-hook B, substantially as described.

2. The rigid cant-hook B, having the bifurcated shank and arms *c c'*, in combination with the handle A, having the handle *d* receiving said arms, as shown and described.

165,779. ART OF TREATING YARN TO RESIST TENDENCY. Daniel Wright, Lowell, assignor to George Draper & Son, Milford, Mass. [Filed Apr. 24, 1875.]

Brief.—The object of using dry heat is to prevent the swelling of the cops or bobbins and the matting together of the yarn, caused by moisture in the old method.



The described improvement in the art of treating yarn on bobbins or cops, to reduce the tendency of the yarn to kink in subsequent operations, consisting in subjecting the yarn to the action of heated air in a chamber, substantially as set forth.

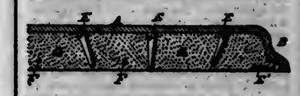
165,780. HEAT-INDICATORS FOR JOURNAL-BEARINGS. Stephen Alley, Glasgow, Scotland. [Filed May 31, 1875.]



The combination of the spring-rod D, an alarm mechanism connected therewith, and a fusible plug, B, applied to the end of the spring-rod, the whole being constructed to be used in connection with a journal-bearing, substantially as described, whereby, when the journal becomes heated, the fusible plug will melt, release the spring-rod, by the action of which upon the mechanism an alarm will be sounded, substantially as described.

165,781. IRON MANTELS. Thos. P. Baker, St. Louis, Mo. [Filed Mar. 1, 1875.]

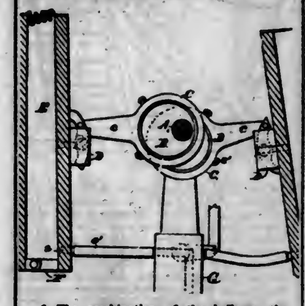
Brief.—A mantel-piece consisting of a metallic shell with recess underneath filled with cement, which is held in place by projecting pins.



As a new article of manufacture, the iron mantel-shelf A B C D, having recess G filled with cement F, anchored by pins E, substantially as set forth.

165,782. PRESSURE-BLOWERS FOR GAS-MACHINES. Joseph H. Bean, Cincinnati, Ohio. [Filed Dec. 12, 1874.]

Brief.—The pitman is connected to the upper arm of the valve-shaft. The forward movement of the pitman closes the valve, and presses back, by means of the upper arm of the valve-shaft, the movable side of the bellows, for the purpose of expelling the air contained therein. The rearward movement of the pitman opens the valve and draws out the movable side of the bellows.

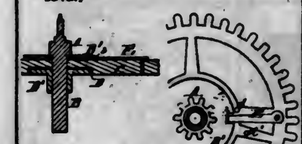


1. The combination of the bellows, the valve, and the operating-pitman, substantially as described, the pitman being adapted to operate the valves in advance of the bellows, as and for the purpose described.

2. The combination of the bellows, so arranged that its movable side swings outward by gravity, with a valve and pitman or crank, adapted, when operated, to move the bellows against the force of gravity, substantially as described.

3. The combination of the bellows E and valve *d d'* with the valve H and air-chamber, as described.

165,783. LEVER SAFETY-PISTONS. George Bement, Belvidere, Ill. [Filed Oct. 20, 1872.]

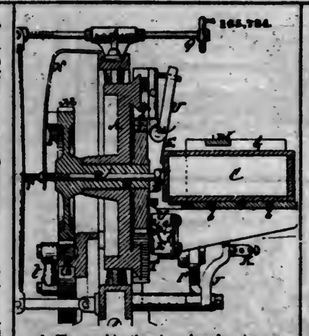


1. The self-retaining device for a watch, consisting of a rigid pivoted pawl E, a stop, *d*, and a circular flange, B', having a notch, *b*, formed in its periphery, in combination with the center-wheel C and pinion A, as herein set forth.

2. The steel collar D, recessed into the wheel C, in combination with the setting-post E, and a pinion, A, as set forth.

165,784. BOX-DRESSING MACHINES. John W. Bowers, South Carver, Mass. [Filed June 11, 1875.]

Brief.—The box is held upon a table, and the ends trimmed by four reciprocating knives acting simultaneously upon the four sides of the box.



1. The combination, in a box-dressing machine, of two or more reciprocating knives, E E', arranged to operate in transverse relation with each other, and so that each adjacent knife finishes its cut at the place where the other commenced its dressing action, substantially as specified.

2. The knives, constructed of duplicate cutters *c c'*, arranged so that as the one cutter, *c'*, trims the end of the stock, the other cutter, *c*, shaves, by a drawing cut, in an outward direction on the end of the box, essentially as described.

3. The combination of the automatically-adjustable guide and clamp H with the stationary guide and clamp G, made adjustable by hand in relation to the guide and clamp H, substantially as specified.

4. The expansible connecting-rod K, in combination with the automatically-operating guide and clamp H, essentially as described.

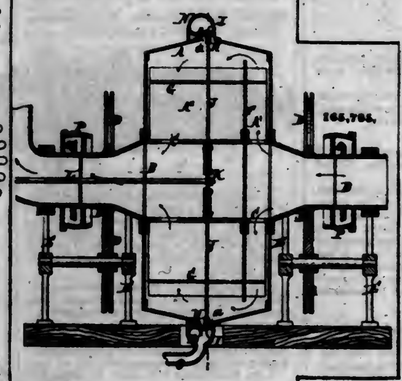
5. The automatically-adjustable stop and box-discharger D, with the knives which dress or trim the ends of the box, substantially as specified.

6. The adjustable hand-stop *r*, in combination with the automatic stop and box-discharger D, essentially as described.

7. The combination of the adjustable table B, the adjustable guides and clamps G H, and the automatic stop and box-discharger D, for operation in relation with each other and the knives, substantially as specified.

165,785. APPARATUS FOR PURIFYING GAS. Otto Braun, Berlin, Prussia. [Filed June 11, 1875.]

Brief.—Impurities separated from the gas by centrifugal action of drum and vanes. The liquid part escapes from the drum into an annular gutter. The openings in the periphery of the drum are closed by valves, whose rods extend to the center of the drum, where they are connected to a swiveling head, operated by a shaft extending to the outside of the



1. The apparatus constructed of the drum A, hollow shaft B, and valves I, for the purpose of purifying gases, substantially as described.

2. In combination with the valves I, the swivel K, for opening and closing the valves, substantially as described.

3. The annular gutter N, in combination with the rotating drum A, and valves I, substantially as described.

4. The rotating drum A, divided into two unequal compartments, A' A'', as shown, in combination with the vanes G, connected tangentially with the plate F, substantially as described, whereby the rotary velocity of the gases, &c., passed into the said drum is alternately increased and diminished, and the impurities separated therefrom, as set forth.

165,786. STEM-WINDING WATCHES. John Daniel Brez, Brooklyn, N. Y. [Filed June 23, 1875.]

Brief.—A coupling-piece, connecting the winding-arbor with the stem proper, permits removal of the movement from the case without disturbing the stem.



In a stem-winding watch, the combination of a coupling-piece, I, with the stem D extending from the crown-piece C, and with the winding-arbor G, substantially as described.

165,787. EXPANSION-DRILLS. Milan G. Bullock, New York, N. Y. [Filed Nov. 28, 1874.]

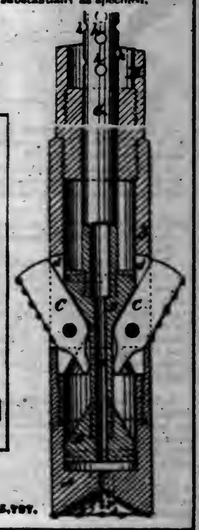
Brief.—The enlarging bits are pivoted in the bit-stock, and held in the desired position by two cones, that are vertically adjustable. The drill-rod and stem of the adjusting-screw are made hollow, and the cones recessed centrally, so as to furnish a conduit for supplying water to the cutting-surfaces.

1. A rock drill or bit constructed with cutting-wings C, for enlarging the diameter of the bore, operated by adjustable cones D E, substantially as shown and described.

2. In a rock drill or bit, the combination of a nut, L, adjusting-screw *o*, tubular stem G, and cones D E with hinged cutting-wings, substantially as and for the purpose described.

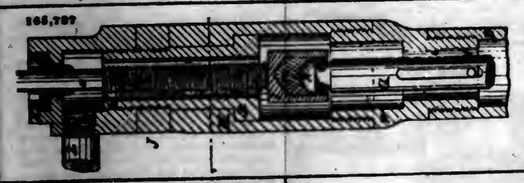
3. The combination, with the screw *o* and stem G, of the coupling I, substantially as and for the purpose described.

4. In a rock drill or bit, the combination of the connected cones, recessed centrally, stem G, tubular nut I, and perforated base A, forming a conduit for supplying water to the cutting-surfaces, substantially as specified.



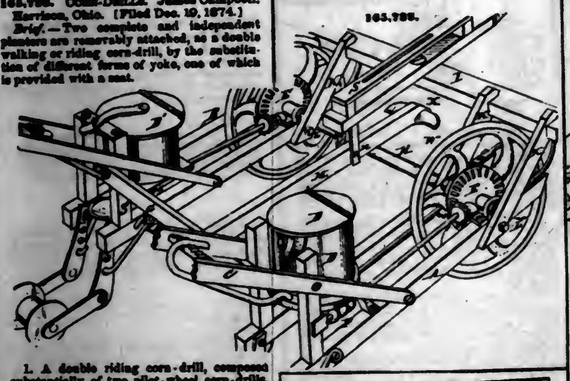
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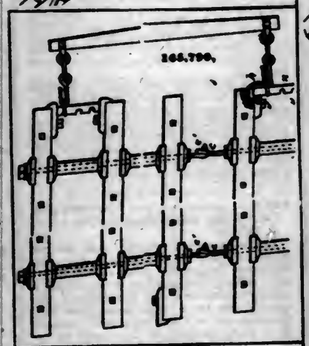


165,788. CORN-DRILL. James Campbell, Harrison, Ohio. [Filed Dec. 19, 1874.]

Brief.—Two complete and independent planters are removably attached, as a double walking or riding corn-drill, by the substitution of different forms of yoke, one of which is provided with a seat.



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165,790.

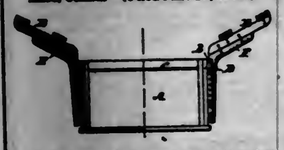
1. A double riding corn-drill, composed substantially of two pilot-wheel corn-drills, connected by means of the yoke G and frame I K, substantially as herein set forth.

2. In a double or riding corn-drill, the yoke G, tilting-bar M, and frame I K, constructed and combined substantially as herein set forth.

3. The combination of the two single pilot-wheel corn-drills by means of the riding-frame I K, yoke G, and roller H, substantially as herein set forth.

4. The combination of the loose yoke G and roller H with the two single pilot-wheel corn-drills, substantially as described.

165,789. WAGON-RACKS. James F. Case, L'Original, assignor of two-thirds his right to Jas. McCallum and Alpheus McCallum, Kent, Canada. [Filed June 26, 1875.]



1. The dovetailed sockets B and brackets F, in combination with a wagon-body, A, as and for the purpose set forth.

2. The sockets B, fastened to the wagon-box by rods C passing transversely therethrough, and secured by nuts D, as set forth.

165,790. HARROWS. Jas. Chamberlain and Henry H. Scipio, Melmore, Ohio. [Filed May 1, 1875.]

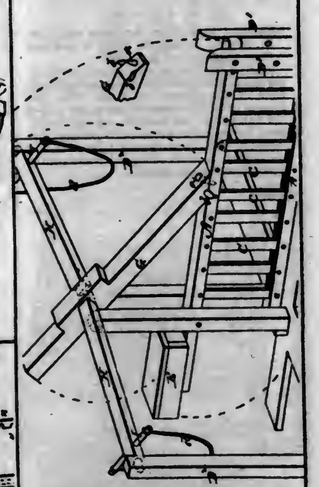
Brief.—The frame of the harrow is composed of longitudinal bars, which carry the teeth. These are secured at the desired distance from each other by means of cast blocks that fit upon the bars, the opposite side being recessed to receive the end of the cross-bars. A rod passes through each set of blocks and braces, and through the longitudinal bars, the inner ends forming hooks for uniting two sections together.

1. In a harrow, the perforated clamps or washers *g*, provided with the recesses *d* and *f* on opposite sides, in combination with the hooked rods C, passing through the longitudinal and cross-bars, substantially as described, and for the purpose set forth.

2. The draw-bars A A', in combination with a slotted main bar and the serrated cross-bar *a*, constructed and arranged substantially as specified.

165,792. GATES. Leopold S. Coim, Berlin. W. [Filed Mar. 6, 1876.]

Brief.—In which the gate rises to a vertical position when a locking-lever is lifted from its place, and returns to a horizontal position when the locking-lever is made to press upon the upper bar of the gate. The locking-lever is manipulated by means of two bars mortised into it on opposite sides, said bars being journaled into two upright posts placed at a convenient distance from the gate. Levers pass through the ends of these bars near the posts, by means of which a rotary motion is given to them, which raises the locking-lever or presses it down.



1. The combination of the weighted pivoted gate A B C, and the pivoted locking-lever G, provided with the pin *a* and guide-projections *b b*, substantially as and for the purposes herein set forth.

2. The combination of the locking lever G, bars H H, and levers I I, with or without the side bars G' G', as and for the purposes herein set forth.

165,791. RELIEF-VALVES. G. H. Clemons, Chicago, Ill. [Filed Apr. 17, 1875.]





A banking device consisting of a circular, or nearly circular, spring, *f'*, formed with bent ends *f''* and a stud or pillar, *f*, and the shank *f'*, arranged and constructed substantially as shown and described.

165,794. KEY-HOLDERS. F. W. Coleman, Rodney, Miss. [Filed July 10, 1875.]

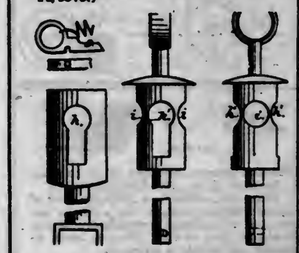


165,794.

1. A key-holder, consisting of a core with end caps combined with disks of pliant material arranged to alternate with the bows of the keys, substantially as described.

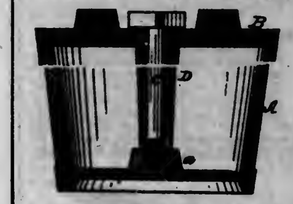
2. The sections A A' of the core, having end caps *a a'*, in combination with the screw-threaded stem B and the disks C, arranged to alternate with the bows of the keys, substantially as described, and for the purpose set forth.

165,795. RAILROAD-SWITCH SIGNALS. W. W. Colley, Philadelphia, Pa. [Filed May 14, 1875.]



A signal-box consisting of a case having side-apertures and a hollow post, in combination with a movable lantern-chamber constructed with side apertures and glass-covered openings, the whole so arranged that when the side apertures of the lantern-chamber coincide with those in the case *h'* a signal of safety is indicated, and when the glass-covered openings *f* of the lantern-chamber are exposed a signal of danger is shown, substantially as set forth.

165,796. BUTTER-PAILS. J. F. Crawford, Canisteo, N. Y. [Filed June 7, 1875.]



1. The combination of the pail A, lid B, rod C, and post or sleeve D, substantially as shown.

2. In combination with the pail A, rod C, and sleeve D, the washer or button E, applied as and for the purpose described.

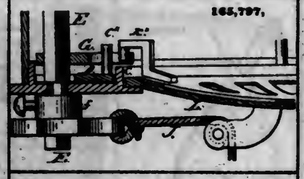
3. In a butter-pail, a hollow post or sleeve D of decreasing diameter toward its lower end.

165,797. CEILING-REGISTERS AND VENTILATORS. Horatio M. Cranmer, Boston, Mass. [Filed May 31, 1875.]

Brief.—The central register is removable, to allow the introduction of pipe. When the central register is in use, it is operated by the same slotted arm on the shaft that operates the exterior annular register.

1. The combination, with the center-piece K L, of the vertical shaft E, arm G, lever H, cords or chains J, and pulleys *i*, substantially as and for the purpose herein described.

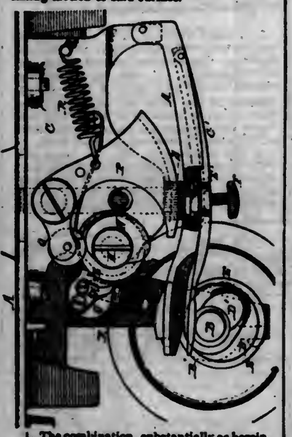
2. The combination of the center-piece or register K L and outside annular register C D, the pins *c' b'*, arm G, and shaft E, whereby the two registers are operated simultaneously, substantially as described.



165,797.

165,798. SEWING-MACHINES. Cyrus S. Cushman, Philadelphia, Pa., assignor to Nesbitt D. Stoops, same place. [Filed May 14, 1875.]

Brief.—An eccentric on the driving-shaft of the machine actuates, through a suitable connection and pawl, a ratchet, on the sleeve of which is secured a pattern-cam, that operates upon an arm projecting from a cogged segment, and vibrates the same on its pivot. This segment meshes with a pinion on the lower end of a hollow shaft, in the hollow of which is pivoted a lever, having its upper end roughened and projecting above the surface of the bed, and its lower end sharpened off in the form of a wedge, against which a tapering bar operates, that is connected with a lever which is moved by a cam, so that a combined rotary and lateral motion is imparted to the feed-surface at one and the same time. A third cam, in connection with a lever and spring, serves to give the requisite rising and falling motion to said surface.



1. The combination, substantially as hereinbefore set forth, of an eccentric attached to the driving-shaft, a pawl and ratchet wheel for imparting motion to a pattern-cam, and a toothed segment and pinion-wheel for imparting an intermittent rotary motion to the feed-plate for the purpose of moving the same, as set forth.

2. The combination, substantially as hereinbefore set forth, of a cam attached to the driving-shaft, and a lever and spring for raising and depressing the spring W and imparting a horizontal reciprocating movement to the feed-plate.

3. The combination, substantially as hereinbefore set forth, of an eccentric attached to the driving-shaft, a pawl and ratchet for imparting an intermittent motion to a pattern-cam, a segment and pinion-wheel for imparting a rotary motion to the shaft carrying the feed-plate, and a cam, lever, and spring for raising and lowering a shaft for imparting a horizontal reciprocating movement to the feed, simultaneously with the intermittent rotary movement of the same, as specified.

4. The combination, with the driving-shaft B, of the eccentric D, pawl G, ratchet-wheel I, segment P, and pinion-wheel R, on the shaft T, for imparting an intermittent rotary movement to the feed-plate, substantially as described.

5. The combination, with the driving-shaft B, of a cam, D', lever C', spring G', and bevel-lever E', and spring-rod W, for imparting a horizontal movement to the feed-plate, substantially as described

6. The combination of a cam, D, pawl G, ratchet-wheel I, segment P, and pinion-wheel S, attached to the shaft T, the spring-bar W, carrying the feed-plate V, and the shaft E', spring G', lever A', and cam D', substantially as described, for imparting a combined rotary and reciprocating motion to the feed-plate, as set forth.

7. In combination with the mechanism, substantially as hereinbefore set forth, for imparting a rotary and horizontal reciprocating motion to the feed-plate, the cam D', lever A', and spring Z for imparting a vertical reciprocating motion to the feed-plate, as set forth.

165,799. POCKET-INHALERS. T. B. Daniels, Detroit, Mich. [Filed June 5, 1875.]

Brief.—The inhaler is made up of two concentric circular boxes. The inner box contains a pocket, into which the telescopic mouth-piece slides when not in use. Outside of the pocket, and within the inner box, the inhaling material is placed, and the vapor passes out through a piece of perforated paper, which is passed around the perforated edge of the inner box. The vapor passes from the space between the two boxes into the telescopic mouth-piece.



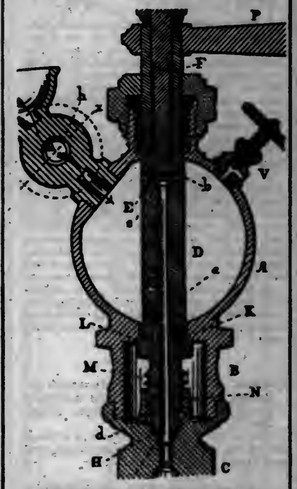
1. The inhaler, consisting of the case O D, the internal box A, provided with the perforations *c*, and the absorbent materials *d* and *e*, and the sliding tube or mouth B, constructed and operating substantially as shown.

2. A case or body for a pocket-inhaler, consisting of two circular flanged plates, O D, provided with an inlet-opening, *f*, and arranged to turn one within the other for the purpose of closing said opening.

3. In an inhaler the combination of a perforated box, A, an absorbent filling, *d*, and an inclining band, *c*, of porous material located in the air-passage, substantially as described.

165,800. LUBRICATORS. Samuel H. Davis, Jr., and Howard M. Du Bois, Philadelphia, Pa. [Filed Oct. 9, 1874.]

Brief.—The purifying solution or steam is kept at an elevated temperature.



The valve-stem D, constructed to rotate, formed with a bore, *a*, and openings *b*, and extended above the shell A, in combination with the handle P, valvular stem F, and screw-collar M, substantially as and for the purpose set forth.

165,801. MANUFACTURE OF CHLORINE. H. Deacon, Widnes, England. [Filed July 1, 1875.]

The described improvement in the manufacture of chlorine by the Deacon process, which consists in effecting the separation of sulphuric acid from the hydrochloric-acid gas employed in said process, by submitting such impure hydrochloric-acid gas to the action of aqueous hydrochloric acid, or of chlorides, such as chloride of sodium, at an elevated temperature, in the manner hereinbefore described.

165,802. MANUFACTURE OF CHLORINE. H. Deacon, Appleton House, Widnes, England. [Filed June 26, 1875.]

Brief.—Improvement upon Patents Nos. 86,376, December 29, 1868; 116,369-12, August 22, 1871; and 141,333, July 29, 1873. Instead of the porous substances of these patents, use substances consisting mainly of sesquioxide of iron. Impregnate them with sulphate of copper or other of the "active chemical agents" specified in former patents. Also, adds to these a salt of magnesia.

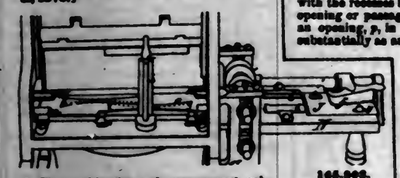
1. The employment in the described process for the production of chlorine of such porous substances as consist mainly or essentially of sesquioxide of iron, in the manner and for the purpose herein before mentioned.

2. The employment in the described process for the production of chlorine of porous substances impregnated with salts or compounds of magnesia in conjunction with salts or compounds of copper, or with other described active chemical agents, in the manner and for the purpose herein before described.

3. The employment in the described process for the production of chlorine of natural magnesian minerals or products, the same being

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165,803. PAPER-COLLAR MACHINES. Chas. H. Dunham, New York, N. Y. [Filed Jan. 11, 1875.]



1. The combination and arrangement, substantially as before set forth, of the two collar-embossing dies, arranged to lap by each other longitudinally, the supporting-bed, the cutting mechanism, and the feed mechanism, located between the said dies and cutting mechanism, whereby the web is drawn past and from said dies, and advanced to the cutting mechanism, by which pieces are severed from the web by a combined longitudinal and transverse cut, having upon each piece two or more collars embossed.

2. The combination and arrangement, substantially as before set forth, of the two collar-embossing dies, arranged to lap by each other longitudinally, the supporting-bed, the button-hole cutter, the cutting mechanism, and the feed mechanism, arranged between the said dies and cutting mechanism, whereby the web is drawn past and from the said dies and button-hole cutters, advanced to the cutting mechanism, and pieces of paper severed from the web by a combined longitudinal and transverse cut, each piece having two or more collars embossed thereon and the button-holes cut.

165,804. METAL-BENDING MACHINES. H. Devine, Detroit, Mich., assignor to himself and M. McWilliams, same place. [Filed Apr. 17, 1875.]

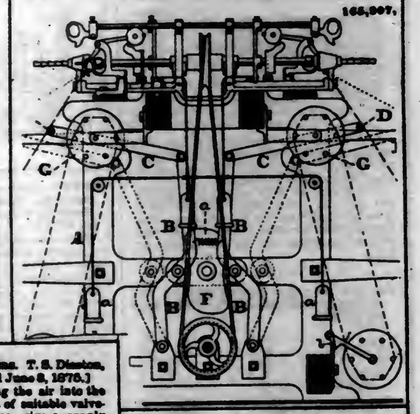
Brief.—The forked lever D acts as a clamp for holding the metal against the former, and as a handle for turning the former.

1. The combination of the sheaves B B' and former C, with the bed-plate A, substantially as and for the purpose set forth.

2. The forked lever D, in combination with the former C, substantially as and for the purpose set forth.



165,804.



165,807.

165,805. ROTARY BLOWERS. T. S. Dinston, Philadelphia, Pa. [Filed June 2, 1875.]

Brief.—The vanes, forcing the air into the segmental recesses and out of suitable valve-openings into the discharge, give a supply of compressed air. The disadvantages of a vacuum are prevented by the openings in the vanes and cylinder, as shown. The irregularities of the blast are modified by the air-chamber attached to the discharge-pipe.

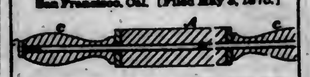
1. A rotary blower in which are combined the following elements, namely: two or more revolving vanes having curved sides, revolving segments *c c*, with concave recesses adapted to the said vanes, a chest-casing adapted to the vanes and segments, and a valve or valves operating in unison with both vanes and segments, for controlling the outlet of the blast, all substantially as set forth.

2. The combination, with the vanes and with the recesses between the segments, of an opening or passage through each vane, with an opening, *p*, in the casing of the blower, substantially as and for the purpose set forth.



165,805.

165,806. SHARPENING-RIPLES. S. P. Dodge, San Francisco, Cal. [Filed May 3, 1875.]

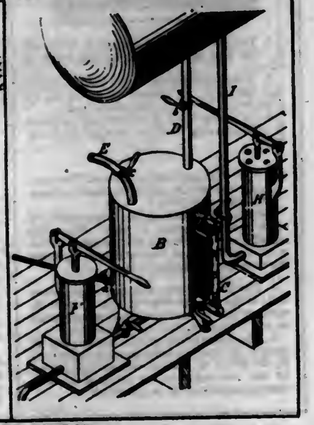


The stone or block A, having the hole *b* made longitudinally through it, in combination with the handles C C, rod D, and plates *a*, and tightening-nut *f*, all combined and arranged to operate substantially as and for the purpose described.

165,807. BOBBIN-WINDERS. John Dorman, Philadelphia, Pa. [Filed June 2, 1875.]

1. The combination, with the winding mechanism, of the sliding rods D, supporting-arms E, levers C, lever E, operating-cam F, and spring or weight *a*, all arranged as described, whereby the slack is taken up, and the yarn does not require to be passed over guides adjacent to said rods D, substantially as and for the purpose set forth.

2. The combination of the sliding rods D, upper barrels G, lever gravitating-barrels H, springs K, and separating-rods L, substantially as and for the purpose set forth.



165,807.

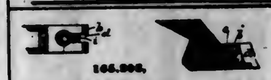
165,808. DENTAL FORCEPS. N. A. Durham, Hartford, Conn. [Filed May 21, 1875.]

Brief.—The socket for a removable beak of dental forceps is straight with a circular section, and the beak, with a corresponding shank, is entered from its inner side in a lateral direction, and held by a spring-pin.

1. A forceps-handle, provided with a straight socket, having a circular cross-section, entering laterally from the inner side of said handle, and provided with a slot, *d*, combined with a beak constructed with a corresponding shank, as set forth.

2. A forceps-handle, A, constructed with the plane end *b* and the socket *c* parallel with said surface *b*, combined with the beak F, provided with the shank *f* fitted to said socket and groove, as set forth.

3. The pin-spring *i*, located in the middle of the socket *c*, combined with the shank *f*, constructed with the orifice A, for the purpose set forth.



165,808.

165,809. APPARATUS FOR SUPPLYING LIQUID HYDROCARBON TO GAS-MAKING RETORTS. Frederick H. Blakeman, Detroit, Mich., assignee of two-thirds his right to Wm. W. Horton, J. T. Salter, J. H. Sheldon, and Jas. Allen, Chicago, Ill. [Filed Jan. 13, 1875.]

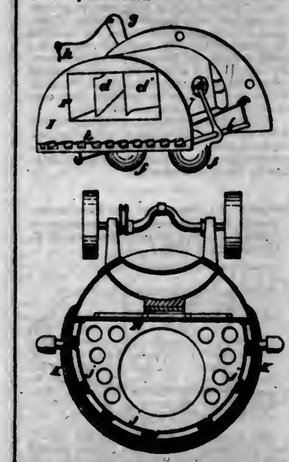
Brief.—The liquid hydrocarbon is forced up into the retort by air-pressure from an independent air-reservoir. A gage is applied to the oil-supply tank, to measure the quantity fed.

165,809.

In an apparatus for supplying hydrocarbons to gas-distilling retorts, the combination of the reservoir B, provided with gage C, the air-chamber G, and a pump to exert an air-pressure in said chamber, all substantially as described.

165,810. BOILERS FOR PORTABLE ENGINES. Joseph Enright, San Jose, Cal. [Filed May 6, 1875.]

Brief.—By means of a frame inserted in the front of a furnace, and provided with swinging doors operated by weights and levers, straw or other fibrous material may be fed to the furnace. By the same means the doors may be kept opened and closed. A water-jacket is provided around the smoke-arch, the inner bottom of which is lined with staves for protection. The boiler-head is made in two or more sections, whereby easy access to the tubes is provided for.



1. The improvement in the front boiler-head C, the same consisting in constructing it in two or more parts, substantially as and for the purpose described.

2. The thimble or short tube E, in combination with the circular flange *a* on the inside of the boiler-head C, and the projecting end of the main flue D, substantially as and for the purpose described.

3. The furnace-front G, with its inward-projecting tube F and doors *d d'*, in combination with the shield X, substantially as described, for the purpose specified.

4. The pivoted doors *d d'* and pipe F, in combination with the links 7, bent levers *e e*, pivoted on shafts 6 6, and bearing-weights *f f*, as set forth.

5. In combination with the hinged doors *d d'* and their weighted crank-shafts *e e*, the operating-lever *g*, rack *g'*, and pin *h*, substantially as and for the purpose specified.

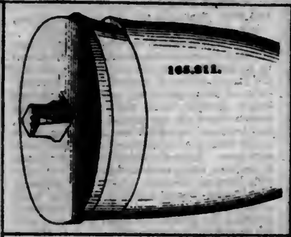
6. The combustion-chamber J, lined with the staves *j j*, substantially as and for the purpose described.

7. The combustion-chamber J, surrounded by the shell K, so as to provide a water-jacket between the shell and boiler, said space or jacket being connected with the water-space in the boiler by the pipes *i*, substantially as and for the purpose described.

165,811. CRUCIBLES. John Foix, San Francisco, Cal. [Filed July 7, 1875.]

Brief.—A crucible of ordinary construction is provided with a ring or annulus of the same material, to fit upon the mouth or top of the same, forming a continuation of said crucible, to hold the loose metal or bullion packed therein, thereby preventing the ingress of coals, or the loss of metal by shaking.

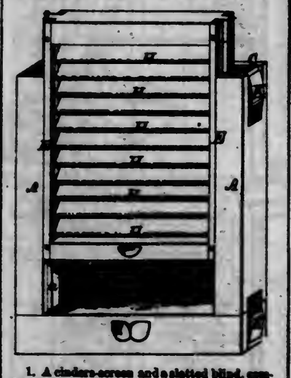
In combination with an ordinary crucible, a ring or annulus adapted to fit upon the mouth or top thereof and form a continuation of the same, substantially as and for the purpose herein described.



165,812.

165,813. CORNICES AND BLINDS AND SCREENS FOR RAILROAD-CARS. Wm. H. Fletcher, Washington, D. C. [Filed June 16, 1875.]

Brief.—A frame containing independent shutter-slats is detachably secured in grooves in a screen-frame. The screen-frame is also detachably secured in grooves in the window-opening. Both frames are provided with springs on their edges, to prevent rattling and to hold them at any desired height.

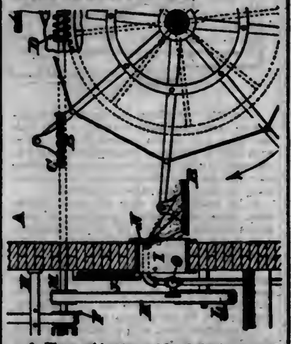


1. A cinders-screen and a slotted blind, combined together within a window-opening, and capable of an independent or a combined movement therein, substantially as and for the purpose specified.

2. In combination with the blind-frame, the springs K' and K', attached to the outer edge of the side rails B and B, and the springs K'' and K'', attached to the rails A and A, substantially as and for the purpose set forth.

165,814. DEVICES FOR GLAZING CRACKERS. David Foerster, Cincinnati, Ohio. [Filed June 9, 1875.]

Brief.—A steam-jet can be thrown upon the crackers within the oven at will.



1. The combination, with a baker's oven, of a steam-jet pipe, N n, occupying a horizontal position within the oven, and controllable by a cock, O, in the manner set forth.

2. The combination of oven A I, rod B, controllable driving-gear D E F G H, and a steam-jet device, N n O, within the oven or oven-mouth, and under the control of the oven-man, substantially as set forth.

165,815. PIPE-STEMS. Henry C. Fritz, Chester, Pa. [Filed July 1, 1875.]

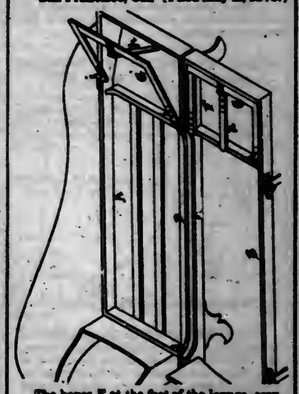
Brief.—The inside stem, through which the smoke is drawn, is of metal, and the exterior stem is of wood, and has side openings in it, to permit the metal stem to be exposed to the atmosphere to keep it cool.



1. A double pipe-stem consisting of an exterior and interior stem, the former having a lateral air-passage, substantially for the purpose set forth.

2. The combination, with a pipe-bowl, A, and mouth-piece B, of the exterior stem C, slotted longitudinally, as described, and the interior stem D placed therein, substantially as and for the purposes herein set forth.

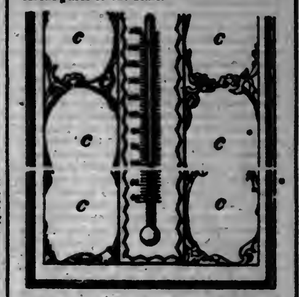
165,816. RED-LOUNGES. Wm. H. L. Gabbs, San Francisco, Cal. [Filed May 11, 1875.]



The bones F at the foot of the lounge, serving as braces, and having the frames or covers G, hinged at *i*, and provided with the adjusting-standards *k*, the covers serving as adjustable pillows, substantially as described.

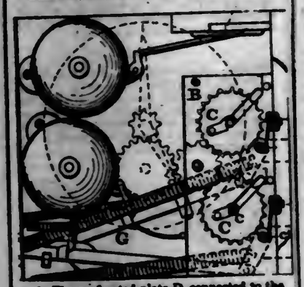
165,817. THERMOMETERS. Gammon Gano, Cincinnati, Ohio. [Filed Nov. 28, 1874.]

Brief.—Illustrated cards are fixed to the back plate, said cards representing scenes indicative of various temperatures, corresponding with indications of the mercury at different parts of the scale.



A thermometer-back consisting of a metallic plate, B, and pictorial card C, affixed, printed, or otherwise produced thereon.

165,917. TIRE-CHECKS. Henry Greene, Philadelphia, Pa. [Filed May 14, 1875.]



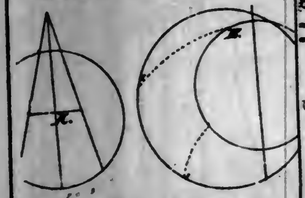
1. The perforated plate D, connected to the alarm-operating bar G, and swinging toward the register-drum B, substantially as and for the purpose set forth.

2. The guide-plate E, with indenting openings *d*, in combination with the swinging plate D and alarm-operating bar G, substantially as and for the purpose set forth.

3. The register-drum B, removably fitted to the frame c, and the confining-clamp C operating therewith, substantially as and for the purpose set forth.

4. The marker, constructed with a point, *f*, and shoulders *g h*, substantially as and for the purpose set forth.

165,918. CYCLOPEDES. R. C. Gwathmey, Louisville, Ky. [Filed May 10, 1873.]

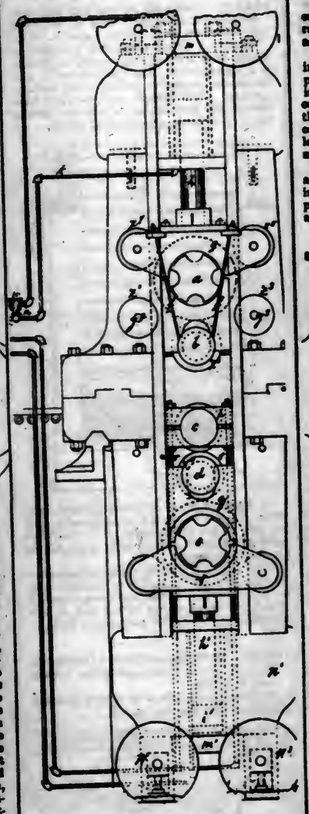


[Ordered to issue by the Court.]

A combination of four bodies or systems of bodies, which will be called applying bodies, and which, in virtue of certain properties of size, shape, and position, will be effectual for holding objects, particularly objects formed with such surfaces as could be imparted by being turned in a lathe, and for other purposes. These properties are as to position, first, that the applying bodies shall be in relation each to an axis, which axis shall be perpendicular to the plane in which the bodies move; second, that these axes shall constitute two pairs; third, that the two constituent axes of each pair shall be fixed relatively to each other; fourth, that the distance between the axes of one pair shall be equal to the distance between the axes of the other pair; fifth, that one or both pairs of axes shall revolve around a point at a finite or infinite distance; sixth, that a radiant line from each point of revolution shall bisect at right angles a line connecting the middle point of a straight line, which connects the two of one pair with the middle point of a straight line which connects the two axes of the other pair, while at the same time the two straight lines connecting each pair shall be reciprocal if necessary, meet the aforesaid radiant line at the same point. The proportion as to size and shape are, first, that the four applying bodies shall have their centers that lie in the same plane perpendicular to their axes circular around their respective axes, and of the same diameter, at least, as to each of their surfaces as are applied to objects; second, any deviation from such size and shape to suit any particular purpose, such modification being available from the relation of the applying bodies to the above-described ones; and, third, that the objects to be held or acted upon by the applying bodies shall be formed in adaptation to the shape of the applying bodies when necessary, such applying bodies to be attached in any way to any machinery that will hold them in the required position, and communicate to them the required movement.

165,919. ROLLING-MILLS. Ignatius Hahn, Pittsburg, Pa. [Filed Feb. 24, 1876.]

Brief.—Five rolls in the same vertical plane, of which the outer two, adjusted and sustained by hydraulic power, are supporting-rolls, and the three interior, of small diameter, working-rolls, all driven positively,—the smaller by the larger through belts, and capable of two passes,—between the middle and upper one, and between the middle and lower one, of the small rolls, the series being readjusted after each pass. Rolls of unusual length, and made in sections, being contemplated, the two outer rolls have at intervals between the bearings anti-friction journal-bearings, of which those connected with the lower roll are adjusted and sustained by screws, and those connected with the upper roll by hydraulic power.



1. In mills for rolling metals, the combination of three small work-rolls, *b*, *c* and *d*, with one large roll, to the outside of and in line with each of the outer intermediate rolls *b d*, the central roll *c* being of equal or less diameter than its next adjoining ones *b d*, substantially as and for the purpose specified.

2. In combination with the outer bracc-rolls, three intermediate work-rolls of less diameter, one or more of the intermediate rolls being driven by belting, substantially as and for the purpose specified.

3. In combination with two rolls which move together, and the belting for driving the same, four or more fixed pulleys, and two or more pulleys moving with the rolls, substantially as and for the purpose specified.

4. In combination with a pulley secured to the shaft of a driven roll, four or more fixed pulleys and the belt for driving the roll, the belt being applied to the entire circumference of the pulley of the driven roll, substantially as and for the purpose specified.

5. The combination of the adjustable rolls *b*, *c*, and *d*, having suitable riders, with pistons working in cylinders formed in or secured to the housings, for raising and lowering the rolls, substantially as specified.

6. The combination of a fixed feed-table and three or more rolls, adjustable in relation to one another and to the table, substantially as and for the purpose specified.

7. In combination with an adjustable roll, a hydraulic piston and cylinder, and a series of pipes for admitting fluid to both sides of the piston, so that the roll may be raised and lowered and held stationary by hydraulic power, substantially as and for the purpose specified.

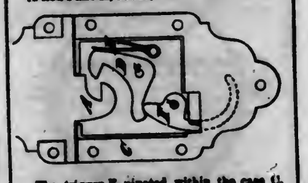
8. In combination with the outer rolls *a c*, the supports D^2 D^2, operated by pistons working in cylinders, substantially as specified.

9. In combination with the fixed table, three or more rolls, *b c d*, and the mechanism for raising and lowering the rolls, substantially as and for the purpose specified.

10. The combination, substantially as herein described, with the several pistons, of four pairs of inlet and outlet valves, all mounted in a common axial line, each pair secured to a common shaft, and independent of the others, the outlet-valves of each two pairs communicating with a common outlet-pipe, and the inlet-valves of the two intermediate pairs communicating with a common inlet-pipe.

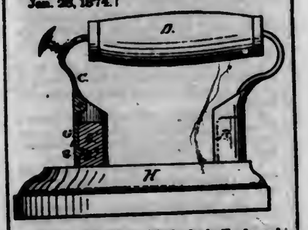
11. The check-valve *w*, in combination with a double line of pipes, one of said pipes leading to the side of the piston against which the pressure in rolling is exerted, substantially as and for the purpose specified.

165,920. FASTENINGS FOR TRUNKS, &c. Joseph Hall, Newark, N. J., assignor to himself and John Reebach, Geneseo, N. Y. [Filed June 11, 1876.]



The trigger F, pivoted within the case G, and constructed to move in a plane parallel with the front of the trunk, in connection with the elbow latch-lever D, pivoted to the pin *c*, the spring E, and the hook A, the whole being constructed and arranged to operate as and for the purpose described.

165,921. SAD-IRONS. Enoch M. Harris and Michael H. O'Neil, Richmond, Va. [Filed Jan. 28, 1874.]



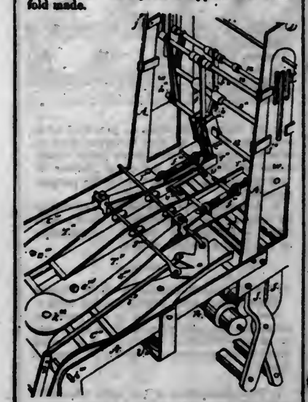
The combination, with the body H of a sad-iron, constructed with lugs E E', the forward leg E' being provided with a notch, F', as described, of a bow or handle, C, having an arrangement F F', adapted to embrace the legs E E', and a curved lever, G, pivoted within its forward leg, formed with a catch, G', at its lower end, and operated by a button, G^2, and spring G^3, the whole being constructed and operating substantially as shown and described.

165,922. MODES OF TANNING LEATHER. G. W. Hatch, Lawrence, Kans. [Filed May 4, 1875.]

As an improvement in the art of tanning, the employment or use of the shrub or plant known as *Ephedra antisyphilitica*, substantially as set forth

165,922. PAPER-BAG MACHINES. James Hatfield, Cincinnati, Ohio. [Filed Aug. 25, 1874.]

Brief.—Paper tube is delivered through feed-rolls with end slightly open. The end is spread by descending spreaders, and held by sliding pins while paste is applied and final fold made.



1. Two swinging levers, *f'' f''*, combined with suitable operative mechanism to cause said levers to descend into and separate the end of the tube, substantially in the manner set forth.

2. The spreading-levers *f'' f''*, provided with adjusting-plates *h*, friction-rollers *e''*, lugs *f'*, combined and operating substantially as and for the purpose set forth.

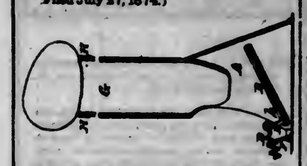
3. The reciprocating fingers *v'' v''*, arranged in pairs to approach each other from opposite sides without meeting, so as to leave uncovered the center line of the bag-bottom, and permit the central surfaces of the triangular side folds, and of the bottom, to be pasted together before the fingers are retracted, substantially as described.

4. The holders T^v T^v, adjustably mounted upon the vibrating frame J'', and combined with suitable spreading, pasting, and folding mechanism, for the purpose set forth.

5. Combined with the holders T^v T^v, the arms *r'' r''*, pivoted to said holders, and provided with the fingers *v'' v''*, and suitable mechanism, to transmit motion from their cam to said fingers, substantially as set forth.

6. Combined with the oscillating arms *r'' r''*, provided with the fingers *v'' v''* and adjusting-screws *f''' f'''*, the rods 1^{vv} and *g''*, with adjustable couplings *s''' s'''*, bell-crank *w''*, and cam-rod *t''*, substantially as set forth.

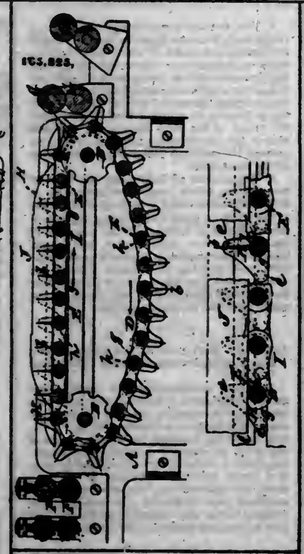
165,924. BED-TESTERS. William Henckler and Heinrich A. Troegeler, Kirkwood, Mo. [Filed July 27, 1874.]



The open-front case A, having adjustable reflector B, in combination with the vertical tubes G, substantially as set forth.

165,925. HEMP AND FLAX MACHINES. C. Herrschaft and James Lawrence, Brooklyn, N. Y. [Filed May 20, 1874.]

The toes H on the bars E, which carry the combing-pins, made with straight edges *g*, in combination with the rollers *b* and upper and lower guides I J, holding-rolls F F, and delivering-rolls G G, all constructed and operating substantially as and for the purpose herein set forth.



165,926. CAR-COUPLINGS. Phillip Hien and John Koch, Rock Island, Ill. [Filed June 2, 1875.]

Brief.—Each draw-head is provided with an open socket for the reception of a ball-link, the opposite end of which is secured in a socket in the opposite draw-head.



1. The draw-head constructed with the open socket *b*, in combination with the ball-link D, permanently confined at one end in socket *a*, substantially as and for the purpose specified.

2. The links D, constructed with the two balls and curved handle D', substantially as set forth.

3. The draw-head constructed with the double recesses *a* and *b*, and the recess *c*, and hole *d*, for coupling with either the link D or the ordinary coupling-link, substantially as set forth.

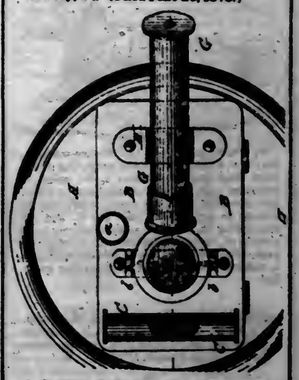
165,927. STOP-COCKS. Timothy Holland, New York, N. Y. [Filed July 1, 1875.]

Brief.—The valves are forced against their seats by means of two rollers acting against the surfaces of triangular wedges secured on opposite sides of the valve-casing.



The combination of the rollers J J, attached to the backs of the valves or valve-plate I I, the fixed inclines H H in the valve box or chamber, the valve seats or bearings *b b*, and the valve-operating screw-stem G, all substantially as shown and described.

165,928. TRANSITS. Simeon Holton, Middlebury, Vt. [Filed June 26, 1875.]



1. In a transit, the hinged plate B, supporting the telescope and reflector, and provided with the level C, and adjusted by means of the set-screw *a*, as and for the purposes set forth.

2. The combination, in a transit, of the hinged adjustable bed-plate B, rocking reflector D, and telescope G, as and for the purposes herein set forth.

3. The combination of the base A, hinged bed-plate B, with adjusting-screw *a*, level C, rocking reflector D, and telescope G, having one or more lines *i*, in focus of its eye-piece, all substantially as and for the purposes herein set forth.

165,929. FARE-REGISTERS. W. H. Hornum, New York, N. Y. [Filed Apr. 2, 1875.]



1. The combination of a casing, a bell, and a striking mechanism arranged therein, and a finger-wheel, the face of which is divided into ten sections bearing different colors and numbered from 0 to 9, substantially as described, whereby whenever the finger-wheel is turned its projections operate the striking mechanism and sound an alarm, as set forth.

2. The combination of the casing divided into two compartments, and having apertures in its back plate, the finger-wheel and alarm mechanism arranged in said casing, and a registering mechanism arranged in the rear compartments of the casing, substantially as described, whereby the single fares taken can be read through the face-plate, and the entire number of fares can be read through the back plate of the casing, as set forth.

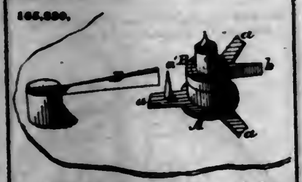
3. The combination of a bright plate or disk with the hammer of the striking mechanism, with the finger-wheel, and with an opening in the face-plate of the case, substantially as described, whereby the motion of the hammer can be observed, even if the sound of the bell should not be heard.

4. The combination of a lever-clamp, constructed substantially as described, with the lid of a receptacle containing transfer-tickets for the purpose of facilitating the operation of tearing off said transfer-tickets, substantially as set forth.

165,930. ESCAPEMENTS FOR WATCHES. J. B. Hopkins, Washington, D. C., assignor of one-half his right to Wm. D. Colt, same place. [Filed July 14, 1875.]

Brief.—A stop mechanism, as set forth in the claim, is employed to prevent overbanking of the balance.

165,800.



In combination with the balance-wheel A, the pin *a'*, secured within and projecting downward from one of its arms *a*, the collar B, journaled upon the staff of said balance-wheel, and provided with the arm *b*, which may be caused to engage with said pin *a'*, and the stop-spring D, fixed to some relatively-fixed portion of the watch movement, so as to engage with and arrest the motion of said arm *a*, substantially as and for the purpose specified.

165,801. BARREL-ARBORS FOR WATCHES. J. R. Hopkins, Washington, D. C., assignor of one-half his right to Wm. D. Colt, same place. [Filed June 9, 1876.]



A going-barrel attached to or upon a staff which works in a hollow winding-arbor, and has its principal bearing in the same, substantially as and for the purpose specified.

165,802. FARE-REGISTERS. W. H. HOPKINS, New York, N. Y. [Filed May 26, 1876.]

Brief.—Sliding trigger attached to a swinging plate can be placed in position to act upon any one of the sets of register-wheels, registering fares of different amounts.



1. The sliding trigger B, moving in a guide-slot in the front plate of the case C, in combination with two or more levers, *g*, *g'*, and corresponding registering-wheels F F', substantially as shown.

2. The sliding trigger E and hinged front plate D of the case C, in combination with the registering devices F F' F'', one or more, and with a bell and hammer or other alarm, substantially as set forth.

3. The sliding trigger E and hinged front plate D of the case C, in combination with the registering devices F F' F'', one or more, and with the general registering mechanism J K, substantially as and for the purpose shown and described.

165,803. METHODS OF IMPOSING AND PRINTING FROM NEWSPAPER FORMS. William D. Hughes, Philadelphia, Pa. [Filed Sept. 18, 1874.]

1. The method hereinbefore described of perfecting from one form at one impression two newspapers, each of which shall contain news or other matter not in the form when the first side of the two papers of each impression was printed, namely, by inserting before printing the second side of double sheets the later news or other matter in two opposite pages of the form from which the first side of the double sheets has been previously printed, the said form comprising all the pages of the newspaper.

2. The method of facilitating the issue of newspapers, which consists substantially as hereinbefore described, in putting all the pages of the paper to press and printing one side of double sheets in advance of the insertion of the latest news or other matter, then inserting such later matter in duplicate in the same form, and printing the second side of the double sheets, the latest news or other matter thus inserted appearing in both copies of the paper perfected at one impression.

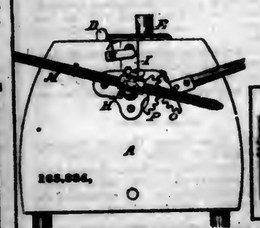
165,804. BUTTER-WORKERS. Moses Hutchinson, Owatonna, Minn. [Filed June 7, 1876.]

Brief.—A mounted shell or barrel, horizontally fixed, semi-cylindrical, the upper part narrowing in straight lines; a longitudinal axial shaft, carrying a dasher at its periphery, and vibrating between the angular parts of the shell; an external crank-shaft and gearing; also, a double lever hald adjustably within a sleeve removably attached to the main shaft for optional use, the top having descending pins to receive the impact of the forming butter, and wedged in by a blade, that also serves as a break for the current.

1. In the butter-worker, substantially as herein described, the chamber B, having a rounded bottom, *b*, inclined sides *b'* and *b''*, and cover C, attached as shown, and provided with pins *c* and ventilator E, the whole combined substantially as and for the purposes set forth.

2. The shaft F, constructed and carrying the paddle *g*, as described, and journaled or pivoted and combined with the plates H and I, wedge I', and arm K, substantially as and for the purposes set forth.

3. In the butter-worker, substantially as herein described, the shaft F, the detachable sleeve I, and double lever-arm M, arranged and combined with the paddle G *g*, so that a vibratory motion of the paddle may be easily produced, substantially in the manner and for the purposes set forth.



4. In combination with the mouth of the chamber B, formed by the beveled edges of the sides *b'* and walls A, the cover C, with beveled edges *c*, and wedge D, substantially as and for the purposes described.

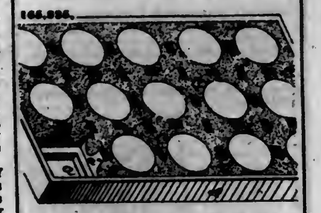
5. The combination of arm N, segment-gears O P, and shaft F F' and paddle G, substantially as and for the purposes set forth.

6. In a butter-worker, substantially as described, the combination of the rounded bottom *b*, sides *b'* *b''* and cover C *c c'*, wedge D, ventilator E, shaft F F' and paddle G *g*, whereby a free air-space is allowed over the cream, and all right-angled points are obviated, substantially as described.

165,805. ILLUMINATING-TILES. T. Hyatt. New York, N. Y. [Filed July 3, 1876.]

Brief.—An illuminating paving or roofing tile in which the cross-bars have the form of inverted arches, the abutments of said arches being flush with the upper surface of the tile, and in connection with a filling of cement and emery, and the illuminating-lenses form the wearing-surfaces.

165,806.



1. An illuminating-tile, A, provided with cross-bars *a'* and *a''*, that have the form of inverted arches, the abutments *a''* of which arches are flush with the upper surface of said tile, substantially as and for the purpose specified.

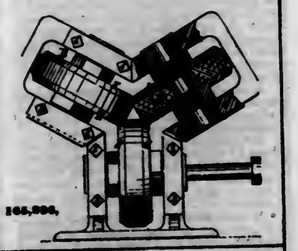
2. An illuminating-tile having a portion of its upper surface composed of emery combined with cohesive material, substantially as and for the purpose shown.

165,806. CANDY-SPINNING. S. B. Hymer, Terre Haute, Ind. [Filed Apr. 14, 1876.]

Brief.—The candy is fed to the space between the touching wheels. This space may be of any contour. Wheels have a central disk (which touches the candy) of wood or rubber.

1. The combination of the three wheels B, arranged to revolve together by frictional contact at or about one hundred and twenty degrees with respect to each other, substantially as and for the purpose described.

2. A wheel for spinning candy, having its face made of rubber, wood, or other non-conducting and non-adhesive material, substantially as and for the purpose described.



165,807.

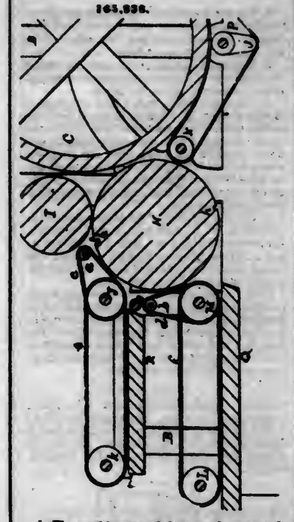


165,807. APPARATUS FOR HYDRATING GASES. Barton H. Jenks, Philadelphia, Pa. [Filed June 10, 1875.]

In an apparatus for hydrating gases, the combination of a gas-generator, an absorber provided with a series of perforated separating-plates, having overflow-spaces on alternate sides or ends of the absorber, or both, a water-supply pipe leading into the top of the absorber, an exit-tube for the gas, having its exterior opening within the water-supply pan of the absorber, and a water-cooled pipe connecting the bottom of the absorber with a storage-tank, substantially as set forth.

165,808. ROTARY PRINTING-PRESSES. C. Kahler, Chicago, Ill., assignor to himself, M. C. Rhines, W. L. Ogden, W. Bryerts, and Philipp Emrath, same place. [Filed Apr. 17, 1875.]

165,836.



1. The combination of the tapes I, supported upon the shafts N, O, and P, with the main cylinder C and the cutting-cylinders H I, for holding the paper against the main cylinder, giving uniform margins, and steadily delivering it to the discharge apparatus, substantially as specified.

2. The tapes *e*, in combination with the nipper-belts *c* and the cylinder H, substantially as and for the purpose described.

3. The combination of the tapes *d* with the nipper-belts *f*, cylinder H, and fly-board Q in a double-delivery press, elevated for taking the lower paper from the cylinder at the quarter turn from the center, substantially as set forth.

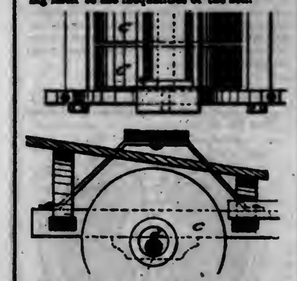
4. The combination of the tapes *e d* and nipper-belts *c f* with the cylinders H I, substantially as and for the purpose specified.

5. The steady-bearers *i* on the type-cylinder, between the curved stereotype-plates, to prevent the impression-cylinder from pressing into the spaces between the plates and spaces left for margins, and for preventing blurred printing, and giving a steady and uniform motion between the type-cylinder and impression-roller, substantially as specified

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165,839. LAND-ROLLERS. Julius A. Kesler, Olatha, Kans. [Filed June 9, 1875.]

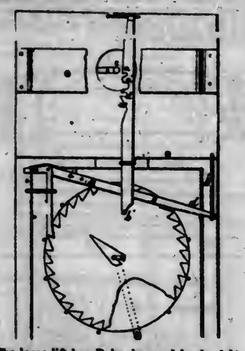
Brief.—The roller, as a whole, is made up of short sections mounted upon a shaft of much smaller diameter than the opening in the center of the roller, so that each section will act independently of all the others, thus adjusting itself to the inequalities of the soil.



In a land-roller, a series of wheels or rollers, C, having enlarged central apertures *d d*, and revolving around a common axis, substantially as and for the purposes herein set forth.

165,840. CLOCK-CALENDARS. Lathe S. Kellogg, Leon, N. Y. [Filed May 22, 1875.]

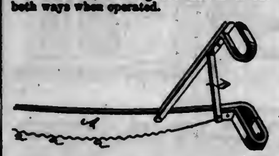
Brief.—The lift-bar is carried up by the revolution of the hour-hand shaft, and actuated by its connecting devices, the ratchet-wheel carrying the calendar. The incline below the notches permits the bar to drop to its first position.



The loose lift-bar B, having end hooks *b b'*, and notches *a a' a''*, combined in a calendar-clock, with the hour-hand shaft and lever D, as and for the purpose described.

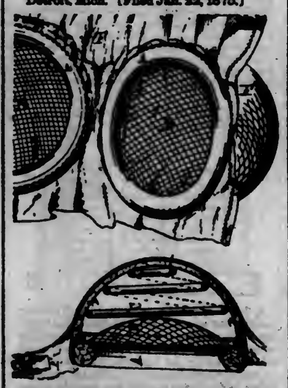
165,841. HAY-KNIVES. Russel Kellogg, Battle Creek, Mich., assignor to himself and James D. Kellogg, same place. [Filed June 18, 1875.]

Brief.—The claim sufficiently points out the invention—corrugating the edge to form rounded teeth, enabling the knives to cut both ways when operated.



The hay-knife A, having its edge corrugated to form the rounded teeth *a a*, and sharpened its entire length, so that the knife will cut both ways, substantially as herein set forth.

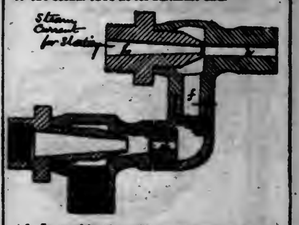
165,842. BONGE-FORMS. Elizabeth Lesteh, Detroit, Mich. [Filed Jan. 22, 1875.]



A bosom-form, consisting of the upholstered ring A, straps B D E, and spiral spring C, constructed and arranged substantially as and for the purpose set forth.

165,843. INJECTORS. Geo. H. Little, Peabody, Mass. [Filed Aug. 20, 1874.]

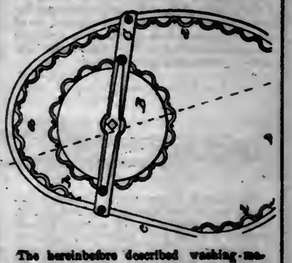
Brief.—Combines with an injector, an ejector, *f f' h*, constructed as shown, with the bore *h* of continuous larger diameter than the smaller end of the continuously-tapering bore *g*, the ejector being applied and arranged in relation to the injector, as shown and described.



1. In combination with an injector, an ejector, *f f' h*, constructed as shown, with the bore *h* of continuous larger diameter than the smaller end of the continuously-tapering bore *g*, the ejector being applied and arranged in relation to the injector, as shown and described.

2. In combination, the steam-tube for forcing water, the auxiliary tube for drawing water at starting, and the priming-chamber *c*, all substantially as shown, and for the purpose described.

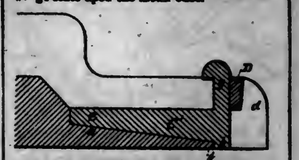
165,844. WASHING-MACHINES. M. Loughran, Allegheny, Pa. [Filed June 19, 1876.]



The hereinbefore described washing-machine, consisting of the tub A, of an oval or egg-shaped form, having a small end, *a*, and a larger end, *b*, and fattened side *c*, said tub being provided with a corrugated cylinder, B, pivoted in the smaller end *a*, substantially as and for the purpose set forth.

165,845. RAILROAD-RAIL CHAIRS. Richard C. Ludlow, St. Louis, Mo. [Filed June 30, 1875.]

Brief.—A rail-chair consisting of a metal seat, the upper outer edge of which hooks over the outer curve of the tread of the rail, and the inner base of which forms an inclined surface, upon which rests an adjustable clamp, having its upper portion made to hook over the inner upper edge of the base of the rail; said clamp-plate being tightened up to the rail by a wedge inserted between it and two wedge-seats upon the metal base.



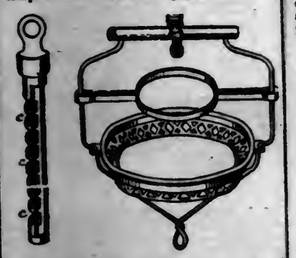
1. The bed-plate having the flange C, recess *c*, under cut *b*, and hooks or wedge seats *d*, substantially as specified.

2. The lever-jaw C' having the tongue *e*, hook-flange *g*, and catch-flange *h*, substantially as specified.

3. The combination with the flanged and recessed bed-plate of the lower jaw C', having the tongue *e* and the key D, substantially as specified.

165,846. EXTENSION-FIXTURES FOR LAMPS AND CHANDELIERS. George R. Lyon, Chicago, Ill., assignor to R. G. Case, same place. [Filed Jan. 13, 1875.]

Brief.—The hook engages in the slots, and holds the lamp at different elevations. The spring insures the engagement of the hook by horizontal pressure, and aids to support the lamp when the hook is disengaged.



The combination, with a lamp or chandelier frame, of the rod B, having the hook *a*, and sleeve C, having slots *c*, the whole being inclosed in the spiral spring D, as and for the purpose set forth.

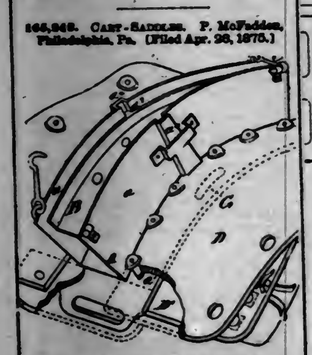
165,847. DOOR-CHECKS. James H. McClymonds, Winchester, Ky. [Filed June 9, 1875.]

Brief.—The claim sufficiently points out the invention. The beveled and notched tip of one bar catches into a spring-box arranged upon the other, to hold the door automatically against jarring or slight pressure.



The plate C, carrying the outwardly projecting box, or case D, having pivoted plate E, downward projection *h*, and spring *e*, in combination with the plate C, carrying catch-bar J, having notch *d*, and beveled end *c*, all substantially as and for the purpose herein set forth.

165,848. CART-SADDLES. P. McFadden, Philadelphia, Pa. [Filed Apr. 26, 1875.]



1. The cart or dray saddle-bridge A, having the lateral flanges *g* cast upon and forming a part thereof, for the attachment of the hames, substantially as described.

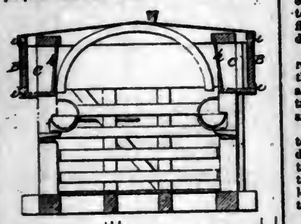
2. The yielding chain-support B, in combination with the saddle-bridge A, containing springs upon which said support rests, substantially as described.

3. The adjustable pad-shields D', in combination with the housings D, substantially as specified.

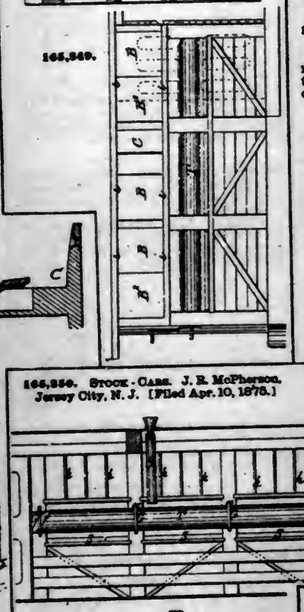
4. The improved pad G' for cart-saddles, having the internal divisions *g' g'*, substantially as and for the purpose described.

165,849. STOCK-CARS. J. R. McPherson, Jersey City, N. J. [Filed May 25, 1875.]

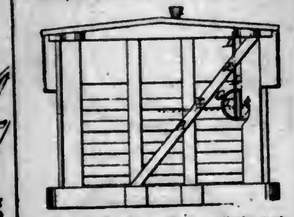
The combination, with a stock-car having a crib or feed-box, C, under the roof thereof, and built partially within and without the walls of the car, and occupying the wall-space above the water-troughs, of the sliding sectional doors B, the ways *i i* therefor, and the closed wall-sections B' between the wall-posts and the ways, substantially as and for the purpose herein set forth.



165,849.



165,850. STOCK-CARS. J. R. McPherson, Jersey City, N. J. [Filed Apr. 10, 1875.]



1. The combination, with the wall of a stock-car and the recessed studs thereof, of a trough rotatable within a circle to bring it partially within the space occupied by the wall-studs when in position for watering stock, and nearly wholly within the inner wall line when in position to discharge its contents into the sheds, whereby a trough without a side line of hinges is combined with the car-wall in a manner to leave the wall-posts in contact while occupying the least room within the car, substantially as herein set forth.

2. The combination of the water-trough to revolve about its own axis-line of fixed embracing guides C and the side walls of the car, substantially as set forth.

3. The combination of the axially-rotating water-trough with embracing guides and stay-loops *e*, substantially as set forth.

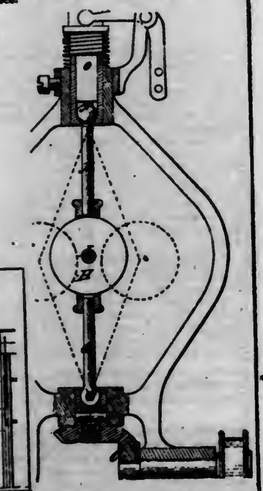
4. The combination, with a fixed water-shed, S, of a trough, T, rotatable about its own axis within a circle to bring it partially within the space occupied by the wall-studs when turned down to water the stock, and with its inner edge a carried by said rotation down to the water-shed flange *f*, whereby a projecting trough-flange is dispensed with, and the trough rendered much lighter.

5. The combination of water-trough made to revolve about its own axis, fixed guideways, the inner wall of the car, lever I, guide-bar A, and stops *c d*, whereby to turn and lock the trough in either its horizontal or vertical positions, substantially as set forth.

6. The combination of a water-trough made to revolve about its own axis, fixed guideways, directing-lever, stop-shoulders *b* in the wall of the car, against which the inner edge of the trough abuts, and a stop-pin, *c*, whereby to lock lever and trough into its horizontal position, substantially as set forth.

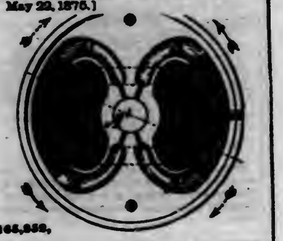
165,851. STEAM-GOVERNORS. Wm. Main, Stratford, England. [Filed July 18, 1874.]

Brief.—The center of gravity of the ball is not within the axis of rotation. The ball is thrown out more and more as the speed increases.



The combination, with the pivoted spindle G and the spindle M, connected with the valve-operating spindle O, of the single divided governor-ball H K, pivoted between the spindles, substantially as described, and the whole constructed to operate in the manner and for the purpose specified.

165,852. LOOMS PULLEYS FOR SHEDDING. Chas. H. Mellor, Philadelphia, Pa. [Filed May 20, 1875.]

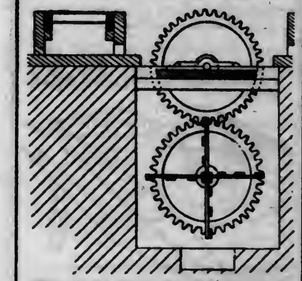


165,852.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

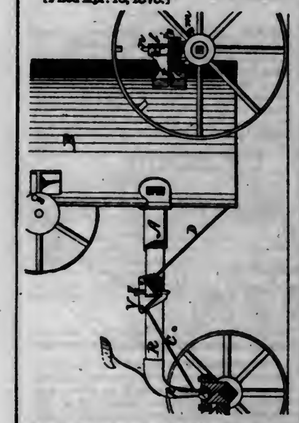
The combination, in a loose pulley, of an oil-reservoir formed within or attached to the pulley and curved oil channels or guides leading from the outer portion of the oil-reservoir to the inner surface of the hub, substantially as set forth.

165,853. LIQUID-MIXERS. John B. Meyers, New Orleans, La. [Filed May 22, 1875.]



The combination, with a vat and rotary mixing-wheel, of a series of supply-boxes, B, having channel-ways leading into vat and discharging on the wheel, as and for the purpose described.

165,854. CARRIAGES FOR PORTABLE ENGINES. Cassius M. Miller, Phelps, N. Y. [Filed Apr. 16, 1875.]



1. In a carriage for portable engines, the combination of a socket upon the front axle, with the reach E having a bifurcated rear end and downwardly-bent front end terminating in a ball adapted to operate in connection with the axle-socket, substantially as and for the purpose set forth.

2. In a carriage for portable engines, the rods C D, combined with the boiler, the reach, and the block V, substantially as and for the purpose set forth.

3. In a carriage for portable engines, the combination of the forward axle and wheels, with the bent reach E and the screws *v v*, substantially as and for the purpose described.

4. In a carriage for portable engines, the tool-box A, combined with the boiler B and the reach E, and arranged between the bifurcated arms of the reach, substantially as described, for the purpose of strengthening the latter and forming the whole or a part of its connection to the boiler.

5. In a carriage for portable engines, the set-screws *m*, combined with the draft-wheels and axles, substantially as and for the purpose described.

6. In a carriage for portable engines, the combination of the clips *c*, rear axle, and clamping-screws *o w*, substantially as and for the purposes described.

7. In a carriage for portable engines, the brackets *b*, provided with the tubular arms *b'*, in combination with the pintles *a*, set-screws *f*, and carriage-springs, substantially as and for the purpose described.

8. In a carriage for portable engines, the combination of the carriage-springs, axle, and a locking device to lock the springs at will and prevent them from operating, substantially as described.

9. In a carriage for portable engines, the combination of the draft-wheels and axle with a locking device to lock the wheels to the axle, substantially as described.

10. In a carriage for portable engines, the combination of an arching reach, with the forward wheels adapted to swing under the reach, and with a locking device by which either forward wheel can be locked to the reach to support the latter and keep the wheels from moving, substantially as described.

165,855. OVENS FOR FIRING POTTERY. T. W. Minton, Stoke-upon-Trent, England. [Filed Feb. 6, 1874.]

Brief.—A drying-chamber is located above the burning-oven.



The combination of a series of fire-places, the vaulted oven, into which the products of combustion ascend from the fire-places, the oven-floor provided with openings, horizontal flues, upright flues in the walls of the oven, a second chamber or upper oven, into which the upright flues project, and its chimney, these members being constructed and operating substantially as set forth.

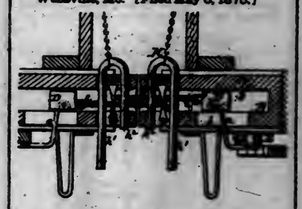
165,856. SASH-HOLDERS. Patrick Mullane, Davenport, Iowa. [Filed June 19, 1875.]

Brief.—A roller, held in a pivoting wire loop, is arranged to work in a notch with unequally inclined sides cut in the sash, and is locked by dropping into a suitable notch of the window-frame; there being also a groove and hole in the side bar of the sash, and an outwardly-extending cord and tassel, by which the device is operated.



1. The combination of the roller D, the pivoting wire loop E, and the cord F with the notch C, having unequally-inclined sides, the groove *c'*, and the hole *c''*, formed in the side bar of a window-sash, B, and with the casing A, substantially as herein shown and described.

165,857. CAR-COUPLINGS. L. R. Musick, Wellsville, Mo. [Filed May 6, 1875.]



1. A draw-head, B, provided with projecting curved or beveled side flanges C C, substantially as and for the purposes herein set forth.

2. The combination, in a car-coupling, of the sliding block D, with the coupling-link *d* connected thereto, the rod *e*, lever E, bent rod *h*, and lifting-rod G, all substantially as and for the purposes herein set forth.

3. The self-acting gravitating-latch *h*, pivoted to the bottom of the draw-head, in combination with the U-shaped pin H, all substantially as set forth.

165,858. MILK-STRAINERS. Fred L. Oliver, Friendship, N. Y. [Filed May 17, 1875.]

Brief.—The cover is funnel-shaped and reversible. A flange upon its side fits the cylindrical vessel. The neck of the funnel is cylindrical, its mouth being a strainer. Within this neck is let down by its ball a short cylinder, having a coarser preliminary strainer on its upper end.

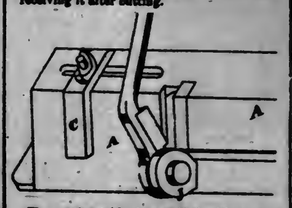


1. A funnel-shaped strainer, B C D, with an annular flange, E, attached to its under side, and tightly fitting the interior of the mouth of the can A, as and for the purpose set forth.

2. The removable preliminary strainer F G H, constructed as described, and inserted below the margin of the cylindrical neck C of the funnel, for the purposes set forth.

165,859. MACHINES FOR CUTTING PRINTERS' LEADS. John A. T. Overend, San Francisco, Cal. [Filed May 11, 1875.]

Brief.—The face of the cutting-table is inclined, and in two planes, the higher part supporting the lead before cutting, the lower part receiving it after cutting.

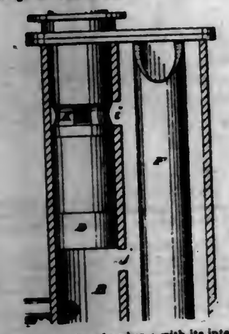


The cutting-table A, provided with an inclined face having two different levels, in combination with the longitudinal strip B and adjustable stop C, all constructed to operate substantially as and for the purpose set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

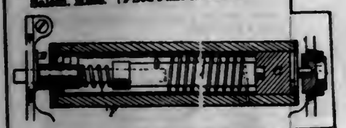
165,860. HEATERS AND FEED-PUMPS FOR BOILERS. John A. T. Overend, San Francisco, Cal. [Filed June 9, 1875.]

Brief.—The water is heated in the side vessel by steam. It passes into the pump-cylinder through two openings. The upper opening connects with the bottom of the cylinder through the hollow plunger. The plunger descends, closes the two openings, and ejects the water through the bottom exit.



The condensing-chamber *c*, with its interior pipe F, in combination with the pump-chamber B, having the two passages *i* and *j*, and the chambered plunger D, with its passage K, substantially as and for the purpose herein described.

165,861. CURTAIN-ROLLERS. P. W. Phillips, Salem, Mass. [Filed June 11, 1875.]



In combination with the shade-roller and shaft, the spring F and sleeve D, provided with a lug, *d*, said sleeve fitting over the end of the shaft, and extending through the cap E, which is provided with a ratchet or stops, *a*, with which the lug or pin *d* is automatically engaged and disengaged, as described, for the purpose of locking or unlocking the shade-roller upon its shaft, substantially as described.

165,862. CARBURETERS. John A. Pierce, Philadelphia, Pa. [Filed June 9, 1875.]

Brief.—The air-reservoir, stationary and open-bottomed, is placed within a tank of water. A back-pressure pipe, having a stop-cock, extends from the top of the carburetor to the top of the air-reservoir.

1. The combination of a condensing air-pump communicating with a stationary open-bottomed air-reservoir, a water-tank surrounding the air-reservoir, a connecting air-pipe, and a hydrocarbon chamber, substantially as set forth.

2. The combination of a stationary open-bottomed air-reservoir surrounded by a water-tank, an air-pipe connecting the air-reservoir with the lower portion of a hydrocarbon-chamber, and an independent back-pressure pipe and valve connecting the upper portions of the air-reservoir and hydrocarbon-chamber, substantially as set forth.

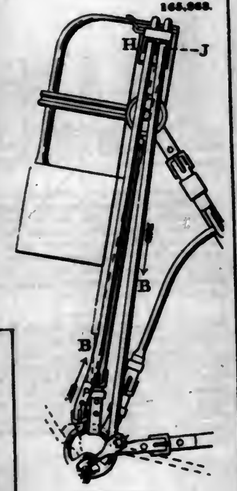
165,863. BRIDLE-BITS. Wm. A. Pierson, Valley Forge, Pa. [Filed June 12, 1875.]

1. The straps B, each connected to one side of the bit, extended over the headstall, and passed through a pulley-block on the other side of the bit, substantially as and for the purpose set forth.

2. The combination, with the extended straps B B, of the two chains G, substantially as and for the purpose set forth.

3. The combination, with the extended straps B B, of the boxes H, and bearings J, substantially as and for the purpose set forth.

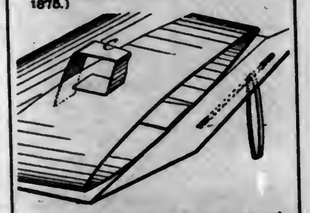
165,863.



165,864. SAFETY ATTACHMENTS FOR POCKET-BOOKS. Thaddeus Potter, Jackson, Miss. [Filed May 22, 1875.]

The combination, with head E and plate A, having rolled-up edges B, of the spring-slide C, having hooks D pivoted in the lower end of slide, and projecting through edges B, as and for the purpose specified.

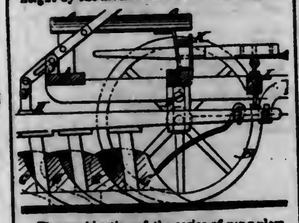
165,865. DOCUMENT-ENVELOPES. John Pritchard, Maysville, Mo. [Filed May 22, 1875.]



A document envelope or holder, composed of interior fold or pocket, open at the sides and closed at the ends, being attached to the inclosing-wrapper firmly at one side and by an adjustable connecting-band at the other, to expand and contract with the thickness of the papers, substantially as and for the purpose set forth.

165,866. GANG-PLOWS. Eugene P. Pulliam, Palmyra, Mo. [Filed Feb. 20, 1875.]

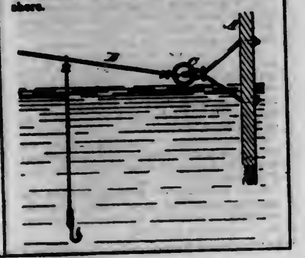
Brief.—The several plow-beams are rigid upon a rear cross-bar operated by a lever. In front they move vertically in curved and slotted hangers, having a cross-bar or yoke hinged to them, which is itself hinged to a lever, by which the plows are held up at any height by the inverted teeth of a ratchet-post.



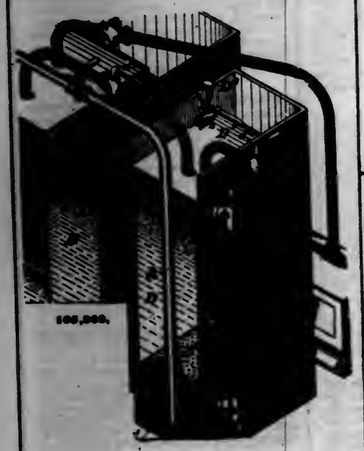
The combination of the series of gang-plow beams F, rigid rear bar H, pivoted front bar L, and slotted socket-arms E, as shown and described, to enable the altitude of all the beams to be simultaneously regulated, in the manner set forth.

165,867. FISHING AND SIMILAR FLOATS. Wm. T. Quinn, Paterson, N. J., assignor of two-thirds his right to Will Hague and J. Hague, same place. [Filed June 5, 1875.]

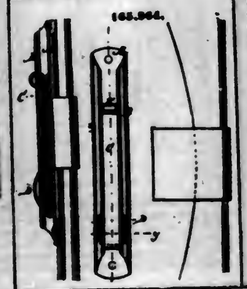
Brief.—A board loaded below, to sit upright in the water, is hung to a line, so as to be quartering, or at an angle with the line, for the current to carry it across a river or away from shore.



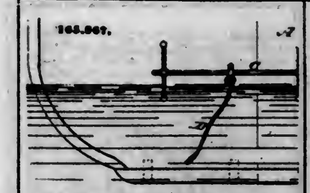
165,868.



165,864.



165,867.



The combination of a draft-line, D, and an attaching-rod, C, with a float, A, when constructed and arranged substantially in the manner described.

165,868. CUTTER-HEADS. S. P. Randolph, Tehama, Cal. [Filed Mar. 20, 1875.]

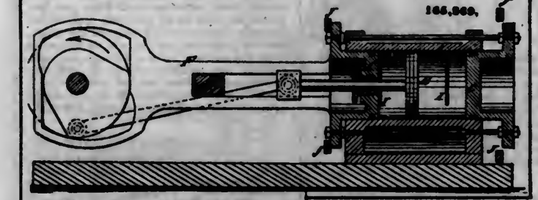
Brief.—The cutter is provided with side lips on its cutting-edge.



The end-tongued matching and flooring cutter A, having on end side lips and angular edge, as shown and described, for the purpose specified.

165,869. STEAM-ENGINES. Wm. Read, St. Cloud, Minn. [Filed Nov. 14, 1874.]

165,869.



1. The movable cylinder heads C C and mechanism, substantially as herein described, for causing the same to follow the piston and stop when they reach the steam-ports, in combination with the cylinder and piston of a steam-engine, for the object stated.

2. The combination of stops J with the movable cylinder-heads, arranged to fall behind them when steam enters the cylinder, and hold them against the back pressure of the steam, substantially as specified.

165,870. STEREOSCOPIC-PICTURE HOLDERS. James D. Rice, Philadelphia, Pa. [Filed May 31, 1875.]

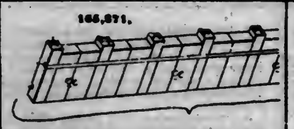


A pivoted stereoscopic-picture holder, reversible upon its axis, to expose the opposite sides, respectively, of the card to the same point of view, substantially as described.

165,871. NUMBERING PRINTING-PLATES. Thos. Richards, Sidney, Australia. [Filed May 25, 1875.]

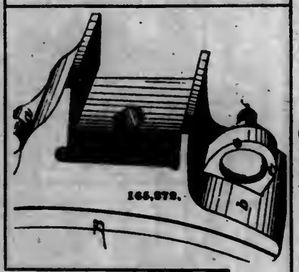
Brief.—A number of ordinary printing-types are arranged at a proper distance apart, and the spaces between them filled with blocks. The types and blocks are grooved and bound together by a rod or wire, thereby converting the types and blocks into a continuous bar. Several of these bars, having the proper figures, are bound together, and may be used in an ordinary printing-press.

165,871.



A printing-plate for numbering coupons, &c., consisting of one or more bars, B, each composed of types A and blocks *a*, arranged alternately, and secured together by means of longitudinal rods *b*, adapted to recesses formed in the sides of said types and blocks, as herein set forth.

165,872.

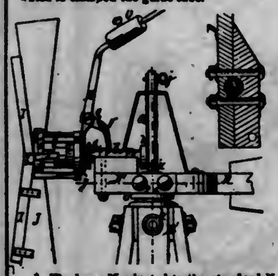


165,872. BRAKE-SHOES. Wm. Robinson, Jr., Wilmington, Del., assignor to himself and Saml. Harris, same place. [Filed Apr. 24, 1875.]

A brake-shoe having recess *a* at the upper end and slot *b* at the lower, in combination with sole B, having top hook *d* and ear *e*, as and for the purpose specified.

165,873. WEIRSHELLS. Robt. N. Rockwell, Glenwood, Iowa. [Filed Feb. 12, 1875.]

Brief.—The sails are hinged to arms projecting from the hub, and held at the required angle through the means of an adjustable weight and a sleeve connected to said sails. The turn-table is made in two parts, between which is clamped the guide-tube.



1. The lever M, pivoted to the standard N, and provided with the adjustable weight O, the sleeve L on the shaft G, the disk, bars *f*, and arms *e*, in combination with the sails J, hinged to the shaft-arms I, for governing the positions or angles of said sails, substantially as described.

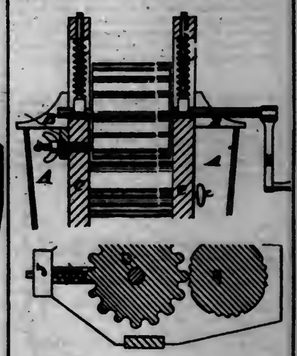
2. The annular-grooved bearing B, provided with the quadrangular pendent flange B′, to each face of which the top of a tower-strut, A, is secured by a bolt, *b*, substantially as described.

3. The wear-plate C, provided with the annular bead *a*′, in combination with the bearing B, having an annular groove, *a*, substantially as described.

4. The guide-tube F, secured to the turn-table by clamping it between its parts D and D′, substantially as described.

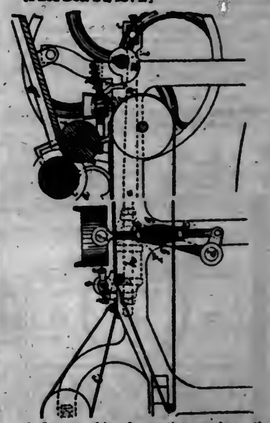
165,874. WASHING-MACHINES. Orville V. Roe, Chico, Cal. [Filed May 17, 1875.]

Brief.—The lower cylinder is held in a fixed position by a set-screw at one end. The upper roller is adjusted by side plates and set-screws.



The tub A and cylindrical surface D, provided with the set-screw *c*, in combination with the frame B, provided with head-pieces C, adjustable roller G, plate *l*, and screw *e*, all constructed and combined to operate substantially as and for the purpose set forth.

165,875. CRACKER-MACHINES. James W. Roger and Augustus Roger, Buffalo, N. Y. [Filed Dec. 24, 1874.]



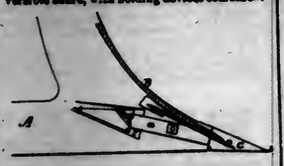
1. In a machine for cutting crackers, the combination of the elastic attachment of the connecting-rod *e*, the crank-shaft *d*, adjustable strap F, and cutting-frame E, all substantially as and for the object specified.

2. In a machine for cutting crackers, the feeding-hopper O, having the lug *f*, in combination with the cam *n*, shaft *i*, and springs *k*, substantially as and for the purpose described.

3. In a cracker-cutting machine, in combination with the fingers *p p p*, the swinging bar *s*, for raising and lowering said fingers simultaneously, as and for the purpose specified.

165,876. PLOWS. Jacob B. Sample, Liberty, Mo. [Filed May 14, 1875.]

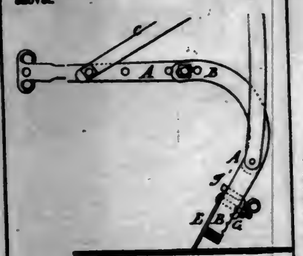
Brief.—Reversible point and triangular reversible share, with holding devices combined.



The point C, having symmetrical wedge-shaped extremities with lateral grooves, in combination with the land-side A, having depression F, the reversible triangular share D, the grooved wedge E, and the mold-board, substantially as and for the purpose specified.

165,877. PLOWS. Oliver P. Sanford, Dadeville, Ala., assignor to himself and Jacob Henry, same place. [Filed May 28, 1875.]

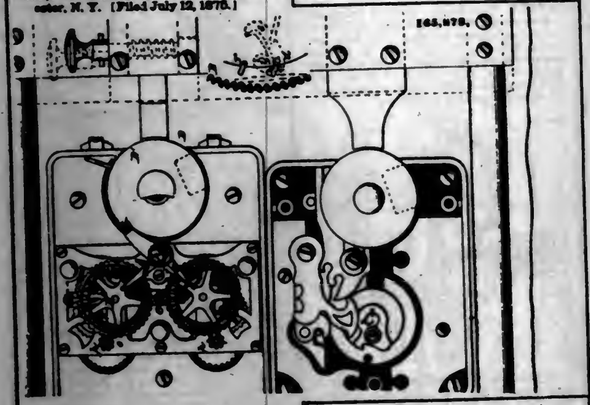
Brief.—The curved beam passes between the members of the double standard, the curve of both being equal. Device for securing the shovel.



1. The combination of the beam A, having its rear end curved downward, the U-shaped adjustable standard B, and the adjustable handles C, with each other, substantially as herein shown and described.

2. The combination of the washer G, provided with a tongue and cross head, *f*, with the notched U-shaped standard B, the plow-plate E, and its bolt F, substantially as herein shown and described.

165,878. TIME-LOCKS. Jas Sargent, Rochester, N. Y. [Filed July 12, 1875.]



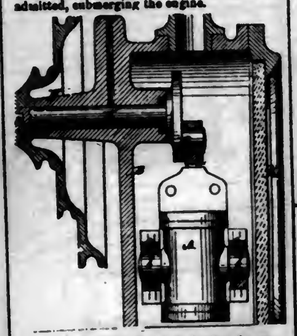
1. The bolt D of a time-lock, constructed in two parts, D' D², each having an independent turning movement, and connected together by a spring, *f*, substantially as described, whereby the time-movement may be set while the door-bolt is held in the unlocked position.

2. The combination, with the mainspring-arbor, of the dial-wheel connected with said arbor directly by means of the pinion *p*, or by intermediate gearing, whereby the time mechanism of a time-lock is wound by the turning back or setting of the dial-wheel, substantially as described.

3. The combination, with the dial-wheel H and pallet *s*, of the stop pins *r u*, for stopping the movement of the time mechanism when the lock is unlocked, substantially as described.

165,879. HYDRAULIC MOTORS. A. Schmid, Zurich, Switzerland. [Filed May 4, 1875.]

Brief.—The engine is inclosed in an air and water tight case, to which the water is freely admitted, submerging the engine.



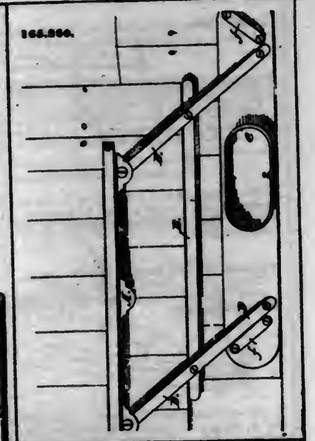
The oscillating cylinder A, having the convex slide-face I, provided with ports or passages *g g*, in combination with the closed box or casing B, constructed with the inlet and outlet passages G and H, and the internal concave face *f f*, through which the outlet-passage H passes, and communicates with the oscillating cylinder by the ports *g*, substantially as shown and described.

165,880. SHINGLING-GAGES. C. Schneider, Charles City, Iowa, assignor of one-half his right to John F. Spaulding, same place. [Filed Sept. 15, 1874.]

Brief.—Three courses of shingles can be laid at each passage of the operator over the roof of a building by means of three horizontal and adjustable bars, one of which is provided with a nail-holder and angular rests at either end, in connection with two cross-bars having swiveled joints at their intersections.

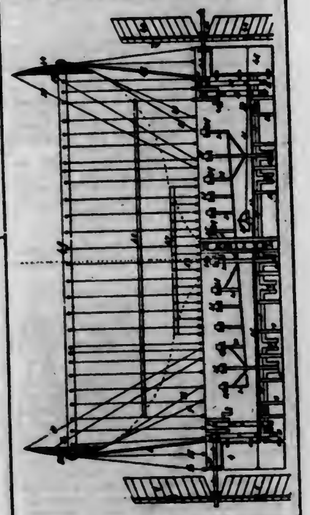
The herein-described shingling-gage, consisting of the bar C, provided with the nail-holder *e*, and adjustable rests *f f*, bars A and B, and cross-bars D D, constructed and operating as shown, and for the purpose specified.

165,880.



165,881. STEERABLE AIR-SHIPS. Frederick W. Schroeder, Baltimore, Md., assignor to himself and George W. Gail, same place. [Filed July 1, 1875.]

Brief.—A ship made of woven wire or wicker-work, provided with front and rear propellers, and front and rear rudders for steering, together with side oscillating wings, the said propellers and wings being connected with and operated by a revolving shaft actuated by any suitable power. To this ship is attached a balloon secured by end caps, a girdle, and steel bands, so as to form a part of the ship, and afford the elevating power.



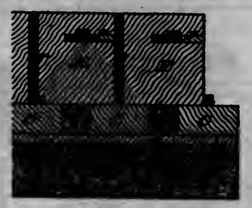
1. The combination of the girdle 49, rings 47 and 48, and the ship constructed of woven wire, covered by canvas, and attached by ropes to the balloon through the said connections, substantially as described.

2. The combination, with the ship, of the end caps 50 64, and the supporting-rods 5 46, held in place by stay-ropes, as and for the purpose described.

3. The combination, with the main shaft 15, provided with cranks and couplings 14 34, of the propellers 1 44, and the side wings having ribs 28, and the extension 61 connecting with the cranks of the main shaft, as and for the purpose set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co BOSTON

165,882. WOOD PAVEMENTS. Joseph J. Schroyer, Springfield, Ill., assignor of one-half his right to Charles A. Helms, same place. [Filed June 26, 1875.]



A wooden pavement composed of several layers of blocks superimposed upon each other, the upper tier of blocks being provided with recesses near their upper faces, into which petroleum and wet salt are introduced, and confined by a plug, substantially as described.

165,883. BOOKKEEPERS' HAND-RESTS. W. D. Sloan, New York, N. Y. [Filed Feb. 2, 1875.]

Brief.—The rest is clamped to one cover of a book, and is adjustable to any thickness by a lazy-tongs worked by rack-and-pinion movement.

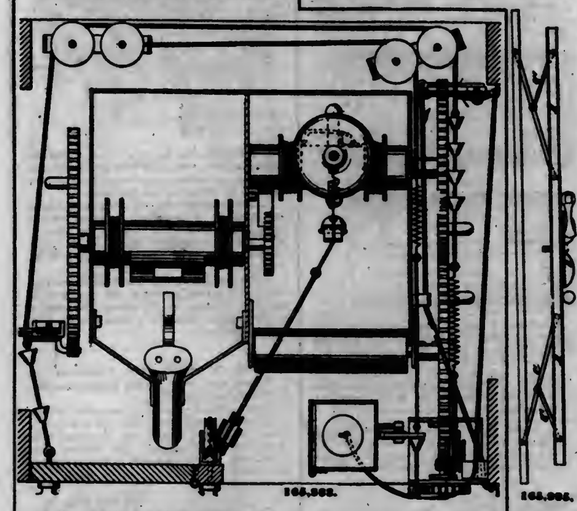
1. An adjustable accountant's rest, constructed with a clamp or hold-fast, whereby it may be fixedly attached to the cover of a ledger or like volume, substantially as herein set forth.

2. In an adjustable accountant's rest, the base-plate A, constructed with the rabbet *a*, the circumferentially-grooved eccentric A', spring *c*, and thumb-piece *b*, the whole arranged for operation, in the attachment of the apparatus to a suitable volume, substantially as and for the purpose set forth.

3. The links C, supplemental link or links C', spur-pinion F, ratchet-wheel G, and pawl *f*, in combination with the base-plate A and shelf or top plate D, the whole arranged for operation in the adjustment of the shelf or top plate, substantially as and for the purpose set forth.

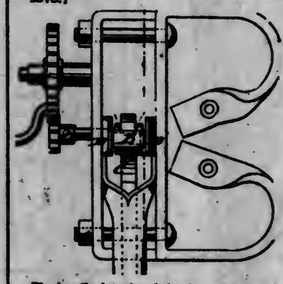
165,884. BORING-ATTACHMENT. H. Seawright, Pottsville, Ohio. [Filed Mar. 20, 1875.]

A bench-plane, provided with the adjustable hinged part L, substantially as and for the purpose specified.



165,885.

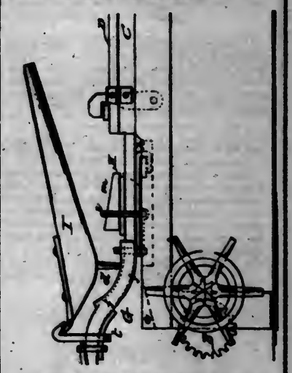
165,886. PEG-CUTTING MACHINES. J. F. Smith, Keokuk, Iowa. [Filed June 6, 1875.]



The bar C, slotted at *b*, having one pivoted straight and one unpivoted curved arm, combined with cam *a* and guide-case D, as shown and described, to enable both a peg and heel cutter to be simultaneously operated, as set forth.

165,887. MACHINES FOR BENDING CARRIAGE-POLES. Andrew G. Snyder, Ashtabula, Ohio. [Filed June 9, 1875.]

Brief.—The former has a double curve, and is connected with devices which give it a partial rotation in opposite directions.

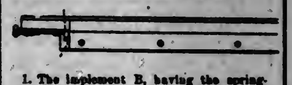


1. The combination of the box C with bit D, screw E, former G with its attachments, ring *n*, chain *p*, and windlass B, all constructed substantially as and for the purposes herein set forth.

2. The combination of the box C with bit D, screw E, former G with its attachments, hook *i*, and lever L, all constructed substantially as and for the purposes herein set forth.

165,888. ATTACHING T-SQUARES TO DRAWING-BOARDS. William B. Stevenson, Philadelphia, Pa. [Filed Nov. 26, 1874.]

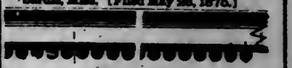
Brief.—The drawing-board is provided with a groove on two or more sides, in which is placed the slide attached to the T-square by a spring pressing the head of the T-square against the side of the drawing-board.



1. The implement B, having the spring-plate E, substantially as and for the purpose set forth.

2. The implement B, having the spring-plate E, combined with the drawing-board formed with the way or ways C, substantially as and for the purpose set forth.

165,889. LIST-ROOM FLOORS. J. M. Sale, Sardis, Miss. [Filed May 28, 1875.]



A list-room floor made of round elastic poles, attached at slight intervals to round joists, as and for the purpose specified.

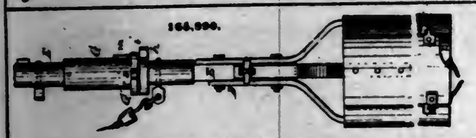
165,890. HARPY-APPARATUS. Cornelius Taylor, De Witt, Mo. [Filed May 21, 1875.]

Brief.—The bucket is made in three sections, two of which carry the cutting-bits, and are adjustably secured to the shaft by bolts and nuts. The third section is removable, and is secured to the shaft by a staple and key, and to the other sections by nuts. The shaft-coupling is a slotted flanged sleeve secured to the upper shaft-section, into which the lower section enters, said section having a bracket, which projects through the slot of the sleeve. A wedge-shaped ring surrounds the sleeve, and, when turned, condemn both sections together by bearing between the flange of the sleeve and the projection of the shaft.

1. In an earth-auger bucket consisting of two sections, A A, carrying the bits U C, and one removable section, B, I claim one or both of the sections A made adjustable up and down on the shaft, for the purposes herein set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co BOSTON.

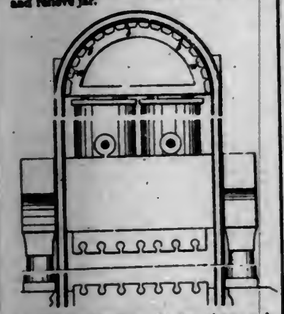
165,890.



2. The combination, with the auger-shaft sections E E', of the slotted sleeve G, having flange A, with slotted projection i, the loose collar G', with slotted projection i' and inclined upper edge, and the lug m, all substantially as and for the purpose herein set forth.

165,891. HYDRAULIC PRESSES. J. F. Taylor, Charleston, S. C. (Filed May 13, 1875.)

Brief.—The frame carrying the cross-head and lower platen consists of wrought-metal bands encompassing the same lengthwise of them. Wedges of wood are interposed between the bands and the bearing-surfaces of the cross-head and platen, to cushion the same and relieve jar.

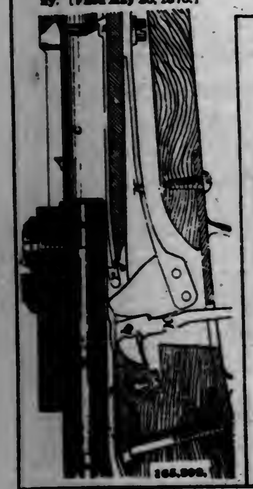


1. The combination, with the platen and cross-head, of continuous links of wrought metal, which encompass the said platen and cross-head lengthwise, and constitute of themselves the frame, and receive all the strain, of the press, substantially as described.

2. An elastic filling, in combination with the links and platen or cross-head, as and for the purpose set forth.

3. The wooden keys W, in combination with the links A A, and the cross-head or platen, having transverse ribs or tongues b as, and for the purpose specified.

165,892. BURNER-LOADING FIRE-ARMS. August F. W. Timmer, Cobleneo, Germany. (Filed May 28, 1870.)



165,893.



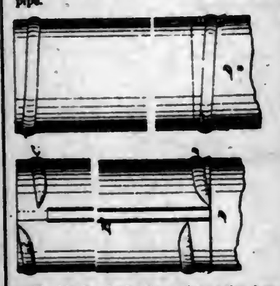
1. The button N, having square edges k, in combination with the breech block, and the breech having the counter-stops r, constructed to operate substantially as described.

2. The button N, having square edges k and notches l, in combination with the spring-catch o, breech block, and the breech having the counter-stops r, constructed to operate substantially as described.

3. The ejector R, having the hook p and projection r, in combination with the breech A, and with the breech-block B, having the channels s and the oblique channel t, substantially as described.

165,893. STOVE-PIPE JOINTS. George D. Umland, Osceola Mills, Wis. (Filed Mar. 29, 1875.)

Brief.—The lock of the longitudinal joint extends only to the lower end of the groove at one end of the section of the completed pipe.



The blank A for forming a pipe section, having corrugations B C, locking-strips E E, and notches N' F', as shown and described.

165,894. VESSELS FOR REMOVING FOUL WATER FROM DOCKS, &c. H. H. Vogeding, Baltimore, Md. (Filed June 28, 1875.)

A vessel for removing foul water from docks and basins, having an open-ended flow and a gate at the stern, all constructed and operating substantially as specified.

165,895. SPOKE-TENONING MACHINES. W. H. Von Behren, Logansport, Ind. (Filed June 14, 1875.)

Brief.—The spoke is held between centers upon a reciprocating table, and carried between rotating cutters, which form the tenon.



1. The circle-bar K, to or upon which the center is fixed, combined with the double cutter-heads, to operate substantially in the manner and for the purposes set forth.

2. The movable table of a tenoning-machine, substantially as described, provided with a circle-bar at one end, having a center attached to it, and an adjustable center at the other end, combined to operate substantially as described.

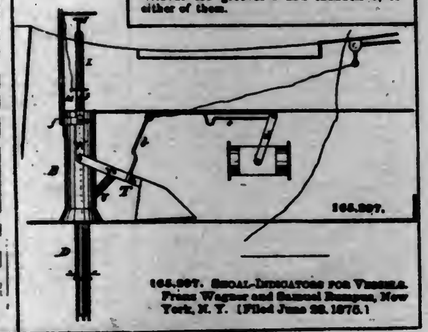
3. The combination of a movable table, provided with a fixed center at one end and an adjustable center at the other, with double cutter-heads, substantially as and for the purpose described.

165,896. PAVING-BLOCKS. Frederick Von Vorsen and John Bickel, Baltimore, Md. (Filed June 24, 1875.)

Brief.—Twenty-five parts protoxide of iron, fifty parts ferruginous silica, and twenty-five parts pulverized quartz are tempered with water, and then molded into blocks. The blocks are burned in a kiln until the surface is vitrified.



A paving block or tile composed of the ingredients herein before stated, and burned until a vitreous surface is produced, with or without the grooves a and channels b, or either of them.



165,897. SIGNAL-INDICATORS FOR VESSELS. Peter Wagner and Samuel Rampen, New York, N. Y. (Filed June 28, 1875.)

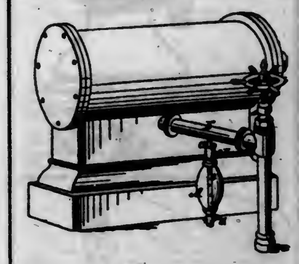
1. The pendent rod D, with or without its extension C, in combination with the shaft C, so supported that it can be vibrated and be drawn down when the rod D is inclined by a rock or cleat, substantially as described.

2. The combination, with a vessel provided with a well, B, of the pendent rod D, the shaft C, and the disk E, arranged on the rod D, at its junction with the shaft C, substantially as and for the purposes described.

3. The combination of the pendent rod D and shaft C and weighted lever T, to which they are connected, with the reversing-lever of the engine of the vessel A, substantially as described.

165,898. STOVE-POLISHES. J. M. Watson, Sharon, Mass. (Filed Apr. 8, 1875.)

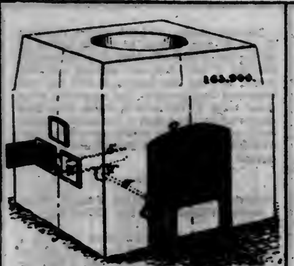
The said composition or stove-dressing, composed of plumbago and silicate of soda alone, or of each and a quantity of soap, all being substantially as specified.



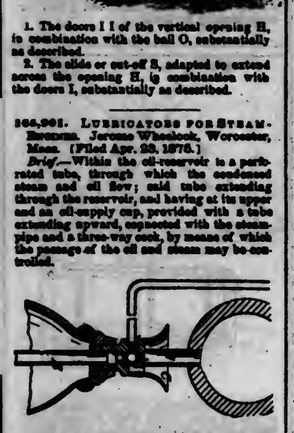
165,899. BAKING-STANDS. J. A. Watson, Lexington, Miss. (Filed June 12, 1875.)



The combination of baking-stand A, having perforated peripheral projections, the loop-rods F, the swiveled bearings C, and rollers B, all arranged to operate as and for the purpose specified.



165,900.

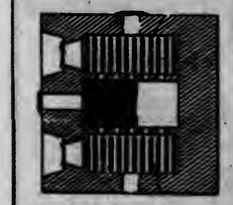


1. In a steam-engine lubricator, the combination of an oil-reservoir, a perforated tube within and extending through the reservoir, an oil-cup, a three-way cock for controlling the flow of the oil and water, and a cock for withdrawing the water from the reservoir, substantially as described.

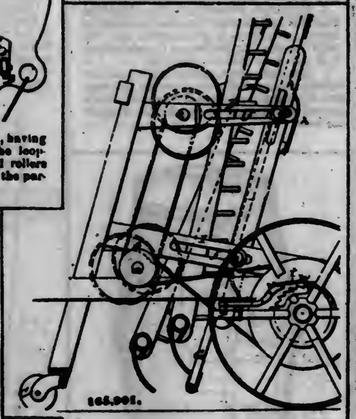
2. The tube g, in combination with the oil-cup, the perforated tube, and the reservoir, substantially as and for the purpose described.

165,901. LUBRICATORS FOR STEAM-ENGINES. Jerome Wheelock, Worcester, Mass. (Filed Apr. 23, 1875.)

Brief.—Within the oil-reservoir is a perforated tube, through which the condensed steam and oil flow; said tube extending through the reservoir, and having at its upper end an oil-supply cup, provided with a tube extending upward, connected with the steam-pipe and a three-way cock, by means of which the passage of the oil and steam may be controlled.



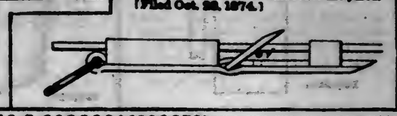
165,902.



165,903. LUMBERING. Abner B. Weeks, Rockland, Me. (Filed Nov. 12, 1874.)

Brief.—The cut-off may be used to obstruct the flow of the contents, in combination with the doors, which may be partially open when a restricted delivery is desired.





165,904. HAY-LOADERS. Edwin R. Whitney, Mason, Canada, assignor to Geo. M. Morton and Frank E. Morton, Chicopee, Mass. (Filed Dec. 29, 1874.)

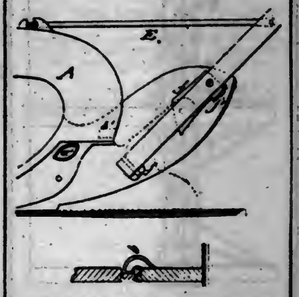
Brief.—Devices for adjusting or shifting the flexible bars form the rake or lifting bars, which carry up the hay. Lower end of flexible bars made yielding, to keep the hay from clogging between the ends.

1. The combination of the slotted arms I I, slotted side bars H H, having the flexible bars G G connected to them, and the tightening-screws A A, substantially as and for the purposes herein set forth.

2. The combination of the flexible bars G G, and the rope i, or its equivalent, attached to and connecting the lower ends of said bars, substantially as and for the purposes herein set forth.

165,905. PLOWS. George Wiard and Thos. Wiard, East Avon, N. Y., assignors to Geo. Wiard and Chas. W. Hough, same place. (Filed June 12, 1875.)

Brief.—Land-side secured by socket, hooked leg, and a single bolt. Devices for securing and bracing the handles.



1. The land side B, constructed with the offset c and projecting semicircular hook b, where it joins the rear edge of the beam, and the projecting elliptical leg a near its upper forward edge, in combination with the beam A, constructed with the locking-leg b' and recess c', and fastening-bolt e, as described.

2. A mold-board handle fastened by two adjacent supports, f f', one side support, f'', and two bolts placed at right angles to each other, as and for the purpose specified.

3. The one-piece handle-brace E, flattened at the bend, and combined with a socket having undercut lip b', as and for the purpose specified.

165,906. EYE-GLASSES FOR WATCHMAKERS. Myron W. Wiard, Waukegan, Ill., assignor to himself and Charles F. Wiard, same place. (Filed June 20, 1875.)



1. The combination, substantially as before set forth, of the eye-tube and the expanding-rim thereof.

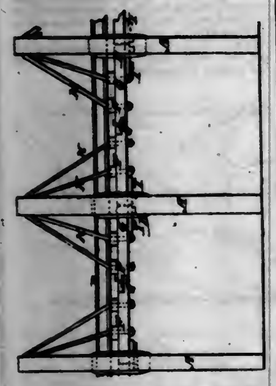
2. The combination, substantially as before set forth, of the lens, the eye-tube, and the expanding rim of said tube.

165,907. BUCKLES. Wm. Henry Williamson, Ashtabula, Ohio, assignor of one-half his right to Samuel C. Talcott, same place. (Filed Oct. 28, 1874.)

A buckle consisting of the frame E and rigid tongue F, the latter attached to the front bar of the frame, and having its base flush or nearly so with the adjacent parts of the frame, and curved downwardly in such manner that the swell of the curve may be opposed to the draft of the strap, substantially as specified.

165,866. ELEVATED RAILWAYS. James G. Wilson, Millerton, N. Y. (Filed July 10, 1875.)

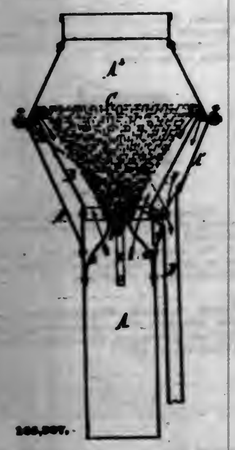
Brief.—The rail-supporting beams are suspended from posts, which extend above the level of the roadway, by tension-bars extending from the tops of the posts diagonally to the ties and stringers outside the rails. The stringers are independently supported from each side, and are connected in the middle by a lap-joint only, allowing for expansion and contraction.



1. The combination of posts A, beams C, cushion D, and suspenders E, substantially as specified.

2. The combination of posts A, stringers G, independently supported by the tension-rods E, and connected by an expanding lap-joint, as described.

165,867. SPARK-ARRESTERS. David Wiser and Henry Schneideau, Fort Wayne, Ind. (Filed Apr. 6, 1875.)

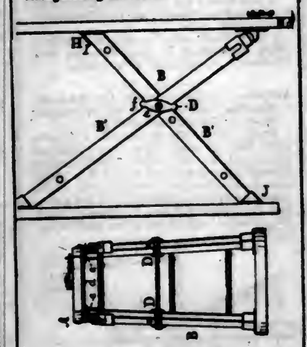


165,867.

The combination, with the stack A, deflector B, top A^1, and bonnet A^2, of the screen C, having its upper part curved over and around the top of said deflector, secured and supported between the flanges of said top and bonnet at their junction, and supported at its lower point by the cone b, which is in turn supported by the braces c, the inclined annulus d, and pipe D, the several parts being constructed and arranged substantially as described and shown.

165,868. IRONING-TABLES. John N. Wimderlich, Philadelphia, Pa. (Filed July 27, 1874.)

Brief.—The table has crossed legs and a platform, with sockets and braces, for holding the legs and feet in position, and plates for strengthening the table.



1. The combination, with the ironing-table A, folding legs B', and hinge C, constructed with butts a, and socket-butts c, of the bow d, extending transversely on the under side of the table, and uniting the butts c, substantially as and for the purpose specified.

2. The combination, with the metal frames D, of the metal plate G, secured to the legs B' B'', whereby the frames will bear against said plates, substantially as and for the purpose set forth.

3. The combination, with the ironing-table, of the metallic shoes, constructed of the depending flanges H' and the diagonal flanges H'', projecting laterally therefrom, as set forth.

4. The shoes, consisting of the depending flanges H' and diagonal flanges H'', projecting laterally therefrom, in combination with the plate H connecting the flanges H', substantially as and for the purpose set forth.

5. The combination, with the table A, of the metallic shoes I for the upper ends of the legs, and the metallic shoes J for the lower ends thereof, substantially as and for the purpose set forth.



165,868.

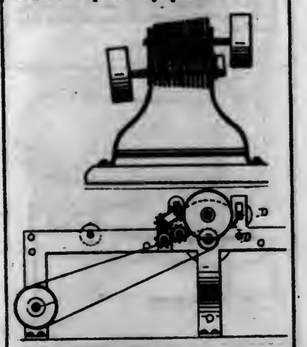
165,900. SHEET-IRON BARRELS. Charles M. Wyrell, Scottsville, N. Y. (Filed Apr. 10, 1875.)

Brief.—The parts are joined together by the overlapping extensions and external hoop, held together by the clasps.

A barrel formed in two parts, having their adjacent edges notched to each other, and secured by the hoops C and the locking-strips D, substantially as herein shown and described.

165,910. MACHINES FOR SAWING HOOPS. Edward Young, Sarnia, Canada. (Filed Jan. 22, 1875.)

Brief.—Two saw-arbors, each carrying a series of circular saws, are placed at such an angle to each other as to give the hoops as sawed from a plank the proper bevel.



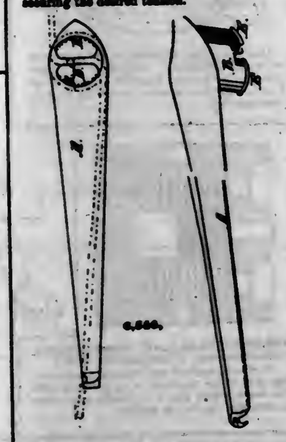
1. A hoop-sawing machine having two gangs of saws, one above the other, and inclined in intersecting planes, substantially as described.

2. The standying-collars f and shafts D, in combination with two gangs of saws whose arbors are inclined in their supporting-frame, substantially as described.

REISSUES.

6,566. DEVICES FOR TIGHTENING WIRE FENCES. Peter S. Crawford, Union, Ill. Patent No. 54,110, dated Apr. 24, 1866. (Filed June 21, 1875.)

Brief.—The wire to be tightened is placed in the slot in the drum. The lever is then turned, and the slack in the wire wound around the drum, after which the hooked end of the lever is adjusted upon the wire, thus securing the desired tension.



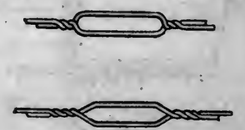
6,566.

1. The lever A, provided with a slotted spool or drum and with a hook, substantially as and for the purpose specified.

2. The lever A, provided at one end with the slotted spool or drum B, with the rims E, and at the other end with the hook D, substantially as and for the purpose specified.

6,567. WIRE HEDDLES FOR LOOMS. D. C. Brown, Lowell, Mass. Patent No. 64,044, dated May 21, 1867. (Filed July 12, 1875.)

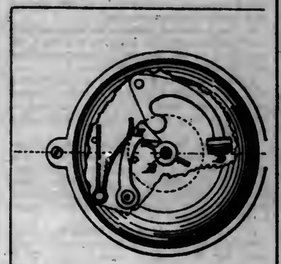
Brief.—To prevent the warp-thread from catching and breaking, a rigid close twist is given the wires at the ends of the eye, and the ends are so shaped as to form an open path for the thread.

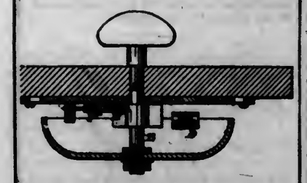


1. In a wire heddle for loom-harnesses a warp-eye having at each or either end the rigidly-compressed twist as herein described, for the purposes set forth.

2. A wire heddle for loom-harnesses, having the free bed and path, and the rigidly-compressed twist, herein described, at each or either end of said warp-eye, as and for the purposes shown and stated.

6,568. DOOR-BELLS. HENRY A. DIEHL, New York, N. Y. Patent No. 157,602, dated Dec. 15, 1874. (Filed July 10, 1875.)

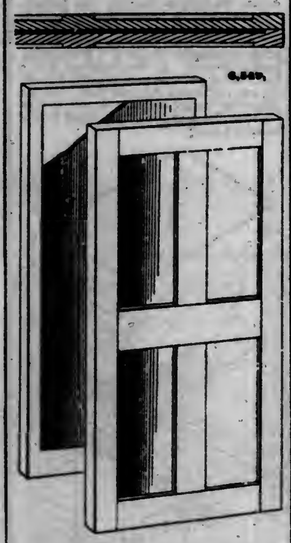




1. In the mechanism for striking or sounding bells, a loosely suspended or pivoted hammer, D, arranged to be operated upon by a spring-follower, E, and in connection therewith, substantially as specified.

2. The mode of hanging bells herein shown and described, consisting in securing the said bell rigidly to the end of a central revolving spindle, E, so that the bell may be solely supported thereby and revolve therewith.

6,569. DOORS. William G. Hurd, Watertown, Conn. Patent No. 161,966, dated Apr. 13, 1875. (Filed June 21, 1875.)

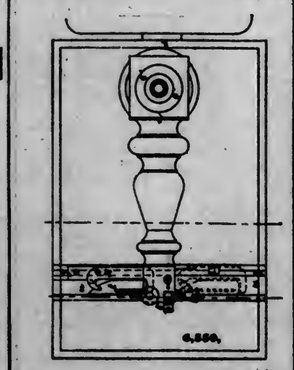


6,569.

A wooden door containing, between the exterior surfaces of the casing, a sheet of chilled iron or other suitable metal, substantially as and for the purpose specified.

6,570. SEWING-MACHINES. Albert F. Johnson, Boston, Mass., assignor, by mesne assignments, to S. T. Thomas, same place. Patent No. 42,202, dated Apr. 12, 1864. (Filed Aug. 12, 1875.)

Brief.—The machine is so constructed that the thread is drawn through the material, and a shuttle then passed through its loop. The driving-shaft is arranged beneath the cloth-plate, and operates the shuttle and the hook-needle, the latter of which devices is set eccentric to the axis of the needle-bar, having a semi-rotary motion. On the rear end of this driving-shaft is a crank, which, through a suitable connection, imparts a rocking motion to a second shaft, situated above the work-plate in the gooseneck of the machine, and operates the awl, the looper, and the take-up. The awl-bar is provided with a longitudinal groove in its side, in which is pivoted a bar carrying in its lower end the awl, and having an incline on its side, that impinges against a screw in a projecting arm when said bar descends, causing the awl to swing with its supporting-lever, and feed the work to the needle.



1. The combination of an awl or other device for puncturing the fabric, an open-eyed or hooked needle for raising and pulling the thread through the fabric, and a shuttle for interlocking one thread with another, the whole operating together substantially as described.

2. The combination of an awl or perforating device, open-eye or hook needle, shuttle, and the take-up mechanism, as and for the purpose herein set forth and described.

3. In combination with the rocker-shaft I and vibrating arm, the guide-pulley e and pulley a, the whole forming a take-up, substantially as described.

4. In combination with the awl-bar, provided with a swinging arm for holding the awl, the adjusting-screws n n and their supporting-arm, as and for the purpose herein set forth and described.

5. In combination with a rocker-shaft above the work-plate, the awl-bar and thread-guide, as and for the purpose set forth.

6. A shaft arranged above the work-plate for the operation of the awl, in combination with a shaft below the table for the operation of the needle, and suitable connecting mechanism, as and for the purpose set forth.

6,571. PAPER BARRELS AND CYLINDRICAL BOXES. Benjamin Rhodes, Bow, England, assignor, by mesne assignments, to N. B. Fogtt, Washington, D. C. Patent No. 41,261, dated Jan. 19, 1864. (Filed Mar. 26, 1875.)

Brief.—A sheet of paper wound into a cylindrical form, with uniting cement interposed between the layers.



1. As a new article of manufacture, a barrel made of paper and an adhesive substance, and provided with suitable hoops.

2. Barrels and boxes made of paper and an adhesive substance, compacted by pressure, and provided with suitable hoops.

3. Wound paper barrels and boxes, the layers of which are united by an adhesive substance, and compacted by pressure.

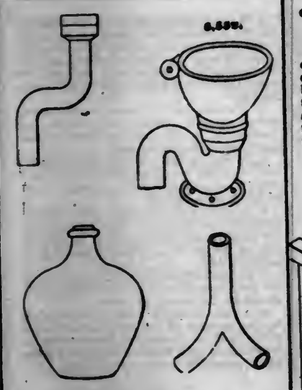
4. Barrels, the walls of which are built up with layers of paper and compacted by pressure while the layers are in a condition to adhere firmly together after being compressed.

5. Bilged barrels or casks provided with hoops, and having their walls composed of adhesive layers of paper compacted together.

6. The process of forming hollow articles of paper and an adhesive substance by means of a mandrel that will contract to permit their removal when formed.

6,572. MANUFACTURE OF BEMUSLAN-SHAPED VESSELS. Benjamin Rhodes, Bow, England, assignor, by mesne assignments, to N. B. Fogtt, Washington, D. C. Patent No. 41,261, dated Jan. 19, 1864. (Filed Mar. 26, 1875.)

6,859.



1. Irregular-shaped vessels, consisting of alternate layers of fibrous or textile fabrics built up in bitumen or bituminous mastics or compositions, substantially as described.

2. The process of forming irregular-shaped vessels by drawing over a core or pattern of the required shape several layers of an elastic or looped fabric and dipping the pattern, after each layer is applied, into a bath of bitumen or bituminous mastic or composition, substantially as described.

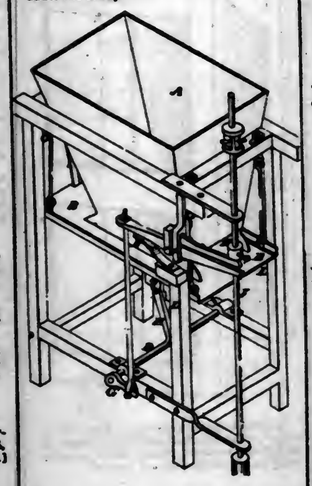
6,860. CHILDREN'S CARRIAGES. W. Stewart, Hartford, Conn. Patent No. 160,064, dated May 10, 1874. (Filed July 2, 1875.)



The combination of the rigid reaches, lever-springs d e, lying in the same line of direction with the reaches, and the body of the carriage, all substantially as shown and described.

6,864. ORE-STAMP FEEDER. Jos. Tullock, Jamestown, Cal. Patent No. 144,714, dated Nov. 18, 1873. (Filed May 28, 1875.)

Brief.—Ore is fed into a hopper, whose lower orifice is closed by means of a horizontally-oscillating plate. As the stamp-rod falls, a backward motion is given to this plate through the action of levers and a crank-shaft. The rear side of the hopper acts as a scraper to force the ore forward on table, from which it falls under the stamp.



1. In a machine for feeding ore to crushing-mills, the stationary hopper A, in combination with a longitudinally-vibrating tray or shoe, B, substantially as and for the purpose described.

2. In combination with a longitudinally-vibrating shoe or tray, B, a stationary scraper, S, substantially as and for the purpose described.

3. The spring M, arranged to press the tray B forward after each backward movement, substantially as above described.

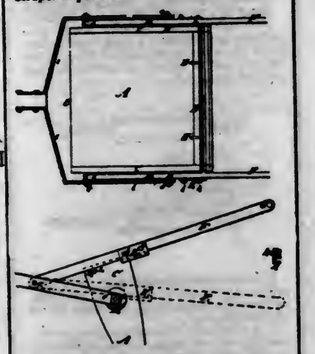
4. The oscillating tray B, supported by the links C, and operated by the shaft D, with its rocker-arm E and crank G, together with the lever I, the whole operated from the stem J by means of the adjustable collar K, substantially as and for the purpose described.

5. In combination with the oscillating tray B, as herein shown, the post or bar L for giving a concussive or abrupt step to the tray, substantially as and for the purpose described.

In witness whereof I hereunto set my hand and seal.

6,868. ROTARY ROAD-SCRAPERS. J. W. Wilson, Somerford, Ohio. Patent No. 68,086, dated Apr. 6, 1869. (Filed June 10, 1875.)

Brief.—The handles of the scraper are pivoted to the draft-pieces in advance of the pivots of the scraper, so as to connect and disconnect with the scraper automatically through the eccentricity of the movement of the handles when raised. Pins on the scraper engage with pins on the handles, to hold the scraper in position.



1. The combination, in a revolving scraper, of handles pivoted to the tongue-pieces or yoke in advance of the pivots of the scraper, and connecting devices on the scraper, and the handles arranged to disconnect and connect automatically, substantially as specified.

2. The peculiar arrangement and combination of the scraper A, standards E E, tongue-pieces I I, and handles F F, the several parts being arranged substantially in the manner and for the purpose specified.

3. The L-shaped irons K K, when used in combination with the handles F F and the pins L L on the scraper A, substantially as and for the purpose specified.

4. The pins M M, when used in combination with the handles F F, pivoted to the tongue-pieces I I and pins L L, and the scraper A, substantially as and for the purpose herein specified.

5. The peculiar arrangement and combination of the scraper A, with the standards E E and pins L L, the tongue-pieces I I, and handles F F, with pins M M and L-shaped irons K K, the several parts being arranged substantially in the manner and for the purpose herein specified.

6. The rotary road-scraper herein described, composed essentially of the scraper A, with standards E E, pins L L, and spikes H H screwed thereto, the tongue-pieces I I, with tongue J, the pivot-bolts *c c*, with separating washers *b b*, handles F F, with pins M M and L-shaped irons K K, and cross-bar O, with braces *f f*, the several parts being constructed and arranged substantially in the manner and for the purpose herein specified.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 4. TUESDAY, JULY 27, 1875. PRICE { $5,00 per year—single. $4,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

WILLIAM H. GOLDING.—*References.*

[*In the matter of the application of Wm. H. Golding, for an* "IMPROVEMENT IN THE MANUFACTURE OF TAGS," *filed June* 15, 1875. *Decided July* 30, 1875.]

Section 4894 of the Revised Statutes, (sec. 32, patent act of 1870:) *Held*, to comprehend the abandonment of applications only. It does not apply to the same class of cases, does not contain the same limitation, and has not the same effect as sec. 35 of the act of 1870.

Where an applicant has abandoned an application for a patent by failure to prosecute it within two years after an action thereon, of which he was duly notified, he is not by that fact alone debarred from prosecuting a new application for patent for the same invention.

The abandonment of an *application* for a patent, as provided for by sec. 4894 of the Revised Statutes, is a different thing from the abandonment of an *invention* to the public.

When an *invention* becomes abandoned to the public it is no longer patentable. But an *application* for a patent being a legal proceeding to secure an alleged right, the abandonment of that proceeding does not necessarily amount to a surrender of the alleged right.

Although long neglect to file or prosecute an application may be a link in a chain of evidence going to prove abandonment of an invention, it is not sufficient for that purpose unless accompanied by proof of express acts of dedication, or by a clear acquiescence in the acts of others amounting to the same thing.

The actual intention indicated by an applicant to sever the two proceedings, where he has abandoned one application and filed another in its stead, is to be regarded, and notice will be taken only of his last application.

Where, intermediate the two applications, another party has filed an application for patent for the same invention, the proper practice is to institute an interference between the second application and that of such other party.

The case of *ex parte* Mills commented on.

THACHER, *Commissioner:*

This is a question of practice involving the construction to be placed upon section 4894 of the Revised Statutes.

The facts in the case are briefly as follows: November 19, 1872, Wm. H. Golding filed an application for an improvement in the manufacture of tags. It was rejected by the Examiner in view of certain references and the general state of the art. February 8, 1873, the case was amended, and February 18 it was again rejected for the same reasons as before. No further steps were taken by Golding in the matter until June 15, 1875, when he filed the present new application for a patent for the same invention. Thus more than two years had elapsed from the date of the last official action on his first application before the filing of his second application.

In the meantime, March 16, 1874, T. Van Kannel filed an application showing and claiming the same subject-matter that Golding had applied for, and he was accordingly refused a patent for substantially the same reasons as was Golding. May 13, 1875, Van Kannel appealed from the decision of the Examiner to the Board of Examiners-in-Chief. The Board reversed the Examiner, and decided that the subject-matter was patentable. The Examiner then suspended further action on Van Kannel's application, in order that inquiry might be made as to whether the invention had gone into public use for more than two years prior to the filing of the latter's application, in accordance with the practice established in the case of *Rouse* and *Stoddard*, 7 OFFICIAL GAZETTE, 169.

In pursuance with this practice a letter was addressed to Golding informing him of the fact that an application was pending before the Office, and requesting him to furnish affidavits in regard to the public use of his invention, if there had been any. Golding furnished no information on that point, but instead thereof filed a second application at the time above mentioned.

In reply to another inquiry as to whether he wished

the Office to consider his second application as a renewal of the first, or as an entirely separate proceeding, Golding replied that it was his purpose to rely upon the last application without reference to the old one. The question now to be determined is, what effect shall the first application have upon the second.

Sec. 4894 of the present law, which is precisely the same in its requirements as sec. 32 of the act of 1870, is as follows:

All applications for patents shall be completed and prepared for examination within two years after the filing of the application, and in default thereof, or upon failure of the applicant to prosecute the same within two years after any action thereon, of which notice shall have been given to the applicant, they shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable.

Unless this section be construed to cover the *invention* as well as the *application*, I see nothing in its provisions to prevent an applicant from filing a second and independent application for the same invention, and nothing prohibiting the Office from entertaining such application without regard to the one first filed. For when applied to the application alone, the language of the section has plain reference to the same proceeding throughout. It is the failure of applicants to complete and prepare the applications originally filed, or their failure to prosecute those applications for more than two years after notice has been given of any action thereon, which subjects *such applications* to the charge of abandonment. No reference in words or by implication is had to any other applications than those filed in the first instance, and the question of unavoidable delay to be considered by the Commissioner is in reference alone to those applications.

I had occasion lately to hold (*ex parte Mills*, 7 OFFICIAL GAZETTE, 963) that the filing of an application for a patent is analogous to a proceeding at law to establish one's rights, and that in that particular case the right to recommence such an action, after a certain time, was barred by a proviso in section 35 of the act of 1870. That proviso related to applications filed *prior* to July 8, 1870. But the 32d section of that act, the one now under consideration, relates to applications filed *subsequently* thereto, and there is no provision anywhere in the law of 1870, or the present one, prohibiting or restricting the renewal of applications made since that date, however long they may have remained dormant, or the filing of new ones, except that if the applicant has delayed the prosecution of his original application a certain time, then, in order that the *renewal* may have the advantages of proceeding upon the old fee and under the old date, he shall show to the Commissioner that such delay has been unavoidable; but as to the right to file a new application the statute is silent.

In regard to abandonment of the invention, I have already indirectly held, in the *Rouse* and *Stoddard* case, that the rejection or withdrawal of an application cannot amount to such an abandonment. The decision in that case was based upon the doctrine laid down by the United States Supreme Court in the case of *Brown* vs. *Guild*, 6 OFFICIAL GAZETTE, 392. The court therein held that, after an inventor had embodied his discovery in a machine which was subsequently thrown aside, it amounted to no more than an unsuccessful experiment, and the filing of an application for a patent thereafter for the same invention, which application was rejected and never renewed, did not remove the case from the category of abandoned experiments, and was no bar to a further patent.

An abandonment of the invention by the first applicant would, of course, operate as a bar to all subsequent applicants, and if the provision of the law under consideration applied to the *invention* as well as to the *application*, the court would have erred in the decision referred to, as the statute would have already concluded the matter to the contrary; and if a statutory bar had been thus established, the inquiry required to be made in the *Rouse* and *Stoddard* case as to abandonment to the public by rejected applicants would be clearly uncalled for.

But I am not aware of any decision of the courts in which it has been held that after an application for a patent has been once filed, the neglect to prosecute or renew the same is in itself sufficient evidence of the abandonment of the invention to the public. Section 12 of the act of March 2, 1861, contained the same provision as to the abandonment of the application, unless unavoidable delay was shown, as the section of the statute under consideration, with the single exception of requiring the application to be prosecuted within two years after action thereon, and that section was construed by Judge McKennan, in the case of *McMillin* vs. *Barclay*, 5 Fish., 189. There McMillin applied for a patent July 23, 1855; after various proceedings he was finally rejected August 25, 1856, on appeal to the Commissioner. He did nothing more until the early part of 1867, when the specification was amended, and the patent was granted April 16, 1867. It will be seen that the state of the facts in this case brought it within the exception now provided for, but the court held that, conceding the case was within the scope of the act of 1861, the section referred to could not be invoked to invalidate the patent. The questions of *abandonment of the application* and *abandonment of the invention* were there treated as entirely separate and distinct, and it was not even hinted that the latter question was included in that provision of the statute. On the contrary, whether the delay to prosecute an application was unavoidable or not, was regarded as a question resting entirely with the Commissioner, and the court refused to consider the proof on that point; but as to the abandonment of the invention, the learned judge quoted Mr. Justice Grier to show that the filing of the application was conclusive evidence that the inventor did not intend to abandon his invention, and that where gross laches could not be imputed to the inventor, the delay interposed by the action of officers or courts could not affect his rights.

The courts, although regarding a long neglect to file an application, or to complete or renew one already filed, a link in the chain of evidence going to prove abandonment of an invention, yet do not hold the evidence complete unless such neglect is accompanied by actual proof of express acts of dedication, or by a clear acquiescence in the acts of others amounting to the same thing. Abandonment being regarded as in the nature of a forfeiture of a right, is not favored in law. (*Jones* vs. *Sewall*, 6 Fish., 343.)

In conclusion, Golding having manifested to the Office his actual intention to abandon his first *application*, but not his *invention*, the rule adopted by Judge Emmons in regard to a patent issued upon the last of two applications filed, will be applied here:

If, intermediate the first and second application, the patentee manifests an actual intention to abandon the first, his patent will have relation to the last one only. His actual intention severs the proceeding. The law deems the first application terminated, and as bearing no relation to the patent, which rests solely on the last one. (*Felton & Taylor* vs. *Waters et al*, 7 OFFICIAL GAZETTE, 425.)

Under the construction of the statute which I have given above, to the effect that section 4894 relates only to the application, and does not include the invention, and in view of the citation immediately above, Golding's actual intention must be regarded as a purpose to sever the two proceedings in this case, and notice will be taken only of his last application.

If the Examiner is still of opinion that Golding's and Van Kannel's applications cover the same subject-matter, he will, of course, declare an interference. If evidence of abandonment on the part of Golding is then adduced, proper weight can be given it to better advantage, probably, than if brought out by an *ex parte* inquiry.

This case is returned to the Examiner for his further action, in accordance with the above views.

VIDVARD & SHEEHAN.—*Appeal.*—*Trade-Mark.*

[*Appeal from the Examiner of Trade-Marks in the matter of the application of Messrs. Vidvard and Sheehan, of Utica, New York, for the issue of corrected certificates upon Trade-Marks for Whisky, Nos. 180 and 226, of the year 1871.—Decided June 29, 1875.*]

PRACTICE IN TRADE-MARK CASES.

The requirement of the statute that an applicant for the registration of a trade-mark shall make oath "*to the effect*" that he and no other has the right to use it, "either in the identical form *or having such near resemblance thereto as might be calculated to deceive*," is properly complied with by a declaration under oath that no other has a right to the use of said trade-mark, "*or of one substantially the same.*"

The statute does not require that the oath shall be in the exact words of the section, but only "*to the effect*," &c.

When an error in the form of a certificate of registration occurs, solely on the part of the Office, it will be corrected without expense to the registrants.

THACHER, *Commissioner:*

The applicants, Messrs. Vidvard and Sheehan, of Utica, New York, forward to the Office two trade-marks for whisky, registered in February and April, 1871, numbered, respectively, 180 and 226, and ask that the certificates appended thereto be corrected, "and legal certificates be issued in their stead." To this the Examiner of Trade-Marks returns, in each case, the following reply:

The above-mentioned application has been considered. It is found, upon examination, that the declaration filed in 1871 does not fully meet the requirements of the statute. In the present condition of the application papers, the Office would not be justified in re-registering the case with a certificate such as is essential, according to Judge Blatchford's ruling, to make the registration valid.

Before registration can be made, it will be necessary to present an entirely new application, and accompany the same with a fee of $25.

Whereupon the applicants take their present appeal, contending that the declaration was in strict compliance with the statute and the form prescribed by the Commissioner of Patents.

The petition and declaration in the case, which are the same in form in both cases, are as follows:

Your petitioners, Peter Vidvard and John H. Sheehan, partners, under the firm-name of Vidvard & Sheehan, residing in Utica, Oneida county, New York, and engaged in the rectification and sale of whiskies at said Utica, represent that they have used for over one year last past, are now using, and have the right to use, a trade-mark for whisky, of which the design represented in the annexed drawing is a true copy. This trade-mark consists of a representation of a medal having stars on its face, accompanied by the words "Gold Medal Kentucky Malt Bourbon," the words "Gold Medal" being arranged in an arch over the medal, and the three words "Kentucky Malt Bourbon" being arranged in as many straight lines thereunder. Said trade-mark has been stenciled on the heads of the barrels containing the whisky, the medal having been in gold, and the words in black.

Your petitioners further represent that no other person, firm, or corporation has a right to the use of said trade-mark, or of one substantially the same.

They, therefore, pray that said trade-mark may be registered and recorded in the Patent Office according to law, they having paid into the Treasury of the United States the sum of twenty-five dollars, and otherwise complied with the regulations in such case made and provided.

Then follows their oath in due form.

This petition complied strictly with six of the seven requirements set forth in the act of 1870. The names of the parties, their residence and place of business, the class of merchandise, and the particular description of goods comprised in such class by which the trade-mark had been or was intended to be appropriated, the description of the trade-mark itself, with *fac-similes* thereof, and the mode in which it had been or was intended to be applied and used, the length of time it had been used, the payment of the fee of twenty-five dollars, and a compliance with such regulations as had been prescribed by the Commissioner of Patents, and which were in force at the date of their petition and registration, were all given and performed.

The seventh requirement of the statute is—

The filing of a declaration, under the oath of the person, or of some member of the firm or officer of the corporation, to the effect that the party claiming protection for the trade-mark has a right to the use of the same, and that no other person, firm, or corporation has the right to such use, either in the identical form, or having such near resemblance thereto as might be calculated to deceive, and that the description and *fac-similes* presented for record are true copies of the trade-mark sought to be protected.

Upon inspection of the declarations filed in these cases, it is found that they also comply with this last requirement. To be sure, the exact language of the section is not adopted in reference to the right of others to use the identical trade-mark in question, the words of the statute being—

That no other person, firm, or corporation has the right to such use, either in the identical form, or having such near resemblance thereto as might be calculated to deceive.

And the words of the declaration of applicants being—

That no other person, firm, or corporation has a right to the use of said trade-mark, *or of one substantially the same.*

The statute does not require that the applicant's oath shall be in the exact words of the section, but that it shall be "*to the effect*," &c.

Now, the essential value of a trade-mark consists in the peculiar appearance it presents to the eye; and when one trade-mark is made of such near resemblance to another as would "*be calculated to deceive*," it is "*substantially the same*" to all intents and purposes.

It is the practice of skillful draftsmen of legal instruments to adopt the exact language of a statute, when applicable; but, when other words are used, no court would hold the instrument invalid if its language was "*in effect*" the same as that of the statute.

It appears, then, that applicants complied with all the requirements of the law and the regulations of the Patent Office in their petition and declaration. They, were, therefore, entitled to registration and a certificate in due form at the time their original applications were made. The only error was on the part of the Office in giving a certificate which has since been declared informal. As the error was on the part of the Patent Office alone, I believe it ought to be corrected by the Commissioner by the issue of new certificates in due form, without additional expense to applicants.

The decision of the Examiner of Trade-Marks is overruled.

VOLTA BELT COMPANY.—*Appeal.—Trade-Mark.*

[*Appeal from the Examiner of Trade-Marks in the matter of the application of The Volta Belt Company, of Cincinnati, for registration of trade-mark, filed April* 23, 1875.—*Decided June* 26, 1875.]

A clear, full, and accurate description of a trade-mark, which distinguishes between essentials and non-essentials in the mark, is necessary before a trade-mark can properly be registered.

THACHER, *Commissioner:*

Applicants apply for the registration of a trade-mark which they allege in their petition is "described in their annexed specification or statement and the accompanying *fac-simile*."

The specification sets forth that the trade-mark they have adopted is for electro-voltaic bands or other analogous goods, and is—

A symbol consisting of the words "electricity is life," placed beneath clouds from which lightning-flashes proceed, the whole arranged generally as shown in the *fac-simile*.

In addition to these features, the *fac-simile* shows the figure of a globe, which the clouds surround. No allusion is made in the description to this feature, and it is, therefore, impossible to tell whether the applicants regard it as an essential or non-essential part of their trade-mark. The presumption is, from the absence of such description, that they regard it as a non-essential part of the symbol; but the description ought not to be left open to presumptions when a few words can make the matter perfectly clear.

This is just what the Examiner insists upon. He does not attempt to "emasculate" their symbol, as applicants allege, but asks them to distinguish definitely between the essentials and non-essentials of the trade-mark.

They having described the words they use as "placed beneath clouds from which lightning-flashes proceed," I cannot agree with the examiner that it is not plain whether the latter feature constitutes one of the essentials; but the description, as I have already remarked, makes no allusion to the figure of a globe; and the expression "arranged generally as shown," in reference to the position of the clouds, does not supply this omission, nor is it *descriptive* of anything whatever.

The law is as imperative in requiring a *description* of the trade-mark as in requiring a *fac-simile* thereof, and one will not supply the omissions of the other.

With the exception mentioned, the decision of the Examiner is affirmed.

CHRISTOPHER C. TRACY.—*Interlocutory appeal.*

[*Appeal from the Principal Examiner in the matter of the application of Christopher C. Tracy, for Letters Patent for the* "MANUFACTURE OF CAMES OF LEAD."—*Decided June* 5, 1875.]

That part which constitutes the improvement on a former machine must be shown by model and drawing; but an applicant for a patent need not furnish model and drawing of the whole of the machine which he claims to have improved, provided the machine is well known to the public, or a description of it readily accessible.

SPEAR, *Acting Commissioner:*

This case is brought up by appeal from the requirement of the Examiner that applicant should furnish drawing and model with his application.

I cannot quite agree with the Examiner that it would not be proper for a patentee to refer the public to the invention of another for a knowledge of the machine on which the patentee had made an improvement. Such reference would, in my judgment, be proper, provided the machine improved and referred to had been patented or otherwise made known to the public. In the case of *Brooks* and *Morris* vs. *Bicknell* and *Jenkins*, 3 McLean, p. 261, it was said—

In describing the improvement of a machine in use and well known, it is not necessary to state in detail the construction of the entire and improved machine. It is only necessary to describe the improvement by showing the parts of which it consists, and the effects which it produces.

What is here expressed is, as I understand, the established practice of the office in such cases. I am of the opinion, therefore, that it is unnecessary and not lawful to require applicant to file a model or drawing of the machine which he claims to have improved. I, however, agree with the examiner to this extent, that it is the practice of the office to require that the improvement described, (if it be a machine,) whether made the basis of a claim for an improvement in the art, or directly claimed as an improvement in the machine, should be shown in drawing and model; but that part which constitutes the improvement and illustrates its connection with the machine improved need be shown, and no more.

The machine on which applicant has, as is alleged in this instance, made the improvement, is a well known machine, all the information relating to which is accessible to the public, and those skilled in the art to which the construction of such machines appertains can, undoubtedly, make it without any other instruction, except that which can be obtained from the patent itself, or from sources well known to the artisan.

With the limitation stated above, the decision of the Examiner is affirmed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

GILBERT AND BARKER MANUFACTURING COMPANY *vs.* ABRAHAM BUSSING.

[*In equity.—Before* WOODRUFF, *Cir. J.—January*, 1875.]

A mere interlocutory decree for gains, profits, and damages against the manufacturer of infringing machines cannot operate as any defense in behalf of the purchaser of one of such machines.

A patentee cannot take compensation for an infringement, including manufacture, sale, and use, and thereafter enjoin that use for which he has taken compensation.

When a patentee claims and recovers, not only the actual gains and profits of the manufacture and sale of the infringing machine, but all the damages which he has sustained therefrom, it is at least to be presumed that such recovery embraces all the profit which the patentee would have received had he made and sold the machine with the incidental and consequential right to use it.

Where the complainants had obtained an interlocutory degree for an accounting of gains, profits, and damages against the manufacturer of the infringing machines, an unqualified injunction *pendente lite* against the purchaser and user of one of the machines was refused. The defendant, however, was put under bonds.

On final hearing the complainants might become entitled to a perpetual injunction against such defendant, as they cannot be compelled, against their will, to permit the defendant to use their invention.

[*E. W. Stoughton* and *W. Stanley*, for complainants.
Edmund Wetmore, for defendants.]

[This was a suit under letters patent granted to C. N. Gilbert and J. F. Barker, August 3, 1869, for an "Improved apparatus for carbureting air." The patent had been sustained at final hearing in a suit against Oakes Tirrell, decided by Judge Woodruff in July, 1874, and the complainants had obtained an interlocutory decree for an accounting as to gains, profits, and damages. Tirrell was a manufacturer of the infringing machines, and the defendant in the present suit had purchased one of the machines so manufactured by Tirrell, and was using it to light his own residence.]

WOODRUFF, *Circuit J.:*

The complainants heretofore filed their bill in this court against Oakes Tirrell, in which they charge him with infringing their patent by the manufacture and sale of gas-machines, the exclusive right to the manufacture and sale of which they claim under their patent. The decision in that case sustained the complainants' patent, and held Oakes Tirrell an infringer. Thereupon an interlocutory decree was entered, requiring the said Oakes Tirrell to account to the complainants for all gains and profits made by him by the manufacture and sale of such infringing machines, and for all damages sustained by the complainants from the infringement of their patent by the said Tirrell. That interlocutory decree is in full legal force, and may be carried into execution so that the complainants may have a final decree for such gains, profits, and damages.

I am inclined to think that if that final degree were made, and the amount which should thereby be awarded to the complainants should be paid, it could be held an indirect affirmance of all sales made and accounted for, or a satisfaction of the damages resulting from such sale, so that as to the particular machines so made and sold there would result to the purchaser a right to hold and take the benefit of his purchase.

Possibly the question, whether demanding and receiving from Tirrell the mere profits of the manufacture and sale, would include the profits of the use of the machine might arise; but, in general, the sale of a machine to a purchaser for use carries with it the right to use it, the presumption being that whatever license fee or compensation for the use is due to the vendor is included in the price. So when a patentee claims and recovers, not only the actual gains and profits of the manufacture and sale, but all the damages which he has sustained therefrom, it is at least to be presumed that such recovery embraces all the profit which the patentee would have received had he made and sold the machine to such purchasers with the like incidental or consequential right to use it. I do not, however, mean to affirm that a patentee may not have a decree against him who manufactures and sells an infringing machine, and also a decree against the purchaser thereof, enjoining such manufacture and sale and also enjoining the future use of the infringing machine, but only that the patentee cannot take compensation for the infringement, including manufacture, sale, and use, and thereafter enjoin that use for which he has taken compensation.

The patentee in such last supposed case would stand very much in the condition of one who sues in trover for the value of his property wrongfully converted, and recovers and receives such value and compensation for his damages. He thereby so far affirms the conversion that his title to the property is gone. But to effect this something more than the bringing of the action and more than a verdict assessing damages is necessary. There must be satisfaction.

An analogous rule, I think, applies to this case. The complainants brought their suit and have established their title as against Oakes Tirrell to full compensation. But they have not received such compensation; *non constat* they ever will. On the contrary, the proof on this motion is that he is insolvent, and, if so, a final decree against him may be of no value. Such interlocutory decree ought not, therefore, to be regarded as any defense to the purchaser from Tirrell. Upon the case made by the bill both Tirrell and the defendant were *tort feasors*. Nothing has occurred by reason of which the defendant is enabled to say that he has acquired a right to use the infringing machine. Until the complainants have received some compensation or satisfaction which will operate to vest such right in the defendant, he stands undefended, assuming, of course, the validity of the patent.

On the other hand, I think the complainants can be fully protected without an unqualified injunction *pendente lite*. The defendant is not engaged in manufacturing and selling, and does not, therefore, interfere with the business of the complainants by competition or otherwise. He is not injuring their business or impairing the present value or profits which they derive from their monopoly. He has a single machine, connected with and used for lighting his private residence. It would be a great inconvenience to him, and, so far as I can perceive, of no legitimate advantage to the complainants, to compel him to discontinue that use while this suit is pending, especially as the decree which the complainants may, if they so elect, have against Tirrell may be fully paid and satisfied in such wise that it might operate as satisfaction of the entire wrong, in which both Tirrell and the defendant are participators. The complainants may be secured ample indemnity, and so the order of the court will work no hardship.

I do not mean to intimate that on the final hearing the complainants may not be entitled to a perpetual injunction against the defendant. The complainants cannot be compelled, against their will, to permit the defendant to use their invention.

All that I mean to hold now is that the complainants

can be fully indemnified for that use pending this suit, and that I am of opinion that such indemnity will protect them, without subjecting the defendant to needless inconvenience and expense, until his rights can be considered and decided on a final hearing.

Neither the moving papers nor those read in opposition to the motion give much information as to the amount of security which should be required, and if the complainants deem the amount which I suggest an insufficient protection, I will hear the parties on the settlement of the order, which will be that an injunction issue, unless the defendant, within twenty days after service of the order on his solicitor, files a bond to the complainants, with two sufficient sureties in the sum of fifteen hundred dollars, conditional for the payment of whatever decree may be rendered against him in this suit.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

FREDERIC A. KURSHEEDT *vs.* ROBERT WERNER.

[*In equity.—Before* BLATCHFORD, *J.; June*, 1875.]

The claim in the patent of George E. King, issued February 26, 1867, and reissued June 23, 1868, for an improvement in fluting-machines, which is for "the guide E, constructed with one or more curved or arched portions, *a'*, in combination with suitable fluting-rollers, substantially as herein set forth, for the purpose specified," construed to cover a machine in which the guide consists simply of an arched projection rising up in front of the plain part between the two fluted parts of the fluting-rollers, by which arched projection an extra width of the fabric passing over it is taken up laterally, to be afterward crinkled as it is passed in between the plain parts of the fluting-rolls.

Although the specification speaks of the guide as composed of two pieces of metal, one over the other, between which the fabric passes—and although those parts of the fabrics which are to be fluted and those which are to be flattened, as well as those which are to be crinkled and puffed, are described as passing between the two pieces of metal of the guide, and although the patentee calls the whole instrument in front of the rollers a guide—yet the only material part of it is the arched or curved portion. The raising of the fabric, or the deflection from the general plane of the fabric, or from the general course of the fabric, of that part of the fabric which is to be crinkled by an interposed deflector, is the essence of King's invention.

The expression in the claim "the guide constructed with a curved or arched portion" is the same thing as saying "the curved or arched portion of the guide."

[*F. H. Betts*, for complainant.
A. V. Briesen, for defendant.]

[The case came up on motion for preliminary injunction.]

BLATCHFORD, *J.*:

The letters patent sued on herein are reissue No. 3,000, granted to George E. King, June 23, 1868, the original letters patent having been granted to him, as inventor, February 26, 1867.

The patent is for "an improvement in fluting-machines." The specification of the reissue says:

This invention is designed for making puffing applicable to shirt-bosoms, trimming, or other purposes of dress, in which the article, as it issues from the machine, is (without having recourse to laundering) delivered in a complete form, either single or in two or more series or rows, composed of flattened borders, with flutes running along their inner edges, and puffed or crinkled surfaces between the flutes. The invention consists in a guide, constructed with one or more curved or arched portions, in combination with one or more suitable fluting-rollers, whereby the material, in passing through the machine, is fluted and contracted laterally, as it were, or drawn up between the flutes to produce the required crinkled surface or surfaces in the puffing.

The main feature of the machine is the arched guide, in combination with two rollers, one above the other, and opposite and near to the guide. The rollers are so formed that the strip of material, after being acted on by the guide, passes between the two rollers. The rollers are so formed that the strip of material, after being acted on by the guide, passes between the two rollers. The rollers have such configuration externally on their surfaces as to produce a finished fabric which has a longitudinal strip that is puffed or crinkled in such manner as to possess an irregular wavy surface, and on each side of such crinkled strip a longitudinal strip that is fluted, and on each side of, and outside of, each of such fluted strips a longitudinal flattened strip, through which stitching may be made longitudinally, to render permanent the conformation of the puffing. The portions of the rollers from between which the crinkled part of the finished fabric issues are plain, and so are the portions from between which the flattened parts of the finished fabric issue, while the portions of the rollers from between which the fluted parts of the finished fabric issue are grooved, so as to make grooves and flutes on each roller—a groove alternating with a flute, and the flute on one roller taking into the groove on the other. Each part of each roller is of the same width as that portion of the finished fabric which it is designed to shape. The parts of the rollers from between which the crinkled part of the finished fabric issues are of such diameter that, when the rollers are in proper position, the face of that part of one roller is situated at such distance from the face of that part of the other roller that no considerable pressure is exerted upon the fabric in passing between them. It is the action of the guide, in connection with the grooved and fluted parts of the rollers and the plain parts of each roller that lies between the two grooved and fluted parts of each roller, that produces the crinkled part of the finished fabric.

The specification describes the guide as "the inclined guide E," and as being composed of two pieces of sheet metal, secured one over the other at such a distance apart as to permit the passage of the cloth or fabric between them. It also states that those parts of this guide E which are in front of the plain cylindrical portions of the rollers "are curved upward, or arched transversely, as shown at *a'*," in such manner that the width of the fabric passed between each pair of the plain portions of the rollers will be greater, if stretched out to its full extent, than the width of such plain portions of the rollers, so that the fabric, by means of such excess of width, will be crinkled or puffed in passing between such plain portions of the rollers; that the end of the strip of fabric is passed between the two pieces of metal of which the guide is formed, and between the rollers, which rotate, so as to draw the fabric lengthwise between them; that the grooves and flutes of the rollers flute the parts which they press; that the parts outside of the fluted parts of the fabric are pressed flat; that the parts of the fabric that are drawn through the curved or arched parts *a'* of the guide E, being (if stretched to their full extent) of a width greater than the width of the plain portions of the rollers opposite such curved or arched parts of the guide, and being also gathered by the fluting formed at their sides or edges, are caused to assume a crinkled or puffed form as they are passed between such plain portions of the rollers, the distance between the faces of such plain portions being such that no pressure is exerted upon the fabric passing between them beyond that required to simply press the convex surface thereof downward to a sufficient degree to insure the shaping thereof into such puffed condition; and that the extent to which the material will be thus contracted laterally or drawn up between the flutes will be governed by the excess of the width of the arched portions *a'* of the guide over the length of a straight line or lines connecting such arched portions at their base.

The description in the specification is of a structure capable of making several strips of finished fabric at once, which may be cut apart longitudinally in the flattened portions. Each of the strips so cut off will present a crinkled portion, two fluted portions, and two flattened portions. But the specification also speaks of making but one of such strips at a time with a guide which has only one curved or arched portion, and rollers which are capable of making at one time but one strip of finished fabric having the features before mentioned.

The claim of the reissue is in these words:

The guide E, constructed with one or more curved or arched portions, *a'*, in combination with suitable fluting-rollers, substantially as herein set forth, for the purpose specified.

The specification speaks of the guide as being composed of two pieces of metal, one over the other, at such a distance apart as to permit the passage of the fabric between them. At the arched part of the guide both pieces of metal are arched. The part of the fabric which passes between the arched parts is only that part of the fabric which is to be crinkled. But the other parts of the fabric, namely, those parts of the fabric which are not to be crinkled, but are to be fluted and flattened, pass on their way to the rollers between the two pieces of metal of the guide, although not between the arched portions. The language of the specification and claim shows, however, that the fact that the part of the fabric which is not to be crinkled passes between two pieces of metal on its way to the rollers is immaterial to the invention claimed, and that the fact that the part of the fabric which is to be crinkled has, at the time it passes over the arched part of the guide, a correspondingly-arched piece of metal over it, is immaterial to the invention claimed. Both of the pieces of metal on each side of the arched part of the guide, as well as the piece of metal above the arched part of the guide, may be cut away or removed without affecting the operation of the machine in the particular aimed at by the invention of the patentee, as described and claimed in the specification, and without removing anything which is of the essence of his invention, or is necessary to its completeness, as claimed. The language of the specification throughout shows that the arched portion of the lower piece of metal is what is alone effective, in combination with the rollers, in producing the result of which the specification speaks. Thus, the specification states that it is the arched portion of the guide, in combination with the rollers, which is the invention, in that thereby the material, in passing through the machine, is drawn up between the flutes to produce the required crinkled surface. It also states that it is the curving upward or arching of the part of the guide which is in front of the plain portions of the rollers which causes the width of the fabric which is passed between such plain portions to be greater, if stretched out to its full extent, than the width of such plain portions of the rollers, so that the fabric, by means of its increased width, will be crinkled or puffed in passing between such plain portions. It further states that the effect of the curved or arched parts of the guide upon those parts of the fabric which they affect is, that such parts of the fabric are, if stretched to their full extent, of a width greater than that of the plain portions of the rollers, and that this fact, with the gathering of such parts of the fabric by the fluting that goes on in the adjacent parts, causes the crinkling. It further states that this lateral contraction of the part that is to be crinkled will depend upon the degree of arching in the arched part of the guide. Now, it is the raising up of the fabric, or the deflection from the general plane of the fabric, or from the general course of the fabric, of that part of the fabric which is to be crinkled by an interposed deflector, which is the essence of the patentee's invention. Such is his claim. The claim designates as the invention the curved or arched portion of the guide, in combination with suitable fluting-rollers, substantially as set forth in the specification, for the purpose therein specified. The patentee calls the whole instrument in front of the rollers a guide; but the only material part of it is the curved or arched portion. The expression in the claim "the guide, constructed with a curved or arched portion," is the same thing as saying "the curved or arched portion of the guide."

This has been the construction heretofore given to this patent. In *King* vs. *Maudelbaum*, (8 Blatchf., C. C. R., 468,) the defendant's machine had two rollers, which did not have plain portions, to form, in connection with an arched guide exterior to the rollers, the crinkled part of the puffing; but the defendant had transferred the arched guide to one of the rollers, by placing thereon, on the portion between the fluting instrumentalities on that roller, knobs or buttons, which formed a series circumferentially around the roller, and had between each two of them a depression. The exterior surfaces of these knobs or buttons performed the same office as the arched portions of the patentee's guide, and caused a greater width of fabric to be taken up and passed through over the knobs or buttons than the width of the base of the knob or button in a straight line between the two adjacent fluted portions of the roller. The material was contracted laterally or drawn up between the flutes in proportion to the excess in length of the arched exterior transverse surface of the knob or button over a straight line, connecting such arched surface at the base of the knob. There were on the other roller depressions matching the knobs. On these facts it was said, in the decision in that case:

The plaintiff claims, in substance, a curved or arched guide, in combination with suitable fluting-rollers, to contract the material or draw it up laterally between the flutes, so that there shall be in the finished fabric a greater width of material than the width on the roller in a straight line between the two fluted portions of the roller, in a line parallel to the axis of the roller, and so that such greater width of material shall thereby have given to it a crinkled or puffed or wavy conformation. The defendant has the arched guide in combination with the fluting-rollers. He has merely changed the position of such guide. It operates in the same way as the plaintiff's arched guide to produce, in combination with the rollers, the same result that the plaintiff produces.

The same patent was again before this court in the case of *King* vs. *Werner*, (decided August 13, 1874.) In

that case the defendant used, in connection with the fluting-rollers, a detent or finger, by which a portion of the fabric was held back, and thereby formed into V-shaped, but more or less irregular, lateral waves and crinkles. He had plain zones between the fluted portions of his fluting-rollers. The free end of the detent bore against a platform midway of the plain zones. The fabric, in its passage to the rollers, passed over the platform and under the detent, which was a spring, and which so pressed the fabric against the platform, while the rollers were drawing the fabric forward, as to detain or hold back that portion of the fabric which was so pressed by the detent, and cause it to be crinkled in the space between the inner edges of the flutes. This result was attained, because the same thing was done as in the King machine—that is, the width of the fabric passed between the pair of plain zones was greater than the width of such zones, and, as the fluting gathered the fabric, the portion of it which passed between the pair of plain zones was crinkled. In the decision in that case, it was said:

The main feature of the plaintiff's machine is the device for pulling away the fabric before the fluting-rollers grasp it too firmly, so as to get the increased width of fabric opposite the pair of plain zones. The plaintiff shows how this is to be done by an arched guide. This arch raises up the fabric. The fabric rides over it, and so is pulled away from the fluted parts of the rollers. The obstacle interposed by the arched guide pushes up the fabric to an apex. There would be no difference in mode of operation if the fabric were pushed down to a given point by an arched guide. The defendant interposes an obstacle which pulls back the fabric from the fluted parts of the rollers. The mode of operation is the same as in the plaintiff's machine, and the result is the same. The only difference is, that in one the center of the extra width moves upward as the pull is made, and in the other it does not; but in each the detaining instrument diverts the fabric from what would otherwise be its course, so as thereby to pull out extra width. I think the variation is merely mechanical, and not substantial, and that the defendant's machine is an infringement.

In the testimony in that case, evidence was given as to the use prior to King's invention of a guide called the Muller guide No. 5, which had an arched projection raised in front of two rollers, and over which arched projection the material passed on its way to the rollers; but the evidence showed that such arched projection had been used, not in combination with fluting-rollers which had plain parts or zones opposite the arched projection, but always in combination with rollers on which, opposite the arched projection, were diamond embossing-rings, which made a diamond figure on the material and occupied all the space on the rollers that was not occupied by the fluting parts of the rollers. It was held that this did not present the combination set forth in the claim of the patent, for the purpose therein specified.

The defendant in the suit last referred to is the defendant in this suit. He has altered his machine by taking off the detent or finger and putting in place of it an arched projection, raised up in front of the plain parts of the rollers, and like the arched projection in the said Muller guide No. 5; but he dispenses with the Muller embossing-rings, and uses instead rollers like King's, which have plain parts between the fluting parts and opposite the arched projection. He has removed from the King machine those parts before spoken of as immaterial to King's invention, namely, the upper piece of metal in King's guide, and the metal each side of the arched projection. He retains all that there is essential in King's guide—that is, its curved or arched portion opposite the plain parts of the rollers, which are between the fluted parts of the rollers—and he uses such curved or arched portion in connection with rollers which have parts suitable for fluting each side of plain parts, in a machine which operates by means of such fluting parts and such plain parts of the rollers, and such curved or arched piece in front of such plain parts, to produce the crinkled or puffed conformation in the fabric in connection with the fluted parts of it. The mode of operation of the parts is the same as in King's machine, in all features that are essential to King's invention, as described and claimed, and the result in the finished fabric is the same. The defendant takes up an extra width of material by causing the material to ride over and to be raised by the arched or curved projection, and this extra width is crinkled as and because the adjacent parts are fluted.

The plaintiff is entitled to an injunction, as prayed for.

DISCLAIMERS FILED.

86,306.—Improved Metallic Lathing.—ISAAC V. HOLMES, New York, N. Y. Patented January 26, 1869; reissue No. 3,661, dated October 5, 1869. Disclaimer filed July 6, 1875. Disclaims:

"That part of the claim, in said Letters Patent, which is in the following words, to wit:

"1. A metallic stud or support, when formed with suitable projections and recesses or stilts, for holding metallic lathing, substantially as herein described and set forth."

48,366.—Tremolo Attachment.—RILEY W. CARPENTER, New York, N. Y. Patented June 27, 1865; reissue No. 3,444 dated May 18, 1869; reissue No. 3,665, dated October 5, 1869. Disclaimer filed June 19, 1875. Disclaims:

"Your petitioners hereby enter their disclaimer to those parts of the claims of said reissue No. 3,665, if any which cover, or which may be construed to cover, the application to the instrument of any valve or tremolo, producing mechanisms arranged as shown in the drawings or model, or original specification of the Letters Patent granted Lafayette Louis, dated November 18, 1856, No. 16,094, and limit their claims to and cause said claims to include only—

"'1. The application to a musical instrument of a fan vane, or beater, located externally to the wind-chest and air-passages of the instrument, and behind or above the key-board and the place usually occupied by the swell of the instrument, and operated by a treadle or other suitable means of operation, substantially as shown.

"'2. The arrangement of such fan or agitator in the instrument, so located and operated at right angles to the keys and parallel to the line of reeds or pipe mouths, at any convenient distance from them, as described.'"

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date July 27, 1875.]

8,495.—Steam and Vacuum Pumps.—DAVID A. BURR, Philadelphia, Pa. Application filed July 10, 1875. Term of patent 14 years.

8,496.—Glass Vessel.—EDWARD FINNEY, Philadelphia, Pa. Application filed May 7, 1875. Term of patent 3½ years.

8,497.—Cigar-Boxes.—FREDERIC HAHNEL and HENRY NORMAN, New Orleans, La. Application filed June 8, 1875. Term of patent 7 years.

8,498.—Toy Bank.—JOHN HALL, Watertown, Mass. Application filed June 14, 1875. Term of patent 3½ years.

8,499 to 8,523, inclusive.—Carpets.—OTTO HEINICKE, New Utrecht, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Applications filed July 17, 1875. Term of patents 3½ years.

8,524 to 8,527, inclusive.—Carpets.—HENRY HORAN, East Orange, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Applications filed July 17, 1875. Term of patents 3½ years.

8,528.—Carpets.—LEVI G. MALKIN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed July 17, 1875. Term of patent 3½ years.

8,529 and 8,530.—Oil-Cloth.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York city. Applications filed July 2, 1875. Term of patents 3½ years.

8,531.—Oil-Cloth.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York city. Application filed July 12, 1875. Term of patent 3½ years.

8,532 and 8,533.—Oil-Cloth.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York city. Applications filed July 2, 1875. Term of patents 3½ years.

8,534.—Oil-Cloth.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York city. Application filed July 16, 1875. Term of patent 3½ years.

8,535 to 8,545, inclusive.—Carpets.—ELMER J. NEY, Dracut, Mass., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Applications filed July 17, 1875. Term of patents 3½ years.

8,546 to 8,549, inclusive.—Carpets.—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Applications filed July 17, 1875. Term of patents 3½ years.

8,550 to 8,553, inclusive.—Fabrics for Clothing.—EDWARD C. CLARK, Rockville, Conn.—Cases A, B, C, and D. Applications filed July 19, 1875. Term of patents 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date July 27, 1875.]

2,785.—Beer.—BENJAMIN BATES, Baltimore, Md. (Re-registration.) Application filed February 7, 1871.

"a ring, stripe, or band of a different color from that of the bottle, running entirely around the girth of the bottle, with my name or signature, Dr. BENJAMIN BATES, cut or affixed upon the bottle just above said colored ring or band."

2,786.—Beer.—BENJAMIN BATES, Baltimore, Md. (Re-registration.) Application filed April 21, 1871.

"a ring, stripe, or band of a color different from that of the bottle, running round the bottle."

2,787.—Tonic Beer.—BENJAMIN BATES, Baltimore, Md. (Re-registration.) Application filed September 26, 1872.

"word 'National' in connection with the words 'Tonic-Beer.'"

2,788.—Medicine.—HENRY H. HAY, Portland, Me. (Re-registration.) Application filed January 3, 1871.

"letters 'L. F.'"

2,789.—Mail-Bags.—JOHN BOYLE, of Brooklyn, N. Y., assignor to MARSHALL JEWELL, Postmaster-General of the United States, on behalf of the United States. Application filed June 30, 1875.

"thirteen parallel stripes, in blue or other suitable color."

2,790.—Condensed and Fresh Milk.—SAMUEL W. CANFIELD, Piermont, N. Y. Application filed June 19, 1875.

"word 'SALICTLIC.'"

2,791.—Broom and Tool Holders.—HIRAM CARSLEY, Lynn, Mass. Application filed June 30, 1875.

"a female figure, represented as holding a broom and emerging from a doorway."

2,792.—Cigars.—LICHTENSTEIN BROTHERS & Co., New York, N. Y.—Case A. Application filed June 17, 1875.

"phrase 'M. Blem.'"

2,793.—Cigars.—RICHTENSTEIN BROTHERS & Co., New York, N. Y.—Case B. Application filed June 17, 1875.

"word 'CONSTELLATION.'"

2,794.—Cigars and Tobacco.—LICHTENSTEIN BROTHERS & Co., New York, N. Y. Application filed July 17, 1875.

"words 'AMERICAN TEAM.'"

2,795.—Soap.—ROBINSON BROS. & Co., Boston, Mass.—Case A. Application filed July 6, 1875.

"words, or compound word, 'Almond Meal.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date July 27, 1875.]

287.—Title: "**Livingston's Indelible Carmine Ink.**"—FRANK L. JOY, Chicago, Ill. Application filed June 28, 1875.

288.—Title: "**Anti-Corrosive Cylinder-Oil.**"—E. H. KELLOGG, New York, N. Y. Application filed July 15, 1875.

289.—Title: "**Pennsylvania Cellar Co., Phila.**"—RESTEIN BROS., Philadelphia, Pa. Application filed July 17, 1875.

290.—Title: "**Adam H. Riebeling, Buffalo.**"—ADAM H. Riebeling, Buffalo, N. Y. Application filed July 12, 1875.

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Simonson, S., Cigar mold	166,154
Simpson, Hall, Miller & Co., assignees	165,926
Singer, J. W., assignee	166,152
Sinsser, B., Sulky plow, (reissue)	6,563
Smith, C. A., Millstone dressing machine	165,958
Smith, E., and E. C. Maltby, Machine for paring cocoanut meats	165,959
Smith, G. K., Composition metal for casting plows, (reissue)	6,558
Smith, W., assignee	166,138
Spear, T. H., Machine for making toy torpedoes	165,960
Spencer, W. H., Manufacture of illuminating gas	166,036
Spencer, W. H., Heating retorts for the manufacture of illuminating gas	166,037
Spinney, W. F., Heel stiffener	165,961
Stepp, H. G., Lap board	166,038
Sterry, G. E., Compound for flavoring and preserving tobacco	166,155
Stevens, D. E., and R. F. Lumley, Fruit jar	165,962
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Sullivan, S., Applying sample patches to cotton bales	166,158
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Wheatstone, C., and J. M. A. Stroh, Automatic telegraph	166,168
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Wright, J., Cotton cleaner	166,054
Wroth, A. B., Washing machine	165,969
Wyman, H., Loom shuttle box mechanism, (reissue)	6,568
Yarbrough and Rush	166,149
Young, C., Ribbon runner	165,970

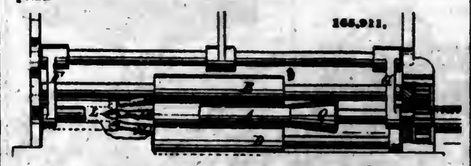
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED JULY 27, 1875.

165,911. CIGAR-MACHINE. R. Appleby, New York, N. Y. [Filed Oct. 17, 1874.]

Brief.—The body of the cigar is laid between three rolls, which rotate it, while its point rests between a set of short rolls, that are arranged to surround the same, to give it the finished form. Over these short rolls, and upon the upper main roll, is an adjustable conical sleeve, that can be brought over the short rolls, to co-operate therewith in forming the point.



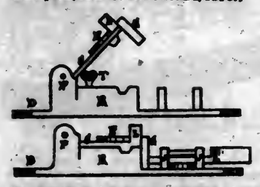
The combination, with the rollers A B C, of the adjustable thimble Q and the rolling sleeve N, mounted on spindles projecting from the grooved head L, and arranged in the arc of a circle, all as shown and described.

165,912. [illegible]

In a metal-lined wood pump made in two sections, A and B, suitably secured together, the lining C, made to enter a groove in the section B, and inclose the clack-valve upon the upper face of said section, substantially as and for the purpose described.

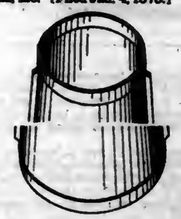


165,913. SEAL-LOCKS. John S. Brown, Indianapolis, Ind. [Filed Feb. 24, 1875.]



The combination of the lock D R, hinged key-hole cover C, having the opening M, with the L-shaped seal E, having the opening P, notched bolt H, and bar K, constructed and operated substantially as described.

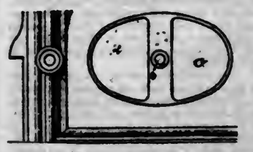
165,914. LAMP-CHIMNEYS. W. H. Barnard, Sedalia, Mo. [Filed Jan. 4, 1875.]



A lamp-chimney constructed of two sections, each of which is provided with laterally-projecting flanges, substantially as described, whereby, when the sections are placed together, a longitudinal projection is formed and a perfect joint secured, as set forth.

165,915. OVEN-DOORS FOR STOVES. Jos. C. Barnes, Albany, N. Y., assignor to Van Wormer & McGarvey, same place. [Filed May 20, 1875.]

Brief.—The name-plate is held in the recess by the bolt passing through the bar.



The combination of the removable name-plate a and the opening or recess c, formed in the stove-door for the reception of the plate, secured and held in place by means of nuts and bolts, substantially as shown and described.

165,916. WOOD PUMPS. Amos Breed, La Harpe, Ill. [Filed Mar. 27, 1875.]

Brief.—The pump-stock is made in two sections, the lower receiving in a groove in its upper face the metal cylinder-lining projecting from the lower end of the upper section. The lining so received incloses the clack-valve placed on the lower section. The working parts of the pump may then be displaced without disturbing the tubing.

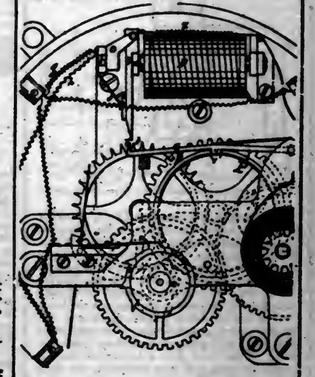
165,917. BURNISHERS AND FINISHING TOOLS FOR BOOTS AND SHOES. Jas. W. Carver, Lynn, assignor to himself and George H. Morrison, East Boston, Mass. [Filed June 20, 1875.]



The burnishing-iron *a*, provided at each end with a marking-wheel, *c*, and gage *d*, substantially as shown, and for the purpose specified.

165,918. SIGNAL-BOXES FOR FIRE-ALARM TELEGRAPHS. Moses G. Crane, Newton, Mass. [Filed July 9, 1875.]

Brief.—Boxes in normally-closed circuit. On the breaking of the circuit, the armature-levers are withdrawn by a spring. On taking against the fingers, closes a short circuit outside of magnet and circuit-breaking wheel, thus preventing a signal being given by any except the box first operated. In such box the mechanism is released by raising a lever having a lug in recess of the wheel, a tooth taking against a lever and locking it, to prevent the formation of the short circuit in such box.

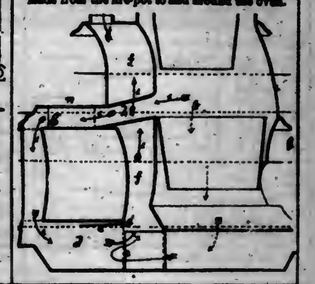


1. In a fire-alarm signal-box the lever G, with its lug V and hook *t*, the flange *p* and its notches V', the lever *b*, insulated plate *c*, and magnet D, all combined and operating as and for the purpose specified.

2. The combination of the lever H, the lever G, and the wheel F, whereby the said wheel is liberated and allowed to revolve under the stress of the motor Q, as and for the purpose specified.

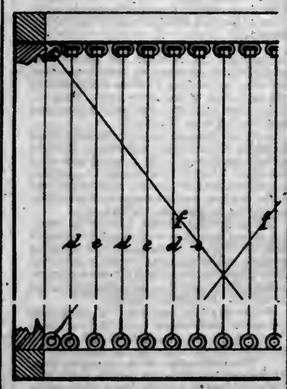
165,919. PARLOR COOK-STOVES. W. Doyle, Albany, N. Y. [Filed May 31, 1875.]

Brief.—The draft in the ascending flue is quickened by heat from the "blast-flue," which leads from the fire-pot to and around the oven.



The method of preventing echo, &c., by interposing a barrier of wire strands between the echoing or reflecting surfaces and the point or points from which the sounds emanate.

165,920. MEANS FOR PREVENTING REVERBERATIONS IN PUBLIC HALLS. William B. Carlock, Bloomington, Ill. [Filed Jan. 21, 1874.]



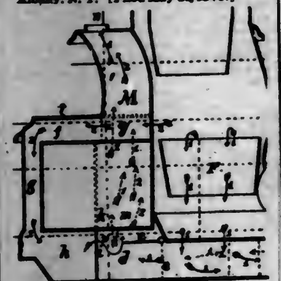
1. A heating-stove having an ash-pit at its rear, and the base-flues *b*, *b'*, and *c*, bottom horizontal flue with dampers *c c* between it and the said base-flues, and an ascending flue between the oven and the stove proper, combined to operate substantially as and for the purpose set forth.

2. The combination, with the ascending flue *f*, of the blast-flue *h* leading from the combustion-chamber to the horizontal flue or chamber *g*, and through the said ascending flue, whereby the hot gases passing through the said blast-flue may reheat the gases of reduced temperature in the said ascending flue, and stimulate the draft of the same, substantially as and for the purpose set forth.

3. The combination, with the stove proper, of the blast-flue *h*, horizontal flue or chamber *g*, direct return-flues *m m*, and ascending flue *f*, substantially as and for the purpose set forth.

4. The combination, with the blast-flues *h* and *h h*, one or more return-flues, *m m*, and horizontal top flue *g*, of the ring *s*, carrying the damper-plates *s' s'*, substantially as and for the purpose set forth.

166,920. PARLOR COOK-STOVES. W. Doyle, Albany, N. Y. [Filed May 31, 1875.]

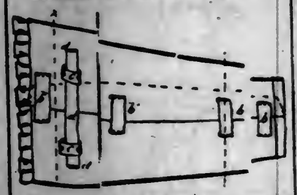


1. A heating-stove proper having flues for a reversible draft into and from the base, and an oven located at the rear, a top flue, *g*, horizontal flue *f*, descending flues *g f'*, horizontal flues *h* and *d*, separated by a flue-strip, ascending flues *m* and M, damper *c*, and ring-damper *s v* at the opening *m'*, combined to operate substantially as and for the purpose set forth.

2. A heating-stove proper, top flue *g*, flue or chamber *f*, descending flue M leading from the flue *f*, descending flues leading down the sides of the oven into a horizontal flue beneath the oven, and to an ascending flue leading to the flue M and damper to open or close the opening *m'* to the flue M, combined to operate substantially as and for the purpose set forth.

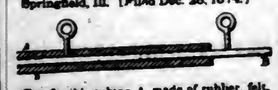
3. A heating-stove proper having descending and base flues for a reversible draft into the lower portion of the said stove, top flue *g*, chamber or flue *f*, having an opening to the ascending flue M, chamber or flue *d*, communicating with the flue *c* in the base of the stove proper, ascending flue *m*, base-damper *c*, and damper to variously open or close the opening *m'* to the ascending flue M, combined to operate substantially as and for the purpose set forth.

166,921. SLEEVE-PROTECTORS. O. H. Dunn, Boston, Mass. [Filed June 26, 1875.]



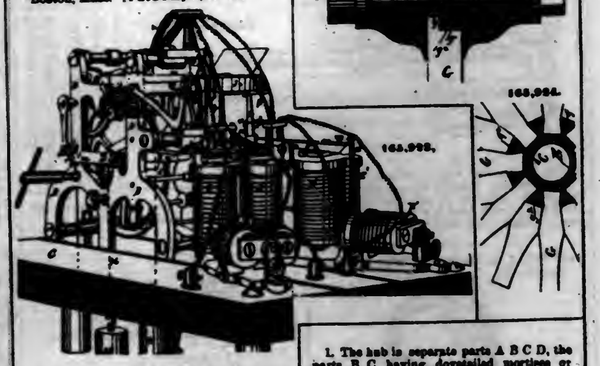
In combination with the protector *a*, provided with the flap *a'*, the elastic bands *b b'*, loops *c*, and elastic encircling band *d*, as and for the purposes herein specified.

166,922. WEATHER-STRIPS. Frank Fleury, Springfield, Ill. [Filed Dec. 26, 1874.]



The flexible tubing A, made of rubber, felt, or other like materials, in combination with the metal rod B and the metal fastenings C, for the purpose specified, substantially as shown and described.

166,923. TELEGRAPHIC FIRE-ALARM REPEATERS. Jno. N. Gamewell, Hackensack, N. J., M. G. Crane, Newton, and E. Rogers, Boston, Mass. [Filed July 9, 1875.]



1. The combination, with the break-circuit wheel of a telegraph-repeater, upon which the lines of two or more circuits converge, of a governor, whereby, when a signal is being given over any one of the circuits, and repeated over the other circuits, the armatures of the magnets in such other circuits are locked in position, thereby preventing interference between the several circuits, as and for the purpose specified.

2. The auxiliary escapement-movement, in combination with the governor J and the break-circuit wheel, whereby the reverse movement of the governor is not permitted to take place during several successive revolutions of the said wheel, as and for the purpose specified.

3. The auxiliary escapement-movement, the circuit-wheel and its shaft, and the lever 26, combined and operating as described, whereby, after the winding up of the escapement by the revolution of the circuit-wheel shaft, the reverse motion of the said lever is prolonged and graduated, as specified.

4. The combination, in an electro-telegraphic repeater, of two electro-magnets in the same circuit, one of which has a larger core than the other, whereby there results an appreciable difference in the periods required for them to be charged and discharged, respectively, as and for the purpose specified.

5. The device described, whereby the breaking of any one of several circuits connected with the repeater for the purpose of signaling occasions the break-circuit wheel to be cut out from that circuit by closing the same over auxiliary fingers *n n'*, all combined and operating as and for the purpose specified.

6. The auxiliary magnets F F', with their armatures and hooked lever M, in combination with the armature-lever H and swinging lever D, as and for the purpose specified.

7. The combination of the swinging lever D, with its two stop-pins, and the arm *i*, with its two fingers *s s'* upon the break-circuit-wheel shaft, as and for the purpose specified.

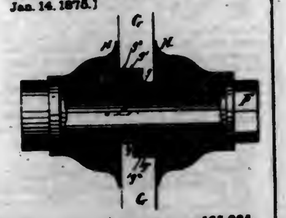
8. The combination of the cam 23, levers 22 and 25, and sliding bar 18, as and for the purpose specified.

9. The combination of the governor J, bar 18, lever 25, and latch 37, as and for the purpose specified.

10. The lever I, with its short arm 10, the armature-lever H, and lever D, and the governor J, combined and operating as and for the purpose specified.

11. The auxiliary escapement *y y'*, with its train 31 32, in an electro-telegraph repeater, employed to graduate the movement of the mechanism by which said train is actuated relatively to the movement of another telegraphic repeating mechanism.

166,924. WHEELS FOR VEHICLES. Jacob C. Garretson, Marchland Village, N. Y. [Filed Jan. 14, 1875.]



1. The hub in separate parts A B C D, the parts B C having dovetailed mortises or notches *g* for the reception of the spokes, and the whole held firmly together by means of the box or thimble E and nut F, as set forth.

2. The spoke G, with a dovetailed tenon, *g'*, and a square shoulder, *g''*, for the purpose of assembling the spoke with the hub, and holding it firmly fixed thereon at a fixed distance from the axis of the hub, as set forth.

166,925. PUMPS. Julian Grzybowski, Detroit, Mich. [Filed Apr. 22, 1875.]

Brief.—The pistons are connected to the piston-rods by cross-heads and sliding keys, by which either pump may be disconnected, leaving the other to work, the cross-head of the disconnected pump sliding freely on the elongated rod.

1. The combination of the two pumps, mounted on opposite ends of a common frame, the crank-shaft O, mounted midway between the two pumps, and the pitmen H, having their inner ends mounted on the crank, and their outer ends connected to the elongated piston-rods by means of the cross-heads M and keys S, as shown, so that either pitman may be disconnected and permitted to slide freely on the rod.

2. The combination of the two pumps, having their pistons both detachably connected to a common driving-shaft by mechanism substantially such as shown, and each pump being provided with two discharge-openings, *n* and *v*, the latter being united by a pipe, V, having cocks R, to a single pipe, N, as shown and described.

166,926.



166,926.



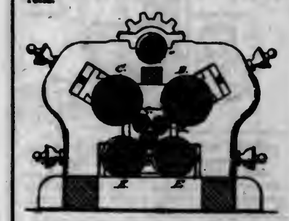
166,926. COVERED DRAINS. W. R. Hawkins, Wallingford, Conn., assignor to Simpson, Hall, Miller & Co., same place. [Filed May 11, 1875.]

1. The disk A, provided with studs *a* upon opposite sides, and the cover B, provided with slotted vertical arms *d*, substantially as described, so as to be turned and suspended beneath the disk, substantially as set forth.

2. The combination of the stationary disk and slotted cams with the cover provided with studs extending into the slots of said cams, and guides, substantially such as described, to govern the movement of the cover as it is turned to and from the disk, substantially as specified.

166,927. ROLLS FOR ROLLING ROUND IRON BARS. J. H. Heim, Allegheny, Pa. [Filed Dec. 8, 1874.]

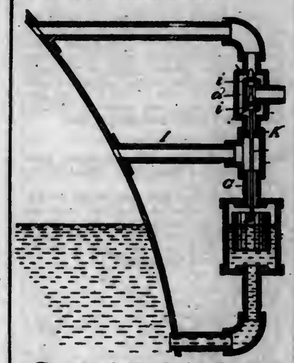
Brief.—Three small rolls, the axis of each of which is inclined spirally to the axis of the bar, so that said bar receives not only a rotary, but also a longitudinal, motion while being rolled. The small rolls are, when the bar (parallel to their axis) is inserted, forced against it by the driving-rolls and the re-enforcing rolls.



The interior rolls *a*, *d*, and *e*, the driving-rolls C and D, and friction-rollers E K, as combined, arranged, and for the purpose specified.

166,928. FEED-WATER REGULATORS. Geo. Henry, Leonorville, Canada. [Filed July 2, 1875.]

Brief.—Steam is admitted through an intermediate pipe, to balance the float.

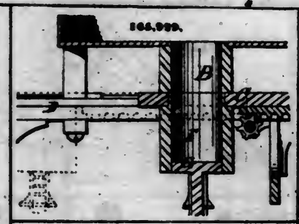


The water-chamber D, float R, stem *a*, valves *c c*, valve-chamber F, having steam-passage *d*, pipe G, valve-seats *i i*, and branch *g*, in combination with pipe I and plug K, substantially as and for the purposes described.

166,929. APPARATUS FOR INTRODUCING REFINING MATERIALS INTO MOLTEN METALS. Edward P. Hudson, New York, N. Y., assignor of one-half his right to N. Huggins, same place. [Filed Dec. 12, 1874.]

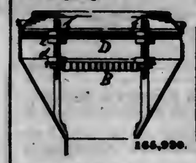
An apparatus substantially as herein described, consisting essentially of a stationary charging-tube, B, attached to a furnace or melting-pot, a closing plate, C, moving beneath the same in suitable ways D D, a movable charging tube or shell, E, and a piston or follower, G, arranged and operating substantially as set forth, for introducing materials into molten metals below the surface thereof, for refining and treating the same, substantially as herein specified.

166,930.



166,930. LOCOMOTIVE SMOKE-STACKS. N. Irving, Susquehanna Depot, Pa. [Filed Apr. 21, 1875.]

Brief.—The taper collar is adjustable attached, to facilitate its removal for repairing the diaphragm.

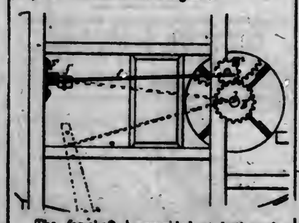


1. In a smoke-stack, the combination of the grate B, diaphragm or netting D, taper collar C, and fixed collar E, arranged relatively to each other as shown, and for the purpose specified.

2. The taper collar C and fixed collar E, in combination with the diaphragm or netting D, substantially as described and set forth.

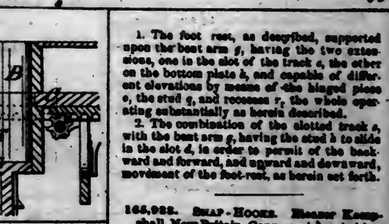
166,931. GRAIN-SEPARATORS. John W. Johnson, Towanda, Pa., assignor of two-thirds his right to C. M. Manville & H. B. Buffington, same place. [Filed Apr. 23, 1875.]

Brief.—Means for varying the actual and relative movement and throw of the upper and lower shoes of a fanning-mill.



The fan-shaft *b*, provided at both ends with crank-pinions B B', the latter driving a smaller crank-pinion, B'', in combination with the transferable connecting-rods *g*, elbow-lever *r* on the removable bracket F, and removable crank-arm D on the rocking shaft D', as and for the purpose set forth.

166,932.



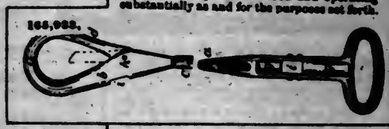
1. The foot rest, as described, supported upon the bent arm *g*, having the two extensions, one in the slot of the track *d*, the other on the bottom plate *h*, and capable of different elevations by means of the hinged plate *o*, the stud *q*, and recesses *r*, the whole operating substantially as herein described.

2. The combination of the slotted track *d*, with the bent arm *g*, having the stud *h* to slide in the slot *d*, in order to permit of the backward and forward, and upward and downward, movement of the foot-rest, as herein set forth.

166,932. SNAP-HOOKS. Eleazer Kempshall, New Britain, Conn., neighbor to himself and William Nash, same place. [Filed July 7, 1875.]

The hook *a* and the body *b*, having orifice *f* through the beak, and recess *g*, in which is fitted the spring *f*, and between the cheeks of which is pivoted the latch *d*, having the cam *e*, the several parts combined and operating substantially as and for the purposes set forth.

166,933.



166,934. MODES OF FORMING SHEET-METAL ROLLERS. A. Haydn Knapp, Boston, Mass. [Filed June 12, 1874.]



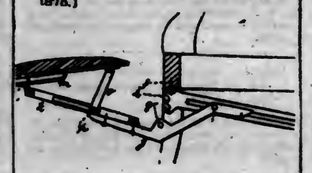
The method or process of forming cylindrical sheet-metal rollers by first bending the metallic sheet upon an elliptical mandrel, and afterward placing and clamping it around a cylindrical mandrel, whereon the edges are soldered together, substantially as and for the purposes herein specified.

166,935. SHEET-METAL SHADE-ROLLERS. A. Haydn Knapp, Newton, Mass. [Filed Apr. 1, 1875.]

1. An extension coupling-tube, *a*, of a sheet-metal shade-roller, A B, having the edges of the metallic sheet composing it soldered together for a portion of its length, and the remaining portion thereof unsoldered, substantially as and for the purposes herein specified.

2. The longitudinal groove *h* in the side of the extension-tube *a*, formed where the edges of the sheet metal composing the tube lap by each other, and embracing both edges, substantially as and for the purposes herein specified.

166,936. FOOT-RESTS FOR CHAIRS. T. A. Johnson, Portland, Me. [Filed June 15, 1875.]



166,936. BUCKLES FOR HARNESS. Israel L. Landis, Lancaster, Pa. [Filed Aug. 18, 1874.]

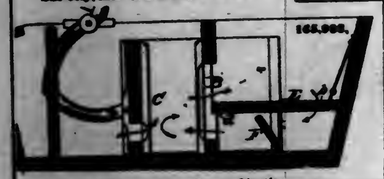


In combination with the crank-shaft C and tongue D, the frame A A, having the depending central legs B and strap-rail A'', as described.

165,937. COMPOSITIONS FOR JOURNAL-BEARINGS. Lebbeus W. Lathrop and T. A. Weber, New York, N. Y. [Filed June 26, 1875.]

The compound or composition consisting of copal, sulphur, and graphite, in the proportions substantially as stated, for making journal-box linings or machinery-bearings, substantially as described.

165,938. WASHING-MACHINES. E. Longly, Sac City, Mo. [Filed May 3, 1875.]



1. In a washing-machine, the combination of a sliding head, a valve operated thereby, a grating to support the clothes against the impact of the head, and a perforated shelf or guide-board, arranged in the manner described, to form a current of water under the clothes on the back stroke of the plunger, and thereby turn them over, substantially as shown and described.

2. The combination of the body A, fixed grating B, sliding head C, perforated shelf E, arranged behind the grating, and the valve F, operated by the head in such manner as to drive a current of water forward through the feet of the grating as the head recedes therefrom.

165,939. FOLDING COTS. Orrin R. Lord, Baldwinsville, Vt., assignor to T. Stowe, same place. [Filed June 8, 1875.]



1. In a folding cot, the combination of the side rails *a*, cross-bars *b*, legs *c*, braces *d*, head-boards *g*, and rods *h*, substantially as described.

2. In a folding bed or cot, the combination of the braces *d* and boards *g*, the two parts being connected together so as to form braces alone, or braces and head or foot boards, substantially as shown.

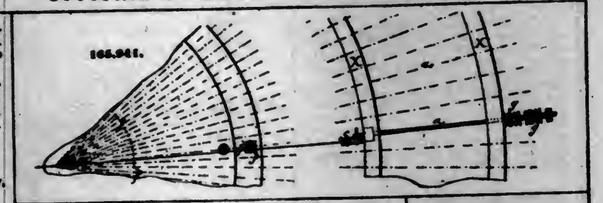
165,940. HANDKERCHIEF-HOLDERS. Hervi O. Mackinney, North Attleborough, Mass. [Filed June 10, 1875.]



The handkerchief-holder composed of the spoon B, provided at one end with the jaws C D D, and at the other with a loop, in combination with the trumpet-shaped slide A, all constructed and arranged substantially as shown and described.

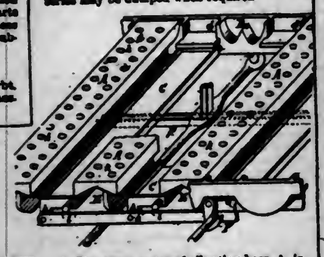
165,941. LACE-MACHINES. E. Malherbe, Paris, France. [Filed Sept. 8, 1873.]

Brief.—The loop is formed by a series of rotating disks placed side by side, and carrying bobbin-carriages, which are alternately shifted, by the double bent levers, from one disk to another, for the purpose of crossing the threads, and rubbed with the disks to twist the crossings. In shifting, they slide on the T-pieces of the disks, and the rotation of the latter is imparted by the gearing on the sleeves attached to the axes of the disks, which gearing is connected by cords to a Jacquard mechanism.



165,942. FURNACE-GRATES. Geo. R. Moore, Philadelphia, Pa. [Filed Feb. 9, 1875.]

Brief.—Two series of grates are arranged one above the other, so that when the upper one is shaken the lower one receives the here-tofore waste particles of coal. The lower series may be dumped when required.



1. The upper series of vibrating bars A, in combination with the lower series of swinging bars C, as and for the purpose herein set forth.

2. The bed-plates E, having each central bearing D provided with side flanges *d*, as and for the purpose specified.

3. The swinging bar C, in combination with an upper series of bars, as and for the purpose herein set forth.

4. The latch F, in combination with the bar C, as and for the purpose herein set forth.

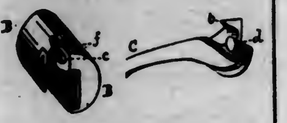
5. In combination, the bars A, hangers *c*, and lever *e*, as and for the purpose herein set forth.

165,943. FAUCETS. Thomas Newman and Wm. H. Kneal, Cleveland, Ohio. [Filed June 17, 1875.]

The tube D, in combination with the tip C, head A, and jacket B, in the manner substantially as described, and for the purpose set forth.

165,944. SASH-HOLDERS. W. H. Plympton, Providence, R. I. [Filed Dec. 26, 1874.]

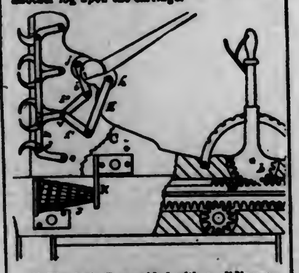
Brief.—Peculiar construction and adaptation of parts, actuated by an interposed U-shaped spring, which is placed vertically within the stile of the sash.



The improved sash-supporter herein described, consisting of the bolt A, the cylindrical case B, the bent lever C journaled in the opening *c*, and provided with the operating leg *d* and the U-shaped spring D interposed between the working parts, and placed vertically within the stile of the sash, all constructed, arranged, and operating substantially as and for the purpose specified.

165,945. SAW-MILL HEAD-BLOCKS. Levi W. Pond, Eau Claire, Wis. [Filed Apr. 6, 1875.]

Brief.—The rack-bars upon which the setting-jacks are adjusted are placed below the tops of the head-blocks, and a coiled spring is so placed as to assist in starting the setting-jacks when they are drawn back to receive another log upon the carriage.



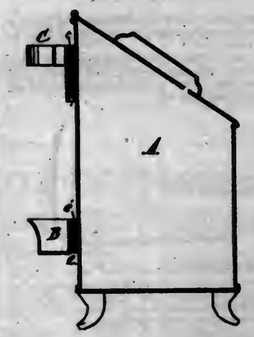
1. The jack C, provided with a sliding or movable bar, operating below the tops of the head-block and permitting the movement of each jack independently of the others, in combination with the head-block B, substantially as specified.

2. The independent spring J in combination with the head-block B and jack C, provided with an arm or stop, K, all arranged and operating substantially as specified.

3. The frames or bars *m n*, each having dogs *e e'* pivoted thereto, and also to the jack, in combination with the dogs *f f*, with rearward extensions *f f'*, arms *g i*, and lever I, substantially as and for the purposes specified.

4. The wheel L, provided with projections *r*, in combination with the set-shaft D, ratchet-wheel R, and brake P, substantially as specified.

165,947. COAL-VASES. William S. Potwin, Chicago, Ill. [Filed June 16, 1875.]

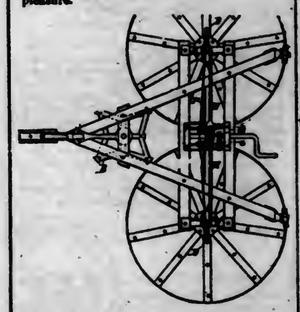


1. The rest or trough B, provided with the tongues *c c'*, in combination with a coal-vase having in its rear face the loops or eyes *s s*, substantially as and for the purposes specified.

2. The coal-vase A, having eyes, loops, or recesses in its rear face, in combination with the rest B and arms C C, each provided with tongues to enter the said eyes, substantially as and for the purposes specified.

165,948. ROTARY HARROWS. W. G. Reed, Colusa, Cal. [Filed June 1, 1875.]

Brief.—The harrows are formed with a hub and radial arms, into which the teeth are inserted. A band of iron encircles the outer ends of the arms. Both hubs are hinged to a frame-work, and so arranged with brace-rods and windlass that the harrows can be changed from a horizontal to a vertical position at pleasure.

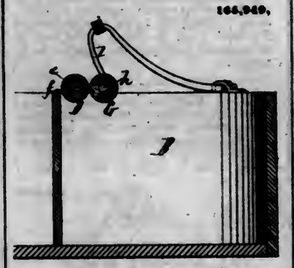


1. The jointed rods or toggles H H, arranged and combined with the rotary wheel-harrow-supporting levers D D and the windlass or shaft G, all being as and for the purpose as set forth.

2. The eccentric *e*, arranged and combined with the windlass or shaft G, and with the toggles H H applied to the levers D D, and having a joint-pin or projection to rest on the eccentric, as explained.

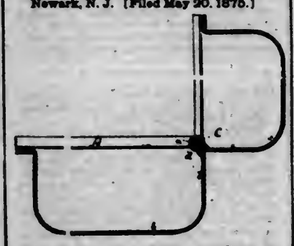
165,949. MOP-WRINGERS. Michael Regan Connecton, N. Y. [Filed Dec. 1, 1874.]

Brief.—The tub over which the wringer-rolls are held has a partition, so that one side thereof can hold the clean water, while the dirty water, as it is wrung from the mop, enters the other side.



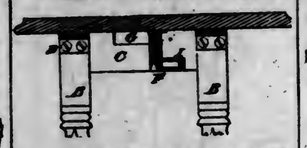
In a mop-wringer, the combination, with a tub, T, having two compartments, A B, and provided with a roller, D, arranged over the compartment B, and revolving in journals *c c*, fixed to sides of said compartment, of the arms K K, pivoted at one end to the sides of the chamber B, and at the opposite end provided with springs I, formed with journals *k* at their lower ends, for supporting the roller G, the whole being constructed and operating substantially as and for the purpose described.

165,950. TRAVELING-BAGS. Wm. Roemer, Newark, N. J. [Filed May 20, 1875.]



The combination of the bag-lining *b c* and strip *a* with the hinge-wire C of a bag-frame, all arranged so that the seam which joins the parts *a b c* will be below the wire, substantially as herein shown and described.

165,951. FOLDING TABLES. J. B. Root, Westfield, N. Y. [Filed Sept. 20, 1874.]

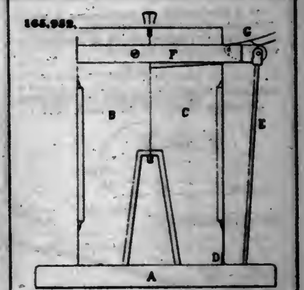


1. In a folding table, the combination of the locking-bar F, hinged to the under side of the table and having its ends flush throughout their whole extent with the hinged legs and their cross-rails C C, the latter having a partial mortise or recess, G, corresponding in width to the width of the brace or locking-bar and inclined sufficiently to allow the rails to freely pass over the ends of the same, and fold flatly against it, as shown and described.

2. The folding table herein described, consisting of the hinged locking-bar F, hinged legs E, with their cross-rails C C, having inclined mortises or recesses G G, one of said rails being provided with a stop, I, for the purpose specified, and the cleats E E, and table top A, the whole constructed and arranged as specified.

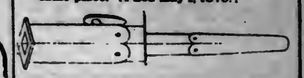
165,952. APPARATUS FOR THE MANUFACTURE OF BAYONET-SCABBARDS. Thomas W. Rounds, Providence, R. I., assignor of one-half his right to John B. Humphreys, same place. [Filed May 1, 1875.

165,953. BAYONET-SCABBARDS. Thomas W. Rounds, Providence, R. I., assignor of one-half his right to John B. Humphreys, same place. [Filed May 1, 1875.]



1. The combination of the jaws B and C with the recess H, the plunger J, and the compressing screws F and G, substantially as and for the purposes specified.

2. In combination with the grooved jaws B and C, the metallic-faced plate H, having a toothed, serrated, or roughened surface, for seizing the scabbard on the outside, and holding it securely while being formed on the inside, substantially as and for the purposes set forth.



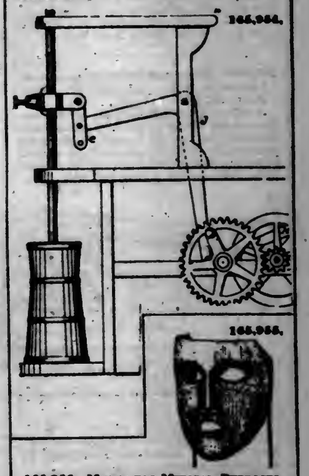
1. The quadrangular scabbard herein described, having its seam at one corner, substantially as and for the purpose specified.

2. A quadrangular scabbard with mitered edges, united by a chamfered corner seam, substantially as set forth.

165,954. RECIPROCATING CHURNS. David Rowland, Pittsburg, Pa. [Filed Mar. 2, 1875.]

Brief.—The dasher-rod is connected to the gearing by a gib and thumb-screw, and a short drop-link.

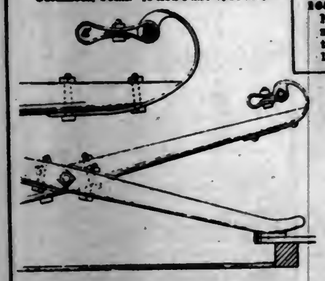
The cross-head *f*, gib F, and binding-screw S, in combination with the short drop-link *e* and L-shaped lever J, as and for the purposes set forth.



165,955. MASKS FOR MEDICAL PURPOSES. Helen M. Rowley, Van Wert, Ohio. [Filed Apr. 9, 1874.]

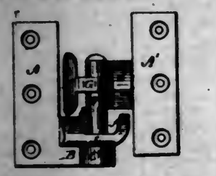
As a new article of manufacture, a mask made throughout of flexible india-rubber, for the purpose of being applied to the face, as and for the purposes specified.

165,856. VEHICLE-SPRINGS. J. D. Serven, Columbia, Tenn. [Filed June 7, 1875.]



1. In a carriage-spring, C-shaped springs, when combined with X-springs, so as to allow the ends of the X-springs greater freedom of motion, substantially as described.
2. In a carriage-spring, connectors F F, in combination with C-springs and X-springs, substantially as and for the purposes specified.
3. In combination with X-springs and C-springs, an elastic bearing between the carriage-body and C-springs, substantially as and for the purposes set forth.

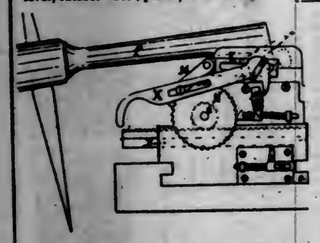
165,857. HINGE. Christian Sholl, Mount Joy, Pa. [Filed Dec. 7, 1874.]



The combination of the leaf A, having projection B, cylinder C, pin D, offset *b*, beveled ovolls *d d* forming flange *c*, and wedge-shaped projection *f*, with the leaf A', having projection F, double inclined ovolls *d'*, tube *b'*, collar G, and lip H, with curved and straight sides *i h*, all substantially as set forth.

165,858. MILLSTONE-DRESSING MACHINE. Charles A. Smith, Lebanon, Mo. [Filed July 1, 1875.]

Brief.—A graduated bed-plate and two carriages, each sliding on and at right angles to the other, have on top a shaft, on which the pick-handle partially rotates in a vertical plane, receiving forward motion by a pawl-lever, ratchet-wheel, pinion, and rack.



1. The combination of the ratchet-wheel N, lever K, dog M, slotted bar L, and shaft H, all operating together, as described.
2. The pick-handle F, provided with lugs *f*, the shaft H, and thumb-screw G, all combined and operating together, as described.

3. The combination of the spring-dog P, lever S, lever K, provided with lug R, thumb-screw *o*, slotted bar L, dog M, ratchet-wheel N, shafts I and H, pinion *e*, and rack E, all combined and operating together, as described.

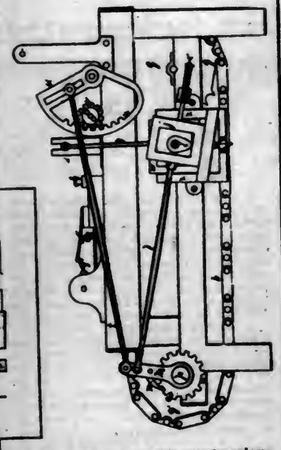
165,859. MACHINES FOR PARING COCOA-NUT MEATS. Edward Smith and E. Chapman Maltby, Northford, Conn., assignors to E. Chapman Maltby. [Filed July 6, 1875.]



1. The combination of the concave and convex cylinders and the correspondingly concavo-convex cutter R, arranged relatively to each other, substantially as and for the purpose specified.
2. The combination of the concave and convex cylinders, the endless band H bearing upon the surface of the convex cylinder, and the correspondingly concavo-convex cutter, substantially as and for the purpose set forth.

165,860. MACHINES FOR MAKING TOY TORPEDOES. Theddeus H. Spear, Gardiner, Me. [Filed Dec. 31, 1874.]

Brief.—An endless intermittently-moving carrier moves the bed-plates into a position to receive the paper wrappers as they drop from the cutters, by which they are cut into suitable size. The bed-plates are then moved under the vertically-moving rammers, by which the wrappers are rammed down into the holes in the bed-plates, to form pockets to receive the fulminate, which is deposited therein by a series of spoons, by which it is taken from the hoppers. Afterward the gravel is deposited in the wrappers by similar devices, when the bed-plates are moved forward, taken from the machine, and the paper wrappers twisted, to complete the torpedoes.



1. In a machine for making toy torpedoes, the combination of the shaft *a*, cam *i*, frame *j*, rod *l*, lever *m*, belt *k*, with its notched wheels, substantially as and for the purposes described.

2. The combination of the shaft *a*, cam *i*, frame *j*, rod *l*, lever *m*, rod *t*, gear *v*, gear *v'*, and the feed-roll *d*, as and for the purposes described.
3. The combination of the horizontal plate *g* and the vertical cutter, operating substantially as described.
4. The combination of the spoons *h* with the hoppers, for the purpose of supplying the papers with the powder and gravel, substantially as herein described, the same operating as set forth.

165,861. HEEL-STIFFENERS. William F. Spinney, Chelsea, Mass. [Filed June 14, 1875.]

Brief.—The internal layer consists of waste rubber, steamed, ground, and mixed with trimmings from other stiffeners, flour of sulphur, and palm-oil.



A heel-stiffener composed of an internal layer formed of the materials compounded as herein described, and of external layers of muslin or closely-woven cotton fabric, all united substantially as described.

165,862. FRUIT-JARS. David H. Stevens and R. F. Lumley, Newark, Ohio, assignors to David H. Stevens. [Filed June 30, 1875.]



The combination of jar A B C, formed with slight inwardly-projecting portions or indentations *b b*, and cap or cover D, stamped or formed from a single piece of material, with a flaring downwardly-projecting rim, *d*, laterally and upwardly-projecting double inclined curved portions *d' d'*, and handle *d''*, all constructed and arranged as and for the purposes described.

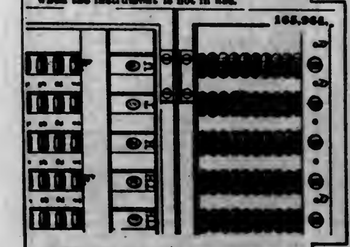
165,863. FEED-CUTTERS. A. C. Stewart, Walton, N. Y. [File . Dec. 30, 1874.]



The angular knife D, supported in the frame F, and cutting upward against the stationary knife D', at the end of the inclined feed-box A, in combination with the hinged rod C, pitman *h*, and fork H, as shown and described, and for the purpose specified.

165,864. CALCULATORS. Alfred C. Wellman, Walla Walla County, Wash., assignor of one-half his right to E. W. Griffin, same place. [Filed Feb. 16, 1875.]

1. The box, composed of two halves or leaves, O O', one, O, containing the mechanism for calculating, and the other, O', the statement-box, containing the mechanism for registering or stating the different amounts as they are developed by the calculating mechanism, the parts O O' hinged together and adapted to fold together with the mechanism in the interior when the instrument is not in use.



2. The combination of the numeral-balls F, thumb-pins D, spiral spring E, substantially as and for the purpose hereinbefore set forth.
3. In combination with the series of endless chains G and numerical balls F secured thereto, the index-rollers I and their transmitting-gears *i*, *i'*, &c., constructed and arranged as and for the purposes described.

165,865. REVERSE-MACHINE CASTERS. A. G. West, Chicago, Ill., assignor to Isaac R. Anderson and D. P. Jones. [Filed Nov. 29, 1874.]

Brief.—The outside and inside bars working upon each other through inclined slots, to raise or lower the casters in position.

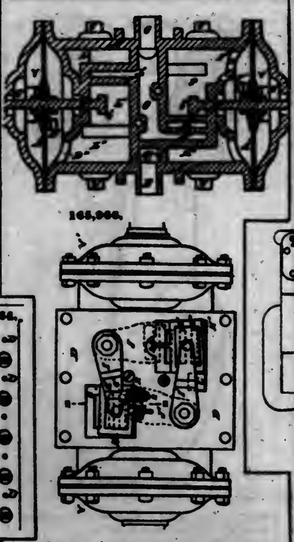


The combination of the bars O O, fastened by means of clamps D D to a sewing-machine stand, and provided with headed pins *a a*, the movable bars E E, provided with inclined slots *b b*, and casters G G, the shaft H, cams I I, and lever J, all constructed, arranged, and operating substantially as and for the purposes herein set forth.

165,866. WATER-METERS. E. M. Wilcox, Chicago, Ill., assignor of three-fifths his right to J. J. Dobelcor, E. W. Crafton, and J. A. Ballock, same place. [Filed Apr. 6, 1875.]

Brief.—The water-channels are so combined with settling-chambers that the sediment is deposited where it can easily be removed, and the necessity of packing the spindles is avoided. Counter-weighted pawls of unequal lengths attached to the slide-valve engage with a ratchet bar or wheel, and actuate the registering mechanism.

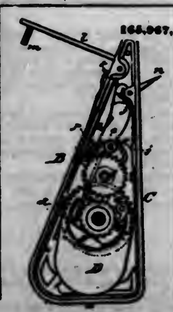
1. The combination of the pair of double-concave measuring-chambers V V', flexible diaphragms A' A'', spindles B' B'', arms J J', arms I I', arched slide-valves H H', and ports *e e' e''* and *e f e''*, all arranged and operating together in connection with each other and the passages or water-channels of a water-meter, substantially as shown and described, and for the purposes set forth.



2. The settling-chambers having removable plugs therein, and arranged in the bottom of the meter, in combination with the pair of double-concave measuring-chambers V V' and the water-channels of a water-meter, for the purpose of thereby keeping the said chambers and channels clean by collecting the sediment carried in by the water, and admitting of its discharge by removing the plugs for that purpose, substantially as described.
3. The independent counterweighted dogs or pawls *k k*, of unequal length, pivoted to the valve-actuating mechanism of a water-meter, substantially as and for the purposes specified.

165,867. BURGLAR-ALARMS. C. H. Williams, Chicago, Ill. [Filed May 22, 1875.]

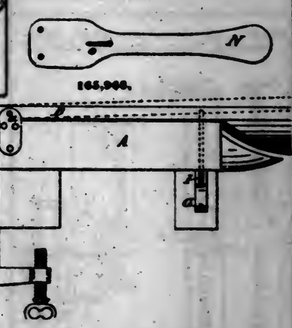
Brief.—The operating arm or lever and the pointed teeth have extensions or lugs on their pivoted ends, which engage with each other, so that the teeth is thrown out in the act of raising the lever. The pin on the upper end of the lever is wedge-shaped, and forces a spring-stop out of contact with the escapement of the clock mechanism, and allows an alarm to be given.



1. The folding teeth n and spring *j*, substantially as and for the purposes described.
2. The combination of the lever I, provided with the lip *k*, with the teeth n, provided with a projection for starting or opening the teeth, substantially as set forth.
3. The folding teeth n and spring *j*, in combination with the lever I, and inclined pin *o*, and the cams A B C, substantially as and for the purpose specified.

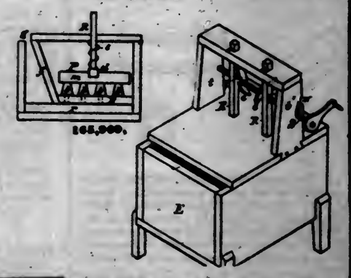
165,868. GERMS-CORN CUTTERS. T. Wilmer, Buffalo, N. Y. [Filed Oct. 20, 1874.]

Brief.—A trough-like cutter, with a V-shaped edge, is secured to a hinged frame, which can be vertically adjusted to the end of a trough, in which the ear is moved forward by means of a spiked ear-holder.



1. The top pieces D D', in combination with the knife F, when attached directly thereto, for the purposes set forth.
2. The trough-like shaped stationary gage-board or body A, in combination with the knife F, substantially as described, and for the purposes set forth.
3. The knife F, top pieces D D', when hinged to the body or gage-board A by hinges *a a'* or their equivalents, all constructed and arranged substantially as and for the purposes described.
4. The ear-holder N, when constructed substantially as described, and for the purposes set forth.
5. The wedge G, in combination with the pins I I' and the top pieces D D', for the purposes set forth.

165,869. WASHING-MACHINES. Alfred B. Wroth, Winterset, Iowa, assignee of one-half his right to Geo. A. Atherton. [Filed Mar. 24, 1875.]

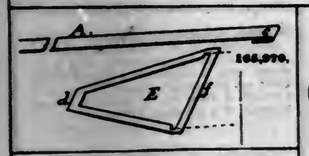


The plungers P P, constructed of two pieces, *n n*, attached to the cross-pieces *d d*, and provided with the beaters *b b*, and having the vertical shafts E E, in combination with the perforated bottom B, resting on the cleats *r r*, the pins *p p*, and crank-shaft S, provided with the cams *o o*, all constructed to operate substantially as and for the purpose set forth.

165,870. BUSHING-BOXINGS. C. Young, New York, N. Y. [Filed June 28, 1875.]

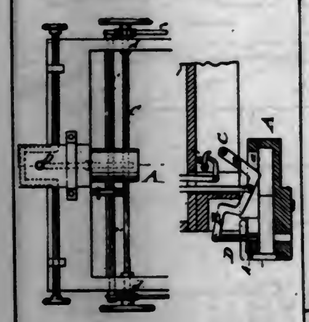
Brief.—The ribbon to be run in a tank or other opening in a garment has one end attached to the head end *f* of the triangle. The guide-bar is inserted in the tank, and its hooked end engaged with the small end of the triangle, so as to draw the triangle and ribbon through the tank.

A ribbon-runner composed of guide-bar A, in combination with the triangle E, substantially as described, and for the purpose specified.



165,970.

165,971. CAR-COUPLINGS. John H. Acton, Jackson Ct. H., Ohio. [Filed Mar. 20, 1875.]



The combination of the crooked bar B, coupling-pin D, transverse shaft C, ratchet-and-pawl mechanism *d e*, lifting-rod *f*, and pawl-unlocking rod *F* with the draw-head A, as and for the purpose set forth.

165,972. MANUFACTURE OF METAL KNOB-SHANKS. John Popkin Adams, Brooklyn, assignor of one-half his right to James A. Rathbone, New York, N. Y. [Filed Apr. 7, 1875.]

Brief.—Relates to the manufacture of the shanks of knobs, such as was patented to H. B. Tuthill, May 4, 1869, No. 89,769. The inner square tube is made from a piece of metal in which a depression or angular recess has been stamped.



1. The improvement substantially as before set forth in the art of manufacturing knob-shanks consisting of the following three operations, viz, first, the production of the recessed angular tube of sheet metal; second, the fitting of the said tube with a core; and, third, the casting of melted metal upon said tube.

2. The recessed angular tube of indented and bent sheet metal substantially as before set forth, the same being a new article of manufacture.

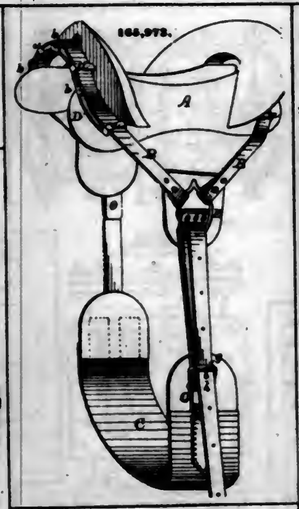
165,973. REINS AND FACE SADDLES. Geo. H. Allen, Minneapolis, Minn. [Filed July 20, 1875.]

1. The combination of the saddle-tree A and sliding straps B B with a girt, C, substantially as described.

2. The arched sideway D, provided with two or more loops, *a*, or their equivalents, in combination with a saddle-tree, substantially as and for the purpose specified.

3. The arched sideway D, provided with one or more rollers, *b*, substantially as and for the purpose specified.

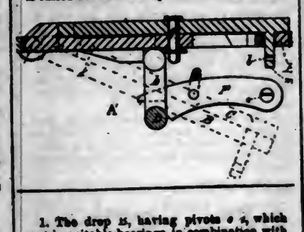
4. The ring E, provided with the cross-bar *c*, in combination with the sliding-strap F and buckle G, substantially as and for the purpose specified.



165,973.

165,974. GRATES. John H. Beam, Frostland, Pa. [Filed July 6, 1875.]

Brief.—The supporting-frame of the grate is raised and lowered by means of the crank.



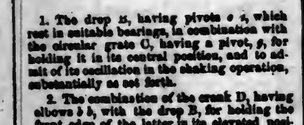
1. The drop E, having pivots *c c*, which rest in suitable bearings, in combination with the circular grate C, having a pivot, *p*, for holding it in its central position, and to admit of its oscillation in the shaking operation, substantially as set forth.

2. The combination of the crank D, having elbows *b b*, with the drop B, for holding the front edge of the latter in its elevated position, and lowering and raising the same, substantially as set forth.

3. The combination of the locking-bar F, crank D, and drop B, whereby to hold the latter in its elevated position, substantially as set forth.

165,975. MACHINES FOR STAMPING NUMBERS. Philo M. Beers, Bridgeport, Conn. [Filed Dec. 3, 1874.]

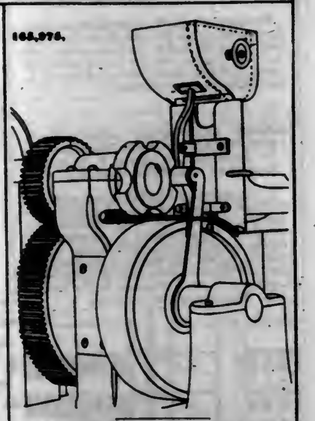
Brief.—A fixed die on a spring-arm; a carrying, holding, or compressing cylinder, for carrying the needles under the die; a guide for properly presenting the needle between the cylinder and die; and a hopper and chute, provided with mechanism for admitting of the passage of but one needle at a time to be operated upon.



1. The hopper K, its feeding slide and operating mechanism, as described, in combination with the carrying and holding or compressing cylinder and fixed die, substantially as set forth.

2. In combination with a carrying and holding or compressing cylinder and stationary die, the guide O for carrying the blank and holding it parallel with the axis of the cylinder, as described.

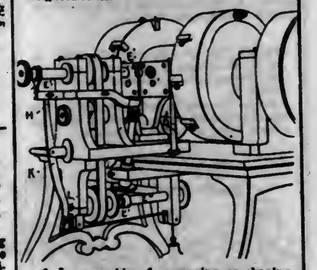
3. In combination with the carrying and holding or compressing cylinder and die, the spring-arm for supporting the die, substantially as and for the purpose specified.



165,976.

165,976. MACHINES FOR SWAGING NEEDLE-BLANKS. P. M. Beers, Bridgeport, Conn. [Filed Dec. 3, 1874.]

Brief.—Two movable dies, operated by tappets contained in a double tappet-wheel, with mechanism in front of them for feeding up the blank, consisting of a rotating mandrel, thrown up by a cam operating on a sliding bar; said bar having an adjustable cam on one of its sides, to operate in conjunction with a similar cam on a pivoted lever, carrying at its end the bearing of a screw; said cams causing said screw to be thrown into and out of connection with a worm-wheel on the cam-shaft. The mandrel is thrown back by a weighted lever.



1. In a machine for swaging or shaping needle-blanks, &c., the combination of a double tappet-cylinder operating two opposing dies and an automatic guide, substantially as described.

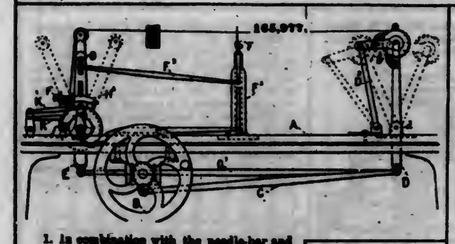
2. The combination of the rotating mandrel F, the sliding bar G with its connecting-yoke, the cam F, lever K, and cord and weight for moving said bar, substantially as described.

3. The combination of the mandrel with the lever H, bar G, lever K, gear mechanism and cam F, substantially as described.

4. The combination of the vibrating-lever H with the sliding bar G, the cam F, the worm and screw, and an adjustable guide, H', between the lever H and bar G, by which the blank is held between the dies the required length of time to complete the operation of shaping the article desired, substantially as described.

165,977. MACHINES FOR POLISHING THE EYES OF NEEDLES. P. M. Beers, Bridgeport, Conn. [Filed Dec. 3, 1874.]

Brief.—Two frames to carry the polishing-thread, automatically and simultaneously vibrated—one carrying a cylinder, intermittingly rotated by suitable mechanism, to wind up a portion of the thread at each vibration, thus presenting a new part to the needle, the other having mechanism for automatically connecting it at certain times to the needle-bar, causing the needle-bar to vibrate with it while so connected. Also, mechanism for automatically, gradually, and regularly raising and lowering the needle-bar.



165,977.

1. In combination with the needle-bar and automatic vibrating mechanism for holding the polishing-thread or wire, automatic mechanism consisting of the connecting-rod F', reciprocating lever G, pawl E', vibrating arm E', and ratchet-plate H, for controlling the motions of the needle-bar, substantially as described.

2. In combination with the automatic vibrating frames or arms D and E, the winding-cylinder D' and its pawls, whereby the polishing-thread is shifted at every vibration, substantially as described.

3. In combination with the frame E, ratchet-plate H, and arm G, the double cam-wheel, and double-ended pawl E', for controlling the vibratory movements of the needle-bar, substantially as described.

4. The combination of the vertical frame for carrying the needle-bar with the tappet-wheel on the cam-shaft, so that the bar will be raised and let down at regular intervals and gradually, as and for the purposes set forth.



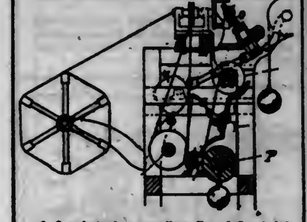
165,981.



165,979.

165,979. MACHINES FOR BALLING YARN. Louis C. Billings, Milford, N. H. [Filed May 27, 1875.]

Brief.—Balls of yarn are wound in such a manner that enough of the exterior layer is made compact to furnish a hard surface, while the interior layers are wound with sufficient space between them to preserve the elasticity of the yarn. To accomplish this the speed of the spindle on which the ball is wound is increased toward the finish by running the belt which transmits the motion over cone-pulleys. The size of the ball is regulated by an automatic stop mechanism.

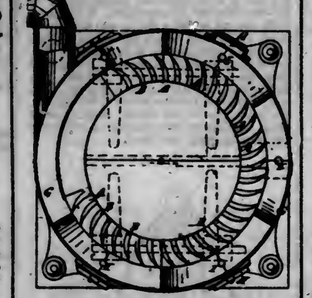


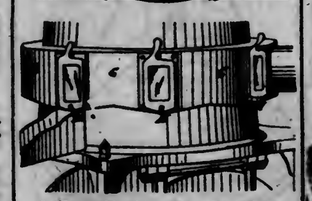
1. The belted cone-pulleys P and Q, of different layers, as described, in combination with the spindle O, whereby the intervals between the threads are varied in the different layers, substantially as and for the purpose specified.

2. The combination of the shipping and winding mechanisms, constructed as described, whereby, when the proper amount of twine or yarn is wound upon the ball, the shipping-lever is tripped, and the machine automatically stopped, as set forth.

165,980. CUPOLA-FURNACES. J. Mahoney, Springfield, Ohio. [Filed June 6, 1875.]

Brief.—The air enters through the blast-pipe into the air-chamber surrounding the cupola, from which it enters the latter through passages formed by curved plates, which are built into the cupola-wall within the air-chamber, so as to form a second air-chamber concentric with the first. The bottom of the air-chamber has hollows with fusible plugs in them.





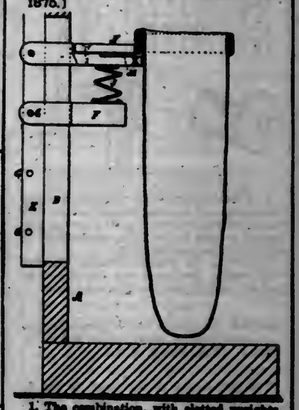
1. The combination, with cupola, of flat circular plate A, having curved inclined chutes B, plate D, and pipe F, as and for the purpose described.

2. The combination, with tuyere, of the cone G, having irregular hollows H in bottom, and openings I, as and for the purpose specified.

165,981. REGISTERING-MACHINES. Collins M. Cady, Peninsula, Ohio. [Filed Jan. 11, 1875.]

In a tallying-machine, the combination of the swinging lever B, connecting-bar F, pawls E F', ratchet-wheels *g* I, forked pivoted plate H, eccentric J, and arbor K, all constructed and relatively arranged as herein set forth.

165,982. ADJUSTABLE SACK-HOLDERS. H. W. Clark, Red Bluff, Cal. [Filed Mar. 18, 1875.]

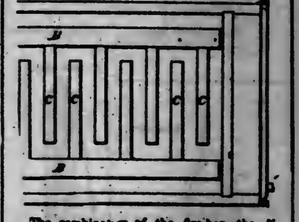


1. The combination, with slotted uprights A D and severally-holed cleat E, of the spring-separated arms F K, made adjustable as and for the purpose specified.

2. The combination, with bag-holder L and arm K, of the bag-pinch M, as shown and described.

165,983. STOVE-GRATES. John W. Cotton, Chicago, Ill. [Filed Nov. 14, 1874.]

Brief.—The interlocking arms projecting from the main bars rise and fall together.



The combination of the fire-box, the diversely-rotary bars B B, each arranged horizontally along opposite sides or ends of the box, and the horizontal and interlacing bars C C having spaces between them and projecting from the bars B B, all operating together substantially as and for the purpose specified.

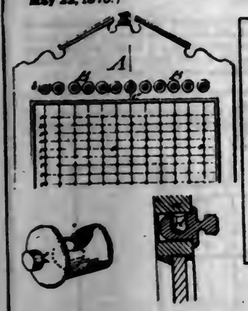
165,984. WEDGES FOR SPLITTING ROCK, &c. Thos. Cosbey, Mormon Mills, Tex. [Filed Apr. 24, 1875.]

Brief.—The wedge is made partially hollow, which makes it lighter, and enables the operator to grasp and extract it from the cleft.



As an improved article of manufacture, a hollow or skeleton metal wedge, substantially as herein described.

166,965. MARKING-BOARDS FOR PIN-POOLS. George H. Decker, Belleville, N. J. (Filed May 22, 1875.)

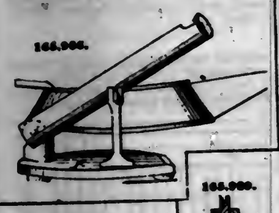


1. A marking-board for pin-pool, provided with a series of recesses, in combination with countersunk plugs fitting therein, having cup-shaped cavities for the balls, substantially as and for the purpose set forth.

2. A plug for marking-boards, provided with button, face-flange, and cup-shaped recess for the ball, substantially as set forth.

166,966. MACHINERY FOR WASHING PHOTOGRAPHIC PRINTS. Otto Dubois, Fall River, Mass. (Filed May 6, 1875.)

The combination of the vessel or pan A, tube C, provided with the movable weight, weighted foot D, and lip or spout E, substantially as and for the purpose hereinbefore set forth.



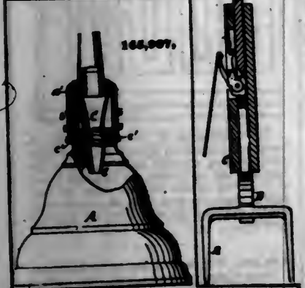
166,967. CISTERN. Geo. F. Dutton, Farmington Falls, Me., assignor to Elias C. Dutton, same place. (Filed Apr. 17, 1875.)

Brief.—The outlet of the reservoir is a glass tube screwed thereon, for the purpose of indicating when it is full. It is protected by an enlargement of the nozzle at the bottom screwed onto the outside of the reservoir.

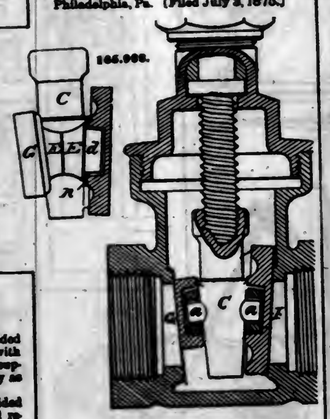
1. The combination of the tube C with the reservoir A and discharge-nozzle B, having the enlarged air chamber-ed portion b', substantially as shown and described.

2. The combination of the packing c' and collar c with the funnel-shaped glass tube C, the reservoir A and projecting lower end nozzle B, as shown and described for the purpose specified.

166,967.



166,968. STOP-VALVE. George W. Eddy, Waterford, N. Y., assignor to L. K. Eddy, Philadelphia, Pa. (Filed July 3, 1875.)



166,968.

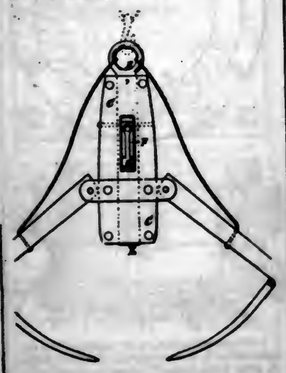
1. The combination, in a stop-valve, of a valve-plate, fitted to cover the opening on one side, with a bar or plate, G, which, while it does not close the opening, will bear against the sides or face thereof, and thus afford a means of guiding the valve-plate to its seat, substantially as shown and described.

2. The stem E, in combination with the sleeve C, provided with the studs c, and the collars B, all constructed to operate as set forth, as a means of operating the plates I and G.

3. The washer a, in combination with the valve-plate I and its sleeve or support, to compensate for wear of the parts, as set forth.

166,969. HORSE HAY-FORKS. Thomas M. Edwards, East Hampton, N. Y. (Filed Apr. 24, 1875.)

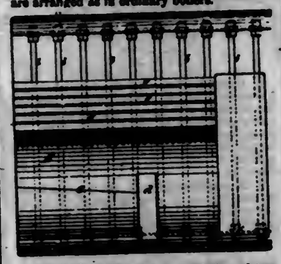
Brief.—Fork-arms pivoted to a sliding bolster stock, and connected by cords to the upper end of a recessed bar sliding within it, by which the fork is suspended. A swinging block pivoted within a slot in one side of the stock, and pressed inward by a spring, carries a swinging pawl pivoted to it, engaging with the recessed bar by the pressure of said spring when the teeth are in grasping position. The pawl, when its outer end is depressed by a cord, bears with its inclined lower face against the lower edge of the recess, pushing itself out of engagement with the bar, and allowing the teeth to dump their load.



The combination of the swinging block F, pawl G, and spring H with the slotted hollow stock G, and with the slotted or notched sliding bar E, substantially as herein shown and described.

166,970. STEAM-BOILERS. Chas. B. Emery, Brooklyn, N. Y. (Filed Apr. 9, 1874.)

Brief.—The boilers are constructed with the minimum amount of small stays or braces, and in each form as to occupy less room for a given power. The cross-section of the boiler is made to consist of a number of segments of a circle, with, in some cases, inclosed spaces. In the spaces between the main braces and shells, the furnaces, tubes, and steam-spaces are arranged as in ordinary boilers.



1. A boiler with section, consisting of two or more segments braced by connections to the ends of the arcs, and provided with direct and return passages for the products of combustion in each portion of the shell, substantially as and for the purposes specified.

2. A boiler-shell with sectional outline of the sides, top, and bottom, composed of a series of connected circular arcs, with cross-braces at junctions, whereby a rectangular or other desired section may be approximated, substantially as and for the purposes specified.

3. A boiler-shell with cross-section formed of connected circular arcs, with braces at junctions, combined with furnaces or furnace-tubes, wholly or partly of circular section, arranged singly or in pairs between the cross-braces, and within the said shell, to secure, with few small braces, strength and adaptability to location, substantially as and for the purposes specified.

4. Two or more furnace-arches, with sections formed in part of circular arcs, connected together by struts at the ends of the arcs, and thus dispensing with the necessity of brazing corresponding portions of connecting arches to other parts of the boiler, substantially as and for the purposes specified.

5. A trough-shaped plate, combined with the ends of the arcs and the braces supporting the same, substantially as and for the purposes specified.

166,970



166,971.



166,971. TOWER-CLOCKS. Chas. Franklin, Albany, N. Y. (Filed Apr. 17, 1875.)

Brief.—In a tower-clock, the driving mechanism of the hands arranged separately from the clock-train, the connection of the parts being such that any irregularities in the movement of the hands will not affect the operation of the train.

1. In tower and other clocks, the clock-train and hand-driving mechanism, operated by separate retaining power, working independently of each other, substantially as and for the purposes set forth.

2. In tower and other clocks, the combination of an unlocking-wheel of the main arbor of the clock-train, controlled by swinging fork and guard-lever, with the planetary-motion device, actuated by the hand-driving arbor, substantially as shown and described.

3. The combination of the swinging lever, having projecting guard-rests, with the spring-arm of the planetary motion, so as to be arrested by the guard-plate at one end, and transferred to and liberated by the guard-plate at the other end, of the lever, substantially as set forth.

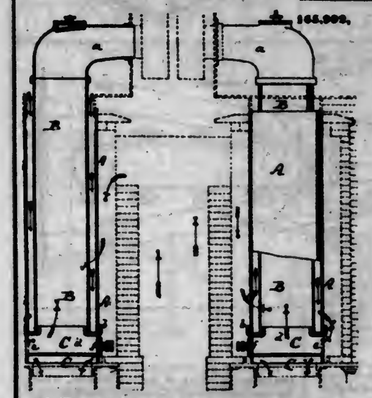
4. The planetary motion, for arresting and liberating the working of the separate hand-actuating weight, composed of larger fixed gear-wheel around hand-arbor, and of revolving frame, with circumferentially-traveling pinion and spring-arm, substantially as shown and specified.

5. The combination of hand-actuating arbor with one or more power-transmitting shafts, suspended by revolving carriage and platform to support weight of the same, in the manner and for the purpose substantially as described.

166,972. APPARATUS FOR BURNING AND REVIVIFYING BONE-BLACK, &c. Joseph Gandolfo, Brooklyn, N. Y. (Filed July 6, 1875.)

Brief.—The retort has a central flue, and is set vertically into a socket, open at top and bottom, but provided with a passage from the outside to the central flue, for the products of combustion to pass to the chimney.

166,972.

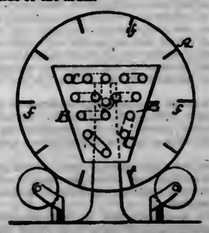


1. The socket C, open on top and bottom, to constitute a support for and a continuation of the retort A, and provided with the hollow bridge d, which is open on top, and supports the flue B, and is closed at the bottom, and with the aperture or smoke-passage a that leads into the hollow bridge, substantially as herein shown and described.

2. The combination of the retort A and pipe B with the socket C, which has the hollow bridge or partition d, substantially as herein shown and described.

166,973. CHARCOAL AND BONE-BLACK HEATERS AND COOLERS. Joseph Gandolfo, Brooklyn, assignor to himself and Jno. W. Jarboe, Green Point, N. Y. (Filed July 2, 1875.)

Brief.—The drum, in an inclined position, rests and revolves upon friction-rollers. The inclined stationary open-bottomed vessel, containing the labyrinth of pipes, for conveying the heating or cooling liquid, is open at top and bottom, and is supported on standards outside of the drum.



The combination of the rotary inclined drum A, which is provided with the inwardly-projecting blades f, with the stationary inclined vessel B, containing the pipes or hollow shelves C, substantially as herein shown and described, and for the purpose specified.

166,974. BASE-BALLS. John Giblin, Boston, Mass. (Filed June 26, 1875.)

Brief.—A core of palm-leaf thread has a covering of woolen yarn, cotton next outside, and one or two layers of rubber over all, which is then vulcanized.

1. As a new article of manufacture, a water-proof base or cricket ball, composed essentially of a heart, A, of palm-leaf or other suitable material, a mass, B, of woolen yarn wound thereon to the requisite thickness, and an external water-proof cover, D, of two or more pieces of india-rubber compressed thereon and into close contact at their edges, and into shape and size by a mold, and vulcanized, all substantially as set forth.

2. In combination with the ball-body, having its outer layer composed of woolen yarn, and its external cover of vulcanized rubber, applied, as described, the protective or interposed covering C of cotton or cotton yarn, all arranged as specified.

166,974.



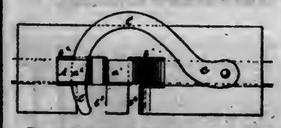
166,975.



166,975. LOCKS FOR DOORS. A. Goldfinger, Newark, N. J. (Filed June 24, 1875.)

In a lock constructed as hereinbefore described, the combination of the plate A, having a flange, C, lugs a, spring e, and feet f and g, with the bolt D, having grooves b, spring e, and feet h and i, all arranged to operate substantially as and for the purpose described.

166,976. HOOK BALE-TIES. William Groet, Mooreville, Ala. (Filed Mar. 20, 1875.)



The combination of the plate B, provided with the recesses b' b' and the slots b' b', and the hook C with each other, to adapt the tie to be used with a bale-band, A, substantially as herein shown and described.

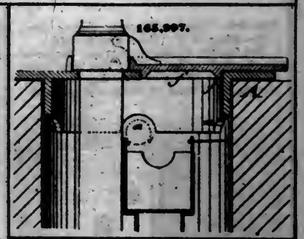
166,977. CISTERN-COVERS. Sebastian Haffner, Highland, Ill. (Filed May 28, 1875.)

Brief.—The flanged cover has two openings, one for the pump-stock, and one covered by the spout shown. There is also provided a filter-box, adjusted as described.

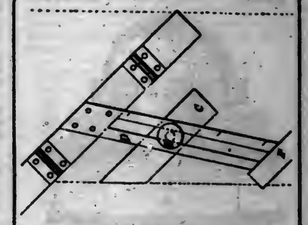
1. A cover for wells or cisterns, fitting by cylindrical and flanged part on the top of the cistern, and having recess for pump-stock and entrance-opening covered by hinged lid, substantially in the manner and for the purpose set forth.

2. The combination of the cistern cover or platform, having oblong recess and fastening-lug, with the pump-stock or pump-chain tube, and the supporting standards or casing attached thereto, substantially as set forth.

166,977.



166,978. BIAS-GAGES. John A. Hamilton, Chippewa Falls, Wis. (Filed Jan. 20, 1875.)



As an article of manufacture, a bias-trimming gage consisting of double-jointed piece A, end-bevled piece C G, slotted piece D, clamp E, and block F, all constructed and arranged as shown and described.

166,979. PROCESSES OF MAKING IMITATION WOODS. Geo. V. Hess, New York, N. Y. (Filed Feb. 6, 1875.)

The process of making imitation woods by first graining a surface with a mixture of acetic acid, logwood, and iron oxide, and then staining with a mixture of aloëine, alcohol, logwood, and red sanders, all substantially as specified.

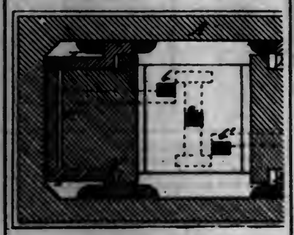
166,980. ART OF PREPARING COTTON FOR SPINNING. Russel Handy, Manville, R. I. (Filed Oct. 24, 1874.)

Brief.—The product of several carding-machines, being united upon the railway-belt, is divided at the end thereof into as many slivers as is desired, and each sliver is passed through a separate evener, so that its size and bulk may be made uniform throughout its entire length, and is then passed directly through a stubbing-frame, dispensing with the employment of one or more drawing-frames.

The improvement in the art of preparing cotton for spinning, the same consisting in the division of the product of two or more cards into slivers at the end of the railway, the passage of each sliver directly through an evener, and from this to the stubbing-frame, substantially as and for the purpose herein described.

166,000. STEAM-VALVES. James Have, Brooklyn, N. Y. [Filed May 6, 1875.]

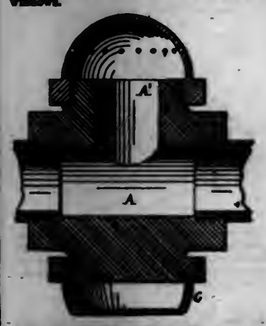
Brief.—The valve-cylinders are supported on the ends of the valve. The large valve contains the ports for operating it, and carries the small valve by which it is operated.



The combination, substantially as hereinbefore set forth, of a main sliding valve, having piston-formed ends, which support the cylinders, in which they are to be reciprocated by steam or other fluid, and a secondary valve, which admits and releases the steam into and from said cylinders, also supported by the main valve, and mounted at right angles to the axis of the cylinders, arranged to operate in the manner and for the purpose set forth.

166,002. APPARATUS FOR EXTINGUISHING FIRES. Elisha Mowry, Providence, R. I. [Filed Feb. 6, 1875.]

Brief.—Perforated and non-perforated caps are attachable at pleasure to the couplings—the former as sprinklers, and the latter to permit the system of pipes to be cleared by letting on the water, the terminal sections of pipe being extended to deliver out of the windows.



1. In combination with coupling A, having port A', perforated cap B, and non-perforated cap C, both removable, substantially as and for the purpose specified.

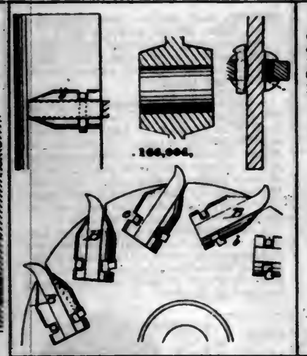
2. The apparatus for extinguishing fire, consisting of combined of piping connected by couplings, as herein described, and forming a series of pipes, as shown in Fig. 5, so arranged, with reference to the windows or other convenient outlet, that the same may be tested and cleared by removing the perforated caps from the said couplings and closing the outlets in the same, all in the manner substantially as described.

166,004. WATER-WHEELS. E. W. Hawley, Walton, N. Y. [Filed June 26, 1875.]

Brief.—The invention consists of a water-wheel with central web, and solid or detachable buckets extending to equal distance and suitable angles therefrom.

1. A water-wheel made of a central solid web, and buckets extending at equal width to both sides of the same, substantially as specified.

2. The combination, with the recessed web of a detachable bucket, cut by side wedges in plaitions, and locked by lateral wedge-keys, substantially as specified.



166,004.

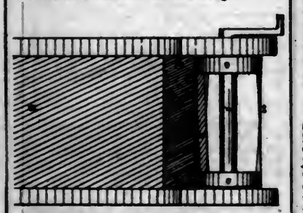
1. The combination of the shafts and pulleys B C, the endless belts E, the bearing-blocks F, the shafts and pulleys G H, the endless cord I, and the guide-pulleys J with each other and with the frame A, substantially as herein shown and described.

2. The combination of the rollers K, the slotted bars L, and the clamping-screws M with the frame A of the device, substantially as herein shown and described.

3. The combination of the pivoted brake-levers P and the spring Q with the shafts G, and with the frame A of the machine, substantially as herein shown and described.

166,005. CORN-STALK CUTTERS. John N. Hill, Concord, N. H., assignor of his right to Chas. G. Pressey, same place. [Filed Oct. 26, 1874.]

Brief.—Cutting-blades are horizontally extended between cylinder heads or disks, upon a shaft at right angles to the feed-trough. Bars with outer fingers alternate with these blades, the fingers passing through slots in the end of the floor of the feed-trough.



The combination of the slotted plate a with the series of knives i and the knife s, substantially as and for the purpose herein set forth.

166,007. TOILET-GLASS FRAMES. Joseph Holley, Brooklyn, N. Y. [Filed May 1, 1875.]



A toilet-glass frame composed of a strip, A, of sheet metal, molded into proper shape, in combination with a surrounding-piece, B, by which its ends are united around the glass, substantially in the manner and for the purpose herein specified.

166,008. POCKET GAS-STOVES. Thos. W. Houchin, New York, N. Y. [Filed Apr. 28, 1875.]



166,008.

The pocket gas-stove herein before described, the same consisting of the combination, with the gas-thimble B, of the metallic chamber A, covered with wire-gauze or perforated metal G, and provided with gauze-covered openings a, and with suitable devices for supporting cooking utensils, all constructed, arranged, and operating as and for the purposes specified.

166,009. APPARATUS FOR SEPARATING GOLD FROM SAND, &c. Thos. W. Irvin, Bucuka, Cal., assignor of one-half his right to Alex. Gilmore, A. Dolan, H. Brown, and M. F. Mulcahy. [Filed Sept. 10, 1874.]

Brief.—The gold-bearing sand is introduced into the inner revolving cylinder, which is also a stove, and retains the gravel to be separately discharged, while the fine sand and gold passes on to the elevator, and is dried meanwhile by the fire. The elevator carries it to the upright separators, into which it falls, and is met by an ascending current of air produced by the fan. The heavy particles settle in the various pockets, and the lighter pass off through the fan.

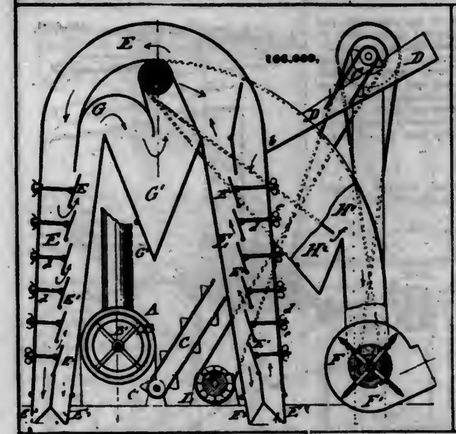
1. The apparatus for separating gold from gold-bearing sands and other substances, composed of a revolving drier and separator, an elevator, an upright main separator, with adjustable valves and segmental side condensers, and a suction-fan, all being combined and operated by suitable motive power, substantially in the manner and for the purpose set forth.

2. The main separator B, consisting of upright parts, with pivoted adjustable valves B' and bottom valves B' B', connected by a rounded-off top part, substantially as specified.

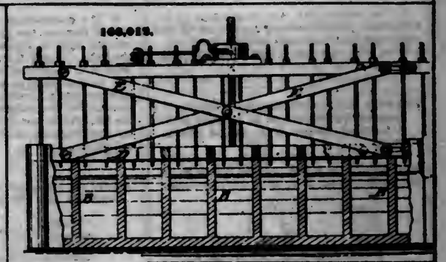
3. The inner semicircular diaphragm C and angular receptacle C' below the same, in combination with condensing-channels H, as shown and described.

4. The main separator B, in combination with segmental condensers B', by upper side extending channels H, as described.

5. The segmental condensers B', provided with triangular receptacle F' and adjustable partition, for the purpose of collecting a still finer mixture of gold and sand for amalgamation, as described.



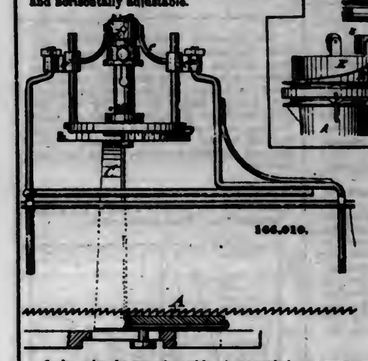
166,009.



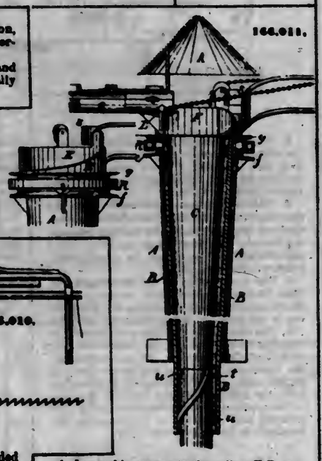
166,012.

166,010. MITER-BOXES. Peter Johnson, Wauconda, and N. H. Johnson, Blackberry, Ill. [Filed Apr. 3, 1875.]

Brief.—The saw-guides clasp the sides and back of the saw, and are made both vertically and horizontally adjustable.



166,010.



166,011.

1. In miter-boxes, the table A provided with supporting-arms A' folding under the table, as and for the purpose described.

2. A saw-frame, F, having a side sleeve, a, in combination with a spiral spring having pin d and secured in post, for the purpose set forth.

166,011. WINDMILLS. Timothy Kellogg, McGregor, Iowa. [Filed June 1, 1875.]

Brief.—When the wind blows with greater force than necessary to do the work, it turns the face of the wind-wheel nearer to a line parallel with the vane, and, turning the frustum on the spiral threads within the concentric cylinders, raises the same, compensating the greater force by the greater resistance, and preventing injury to the machinery, and rendering stoppage in high winds unnecessary.

1. In combination, the concentric cylindrical parts at the lower ends of the two frustums of cones B and C, with spirals fitting and working together, substantially as and for the purpose set forth.

2. The combination of the cylindrical collars E F on the two conic frustums B C, each collar having a portion of one side cut away on an incline, in the manner and for the purpose described.

3. The combination of the two concentric frustums B C, inverted within a third external frustum, A, which serves as a jacket to inclose them, and of a frame for the attachment of the machine to the lower parts of the mill, all constructed and operating in the manner specified.

4. In combination with the collars E F, constructed as described, the vane V, arm L, shaft D, chain H, and pulleys P P', all arranged and operating in the manner and for the purpose set forth.

5. In combination with the vane V, the spring S, operating as described, to counteract the forces drawing the vane and shaft out of line, and thus assist in regulating the action of the main shaft.

166,012. GALVANIC BATTERIES. J. Kidder, New York, N. Y. [Filed Apr. 24, 1875.]

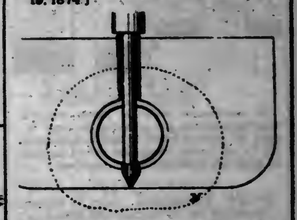
1. A cell-casing for galvanic batteries having interior cell forming partition-walls, made at less height than outer walls, for enabling rapid filling and emptying of cells substantially as and for the purpose specified.

2. A cell-casing for galvanic batteries provided with outer walls of greater height than the interior partition-walls, and having a supply-reservoir with flanged gutter and spout for the more rapid emptying and filling of the cells with the fluid, substantially as and for the purpose set forth.

3. The subdivided guide-frame seated in main cell-case, and connected with vertically-moving element carrying top plate, as shown and described, then admitting of the lateral removal of cells and insuring the insertion of each element in its proper cell when depressed, substantially as set forth.

4. The diagonal pivoted straps B B, to command the parallel immersion of the elements into the solution of the cells, substantially as and for the purpose specified.

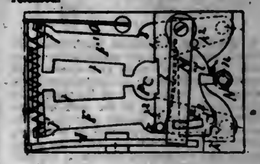
166,013. APPLE CORERS AND SLICERS. C. B. Kimball, New York, N. Y. [Filed Dec. 19, 1874.]



The combination, with the notched radiating quartering-blades, of the coring-cutters B and the spindle D, substantially as specified.

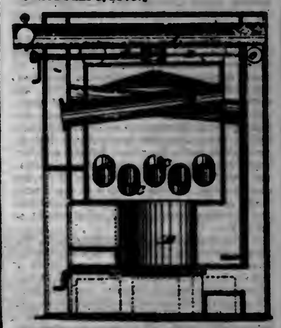
166,014. HASP-LOCKS. John Lechler, Erie, Pa. [Filed June 16, 1875.]

Brief.—Two pivoted spring-bolts serve to hold the hasp in a locked position. A sliding plate is so connected to the said bolts that by moving it in one direction the bolts will be moved in opposite directions, and the hasp released.



The combination, in a door-lock, substantially as described, of bolts F and F', or their equivalent, plate E, lever L, spring M, lever l, stop-plate H, and spring O, and spring D.

166,015. HOT-AIR FURNACES. Thos. Longstreth, Germantown, Philadelphia, Pa. [Filed June 5, 1875.]

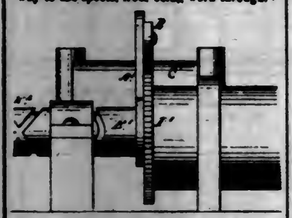


1. The combination of rod R, which actuates damper C of the indirect draft-flue, with tubular valve-rod S, which moves the damper T of the direct draft-flue, as shown and described.

2. The combination, with smoke-pipe H, of horizontal pipe I, receiving the former at its middle, open at both ends, and provided with a valve, M, at one end, as and for the purpose set forth.

166,016. SPOOLING-MACHINES. Stephen D. Learned, Pawtucket, R. I., assignor to A. C. Learned, Bergen, N. J. (Filed Nov. 9, 1874.)

Brief.—To prevent the cloth covering of the friction-roll, over which the yarn passes on its way to the spools, from being worn through.



In combination with the friction-roll of a spooling-machine, the wave-bar D', lever A', pawl B', ratchet-wheel F', and rotary-screw E', for producing rotary and lateral motions of cloth roll, substantially as described.

166,017. HARVESTERS. John P. Manny, Rockford, Ill. (Filed Nov. 26, 1874.)

Brief.—Combinations by which the cutters and rake may simultaneously be thrown into or out of gear, or their speed changed.



1. The clutch mechanism, hereinbefore described, consisting of the combination of the main axle, the two main gear-wheels H K mounted loosely thereon, and constructed with recesses for the reception of the clutch, the cup-shaped hub fast on the main axle, between the gears H K, the grooved clutch-sleeve or collar F', constructed as described, with spurs to enter the recesses in the gears, turning with but moving endwise on the hub, and the oscillating shipping-yoke F—all constructed as and for the purposes set forth.

2. The combination of the main axle, the spurred sliding clutch-collar F' thereon, the loose recessed main gear H, the bevel-wheel f thereon, the stud-axle on the pipe-bar, and the bevel-gear thereon for driving an automatic rake, these members being constructed and operating substantially as set forth.

3. The combination of the main axle, the sliding clutch thereon, the double gear-wheel K, the counter-shaft, the spur-pinion j thereon, gearing with the gear-wheel K, the pinion h fast on the counter-shaft, the main gear H loose on the axle, the bevel-wheel f thereon, and the bevel rake-gear on the stud-axle g, all these members being constructed and operating in combination, substantially as set forth, to drive the rake at an increased speed.

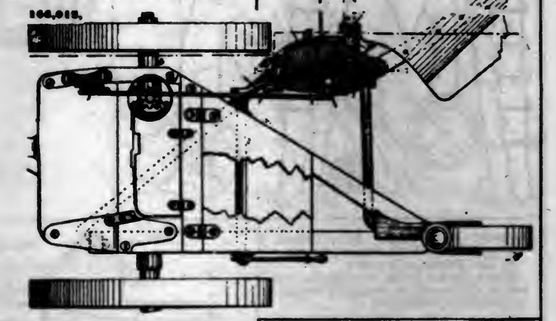
4. The combination of the main axle, the sliding clutch thereon, the spur-wheel H loose on the main axle, the spur-pinion h fast on the counter-shaft, the pinion j on the counter-shaft, the pinion I L loose on the main axle, the spur-pinion m and bevel-wheel M on the counter-shaft, and the pinion e on the crank-shaft, all these members being constructed and operating in combination, substantially as set forth.

5. The combination of the main axle, the main gear-wheels H K loose thereon, the intervening sliding clutch, the bevel-gears f and G, the counter-shaft, the gears h j fast thereon, the gears I L loose on the main axle, the gears m M loose on the counter-shaft, and the gear on the crank-shaft, these members being constructed and operating in combination, substantially as hereinbefore set forth, whereby the speed both of the rake and of the cutters simultaneously may be varied.

6. The combination of the main axle, the hub B' thereon, the sparred notch-sleeve F' moving endwise thereon, its shipping-yoke, the latch J hinged thereto, and the notched plate with which said lever engages to hold the mechanism into and out of gear, these members being constructed and operating substantially as hereinbefore set forth, whereby the latch forms part of the lever which moves the shipping-yoke, and is then turned down to lock it.

166,018. HARVESTERS. John P. Manny, Rockford, Ill. (Filed Nov. 26, 1874.)

166,018.



1. The combination of the coupling-frame, the shoe, the bracket thereon, the adjustable loop, and the lever I, these members being constructed and operating in combination, substantially as set forth.

2. The combination of the main frame, the coupling-frame, the shoe, the adjustable loop, the post, the hand-lever, and the link connecting the post and lever, these members being constructed and operating in combination, substantially as set forth.

3. The combination of the coupling-frame, shoe, finger-beam, post, and swinging latch, these members being constructed and operating in combination, substantially as set forth.

4. The combination of the main frame, the coupling-frame, the shoe, the finger-beam, the rock-shaft, its crank-arm, the link connecting the crank-arm and shoe, the grain-wheel, its hinged arm, and the lifting-cord extending from the grain-wheel arm through the shoe to the crank-arm, these members being constructed and operating in combination, substantially as hereinbefore set forth.

166,019. MOWING-MACHINES. John P. Manny, Rockford, Ill. (Filed Nov. 26, 1874.)

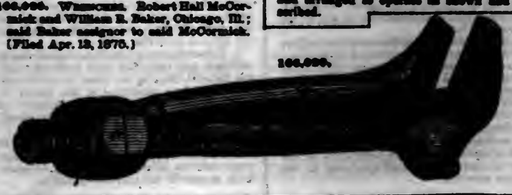
The combination, substantially as set forth, of the divider, the track-cleaner, the stud-bracket, to which the grass-wheel arm is hinged, and the single through-belt which secures the above-named parts together.

166,019.



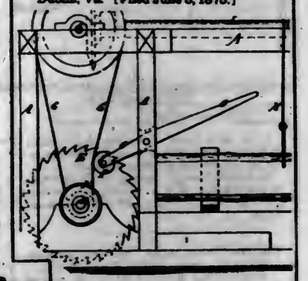
166,020. WRENCHES. Robert Hall McCormick and William R. Baker, Chicago, Ill.; said Baker assignor to said McCormick. (Filed Apr. 12, 1875.)

166,020.



The improved wrench hereinbefore set forth, consisting of the combination of the main portion, provided with a jaw, guide-flanges, a longitudinal guide-groove, and a screw; a movable portion, provided with a jaw, grooved flanges interlocking with the guide-flanges on the main jaw, and a tongue working in the guide-groove, and a screw-nut working on the screw of the main portion and over the sliding portion, for the purposes specified.

166,021. LOG-TURNERS. Chas. F. McWane, Dublin, Va. (Filed June 5, 1875.)



The rope-winding shaft I, placed parallel to the ways of the log-carriage, the saw-shaft J at right angles thereto, the gear K, pinion J, pulleys H F, stock-band G, and pivoted lever O, carrying friction-roller P, all constructed and arranged to operate as shown and described.

166,022. CLOTHES-PINS. Uriah D. Mihills, Fond du Lac, Wis. (Filed June 26, 1875.)

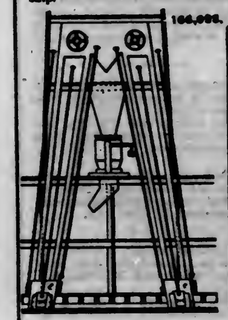


An improved clothes-pin, formed by the combination of a notched and slotted block, A, and the tapering key B, provided with a head upon each end, substantially as herein shown and described.

166,023. GRAIN-ELEVATORS. C. W. Mills, Mont Clair, N. J. (Filed Jan. 19, 1875.)

Brief.—Endless belts in water-tight wells, with slides for admission of grain, and others on the floor for the admission of water, in order that the same means may pump the ship.

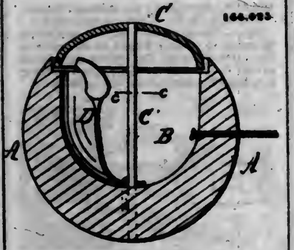
166,023.

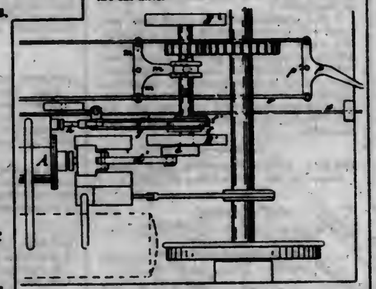


166,024. AIR-BRAKES AND CAR-STARTERS. Herman Moschowitz, New York, N. Y. (Filed Feb. 8, 1875.)

Brief.—The one lever, by a longitudinal movement, reverses the engine, and by a lateral movement throws it out of or in gear with the car-axle.

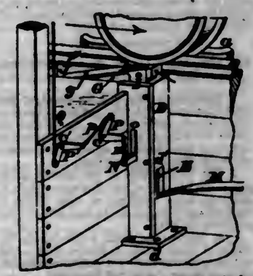
166,024.





The water-tight well fitted into a vessel and extending below the floor of the grain-bins, in combination with the elevating-buckets and two slides, one to admit grain from the bin and the other to admit water below the bin, substantially as set forth.

166,025. RAILROAD-SIGNALS. R. H. Moore, Greenbeck, Ohio. (Filed June 4, 1875.)



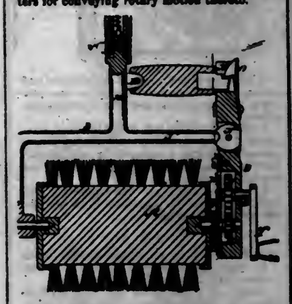
The combination, substantially as herein described, of housing D d', vertically-acting shaft E c, tappet F G g l, spring l, retractor H, and arm N, together with the connexion P [" p Q R T, or their equivalents, for sounding an alarm upon a bell or gong, V, so as to give intimation of an approaching train, substantially as set forth.

166,026. TOPS. Geo. F. Morse, New York, N. Y., assignor to himself and J. P. Tobin, same place. (Filed May 22, 1875.)

A toy chime-ball consisting of a recessed ball having a bell mounted thereon, which completes the spherical shape of the ball, and a ball-ringing device, combined and arranged substantially in the manner and for the purpose specified.

166,027. ROTARY HAIR-BRUSHES. Wm. O. Nutsford and Wm. Glasgow, Chicago, Ill. (Filed Apr. 17, 1875.)

Brief.—The rotary brush is so held in the frame that it can be readily removed and replaced by another. The end of the brush carries two flanges, between which a pin enters for conveying rotary motion thereto.



1. The spright D, snap-fastening H O, and joint N', gear-wheels E and F, crank T, and pivot-pin O', in combination with a rotary hand hair-brush, the pivoted handle E, and frame B, for the purposes described.

2. The pin I and flanges J J, in combination with the brush A, having pivot O', for the purposes described.

166,028. PAPER BAGS. William Osterlein, Cincinnati, Ohio. (Filed May 20, 1875.)

166,028.



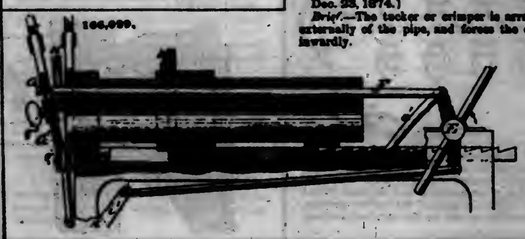
1. The method of making a "satchel-bottom" paper bag by cutting or punching the paper to shape shown in Fig. 1.

2. Folding the irregular-shaped side of the paper lengthwise, inwardly, Fig. 2, and pasting the paper and folding it twice in a right angle to the first fold, Fig. 4, as herein set forth, and folding the bottom corners of the bag inwardly, Fig. 5, as in the manner described.

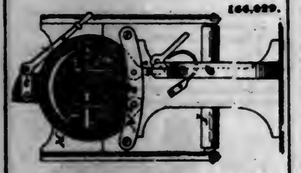
166,029. MACHINES FOR MAKING STOVE-PIPE ELBOWS. John F. Field, Richmond, Ind., assignor of part of his right to John H. McIntyre and J. B. Taylor, same place, and Geo. Erick, Philadelphia, Pa. (Filed Dec. 23, 1874.)

Brief.—The tucker or crimper is arranged externally of the pipe, and forces the crimp inwardly.

166,029.



166,029.



1. The beater or crimper H, constructed and adapted to form an interior tuck by one operation, substantially as and for the purpose described.

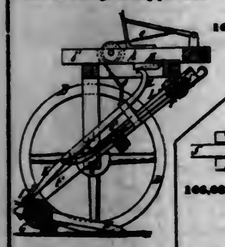
2. The expansible and adjustable rest, composed of the sections G G', with studs g' g' and eccentric, forming a support for making the interior crimp, substantially as and for the purpose described.

3. The combination of the expansible rest and the crimper H, substantially as and for the purpose described.

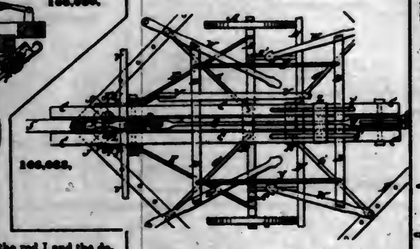
166,030. REVOLVING HORSE-RAKES. John H. Randolph, Jr., Bayou Goula, La. [Filed Mar. 1, 1875.]

Brief.—The release of the rake-head to dump the gathered hay is effected at will by the depression of a foot-board hinged to the main frame, tilting thereby the tripping-lever mounted in adjustable bearings in the rake-frame, and held by a spring in engagement with the stop on the rake-head. Said stop is formed of two or more pieces, removable, to alter the angle of inclination of the rake-teeth in their gathering position.

166,030.



166,032.

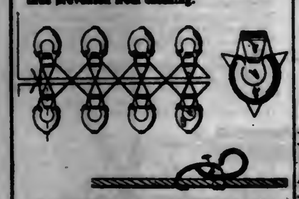


1. The combination of the rod I and the detachable stop-blocks J with the roller G of the rake-head, to receive the end of the holding-lever K, substantially as herein shown and described.

2. The combination of foot-board M, hinged to the main frame A, the lever K, the adjustable slotted bar L, secured to the rake-frame F, and the spring *b'*, for holding and tripping the rake-head, substantially as herein shown and described.

166,031. SHOE-FASTENERS. George P. Reeves, Hebron, Mass., assignor to himself and Charles Rumley, same place. [Filed Mar. 29, 1875.]

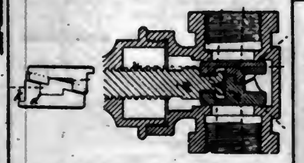
Brief.—A sheet-metal fastening has a horseshoe-shaped ridge or projection, between the open end of which the hook that receives the lace fills. The dress and other objects are thus prevented from catching.



The shoe-fastening A provided with suitable prongs for securing it to the shoe, and having the central concavity b, the surrounding ridge or projection a, and the hook d bent to fall within the ends of the curved portion, substantially as and for the purpose specified.

166,032. GATE-VALVES. Edmund Russell, Brooklyn, N. Y. [Filed June 21, 1875.]

Brief.—The gates have inclined backs, and by means of wedges formed in the walls of the valve-chamber the valves are forced against their seats, the wedging action being in a direction transverse to the valve-seats.



1. In a gate-valve, the combination of a gate composed of two pieces, respectively, having oppositely inclined backs, with wedge-guides upon the side walls of the gate-chamber, for the purpose of imparting transverse motion, in opposite directions, to the two gate-pieces as the gate is depressed, substantially as described.

2. The combination of a screw-stem, provided with a collar upon its lower extremity, and a gate composed of two parts obliquely halved, or tongued and grooved together, and vertical wedge-guides for imparting transverse motion to the two parts of the gate in opposite directions, with annular seats surrounding the water-way openings into the gate-chamber, substantially as shown and described.

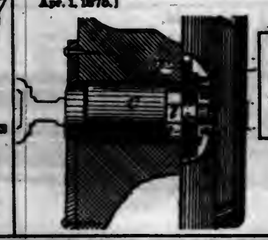
166,033. SULEY-HARROWS. D. F. Shaw, Hamilton, Mo. [Filed May 28, 1875.]

1. The combination of the perforated plates J, the arms K and G, the blocks L H, and bar I with each other, and with the bars F of the harrow-frame, to enable said harrow-frame to be adjusted, substantially as herein shown and described.

2. The combination of the blocks N, the pivoted connecting links or bars O, the pivoted bent levers P, the pivoted connecting-bars Q R, and the sliding tongue S with the parallel bars C of the carriage, and with the bar I, with which the harrow-frame is connected, substantially as herein shown and described.

3. The combination of the lock-catch T and the lever U with the parallel bars C of the carriage, and with the sliding tongue S, substantially as herein shown and described.

166,034. LOCKS. Henry S. Shepardson, Shelburne Falls, Mass., assignor to the Winn Lock Company, same place. [Filed Apr. 1, 1875.]



The nut e and plate F, provided with the recesses or notches *e*, in combination with the cylinder C, provided with the lugs *c*, said parts being provided with a screw-thread or grooves for adjusting and locking them together, substantially as described.



166,035. CUTTER-HEADS FOR PLANING AND MOLDING MACHINES. George J. Skinner, Milton, Pa. [Filed Dec. 30, 1874.]

Brief.—The bit is formed of a circular plate or disk, sufficiently thick to form the required cutting-edge, thin in the central part or web, and transversely notched to form a cutting lip.

A bit formed of a circular plate or disk sufficiently thick to form the required cutting-edge, and thin in the central part or web, and transversely notched, all as herein shown and described.

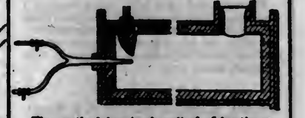
166,036. MANUFACTURE OF ILLUMINATING-GAS. Wm. H. Spencer, Brooklyn, N. Y. [Filed Dec. 26, 1874.]

Brief.—The retort is lined with lime. The hydrocarbon enters the retort just above the jet of oxyhydrogen flame.

The method herein specified of decomposing hydrocarbons and aqueous vapors by the direct application of an oxyhydrogen flame within a retort, substantially as set forth.

166,037. HEATING-RETORTS FOR THE MANUFACTURE OF ILLUMINATING-GAS. Wm. H. Spencer, Brooklyn, N. Y. [Filed Dec. 26, 1874.]

Brief.—The gas-retort is heated by the vapors of zinc, whereby a definite and uniform temperature is maintained.



The method herein described of heating a retort for the manufacture of illuminating-gas by the vapors generated in the distillation of zinc or other metal, as set forth.

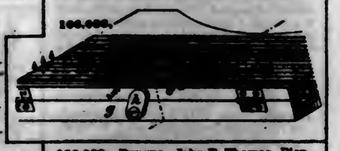
166,038. LAP-BOARDS. Henrietta G. Stapp, Somerville, Mass. [Filed Dec. 18, 1874.]

1. The combination, in a lap-board, of parallel guide-grooves *b b* for guiding scissors or hand-shears, and a clamp, *c*, for holding the goods while strips are being cut therefrom by means of the scissors or shears, substantially as herein shown and described.

2. The combination of the parallel guide-grooves *b b*, clamp *c*, and measuring-scale *d*, the latter being arranged at right angles to the guide-grooves, as herein specified, for the purposes set forth.

3. In combination with a lap-board, the clamp or cloth-holder *c*, elastic strip *i*, and button *h*, constructed and arranged substantially as herein shown and described.

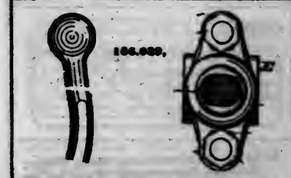
166,039.



166,040. PUMPS. John F. Thomas, Rion, N. Y. [Filed May 28, 1875.]

Brief.—The parts are so constructed that a slight lateral play is given to the rod to allow it to adjust itself, and prevent binding, and also enable the wear of the joint to be taken up.

166,039.

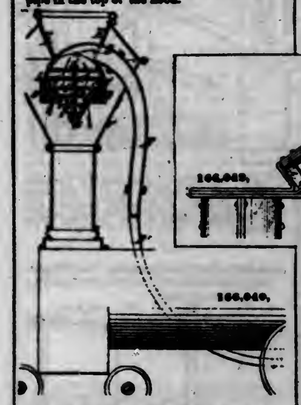


The combination, in a pitman-head, of the yoke B, spherical head J, ring C, with the box E, shoe I, and staple D, all constructed and arranged to operate substantially as set forth

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166,040. SPARK-ARRESTERS FOR LOCOMOTIVES. William McK. Thornton, St. Louis, Mo. [Filed Dec. 30, 1874.]

Brief.—An inverted cone made of annular adjustable sections suspended on a pendent screw-rod, which is inclosed within a hood. An annular section of wire netting surrounds the lower part of said hood, whereby the sparks are trapped and carried off through a pipe in the top of the hood.



166,039.



166,040.

1. The inverted conical spark-catcher, consisting of the head *a*, pipe E, and a downwardly-tapering portion formed of annular sections *b*, which are of varying diameters, and are fastened upon a pendent rod, substantially as and for the purpose described.

2. The annular sections *b*, of varying diameters, and tapered on their inner circumference, and fitted (by means of a screw-thread formed on each of them, and a screw-thread formed on the pendent rod) to be adjusted nearer together or farther apart, in combination with the head *a* and pipe E, substantially as and for the purpose described.

3. The inverted conical spark-catcher, consisting of the head *a*, pipe E, and annular sections *b b* of varying diameter, and fastened upon a pendent rod, *d*, in combination with the notching D open at its lower end, and suspended from the spark-catcher and conductor, substantially as described.

4. The inverted cone portion of the spark-catcher and conductor, formed of annular rings of varying diameters, which are tapered on their inner circumferences and cylindrical on their outer surfaces, substantially as described.

166,041. MACHINES FOR MAKING BARREL-HEADS. Wm. W. Trevor, Lockport, N. Y., assignor to himself and Francis M. Trevor, same place. [Filed June 10, 1875.]

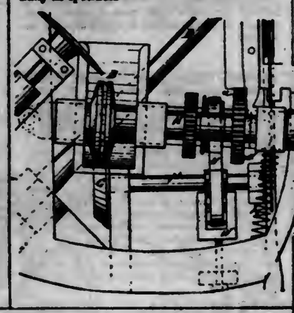
Brief.—The material is held between revolving chucks, and the desired form given to the head by means of a concave circular saw, in contact with which it is brought while revolving with the chucks.

1. The combination of a tripping-wheel, *c*, with the clamp-shaft and the trip-catch, the said wheel having clearer motion than the clamp-shaft, substantially as specified.

2. The combination of the pinion *b*, and tripping-wheel *c*, with the driving-shaft T, and the clamp-shaft, substantially as specified.

3. The swinging rod P, combined with and jointed to the swinging clamp-shaft H, substantially as specified.

4. The swinging rod P, having lengthwise motion in its support, and the spring N, in combination with the clamp-shaft, substantially as specified.

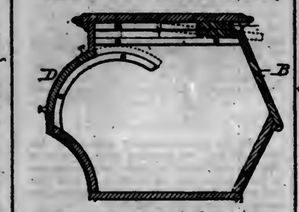


166,042. METALLIC TRUSS-BRIDGES. Jas. Valleley, Canton, Ohio. [Filed Apr. 24, 1875.]

Brief.—The bridge-arch is composed of top and bottom plates, connected by diagonal stay or brace pieces, arranged transversely and lengthwise alternately.

In an iron bridge, the arch A, composed of the top and bottom plates H H and connecting stay or brace plates F of the form shown, and arranged transversely and lengthwise of the arch, as set forth.

166,043. STORE-COUNTERS. W. Volkland, Fond du Lac, Wis. [Filed Mar. 29, 1875.]



A store-counter composed of one or more compartments, with the top A, the curved sliding lid D, and the hinged sliding lid B, both opening upon opposite sides into the same compartment, the whole being constructed to operate substantially as described.

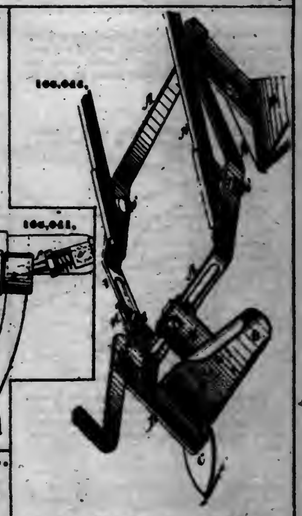
166,044. CULTIVATORS. William Weaver, Greenwich, N. Y. [Filed May 15, 1875.]

Brief.—An angular-shaped cultivator with alternate devices, to adapt it for use as a cultivator, hiller, or potato-digger.

1. The angular bars A A, slotted in their front sections, in combination with the angular draft-bar B and standard D, forming a cultivator of angly diamond shape, and adapted to receive alternate cultivating devices, as shown and described.

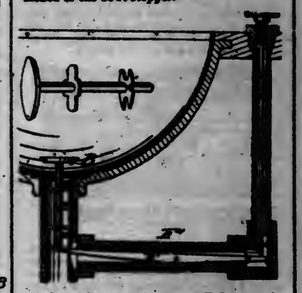
2. The combination of angular slotted frame A A, draft-bar B, slotted handle-sockets O, standards D F E, and plows C G E, all arranged substantially as and for the purpose specified.

166,045.



166,046. WASH-BOWLS. E. M. Weaver, Mansfield, Ohio. [Filed May 22, 1875.]

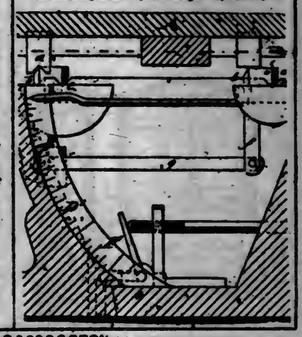
Brief.—On the stem, below the valve-ring, there are sieves or strainers. The valve mechanism is operated by a lever, as shown, thus dispensing with the chain usually attached to the bevil-stopper.



1. The valve-operating device F G, inclosed in tight tube F G', as and for the purpose described.

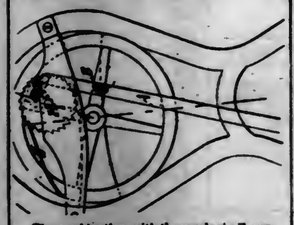
2. The detachable valve-ring, having top-ring and sieves or strainers attached of stem below the same, substantially as and for the purpose set forth.

166,047. WHEELBARROW-SECTION. E. M. Weaver, Mansfield, Ohio. [Filed Apr. 17, 1875.]



The combination, with knife-edges, of a balance-weight and an auxiliary weight, connected by rigid arms *f f* and pivoted rod *g*, the weights oscillating in same plane, as and for the purpose specified.

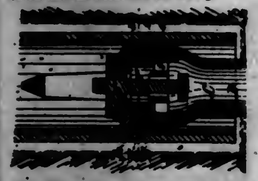
166,047. CRANK-MOTIONS. C. B. Whipple, North Charlestown, N. H. [Filed May 1, 1875.]



The combination, with the crank-pin E, connecting-rod A, and the secondary crank D, pivoted concentrically to the axis, of an idle-wheel, B, or another crank, substantially as specified.

166,048. PUMPS FOR TUBULAR WELLS. J. T. Whipple, Oak Park, Ill. [Filed June 10, 1875.]

Brief.—The coupling is provided with a flaring elastic packing, between which and the upper edge of the coupling applies a vertical flange depending from the valve-seat, by which means the packing is compressed against the tubing. Between the flange and the body of the valve-seat is a groove, provided with elastic packing, against which the upper edge of the coupling impinges, the two packings thus forming an air and water tight joint between the valve-seat and the tubing.

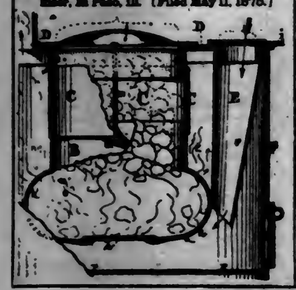


1. The valve-seat F provided with the depending flange E, adapted to pass between the coupling and packing, whereby the latter is compressed between the flange and inner surface of the tube, as specified.

2. The valve-seat F provided with the vertical groove G, adapted to receive the upper end of the coupling, in combination with packing J, as specified.

3. In combination with the valve-seat, coupling, and main tube, the packings E and J, arranged for joint operation to secure an air and water tight joint below the valve at the junction of the valve-seat with the coupling, as specified.

166,049. HEATING-STOVES. William Wickhiser, El Paso, Ill. [Filed May 11, 1875.]

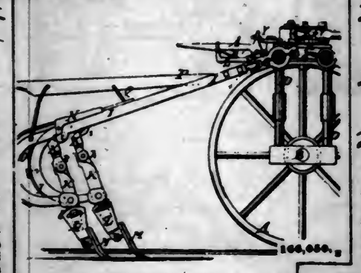


1. The combination, with the stove-case D F provided with air-passage E, with its cover *i*, furnace-cover *f*, and smoke-passage *g*, of the bowed furnace-bars *h* on cylinder B, with lugs *a a* and rods *m m*, connected by cylinder C to the rim *e* of the cover D, and supported by said rods *m m*, as described.

2. The combination of the bowed furnace-bars *h*, cylinders B C, cover D, and casing F, having the water-tight door S, and a food caldron or boiler, as and for the purposes described.

166,050. CULTIVATORS. Gershom Wilkinson, Quincy, Ohio. [Filed Apr. 17, 1875.]

Brief.—Spring-bars instead of a break-pin and slotted plates, to regulate the pitch of the teeth. Adjustable hooks for holding up the drag-bars.

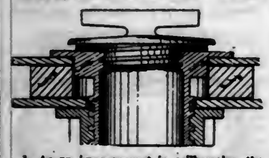


1. The combination of the pivoted and jointed standards K, the elbow-levers N, and the springs O, with the curved rear parts of the plow-beams I, substantially as herein shown and described.

2. The combination of the pivoted and slotted plates L with the standards K and the plows M, substantially as herein shown and described.

3. The combination of the levers or arms T and the adjustable hook-plates U *u*, with the outer adjusting-bars R, substantially as herein shown and described.

166,051. MILK-COOLERS. O. H. Willard, Randolph, N. Y. [Filed July 10, 1875.]



1. As an improvement in milk-cooler, the milk pan and vat provided with bottoms of diagonal inclination or pitch from one corner to the opposite one, for drawing off both milk and water at the lowest points, substantially as and for the purpose set forth.

2. The combination of milk pan and vat with a milk-outlet or faucet made of a flanged and threaded tube with screw-plug, a rubber ring interposed between pan and vat, and fitted to collar of tube, and of a bottom fastening-nut for connecting or detaching the parts, substantially as specified.

166,052. ROAD-SCRAPERS. Jacob W. Wilson, Hammerfort, assignor to himself and Addison Shanklin, London, Ohio. [Filed July 3, 1875.]

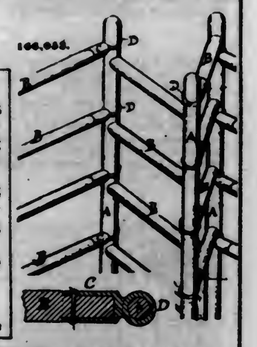
Brief.—In a revolving scraper manipulated by the handles, which are connected to the draft-yoke eccentrically, so that the scraper is detached by swinging the handles upward, and connected by swinging them downward. A guard-hook is arranged on the sides of the scraper, to prevent disconnection except when the handles are raised.

The combination of the guard-hook J with the pin G of the revolving scraper and the rods I H of the handle, substantially as specified.



166,053.

166,053. CLOTHES-DRYERS. Henry Winter, Cincinnati, Ohio, assignor of one-half his right to Wm. F. Kurtz, same place. [Filed Nov. 27, 1874.]



166,053.

In an articulated clothes-drier of the character stated, the socket-clasp C D, composed of a single piece of malleable cast-iron, and applied substantially as and for the purpose specified.

166,054. COTTON-CLEANERS. Jas. Wright, Mountain Mills, Ala. [Filed Nov. 7, 1874.]



166,054.

The improved cotton willow or cleaner, consisting of the frame A, containing the following elements: The frusto-conical chamber C, having removable top B and wire-screen bottom C', the beating-shaft, provided with curved radial and spirally-arranged beaters, breaking-joints with pins E, the beaters F above opening F, the bar G located under the screen C', and having the laterally-projecting spout and the dampers H H on opposite sides

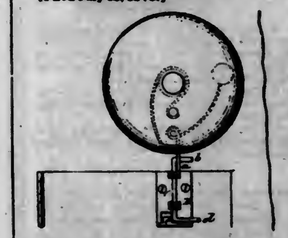
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166,055. GRINDERS. Arthur A. Abbott, Chicago, Ill. [Filed Apr. 27, 1875.]



A sleigh-knee consisting of a standard provided with the socket E to receive the runner, the outward projection *a* to support the runner, the inward projection *c* to support the body of the sleigh, and the intermediate upright projection *d*, all cast in one piece, and having substantially the form and construction herein described and shown.

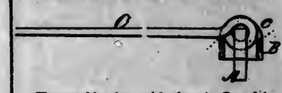
166,056. ALARM-BELLS. Irvin H. Abell, East Hampton, Conn., assignor to the East Hampton Bell Company, same place. [Filed July 13, 1875.]



1. In combination with an alarm-bell, the shaft C, provided with arms *b d* in different planes, one arm serving as a trip for the bell, and the other as a stop to hold the said trip in either of the two positions of sounding the alarm when the door is open or closed, substantially as described.

2. The herein-described trip for alarm-bells, consisting of the shaft provided with the two arms *b d* in different planes, arranged in bearings on a plate, D, and with the stop *c* on said plate arranged to form a bearing to support the arm *b* at one incline for actuating the bell, and also to hold the said arm *b* in its position of disengagement, substantially as set forth.

166,057. JEWELRY-PINS. I. B. Abrahamson, New York, N. Y. [Filed Dec. 19, 1874.]



The combination, with the pin C and inclosed post A hinged together, of the slotted shell B inclosing said post, substantially as specified.

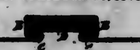
166,058. TRUNK-STRAPS. Geo. R. Alter, Minneapolis, Minn. [Filed May 22, 1875.]



1. A trunk-strap, consisting of a buckle, F, and loops D and H, connected to the long strap E, substantially as described, and for the purpose specified.

2. The long strap B, provided with a buckle, F, and loop D, in combination with loop E, strap C, and adjusting-buckle G, substantially as and for the purpose described.

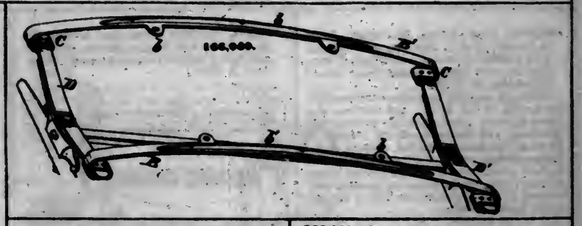
166,059. CLASPS FOR UNITING WIRE OR CLOTH FOR JAPANNERS. Benjamin Atha, Newark, N. J. [Filed Feb. 20, 1875.]



The bar A, having margins B B and undertarned ends C C, of the key or rigid wedge D, all constructed and applied as and for the purpose specified.

166,060. VEHICLE-SPRINGS. C. Bauer, Cincinnati, Ohio. [Filed June 21, 1875.]

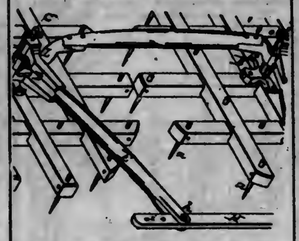
The vehicle-spring B B', having lugs *b b*, connecting-pieces *b' b'*, and coiled extremities C C, in combination with the semi-elliptic springs D D', as set forth.



166,060.

166,061. HARROWS. John S. Bonsall, Chillicothe, Mo. [Filed Feb. 1, 1875.]

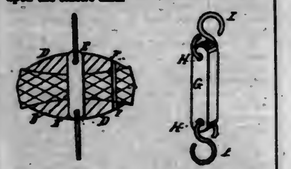
Brief.—Each section of the harrow is provided with a spindle rising from a center-plate, which is bolted to the center of the frame. The lower part of the spindle is of uniform diameter for about two-thirds of its length; then a tapering seat is formed for a ring, the upper end of the spindle being straight. The upper arm of the drag-bar rests upon the upper edge of the ring, and the coupling-bar rests upon the lower arm of the drag-bar, and that in turn is supported by the upper arm, thus relieving the base plate from friction.



In a revolving harrow, the post C, constructed as shown, and provided with the washers M, in combination with the forked shoes D and bearings L, substantially as and for the uses and purposes set forth.

166,062. CHAIN-PUMP BUCKETS. John S. Bonsall, Chillicothe, Mo. [Filed Feb. 22, 1875.]

Brief.—An elastic disk having concave faces, a central rectangular opening, and a smaller leak-passage near its edge. Upon each face of the disk is placed a convexo-convex metallic disk, having openings to correspond with those in the elastic disk. The disks are held together by a rectangular eyebolt, of such length that the links can only be inserted in the eyes by compressing the metallic disks upon the elastic disk.



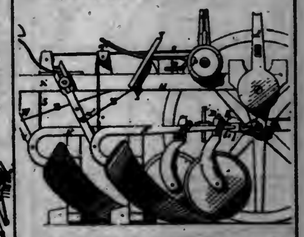
1. In a pump-bucket for chain-pumps, an elastic central disk and metallic outer disks secured together by a rectangular eyebolt, having an eye in each end for the reception of a link, and of such length that the links can only be inserted into the eyes of said eyebolt by compressing the disks together, and causing the ends of the eyebolt to project from the bucket, substantially as and for the purposes set forth.

2. In combination, the elastic disk A, having openings B and C, metallic disks D D, having openings E and F, and the rectangular eyebolt G, having eyes H H and links I I, substantially as and for the purposes set forth.

3. The rectangular eyebolt G, having eyes H H and links I I, as described, for the uses set forth.

166,063. GANG-PLOWS. Edwin A. Beers, De Kalb Centre, Ill. [Filed June 17, 1875.]

Brief.—Devices for holding down and regulating the plows, and loose couplings for connecting the beams.

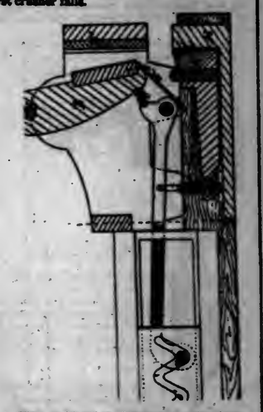


1. In combination with the jointed bars W and W, the shaft Y, provided with the arms *y* and *y*, and foot-lever *y'*, and connected to or with said bars by means of the rods Z and Z, substantially as and for the purpose specified.

2. In combination with the plow-beams N and N, the bars A' and A', secured to or upon said beams, and provided at their inner ends with the interlocking loops *a'* and *a'*, substantially as and for the purpose shown.

166,064. ORE AND STONE CRUSHERS. John R. Blake, Sewickley, Pa. [Filed June 17, 1875.]

Brief.—The movable jaw of a stone-crusher is actuated by a pivoted lever, which is caused to rise and fall by means of a sliding cam. Attached to the under side of the lever is another sliding cam, which causes lateral motion in the movable jaw of another crusher, into which the partially-pulverized ore from the first crusher falls.

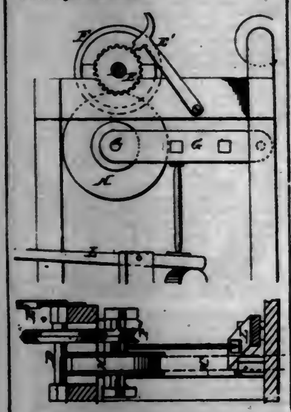


1. The combination of two converging jaws, actuated by means of a pivoted lever and sliding cam, substantially as and for the purpose specified.

2. In combination with a crusher having converging jaws, and a pivoted lever for operating them, a pulverizer operated from the pivoted lever by means of sliding cam, substantially as and for the purpose specified.

166,666. CORN-HUSKER MACHINES. John D. Blood and Geo. Topping, Amsterdam, M. Y., assignors to John D. Blood, Henry Herrick, and Geo. Topping, same place. [Filed May 19, 1876.]

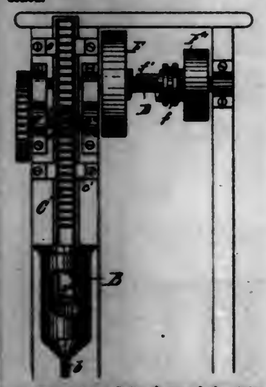
Brief.—A mounted hollow mandrel receives the handle of the broom, and revolves the broom opposite a floating-pulley intermediate between it and the tension-drum. Motion is given to the mandrel by the contact of its friction-pulley with a friction-pulley on the shaft of a hand-wheel, held in a pivoted frame beneath; said pivoted frame being raised and lowered by the action of the foot of the operator upon a treadle.



In a broom-winding machine, the combination, with the hollow mandrel D and ratchet-wheel E, with its dog F', of the friction-wheels F and F', hand-wheel H, vibrating frame G, treadle L, and rod M, substantially as and for the purposes set forth.

166,666. PRESSES FOR PACKING PUTTY. L. Boucher, St. Louis, Mo. [Filed Mar. 4, 1876.]

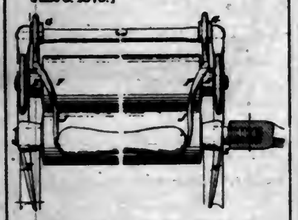
Brief.—The rack-bar, having the piston thereon, is connected with corresponding gearing and double-clutch mechanism, by means of which the piston is brought into or out of action.



1. The rack-bar C, its plunger *c'*, the piston *c*, gear-wheel E, pinion d, power-shaft D, in combination with a cylinder, B, to operate as and for the purpose set forth.

2. The clutch *f*, pulleys F F', power-shaft D, pinion d, gear-wheel E, pinion *e*, rack-bar C, its plunger *c'*, in combination with the cylinder B, to operate as and for the purpose set forth.

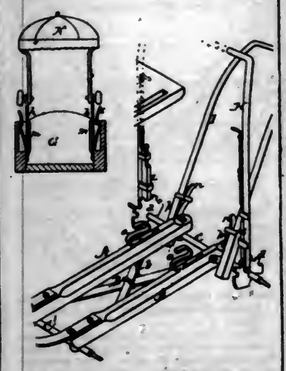
166,667. CLOTHES-WRINGERS. William T. Bunnell and A. G. Ronan, Ottawa, Canada; said Ronan assignor to said Bunnell. [Filed June 3, 1876.]



1. The combination of rock-shaft F, having end eccentrics G G, the coiled pressers F F, and the friction-rolls H H with the upper roll of a wringer, as and for the purposes described.

2. The guide-roll I, suspended from the pressers F F of a wringer, as described, thus serving as a handle for the convenient manipulation of said pressers.

166,668. CHILDREN'S CARRIAGES. Robert W. Caldwell, Zanesville, Ohio. [Filed Feb. 4, 1875.]



1. The combination, in a child's carriage, of the frame A B, secured upon the axles C C', the G-shaped springs D D, and bed E, upon which the carriage-body is fastened, substantially as and for the purposes set forth.

2. The combination of the frame A B, springs D I., bed E, adjustable body G, springs *e e*, and elastic band *b*, all substantially as and for the purposes set forth.

3. The pivoted foot-piece J and pins *f f*, in combination with the bed E, springs D D, and adjustable carriage-body G, as and for the purposes set forth.

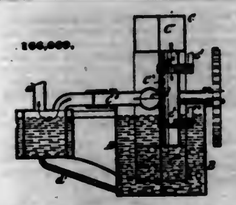
4. The combination, with a child's carriage, of the pivoted adjustable handle H, with spring-pawls *e e*, and the segmental racks *d d*, substantially as and for the purposes set forth.

5. The combination, with a child's carriage, of the handle I, having spring-catches *a a*, and the sockets *p p*, as and for the purposes set forth

166,669. AIR-SUPPLY ATTACHMENTS FOR CARBURETTERS. John M. Cayce, Franklin, Tenn. [Filed Feb. 20, 1876.]

Brief.—In a water-reservoir revolve one or more hollow wheels or annular chambers, having on their outer peripheries inlet-ports, and on their inner peripheries outlets through radial tubes opening into the central tube, on which they revolve. The radial tubes are provided with valves or cocks operated by trippers attached to the sides of the reservoir. As the inlet-ports are immersed in the water, the air in the chamber above is discharged through the central tube into the air-reservoir. Any water that may be carried along with it is delivered again from the air-reservoir to the water-reservoir through a connecting-pipe.

166,669.



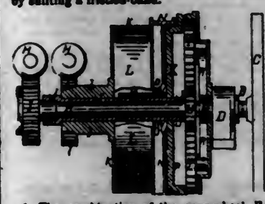
1. The combination, with air and water reservoirs B D and pipe C', of the hollow wheel C, having chambers C', and provided with inlet and outlet *c c'* and valved pipe *c'*, operated as and for the purpose described.

2. The combination, with valves having arms *c' c'*, of the trippers *b' b'*, as and for the purpose set forth.

3. The combination, with reservoirs B D, of the connecting-pipe *c'*, as and for the purpose specified.

166,670. MOTORS FOR RAILWAY-CARS. G. B. Oliver, Philadelphia, Pa., assignor to himself and Robert Eastman, same place. [Filed May 27, 1876.]

Brief.—Revolution of hand-wheel winds spring in drum; recoil propels car. Connection between drum and wheel made or broken by shifting a friction-band.



1. The combination of the spur-wheel E, pinion F, shaft G, screw H, worm-wheel I, case K, sleeve J, and the spring L, as shown and described.

2. The combination of the sleeve J, case K, spring L, feather M, transmitting-wheel N, spring O, and the annular wheel P, as shown and described.

3. The combination of the lever V, shifting-cloth W, transmitting-wheel N, sleeve J, feather M, spring O, and the wheel P, as shown and described.

4. The combination of the wheel P, spider R, gear-wheels T U, shaft B, and the sleeve J, as shown and described.

166,671. SEWING-MACHINES. L. J. Crenshaw, St. Louis, Mo. [Filed May 24, 1876.]

Brief.—Improvement on the Wardwell machines. The hook which takes the loop from the needle is pivoted to the edge of the spool-case holder, and is held out against the needle by a spring, so that the removal of the stitch from the needle is insured. A notch is formed in the spool-case stay, through which projects the retaining-arm on the spool-case, to prevent such parts from wearing the thread.

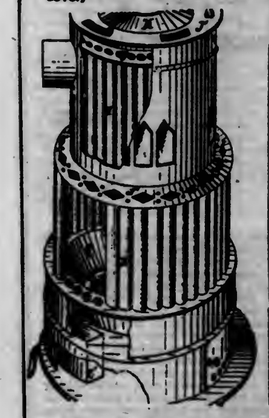


1. The combination, with a revolving spool-case holder, of a movable or vibratory hook projecting beyond the edge of said holder, and operated by spring-power, whereby the said hook is always brought in line with the path of the needle, substantially as and for the purpose described.

2. The combination, with the spool-case holder, of the spring A, point B, needle-guard C, and pivot D, as and for the purposes set forth.

3. The combination, with the spool-case stay F, provided with the escape-notch G, of the spool-case finger E, the several parts being constructed and relatively arranged as shown and described.

166,672. MAGAZINE HEATING-STOVES. M. A. Cushing, Aurora, Ill. [Filed Mar. 29, 1876.]



1. In a magazine heating-stove, the magazines inclined in and built up of contiguous tubes, open at their upper ends to the surrounding air, and at their lower ends to the combustion-chamber, substantially as described.

2. In a heating-stove, a magazine built up of pendent tubes, combined with an annular air-register at the top, substantially as described.

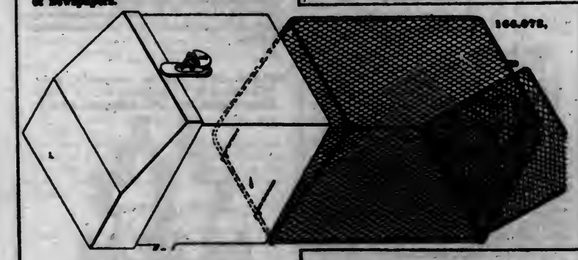
3. In a heating-stove, a tubulous magazine, pendent from and in combination with an annular air-chamber, provided with an air-register, substantially as described.

4. In a heating-stove, a tubulous magazine, built up of alternate long and short tubes, combined and arranged substantially as and for the purpose set forth.

5. In a heating-stove, a fire-pot, built up of and entirely surrounded by contiguous tubes, open at their top to the surrounding air, and at their bottom to an air-flue extending through the ash-pit and base-plate, said tubes and air-flue combined and arranged substantially as described.

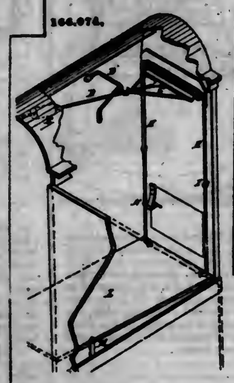
166,673. BASKETS FOR NEWSPAPERS. Jas. J. De Barry, Thorvald J. Lundqvist, and A. T. Lundqvist, Brooklyn, N. Y. [Filed May 30, 1876.]

Brief.—The basket is intended to hang under a lamp-post letter-box, for the reception of newspapers.



A mail-box composed of woven wire or ferruginous metal, having a door at the bottom, and an open inclined top, and adapted to be secured below an ordinary street letter-box, as described.

166,674.



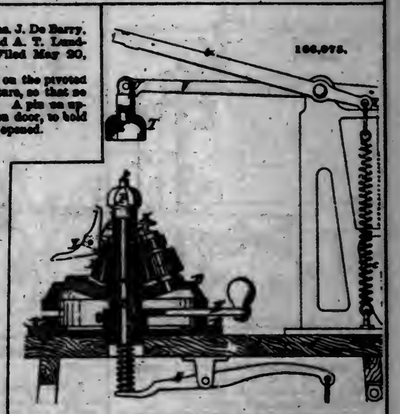
1. A letter-box in which is combined a table, I, pivoted near one end, vertical rods H, connected at their lower ends to the pivoted table, a shield-plate attached to the vertical arms, and a rod, D, connected with the shield-plate, and provided with an adjustable weight, H, all substantially as and for the purpose described.

2. In combination with the reciprocating frame, the pin and spring-fastening attached to the door of the box for securing the frame when dropped, and preventing the plate from being pushed away from the mail-opening, substantially as described.

166,675. MACHINES FOR MAKING WIRE CAPS. Adrn. de Mestre, Bordeaux, France. [Filed May 7, 1875.]

Brief.—A flat wire cap is pressed over a conical former by a cup-shaped die, and the long loose end of the wire is passed alternately through the loops of the wire and over hooks which are journaled in a horizontally-revolving head, and geared to a central pinion loosely revolved on the shaft supporting the former by an arm extending through a slot in the head, the end being finally twisted with the short end of the wire over a pivoted spring-pressed hook. The journaled hooks revolving, the loops half open them are twisted, after which the former is forced upward to stretch the cap; and, with the pivoted hook, releases the cap from the machine.

166,675.



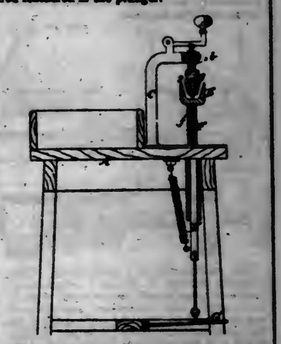
1. The combination of the revolving head D, the pinion I, journaled in and carried by the same, and provided with the hooks K, the central pinion G, arranged between the pinions of the hooks, the lever R, connected with the central pinion for partially revolving the same, and the forming-die P, arranged on the shaft G, passing through the central pinion, all substantially as described.

2. The combination of a cup, T, and head-lever b with the forming-die P and the twisting-hooks K, substantially as set forth.

3. The combination, with the revolving hooks K, their pinions I, and the central pinion G, arranged between the same, of the pivoted hook K', having a thumb piece, L, and a spring to throw it away from the hooks K, substantially as and for the purpose described.

166,676. MACHINES FOR PRESSING WIRE CAPS. Adrn. de Mestre, Bordeaux, France. [Filed May 7, 1875.]

Brief.—The wire cap, placed in a swiveled cup-shaped die and its branches adjusted in notches in the die, is pressed upward against a swiveled conical plunger, and retained between it and the die, while the loose ends of the wire are passed through the loops of the cap, which is drawn to shape over the projecting edge of the plunger. The die is then depressed, and the finished cap is forced off the plunger by a pivoted lever acting on a headed rod fastened in the plunger.

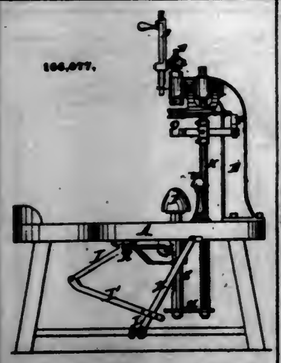


The cup-shaped die E, swiveled upon the spring-impelled bar F, and having notches *d*, for receiving the wires to form the cap, in combination with the swiveled plunger D, having a projecting edge for bringing the loops of the wire cap into the proper position, substantially as described, and for the purpose specified.

166,677. MACHINES FOR APPLYING WIRE CAPS TO BOTTLES. Adrien de Mestre, Bordeaux, France. [Filed May 7, 1875.]

Brief.—A bottle-supporting slide operated by a foot-lever; a retaining-clamp opened and shut by moving over an incline, and a die for depressing the wire caps on the cork-stoppers, so that the caps can be readily fastened. Combined with said parts is a cutter for removing ends of projecting wires, and a hand-stamp for applying lead seals to the caps, and for stamping thereon required designs, &c.

166,077.



1. The combination of the bench A, upright B, die C, rod D, sliding rod, E, jaws C, and fastener P, all constructed and operating substantially as shown and described.

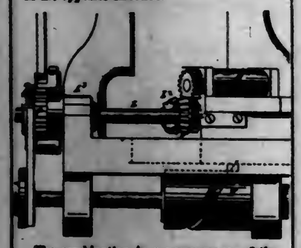
2. The combination of the treadle I, cog-wheel G, slide E, and bottle-supporting block F with the sliding rod E, die C, jaws C, and fastener P, substantially as set forth.

3. The combination of cutting-jaws m, with the rod D, die C, sliding rod E, jaws C, fastener P, and bottle-supporting block F, substantially as shown and described.

4. The combination of ρ tool for impressing designs on a lead disk with the apparatus for applying wire caps to bottles, substantially as set forth.

166,078. FERRULE DEVICES FOR PUNCHING-MACHINES. Ferdinand Deming, Waterbury, Conn. [Filed Apr. 20, 1875.]

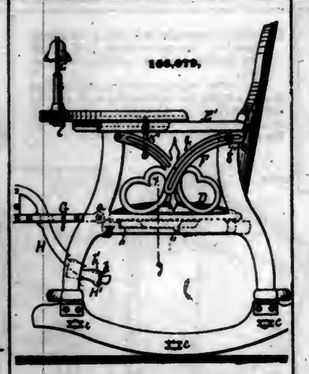
Brief.—During the reciprocation of the carriage the shoe is raised and held up by a cam, so that the pawl ceases to operate the feed-rollers; but at the extremes of the movement the shoe is permitted to fall, and allow the pawl to engage with the ratchet on the shaft of the feed-roller, the shoe being again raised the moment the carriage commences to move in the opposite direction.



The combination, in a power-press, of the diagonal carriage G, having a reciprocating movement parallel with the press, the shaft L, in connection with the feeding mechanism of the said carriage, the pawl and ratchet P P', for imparting a revolution to the said shaft L, the shoe R, and the cam S, for interrupting the action of the pawl P', move at the two extreme movements of the carriage, substantially as specified.

166,079. NURSERY-CHAIRS. J. F. Downing, Erie, Pa. [Filed Mar. 10, 1875.]

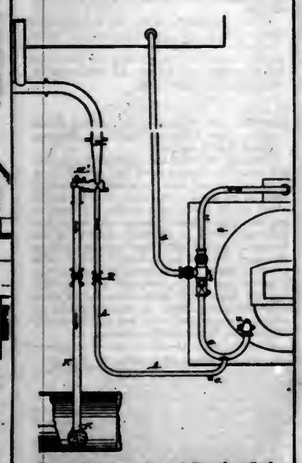
1. The leg-rest G, secured by pivot-bearings to the frame of the chair, foot-rest G' pivoted to said leg-rest, and having arms H H rigidly attached thereto, the latter being provided with ratchet-teeth h h, and adapted to slide in the stirrup-bearings H' H', in combination with a seat and swinging back, the whole being arranged to permit of the parts being adjusted and fastened in the manner and for the purpose set forth.



2. The leg-rest G secured by pivot-bearings to the frame of the chair, foot-rest G' pivoted to said leg-rest, and having arms H H rigidly attached thereto, the latter being provided with ratchet-teeth h h, and adapted to slide in the stirrup-bearings H' H', in combination with a seat and swinging back, the whole being arranged to permit of the parts being adjusted and fastened in the manner and for the purpose set forth.

166,080. APPARATUS FOR RAISING WATER. Isidore Dreyfus, New York, N. Y., assignor to Nathan & Dreyfus, same place. [Filed July 1, 1875.]

Brief.—A return-pipe from the boiler-feed is connected to an injector for raising water.

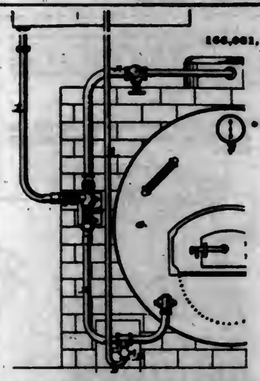


The combination, substantially as described, with a boiler-feeding apparatus, of an ejecting or forcing apparatus, and a return or diverting pipe, which communicates with the feed-delivery pipe at a point between the feeder and the boiler, and is adapted to conduct from said feed-delivery pipe an impelled column of water that becomes, in the ejecting or forcing apparatus, the ejecting or forcing agent, substantially as set forth.

166,081. FEED-WATER REGULATORS. Isidore Dreyfus, New York, N. Y., assignor to Nathan & Dreyfus, same place. [Filed July 1, 1875.]

Brief.—The over-feed of the injector escapes through a return-pipe, provided with a valve, to the supply-tank.

166,081.



1. The described combination of the feed-water-forcing apparatus, the boiler, the feed-delivery pipe, and the return or diverting pipe, which communicates with the feed-delivery pipe at a point between the feeder and the boiler, and through which, when open, and to the extent to which it is open, water from the feed-delivery pipe is driven under the combined pressure of the boiler and the boiler-feeder, substantially as set forth.

2. The combination, with a constantly-working injector, of the feed-delivery pipe, the boiler, and the return-pipe, communicating with the feed-delivery pipe at a point between the boiler and the injector, said parts being constructed and arranged for joint operation, in the manner and for the purposes substantially as shown and described.

3. The combination of the boiler, the injector or other feeder, the water-tank, the delivery-pipe, and the return-pipe, provided with a regulating valve or cock, and connected at one end with the tank, and at the other end with the delivery-pipe at a point between the injector or other feeder and the boiler, substantially as set forth.

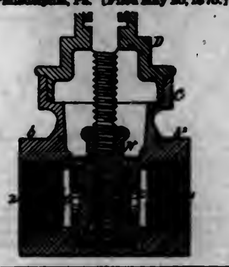
166,082. CLAMPS FOR HALTERS. Frank P. Drinkhouse, Phillipsburg, N. J. [Filed June 26, 1875.]

Brief.—The clamp is formed of two pieces, which fit about the rope, and are drawn tight by the screw, the head of which forms the eye for the snap-hook.



The combination, with a rope halter, A, of a bisected clamp, B C, ring D, and screw b, substantially as and for the purposes herein set forth.

166,083. STOP-VALVES. George W. Eddy, Waterford, N. Y., assignor to L. K. Eddy, Philadelphia, Pa. [Filed May 26, 1875.]



1. In a stop-valve the gate or gates G thereof, provided with a convex central projecting bearing, *a*, and combined for operation with the wedging sleeve-nut N, to equalize the bearing of the gates upon their seats *e*, without fixed or jointed connections, substantially as herein set forth.

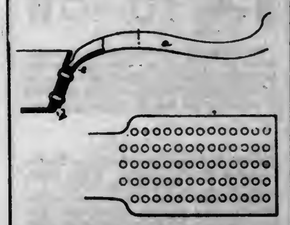
2. The gates provided with the annular grooves *g*, and combined for operation with projections *h* upon the wedging sleeve-nut N, whereby the gates are suspended and allowed to turn in either direction upon their points of suspension, substantially as herein set forth.

3. The combination, with the wedging nut or sleeve N, provided with the side projections *h h*, of the gate-grooves *g* of larger cross-section throughout their circle than the projections, whereby the gates may turn and the nut have a limited movement within any part of the circular grooves of said gates, independent thereof, for the purpose stated.

4. The circumferential annular-rim bearings of the gates, combined with the flat surfaces *i i* at the top of the wedging-sleeve N, whereby the said gates are free to turn, and the nut held from turning, as described.

166,084. STOVE-COVER LIFTERS. James Edgar and Alfred Bardell, New York, N. Y. (Filed June 30, 1875.)

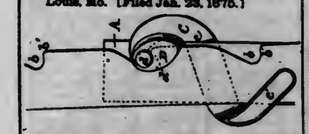
Brief.—A sheet-metal lifter with a ventilated handle, arched shank, and re-enforced tip.



1. A sheet-metal handle, constructed with the imperforate shank *a* and perforated head *b*, substantially as herein shown and described.

2. In combination with a sheet-metal handle, constructed with a perforated head, *b*, imperforate shank *a*, and the lip *c* of the re-enforcing-plate *d*, substantially as and for the purpose described.

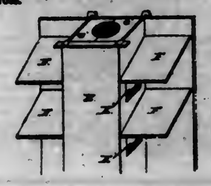
166,085. BALE-TIES. Henderson Estes, St. Louis, Mo. [Filed Jan. 23, 1875.]



The combination of the band and A with the serpentine tie or lock piece C, provided with finger *c'* and head D, the latter having recess *d'* and projection or shoulder *d²*, and secured by rivet or stud *d*, all substantially as set forth.

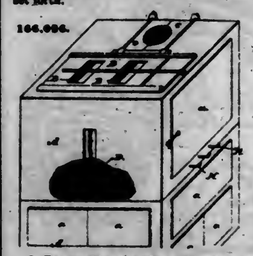
166,086. PORTABLE FRUIT-DRIERS. James W. Faulkner, Auburn, Cal. (Filed Apr. 13, 1875.)

Brief.—The door in the rear of the case and the cut-away valves are opened to admit the stove-pipe when the case is placed over the stove. Both the trays and the cases are reversible.



1. The combination of the drying-chamber A, having in its rear the chamber E, with door *e*, and in its lower part the valves H, with the adjustable and removable jacket A', adapted for any ordinary domestic heater or cooking-stove, substantially as and for the purpose set forth.

166,086.



2. The combination of case A', constructed as described, with chamber A, having ventilating-openings B and valve B', doors *e*, and removable and reversible drying-shelves, substantially as described.

3. The combination of chamber E, with its doors *e e'* and apertures E', with the chamber A' and case A, substantially in the manner set forth.

4. The wire-gauze shelf or slide G, with its front rail or lip *g*, adapted to and combined with the drying apartment or case, substantially as and for the purposes set forth.

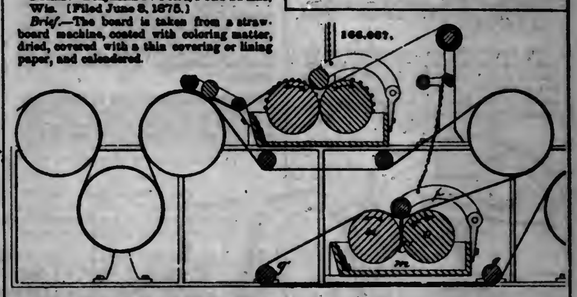
5. The chamber A, having drying-shelves or case G, and vertical chambers E *e e'*, and valves H and wire-gauze or perforated diaphragm D, combined with the folding and adjustable jacket A, substantially as and for the purposes described.

6. The combination of the drying-chamber A, having openings B and valves B', the shelves or trays G *g*, valves or registers H, and suitable doors *a*, and chamber E E', with its doors and registers, substantially in the manner and for the purposes set forth.

166,087. MANUFACTURE OF LINED STRAW-BOARD. Benjamin F. Field, Fond du Lac, Wis. [Filed June 8, 1875.]

Brief.—The board is taken from a straw-board machine, coated with coloring matter, dried, covered with a thin covering or lining paper, and calendered.

166,087.



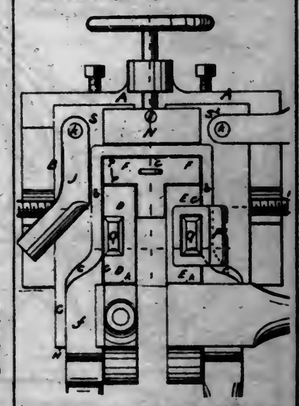
1. The mode or process of finishing straw-board, and other coarse dark paper-boards, by coating or dyeing one or both surfaces with coloring material, and afterward lining such colored surface with thin lining-paper, substantially as and for the purposes set forth.

2. As an article of manufacture, straw-board, or other dark heavy paper or board, lined with thin paper, and having a coating or wash of coloring material, or coloring and smoothing material, applied between the lining and the board, substantially as described.

3. The combination of a straw-board machine with an apparatus for applying lining-paper, and an apparatus for coloring or sizing the surface of the board preparatory to the application of the lining-paper, substantially as described.

4. The combination of a straw-board machine, driers for partially drying the straw-board, a coloring apparatus for coloring the surface of the board, additional driers for drying in or hardening the coloring material, a lining apparatus, and, finally, other driers to dry the lining-paste, all operating in the order and for the purposes set forth.

166,088. DEVICES FOR BENDING METAL TIMBER-HANGERS. Jas. Flynn, Boston, Mass. (Filed Feb. 5, 1875.)



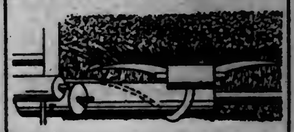
1. A form for making timber-hangers, substantially such as herein described, constructed with faces or walls D, E, F, G, H, and I, which are arranged relatively to each other, substantially as described, of a series of bending-levers, which are applied to and about said form for being operated substantially as described, for the purpose specified.

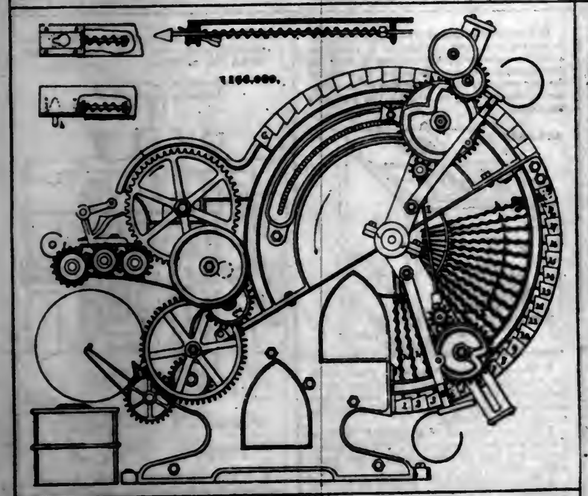
2. The combination, with a form made in two parts, S S', and otherwise constructed with walls and levers substantially as herein described, of the right and left adjusting screw-shaft U, arranged to enter the parts S S' of the form, and, when turned, to move them substantially as and for the purpose specified.

166,089. CARDING-MACHINES. John F. Foss, Lowell, Mass., assignor of one-half his right to John M. Pevey, same place. (Filed Oct. 24, 1874.)

Brief.—In order to maintain the under flats in position against the lower side of the main cylinder, they are each attached to a guide-rod, which is surrounded by a spiral spring, and is capable of sliding radially.

In a carding-machine, under-flats 1 2 3 in combination with guide-rods and springs *h h h*, substantially as herein specified.




No. 166,090.

166,090. MANUFACTURE OF GLUCOSE. W. Garton, Southampton, England. [Filed June 30, 1875.]

Brief.—Treats cane-sugar solutions with acid. Cane-sugar is added to the solution, whose acid is still capable of inverting the sugar.

The process of manufacturing glucose from starch and cane-sugar by heating saccharose or starchy substances with acid in the ordinary manner, and adding to the mixture cane or beet sugar before neutralizing the acid, substantially as described.

166,091. BUTTON. Charles H. Goodwin, Waterbury, Conn., assignor to the Waterbury Button Company, same place. [Filed May 31, 1875.]

The herein-described improvement in the manufacture of buttons, consisting of the button-eye formed from wire, bent to bring the two ends into a plane, substantially at right angles to the plane of the eye proper, and substantially as set forth.


No. 166,091.


No. 166,092.

166,092. SHIRT-BOSOM. F. C. Goodwin, Boston, Mass. [Filed Dec. 30, 1874.]

Brief.—The bosom is kept smooth and crumpled by the folded gore, which allows the lower end of the bosom to have free movement when the wearer bends forward.

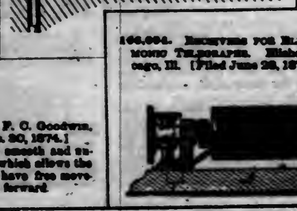
1. A shirt-bosom connected at its lower end to the shirt by a flexible or bellows-like gore, substantially as described, and for the purpose specified.

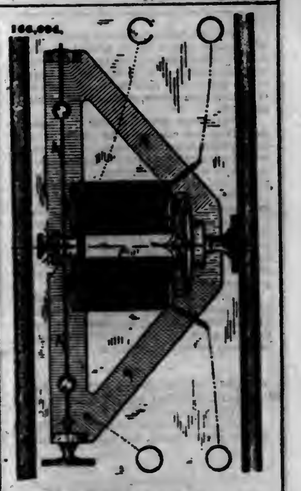
2. In combination with a shirt and shirt-bosom the gore B, having the folded sides C and bottom D, formed substantially as described, and for the purpose set forth.

166,093. ANT-DESTROYING APPARATUS. Wm. Grafton, Clinton, Tex. [Filed Mar. 20, 1875.]

Brief.—A closed retort is used for the combustion of materials for generating poisonous gases. A pipe is inserted into the ant-hill, so as to connect with the main chamber, and coupled to the neck of the retort. Combustion is maintained by means of one or more air-pumps, and the generated gases are thus forced through the chambers and cells of the ant-hills, resulting in the destruction of the insects.

The combination of furnace B, having pipe C and air-pumps D, provided with hand-lever E and pipe I, all arranged on hand-barrow, with the earth-tube H, as and for the purpose specified.

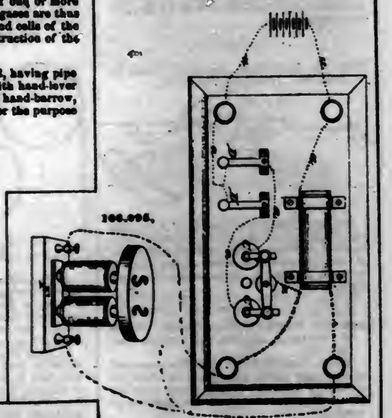

No. 166,093.


No. 166,094.

The combination, substantially as herein-before set forth, of the vibrating receiving-spring, the elbow-lever circuit-interrupter, and mechanism, substantially such as described, for adjusting the rate of vibration of said lever.

166,095. ELECTRIC TELEGRAPHS FOR TRANSMITTING MUSICAL TONES. Elisha Gray, Chicago, Ill. [Filed Jan. 19, 1875.]

Brief.—Depends primarily on fact that the core of a magnet expands and contracts, causing vibrations as it is made and unmade. Currents corresponding in number to the vibrations necessary to produce any particular note are transmitted, causing corresponding vibrations in core of magnet, which are transferred to a sounding-box placed in the magnet.


No. 166,095.

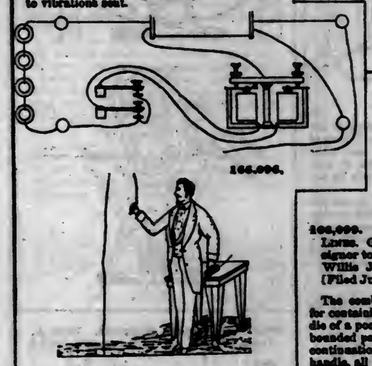
The combination of a telegraphic circuit, a series of circuit-breakers capable of producing musical tones of different pitch, a series of keys for simultaneously or successively throwing said circuit-breakers into or out of operation, and an electro-magnet receiver, which is thrown into operation by the transmitters, whereby tones of different pitch may be reproduced at the receiving end of the line by the employment of a single circuit.

166,096. RECEIVERS FOR ELECTRO-HARMONIC TELEGRAPHS. Elisha Gray, Chicago, Ill. [Filed June 28, 1875.]


No. 166,096.

166,096. ELECTRIC TELEGRAPHS FOR TRANSMITTING MUSICAL TONES. Elisha Gray, Chicago, Ill., assignor of one-half his right to Saml. S. White, Philadelphia, Pa. [Filed Jan. 19, 1875.]

Brief.—Uses induced current. By any suitable circuit-breakers, pulsations are sent upon the line, corresponding in number to the vibrations necessary to produce any given note or sound. At receiving-station operator is placed in circuit, and in electrical connection with a vibrating resonant-plate, also in the circuit. The transmission, then, of these vibrations through the living tissue to the resonant substance causes an audible note, corresponding to vibrations sent.


No. 166,096.

1. The herein-before-described art of transmitting musical impressions or sounds telegraphically, by producing musical impressions or sounds at the transmitting end of a telegraphic circuit by causing interruptions in the electric current of uniform frequency to produce musical tones, transmitting said tones through an electric circuit composed in part of animal tissue, and reproducing them at the receiving end of the line by means of a resonant body, which is also a conductor of electricity, substantially as set forth.

2. The electro-harmonic telegraph apparatus, herein before set forth, consisting of the combination of a telegraph-circuit, composed in part of animal tissue, a circuit-breaker capable of producing a musical tone, and a resonant conductor of electricity capable of reproducing that tone at the receiving end of the circuit.

3. The combination, substantially as herein-before set forth, of a telegraphic circuit composed in part of animal tissue, a resonant receiver, which is also a conductor of electricity, a series of circuit-breakers capable of producing musical tones of different pitch, and a corresponding series of keys for throwing the circuit-breakers into or out of operation, whereby several tones simultaneously may be transmitted through a single wire

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166,097. BUTTONS FOR WEARING APPAREL. Henry C. Grigas, Waterbury, Conn. [Filed May 4, 1875.]

Brief.—The back or filling is paper-board covered with fabric, so as to dispense with japanning, or the use of an extra metal disk.


No. 166,097.

As an article of manufacture, the herein-described button, consisting of the metal front A and the fabric-surfaced paper back, substantially as set forth.

166,098. DISH-WASHING MACHINES. H. H. Hall, Tioga, Pa. [Filed Nov 21, 1874.]

The combination, with the dasher-wheel B, of the removable rack D, having pins *p* arranged in an inclined position, and in a vertical plane oblique to its longer axis, substantially as and for the purpose set forth.


No. 166,098.


No. 166,099.

166,099. COMBINED KNIVES AND TAPE-LINES. Glover S. Hastings, Unionville, assignor to himself, Frank S. Johnson, and Willis J. Hemingway, Plainville, Conn. [Filed June 8, 1875.]

The combination described, of a chamber for containing a tape-measure, with the handle of a pocket-knife, the said chamber being bounded partly by the ring *a*, and partly by continuations *b* of the said cheek-pieces of the handle, all substantially as set forth.

166,100. CIGAR-BOXES. Saml. Heineman, Baltimore, Md. [Filed June 17, 1875.]

Brief.—The stamping-surface is of wood, and is held in an indentition in the tin box by side strips of tin.


No. 166,100.

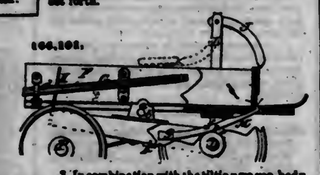
A sheet-metal cigar-box having a cavity or recess stamped in one of its walls for receiving a branding material, and metallic strips secured at the edges of the said recess for overlapping the branding-surface and confining in place, substantially as described.

166,101. DUMPING-WAGONS. W. H. Henkel, Morton, Ind. [Filed May 4, 1875.]

Brief.—Owing to the peculiar running-gear, the wagon may dump between the hind wheels.

1. The combination of the end gate I, curved arms J, pivot-rod K, and standards L, and the wagon-body, substantially as described.

2. A tilting wagon-box having an apron or chute, H, with an upwardly-turned flange, O, as an extension of the wagon bottom, substantially as herein described, for the purpose set forth.

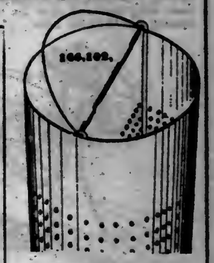

No. 166,101.

3. In combination with the tilting wagon-body and trunk-frame, the check relieving spring Q and chain R, substantially as herein described.

4. The tail-board L hinged to be turned over frontward upon the wagon-body to form a seat for the driver when the wagon is empty, as described.

166,102. BOILING-POTS. Wm. H. Heineman and W. F. Shaw, Jr., Baltimore, Md. [Filed June 24, 1875.]

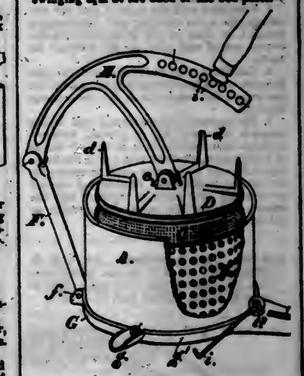
Brief.—The hinged cover closes one side while the other is being emptied.


No. 166,102.

A boiling-pot provided with a sectional cover hinged to the top of a vertical partition, as and for the purpose specified.

166,103. FRUIT-PEELERS. Isaac W. Heysinger, Philadelphia, Pa., assignor of one-half his right to Stewart & Matthews, same place. [Filed June 30, 1875.]

Brief.—Two concentric perforated cylinders rest within an imperforated one, with a space between, all lying in a spanned pan or bed-plate. The prosser within the innermost cylinder has centrally pivoted to its top an arm, rigidly attached to and descending from a lever carving to the front, and pivoted to a swinging arm at the back of the bed-plate.


No. 166,103.

1. The combination of the bed-plate G, having the vertical rim *f* flared out gradually from its bottom to its top on its inner side, and the removable cylinder A, so that cylinder A, when forced within it, will be held there without other fastening, substantially as and for the purpose described.

2. The curved lever E, having the right-angle arms, and connected at its outer end with the inner plate G by means of the link F, and having the traveling or shifting joint with lever F at *e*, substantially as and for the purpose described.

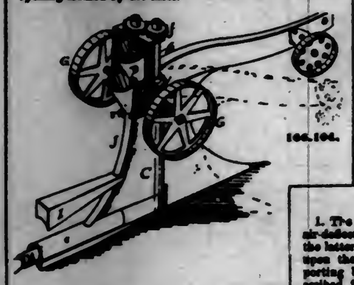
3. The plunger D, having the vertical finger *d*, and jointed to the arm *a* of *c*, and adapted to perpendicular motion, with a perforated pulp-cylinder in combination therewith, substantially as and for the purpose set forth.

4. The combination of the removable cylinder C, having the inner ledge *c*, the fixed cylinder B, cylinder A, and bed-plate G, substantially as and for the purpose described.

5. The combination of the link *i*, connected by a hook and eye at *f* to the base-plate G with the rear nail perforated end of lever F, substantially as and for the purpose described.

166,105. TILE MAKING AND LAYING MACHINES. Reuben Hoffheim, York, Pa. [Filed May 20, 1875.]

Brief.—A mole-plow with attached devices for folding the material, and shaping and forming a tile-drain at one operation, the cement being plastered upon the walls of the opening formed by the mole.



1. Combined with the mole C, substantially as described, a mixing and feeding device, whereby concrete or cement may be mixed, fed, and discharged into the trench at the rear of the mole.

2. Combined with the mole C the hopper D and screw E, driven by gearing *e f g* A, substantially by the rotation of the wheels G.

3. The mole C and the device for mixing, feeding, and discharging the cement or concrete, the hollow cast piece or former, either cylindrical or horseshoe shaped, combined with a core, for the purposes set forth.

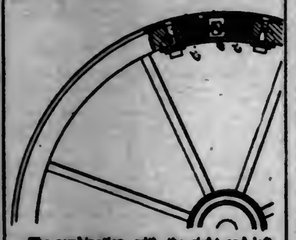
4. Combined with the discharge or end piece and its former or core the loosely-attached drag A, slightly larger than said core, for the purposes set forth.

5. Combined with the mole C and the discharge-pipe *c*, the covering and compressing weight *f*, to shape in the earth over the discharge end of said pipe, for the purposes set forth.

6. Combined with the mole C and the pipe through which the cement is to be passed into the trench, the water-pipe J, for the purposes set forth.

7. The process of constructing and laying concrete or cement tile in ground, substantially as described—that is to say, by means of a mole-plow, provided with a tube discharging at the rear of the mole—and an apparatus for mixing, feeding, and discharging cement or concrete over cores or formers into the trench made by said mole, substantially as set forth.

166,106. TIME-TELEPHONES. Henry A. B. Horton and Amos P. Hayes, McKinney, Tex., assignees of one-half their right to John H. Owen. [Filed Apr. 17, 1875.]

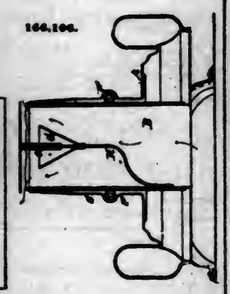


The combination, with the right and left screw D, of a fire, having tongue J and notch I, the mole C, rigidly attached to the ends of the fire, and the follies, having wedge-shaped ends provided with metallic thimbles, which fit into corresponding recesses in the mole, as shown and described.

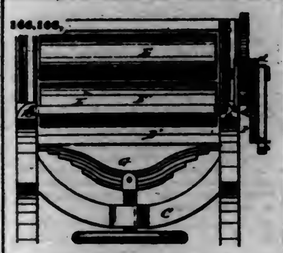
166,107. STOVE-LAMPS. R. H. Heath, Brunswick, Germany. [Filed July 9, 1875.]

Brief.—The flame and air deflectors *a c* each relatively adjustable.

166,108.



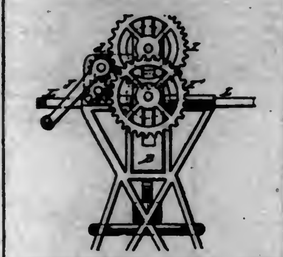
166,109.



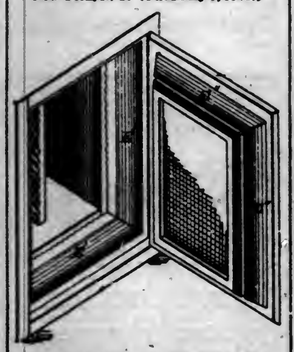
1. The combination, in a stove-lamp, of the air-deflector G, and flame-deflector I, both of the latter being adjustable toward each other upon the bracket, with the bracket H supporting both deflectors, substantially as described, for the object specified.

2. In combination with the tube B, and the encircling tube E carrying the wick-raising wheels F F, the fixed bracket H, and the air and the flame-deflectors, which are adjustable toward and from each other, and supported by the bracket, substantially as described.

166,110.



166,107. FIRE-PROOF SAFES. Theo. Hyatt, New York, N. Y. [Filed July 3, 1875.]



1. A fire-proof safe in which the hollow walls contain a filling of glass, the molecular structure of which has been changed so as to render it tough and a non-conductor of heat, substantially as and for the purpose specified.

2. In combination with a filling of toughened glass for the walls of a safe, asbestos, or other heat non-conducting minerals or earths, substantially as and for the purpose shown.

3. In combination with a filling of toughened glass for the walls of a safe, heat non-conducting earths or minerals and chemical salts containing water of crystallization, substantially as and for the purpose set forth.

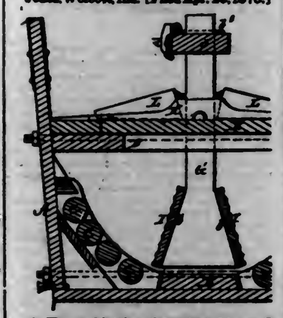
4. A fire-proof safe in which the book-case, partitions, and shelves are constructed of or from toughened glass, substantially as and for the purpose shown and described.

5. A fire-proof safe in which the jambs of the door-frame and door and inner face of same are composed wholly or in part of toughened glass, substantially as and for the purpose specified.

166,108. MANGLES. James Johnson, New York, N. Y., assignor to Metropolitan Washing-Machine Company, Middlefield, Conn. [Filed July 1, 1875.]

A clothes-mangle, consisting of rollers E F, standards A B, with their horizontal grooves *h h*, and vertical grooves *a a*, tables I, bars O D D', springs G, pinions *f f*, and cog-wheels I F, all constructed and arranged to operate as set forth.

166,109. WASHING-MACHINES. Evan A. Jones, Wolcott, Ind. [Filed Apr. 26, 1875.]



1. The combination of the pivoted levers G G, carrying the wash-boards I I, the cross-bar J, pins *b b*, and bottom *d d*, substantially as and for the purposes herein set forth.

2. The combination of the box A, frame D, having slots *a* and cleats H, the levers G pivoted above said slots and passing through them, and the slides L connected to the levers, and having their inner ends beveled and hollowed out at *n*, all substantially as and for the purposes herein set forth.

166,110. REMOVABLE REPRESENTATIONS FOR FAIRS, &c. James G. Jones, New York, N. Y. [Filed June 28, 1875.]

Brief.—Bills or wings may extend from the ice-trough. The metal bottom may be on the refrigerator or attached to the pail.



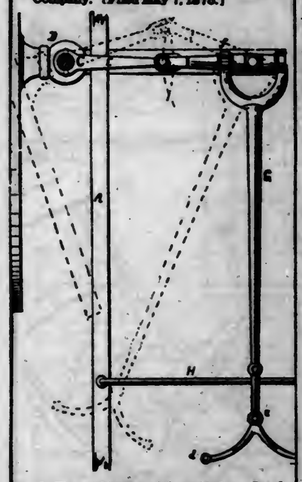
The removable open-screwed lining B, provided with the ice-chamber C, having its ends closed by attachment to said lining, and furnished with the central waste-pipe *d*, as herein shown and described.

166,111. MANUFACTURE OF DOLL-HEADS, &c. Edward S. Judge, Philadelphia, Pa. [Filed June 16, 1875.]

1. The process of treating paper with paste, and beating, wrinkling, and folding while so crushing it to render it uniformly supple and pliable for molding it into sections of doll-heads, and other like structures, substantially as set forth.

2. As a new article of manufacture, a doll-head made of sheets or layers of paper laid one upon another, manipulated and treated as herein described, connected, pressed and molded into form, in sections, such sections being united to form the completed head, substantially as described.

166,112. HOOK-AND-LADDER TRUCKS. Jno. A. Kloy and Van H. Higgins, Chicago, Ill., assignors to the Babcock Manufacturing Company. [Filed May 7, 1875.]



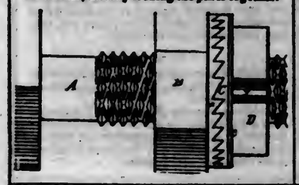
1. The combination of the guide-lever G and cross-head F with the levers E and the shafts D, substantially as specified.

2. The combination of the springs M N with the bars K L, cross-bar P, and frame A, substantially as described.

3. The pivoted steady-rods I, in combination with the bars K and cross-bar O, for holding the upper ends of the shafts D in position and allowing them to sway, substantially as set forth.

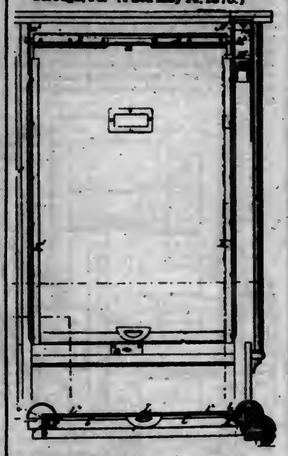
166,113. NUT-LOCKS. James M. Kent, Curtis, N. Y. [Filed June 10, 1875.]

Brief.—The washer and nut are moved, respectively, on right-and-left-head screws, with a roughened ring between, fitting over an angular projection on the inner face of the nut, to lock it thereto, and provided with an elastic packing between the ring and nut, which seats the teeth of the ring into the adjacent face of the washer, thereby locking the parts together.



The nut-lock described, having double threaded bolt A, ring C, washer *c*, and nuts B and D, the latter of which is provided with grooves *y*, for the purposes specified.

166,114. CARRIAGE-CURTAIN FIXTURES. D. R. Knight and John M. Ripple, Waynesborough, Pa. [Filed May 14, 1875.]



1. The curtain-roll A, recessed at *a*, as and for the purpose described.

2. The drive-shaft C and sleeve E, connected by a pin, D, in combination with curtain-roll A, having one end in open bearing, and the other receiving finally said drive-shaft, as and for the purposes specified.

3. A carriage-curtain having thin bars I, with end hooks *i*, that slide in grooved plates K, as and for the purposes described.

4. The combination of end bent plate N, having notches *n n*, and the straight plate N', having projections *n' n'*, with short post J, as and for the purposes set forth.

5. The combination of wheel, having spoke *f*, to one side of rim, the cone H, having hole *h'*, and the pin *h*, as and for the purpose specified.

6. The combination of key G, having opposite slots *o o*, the shaft C, and the pin P, as and for the purposes described.

7. A curtain stretched longitudinally between a spring-held roll at top, and a spring-catch, Q, at bottom, and laterally between guides K K', as and for the purposes set forth.

8. The combination with curtain of the bottom stripe R R, arranged substantially as and for the purposes specified.

166,115. CURTAIN-CORD FASTENERS. Lewis Knudson, San Francisco, Cal. [Filed Oct. 12, 1874.]

Brief.—The pulley-block slides in a grooved holding-plate, and is provided with a set-screw, that fixes said block in any desired position.

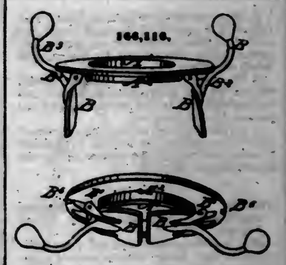


The block D, provided with the cord-pulley F at its upper end, and clamping-screw G at its lower end, in combination with the holder A, having grooves B B, whereby the block can be adjusted in any desired position, and at the same time all action of the pulley-cord on the clamping-screw is prevented, substantially as described, and for the purposes set forth.

166,116. SEWER-TRAPS. Christphr. Lewis, Columbus, Ohio. [Filed June 17, 1875.]

Brief.—When sufficient weight has accumulated, the double-weighted doors fly back, allowing a discharge; then the doors return to place.

166,116.

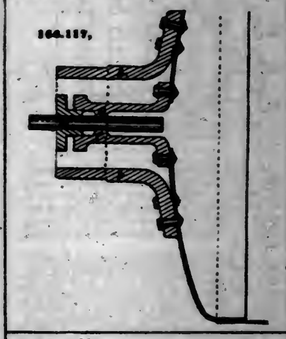


In a sewer-trap, the frame A, provided with a suitable opening, A', and downwardly-projecting flange A' *c* of the hinged flaps or doors B, having attached thereto weighted balls B', all constructed and operating as shown and described.

166,117. ROTARY BLEACHING-BOILERS. H. Loring, Boston, Mass. [Filed Oct. 7, 1875.]

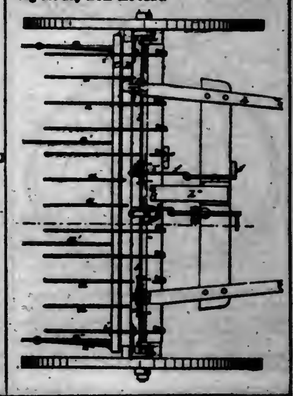
A hollow cylindrical gudgeon, with flanges, attached to the head of a rotary bleaching-boiler so as to surround the induction-pipe and be separated therefrom, substantially as described.

166,117.



166,118. HORSE HAY-RAKES. Charles M. Loftin and Charles G. Allen, Barre, Mass. [Filed Jan. 29, 1875.]

Brief.—The stripper-bar slides freely upon the end teeth of the rake, and acts as a support to the teeth, as well as an aid in discharging the hay from the rake.



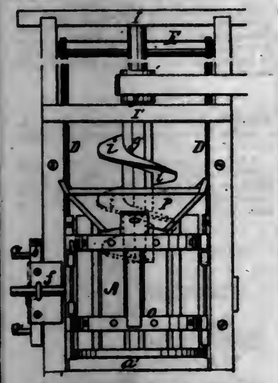
1. The combination of the lever *f*, rod *f'* with the rod *h*, and pawl *k* with its lugs 1 and 2, and ratchet *n*, when constructed and arranged to operate in the manner and for the purpose herein described.

3. The stripper-bar C, in combination with the end teeth *a a*, stripper-rods *a''*, and connecting-rods *a'''*, in the manner and for the purpose herein described.

3. The combination of the stripper-rods *a''* with the connecting-rod *a'''* and stripper-bar C, and cross-bar B, in the manner and for the purpose herein set forth.

166,119. COTTON-PRESSES. Robt. Mackey and Matthew Green, Nevada, Mo. [Filed Feb. 20, 1875.]

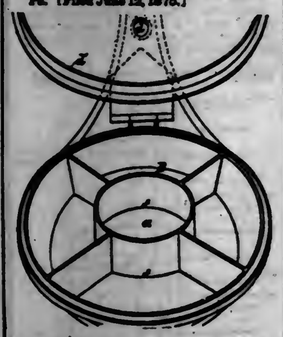
Brief.—Horse-power shaft and press vertical in the same frame; belting rotating a central press-shaft, with a screw-blade thereon, while the box is gradually raised by ropes and a drum.



1. In a cotton-press, the cylindrical press-box A, vertically movable in guides, by means of ropes D, roller E, and winding-drum F, in combination with the friction-shoe *d*, set-screw G, and wheel *h*, on the end of winding-drum F, substantially as and for the purpose set forth.

2. In a cotton-press, the press-box A, vertically movable in guides, as set forth; friction-shoe *d*, set-screw G, and wheel *h* on the end of winding-drum F, in combination with the shaft H, having flange *i*, pulleys *k j*, endless belt J, shaft K, and lever M, substantially as and for the purpose set forth.

166,120. FRYING-PANS. Asa Mills, Derby, Pa. [Filed June 12, 1875.]

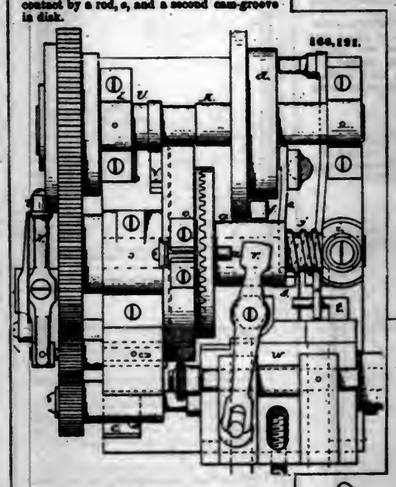


1. As a new article of manufacture, a frying-pan divided into compartments, and having a grease-fountain communicating laterally with said compartments, substantially as set forth.

2. In combination with a frying-pan, A, a grease-well or fountain, *a*, substantially as shown and described.

166,121. MACHINES FOR THREADING WOOD-SCREWS. Benjamin A. Mason, New York, N. Y. [Filed July 12, 1875.]

Brief.—The vertically-revolving blank-carrier has notches in its periphery, into which the blanks are fed from a spout, and these blanks are successively caught and rotated by a revolving driver in front of the milling-cutters. The cutter-carriage *w* rests on—and by means of screw *o* is adjustable to—a second carriage, *m*, that is reciprocated by a cam-groove in disk *d*, through rod *l*; and this carriage *m* rests on a third carriage, that has a movement perpendicular to that of carriage *m* by a revolving screw-shaft underneath, with which a half-nut is intermittingly brought in contact by a rod, *o*, and a second cam-groove in disk.



166,121.



1. The cam on the face of the wheel I, in combination with the rotating sliding turn-screw and lever, substantially as described, and for the purpose set forth.

2. The cylindrical blank holder and carrier, with clutch-teeth on its face, ratchet-teeth on its rear, and the hollow journal, substantially as described, and for the purpose set forth.

3. The combination of the sliding clutch-disk *g* and the roller *f*, by which it is operated, the shaft and bearings upon which it moves, and the feather *a* upon the exterior of the barrel for operating the lever *r*, substantially as described, and for the purpose set forth.

4. The cam U on the shaft E, in combination with the vibrating lever V, mounted on stud-pin F, substantially as described, and for the purpose set forth.

5. The cam-disk *d*, having the wedge *c*, and the cam-grooves *b* and *a*, substantially as described, and for the purpose set forth.

6. The sliding bar I and the sliding bar *o* and their connection, in combination with the cam-disk *d*, the half-nut slide, and tool-carriage, substantially as described, and for the purpose set forth.

7. The automatic sliding-tool-carriage, operating as herein described, in combination with the rotating milling-tools and the blank holder or carrier, substantially as described, and for the purpose set forth.

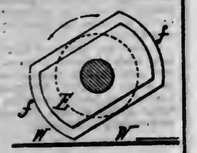
8. The combination of the cam-groove disk *d*, tool-carriage *m*, bar *l*, and adjusting-screw *n*, as and for the purpose set forth.

9. The combination of the intermittingly-rotating screw-blank carrier and holder, the rotating screw-driver for revolving the screw-blank, one or more revolving milling-tools for cutting the thread on the blank, and mechanism to impart to said tool or tools the proper feed movement toward the axis, and also longitudinally of the blank, the combination being and operating substantially as described.

166,122. MACHINES FOR WATER-MARKING PAPER. Mathew Mathews, Saggart, Ireland. [Filed Feb. 22, 1874.]

Brief.—The removable plates admit of applying different water-marks by the same cylinder.

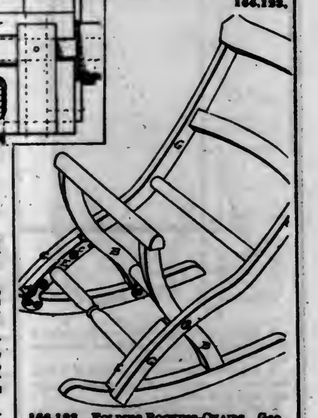
The segments E on the skeleton-roll, and having rounded portions *f* on line with the marking-plates *e*, in combination with the wire-cloth W, whereby the said plates *e* are caused to move at exactly the same surface-speed as the said wire-cloth during the formation of the water-mark.



166,122.



166,123.



166,123. FOLDING ROCKING-CHAIRS. Geo. McAleer, Worcester, Mass. [Filed May 8, 1875.]

Brief.—When the chair is unbided for use, the front legs support the rear legs in proper position, and relieve the pivots of strain. The lever side extensions of the back panel are pivoted to the front and rear legs, and strengthen the structure at the points where the front legs abut the rear legs and rockers.

1. The combination, with the rocker and pivoted folding rear leg B, of the front leg E, between the rocker and rear leg, and abutting at its ends against the same, substantially as specified.

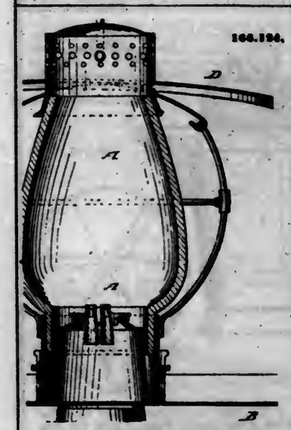
2. The combination, with the folding front and rear legs and rockers, of the back-panel extensions G, pivoted to both front and rear legs, substantially as specified.

166,124. LANTERNS FOR TRAPPING INSECTS. Benj. F. McQueen, Monroe, Ala. [Filed June 9, 1875.]

Brief.—A common glass lantern is provided with a large basin for containing liquid below the burner, and above the burner is a horizontal circular reflector, allowing light to radiate in all directions horizontally.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

166,124.

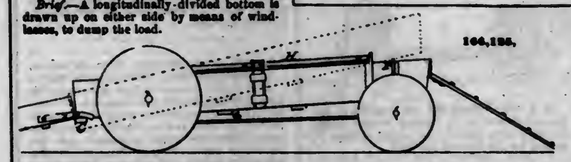


In combination with the lantern A and pan B, the reflector D, placed at the top of the lantern, as and for the purposes herein set forth.

166,125. DUMPING-WAGONS. M. C. Meigs and Henry L. Meigs, Romney, Ind. [Filed June 7, 1875.]

Brief.—A longitudinally-divided bottom is drawn up on either side by means of windlasses, to dump the load.

166,125.

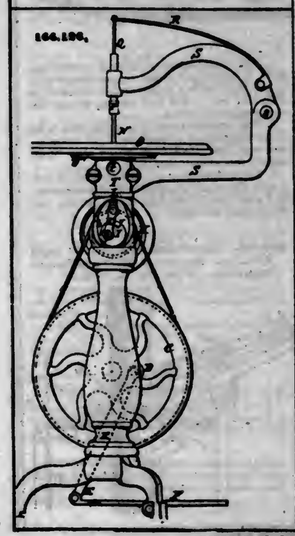


1. The combination, with a wagon-body, of a skid placed at each end, as and for the purpose described.

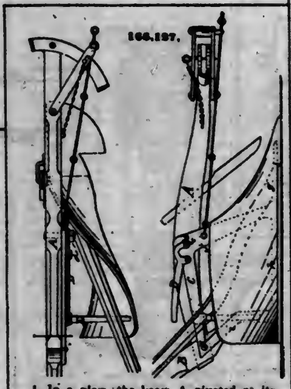
2. The bars E E, angle-notched at top, and pivoted to the front bolster, as and for the purpose set forth.

3. The combination of bottom sections F F, flexible connections I, and rolls H H, arranged as and for the purpose specified.

166,126.



166,127.



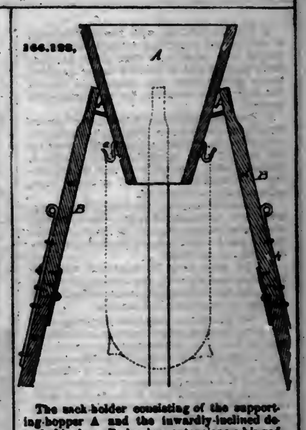
1. In a plow, the beam A pivoted at its rear end to a frame, C, and made rigid with the handle B in combination with the adjusting-lever D, set-nut, and said frame, substantially as shown and described.

2. The cross-frame E, composed of two vertical and two or more horizontal bars, and having a socket to receive the handle B', substantially as specified.

3. In a plow, the combination of the frame E, constructed as described, the removable handle B', and mold-board, substantially as specified.

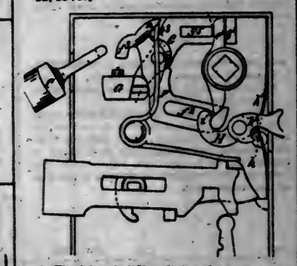
166,128. SACK-HOLDERS. John L. Millhiser, Marshalltown, Iowa, assignor of two-thirds his right to Joel S. Edwards and Randolph F. Marshall, same place. [Filed Aug. 17, 1875.]

166,128.



The sack-holder consisting of the supporting-hopper A and the inwardly-inclined detachable legs B, having extensions *s* hinged to fold inward, and stiffening-belts *h*, substantially as specified.

166,129. REVERSIBLE LATCHES. John Moore, Brooklyn, E. D., N. Y. [Filed July 12, 1875.]



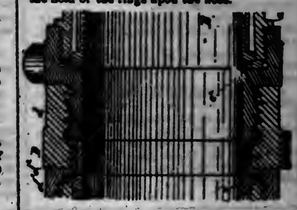
1. The jointed sliding link or horseshoe, in combination with the tail-piece of a detachable latch and the horns of a knob-shaft hub, substantially as shown and described.

2. The combination of the pivoted joint F of the horseshoe with the lever H, projecting through the shell of the lock, substantially as and for the purposes set forth.

3. The combination of the pivoted joint F, provided with the slot *f''*, and the movable guide-pin *f'*, affixed to the inner end of the lever H, with the notch *h'*, and a screw passing through the lock, for the purpose of maintaining the pin *f'* in suitable position to act as a guide for the horseshoe in its reciprocating movement, substantially as shown and described.

166,130. HOSE-COUPLINGS. A. J. Morse, Boston, Mass. [Filed Dec. 22, 1874.]

Brief.—Secures the hose to the coupling by clamping the end between outer and inner rings, by expansion of the latter or contraction of the former, the two being united together at the end next the coupling-section, and secured thereto by screw-threads, and readily removable therefrom without breaking the hold of the rings upon the hose.



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1. The combination, with the binding-ring, of the flanged inner ring, constructed and arranged with relation to each other, substantially as described, to afford a larger space between them toward the center than toward the ends of the coupling, for the purpose described.

2. The combination, with the hose, of an externally screw-threaded binding-ring adapted to receive the running section, and a loose inner flanged ring, substantially as described, the hose being held between and by expanding or contracting the inner or outer rings, substantially as described.

3. The combination of the flanged inner ring, adapted to be expanded against the hose, with an outer or binding ring having external screw-threads, and with a removable screw-ring, substantially as set forth.

4. The loose ring D, combined with the threaded binding-ring, the removable screw-ring, and the removable screw-threaded flanged section, substantially as described.

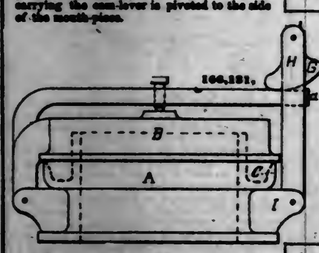
5. The binding or hose-receiving ring, having a longitudinal space to receive the lap or seam of the hose, substantially as described.

6. The combination, with the outer and inner rings A B A B, positively secured to different pieces of hose by expansion or contraction, of coupling-sections C and F D, provided with screw-threads *c d*, and each connected, through screw-threads, with the outer or binding rings, and removable therefrom without destroying the connection of the outer and inner rings with the hose, substantially as described.

7. The combination of the screw-threaded binding-ring, adapted to contain the flange of the inner ring, and a coupling-section provided with a shoulder, *f*, to meet the outside of the flange and the end of the inner ring, with the flanged tapering and expansible inner ring, substantially as described.

166,121. MOUTH-PIECES FOR GAS-RETORTS. Peter Mensinger, Philadelphia, Pa., assignor to Morris, Tasker & Co., same place. [Filed June 9th, 1875.]

Brief.—The knife-edge contact-piece, upon which the lid rests, is secured or cast on the side of the mouth-piece, some distance from its extended end, which acts as a guard to protect the knife-edge from injury. The bar carrying the cam-lever is pivoted to the side of the mouth-piece.



1. The combination of the retort mouthpiece A, knife-edge contact-piece G, lid D, and the guard E, as shown and described.

2. The combination of the retort mouthpiece A, lid D, eccentric G, hinged bar H, and the cross-bar J, as shown and described.

166,122. CONDENSING AND HEATING. Lane L. Stevenson, Cleveland, Ohio, and Augustus Van Cronkite, Pine Grove, Pa. [Filed Jan. 16, 1875.]

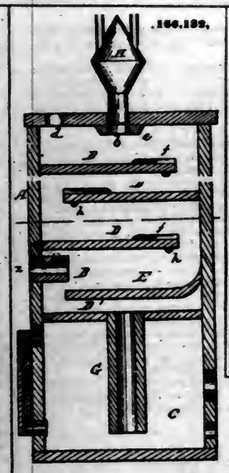
1. The flange or shoulder *e*, formed around the lower end of the exhaust-pipe *b*, for the purposes herein set forth.

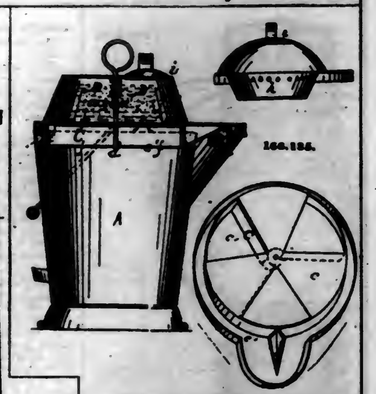
2. The V-flange *f*, on top of the shelves D at their front ends, for the purposes herein set forth.

3. The steam-drag or rib *h* on the under sides of the shelves D, for the purposes herein set forth.

4. The combination of the condensing-chamber B, bottom plate D', condensing-pipe G, and tank C, all substantially as and for the purposes herein set forth.

5. The deflector B, arranged between the steam-inlet *a* and bottom plate D', and curved upward at its inner end, as and for the purposes herein set forth.





1. The slop-jar A, constructed with the spout *a* and double flange *b b* on the rim, forming an easy seat, and in combination with the cover B E, substantially as specified.

2. The top or cover B, consisting of the disinfecting-chamber D, the double open bottoms *c c'*, with the flanged valve G *e e*, operated by the spring-rod *d*, substantially as and for the purposes specified.

3. In combination with the cover B and spout *a*, the cup *g*, having a disinfectant placed therein, substantially as and for the purposes specified.

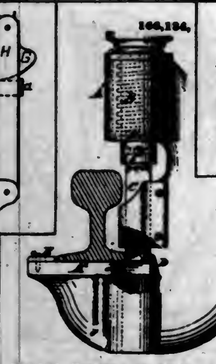
166,123. SEWING-BOTTOMS FOR CHAIRS. Timothy Noonan, Boston, Mass. [Filed Mar. 16, 1874.]



In a chair-bottom, the combination of stationary frames A C, yielding bottom board D, adjustable rods F, and spiral springs E, as and for the purposes set forth.

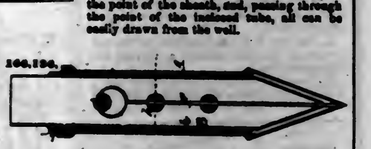
166,124. DISINFECTING SICK-ROOM STOP-JARS. Chas. F. Parker, Lockport, N. Y., assignor of one-half his right to A. M. Shelley, same place. [Filed June 10, 1875.]

Brief.—The jar has a spout and flanged rim, for convenience of the sitter. The cover holds the earth or suitable disinfectants, the same being let into the jar by spring-valves. There is also a receptacle for chloride of lime, &c., attached to the cover and depending in the spout.



166,125. WELL-TUBING. Wm. Patterson, Constantine, Mich. [Filed May 20, 1875.]

Brief.—The strainer-tube is surrounded by a solid sheath, in which it slides. A collar on the former bears on the top of the latter in driving the well, as also does the point of the inner within the outer. A gasket upon the top of the sheath isolates the strainer-tube, and packs it by a rod attached internally to the point of the sheath, and, passing through the point of the inclosed tube, all can be easily drawn from the well.



1. The combination of a solid protecting-shell, A, having a top cast, C, and elastic ring or gasket D, with a strainer-tube, B, fitted to slide into and out of said casing, as and for the purpose described.

2. The movable strainer or water-inlet tube B, having a collar or shoulder, E, in combination with the pointed protecting-shell A, as and for the purposes described.

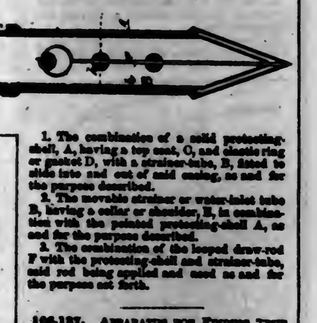
3. The combination of the looped draw-rod F with the protecting-shell and strainer-tube, said rod being applied and used as and for the purpose set forth.

166,126. PUNCHING-MACHINES. C. Norton, Philadelphia, Pa. [Filed May 28, 1875.]

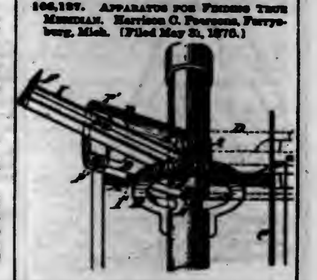
The improved portable punch for railroad-rails, consisting of the following parts in combination: The frame A with nut B', screw B, punch C, guide *a* and table A^1, substantially as hereinbefore described and set forth.

166,127. DISINFECTING SICK-ROOM STOP-JARS. Chas. F. Parker, Lockport, N. Y., assignor of one-half his right to A. M. Shelley, same place. [Filed June 10, 1875.]

Brief.—The jar has a spout and flanged rim, for convenience of the sitter. The cover holds the earth or suitable disinfectants, the same being let into the jar by spring-valves. There is also a receptacle for chloride of lime, &c., attached to the cover and depending in the spout.



166,127. APPARATUS FOR FINDING TRUE MERIDIAN. Harrison C. Pearsons, Perrysburg, Mich. [Filed May 21, 1875.]



1. The declination-plate D, arranged upon the pivot or polar axis A parallel with the optical axis of the instrument, substantially as described, and for the object herein specified.

2. The index-arm I, connected to the declination-plate D with a gimbal or universal joint, constructed substantially as herein specified, and for the purpose described.

3. The declination-plate D, graduated on both faces, constructed substantially as herein specified, and for the purpose described.

4. The combination of the pivot or polar axis A, the declination-plate D, the index-arm I, and the hour-circle H, all constructed and arranged substantially as herein specified, and for the purpose described.

166,128. BREECH-LOADING FIRE-ARMS. Jacques F. Pieri, Ghisoni, Corsica, assignor to William Smith, London, England. [Filed Apr. 30, 1875.]



1. A fire-arm with the trigger *d* at the top or upper side of the arm, attached to the breech bolt or cylinder *c*, and operating as herein specified.

2. In a breech-loading fire-arm, the trigger *d*, firing-pin *e*, and spiral spring, combined with and carried in the sliding breech bolt or cylinder *c*, and operating as herein set forth.

3. In a breech-loading fire-arm, the combination of the breech-bolt *c*, having the trigger *d* and screw b^1, the head *b*, having groove b^1 and inclined surface b^2, and the firing-pin *e*, having the shoulder *e'*, substantially as described and shown.

4. The safety device *f*, arranged and operating in combination with the bolt *c*, as herein set forth.

5. In a breech-loading fire-arm, the combination, with the breech-bolt *c* and head *b*, of the extractor *c*, constructed and arranged substantially as described and shown.

166,129. DENTAL PLUGGERS. A. J. Folk, Millersburg, Pa. [Filed May 15, 1875.]

Brief.—The spring which forces down the hammer is depressed by a pawl-lever, which takes over a shoulder upon the operating-stick. An opening in the case near the tool end allows of rotating the tool independent of the case.

1. The spring S, adapted to be compressed by slide I, in combination with tool-holder H and hammer-rod D, substantially as specified.

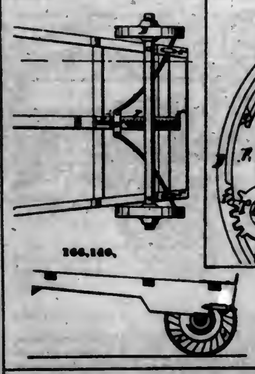
2. The lever-pawl I, in combination with slide I and actuating-spring S, substantially as specified.

3. The lever-pawl I and spring *n*, in combination with a disk, O, having eccentric segmental strip *b*, substantially as specified.

166,130. HAND-TRUCKS. Beauty L. Fleck, Le Raysville, Pa. [Filed May 17, 1875.]

Brief.—Wheels locked by pawls pressed by foot. Spring retracts them when foot is withdrawn.

A brake for warehouse-trucks and analogous vehicles, consisting of the spring-slide, head, pawls, and ratcheted wheels, as shown and described.

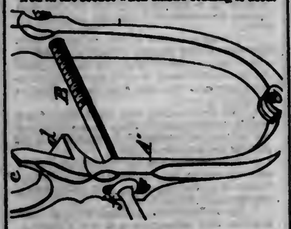


4. The locking-slide *g*, having milled annulus *f*, in combination with a latching-dog, G, and its retainer-spring *e'*, substantially as specified.

5. The cone A, having aperture *b* for operating a retaining tool-holder, B, substantially as specified.

166,131. THILL-COUPLING CLAMPS. Lyman R. Prindle, Bantam Falls, Conn. [Filed Apr. 17, 1875.]

Brief.—The clamp is used to press the thill-iron in the socket when elastic stuffing is used.

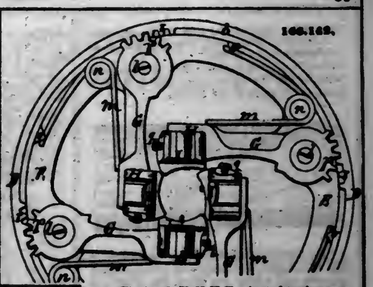


1. The combination of pivoted jaws A A', clamping-screw B, fork *c*, and cap *b*, substantially as and for the purpose set forth.

2. The clamping-jaws, provided with bracket *d*, substantially as and for the purpose set forth.

166,132. CORN-SHELLERS. Calvin D. Read and Ellis D. Read, Ayer, assignors of one-third their right to James Goodrich, Fitchburg, Mass. [Filed Apr. 7, 1875.]

Brief.—Adjustable cutting or shelling knives on pivoted bands, carried upon arms pivoted to a loose ring-plate within a ring bevel-pinion, said arms being held toward each other by springs bearing against the inner surface of the ring-pinion, so that the bands may simultaneously adjust themselves to the size of ear fed. Fixed or withdrawing rolls carried on pivoted spring-arms, one of which arms carries a small gear-wheel, for transmitting motion from a pinion on the driving-shaft to one of the rolls.

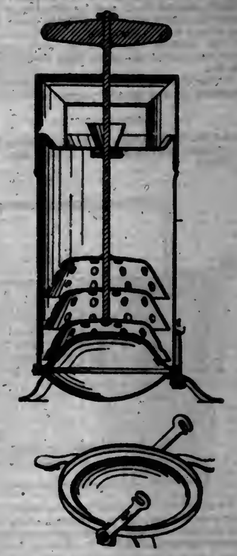


4. The heads H H H H, pivoted to the arms G G G G, and constructed with the inclined V-shaped projections *s s s s*, substantially as and for the purpose herein specified.

5. In combination with the pivoted arms G G G G, operating as described, and provided with the pivoted heads H H H H, the knives or points I I I I, attached to the said pivoted heads, constructed and arranged to operate substantially as and for the purpose herein specified.

6. The combination of the feed-roller M, mounted on one of the two swinging arms L L, and geared to the driving-wheel shaft through a cog-wheel, *s*, mounted on said arm, with the roller M, mounted on the other arm L, constructed, arranged, and operating substantially as and for the purpose herein specified.

166,133. EGG-BEATERS. Wm. Redheffer, St. Louis, assignor of two-thirds his right to W. H. Chick, St. Louis, and J. S. Chick, Kansas City, Mo. [Filed Dec. 4, 1874.]



1. An egg-beater can provided with a convex bottom, in combination with a beater composed of one or more perforated hollow frustums of cones, substantially as described, whereby the entire contents of the can may be forced through said perforations at each full downward stroke of the beater, as set forth.

2. In a rod-operating egg-beater, the combination, with the egg-beater can, of a detachable base, substantially as described.

3. The egg-beater cleaner composed of a handle and a semicircular concave-convex scraper, as set forth.

166,144. MAGAZINE FOR COAL-STOVES. James P. Richardson, Washington, D. C. [Filed June 11, 1875.]

Brief.—The movable section is raised perpendicularly by its rotation, and is held in position by a notch and the pin.



The telescopic magazine for base-burning stoves, consisting of concentric tubes adapted to slide one within the other, the outer one provided with a spiral slot, one side of which is serrated or formed with teeth to engage and hold over a pin on the inner tube and lock the inner tube in any desired position, substantially as described.

166,145. SOCKETS FOR ATTACHING ORNAMENTAL HEADS TO NAILS. Thos. C. Richards, West Winsted, Conn. [Filed Dec. 30, 1874.]

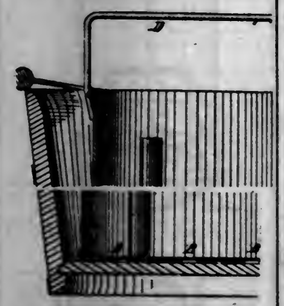
Brief.—Three lips struck from a sheet of metal, and bent outward at an acute angle, the lips *a' a'* being provided with depressions *b* to fit the nail snugly, the whole forming a socket to receive the ornamental head and the nail-head.



1. The herein-described socket for receiving the ornamental head and for attachment to the nail, struck up from a single sheet of metal, and having the lips *a' a' a'* all pointing to the common center at an acute angle from the part of the sheet from which they are cut.

2. The depressions *b* in the lips *a a'*, substantially as and for the purpose described.

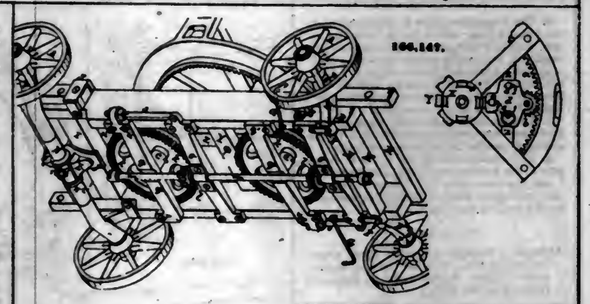
166,146. VEGETABLE-WASHING. Perley P. Roberts, Morrisville, Vt. [Filed Apr. 1, 1875.]



As an article of manufacture, the vessel A, with closed sides and perforated bottom B, and having vertically placed stationary and curved stirrers C, and ball D, all as set forth.

166,147. PORTABLE HORSE-POWERS. Cyrus Roberts, Three Rivers, Mich. [Filed May 24, 1875.]

Brief.—The horse-power frame is supported on adjustable crank-axles, by means of which it can be lowered when it is intended to be used as a horse-power, and elevated for transportation. The gear-pinions are adjustable to the interior cog-gear of the main driving-sweep by an eccentric turning in brackets, by which, and by a bridge-bar at the lower side of the bed-frame, the pinion-shaft is supported.



166,147.

1. In combination with a horse-power frame, the bent or crank axles B N, made turnable in their bearings D I, to enable the frame to occupy different vertical positions while supported on the wheels, as and for the purposes set forth.

2. The combination of fore axle N, made with bent portions, and constructed to turn in a vertical plane in bearing I, said bearing turning in a horizontal plane in the fore bolster or cross-bar l, for the purpose set forth.

3. The combination of fore bolster l, bearing-block J, box I, axle N, and king-bolt K, when the king-bolt is made to form a pivot for horizontal rotary motion, and at the same time prevents the axle from turning in its bearings in box I.

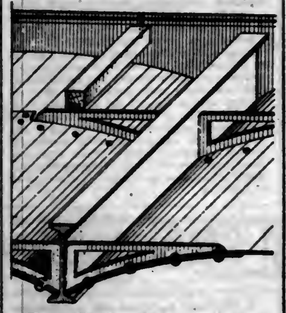
4. The combination, with the falling frames Q Q R, of the staple S, open at one side, and the slotted pin-bearing Q' T, substantially as and for the purpose set forth.

5. The combination of the pinion-shaft *s* and adjustable bracket *d* with the adjusting-eccentric *g*, locking-bolt *j*, and set-screws *e*, substantially as set forth.

6. The bridge-bar *q*, pivoted at *r*, in combination with set-screws *u u* and adjusting-screws *e*, substantially as set forth.

7. The combination of the crank-axle B with the horse-power frame and hooks G, as and for the purpose set forth.

166,148. FIRE-PROOF FLOORS. L. P. Rogers, Boston, Mass. [Filed July 1, 1875.]

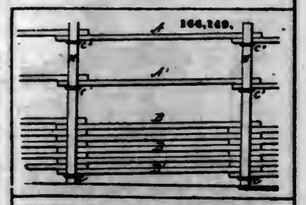


The combination of the **X**-shaped girders A, arched plates B, and arched brackets C, arranged and applied together substantially as described, for the purpose specified.

166,149. FARM-FENCES. Alonzo Rush and Fisher Yarbrough, Tyler, Tex. [Filed Mar. 5, 1875.]

Brief.—The rails, which overlap between uprights resting on the ground, are sustained above ground by encircling wire binders, which also serve as division-rests.

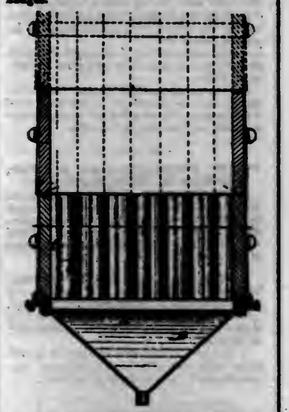
The combination, with the rails A A' B B' and posts H H', of the encircling wires *c c' c'*, substantially as and for the purpose set forth.



166,149.

166,150. SCRAP-MOLDS. M. L. Sanderling, Jersey City, N. J. [Filed Dec. 10, 1874.]

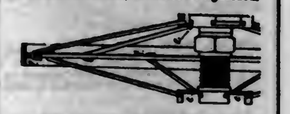
Brief.—A mold having detachable sections, each having removable corrugated partitions and removable sides, clamped together. Joints tightened by rubber or other packing, and by flanges.



A mold divided throughout its depth by zig-zag or serpentine partitions, and constructed in sections, mounted the one upon the other with a close joint at the meeting edges of the sections, substantially as and for the purpose specified.

166,151. WHEELS FOR VEHICLES. Edward Shaw, Manchester, England. [Filed Apr. 12, 1875.]

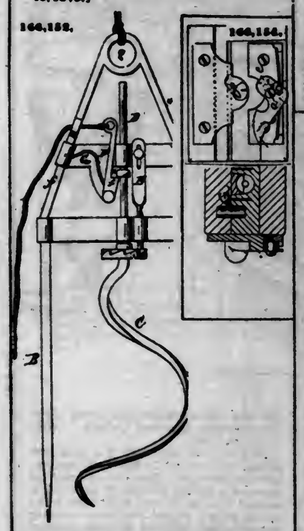
Brief.—By forcing the disks apart by means of the nut and screw, the wheel is tightened.



The combination of the felly, the disks *c c* on the hubs and spokes, connecting said disks and felly with nut and screw, substantially as described, for spreading said disks.

166,152. SPIRAL HAY-FORKS. Amos Shellenberger, Versailles, Ohio, assignor of two-thirds his right to Jos. E. Lister and John W. Singer, same place. [Filed Apr. 10, 1875.]

166,152.

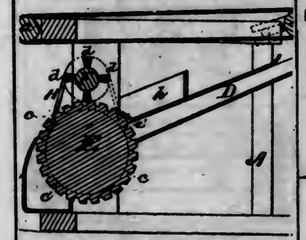


166,154.

In combination with the frame A and parallel tines B B and spiral tine C, the rod D, having a shoulder, X, and capable of a vertical as well as a rotary motion, substantially as and for the purposes herein set forth.

166,153. MACHINES FOR ASSORTING PINS. J. D. Shelton, Birmingham, Conn. [Filed June 30, 1875.]

Brief.—The pins from the machine fall upon an endless apron, which carries them to the mouth of a chute leading to a revolving wheel, into the longitudinal grooves of which the straight and very slightly bent ones are completely buried, while the crooked ones, projecting upward, are struck by a revolving brush, and swept from the face of the wheel against an inclined shelf, which deflects them to the side of the machine.



1. In a machine for separating straight from crooked pins, the longitudinally-grooved roller E, in combination with the inclined chute D and feed-apron C, substantially as specified.

2. The brush-roller F, in combination with the longitudinally-grooved cylinder E and chute D, substantially as specified.

3. The shelf *h*, in combination with chute D, grooved cylinder E, and brush-roller F, substantially as specified.

4. The roller E, having beveled grooves *a*, in combination with the receptacle or box H', substantially as specified.

5. The apron C, chute D, shelf *h*, grooved roller E, brush-roller F, and receptacle, arranged, combined, and co-operating substantially as described.

166,154. CIGAR-MOLDS. S. Simonson, Bridgeport, Conn. [Filed Mar. 10, 1875.]

Brief.—The catch upon one end of the mold operates automatically to fasten them together, while it also serves as a lever to force them apart. A hinge is situated upon the opposite side to the catch.

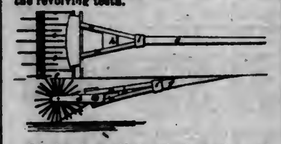
As a new article of manufacture, a cigar-mold having the two members hinged at one side or end, and fastened by the automatic-closing and mold-opening lock or latch, as set forth.

166,155. COMPOUNDS FOR FLAVORING AND PRESERVING TOBACCO. George H. Stortz, New York, N. Y. [Filed Apr. 10, 1875.]

An improved compound, for sweetening, seasoning, flavoring, and preserving tobacco, formed of powdered salt and licorice root, as set forth.

166,156. HARROWS. Leonard Study, Plum Hollow, Iowa. [Filed May 20, 1875.]

Brief.—A revolving shaft armed with radial teeth is mounted in a frame, consisting of a bar, to which a four-branched tongue is attached, and short end pieces forming bearings for the shaft. The bar has stationary teeth, which incline rearwardly and interlock with the revolving teeth.

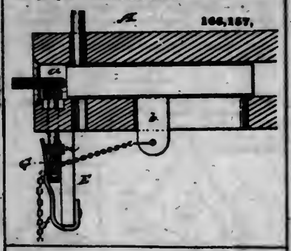


The bar *b*, provided with the teeth *c*, and short side-pieces *a*, that form bearings for the revolving toothed bar *d*, in combination with the tongue *g*, having its end divided into four points *e' e'* attachment, *a a'* and strengthened by the block and ring, all of the said parts being constructed and arranged to form the harrow, substantially as specified.

166,157. CAR-COUPLINGS. Michl Sullivan, Royalton, Wis. [Filed July 2, 1875.]

Brief.—The pivoted lever, held by a spring, raises the frame, which elevates the link.

The combination, with a draw-head, A, of the hangers E, lever G, spring *f*, and frame A *a a*, all constructed substantially as and for the purposes herein set forth.



166,157.

166,158.



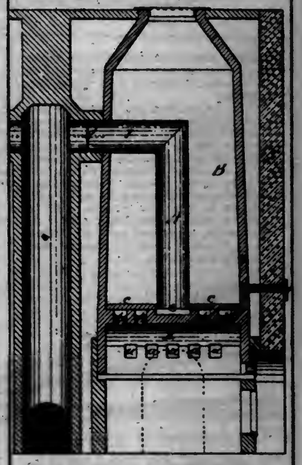
166,158. MODES OF APPLYING SAMPLE-PATCHES TO COTTON-BALES. S. Sullivan, Savannah, Ga. [Filed July 14, 1875.]

Brief.—The sample-patch is secured at its corners to the bale by hooks, in such manner that the corners are held flat and secure should the bands become detached.

A device for securing sample-patches to cotton-bales, consisting of a hook or fastening-clamp adapted to hold the corners of the same, and secure them to the outer covering of the bale, substantially as described.

166,159. CALCINING-KILNS. W. J. Taylor, High Bridge, N. J. [Filed June 14, 1875.]

Brief.—Air is drawn by draft or forced by a blast through the uptake, and down through the centrally-placed downtake, and is discharged immediately above the central fire-place, so as to mingle with the flames, &c., from the latter. The ore is thus more uniformly desulphurized.



1. The combination, with an ore-roasting kiln, of an air-downtake, A, depending centrally within the kiln-chamber, whereby the heated air will be discharged and diffused therefrom at a point above the combustion-chamber, substantially as herein set forth.

2. The combination, in an ore-roasting kiln, of a centrally-located air-downtake, A, with a centrally-located fire and combustion chamber, E, beneath said downtake and separated from it, whereby the air is delivered at a point centrally upon the crown or arch of the combustion-chamber, and diffused or turned aside uniformly into the ore-chamber.

3. The combination, in an ore-roasting kiln, of a centrally-located air-downtake, A, with a centrally-located fire and combustion chamber, E, provided with lateral and top flame and gas openings *a b*, whereby the upward-issuing flames of combustion are brought into immediate contact with the inflowing currents of heated air from the downtake, to more equally distribute both the heat and the air.

4. The air downtake A, descending centrally from near the top of the kiln, and combined with the uptake C, joining the upper end of the downtake by the branch I, and extending down outside of the kiln, whereby the cold air entering at the top is caused to descend through the entire length of the central hot pipe, as and for the purpose described.

5. The combination of two kilns B B for roasting ores with an air-downtake, A, centrally located in each, supplied by a single uptake, C, built in the dividing-wall of said kilns, substantially as herein set forth.

6. The combination, in a twin kiln for roasting ores, having centrally-located air-downtakes depending in each from or near the top, of the intermediate uptake C, having greater length and double the area of the combined downtakes, as and for the purpose set forth.

7. The combination, in a twin kiln for roasting ores, of the centrally-located fire and combustion chambers E in each, the centrally-located air-downtake A therein, and the intermediate air-uptake C, having the relation to each other and co-operating to produce the results herein stated.

166,160. CLOTHES-PINS. George Topping, Chicago, Ill. [Filed Jan. 30, 1875.]

In a clothes-pin, the jaws A, having the recesses h, grooves i, extending outwardly to the end of the handles, and pivots d, in combination with the spring S, having loop e and legs f, arranged respectively in said recesses and grooves, as shown and described.

166,160.



166,161. SEWING-MACHINE GUIDES. John E. Trowbridge, Brooklyn, assignor to Geo. H. Wooster, New York, N. Y. [Filed Feb. 6, 1874.]

Brief.—The guide, which is tapering from the end opposite to the feed toward the same, is bent in a U form at its smaller end, for the purpose of folding the strip of cloth in the middle, and has its edges turned over in the form of an ordinary hemmer, whereby the raw edges of the material operated on may be turned under, while along the center of the device, on its inner side, projects a rib, for forming a seamen in the double edge of the folded article; the material being held against said rib by means of spring arranged along the inside of the guide.

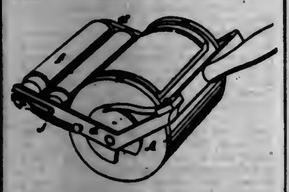
166,161.



A hand-folding guide, substantially as described, the folding-surface or channel-way of which is constructed to fold or turn in the back or doubled edge of the band in the form of a groove to receive the edge of the garment or article to which the band is designed to be applied, as specified.

166,162. MARKING-WHEELS. Francis M. Trevorthy, San Francisco, Cal. [Filed June 8, 1875.]

Brief.—The inking-rollers are both held in slot in bent frame by a spring on each bent arm.

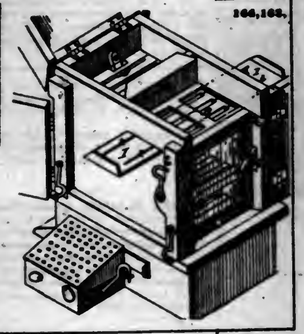


The type-band cylinder A and side bars d, having their extremities provided with the slot i, in combination with the rollers e f, placed one above the other, radial to the center of the wheel, and the spring j, having one end secured to the side bar, while its opposite end is secured to the journal of the upper roller, substantially as and for the purpose set forth.

166,163. RUG-RIVER. William Vanauker, Westberry, Ind., assignor of one-half his right to John Frederickson. [Filed June 8, 1875.]

1. The combination of the hive, having grooves s s, the comb-frames D D, fitting into the grooves s, the mash G G, with buttons h h entering inclined grooves i i in the sides of the hive, for wedging the parts closely within the hive, substantially as and for the purpose herein set forth.

166,163.



166,164. BOBS-SPINNING. Wm. T. Voss, Newton, Mass. [Filed Mar. 24, 1875.]

Brief.—The perforated plate is separate from the head and screw-cap, and can be reversed when it becomes clogged.

166,164.



The combination of the bulb or head, A, the screw-cap C, and the reversible perforated plate B, constructed in separate pieces, adapted to operate together substantially as described.

166,165. VEHICLE-TOPS. H. W. Warner, Greenfield, Mass. [Filed July 8, 1875.]

166,165.



1. The combination of a canopy-standard and a detachable bane-piece thereafter, provided with dowel-pins and holes or their equivalents, substantially as shown and described.

2. The combination of the bane-piece B, provided with the central fixed bolt and the holes, with the standard having its feet provided with the bolt holes and pins, as shown.

3. A hollow raised bane-piece, B, for a canopy-standard, adapted to take the place of the customary stuffing or cushioning under the covering, as shown and described.

166,166. METAL-SCREW MACHINES. John F. Webster, Hamilton, Canada. [Filed Apr. 10, 1875.]

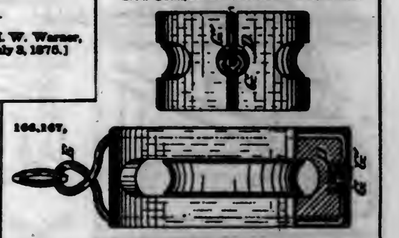
Brief.—By the movement of a hand-lever pivoted at the rear of the head-stock, and connected to the forked lever for operating the sleeve of a conical split chuck, the chuck is released from the rod, and at the same time a pair of gripers, pivoted together on a sliding bolt, are closed on the rod by a slide, provided with a V-shaped cam-groove, into which the lower extremities of the gripers project, and are carried forward, thereby feeding the requisite length of rod through the chuck. A reverse movement of the hand-lever closes the chuck, and runs back the gripers.

1. In combination with the lever H, the oscillating lever M, operating the sliding bar L, cam O, and sliding jaws P, for the purpose of feeding the blank through the hollow mandrel, substantially as herein set forth.

2. The combination of the hollow mandrel B, grooved sleeve and collet, and the levers F and H, connected by the rod I, cam O, and jaws P, constructed to operate substantially as herein set forth.

166,167. PULLEY-BLOCKS. John Weir, New York, N. Y. [Filed June 26, 1875.]

166,167.

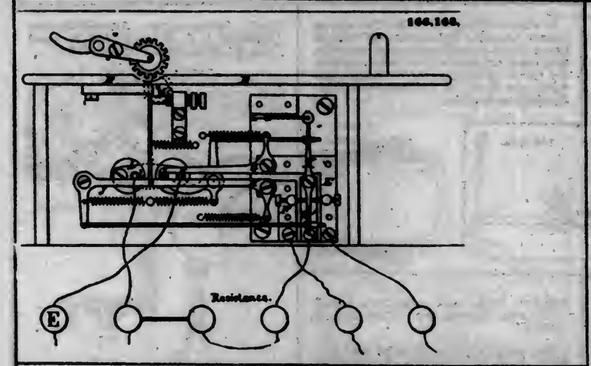


In a pulley-block, the wire band C, bent at the middle to form a suspension-loop, H, and the ends interlocked at the bottom by means of the loops G G' cast in a hole, D, substantially as shown and specified.

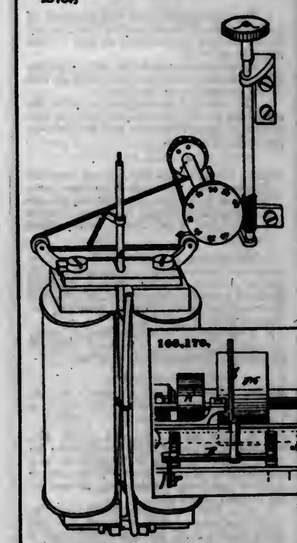
166,168. AUTOMATIC TELEGRAPHS. Chas. Wheatstone and J. M. A. Stroh, London, England. [Filed Mar. 16, 1875.]

The means for sending a weak current into the line at the end of a dash or space, for preventing an undue elongation of short currents, consisting of the lever K, operated from the transmitting-lever, the contact-points F E, and the resistance and branch circuit, substantially as set forth.

166,168.



166,169. MAGNETS FOR ELECTRIC TELEGRAPHS. Chas. Wheatstone and J. M. A. Stroh, London, England. [Filed Mar. 16, 1875.]



The combination, with an armature pivoted between and acted on by two electro-magnets or coils, of a spring and means for adjusting the tension thereof, and causing it to exert its force upon either side of the pivotal bearing of the armature, substantially as set forth.

166,170. CIRCULAR-SAW MILLS. Francis N. Whitcomb, Amity, and W. R. Davis and Mary J. Rawson, Belmont, N. Y., administrators of D. Rawson, deceased. [FiledMar. 20, 1875.]

Brief.—The log-carriage is reciprocated by means of a rack and pinion, the latter being rotated in opposite directions by a system of friction-gearing.

1. In a saw-mill, the conical pulley G, adjusted upon the end of the saw-arbor B by the end screw f, as and for the purposes herein set forth.

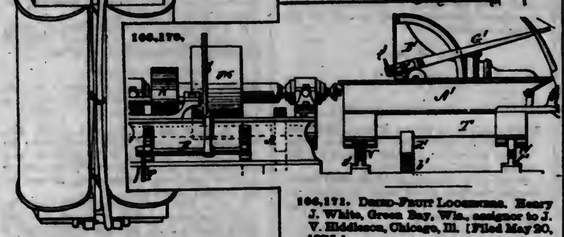
2. The tubular box or bearing p, provided with a vertical projection, n, on its upper and lower side, and held by vertical screw-pivots o, to form the self-adjusting bearing for the inner end of the counter-shaft E, substantially as and for the purposes herein set forth.

3. The combination of the counter-shaft E, eccentric bearing-box t, and the collar or sleeve v, held by the vertical pivot-screws v, substantially as and for the purposes herein set forth.

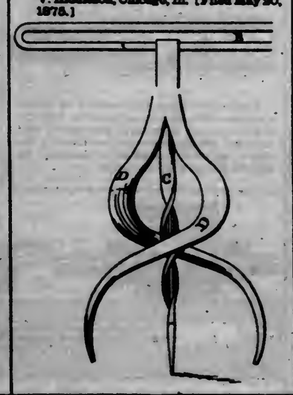
4. The combination of the eccentric bearing-box t, lever N, connecting-bar O, shaft R, with arm P and lever S, the segment s', with notch s, and the spring-hook p, all substantially as and for the purposes herein set forth.

5. In combination with the knee of a head-block for saw-mills, the stud w' and the lever G', secured near the bottom of the knee, and provided with slot w', notches G', point t, and flange v', and the curved notched ratchet w', substantially as and for the purposes herein set forth.

166,170.



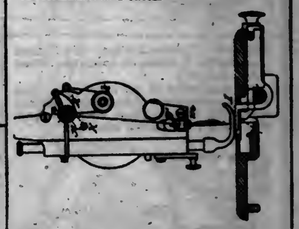
166,171. DEAD-FRONT LOCOMOTIVE. Henry J. White, Green Bay, Wis., assignor to J. V. Hiddleson, Chicago, Ill. [Filed May 20, 1875.]



A fruit-auger composed of the stock A, with a cross-piece or handle at one end, and the central guide-point C and spiral prongs D at the other, substantially as set forth.

166,172. SEWING-MACHINES. R. Whitehill, New York, N. Y. [Filed July 10, 1872.]

Brief.—The take-up is adjustably arranged upon a shaft having a pinion on its end, which gears with a rack formed upon the needle-bar, while in the forward end of such shaft is secured a projecting pin or stud, which is situated therein in a position eccentric to the axis of the shaft, and serves, in connection with the take-up, to tighten the thread after the formation of a stitch.

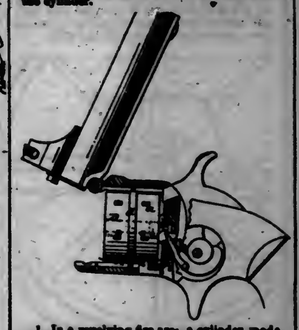


1. In combination with the oscillating take-up K, the stationary bar or pin M, arranged to occupy an eccentric position relatively with the arbor N or axis of oscillation of the take-up, whereby its inside face over which the thread is drawn will be in line with the center of the take-up, substantially as specified.

2. The oscillating take-up K, made adjustable around the arbor N, by which it is operated, substantially as described, whereby provision is made for adjusting the take-up to suit different thicknesses of fabric.

166,173. REVOLVING FIRE-ARMS. R. White, Lowell, Mass. [Filed June 26, 1875.]

Brief.—If the shoulder on the pawl should for any reason fail to engage with the shoulder on the locking-bar, to operate the latter, the pawl would thereby be thrown up, so that it could not engage with the ratchet to rotate the cylinder.



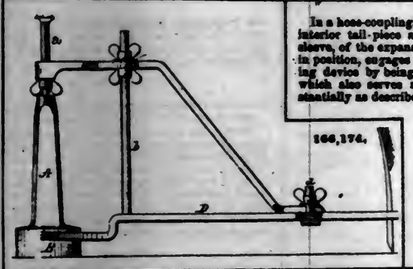
1. In a revolving fire-arm, a cylinder made wholly or in part reversible, for the insertion of cartridges in either end, as herein set forth.

2. The combination, in a revolving fire-arm, of the ratchet-pawl n, provided with the shoulder x, and the lock-bolt lever, provided with the shoulder y, to operate as and for the purposes herein set forth.

166,174. DEVICES FOR ADJUSTING MILLSTONES AND SPINDLES. Samuel Whitehead, Reading, Pa. [Filed June 11, 1875.]

1. The combination of the spindle A, brass C, arm D, set-screw a, rod b, and bolt d, substantially as and for the purpose described.

2. The combination of the slotted brass C, set-screw a, and bifurcated arm D, substantially as set forth.



In a hose-coupling, the combination with an interior tail-piece and an exterior band or sleeve, of the expansible ring C, which, when in position, engages with the hose as a holding device by being embedded therein, and which also serves as a friction-band, substantially as described.

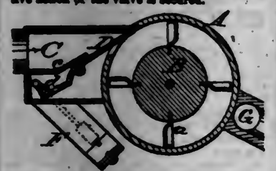
166,174.



166,177.

166,175. WATER-METERS. Geo. Wheaw and Richd. D. Bland, St. Louis, Mo. [Filed Jan. 9, 1875.]

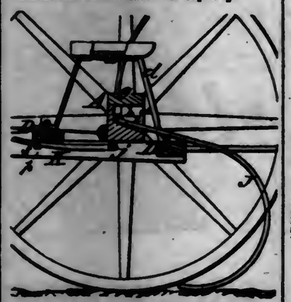
Brief.—Applied to the inlet-valve, which crosses the inlet-tube obliquely, is an adjustable weight, whereby a more certain and positive action of the valve is secured.



The case A, provided with port *p* and induction-pipe C, in combination with the chest F, obliquely-arranged valve D, and lever E, having at its outer end an adjustable weight, *w*, operating substantially as and for the purpose set forth.

166,176. HORSE HAY-RAKES. Newton D. Wood and Lee Taylor, Ballston Spa, N. Y. [Filed Apr. 17, 1875.]

Brief.—A spring-staple on the main frame, in its normal position, holds the teeth down to their work through a notched rod pivoted beneath to the axle. When the staple is depressed by the driver's foot, the rod is released, and the axle may be tilted to raise the teeth by a hand-lever. Teeth provided with lugs, and secured by a single rod within a grooved and slotted axle covered with cap-strip.



1. The rod E, pivoted to the axle A, carrying teeth J, and notched at *p*, in combination with the sliding staple *s*, applied to thill-bar D, and acted on by a retracting-spring, *t*, substantially as described.

2. The combination of the rake-teeth J, provided with eyes, with the rod A, grooved and slotted axle A, and cap *p*, substantially as described, and for the purpose set forth.

166,177. HORSE-COUPLINGS. Abraham Wurt, Providence, R. I. [Filed Nov. 21, 1874.]

Brief.—Employs a ring of spring-able metal, with an interior tail-piece and outer ring. Expanding the ring embeds it in the fibers of the hose, and constitutes it a holding device as well as a lining, to prevent abrasion of the hose.

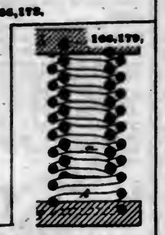
166,178. RAILROAD-CAR SPRINGS. John H. Wootten, Reading, Pa. [Filed Jan. 20, 1874.]

In a car-spring, an outer spiral spring, A, firmly attached at its ends to the plates B B, and having inside thereof the shorter spring *a*, free at its ends, all combined substantially as and for the purpose set forth.

166,178.



166,179.



166,179. RAILROAD-CAR SPRINGS. John H. Wootten, Reading, Pa. [Filed Jan. 20, 1874.]

In a car-spring, the outer spiral spring A firmly attached to the plate B, and having inside of it the spring *a* firmly attached to the plate *b*, all substantially as and for the purpose set forth.

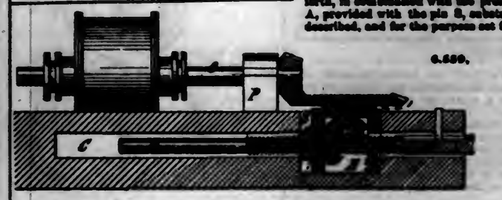
REISSUES.

6,646. DRIVER ON BOARD WELLS. Matthew T. Chapman and Mark C. Chapman, Aurora, Ill. Patent No. 121,500, dated Sept. 24, 1872. [Filed Aug. 14, 1874.]

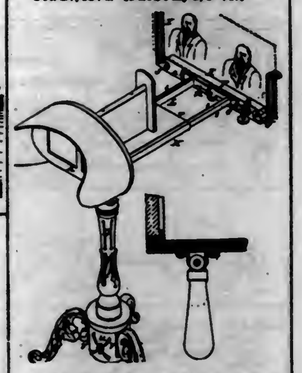
Brief.—The removable valve-seat has a beveled shoulder, which, when the seat is secured to the coupling, avoids the packing against the well-tubing.



The beveled flange or shoulder *d* on the removable valve-seat, in combination with the flexible packing *a*, arranged between the said shoulder and the removable part to which the seat is adjustably attached, substantially as and for the purposes specified.



6,647. STEREOSCOPES. Antonio Quirole, Hoboken, N. J. Patent No. 156,211, dated Oct. 27, 1874. [Filed July 8, 1875.]



1. The combination, with the standard of a stereoscope, of the series of legs suitably attached thereto, substantially as and for the purposes set forth.

2. The pivoted picture-holder, upright guides I I, and their stops J J, substantially as and for the purpose herein described.

3. The spring T, in combination with the guide-rods L, and guides K, and stops E, and grooves S, substantially as and for the purpose herein described.

6,648. COMPOSITION METALS FOR CASTING PLOWS. Geo. K. Smith, Waterloo, Iowa, assignor, by mesne assignments, of one-half interest to George W. Miller. Patent No. 142,530, dated Oct. 7, 1873. [Filed Oct. 20, 1874.]

1. The process of making a composition metal by first making a conglomerate by pouring melted cast-iron upon a mass of pieces of annealed iron or steel of sufficient size to make a chill, and then remelting the conglomerate, as specified.

2. A composition metal consisting of steel, wrought-iron, cast-iron, and black oxide of manganese, substantially as specified.

6,649. COTTON-JACKS. Maurice J. Walsh, New York, N. Y. Patent No. 157,044, dated Nov. 17, 1874. [Filed July 1, 1875.]

1. A screw-jack for pressing cotton, &c., combined with an engine for reciprocating the screw to move the body of the jack, the said engine being mounted upon and secured to the said jack-body, substantially as and for the purpose described.

2. In a jack for pressing cotton, and for similar purposes, a shaft, one end of which bears upon a fixed obstacle and imparts a longitudinal motion to a pressing-head, in which it reciprocates by means of intermediate gearing operated by means of the shaft of an engine, substantially as described and for the purpose set forth.

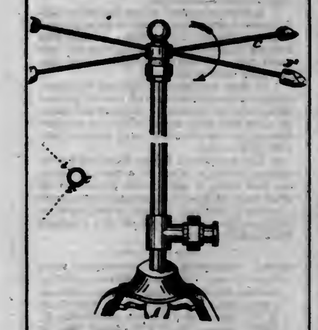
3. The pressing-block A, having the recess B and passages C D, in combination with the screw-shaft M, having a longitudinal but no rotary movement, the sleeve L, provided with a pinion on its end, gear-wheel I, pinion B, and driving-shaft O, substantially as described, and for the purpose set forth.

4. The screw-shaft M, provided with the longitudinal groove *e*, and operated as set forth, in combination with the pressing-block A, provided with the pin S, substantially as described, and for the purpose set forth.

6,650.

6,640. PORTABLE FOUNTAINS AND LAWN-SPRINKLERS. Russell Brusie, New York, N. Y. Patent No. 137,176, dated Mar. 25, 1873. [Filed July 2, 1875.]

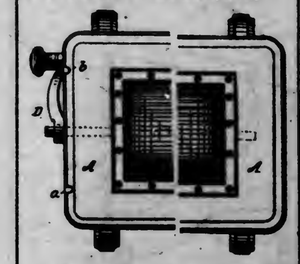
Brief.—Combines with the radial arms of a rotary sprinkler foraminated caps upon their ends, the perforations varying in number, and in the elevation given to the jet.



1. The combination of the foraminated caps D¹ D¹, &c., with the radial arms of a portable rotary fountain or sprinkler, substantially as and for the purpose set forth.

2. In a revolving lawn-sprinkler, a series of discharge-orifices, having an inclination varying with its different arms, and of variable number, substantially as shown and described.

6,641. KNEELING-STOOLS. William Cahill, Syracuse, N. Y. Patent No. 156,703, dated Oct. 6, 1874. [Filed Jan. 6, 1875.]



1. A portable footstool constructed substantially as herein shown and described—that is to say, with the top C having upon one side a plain unenhanced surface for the feet, and on the opposite side a cushioned surface for the knees, the said top being loosely pivoted within the surrounding frame A', so as to oscillate thereon to partake of the movements of the knees, as set forth.

2. The combination of the horizontal frame A, having notches *a*, of the reversible top C and the lever D, having projections *b*, substantially as and for the purpose described.

6,642. CONVERTING IRON INTO STEEL. A. B. Carpenter, Philadelphia, Pa., assignor, by mesne assignments, of H. F. Houghton, deceased. Patent No. 139,049, dated June 16, 1873. [Filed May 19, 1875.]

Brief.—Uses the waste bone-black which has been used in filtering vacuum-oil in converting iron into steel, or hardening it by cementation.

1. A composition for case-hardening iron or converting it into steel, consisting of bone-black or other carbonaceous material impregnated with hydrocarbon-oil.

2. As an improvement in the art of case-hardening iron or converting it into steel, applying thereto in the hardening or converting process carbonaceous material impregnated with hydrocarbon-oil, as set forth.

6,643. SULKY-PLOWS. Benjamin Stoner, Sidney, Ohio, assignor to Norman Du Bois and A. P. Koop. Patent No. 90,427, dated July 20, 1869. [Filed Apr. 17, 1875.]

Brief.—Plow-beams pivoted to crank-axle, and raised by jointed lever, which permits free motion of plows upward when meeting an obstacle.



1. The combination of the crank-axle S S' P and jointed bent lever L n, for the purpose of raising the plow, and permitting it to rise automatically out of the ground, substantially as and for the purpose set forth.

2. The combination of the crank-axle S S' P of a sulky-plow with the beam or frame of the plow, loosely pivoted thereto, to permit the plow to rise automatically out of the ground, substantially as and for the purpose described.

6,644. EXPLOSIVE COMPOUNDS. Charles A. Browne and I. S. Browne, North Adams, Mass. Patent No. 152,760, dated July 7, 1874. [Filed Sept. 12, 1874.]

Brief.—Mixes pulverized fulminate of mercury with pulverized antimony, and decreases the concussing power by adding varying quantities of antimony sulphide, iron oxide, coke, or plumbago.

An electrically-explosive compound, consisting of fulminate of mercury pulverized and intermixed with particles of metal, as and for the purpose described.

6,645. MACHINES FOR MAKING RUFFLES. John A. Pipe, New York, N. Y., assignor, by mesne assignments, to O. H. Wooster. Patent No. 97,550, dated Jan. 27, 1869. [Filed June 23, 1875.]

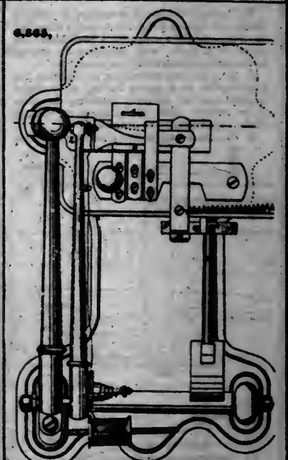
1. In a ruffling mechanism, a spring or flexible blade, having its acting edge turned or bent toward the surface against which it acts to form the ruffle, in combination with a carrier, to which the blade is rigidly attached, substantially as described.

2. A ruffling-blade arranged above the cloth-plate, and combined with an actuating-lever adapted to carry and press the blade on the goods in advancing and to relieve the pressure of the blade from the surface of the goods while retreating, substantially as described.

3. A blade adapted to form, but not to space a fold or plait in a strip to be ruffled, in combination with a feed to engage and move the material after the ruffle is formed, substantially as described.

4. The combination, with a flexible ruffling-blade, of an actuating-lever or rocking-shaft, to which the said blade is rigidly affixed, substantially as described.

5. The combination, with a ruffling-blade and a support for the material to be ruffled, of a guide adapted to turn the edge of a band, and present it to the action of sewing mechanism, substantially as described.



6. The combination, with a ruffling-blade and a support for material to be ruffled, of a guide adapted to turn the edge of a band, and present it to the action of sewing mechanism, substantially as described.

7. The combination, with the actuating-lever and ruffling-blade, of a regulating device to regulate the extent of backward movement of the blade without affecting the position to which the forward end of the blade moves, for the purpose set forth.

8. In a ruffling or plaiting mechanism, a spring or flexible blade rigidly affixed to its carrier, in combination with a surface opposed to the blade, and adapted to sustain the material being ruffled against the action of the blade, substantially as described.

9. In a ruffling or plaiting mechanism, a pressing or holding mechanism having a solid or unyielding surface, arranged and adapted to screw and press the whole width of the plaited fabric, substantially as described.

10. In a ruffling mechanism, the combination, with a blade and rocking lever, of a vibrating member of the needle-actuating mechanism adapted to rock the lever and move the blade to form a ruffle, substantially as described.

11. In a ruffling mechanism, a support for an elbow-lever, in combination with an elbow-lever, pivoted at its angle to the support, and adapted at one end to operate a ruffling-blade rigidly affixed thereto, and to have motion imparted to it at its other end, substantially as described.

12. The combination of the ruffling-blade and its carrier with adjusting mechanism to determine the position of the forward or working edge of the ruffling-blade with relation to its carrier, substantially as described.

13. The combination of a rocking or elbow lever and an adjustable ruffling-blade, operated by the lever, with mechanism, substantially as described, for adjusting the throw of the lever.

6,646. SEWING-MACHINES FOR MAKING RAND-RUFFLES. Geo. H. Wooster, New York, N. Y., assignor, by mesne assignments, of T. Robjohn. Patent No. 40,454, dated Feb. 14, 1863. [Filed July 19, 1875.]

Brief.—A guide provided with suitably-formed curves is arranged around the edge of a ruffling or plaiting blade, so that a strip of material may be folded and presented, with its edges turned under or hemmed, in proper relative position to said blade to receive a sewed strip, which, having been passed through a sewed guide and subjected to the action of the ruffling-blade, is ruffled or plaited, and placed between such hems, where it is secured by a row of stitching.

7. In a ruffling or plaiting mechanism, the combination of a ruffling or plaiting blade, with a folding-guide whereby a strip of any suitable fabric may be properly guided to form and fold a band about the edge of a ruffle, substantially as described.

3. The combination of a ruffling or plaiting blade and folding-guide for properly directing the strip to form and fold a band about the edges of a ruffle, with stitching or sewing mechanism, substantially as described.

4. In a plaiting or ruffling mechanism, the combination of a guide having an inclosed channel-way for properly directing the strip to be ruffled, with the plaiting or ruffling blade, substantially as described.

5. The combination of a plaiting or ruffling blade and guide for properly directing the strip to be ruffled, and a folding-guide for conducting a separate strip to form and fold a band on the edge of the said ruffled strip, with sewing mechanism adapted to unite the band and ruffle, substantially as described.

6. The combination with a ruffling or plaiting blade, of a guide for conducting a strip to form a band for the ruffle, and adapted to fold or turn both edges of said band.

7. The combination of a ruffling or plaiting blade, a guide adapted to conduct a strip to form a band and to fold both edges of said band, with a sewing mechanism, substantially as described.

8. The combination of a ruffling or plaiting blade or knife, arranged and operated above the cloth-plate, with a supporting or counter-ery plate, opposite from the cloth-plate, between which and the blade or knife the fabric to be ruffled is held and advanced by the blade, substantially as described.

9. A plaiting or ruffling blade, arranged above the cloth-plate of a sewing-machine, and adapted to operate upon a surface other than such cloth-plate, whereby a strip of goods can be plaited or ruffled in two a plain piece, substantially as described.

10. In a ruffling or plaiting mechanism, a presser or holder and screw at its lower side to permit the passage of a hem, substantially as described.

11. A folding-guide, adapted to outdent and fold a band, and provided with a nose or extended portion to direct and hold the band after it is folded, substantially as described.

12. The inclosed guide, in combination with the double tongue, adapted to press upon the goods passing through said guide to keep said goods flattened and straight, substantially as described.

13. In a ruffling mechanism, the combination of a blade, adapted to engage and fold or ruffle one piece of material, with a feeder, adapted to engage and move forward the unruffled material on which the ruffled material is delivered and secured by stitching, substantially as described.

14. In a ruffling or plaiting mechanism, the combination of a plaiting-blade, adapted to separate the material to be ruffled from the unruffled material to which it is to be attached, with a supporting blade, adapted to press upon and engage the upper side of the material to be ruffled, to move forward with such material and present a fold for the action of the needle, and on the return stroke of the blade to raise its pressure on the material to be ruffled, substantially as described.

15. The combination of the ruffling-blade, adapted to move forward beyond the end of the supporting or separating plate, with the separating-plate adapted to retain the ruffled material from returning with the ruffling-blade, substantially as described.

16. The combination of a guide adapted to control each edge of the piece to be ruffled, and a ruffling or plaiting blade, having its edge extended across the material to be ruffled, with a solid or rigid pressing surface or holder, of a width to cover and fasten the ruffled or plaited material, substantially as described.

17. The combination, with a mechanism adapted to form a ruffle or plait, of a guide, provided with an inclosed channel-way, to guide the strip intended to be ruffled or plaited.

18. The combination, with a separator and a ruffling blade, of guides adapted to control and present the band-forming edges both above and below the strip to be ruffled, whereby a piece of fabric may be ruffled between two surfaces.

6,867. SHUTTLE-BOX MECHANISM FOR LOOMS. H. Wyman, Worcester, Mass., assignor to George Crompton. Patent No. 70,309, dated Oct. 29, 1867. [Filed July 20, 1875.]

Having thus described my apparatus, I claim as my own invention—

1. The combination of a lever, one end of which is connected to shuttle-boxes, with its actuating crank-pin and connecting-rod, and with another lever pivoted thereon, and the actuating crank-pin and connecting-rod thereof, whereby four shuttle-boxes may be actuated, the combination being substantially such as described.

2. The combination of a lever connected at one end with shuttle-boxes, its actuating crank-pin and connecting-rod, and another lever pivoted thereon, and two crank-pins and two connecting-rods for actuating the same, whereby six shuttle-boxes may be operated, the combination being substantially as described.

3. A lever connected at one end with shuttle-boxes, its actuating crank-pin and connecting-rod, a second lever pivoted to the lever connected with the shuttle-boxes, and an actuating crank-pin and connecting-rod for it, in combination with two toothed wheels and two toothed surfaces, the toothed wheels turning the crank-pins, and the toothed surfaces moving the toothed wheels, the combination being substantially as herein set forth.

4. A lever connected at one end with shuttle-boxes, its actuating crank-pin and connecting-rod, and another lever pivoted thereon, and two crank-pins and two connecting-rods for actuating the same, in combination with three toothed wheels and three toothed surfaces, the combination being and operating substantially as described.

5. The combination of the two levers, a connecting-rod and crank-pin for each lever, and two toothed wheels and two toothed surfaces, with the mechanism for actuating the toothed surfaces, substantially as described, the combination lever substantially as herein described.

6. A lever connected at one end with shuttle-boxes, its actuating crank-pin and connecting-rod and another lever pivoted thereon, and two crank-pins and two connecting-rods for actuating the same, in combination with three toothed wheels and three toothed surfaces, and with mechanism substantially such as herein described for actuating the toothed surfaces, the combination being and operating substantially as described.

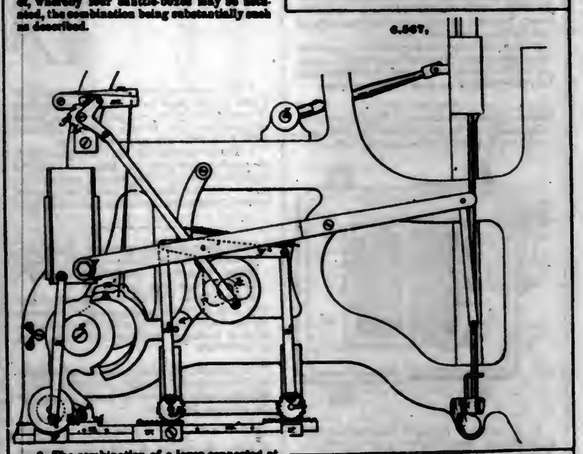
7. A lever connected at one end with shuttle-boxes, in combination with a lever pivoted thereon, the latter lever being combined with and actuated by two connecting-rods and two crank-pins, and the combination being substantially such as set forth.

8. A lever connected at one end with shuttle-boxes, in combination with a crank-pin and connecting-rod for moving the other end thereof, when said lever has a shifting or movable fulcrum, the combination being substantially such as described.

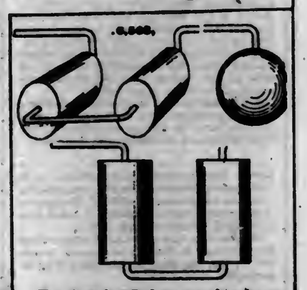
9. The contrivance herein described for obviating breakage, which is a two-part lever, one part being a spring-lever pivoted to the other part, as described, in combination with a series of shifting shuttle-boxes, substantially in the manner and for the purposes herein before set forth.

6,868. MAKING ILLUMINATING-GAS FROM PETROLEUM. William C. Wren and Wm. Barker, Brooklyn, assignors, by mesne assignments, to Charles P. Dunn, New York. N. Y. Patent No. 64,043, dated July 21, 1866; reissue No. 5,673, dated May 18, 1874. [Filed June 22, 1875.]

6,867.



6,868.



The above-described process of producing illuminating-gas from petroleum or its kindred products, in which a charge of liquid hydrocarbon is gradually heated in a still, and the resultant vapors are then converted from their vaporous form into permanent gas in a retort or retorts heated by independent fires, substantially as described.

NEWSTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 5. TUESDAY, AUGUST 3, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

WILLIAM B. CARLOCK.—*Appeal.—Interlocutory.*

[*Appeal from the Principal Examiner in the matter of the application of William B. Carlock for an* "IMPROVEMENT IN MEANS FOR PREVENTING REVERBERATIONS IN PUBLIC HALLS."—*Decided July* 8, 1875.

PRACTICE UNDER RULE 32.

By neglecting to settle questions in their proper order when they arise, as the Office rules require, great confusion is caused, forming just ground for complaint.

Where the word "barrier" was employed in a specification—referring to small wires to intercept and break up sound-waves: *Held*, that the propriety of its use depended on the fact of their accomplishing the result claimed for them.

It is only those changes that affect the substance or materiality of an invention that are objectionable as new matter.

THACHER, *Commissioner:*

On January 21, 1874, the applicant, William B. Carlock, filed an application for a patent for a device, the object of which he therein stated to be—

The improvement of churches, public halls, and rooms of all kinds acoustically defective by reason of echoes, unequal reflection, dispersion of and overabundance of sound in same by means of small copper wires, or fine annealed wires, scientifically applied.

He set forth in a series of rules the best mode of applying his device, the manner of measuring the rooms, the position the wires should occupy therein, their distance apart, and the means of fastening them to the walls. His claim, like the balance of his specification, was very loosely worded, and was for—

The use of wires for curing the bad acoustics of churches, public halls, &c., and their arrangement in accordance with the drawings herewith attached, Figs. 1, 2, and 3, and the rules hereinafter following and above referred to, and which in most part grow out of the scientific basis upon which it (the invention) is founded.

April 2, 1874, the Examiner very properly rejected the application for its many informalities, stating wherein they consisted, and recommended the applicant to obtain professional assistance in amending.

Carlock's application had been called forth by reason of an application filed a month previously by Joseph P. Taylor, of New Brighton, Pennsylvania. Taylor's device was for the same purpose, and in investigating his claims to originality the Office heard of a certain experiment that had been made in that line at Bloomington, Illinois. Addressing the postmaster of that place on the subject, replies were received from Carlock, giving a history of that and several other experiments of the same kind made elsewhere, and claiming to be the original inventor of the device in question.

Carlock's letters were immediately followed by his application above referred to. His letters and application did not differ materially in the description of the essential parts of his invention. After these letters were received, but before the application was filed, the Examiner had passed Taylor's application to issue—not considering Taylor's invention to be anticipated by that of Carlock.

Taylor's patent was issued February 10, 1874. October 16, 1874, Carlock filed an amended specification and new drawings, in accordance with the suggestion of the Examiner in his letter of the previous April.

In the opinion of the Examiner, the amended specification was in violation of Office Rule 32, on account, as he contends, of new matter therein set up. Carlock had employed attorneys, who adopted in a general manner the description set forth by Taylor, and made the claim equally as broad as that of the latter. Notwithstanding his belief that Carlock had thus unwarrantably broadened his application by amendment, contrary to Rule 32, and notwithstanding Office Rule 51 requires that before the declaration of an interference all preliminary questions must be settled, and the claims of the respective parties put in such condition that they will not require alteration after the interference has been finally decided, unless the testimony

adduced upon the trial should necessitate such change, the Examiner without any hesitation or a word of objection to Carlock's amended specification, so far as the record shows, declared an interference between Carlock and Taylor.

In his answer to the reasons of the present appeal, the Examiner says in regard to Carlock's amended application:

> Carlock employed able attorneys, with the avowed intention of forcing an interference with Taylor's patent.

He gracefully yielded to the accomplishment of this measure of force, by declaring the interference without objection, upon an application which he was convinced was in violation of a rule of the Office to entertain at all. He explains his action as follows:

> Not to make it an *ex parte* affair, I declared the interference asked for—leaving the question of dissolution to come up on motion and argument, as it did.

This neglect of the salutary requirements of Rule 51, as might have been expected, gave rise to just the confusion, trouble, expense, and delay which the rule is intended to obviate, and leaves the question to be now determined, after an expensive litigation, the same as lay at the threshold of the case, and which if then settled in accordance with the Examiner's views would have rendered entirely unnecessary the long contest that has since followed.

After the interference was declared the parties filed their preliminary statements; then a time was fixed for taking testimony, and a day of hearing appointed. Carlock, ignorant of the Examiner's views as to his amended application, or misinformed by his attorneys, or both, prepared to take his testimony. His evidence had to be gathered from sources widely apart, which, of course, gave rise to much trouble and expense. While thus engaged, the motion to dissolve—foreseen by the Primary Examiner—was made. The Examiner recommended the dissolution for the reasons already indicated, and the Examiner in charge of interferences thereupon dissolved the interference.

Carlock appealed to the Commissioner. In the meantime the taking of his testimony had been completed. The Acting Commissioner, in view of the latter fact, and also being of opinion that, without doubt, the application of Carlock as originally filed really conflicted with Taylor's patent, overruled the action below, and continued the interference. Of course, entertaining the view that a valid interference existed between the original application of Carlock and the patent of Taylor, upon the declared issue, it was unnecessary for him at that stage of the case to discuss the nature of the amendment.

The testimony on behalf of Carlock having been taken and completed after the Examiner in charge of interferences had dissolved the interference, that officer rejected it upon the hearing, and Taylor having taken no evidence, the case was decided upon the record in favor of the latter. The interference case, however, was subsequently reopened, and Carlock commenced *de novo*.

The Examiner of Interferences, in view of the fact that the Acting Commissioner regarded the interference as validly existing between the patent and Carlock's original application, and not alone with the amendment, as held by the Primary Examiner, considered the evidence adduced in the light alone of Carlock's former application. Priority was decided in favor of Carlock, from which decision no appeal was taken. Upon the return of the case to the Primary Examiner he renewed his objections to Carlock's amendment, and the appeal now taken is upon that point.

I have thus set forth at length the course thus far taken in this case, for the purpose of showing how, by a neglect to settle questions as they arise in their proper order as prescribed by the rules of the Office, great confusion is caused, and the Office justly laid open to the charge of creating litigation, and dilly-dallying with the rights of inventors.

In regard to the subject-matter of Carlock's original application, the only difference—certain informalities aside—between that and the matter of his amended specification consists in the distances apart he gives for placing the wires.

In his original specification, drawings, and model, Carlock describes and shows two strata of fine wires stretched tensely across a room in the direction of its length. Between these different strata two wires are stretched diagonally across the room. The wires composing the upper and lower strata are described as being placed from four to six feet apart, according to the size of the room. Even in his crudely-drawn original specification Carlock does not necessarily confine himself to a particular distance between each wire.

The gist of the invention consists of a barrier of fine wires, and is fully comprehended by Carlock's original application, as already stated by the Acting Commissioner. Says the Examiner:

> The question of new matter, now to be decided, turns on the definition of the word "barrier." Taylor's invention and claim is a "barrier of wire." Now, does a series of wires placed from four to ten feet apart constitute a "barrier" in a legitimate sense?

It is quite clear that a double series of wires, arranged as Carlock describes, constitutes a barrier in the *ordinary* sense of the term, but whether they constitute a barrier in the "legitimate sense" mentioned by the Examiner depends, I suppose, on the fact of their accomplishing the object claimed for them, viz., the breaking up of the sound-waves in such a manner as to prevent confusing reverberations, &c.

That they did quite successfully accomplish this result is shown by the evidence adduced in behalf of Carlock in the interference case. Taylor prefers to form his wires into a sort of screen, with the wires two or three inches apart, and having expressed that preference there was just as much reason for restricting his specification and claim to that narrow ground as there now is for restricting Carlock to the precise distances he expressed a preference for in his original application.

There is no doubt in my mind that the application of the latter was intended to cover broadly the use of fine wires for the purpose specified. Carlock therein says:

> I claim to be the original inventor of the use and adaptation of these wires for the purposes set forth above—

and this allegation is substantiated by the evidence in the interference case.

In the amendment of his application the model was not changed, and his drawings only altered to more closely conform to the model. The latter changes were made in strict accordance with the suggestions of the Examiner himself, in his letter of April 2, 1874.

The adoption of the word "barrier" was a very proper verbal change, but did not affect in the slightest degree the scope of the invention. The alteration of the description to include wires placed more closely together than he had at first described, was a matter of *degree* only, and not a substantial variance. It is only those changes that affect the substance or materiality of an invention that are objectionable as new matter. Such changes, in my opinion, have not been made in this case.

The decision of the Examiner is accordingly reversed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, NORTHERN DISTRICT OF NEW YORK.

GEORGE A. REED *vs.* LOUIS REED AND GEORGE FOLTS.

[*In equity.—Before* WALLACE, *J.—October*, 1874.]

The claim of letters patent for an "Improvement in Head-Linings for Barrels," granted to George A. Reed, May 11, 1873—viz: "As a new article of manufacture, barrel-head linings prepared in the manner specified, when bundled as shown and described"—is invalid.

As both head-linings and hoops had been made by machinery, and were articles of trade, and as hoops had also been crimped by machinery, the patentee merely produced an article which was the result of more mechanical skill and care in its manufacture than that previously sold and used; but this result did not involve the faculty of invention.

Although the crimped machine-made head-linings are an improvement upon the article used prior to their introduction, and, as such, have secured the approval of the trade and become a valuable commodity of manufacture and sale, the improvement is not the proper subject of a patent.

The sole merit of *bundling* the head-linings is, that it renders the commodity more attractive to purchasers, and more convenient for the purposes of sale. There is nothing in this result that is patentable.

[*James A. Allen*, for complainant.
John Van Voorhis, for defendants.]

WALLACE, *J.*:

The patent which it is alleged the defendants have infringed was issued to the complainant on the 11th of March, 1873, for an "improvement in head-linings for barrels." The specification describes the subject of the patent as follows:

> My improvement relates to the head-linings used on sugar, flour, fruit, salt, and other kinds of slack barrels; and consists in forming the lining by cutting a straight splint from the lumber, and subsequently crimping it in a suitable machine, by which it is bent to the curved shape of the barrel to which it is to be applied, the object of the improvement being to obviate the objections to the common head-linings of requiring them to be soaked before use, and bent as they are applied, necessitating the driving of a large number of nails to retain them when dry, and, also, the want of accurate fitting against the barrel head or chime, together with frequent splitting after having been applied, in consequence of having been bent the wrong way of the grain.

After describing the mode of manufacture, the specification proceeds:

> When so crimped they are put in square bundles of two hundred and fifty or five hundred, and tied or wired for transportation and use.

The claim, after stating that the applicant is aware that hoops for barrels have been crimped or permanently bent, before setting, prior to this invention, and disclaiming any right predicated upon this process, is as follows:

> What I claim, and desire to secure by letters patent, is, as a new article of manufacture, barrel-head linings, prepared in the manner specified, when bundled, as shown and described.

It appears by the proofs that the head-lining is a piece of wood applied to the chime of a barrel by the packer after the barrel has been filled for shipment, for the purpose of supporting the chime, and to retain the barrel-head more firmly in its place when subjected to the strain of transportation and handling.

It also appears that, prior to the introduction of linings similar to those described in the specification, it had been the practice of packers and shippers to make head-linings by splitting the ordinary hoop and nailing the pieces on the head of the barrel next to the chime. It was ordinarily done by taking an old hoop, or part of one, and splitting it in two parts with an adze or a knife, and required only sufficient skill to secure width sufficient to hold a nail, when driven into it, without splitting, and length sufficient to afford support to the chime. The pieces, when cut in this way, were almost necessarily somewhat irregular in width, were rough in appearance, frequently split when nails were driven into them, and were, in short, a crude and simple contrivance to give support to the barrel-head, without reference to ornament or taste, and, practically, they met the purpose for which they were used. Subsequently, head-linings were made and used as an article of trade, designed to be sold to packers in quantities, to save them the trouble of cutting out their linings, as they desired to use them. They were made of oak, split out by hand, the form of the lining following the direction of the grain of the timber, and the width and thickness being more or less variable, according to the degree of care used in cutting them, and the clearness of the grain of the timber. In using them, it was quite customary to soak or steam them, as then they were more readily bent to the curve of the barrel, and less frequently split when nails were driven into them. Subsequently, machine-made linings were introduced and became an article of trade, which were straight and of uniform width and thickness, and differed in no respect from those of which the complainant now claims to be the inventor, except that the latter are crimped. The effect of crimping them, as is alleged in the specification, is to corrugate the grain of the wood, thereby bending the head-lining so as to conform proximately to the curved head of the barrel, thus obviating partially the tendency of the timber to split when nails are driven into it, and dispensing measurably with the necessity of soaking or steaming the linings before using them.

It is quite apparent, however, that soaking or steaming the complainant's linings would lessen their liability to split, and, even then, splitting could not be entirely prevented. It is also obvious that the value of the complainant's linings, as of those previously in use, depends largely, if not mainly, on the quality of the timber used for their manufacture.

That the complainant's head-linings are an improvement on the article which had been used prior to their introduction, and, as such, have secured the approval of the trade, and become a valuable commodity of manufacture and sale, must be conceded; but I

am unable to arrive at the conclusion that such improvement is the proper subject of a patent. The proofs establish, beyond controversy, that hoops had been made by machinery, as well as head-linings, and were an article of trade, prior to the alleged invention of the complainant; and the specification of the claimant disclaims any discovery of the process of crimping such hoops. The complainant adapts the same appliances to the manufacture of head-linings that were used in the manufacture of hoops, and he thereby produces an article which is, in all its essential features, a crimped machine-made hoop on a small scale, except that it is of uniform width and thickness, and has rectangular ends. It is a hoop adapted to fit inside instead of outside the staves of the barrel, and to support the chime instead of the body of the barrel. Ignoring, as must be done, the use of the machine for cutting and crimping the timber, the article is produced by cutting a block of timber into pieces of such size and shape as will constitute a hoop of reduced dimensions, uniform in thickness, and with rectangular ends. The quality of invention is not called into exercise by adopting, to make head-linings, the machine for making and crimping hoops; and what remains of the process is accomplished by the most simple mechanical skill.

Having arrived at the conclusion that the patent cannot be sustained, so far as it rests upon the claim for head-linings "as an article of manufacture, when prepared in the manner specified," it remains to consider whether it can be supported upon the additional claim as "an article of manufacture, when bundled as shown and described." The portion of the specification relating to the bundling of the linings is as follows:

> I accomplish another result—that is, that I can pack the linings in square bundles, ready for the market, and that each lining will always retain its circular form, owing to the corrugated condition of the fibers, and at the same time I dispense with soaking.

It will be observed that the corrugation of the fibers dispenses with soaking the linings, and is accomplished by the process of crimping the timber, and in this regard the linings do not differ from the hoops. Nothing enables the linings to retain their circular form when bundled, aside from the crimping, except that they are of uniform size, and thereby fit compactly together. The hoops could be bundled as well as the linings, and are usually transported in bundles, but not so tidily or compactly as the linings, owing to their bevel and greater length. The sole merit of this feature of the improvement is that it renders the commodity more attractive to purchasers and more convenient for the purposes of sale. There is nothing in this result that is patentable. If the subject of the patent was a machine which accomplished the result of manufacturing a product more convenient for transportation and sale, as an article of trade, than that which had preceded it, such result might be important and controlling as determining the utility of the invention. But no such test is applicable when the product itself is the subject of the patent. (*Langdon* vs. *De Groot*, 1 Paine's C. C. R., 203.)

Upon the whole case, therefore, my conclusion is that the complainant has only produced an article which is the result of more mechanical skill and care in its manufacture than that previously used and sold, and that this result did not involve the faculty of invention. The case is analogous to that of *Union Paper Collar Co.* vs. *Van Deusen** (10 Blatchf. C. C. R., 109) and *Rubber Tip Pencil Co.* vs. *Howard**, (9 Id., 490.)

The bill must, therefore, be dismissed, with costs.

*See, also, for reports of these cases as decided in the Supreme Court, the decisions below being affirmed, OFFICIAL GAZETTE, Vol. I, 172 and 919.

DISCLAIMERS FILED.

52,726.—Improvement in Window-Screens.—ABNER F. MAGOUN, Philadelphia, Pa.—Patented February 20, 1866; reissue No. 4,698, dated January 2, 1872. Disclaimer filed August 13, 1875. Disclaims:

"Being aware of the 'mosquito-frame' which constitutes the subject of Letters Patent of L. S. Thompson of February 24, 1863, No. 37,779, that invention is disclaimed as being any part of the present invention, it being the object of the present Letters Patent to cover only a window-screen which remains adjustable when converted into a screen, in other words, after the gauze has been secured in place upon the frame; it not being the object of the present invention to include or claim as new the above-named invention of L. S. Thompson."

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date August 3, 1875.]

8,354.—Chairs.—JOSEPH H. HOOPER and THEODORE JOHNSEN, Portland, Me. Application filed April 5, 1875. Term of patent 3½ years.

8,355 and 8,356.—Inkstand-Supports.—CHARLES KITSCHELT, New York, N. Y., assignor to NICHOLAS MULLER'S SONS, same place.—Cases F and G. Applications filed June 22, 1875. Term of patents 7 years each.

8,357.—Clock-Cases.—WILLIAM F. MULLER, New York, N. Y. Application filed July 24, 1875. Term of patent 7 years.

8,358.—Stove-Door Knob.—JULIUS F. QUIMBY, Troy, N. Y., assignor to SWETT, QUIMBY & PERRY, same place. Application filed May 21, 1875. Term of patent 7 years.

8,359.—Printing-Type.—JOHN K. ROGERS, Brookline, Mass. Application filed July 19, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date August 3, 1875.]

2,796.—Clock-Springs.—WALLACE BARNES, Bristol, Conn. (Re-registration.) Application filed August 17, 1871.

"a perspective view of one of his patent level-tempered clock-springs, the end of which spring is of a peculiar form."

2,797.—Thrashing-Machine.—JAMES BRAYLEY, Buffalo, N. Y. (Re-registration.) Application filed February 23, 1871.

"'Buffalo Pitts.'"

2,798.—Thrashing-Machines.—JAMES BRAYLEY, Buffalo, N. Y. (Re-registration.) Application filed March 3, 1871.

"a belt, within the center of which is a head representing that of a buffalo."

2,799.—Spectacles and Eyeglasses.—JOSEPH GALL, New York, N. Y. Application filed February 5, 1875.

"a spread eagle, with the words 'J. Gall's' above it, and the words 'Achromatic Spectacles and Eye-Glasses' below it."

2,800.—Wash-Blue.—HELLER & MERZ, New York, N. Y.—Case A. Application filed May 6, 1875.

"the figure of a girl with bare arms, and wearing a red skirt having a dark band around its lower part, an overskirt gathered into a puff behind, and an apron."

2,801.—Ultramarine Blue.—HELLER & MERZ, New York, N. Y.—Case B. Application filed May 8, 1875.

"'U,' surrounded with an isosceles or equilateral triangle, along one of the inclined sides of which may be printed the words 'American Ultra,' and along the other inclined side may be printed the words 'Marine Works.'"

2,802.—Washing-Crystal.—FRANCIS D. LEIDY, Philadelphia, Pa. Application filed July 26, 1875.

"words 'ANCHOR BRAND,' and the picture of an anchor."

2,803.—Steel and Iron Wares.—SWEET, BARNES & Co., Syracuse, N. Y. (Re-registration.) Application filed May 24, 1873.

"a figure formed of lines in a lozenge form, with the letters 'G. B. & Co.' placed at each of the four angles."

2,804.—Cigars.—H. K. THURBER & Co., New York, N. Y. Application filed May 8, 1875.

"pictorial representation of an alligator, represented as floating in a river bordered by tropical plants, said alligator being guarded by a female figure standing on the back of the same."

2,805.—Rope, Twine, Gilling-Thread, &c.—UHLER, ENGLISH & BOILEAU, Philadelphia, Pa. Application filed July 9, 1875.

"word 'LUCK.'"

2,806.—Baking-Powder.—GEORGE H. VICKERY, Hyde Park, Pa. Application filed May 8, 1875.

"the representation of a colored woman holding a pan with biscuit or cakes just taken from the stove."

2,807.—Fertilizer.—DUGDALE & GIRVIN, Baltimore, Md. (Re-registration.) Application filed November 9, 1870.

"the words 'Magnum Bonum,' in connection with words 'Soluble Phosphate.'"

2,808.—Fertilizer.—DUGDALE & GIRVIN, Baltimore, Md. (Re-registration.) Application filed November 9, 1870.

"word 'Excellenza,' which is intended to be used in connection with the words 'Soluble Ammoniated Superphosphate.'"

2,809.—Fever and Ague Cure.—GLADSTONE & FERGUSON, New York, N. Y. Application filed June 19, 1875.

"letters C. F. A., and the figure of a star in the upper portion of the panel inclosed by the ornamental border."

2,810.—Candles.—CHARLES HARKNESS, Cincinnati, Ohio. (Re-registration.) Application filed June 5, 1871.

"words 'Patent Wax' and a 'honey-bee.'"

2,811.—Toilet-Soap.—FREDRICK SAHLFELD & Co., Baltimore, Md. Application filed June 22, 1875.

"a phœnix with outstretched wings, immediately beneath which is a crown, and beneath the crown are olive and laurel branches secured together by a ribbon, upon the flowing ends of which is the following Latin inscription, viz., *'Scientia Mundum Regit, Quae Presit Omnibus.'* Above the representation of the phœnix is the word 'Phœnix,' and to the left of the bird the word 'Chemical,' while on its right is the word 'Works.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date August 3, 1875.]

291.—Title: **"Chart adapted for and used with Edson's Pressure Recording Gages."**—MARMENT B. EDSON, Brooklyn, N. Y. Application filed March 11, 1875.

292.—Title: **"Bull's Cough Syrup."**—A. C. MEYER & Co., Baltimore, Md. Application filed July 29, 1875.

293.—Title: **"Scott's American Cologne."**—A. W. SCOTT, Cincinnati, Ohio. Application filed July 9, 1875.

294.—Title: **"S. y Ca., La Rosa Espanola."**—SEIDENBERG & Co., New York, N. Y. Application filed January 25, 1875.

295.—Title: **"Brazilian Headache Powders."**—CHARLES H. VAN ARNAM, Troy, N. Y. Application filed May 13, 1875.

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Persons desiring copies of all specifications and drawings of any particular class of patents can purchase them at the rate of ten cents each, and have them mailed, free, to their address, as soon as possible after the patents are issued, by leaving a deposit of not less than three dollars with the Commissioner of Patents. The index of classes for subscribers, date of September, 1871, is furnished gratis to any applicant.

In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

Copies of the specifications and drawings of design patents will be furnished by the Patent Office at the cost of making them. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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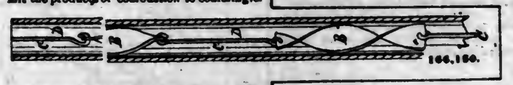
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED AUG 3, 1875.

166,180. FIRE-TUBES FOR STEAM-BOILERS. Henry Bailey, New York, N. Y. [Filed July 1, 1875.]

Brief.—The spaces between the spirals permit the products of combustion to commingle.



166,180.

1. In combination with the spiral sections B, the combustion-chamber D, for the purposes described.

2. The connecting link or rod C, in combination with the spiral sections B, for the purposes described.

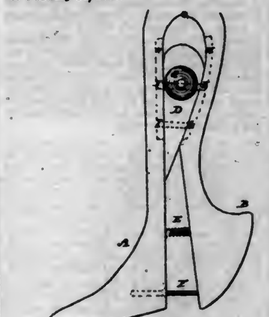
166,181. ROTARY CHURNS. James L. Barden and Samuel Crudden, Hamilton, Ohio. [Filed May 17, 1875.]



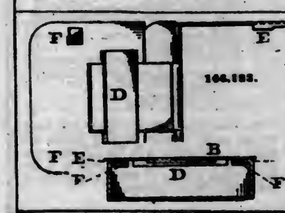
The combination and arrangement of the agitators *b c* and deflectors *i*, when the former are provided with the notches *s*, substantially as described, for the purpose specified.

166,182. BOOT-HOLDERS. A. N. Breneman, Lancaster, Pa. (Filed July 2, 1875.)

Brief.—Improvement on Patent No. 73,228, of January 14, 1868.



The combination of the hinged parts A B, sliding wedge D, coiled spring E, and guide-rod F, as shown and described.



166,183.

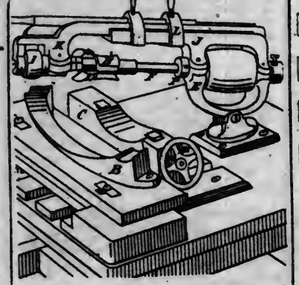
166,183. BOX-FASTENINGS. Edward W. Bridge, Philadelphia, Pa., assignor to W. K. Ferguson and James M. Bennett, same place. [Filed June 26, 1875.]

166,180.

The sliding and axial lid B and body A, connected by the tongue C and eye D, and the fastening lugs E F, combined and operating therewith, substantially as and for the purpose set forth.

166,184. MACHINES FOR SHAPING CHAIR-BACKS. Henry Buchter, Louisville, Ky. [Filed Apr. 6, 1875.]

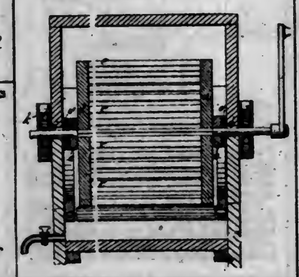
Brief.—Chair-backs and similar articles can be formed by means of a cutter-carrying frame, which is longitudinally adjustable by a slide working in a groove in the upper part of the swiveled frame, and secured by stirrups and set-screws, and the cutter-spindle adjustable through bearings in the frame by loose collars and set-screws, and provided at its outer end with a guide-roller, and having its inner end attached by a universal joint to the table, in connection with a raised and removable curved guideway, upon which the roller travels, and suitable dragging mechanism.



1. The combination of the adjustable tool-spindle F, roller I, rest C, and removable and adjustable guideway B, constructed, arranged, and operating substantially as and for the purpose described.

2. The combination of the swivel frame E, frame J, and adjustable frame K with the tool-spindle F, constructed and arranged substantially as shown.

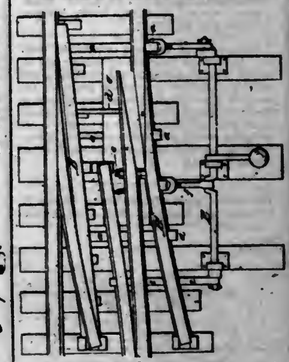
166,185. WASHING-MACHINES. John H. Carroll, Dubuque, Iowa. [Filed Nov. 9, 1874.]



The rubber sliding blocks *j* in combination with their inclosing-boxes *k*, and the cylinder C, substantially as and for the purpose described.

166,186. RAILROAD-SWITCHES. Dennis F. Cavanaugh, Greensburg, Pa. [Filed July 15, 1875.]

Brief.—A railroad switch having three movable rails—*A*, *a*, the two siding-rails and one section of one of the main rails, the last named closing on a diagonal splice-lap against the contiguous section of the main-line rail when the main line is clear. The switch-rails are operated by hand through a crank-shaft, and in case a train is coming along the main line in direction from the siding, and the main line is closed, the flanges of the wheels operate a push-lever, and open the main line. The outer movable rail is re-enforced or braced by a rod attached to the crank-shaft.



1. In combination with the laterally-adjustable rail A' of the main or direct track, the movable switch-rails B' B and pivoted guide-rail D, said rails being connected by means substantially as described, whereby, when the switch is open and rails B' B in connection with the rails A A', the impact or pressure of the wheels against rail D will effect the closing of the switch, substantially as specified.

2. The laterally-movable switch-rail B', pivoted at one end only, and direct rail A', connected together by means of the adjusting tie-rod *c*, substantially as and for the purposes set forth.

3. In combination with the pivoted trip-rail D, movable switch-rails B B', and movable direct rail A', the crank-shaft E, and connecting-arms *a*, *c*, *e*, *c*, and *d*, as shown and described.

4. In combination with switch-rail B' and the elbowed crank-shaft E, the operating and brace lever *f*, supporting the rail B' at its first point of junction with the permanent rail A', as shown.

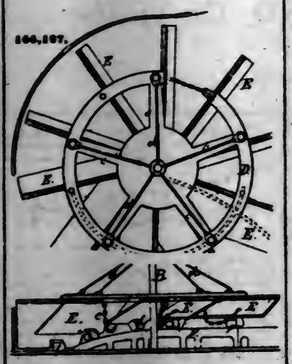
166,187. CURRENT WATER-WHEELS. W. W. Cleaveland, Coldwater, Mich. [Filed July 8, 1875.]

Brief.—Consists of the combination of the hinged buckets or wings with their chain braces or supports and friction-rollers on their rear or under sides, to change their position and bring them edgewise to the current when the water rises in the stream so as to overflow its channel and submerge the wheel.

The hinged wings or buckets E, provided with chain-supports *e* and friction-rollers *f*, in combination with the curved bridge or track F, operating substantially in the manner as herein shown and described, for the purpose specified.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON

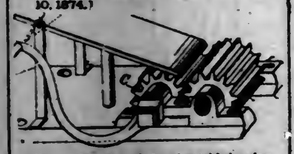
166,187.



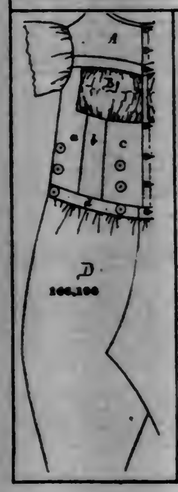
166,188. PROCESSES FOR THE MANUFACTURE OF MATERIAL FOR BEARINGS. Sigismund Cohen, London, Great Britain. [Filed Apr. 21, 1875.]

The process of making a material for bearings for general purposes by mixing well together ground asbestos and plumbago, and making therefrom a semi-dry paste by the mixture therewith of liquid silicate of soda or liquid silicate of potash, then drying the said paste and immersing it in, or causing it to absorb, hot melted paraffine or ceocerite, or a solution of paraffine in benzole; substantially as herein specified.

166,189. MEAT-TENDERER. George E. Comstock, Mankato, Minn. [Filed June 10, 1874.]



The combination of the adjustable bearing-blocks and the wheels U C', the blocks being adapted for adjustment at fixed distances, but rigidly holding the wheels in any position in which they may be secured, as described.



166,190



166,191.

166,190. UNDER-CLOTHING FOR WOMEN. Susan Taylor Converse, Woburn, Mass. [Filed Oct. 31, 1874.]

1. The garment above described, consisting of the body A, the breast-pieces B B, and leg-pieces D D, constructed and arranged together as described.

2. In combination with a body-garment, the breast-pieces B B, curved and gathered at top or bottom, or both, and having the front end cut shorter than the rear end, all as and for the purpose specified.

3. The body composed of the waist pieces a b c, back-piece c, band d, and suitable neck-pieces A, and breast-pieces B, the band extending below the abdomen, and the whole fitted closely to the form, and acting as an abdominal supporter.

166,191. CARRIAGE-WHEELS. D. Cushman, Milford, Mass. [Filed May 22, 1875.]

The ferrule C, provided with the partition a and the female screw, to receive and support the separate male screw D, in combination with said screw D, the spoke B, the nut E, and the tire provided with the recess b and spanner G, all as set forth.

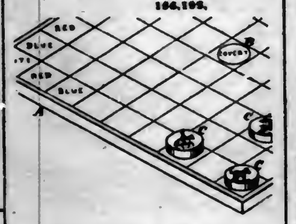
166,192. GAME-BOARDS. Harvey Darnell, San Francisco, Cal. [Filed June 12, 1875.]

Brief.—To play a game called "the chase," in which each party tries to capture the other's "game," or pieces having deer or other objects of prey upon them.

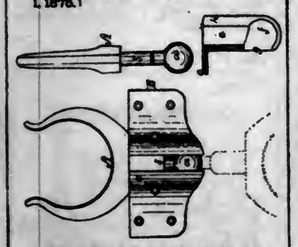
1. The board A, having squares or spots painted in three different colors, and provided with a "covert" or independent spot, B, in its center.

2. In combination with the checkered board A, with its covert or center spot B, the playing-pieces C, when said pieces are marked or otherwise constructed to represent a party of hunters and animals of the chase or game, substantially as and for the purpose described.

166,192.



166,193. ROWLOCKS. Frank E. Davis, Gloucester, Mass., assignor to himself and Israel C. Mayo, same place. [Filed June 1, 1875.]

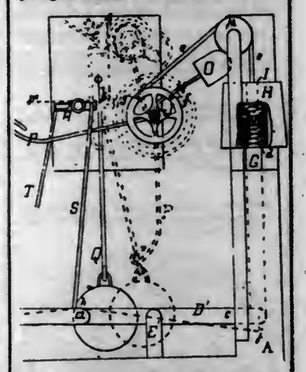


1. The rowlock A, provided with the ball a and the fastened shank c, as described, for use with a bracket, constructed substantially as specified.

2. For use with such a rowlock, the bracket B, provided with the ball-socket f, open at bottom and in rear, and with the shank-socket e, open in front, and opening out of the ball-socket f, all being substantially as set forth.

166,194. TIME-SIGNALS FOR RAILROADS. James A. Oinkey, Nehemiah Embody, and Saml. Bradley, Mauch Chunk, Pa. [Filed June 23, 1875.]

Brief.—The index being set at the starting-point and the clock-work wound up, it is automatically started by a passing train. After running a certain length of time it stops, and is again wound up, the index set back to the starting-point, and the clock-work again started by the next passing train. The index points the time which has elapsed since the passage of a train.



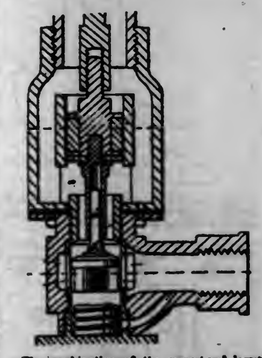
1. The combination, with a clock-movement, of the spring B, levers D D', lifting-bar G, winding-weight H, cord e, pulley J, arbor K, and spring L, as shown and described.

2. The combination, with a clock-movement, of the pulley M, rod and weight N O, and the trip-lever P, as shown and described.

3. The combination, with a clock-movement, of the spring B, lever D, rod S, lever E, and the trip T, as shown and described

166,195. WATER-HYDRANTS. Joseph W. Douglas, Middletown, Conn., assignor of one-half his right to Benj. Douglas, same place. [Filed Apr. 20, 1875.]

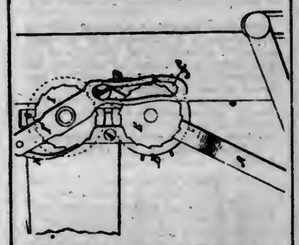
Brief.—By screwing down the valve-stem, the cylindrical orifice in the lower part closes over the spindle of the lower valve, the two being held by the friction. The lower valve may now be drawn up to its seat. When the upper portion of the hydrant is removed for repairs, &c., the lower valve is held fast by the pressure of the water.



The combination of the upper and lower valves, acting together by their mutual embrace, in connection with the upward pressure of the water against the bottom of the lower valve, holding it firmly to its seat, to cut off the flow, as specified.

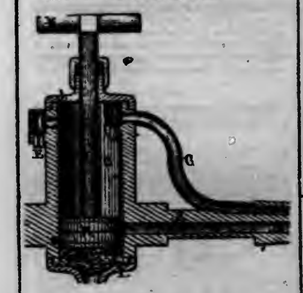
166,196. FEED-CUTTING MACHINES. Lucius Evans, Fayetteville, N. Y. [Filed July 1, 1874.]

Brief.—From one end of the horizontal driving-shaft proceeds a jointed lever, which imparts a rotary motion to the lower feed-roller, and through a slotted connecting-link, which permits the upper roller to yield vertically, the upper roller is simultaneously rotated. A pawl on the slotted link engages with the ratcheted end of the upper roller, and another on the upper end of the jointed lever engages with the ratcheted end of the lower roller, to produce an intermittent feed of the material to the reciprocating cutters.



The slotted and pivoted arm E f, with pawl H, reciprocating arm A, with pawl D and stud G, in combination with the ratchet I on yielding roller G, and ratchet E on roller B, for feeding the material to the cutting-knives, as set forth.

166,197. FAUCETS. R. Max Fascidt, Albany, N. Y. [Filed Dec. 4, 1874.]



1. The combination of the faucet A with the air-pump C, when arranged as herein described, and in such manner that each stroke of the piston H will reciprocally inject air into a vessel containing liquid, and eject an equal quantity of liquid therefrom, as herein specified.

2. The faucet A, having the air-pump C and piston H arranged in relation to the air-passage G and outlet-passage E, and constructed to operate in the manner and for the purpose herein specified.

3. The combination of the faucet A and air-pump C with the filtering material F, substantially as and for the purpose set forth.

166,198. GAME-BOARDS. Isaac N. Pentecoster, Baltimore, Md. [Filed June 16, 1875.]

1. The arrangement, upon the board or bed over which a ball is played, as herein before set forth, of the central group of curved guides, having concave outer faces, and the outer or marginal guides, having concave inner faces located at intervals around said central group, substantially as and for the purpose set forth.

2. In combination with a game board or bed, the curved guides D E F G H I, arranged relatively to each other, substantially in the manner and for the purpose set forth.

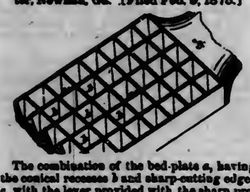
3. The combination, with the guides C H, of the directing-pins K K', arranged upon the bed or board, as set forth, to guide the ball in its passage between the concave faces of the guides.

166,199.



4. The combination of the curved ball-guides and the gaging-pins J, arranged upon the bed or board relatively to each other, as set forth, whereby the ball is caused to follow the concave surface of the guide against which it is played inside of and around the pin.

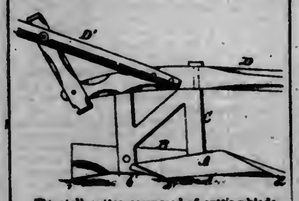
166,199. MEAT-TENDERER. A. G. W. Foster, Newnan, Ga. [Filed Feb. 9, 1875.]



The combination of the bed-plate a, having the conical recesses b and sharp-cutting edges c, with the lever provided with the sharp projections c, the projections being enough smaller than the recesses b to leave a space all around them, substantially as shown and described.

166,200. STALK-CUTTERS. Chas. H. Gaylord and Edward M. Ayers, Osceola, Ark. [Filed May 6, 1875.]

Brief.—A low-cutting mower, the edge slightly curved upward in its center, and having a landside with a rear point or rudder to keep it in position.



The stalk-cutter composed of cutting-blade A, placed and secured in a nearly flat or slightly-inclined position, constructed or formed with curved sharp cutting-edge A' and projecting points a a', upon which it rests, land-side B, formed with a rear projecting sharp point, b, standard C, and ordinary plow-beam and handles D D', as and for the purposes described.

166,201. GRAIN-FORKS. Frederick Gerlen, Locust Grove, Pa. [Filed Feb. 20, 1875.]

Brief.—The head of the fork is composed of metal, and fitted to receive the handle. The tines are each separate from the others, the upper end being provided with a screw-thread, which screws into a threaded hole in the head. The body of the tine is square next to the head, and is kept from turning, by a lock-plate that fits over all the tines, and is secured in place by screws.



The fork head A, with its shoulder a and screw-holes c, in combination with the prongs T, provided with shouldered screw-ends, and lock-plate B, provided with a notched flange, b, substantially as and for the purpose specified.

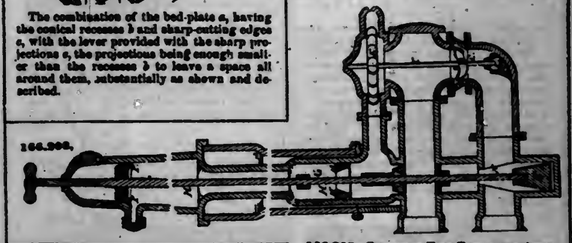
166,202. DERRICKS. Martin Gray, Mentor, Ohio. [Filed Feb. 2, 1875.]

Brief.—The back leg or support is adapted, by a notch and hook, to ready adjustment and removal.



The brace D, with its angle c, notch a, and hook b on its upper end, in combination with the derrick A, substantially as and for the purpose as herein before set forth.

166,202.



166,203. COMBINED FIRE-PLUGS AND AUTOMATIC PUMPS. William W. Harding, Philadelphia, Pa. [Filed June 21, 1875.]

Brief.—The plug has within it a motor and pump. By the arrangement shown, of the screw-threaded rod and the disk and upper valve, the lower valve may be closed, stopping the motor, and allowing the hydrant to be used in ordinary way. Both valves may, however, be closed when desired.

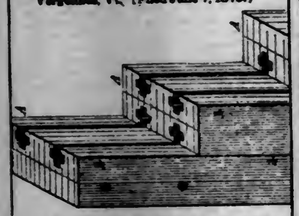
1. The combination, with a fire-plug or hydrant, of an automatic rotary motor and force-pump within it, and a rod and check to close, or open the supply of water through the motor, so as to use or stop the pump at pleasure, substantially as described.

2. The combination, with a plug or hydrant having within it an automatic force-pump, of a screw-threaded rod to open the ordinary water-passage alone or separately, or also to open the supply of water to the water-motor of the pump at will, substantially as and for the purposes described.

3. A combined water-plug or hydrant, and an automatic force-pump in its interior, which plug or hydrant can, at will, by means of checks, be used either in the ordinary way as a simple water-plug, or as a combined plug and force-pump, substantially as described.

4. The combination of rod H, disk O, rod checks I and K, to open and close the plug or pump, or both, substantially as described.

166,896. SLIDES FOR EXTENSION-TABLES. Wallace S. Holland and Josiah W. Parker, Vergennes, Vt. [Filed June 7, 1875.]

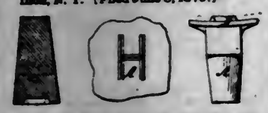


1. The metallic slide B, having the extension *b'* beyond the right-angled projections *b'' b''* of body *b*, in the manner and for the purpose substantially as described.

2. The runner-bars A, having the grooves *a* formed with the extensions *a'* beyond the upright and right-angled grooves *a''*, in the manner and for the purpose substantially as described.

3. The combination, in extension-tables, of the metal slides B, having the extension ends *b'*, with the runner-bars A, having the grooves *a* and the terminal grooves *a''* to receive the metal slides, in the manner substantially as specified.

166,906. TYPES. Anson Merrick Howard, Ilion, N. Y. [Filed June 3, 1875.]

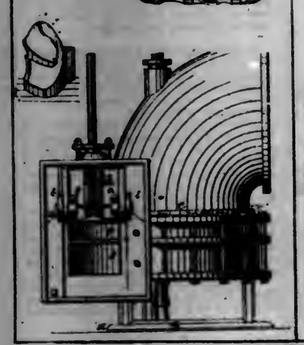


Single metal type, having their lettered ends made in form of a segment of a cylinder, substantially as and for the purpose described.

166,906. TURBINE WATER-WHEELS. Geo. H. Jones, Ross, N. Y. [Filed May 1, 1875.]

Brief.—The bucket has a raised dividing edge to the water flowing back and reacting from the bucket, for the purpose of causing a smoother flow and diminishing its backward pressure. The seat upon which the gate works is so arranged and extended that, by the use of a single gate, either of the different-sized compartments or chambers may be used separately or together. The slide-gate has adjustable bearing- or bores. There is also a siphon draft-tube arranged above the wheel, and connected thereto in a manner that admits of adjustment.





1. The water-wheel bucket, substantially as herein described, having the increased depth downward from the concave face of the same, for the purpose specified.

2. The water-wheel bucket, formed with a raised dividing-edge, *a'*, to the water flowing back and reacting from the bucket, for the purpose of causing a smoother flow and diminishing its backward pressure, substantially as described.

3. The combination, with a suitable gate, and the different size compartments *c c*, of the seat extended above and below said compartments in a manner that will admit of either being used separately, or both simultaneously, by the use of a single gate, substantially as and for the purpose set forth.

4. The combination, with a water-wheel, of a siphon draft-tube, arranged above the same and connected thereto in a manner that will admit of adjustment, substantially as and for the purpose set forth.

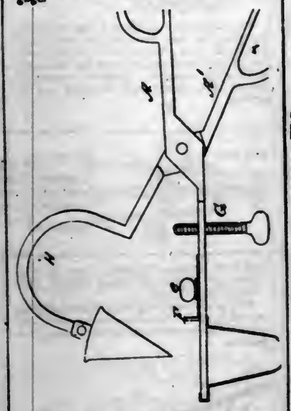
5. The gate *k*, provided with friction-rollers *l*, and adjustable bearings *k*, substantially as and for the purpose set forth.

166,907. COMPOUNDS FOR DESTROYING HOP-GRUBS, &c. Orville M. Knox, Knoxborough, N. Y. [Filed Feb. 8, 1873.]

The within and foregoing described compound, consisting of sulphur, pulverized plaster, and common salt, mixed in about the proportion of ten parts sulphur, ten parts pulverized plaster, and two hundred parts of common salt, all substantially as and for the purposes specified.

166,908. BUTTON-HOLE CUTTERS. Daniel A. Lehman, Wakarusa, Ind., assignor of one-half his right to Joseph A. Culp, same place. [Filed May 2, 1874.]

Brief.—The gage has a notched shoulder, and is applied upon the slotted arm of the button-hole cutter. The straight shank of the cutting-shears has a set-screw to regulate the angle of opening, and the other shank is bowed to pass over the set-screw which adjusts the gage.

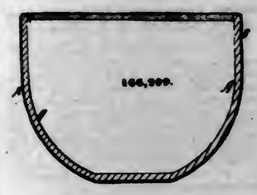


1. The gage F, having a notched shoulder or abutment, applied upon the slotted arm of a button-hole cutter, substantially as and for the purpose set forth.

2. The button-hole cutter having the straight shank A slotted to receive the knife, and provided with the set-screw C, clamp-screw *c*, and notched gage-plate F, and the pivoted knife-shank A', bowed at E over the clamp-screw *c*, as specified.

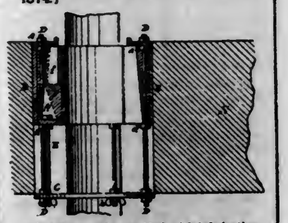
166,909. PANS FOR WATER-CLOSETS. E. A. Leland, Pittsfield, Mass., assignor to L. Richardson, Brooklyn, N. Y. [Filed June 5, 1875.]

Brief.—A water-closet pan having the interior of porcelain, and the exterior being a metallic shell, the metal is brought over the edge of the porcelain to protect it.



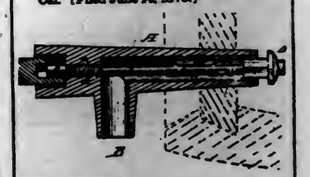
The water-closet pan constructed with the inner portion A of porcelain, and the outer portion B of sheet metal, the edge of the sheet metal being tapped or spun over the edge of the porcelain, substantially as and for the purpose herein set forth.

166,910. BUSHES FOR MILL-SPINDLES. N. B. Lewis, Columbia, Pa. [Filed Nov. 11, 1874.]



The followers F, provided with lubricating-chamber *f* and recess *f' f'*, in combination with screws E, basal ring G, having slotted lugs *g*, shell B, cover A, and screw-rods D, all constructed and arranged to operate substantially in the manner described.

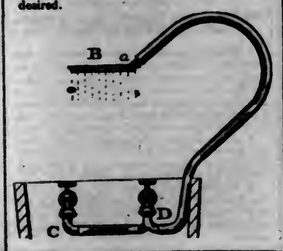
166,911. FAUCETS. Isaac Lobree, Antioch, Cal. [Filed June 14, 1875.]

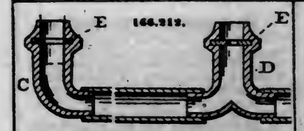


The plug A, formed of a single piece, having spout B, nut *c*, and recess *b*, for a key, C, in combination with the screw-rod C, having valve D, extending beyond the plug, all constructed as and for the purpose herein set forth.

166,912. SHOWER-BATHS. A. Macqueen, Jr., Philadelphia, Pa. [Filed May 31, 1875.]

Brief.—The flexible tube and sprinkler is attached to the couplings, as shown. The couplings have transverse embracing-washers, which hold them to the bath-tub cocks. The temperature of the water can be adjusted as desired.





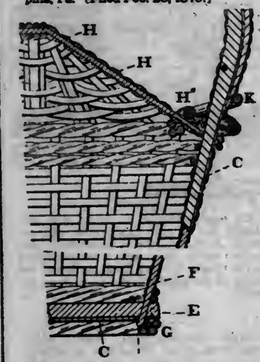
166,912.

1. As a new article of manufacture, a portable shower-bath, as herein set forth, the same consisting of the flexible tube A and sprinkler B, in combination with the coupling-tube, having an embracing-washer, E, extending transversely therein, substantially as and for the purpose specified.

2. The tube A, with end coupling C, in combination with the coupling D, intermediate of the sprinkler B and the said coupling C, substantially as and for the purpose set forth.

3. The portable shower-bath herein described, the same consisting of the flexible tube A and sprinkler B, in combination with the end coupling C and the coupling D, intermediate of the sprinkler and said coupling C, substantially as and for the purpose set forth.

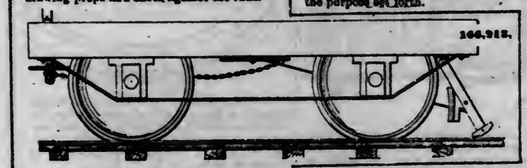
166,913. BASKETS. Julius Meyer, Philadelphia, Pa. (Filed Feb. 26, 1875.)



1. The combination, with a basket having a handle, of the bracing-strip C extending continuously around the handle, sides, and bottom of the basket, substantially as and for the purpose set forth.

166,914. CAR-STARTERS. Thomas McDonough, Mont Clair, assignor of two-thirds his right to W. F. Dodge and G. R. Dunn, Newark, N. J. [Filed May 3, 1875.]

Brief.—Raises weight of rear end of car by drawing props and shoes against the rails.



The lever L and gears G, in combination with the props and shoes, substantially as and for the purpose set forth.

166,915.

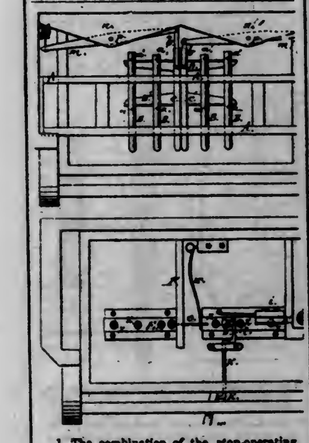
2. The combination, with a basket, of the wooden bottom E, having a series of perforations near its outer edge, and the rods or wands F passing through the perforations and woven below the bottom into the foot G, substantially as and for the purpose set forth.

3. The combination, with the basket-lid J, of the bracing-piece H, extending transversely and formed into ring-engaging loops H' H'', substantially as and for the purpose set forth.

4. The combination, with a basket-lid formed with loops H' H'', of the soft-rubber rings K K', substantially as and for the purpose set forth.

166,916. ORGAN STOP-ACTIONS. James F. McMahel and Saml. Tracy, Oxford, Ohio. [Filed Feb. 12, 1875.]

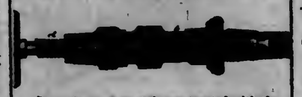
Brief.—Particular mechanism for throwing on or off the entire set of stop-registers. Holes connecting the bellows with the wind-chest are controlled by a slide-valve and knee-lever.



1. The combination of the stop-operating mechanism C C', D D', *m m'*, arranged and connected with pedals *v w*, as described, for the purpose specified.

2. The valves E, in combination with crank-rod K, hinged knee-lever T, and spring W, arranged as described, for the purpose specified.

166,916. GAGE-COCKS. John F. Mullowny, Pittsburg, and Thomas S. Shaw, Connellsville, Pa. [Filed May 18, 1875.]



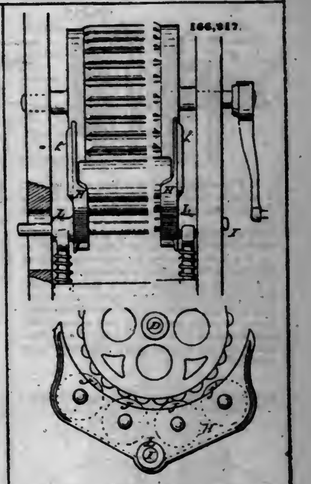
In a steam gage-cock constructed with the herein-described lower independent valve-chamber and spring-valve disconnected from and operated by an upper valve-stem, the shell A, having a weak and brittle portion, *b'*, the latter part constituting the point of breakage between the flange and screw-thread, and located with reference to the conical valve-seat *i*, for the purpose specified, all substantially as shown and set forth.

166,917. WASHING-MACHINES. John M. Oakley, Brooklyn, N. Y., assignor of one-half his right to John Keating, same place. [Filed June 10, 1875.]

1. In combination with the revolving ribbed cylinder and oscillating roller-frame, the guiding-guards *h'* arranged inside of the main frame or in front of the cylinder, for the purpose and substantially as described.

2. The curved journal-carriers having their ends extended outward and upward, to form the guiding-guards, as described.

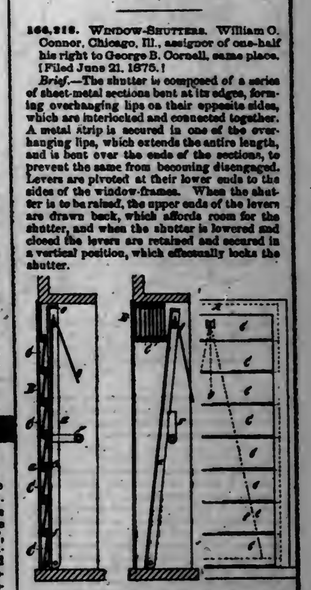
3. The metallic journal-carriers with guiding-guards, and provided with trunnions I, and adapted to oscillate on a rod, I, arranged to play in slots in the main frame, as set forth.



166,917.

166,918. WINDOW-SHUTTERS. William O. Connor, Chicago, Ill., assignor of one-half his right to George B. Cornell, same place. [Filed June 21, 1875.]

Brief.—The shutter is composed of a series of sheet-metal sections bent at its edges, forming overhanging lips on their opposite sides, which are interlocked and connected together. A metal strip is secured in one of the overhanging lips, which extends the entire length, and is bent over the ends of the sections, to prevent the same from becoming disengaged. Levers are pivoted at their lower ends to the sides of the window-frames. When the shutter is to be raised, the upper ends of the levers are drawn back, which affords room for the shutter, and when the shutter is lowered and closed the levers are retained and secured in a vertical position, which effectually locks the shutter.



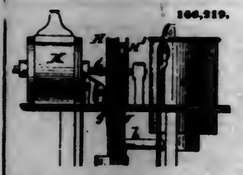
1. A sheet-metal window-shutter, consisting of the series of sections C, provided with the overhanging lips *c c'*, the lip *c'* provided with the bar *b*, extending its entire length, and bent at its ends to form the lips *d d*, arranged to lap about the ends of the adjacent section, substantially as specified.

2. In combination with the shutter B, made in sections, as specified, the stops E E and levers F F, as and for the purpose specified.

166,919. HOISTING-MACHINES. N. P. Otis, Yonkers, N. Y. [Filed Jan. 6, 1875.]

Brief.—The load is counterbalanced, and the speed of the load and counter-balance is regulated by means of the fluid retarder K on shaft G, which latter is connected with the load, and counterbalanced by chains secured to reverse sides thereof.

166,219.



1. The combination of a fluid retarder with a variable counter balance, controlled directly by the fluid retarder, substantially as specified.

2. The combination, with a variable counter-balance and the car or load controlled by it, of a fluid retarder, for regulating the velocity of both, essentially as described.

3. The combination, with a fluid retarder, for controlling both the variable counter-balance and the car or load, of the independent chains or ropes connecting said counter-balance and load with reverse sides of the shaft controlled by the retarder, substantially as specified.

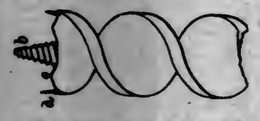
166,220. Steam-Lamps. Chauncey C. Parker, Brooklyn, N. Y. (Filed July 6, 1875.)



The spring-clamps or nose-piece *f f*, secured to the frame near its lower ends, and curved at its upper ends, as shown at *g*, and provided with elongated slots A, engaging with the pins *i i*, substantially as and for the purpose specified.

166,221. Augers. Thos. D. Parsons, Bristol, Conn., assignor to himself and Geo. T. Steele, same place. (Filed July 12, 1875.)

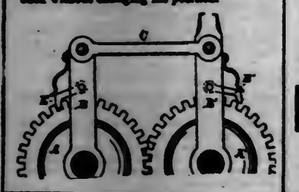
Brief.—The auger is provided with two receding concave-shaped floor-lips, and with two spur-cutters arranged on the outer edge of the body of the auger, a short distance back from the edge of the cutting-lip.



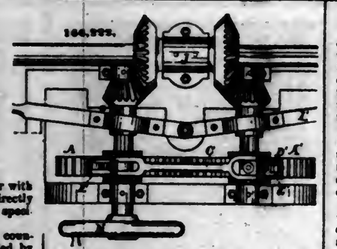
A bit or auger provided with the receding concave shape cutter-lips *c*, the cutting-spurs *d*, and center point or screw *b*, substantially as and for the purpose set forth.

166,222. Head-Blocks for Saw-Mills. Benj. P. Perry and Orrin S. Mote, Richmond, Ind. (Filed Mar. 3, 1874.)

Brief.—A simultaneous and double-acting movement is communicated, at each stroke of a lever-handle, to two gear-wheels of equal diameter, which move the shafts that operate the knees of the head-block, by means of two upright levers attached to the axis of the wheels, and connected together by a pivoted bar, the whole operated by one of the levers, which is extended to form a handle, in connection with spring-pawls attached to the upper part of the levers. The operator can move either or both knees of the block forward or back without changing his position.

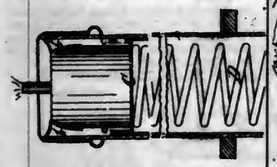


166,223.



The combination of the levers B B', connecting-bar C, and pawls E E' with the wheels A A', whereby a simultaneous and double-acting movement is communicated to the wheels A A' at both right and left strokes of the handle F, substantially as described.

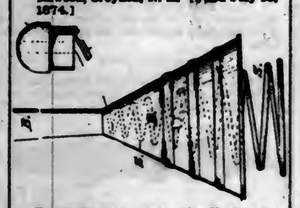
166,224. Candlesticks. Elmer I. Pratt, New York, N. Y. (Filed Apr. 14, 1876.)



1. A cap of a candlestick, provided with a recess both of whose walls shall lie outside of the top of the candle when the candle is brought into position by adjusting the cap to the holder, substantially as and for the purpose set forth.

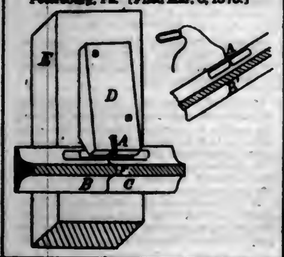
2. The combination of a recess formed in the cap of a candlestick and the upturned rim surrounding the candle-seat, substantially as and for the purpose described.

166,225. Clothes-Pounders. David W. Rawson, Croydon, N. H. (Filed July 18, 1874.)



The combination of the valve V, the tube or handle B, the expanded foot D, and the spiral spring S, all constructed and operating substantially as and for the purpose described.

166,226. Connectors for Electric Track-Circuits. William Robinson, St. Petersburg, Fla. (Filed Mar. 6, 1875.)

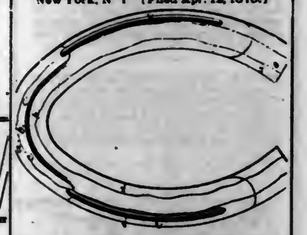


1. The combination with the adjacent rails of the track, of the spring A, having a bearing upon or against said rails, so that the rails being deflected by the weight of a passing car or train frictional contact will be secured between the spring and rails, for the purpose of maintaining reliable electrical connection between said rails, essentially as described.

2. In combination with the adjacent rails B C, the spring A and the block or plate D, the latter holding said spring in frictional contact with said rails, for the purpose of electrically connecting the same, substantially as described.

3. The spring A, making rubbing contact with the rail B' when said rail is deflected, in combination with the magnet M or battery K, and electrically connecting said magnet or battery to said rail, essentially as described.

166,226. Horseshoes. Jacob Russell, New York, N. Y. (Filed Apr. 12, 1876.)

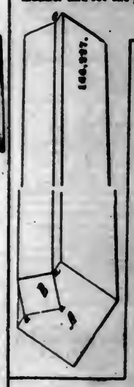


A horseshoe constructed with an inwrought central or internal rib of steel, continuous from one heel extremity to the other, and projecting at the toe and heel to provide wearing-surfaces of the calks, substantially as herein set forth.

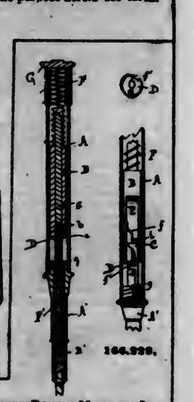
166,227. Piles for Horseshoe-Blank Bars. Jacob Russell, New York, N. Y. (Filed Apr. 12, 1876.)

The pile for the manufacture of horseshoes herein described, composed of the rectangular steel bar B, arranged in the angular groove *c* of the rectangular iron bar A, in the manner and for the purpose herein set forth.

166,227.



166,228.



166,228. Automatic Dental Mallets. Ira A. Salmon, Boston, Mass. (Filed Jan. 6, 1875.)

Brief.—The cap upon the upper end of the case has an outer sleeve and an inner tube, the latter furnished with a double screw-thread. The hammer is loaded with quicksilver, and cushioned with lead at the point where it strikes the hammer. A pivoted spring-catch plate takes into a notch in the spindle, which projects upward into the central opening of the hammer.

1. In combination with the hammer B, the leaden cushion *c*, substantially as and for the purpose set forth.

2. The hammer, drilled and loaded, substantially as shown.

3. The stud O, the slot A, and the small stud *g* and stop *i*, constructed and operating substantially as and for the purpose set forth.

4. The double thread or groove on the inside of the upper end of the case A, whereby I secure a quicker adjustment without loss of bearing.

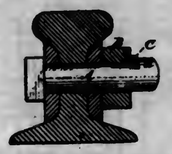
5. The cap, with its double screw and protecting-sleeve, constructed and operating in the manner substantially as described.

6. The combination of the hammer B, catch D, and spring *f*, or their equivalent, operating in conjunction with the shoulder, notch, or hole in the spindle, substantially as shown.

7. The combination of the catch, its spring, the hammer, spring F, and cap G, substantially as described, and for the purpose set forth.

166,229. Railroad-Rail-Joint Fastenings. Abel Spencer, Penn Yan, N. Y., assignor of two-thirds his right to Martin S. Hicks, same place. (Filed June 4, 1875.)

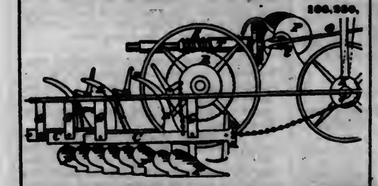
Brief.—A railroad-rail-joint fastening in which the fish-plates are held to the rails by means of a notched bolt, a channeled washer, and a wedge-shaped key, which fits the angular notch in the bolt, and the channel in the washer. The key, being driven home, tightens the joint, and it is then knocked over to prevent accidental displacement.



The bolt A, washer B, and key C, when made and used to hold plates and rails together, substantially as herein specified.

166,230. Steam-Plows. Theo. C. Stark, Vallejo, Cal. (Filed June 12, 1876.)

Brief.—Two or more gangs of plows are arranged upon beams which slide backward and forward between guides. Attached to each plow-beam is a chain passing around its pulley upon the forward wheel-shaft. A rigid lever or post on the pulleys has an eccentric connection with the geared propelling-shaft. The eccentrics are on opposite sides of the latter shaft, so that as the machine moves forward, the plows upon each beam work alternately.



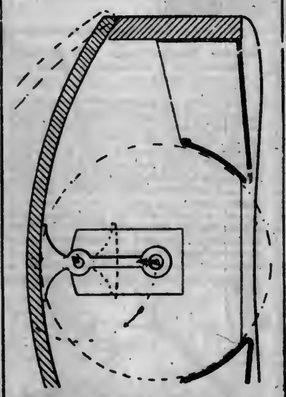
Two or more guided plow-beams, C, with their attached plows F arranged to be operated in alternation from one main power by means of the chains I, pulley or cranks K, levers M, connecting-rods O, and eccentrics P, all combined and arranged to be driven by the shaft Q, substantially as and for the purpose described.

166,231. Reciprocating Churn-Dashers. Henry A. Shearer, Lincoln, R. I. (Filed July 10, 1876.)



A churn-dasher having conical inclined holes B, circularly arranged with the larger ends below, opening into recess *d*, and small ends above into recess F, and similar holes C, interiorly arranged, with smaller ends opening into the cavity E, and large ends opening into recess F', all constructed substantially as and for the purpose described.

166,232. Carpet-Sweepers. Alexander W. Stewart, Boston, assignor to John J. Haley, Newton, and Henry C. Morse, Boston, Mass. (Filed June 27, 1874.)



The adjustable bearing-plate A, pivoted to the end of the box, or sloted, and held by a set-screw, and adapted to receive and release the spindle B of the brush-shaft, and to hold it firmly against displacement when brought into a proper working position, substantially as set forth.

166,233. Pulley-Covers. J. W. Linton, New York, N. Y. (Filed May 22, 1876.)

The endless pulley-cover composed of one or more layers of bias canvas inclosed between concentric layers of rubber, the whole being united by vulcanization, substantially as and for the purpose set forth.

166,233.



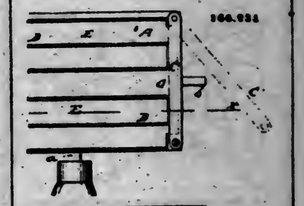
166,234. Churn-Cranks. Robert P. Van Horne, Gratiot, Ohio, assignor of one-half his right to W. S. Palmer, Brownsville, Ohio. (Filed Mar. 9, 1876.)

Brief.—The comb-plate is removable from the beat, and is held in place by a pivoted bar on one side of the beat.

1. The carry-comb beat A, constructed as described, with the stationary bar C at one end, and the movable bar C' at the other end, for fastening the card to the beat, the movable bar C' being held by a screw, *d*, substantially as herein set forth.

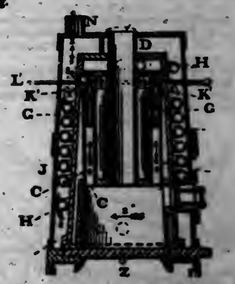
2. The combination of the beat A, handle B, stationary bar C, movable bar C', with screw *d*, and card D E C, all constructed substantially as and for the purposes herein set forth.

166,234.



166,235. Water-Tube Boilers. James Warner, Philadelphia, Pa. (Filed Mar 18, 1875.)

Brief.—Drop-tubes from the upper chamber descend into the vertical fire-tubes in the boiler proper. A water-coil extends around the boiler, from the upper chamber to the water-leg.



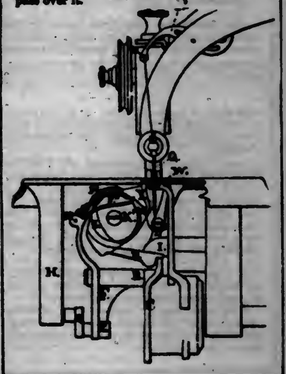
1. In a steam-generator, the combination of the suspended water-coil H, drum D, water-legs G, fire-flues C, into which said legs project, and the damper K, substantially as described.

2. The inner casing A and outer shell J, in combination with the wall N, bars W, and damper K, substantially as and for the purpose described.

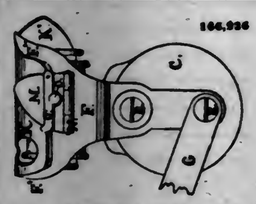
3. The drum D, provided with water-legs G, located above and in combination with the fire-flues, so as to leave a space between the said drum and flues, substantially as shown and described.

166,236. Sewing-Machines. Theodore A. Weber, New York, N. Y., assignor of three-fourths his right to Benoivil Gardner and Lebbeus W. Lathrop, same place. (Filed Jan. 12, 1876.)

Brief.—The shuttle, carried in an elliptical path, has a projecting beveled nose, that increases the size of the loop after it leaves the looper, which is confined across the track of the shuttle by a cam and spring. The shuttle is supported at either end loosely, and bears down on them by a spring that bears on top of the shuttle, allowing the thread to pass over it.



166,936



1. The combination of looper D and cam G, with shuttle K, its holder F, crank-pin B, link G, and stationary post H, as and for the purpose set forth.

2. The combination, with shuttle K, of carrier F, provided with resting-places F' and F'', finger M, notched projection O, and catch O', as and for the purpose specified.

166,937. CHILDREN'S CARRIAGES. FRANCIS W. Whitney, Leominster, Mass., assignor to F. A. Whitney Carriage Company, same place. [Filed May 14, 1875.]

Brief.—The handle is centrally pivoted, and may be fastened either to front or rear by means of a swinging latch attached to handle.



1. In combination with the reversible handles a, the bar A, pivoted to said handles, and the latch f, hinged to said bar, so as to latch said handles at or to either end of the carriage, substantially as described and represented.

2. In combination with the pivoted or swinging handles a and bar A, the holes or eyes m, or hooks or angles in the bar, and the hooks n n on the rearches or axles, for locking the handles to the carriage, so that the latter may be raised up and let down by the former, as and for the purpose described.

166,938. BASE FOR HORSESHOE-BLANKS. John Wike, Phillipsburg, N. J., assignor to Jacob Russell, New York, N. Y. [Filed June 15, 1875.]



The blank for horseshoes, more or less diamond-shaped in its cross-section, and constructed with the rounded longitudinal corner a, substantially as and for the purpose herein set forth.

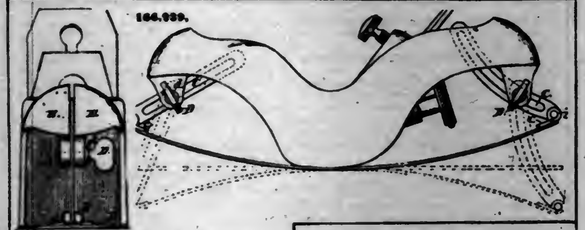
166,939. BENCH-PLANE. D. F. Williams, Woonsocket, R. I., assignor to Bailey Tool Company, same place. [Filed May 24, 1875.]

Brief.—The plane is provided with a flexible cast shoe, having at either end a hinged and slotted arm, and each end is split to form a clamp, in connection with clamping-jaws projecting from the under side of the stock. The shoe can be adjusted to any desired position by means of a set-screw operating through the jaws and slots of the hinged arms.

1. A bench plane having a flexible face, in which the stock is split at either end to form a clamp, substantially as described.

2. The combination of the flexible shoe B, slotted arms C C hinged thereto, clamping-jaws E, and set-screws D, substantially as described.

166,939.



1. In a bench-plane, a clamping-plate having open bearings in its side edges, with channels leading thereto in its under side, substantially as and for the purpose set forth.

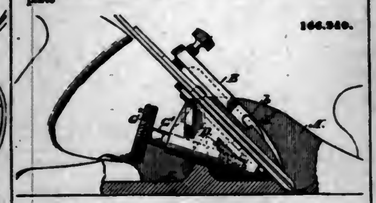
2. The combination of the stock A, with studs a', the bit and its cap, and the clamping-plate B, with channeled openings b b', substantially as described.

3. In a bench-plane, the combination of the sliding plate, crank-pin, worm, and worm-wheel, substantially as described.

4. The combination of the plane-iron and its cap, the wedging-screw, and the slotted sliding plate with means for operating the same, substantially as described.

5. The sectoral worm-wheel F, having shoulders at f' f', in combination with the stop-pin f'' and the worm G G', substantially as described.

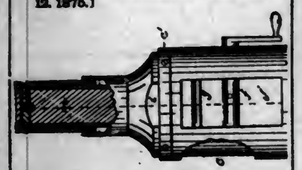
166,940.



1. In combination with the oven of a stove or cooking-range, a dividing-plate under the oven, pivoted at one end, and constructed to be moved vertically, either with or without a forked end, substantially as described, and for the purpose set forth.

2. The combination, in a cooking-stove constructed with a water-reservoir, of the division-plates extending under and over the oven, and the division-plate arranged centrally in the reservoir-chamber, and forming a continuation of the plates extending over and under the oven, substantially as shown and described, whereby the entire space around the oven and the reservoir is divided into two parts, for the object specified.

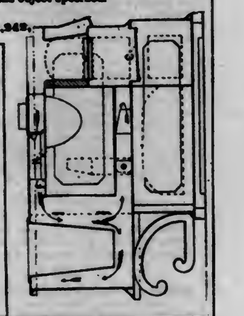
166,941. REELS FOR FISHING-RODS. Hezekiah Winslow, Portland, Me. [Filed May 12, 1875.]



The combination, in the handle of a fishing-rod, of the reel-box b, inner and outer cylinders c d, having their apertures, as described, and the rod f, all combined and arranged to operate substantially as and for the purposes set forth.

166,942. COOKING-RANGES. William P. Abendroth, Port Chester, N. Y. [Filed June 19, 1875.]

166,942.



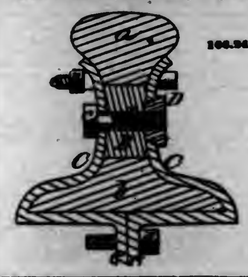
166,943. RAILWAY-RAIL JOINTS. H. Allen, Titusville, Pa. [Filed June 10, 1875.]

Brief.—A rail-joint support consisting of a pair of clamping-plates secured together under center of base of the rails, and to the rails by bolts passing through both under the head of the rails, the rails being recessed at their meeting ends, and having a bearing-block inserted, which is secured to the clamps by a bolt provided with a nut which has a screw-threaded rabbet, which screws into a threaded perforation in one of the clamp-plates.

1. In a railroad-chair, the combination, with the rails A A', and the joint-block B, of the sectional chair C C, having flanges c' upon its under side, adapted to be clamped around and about the web of the said rails, substantially as specified.

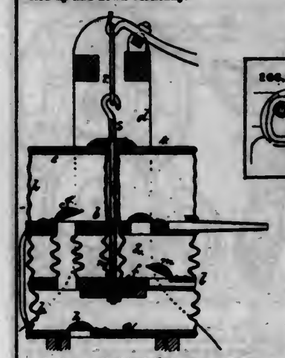
2. The nut D, having screw-threaded rabbet f, in combination with the bolt b and section C of a railroad-chair, having a screw-threaded aperture, g, adapted to receive the rabbet on the nut, substantially as specified.

166,943.



166,944. BELLOWS. John Bayliss, New York, N. Y. [Filed Oct. 26, 1874.]

Brief.—The weight is attached to the moving follower itself inside the bellows. The power is applied to the follower through vertical rods, acted upon by a lever above the bellows, so that the moving follower is carried up and down vertically.

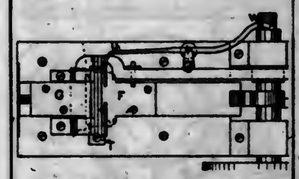


1. In a cylindrical bellows containing two diaphragms or followers a b / c, valves k m p, tube t, and lateral inlet l, the weight r attached directly to the diaphragm f, inside the bellows, and the connecting rod or rods passing from each diaphragm to a lever above each bellows, substantially as set forth.

2. In a cylindrical bellows the follower f, weighted and moving between the diaphragms or followers a and b, in combination with the central connecting-rod c and flexible tube n, substantially as set forth.

166,945. MACHINES FOR TRIMMING NEEDLE-BLANKS. Philo M. Beers, Bridgeport, Conn. [Filed July 30, 1875.]

Brief.—A hopper and chute, each having one end adjustable for different thicknesses of blanks; a pressing-lever, U, for pressing the blank against an adjustable gage or stop, T, and a pair of guides or holder, F G, operated by cam and spring, to, first, take the blank from under the hopper; second, hold it while being cut by the shear B'; and, third, to open when over a hole in the table and drop the blank.



1. In a machine for trimming needle-blanks, &c., the combination of the cutting-shears, the hopper, and chute with the guides F and G, as and for the purpose set forth.

2. In combination with the shears or cutters the stop T, and the pressure-lever U, as and for the purpose set forth.

3. The adjustable hopper and chute in combination, constructed and arranged substantially as described, and for the purposes set forth.

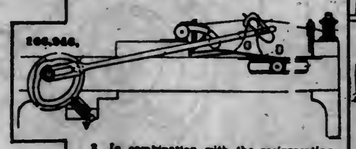
166,946. MACHINES FOR POLISHING THE EYES OF NEEDLES. Philo M. Beers, Bridgeport, Conn. [Filed July 8, 1875.]

Brief.—A crank on the shaft, which carries the cam, having its rod rigidly attached to the carriage, reciprocates, and, by virtue of each rigid attachment, causes the carriage to rise and fall at each reciprocation. At each rise the carriage operates a pawl on the winding-drum, to intermittingly wind up the polishing-thread. The needle-clamp, pivoted to the reciprocating carriage, is caused to vibrate by its crank, the crank-rod, the cam, and crank-pin; the cam operating to shorten and lengthen the stroke of the rod.

1. The combination, with the carriage D and clamp M, of mechanism, substantially as shown and described, for reciprocating the carriage, and causing it to rise and fall at each reciprocation, as and for the purpose set forth.

2. The combination, with the reciprocating carriage and needle-clamp, of the slotted connecting-rod R, cam U, and crank-pin S, as and for the purpose set forth.

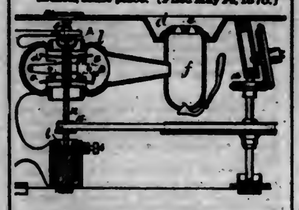
166,946.



3. In combination with the reciprocating carriage and needle-clamp, the winding mechanism for moving and polishing threads at each reciprocation, substantially as described.

4. The needle-clamp M, constructed of two bars, one of which is mounted in bearings, so as to partially rotate, in combination with the link O and its set-screw, for binding the bars together, substantially as described.

166,947. FURNACE FOR BLACKENING. Augusto Bonna, New York, N. Y., assignor to himself, Louise Foutin, and E. Von Hordtmann, same place. [Filed May 14, 1875.]



The rotary blower consisting of the case l, vertical shaft s, oil-cup 3, screw s, adjustable bearing-block t, fans o, and disks r, of larger diameter than the openings in the case l, in combination with the wind-chamber f, tuyere 4, handle 9, shaft 10, and gearing connecting to the blower, as set forth.

166,948. SEED-VIBES FOR STOVES. Henry T. Baxter, San Francisco, Cal. [Filed June 12, 1875.]



1. The carrying-girder A and the front finish C, arranged in combination with the posts B, to suspend the hangers D, and receive the covering columns F, as specified.

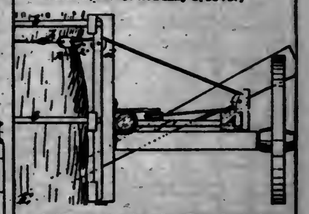
2. The metal suspension-bars D and bearers E for the shelves, combined with the carrying-girder A and finish C, substantially as specified.

3. The suspension-bars placed outside of the finish, to receive the covering columns and their capitals outside of the line of finish, substantially as specified.

166,949. MEDICAL COMPOSITIONS. Thalberg Bloodchild, New York, N. Y. [Filed May 20, 1875.]

A compound for medical purposes, composed of lobia cassia, herba taxus, pentandria monogynia, (panel,) herba mutisus, radix althæa, flores lavendulæ, flores rhœados, flores millefolii, radicles nobilis, (yarrow-flowers,) herba rubus fruticosus, (blackberry-leaves,) herba verbenæ, semen anisi, semen fœniculi, semen coriandri, radix liquiritiæ, flores malvæ vulgaris, flores cambuci, semen carui, and cream of tartar, in about the proportions specified.

166,950. WAGON-RACKS. Joseph Bell, Warsaw, Ill. [Filed May 6, 1875.]

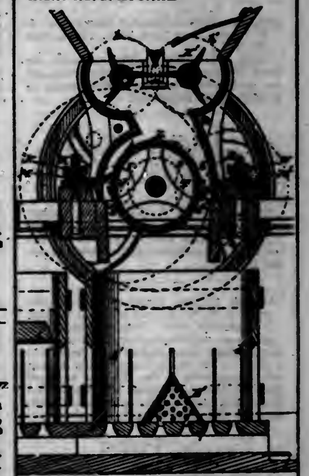


1. The combination of a tilting frame, having one side extended beyond the rack-frame and the other side provided with a pulley and cord, having check-fastening and hook and sliding pulley-block, with the winding roller and ratchet mechanism at the end of rack-frame, for carrying load and tilting frame back, and retaining both securely, substantially as set forth.

2. The combination of rack-frame, having lateral guide-pieces and side-rest blocks, with inclined brace-bars extending in opposite direction to the ground for supporting the rack-frame during loading, substantially in the manner and for the purpose specified.

166,951. GRAIN-MILLS. James Bowen, Lancaster, Ohio. [Filed Aug. 23, 1874.]

Brief.—The fruit passes between a pair of revolving bladed spindles onto a mangling-cylinder, having on its periphery diagonal rows of teeth with adjoining depressions. The press-cages below are slotted upwardly a short distance on their walls, and have each a perforated cone at the bottom.

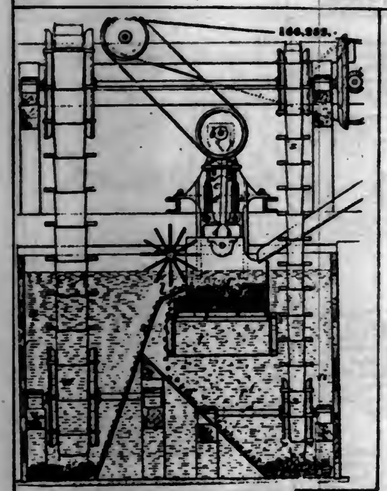


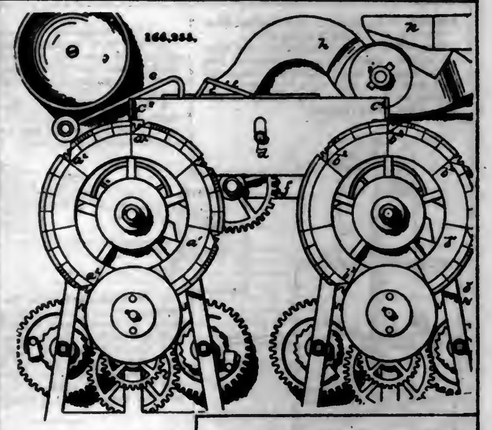
1. The crushing-cylinder I, when formed with teeth F and cavities F', constructed and arranged substantially as and for the purpose specified.

2. In combination with the annular grooves O' O'', the conical perforated metallic strainers E E', constructed and operating substantially as and for the purpose specified.

166,952. SEPARATING COAL FROM SLATE, &c. Hezekiah Bradford, Philadelphia, Pa. [Filed Oct. 2, 1874.]

Brief.—The coal and slate are fed into the reciprocating jig through the chute q, and pass out over the two dams f and e. These are arranged at such a height with relation to each other that the heavy and light materials balance each other when the former is as high as e and the latter as f.





A reciprocating fig, substantially as described, having a perforated bottom, and so done with delivery edges at different centres for retaining materials that are balanced according to their respective specific gravities, and delivering the surplus automatically and separately according to gravity, as set forth.

166,862. Tubing-Pins for Pianos, &c. J. M. Brenig, New York, N. Y. [Filed July 10, 1875.]

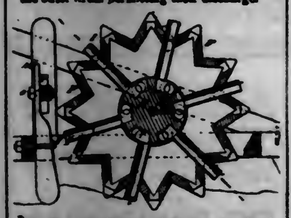
Brief.—The collar bushing preserves the teeth or threads of the pin from wear, and the pin is locked in position after tuning by a wedge driven in beside it.



The open bushing B, made of brass or other metal softer than the pins C, and the wedge F, in combination with the plate A and the tuning-pins C, substantially as herein shown and described.

166,864. Cotton, Corn, and Pea Planters. D. W. Bristol and Jno. F. B. Searcy, Pleasant Hill, Miss. [Filed May 26, 1875.]

Brief.—A seed-wheel composed of an outer angular-faced drum, and an inner drum with a wheel in the center, having taken leading out through holes in the alternate angles of the outer drum. The space between the two drums is for the reception of seed, orifices in the outer drum permitting their discharge.



1. The combination of the angular-faced drum F, the inner drum G, the recessed wheel H, and the tubes I with each other and with the frame A of the planter, substantially as herein shown and described.

2. The combination of the perforated disks J and the rod K with the wheel H and the drums F G, substantially as herein shown and described.

166,865. Tube-Locks. John Burge, Circleville, Ohio. [Filed Aug. 22, 1873.]

Brief.—An alarm mechanism is connected to the bolt-releasing devices, so that when the bolt is being released an alarm will be sounded.

1. The combination of the notched disk or disks a' b', the slotted detent-plate c, clapper-lever c, clock-work mechanism f, pinion g, and lever h, substantially as and for the purpose set forth.

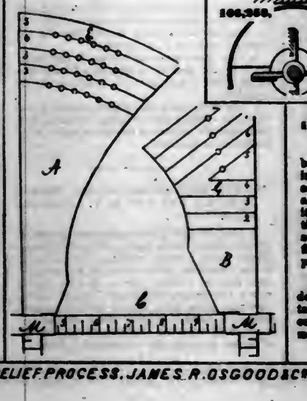
2. The clock-work mechanism a, disk a', detent-plate c, and clapper-lever c, in combination with the clock-work f, pinion g, lever h, and pawl k, substantially as described.

166,866. Rubber-Coated Fabrics. W. Cable, Boston, Mass. [Filed Dec. 26, 1874.]

The mode, substantially as herein described, of finishing the surfaces of rubber-coated fabrics, the same consisting in treating the surface of such goods with a solution of soap while the same are being delivered from the calendering-rolls, as set forth.

166,867. Tailors' Measures. J. S. Church, Dayton, Ohio. [Filed Feb. 4, 1876.]

Brief.—An apparatus consisting of metallic plates and measuring-stripe, adapted to be fitted to the body and the measurements of the different parts accurately noted.



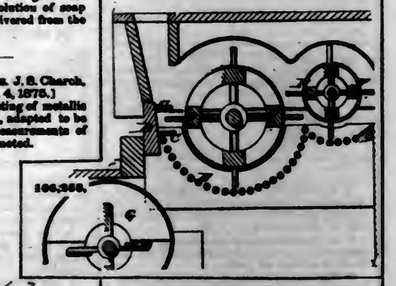
1. The front shoulder-plate A, having a series of holes, E, and numerals on lines, as described, the rear shoulder-plate B having a series of holes, F, and corresponding lines and numerals, as described, and the relation of these to the breast-measure C, for the purpose specified.

2. The combination and arrangement of the shoulder-plates A and B, the breast-measure C, the waist-measure D, and bust-measure H, substantially as and for the purpose specified.

166,868. Seed-Cotton Cleaners. M. C. Cheek, Mansfield, Tenn. [Filed July 8, 1876.]

Brief.—The secondary cylinder detaches the cotton from the main cylinder, and directs the air-blast, which is increased by a centrifugal fan, downwardly through the cotton in its passage over the open concave.

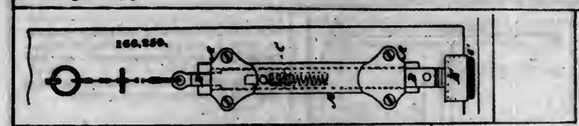
The combination of the secondary spiked cylinder F, concave-grates or screen E, and the centrifugal fan G with the cylinder D and stationary spikes C, substantially as specified.



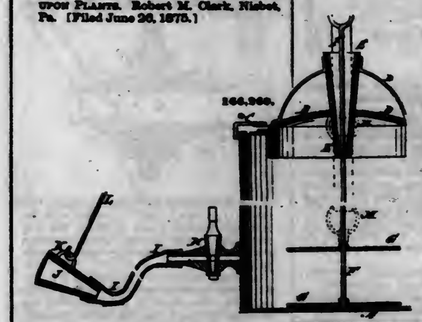
166,869. Door-Checks. Horace B. Church, Jefferson City, Mo. [Filed May 6, 1876.]

Brief.—The ordinary sliding spring door-bolt is provided with a socket or hollow foot, in which a pad or block of india-rubber is inserted. The foot or shoe piece is attached by a downwardly-projecting curved arm, holding it and the elastic pad in nearly horizontal position, and, being forced down by the spring, serves, by frictional contact with the carpet or floor, to hold the door automatically in desired position.

The combination, with the sliding spring door-bolt B, of the socket or hollow foot E, containing the elastic block e', the parts B E being constructed separate, and connected by the means shown and described.



166,860. Devices for Destroying Bugs upon Plants. Robert M. Clark, Nisbet, Pa. [Filed June 26, 1875.]

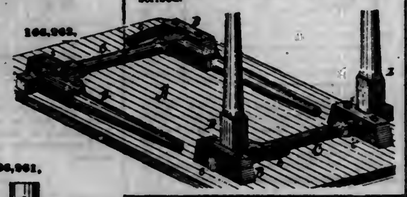


The combination of the vessel A, the cover E, provided with the arched handle D and funnel F, the dasher F G, the faucet H, the rubber tube I, and the flaring nozzle J, with each other, substantially as herein shown and described.

166,861. Dust-Brushes. Henry B. Conant, Geneva Lake, Wis. [Filed May 22, 1875.]

Brief.—The wires that the feathers are fastened to have their lower ends bent inward, to enter holes in the head to hold them in place, while a vertical groove and outside ring bind them upon the head in a secure manner.







1. In a dusting-brush, the combination of the springs A, having bent ends and the band G, with the head B', constructed as shown and described.

2. The combination, with the head B', having socket K, of the handle H, and wire I wound spirally around the part J, as shown and described.

3. The combination, with the springs A and head B', of the cord E, as and for the purpose specified.

166,862. Imitation Quilted Fabrics. W. R. Corwin, New York, N. Y. [Filed Sept. 2, 1874.]



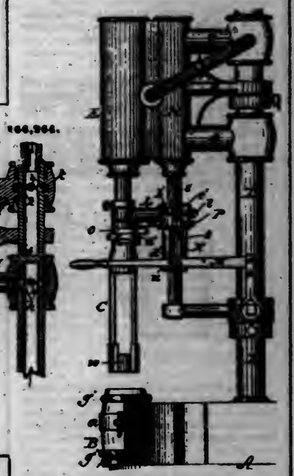
An imitation quilted fabric, composed of an exterior fabric, a lining, and a layer of india-rubber, united, as shown, and only at the lines forming the imitation stitch, substantially as described.

166,863. Folding Tables. P. S. Crawford, Woodstock, Ill. [Filed July 16, 1875.]

1. The combination of the rock-shaft C, legs D, and spring c, with the notched blocks B, constructed and operating substantially as described.

2. The blocks B, having the notches b and b', and bore b'', as and for the purposes described.





166,864. Machines for Molding Concrete Pipe, Drain-Tile, &c. Taylor R. Daniels, Detroit, Mich. [Filed May 13, 1875.]

Brief.—A steam-hammer or tamp is made to enter any one of a series of detachable molds arranged on the periphery of a circular table.

1. In combination with the circular table A, provided with the series of molds B, the steam-hammer, mounted upon and swinging around the central standard D, substantially as shown and described.

2. In combination with the steam-cylinder B, the hollow standard D, serving both to support the cylinder and conduct steam thereto, substantially as shown and described.

3. In a pipe-molding machine constructed and operating substantially as shown and described, the steam-cylinder, provided with the ports g, and the valve-chest H, provided with the ports e, in combination with the hollow rotary valve G, having the openings n and channels n, as shown.

4. In combination with the stem b' of the rotating valve G, the sleeve K, provided with the inclines c, and the arm L, attached to the piston-rod, and provided with pins to act upon the inclines of the sleeve.

5. In combination with the cylinder and piston, operating the hammer, and the rotary valve, constructed as shown, to control the admission of the steam, the vertically-sliding sleeve K, held and controlled by a hand-lever, and provided with the inclines c, and the arm L, attached to the piston-rod and provided with projections, to impart a rotary motion to the sleeve, as described, whereby the operator is enabled to control the rise and fall of the hammer, as required.

6. In combination with the hammer, having a recess, w, in the side of its head, the arm O and dog o', operating substantially as described, to give the head a rotary motion.

7. The molds B, made in two parts, and secured together by the outside bands g', as shown, the ends of the mold being tapered, and the edges of the parts jointed together, as described.

8. The vertically-sliding cores f, mounted in the table A, and connected to the springs f, in combination with a catch for sustaining them in position.

9. The detachable molds B, in combination with the table A, recessed in the manner shown, to receive and sustain them, and the band s or other fastening, for retaining them in place.

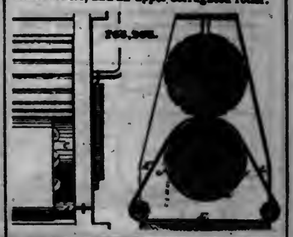
10. In a pipe-molding machine, the combination of a vertical mold, a steam-hammer working therein, and a vertically-adjustable valve-gear controlled by a hand-lever, constructed and operating substantially as shown and described, so that by gradually moving said lever the descent of the hammer may be limited as the mold fills up without changing the length of its stroke.

166,865. Compounds for Artificial Stone. Taylor R. Daniels, Detroit, Mich. [Filed July 6, 1876.]

A composition for artificial stone consisting of beeswax, borax, resin, alum, sugar, linseed-oil, cement, and water, in substantially the proportions specified, with or without the application of silicate of soda.

166,866. Washing-Machines. Samuel L. Denney, Gap, Pa. [Filed June 1, 1876.]

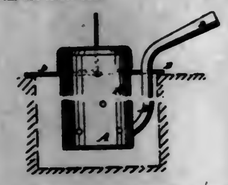
Brief.—A lower roller with channels arranged alternately, an endless belt with two small rollers, and an upper corrugated roller.



The combination of the roller e, having chain-cords d d, rollers f f, endless band e, and roller b, as and for the purpose specified.

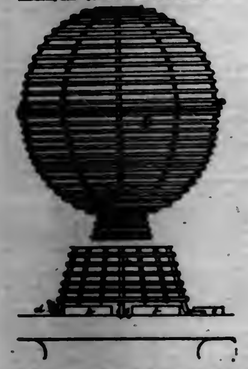
166,967. Apparatus for Destroying the Cutting Ant. Ferdinand A. Fenner and J. H. Power, Mission Valley, Tex. [Filed May 28, 1875.]

Brief.—A perforated tube having a closely-fitting top and a broad flange near the top, and supplied with an air-tube passing through the flange, and entering the perforated tube near the lower end.



The perforated and closely-covered cylinder A, provided with a pipe, D, having one end attached to its lower end, rising up the side through a collar, B, and bent outwardly therefrom, as and for the purpose specified.

166,968. Fly-Traps. Henry L. Ferris, Alden, Ill. [Filed June 19, 1875.]

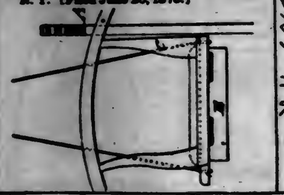


1. The combination of the base A, cleats b, recess a, staple d, bent ends of the upright rods, and button c, substantially as described, and for the purpose set forth.

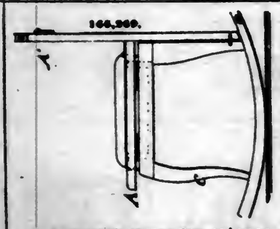
2. The combination of the sphere D and cone-passage G, projecting within said sphere, and constructed with longitudinal ribs of large wire, and spiral coils of small wire, substantially as shown and described.

3. The conical cap-supporter C, having longitudinal wire ribs, and a surrounding coil of small wire, four of said ribs projecting above and below its open end base, to form a guide to the entrance at one end, and means of fastening the trap to the base-plate at the other end, substantially as specified.

166,969. Convertible Rocking-Chairs and Settees. Sigmund Feust, New York, N. Y. [Filed June 30, 1875.]



166,969.



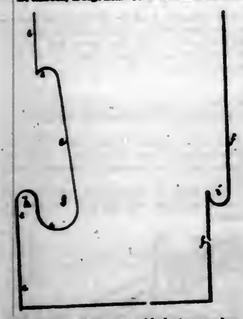
1. A convertible rocking chair and swing, substantially as above and described.

2. The combination of a seat with hinged leg and rocker sections, that may be rigidly secured in position either as rockers for a chair or as side arms for a swing-seat, substantially as specified.

3. In combination with a chair, the suspension-cords, the hinged seat, and the box or receptacle below the seat to allow the storing of the cords, substantially as specified.

4. The combination of the seat-frame A, perforations a, grooves a', and receptacle E, substantially as and for the purpose specified.

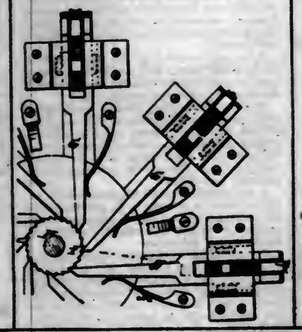
166,970. Gloves. Jules Foulon, Grenoble, France, assignor to Ed. Jeanniaux & Co., Brussels, Belgium. [Filed June 28, 1875.]



The glove-pattern, provided at one edge, a, above the thumb-opening, with the downwardly-projecting tongue b, and at the opposite edge f with the upwardly-projecting tongue f, said tongues being constructed to overlap, and all arranged to form a closed slit, substantially as specified and shown.

166,971. Motive Powers. P. B. Greene, Centerville, Iowa. [Filed May 28, 1875.]

Brief.—The circular platform tilts by means of a weight being drawn around its circumferential trunk, and operates a series of rising and falling arms, which have pawls connected thereto, operating a ratchet on the shaft, by means of which it is rotated.



166,972. Buffers for Steam Hoop-Drills. Jos. C. Githens, New York, N. Y. [Filed June 10, 1875.]

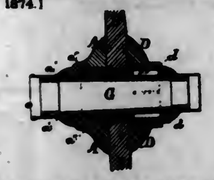
Brief.—An elastic disk is placed between a loose cylinder-head and a follower, which is secured to the opposite cylinder-head by tie-bolts. This arrangement allows each cylinder-head to yield to the blows of the piston.



1. The combination of the tilting platform A, roller B, cam plates F, pawls G, ratchet-wheel I, and shaft H, substantially as specified.

2. The shaft C, arm D, roller B, and tilting platform A, substantially as specified.

166,973. Wheels for Vehicles. Francis H. Green, Eau Claire, Wis. [Filed Dec. 9, 1874.]

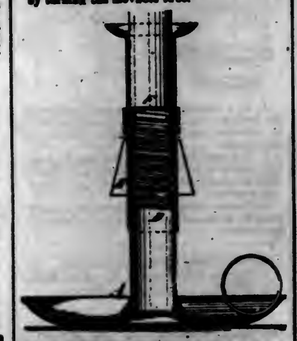


1. In combination with the thimble G, the sleeve C and the collar D, provided with the tapering threaded recess d, which fits over and compresses the divided threaded portion c' of said sleeve, substantially as and for the purpose shown.

2. In combination with the spokes E E, &c., fitted into the radial recesses c c, &c., of the collar A, the sleeve C, provided with the threaded portion c, that fits into the threaded recess c' of said collar, and having a tapered portion, c', which bears against the inner ends of said spokes, substantially as and for the purpose set forth.

166,974. Candlesticks. John B. Gribble, Green Valley, Cal. [Filed Nov. 7, 1874.]

Brief.—The candle can be raised or lowered by turning the movable tube.

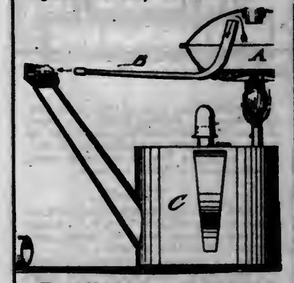


As an improvement in candlesticks, a movable tube, C, having short motion-thread working over the stationary tube-thread, as and for the purpose specified.

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166,975. Self-Acting Blow-Pipe. John Martin Hancock, Lansing, Iowa. [Filed June 5, 1875.]

Brief.—The vapor-vessel and the lamp are separate, as shown, so that the heat may be regulated as desired, or at once removed.



The combination of vapor-chamber A, having blow-pipe B and the hood movable also-heat-vessel C, having one burner at the top and another at the side, as shown and described, to enable jewelers, in brazing or soldering gold or silver articles, to guide the flame to the work, regulate accurately the degree of heat, and then instantaneously remove the flame when it has performed its function.

166,976. Stopping Mechanism for Drawing-Frames. Daniel W. Hayden, Providence, R. I. [Filed June 21, 1875.]

Brief.—Variations in the size of the sliver passing through the trumpet are communicated, by the connecting-rod, directly to the suspended arc, causing the latter to engage the stop-gear, and arrest the motion of the machine.

1. The combination, with the revolving stop-gear g and the suspended arc d, provided with the adjustable weight h, of the trumpet-arm b and the connecting-rod i, the whole adapted to operate substantially as and for the purpose set forth.

2. The combination of the hinged arm H, provided with the stop K and adjustable weight L, with the suspended arc d and stop-gear g, substantially as described.

3. The combination of the trumpet a, the arm b, the connecting-rod i, the suspended arc d, provided with the adjustable weight h, and the weighted arm H with the stop K, the whole adapted to operate substantially as specified.

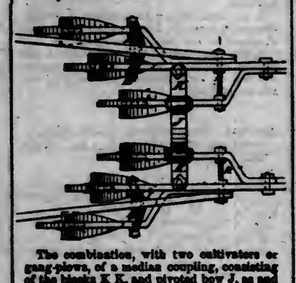
166,977. Buttons. Wm. Hornish, Newark, N. J. [Filed June 10, 1875.]

Brief.—The cloth shank of a cloth-covered button is re-enforced with a metal eye.

As an improvement in buttons, the combination, with the inner fibre-disk, of a bent wire, projecting, by its central loop or eye part, through the perforation of the lower shell to re-enforce the cloth section by which the button is sewed on, substantially in the manner and for the purpose set forth.

166,978. Cultivators. Joseph C. Jenkins, Lebanon, Tenn., assignor to himself and James C. Jolley, same place. [Filed Apr. 17, 1875.]

Brief.—A middle loosely-jointed coupling for a pair of cultivators.



The combination, with two cultivators or gang-plows, of a median coupling, consisting of the blocks K K, and pivoted bow J, as and for the purpose specified.

166,979. Method of and Apparatus for Separating Free Sulphur. Samuel H. Johnson, Lea Bank Works, Stratford, England. [Filed July 13, 1874.]

Brief.—The dried material is placed in the extractor, and CS_2 admitted at bottom, the CS_2 vapor displacing the air. The air-cock is closed, the extractor steam-heated, and agitator started. After solution of the sulphur the agitator is stopped, when a graduated filter is formed by the action of gravity on the suspended particles. The solution is run off into the tank or reservoir below, from which it is drawn into the stills and distilled by steam heat. The distillate passes to the first condenser, from which the condensed CS_2 passes to the pure-spirit receiver, while the uncondensed portions pass to a second condenser, from which additional CS_2 flows to the same receiver, and the permanent gas formed during the process passes to a gas-holder. The residue in the extractor is washed with CS_2, and the washings run to a second receiver, to be reused with next charge. Air is removed from the stills by gas from the holder before distilling. The CS_2 is forced up into the extractor from the receiver by water-pressure. Steam is used to sweep out residual vapor, &c., from extractor and stills.

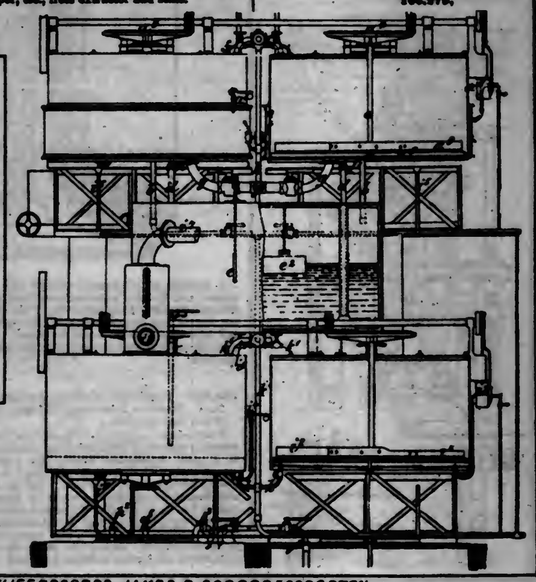
1. The herein-before-described improvement in the art of separating free sulphur from substances with which it is mixed; which improvement consists in mixing the sulphur-bearing substance in a dry state with bisulphide of carbon in a close vessel or extractor, heating the mixture to the boiling-point, agitating it, stopping the agitation, and allowing the granular residuum to form a filter, through which the liquid contents of the extractor are forced by the pressure of vapor generated in the extractor itself.

2. The herein-before-described improvement in the art of separating free sulphur from substances with which it is mixed; which improvement consists in mixing a charge of sulphur-bearing substances with bisulphide of carbon in a closed vessel or extractor, heating, agitating, filtering, and discharging the liquid contents; then subsequently admitting a fresh charge of bisulphide of carbon into the extractor, mixing it by agitation with the residuum remaining therein, allowing the contents of the extractor to subside; then discharging the liquid contents into a receiver separate from the first one, and applying the resultant product to a fresh charge of sulphur-bearing substance, then securing the strongest practicable solution for evaporation.

3. The herein-before-described improvement in the art of separating free sulphur from substances with which it is mixed; which improvement consists in mixing the sulphur-bearing substance in a dry state with bisulphide of carbon in a closed vessel or extractor, provided with an escape-pipe leading to a condenser, and a return-pipe leading from the condenser through a gas-holder to the extractor, raising the temperature of the mixture in the extractor to a boiling-point, whereby that portion of the bisulphide-of-carbon vapor driven from the extractor during the first stage of the process may be saved and returned to the extractor after the insertion of a fresh charge of sulphur-bearing substance.

4. The herein-before-described improvement in the art of separating free sulphur from substances with which it is mixed; which improvement consists in discharging the washings from the extractor through a pipe inclosed in a larger one, both extending closely to the bottom of a receiver, and below the surface of water contained therein, whereby any globules of bisulphide-of-carbon vapors carried down through the pipe in the form of vapor will rise up between the outer and inner pipes, and be saved.

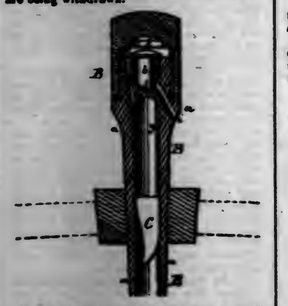
166,980. Cabinet-Organs. Alfred Dolge, Brooklyn, N. Y. [Filed June 10, 1875.]



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166,920. BUNGS FOR BARRELS AND CASKS. F. Wilhelm Ehmsen, New York, N. Y. (Filed June 30, 1875.)

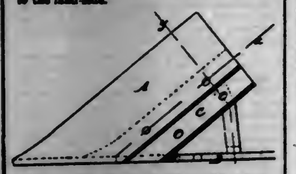
Brief.—As the air enters the barrel through the vent-bung, the reed whistle makes a noise, and warns the proprietor that the contents are being withdrawn.



In combination with the vent-passage *g* of a bung, B, the reed, whistle, or tongue C, substantially as specified.

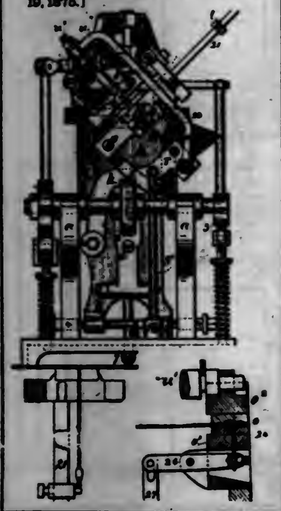
166,921. PLOWS. Henry Krog, Sr., Washington, Mo. (Filed May 22, 1875.)

Brief.—The outer end of the share bolted to the cast, and the inner ends of both welded to the land-side.



In a plow, the combination of share A, landside-bar B, and cast C, the connecting ends of these parts being welded together, while the outer ends of plates A C are riveted or bolted together, all substantially as and for the purpose specified.

166,922. CASTING UMBRELLA-TIPS, &c. A. Ligibel, Jersey City, N. J., assignor to Winter & Ball, same place. (Filed Apr. 19, 1875.)

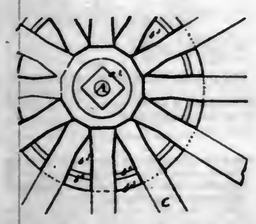


1. The two-part mold *a*, connected respectively to the swinging mold-frame *h* and swinging head *a'*, in combination with such frame *h*, swinging head *a'*, bent lever *r*, and link *u*, for opening and closing the mold, substantially as specified.

2. In combination with the two-part mold *a*, the pin 24, lever 26, link 27, lever *r*, and link *a'*, as and for the purposes set forth.

3. The combination, with the molds *a* and casting mechanism, of the adjustable gage *t* and arm 21, for positioning and holding the rib, as set forth.

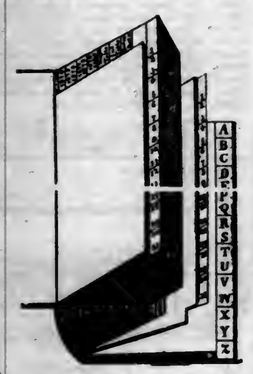
166,923. VEHICLE-HUBS. Jos. H. Lindsay, Freehold, (Woodside P. O.,) Pa. (Filed May 1, 1875.)



1. The chamber E, having a median automatic valve, *c'*, and raised hollow valve-seat *d'* over the inlet-port *c'*, as and for the purpose specified.

2. The segmental ring-flange *b'*, formed upon the projections *b'* of the part B, in connection with the ring groove *d'*, formed in the part D of the hub, substantially as herein shown and described.

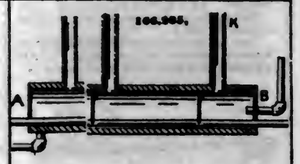
166,924. INDEXES. Melvin N. Lovell, Erie, Pa. (Filed Dec. 1, 1874.)



A book for daily reference, divided into divisions, and provided with a series of marginal indexes, whereby the initial letter of the subject-matter, and the date, month, and year of any given entry can instantly be found, substantially as described, as and for the purposes specified.

166,925. DISTILLATION OF HYDROCARBON OILS. Thomson McGowan, Meredith, Pa. (Filed Jan. 26, 1875.)

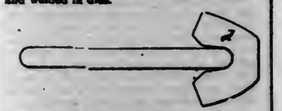
Brief.—Into a slightly-inclined elongated vessel at one end is admitted oil; at the other, in a pipe, superheated steam. By nearly-closed partitions the oil is prevented from readily flowing down the vessel. The graduated heat from the pipe serves to lift hydrocarbon vapors of different degrees of density into the vapor-flues situated at the extremity of each division of the still, said flues leading to condensers. Object: To secure in one distillation oils having different gravities.



The combination, in an oil-still, of the elongated vessel A B, having a series of partitions, steam-pipe I. M, extending throughout the length of the vessel, and vapor-pipes G, H, I, and K, projecting from the elongated vessel, all substantially as herein described.

166,926. MANUFACTURE OF TURK-BUCKLES. Manning Merrill, New York, N. Y., assignor to himself and Edwd. W. Merrill, same place. (Filed Nov. 12, 1874.)

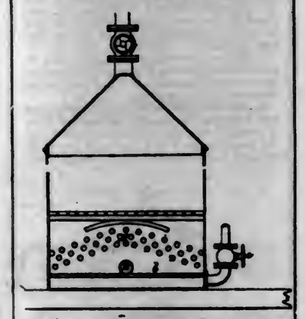
Brief.—A prepared block of metal is placed over each end of a link, and the whole heated and welded in dies.



The method of preparing the link shown in Fig. 1, and adding to the bent ends thereof the block *d*, so as to encompass said bent ends, and welding said block to said ends, as hereinbefore specified.

166,927. METHODS OF FIXING AND DEVELOPING COLORS ON FABRICS. C. T. Mieg, Paris, France. (Filed May 26, 1875.)

Brief.—Exposes the cloth to the joint action of steam and hot air in a closed vat.



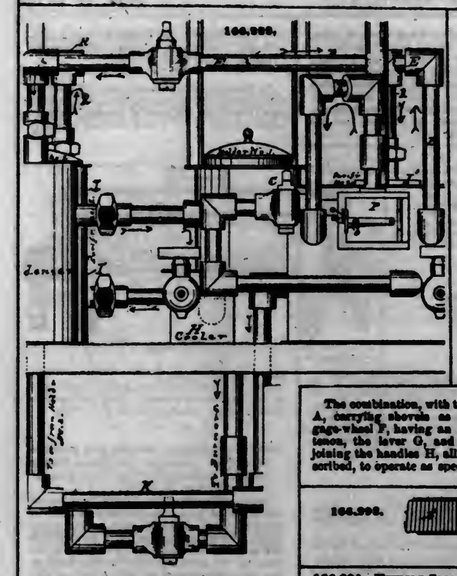
The process herein described of fixing and developing colors on fabrics by exposing the same in a closed vat to the joint action of steam and of heated air, as set forth.

166,928. GAS-GENERATORS. J. C. Mitchell, Lancaster, N. H. (Filed May 26, 1875.)

Brief.—A pipe provided with a stop-cock conducts gas directly from the retort into the fire-chamber of the furnace, thus preventing escape of gas into the room when the retort-door is opened. Uses wood, coal, fats, or gas material. Gas from retort passes successively through condenser, cooler, up through one purifier, and down through another, (the two being connected by a removable pipe and covers,) and thence into either holder.

1. The combination, with retort B, having a smooth face, of a door, F, having a corresponding smooth face, the latch *c*, spring *b*, and catch *e*, for the purpose of maintaining the door closed with an air-tight connection, substantially as described.

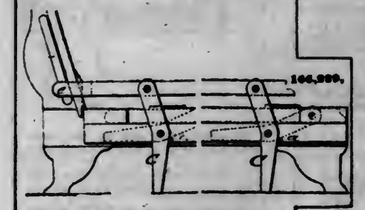
2. The combination, with the purifiers I I', having water-troughs O, of the detachable tube E and the covers T, as and for the purpose set forth.



3. The combination, in a gas-generator, with the pipe K, terminating in the gas-holder, of a ball-valve, N, resting in the end of said pipe, for the purpose of preventing back pressure, as described.

4. The method of freeing air-tight gas-retorts of their gaseous contents before opening the retort-door, and of disposing of such contents by conducting the same, without admixture of air, directly from the closed gas-retort into the furnace to be burned, substantially as herein described.

166,929. BED-LOUNGE. Abraham Morris, New York, N. Y. (Filed May 26, 1875.)

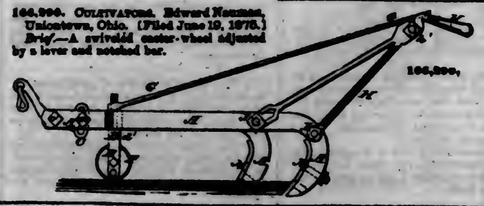


1. The hinged section of a bed-lounge, provided with pivoted upward-extended legs, and a connecting guard-rail pivoted thereto, substantially as and for the purpose set forth.

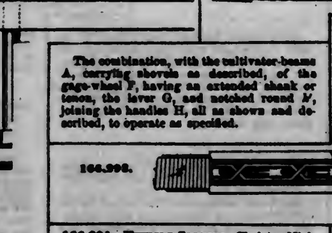
2. The combination of the detachable head-piece of the hinged section with a raised strip of the main head-piece and the grooved end of the guard-rail, as described, for securing rigid position of head-piece and guard-rail, substantially as specified.

166,930. CULTIVATORS. Edward Neuman, Uniontown, Ohio. (Filed June 19, 1875.)

Brief.—A swiveled caster-wheel adjusted by a lever and notched bar.



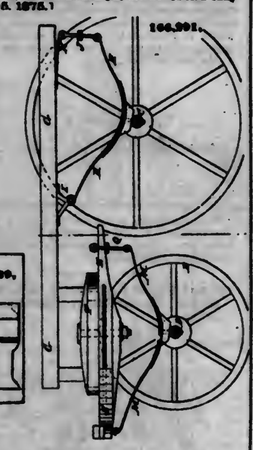
The combination, with the cultivator-beams A, carrying shovels as described, of the gage-wheel F, having an extended shank or tenon, the lever G, and notched round *h'*, joining the handles H, all as shown and described, to operate as specified.



1. The combination, with rear springs H, of brackets I, shackles J, eye-straps K, and brace-bars L, all arranged substantially as and for the purpose specified.

2. The combination, with front springs M, of bars O P Q, serving both as coupler and brace, as set forth.

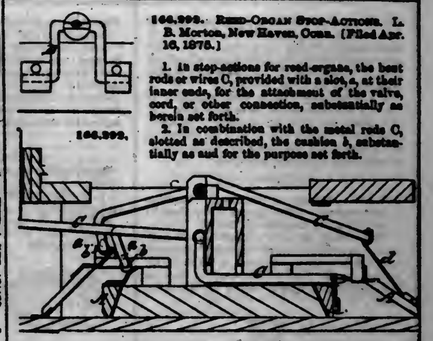
166,931. VEHICLE-SPRINGS. Christen Nielsen, South Brooklyn, N. Y. (Filed May 18, 1875.)



166,932. REED-ORGAN STOP-ACTIONS. L. B. Morton, New Haven, Conn. (Filed Apr. 16, 1875.)

1. Its stop-actions for reed-organs, the bent rods or wires C, provided with a slot, *a*, at their inner ends, for the attachment of the valve, cord, or other connection, substantially as herein set forth.

2. In combination with the metal rods C, slotted as described, the cushion *b*, substantially as and for the purpose set forth.



166,933. DEVICES FOR BENDING METAL PIPES. Morris L. Crum, Philadelphia, Pa. (Filed May 22, 1875.)

In a device for bending metal pipe, the combination of a spiral-wire mandrel and flexible plates interposed between the mandrel and the sides of the pipe, substantially as set forth.

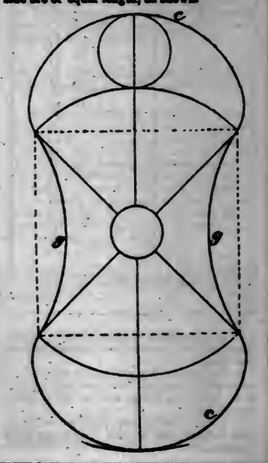


166,934. MANDRELS FOR BENDING METALLIC TUBES. Morris L. Crum, Philadelphia, Pa. (Filed Mar. 30, 1875.)

A flexible mandrel for bending metallic pipe, consisting of a spiral coil of wire, the exterior surface of which is flattened, substantially as set forth.

166,935. ROTARY PRESSURE-BLOWERS. W. L. Palmer and Israel W. Knox, San Francisco, Cal. (Filed July 13, 1875.)

Brief.—The pistons are constructed upon epicycloidal curves, so as to make an exact fit between them. The chords of the heads and side are of equal length, as shown.

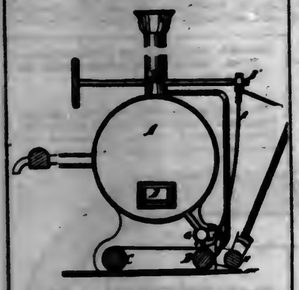


1. The rotating pistons, each consisting of the convex heads *c c* and the concave sides *g g*, said heads and sides being constructed upon epicycloidal curves, for the purpose of making an exact fit between the pistons as they rotate, substantially as herein described.

2. The rotating pistons, each consisting of the convex heads *c c* and the concave sides *g g*, said heads and sides being constructed upon epicycloidal curves, and having the chords of the heads *c c* and the sides *g g* of equal length, substantially as herein described.

166,896. MODES OF SECURING FLEXIBLE ROOFING TO ROOFS. James Perry, Brooklyn, N. Y. (Filed Oct. 2, 1874.)

Brief.—Felt as it is applied to the roof-boards is covered on the under side with coal-tar from a heating-reservoir. A hot roller attached to the front of the machine imparts heat to the roof-boards before the felt is applied.

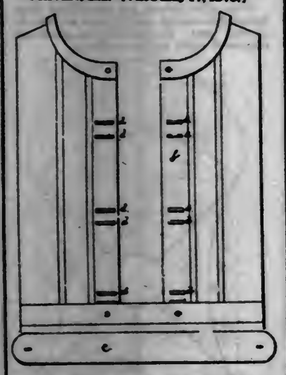


1. The improved process of laying sheet material upon the roof-boards of roofs by applying the molten coal-tar or cement to the sheet material simultaneously and in conjunction with the application of heat to the roof-boards, substantially as and for the purpose set forth.

2. The organized machine for laying flexible roofing, comprising the receiver A, the roller C, for carrying the web, and the roller D, provided beneath the system of pipes *e*, constructed for use substantially as and for the purpose set forth.

3. The combination of the roller H with the organized machine, constructed for operation as set forth, for the purpose specified.

166,897. SEWER-STRUCTURE. Francis L. Fitzhugh, Florence, Ala. (Filed May 17, 1875.)



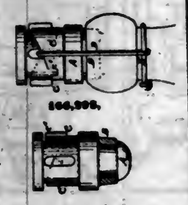
1. The detachable fastening-band *c*, in combination with a shirt-front, substantially as described.

2. The band *c*, in combination with the two sides of an open shirt-front, provided, respectively, with slots *d d*, as and for the purposes specified.

3. An open shirt-front provided with the slots *d d*, arranged as and for the purposes specified.

166,898. BOTTLE-STOPPER. Geo. B. Reed, Brooklyn, N. Y. (Filed July 17, 1875.)

Brief.—The body of the stopper has two grooves, the upper one having the metallic band supplied with handles, the lower having the rubber ring. By turning the metal band so that the inclines slide under the bail, the stopper is firmly held in place; a reverse movement releases it.

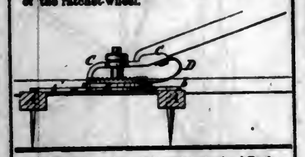


166,898.

An improved bottle-stopper formed of the body A, provided with ring-grooves upon its lower and upper parts, and the slot *a'*, the rubber band B, and the metal band C, provided with the inclines *c'*, the handles *d'*, and the notches *e'*, in combination with the wire loop D and wire band E, substantially as herein shown and described.

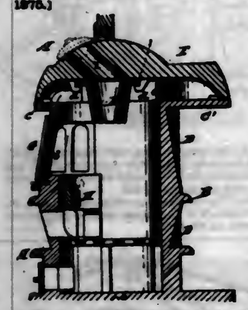
166,899. ADJUSTABLE HANDLES FOR HARROWS. Samuel D. Ringel, Adelphi, Ohio. (Filed June 10, 1875.)

Brief.—A ratchet-wheel is secured to the harrow-frame. A spindle rises from its center, upon which is pivoted the handle. An arm from the pivoted handle, being an extension of the same, fits into the teeth of the ratchet-wheel, and is held in contact by a counter-spring upon the opposite side, and which is attached to the under side of the handle, with its free end resting upon the rim of the ratchet-wheel.



The combination of the ratchet-wheel B, the pivoted handle C, and the spring D with the frame of a harrow, substantially as herein shown and described.

166,900. FIRE-PLACE HEATERS. Philip Rollhaus, Jr., Brooklyn, N. Y. (Filed July 16, 1875.)

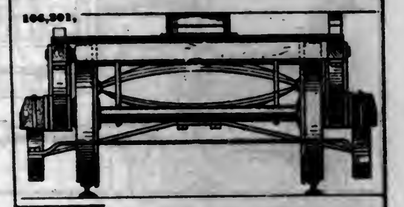


1. The top plate C, having smoke-pipe D, and provided with the curved flue-plates *a a*, extending from the rear to a point near the front, in combination with the cap E, all constructed and arranged substantially as and for the purpose specified.

2. The removable girder A, in combination with the bisected front A, doors G G, front grate H, and magazine I, all as and for the purpose set forth.

166,901. SAFETY-RUNNERS FOR RAILROAD-CARS. Lawrence O. Root, Minneapolis, Minn. (Filed June 11, 1875.)

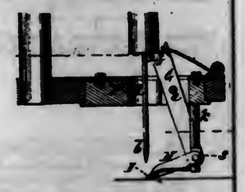
In combination with a car-track, the runners O O, consisting of narrow bars suspended edge downward from each side of the track or pedestals outside of the wheels, forming a substantial guard to prevent persons from falling between the wheels of the cars, and confining the cars to the road-bed in case the wheels are thrown from the rails, substantially as described.



166,901.

166,902. FEEDING DEVICES FOR SEWING-MACHINES. Israel M. Rose, Brook Haven, assignor to Joseph I. West, New York, N. Y. (Filed Nov. 19, 1874.)

Brief.—The presser and feeding mechanism are attached to a ring, which is adapted to revolve within a second ring, having a projection on one side, by means of which, through the medium of a rod, it is connected to the head of the machine; the feeding mechanism being constructed in such a manner that when the feed-dog is urged forward the studs on the side of the same pass under and beyond the springs composing the presser-foot, by means of which the dog is firmly held against the cloth, while on its backward movement the studs ride over the tops of such springs, holding the dog away from the cloth until near the end of the stroke, when the studs drop through recesses in the springs, and the dog is thereby brought in proper position for the next forward movement.



1. The combination, with the feed-carrier F, constructed to rotate in a horizontal plane around the needle-bar, of the lever G, pivoted to the feed-carrier, the dog H, and the yielding presser I, substantially as and for the purpose described.

2. The combination of the dog H, pivoted to the rocking lever G, and having the cam *a*, with the spring-presser I, constructed of springs attached at one end to the projections K on the carrier, substantially as and for the purpose described.

166,903. MAGIC-AUTOMA. Oscar Rust, Mechanicville, Me. (Filed June 10, 1875.)

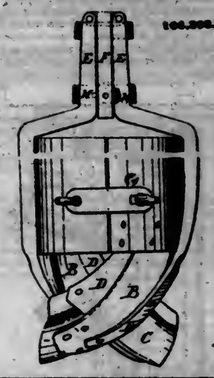
Brief.—The basket is made elliptical in cross-section in two parts, and is provided with concaved jaws, boring on their outer edge round-cornered concaved bits, which are adjacent by braces on their outer sides. The basket is held together by hasps and basket earing-pins.

1. The basket or shell A of an earth-auger, made elliptical in its cross-section, and in two parts, the plane of division passing through the longer axis of the ellipse, substantially as herein shown and described.

2. The round-cornered oval-edged concaved bits C, having their outer ends bent upward, in combination with the jaws B of the basket A, substantially as herein shown and described.

3. The combination of the braces D with the turned-up outer ends of the bits C, and with the lower ends of the parts of the basket A, substantially as herein shown and described.

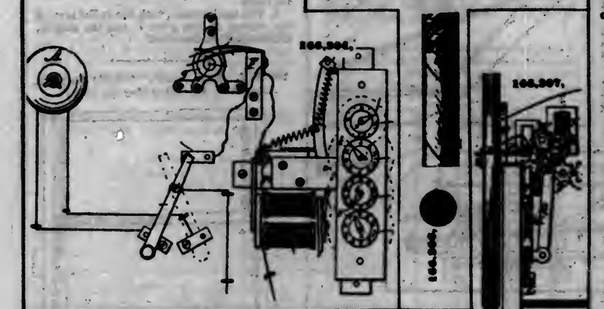
4. The combination of the hasps I with the parts of the basket or shell A of an earth-auger, substantially as herein shown and described.



166,903.

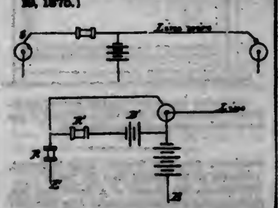
166,904. ELECTRIC GAS-LIGHTING APPARATUS. Frank V. Smithard, Chelsea, Mass. (Filed July 14, 1875.)

The combination, with an electrical gas-lighting apparatus, of a time-registering mechanism, substantially as herein described, for the purpose specified.



166,904. 166,906. 166,907.

166,905. TELEGRAPHIC CIRCUITS. Wm. R. Sawyer, Washington, D. C. (Filed June 10, 1875.)



1. The method of operating a line of telegraph, consisting in placing the transmitting-battery at or near the receiving end of the line-wire, and effecting the record or actuating the receiving instrument by making and breaking the line-wire circuits at the transmitting end, whereby the battery-current passing through the receiving-instrument is alternately, equally, or unequally divided and restored to its normal strength or required maximum value, as set forth.

2. The method of operating a line of telegraph, consisting of the employment of two circuits, the line-wire circuit and an artificial line-circuit, in the latter of which is placed the receiving-instrument, which is actuated, or in which the record is effected, by causing an increment and decrement, through breaking and making the line-wire circuit of the quantity or force of the battery-current flowing in the artificial line-circuit, as set forth.

3. The artificial circuit at the receiving end of a line of telegraph, in which the battery-current flows at its required maximum of quantity or force, consisting when a greater or less portion of the battery-current is diverted into the line-wire by establishing the line-wire circuit, as set forth.

4. The method of effecting a record at the receiving-instrument, or of actuating the receiving-instrument, consisting in wholly or partially short-circuiting the main battery, which is placed at the receiving-station, by wholly or partially diverting its current from an artificial circuit into the line-wire circuit.

166,906. RUBBER-COATED CORD AND CORDAGE. Hermann Gehlerbaum, Clifton, N. Y., assignor to Goodyear's India-Rubber Glove Manufacturing Company. (Filed May 1, 1875.)

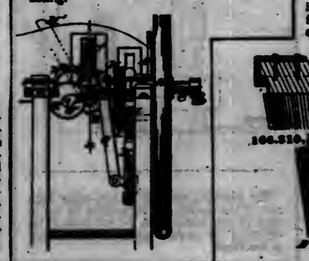
Brief.—Rope is incased in a covering of rubber, which is then vulcanized externally, leaving the interior of the coating in a plastic state.

1. As a new article of manufacture, fibrous cord or rope covered with a continuous sheet of rubber, which forms a lap-joint, substantially as specified.

2. In the art of covering fibrous cord or rope with rubber, the process which consists in applying a raw sheet of rubber around said cord or rope, and subsequently vulcanizing the rubber to an extent which will leave the inner part of the rubber comparatively raw, as it will constitute a cement, substantially as specified.

166,907. STRAW-CUTTERS. L. Schollinger, Milwaukee, Ind. (Filed June 10, 1875.)

Brief.—A saddle presses upon the hay or straw to be cut, the saddle being connected with gearing for rocking and reversing it. The pressure of the saddle is adjusted by a bow-spring, which has a suitable device for increasing or diminishing the tension of the spring. By means of an eccentric, the feed-rolls only feed the hay or straw when the knife is not acting.



166,907.

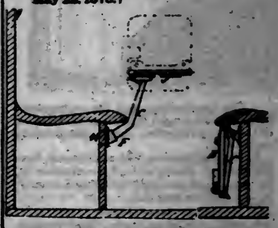
1. In a straw-cutter, the combination, with the saddle P and bar N, of the curved spring O, rod M, and nuts *n' n'*, for adjusting the tension of the spring, as shown and described.

2. In a straw-cutter, the combination of the eccentric-wheel J, meshing-gears H and I, and arm K, through which motion is transmitted to feed-rolls, as shown and described.

166,908. COMPOUNDS FOR PREMISTER PENS. Henry Gellenson, Hoboken, N. J., and Herman Benning and Julius Weiß, New York, N. Y. (Filed June 10, 1875.)

A compound of vinegar, allspice, pepper, onions, horseradish, bay-leaves, cloves, ginger, coriander-seed, Chili pepper, and sugar, in about the proportions specified.

166,909. FOLDING SEATS FOR HORSE-CARS. C. B. Sheldon, New York, N. Y. (Filed May 28, 1875.)



1. The combination, with the ordinary car or omnibus seat, of an extra seat, B, supported above and in front of it by a single folding standard mounted on the rear for its support, and which, together with the said extra seat, folds down and under the main seat, substantially as specified.

2. The combination, with the ordinary seat of a car or omnibus, of an extra seat, B, supported above and in front of it by a single folding standard, and jointed to said standard to fall sideways thereon when adjusted in the position for use, substantially as specified.

3. The combination, with a single standard, C, of seat B, held in position for use by joint F, and folding upon the said standard, the latter being secured to the plate M, and jointed to the slot formed in arm of said plate, substantially as shown and described.

4. The single-jointed and folding standard, jointed to metal-plate M of the rear, said standard projecting above the seat, and supporting the hinged plate J, to which the seat is suitably adjusted, substantially as set forth.

5. The combination, with seat B and standard C, of the plate J, having the seat-hinged thereon, said plate being itself hinged to the standard, as and for the purpose specified.

6. The standard C, jointed to the seat-plate M, and having the seat B jointed to it, substantially as specified.

166,910. BOTTLE-PACKAGES. C. B. Sheldon, New York, N. Y. (Filed June 12, 1875.)

1. The combination of removable protecting-jacket H and metallic body A, distributing from top to bottom, and secured together by forcing the wooden jacket over the metallic lining, all substantially as described.

2. In a bottle-package, the combination of this metallic body A, re-entering jacket H, and the heavy stamped metallic bottom having flange B, the wooden jacket being chamfered on its lower and inner edge, and sprung over the flange, as set forth.



166,910.

166,211. Garbage-Vaults. Geo. L. Shepard and William Bedell, New York, N. Y. [Filed July 10, 1875.]



1. The combination, with the garbage-vessel H and the hinged door F of chamber D, of the spring-supported shoe I, substantially as specified.

2. The combination, with a coal-vault, having inclined abutment J, of the chamber D, having hinged vertically vibrating bottom F, substantially as specified.

166,212. Dumping-Cars. Benj. Skinner, Sidney, Ohio. [Filed Jan. 16, 1875.]

Brief.—On loosening and withdrawing rod, the toggle-arms drag down the end of the pivoted car or wagon body, and in so doing release the swinging door from its latch.

1. The combination of flat bars *c*, *c'*, and *c''*, bent and united to constitute frame C, as and for the purpose set forth.

2. The combination of wagon or car body, metallic frame to which the body is pivoted, toggle, and rod jointed to center of toggle, as and for the purpose set forth.

3. The combination of wagon or car body, metallic frame to which the body is pivoted, and weighted levers, and tail-board latches, as and for the purpose set forth.

1. In a saw-gumming machine, the combination of the ring A', provided with the flanges *a''*, jaws A, having dovetail grooves *a* and slots *a'*, carriage-way B, provided with slides *c*, and cross-head B', arbor C, cutter C', boxes *c''*, spiral pinion *c'*, feed-screw D, cam-lever D', movable box *d*, leg *d'*, and stop D'', when the several parts are arranged to operate substantially as described, and for the purpose set forth.

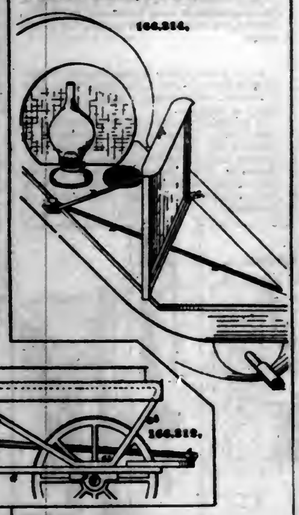
2. In a saw-gumming machine, the combination of the rim A', provided with the flanges *a''*, with the jaws A, having the dovetailed grooves *a* and slots *a'*, said rim A' being adapted for adjustment within the jaws A, to suit the different angles necessary in gumming saws, substantially as described and shown.

3. In a saw-gumming machine, the combination of the arbor C and cutter C' with the spiral pinion *c'*, secured near the base of the feed-screw D, substantially as and for the purpose described.

166,214. Sewer-Junction Indicators. John H. Stanley, Chicago, Ill. [Filed May 24, 1875.]

Brief.—Allowed to float down a main sewer, measured rods or cords being attached. Sides of main sewer illuminated by the lamp, and shown in a mirror by reflection.

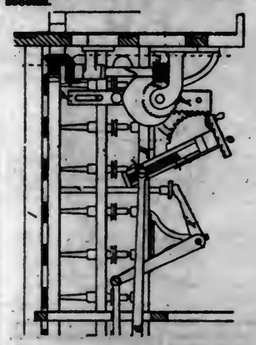
166,214.



The sewer-junction indicator, consisting of a floor supporting a lamp and reflectors adjustably arranged thereon, and operating substantially as and for the purposes set forth.

166,215. Building Mechanisms for Spinning-Frames. Joseph M. Stone, North Andover, Mass. [Filed Apr. 27, 1875.]

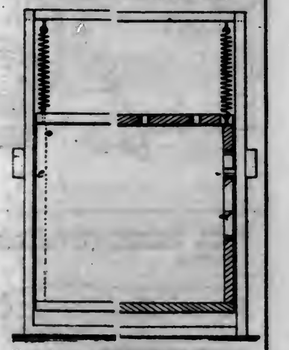
Brief.—A heart-cam reciprocates vertically a sliding rack, and the latter vibrates a radial arm, to the nut of which is pivoted a rod, which is connected at one end to one of a pair of rocker-arms, whereby vertical up-and-down movements are imparted to the ring-rail. A pawl on the sliding rack operates a ratchet on the lower end of the screw of the radial arm, and by varying the position of the nut shortens gradually the traverse of the ring-rail, so that a yarn-load with conical ends is built upon the bobbins.



1. The combination, substantially as shown and described, of the ring-rail and its connected mechanism, the heart-cam, the radial arm provided with the screw, the movable block and the ratchet, and the slide K, provided with the pawl P, as and for the purpose set forth.

2. The combination, with the radial arm, of the ratchet O, the pawl P, and the slide K, substantially as described.

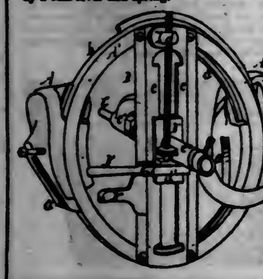
166,217. Egg-Boxes. Othello Sutphen, Albany, N. Y. [Filed May 26, 1875.]



The spring-suspended egg-box, having guide-slots, in combination with the pivot-pins of the outer case, substantially as specified.

166,218. Screw-Taps. John R. Sweet, Ithaca, N. Y. [Filed Apr. 20, 1875.]

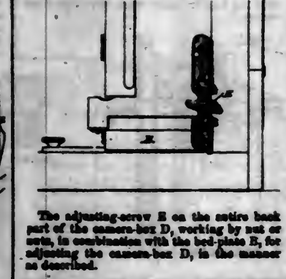
Brief.—In the thread of a four-fluted tap, the following changes are made: One diameter in length at each end remains as usual; in the first section the threads are reduced on both sides, to form a less angle than the intended thread; the second section is reduced on one side, and the third on the opposite side; the fourth section retains the full width of thread. After the end of the tap has passed the outline of the thread, the first cutter takes a chip from the bottom, the next from the one side, and the third from the other side, while the fourth finishes both sides and the bottom.



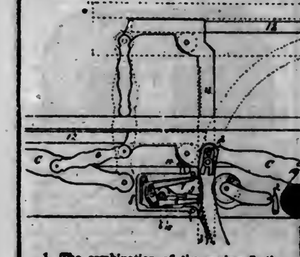
166,212.



166,213.



166,216.



A screw-tap formed with cutting-threads or sections thereof, relieved on the sides alternately, and with threads or cutting-points working centrally, as described, and for the purposes set forth.

166,219. Machinery for Making Blinds. William H. Toppan, New York, N. Y., assignor to Charles Whitlock, same place. [Filed Dec. 30, 1874.]

Brief.—The position of the blind-stile is indicated by means of a spring-pawl falling into the notches of a movable rack.

The standard *d*, arm *f*, adjustable pawl-bar A, and pawl *i*, in combination with the rack-bar *l*, applied to the blind-stile, for the purposes and as set forth.

166,220. Parallel Rulers. J. M. Taylor, Boston, Mass. [Filed Apr. 14, 1875.]

166,220.

1. The combination of the spring 5, the toothed rack 13 or 14, and an escapement, substantially as described, with the two rules A B, connected by links O O, all being to operate essentially as specified.

2. The said escapement, substantially as described, composed of the lever 6, pawls 7 8, lever 15, guides *g h*, and springs 1 and 2, arranged and combined as specified.

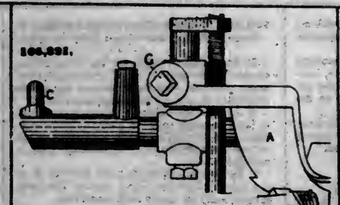
3. The adjustable abutment or screw 14, in combination with the escapement, and to operate therewith, as and for the purpose explained.

4. The straight rack 13, applied to the rule A, to slide rectilinearly thereon, and connected to the link O by the shorter link *a*, all being substantially as described.

166,221. Knitting-Machines. Ira Tompkins and Albert Tompkins, Troy, N. Y. [Filed Mar. 20, 1875.]

Brief.—For adjusting the barbs into their proper position relatively to the needles.

166,222.



The combination, with the bracket A, the heart-support C, and stud D, having the projection E, provided with the nut, of the adjusting-screw F, provided with the right and left screw-threads and the set-screw G, the whole constructed and arranged to operate as herein shown and described.

166,223. Trace-Carriers. William H. Townsend, Goodland, Ind. [Filed May 20, 1875.]



The improved trace-carrier, formed of the frame A, adapted for attachment of harness-straps, as shown and described, having the rigid trace-supporting arms D extending inward from its rear corners in a plane parallel, or nearly so, to the side bars, and the spring arms or snaps C, pivoted to the transverse bridge-piece B, and coinciding with arms D, as set forth.

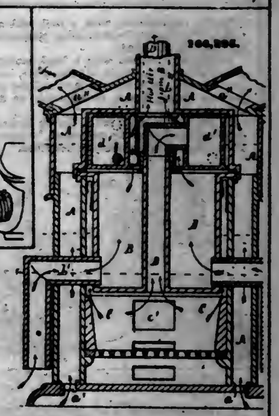
166,224. King-Bolts for Wagons. Wm. Treat, Hamilton, Mich. [Filed July 3, 1875.]

Brief.—The headless king-bolt rests upon a plate, which is held up by bolts passing through the sand-board and axle.

The headless king-bolt E and the plate F, in combination with the axle-tree A, the sand-board B, the bolster C, and the sand-board bolts D, substantially as herein shown and described.

166,225.

166,226.



166,227.

166,228. Air-Heating Furnaces. John M. Wilson, Philadelphia, Pa. [Filed Feb. 24, 1875.]

1. The hot-air chamber B, inside of the body of the heater and above the fire, as described, and surrounded by the annular space C, which forms the upper portion of the combustion-chamber, as described, in combination with the annular hot-air space A, as described, the said chambers A and B receiving their fresh air through *a'* and *b'*, respectively, and discharging the same, heated, through their respective outlets *a''* and *b''*, as set forth, thus forming a double or duplex heater having but one combustion-chamber.

2. In combination with the hot-air chamber B and annular or gas flue D, the series of drums *d' d'* in the upper part of the fire-chamber C, for the purpose of increasing the radiation of heat into the said chamber B.

166,229. Bale-Ties. H. J. Wright, Society Hill, S. C. [Filed Feb. 12, 1875.]

The bale-tie or buckle, composed of the plate A, having slot C and the end cam-bar D in a different plane from the part to which the band is riveted, and the plate H, having slot I to receive the free end of the band, and tenon E, to engage it for locking with plate A, as shown and described.

166,230. Car-Couplings. J. Q. A. Young and J. D. Young, Cedar Mill, Oreg. [Filed Apr. 9, 1875.]

The draw-head A, provided with recessed jaw-chapel front end, in combination with the swinging front-weighted jaw B, cam *d* of the lateral shaft D, and the conically-headed coupling-link C, for coupling and uncoupling the link by the action of the cam, substantially as and for the purpose set forth.

166,231. Book-Backing Machines. Jos. Armstrong, Cambridge, Mass. [Filed May 21, 1875.]

Brief.—The book is placed in the rotary holder, and a double oscillatory movement is given to the lever carrying the backing-roll through the medium of the right-angled lever, while a vibratory movement is given to it by the rocking fulcrum operated from the main shaft.

166,232.

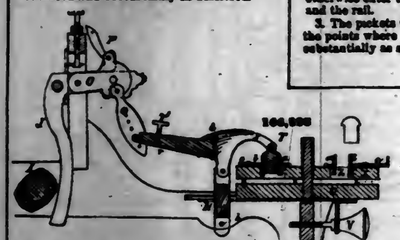
The chill for mold-boards, consisting of the fixed bars A, detachable bars C, joined together by means of the rim B, the cleats E, gas-ducts D, and ears F, all constructed substantially as described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON

1. The combination, with a boot-backing roller, of a rotating boot-holding plate, substantially as described.

2. The combination, with a boot-backing roller, of a rotating boot-holding plate, having adjustable boot-holding jaws and the adjustable sliding frame, substantially as described.

3. The boot-backing roll T, having a double oscillatory and vibratory movement, by means of mechanism substantially as described.



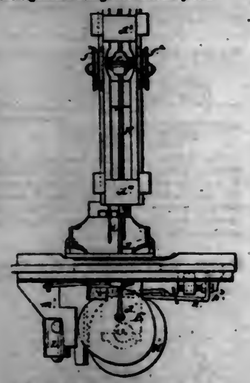
4. The combination of the oscillatory lever R, carrying the backing-roll T and the rocking fulcrum H, substantially as described.

5. The combination of the cam I, right-angled lever J, pendant Q, and lever R, for producing a double oscillatory movement of the backing-roll, substantially as described.

6. The combination of the lever J, latch O, cam-lever F, pendant Q, with the lever R, for raising the backing-roller, as and for the purpose described.

166,280. BOOK-SEWING MACHINES. James Armstrong, Cambridge, Mass. [Filed Mar. 9, 1875.]

Brief.—The needle-bar carries a positively-rotating drill, which forms the hole while the stitch is being formed in the preceding hole, the signature being intermittently fed.



1. In combination with a stitch-forming mechanism, the reciprocating rotating drill, as and for the purpose described.

2. The rotating drill F, provided with pulley f, in combination with the reciprocating standard D, carrying the needle f, as described.

3. The combination of the rotating drill F, reciprocating standard D, carrying the needle f and spool F, with the rod d and cam-wheel E on the main shaft, as described.

4. In combination with the stitch-forming mechanism, the reciprocating rotating drill F, and the intermittent feed mechanism, operating substantially as described.

5. The pivoted arm H, carrying the adjustable bent strip h^1 and bar h^2, in combination with cam-wheel H^1 and pivoted frame n^1, whereby the length of the stitch is controlled, substantially as described.

6. The intermittent feed mechanism, consisting of the plate M, constructed substantially as described, provided with the bar m^1 and standard m^2, carrying the pivoted clamping-bar m^3, operating as described.

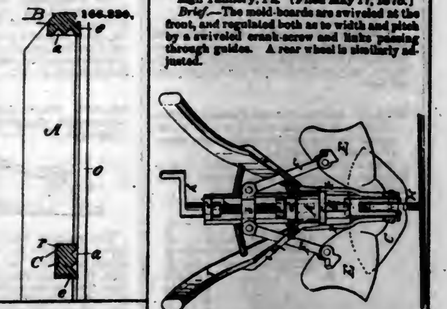
166,281. FENCES. Henry Bean and Benj. F. Bean, Pawling, Pa. [Filed Apr. 16, 1875.]

1. As an improvement in the construction of fences, the rails B C, having their sides and edges provided with the grooves *a* and *c*, substantially as and for the purpose set forth.

2. A fence-rail having a gutter or groove, *b*, in its upper edge near the pickets, for the purpose of conveying away the water that would otherwise enter the joint between the pickets and the rail.

3. The pickets O, having the groove *b* at the points where they bear against the rails, substantially as shown and described.

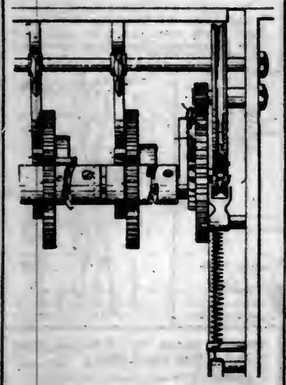
166,280.



The combination of a series of independent springs, a series of independent clutches, the non-rotating shaft, and a single winding and retaining shaft, substantially as described.

166,282. METERS. Joseph H. Bean, Cincinnati, Ohio. [Filed July 20, 1875.]

Brief.—Two parallel shafts, only the front one rotating, a series of loose tooth-wheels on both. The front ones have each a clutch, the back ones each a spiral spring and a ratchet and pawl, to be wound up by the former either separately or combined. A friction-roller for binding on the belt-wheel is operated by a spring and treadle.



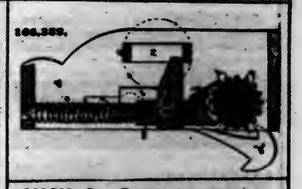
166,283. MEAT-POUNDERS. Jas. T. Black and Job Trane, Mount Union, Pa. [Filed June 2, 1875.]

1. The combination of the fluted roller *b*, ratchet *c*, dog *d*, bar *h*, and slide *e*, substantially as described.

2. The combination of the fluted roller *b*, bar *h*, ratchet *c*, dog *d*, projection *r*, stem *i*, spring *l*, flat bar *o*, slides *e*, and crank *p*, the parts being arranged for operation substantially as shown and described.

3. The flat bar *o*, in combination with the crank *p*, projection *r*, block *m*, stem *i*, spring *l*, and bar *h*, substantially as specified.

166,284.



166,285. CORN-PLOWS. Anton Binder, Lehigh Tannery, Pa. [Filed May 17, 1875.]

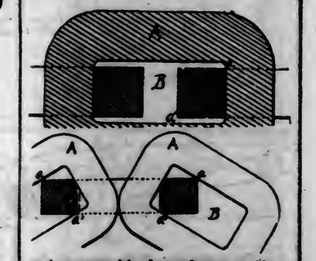
Brief.—The mold-boards are swiveled at the front, and regulated both as to width and pitch by a swiveled crank-screw and links passing through guides. A rear wheel is similarly adjusted.

1. In a plow, the combination of the pivoted mold-boards B, their adjusting links F, screw I, traveler *h*, guide-braces *i j*, and depth-regulating wheel H, constructed and arranged as shown and described.

2. The combination of the guide-braces *i j* with the adjusting links and mold-boards, substantially as shown and described.

166,286. CHAINS. James W. Beatie, New Brighton, Pa. [Filed Mar. 20, 1875.]

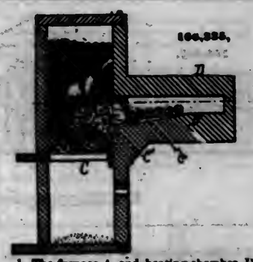
Brief.—The links are formed from square bars of iron. The slot of each link is of a less width than the diagonal diameter of the link with which it is connected, and, consequently, does not allow the link to turn crosswise.



As a new article of manufacture, a cable or draft-chain composed of links A A, having rectangular edges, when the width or breadth of the slot B of the link is less than the diagonal diameter of of the bar, as and for the purpose specified.

166,287. FURNACES FOR BLAKES. James W. Beatie, New Brighton, Pa. [Filed Apr. 6, 1875.]

Brief.—The heating-chamber is connected with the furnace through a series of openings, and is provided with an inclined bed-plate, upon which the blanks are placed. The bed-plate is formed with grooves or channels, one extending from each of the openings, in virtue of which the flame, as it issues in through said openings, surrounds the blanks upon all sides. The blanks slide down the inclined bed-plate as each heated one is removed, and thus are subjected to a gradually-increasing heat, until brought directly in contact with the blast.



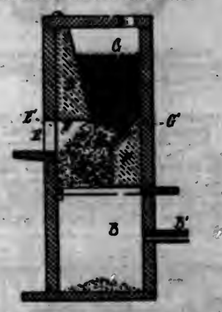
166,288.

1. The furnace A and heating-chamber D, having an inclined bed-piece, D', connected through a series of openings, C' C', the whole being combined and arranged to operate substantially as described.

2. The chamber D, having a bed-piece, D', formed with an inclined section, and grooves or channels *d d*, that connect with the openings C' C' leading from the furnace, substantially as described.

166,289. FURNACES FOR BLAKES. James W. Beatie, New Brighton, Pa. [Filed Apr. 6, 1875.]

Brief.—The construction of the furnace is such, mainly in virtue of the bosher, as to cause the fuel to be deflected forward toward the mouth of the furnace and over the grate only after it shall have become ignited, thus permitting the blank to be embedded in the hottest portion of the fire, and avoiding any possible contact with it of the raw coal.

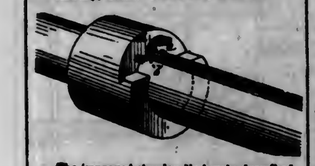


1. In combination with the walls of the furnace, the chocks or beshes D F, arranged with relation to the grate and feed-opening, substantially as herein shown and described.

2. A furnace for heating blanks, consisting of the chocks or beshes D F, of the form and arrangement shown, movable door H, blast-tube F, and mouth E, the whole being constructed and arranged to operate substantially as described, as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

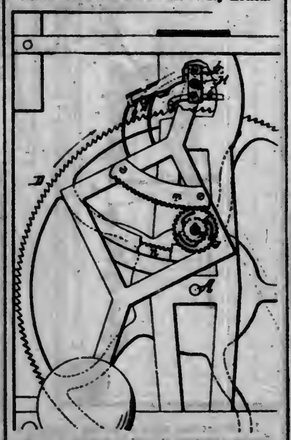
166,287. DIES FOR SMOOTHING AND SHAPING SOLDERED TUBES. Philo Brown, Waterbury, Conn. [Filed July 1, 1875.]



The improved circular die herein described, for smoothing and shaping soldered metal tubes, constructed with the cutting-edge *b* at one portion only in front, for the purpose of scraping the surplus solder from the exterior of the tube as the latter is drawn in through the die, substantially as specified.

166,288. MACHINES FOR CONVERTING MOTION. David C. Burson, Philadelphia, Pa. [Filed July 8, 1875.]

Brief.—The vibratory motion of a pendulum is converted into a continuous rotary motion.



The combination of the main wheel D, driven by a spring or weight, the escapement, and the pendulum, having two toothed segments, *n* and *n*, with the shaft L, cog-wheels J J', each having pawls, and the ratchet-wheels K K', all substantially as set forth, for the purpose specified.

166,290. RAMS-FAUCETS. Wm. C. Bussey, San Francisco, Cal. [Filed May 17, 1875.]

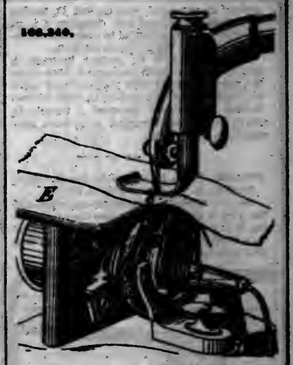


1. A swivel-head for gas, water, and steam cocks, consisting of an india-rubber block, D, surrounded by a metallic shell, E, substantially as and for the purpose described.

2. The swivel metallic shell E, with its filling D of india-rubber, and having the nozzle J, when the water-pipe B passes through a hole in the india-rubber filling, and has a passage, *c*, connecting the interior of the water-pipe with the nozzle J, substantially as and for the purpose above described.

166,289. LOOPING ATTACHMENTS FOR SEWING-MACHINES. Saml. Byrom and Francis Clowsley, Philadelphia, Pa., assignors of one-third their right to Joseph D. McKee, same place. [Filed May 24, 1875.]

Brief.—Loops of yarn or thread are formed by a loop-carrier. This is a conical or cylindrical piece of metal formed with or secured to the lower bobbin, and when in position presents at right angles to the plane of the rotating head. At its outer extremity an eye is formed for holding the end of a cord, upon which the loops are strung. The slide-holder is open at the top to admit of the passage of the loops, and a slot is formed in the cloth-plate for a similar purpose. Loops are formed by the hook, and pass over the bobbin to the loop-carrier without being shortened or closed up.



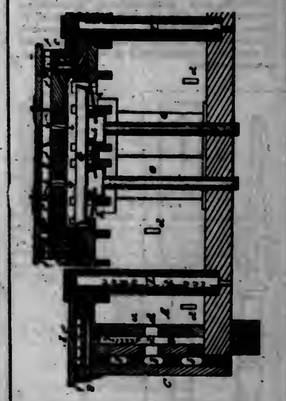
1. A loop-carrier for sewing-machines, provided with a cylindrical or conical projection, whereby a series of loops are formed and prevented from being drawn into the cloth, substantially as set forth.

2. The combination of a looping-hook, C, and a loop-carrier, A, substantially as set forth.

3. The combination of the loop-carrier A, the bobbin B, the looping-hook C, the open-topped slide-holder D, and the slotted cloth-table E, the combination being and operating substantially as set forth.

166,291. REFRIGERATOR-CANS. Joseph H. Canfield, St. Louis, Mo. [Filed July 17, 1875.]

Brief.—Between the middle and the outer shell of the sides and ends of the can, and of the ice-box, and of the top of the ice-box, are straight passages, (valved or not,) through which air rushes as the car moves. From such passages in the top of the ice-box, air passes downward through the ice into the car. All of the side and end passages communicate with the interior of the car.



1. A refrigerating-car composed of three shells, A B C, the space between the two inner shells being filled with non-conducting material, and the space between the two outer ones forming air-passages *h*, communicating with the interior of the car through ports *d*, and with the air outside through ports *e*, at both ends and both sides of the car, all constructed and arranged to operate substantially as herein described.

2. The ice-box D, provided with the air-passage *f* longitudinally through its top, and said passage having ports *i* and valves *n*, substantially as and for the purposes herein set forth.

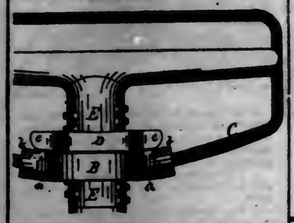
3. The ice-pan G, inclined bottom *h*, and

pipes *d d*, connected with ice-box D, having air-valved passages *f* and openings *i i*, all constructed and arranged to operate substantially as and for the purposes set forth.

4. The car A B C, packed between A and B, and having air-passages *b*, with ports *d e*, communicating with the inner and outer air, as described, the ice-box D, with inclined bottom *h*, air-valved passages *f*, ice-pan G, and cylinder I, all arranged to operate substantially as set forth.

166,342. Map-Heads. Charles B. Clark, Buffalo, N. Y. [Filed July 6, 1875.]

Brief.—The collar is made in one piece, and the wire is held in the cavities therein by being bent down. The movable jaw is operated by a thumb-nut under it, having a flange that rests in a recess therein.

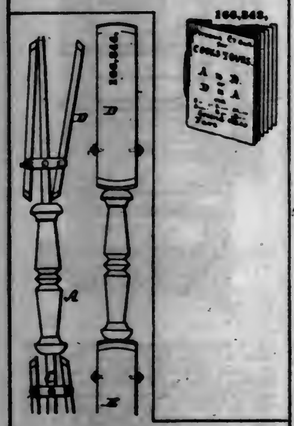


1. The solid collar B, provided with the cavities *d* and hollow arms *b*, whereby the wire C is received and the ends *e* bent down, as described and shown.

2. The combination of the nut D, having flange *p*, the solid collar B, having the annular seat *f* and the cavities *d*, and a fixed and movable jaw, as set forth.

166,343. Complex-Coupon Railroad-Tickets. Thos. Cook, London, England. [Filed Sept. 22, 1873.]

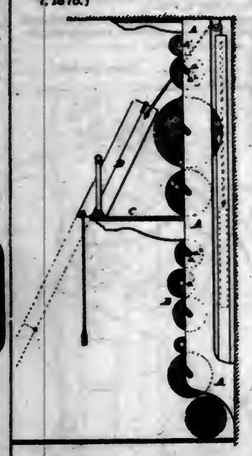
A complex-coupon route-ticket, composed of a set or series of passage-tickets which are available over geographically consecutive routes, and a stub which is common to all of them, and from which each of the several tickets may be separately detached, in or out of sequence, substantially as and for the purpose specified.



166,344. Carpenters. James A. Crandall, Brooklyn, N. Y., assignor to himself and Sylvenus White, same place. [Filed July 30, 1875.]

A double carpenter consisting of a handle, A, provided at each end with clippers D E, substantially as specified.

166,345. Snow-Racks for Carpets. Jos. Crawshaw, Jr., St. Louis, Mo. [Filed June 7, 1875.]



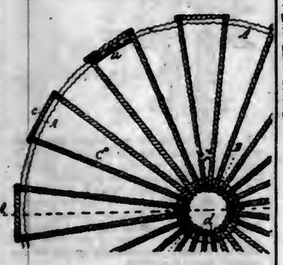
1. The vertical posts A, having bearings *a* for the gudgeons of rolls of carpet, in combination with the balcony C, as and for the purposes set forth.

2. The hollow gudgeon G, in combination with the removable conical point H, substantially as and for the purposes set forth.

3. The hollow gudgeon G, in combination with the conical point H, having reduced neck *h*, and wire or cord *h'*, as set forth.

166,346. Wire Dish-Stands. W. F. Collier, Worcester, Mass. [Filed July 13, 1875.]



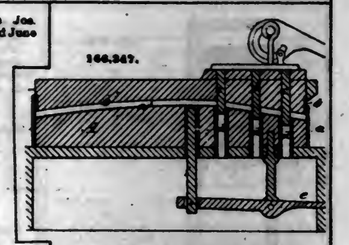


1. The combination, with the outer and inner rings A and B, of horizontal wires C, having bends *b*, *c*, and *e*, substantially as and for the purposes set forth.

2. The wire C, bent at *c* in the form shown, to unite the legs of the said wire C and provide a projecting flange for the tray, substantially as described.

166,347. Dies for Cutting, Molding, and Punching Shovel-Blades. Peter B. Cunningham, Bethlehem, Pa. [Filed May 4, 1875.]

Brief.—Two die-blocks present faces or dies that properly mold the plate, and these are insured at their edges with cutters that shear the plate to the proper size and shape. Punches operated by a lever make the rivet-holes, and an ejector loosens the blank in the die.



1. The combination of the female die, having knives or cutters *a a'*, and a formed face, *a''*, with the die B, having knives *b b'*, and a correspondingly-formed face, *b''*, substantially as shown and described.

2. In combination with the cutting and forming dies A and B, the punches *c* and sockets *d*, located in said dies A and B, for punching the blanks while in the forming-dies, substantially as shown and set forth.

166,348. Bobbins for Sewing-Machines. Geo. W. H. Curtis, Brooklyn, N. Y. [Filed Apr. 26, 1875.]

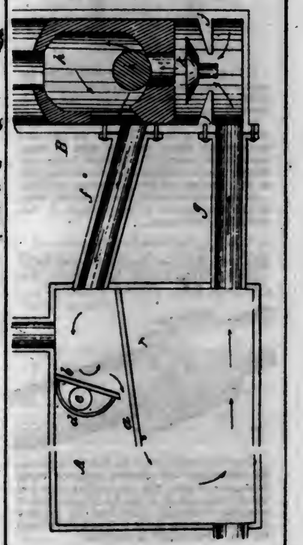
Brief.—A bobbin provided with two or more grooves for carrying the under thread.



A bobbin provided with two or more grooves for carrying the under thread for ornamental stitching, substantially as described.

166,349. Oil-Stills. Julius G. Dickey, Franklin, Pa. [Filed Nov. 4, 1874.]

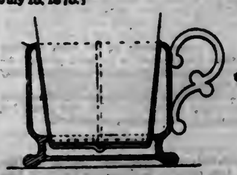
Brief.—Heat is applied to the bottom of the still. The pump starts a circulation, drawing the oil from the bottom of the still and forcing it into the top, whence it flows down the inclined partition. Midway upon the partition the oil meets a deflecting-plate, breaking up the heavy oil, and liberating the volatile products.



1. The tank A, provided with an inclined partition, *c*, in combination with a pump or other forcing apparatus, substantially as and for the purpose set forth.

2. The tank A, provided with a deflecting-plate, *b*, and inclined partition *c*, in combination with a suitable pump or forcing apparatus, substantially as and for the purpose described.

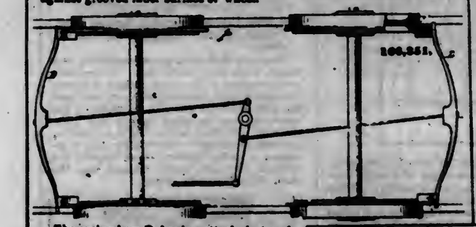
166,350. Cups for Effervescing Drinks. Wm. C. Dodge, Washington, D. C. [Filed July 10, 1875.]



In a cup or cup-holder for effervescing drinks, a receptacle constructed and arranged to receive the overflowing liquid, and retain the same when the cup or holder is used in the act of drinking, substantially as described.

166,351. Car-Brakes. Saml. Doubleday, Baltimore, Md. [Filed May 15, 1875.]

Brief.—Draft on center of semi-elliptic spring forces shoes on either end thereof against grooved inner surface of wheel.



The spring-bow D, having attached at each of its ends a brake-shoe, provided with a shoulder, I, in combination with a mechanism connected with said spring-bow for operating the same, the whole being constructed to operate in connection with car-wheels having grooves cut in their inner face, substantially as shown and described.

166,352. Processes of Manufacturing Illuminating-Gas. Frederick H. Blackmore and Andw. George Hunter, Detroit, Mich. [Filed Aug. 20, 1874.]

The process described, consisting of vaporizing hydrocarbons in a retort, and at the same time distilling wood in another retort, then in conducting the vapors of the hydrocarbons and the wood-gases into another retort at a red heat, then in removing quickly the combined resultant gas, all substantially as described.

166,353. Veneer-Cutting Machines. C. T. Fairchild, Hartford, N. Y., assignor to Burrell, Ives & Co. [Filed Jan. 21, 1871.]

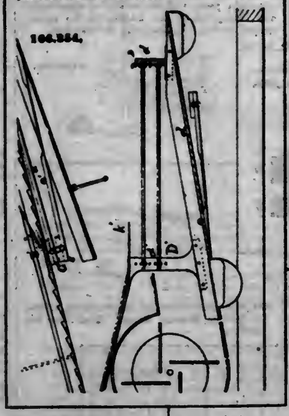
Brief.—An additional roll is placed in advance of the cutting-knife, to prevent the tearing of the wood when in a loose or shaky condition by the cutting device.



The roller F, arranged in a veneer-cutting machine as described, in relation to the knife, its support, and the supporting centers, as and for the purpose specified.

166,354. Grain-Separators. A. B. Farquhar, York, Pa. [Filed May 13, 1875.]

Brief.—Special construction of separator-shoe for thrashing-machines. Feed-board and screens carried upon metallic standards supported from floor of shoe.



The standards D', formed with projections *d'*, to hold the forward ends of the riddles, and inclined forwardly-projecting arms *g*, for supporting the feed-board *h*, constructed and operating as shown and described.

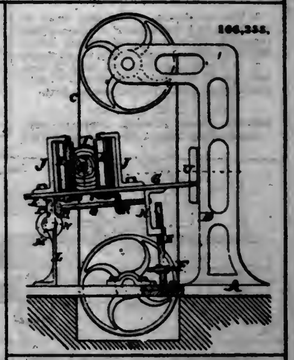
166,355. Rebawing-Machines. Jno. First New York, N. Y. [Filed June 30, 1875.]

Brief.—The table which supports the log and the feed-rolls can be brought into an inclined position, at the same time that an oblique cut of the log is obtained, without throwing the feed mechanism out of gear, by means of a hinge-joint, whose leaves are fastened, respectively, to the table and the base-piece, and the center of which coincides with the center of a shaft, from which motion is transmitted to the feed-shaft and feed-rollers, in connection with a vertical screw-spindle turning in a bracket attached to the under part of the inner end of the table. The feed-rolls are rotated by bevel-wheels upon the lower ends of their shafts, which engage with corresponding wheels mounted upon a horizontal shaft under the table, and operated by worm-gear at the outer end of the same.

1. The combination, substantially as hereinbefore set forth, of a hinged log-supporting table, G, with the fixed rollers I I, and mechanism, as described, for rotating the rollers, and for inclining the table without disconnecting the gear-wheels, substantially as set forth.

2. The log-supporting table, provided with feed-rollers, and carrying the shaft and gear for operating the same, and connected by a hinge with its supporting-frame, in combination with an adjusting mechanism, substantially as described, whereby the table, its feed-rollers, and gear can be inclined without disconnecting said gear, as set forth.

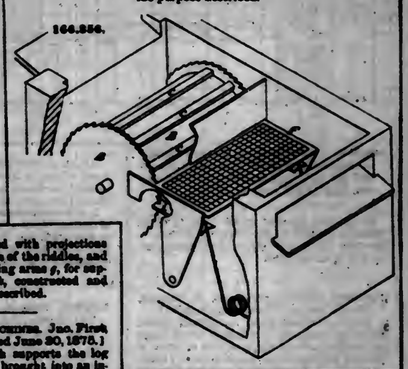
3. The combination of the table G, feed-rollers I I, screw-spindle R, hinge-joint K, worm N, worm-wheel P, driving-shaft Q, and bevel-wheels R S S S, all combined and operating substantially as set forth.



166,356. Amalgamators. E. J. Fraser, San Francisco, Cal. [Filed Feb. 10, 1875.]

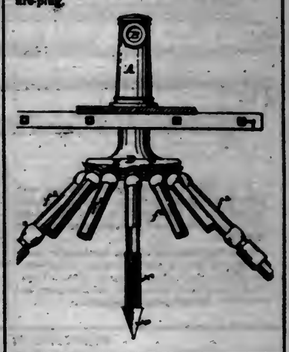
Brief.—Combines a submerged oscillating sieve with the backed cylinder described in Patent No. 153,263.

In combination with the cylinder or cylinders E, with their wings *a*, rotated inside of a tank which is partially filled with quicksilver, the shaking screen F, substantially as and for the purpose described.



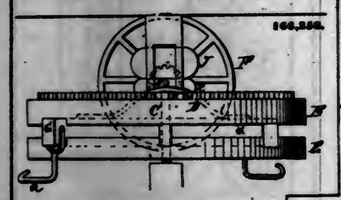
166,357. Fire-Plugs. Carroll H. Gray, St. Louis, Mo. [Filed Apr. 12, 1875.]

Brief.—The tubes are driven from the bottom of an excavation in a radial direction, and connected with the plug by means of flexible tubes. In this way the water is drawn from a considerable area, and the pipes lying in any direction can be easily connected to the fire-plug.



1. The combination of the spring head or casting A, and weft-tubes F communicating therewith, and extending radially and downwardly therefrom, substantially as set forth.
2. In combination with the head A, and weft-pipes F, the flexible connections f, substantially as and for the purpose set forth

166,856. Hoops-Fowers. James R. Gray, Chesterville, Miss. (Filed Apr. 10, 1875.)



166,856.

The combination of the wheels E E', crossbar G, clamped between the two, and having hooks c c, the pinion I, bridge D, shafts C c, and wheel F, all constructed substantially as forth.

166,857. Shoe Tips or Protectors. Chas. T. Grilley, Boston, Mass. (Filed June 24, 1875.)

The process of forming leather tips or protectors for uppers, consisting in cutting out the inner portion of the blank, as described, and then pressing and hardening the tip so shaped in dies, substantially as described.



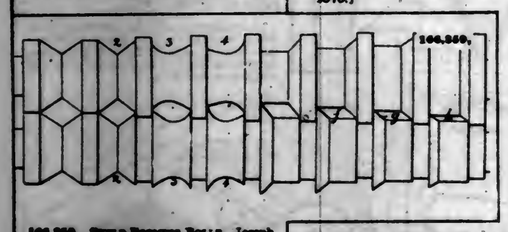
166,857.



166,858.

166,858. Shoe Tips or Protectors. Chas. T. Grilley, Boston, Mass. (Filed June 24, 1875.)

1. A tip or protector for boots or shoes, composed of one or more strips of leather, compressed, hardened, and conformed to the shape of a toe or upper, substantially as described.
2. In the manufacture of shoe-tips from strips of leather, bending and forming the heart-strip as described, and then uniting the shoulder-strip to the heart strip by means of fastenings, substantially as described.



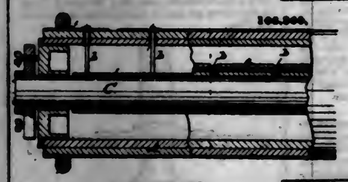
166,859.

166,859. Sizing-Fourning Rolls. Joseph G. Gehr, Philadelphia, Pa., assignor of one-half his right to Ann O. Danle, Wilmington, Del. (Filed Apr. 12, 1875.)

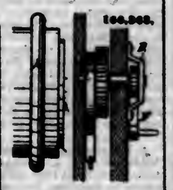
Sheip-rolls grooved as set forth, so as to reduce a bar first to the form Fig. 2, then to the form Fig. 3, and then to that represented by Fig. 4, as specified.

166,860. Sand-Paper Rolls. O. Gibbens, Boston, Mass. (Filed June 26, 1875.)

Brief.—The sand-paper is fastened to and about the periphery of a hollow roll of paper or similar material by means of a series of pivoted gripping-jaws arranged exteriorly along the roll, and adapted to be operated from the inside. The jaws are provided at their outer ends with sharp prongs for securing the paper sheet to the roll, and are connected to the roll-shaft, so as to swing in circular lines and draw the sheet close about the roll. The sand-paper is held around the roll by bands of rubber, which encircle the ends of the same.



166,860.



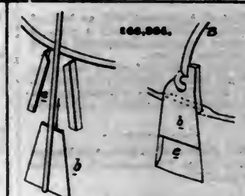
166,860.

1. A hollow roll, A, in combination with jaws d, arranged exteriorly along the roll, and adapted to be operated from the inside of the roll, substantially as described, for the purpose specified.
2. In combination with a sand-paper roll, the gripping jaws d, having prongs f, and connected to a shaft, C, to swing in circular lines when operated by said shaft, substantially as described, for the purpose specified.

In combination with the window-sash operated by the rack-pinion and spring, the ratchet D, pinned outside the casing on the spindle of the pinion, and the automatic detent F G, substantially as set forth.

166,862. Attaching Handles to Vessels. G. W. Hartwell, Cincinnati, Ohio. (Filed July 19, 1875.)

Brief.—The bail or handle is readily detachable.



166,864.

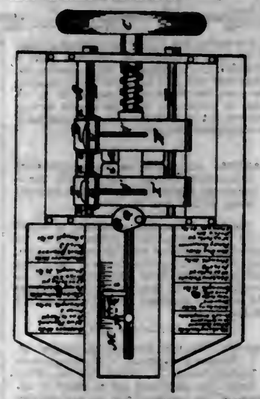
1. A vessel having at the sides tapering sockets c c, adapted to tapering plates b, secured to the ends of a handle, B, substantially as set forth.
2. The combination of a vessel having sockets c c and a handle provided with plates b b, adapted to said sockets, as set forth.

166,865. Confectionery. Edwin Hawker, Lee, assignor to Cornelius Hanbury, London, England. (Filed Nov. 28, 1874.)

1. The process herein described of coating jujubes and other sticky confections in a solution of gelatine or isinglass, (fish gelatine,) substantially as and for the purpose set forth, to prevent adhesion or absorption of water or loss of water.
2. Jujubes or gum confections, having a coat of gelatine or isinglass, (fish gelatine,) substantially as herein described.

166,866. Cloth-Testing Machines. Wm. Hebdon, Boston, Mass. (Filed Jan. 20, 1875.)

Brief.—A cloth-testing machine having two chaps, which slide on the rods. These chaps are corrugated on the upper surface, and have two plates, which are hinged at one end, and lap over and hold down to the chaps by the cams, so that the cloth cannot slip when strained. Working in the chap is a screw for producing the strain. To the other chap is attached a spring-balance, which records the number of pounds tensile strength that the cloth will stand when strained.



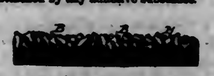
166,866.

1. In a cloth-testing machine, two sliding jaws or clamps adapted to hold a piece of cloth or other material between them, one jaw being connected directly to a screw-shaft, which gives it motion, and the other to a spring indicating mechanism, substantially as described.
2. In a cloth-testing machine, the combination of the traveling chaps D I, corrugated on their upper surfaces, the hinged portions F F', corrugated on their lower surfaces, and the cams G, journaled in the swinging arms a c, and provided with handles G', all arranged and operating substantially as and for the purpose specified.
3. The chaps D I, having the projections or shelves d d', substantially as and for the purpose specified.

4. The combination of the traveling chaps D I and their attachments with the screw-shaft B and spring-balance s, all arranged and operating substantially as described.
5. The cam Q, adapted to prevent the sudden recoil of the chap I, substantially as described.

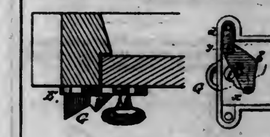
166,867. Anodes for Electroplating with Nickel. August Hermann and W. H. Taylor, Stamford, Conn. (Filed June 26, 1875.)

Brief.—The particles of metal are compressed into the nasal carbon anode while it is yet plastic. To a metallic anode the particles are attached by any adhesive substance.



An anode for electroplating, composed of a plate, A, with particles of metal B B united to the outer surface thereof, substantially as herein set forth.

166,868. Reversible Latches for Cupboards, &c. Chas. F. Herrick, Independence, Iowa. (Filed June 26, 1875.)



The combination, with the latch G and latch-case E, of the plate b, fastened by means of a rivet, a, to the latch, and provided with holes x x, and the suspending-plate d, provided with the pin y, all substantially as and for the purpose herein set forth.

166,869. Machines for Welding Chain-Links. Benj. Hershey, Erie, Pa., assignor to Pittsburg Chain and Car-Link Manufacturing Company. (Filed Mar. 26, 1875.)

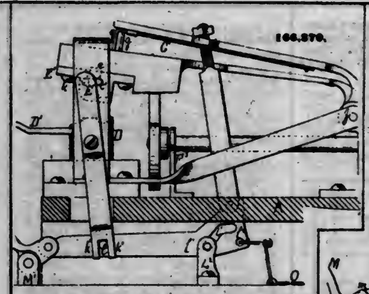
Brief.—The peculiarly-shaped cavities are intended to allow for and control the spread of the excess of metal due to the lapping the ends of the blank.



The dies A B for welding chain-links, constructed as shown and described—that is to say, the cavity being of a somewhat oblong or elliptical contour, its major axis lying oblique to a plane passing through its two limbs, in virtue of which form the greater portion of the metal acted upon by the die A is thrown laterally inside the center of its cavity, while the greater portion of the metal acted upon by the die B is thrown laterally outside the center of its cavity, substantially as and for the purpose set forth.

166,870. Machines for Welding Chain-Links. Benj. Hershey, Erie, Pa., assignor to Pittsburg Chain and Car-Link Manufacturing Company. (Filed Mar. 26, 1875.)

Brief.—The improvement consists in mounting the lower die upon an upright axis, and providing it with a horizontal arm with an upright pin; said arm and pin acting as a handle for rotating the die, (to present different parts of the link to the action of the narrow-faced upper die,) and as a support for the link being operated upon.

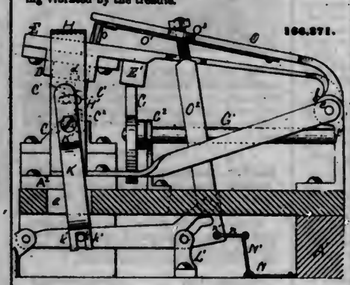


166,870.

1. In a chain-link-welding machine, the rotating die D and the movable swage-die E, the same being combined as described, to operate substantially as and for the purpose specified.
2. In combination with the movable swage-die E, a rotating die, D, having an arm, D', with a bearing-pin, d', attached, as and for the purpose specified.

166,871. Machines for Welding Chain-Links. Benj. Hershey, Erie, Pa., assignor to Pittsburg Chain and Car-Link Manufacturing Company. (Filed Mar. 16, 1875.)

Brief.—Instead of using a drop, in this case a helve-hammer is used, having a flanged vertically-notched head working in a stirrup horizontally notched, the vertical notch allowing the head to move freely up and down when the stop-pin is in one position, and catching under the flange in the other, the stop-arm being vibrated by the treadle.

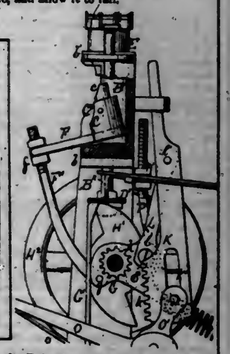


166,871.

1. The hinged hammer arm E, having a flanged head, D, in which there is a vertical slot, d, stirrup H, having horizontal slot d', stop-arm K, having bearing-pin i, the lever L, spring N, and treadle M, the whole being constructed, combined, and arranged to operate substantially as described.
2. The hinged hammer arm E, cam G, horizontal shaft G', the bed-plate O, having a spring, O', attached, arms O² O³, lever L, spring N, and treadle M, the whole being combined and arranged to operate substantially as described.

166,872. Machines for Welding Chain-Links. Benj. Hershey, Erie, Pa., assignor to Pittsburg Chain and Car-Link Manufacturing Company. (Filed Mar. 12, 1875.)

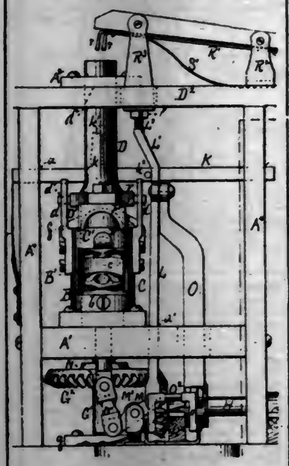
Brief.—A pivoted die tilted forward to release the link from its frog by means of plate and link, the latter attached to a bell-crank lever, connected through link and the lever to the pinion on the main shaft, the object being, when the lever is brought into gear by depressing the treadle, that the bell-crank lever may operate to tilt the die, draw down the link, (and with it the spring,) and push the stop-spring bar from under the frame of the upper die, and allow it to fall.



166,872.

1. The die E, having an opening to receive the permanent tongue or frog of the lower die C, in combination with said die C, provided with the permanent tongue, and mounted in the sleeve C' on a horizontal axis, to admit of its being tilted forward, substantially as and for the purposes set forth.
2. The combination of the rocking die C, plate F, adjusting-arm F', bell-crank lever G, pinion A, ratchet-arm K, and link L, the whole being constructed as shown, whereby, through the action of the treadle, they are thrown into gear, so as to tilt the die forward to aid in releasing the finished link, substantially as described.
3. The combination of the rocking die C, plate F, adjusting-arm F', bell-crank lever G, pinion A, arm K, link L, and spring M', the whole being constructed and arranged as shown, whereby, when the ratchet-arm is disengaged, the die, which had previously been tilted forward, shall be automatically returned, substantially as described.
4. The combination of the spring stop-bar G', bell-crank lever G, and its operating mechanism, cam H', and gate D, the whole being constructed and arranged as shown, whereby the traveling die is operated and retained, substantially as described.
5. The combination of the spring-bed N and spring N', gate D, link L, arm F, and bell-crank lever G, and its operating mechanism, the whole being constructed and arranged to operate substantially as described.

166,376. MACHINES FOR WELDING CHAIN-LINKS. Benj. Hershey, Erie, Pa., assignor to Pittsburg Chain and Car-Link Manufacturing Company. [Filed Mar. 17, 1875.]



1. The dies C C', having cavities of such outline as will give to the welded section of the link an obovate form in cross-section, the thicker portion being at the inside of the link, said cavities being of semi-obovate form at the center of their curved portions, and gradually approaching the original form of the blank, until, at the junction of their curved and their straight portion, they are of said original form, as and for the purpose specified.

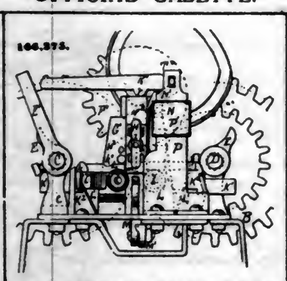
2. In combination with dies C C', having cavities of a semi-obovate contour, the finishing-dies F F', the same being connected, respectively, with the sleeve B and traveling plunger D, to operate substantially as described, as and for the purpose specified.

3. The sliding stop-bar K and plunger D, having bearings *k k'*, lever L, having an inclined bearing, L', arranged in connection with a bearing-pin, k^3, on the stop-bar, as shown, spring K', and treadle M, the latter secured to the lever L through a suitable connection, the whole being combined and arranged to operate substantially as described.

4. In combination with the stop-arm K, pin k, and the plunger D, having bearings, as shown, the lever L, having inclined bearing L', pivoted lever M, and traveling teagre N, the whole being combined and arranged as shown, to operate substantially as described.

5. The bed-plate R, spring R', lever L, rod O, having an center bent-bearing, P, cam P', and lever O', the whole being combined and arranged to operate substantially as described.

166,375.



2. The combination of the horizontal arm K, having its upper face recessed, as shown at *k'*, roller O, mandrel H, and arm E, when the whole are constructed and arranged to operate substantially as described.

3. In combination with the plunger H', that carries the mandrel, the lever R', movable knife T', and stationary knife T, the whole being constructed and arranged to operate substantially as described.

166,376. MACHINES FOR WELDING CHAIN-LINKS. Benj. Hershey, Erie, Pa., assignor to Pittsburg Chain and Car-Link Manufacturing Company. [Filed Apr. 9, 1875.]

Brief.—The bending is effected by two grooved rolls attached to slides that move past one another in parallel planes. The mandrel, rectangular in cross-section, is carried by a frame reciprocated by a cam, which, when descending, first strikes the blank lying upon the rolls, then descends with it until the two ends of the doubled blank have passed below, and have been bent by the rolls over its top. An arm then strikes the cam-lever, which latter forces the mandrel inward, where it is caught by a detent, and retained until, just as the frame reaches the top of its throw, it strikes a trigger, that releases the mandrel, and it is again forced out by a spring.

1. The combination of the sliding plate or plunger H', mandrel or former H, spring *h'*, spring-latch N, inclined shoulder *n*, levers R' and R, and dies L L, the whole being constructed and arranged as shown, and so as to operate substantially as described.

166,377.



The dies A A, having cavities of the form described, and which, through their joint section, upset the excess of metal at the welded section of the link, imparting to the same a print or form such as is shown at B', Figs. 2 and 3.

166,377. MACHINES FOR WELDING CHAIN-LINKS. Benj. Hershey, Erie, Pa., assignor to Pittsburg Chain and Car-Link Manufacturing Company. [Filed Mar. 15, 1875.]

Brief.—The dies perform the welding, properly working the excess of metal due to the lapping of the ends of the link, and the other set of dies finish the welded section.



The dies B B', having cavities *b b'* of the form shown, for welding chain-links, in combination with finishing-dies C C', the whole being constructed and arranged to operate substantially as described, as and for the purpose specified.

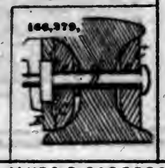
166,378. ADZES. Sylvester W. Higgins, St. Louis, assignor of three-fourths his right to James A. Greeson, Ironton, and Joseph B. Meeker, St. Louis, Mo. [Filed May 10, 1875.]

As a new article of manufacture, a detachable point for augers, constructed as shown and specified.

166,378.



166,379.



166,379. RAILROAD-RAIL JOINT FASTENINGS. Stephen Hipkins, Jr., and John W. Rigsby, Wheeling, W Va. [Filed July 8, 1875.]

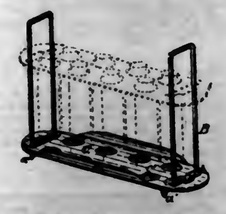
Brief.—A rail-joint in which the fish-bars are secured by double-headed bolts, one of the fish-bars being provided with inclined surfaces, against which the heads of the bolts bear, and by means of which inclines the joint is tightened up. The bolts are prevented from turning by a transversely-slotted plate; said slots fitting over the heads of the bolts, and the plate is prevented from displacement by two small bolts, which pass through one of the fish-bars, the outer end of the bolts being slotted, and a key driven down with bearings for it in grooves cut in the side of the plate.

1. The combination of the slotted rails A B, the fish-plates C C', the elongated slots *c*, inclines *c*, and the double T-headed bolts D, as described.

2. The combination of the rails A B, the fish-plates C C', the elongated slots *c*, inclines *c*, double T-headed bolts D, and the key-plate E, provided with its elongated slots and bolt-holes, as described.

3. The key-plate E, provided with the vertical and horizontal slots *i k* and the face-grooves *l*, and combined with the double-headed bolts D, upon which and the fish-plate said key-plate is secured by the bolts *g* and the keys *k*, as described.

166,380. HOLDERS FOR PRESERVE-CANS. C. Dewey How, Cincinnati, Ohio. [Filed July 19, 1875.]



1. The perforated base-support, having directly attached thereto suitable handles or lifting device, as described, with an upper plate combined therewith adapted for the neck of the fruit-receivers, the whole constructed and adapted to operate substantially as described.

2. The supporting plate or base A, having guard *a'*, and feet *a''*, combined with handles or lifter B, and upper support C with openings *c'* for the fruit-receiver neck, substantially as and for the purposes set forth.

166,381. HARROWS AND SOWERS. Robert H. Hudgens, Laurens Court-House, S. C. [Filed May 20, 1875.]

Brief.—Mounted upon uprights on the front of two V-shaped harrow-frames, connected by a central beam, is a partitioned seed-box, in which is oscillated a series of distributers for forcing out the grain. Motion is imparted to the distributers by crank and connecting-bar, to which the cranks of the distributers are attached, the driving-wheel being journaled loosely to conform to the inequalities of the ground. To a transverse bar is flexibly attached a series of self-adjusting bars, to the rear ends of which inclined drag-boards are secured, for pulverizing the clods and covering the seed, in connection with removable rakes.

1. In a combined sower and harrow, the combination of an elevated partitioned seed box or troughs, F, a series of oscillating toothed distributing-shafts, J, a connecting and operating bar, L, a central crank-shaft, c, a pitman, M, and a rising-and-falling or self-adjusting ground-wheel, N, having a crank-shaft, V, all constructed and relatively arranged as herein shown and described.

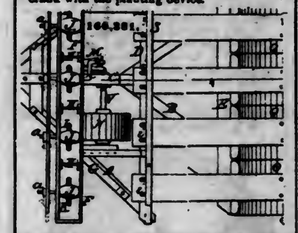
2. The combination of the inclined drag-boards Q, and self-adjusting drag-bars P, with the harrow-frame and sowing mechanism, substantially as herein described.

3. The combination of the pressure-bar S, harrow connecting-bar D, and retaining-pins *i*, with the drag-boards and hangers, as and for the purpose described.

4. The combination, with the pivoted rising-and-falling drag-bars F, provided with the oblique drag-boards Q, of a rake, T U, attachable to the end of each board with the teeth U, having the same direction as the boards Q with respect to the surface of the ground, as and for the purpose herein set forth.

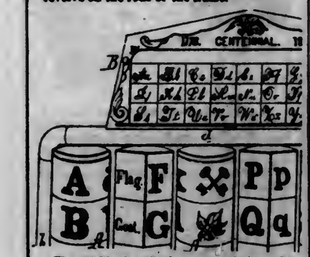
5. The combination, with the harrow, the seeder, and fertilizer-distributer, of the ground-wheel N, having one of its bearings in the pivoted arm O, and the other in the frame O, whereby the crushed end V of the axle is held rigid while the bearing O and wheel have sufficient freedom to rise and fall without interrupting the connection of the driving-crank with the planting device.

166,381.



166,382. LETTER-BLOCK APPARATUS. Benj. Irvgang, Philadelphia, Pa. [Filed May 31, 1875.]

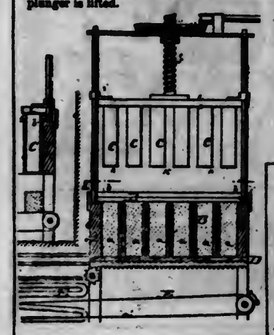
Brief.—The lettered blocks are arranged to revolve on the rods of the frame.



The within-described toy, consisting of a number of blocks, A, pivoted to a frame, and the piece B, secured to the top of the frame, all substantially as herein set forth.

166,383. MACHINES FOR PRESSING SUGAR INTO BLOCKS. J. W. Jarboe, Green Point, assignor to himself and Joseph Candelette, Brooklyn, N. Y. [Filed June 26, 1875.]

Brief.—The sugar from the drainer is poured into the molds, the plungers worked down onto the sugar and into the molds. The bottom is then withdrawn horizontally, and plungers advanced to push the sugar block onto a carrier. Heating-tubes range alongside the carrier. Rubber wipers on the lower end of each plunger clear each when the plunger is lifted.



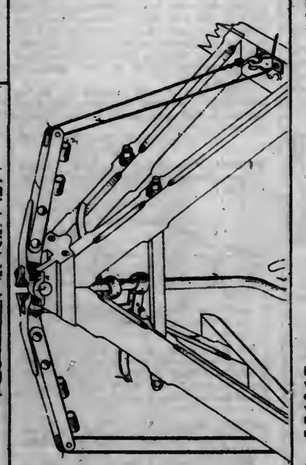
1. In a machine for pressing sugar into blocks, the combination of the stationary cellular molds B with the intermittent compressing and discharging plungers C C, movable bottom D, and carrier E, substantially as and for the purpose hereinbefore described and set forth.

2. The combination of the heating apparatus F with the sugar-carrier E, to dry the sugar while it is on said carrier, substantially as herein shown and described.

3. The combination of the wipers *k* and the plungers C, substantially as and for the purpose specified.

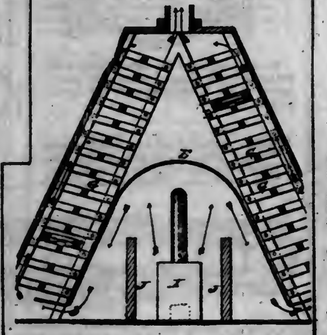
166,384. STUMP-PULLERS. W. O. Johnson, Alma, Mich. [Filed June 17, 1875.]

Brief.—An oscillating lever, centrally pivoted on the top of a stand, has a pulling-rod passed through a hole in its middle, and through a pair of eye-grippers, which are suspended by links to each side of the pivot of the lever. The oscillation acts on each griper alternately, to raise the pulling-rod.



A stump-pulling machine wherein a single oscillating beam is journaled in the top of a pyramidal frame, the said beam extending on each side of the said frame, and oscillated by power applied alternately to its ends, and having pendent from it on each side of its bearings a link connecting with an eye-griper to actuate a pulling-rod, substantially as described and shown.

166,385. FRUIT-DRIERS. Jesse Johnson, New York, N. Y. [Filed Apr. 6, 1875.]



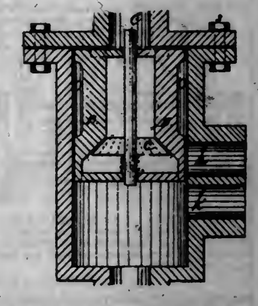
1. In a fruit-drier, the side shelving G G, in combination with the metal dome E, said dome extending from the front to the back of the drier, thus forming a reservoir for heated air, and supplying the same to the drier beneath the wings *e e*, all substantially as set forth.

2. In combination with the furnace I, provided with the deflectors J, the dome E, the top of which extends a considerable distance above said furnace to inclose a reservoir of heated air, and the lower edges or wings of which are provided with the upturned deflecting-flanges *e*, to cause the heated air to pass outwardly.

3. The combination, in a fruit-drier, of the furnace I, the dome E *e*, the passages *b b*, and the shelves G.

166,386. AIR-BRAKES. W. D. Jones, Hageman's Mills, N. Y. [Filed July 27, 1875.]

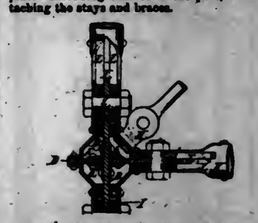
Brief.—Pressure being applied, the hollow piston-valve is forced over and closes the cylinder and exhaust ports. A check-valve is forced open by the pressure within the supply-pipe, allowing air to enter the reservoir. A reduction of pressure within the supply-pipes serves to open the port to the brake-cylinder, and allows air to enter the cylinder and set the brakes.



The combination, with the valve-casing having ports *g*, *g*, *h*, and *k*, of the hollow piston-valve and check-valve inclosed therein, to open with the pressure, the ends of the piston-valve having perforated cross-bars to support the stem of the check-valve, substantially as and for the purposes specified.

166,387. SPLICE-PLATES FOR METALLIC TRUSS-BRIDGES. Walter Kotte, St. Louis, Mo. [Filed June 21, 1875.]

Brief.—A splice-plate of cruciform section, which breaks the joint of the metallic post or column, and is provided with lugs or eye-plates extending outside of the post, for attaching the stays and braces.



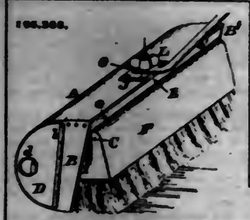
1. The splice-plate with four radial wings, D, secured in the joint or splice of the post, substantially as set forth.

2. The splice-plate, as described, with extensions I from the wings D, forming lugs for the attachment of the stays and braces, substantially as set forth.

166,388. CARPET-SWEEPERS. John Kemper, Cincinnati, Ohio, assignor to Wagner, Kemper & Dorsene, same place. [Filed May 21, 1875.]

Brief.—A hinged vibrating brush retracted by a concealed spring.

166,888.



1. The combination, substantially as described, of the dust-pan A, provided with closed ends B B' D and a rear opening, C, covered by the hinged and vibrating brush *a d* F G, which latter is retracted by a concealed spring, H, said dust-pan having rigidly attached to it the handle E, for the purpose stated.

2. In combination with the dust-pan A B B' C and its hinged vibrating brush *a d* F G H, the bolt K *k*, nut L, and eye P, whereby the shank M of handle E may be rigidly secured in either of two positions to said pan, substantially as herein described.

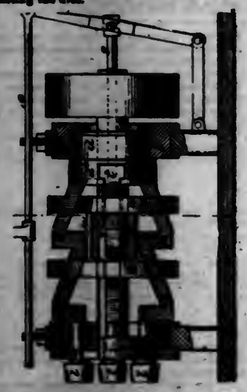
166,889. WRENCHING APPARATUS FOR WAGONS. John J. D. Kingsbery, East Bloomfield, N. Y. (Filed June 23, 1875.)



The bolster-bars *a a a a*, springs *d d*, and double-rods *i i*, arranged as specified, and combined with the wheels, axles, and platform or box of a wagon, in the manner and for the purposes set forth.

166,890. MACHINES FOR PUTTING BOTTLE-NECKS. Wm. Longwell, Atterclife, England, assignor to Baker Brothers & Co., Baltimore, Md. (Filed July 24, 1875.)

Brief.—A revolving spindle carries revolving adjustable dies, a face-plate, a cone, and levers and connections, for operating and adjusting the dies.

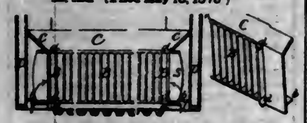


1. The combination of a revolving face-plate and adjustable dies, with a central plug or core, substantially as and for the purposes set forth.

2. The combination of the sliding guide-heads *h h'*, with the arms *h* and dies thereon secured, substantially as set forth.

3. The combination of the rod *g*, with the spindle *c*, guide-heads *h' h*, and arms *h*, substantially as and for the purposes set forth.

166,891. FURNACE-GRATE. Oliver H. P. Little and Francis J. Heuber, Indianapolis, Ind. (Filed May 16, 1875.)



1. A supplemental fire wall for protecting the water-legs of boiler-furnaces, consisting of two side and two end sections, B, equal in length and width to the fire-box, each having vertical grate-faces and an angular cap, C, with miter ends, and placed vertically in position to interlock and form a single structure, with the caps resting against the water-legs, and the sections upon base-bars, whereby any one of the sections B may be withdrawn and replaced without disturbing the others or the grate, as described.

2. The combination, with the grate-wall sections B, having angular intermatching ends and closed caps, of the lug projections *b*, extending from their lower edges against the furnace-wall, and the lug projections *d* at the ends of the side walls, whereby the grate-frames are supported in place upon the bottom bars *a*, braced against the furnace-wall, and locked in position with each other at their joining corners, both at top and bottom, as herein set forth.

3. The vertical wall sections B, having closed caps C integral therewith, and made angular at the ends, as and for the purpose set forth.

166,892. POST-HOLE BORERS. Obadiah Love, Saxonburg, Pa. (Filed June 26, 1875.)



The combination, in a post-hole borer, of a series of convergingly curved blades, E *d' d'*, having their front edges sharpened and inclined outwardly with the T-shaped handle, as and for the purpose specified.

166,893. GLOBE-VALVES. Frederick Lamheimer, Cincinnati, Ohio. (Filed May 19, 1875.)

Brief.—The valve is locked to the stem, so that it can be turned in either direction when grinding the valve.



The combination of the collared stem C E, nut G, and valve D, all perforated for the reception of pin J, substantially as and for the purpose specified.

166,894. PUMP-PISTONS FOR ARTESIAN WELLS. Thos. Malcolmson, Oil City, Pa., assignor of one-half his right to David L. Trax, same place. (Filed Apr. 26, 1875.)



166,895.



Brief.—Segmental packing breaking joints are arranged around the central cylindrical body of the piston, and are retained in contact by a coiled spring and a suitable ring and follower. A sleeve enveloping them retains them in position till they are entered into the bore of the pump, when it is drawn upon the upper edge thereof, the upper portion of the piston passing down through it.

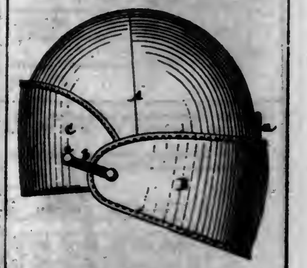
1. In the piston A, consisting of parts B and D, the combination therewith of the tapering sleeve K, substantially as described.

2. The pistons A B D, with the segmental packing-ring F, spring G, and follower H, constructed substantially as set forth.

3. The combination of a piston, A B D, with the ring K, sleeve K, packing-ring F, and follower H, all arranged as specified.

4. The combination of a piston, A B D, ball-valve C, and sleeve K, with a ring, E, packing-rings F, spring G, follower H, and coiled spring I, all constructed and arranged as and for the purpose set forth.

166,896. CAPS. Marcus Marks, New York, N. Y. (Filed July 23, 1875.)



As a new article of manufacture, the head covering consisting of the crown or body A, band C, ear and neck protector B, tape *a*, and fastenings *b c*, said protector being arranged upon the exterior of the article, substantially as described, and adapted to move up and down thereon.

166,897. STEAM-BELLS. Robert Marbach and Herman Marbach, Cleveland, Ohio. (Filed July 6, 1875.)

166,896.



166,898. PUMP-PISTONS FOR ARTESIAN WELLS. Thos. Malcolmson, Oil City, Pa., assignor of one-half his right to David L. Trax, same place. (Filed Apr. 26, 1875.)

166,899.

Brief.—Segmental packing breaking joints are arranged around the central cylindrical body of the piston, and are retained in contact by a coiled spring and a suitable ring and follower. A sleeve enveloping them retains them in position till they are entered into the bore of the pump, when it is drawn upon the upper edge thereof, the upper portion of the piston passing down through it.

1. In the piston A, consisting of parts B and D, the combination therewith of the tapering sleeve K, substantially as described.

2. The pistons A B D, with the segmental packing-ring F, spring G, and follower H, constructed substantially as set forth.

3. The combination of a piston, A B D, with the ring K, sleeve K, packing-ring F, and follower H, all arranged as specified.

4. The combination of a piston, A B D, ball-valve C, and sleeve K, with a ring, E, packing-rings F, spring G, follower H, and coiled spring I, all constructed and arranged as and for the purpose set forth.

166,896. CAPS. Marcus Marks, New York, N. Y. (Filed July 23, 1875.)

As a new article of manufacture, the head covering consisting of the crown or body A, band C, ear and neck protector B, tape *a*, and fastenings *b c*, said protector being arranged upon the exterior of the article, substantially as described, and adapted to move up and down thereon.

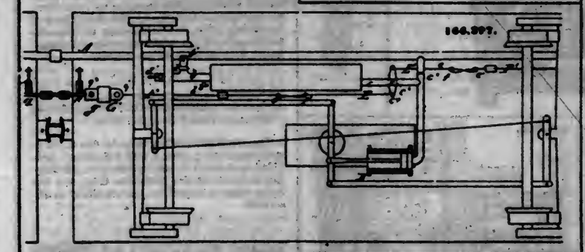
166,897. STEAM-BELLS. Robert Marbach and Herman Marbach, Cleveland, Ohio. (Filed July 6, 1875.)

166,900.

The vessel A, having gauge D D, post *a*, curved arms *b b*, with their supports *d d*, arms B B, side bails C C, arms A A, with the holders E E, all arranged as shown, and for the purpose described.

166,897. STEAM-ENGINE CAR-BRAKES. Thos. McIlvain, Philadelphia, Pa. (Filed Dec. 14, 1874.)

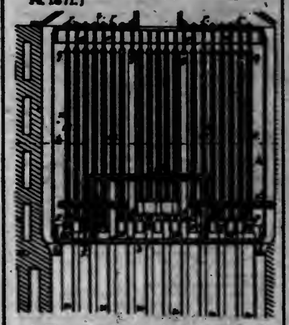
Brief.—Water from the supply-pipe enters a chamber and compresses the air therein, the force of which is automatically applied to the brake-cylinder when the cars are separated.



1. The combination of the conveying-tube A, brake-cylinder B, and air-chamber D, communicating by means of pipes *b* and *a*, having, respectively, a valve, *d*, and cock *d'*, as set forth.

2. The combination of the sliding plates G G', having suitable coupling A *h'*, with the cock *d'*, connected to said plates by rods or chains, substantially as described, and for the purpose set forth.

166,898. STEAM-GENERATORS. George T. McLouthlin, Boston, Mass. (Filed June 14, 1871.)



1. The removable ring *d'* and its springs F, combined with the main depending and the circulating tubes, for centering and holding the upper end of the circulating tube, substantially as set forth.

2. The main depending tube a, connected with the crown-sheet by means of screw-threads, as set forth, and the circulating-tube *g*, within the main tube, combined with removable centering devices, substantially as described, for centering the circulating-tube at bottom and top, as set forth.

3. The outer tube a, the vertical projections *i*, and the inner tube *g*, arranged with relation to each other, substantially as described, and so that the lower end of the inner tube is retained centrally, and its end left unobstructed for the passage of water, as set forth.

4. The outer tube a, provided with the removable plug, combined with the inner tube and removable centering mechanism, and arranged with relation to the steam-chamber and fire-box, so that the inner tube may be removed from the top or the bottom of the outer tube, substantially as set forth.

166,899. FURNACES FOR HEATING TUBES. Wm. L. McMakr, Allegheny, assignor to William Graff & Co., Pittsburg, Pa. (Filed June 28, 1875.)

Brief.—The blast is introduced into a heating-chamber, and is partially heated by the radiated heat from the red-hot roof. It passes from said chamber, by a pipe, into a flue running the entire length of the hearth, which is so formed as to make it double on itself, and run the entire length of the hearth again, after which it is admitted, by suitable valves, underneath the grates. In order that oxygen may be supplied to the inflammable gases, small apertures are provided in the bridge-wall, for carrying a portion of the blast to the top of the grates.

1. In a heating-furnace, the combination of the hot-air chamber A, pipe *i*, flue *j*, air-holes *l*, ash-pit *b*, fire-chamber *d*, hearth *c*, and flues *k*, substantially as shown.

2. The flue *j* for the blast, arranged under the welding or heating hearth, substantially as set forth.

166,900. SPRING-CATCHES FOR BOXES. Louis Messer, New York, N. Y. (Filed June 28, 1875.)

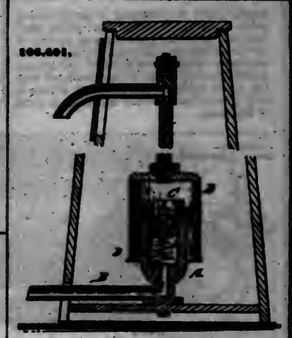


The casing-mouth *b*, formed of elastic sheet metal, with the slot *c*, and space *e e e*, in combination with the hook *a*, the lid B, and box A, constructed with the recess *d*, substantially as and for the purpose specified.

166,901. HYDRANTS. Joseph B. Moorby, Baltimore, Md., assignor to T. F. Hunt-Bateman & Co., same place. (Filed May 17, 1875.)

Brief.—A hydrant having stationary valve-box and a movable cylinder in connection with the valve mechanism, and moved with the discharge-pipe.

166,901.



1. The stationary valve-box A, with inlet-pipe B, piston C, attached to the box, and valve *b*, in combination with the exterior movable cylinder D and pipe E, substantially as and for the purposes herein set forth.

2. In a hydrant, the combination of the valve-box A, inlet-pipe B, piston C, with packing *a*, valve *b*, spring *d*, key-seat *e*, exterior movable cylinder D, pipe E, handle G, and spout I, all constructed substantially as and for the purposes herein set forth.

166,902. STOCKS. B. Westbrook Myers, New York, N. Y. (Filed Sept. 17, 1874.)

166,902.



A stove-steel having its standard B flaring at its lower end *b*, to cover the pintle-bore D, and provided with a socket to receive the pintle *d*, upon the ends of which the steel is supported and revolves, the flange *b* being sufficiently broad to support the steel when removed therefrom, substantially as set forth.

166,903. SUGAR-SAWING MACHINES. Geo. P. Ostherhaasen, New York, N. Y. (Filed July 1, 1875.)

Brief.—The upper frame has a recess fit the block of sugar, and grooves in its under side at each end, to permit the passage throughout of the guiding projections on the rollers underneath it.



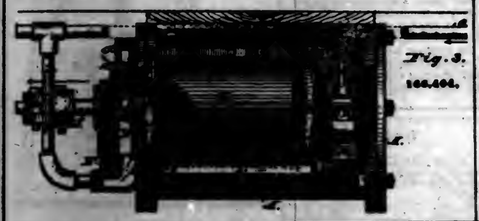
1. The combination, with the series of elevator-arms C, of the carriage F, provided with a series of parallel slots, *f*, and a cavity, *h*, near one end, for receiving and holding the sugar loaf, and constructed to be moved over the saw, in order to present the sugar loaf to the same for severing it into slabs, substantially as shown and described.

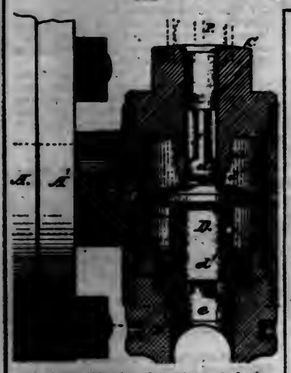
2. The combination of the carriage F, provided with the slots *f* and grooves *g*, and the rollers D, provided with the guide-flanges or collars *d*, substantially as and for the purpose herein described.

166,904. ARM-RESTS. H. Lansing Purdue, Freehold, N. J. (Filed May 26, 1875.)

Brief.—Air being applied to set the brakes also fills an auxiliary reservoir attached to the brake-cylinder.

supply-pipe is decreased, a double-seating valve closes the induction-port of the reservoir, and opens a port leading to the rear of the brake-cylinder, allowing air to pass into the brake-cylinder and force off the brakes. A double-seating valve is also combined with the brake-cylinder, and serves to automatically govern the induction and exhaust ports of the same.





1. The combination of the piston of a brake-cylinder with an auxiliary reservoir and automatic valve, substantially as specified, whereby the brakes are forced off by means of compressed air stored within the auxiliary cylinder while the brakes are being forced on, the automatic valve being governed in its action by the varying pressure of the air within the pipe leading thereto.

2. The combination of the main supply and exhaust valve of the brake-cylinder and the automatic supply and exhaust valve of the auxiliary reservoir with a single supply-pipe, substantially as specified, whereby the compressed air, after having exerted its power upon either side of the piston, is exhausted from the cylinder directly into the atmosphere.

3. The combination of the differential check-valve D, having a grooved stem, d, with cap B, having an annular port, and cap C, the latter constituting a guide for the grooved stem, substantially as and for the purpose described.

4. The combination of the differential check-valve D, having a piston formed on the end of its grooved stem, with an auxiliary reservoir, brake-cylinder, and exhaust-ports, substantially as specified, whereby the valve, when caused by the pressure of air within the reservoir, allows the confined air to force off the brakes, and, when raised from its seat, allows the air to escape or exhaust from the cylinder.

166,605. Air-Brakes. H. Lansing Farrine, Freehold, N. J. (Filed July 29, 1875.)

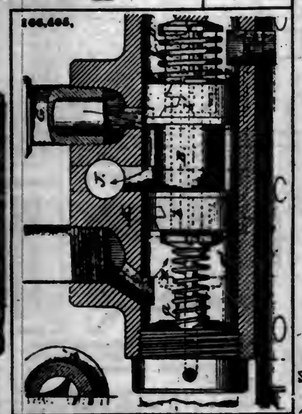
Brief.—When pressure is applied, the hollow piston-valve is forced toward one end of the valve-chest, until the supplemental valve strikes the wall of the chest, when the pressure opens communication with the reservoir, and allows air to enter the same. Pressure being reduced in the supply-pipe, the piston-valve moves in a reverse direction, and opens a port leading to the brake-cylinder, and allows air from reservoir to enter the cylinder and set the brakes. Pressure again being applied, the air is exhausted from the brake-cylinder.

The combination, with the valve-casing, having ports arranged substantially as described, of the hollow piston-valve and a supplemental wing-valve, the latter, when serving to admit air to the reservoir, opening against the pressure, as and for the purpose set forth.

166,607.

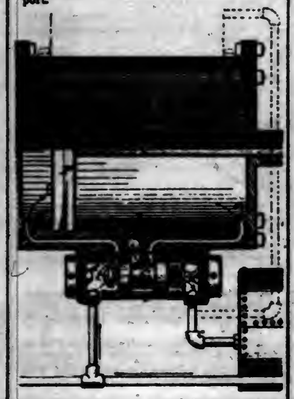


166,606.



166,606. Air-Brakes. H. Lansing Farrine, Freehold, N. J. (Filed July 7, 1875.)

Brief.—When air is supplied through the pipe, the hollow piston-valve is forced back, which opens an induction-port to the cylinder and applies the brake, and at the same time a check-valve in said piston-valve is opened to supply the reservoir with air. When the pressure in the supply-pipe is relieved, the pressure in the reservoir forces the piston-valve to its first position, opens the induction to the other end of the cylinder, and takes off the brakes, exhausting through the opposite port.



1. In an air-brake, a brake-cylinder having an exhaust and two ports, that alternately act as induction and eduction ports, and serve simultaneously one as an induction and the other as an eduction port, in combination with a chamber or reservoir containing air for use in forcing off the brakes, an intermediate valve, and a single line of supply-pipe, substantially as and for the purpose specified.

2. In an air or like brake, the combination of a storing chamber or reservoir, three-port brake-cylinder, an intermediate automatic valve, and a single line of supply-pipe, substantially as and for the purpose described.

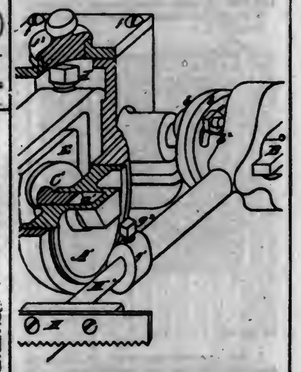
3. In an air-brake mechanism, in which the brakes are positively applied and released, a valve, B, constructed with a hollow piston and an independently-movable valve-bar stem, co-operating automatically, for the purpose of supplying air to, and exhausting it from, opposite ends of the brake-cylinder simultaneously, substantially as described.

166,607. Outlemens for Carding-Machines. Charles Nicolas Fleurent, Rouen, France. (Filed Dec. 26, 1874.)

The combination of the cylinder of a carding-machine, having slots A, with the plates t, provided with teeth n, and the cement c, whereby the slots about the plates are filled, and the latter secured in position, substantially as described.

166,609. Mechanism for Operating Doffer-Combs. Josiah K. Procter, Philadelphia, Pa., assignor of one-half his right to James Smith & Co., same place. (Filed Apr. 23, 1875.)

Brief.—The journal of the comb-shaft is provided with a yoke, the opening through which is tapering, and in which slides a tapering block, through which is a conical opening, in which turns an eccentric cone, whereby the shaft is rocked and the comb vibrated. The operating parts are all inclosed in an oil-box.



1. The combination, with the rocking yoke D, having a flaring opening, of the tapered block E, fitting in said opening, substantially as shown and described.

2. The combination of the comb-shaft B, having a journal, B', the receiving shaft C, having an eccentric cone, C', the yoke D for transmitting motion between said shafts, and the block E, the several parts being combined and arranged for operation substantially as shown and described.

166,609. Processes and Apparatus for Manufacturing Gas. Alonzo C. Read, Minneapolis, Minn. (Filed June 8, 1875.)

Brief.—The vaporizer is set vertically and provided with horizontal planes, perforated alternately at circumference and center. A pipe leads directly from the vaporizer to a heating regulator, provided at the top with a pivoted weighted arm, which is connected to the cock in the oil-supply pipe to the vaporizer.

166,609.



166,611.



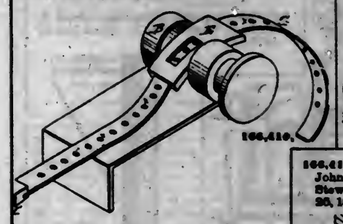
1. The process for manufacturing gas for illuminating purposes by thoroughly combining and mixing the vapors of hydrocarbon of different specific gravities as they are generated in a vaporizer, for the purpose of forming a homogeneous vapor, and submitting the same, under uniform automatic pressure and in uniform quantities, to destructive distillation in heated retorts, substantially as herein set forth.

2. In the manufacture of illuminating-gas, the method of vaporization, which consists in automatically and proportionately regulating the feed and outflow of a vaporizer, and at the same time maintaining an equable pressure therein, as set forth.

3. The vaporizer B, provided with a series of perforated diaphragms, for mixing the vapor generated therein and rendering it homogeneous, and automatic devices for regulating the admission of hydrocarbon and controlling the pressure of vapor therein, in combination with the retorts A, for converting the vapor into fixed gas, substantially as set forth.

166,610. Feed-Guides for Printing-Presses. Jos. Reed, Jeffersonville, Ind. (Filed Feb. 4, 1876.)

Brief.—The base-plate, which is secured to the clamp of the platen, carries a cog-wheel, gearing with a perforated flexible strip passing through a curved guide. The strip carries at one end a recessed head, and has a spring curve, keeping it out of the way of the inking-rollers. One end of the shaft of the cog-wheel is extended and bears a button, by which the strip is adjusted.



1. In a feed-guide for printing-presses, the flexible strip G, provided with the recessed head H and a series of equidistant perforations, a, in combination with a guide for the strip, and a cog-wheel, G, for operating the same, substantially as herein set forth.

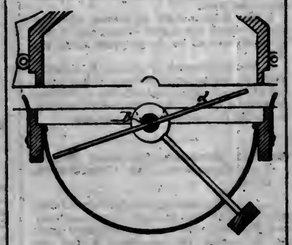
2. The curved guide E, in combination with the flexible perforated strip G and cog-wheel G, substantially as and for the purposes herein set forth.

3. The combination of the plate A, box B, cog-wheel C, curved guide E, and flexible perforated strip G, with head H, substantially as and for the purposes herein set forth.

166,611. Skirts. Frederic A. Richardson, Boston, Mass. (Filed Mar. 23, 1875.)

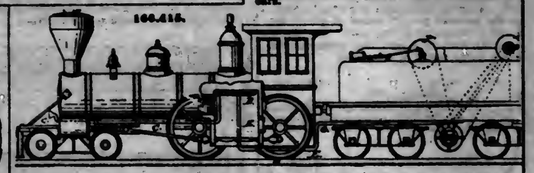
As a new article of manufacture, a flapless shirt, constructed substantially as herein described, and being composed of the bosom d, entirely free at its lower end, to permit the bosom at that point to move easily over the person, of front a, extending from the bosom and under the arms as narrow bands f, and of a short back, neck-band, and shoulder parts, all as set forth.

166,612. Egg-Beaters. John F. Rote, Reading, Pa. (Filed Aug. 26, 1875.)



The combination, in an egg-beater, or a cooling, A, made in two sections, the upper of which is removable, the detachable shaft B, having prongs d, and the fixed bars c, all being constructed and arranged as set forth.

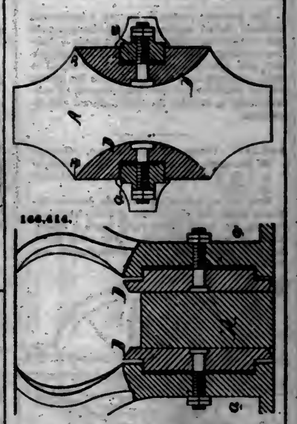
166,615.



166,615. Heating and Ventilating Railroad-Cars. Wellington Sager, Colchester, Vt. (Filed Dec. 3, 1874.)

Brief.—Air is drawn into a trumpet-mouthed pipe in front of the locomotive, passed through a coil in the fire-box, and discharged in the cars.

166,614.



1. The combination of the hanger B and its fixed or adjustable guiding-plates D, having convex faces, with the axle-box A, in the sides of which are formed concave recesses, all as and for the purpose set forth.

2. The guiding-plates D, secured to the legs a of the hanger by means of central bolts, and provided at each end with recesses d d, in combination with the projections b b formed on each leg a, and adapted to the recesses d d of the plate, all as and for the purpose set forth.

166,615. Apparatus for Fish-Culture. John Roth, Duncannon, Pa., assignor to Stewart & Young, same place. (Filed Jan. 26, 1876.)



1. The box A, divided by partitions B B into compartments C and C' C', and provided with the water-inlets a a and b b, and outlets d d and e, with their respective gates, substantially as and for the purposes herein set forth.

2. In combination with the subject-matter of the above claim, the frame-work I and adjustable wire-cloth basket J, for the purposes herein set forth.

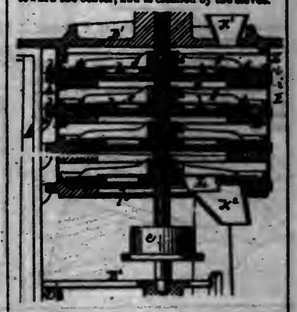
166,614. Car-Axle-Box Brasses. Thos. D. Rulon, Philadelphia, Pa., assignor of one-half his right to John H. Rulon, same place. (Filed June 2, 1875.)

Brief.—To compensate for the wearing of the axle-box.

The combination of the induction-pipe G, coil D, placed in the fire-chamber above the fire, as described, pipes F and G, fan H, pipe I, and a system of pipes and registers under the cars, to supply heated air to the interior thereof, substantially as and for the purpose hereinbefore described and set forth.

166,616. Grain-Decorticators. Wilhelm Seek, Bockenheim, Prussia. (Filed May 4, 1875.)

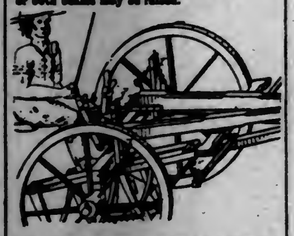
Brief.—The grain is decorticated in passing toward the center, and is cleaned by the sieves.



The counter plates D, having a horizontal radially-fluted surface, in combination with the horizontally fluted revolving disks G, having openings between their center and periphery, and provided with sieves h, arranged in said openings, and extending from the center of the disks toward its circumference, all substantially as and for the object shown and described.

166,417. WHEEL-CULTIVATORS. George W. Gilbreath, Geneva Lake, Wis., assignor to C. L. Herndon, same place. [Filed May 10, 1875.]

Brief.—Two levers side by side, having the chain from one plow-beam directly attached to one, the other lever rigid upon a crank-shaft, to which the chain of the other plow-beam is secured, by which arrangement one or both beams may be raised.



In a cultivator, substantially as described, the combination of the levers, E' for lifting cash out of sheaves, both placed at one side of the frame, one being rigidly secured to a rock-shaft, and the other turning independently of said rock-shaft, so as to be used separately or to be simultaneously drawn back by one hand, substantially as described and shown.

166,418. FRUIT-GATHERERS. Minor Smith, Cayuteville, N. Y. [Filed Mar. 20, 1875.]

Brief.—The upper jaw is fixed, and the sides are elongated to form a seat for the movable jaw. A spring is attached to a cross-bar and to the movable jaw, by means of which the mouth of the picker is kept open. It is closed upon the fruit by a cord that passes over a pulley in the throat of the picker



In a fruit-picker, the combination of the circular fixed jaw E, having a long shank, O, the bag D attached thereto, the movable jaw B, of sheet-metal form, the ends of which are pivoted at the angles of the fixed jaw E, the extensible spring h, operating-rope a, cross-bar S, provided with grooved pulley s, and the stapled cross-bar f, substantially as described, and for the purpose set forth.

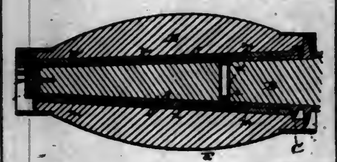
166,419. MILLSTONE-DRESS. G. T. Smith, Minnesota City, Minn. [Filed May 26, 1875.]

Brief.—The middlings-furrows, being of greater depth, shallower, and narrower than the main furrows, carry off that part of the material which is sufficiently ground, leaving the bran, &c., to be further acted on by the stones.



In combination with the main furrows A or B' B', the middlings-furrows a, substantially as set forth.

166,420. AXLE-SKEINS. J. D. Smith, Schuylerville, N. Y. [Filed June 18, 1875.]



1. The combination of the axle B, thimble-skein A, and vertical tube b, having packing s at its lower end, and a stopper, d, at its upper end, substantially as and for the purposes herein set forth.

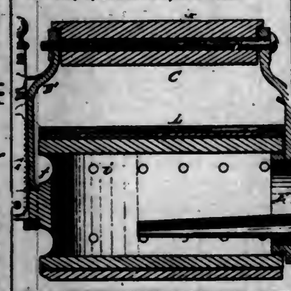
2. The thimble-skein A, formed with the shoulder-band C and sand or mud cap D, substantially as and for the purposes herein set forth.

3. The combination of the axle B, thimble-skein A, having shoulder-band C and sand-cap D, the oil-tube b, and axle-box J, forming bearings m m and oil-chamber n, substantially as and for the purposes herein set forth.

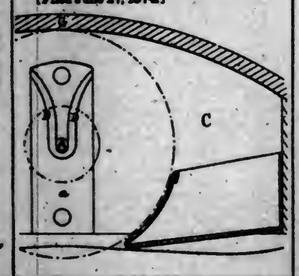
166,421. REVERSIBLE SAD-IRONS. Thomas T. Smothers, Bryan, Tex. [Filed July 24, 1875.]

1. In combination with a reversible sad-iron provided with the openings f f, as described, and the lamp-reservoir H, the hollow journal B, having the recesses y y and the studs d d on its face, for allowing the air to circulate through the iron and between the journal B and the lamp-attaching plate I, substantially as and for the purpose set forth.

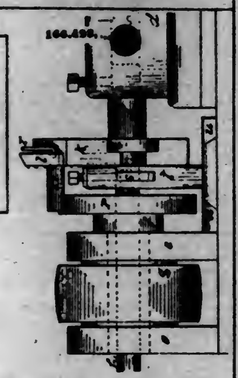
2. In combination with a reversible sad-iron having the ribs or beads s s, a detachable face-plate, having projecting ears or flanges m, and connected to the sides of the iron body by set-screws n, as set forth.



166,422. CARPET-SWEEPERS. Albert H. Spencer, Boston, assignor to Jno. J. Haley, Newton, and H. C. Morse, Boston, Mass. [Filed June 27, 1874.]



The combination, in a carpet-sweeper, of the case C, cover G, spindle A, brush-shaft B, and open vertically-slotted bearing-plate D, substantially as and for the purpose set forth.



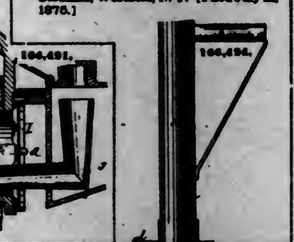
166,423. MACHINES FOR SHAPING THE HEADS OF METAL SCREWS. Christopher M. Spencer, Hartford, Conn. [Filed Dec. 7, 1874.]

Brief.—A tool-stock carried in a rotating head, provided with a ways-block, in which slides a tool-holder, the tool in which is held away from the work by a spring, except when forced up to it by a former rotating under the projection n, which former may be of any desired contour.

2. The combination of the hollow stock-holding shaft f, the rotating former p, the ways-block h, the tool-stock l, and the tool m, all substantially as shown and described.

3. The combination of the slide c, rotating head d, ways-block h, reciprocating tool-holder l, and rotating former p, all operating substantially as shown and described.

166,424. CLOTHES-POUNDERS. Oscar F. Stedman, Westfield, N. Y. [Filed July 21, 1875.]

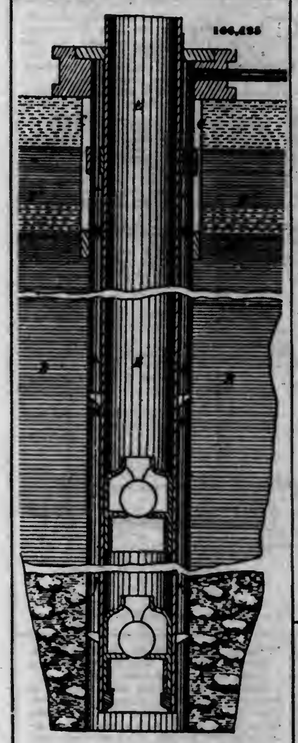


In connection with a clothes-pounder, the combination of the disks c and a with the basin B, substantially in the manner and for the purpose set forth.

166,425. PETROLEUM-WELLS. Elisha McCurdy Stevenson, Pulaski Township, Lawrence County, Pa. [Filed Apr. 21, 1875.]

Brief.—Employs a reducing-tube closed or sealed at the bottom, to so diminish the capacity of the well that the commingled oil and gas will rise to the discharge without separating, and by the expansive force of the gas.

166,425



1. In a petroleum-well, a reducing tube, pipe, or cylinder, closed or sealed at its lower end, and employed substantially as herein described, for diminishing the sectional area of the space within the walls of the well, so as to prevent the separation of the gas from the oil, whereby the gas, when passing from the wall by the annular space between the tube and the well, is caused to carry with it the oil with which it is incorporated, substantially as set forth.

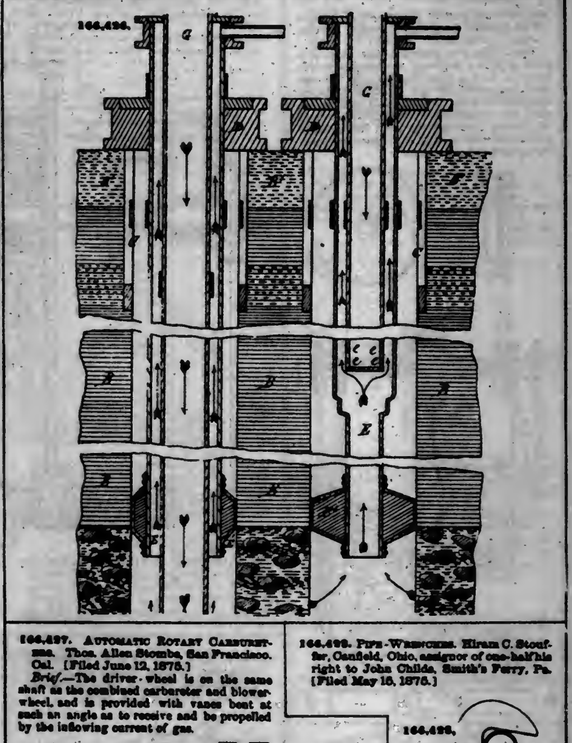
166,426. PETROLEUM-WELLS. L. Stewart, Titusville, Pa. [Filed Apr. 1, 1875.]

Brief.—Reduces the discharging capacity of flowing-tubes of oil-wells by introducing a reducing-rod or closed tube, to facilitate spontaneous discharge. Employs also the reducing-tube, raised up and adjusted to either the flowing-tube or the well itself, for the introduction of benzine or steam for the removal of paraffine, under such conditions that the benzine or water of condensation is carried up by the mingled oil and gas without the use of a pump.

1. The combination, with the well, of the flowing-tube B, the packer D', and the reducing-tube G, substantially as set forth.

2. In a petroleum-well, a reducing-tube, diminishing the discharging capacity of the well, and arranged as shown and described with relation to the discharging-outlet of the well, that benzine introduced to remove the paraffine, or the water arising from the condensation of steam used for the same purpose, shall be carried up by the ascending column of oil and gas without the use of a pump, substantially as set forth.

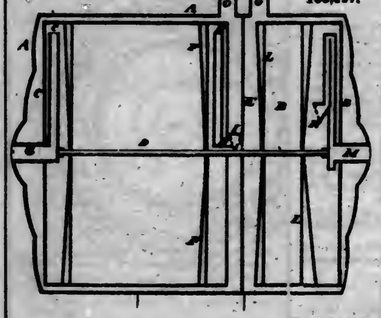
166,426.



166,427. AUTOMATIC ROTARY CARBURETTERS. Thos. Allen Stowbs, San Francisco, Cal. [Filed June 12, 1875.]

Brief.—The driver-wheel is on the same shaft as the combined carbureter and blower-wheel, and is provided with vanes bent at such an angle as to receive and be propelled by the inflowing current of gas.

166,427.

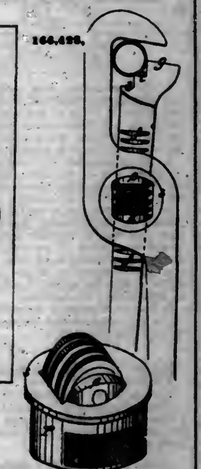


1. The driver E, with its inclined partitions L, and provided with the inlet-passage formed by the vanes V V, standing at different angles, and the air-cylinder C, with its partitions F, mounted upon the same shaft D within the case A, and provided with inlet and exit openings, as shown, the whole constructed to operate substantially as and for the purpose herein described.

2. The carbureting-sheets a—consisting of the continuous fabric J, passing alternately to the circumference and the center of the chambers of the cylinder around the frame K, in combination with the automatic device for regulating the supply of liquid, the same consisting of the float S, with its stem T and valve U, when fitted to rise and fall at the lower end of the supply-pipe, which connects with the chamber A, substantially as herein described.

166,428. PIPE-WRENCHES. Hiram C. Stouffer, Canfield, Ohio, assignor of one-half his right to John Childs, Smith's Ferry, Pa. [Filed May 15, 1875.]

166,428.

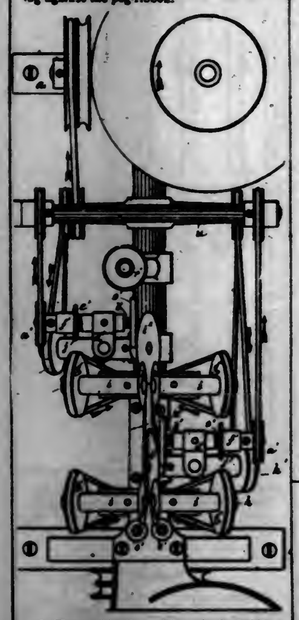


1. The combination of the flanged plug, extending through and beyond one side of the main jaw-bar, with the fixed and movable jaws, and in which the plug passes through the main jaw-bar, and the movable jaw-bar passes through the plug outside the main jaw-bar, to key the wrench parts together, substantially as herein set forth.

2. The combination, with the flanged plug and the jaw-bars keyed thereto, as described, of the thumb-screw carried by the plug, for operation as herein set forth.

166,429. Machines for Pointing Ribbon Peg-Wood. Benj. F. Sturtevant, Boston, Mass. (Filed Mar. 27, 1875.)

Brief.—The two corners of one edge of a strip of ribbon peg-wood are beveled or cut away to form a point-forming edge for the strip, and curve for the points of pegs, by means of rests for receiving and holding the strip, and intermediate rotating disk-cutters for forming a sharp edge upon the same, in connection with rotating holding-guides working against the peg-ribbon.



1. The combination, with rests for holding and pointing peg-ribbon, of intermediate cutting-disks *F F*, set at an angle to the path in which the peg-ribbon moves, and adapted to cut the two corners and sharpen the edge of the ribbon or strip, substantially as described.

2. The combination, with the rotating holding-guides *f h*, of the disk-cutters *F F*, arranged and operating with relation to each other substantially as described.

3. The combination of the rotating holding-guide *f* and shaft *h* with the sleeve *n* and pawl and ratchet, to allow the guide to be moved in advance of the movement of the sleeve, substantially as set forth.

4. The combination of the shaft *h* and sleeve *n* with the spring *o*² and the plugs *b*² *c*², substantially as described.

5. The combination of the table *g* with the rest *p* and rotating and sliding shaft *o*, substantially as described.

166,430. Machines for Sharpening Scale-Fastenings Within. Benj. F. Sturtevant, Boston, Mass. (Filed Mar. 27, 1875.)

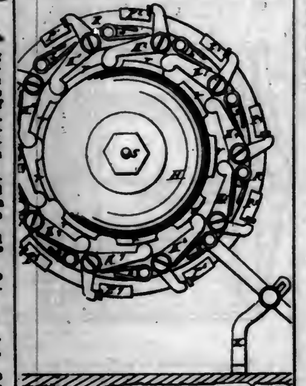
Brief.—The machine is intended to produce a substitute for pegs to be used in fastening the sole to the upper in the manufacture of boots and shoes.

1. The combination of a feeding and holding mechanism, with cutters adapted to operate substantially as shown and described.

2. The combination of two pairs of intermittingly-operated feeding and holding rolls, in which combination one roll at least of each pair is fluted, and in which one roll of each pair is adapted to exert a yielding pressure, as set forth.

3. The combination, with two pairs of feeding and holding rolls, of cutters arranged between the pairs of feed-rolls, and operating substantially as described.

166,431. Electro-Magnetic Engines. Alexander Tittman, Chauncey, assignor to himself and Henry S. Daggett, La Fayette, Ind. (Filed Apr. 16, 1875.)

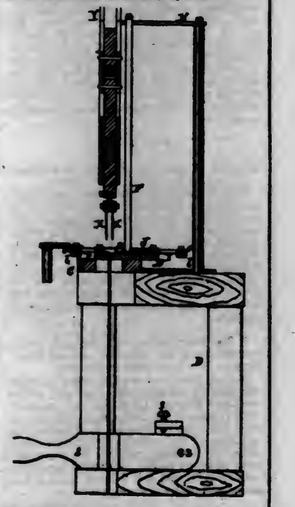


1. In combination with an unequal number of magnets and armatures, arranged, respectively, on a stationary cylinder and a revolving disk, a stationary ring provided with a series of keys and plates corresponding with the number of magnets, and a revolving disk provided with a series of rosettes corresponding with the number of armatures, substantially as and for the purposes herein set forth.

2. In an electro-magnetic engine, the combination of the ball-crank-shaped keys *b*¹ *b*², &c., plates *F*¹ *F*², &c., springs *r s*, and central disk provided with rounded edge, all arranged to operate as set forth.

166,432. Machines for Making Ornamental Chains. Gregor Trinks, New York, N. Y. (Filed June 11, 1875.)

Brief.—A reciprocating slide provided at one end with a pusher for pushing the lowermost link from the feeding wire over the die, and at the other end with a needle for opening the ends of the link, which have been bent up at right angles sufficiently to receive the next link. The channel through which the links are pushed is bounded on top by a spring-plate, which will yield in case of irregularities upon the links, and, therefore, prevent the same from being injured.



1. The reciprocating slide *J*, in combination with the pusher *I*, feed-wire *E*, needles *P*, and bed-plate B, composed of divisions, whose edges are cut away to form the chain-eler. Q and needle receiving and guiding holes E E, substantially as and for the purposes specified.

2. The combination, with the reciprocating slide *J*, of the pusher I and needle P attached to said slide, substantially as herein shown and described.

3. The spring-plate S and block U, in combination with the receiving and bed plates A B and pusher I, substantially as shown and described.

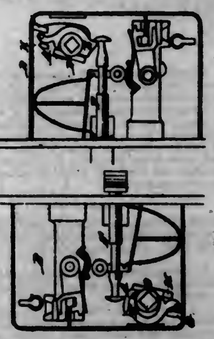
4. The clamp 2, for drawing down the chain, arranged below the bed-plate B, substantially as shown and described.

166,433. Manufacture of Anodes for Nickel-Plating. Edward Weston, New York, N. Y., assignor to Stevens, Roberts & Havell, Newark, N. J. (Filed July 10, 1875.)

A process for forming anodes for electro plating, consisting of mixing particles of metal with a cement when in a plastic state, and then molding, pressing, and baking the mass to form a solid body of the required size and shape, substantially as herein set forth.

166,434. Reversible Latches. Andw. F. Whiting, Crestline, Ohio. (Filed Jan 26, 1875.)

Brief.—A bolt and lever for operating a latch bolt are arranged so as to have a limited sliding motion, sufficient to release the lever from the latch-bolt, and permit the reversal of the latter.

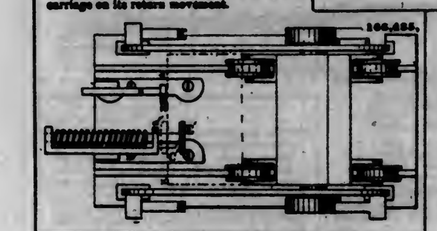


1. The oblong rim A, formed on the interior of the knob-cone B B', and disposed concentrically to the knob-spindle opening, in combination with the knob-spindle bolt and the latch-retracting lever E, substantially as and for the purpose set forth.

2. The projections G H and rim A, formed on the knob-cone B B', bolt D, and lever E, in combination, substantially as and for the purpose set forth.

166,435. Buffers for Mule-Carriages. John W. Whitehead, Saco, Me. (Filed May 10, 1875.)

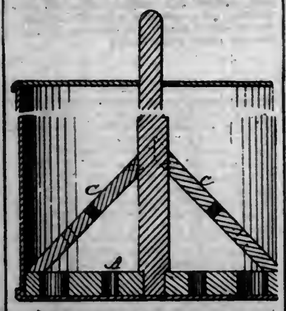
Brief.—The resistance of the spring causes the motion of the carriage to be gradually stopped, while its recoil assists in starting the carriage on its return movement.



1. The adjustable spring-brake D E, combined with a spinning-mule carriage, as and for the purpose described.

2. The combination of the adjustable spring-brake and an adjustable gage-frame H, as and for the purpose described.

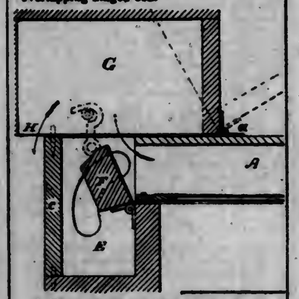
166,436. Reciprocating Churn-Dashers. Isaac J. Whitlatch, Lexington, Ind., assignor of one-half his right to A. A. Morrison, same place. (Filed June 26, 1875.)



The within-described churn-dasher, consisting of circular perforated base A, with rod or handle B, and the perforated semicircular wings C C, placed thereon at an angle, substantially as and for the purposes herein set forth.

166,437. Reed-Organs. Henry K. White, Brattleborough, Vt., assignor to J. Estey & Co., same place. (Filed Apr. 7, 1875.)

Brief.—The sound, as it issues from the reed-cell, is diverted upward by a partition fronting it, and is further retarded downward by an overlapping hinged bar.



1. The combination of the chamber G, reed-cells A, ports C, and chamber E, when said parts are arranged in substantially the manner described and shown, and for the purposes set forth.

2. The combination of the reed-cells A, reeds C, and chamber E with a resonant chamber, G, arranged to overhang said chamber E and leave a space, B, for the egress of sound from the reeds, substantially as described and shown.

166,438. Tube-Drawing Mandrels. T. Whitehouse, Somerville, assignor to the American Tube-Works, Boston, Mass. (Filed May 27, 1875.)



A tube-drawing mandrel, *A*, provided near its large end only, or near each end, with an annular depression, *f*, having an inclined or rounded shoulder, *h*, substantially as and for the purpose set forth.

166,439. Umbrellas. John G. Widmann, Yonkers, N. Y. (Filed Apr. 9, 1875.)

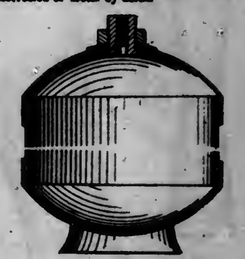


1. The combination, with the runner of an umbrella having a notched crown-piece, of a notched disk upon the runner, constructed and arranged to operate substantially as and for the purposes described.

2. The combination, with the runner of an umbrella having a notched head, lateral flange or lip *d*, and a lock or stop, *f*, of the notched disk C, secured between the said flange *d* and the notched head, and having a finger-piece, *e*, and recess *i*, substantially as described.

166,440. Soda-Water Fountains. Fredk. W. Wiesebrock, New York, N. Y., assignor to H. W. Shepard and Robert Seaman. (Filed Jan. 20, 1875.)

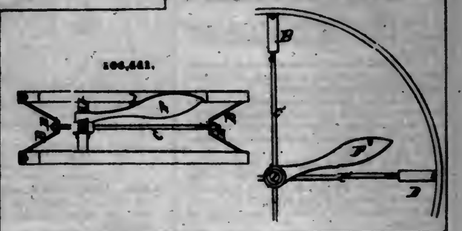
Brief.—Sheet-metal fountain is first tinned and then coated with paraffine, to prevent corrosion of metal by soda.



A sheet-metal fountain tinned and coated with paraffine, as a new article of manufacture.

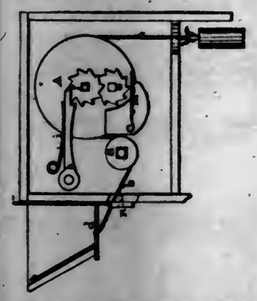
166,441. Toy Hoops on Treadles. W. W. Wilcox, Middletown, Conn. (Filed July 14, 1875.)

Brief.—The hoop, being double, is adapted to readily stand alone for very young players.



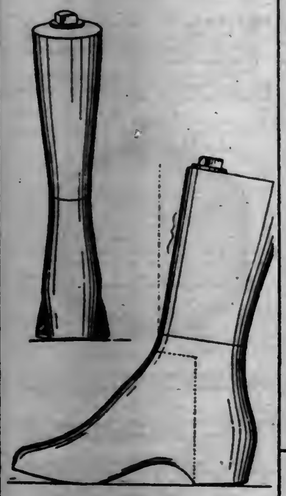
1. The combination of the double hoops A A, brackets B, and radial braces C, constructed and arranged substantially as described.
2. The driver F, in combination with the double hoops A A, brackets B, and radial braces C, substantially as described.

166,643. GRAIN-TALLIES. W. D. Wiley, Oswego, N. Y., assignor of one-half his right to Chas. H. Woodruff, same place. [Filed Feb. 5, 1875.]



The pulley A, carrying ratchet-wheel f and pin h, and held in position by pawl i and spring j, in combination with cord k, passing over pulley A, and under pulley a, one end of said cord being attached to drop d, and the other end provided with a weight.

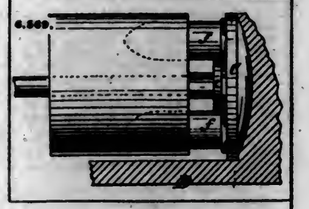
166,645. LASTS FOR RUBBER-WORKING. Isaac F. Williams, Bristol, R. I. [Filed Dec. 28, 1874.]



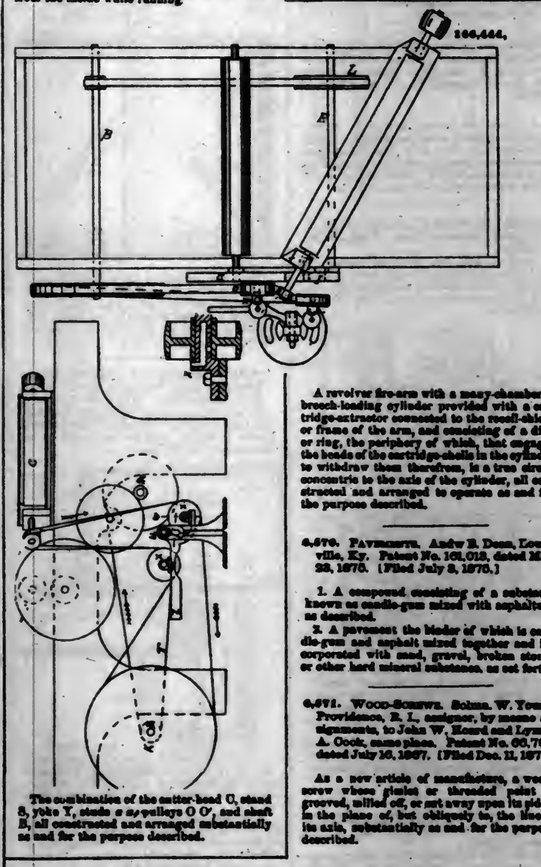
1. In a last having a foot and a leg, the receding front leg outline, substantially as described.
2. In a last having a foot and a leg, the concave outline at the rear of the leg, ankle, and heel, substantially as described.
3. In a last having a foot and a leg, the concave outline at the rear of the leg, ankle, and heel, and the concave side lines, with the greatest depth adjacent to the ankle, substantially as described.
4. A last having a leg and a foot, with an outline at the front of the leg, which recedes to the rear from the instep upward, a concave outline at the rear of leg, adjacent to the ankle, and concave side lines, substantially as described.

166,644. PLANING-MACHINES. Leander S. Woodbury, Burlington, Vt., assignor of two-thirds his right to B. S. Nichols and F. G. Coggin, same place. [Filed Mar. 29, 1875.]

Brief.—The motion of the driving-shaft, which is parallel with the feed-rolls, can be transmitted to the cutter-head when set at any desired angle other than a right angle, and at the same time admitting of a vertical adjustment of the cutter-head by two carrying or tightening pulleys, running on hollow studs attached to a vertically adjustable and swinging yoke, secured to a laterally-adjustable supporting-stand. The studs can be oiled from the inside while running.



166,644.



The combination of the cutter-head C, stand S, yoke Y, studs *a a*, pulleys O O', and shaft E, all constructed and arranged substantially as and for the purpose described.

A revolver fire-arm with a many-chambered breech-loading cylinder provided with a cartridge-extractor connected to the recoil-shield or frame of the arm, and consisting of a disk or ring, the periphery of which, that engages the heads of the central-pin chain in the cylinder to withdraw them therefrom, is a true circle, concentric to the axis of the cylinder, all constructed and arranged to operate as and for the purpose described.

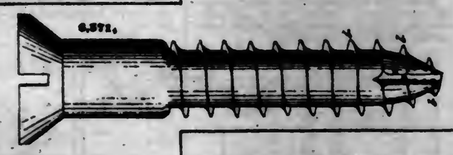
6,570. PAVEMENTS. Andw B. Dunn, Louisville, Ky. Patent No. 161,013, dated Mar. 23, 1870. [Filed July 8, 1875.]

1. A compound consisting of a substance known as candle-gum mixed with asphaltum, as described.
2. A pavement the binder of which is candle-gum and asphalt mixed together and incorporated with sand, gravel, broken stone, or other hard mineral substance, as set forth.

6,571. WOOD-SCREWS. Solma. W. Young, Providence, R. I., assignor, by mesne assignments, to John W. Hoard and Lyman A. Cook, same place. Patent No. 66,700, dated July 16, 1867. [Filed Dec. 11, 1874.]

As a new article of manufacture, a wood-screw whose pinion or threaded point is grooved, milled off, or cut away upon its sides, in the plane of, but obliquely to, the line of its axis, substantially as and for the purpose described.

6,571.



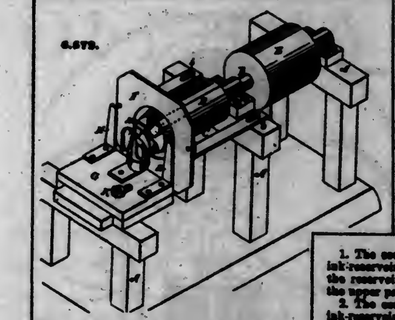
REISSUES.

6,568. REVOLVING FIRE-ARMS. Benjamin H. Williams, New York, N. Y. Patent No. 150,120, dated Apr. 21, 1874. [Filed July 8, 1875.]

6,572. MACHINES FOR CARVING AND ORNAMENTING WOOD-WORK. Myron T. Boult, Battle Creek, Mich. Patent No. 91,410, dated June 15, 1869. [Filed July 26, 1875.]

Brief.—Ornamental panels are formed by attaching to one side of the board to be operated upon a former or templet, which is held against a guide-pin opposite the rotating cutter while the latter is shaping the panel.

6,573.

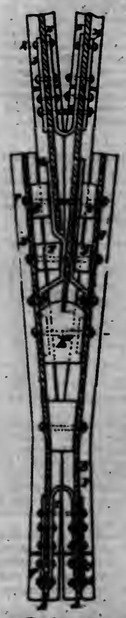


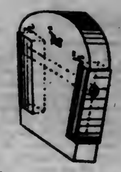
6,574.



1. The guide l, when used in combination with a molding or running tool, whose axial line is identical with that of the guide, substantially as and for the purposes specified.
2. The arrangement of the cutter-head C, with one or more angular or curved cutters, D, adjustable gage-plate F, and adjustable table G, with its arms H H H, roller I, and spring J, or their equivalents, all constructed substantially as shown and described.

6,575. RAILROAD-FROGS. James Brake, Jersey City, N. J. Patent No. 130,291, dated May 27, 1872. [Filed May 31, 1875.]



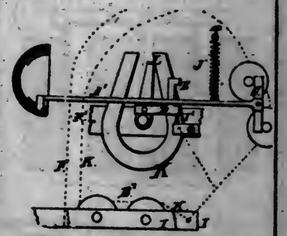


1. The brace-bars G, in combination with the point C and guard-rails B of the frog, substantially as herein shown and described.
2. The combination, in a railway-frog, of the metal body W of a "diagblock," and the wooden cushions arranged between the said body and the rail or point of the frog, as and for the purpose described.

6,576. LIFE-PLANES. Samuel Darling, Providence, R. I. Patent No. 111,668, dated Jan. 31, 1871; reissue No. 6,442, dated May 25, 1875. [Filed July 9, 1875.]

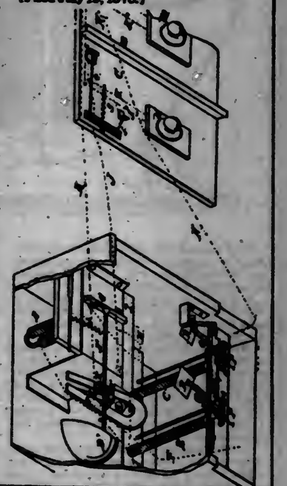
1. The combination, in an inkstand, of an ink-reservoir, an elevated dipping-cup within the reservoir, and an ink-receiving recess in the upper part, substantially as described.
2. The combination, in an inkstand, of an ink-reservoir and a pen-gage, such gage consisting of a cup or chamber, and a deep narrow cavity, leading downward from the bottom of this cup or chamber, the upper end of said cavity, which opens into the cup, being made smaller than the width of an ordinary writing-pen, when the height of the walls surrounding the cup or chamber regulates the amount of ink to be taken upon the pen, substantially as described.
3. The combination, in an inkstand, of an ink-reservoir or central dipping orifice or tube, an ink-receiving recess in the upper part surrounding the dipping-orifice and a central hole, the lower opening of the dipping-orifice being larger than an ordinary writing-pen, and above the ink when in use, substantially as described, and for the purpose herein set forth.
4. The combination, in an inkstand, of an ink-reservoir, a central dipping-orifice, an ink-receiving recess in the upper part of the inkstand, and a deep narrow cavity in the lower part, the upper part of said deep cavity being open in size than the width of an ordinary writing-pen, substantially as described and herein set forth.
5. The combination, in an inkstand, of an ink-reservoir, a central dipping-orifice, an ink-receiving recess in the upper part of the inkstand, a deep narrow cavity in the lower part, said cavity being less in size than the width of an ordinary writing-pen, and an external recess under the bottom surrounding a central leg, which leg contains said deep cavity, substantially as described, and for the purpose herein set forth.
6. The combination, in an inkstand, of an ink-reservoir and an elastic stopper, such stopper having an air-chamber in its upper part or head, and a small air-duct through the lower part, which is located into the inkstand, thus providing a free pressure for air from the chamber in the head of the stopper to the interior of the reservoir, substantially as described.

6,577. HOTEL-ANNUNCIATORS AND FIRE-ALARMS. Edward A. Hill, Chicago, Ill. Patent No. 114,007, dated Apr. 25, 1871. [Filed July 19, 1875.]



1. The combination of the magnet A and shunt with the special magnets B' C', when so constructed and arranged that the electric current passes alternately through the magnet and shunt automatically, for the purpose of strengthening the currents to the magnets B' C' when the magnet A is shunted.
2. The permanent magnet K', in combination with the shunt-circuit and the alarm-bell, when constructed and arranged substantially as and for the purposes specified.
3. The combination of the permanent magnet K', the vibrating arms L', E', and A', when constructed and arranged substantially as described, for the purposes of opening and closing the circuit of the shunt.

6,577. HOTEL-ANNUNCIATORS AND FIRE-ALARMS. Edward A. Hill, Chicago, Ill. Patent No. 114,007, dated Apr. 25, 1871. [Filed July 19, 1875.]

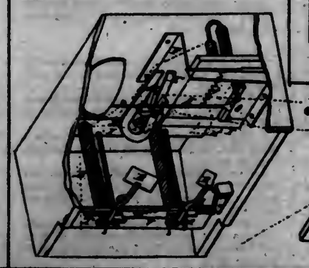


2. The dial S', provided with transparent figures, in combination with the shifting blind, as and for the purpose as specified.
3. The slide-bar V, for restoring the curtain or blind B or the pivoted armature O, as described.

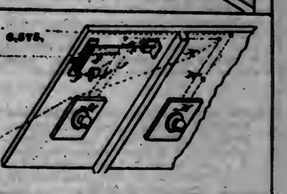
6,578. HOTEL-ANNUNCIATORS AND FIRE-ALARMS. Edward A. Hill, Chicago, Ill. Patent No. 114,007, dated Apr. 25, 1871. [Filed July 19, 1875.]

Brief.—Numbers are supplied on an opaque ground, tilting shields same color as ground normally behind the numbers, practically concealing them until withdrawn by magnet.

1. The combination of the pivoted armature O and tilting blinds or curtains B, when constructed and operating in an annunciator, substantially as and for the purpose specified.

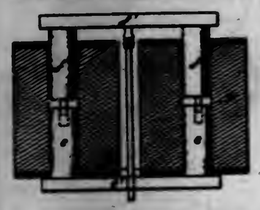


6,579.

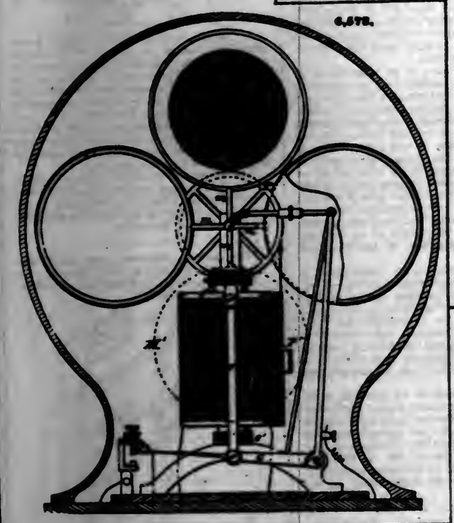


The combination of the thermostat and call-boy or knob in a circuit with an electro-magnetic annunciator, as described

6,572. Electric Signaling Apparatus for Railways. Frank L. Pope, Rimbolt, assignor to himself, Jos. N. Ashley, Greenville, N. J., S. C. Hendrickson, Brooklyn, N. Y., and James D. Lincoln, Greenville, N. J. Patent No. 180,941, dated Aug. 27, 1872. (Filed July 28, 1876.)



6,572.



1. A semaphoric signal constructed with disks or targets of alternate contrasting colors, in combination with an electro-magnet, substantially as specified.

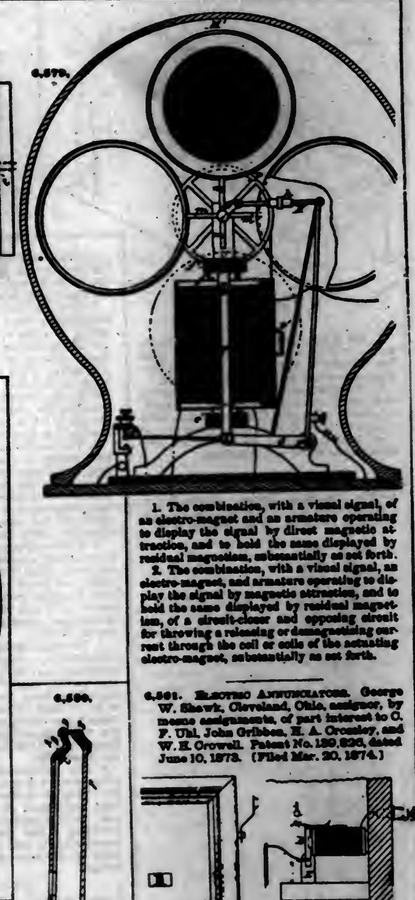
2. An electro-magnet actuated partially or wholly by axial magnetism, in combination with a semaphoric signal, substantially as and for the purpose described.

3. An electro-magnet having an armature so arranged as to be held in contact with its poles by residual magnetism until released by an opposing or demagnetizing current emanating from any suitable apparatus for generating the electricity, in combination with a semaphoric signaling apparatus or an alarm, substantially as specified.

4. The combination of a semaphoric signal operated by electro-magnetism, and a secondary signal actuated or controlled by said semaphoric signal, with a reversing or retarding apparatus so arranged that when the said signals have been set by an operator at one point or station they can only be reversed or released by an operator at another point or station, substantially as herein specified.

6,572. Electric Signaling Apparatus for Railways. Frank L. Pope, Rimbolt, assignor, to himself, Jos. N. Ashley, Greenville, N. J., S. C. Hendrickson, Brooklyn, N. Y., and James D. Lincoln, Greenville, N. J. Patent No. 180,941, dated Aug. 27, 1872. (Filed July 28, 1876.)

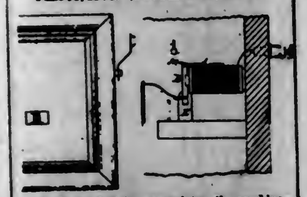
6,572.



1. The combination, with a visual signal, of an electro-magnet and an armature operating to display the signal by direct magnetic attraction, and to hold the same displayed by residual magnetism, substantially as set forth.

2. The combination, with a visual signal, an electro-magnet, and armature operating to display the signal by magnetic attraction, and to hold the same displayed by residual magnetism, of a circuit-closer and opposing circuit for throwing a releasing or demagnetizing current through the coil or coils of the actuating electro-magnet, substantially as set forth.

6,580. Electric Annunciators. George W. Shewit, Cleveland, Ohio, assignor, by mesne assignments, of part interest to C. F. Uhl, John Gribben, H. A. Crowley, and W. H. Crowell. Patent No. 180,826, dated June 10, 1873. (Filed Mar. 20, 1874.)



1. In an electric annunciator, the combination of an electro-magnet with an armature, which is actuated by magnetic attraction, and retained in direct contact with the cores of the electro-magnet by residual magnetism, in connection with independent mechanism, substantially as described, whereby the armature is forced from the cores by positive mechanical action, substantially as set forth.

2. In an electric annunciator, the combination of a numbered or lettered plate with the armature of an electro-magnet, the armature adapted to be retained in direct contact with the cores of the magnet by residual magnetism, substantially as described.

3. In an electric annunciator, the combination of a weighted arm with the armature of an electro-magnet, to which a lettered or numbered plate is secured for the purpose of counterbalancing the weight of the said plate, and thereby insure the attraction of the armature to the magnet by a light electric current, substantially as described.

4. In an electric annunciator, the combination of a crank-shaft, having an arm secured thereto, with the armature of an electro-magnet, to which a lettered or numbered plate is secured, for the purpose of releasing the armature from the electro-magnet, and allow the letters or numbers to move away from view, substantially as described.

6,590. Clock-Dials. S. H. Root, Bristol, Conn. Patent No. 28,960, dated May 10, 1860; extended seven years. (Filed July 17, 1876.)



1. The combination of a metallic scalp with a clock-dial, substantially as and for the purpose described.

2. The combination of a metallic scalp and also back with a paper dial, substantially as and for the purpose shown.

3. The combination of a zinc back with a paper dial, substantially as and for the purpose set forth.

4. The combination of metallic back and paper dial with a rim of "struck up" sheet metal, substantially as and for the purpose described.

5. As a new article of manufacture, the combination of a clock-dial, B, metallic back A, and frame C, substantially as and for the purpose set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 6. TUESDAY, AUGUST 10, 1875. PRICE { $5,00 per year—single. $5,00 per year in clubs.

The Official Gazette is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

JAMES HEGINBOTHAM.—*Preliminary reference.*

[*In the matter of the application of James Heginbotham for Letters Patent for* "Improvement in Furnaces for Steam-Boilers."—*Decided July* 22, 1875.]

In certain cases the signature to a petition by an applicant's attorneys may be received. *Voelter's* case, (Commissioner's Decisions, 1870, page 84,) referred to.

In the division of an application the various prerequisites cannot be dispensed with; *ergo*, a new oath must accompany the divisional portion of an application the same as if it were an original application. Case of *Whitely* vs. *Swayne*, (4 Fisher, 117,) referred to.

The dictum that separate independent inventions must be the subjects of separate patents is not a mere Office rule, but is in consonance with the law.

Spear, *Acting Commissioner:*

It is requested on the part of the applicant in this case—

First, that the oath in the original case, which was divided at the request of the Office, be applied to this division, which embraces no matters not contained in the original papers, and covered by the oath annexed thereto.

Second, that the signature of the applicant, by his attorneys, be admitted to the petition.

To the signing of the petition by the attorneys of the applicant I see no objection. As was said in the case of *Voelter*, (Comr. Dec., 1870, p. 84,) the petition is a matter of form merely. There is

nothing in the law that seems directly or by implication to forbid the reception of the petition when signed by attorney, and in the absence of any such statutory prohibition it is believed that a liberal policy in this regard is fully warranted by the analogies that obtain in the general law of principal and agent.

Although this was said in regard to a petition for an extension of a patent under the law of 1870, yet I regard it as equally applicable to the present case.

There are, however, very serious objections to granting the first request of applicant. The division of an application, where more than one distinct invention is claimed, is not required on account alone of classification or the mere convenience of the Office, as contended by applicant; but the Office has always taken the ground that the spirit and policy, if not the letter of the law, require that separate independent inventions should be the subjects of distinct patents, and the courts have invariably acquiesced in that practice.

When, then, several applications are carved out of one, each independent in subject-matter of the other, it is very clear that all the prerequisites of the law in respect to the original application should be observed as to the others.

The oath is a prerequisite to the granting of a patent. It was so held by Judge Story in the very case in which he held the patent valid, notwithstanding the informality of the oath, (*Whittemore* vs. *Cutter*, 1 Gal.,) and other courts have found the same; but, because the courts have sustained patents where some of the prerequisites to their granting have been ignored or dispensed with by the Office, it by no means follows, as contended by the present applicant, that it is a matter discretionary with the Commissioner. On this point the court, in the case of *Crompton* vs. *Belknap Mills*, 3 Fisher, 537, although holding that, whether the oath were taken or not, such an omission would not invalidate the patent nor affect its reissue any more than if the fees required by law had not been paid, yet at the same time observed that both were directory and not to be dispensed with, proceeding on the ground that the patent afforded a conclusive presumption that the requirements of the law were complied with in issuing the patent, but not in the slightest manner justifying the Office in disregarding those requirements.

But the course adopted by the courts in the cases above mentioned has not by any means been uniformly followed by other circuit courts. In the case of *Ransom* vs. *Mayor of New York*, 1 Fisher, 252, it was held that the things specified in section 6 of the act of 1836, were prerequisites to the granting of a patent, and unless these prerequisites were complied with a party sued for infringement of a patent might show that they had not been complied with, and so defeat the action of the supposed inventor. One of the things specified in that section was the oath of precisely the same description as is required by the present law.

In a case still later than any of the others cited (*Whitely* vs. *Swayne*, 4 Fish., 117,) the court, Judge Leavitt, quoted and approved the language in the case last-above named, and held a reissue patent invalid, because an oath attached thereto was not such an oath as the law prescribed, and that it was an excess of authority on the part of the Commissioner to grant a reissued patent upon such an oath. Now, in that case the reissued patent was a division of the original application. The question of division in the matter of reissue is just the same as in the matter of an original application. If an application has gone to patent which includes several separate and distinct parts of an invention, the law provides that the patentee may reissue and have a patent for each of those separate devices. These devices were included in the original application, and must necessarily have been so, or the reissue could not legally be granted. The original oath covered all matters contained in the reissue; why, then, the necessity of additional oath therein?

It is quite clear that if the matter of the present division application were the subject of a reissue application, and the latter should go to patent without the oath attached, the courts, if following the doctrine in *Whitely* vs. *Swayne*, would hold the same invalid; for if an oath informal, in part, was a defect sufficient to invalidate a patent, the omission of the oath entirely would certainly be equally as fatal.

The well-settled doctrine that two patents cannot be legally granted for the same invention would seem to necessitate the requirement that all the prerequisites required by law to the granting of a patent should be possessed by each individually, and that when made in one application they cannot be made to lap over and cover another.

The difficulty of an opposite course is especially illustrated in a case where all the devices which go to make up the invention are originally claimed in combination. The inventor may have made what he considers a legitimate combination of elements, of which he is ready to make oath that he is the first and original discoverer. Yet, considered separately, he may be well aware that he cannot claim to have originated each or several of the distinct parts. In that case, should the Office decide that the combination is not a legitimate one, and require the applicant to divide, and yet allow the oath made to the combination apply to each division, patents would be issued to other than the first and original inventor, in direct violation of law. This consequence might follow in the present case.

For the reasons thus given I am of opinion that it would not be in accordance with law nor sound practice to grant the applicant's first request. The applicant proposes, in conclusion, that if this practice is insisted upon the rule might be observed by filing with the new application a certified copy of the papers accompanying the original case, including the matter now presented and the oath.

Having decided that the division should be treated as an independent application for an invention distinct from that embraced in the original one, the same prerequisites of the statute must be complied with as in all other applications, and the course proposed cannot, therefore, be entertained.

KERNARD KNOTT.—*Interlocutory appeal.*

[*Appeal from the Principal Examiner in the matter of the application of Kernard Knott for* "IMPROVED METHOD OF SLAUGHTERING, &c."—*Decided July* 26, 1875.]

It is the duty of the Office at the outset, in requiring the division of an application, to indicate clearly the nature and extent of the division required.

SPEAR, *Acting Commissioner:*

I have carefully read the specification and examined the drawings in this application with a view of determining how much there might be in the objections raised by the Examiner, and to what extent applicant ought to yield to his requirement of the division of the application.

So far as I see, there should be three applications instead of one. I leave out of question the novelty of the devices, as I have no means of determining this question, and, indeed, am not now called upon to consider the question of patentability on any ground. I think the matter included in the claims, numbered consecutively to the 8th, may be properly included in one application. The claims from the 8th to the 12th, inclusive, relate to the hatchway-elevator and other apparatus on board the vessel, and belong to another and distinct invention. The remaining claims, 13th, 14th, and 15th, contain other and equally distinct subject-matter, and relate to a vessel constructed with a view of keeping the air, or whatever the hold contains, at a low temperature. The applicant should be required to divide his application into these three divisions, and no more.

I cannot permit this case to pass without commenting upon the Examiner's method of treating the application. Applicant doubtless made his application for a patent in the form in which it appears in good faith. He had devised a series of mechanisms all looking to one common object. That object was a remote one indeed, but still it was unquestionably the one object for which all his devices were made. He supposed, as I must believe, when he made his application to this Office for a patent, that he was entitled to claim in one patent all that he had invented. Now, had his application been considered upon its merits, he would have been entitled under the law, if rejected, to the reasons for such rejection, together with such information and references as might be useful in judging of the propriety of changing his specification.

In accordance with the law in such instances the Office invariably points out to the applicant exactly what part of his invention is considered to be new, and what part old. But in the present instance the Examiner wrote to the applicant, as follows:

The applicant claims, separately, many devices belonging to almost as many classes of invention. It is true they are all applied in producing a single ultimate result; but it is as a saw-mill, a planing-machine, and a brick-machine contribute toward the construction of a house, and an engine, a capstan, and a compass to the completion of a steamship. It is considered that there are subjects-matter in this application for many applications, and that it should be divided accordingly, since their connection, to be appreciated, is not a necessity. The method, plan, system, or process which comprehends them all, is not more real than that ginning, spinning, weaving, and bleaching cotton, as carried on in a large establishment, is a single process. (See Office Rules 15 and 16.)

Now the Examiner's illustration throws no light whatever on just that part of the subject which it was necessary for applicant to understand, in order to divide his application in accordance with the views of the Office. As he supposed the invention was a unit, he should have been informed exactly into what parts the Office required a division. To tell him that he must divide, and not to indicate how, was to fail in raising any definite issue, exactly such failure as if the Examiner should reject for lack of novelty, and not inform applicant what part was old, and for what reason he considered it old. Applicant would have complied with the requirement of the Examiner if he had divided the application into two parts; that would have been a division. But it appeared after appeal to the Commissioner that the Examiner considered the application as containing eleven distinct inventions. It would have been the merest guess-work for applicant to attempt a division without particular information as to the Examiner's views; and, indeed, no further words seem necessary to make it clear that it is the duty of the Office at the outset, in requiring the division of an application, to indicate clearly and precisely to the applicant into what parts and how the application should be divided.

I understand this to be the practice of the Office, and certainly no other course is favorable to a speedy and satisfactory transaction of the business. With these remarks the case is returned to the Examiner.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, DISTRICT OF MASSACHUSETTS.

OTIS TUFTS *et al. vs.* THE BOSTON MACHINE COMPANY.

[*In equity.—Before* SHEPLEY, *Cir. J.—January*, 1875.]

The twelfth claim of the patent granted Otis Tufts, August 9, 1859, for Improvement in Elevators and Hoisting Apparatus for Hotels, &c.—viz: "Passing the shipping rods and the cord or rod that operates the friction-brake through the car or platform, for the object and purposes set forth"—if construed broadly as a claim for passing any rod or cord, by means of which the appropriate mechanism is operated to move the car up and down, or hold it at rest, *through the car or platform*, is void for want of novelty.

In view of the prior elevator of Hecker, in which a single chain passing through the car furnished the means for lifting a gravity-brake and operating a friction-clutch, the claim can only be sustained by giving it a construction strictly in accordance with the language used—viz., "passing *the* shipping-rods *and* the cord or rod," &c.

The first claim of the patent granted to Otis Tufts, May 28, 1861, for Improvement in Elevators—viz: "Constructing an elevator or hoisting apparatus with a series of two or more hoisting ropes or chains having independent attachments, and winding simultaneously upon the hoisting-drum for greater safety," &c.—is void for want of novelty.

The second claim of the patent being for "equalizing the strain upon the series of ropes or chains *x x x x* by automatic adjustment," &c., where it appeared that defendants used a different means of automatic adjustment from that described in the patent: *Held*, that, in the absence of proof that the device used by the defendants was, at the date of the patent, a known substitute for the devices described therein, the claim cannot be regarded as infringed.

The claim of a patent held to be anticipated by a clear description in an English provisional specification which had been printed by Eyre & Spottiswoode.

[*James B. Robb*, for complainants.
Causten Browne, for defendants.]

SHEPLEY, *J.:*

This is a bill in equity brought for alleged infringement of letters patent issued to Otis Tufts, dated August 9, 1859, and extended seven years, for improvements in hoisting apparatus, and adapting that apparatus for use as a passenger-elevator for carrying persons to and from the different stories in hotels and other buildings; and also of letters patent dated May 28, 1861, for improvement in the mode of suspending and operating the elevator; also, for infringement of letters patent dated December 11, 1866, for improvements in the mode of adjusting the length and tension of the ropes of an elevator; and of letters patent dated December 11, 1866, for an improvement in elevator-guides. All of these patents were duly assigned to complainants.

The twelfth claim in the patent of August 9, 1859, No. 25,061, is the one on which the infringement is claimed, and is as follows:

I claim passing the shipping-rods and the cord or rod that operates the friction-brake through the car or platform, for the object and purposes set forth.

The shipping-rods are described in the specification as passing up through the car the whole height of the building and operating a shipper, by which the driving-belt is shipped from a fast to a loose pulley when the power is to be thrown off. The cord is also described as passing down through the car or platform, so as to be accessible within the car, which operates to apply a counterpoise-spring, so as to put on a friction-strap brake, its office being to check or perfectly stop the descending motion of the car at the will of any person within the car or on the gallery.

The great advantage (claimed) of running the shipping-rods and the cord or rod up through the car itself is that they are thus rendered accessible to the conductor, or any person within the car, without incurring the danger of protruding the hand or arms beyond the same while in motion.

If the twelfth claim be construed broadly as a claim for passing any rod or cord, by means of which the appropriate mechanism is operated to move the car up and down, or hold it at rest, *through the car or platform*, instead of outside the car or platform, it is void for want of novelty.

George V. Hecker had in his flour-mill in Cherry street, New York, an elevator which was put in twenty years ago, and which has been in successful operation since that time. A chain passed through the roof and floor of the cage or car, which operated upon a friction-clutch and a brake. The conductor or operator within the car could, by means of this chain, operate the shipping apparatus and the brake without incurring the danger of protruding the hand or arms beyond the car while in motion. This chain was connected with a brake in such a manner that the brake could be thrown off by pulling upon the chain, or put on by relaxing the pull upon the chain, a weight then causing the brake to produce friction on the friction-pulley. The pull upon the chain, by raising the weight, first relieved the friction of the brake, and then threw into gear a friction-clutch, and the car ascended by the force of the motor applied through the friction-clutch. When it was desired to stop, the pull upon the chain was relaxed, and the weight threw the clutch out of connection and the cage stopped, held in place by the brake. When it was desired to descend a slight pull was made upon the chain, sufficient to relax the pressure upon the brake, but not to throw the friction-clutch into gear. The car then descended under control of the brake, by force of gravity, at a speed dependent upon

the will of the operator who controlled the brake. Within the car was a lever with one long and two short arms, with a friction-pulley on each of the short arms, which device was for the purpose of making the necessary pulls upon the chain which passed through the inside of the car. The friction-clutch is a well-known substitute for a shaft with a fast and loose pulley, a belt and belt-shipper.

It is manifest, therefore, that, in view of the state of the art, the twelfth claim in the patent can only be sustained by giving to it a much narrower construction than the one claimed for it, and one strictly in accordance with the language of the claim, viz:

Passing *the* shipping-cords *and* the cord or rod that operates the friction-brake through the car and platform, for the objects and purposes set forth.

The defendants do not infringe the twelfth claim thus construed, or any other claim of the patent of August 9, 1859.

Infringement is also alleged of the first and second claims of the patent of May 28, 1861, which are as follows:

1. Constructing an elevator or hoisting apparatus with a series of two or more hoisting ropes or chains having independent attachments, and winding simultaneously upon the hoisting-drum for greater safety, substantially as described.
2. Equalizing the strain upon the series of ropes or chains of my improved elevator or hoisting-machine by automatic adjustment, substantially as described.

To construct "an elevator or hoisting apparatus with a series of two or more hoisting ropes or chains having independent attachments, and winding simultaneously upon the hoisting-drum," was not new at the date of this patent. Letters patent of Great Britain to Frederick Levick and Joseph Fieldhouse, sealed January 13, 1854, describe a hoisting car or carriage with two hoisting-ropes wound around the same spirally-grooved drum. The ends of both of these ropes are attached to a connecting-chain, which passes under a pulley attached to the top of the car. Another chain is attached to the first-described chain in such a manner that the chain surrounds the pulley. If one breaks, the other, with the chain, forms a loop around the pulley, and sustains the car. The second chain converts the attachment into an independent attachment of each rope, and, when one rope breaks, the other rope will continue to sustain the weight of the car. Mr. Renwick, the expert, correctly states that—

The ropes act precisely as if they were attached to the two ends of a horizontal lever whose center, upon which it could turn, was secured to the top of the car.

In the patent of 1861 the patentee, Tufts, says:

I do not confine myself to the precise method herein described of effecting the automatic adjustment of the strain upon the hoisting-ropes, as I sometimes accomplish the same by a rocking lever, when two ropes are used.

It is plain that, in the Levick and Fieldhouse elevator, the two ropes, when intact, have equal strain upon them, and that, if one of the ropes should break, the weight of the car would be supported by the other rope. If the chain should break under the pulley the car would fall, as it would in the form last described of the Tufts elevator, if the attachment to the car at the center of the rocking lever should fail.

It is contended that the purpose of the two ropes in the Levick and Fieldhouse machine was to keep the cage in the center of the shaft, and that, therefore, the Levick and Fieldhouse patent does not anticipate the first claim in the patent of 1861. The answer to this is, first, that whether they were placed there for the purpose of greater safety or not, they effected that result; and, secondly, that the patentees evidently contemplated that as one of the beneficial results to be attained by the use of two ropes instead of one, as there is no conceivable use for the cross-chain before described, except in case of the breakage of one rope, to form a loop around the pulley, thus attaching the surviving rope to the car.

In the elevator which was placed in the mill of the Parsons Paper Company, at Holyoke, Massachusetts, in 1856, there were two hoisting-ropes, having independent attachments to opposite arms of a rocking lever; they jointly and equally took the strain of the weight of the car, and each rope was sufficient to sustain the load put upon the machine. This elevator has been in constant use, and when one rope has broken the elevator has been worked several days with the remaining rope. The ropes in the Holyoke elevator did not, it is true, wind around a drum, but were passed around a series of pulleys, and the free ends of the ropes were attached to counterpoise-weights, but these two means of winding up a rope to which a weight is attached are well-known substitutes for each other.

Without adverting to the other patents which have been introduced in evidence, and relied upon in defense in this branch of the case, enough has been stated to show that the first claim of the patent of 1861 is void for want of novelty.

The second claim in this patent—viz., "equalizing the strain upon the series of ropes or chains of my improved elevator or hoisting-machine by automatic adjustment, substantially as described"—can only be construed as a claim for the described means of performing this function, and for well-known substitutes or equivalents of those described means. The means the patentee describes are three. One of those modes is by means of a rocking lever, or system of rocking levers, to the ends of which the suspensory ropes are attached. The Holyoke elevator and the Levick and Fieldhouse elevator both anticipate this claim. One had a rocking lever, and the other had a device which operated in the same way and produced the same result. If the claim is valid, defendants are not proved to have infringed it, for there is no evidence in the record tending to show that the contrivance used by the defendants—of a series of pistons fitting into a set of cylinders with connecting pipes, the cylinders being filled with an incompressible fluid—were, at the date of the patent, known substitutes for either of the means of adjustment described in the patent.

The patent of December 11, 1866, No. 60,441, so far as the second claim is concerned, which is the one alleged to be infringed, relates to—

Means for manipulating relative adjustment within reasonable limits of the series of ropes or chains, which are independently attached to the winding-drum and to the car of the elevator, so that an equal degree, or very nearly equal degree, of tension can be had upon each rope or chain of the series, by proper attention or manipulation on the part of the party having such elevator in charge.

The patentee states in his specification that considerations of saving in the first cost of construction render it desirable in many instances to substitute for an automatic adjustment of the ropes or chains a means for adjusting them from time to time, as occasion may require; in other words, that the means of manipulatory adjustment in the patent No. 60,441 were intended as a substitute or alternative means for the automatic adjustment described in the patent of May 28, 1861, No. 32,441. The defendants have put into their elevators means of mechanical manipulatory adjustment, but they do not perform the function described by Tufts as a substitute for the automatic adjustment, because the tension on the ropes or chains cannot be varied by any manipulation of the nuts. Owing to the presence of the equalizer, the means of automatic adjustment in the defendant's elevator, the nuts or the stirrups may be screwed up or down to their fullest extent on any rope, without any variation of the tension on that or any other rope. As defendants do not infringe, it is not necessary to consider the question of novelty of this claim.

The patent of December 11, 1866, relates to means by which an elevator is so guided as to prevent the sway thereof, and the noise consequent upon contact with the ways by which the elevator is guided. The claim is as follows:

I claim combining the suspended car of an elevator with the ways or rails which confine it, by means of guides kept by springs constantly in contact with said ways or rails, when said guides are so arranged as to be capable of motion toward and from the rails.

In the provisional specification, filed April 6, 1858, in the office of the Commissioner of Patents for Great Britain, accompanying the petition of Louis Tétar Van Elven for a patent, which did not proceed to the great seal, but which specification was printed by Eyre & Spottiswoode, is a clear and accurate description which contains all the features of this claim. Respondents' Exhibit No. 13 is a model of the device described in the Van Elven specification. It fully anticipates every feature of this claim.

Complainant's bill dismissed.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date August 10, 1875.]

8,560.—Carpet.—JOHN FISHER, New York, N. Y., assignor to E. S. HIGGINS & Co., same place. Application filed July 26, 1875. Term of patent 3½ years.

8,561.—Carpet.—THOMAS J. STEARNS, Boston, Mass., assignor to ROXBURY CARPET COMPANY, same place. Application filed July 29, 1875. Term of patent 3½ years.

8,562.—Bird-Cage and Hanging-Basket Hook.—FRANCIS T. FRACKER, New Britain, Conn., assignor to P. & F. CORBIN, same place. Application filed June 26, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date August 10, 1875.]

2,812.—Hermetically-Sealed Canned Goods.—I. B. BRINKLEY, Baltimore, Md. Application filed July 27, 1875.

"words 'This can is the standard No.—adopted by,' the word 'standard' being on a scroll running across the sketch or device of a pair of balances, all surrounded by the words 'National Association of Canned Goods Packers.'"

2,813.—Mop and Brush Holders.—CLARK & Co., Buffalo, N. Y. Application filed August 4, 1875.

"word 'DIAMOND.'"

2,814.—Insect-Powder.—CHARLES N. CRITTENTON, New York, N. Y. Application filed May 26, 1875.

"words 'Insect-Destroyer, Knowles.'"

2,815.—Soap.—CHARLES N. CRITTENTON, New York, N. Y. Application filed June 12, 1875.

"words 'Sulphur Soap. Glenn.'"

2,816.—Clothiers' and Tailors' Trimmings.—HARRIS, RICHMOND & SHAFER, New York, N. Y. (Re-registration.) Application filed May 27, 1871.

"an anchor with stock, shank, arms, and flukes complete, and having a cable attached to the ring and loosely turning about the anchor."

2,817.—Gloves.—ED. JONNIAUX & Co., Brussels, Belgium. Application filed June 28, 1875.

"the representation of a rampant lion holding a spear, on the upper end of which there is a glove."

2,818.—Oaten Grits.—LUNT BROTHERS, New York, N. Y. Application filed April 24, 1875.

"word 'AVENA.'"

2,819.—Cigars and Tobacco.—LOUIS MOHR, Hoboken, N. J. Application filed July 2, 1875.

"words 'FRITZ REUTER.'"

2,820.—Watches.—HUGH MULLIGAN, Philadelphia, Pa. Application filed July 24, 1875.

"words and figures 'General Andrew Jackson. Exhibition Watch, 1876. Philadelphia.'"

2,821.—Soap.—ROBINSON BROS. & Co., Boston, Mass. Application filed July 30, 1875.

"words 'Nosegay Soap.'"

2,822.—Hermetically-Sealed Canned Goods.—CHARLES G. SUMMERS & Co., Baltimore, Md. Application filed July 8, 1875.

"words 'CONQUEROR BRAND' and the picture of a laurel wreath."

2,823.—Medford Rum.—DANIEL LAWRENCE & SONS, Boston, Mass. (Re-registration.) Application filed January 11, 1871.

"words or phrase 'Medford Rum.'"

2,824.—Bourbon Whisky.—LILIENTHAL & Co., San Francisco, Cal.—Case A. Application filed July 9, 1875.

"words 'Cyrus Noble,' 'Old Bourbon,' and the device of a single coronet.

2,825.—Bourbon Whisky.—LILIENTHAL & Co., San Francisco, Cal.—Case B. Application filed July 9, 1875.

"words 'Cyrus Noble,' 'Old Bourbon,' and the device of two coronets."

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date August 10, 1875.]

206.—Title: **"R. W. Bell & Co.'s Transparent Sweet-Brier Soap."**—R. W. BELL & Co., Buffalo, N. Y. Application filed July 12, 1875.

207.—Title: **"R. W. Bell & Co.'s Glycerine Soap."**—R. W. BELL & Co., Buffalo, N. Y. Application filed July 12, 1875.

208.—Title: **"Griffith's Rheumatic Relief."**—WILLIAM A. GRIFFITH, Washington, D. C. Application filed August 5, 1875.

209.—Title: **"Cancer and Tetter Cure."**—WILLIAM A. GRIFFITH, Washington, D. C. Application filed August 5, 1875.

300.—Title: **"Griffith's Catarrh Remedy."**—WILLIAM A. GRIFFITH, Washington, D. C. Application filed August 5, 1875.

301.—Title: **"Warner's Purgative Soda Water."**—WM. R. WARNER & Co., Philadelphia, Pa. Application filed July 21, 1875.

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Flynt, C. D., Car axle lubricator	166,600
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Frey, J., and J. M. Eichholtz, Sawing machine, (reissue)	6,586
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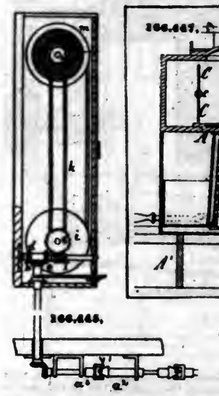
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Rousseau, D., Electric railway signal	166,557
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Walter, W. P., Cornice tool	166,666
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Westinghouse, G., Jr., Vacuum brake pipe coupling	166,489
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Willson, W. E., assignee	166,535
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Wilson, W. W., Egg tester	166,671
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Wolf, J., Oscillating engine	166,672
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Woodbury, A. H., Wool carding engine	166,578
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Yard & Sullivan, assignees	166,614
Young, H. Z., Bale tie clamp	166,491

TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED AUG 10, 1875

166,445. STATION-INDICATORS. Lewis V. Adams, Rock Island, Ill. [Filed Feb. 23, 1875.]



1. The roller *m*, shaft *n*, and spring *r*, in combination with the roller *i*, ribbon D, and cord *k*, and suitable driving devices, substantially as and for the purposes specified.

2. The shaft A, consisting of the parts *a* a^1 a^2 and shaft B, in combination with shaft *n*, roller *m*, spring *r*, roller *i*, ribbon D, and cord *k*, in a station-indicator for cars, all as and for the purpose specified.

166,446. MAN-HOLES FOR OIL-TANKS. W. H. Anderson, Brooklyn, E. D., N. Y., assignor of one-half his right to A. J. Pouch, same place. [Filed Nov. 27, 1874.]

Brief.—The springs successively add to the repellent force which closes the hinged cover when pulled upward by escaping vapors.

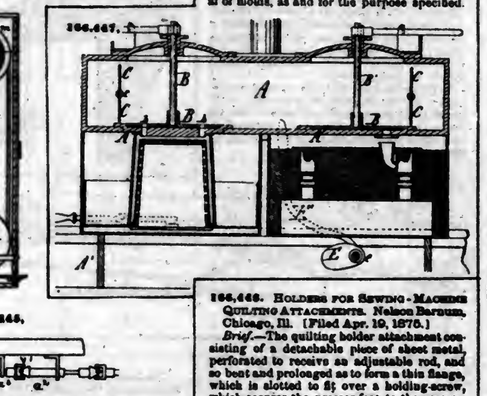


The oil-tank constructed with the external system of independent springs *b d*, arranged above and behind the usual man-hole plate or cover C, and operating in succession to automatically close the said plate when the same has been thrown open by explosion, the elastic force applied to them return the plate being thereby proportioned to the force with which it is thrown open, substantially as herein described.

166,447. MACHINES FOR MOLDING PAPER-PULP. Benjamin F. Barker, Curtisville, assignor to himself and J. Barker & Brothers, Pittsfield, Mass., and G. W. Williams, Hartford, Conn. [Filed June 20, 1874.]

Brief.—The pulp is let into a vat, where it is kept in constant agitation, and from this vat runs into molds, which are lifted into close contact by means of cam-levers.

1. In combination with the chest A, valves B, framing A^3 A^4, and molds M F, the means R, substantially as described, for bringing the molds into tight contact with the chest, and releasing them therefrom, as herein specified.



2. The chest A, having the connection *c*, in combination with the agitator C and series of valves to allow the application and removal of molds, as and for the purpose specified.

166,448. HOLDERS FOR SEWING-MACHINE QUILTING ATTACHMENTS. Nelson Barnum, Chicago, Ill. [Filed Apr. 19, 1875.]

Brief.—The quilting holder attachment consisting of a detachable piece of sheet metal, perforated to receive an adjustable rod, and so bent and prolonged as to form a thin flange, which is slotted to fit over a holding-screw, which secures the presser-foot to the presser bar.



1. The sheet-metal holder E, made with the parts *b d*, pierced to receive the rod D, the part *b* being prolonged into the flange *c*, and the part *d* being prolonged and bent to form the spring *g*, substantially as specified.

2. The combination and arrangement of the holder E, having the thin sheet-metal flange *c*, with the presser-bar A, presser-foot B, and screw F, substantially as specified.

166,449. MACHINES FOR WELDING AND FINISHING PIPE. Mildred Blakey, Etna, Pa., assignor of one-third his right to J. L. Robertson, same place. [Filed July 8, 1875.]

Brief.—Two or more concave-faced rolls in a revolving stock, angular to the line of feed, and acting circumferentially on the pipe, grooved feed-rolls, tubular bearing-shaft, and mandrel.

166,449.



1. For welding or finishing pipe, a series of two or more concave-faced rolls arranged in a rotating head or stock angularly to the line of feed, and when in operation revolving on their axes, and also acting circumferentially on the pipe either by the revolution of the pipe inside the rolls or by the revolution of the rolls around the pipe, substantially as set forth.

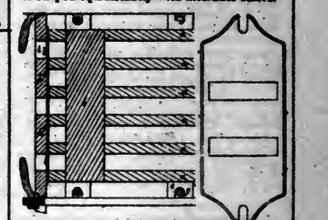
2. A series of two or more rolls, D, arranged, and operating as set forth, in combination with grooved feed-rolls A A, for the purposes substantially as described.

3. Two or more rolls, D, arranged to act circumferentially on the pipe or skelp, in combination with a tubular bearing, axle or shaft through which the skelp or pipe is fed and delivered, substantially as set forth.

4. A mandrel, c, in combination with revolving circumferentially-bearing rolls D, substantially as described.

166,450. FRAMES FOR DYEING CLOTH. E. Brierley, Milton Mills, N. H. [Filed June 1, 1875.]

Brief.—There are first clamped onto the dyeing-frame end frames, which have vertical bars three times the width of the spaces between them. By dipping in the vat the spaces between the bars take the stripe color. Then substitute other end frames having a slot opening against the center of the broad ground-color space of the cloth, between the stripes already made. Dip again in other color, and the cloth is striped equidistantly with alternate colors.



In the above-described dye-frame, the end frames D, having bars which severally lap on and cover two next adjacent bars and the space between them of each of the sectional frames, all being to enable the cloth to be dyed with stripes of different colors, as set forth.

166,451. AUTOMATIC FIRE-EXTINGUISHERS. Joseph R. Brown and William A. Foskett, New Haven, Conn. [Filed Jan. 4, 1875.]

Brief.—Within the water-pipe, and between the distributing-nozzle and the water, is placed a metal disk, secured within the pipe by fusible solder, and covered with wax or equivalent material, to keep the water from the disk, and allow the heat to act more quickly upon the solder. A core of some poor conductor of heat is placed in front of the disk. The pipe has a pocket at its end to receive the disk, which is forced therein by the action of the water when the solder securing it has melted.

166,451.



1. The disk *f*, secured within the pipe A by fusible solder, and covered with paraffine, wax, or their equivalent, substantially as and for the purpose specified.

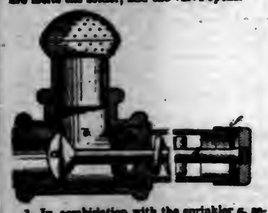
2. The core G, consisting of fusible material, when placed between the water and the disk, secured by solder to be fused by the heat of the fire, substantially as and for the purpose described.

3. The combination of the core G, the disk *f*, and the pocket K for receiving the core and disk, and allowing a free passage for the water, substantially as herein described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

166,452. AUTOMATIC FIRE-EXTINGUISHERS. Joseph R. Brown and William A. Foskett, New Haven, Conn. [Filed Jan. 30, 1875.]

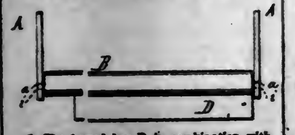
Brief.—To a T-pipe is attached, to the side part, a sprinkler; to one end an end of water-pipe, having a valve-seat formed upon it; to the other end a plug containing a valve, valve-stem, projecting arms, and cap, (the two latter joined by a fusible solder.) The increased temperature from the outbreak of a fire melts the solder, and the valve opens.



1. In combination with the sprinkler *a*, secured to a branch of the T-piece *b*, as described, the valve C, the stem projecting horizontally beyond the T-piece, and the cap *f*, secured either to the valve-stem or to the projecting arms *g g*, by fusible solder substantially as and for the purpose described.

2. The combination of the T-piece *b*, having the valve C placed within the same, the valve-stem *d*, cap *f*, projecting arms *g g*, and the spring H, arranged to open the valve as soon as the solder is melted, substantially as and for the purpose herein described.

166,453. WEATHER-STRIPS. Thos. Clark, Akron, Ohio. [Filed May 27, 1875.]



1. The bowed bar B, in combination with the cams *i* and rubber D, substantially as specified.

2. The bowed bar B, in combination with the cams *i*, rubber D, bearings A, and boss *c*, substantially as and for the purpose set forth.

166,454. MANUFACTURE OF IRON AND STEEL. A. G. Cook, Burlington, Vt. [Filed May 13, 1875.]

Brief.—Six hundred pounds No. 1 iron, five hundred to eight hundred pounds No. 6 iron, two hundred pounds finetch iron, one hundred pounds steel, and fifty pounds wrought-iron are mixed and melted in the cupola, and then drawn off into a refiner.

A metal composed of gray or No. 1 iron, white or No. 6 iron, finetch iron, steel, and wrought iron combined, in about the proportions and substantially as described.

166,455. HEAD-RESTS FOR CAR-SEATS. Tryon Edwards, Hagerstown, Md. [Filed Nov. 3, 1873.]



A car-seat back provided with the loose portion B, having its face adapted to form a part of the face of the seat, and also capable of use upon either edge of the back, as described.

166,456. GRAIN-SEPARATORS. Albert W. Gray, Middletown, Vt., assignor to himself, Leonidas Gray, and Albert T. Gray, same place. [Filed Mar. 6, 1875.]

Brief.—Serrated bars and screen reciprocated in opposite directions at different speed by unequal double crank. Lifting-fingers, with center of oscillation in the screen, operate in connection with the serrated bars, to detain the straw from moving backward during the backward movement of the bars.

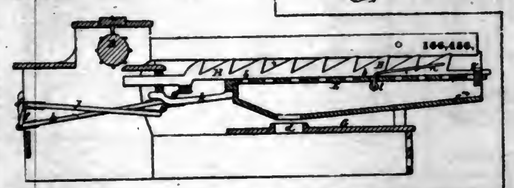
1. The combination of the single shaft *c*, with its long and short cranks *f g*, arranged opposite to each other, the pitmen *h i*, the serrated bars or straw-pushers H, and the shaker or screen E, for moving said pusher and screen simultaneously in contrary directions, the former faster and farther than the latter, as and for the purpose described.

2. In combination with the serrated straw pusher and the screen, moving in contrary directions, the former faster and farther than the latter, the vibrating fingers *n*, operated, in connection therewith, as and for the purpose described.

166,459.



166,456.



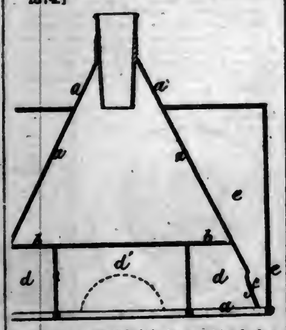
166,457. BELT-COUPLINGS. James Hare, Providence, R. I., assignor to J. A. Whitman, same place. [Filed June 21, 1875.]



1. An elastic belt-coupling, A, made of triangular wire, the internal spaces of which form screw-threads, as and for the purpose described.

2. An elastic belt-coupling formed by the combination of the two parts A A, having the internal screw-threads thereon, and the internal part or male screw B, having external screw-threads, substantially as described.

166,458. CLOTHES-POUNDERS. Ambrose J. Harmon, Boston, Mass. [Filed Nov. 26, 1874.]

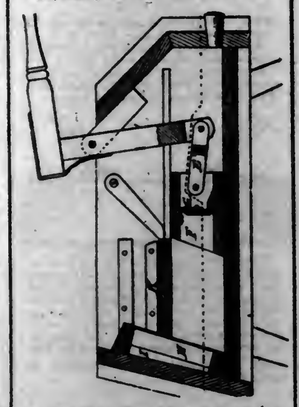


The conical body *c*, having partition *b*, ring *c*, and annular chamber *d*, in combination with radial air-chambers *eeee*, closed at their tops, but having openings ////into said annular chamber, substantially as and for the purpose set forth.

166,459. WEBFOOTS. Cornelius B. Haynes, Boston, Mass., assignor to Augustus Page, same place. [Filed Mar. 4, 1875.]

The beat spring, formed as described, with a bearing for the upper roll in its free end, in combination with the standard formed with a bearing for the lower roll, and a seat upon which the spring is fixed and held, substantially as shown and set forth.

166,460. WASHING-MACHINES. Jos. Hollingsworth, Jonesborough, Ind., assignor of one-half his right to Elihu W. Pemberton, same place. [Filed July 15, 1875.]



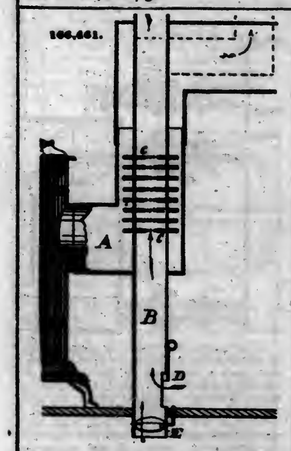
1. The combination of the tubular plunger F, furnished with the valve G and the rods or bars H and water-chamber I, substantially as set forth.

2. In combination, the valved plunger, the bars and water-chamber, and the adjustable partition K, substantially as set forth.

166,461. SMOKE-FLUES AND HEATING-DRUMS. L. T. Houghton, Worcester, Mass. [Filed Apr. 5, 1875.]

The combination of the smoke-flue A with the air-heating pipe B, the external air-inlet E, the interior air-inlet D, and the radiators C, substantially as described.

166,461.



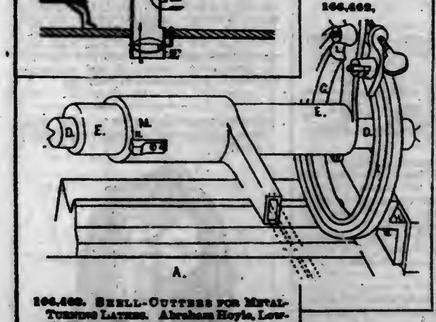
1. In a coupling for cars, the spring-clutch composed of the jaws *j* and *f* and springs *s s*, in combination with the transverse sliding plate P', so as to be self-adjusting by the action of the springs *s s* when the link is removed, substantially as shown and described.

2. The transverse sliding plate P', in combination with the chain *c*, (or its equivalent,) and the spring-clutch composed of the springs *s* and the jaws *j* and *f*, substantially as and for the purposes shown and described.

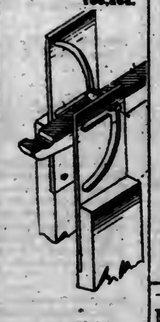
166,462. BELT-SHIFTERS. John D. Isaacs, Wilmington, Del. [Filed Jan. 26, 1875.]

Brief.—Sliding and parallel in a frame are two bars, each having a pair of holding-pins, for the shifting of belts successively off and on the tight central drum and outer loose ones by means of a lever having a pin projecting from both sides, and working each bar longitudinally by a slot formed of a curve and a right angle

166,462.



166,462.



The combination, in a belt-shifter, of two plates, each having a curved slot, substantially as shown in the accompanying drawings, with a pin or its equivalent, either the plate or the pin moving in a curved path, substantially as described, and for the purpose above specified.

166,463. SHELL-CUTTERS FOR METAL-TURNING LATHES. Abraham Hoyle, Lowell, Mass. [Filed Mar. 24, 1875.]

Brief.—The shell-arbor, bored eccentrically, surrounds a solid arbor, which is supported either concentrically or eccentrically by the lathe-spindle. A ring fixed to the tail-stock and a screw bolt and nut serve to fix the shell-arbor in position, and an adjustable gage-screw is used to adjust the arm of the shell-arbor. The shell-cutter arbor surrounds the shell-arbor, and is held from turning by an extension of its arm being inserted in the tool-post.

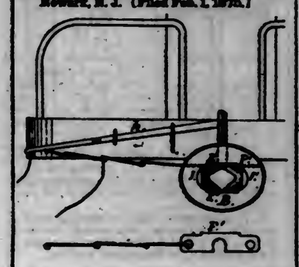
1. The combination of the arm F on the shell-arbor B, the grooved circle G, the screw K, and nut L, as and for the purpose herein described.

2. The combination, with the shell M and tool H, of the slot W and the bar X, fixed in the tool-post of a lathe, as and for the purpose herein described.

3. The combination of the eccentric shell-arbor B with the eccentric solid arbor D', as and for the purpose herein described.

4. The combination of the eccentric shell-arbor B, the shell M, and the tool H, as and for the purpose herein described.

166,464. GEAR-COUPLINGS. Henry C. Hull, Newark, N. J. [Filed Feb. 1, 1875.]



166,465. SCALES FOR TYPE-WRITERS. W. C. Johnson, Newburyport, Mass. [Filed Feb. 20, 1875.]

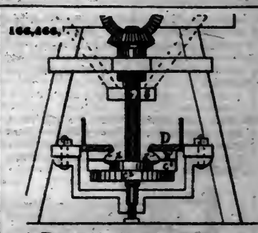


A type-writer scale upon which divisions are marked, as shown and numbered, each of said divisions corresponding with the space occupied by a letter made by the type-writer, as and for the purpose specified.

166,466. MILLS. Jacob Kaiser, York Township, York County, Canada. [Filed Sept. 30, 1874.]



166,466.



1. The combination, with the upper horizontal stationary metal grinder D', of the receiving-cylinder D, fixed upon its upper surface, the central opening in each coinciding, and the grinder flaring inwardly from its upper surface, all as shown and described.

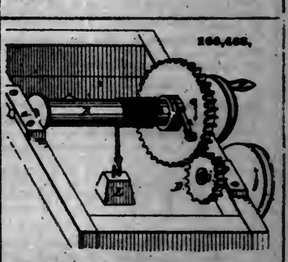
2. The upper metallic grinder, (shown in Fig. 3,) having the slopes *o o* thereon cut into the circular portion of the center, and the supplemental grooves *f* between their outer grooves and the furrows, the slopes *o* being, some of them, cross-cut, in combination with the lower metallic grinder, (shown in Fig. 5,) having the groups of undercut grooves *r* cutting the straight but non-radial furrows *g*.

166,467. CORKS. William King, Perth Amboy, N. J., assignor to William King & Co., New York, N. Y. [Filed May 10, 1875.]

Brief.—The stopper is cut from a blank composed of two or more layers of previously-prepared cork-wood, joined together by suitable cement, and firmly united by being subjected to heavy pressure, for the purpose of saving cork-wood by making large-sized corks from thin layers of bark.

As a new article of manufacture, a stopper cut from a slab or piece of cork composed of two or more layers, first joined together by cement and pressure, substantially as described.

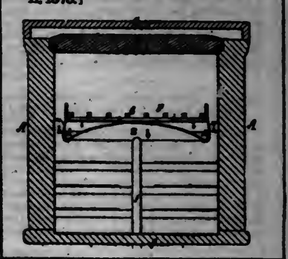
166,468.



166,468. WINDLASSES. W. Hadnell King, Somerville, assignor of one-half his right to John W. Lukens, Springfield, Mass. [Filed June 12, 1875.]

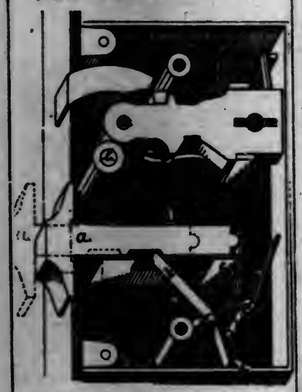
An improved elevator, having the combination of the shaft b, nut l, drum B, clutch G, bar H, tooth-wheel C, and strap *s*, in connection with or without the platen D, substantially as and for the purpose described.

166,469. REFRIGERATORS. Richard Loud, South Weymouth, Mass., assignor to Reuben Loud & Son, same place. [Filed May 11, 1875.]



In combination with the unperforated box A and the water-diffusing pan F containing the grid G, the pan S, having the domed and cold-conducting bottom, operating as described to cool the air beneath it, all substantially as specified.

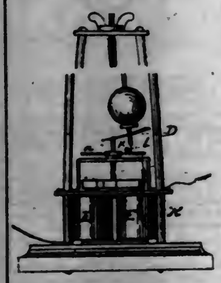
166,470. LOCKS FOR SLIDING DOORS. Thos. Lyon, Hartford, and Emery Parker, New Britain, assignors to Russell & Erwin Manufacturing Company, New Britain, Conn. [Filed June 29, 1875.]



1. In combination with lock-cases for sliding flush doors, an extensible draw-bar, *c*, having its head projected beyond the front plate to form a thumb-piece, by which it can be extended, but arranged to be sheathed within the case when the edges of the sliding doors are brought into contact, substantially as described.

2. The combination, with an extensible draw-bar, *c*, as described, of a friction-stop spring, *b*, substantially as specified.

166,471. GOVERNORS FOR ELECTRIC MOTORS. Augustus Mac Connel, Cambridge, Mass. [Filed Apr. 15, 1875.]

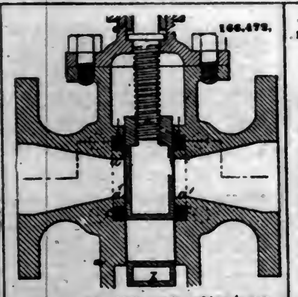


The combination of the rotatory electro-magnetic engine, the circuit-closer K having projecting arms *a a*, the slotted arm D upon the shaft h of the motor, and the conical pendulum E, constructed and operating substantially as and for the purpose set forth.

166,472. STOP-COCKS. James Mallinson, Welwyn, Hertford. [Filed July 6, 1875.]

1. The cock or valve shell, constructed substantially as hereinbefore set forth, with a fluid-way or passage therethrough, a plug-seat therein, and packing cavities around the fluid-way or passage.

2. The combination, substantially as hereinbefore set forth, of the shell having a plug-seat and fluid-passage, the lips on the shell, the cavities provided with packing, and the plug

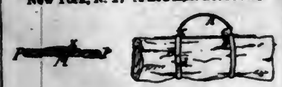


166,472.

surrounded by said lips and working in contact with the packing.

3. The combination, substantially as hereinbefore set forth, of the shell having a way or passage for the fluid, and a plug-seat, the plug, the packing, and the removable covers securing the packing in place.

166,472. SHAWL-HOLDERS. F. Meinberg, New York, N. Y. [Filed Apr. 26, 1875.]



In a shawl-strap, the core M, having its edge bound with the gutter-shaped metal binding P, and with or without the leather covering X, and adapted for use in connection with the handle A and straps D D, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand this 27th day of April, 1875, in the presence of two subscribing witnesses.

166,474. NURSERY-CHAIR SEATS. Stephen S. Newton, Binghamton, N. Y. [Filed Jan. 18, 1875.]

Brief.—The combination and arrangement of a guard with the chair-seat and vessel in such a manner that said guard shall prevent the saturation of the seat by careless use.



166,474.

The combination and arrangement of the chair-seat A, having a slot, *a*, and recess *b*, semicircular guards B, and vessel C, all constructed substantially as herein described, for the purpose set forth.

166,475. PROCESSES OF MANUFACTURING ARTICLES FROM HORN AND HOOF. William F. Niles, Leominster, Mass. [Filed Feb. 20, 1875.]

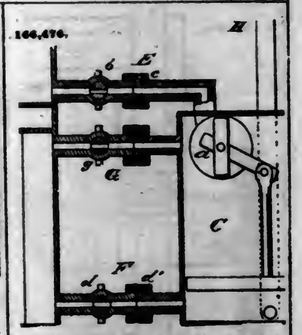
1. The herein-described improved mode or process of making or forming articles from horn or hoof and bone-black, which consists in reducing the horn or hoof to powder by grinding, mixing with the same bone-black, as described, boiling or sifting said mixture slightly moistened, as described, and then pressing the boiled or sifted product in heated files or molds of the configuration required for the article to be produced.

2. Articles made from ground hoof or horn and bone-black, combined together substantially in the manner described.

166,476. GAS-CARBURETERS. A. W. Porter, New York, N. Y. [Filed July 14, 1875.]

Brief.—The float operating the cock in the supply-pipe is placed in a box by itself, and the box is joined by pipes to the oil-supply tank and carburetor. An air-chamber is formed between the oil-tank and carburetor.

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1. In combination with a carburetor which is subdivided by partitions *a' d'*, and the central space or apartment K, the reservoir A and an automatic feed-box, C, containing a valve, *c*, which is actuated by the rise and fall of a float, C', substantially as described.

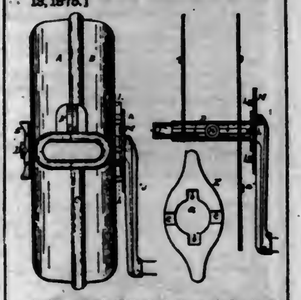
2. Pipes E F G, provided with cocks and union-couplings, in combination with reservoir A, carbureting-chamber B, and automatic feed-box C, substantially as described.

166,477. LIFE-PRESERVING JACKETS. Thos. Richards, Cleveland, Ohio. [Filed May 1, 1874.]



A life-preserving jacket provided with an intermediate piece of fabric, to which is attached the sections of cork, substantially as and for the purposes described.

166,478. CLOTHES-LINE REELS. Ephraim D. Richardson, Chardon, Ohio. [Filed July 13, 1875.]



1. The wheels H I, shaft D, crank J, wheel M, studs A, and click L, in combination with the case, consisting of the two sections A B, substantially in the manner as and for the purpose set forth.

2. In combination with the shaft D, pin *d*, and case, constructed substantially as described, the button B, provided with notches *b* and groove *c*, for the purpose specified.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

166,479. STEAM-WHISTLES. John Rieppel, Renovo, Pa. [Filed June 26, 1875.]

Brief.—The bell of the whistle is constructed at its mouth, so that the steam from the bowl strikes it at an angle. The opening between the bell-mouth and the bowl is automatically adjusted by means of a spring.



166,479.

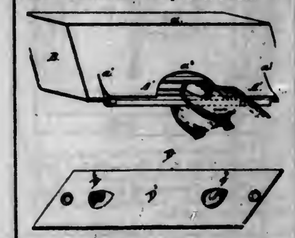
1. A steam-whistle bell constructed with a contracted mouth, combined with a steam-jet less in diameter than the body of said bell.

2. The bell D, with the contracted mouth *a*, combined with the conical jet *d e*, as set forth.

3. The bell D, constructed with the hub *f*, fitted to the cylindrical stem *g*, as described, and combined with an adjusting-nut, *i*, and a seat-spring, E, to hold said bell against said adjusting-nut, as and for the purpose set forth.

166,480. MATCH-BOXES. Thos. Robertson, Toronto, Canada. [Filed Jan. 28, 1875.]

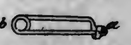
Brief.—A box in which matches are packed, and which is arranged for the removal of one match at a time, provided with apertures to receive buttons or a wall-plate or holder.



1. A match-box constructed of some suitable material, having its bottom inclined forward, as shown, and its front and bottom slitted at *a'*, forming the spring-surfaces A' A², and provided with the finger-way *a²*, as and for the purpose specified.

2. A match-box constructed substantially as herein shown, and having the openings *a²* in the back, in combination with the plate D', having the studs D², as and for the purposes set forth.

166,481. SAFETY-PINS. Alfred Shedlock, New York, N. Y. [Filed June 16, 1874.]



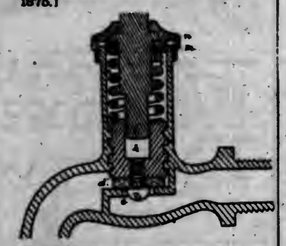
As a new article of manufacture, the safety-pin formed from a single piece of wire with the spring *b*, and helical shield *a*, the axis of which is in line with the pin proper, substantially as described and for the purpose set forth.

166,482. FAUCETS. Dani. C. Stillson, Boston, Mass. [Filed July 3, 1875.]

Brief.—When the key is rotated, both ends of the bar impinge against the sides of the arms of the rocker-levers, and, moving the former horizontally, cause the levers to be moved vertically, and, by their impingement against the upper walls of their slots, raise the valve.

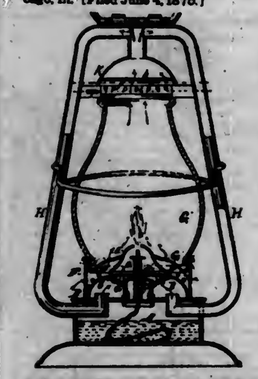
The combination, with the valve-chamber b and valve B, of the screw-ring *f*, provided with a bar, *g*, the rocker-levers h h', spring *e*, and the key D, provided with the actuating-bar *m*, the whole being arranged and operating together, substantially as set forth.

166,482. SELF-CLOSING FAUCETS. Daniel C. Stillson, Boston, Mass. [Filed July 3, 1875.]



In a self-closing faucet, the valve *d*, having a screw-thread cut on its outer surface, and provided with a socket, A, into which the angular end of the valve-key *i* is fitted, said key having a fixed disk or washer, *l*, and a loose washer, *n*, with a packing, *o*, interposed between the two, a spring, *e*, enveloping the said key, and resting at one end against the washer *n*, and at its other end upon the superior end of the valve *d*, the whole being arranged and operating together as described, and for the purpose specified

166,484. LANTERNS. Charles J. Sykes, Chicago, Ill. [Filed June 4, 1875.]



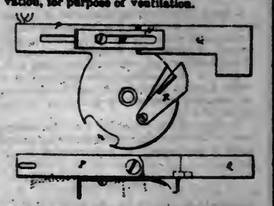
1. In combination with the curbs H H, arranged to pass into the oil-pot and upward through the cover, the conveyed cap C, forming chamber D, the latter communicating with the interior of the case through the perforated plate *b'*, as specified.

2. In combination with the removable perforated rim F, the plate G, arranged to receive the lower end of the globe, and to form chamber D', the latter communicating with the interior of the globe through the distributing perforations in the plate, as specified.

3. The hinged perforated ring I, in combination with hood K and perforated diaphragm *h*, as specified.

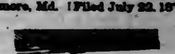
166,485. SASH-FASTENERS. J. Thorman, Terre Haute, Ind. [Filed May 31, 1875.]

Brief.—A notched disk, carrying a jointed tangential arm, is secured to the window-casing in such manner that the jointed arm, when extended out, overlaps the corner of the inside meeting-rail, and by the use of a sliding plate locks the sash. A check or serrated catch pivoted on the disk holds the sash, when partially raised, in desired position, and a suitable pin, playing in a notch on the edge of the disk, prevents it from rotating too far, and likewise locks the device at a slight elevation, for purpose of ventilation.



A window-sash lock consisting of the center or disk O, having notch *n*, the tangential slotted arm P, slide N, movable arm Q, and check K, in combination with the pin *m*, substantially as described, and for the purpose set forth.

166,486. CONCRETE PAVEMENTS. John H. Thormann and Friedrich Brauenhagen, Baltimore, Md. [Filed July 22, 1875.]



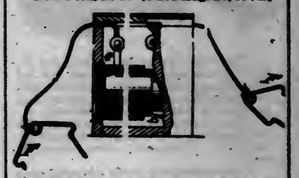
A pavement or floor composed of concrete slags or blocks, separated by interposed layers of white lead, substantially as and for the purpose specified.

166,487. FURNACE-GRATES. W. Tinkham, Providence, R. I. [Filed Dec. 28, 1874.]



In a furnace-grate, the combination of the series of bars A, having flat sides, and provided with the coincident and engaging conical projections B and sockets C, and the lower row of points D, all as shown and described, whereby the bars are locked together and made mutually supporting, as shown and described.

166,488. INDUCTION-COILS. Jos. C. Vetter, New York, N. Y. [Filed Aug. 27, 1874.]



1. The handles E E', constructed to telescope and to pass over the exterior of the induction-coil through an opening in the box, substantially as herein set forth.

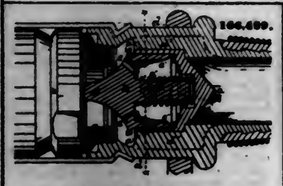
2. The elastic ball-like attachments F F, in combination with the handles E E' and conductors, substantially and as for the purpose specified.

166,489. VACUUM BRAKE-PIPE COUPLINGS. George Westinghouse, Jr., Pittsburg, Pa. [Filed Mar. 10, 1875.]

Brief.—Improves upon applicant's Patent No. 158,397, March 4, 1875, by supporting the cylindrical valve-case by radial ribs projecting inwardly from the outer shell. Secures closure of the valve against atmospheric pressure, in part by balancing the valve, and in part by a spring.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

166,489.



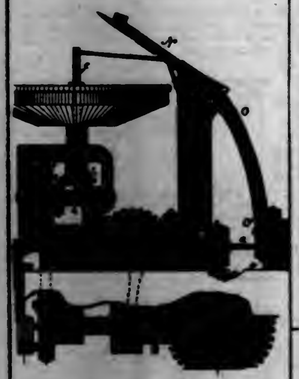
1. In a pipe-coupling, the valve or piston case *a* as a carrier and guide for the valve, arranged in the axial line of the coupling by means of radial ribs *b* projecting inwardly from the outer shell, substantially as set forth.

2. In a pipe-coupling, the combination of valve *c*, piston extension *d*, case *a*, and spring *e*, arranged substantially as and for the purposes set forth.

3. The annular projection *i* on the seating part of the valve, in combination with port or ports *o*, and spring *e*, substantially as set forth.

166,490. MACHINES FOR TAPPING NUTS. Samuel L. Worsley, Providence, R. I., assignor to the American Screw Company, same place. [Filed June 7, 1875.]

Brief.—The column of blanks in the receiving-chute is supported by the nut when at work. When the tap has passed through the blank it comes in contact with an arm attached to a ball-crank lever, forces it back, and thereby causes the stop to be withdrawn from the mouth of the chute, to allow the previously-tapped blank to fall. When the tap is withdrawn, a spring forces the stop back to its normal position.



1. The combination of the revolving dish M', for containing nut-blanks in a mass, and the vibrating separator N, when the latter is constructed with a shovel end, *m*, a mortise, *n*, and guard *o*, substantially as described.

2. The combination of the vibrating mentioned separator N with a stationary receiving-stock and a spring-shank, substantially as described.

3. The combination of the threading-tap *a* with the devices, substantially as described, for discharging the nuts one by one.

4. The combination and arrangement of the threading-tap *a* with the stock O and holder O' for the nut-blanks, whereby the said tap, while threading the blank in the column of blanks next above the last threaded blank, shall support the whole column of blanks above the tap while the underlying nut is being discharged, substantially as specified.

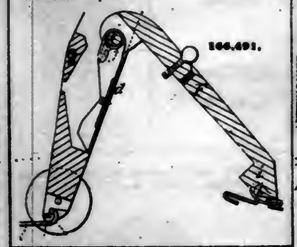
166,491. BALE-TIE CLAMPS. H. S. Young, Vicksburg, Miss. [Filed Jan. 9, 1875.]

1. In a bale-tie clamp or stretcher, the vibrating arm F, combined with the main lever D, its pivot-pin *f* being arranged in slots *g* of the said lever, substantially as and for the purpose specified.

2. The combination, with lever D and the arm F, endwise movable with relation thereto, of the trigger G, arranged within the said lever, and adjustable pin *p* on arms F, substantially as specified.

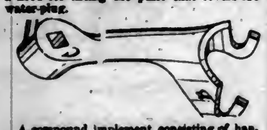
3. In a bale-tie clamp, the trigger G, consisting of parts *j j*, hinged together and adapted to flex downwardly, as and for the purpose specified.

166,491.



166,492. HOSE-SPANNERS AND KEYS. A. J. Barnard, Camden, N. J. [Filed May 1, 1875.]

Brief.—A hose-spanner having on the end of its handle a key for turning the plug, and a hook for lifting the plate that covers the water-plug.



A compound implement consisting of handle A, having recessed prongs B B at one end, and key C, as well as tapering pin D, at the other, as and for the purpose specified.

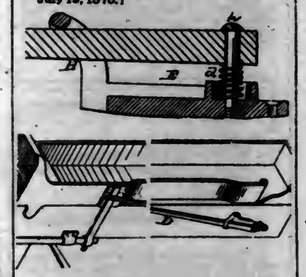
166,493. LAMP-BURNERS. Abel Barker, Wyoming, Pa. [Filed Nov. 30, 1874.]

Brief.—The object of the collars upon the ratchet-shaft is to prevent "traveling" of the oil on said shaft.

The collars B B, in combination with and moving with the ratchet-shaft and cup or chamber inclosing the wick-tube, substantially as and for the purpose set forth.

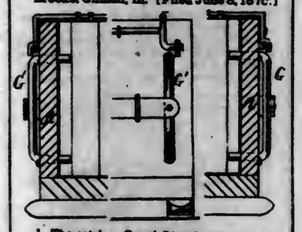
166,493.

166,494. LOOM-SHUTTLE BINDERS. Theophilus Blake, Fisherville, N. H. [Filed July 10, 1875.]



In combination with a protecting-rod and shuttle-binder, the metal piece E, with loops H, the arm or lever D, spring *d*, and screw *h*, constructed and arranged to operate substantially as and for the purposes herein set forth.

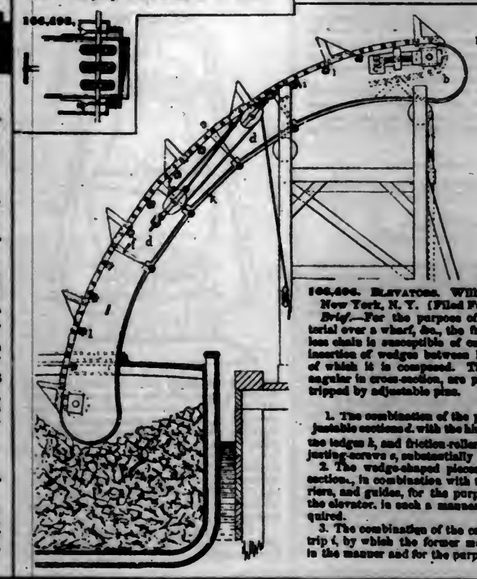
166,495. VEHICLE END-GATES. Fitzhen C. Brooks, Gilman, Ill. [Filed June 8, 1875.]



1. The catches G and G' and springs *i* and *i'*, in combination with the backboard B and wagon-box A, substantially as described.

2. The rod C and spring *f*, in combination with the backboard B and wagon-box A, substantially as described.

166,496.



166,496. ELEVATORS. William H. Brown, New York, N. Y. [Filed Feb. 8, 1875.]

Brief.—For the purpose of elevating material over a wharf, &c., the frame of an endless chain is susceptible of curvature by the insertion of wedge between hinged sections of which it is composed. The buckets, triangular in cross-section, are pivoted, and are tripped by adjustable pins.

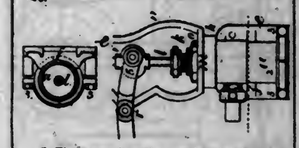
1. The combination of the portable and adjustable sections *d*, with the hinges and chains, the ledges *k*, and friction-rollers *l*, and the adjusting-screws *e*, substantially as described.

2. The wedge-shaped pieces *o* between the sections, in combination with the chains, carriers, and guides, for the purpose of carving the elevator, in such a manner as may be required.

3. The combination of the carriers with the trip *i*, by which the former may be reversed, in the manner and for the purposes described.

166,497. PUMPS. Theodore Butler, Melrose, N. Y. [Filed July 12, 1875.]

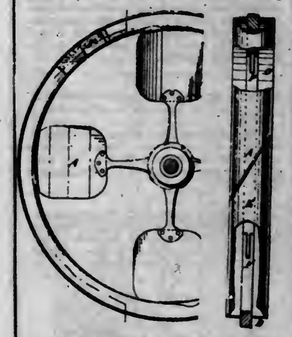
Brief.—The swiveled frame and the pump-barrel fastening allow the handle and discharge-nozzle to be turned in a semicircular arc.



1. The pump-barrel *a*, resting in the segmental bearings of the frame *c*, in combination with the segmental strap *i*, bolts 3, and rings 2 upon the pump-barrel, for the purposes and as set forth.

2. The frame *n*, attached to the cylinder-head by the nut *o* around the stuffing-box, and forming a guide for the upper end of the piston-rod *l*, in combination with the lever *c*, that is attached to such frame by the fulcrum-pin *r*, and is formed with a fork at the end, passing at both sides of the frame and of the cross-piece upon the piston-rod, for the purposes and as set forth.

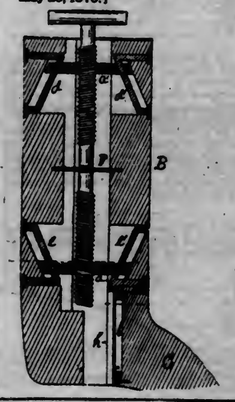
166,498. SCREW-PROPELLERS. Lewis O. Cary and George F. Cary, Portland, Me. [Filed May 1, 1875.]



1. The combination of a hollow water-tight protecting-rim with the blades of a propeller, substantially as specified.

2. The protecting-rim, constructed of the flat band D, oval or half-round band E, and the stiffening-rim F, substantially as specified.

166,499. BOOT-TREES. Henry Clay Cass and Geo. Read Rankin, Alma, Colo. [Filed May 26, 1875.]



1. In a boot-tree, the rod D, provided with a right-and-left-hand screw, in combination with the movable plates *a a'*, and the fixed plate F, as shown and described.

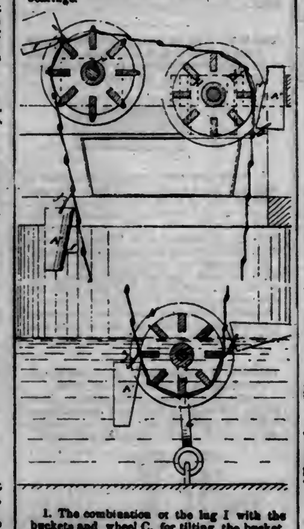
2. The laterally-adjustable parts A and B, provided with the keepers *d d'* and *c c'*, in combination with the movable foot C, substantially as before shown and described.

3. In a boot-tree, the movable foot C, provided with an elongated slot, *b*, in combination with the screw *c*, substantially as shown and described.

4. The keepers *c c'* and *d d'*, in combination with the plates *a a'* and F, rod D, and foot C, and parts A B.

166,500. WATER-ELEVATORS. Jesse Chandler, Barry, Ill. [Filed July 3, 1875.]

Brief.—The buckets are attached to the chain by bails, so that they strike the water bottom down, allowing air to escape as water enters. The lug on the under side allows the bucket to be easily tilted. The second wheel is in a lower plane, and has lateral play in its bearings.



1. The combination of the lug I with the buckets and wheel C, for tilting the bucket, in the manner described.

2. The wheel D, arranged in a lower plane than wheel C, and in combination with the chain and buckets, to incline the buckets down, in the manner described.

3. The wheel D, having lateral play in its axle-bearings, in combination with chain A and wheel C, substantially as specified.

4. The buckets connected to the chain by a ball, allowing them to strike the water bottom downward, substantially as specified.

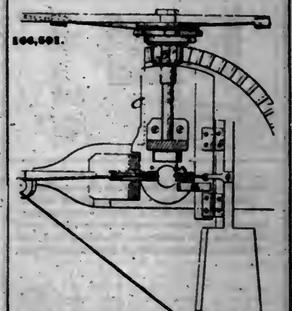
166,501. WINDMILLS. Jacob D. Christie, Schrallenburg, N. J. [Filed June 26, 1875.]

Brief.—The combination of an independently-swinging and adjustable wheel-shaft, provided with loose pinion and supplementary vane, with a quadrantal toothed turn-table, governed by the main vane, for securing position of wheel to any desired angle toward the direction of the wind.

1. The combination of the independently-swinging and adjustable wheel-shaft, provided with loose pinion and supplementary vane, with a quadrantal toothed turn-table, governed by the main vane, for securing position of wheel to any desired angle toward the direction of the wind, substantially as and for the purpose set forth.

2. The combination of the weighted and swinging wheel-supporting frame with a hinged supplementary vane for throwing wheel out of the wind on relaxing weight,

166,501.

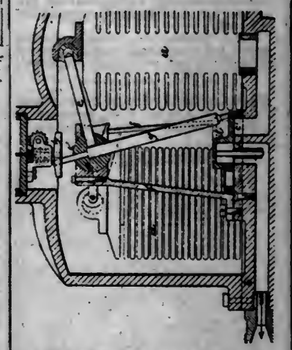


and throwing vane in horizontal position, substantially as described.

3. The combination of the revolving wheel, having adjustable and centrifugally-working brake mechanism, with the disk-pinion and quadrantal turn-table, to produce uniform speed of wheel at varying velocity of wind, substantially as set forth.

166,502. APPARATUS FOR MEASURING LIQUIDS, &c. Emile E. F. Clascelles, Barcelona, Spain. [Filed Apr. 26, 1875.]

Brief.—Three or more bellows consisting of plates of thin metal soldered at their edges, or of other material, operate together a compound L-lever by means of ball-and-socket joints, the central spindle of which lever revolves a rotary valve, which supplies and exhausts the bellows. Said spindle, prolonged through the center ball, actuates the registering mechanism.



1. The bellows *a*, constructed of thin disks of metal, connected at their edges by solder or otherwise, substantially as described.

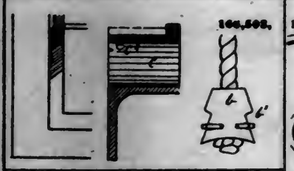
2. The combination, with the valve *d*, of the spindle *g*, central ball-and-socket joint *s'*, lever *s*, and the bellows *a*, as and for the purpose specified.

166,503. SASH-CORD FASTENERS. James F. Collins, Washington, D. C. [Filed Mar. 23, 1875.]

Brief.—A hollow shell or holder, having a wedge-shaped recess, is let into the window-casing, and in this shell a wedge-shaped block, which is pierced for and carries the knotted end of the sash-cord, is closely fitted. On the sides of this block are springs engaging with notches in the holder, and when these springs are pressed in, the cord-carrying block may be readily lifted out of place, thus detaching the sash.

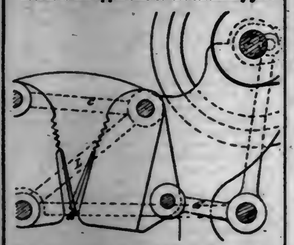
The sash-cord fastening and shifting device, composed of the block *b*, having the notches or grooves *b'*, mortise *b''*, and springs *b'*, and the shell or holder *c*, constructed as described, when arranged and operating substantially as and for the purposes set forth.

166,502.



166,504. STONE-CRUSHERS. Joshua Comly, Philadelphia, Pa. [Filed June 26, 1875.]

Brief.—The vibrating jaw of a stone-crusher is caused to have a motion in the direction of its length by having its vibrating end connected to the upper side of the stationary jaw.

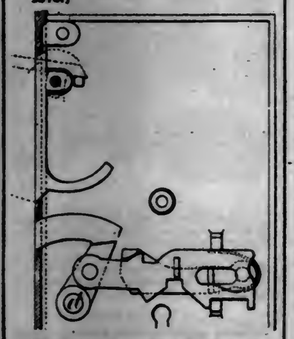


1. The combination of the rocker F and toggle-bar G with the crank-shaft and movable jaw, and the connecting-bars L, substantially as specified.

2. The vibrating end of the movable jaw, coupled to the stationary jaw by the rod L, and pivoted in bearings allowing it to have lengthwise motion, in combination with the rocker F and connecting-rod E, substantially as specified.

3. The vibrating jaw, having lengthwise motion, and being coupled to the trunnions of the stationary jaw, substantially as specified.

166,505. LOCKS FOR SLIDING DOORS. Frank Curtis, New Britain, Conn., assignor to F. & F. Curtis, same place. [Filed June 11, 1875.]

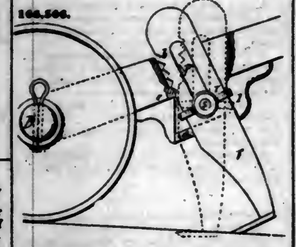


The combination, with a door-lock, of a swinging pull pivoted to the back of the face-plate, and provided with the tail-piece c, stopping against the block c upon the inside of the lock-case, for the purposes and as set forth.

166,506. WEEDING IMPLEMENTS. Charles Crofut, Weston, Conn., assignor of one-half his right to M. Buckley and Wm. E. Crofut, same place. [Filed May 11, 1875.]

Brief.—A single push-handle is mounted upon two small trunk-wheels. The upper end of the handle has a cross-piece for the hands of the operator. An adjustable cutter or tooth has its standard passing through the handle-bar, and by means of a double set of grooves and notches, and a set-screw, the tooth can be set at any desired height or angle.

166,506.



In a weeding-machine, the combination of the shank F, constructed with vertical grooves d and transverse notches b, and the slot B, the notches c, and projections e in the socket, and the clamping-bolt, substantially as set forth.

166,507. HEELS FOR BOOTS AND SHOES. Ariel A. Danforth, Lynn, Mass., assignor to himself and Melville C. Kimball, same place. [Filed Jan. 27, 1876.]

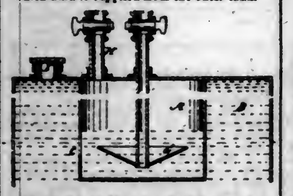


1. As an improved manufacture, a boot or shoe heel having each of its inner lifts composed of two or more pieces, *c d*, scarfed and lapped on each other, and next, or while applied to the outer lift or lifts *a b*, subjected to powerful pressure, so as to firmly and closely set together the scarfed edges, all as set forth.

2. The described mode or process of making a heel—viz., by scarfing and lapping pieces of material together to form each inner lift, and subsequently, or while applied to the outer lift or lifts, subjecting the whole to powerful pressure, so as to force the lapped parts into close or intimate contact, all as set forth.

166,508. CARBURETERS. E. J. Deschbach, Pittsburg, Pa. [Filed June 26, 1875.]

Brief.—The carburator-chamber is placed within the gasoline-tank, and communicates with it by a passage near its bottom, through which fluid is supplied from the outer tank.

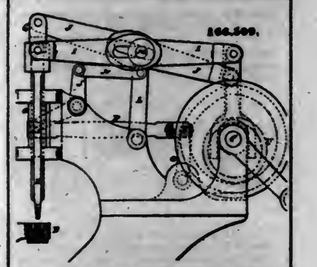


The fluid-tank B, having inlet I, combined with inclosed carburetor A, having hole C and corked pipes D H, as and for the purpose specified.

166,509. MACHINES FOR SEWING ON THE SOLES OF BOOTS AND SHOES. Thomas J. Deane, Croydon, and Mark G. Deane, New Cross, England. [Filed May 24, 1875.]

Brief.—The frame which supports the needle-actuating mechanism is pivoted to the base-plate of the machine in such a manner as to admit of being revolved around an axis thereon coincident with the axis of the needle-bar. The stroke of the needle and the position of the presser-foot are automatically regulated, to adapt them to different thicknesses of material, by means of a sliding fulcrum, which is operated by the material itself, through suitable connecting devices. The needle is arranged eccentrically to the axis of the needle-bar, which has a rotary reciprocating motion imparted to it by a cam, so that the needle, after passing through the work, is caused to move around in a circular groove formed in the top of a stationary horn, to carry the hook across the thread, so that the taking of the same at every stitch is insured.

166,509.



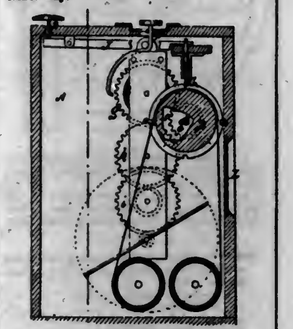
1. The combination of the needle-bar G, arranged to receive a needle, T, set eccentrically therein, as shown, the slotted sleeve O, stud O', arm P, pin or roller E, and cam E, with a horn, B, perforated to receive a sewing-thread, and provided with an annular groove around said thread-hole, substantially in the manner shown, and for the purpose specified.

2. The combination of the adjusting-bar S, bell-crank and link K K' N, rock-lever L, fulcrum-pin M, slotted beam l, cam D, and presser-foot H, all constructed substantially as shown, and arranged to operate as set forth.

3. The combination of a needle-bar, G, having the needle T arranged eccentrically therein, and adapted to be rotated back and forth, as described, with a horn, B, having an opening for the passage of the thread, and an annular groove or channel around said thread-hole for the travel of the needle, as and for the purposes specified.

166,510. STATION-INDICATORS. Stanley M. Dewey, New York, N. Y. [Filed Jan. 7, 1875.]

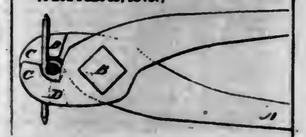
Brief.—Belt carrying names of stations is moved by clock-work when the main wheel is released by depressing a button. The train of gearing can be adjusted to drive the belt either way.



1. In a station-indicator having winding-drums revolving in opposite directions, the combination of the main roller E, gearing *g h i*, combined lever and pawl F, and dogging-plate G, arranged and operating substantially as shown and described.

2. In a station-indicator, the combination of a train of wheels with a detaining pawl or stop, with which the wheels may be dogged when the main roller is being changed, so that it may revolve in a given direction, substantially as described.

166,511. WIRE-EARS FOR FISCHERS. John Dobbs and Benj. F. Booth, Victor, Iowa. [Filed June 10, 1875.]

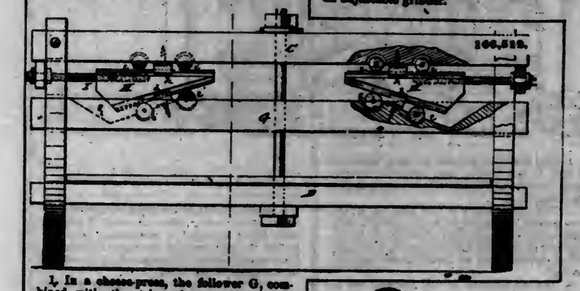


The pinchers made with the curved and notched jaws C, and provided with the projections D upon the inner sides of said jaws, to adapt it for use in applying barbs to fence-wires, substantially as herein shown and described.

166,512. CHEESE-PRESSES. Geo. C. Dolph and Frank J. Smith, West Andover Township, Ashtabula County, Ohio. [Filed July 10, 1875.]

Brief.—The pressor-beam is depressed by wedges and friction-rollers forced inward by the rotation of screws.

166,512.



1. In a cheese-press, the follower G, combined with the triangular recesses *e* and rollers *i*, in combination with the wedge H, stationary beam C, and beams D, all constructed and arranged substantially as and for the purpose specified.

2. The combination of the wedge H, screw I, clamps *h*, and friction-rollers *i* with the stationary top beam C and follower G, substantially as and for the purposes herein set forth.

166,513. HORSESHOES. Joseph H. Dorgan, Plattsburg, N. Y. [Filed Mar. 13, 1875.]

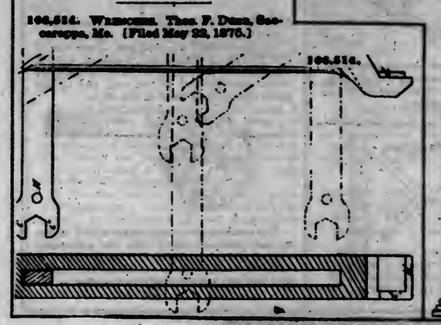
Brief.—A clasp of sheet metal spans the front of the heel, its ends overlapping and adjustably attached to two other side strips, which have lugs on their rear ends, to sustain the rear ends of the shoe, which is attached in front by a screw-bolt passing up through the clasp.



1. The combination of band B, having its flexible end portions provided with a series of holes, G, the longitudinal adjustable pieces E, and bolts F, as shown and described.

2. The bolt H and lugs I, in combination with the band B and shoe C, for the purposes described.

166,514. WRENCHES. Thos. F. Dunn, Geocreque, Mo. [Filed May 22, 1875.]

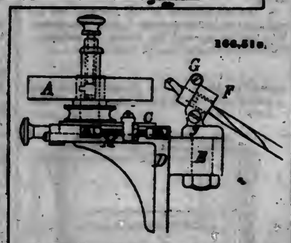


The wrench provided with a lengthwise slot, S, in its body or handle portion, for the purpose of adapting it to be applied to another wrench, in the manner specified.

166,515. DRILL-SHARPENING MACHINES. Wm. H. Daly, Worcester, Mass. [Filed Jan. 18, 1876.]

Brief.—A drill-holder consisting of three parts—viz., a spring-clasp with gage-lugs to regulate the changing of the drill, a jointed socket or holder, and a support eccentrically pivoted in a bracket attached to the frame of an adjustable grinder.

166,516.



1. The hinged holder F, arranged eccentrically on the oscillating fixture E, to bring the end of the drill past the grinding-surface, in combination with the grinding-wheel A, when constructed and operating substantially as described.

2. The griping-collar G, having a shoulder fitted on the holder F, in combination with the holder F, arranged eccentrically on the oscillating fixture E, as described, and the grinding-wheel A, when constructed and operating as and for the purposes described.

166,516. COMBINED READING AND WRITING DESKS. Lemuel G. Fairbank, Chicago, Ill. [Filed Apr. 13, 1875.]

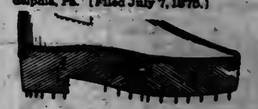
In a combined reading and writing desk, the ends A and A', legs B and B', feet C and C', drawer D, cover D', foot-rest E, and the receptacle F, all constructed, combined, and arranged to operate substantially as and for the purpose specified and described.

166,516.

166,516.



166,517. WOODEN-SOLED BOOTS AND SHOES. Manuel J. Silver Falcon, Philadelphia, Pa. [Filed July 7, 1875.]



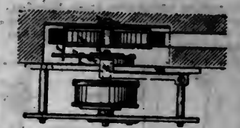
1. The hinge-jointed wood sole constructed with a cavity, and with both front and side abutments, substantially as and for the purpose described.

2. The wood sole for boots and shoes having its hinge C arranged in a cavity, which forms front and side abutments, and which is packed with the box-shaped rubber, substantially as and for the purpose described.

3. The jointed wood sole constructed with a cavity, *a a*, and provided with an abutment-block, E, which is rounded and beveled as described, substantially as and for the purpose described.

4. The hinge-jointed wood sole constructed with a cavity, *a a*, provided with an abutment-block, E, and with an india-rubber insole, A, which covers the cavity and block and the joint between the side and intermediate abutments, substantially as and for the purpose described.

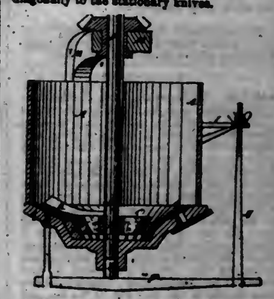
166,518. DEVICES FOR WINDING CLOCKS. Eugene Farcot, Paris, France. [Filed Apr. 20, 1876.]



In combination with the mainspring-barrel of a clock-movement, a second spring-barrel, in connection with the mainspring-barrel by means of a pawl and ratchet, and a cord or ribbon on said second barrel, substantially as described, so that drawing upon the said cord simultaneously winds the spring in both barrels, the mainspring to drive the clock-movement and the second to rewind the cord.

166,519. PAPER-PULP ENGINES. Alvin Gardner, Windsor, Canada. [Filed June 12, 1876.]

Brief.—The knives on grinding-ring are set diagonally to the stationary knives.



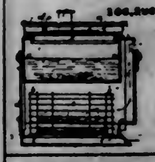
1. The combination, with box A, having tapered wall at the bottom, of inclined knives *b' c'*, held, respectively, in beveled ring and wheel, open inside the rim, as and for the purpose specified.

2. The combination of the damper K with the polygonal box A, the tapering knife-ring B, and the beveled knife-wheel C, open inside the rim, substantially as herein shown and described.

166,520. TRAVELING-CARS. A. A. Gervais, Paris, France, assignor to A. Gervais & Co., same place. [Filed July 6, 1875.]

The combination, with the body of the traveling-can, of the cover A, having neck *p*, the hinged bar *f*, the braces *x*, and the set screws *o*, as and for the purpose specified.

166,580.



166,581.



166,581. SLEIGH-BELLS. George W. Goff, East Hampton, Conn., assignor to the East Hampton Bell Company, same place. [Filed July 13, 1875.]

Brief.—As an article of manufacture, the herein described sleigh-bell, consisting of the two parts A B formed from sheet metal, and their meeting edges soldered as the only means for securing the said two parts together.

166,582. SAW-SETTING DEVICES. Lewis A. Grosly, Huron, Ohio. [Filed May 22, 1875.]

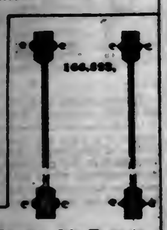
Brief.—Screw for regulating amount of set, fulcrum ob which the foot of the tooth rests, and face against which the tooth is bent by any appropriate means, the whole device being held in the head, against the saw, while it is in a clamp.

The gage for setting saws, herein described, comprising the block A, having f projecting face, B, fulcrum C, and set-screw D, as and for the purposes set forth.

166,583.



166,583.



166,583. SLATE-FRAMES. John Haggerty, Corry, Pa., assignor of one-half his right to V. G. Curtis, same place. [Filed May 26, 1875.]

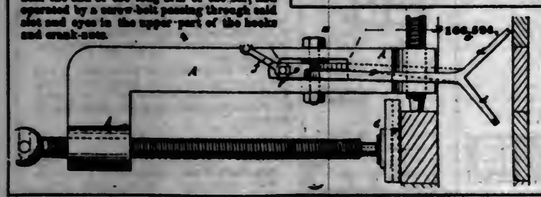
Brief.—The projecting bead forms part of the felt or other frame-cover.

The slate-frame having a covering, C, of felt or similar material, provided with a bead, *c*, substantially as shown and described.

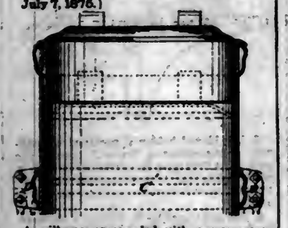
166,584. PLANKING-CLAMPS. J. Hastings, Elizabethport, N. J. [Filed June 5, 1875.]

Brief.—In planking vessels, the planks are forced to their places by means of a bar bent edgewise at right angles near one end, and provided at its ends with internally screw-threaded sockets, to receive the clamping-screws, which operate simultaneously upon the edge and side of the plank, in connection with a dovetail-shaped cross-head, pivoted to the forward end of the screw operating upon the side of plank, and upon which is placed a sliding bar, with its inner face serrated. The clamp is secured in position and locked on the ribs of the vessel by two bracketed hooks pivoted in a longitudinal slot near the end of the long arm of the bar, and operated by a screw-bolt passing through said slot and eyes in the upper part of the hooks and crank-arm.

166,584.



166,585. MILK-CANS. Samuel F. Hawley and Henry A. Mead, Cuba, N. Y. [Filed July 7, 1875.]



A milk-can surrounded with one or more bands, formed of stripe, with a raised bead running longitudinally with the stripe, drawn tightly around the can by the joints formed of the dampers, sockets, and screws, and soldered to the body of the can.

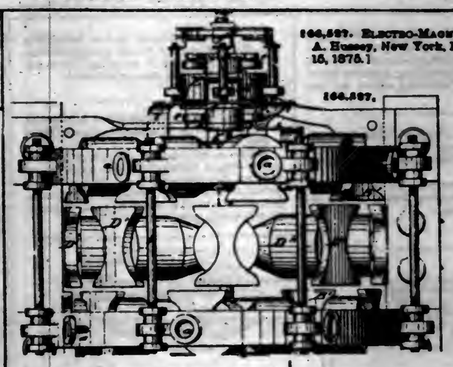
166,586. BILGE-WATER VALVES FOR SHIPS. Joseph W. Hughes, Newburyport, Mass. [Filed May 26, 1875.]



The combination of a self-closing stop-valve, F, with the ribs A and planking E C of a ship, to retain the bilge-water in the middle of the ship, substantially as specified.

166,587. ELECTRO-MAGNETIC ENGINES. C. A. Hussey, New York, N. Y. [Filed May 15, 1875.]

166,587.



1. The hooks D, pivoted to each other by a bolt, E, and having their lower or prosged ends branched, substantially as herein shown and described.

2. The combination of the bent bar A, the two screws B C, arranged at right angles with each other, the branched hooks D, the pivoting-bolt E, and the locking-bolt F, with each other, substantially as herein shown and described.

3. The combination of the grooved bar H and the pivoted cross-head G with the screws B C, the bar A, and the hooks D, substantially as herein shown and described.

1. In electro-magnetic engines, the stationary magnets having radial arms with T-shaped ends, being arranged in alternating position, so that the pole ends of one face the intermediate space between the pole ends of the other, for the purpose set forth.

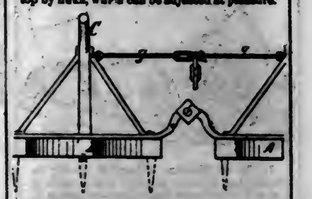
2. The outer stationary magnets having widening pole ends of T shape at right angles to the arms, substantially as described.

3. The central revolving magnet provided with widening pole ends of double T shape at right angles to the radial arms of the same, as set forth.

4. The stationary and revolving magnets having radial arms and widening pole ends whose face-width is somewhat larger than the distance between two adjoining pole extremities, so as to lap on the pole ends across the intermediate space, substantially as described.

166,588. HARROWS. Isaac W. Hutchin, Clinton, Ill. [Filed Apr. 17, 1875.]

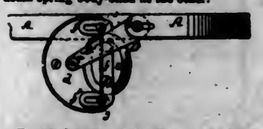
Brief.—Two triangular harrow-frames are hinged together in front and rear by raised hinges, so as to pass on each side, or straddle the row of corn. The handles are rigidly fixed to the frames, and connected near the top by links, which can be adjusted at pleasure.



In a sectional harrow, the raised hinges *e e*, in combination with sections A B, fixed handles C C, and adjustable connecting-chains *g g*, as specified.

166,589. TROUSERS. Joseph G. Jodo, Montmorenci, Pa. [Filed June 26, 1875.]

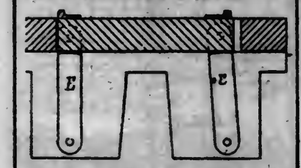
Brief.—A small pressure-pad, at one side of a large crescent-shaped pad, is pressed against the rupture by means of a link, which is fixed to the crescent-pad at one end, and to the usual spring body-band at the other.



The combination of the strap A, link D, pin *c*, and crescent-pad *d* with the adjustable slotted plate *f* and ball-pad *e*, all arranged so that the link D acts as a lever on the plate *f* and ball-pad, substantially as specified.

166,590. STREET-RAILWAY SWITCHES. A. L. Johnson, New Orleans, La. [Filed May 27, 1874.]

Brief.—A street-railway switch having its movable portion laid on a platform which is supported upon vertical toggles, so as to be shifted with great facility by the action of the draft-animal, when guided to the right or left after the car has entered the platform.



The combination of the swinging switch-rails C and C' with the supporting-toggles E E, arranged substantially as described, and for the purpose set forth.

166,591. GAS-BURNERS. Pierre F. Joute, Cincinnati, Ohio. [Filed May 6, 1875.]

Brief.—The plate B is placed at the side of the flame-orifices, and serves to spread the flame.



The burner A, having perforations *a*, in combination with the flange B, provided with the corrugations *b*, substantially as and for the purpose hereinbefore described and set forth.

166,592. GRAIN-SEPARATORS. Andrew W. Kendrick, Brooklyn, N. Y. [Filed July 3, 1875.]

Brief.—Device for running the separator, either independently of, or in connection with, the fan, as desired. Elbow-crank actuates the lower end of the shoe through connecting-rod, adjustable to suit the height of the lever and of the shoe, which is suspended by adjustable straps. Knocking-lever adjustable to suit height of shoe. Device for regulating the flow of grain from the hopper.

166,592.



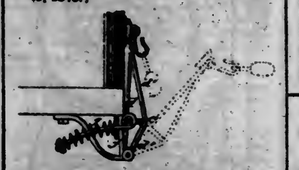
1. The combination, with driving-wheel E and crank-pulley J, operating the shoe F, of the plates H' and pulley H, rigidly secured together, and detachably secured to the fan-shaft B, for the purpose of allowing the separator to be used at will, either with or without the blast, substantially as set forth.

2. The combination of pulley J, having the cam-projection *j*, with the adjustable jarring-lever I and adjustably inclined separator or shoe F, substantially as set forth.

3. The combination of adjustably inclined shoe F, slotted bracket K', inclined connecting-rod *d*, provided at one end with screw-thread and adjusting-nuts *e*, and lever K', substantially as set forth.

4. The combination of slides B', having delivery-orifices in its lower edge, pivoted slats or gates C, and adjusting-bar D, to which said slats are pivotally connected, substantially as and for the purposes set forth.

166,593. STREET-CAR COUPLINGS. Heinrich Krueger, Jr., New York, N. Y. [Filed June 19, 1875.]



1. A spring-retracted lever, fulcrumed at *a*, and having pivoted hook at upper end, to serve on horse-cars as a draw-bar that will automatically be taken out of the way of the horses' feet as soon as a stoppage is made.

2. The combination of the braced and pivoted lever with rear-extending and spring-acted arm pivoted thereto, and a perforated retaining guard-plate of the car-bottom frame, substantially as shown and specified.

3. The swinging and spring-acted lever, having broad contact-plate at upper end to rest against dash-board, substantially as described.

166,594. CIGAR-BOXES. M. Lichtenstein, New York, N. Y., assignor to Lichtenstein Brothers & Co., same place. [Filed June 4, 1875.]

Brief.—The box is covered with foil gummed thereon. Paper binding or border on all the edges covers the edges of the foil, and prevents soiling or rolling.



A cigar-box rendered air-tight by a complete covering of tin-foil, *a*, which is attached to the wood of the box by gum, and whose edges are covered with paper binding *b*, substantially as and for the purpose specified.

166,595. METALLIC WINDOW-BLINDS. W. S. Mackrell, Evanston, Tex., assignor to himself, W. R. Wilson, and Curtis T. Ball, same place. [Filed June 1, 1875.]

The fire-proof window-blind consisting of horizontal leaves or sections A, vertical cleats B, and locking-arm C, all arranged substantially as and for the purpose described.

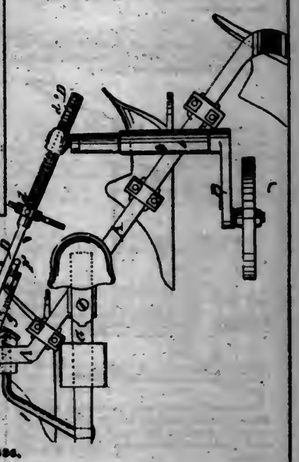
166,595.



166,596. GANG-PLOWS. David A. Manuel, Napa, Cal. [Filed May 8, 1875.]

Brief.—Plow-beam and wheels placed obliquely. The crank-axle arms connected to either end of an oblique horizontal shaft, and actuated by a lever and connecting mechanism to raise the wheels, and by a swiveled screw to set the depth of the plows. Draft-beam and tongue adjustable to allow the plows more or less land.

166,596.

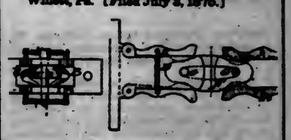


1. The combination of the main beam A and crank-axle E swinging thereon with the governing rear shaft D, fulcrumed hand-lever F, and rack and treadle mechanism for raising and lowering wheels and regulating depth of plows, substantially as set forth.

2. The combination of the rear crank-axle and shaft B', having swiveled nut *c*, with the receiving screw-sleeve 2, of rear shaft D, for setting plows to exact depth required, as specified.

3. The main beam A, in combination with pivoted draft-beam G, having socket *n* with tongue pivoted therein, and adjustable side brace I to throw draft-beam out of line of draft and plows to or from the land, as set forth.

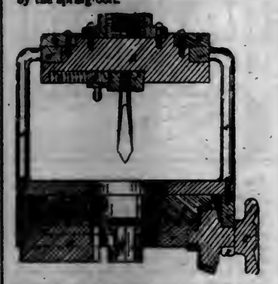
166,597. CAR-COUPLINGS. John M. Martin, Willett, Pa. [Filed July 3, 1875.]



An automatic car-coupling composed of stationary top and bottom guide-bars, pivoted and spring-connected side bars, with grooved front jaws, with coupling-pin resting thereon, and of a centrally-widening link, all constructed substantially as specified.

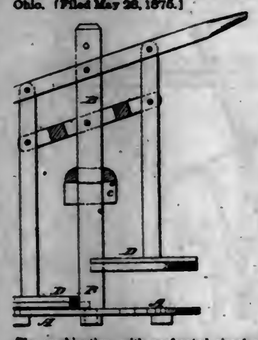
166,536. CHUCKS AND CENTERERS. John R. Macoy, Wilmington, Del. [Filed June 22, 1875.]

Brief.—Sliding plate carries two tools, either of which may be locked in a central position by the spring-bolt.



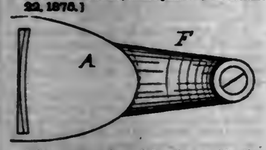
The combination of arm-plate F, face-plate G, lock-plate H, ring M, and sliding plate I, adapted for the use of two tools, J and K, with the scroll-check, all as and for the purpose specified.

166,539. WASHING-MACHINES. John W. McQuillin and John A. Knepper, Delta, Ohio. [Filed May 28, 1875.]



The combination, with perforated circular grate A, having central post B, of the pounders D D, recessed and sliding on said post as a guide, in the manner shown and described.

166,540. BOX-SCRAPERS. Gustavus Meyer, Quincy, Ill., assignor of one-half his right to Julius Franke, same place. [Filed June 22, 1875.]



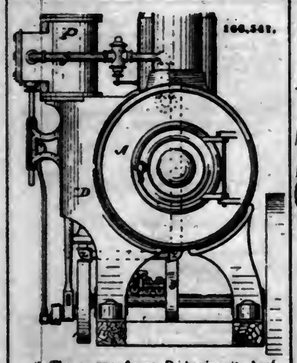
A box-scraper formed by the combination of the plane-rest A, handles F, shoulder B, and adjustable piece D, substantially as shown and described.

166,541. PORTABLE STEAM-ENGINES. M. McEaig and W. J. Muncaster, Cumberland, Md. [Filed May 26, 1875.]

1. The combination, in a portable steam-engine, of the horizontal boiler A and frame D, constructed substantially as described, whereby the said frame supports the cylinder above, and the crank-shaft with its balance-wheel below, the boiler, as set forth.

2. In combination with the horizontal boiler A, the engine-frame D, having its back fitted to the boiler, and its upper end adapted to receive the engine-cylinder, substantially as shown and described.

166,542.



3. The engine-frame D, having its back adapted to fit upon and support the end of the horizontal boiler, and its lower and provided with bearings for the main shaft, in combination with the vertical cylinder P, substantially as set forth.

4. The frame D, having its back made concave to fit upon and support the boiler, with bearings for the cross-head in its interior, the bearings or guides *g* for the valve-stem, and the boxes or bearings at its lower end for the main shaft, substantially as shown and described.

5. The pump H, secured to the boiler underneath the same, in combination with its operating-wheel *q* and main shaft G, all being arranged to operate as set forth.

166,542. BRUSHES. Saml. A. Miles, Rochester, N. Y. [Filed May 24, 1875.]

Brief.—The head is grooved, and leading to this is a narrow throat at the bottom of two converging sides, by means of which a sponge can be rammed into the groove through the throat, and held thereby without other fastening.



The grooved head or holder A, constructed with the narrow throat *c* and expanding sides *b b*, forming the angular groove *f* for the easy insertion of the sponge, as herein shown and described.

166,543. SLEEVE-BUTTONS. J. C. Miesmer, Trenton, N. J. [Filed June 19, 1875.]

Brief.—A perforated bar is adapted to slide in a groove on the bottom of the foot, and a spring-catch which is secured to the top of the foot engages with the bar, and locks the button to the article on which it is used.

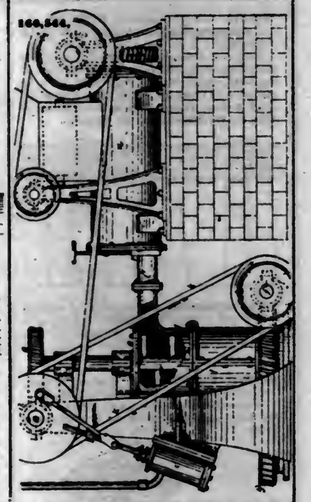


A button having the face-plate or head A and the shank B, with the single foot *b'* at a right angle to it, in combination with the spring-catch D and perforated slide-bar C, substantially as and for the purpose specified.

166,544. BRICK-MACHINES. A. Conrad, Germantown, Pa. [Filed Nov. 27, 1874.]

Brief.—The clay is tempered in a horizontal cylinder by a pair of rollers of differing velocities. It thence passes into a closed vertical pug-mill at a point just below the uppermost blade. Worm-gearing throughout, with belting at both ends of each shaft.

166,544.



1. The combination of the worm-wheels *e* and *g*, worm-shafts *a*, *d*, and *f*, double or balanced pulleys B B and A A, and the belts *h h*, when constructed and arranged to operate together, substantially in the manner shown, and for the purposes specified.

2. The combination of a brick-pressing machine, constructed substantially as shown, and provided with a vertical receiver, *i*, for tempered clay, and a horizontal clay-tempering machine, n, connected together by a conduit, C, and a suitable arrangement of pulleys and belts driven from the same motor-shaft, so that the speed of one may be always proportionate to that of the other, substantially in the manner shown, and for the purposes set forth.

166,545. BED-BOTTOMS. Thomas L. Odell, Iowa Falls, Iowa. [Filed Nov. 19, 1874.]

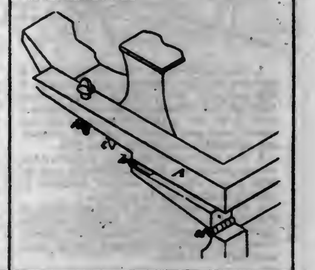
Brief.—The edges of the slats are stiffened by the wires, and the slats are supported by the staples which rest in the grooves of the transverse slat.



In combination with the grooved slats B, the slats A provided with the metallic springs or wires *a a*, the staples C and eyes *d*, all constructed substantially as and for the purpose set forth.

166,546. CARRIAGES. Richard L. Ogden, San Francisco, Cal. [Filed June 22, 1875.]

Brief.—To allow the bows to be folded back of the driver's seat.



1. The rest *c*, hinged to the carriage-body at *d*, and having the part A hinged to it at *b*, so that the top may be folded back of the seat, substantially as herein described.

2. In combination with the parts A and *c* of a carriage-rest, hinged together as shown, the extension *e* and the folding-cover *h*, for securing and steadying the rest in vertical position, substantially as herein described.

166,547. PROTECTORS FOR BOOT AND SHOE STRAPS. Horace P. Osbourne, Milwaukee, Wis. [Filed Dec. 21, 1874.]

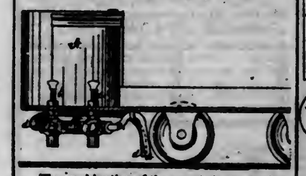
Brief.—The webbing or fabric encircling the strap is passed through a slotted piece of leather and stitched to it.



The protector B, in combination with the fabric composing the strap of a boot or shoe, for the purpose specified.

166,548. APPARATUS FOR LUBRICATING RAILWAYS. Cornelius B. O'Sullivan and Patrick Murphy, New Orleans, La. [Filed Feb. 20, 1875.]

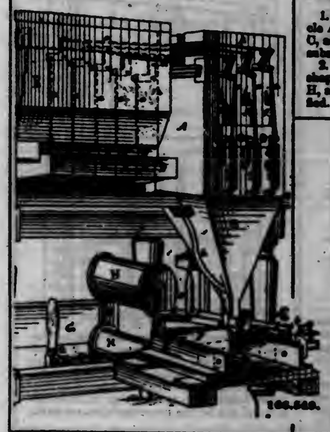
Brief.—Waters both tracks, or either, with streams regulated in quantity by valves.



The combination of the reservoir A, supply-pipe *a*, valves B and C, and discharge-pipes *d* and *e*, as and for the purpose set forth.

166,549. TYPE-SETTING MACHINES. William D. C. Pattyson, Sherbrooke, Canada. [Filed Jan. 12, 1875.]

Brief.—The types stand out on end in separate tubes. By touching the proper key the lower type in any tube is released, falls through a funnel, and drops on the end of a liberatory lever in the composing-stick. As this lever is tripped it completes the circuit, so that a magnet is brought into action. This actuates a pusher, which slides the type along in its line, making place for the next letter. When the line is full it is drawn back in the stick by a lever moved by hand.



166,549.

1. The combination of the keys D, arranged and located in case E, the spring-valves *d*, arms *g*, and tubes *a* in case A, together with the rods *c* and levers for connecting the keys with the valves and arms, so that the former shall operate the latter, all constructed and operating in the manner specified.

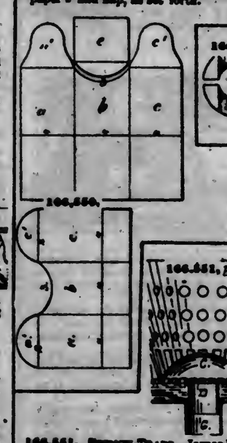
2. The combination of the block K, lever J, armature I, and electro-magnets H H, in the manner and for the purpose stated.

3. The combination of the liberating-lever N, poles L M, magnets H H, lever J, and block K, in the manner and for the purpose specified.

166,550. NEEDLE-WRAPPERS. Augustus K. Phillips, New York, N. Y. [Filed Jan. 19, 1875.]

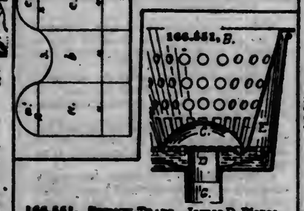
1. The needle-wrapper, made of one piece of paper, folded to form the sections *a b c*, and with the end flaps *a' c'* to cover the opening at 3, as and for the purposes set forth.

2. The needle-wrapper, made of one piece of paper, folded to form the sections *a b c*, and provided with the opening at 3 for the tack or flap, in combination with the separate paper *e* and flap, as set forth.



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166,551.



166,551. B.

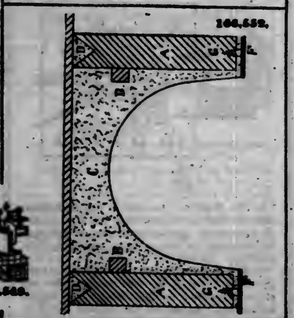
166,551. STENCH-TRAPS. James D. Pierce, Milwaukee, Wis., assignor of one-half his right to John B. Smith, same place. [Filed June 26, 1875.]

Brief.—The trap has a perforated strainer with crown-shaped bottom. Below this is a disk attached to a removable pipe. The posts being easily removed, the trap can be kept clean, and also free from effects of frost.

1. A steam-trap constructed with receptacle A, strainer B, with crown-shaped bottom C, and removable pipe D, all in combination substantially as set forth.

2. Receptacle A, strainer B, with crown-shaped bottom C, removable pipe D, and disk H, all in combination substantially as specified.

166,552.



166,552.

166,552. FIRE-PROOF FLOORS. James D. Pierce, Milwaukee, Wis., assignor of one-half his right to John B. Smith, same place. [Filed Dec. 16, 1874.]

Brief.—A fire-proof floor consisting of a cement arch supported by iron plates secured to the bottom of the joists. The joists are recessed on top to receive cement, and are provided with side strips, which assist in holding the cement arch in place.

1. A fire-proof floor constructed with joist A, cement arch C, and plates F, substantially as specified.

2. A fire-proof floor constructed with joist A, side plates E, cement arches C, hollow D, filled with cement, and plates F, substantially as specified.

166,553. HAND-VISES. Leonard L. Pollard, Worcester, Mass. [Filed May 25, 1875.]

Brief.—A portion of the screw-shank is smooth, and fits in a corresponding socket in the upper end of the handle, to protect the screw-thread from dirt or filings.



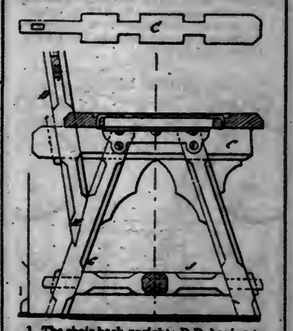
The hand-vise herein described, consisting of the pivoted jaws A A, springs *a a*, and screw-shank B, the upper part thereof formed smooth, to fit with a close joint into a recess, E, in the handle C, said handle having a conical end, *d*, for operating the jaws, substantially as and for the purpose set forth.

166,554. VENT-FAUCETS. Chas. H. Bassett, Buffalo, N. Y. [Filed July 6, 1875.]

The return-duct E K, arranged upon the faucet-body A, whereby cold air is drawn from an ice-box or refrigerator through one of the ducts E, and, passing through the channel F in the plug B, returns through the adjacent duct into the ice-box, to vent the cask containing the liquor to be drawn, substantially in a manner as described.

166,555. CHAIRS. Henry Rempka, Chicago, Ill., assignor to himself and F. W. Krause, same place. [Filed Apr. 10, 1875.]

Brief.—The several parts of the chairs are united by mortises and tenons, which are secured by keys.



1. The chair-back uprights D D, having tenons H resting in notch of legs G, and a mortise through which the seat-rails C are passed, and secured by keys, all substantially as and for the purpose described.

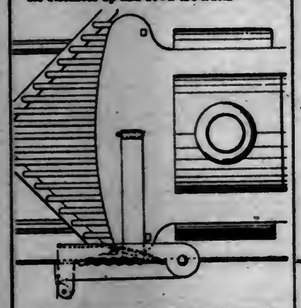
2. The connected chair-stretchers J J, passing through front and rear legs of chair, and secured by keys, substantially as and for the purpose set forth.

3. The seat-rails C, having gains N, combined with front and rear legs, slotted, as and for the purpose specified.

4. The head S, having bar Q and cross-bar R, combined with back pieces D, slotted and mortised, as and for the purpose described.

166,556. Means for Raising Water into Railroad-Tanks. Tyree Roden, Wales Station, Tenn., assignor to himself and T. A. Atchison, same place. (Filed Apr. 3, 1875.)

Brief.—A clamping-jaw attached to the locomotive, and capable of being swung over to either side, by which a rope is seized which connects with pumping machinery, and enables the locomotive to raise its own water into a tank. The clamp is disengaged by the lever thereof striking posts located at suitable distances up and down the track.

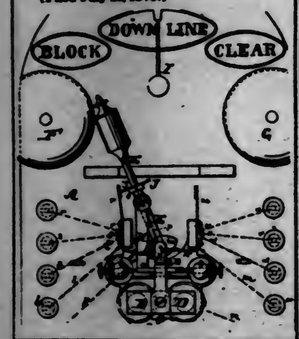


1. As an improved device for raising water into railway-tanks by the action of the locomotive without interfering with the running of the trains, a swinging and adjustable grappling attachment to the locomotive, in combination with a wire-rope running-gear, parallel to the track at both sides of the tank, and with detaching-posts near each end of running-gear, all being arranged and operated substantially as and for the purpose set forth.

2. The grappling attachment to locomotives for raising water into the tank, composed of hinged main arm with lateral supporting jaw-piece, pivoted and spring-acted clamping jaw-piece, and eccentric locking-lever, substantially as described.

3. The combination of swinging grappling attachment, hinged centrally to cow-catcher beam of locomotive, with supporting legs or rests at each side of the same, for the purpose specified.

166,557. Electric Railway-Signals. David Rousseau, New York, N. Y., assignor, by mesne assignments, to William F. Smith and Samuel Samuels, same place. (Filed July 21, 1875.)



1. The combination of the tube H, formed on the circuit-closer, with the inner rings or plates h i, and with the sliding sleeve or plate l, substantially as described.

2. The rod I, placed within the cushion C, and through the rings i h, and combined with the sleeve l and plate E, substantially as and for the purpose specified.

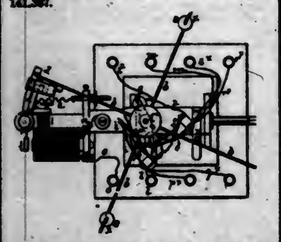
3. The cushion C, flanged on top and bottom, and combined with the plates B and D, and screw-rings E and G, substantially as set forth.

4. The conductor F', carrying the plate q, combined with the conductor F", carrying the plate p, and with the cushion r and screw s, substantially as and for the purpose specified.

5. The combination of the upper and lower movable plate h i with the intermediate plate or sleeve l, which is capable of motion, all arranged to constitute a circuit-closer, substantially as specified.

166,558. Electric Railway-Signals. David Rousseau, New York, N. Y., assignor, by mesne assignments, to William F. Smith and Samuel Samuels, same place. (Filed July 21, 1875.)

Brief.—Improvement on his Patent No. 141,367.

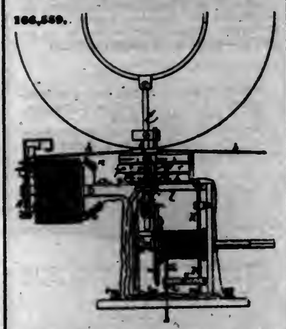


1. The trigger f, pivoted to the armature-lever F, and combined with the leg d, that protects from said armature-lever, substantially as and for the purposes shown and described.

2. The projecting hook w, attached to the armature-lever F, in combination with the projecting step s on the arm b of the signal, substantially as and for the purpose specified.

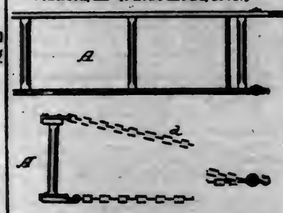
3. The friction-rollers e e, combined with the projecting arms g h of the signal-shaft, and with the springs p' q' r' r", &c., substantially as and for the purpose described.

166,559.



4. The slide H, carrying the slotted arm y, and combined with the rope E, which has the knot z, for the purpose of raising said slide, as specified.

166,560. Hay-Gatherers. Perry Russell, Jefferson, Ill. (Filed June 24, 1875.)



The frame A, consisting of two or more longitudinal bars, suitably connected together, in combination with chains d e at each end, all constructed and operating substantially as and for the purpose specified.

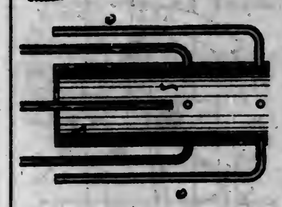
166,561. Curtain-Fixtures. Herman Beshausen, Memphis, Tenn., assignor of one-half his right to George E. G. Jones, same place. (Filed July 7, 1875.)



In combination with a curtain and its curtain roller, with cylinder at one end, the cord c attached at one end to the curtain, and passing around the pulley b, and ceiling at the other end upon the roller, the frame D having pulley b and slot a, and the pins f, all substantially as and for the purposes herein set forth.

166,562. Exhaust-Nozzles. Thos. Shaw, Philadelphia, Pa. (Filed May 17, 1875.)

Brief.—The steam is exhausted into a pipe, in which a cushion is formed, and thence into the atmosphere through a series of small pipes, thus preventing the shooting of the steam.



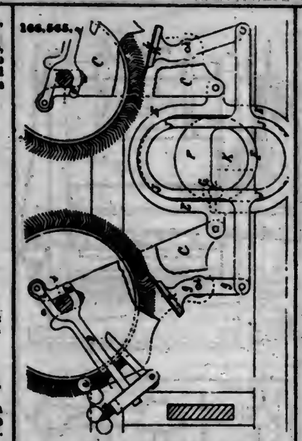
The combination of the steam-chamber a with the tubes c and the exhaust-pipe e, as described, and for the purpose set forth.

166,563. Car-Couplings. Jacob Singer, Harrisburg, Pa. (Filed Oct. 16, 1874.)

Brief.—Two gravitating-blocks sliding upon inclined shelves within the draw-head. The first block slides under the pin-hole, and supports the pin when uncoupled; when coupling, the thrust of the link pushes it back, and allows the pin to fall. The second block receives the end of the link, and prevents shock when the bumpers come violently together.

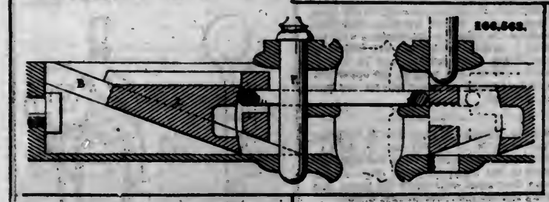
1. A triangular shelf, No. 1, slotted at D, in combination with the inclined way E, and a yielding auxiliary device beyond to receive the link in case of violent shocks, as and for the purpose described.

2. The block-follower No. 2, in combination with the shelf-follower and inclined seat, as and for the purpose set forth.



1. The steel comb or cleaner I, in combination with the frames C C H g g, eccentric F, cam K on shaft G, and eccentric frames J E, whereby the comb is adapted to be moved in a circle concentric with the periphery of the cylinder to be cleaned, substantially as and for the purpose specified.

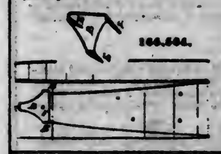
2. The combination, with the frames C C, slotted at a a, whereby they are adapted to hang on shaft b, of the slotted lever-arms or bents D e e, the set-screws o o, and straps d d, for adjusting the cleaner toward or away from the cylinder, substantially as specified.



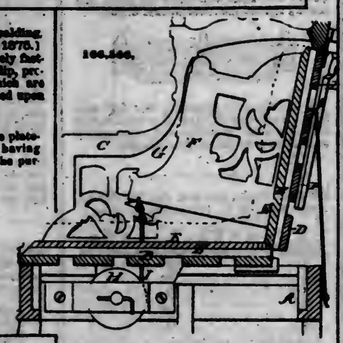
166,564. Hoop-Fastenings. W. Spalding, Petersburg, Mich. (Filed May 14, 1875.)

Brief.—The end of a hoop is securely fastened by a triangular-shaped metal clip, provided at its corners with prongs, which are passed through the hoop, and clinched upon the inside.

As a new article of manufacture, the plate-clip B, of a triangular shape, and having prongs B at its corners, as and for the purpose specified.



166,565.



166,566. Machine for Cleaning Card-Cylinders. Harvey Spaulding, Springville, N. Y. (Filed June 28, 1875.)

Brief.—The frames which carry the comb or cleaner are hung on the shaft of the cylinder to be cleaned, and are vibrated by the eccentric and its frame, the teeth of the comb, at the end of each stroke, being thrown downward away from the card by the cam and its frame, so that the comb, in moving back, may not strike the card-teeth. By lowering the screws the lever-arms are raised or depressed, and the cylinder moved away from or toward the comb, so that it may be cleaned to a greater or less depth.

166,567. Sofa-Bedsteads. Sidney Squires, Boston, Mass. (Filed Nov. 6, 1874.)

Brief.—The ends of the swinging back fall into recesses in the ends of the stationary frame, the folding and extension of the parts being assisted by a cord attached upon a spring-drum. An ornamental strip is hinged to the back, and turned down to support it where the bed is made. It is also provided with legs folding in a longitudinal direction upon the solid back, and held in position by the tension of a cord, which is strained by raising the back.

1. In a sofa-bedstead, the combination of the swinging back D, with the arms F F arranged to slide into the rabbets G G in the arms O C, so as to be concealed from view, substantially as and for the purposes described.

2. The combination of the springs H, fixed within the sofa-frame and under the sofa-seat, arms F F, and swinging back D, as and for the purposes set forth.

3. The combination of the swinging back D with the legs P P, constructed as described, to be folded toward or away from said swinging back, in a direction lengthwise with it, as and for the purposes set forth.

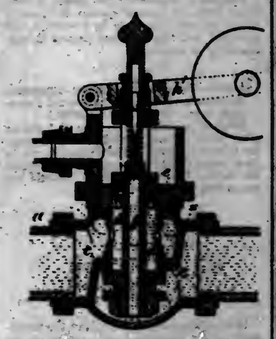
4. The combination of the swinging back D, frame A, legs P, cord Q, and staples or pulleys R, as and for the purpose set forth.

5. The combination of the swinging back D and hinged top S, as and for the purpose set forth.

6. The combination of the swinging back D, hinged top S, frame A, cord V, bar U, and spring W, as and for the purpose set forth.

166,567. Pressure-Regulators for Water-Pipes. Ferdinand Steele, Brooklyn, N. Y. (Filed May 31, 1875.)

Brief.—When the pressure is lowered in the delivery-pipe, the weight opens the valve to again admit water. If the pressure becomes too great, a small relief-valve is opened.

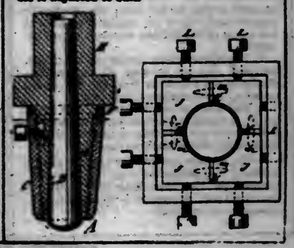


1. The removable cylinder d, containing the sliding piston e, and forming a seat at its end for the valve g, in combination with the piston e, valve g, stem f, lever h', and inlet water-way a', opening into the cylinder d between the piston e and valve g, substantially as set forth.

2. In a pressure-regulator, the piston and valve upon one stem, between which the incoming pressure is balanced, in combination with a valve adjusted to open by an excess of pressure in the delivery-pipe, substantially as set forth.

166,568. Dies for Forming the Eyes of Tools. John R. Thomas, Hamilton, Ohio. (Filed May 10, 1875.)

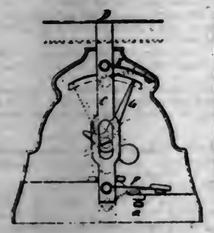
Brief.—The conical shell is adjusted on the part A, and held thus adjusted by washers, this lengthening of the punch causing it to enter farther into the eye, and, by virtue of its conical shape, further distend it. The lower die is adjusted to suit.



1. The combination, with the tapered and slitted die-stock A, of the correspondingly-shaped nut C, and pin B, and a collar or ring, F, as and for the purpose specified.

2. The combination of the adjustable punch with a die constructed substantially as described.

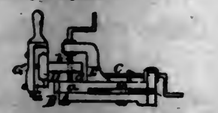
166,569. LETTER-SCALES. Andrew Turnbull, New Britain, Conn., assignor to Landers, Frary & Clark, same place. [Filed Mar. 18, 1874.]



The post C, supporting the platen D, combined with the parallel springs E F, one of which is made adjustable by a screw, *a*, and provided with the weighted pointer G, substantially as specified.

166,570. DIAMOND MILLSTONE-DRESSING MACHINES. Orsem G. Vanderhoof, Knoxville, Tenn. [Filed July 13, 1875.]

Brief.—The bracket-arms on the sliding plate have vertical screws passing through the projecting arms of the adjustable bar, to be adjusted up and down as desired, to make the sliding diamond-holder on the said bar cut as deep as required.



In a millstone-dressing machine, the combination of the bed-plate A, with guides *a a*, the sliding plate B, with brackets E E, the adjustable bar D, with arms *d d*, and the adjusting-screws C and *b b*, all substantially as and for the purposes herein set forth.

166,571. MACHINES FOR CUTTING FAN-STICKS. Joseph W. White, Weymouth, Mass. [Filed June 24, 1875.]

Brief.—Fan-sticks are cut by means of a reciprocating cutter-carrier provided with an endless flexible and laterally-adjustable cutter of suitable form, in connection with a vertically-adjustable bed, feed-rollers, and loose support actuated by the feed, and adapted to support and present the material to the cutter. The upper portion of the cutter-carrier is inclined, for the purpose of delivering the sticks, as they are discharged from the cutter, through an opening in the carrier, in line with the cutter, into a receiver or guide attached to the side of the carrier.

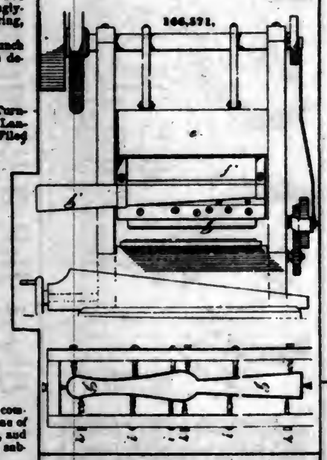
1. In a fan-stick-cutting machine, the combination of the reciprocating cutter-carrier, cutter *g*, and bed with feed-rollers and loose support, moved by the feed, and adapted to support and present the fan-stick material to the action of the cutters, substantially as described.

2. The reciprocating carrier for the cutter, provided with an opening, *f'*, for the discharge of the fan-sticks from the top of the cutter *g*, substantially as described.

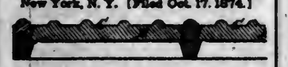
3. The cutter-carrier *e*, provided with opening *f'*, in combination with the fan-stick guide *f* to receive the fan-sticks as discharged from the holder, substantially as described.

4. The endless and flexible cutter *g*, and its holder *f*, in combination with the adjusting-screws *h* and *i* for controlling the opening in the cutter and its position in the holder, substantially as described.

166,571.



166,572. VAULT-COVERS. Jos. M. Willbur, New York, N. Y. [Filed Oct. 17, 1874.]



The frame or sash A, composed of the parts or sections *a a'*, having openings in the form, in cross-section, of two frustums of a cone, one above the other, in combination with the lights C, adapted to rest on the projecting edges of the lower section, and to be held in place by the inclined walls of the upper section, substantially as described, for the purpose specified.

166,573. VAULT-LIGHTS. Jos. M. Willbur, New York, N. Y. [Filed Oct. 17, 1874.]

Brief.—A vault-light in which the lenses are secured in the frame by metal rings shrunk around their small ends below the frame, and bearing against the lower surface thereof.



A cork-shaped or tapering lens for vault-lights, secured to its frame by a metallic ring shrunk around its smaller end, substantially as described, for the purpose specified.

166,574. VAULT-COVERS. Jos. M. Willbur, New York, N. Y. [Filed Oct. 17, 1874.]

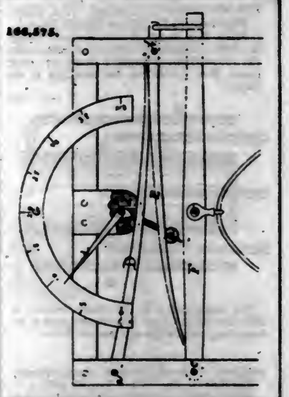


The solid reversible vault-cover, provided with projections B, substantially as shown, for the purposes set forth.

166,575. WRENCHES-SCALES. Henry C. Wingate, New Orleans, La. [Filed Jan. 18, 1875.]

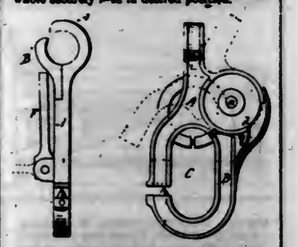
The pivoted levers D E F, formed and secured as shown, cam *f*, shaft *e*, index-finger *d*, weighted crank *g*, and dial-plate G, the whole being combined and arranged to operate substantially as described.

166,575.



166,576. HAT AND COAT HOOKS. Charles H. Winton, Danbury, Conn. [Filed June 26, 1875.]

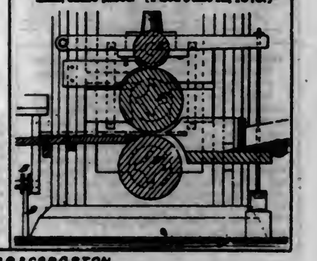
Brief.—To the base or body of a portable detachable hook is hinged a supplementary arm, the two parts opening and closing on a pivot, there being on the one part a suitable pawl, and on the other a segmental ratchet, also a detached key to operate the same. There are also a pair of jaws hinged to the main device, which open out nearly at right angles, and in that position may be attached to any ordinary hook or the like, the construction being such that when the main device is locked these jaws are also locked, and the whole securely held in desired position.



1. The combination of the two parts A B, hinged together, and constructed to form the recess C, with the locking-pawl *f* on one part, and the corresponding notch *d* on the other part, and the jaws A' B' on their respective parts, substantially as set forth.

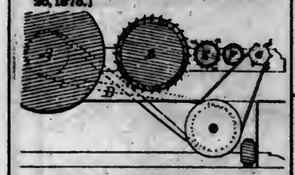
2. The combination of the two parts A B, hinged together and constructed to form the recess C, with the locking-pawl *f* on one part and the corresponding notch *d* on the other part, and the hinged jaws F F' constructed to form the recess G, substantially as described.

166,577. MACHINES FOR ROLLING NAIL-PLATES. Hiram Woods, Newcastle, Pa., assignor to himself and William P. Merriman, same place. [Filed June 12, 1875.]



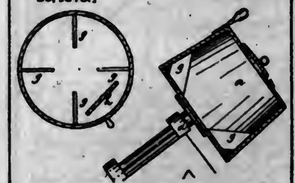
The combination of a movable feed-table, A, with the drawer-over roll E and a pair of nail-plate rolls, substantially as specified.

166,578. WOOL-CARDING ENGINES. A. H. Woodbury, Ashuelot, N. H. [Filed Mar. 26, 1875.]



In combination with the serrated stripping-roll E and auxiliary roll F, the beating-roll C, substantially as and for the purposes stated.

166,579. WASHING-MACHINES. William Atwood, Cape Elizabeth, Me. [Filed May 26, 1875.]



The vessel *a*, constructed to rotate upon the inclined axis *b*, having the wings *g*, grating A, and discharge-plug *i*, as shown and described.

166,580. WATER-PROOF HOSE. Seth W. Baker, Providence, R. I. [Filed Mar. 24, 1875.]



1. The hydraulic hose, consisting of the thick woven fabric and water-proof lining, united into tubular form by the seam D, having the packing and covering, substantially as shown and described.

2. In hydraulic hose, the combination, with a seam or joint constructed as described, of an outside covering or shield, applied to the same substantially as and for the purpose specified.

3. The combination of the webbing or handle G with the ridged part of the hose, substantially as shown and described.

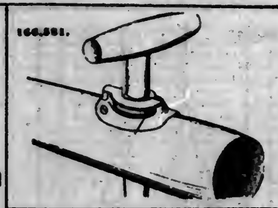
4. The combination of the external ribs H with the body of the hose, substantially in the manner and for the purpose specified.

5. The herein-described hydraulic hose, consisting of the thick woven fabric, the water-proof lining, the seam D having the packing and covering, and the external ribs H, the several parts being constructed, combined, and arranged substantially as and for the purpose described.

166,581. FAUCETS. Edward W. Barnes, Syracuse, N. Y. [Filed July 28, 1875.]

The metallic disk or plate adapted to fit and and be secured upon a faucet over the spigot-recess, being provided with an aperture for the insertion of the spigot, and carrying a semicircular bridge adapted to engage over a lug, pin, or projection on the spigot, and confine the same in place, substantially as described.

166,581.



166,582. LAMPS. George A. Soldier, Philadelphia, Pa. [Filed June 18, 1875.]

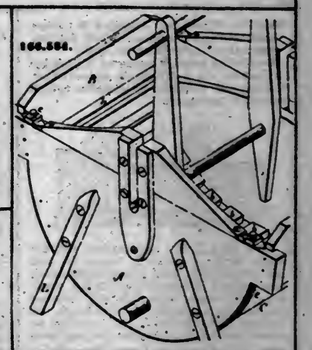
2. The combination of the double tube A B, sliding tube C, with aperture *h*, and vent-tube *i*, as and for the purposes herein set forth.

3. The combination of the double tube A B, sliding tube C, collar *d*, with hole *p*, and drip-cup D, all substantially as and for the purposes herein set forth.

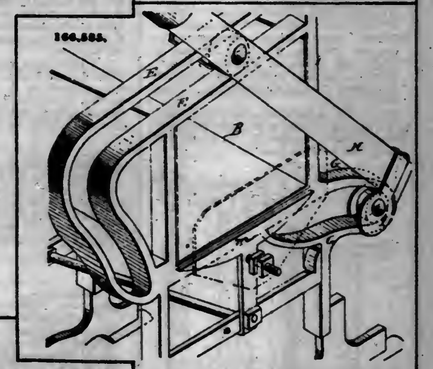
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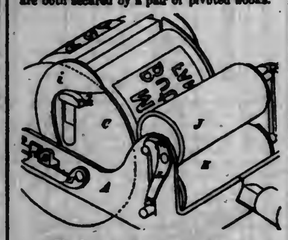


166,585.



166,583. MARKING-WHEELS. Wm. H. Bell, San Francisco, Cal. [Filed June 20, 1875.]

Brief.—The marking-belt is tightened by a cross-bar held by hooks, and the inking-rolls are both secured by a pair of pivoted hooks.



1. The frame A, having the slots D to receive the ends of the axle, in combination with the plates E, with their hooks *f f* to accommodate different sizes of rollers, substantially as herein described.

2. The band or belt H, and bar A, in combination with the type-roller C, provided with the depression *g* and cam-hooks *i*, substantially as and for the purpose set forth.

3. The pivoted plates L, with their hooks *m* and ends *n*, in combination with the frame A, when said plates are so attached as to either secure or release the two rollers J and K at one operation, substantially as herein described.

166,584. WASHING-MACHINES. David Born and David F. Born, Fulton, Ohio. [Filed Mar. 6, 1875.]

The combination of the case C, having bars *h* at each end unattached to the side pieces, cross-pieces B B, binding-straps *a*, sides A, and pinking-strips *c*, substantially as and for the purpose described.

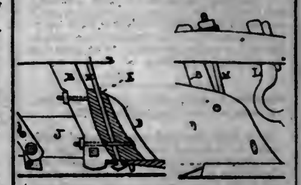
166,585. STRAW-CUTTERS. W. R. Bowman, Danville, Ky., assignor to Lucy C. Bowman, same place. [Filed Dec. 16, 1874.]

Brief.—The particular shape of the guide-ways in which the knife works gives the desired draw-cut, and permits the knife to be thrown back out of the way of the material with ease and convenience.

In combination with the frame A and box B, the angular bars E E, having curves *s s*, the bars G G, and the knife H, having straps O and roller J at its upper part and roller I at its lower part, and connected thereby to the bars E and G, respectively, all substantially as set forth.

166,586. PLOWS. T. Miles Brose, Philadelphia, Pa. [Filed Nov. 13, 1872.]

Brief.—The plow is formed with a solid block for the standard, and which is of one piece with the mold-board. An iron bolt passes up through the standard and beam, thus securing the parts firmly together.



The mold-board D, formed with a solid back, E, extending from top to bottom of the board, in combination with the fastening-rod H, passed through the back E, the plate J, fitted to said back, and the standard B, bolted to the same solid back E, all as herein set forth.

166,587. WRENCHES. Matthew B. Campfield, Girard, Pa., assignor to R. S. Bettler, same place. [Filed Apr. 13, 1875.]

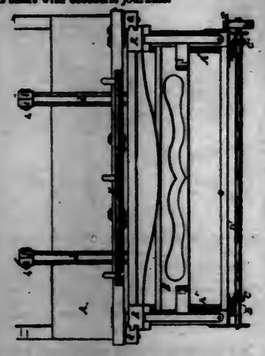
Brief.—The ferrule is supported in place by a cylindrical nut on the shank, against which it abuts, and which nut is accessible by the removal of the handle.



In a wrench, the combination, with the shank C, of the socket B, having the oval and cylindrical portions fitting corresponding parts of said shank, the outer flange a embracing the end of the handle, and the inner flange extending beyond the outer flange, and bearing upon the nut E, all combined as shown and described, for the purpose specified.

166,588. SHEET-METAL-SHEARING MACHINES. William H. Clark, William J. Clark, and Abner C. Eldredge, Salem, Ohio, assignors to Eldredge Cornice and Ornament Company, same place. [Filed June 7, 1875.]

Brief.—The cutter-bearing frame is provided with a gage in addition to that upon the table. The metal clamp is operated by a handle and a shaft with eccentric journals.



1. In combination with the herein-described squaring-shears, the adjusting-screws A' A', miter-gear B', gear C', shaft D', hand-wheel E', gage F, and frame G, substantially in the manner as and for the purpose specified.

2. The rails d of the clamps F, when sunk in the surface of the table A, so that said rails shall be level or flush therewith, clamps f f fitted to said rails, so that the lower part of the clamp shall be below the surface of the table, and secured to the rails by bolts h, to admit of their being adjusted on said rails for the purpose specified, in combination with the squaring-shears herein described, in the manner substantially as set forth.

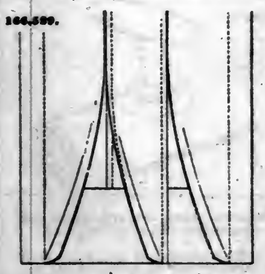
3. The shaft D, having eccentric journals e and handle K, in combination with the bar G connected therewith by the yokes J and hangers H, operating and co-operating in combination with a squaring-shear, P, as set forth and for the purpose specified.

166,589. SHIRT-BOSOMS. John C. Coombs, Boston, Mass. [Filed Apr. 8, 1875.]

1. A shirt front or bosom having strengthening or stiffening pieces O O arranged and connected with its plaits at or about the middles of the back folds thereof, as shown at *f* and *e*, Fig. 2, and with the parts next to or in rear thereof, all substantially as described.

2. A white or dyed front shirt-bosom, having the middle or central plait O' attached at or near one of its side edges only to its backing, or part in rear of said plait, as at *b'*, and the other edge attached through and through or fixed, as at *f'*.

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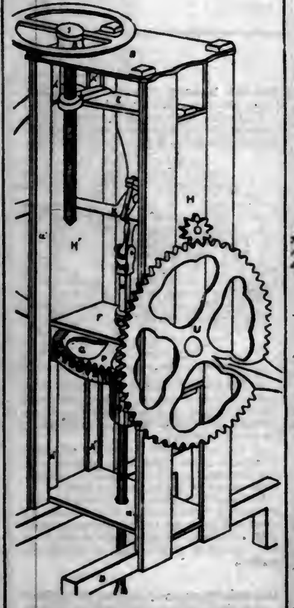


3. A shirt front or bosom having the middle or central plait O' attached at or near one edge only to the part or parts in rear of said plait, and also having its other plaits connected at or near their middles, or those of their back folds, by stay-pieces C C, to the parts in rear of them, all being substantially as represented and described.

4. A shirt-bosom constructed essentially as above described and claimed, and being, besides, thinned out at its lower part, or from its lower edge upward for a part of its length, substantially in the manner described and shown, and for the purpose set forth.

166,590. ROCK-DRILLING MACHINES. C. C. Creager, Tiffin, Ohio. [Filed Jan. 21, 1875.]

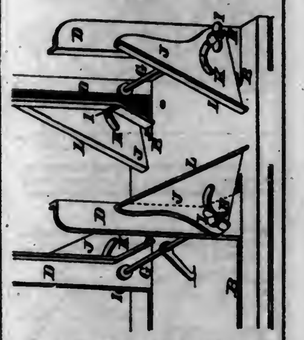
Brief.—In an upright frame the drill is in the center of a horizontal tooth-wheel, rotated by a winch-wheel, which latter gears also with another wheel, the shaft of which, by a connecting-rod, reciprocates the tool.



The combination of the swivel M and movable arm L, the crank on the main shaft K, raising and lowering the drill, the rotating mechanism U, X, and F, weight G, feeding-screw I, sliding frame H H' E F G, frame A A A' A' E, and standards D D, substantially as and for the purposes herein described.

166,591. CIGAR-BUNDLING MACHINES. Napoleon Du Breil, Cincinnati, Ohio. [Filed Dec. 19, 1874.]

Brief.—The adjustable standards have feet that are connected and slide in a horizontal slot in the base. Each standard carries a side plate, that can be adjusted to different angles, as desired, for packages of different shapes.



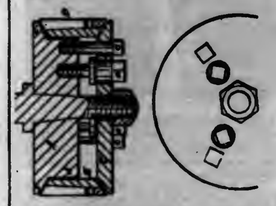
1. The standards D, having flanges E, the rods G H, the angle-plates J K, and nuts I, in combination with the barbed base A B C, as and for the purposes set forth.

2. The paired adjustable standards D, having the feet F, the base A having barb C, as and for the purpose set forth.

3. In combination with the base A and standards D, the adjustable angle plates J K, for the purpose designated.

166,592. PISTONS FOR STEAM-ENGINES. William T. Duvall, Georgetown, D. C., assignor to himself and Joseph L. Simms, same place. [Filed Aug. 4, 1875.]

Brief.—The body and follower are provided with two annular recesses and corresponding shoulder, that fit each other, which prevent the spring from twisting, which form a hub, each of which has tapered flanges. The packing-rings are slotted on their periphery, and tapered to fit the flanges of the hub and follower.



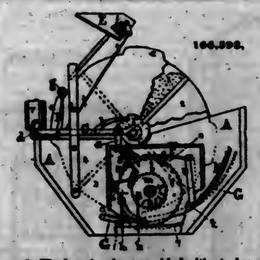
1. The construction of the rings D E, slotted alternately from either edge, as and for the purpose described.

2. The follower C, constructed with a cylindrical collar, *a*, to encircle the hub A of the piston, in combination with said hub and with the slotted rings D and E, for the purpose set forth.

166,593. GRAIN-MEASURES. William Colwell, Chillicothe, Ill. [Filed Mar. 31, 1875.]

Brief.—An automatic grain-weigher consisting of a revolving drum having legs on the circumference, also partitions dividing the drum off into equal parts. This drum is placed on a lever which is weighed to weigh a certain amount. When this amount is placed in one of these partitions, the lever is tilted, the drum revolves, and the grain is thrown against the diaphragm, which is attached to a frame, is thrown down by the weight, and by a pawl moves a register. Attached to this frame is a cross-bar, which engages with the legs on the drum. This, together with the others which are attached to a frame on the lever, and a pawl, also attached to the same, prevents the drum from turning except in one direction.

166,593.



1. The box A, when provided with steelyard C C, pivots *a a*, standards *b b*, and spout E, provided with valve *f* and with trap or levers G G, having a connecting board or diaphragm, *g*, said levers pivoted by axles *i i* in the sides of said box in such a manner as to receive the impact of the dumped grain and transfer the motion to the register-pawl *q*, substantially as and for the purpose described.

2. The combination, with the box A, of the pivots *a a*, levers C C, with pivoted arms D D *d d*, provided with friction-rollers *g g g g*, substantially as described, together with the standards *b b*.

3. The combination, with the box A, of the pivoted levers G G, united by diaphragm *g* and cross-bar *s*, and provided with an arm, *e*, on the axle *i*, terminating in the registering-pawl *q*.

4. The combination, with the legs *o*, of the rotary grain-receiver B, projecting beyond its circle, the cross-bar *s* of the levers G G, as described.

5. The combination of the floor-pocket receiver B, ratchet-wheel *r*, and pawl *h* of lever C, as described.

6. The receiver B, in combination with and operated simultaneously by the legs *o*, ratchet *r*, pawl *h*, steelyard C, provided with vertical arms *d* D, with rollers *g g*, and the rod *s* of the levers G in the box A, as described.

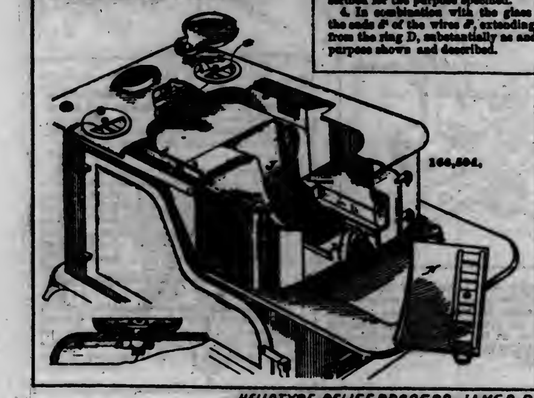
166,594. COOKING-STOVES. John B. Crowley and Addis B. Chamberlain, Cincinnati, Ohio. [Filed June 26, 1875.]

Brief.—Air may be admitted through the registers to the fires supplying the fire-pot, or to the top sheet-flue. The nipple and washer obviate friction of the bolt.

1. In a cooking-stove, the combination of the flues G J E, arranged substantially as described.

2. In a cooking-stove, the combination of the flues G H, arranged substantially as and for the purposes specified.

3. The register or registers, in combination with the induction and exit flues, and constructed to regulate the supply of air for combustion by turning a part or all into the induction-flues, or shutting off all supply from the fire, and turning currents of cold air into the escape-flue of stove, to entirely check the draft, substantially as described.



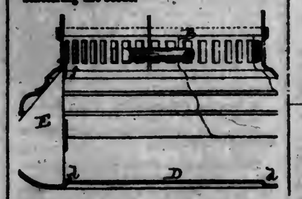
166,594.

4. A nipple cast or attached to a flat surface, passing entirely through the handle or portion of the article to be swung, to a washer resting on the head of said nipple, and held in place by bolt and nut, substantially as described.

5. A lid-holder with a perforated neck or arm to receive the nipple and bolt, with a flange encircling its entire edge, and connected to the pivot-bolt at a point on the bottom of the lid-holder inside said flange, in combination with the nipple-bolt and washer, substantially as and for the purposes set forth.

166,595. BIRD-CAGES. Albert L. Edwards, Syracuse, N. Y. [Filed July 1, 1875.]

Brief.—The base containing the feed-cup is contracted at its top to prevent the bird from scattering the seeds.



1. The combination, with the base of a bird-cage, of a ring or band, C, enlarged or expanded outward and downward, as shown and described, for the purpose specified.

2. The combination of the feed-cup E, provided with the hook *f*, with the cage or ventilating-ring B, and the floor D, provided with the rib, ledge, or shoulder *d*, as shown and described, for the purpose specified.

166,596. BIRD-CAGES. Albert L. Edwards, Syracuse, N. Y. [Filed Feb. 2, 1875.]

Brief.—To the base of the cage is attached a ventilating-caution, composed of two horizontal rings, through which pass vertical wires, the upper ends of which extend above the upper ring, to hold in place a glass dome-shaped open-top section, inside of which are three or more suspending rods or wires, passing through the glass at its upper end, and connected to a ring-bolt.

1. In a bird-cage, constructed of the base A, metallic open ring or hoop D, glass body F, having an open top, and resting upon and supported by the ring or hoop, and a ventilating-cap, G, arranged on the top of the glass body over its open top, all substantially as described.

2. The combination of the ring or hoop D, the suspension-wires H, glass body F, top or cap G, and bolt K, substantially as and for the purpose shown and described.

3. The combination, with the suspension-wires H, of the spreader I, as shown and described for the purpose specified.

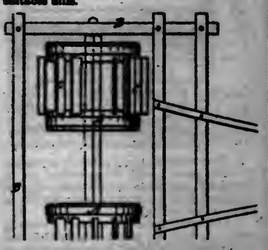
4. In combination with the glass body F, the ends *g*' of the wires *g*, extending upward from the ring D, substantially as and for the purpose shown and described.

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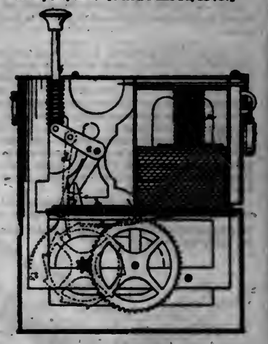
166,597. COTTON-CHOPPERS. W. D. Ryder, Society Hill, S. C. [Filed July 1, 1875.]

Brief.—One or more pairs of wheels upon a shaft, with transverse knives upon their circumference. The knives are set at a reverse angle from those designed to spade the earth, and have openings at intervals, being designed to run upon the rows of cotton and chop it to suitable hills.



In a cotton-chopper, the drums A A and irregularly-spaced transverse cutting-blades C reversely inclined to the center, combined as and for the purpose specified.

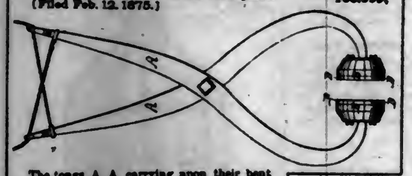
166,598. FARM-BOXES. Saml. W. Francis, Newport, R. I. [Filed June 14, 1875.]



1. The combination of the pusher, the slotted ticket or check receptacle, and the gate or stop, normally closing the discharge-slot in said receptacle, and directly operated to open the same by the advancing pusher, substantially as shown and described.

2. The combination of the hooking-cam, its cover, the vertical slide depressed by said cover, and the key-hole shield for joint operation, as shown and set forth.

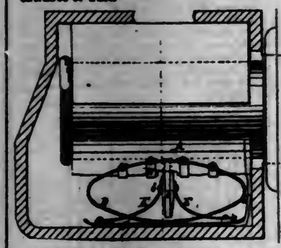
166,599. Hoisting-Tongs. Wm. C. Frederick, Medford, Mass., assignor to Wm. H. Hooper and Wm. A. Willard, same place. [Filed Feb. 12, 1875.]



The tongs A A, carrying upon their bent prongs balls *c*, in combination with the clamps B B, having sockets to receive the balls *c*, filling D, of soft metal or equivalent material, and flange E, the whole constructed as shown and described, for the purpose specified.

166,600. Car-Axle Lubricators. Chester D. Flynn, Brooklyn, N. Y. [Filed June 30, 1875.]

Brief.—The roller carries up the lubricant to distributing-pad. Curtain G extends downward from distributing-pad, and prevents the entrance of dust.



1. The combination of a roller, F, supported by elastic arms E, with the absorbent pad A, frames B C, and their connecting-springs D, all constructed and operating substantially as shown and described.

2. The combination of a dust-protecting apron, G, with the pad A, frames B C, and their connecting-spring, D, substantially as and for the purpose set forth.

166,601. Condensing Mechanism for Carding-Machines. Merrill A. Furbush, Philadelphia, Pa., assignor to himself and Charles A. Furbush, same place. [Filed May 21, 1875.]

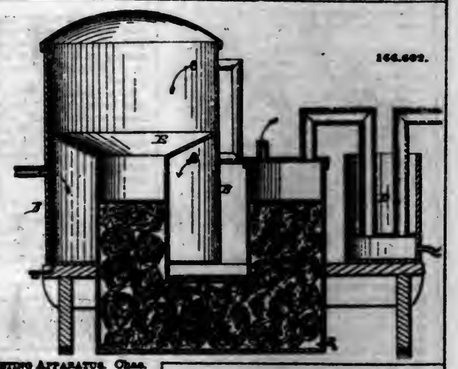
Brief.—To enable the rolls to be readily attached to, detached from, and adjusted in the frame.

1. In a carding-engine, a series of upper condensing-cylinders, each of which is supported and adapted to slide at one end in the self-adjusting hub of a driving-wheel, and is confined at the opposite end, by a ball-and-socket joint, to a reciprocating bearing, all substantially as set forth.

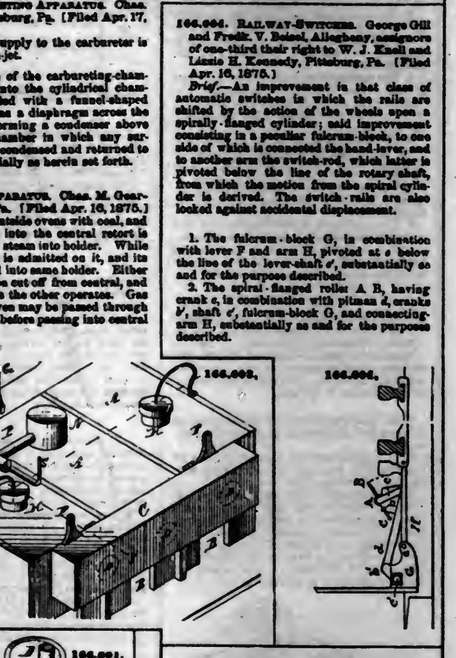
2. The combination of the hanger I and the spindle and driving-wheel of a condensing-cylinder with the bar or frame A, screw *i*, nut *j*, and nut-screws *k k*, all substantially as set forth.

3. The combination of the reciprocating and adjustable hanger E, its socket, and screw *e* with the spindle of a condensing-cylinder having spherical ends.

166,599.



166,602.



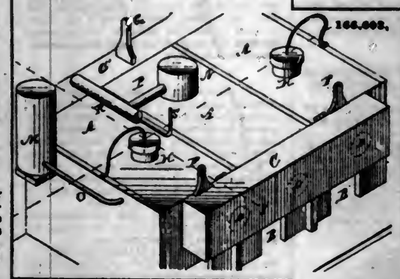
166,602. Carbureting Apparatus. Chas. M. Gearing, Pittsburg, Pa. [Filed Apr. 17, 1875.]

Brief.—The air-supply to the carburetor is induced by a steam-jet.

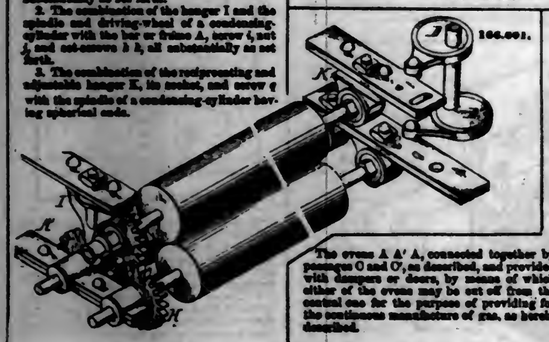
The combination of the carbureting-chamber A, extending into the cylindrical chamber B, and provided with a funnel-shaped mouth, E, serving as a diaphragm across the chamber B, and forming a condenser above the carbureting-chamber in which any surplus vapor will be condensed and returned to the same, substantially as herein set forth.

166,603. Gas Apparatus. Chas. M. Gearing, Pittsburg, Pa. [Filed Apr. 16, 1875.]

Brief.—Charge outside ovens with coal, and gas having passed into the central retort is extracted by jet of steam into holder. While coke is yet hot, oil is admitted on it, and its gas likewise passed into same holder. Either outside oven may be cut off from central, and charged anew while the other operates. Gas from one outside oven may be passed through other outside oven before passing into central oven.



166,602.



166,603.

The ovens A A' A, connected together by passages O and O', as described, and provided with dampers or doors, by means of which either of the ovens may be cut off from the central one for the purpose of providing for the continuous manufacture of gas, as herein described.

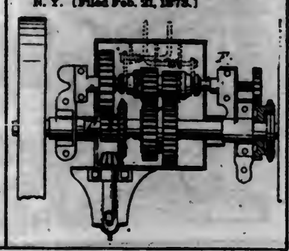
166,604. Railway-Switches. George Gill and Fredk. V. Reisel, Allegheny, assignors of one-third their right to W. J. Knell and Lizzie H. Kennedy, Pittsburg, Pa. [Filed Apr. 16, 1875.]

Brief.—An improvement in that class of automatic switches in which the rails are shifted by the action of the wheels upon a spirally-flanged cylinder; said improvement consisting in a peculiar fulcrum-block, to one side of which is connected the hand-lever, and to another arm the switch-rod, which latter is pivoted below the line of the rotary shaft, from which the motion from the spiral cylinder is derived. The switch-rails are also locked against accidental displacement.

1. The fulcrum-block G, in combination with lever F and arm H, pivoted at *e* below the line of the lever-shaft *e'*, substantially as and for the purpose described.

2. The spiral-flanged roller A B, having crank *c*, in combination with pitman *d*, cranks *b'*, shaft *c'*, fulcrum-block G, and connecting-arm H, substantially as and for the purposes described.

166,605. Harvesters. Alexander Gordon, Jacob H. Myers, Geo. Telford, and Moses G. Hubbard, Rochester, assignors to the Differential-Gearing Company, Syracuse, N. Y. [Filed Feb. 21, 1873.]



The combination of the wheel or pulley which drives the reel or rake with the differentially-geared shaft from which motion is communicated to the cutters, and through which the speed of the cutters is changed, as described, whereby any change in the speed of vibration of the cutters will be accompanied by a corresponding change in the speed of the reel or rake, for the purpose and substantially as specified.

166,606. Electroplating Glass, China, &c. Ellev Hansen, Copenhagen, Denmark. [Filed Jan. 9, 1875.]

The herein-described process of forming a metallic covering on glass and like substances, consisting in first painting the surface with a solution containing sulphur, then baking or burning the article to drive off the sulphur and other volatiles, and to fix the metallic base thereon, and finally making a deposit by the electro-chemical process, all substantially as specified.

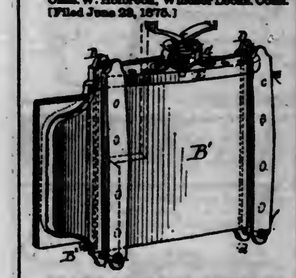
166,607. Brushes. Marcus R. Hawkins, Lansingburg, N. Y. [Filed May 24, 1874.]

Brief.—The entire head is of malleable iron, and the jaws are V-shaped, with an enlarged opening at their meeting-point, in which is a rod, over which the brush material is placed. The jaws are pressed upon this material and held by their rigidity.



The brush-head, formed as described, of malleable cast-iron, with V-shaped jaws with an enlarged opening at the angle, in combination with a binding-wire D, for holding the body of the brush in place without screws or other fastening devices, substantially as herein described and set forth.

166,608. Clamps for Pressing Leaves. Chas. W. Holbrook, Windsor Locks, Conn. [Filed June 29, 1875.]



The clamp or press composed of the boards B' B', bars D D, cord or cords C, windlass J, bridge-piece G, and hand E, substantially as and for the purpose herein described.

166,609. Soaps. John T. Hoge and Robert D. Schultz, Zanesville, Ohio. [Filed May 21, 1875.]

1. The process, substantially as described, of making bar-soap of a green, blue, or other color, consisting in the addition or compounding of indigo with the common ingredients employed in making yellow, white, or other colored soaps, whereby the blue color of the indigo, uniting with the color of the soap, gives a product having a third or resultant color.

2. A soap and indigo compound, substantially as and for the purposes herein described, having the inherent property upon exposure and oxidation of changing its color to a color that is the resultant of the combination of the blue color of the indigo and the color of the soap before the compounding of indigo therewith.

166,610. Vehicle-Top Supports. Reuben Hunt, Albion, Mich. [Filed June 17, 1875.]

Brief.—The spring rests upon the back of the seat when the top is lowered.

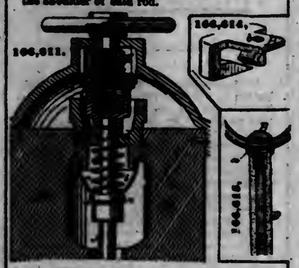


166,610.

The combination, with the bow A of a carriage-top, of the metallic plate B, secured by the clamp *a*, and provided with the spring C, all constructed and arranged substantially as described and shown.

166,611. Stuffing-Box and Valve Mechanism for Hydrants, &c. Jas. P. Hyde, New York, N. Y., assignor to F. A. Baldwin, same place. [Filed May 10, 1875.]

Brief.—A flexible stuffing-box consisting of an annular diaphragm attached at either end, as shown. The diaphragm is moved by the hydrant-rod, the spring pressing it firmly upon the shoulder of said rod.



166,611.

166,614.

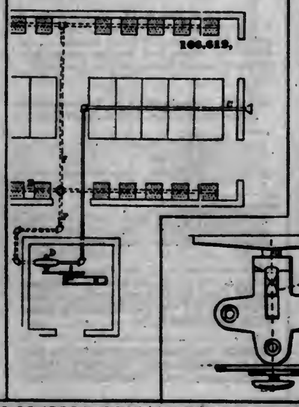
166,615.

In combination with the reciprocating rod A, having the shoulder *c*, and with the annular flexible diaphragm C, which rests on said shoulder, the spring *b*, which keeps the diaphragm in contact with the shoulder *c*, substantially as herein shown and described.

166,612. Apparatus for Drying Coal. Louis Jacobi, Baltimore, Md., assignor of one-half his right to Miron A. Ward, New York, N. Y. [Filed June 17, 1875.]

Brief.—The induction-pipe supplying air to the blower passes through the brick-work of the retort-furnace, or near to it, whereby the air is heated previous to being blown through the coal for drying it.

The supply and discharge pipes C and F and blower D, in combination with the pits G and perforated plates H, substantially as and for the purpose set forth.



166,612.

166,613. Spring-Clasps for Holding Overshoot, &c. Bushrod W. James, Philadelphia, Pa. [Filed May 26, 1875.]



166,613.

A spring-catch for tackets, overshoot, &c., consisting of a strip of steel or other elastic material, bent and corrugated as described, and presenting elastic arms, corrugations on one arm coinciding with those of the adjoining arm, all substantially as set forth.

166,614. Bale-Ties. Henry B. Jones, Burton, assignor of one-half his right to Yerd & Sullivan, Galveston, Tex. [Filed June 29, 1875.]

Brief.—The oblique slot between the horns or catches facilitates the insertion of the notched end of the hoop.

As a new article of manufacture, the bale-tie herein described, consisting of the base or bar B, having a perforated projecting tongue, D', a short projection or catch, C, curved and beveled, as described, and a long projection or catch, C', bent at right angles and beveled on its under surface, substantially as and for the purpose specified.

166,615. Bridle-Bits. Loria F. Judd, New Britain, Conn., assignor to the North & Judd Manufacturing Company, same place. [Filed Apr. 8, 1875.]

The combination of the bit-rod C, tubular rubber covering D, and the projecting rims *a a* of the heads B B, which rims encircle the ends of the rubber covering, all substantially as and for the purpose described.

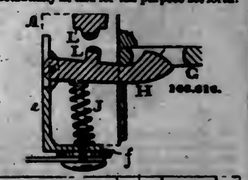
166,616. Electric Train-Telegraphs. H. C. Keyes and J. P. Clark, Philadelphia, Pa. [Filed June 9, 1875.]

1. In an electric signal apparatus for railway-trains consisting of an open metallic circuit, two wires and an interrupting bell-magnet, the plate B, with post C, in combination with the arm *a* and link E, and with the eye F of the insulating-cord, substantially as and for the purpose set forth.

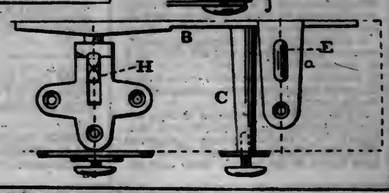
2. In an electric signal apparatus for railway-trains consisting of an open metallic circuit, two wires and an interrupting bell-magnet, the hinged arm H and spring J, in combination with the plate *f e*, and with the eye G of the insulating-cord.

3. In an electric signal apparatus for railway-trains having an open metallic circuit, which, when the train is restored, will be closed, the hinged arm H, with point I, in combination with the plate B with point I', substantially as and for the purpose set forth.

4. The eye F of the insulating-cord *a*, in combination with the link E and spring *b*, substantially as and for the purpose set forth.



166,616.

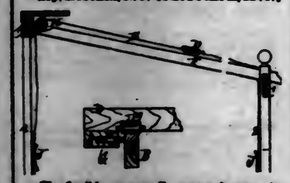


166,617. Tuyeres. Francis Henry Lloyd, Wednesbury, England. [Filed July 27, 1875.]



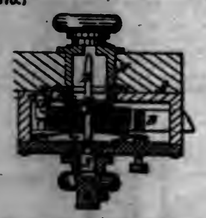
The combination, with a tuyere open at its back or rear end, as described, of a water-delivery pipe or system of pipes placed between the inner and outer tubes of the said open tuyere, and perforated for the passage of water under pressure in the form of small jets or spray, substantially as and for the purpose set forth.

166,618. Awnings. Ferdinand C. Lemmerhop, Hoboken, N. J. [Filed June 11, 1875.]



The flexible awning B, arranged upon the roller H, in combination with the stretcher D and the anti-friction rollers F and G, constructed and applied to the stretcher at right angles to each other, substantially as shown, whereby the said anti-friction rollers are caused to bear upon the top and the side surfaces of the supporting-bars B of the awning-frame, as set forth.

166,619. Locks for Doors, &c. James G. L. Martin, Eufaula, Ala. [Filed July 6, 1875.]

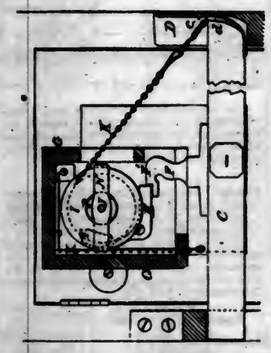


1. The combination of the rotating and endwise-movable tumbler H, having rack-teeth J, with the rack-bolt B K, fixed arbor D, and a suitable device for unlocking the tumbler from said arbor, substantially as herein described.

2. In combination with the rotating and endwise-movable tumbler H, and the rack-bolt B K, operated thereby, the pull and turn knob Q, connected with said tumbler by the rods R R passing through the slots r, and used as and for the purpose set forth.

3. The combination, with the rotating and endwise-movable tumbler and its fixed locking-arbor D, of the locking bent or projection O and the cushion or recesses P P', substantially as and for the purpose herein set forth.

166,620. Locks for Doors, &c. James G. L. Martin, Eufaula, Ala. [Filed Dec. 17, 1874.]



1. The combination, with the pivoted locking-bar C, provided with the hook F F', of the lever E and the cam-pulley I T, connected with said bar C by the chain K, whereby the bar C is both unlocked and turned by the direct action of said pulley, as set forth.

2. In combination with the fastening-bar C and grooved pulley I, the connecting-chain K and the spring catch-plate d on the end of the fastening-bar C, substantially as and for the purpose herein set forth.

3. The combination of the pulley I, having a rotating and sliding movement upon its spindle, with the angular boss L on the arbor J, the spring N, and the angular socket in the pulley I, whereby the pulley is released from the locking-boss and rotated to raise the bar, as herein set forth.

4. The convex bearing-plates P Q, in combination with the revolving pulley I, the spring N, and the lock-case G, substantially as and for the purpose specified.

5. The lock-case G, provided with reversely-running seats or recesses O, in combination with the pressure-spring N and pulley I, substantially as and for the purpose herein described.

166,621. Boots and Shoes. Wm. Meyer and Henry Freiburg, Quincy, Ill. [Filed June 22, 1875.]



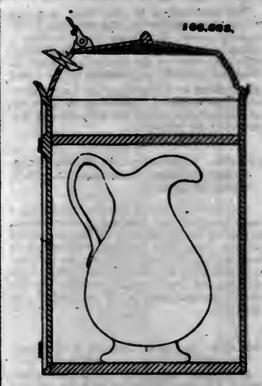
A shoe having the wooden heel and shank B B, with attached continuous insole A A, having flaps A' bent over and secured to the under side of the said wooden shank, substantially as and for the purpose described.

166,622. Car-Couplings. Bolton Mickle, Holly Springs, Miss. [Filed June 14, 1875.]



The combination of the gravity-catch B, having a slot, a, with the transverse support-lug-pin b and the draw-bar, having a central longitudinal slot with side recesses c c, as and for the purpose set forth.

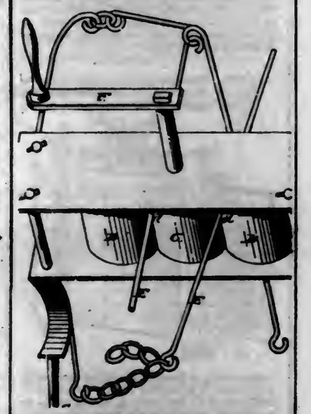
166,623. Combined Letter-Boxes and Mail-Receptacles. Charles H. Miller, Indianapolis, Ind. [Filed June 17, 1875.]



A receptacle formed of two apartments, one below to receive bread, milk-vessels, &c., and the one above to receive letters and newspapers, constructed substantially as and for the purpose herein before set forth.

166,624. Machines for Compressing Grain-Sheaves. Solomon C. Minear, Chillicothe, Ohio. [Filed Apr. 28, 1876.]

Brief.—The machine being placed in position, with the chains around the sheaf, by turning the crank the rods are drawn in opposite directions, tightening the chains and compressing the sheaf.



1. The combination of the rollers C and B B, provided with circumferential grooves d, and the rods E E, provided with connecting-links b b, substantially as and for the purpose herein set forth.

2. The combination of the frame A, legs or pendants g, grooved rollers C and B B, crank F, rods E, and connecting-links b, all substantially as and for the purpose herein set forth.

166,625. Permanent Ways for Railroads. Reuben H. Nichols, Philadelphia, Pa. [Filed July 10, 1875.]

1. A permanent way, consisting of sleepers and sills of channel-iron, connected together and placed for the reception of a filling of broken stones or rubble, all substantially as set forth.

2. The channel-iron sleeper A, from two sides of which lips a are formed for attachment to the sides of the channel-iron sill B as specified.

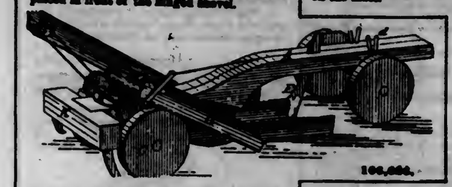
166,626.



2. The channel-iron sill B, with sides bent inward, and flanges a, and with upturned edges for the reception of the rail, as described.

166,627. Devices-Machines. Halver Olsen and Knud Olsen, Tobin Creek P. O Wis. [Filed July 21, 1876.]

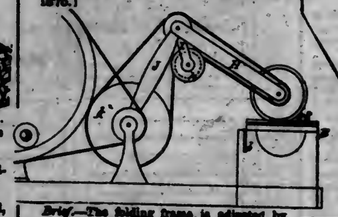
Brief.—A central draft-beam and shovel, with diverging fixed elevators having pulleys, operating endless bands with bentiron. The draft-beam is slotted for an adjustable cutter placed in front of the hinged shovel.



1. In combination with a central draft-beam, A, and shovel D, the diverging fixed elevators G G, having pulleys i, operating endless bands, substantially as and for the purpose herein shown and specified.

2. The combination of the slotted draft-beam A, adjustable cutter B, hinged shovel D, and diverging fixed elevators G G, all arranged and operating substantially as and for the purpose herein shown and specified.

166,628. Machines for Sharpening Mowing-Machine Knives, &c. G. V. Phelps, Newark, Ohio, assignor to himself and G. W. Ingraham, same place. [Filed July 6, 1876.]



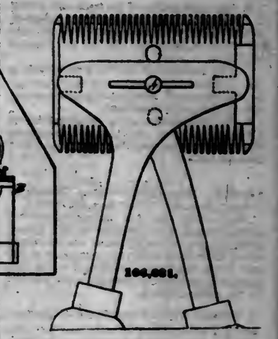
Brief.—The folding frame is adjusted by means of pulleys, and the double-faced grinder is governed by a pin which travels in a guide on the table.

1. The described combination, with a double-faced grinder, F, of a traveling pin, d, in its median front, and a guide, D, on table, to operate upon both edges of a harvester-knife, in the manner set forth.

2. The combination, with grinder F, of folding frame H I J, having pulleys g g' h h', to enable the grinder to be actuated, in the manner specified.

166,629. Ice-Creepers. Albert J. B. Phillips, Philadelphia, Pa., assignor to Samuel B. Phillips, C. L. Phillips, and A. J. B. Phillips, same place. [Filed June 9, 1876.]

166,630.

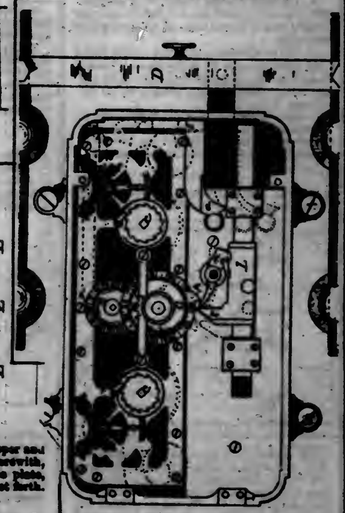


1. In a clipping-machine, a fixed handle, having a head which serves as a case or cover to the clipper, and a fixed bearing-plate for the movable cutter, substantially as shown and set forth.

2. The combination of the fixed cutter, the movable cutter, the movable handle, the fixed handle provided with a head which serves as a case or cover to the clipper, and a bearing-plate for the movable cutter, and the spring or springs interposed between the movable cutter and the fixed head, and covered and protected by said heads, said parts being arranged and held together as shown and set forth.

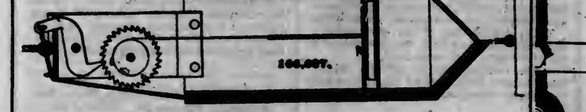
3. The combination, with the handles, of the fixed and movable cutters provided with cutting-teeth on their front and back longitudinal edges, and constructed and arranged, substantially as described, so as to be reversible, in order to bring either set of cutting-teeth to the front of the clipper at pleasure.

166,631. Tees-Locks. O. B. Filkerd, New Britain, Conn., assignor to F. E. North, same place. [Filed July 26, 1876.]



1. The combination of the gate F, one or more corresponding movements, and a tripping-bar, K or L, constructed to engage with the gate and hold it up until withdrawn by the movement or movements, when the gate falls, substantially as described, and for the purpose set forth.

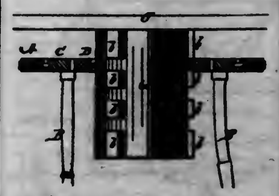
166,632.



1. The combination, with the torpedo of the cap-wire, winding mechanism, rubber, dog, and weight, arranged and operating substantially as described.

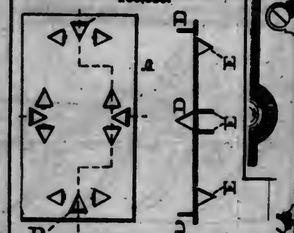
2. The combination, with a torpedo in which the discharge is effected through the agency of clock-work mechanism, of a weight controlling the action of the same, substantially as described.

166,633. Skirt Clasps. Dana Parks, Boston, Mass., assignor of one-half his right to F. P. Sawyer, Georgetown, D. C. [Filed July 26, 1875.]



The combination of the annular frame A, concentric rings C D, pivoted on diametrical lines at right angles to each other, and the inner ring D, provided with slots a a, and the cylindrical cam-support G, provided with lugs b b, substantially as and for the purpose herein set forth.

166,634.



The two cross-plate A, having upper and lower spars D E, which are integral therewith, and formed within the confines of the plate, substantially as and for the purpose set forth.

166,635. Animal-Clippers. Thomas L. Filgate, Birmingham, England. [Filed July 6, 1875.]

Brief.—The head of the fixed handle serves as a cover to protect the springs and working parts. The cutters are so arranged that they can be reversed in order to bring either set of cutters to the front.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON

2. The combination of the train-bolt C C D E, gate F, two independent tripping devices, K and L, with a chronometer movement, substantially as described, and for the purpose set forth.

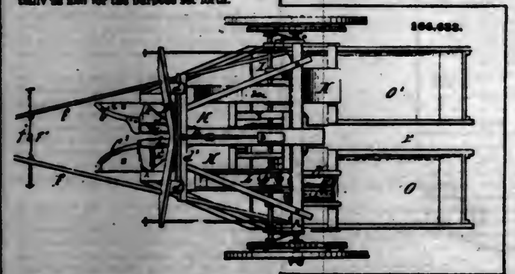
3. The combination of the time-indicating dial H, the crank or cam on its shaft, the bar K, and the gate F, substantially as described, and for the purpose set forth.

4. The combination of the unlocking-dial G g, dog n, horizontal tripping-bar L r, and gate F, substantially as described, and for the purpose set forth.

166,626. Corn-Harvesters. Charles D. Reed, Pain, Ill. [Filed Apr. 26, 1875.]

Brief.—The ears are stripped from the stalks, husked, and carried by inclined planes to receptacles at the bottom of the elevators, which carry them to the compartments at the rear of the machine. The frame of the machine is constructed so as to allow free passage for the stalks under it.

1. The arch or yoke F, connecting the tongue-bars F F at their forward ends, and provided with the ring *f'* for the cross-reins, substantially as and for the purposes set forth.



166,626.

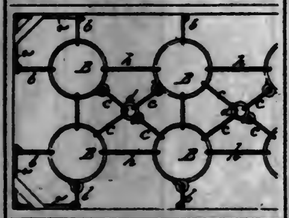
2. The combination, with the upright open frame *b b'*, of the inverted V-shaped bracing-yoke D, through the lower intended ends of which the clevis rods or chains B pass, substantially as described.

3. The open upright frame *b b'*, in combination with the lever-frame *d d'*, and the pivoted tongue-bars F F, and lever G, all arranged as described.

4. The combination, with the rollers *h* and *i* and the receptacle K, of the inclined planes H, for receiving the ears from the rollers and conducting them to said receptacle, as described.

5. The compartments O O', constructed as described, and separated longitudinally by the central space at *P*, for permitting the constructed passage of the stalks, as described.

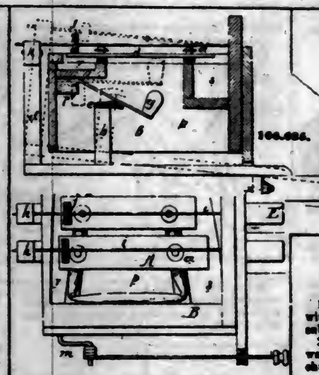
166,627. Bee-Hives. C. V. B. Reeder, San Jose, Cal. [Filed Feb. 26, 1874.]



166,627.

The frames A A', provided with the springs B B, connected at their lower ends by longitudinal and transverse wires *c c*, in combination with the corner-braces *a a*, attached to both frames and to the upper ends of the springs B by wires *b*, the wires *b b a a*, and rings *d*, the whole being arranged and constructed in the manner and for the purpose set forth.

166,628. Bird-Cherry Attachments. A. Schoenhut, Philadelphia, Pa. [Filed June 10, 1875.]

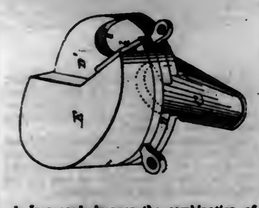


166,628.

1. The swinging hopper I, in combination with a branch chute, E, and main chute A, substantially as described.

2. The swinging hopper I, arranged in the wall of a house, in combination with the main chute A, substantially as described.

166,629. Bean and Pumpkin-Seed Droppers. Ephraim Sears, Kimbolton, Ohio. [Filed June 10, 1875.]



166,629.

1. In a seed-dropper, the combination of the disks D D', pivoted centrally one on top of the other, and provided with the apertures *c c'*, respectively, and operated simultaneously in opposite directions, substantially as and for the purposes herein set forth.

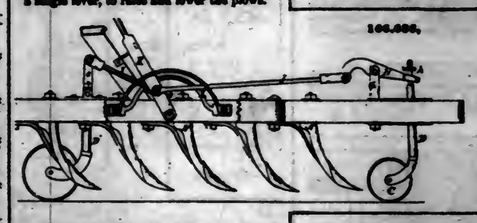
2. The combination of the hammers *g* with the pivoted block F, and mechanism for operating the same, all substantially as set forth.

3. The combination of the spring-rods *i* and their dampers *j* with the projections *d* and their loops A, all as set forth.

4. The sounding-box B, with its central open chamber *p* and box-like chambers *r* and *s*, arranged as set forth, for the purposes specified.

166,630. Cultivators. Ander Schrader, Walla Walla, Wash. [Filed June 7, 1875.]

Brief.—Swiveled caster-wheels at front and rear are connected by rods, and operated by a single lever, to raise and lower the plows.

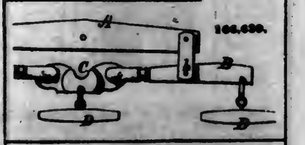


166,630.

The combination, with sliding rod D and swiveled rods D', holding front and rear wheels, of the rock-shaft E having arm *e*, the lever H having oblong slot *h*, the rods I J, and the lever K, all arranged in connection with frame A, as and for the purposes described.

166,631. Ash-Chutes. J. P. Schweibert, New York, N. Y. [Filed June 2, 1875.]

Brief.—A swinging hopper is arranged in connection with a main chute and a branch chute of a well, for the reception of ashes, &c., so as to control the opening to prevent dust, whether the hopper is closed or open.



166,630.

166,632. Processes of Baling Hay, Cotton, &c. James M. Seymour, Newark, N. J. [Filed June 10, 1875.]

166,633.



166,633.

2. The process hereinbefore described of applying flexible bands to materials to be baled, and which consists in lapping the ends of the band, after it has been passed around the bale, over upon each other, and then, by any suitable device, linking up the sheet of the band by folding a part of the band over upon a contiguous part thereof, and otherwise securing the fold thus formed in any efficient manner.

166,634. Compounds for Polishing and Coating Copper. John H. Simpson, Baltimore, Md. [Filed Mar. 17, 1875.]

A compound consisting of rice or wheat flour combined with gum-arabic and water, substantially as described, and for the purpose set forth.

166,635. Coverings for Gun-Barrels. Hugh Adams Silver, Cornhill, London, England. [Filed Dec. 19, 1874.]

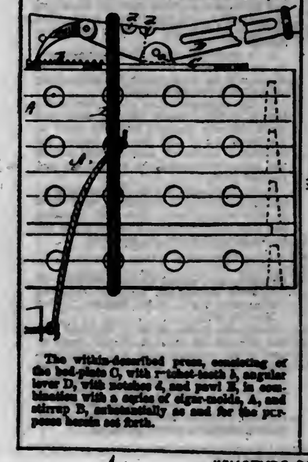


166,635.

1. A non-conducting shield for gun-barrels, of ebonite or its equivalent, surrounding the barrel, and secured thereto by its under portion being firmly clamped between said barrel and the stock, substantially as set forth.

2. A fastener, substantially as described, for the purpose specified, consisting of the upper side plate, and the under side plate, when secured in place by being clamped between the barrel *f* and the stock, substantially as described, and shown in Fig. 1 of the drawings.

166,636. Chair-Mold Fillers. Jos. Simpson, Newark, Ohio. [Filed Mar. 26, 1875.]

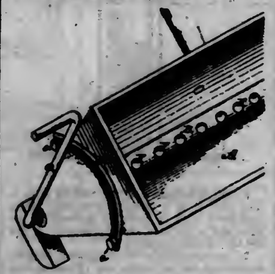


166,636.

The within-described press, consisting of the bed-plate C, with rack-teeth *h*, angular lever D, with notches *d*, and pawl E, in combination with a series of cigar-molds, A, and stirrup B, substantially as and for the purpose herein set forth.

166,637. Organ-Dropping Machines for Confectionery. George Smith and Elizabeth Smith, Cleveland, Ohio, administratrix of George Smith, Sr., deceased. [Filed Mar. 17, 1875.]

Brief.—The semi-fluid material is placed in a hopper having perforations in its bottom. A similarly perforated cylinder is at the bottom of the hopper. The material falls through the holes, any desired quantity being cut off by partly revolving the cylinder.

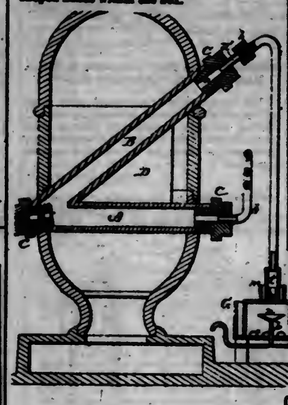


166,637.

In a cream-dropping machine, the box A, provided with a perforated bottom, in combination with the perforated roller B, crank C, gage-plate D, and set-screws *a a*, provided with nuts at their ends, substantially as described, and for the purpose set forth.

166,638. Apparatus for the Manufacture of Illuminating-Gas. Roland H. Smith and Joshua Goldsmith, Pittsburg, Pa. [Filed July 10, 1875.]

Brief.—The two legs of the angular retort are united by a strengthening-web, and the ends of the retort are closed by screw-plugs. The water-seal house, by which the gas-pipes are united to the purifier, are provided with overflow dip-pipes. The crossbar dip-pipes extending from the purifier-box have cup-shaped heads within the box.



166,638.

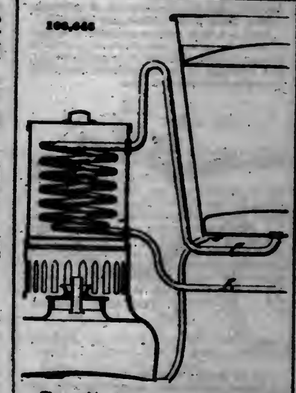
1. A retort composed of two tubes, A B, connected at an angle, and provided with the strengthening-web D and hollow screw-plugs C, substantially as and for the purposes herein set forth.

2. The dip-tubes *i*, in combination with the seals *n* of the washer G, substantially for the purposes herein set forth.

3. The tubes *p*, provided with capped heads *s* in the bottom of the washer G, substantially as and for the purposes herein set forth.

166,639. Clothes-Washers. H. H. Smith, New York, N. Y. [Filed Feb. 24, 1875.]

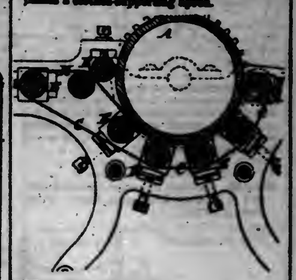
166,639.



The combination, in an apparatus for washing clothes or other articles, of a tank having an open mouth and a false bottom for supporting the articles to be washed, with an air-forcing apparatus and an air-hosing pipe, one end of which communicates with the tank at its bottom below the false bottom, while the other end communicates with the air-forcing apparatus, substantially as described, whereby the articles to be washed, after the same have been soaked in water, can be exposed to a current of atmospheric air, as set forth.

166,640. Ironing Apparatus. H. H. Smith, New York, N. Y. [Filed Jan. 20, 1875.]

Brief.—A polishing-roller adapted to be heated, with a series of supporting-rollers having a different surface-speed, around which passes a clothes-supporting apron.



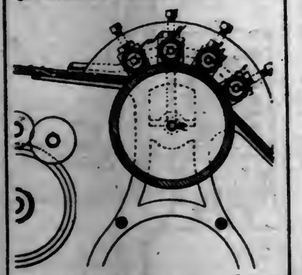
166,640.

1. The combination, in an ironing-machine, of a polishing-roller, A, constructed with an opening for receiving heat-generating agents, two or more supporting-rollers, B, geared with the polishing-roller, to revolve at a different speed, and a clothes-supporting apron, C, arranged around the supporting-rollers, substantially as and for the purpose described.

2. The combination, with a polishing-roller, A, constructed to be heated, and the rollers B, provided with the apron C, for supporting the clothes, of the rollers F F, arranged in the same horizontal plane, and over which the clothes-supporting apron passes, for producing a level portion, E, and the guide-roller G, arranged above the apron for conducting the clothes to the polishing-roller, all substantially as described.

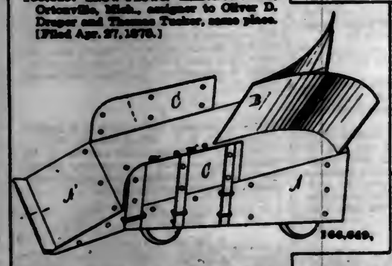
166,648. INCURED APPARATUS. H. B. Smith, New York, N. Y. [Filed Jan. 20, 1875.]

Brief.—A large cloth-wound roller that may be inwardly heated, over which are a series of pressing-rollers, that may be heated inwardly, and arranged to run at different speeds by gear-wheels of different sizes.



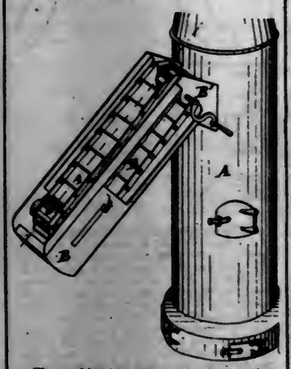
In an ironing-machine, the combination of a heated cloth-wound supporting-roller with a series of pressing-rollers, constructed to rotate at different speeds, substantially as herein shown and described.

166,649. SNOW-PLOWS. Almon J. Smith, Ortonville, Mich., assignor to Oliver D. Dragoo and Thomas Tasker, same place. [Filed Apr. 27, 1875.]



The combination of the longitudinally-adjustable mold-board B E and the detachable side plates C C with the inclined apron A A', mounted on wheels, the several parts being constructed and arranged substantially as and for the purpose set forth.

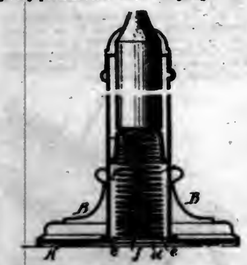
166,650. BROOM-SUPPORTS. Ira C. Smith and F. Walker, Muskegon, Mich. [Filed June 3, 1875.]



The combination, with a return-bearing furnace, A, of the elevator-leg B D', extending from the said furnace to the mill where the rotors is manufactured, and provided with the wheels C D, endless chain E, and plate e, substantially as described and shown.

166,651. CANDLESTICKS. Thomas Sweet, Philadelphia, Pa. [Filed June 26, 1875.]

Brief.—The candle-holding tube extends through the base to the bottom plate. The plate *f* permits removal of the spring.



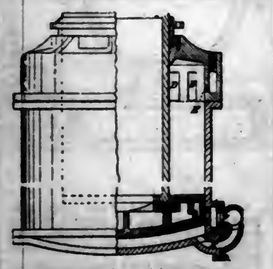
1. The combination of the tubular stem A and base B of a spring candlestick with a cast-metal ring or plate, H, secured to the base and to the tube, all substantially as and for the purpose set forth.

2. The combination of the plate *f*, forming a bearing for the lower end of the spring, with the central opening *d* of the ring H and its recesses *e e*.

166,652. BALE-TIES. Alexander A. Smith, Houston, Texas. [Filed July 12, 1875.]

The improved bale-tie block A, with laterally-open slot B *b* and cramping-grooves C, having the hole D, extending from a point near one end of slot B laterally or transversely through the block, as and for the purpose specified.

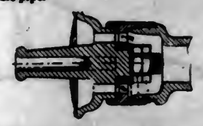
166,653. STEAM-CYLINDERS FOR COTTON-PRESSES. John F. Taylor, Charleston, S. C. [Filed June 24, 1875.]



The combination, in a single-acting steam-cylinder for operating the toggle-arms of a press, of the upwalking-rocarer D with the holes B, said recesses being located upon the inner periphery of the cylinder, near the end of the stroke, and the holes in the same plane with the same, so that the piston covers the holes when it passes upon the recesses, substantially as and for the purpose described.

166,654. HOSE-NOZZLES. Walter Thomson, Detroit, Mich. [Filed May 4, 1875.]

Brief.—The nozzle is pivoted to a double-flanged diaphragm, which is screwed upon the nozzle-pipe.

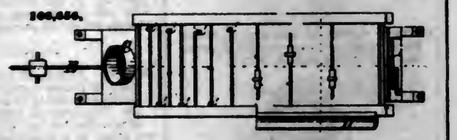


In a hose-nozzle, substantially as described, the combination of the rose and jet head with the double-flanged diaphragm, pivoted thereto, and an intervening packing-leather, covered provided with the ports and passages, substantially as described, for the purposes specified.

166,655. MEDICAL COMPOSITIONS. Columbus C. Trowbridge, Nelson Furnace, Ky. [Filed Aug. 12, 1874.]

The within-described medicinal composition, consisting of bitter-root, (silk-weed root,) mandrake-root, and prickly-ash bark, in the proportions described, steeped in diluted alcohol, substantially as and for the purpose herein specified.

166,656.



166,657.



166,658. EVAPORATING-PANS. John M. Trowbo, Metropolis City, Ill. [Filed May 3, 1875.]

Brief.—The pan is pivoted at one end, and the other rests upon a lever, by raising which the pan may be tipped. A trough is arranged at one side to receive the steam. The partitions are placed so as to divide the pan into a series of regularly-decreasing spaces, and have openings between their ends and the sides of the pan alternately upon opposite sides.

1. In combination with the furnace B, pivoted at its front end upon the support D, the lever E, pivoted upon the support D to engage with the rear end of said furnace, and the slotted post F, embracing the outer end of said lever, and provided with the horizontal openings *f' f'* and pin G, said parts being combined substantially as and for the purpose specified.

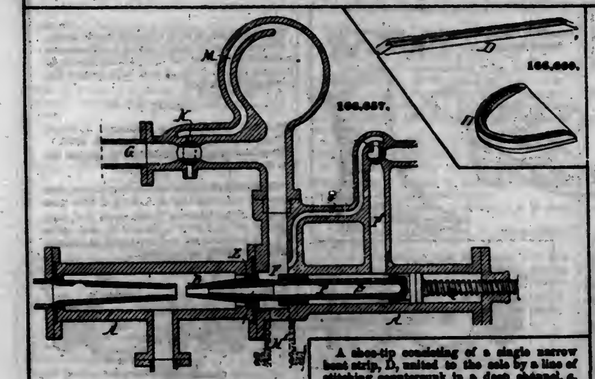
2. In combination with the evaporating-pan A, the high central partition A", the reduced side *a*, and the steam-trough H, substantially as and for the purpose shown.

3. The cross-partitions A' A' within the pan A, forming spaces between each pair, which decrease regularly from the upper to the lower end of said pan, and having the openings *a'* alternately upon opposite sides of the latter, substantially as and for the purpose set forth.

4. In combination with the partition A', having the opening *a'*, the gate *a''*, constructed to slide longitudinally upon said partition, and to close said opening, substantially as and for the purpose shown and described.

166,657. APPARATUS FOR DRAWING OR RAISING WATER, &c. Philibert Vabo and Hippolyte Cuau, Paris, France. [Filed May 31, 1875.]

Brief.—By means of an L two-cock and side passages, the steam is allowed direct access to the water-chamber and supply-pipe, and by first blowing through the same and then condensing, vacuum is produced, and a priming of the injector; then, by allowing access of air to the elevated water-chamber at the same time that steam is let onto the nozzle, the injector is started promptly.



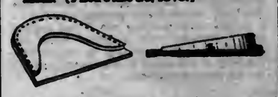
166,656.

166,657.

1. A perforated hollow plate, P, communicating with the steam-pipe T, and forming a water-regulator, with the containing-tube D of an injector, in combination with the water-passage communicating, through the cock K, with the steam-pipe, all substantially as set forth.

2. The combination of the vessel I, its air-passage M, and the cock K with the water-pipe G and water-chamber F, communicating with the steam-pipe, all substantially as described.

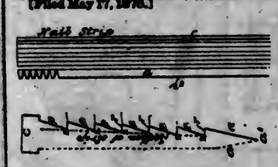
166,658. LEATHER TIPS FOR BOOTS AND SHOES. Albert Van Wagenen, Boston, Mass. [Filed June 26, 1875.]



1. As a new article of manufacture, a leather shoe-tip composed of two pieces of leather, united at or near their edges by stitches going through the whole or part of the two thicknesses of leather, one of these pieces of leather being raised from a horizontal position to any angle desired, thereby forming a tip to protect the upper.

2. The mode of constructing tips for boots and shoes, consisting in first uniting two pieces of leather by a line of stitches, and afterward raising and fixing the upper piece to the required angle to form a protector, substantially in the manner and for the purpose specified.

166,659. NAIL-STRIPS FOR SOLE-FASTENINGS. Albt. Van Wagenen, Boston, Mass. [Filed May 17, 1875.]



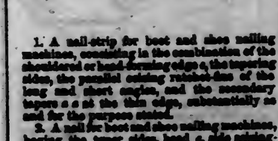
1. A metallic nail-strip or blank having a thin or taper clinch-forming edge, with one side *a* thereof concave from the strip-edge *r* to the ridge *s*, which bounds the clinch-forming edge, substantially as and for the purpose set forth.

2. The combination, in a metallic nail-strip or blank, of a shouldered or head-forming edge, *a*, side cutting ratchet-line *c*, and a clinch-forming tapered edge with one of its sides made concave the full width of the clinch-forming edge, substantially as and for the purpose herein set forth.

3. The combination, in a nail-strip having a clinch-forming edge, of the bevel side *b*, the concave side *a*, and the penetrating point *r* extending from one straight side of the nail to the other, substantially as herein set forth.

4. A nail for boots and shoes having a clinch-forming point formed by the bevel *b* on one side a concave, *r*, on the other, and a penetrating point the width of the nail, as shown and described.

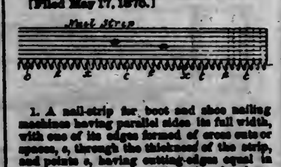
166,660. NAIL-STRIPS FOR SOLE-FASTENINGS. Albt. Van Wagenen, Boston, Mass. [Filed May 17, 1875.]



1. A nail-strip for boot and shoe nailing machines, consisting in the combination of the shouldered or head-forming edge *a*, the tapering sides, the parallel cutting ratchet-line of the long and short angles, and the secondary tapers *a a* at the thin edge, substantially as and for the purpose stated.

2. A nail for boot and shoe nailing machines, having the taper sides, head *a*, side cutting-line of long and short angles, *c r*, and secondary tapers *a a* at the thin edge, as shown and described.

166,661. NAIL-STRIPS FOR SOLE-FASTENINGS. Albt. Van Wagenen, Boston, Mass. [Filed May 17, 1875.]



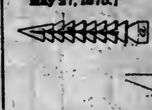
1. A nail-strip for boot and shoe nailing machines having parallel sides its full width, with one of its edges formed of cross cuts or spaces, *a*, through the thickness of the strip, and points *s*, having cutting-edges equal in width to the thickness of the strip, whereby to space and determine the clinching of the nail-point in the line of the nails when cut and driven, substantially as herein described.

2. A nail-strip with parallel sides and cross division-points, having one of the inner or tapering sides of each point made with a recess, *s*, as and for the purpose stated.

3. A nail-strip having parallel sides and edge shoulder, side lines, and points formed by cross-spaces, with sharp edges, equal in width to the thickness of the strip, as a new article of manufacture.

4. A nail for boot and shoe nailing machines, having parallel sides from head to point, side cutting-line, wedge-point, and a cross-recess in one of the sides of each point, as shown and described.

166,662. NAILS FOR SOLE-FASTENINGS. Albt. Van Wagenen, Boston, Mass. [Filed May 27, 1875.]

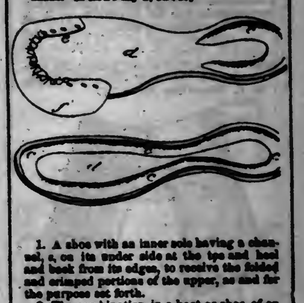


1. A shoe-nail, consisting of a head, a clinching-point, a rank of cones, and the side grooves, made substantially as described.

2. In a shoe-nail, the combination of side grooves or channels *s* with a rank of cones, said channels intersecting said cones in the manner and for the purpose described.

3. In a shoe-nail having the combination of side grooves or channels *s* with a rank of cones, as described, the said side grooves extending from near the clinching-point and terminating short of the head, to preserve the head intact for the important purposes stated.

166,664. INNER SOLES FOR BOOTS AND SHOES. Albert Van Wagenen, Boston, Mass. [Filed July 8, 1875.]



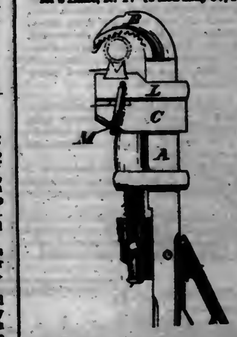
1. A shoe with an inner sole having a channel, *c*, on its under side at the toe and heel and back from its edges, to receive the folded and crimped portions of the upper, as and for the purpose set forth.

2. The combination, in a boot or shoe, of an inner sole, *d*, having an under surface groove or depression, *s*, partially or all the way round it, with the upper *f* lasted in said groove, and the outer sole *l* secured thereon.

3. As a new manufacture, an inner sole having a channel, *c*, on its under side at the toe back from its edges and lessening in depth, as described, and for the purpose set forth.

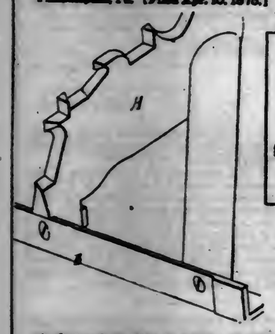
4. As a new manufacture, an inner sole having a channel, *c*, of varying depth on its under surface, and beveled edges on its upper surface, substantially as and for the purpose herein set forth.

166,665. WRENCHES. L. C. Velser, Schuyler's Lake, N. Y. [Filed May 27, 1875.]



A wrench consisting of a main arm, A, upper jaw B, lower jaw C, and intermediate jaw L, adapted to be coupled to either the upper or lower jaw by means of a link, M, said lower and intermediate jaws sliding upon the arm A, as set forth.

166,666. CORNER-TOOLS. WM. P. Walter, Philadelphia, Pa. [Filed Apr. 10, 1875.]



A plasterer's molding instrument in which a detachable molding-plate, A, and handle D are combined with the angular frame B, as and for the purpose set forth.

166,667. VESSELS FOR MEASURING ICE-CREAM, &c. Frank Watchie, New York, N. Y. [Filed Mar. 20, 1875.]



As an article of manufacture, a vessel for measuring ice-cream, longitudinally divided into equal sections, A¹ A², hinged together at their bottom and provided with fastening devices at their top for securing the sections together, the whole being combined substantially as and for the purpose described.

166,668. MACHINES FOR WELDING TUBES. George H. White, Cleveland, Ohio. [Filed Apr. 17, 1875.]

Brief.—A long furnace with a narrow slit in its covering-plate, through which the flames pass to the lapped edges of the skelp; a concave roller-anvil in front of the furnace, on which to effect the welding, and a welding-roller attached to one end of a horizontal lever, around which roll and over the skelp passes as it is gradually fed forward from the furnace, the lever being moved, to force the roll down upon the lapped edges lying and moving upon the anvil-roller, by a wedge inserted under the other end of the lever.

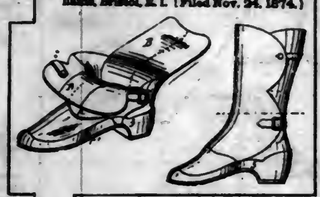
1. In a machine for making lap-weld tubes, the furnace A, provided with a narrow opening, E, in combination with the feed-roller G, welder I, and lever H, all substantially as and for the purpose described.

2. The combination, with the feed-roller G and the lever H, of the wedge K, and hand-wheel M, substantially as and for the purpose described.

3. The combination of the lever H, provided with welding-roller I, fulcrum H, and standard N', with the bed-plate O and shoes P, substantially as and for the purpose described.



166,669. RUBBER BOOTS. Isaac F. Williams, Bristol, R. I. [Filed Nov. 24, 1874.]



1. The improved boot composed of textile fabric and rubber, having an inner upper cut to fit the last or foot, and an outer upper cut larger than the inner upper, with the surplus portion thereof overlapped, substantially as described.

2. The improved boot, having an open overlapping leg-section and the overlapping ankle-section, provided with the bellows-flap, formed of continuations of the front and rear uppers, substantially as described.

3. In a boot, the overlapping leg and ankle section, provided with the recess D at the edge between the said sections, substantially as described.

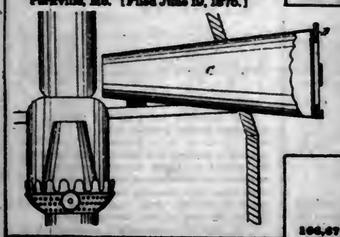
166,670. LAMP-BURNERS. S. R. Wilmot, Bridgeport, Conn., assignor to Bridgeport Brass Company, same place. [Filed July 24, 1875.]

Brief.—Air is admitted to the vent-tube through the holes.



A lamp-burner provided with a gas or vent-tube extending from or near the bottom of the burner to or near to the top of the wick-tube, and having one or more air openings or vents intermediately between its top and bottom, substantially as and for the purpose herein set forth.

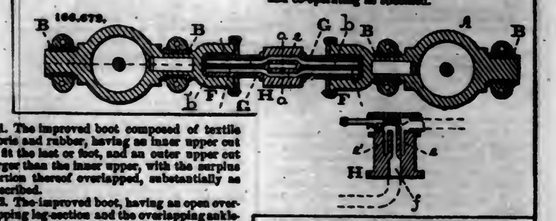
166,671. HOG-TROUGH. Wm. W. Wilson, Parkville, Mo. [Filed June 10, 1875.]



166,672. OSCILLATING ENGINES. J. Wolf, Philadelphia, Pa. [Filed June 10, 1875.]

Brief.—A single valve serves to operate the two engines.

The herein-described oscillating engine, composed of the cylinders A A, formed with trunnions B B' and bosses F, the ports *d d'*, passages *c c'* and *b' b''*, pipes G G, and valve H *e f g*, constructed and arranged as shown, and co-operating as specified.



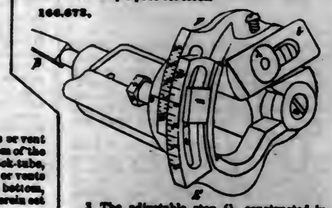
166,673. HOLLOW AUGERS. A. A. Wood, Manlius, N. Y. [Filed July 31, 1875.]

Brief.—The cutter is secured to one of a pair of jaws, the other acting as a gage to determine the size of the tenon formed by the tool.

1. The adjusting-wedge *c* and its screw *d*, in combination with the jaw F, cutter I, and its adjusting and holding screws *e'* and *h*, substantially as and for the purpose specified.

2. The cutter-carrying jaw F and gaging-jaw B, provided with graduated scales and holding devices, as shown, in combination the body A and shank B, substantially as and for the purpose set forth.

166,673.



3. The adjustable step G, constructed in two pieces, clamped to each other and to the body A by the screw *p*, as and for the purpose specified.

166,674. HOLLOW AUGERS. Abel A. Wood, Syracuse, N. Y. [Filed Dec. 17, 1874.]

Brief.—The cutter is attached to the body of the auger, and adjustable, as desired, by means of a pivoted clamp, having a slot at its outer end, and provided upon its inner face with a recess to receive the body of the cutter.

The combination of the body A of a hollow auger with the cutting-knife K and clamp B, provided with the slot O, all constructed to operate as shown and described, and for the purpose specified.

166,675.

166,676. PRINTING-PRESSES. James Cook and William Foster, Meriden, Conn.; said Foster assignor to said Cook. [Filed Apr. 13, 1875.]

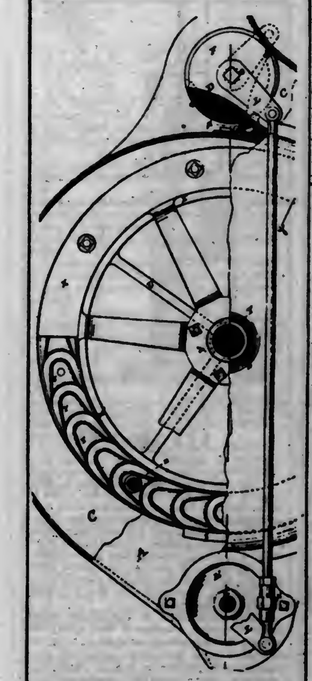
Brief.—The rest is pivoted to the stand, the face of which is inclined, so that when it is turned outward it is elevated above the ink-plate.



In a printing-press, the combination of the ink-plate, the inclined bearing *d*, and the rest R, substantially as described.

166,677. WATER-WHEELS. Joseph Attlee, Washington, D. C. [Filed Mar. 26, 1875.]

Brief.—The buckets are semi-cylindrical in form, and the rear portion of each is so formed with reference to the one next to it as, with it, to form a semi-annular channel, which the water from the chute enters and leaves in a tangential direction, or nearly so. These semi-annular channels have an aggregate sectional area twice that of the chutes. Each gate consists of a segment of a cylinder connected to its ends, and having a partial revolution upon its axis, a water-pressure packing being introduced in the wall of the chute to bear against its face. The two gates are adjusted to open and close simultaneously. The wheel is so attached to the shaft by the central collar of the former and the shoulder on the latter that the wheel can be raised without raising the shaft.



1. In combination with the chute C, the buckets Y, of the form shown and described, having circular passages of uniform width, the sectional area of which in the aggregate is double that of the chutes in the aggregate, substantially as described.

2. The buckets Y, constructed with flanges *y'*, and in combination therewith the flanges *y''*, raised upon the edges of the disks X.

3. The gate D, constructed with the disks F, the periphery of the gate having a less diameter than the openings which they occupy in the trunk, and a longer radius than the periphery of the disk F, for the purposes set forth.

4. The detachable gate-cap E, combined with the gate D and trunk A.

5. The self-adjusting packing H, with water-passages J behind it, combined with the water-gate of a hydraulic motor.

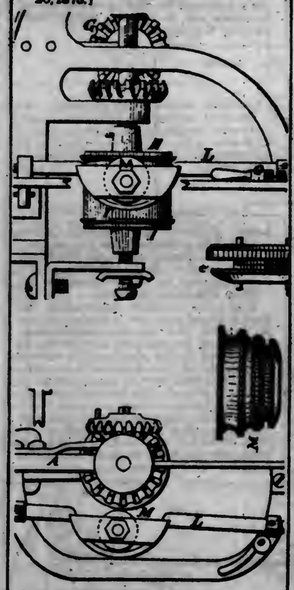
6. The self-adjusting packing-rings F' and F'', substantially as set forth.

7. The self-adjusting box V, substantially as set forth.

8. In combination with the flange F' of the shaft T, the flattened hub A' of the wheel, resting upon said flange, and secured thereto by bolts, whereby the wheel may be raised from the shaft without disturbing the same, substantially as described.

REISSUES.

6,568. GAS-REGULATING MACHINES. Lester G. Beardsley, Cleveland, Ohio. Patent No. 156,012, dated Oct. 20, 1874. [Filed Feb. 26, 1875.]



1. The gas-ensuring machine consisting of the two disks or chokes H I, with mechanism for causing the same to revolve, in combination with the pivoted ensuring-roller M, having the described groove *g* and *i*, and mechanism for forcing the said roller down around the edge of the one, all substantially as and for the purpose described.

2. The lever L, bearing or journal *a*, and sleeve *a'*, in combination with the roller M, cam O, and disks H I, in the manner as and for the purpose described.

3. The ensuring-roller M, for forming a double seam, having the rectangular groove *g*, *i*, and *f*, beveled groove *i*, and with or without the curved wiring-groove *k*, substantially as and for the purpose described.

4. In combination with the roller M, the rectangular groove *g* and adjustable plate *r*, substantially as and for the purpose described.

6,569. SEAMS-METAL CANS. L. G. Beardsley, Cleveland, Ohio. Patent No. 156,013, dated Oct. 20, 1874. [Filed Feb. 26, 1875.]

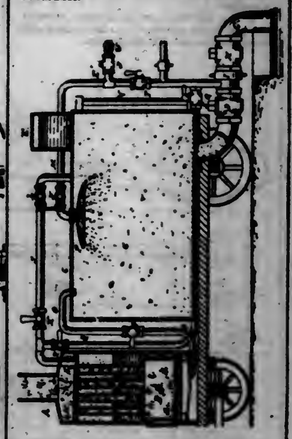


1. In combination with the double tubular or beaded seam, the filling C of white lead, substantially as and for the purpose set forth.

2. The process of uniting a top to a can by a tubular or beaded seam and of filling the band with white lead, consisting, first, of placing a film of white lead on the flange *c*; second, of pressing the overlapping flange *b* upon the same and crimping it over the edge of the flange *c*; and third, of carving the combined flanges downward and pressing the edge against the side of the can, substantially as and for the purpose set forth.

6,570. APPARATUS FOR EMPTYING WATER-CLOSETS, &c. Reinhold Boekius, Brooklyn, N. Y. Patent No. 142,200, dated Aug. 26, 1873. [Filed July 27, 1875.]

Brief.—Fills tank and hose with steam, and makes vacuum in both by water. Washes fecal matter from hose by steam, and afterward cleanses by water. Burns escaping gases in furnace.



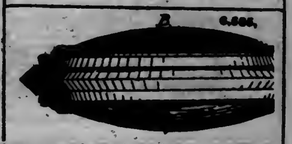
1. The method of removing night-soil, sewage, or the like material from its receptacle, which consists in filling with steam both an air-tight tank and an air-tight conduit from the tank into the material to be removed, and, by injected water, condensing the steam in the tank and in the conduit down to the material, in order to obtain a continuous vacuum, through the tank and the conduit, above the material, for the purpose set forth.

2. The combination of the tank C and hose G and water-supply pipe M with a stop-cock, F, to condense the steam in both the hose G and the tank C, substantially as herein set forth.

3. The combination of pipes M and J, stop-cocks K L F, with vessel C and boiler A, substantially as and for the purpose set forth.

4. The combination herein described of boiler A, vessel C, and pipes J, Q, O, F', and M, for the purpose set forth.

6,571.



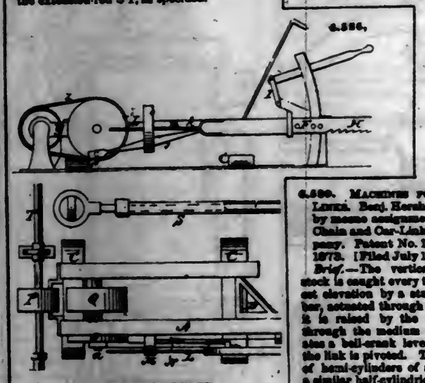
6,586. WATCH-CASE. Caleb K. Colby, New York, N. Y. Design No. 6,201, dated Oct. 16, 1872. [Filed July 29, 1875.]

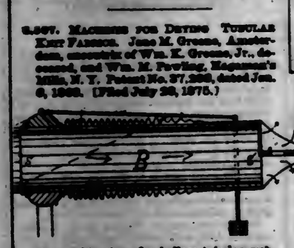
1. The design for the watch-case proper, A, having the V edge, as shown.
2. The design for a watch-case lid, B, having an inclined band, b, raised above a central portion, d, to form the step c, substantially as shown.
3. The design for a watch-case as a whole, having the V-edged case A and the ornamental lids B B, the ornamentation on the lids consisting of the band c, then the band b, then the step c, down to the central portion d, substantially as shown.

6,587. SEWING-MACHINES. John Frey, Canajoharie, and John M. Hobbelein, Canton, Ohio, assignors to Wm. Detrick. Patent No. 61,266, dated Aug. 29, 1866. [Filed Nov. 26, 1873.]

Brief.—A telescopic shaft is used for driving the saw, which allows it to be moved along the leg, instead of moving the leg to the saw.

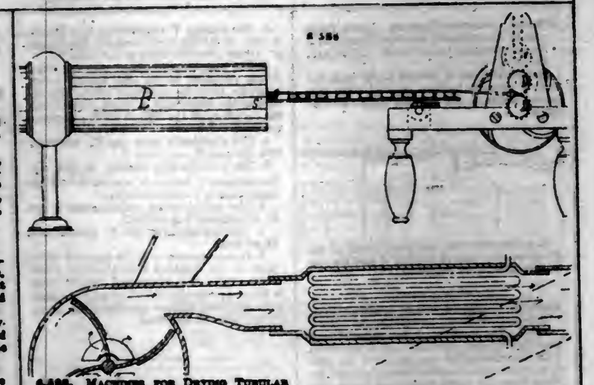
1. The extension-rod S T, composed of the tube S, with journals s, and shaft t T T, when used in combination with the auxiliary pulley F of a sewing-machine, said pulley being maintained in its relative position to the machine by means of the arms Y Y, the extended ends of which form the bearer of the auxiliary pulley F, substantially as and for the purpose specified.
2. The movable sewing-machine, substantially as herein described, in combination with the extension-rod S T, as specified.





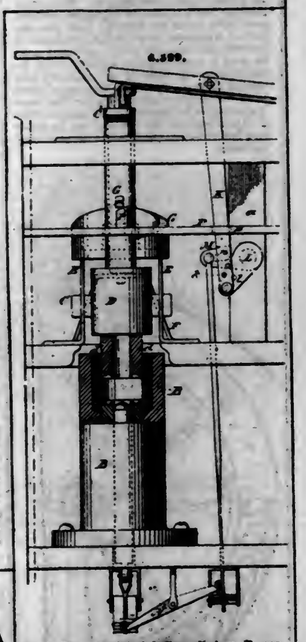
6,588. MACHINES FOR DRIVING TUBULAR KNIT FABRICS. Jane M. Greene, Amsterdam, executrix of Wm. K. Greene, Jr., deceased, and Wm. M. Fowling, Hagaman's Mills, N. Y. Patent No. 37,266, dated Jan. 6, 1863. [Filed July 26, 1875.]

The combination of a hollow tubular web-support, an internal web expander or spreader, and a mechanism for drawing off and closing the tubular web, all operating together substantially as shown and described.

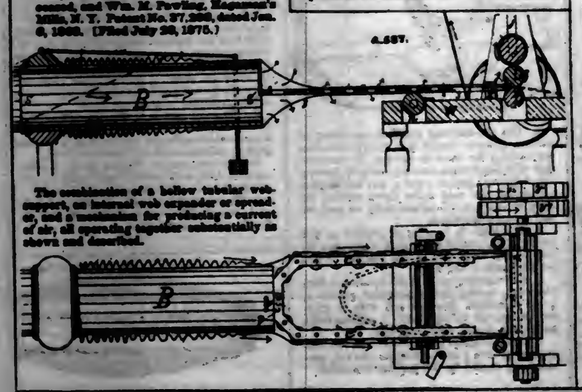


6,589. MACHINES FOR WELDING CHAIN-LINKS. Benj. Hershey, Erie, Pa., assignor, by mesne assignments, to the Pittsburgh Chain and Car-Link Manufacturing Company. Patent No. 139,151, dated May 20, 1873. [Filed July 12, 1875.]

Brief.—The vertically-reciprocating die-stock is caught every time it reaches its highest elevation by a stab on a movable crosshead, actuated through the link by the trap as it is raised by the stock, and is released through the medium of a treadle that operates a bell-crank lever, to one arm of which the link is pivoted. The dies are in the ends of semi-cylinders of steel, and move within a similar half-cylindrical inclosure; and a cylindrical mandrel lying in the cavity of the lower die-stock is movable upward, by a foot-lever, into the upper stock, to prevent the spread of the link inward.



6,590. MACHINES FOR DRIVING TUBULAR KNIT FABRICS. Jane M. Greene, Amsterdam, executrix of Wm. K. Greene, Jr., deceased, and Wm. M. Fowling, Hagaman's Mills, N. Y. Patent No. 37,266, dated Jan. 6, 1863. [Filed July 26, 1875.]

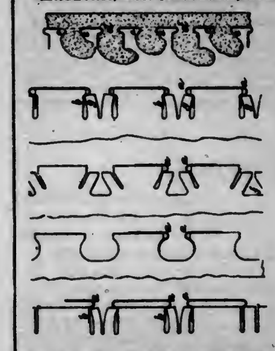


The combination of a hollow tubular web-support, an internal web expander or spreader, and a mechanism for producing a current of air, all operating together substantially as shown and described.

1. The cylindrical hollow die-box B, constructed as shown, a stationary die, b, and a traveling-die, d, the same being combined and arranged to operate substantially as described.
2. The combination of the detachable dies b d, die-block B, plunger C, collar D, and camwheel G, operating substantially as described.
3. The die-box B having a detachable steel packing, B', when the latter is secured so as to operate in connection with dies b d, substantially as described.
4. The combination of the hinged lever-board H, having a torsion or other spring attached, and so relatively arranged as to act in connection with the upper section of the plunger, as stated, pivoted arm K, crank-arm I, and axle L, the same operating substantially as described, and for the purpose specified.
5. The combination of sliding bar P, having a slot, p, and stop-pin P', arm K, lever-board H, and plunger C, the same being so arranged that as it is plunger is elevated the sliding bar shall be so moved as to arrest its motion at the proper time, substantially as described.

6. The combination of the sliding step-bar P, arm K, lever-board H, axle L, crank-arms I M, and treadle M', operating substantially as described.
7. In a link-welding machine, a stationary die, b, a traveling die, d, and the traveling tongue or frog O, the whole being constructed, combined, and arranged to operate substantially as described.
8. The combination of the double treadle N N', pivoted connecting-arm N², tongue-bearing pin O, rod M', axle L, arm K, bed-piece H, and plunger C, operating substantially as described.
9. The combination of the double treadle N N', pivoted connecting-arm N², tongue-bearing pin O, rod M', axle L, arm K, bed-piece H, and plunger C, operating substantially as described.

6,590. METALLIC LATHING. I. V. Hobson, Mount Vernon, Ohio, assignor of one-half interest to J. Cooper. Patent No. 64,881, dated Dec. 18, 1866. [Filed Oct. 18, 1874.]

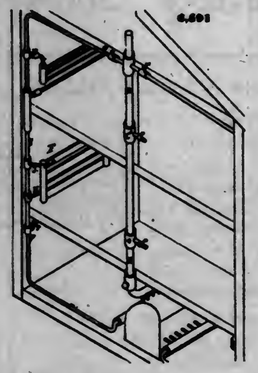


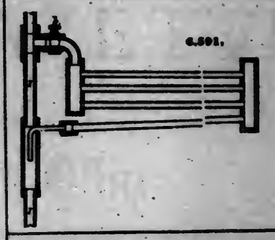
1. A sheet-metal lath having its edges bent or curved back in a manner substantially as the twofold purpose of stiffening the lathe and affording a broad bearing for the plaster-key.
2. A perforated sheet-metal strip-lath, stiffened by having its edges bent or curved back.
3. The metallic sheet-lath described, when provided with rectangular openings, made by slitting the lath and bending back the edges a a, substantially as and for the purpose described.
4. Lathing composed of studs provided with recesses, and laths supported in said recesses, substantially as and for the purpose specified.
5. The combination of a metallic stud and a metallic lath, constructed and secured together by bending one over or upon the other.
6. A lath, when constructed of sheet metal, with its edges bent back, so as to present rounded corners a a a a, and applied substantially as and for the purpose described.
7. The construction of the described metallic sheet-lath, when made with a tapered form at one end, with a view to splicing or jointing, substantially as described.
8. The metallic plates, slitted as described, when used for studs or supports for metallic sheet-laths, substantially as shown, and for the purpose described.

6,591. SYSTEMS OF STEAM AND WATER PIPES FOR BUILDINGS. John H. Hills, Boston, Mass. Patent No. 140,003, dated Dec. 30, 1873. [Filed June 10, 1875.]

Brief.—The steam is first carried to the top of the building to be heated; then, in its downward course, is distributed to radiating coils, which discharge into the same pipe from which they receive steam.

1. The herein-described system of steam-heating, the same consisting in the combination of one or more main pipes, conveying the steam without distribution to a point above the radiators, with branch piping, conveying the steam downward, and serving at one and the same time to supply steam to and conduct the water of condensation from the radiators, the steam, water, and air moving together in one direction toward the boiler, as shown.
2. In a system of steam-heating, comprising an overhead supply, the combination of the radiators or coils with the branch or return piping entering below the water-line of the boiler, as shown and described.
3. The combination, with a system of steam-piping and radiators connected therewith and operating as described, of an air vent or valve located on the branch or return piping at a point below the first or lowest radiator, but above the water-line of the boiler, as shown and described.

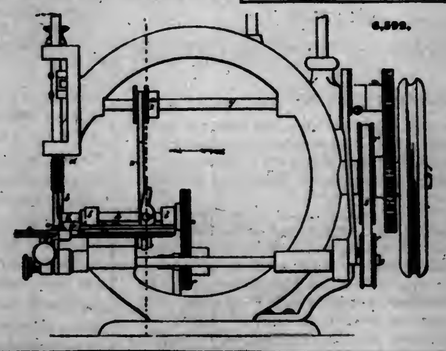




6,592. MACHINES FOR THREADING AND CUTTING ATTACHMENTS FOR SEWING-MACHINES. William A. Springer, Marlborough, Mass. Patent No. 147,441, dated Feb. 10, 1874; reissue No. 6,088, dated Oct. 13, 1874. [Filed Mar. 18, 1875.]

1. In combination with a stitch-forming and feed mechanism of a sewing-machine, a positively-rotated, but intermittingly-acting trimming-cutter, for the purposes stated.
2. In combination with a stitch-forming and feed mechanism, a positively-rotated cutter, having a vertically-reciprocating movement, substantially as and for the purposes set forth.
3. In combination with the plate a, the slide h, and herform the slot or groove f, substantially as shown and described.
4. The hinged bearing-plate m, carrying a cutter, and having a spring to force it upward, combined with an eccentric, e, and link or intermediate arm w, to force it downward, substantially as shown and described.
5. The eccentric e, link or intermediate arm w, lever v, arm s, cam-lever t, and plate m, combined and operating substantially as shown and described.
6. In combination with the hinged plate for supporting the cutter, the rear block *s*, arranged *s*, substantially as shown and described.

6,593. SYSTEMS OF STEAM AND WATER PIPES FOR BUILDINGS. John H. Hills, Boston, Mass. Patent No. 140,003, dated Dec. 30, 1873. [Filed June 10, 1875.]



OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 7. TUESDAY, AUGUST 17, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

ORCUTT & SON.—*Label.*

[*Appeal from the Examiner of Trade-Marks in the matter of the application of* D. ORCUTT & SON *for registration of a label.—Decided August* 5, 1875.]

The superscription being in its main elements a *label*, the fact that it contains matter which, taken separately, might constitute a *trade-mark* is not fatal to its registration. (Case of *A. Godillot*, OFFICIAL GAZETTE, Vol. VI, p. 641, commented on.)

SPEAR, *Acting Commissioner:*

The subject-matter which applicant seeks to register as a label is a printed slip having at the top a monogram composed of the initial letters of the firm, below which are the words "Orcutt's Salt-Rheum Cure." This is followed by an enumeration of the diseases for which this cure is intended, the price of the article, fac-simile of the signature of the firm, and the place of manufacture. In all its essential, and by far the larger parts of the slip, it is unquestionably a label. The Examiner refuses registration on the ground that the monogram and the fac-simile, if taken from the label, might constitute a trade-mark, and, therefore, make the whole slip a trade-mark, and exclude it from registration by the terms of the law.

The Examiner, in considering this application, and in refusing the registration prayed for, may have been influenced by the decision of the Acting Commissioner in the case of *Godillot*, OFFICIAL GAZETTE, Vol. VI, p. 641; and I refer to that decision to correct what I believe to be unguarded language, which is capable of construction broad enough to exclude the present application from registration.

The matter under consideration in that case was, in all its essential characteristics, a trade-mark; and it was not intended to exclude from registration as labels matters which were essentially labels, although having elements which might be selected, rearranged, and used as trade-marks.

In the present instance the slip of paper indicates the contents of the bottle or package to which it is to be applied, the purpose of the contents, the price, the manufacturers, and place of manufacture. The rest is merely incidental, and it would be manifestly a hardship to refuse registration of what is so plainly a label, by reason of some added ornamentation.

The decision of the Examiner is, therefore, reversed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, NORTHERN DISTRICT OF NEW YORK.

THE GOULDS MANUFACTURING COMPANY *vs.* JOHN P. COWING *et al.*

[*In equity.—Before Mr. Justice* HUNT.—*July*, 1874.]

The rule is settled that when the patent is for an improvement upon a machine the damages for the infringement of such patent are confined to the profits made by the use of the improvement only, and not by the manufacture of the whole instrument.

The complainants, at the accounting, proved the expenses of making and selling the infringing pumps; that they were prepared and ready to fill the orders taken by the defendants, and the prices at which the pumps were sold by the defendants, and the master took the difference between such expenses and such prices (being $47.71 on each pump) as the measure of damages: *Held*, that as the patented invention was merely an *improvement* in pumps, being only a special construction of the side chamber, whereby the same is adapted to use with the valve-casings bolted on the outside, and constituting but a small part

of the aggregate mechanism, this rule was erroneous, and that the damages could not exceed the profits upon such improvement.

The burden of proof, to show the amount of damages or profits, is upon the plaintiff. Where he fails to show the profits or damages arising from the use of the patented improvement, as distinguished from the profits on the entire machine, nominal damages only can be recovered.

[This was a suit in equity brought upon letters patent for an "improvement in gas-pumps," granted to the complainants on the 8th day of August, 1871, as the assignees of William H. Pollard, the inventor. The case came up on exceptions to the master's report, to whom under a previous decree it had been sent for an accounting.]

[*J. B. Perkins*, for complainants.
Elisha Foote, for defendants.]

HUNT, *Justice:*

Upon the hearing of this case upon the merits it was adjudged by the court that the patent to the plaintiffs, dated August 8, 1871, was a valid patent, and that the defendants were infringing in respect to all the pumps manufactured and sold by them subsequent to that date. It was referred to a master to ascertain and report the complainants' damages. The master reported that the complainants should recover damages on two hundred and ninety eight pumps manufactured, to the amount of $47.71 per pump. To this report the defendants filed exceptions, and the case now comes before the court on the hearing of such exceptions.

The principal question arises upon the third exception, and regards the rule for the measure of damages adopted by the master. The complainants proved the expenses of making and selling the pumps in question, that they were prepared and ready to fill the orders taken by the defendants, and the prices at which the pumps were sold by the defendants. The master found the damages to be the difference between such expenses and such prices, and reported accordingly.

If the plaintiffs had been the inventor and patentee of pumps, or of double-acting pumps, the argument would have been strong in favor of the rule adopted; but the invention patented and infringed was of an improvement upon pumps merely. Such was the decree, which did not restrain the defendants from making pumps, or even the pumps in question, but only certain devices, forming a part of them, and which devices the court adjudged to be an improvement belonging to the plaintiffs, which had been infringed by the defendants. The decree adjudges that the letters patent in question, "for an improvement in gas-pumps, dated August 8, 1871, and more particularly set forth in the complaint, were and are valid in law, and that the defendants infringe on the rights secured thereby;" and the defendants are restrained "from making, using, or vending the device or improvement secured thereby." In making the report the master says:

While admitting, of course, the doctrine that, in some cases, the profits resulting from the mere improvement must be separated from those of the entire machine, and allowed to the plaintiff as the sole measure of damages, I am unable to see how, upon any correct principle, this separation can be made in the present case. I have said, in the opinion accompanying this report, that, as it appears to me, the comparison must be made between the machine as it stands, with its patented improvements, and what would be left of the same machine if these improvements were taken away, and not between this machine, with its patented improvements, and any other one having the same general character, not patented, and used in the business, and sold in the market. If this criterion is the correct one—and, for the purposes of this decision, I hold it to be so—it is very plain that, if the patented improvements on this gas-pump are removed, there is nothing left which can be called a machine, and in respect of which any profits can be predicated. I distinctly hold, then, in order that the question may be distinctly presented—although it seems to me to be a matter of law, a sort of construing the machine in the same way that a court construes a writing—that the profits resulting from the patented portion of this pump cannot be separated from those resulting from any other part of it.

In concluding his report, he says:

In conclusion, I find and report that the plaintiffs are entitled to recover, as "damages" sustained by them by the sale of the aforesaid two hundred and ninety-eight pumps by the defendants, as aforesaid, at the rate of $47.71 for each pump so sold by the defendants, that being the whole profit which, as appears from the evidence, the plaintiffs would have made from the sale of each entire pump.

Pumps have been in use since the earliest ages of the world. Double-acting pumps, like the one in question, have long been in use. Double-acting pumps, having a cast side chamber to allow the medium to follow the action of the plunger, have long been in use; and, in this patent, it is expressly stated that this is not claimed as an invention by the plaintiffs. The base, the cylinder, the top, the piston, are the same, in general arrangement, as are used in ordinary double-acting pumps. These things are not claimed by the plaintiffs to be within their improvement. Their use is free to the defendants. Only a special construction of the side chamber is claimed, whereby the same is adapted to use with the valve-casings bolted on the outside. Valves must exist in every pump, and they must open on the outside. They are located in hollow casings; but this the inventor in his patent says that he does not claim. A valve-box or valve-case—that is, the portion of the passages to and from the cylinder that contains the valves cut off from the rest, for the convenience of fitting the valves, and then bolted on again to the outside of the cylinder—is a valuable device forming a part of this machine, but it is not claimed to belong to the plaintiffs, although the specification is said to have been drawn with reference to it. I do not pursue the analysis of the patent so carefully carried out by the defendants' counsel, showing all the parts which were in use before the alleged improvement, and showing specifically what the patent claims. Enough has been said to present the main question in the case—viz., whether the patentees can recover the profits for the manufacture of the entire pump, or whether their claim is limited to the profits upon the improvement embraced within the patent. The master concedes the latter to be the rule in some cases; but, if I understand his reasoning, above quoted, he takes this case out of it on a ground that, I think, cannot be sustained. The comparison is to be made, he says, "between the machine as it stands, with its patented improvements," (the plaintiffs' improvements, I assume,) "and what would be left of the same machine if these improvements were taken away, and not between this machine, with its patented improvements, and any other one having the same general character, not patented, and used in the business, and sold in the market." The portion of the pump in question which belongs to or is included in the improvement of the plaintiffs is very small, and a machine constructed upon other known principles and devices applicable to pumps, omitting the plaintiffs' improvement, would include nearly everything useful that is to be found in the present machine. A different view of this matter of fact is the basis of the master's opinion. I

judge that the master holds the plaintiffs' improvement to be more extensive than it is.

The proposition is simply this: The patentee takes the well-known portions of a pump used in pumping gas oil, with passages, valves, piston, chambers, openings, &c., as ordinarily made and used, and adds a chamber of an important construction, as it is alleged, and a combination with certain other parts described. Now, if this addition is not a new and useful improvement, no damages can be claimed for its use. If it is such an improvement, the improvement, in its nature and by law, is and must be capable of being described and pointed out, and must be described and pointed out. Every skilful mechanic must be able to learn, from the patent itself, precisely what the monopoly covers. (Act of July 8, 1870, sec. 26, 16 U. S. Stat. at Large, 201.) If this alleged improvement is so confounded with portions of the machine which are the subjects of other patents, or which, from long-continued use, are open to the public, that it cannot be separated from them, or if, when so separated, it has no value, it is not a patentable invention, and no damages are due for its use. The decree in this case has adjudged the patent to be valid. In its nature, therefore, it is, and must be, capable of separation and distinction from other portions of the machine. The ruling of the master, that the profits arising from the improvement of the plaintiffs cannot be separated from the profits of the machine generally, seems to be based upon the idea that the improvement of the plaintiffs is all that is valuable in the machine. I cannot but consider this a great mistake, as I have already shown.

I understand the rule to be settled that, when the patent is for an improvement upon a machine, the damages for the infringement of such patent are confined to the profits made by the use of the improvement only, and not by the manufacture of the whole instrument. What profit or advantage did the defendants obtain by the use of the plaintiffs' improvement? What advantage did they have that they would not have had, if they had built their machines without the improvement? In *Philp* vs. *Nock*, (17 Wall., 460,) although the case did not, perhaps, require an adjudication of the point, the rule is thus laid down, by Swayne, J.:

Where the infringement is confined to a part of the thing sold, the recovery must be limited accordingly. It cannot be as if the entire thing were covered by the patent; or, where that is the case, as if the infringement were as large as the monopoly. * * The plaintiff must show his damages by evidence. They must not be left to conjecture by the jury.

In *Mowry* vs. *Whitney*, (14 Wall., 620, 649,) the precise point before us was in question. The defendant was charged by the master with $91,000, as the profits arising from the use of the plaintiffs' patent, in manufacturing car-wheels, which was the profit obtained from the manufacture of the entire wheel. In delivering the opinion of the court, Strong, J., says:

It is clear that Whitney is not entitled to recover more than the profits actually made in consequence of the use of his process in the manufacture of the 19,819 wheels. It is the additional advantage the defendant derived from the process—advantage beyond what he had without it—for which he must account; * * but the master charged the profit obtained from the entire wheel, instead of that resulting from the use of Whitney's invention in a part of the manufacture. * * * It is as true of a process invented as an improvement in a manufacture, as it is of an improvement in a machine, that an infringer is not liable to the extent of his entire profits in the manufacture. The question is, What advantage did the defendant derive from using the complainant's invention, over what he had in using other processes then open to the public and adequate to enable him to obtain an equally beneficial result? The fruits of that advantage are his profits. They are all the benefits he derived from the existence of the Whitney invention.

The burden of proof rested upon the complainants. The damages to the plaintiffs or the profits to the defendants (they are the same thing) must be proved like the other points in the case. For all the profits or advantages with which they have been charged, except that precise advantage derived from using the plaintiffs' improvement, the defendants may still be liable to other inventors, or they may have already paid for them to those inventors. Upon no principle can the plaintiffs assume that they belong to themselves, and call upon the defendants to disprove this assumption. It is not necessary further to examine the cases on this point. The Supreme Court has decided it explicitly, and, if there are cases found to the contrary, they must be considered as overruled. The master should have decided that, as the plaintiffs had failed to show the profits or damages arising from the use of the improvement, nominal damages only could be recovered.

The third exception is allowed, and, as it goes to the basis of the entire recovery, it is not necessary to consider the other exceptions in the case.

SUPREME COURT OF THE DISTRICT OF COLUMBIA.

[*In general term.*]

FREDERICK G. AND WILLIAM F. NIEDRINGHAUS.—*Appeal.*

[*In the matter of the application of Frederick G. and William F. Niedringhaus for a patent for a* "DESIGN FOR ORNAMENT FOR ENAMELED IRON-WARE," *filed June 3, 1874.—Appeal from the decision of the Commissioner of Patents.*]

A beautiful appearance is not of itself entitled to a design patent. The design must also be new and original, and the result of invention and genius.

Mere exhibition of skill on the part of workers in enamel, in giving beautiful forms and colors to their productions, when they are the common efforts of persons ordinarily skilled in the art, is not the invention which is protected by the law.

The use of an old design is clearly excluded from patent by the statute, and mere change or "double use" cannot receive its protection.

The same degree of originality is required in both design and functional patents—that is, the claim must not comprehend what is already in existence.

A design consisting in a mere mottled appearance to be given to enameled iron-ware is not patentable.

[*Charles D. Moody*, for appellant.
Wm. H. Doolittle, for the Commissioner.]

Mr. Justice MAC ARTHUR delivered the opinion of the court:

This is an appeal from the decision of the Commissioner of Patents refusing a design patent in enameled iron-ware to Frederick G. Niedringhaus and William F. Niedringhaus. The statute in regard to design patents reads as follows:

Any person who, by his own industry, genius, efforts, and expense, has *invented and produced* any *new and original* design for a manufacture, bust, statue, alto-relievo, or bas-relief; any *new*

and original design for the printing of woolen, silk, cotton, or other fabrics; any *new and original* impression, ornament, pattern, print, or picture to be printed, painted, cast, or otherwise placed on or worked into any article of manufacture; or any new, useful, and original shape or configuration of any article of manufacture, *the same not having been known or used by others before his invention or production thereof, or patented or described in any printed publication*, may, upon payment of the fee prescribed, and other due proceedings had the same as in cases of inventions and discoveries, obtain a patent therefor. (Sec. 4929 United States Revised Statutes.)

In their specification, the applicants claim to have invented and produced a new and original design of ornament or pattern, to be printed, painted, or otherwise placed on, or marked into the various articles of enameled iron-ware which they make and sell. A photograph is annexed to illustrate the outline. They also say that—

the article itself, however, when completed, presents to the eye a beautifully-mottled appearance, resembling granite in color, which the illustration fails to exhibit. It is this peculiar mottled appearance which constitutes the chief merit of our design, and it is on this we place most importance.

The Primary Examiner, the Examiners-in-Chief, and the Commissioner have all concurred in refusing the application for the patent. The Commissioner, in his decision, says:

I concur in the opinion of the Examiners-in-Chief, so far as want of patentability in the general subject-matter embraced by the application is concerned. The so-called design is effected by printing, painting, or in any other way placing upon iron-ware a peculiarly-mixed color. The enameling of iron-ware in various colors is an art well known. If applicant has achieved anything new, it is to be found in the mixing of colors, by which he produces a mottled appearance having the effect of granite coloring. If he has in this way obtained a new paint, it may or may not be patentable; but the application of such a paint in an ordinary way does not constitute the subject-matter of a design patent, even under the most liberal construction of the statute.

The court are unanimously of the opinion that the decision of the Commissioner ought to be affirmed. The art of enameling has been practiced for many centuries, and the different kinds of enamel have been produced in every variety of shade and color. The materials used for the purpose of coloring, and the process by which they are fused have been known so long that to change them requires only the taste and skill of one engaged in the business. The appellants, of course, do not mean to claim any exclusive title to what is so well known. But their specification certainly seems to suggest that the change of color "resembling granite," imparts great value to their invention. They say "the mottled appearance which constitutes the chief merit of our design, and it is on this we place the most importance." The specimen of enameled iron-ware exhibited by counsel on the argument was of a color resembling granite, and was marked by spots of different shades darker than granite. The enamel and coloring substances are manifestly liquefied by intense heat, such as enamelers use, until they are completely fused, and they are laid upon the iron-ware while in this condition. The spots are then formed at random, in larger and smaller patches, without regard to regularity or design of any kind. No two of the articles are alike, except in color and general appearance. It is undoubtedly ornamental to the article, and has a pleasing effect on the eye. This is equally true of the hundreds of objects upon which this art is employed. Ornamental work in great variety, and paintings that never lose their freshness, are executed in enamel. Indeed, the primary object of this art is to impart greater luster and beauty to every article of luxury or utility to which it is applied. A beautiful appearance is not in itself patentable. The design must be new and original, and the work of invention and genius. The ingenuity and taste of workers in enamel are quite wonderful to all but those employed in it; but no one would imagine that these exhibitions of skill in giving beautiful forms or colors to their productions was the kind of invention to be protected by the law. They are the common efforts of persons ordinarily skilled in the art. The appellants contend in their brief that—

it matters not if the design has been previously used, if now combined with an "object" with which it has not been hitherto combined; and if, as a result of such association, a new and distinctive aspect is given to such object, the law is complied with—

and refers to former decisions by the Commissioner of Patents as cases in point. We cannot concur in this view. The thing provided for in the law is in express language, "any new and original design for a manufacture;" "any new and original design for printing;" "any new and original impression;" "any new, useful, and original shape;" "the same not having been known or used by others before his invention or production thereof." The use of an old design upon an old object is clearly excluded by the statute, and mere changes or "double use" cannot receive its protection.

Besides, it is now well understood that the same degree of originality is required in both design and functional patents. That is, the claim must not be for a copy or imitation of what is already in existence. If, for instance, the applicants should manufacture their iron-ware with a figure of the statue of the Three Graces, it might improve the appearance of the article, but would scarcely entitle them to the benefits of a patent. To manufacture it with enamel is a change of the same kind, for the same thing has been performed on metals from time immemorial. To give the enamel any particular color is a matter of ordinary skill and taste. The coloring substances have always been fused with the enamel in the heat of the furnace. We can, therefore, observe nothing in the present specification to which the term invention can be applied.

I am aware that the Supreme Court of the United States, in *Gorham Company* vs. *White*, 14 Wall., 524, have said in regard to design patents that—

they contemplate not so much utility as appearance, and that not an abstract impression but an aspect given to those objects mentioned in the arts.

That was an action brought for the infringement of a design patent for the handles of table-spoons and forks. The design consisted in the configuration of the spoon and the ornamentation of the handle. The outline and all the details of the design were new, and invariable in each spoon alike. No question was discussed as to the originality of the patent, for it had never been known before, and the court decided that the article manufactured and sold by the defendant did not differ substantially from plaintiff's, and that it was therefore an infringement. But the whole tenor of the decision is to the effect that the appearance or aspect of the object must be of a design that is new and original. Indeed no other view is admissible, for such is the express requirement of the law.

The decision of the Commissioner is affirmed.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date August 17, 1875.]

8,563.—Heating-Stove.—WILLIAM C. DAVIS, Cincinnati, Ohio, assignor to WILLIAM C. DAVIS & Co., same place. Application filed August 7, 1875. Term of patent 7 years.

8,564 to 8,566, inclusive.—Carpet.—ALFRED HEALD, Philadelphia, Pa.—Cases B', C', and D'. Applications filed August 7, 1875. Term of patents 3½ years.

8,567.—Fire-Place Heater.—PHILIP ROLLHAUS, Jr., Brooklyn, N. Y. Application filed August 6, 1875. Term of patent 7 years.

8,568.—Ranges.—WILLIAM S. WHITMAN, Bangor, Me. Application filed July 24, 1875. Term of patent 7 years.

8,569.—Clock-Case Doors.—LUTHER E. JEROME, New Haven, Conn., assignor to THE NEW HAVEN CLOCK COMPANY, same place. Application filed August 9, 1875. Term of patent 7 years.

8,570.—Handles for Cans, &c.—HERMAN MILLER, New York, N. Y., assignor to THE DEVOE MANUFACTURING COMPANY, same place. Application filed August 2, 1875. Term of patent 7 years.

8,571.—Handles of Forks and Spoons.—LE ROY S. WHITE, Waterbury, Conn., assignor to BROWN & BROTHERS, same place. Application filed July 10, 1875. Term of patent 14 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date August 17, 1875.]

2,826.—Salicylic Acid.—SAMUEL W. CANFIELD, Piermont, N. Y. Application filed June 19, 1875.

"the compound word 'MILK-SALICYLIC.'"

2,827.—Medicine.—JOHN A. CRAIG, Philadelphia, Pa. Application filed June 19, 1875.

"'GOLDEN TONIC.'"

2,828.—Medicine.—WM. B. DOUGLASS & Co., Washington, D. C. (Re-registration.) Application filed June 20, 1872.

"a map or topographical outline of Lake Superior, with the words 'Lake Superior' arranged above the figure, and the word 'Vis' beneath it."

2,829.—Flour.—WILLIAM M. GALT, Washington, D. C. (Re-registration.) Application filed July 28, 1871.

"words 'GOLDEN HILL.'"

2,830.—Spectacles and Spectacle-Frames.—ANDREW L. SMITH, Geneva, N. Y. Application filed December 22, 1874.

"the letter 'C' and the words 'Crystal Spectacles,' arranged in an ornamental border."

2,831.—Shirts.—JOSEPH WHEELOCK, Jr., Troy, N. Y. Application filed March 2, 1875.

"figure of a heart."

2,832.—Beverages.—EDWARD J. WILLIAMSON, St. Louis, Mo. (Re-registration.) Application filed June 6, 1871.

"word 'Melaroma.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date August 17, 1875.]

302.—Title: "**Bonham's Recipes.**"—J. S. BONHAM, Jacksborough, Tenn. Application filed July 16, 1875.

303.—Title: "**Dr. Heilen's Healing Oil.**"—F. HOLLEN, Wilsonburg, Ill. Application filed June 10, 1875.

304.—Title: "**Kinder Supper Extract.**"—SIVARTH & SCHLEUSSNER, Brooklyn, N. Y. Application filed August 12, 1875.

305.—Title: "**Business Envelope.**"—JAMES W. TURNER, Boston, Mass. Application filed May 17, 1875.

306.—Title: "**Mrs. Reader's Candy.**"—JOSEPH WHITE, Lancaster, Pa. Application filed August 2, 1875.

BOUND VOLUMES OF PATENTS.

The bound volumes of patents, containing the specifications and drawings of patents in full from May 30, 1871, to within a few months of date, may be consulted at the following places:

Astor Library, New York city.
American Society Civil Engineers, New York city.
Bronson Library, Waterbury, Ct.
Court of Appeals, Syracuse, N. Y.
Cooper Union Library, New York city.
Cornell University, Ithaca, N. Y.
City Library Association, Springfield, Mass.
Congressional Library, Capitol.

And at the United States District Courts of—

Alexandria, Va.	Erie, Pa.	New Haven, Ct.
Atlanta, Ga.	Fort Smith, Ark.	New Albany, Ind.
Brooklyn, N. Y.	Grand Rapids, Mich.	New Orleans, La.
Buffalo, N. Y.	Huntsville, Ala.	Ottumwa, Iowa.
Baltimore, Md.	Jacksonville, Fla.	Omaha, Neb.
Boston, Mass.	Key West, Fla.	Pittsburg, Pa.
Burlington, Vt.	Leavenworth, Kan.	Portland, Me.
Cincinnati, Ohio.	Louisville, Ky.	Portland, Oregon.
Cleveland, Ohio.	Lynchburg, Va.	Philadelphia, Pa.
Chicago, Ill.	Mobile, Ala.	Parkersburg, W. Va.
Charleston, S. C.	Milwaukee, Wis.	St. Louis, Mo.
Detroit, Mich.	New York city.	San Francisco, Cal.
		Wilmington, Del.

At the—

Davenport, N., Law Library, Troy, N. Y.
Engineers, Chief of, Washington, D. C.
Free Public Library, Worcester, Mass.
Free Public Library, Boston, Mass.
Franklin Institute Library, Philadelphia, Pa.
Free Public Library, New Bedford, Mass.
Grosvenor Library, Buffalo, N. Y.
Illinois Industrial University, Champaign, Ill.
Mercantile Library, New York city.
Mercantile Library, Galveston, Texas.
Mechanics' Institute, San Francisco, Cal.
Mercantile Library, Philadelphia, Pa.
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Howard, R. L. and G. F., assignee	166,722, 166,730
Hussey, M. L. M., Compound telegraph key	166,876
Hutchinson, J. W., Shirt	166,777
Hynson, J. H., Sugar cooling and draining apparatus	166,778
Illingworth, J., Ingot mold	166,700
Ingersoll, E. C., assignee	167,822
Ives, G. L., Grain drill teeth	166,779
Jeffrey, H., Vehicle spring	166,780
Jerome, W. R., assignee	166,841
Johnson, J., Spring bed	166,701
Johnson and Campbell	166,622
Jones, B. C., assignee	166,725
Kahn, L., Stem winding and setting device for watches	166,781
Keith, H. L., assignee	166,779
Keller, N. J., Sand and gravel separator, (reissue)	6,598
Kellogg, A. N., and J. J. Shock, Stereotype plate holder	166,702
Kellogg, H. C., assignee	166,808
Kemp, T. O., Boiler cleaner	166,782
Kempshall, E., Harness snap	166,783
Kendall, J. J., Shingle machine	166,784
Kernochan, R. L., assignee	166,740
Killinger & Co., assignees	166,899
Kineman and Peirce	166,718
Kittredge, A. O., and W. H., and W. J. Clark, Mallet for smoothing sheet metal	166,703
Kittredge Cornice and Ornament Company, assignee	166,703
Klinkermann, H., Counter balancing millstone	166,785
Knecht, A. and M., Pump	166,786
Kosloff, S. A., Electric light	166,877
Kratzsch, W., Milling machine	166,704
Kratzsch, W., Gear cutting attachment	166,705
Kratzsch, W., Tool holding attachment for metal lathes	166,787
Labbé, M. T., Dental cement	166,878
Lannan, W., Car coupling	166,879
Leavitt, E. D., Jr., Steam engine	166,706
Lee, J., Hub boring machine	166,788
Leiner, M., Brush	166,789
Lenoir, J. J. E., Producing amalgamated silvering for mirrors	166,790
Levin, G. W., Automatic dental plugger	166,709
Levin, G. W., Automatic dental plugger	166,710
Levy and White	166,910
Lewis and Ferris	166,866
Lindsay, J. R., Metal punching machine	166,707
Lipe, C. E., Horse hay rake	166,708
Looser, L., Buckle	166,880
Long, J. S., Shot charger for shot pouches	166,791
Lucas, C. E., Sleeping car	166,792
Mallory, Wheeler & Co., assignees	166,838
Martin, J. T., Ice breaker	166,793
Mason, R. assignee, (reissue)	6,594, 6,595
Mattison, S. A., assignee	166,689
McClain, E. C., Ironing table	166,881
McGill, W. C., Fare box	166,794
McKay, G., H. P. Fairfield, and C. W. Glidden, Machine for attaching and trimming heels	166,795
McMillin and Creekmore	166,751
Megill, J., Scraper	166,882
Merriman, F. E., Machine for splitting or dressing whalebone	166,711
Middleton, H., Telegraph transmitter	166,712
Miller, A. S., Ladder	166,883
Miller, D. J., Calendar	166,796
Mix, E. M. and J. E., Adjustable face plate for locks	166,797
Moran, T., Shade holder	166,884
Moses, W. S., Knock down bedstead	166,798
Mudgett, J. H., Washing machine	166,714
Mulholland, H., assignee	166,821
Murdock, J., Casting pulleys	166,799
Murfey, E. D., Bearing surface for spindles	166,885
Murfey, E. D., Preparation for bearing surfaces for spindles	166,886
Negley, E. C. and R. H., and J. T. Cunningham, Apparatus for the manufacture of ice	166,713
Newcomer, E. S., Letter box	166,800
Nichols, A. T., Sawing machine	166,887
Noe, C. L., Traverse motion	166,801
Nugent, R. C., Machine for turning flanges on boiler heads	166,715
Nugent, R. C., Screw cutting die	166,716
Oliver, E., Animal trap	166,802
Owen, G. R., Car coupling	166,717
Oyston, C., Hose nozzle	166,803
Packard, N. R., Blank for boot and shoe box ties	166,804
Page, C. D., assignee	166,696
Palmer, D. and M., and C. E. Briggs, Washing machine	166,888
Patterson, E. G., assignee	166,740
Pearson, W., Machine for sewing hosiery seams	166,805
Pease, C. E., assignee	166,704, 166,705, 166,716, 166,787
Peirce, J. M., and F. M. Kinsman, Cylinder saw	166,718
Percy, J. H., assignee	166,897
Petry, J., Sofa bedstead	166,806
Phelps, W. J., assignee	166,783
Pierce, C. W., Rotary steam boiler	166,807
Porter, C. B., Stand for water coolers	166,889
Pratt, S. M., Sash holder	166,808
Pride, O. S., Ironing board	166,809
Querner, A., and T. Burke, Skylight	166,890
Ralph, M., Feed rack	166,719
Ralston, J. C., Soap slabbing machine	166,891
Randel, W., Sewing machine button hole attachment	166,810
Rathbun, M. F., Lamp stove	166,892
Redheffer, W., Churn	166,893
Reilly, J. F., Warming apparatus	166,894
Rice, H. F., Implement for destroying chinch bugs	166,720
Richardson, W. C. B., Rotary spader	166,721
Riley, A. T., Car brake	166,811
Ritchie, E. S., Mariner's compass	166,812
Rorick, J. C., Apparatus for tempering butter	166,813
Russell, W. G., executor, (reissue)	6,509
Salisbury, L. B., Steam brake for locomotives	166,895
Samuel, P., Wrench	166,814
Schadewald, H., Fabric for coverlets	166,896
Scheermesser, C. H., Stone crushing machine	166,897
Schirck, A., Lubricating axle for vehicles	166,898
Schlenker, E., Internal gearing of elevators	166,722
Schlenker, E., Hoisting machine or elevator	166,730
Schoenbein, C., Hat and coat hook	166,815
Schrock, A., Car wheel	166,899
Schuster, G. A., and J. L. Driscoll, Paint brush	166,723
Schwarz, A., Cap	166,900
Scott, E. W., Whip socket clasp	166,724
Scott, J., Jr., and A. S., Welding compound	166,816
Sears, J., Variety molding machine	166,817
Shamburg, G., assignee	166,740
Shaw, A., Claw bar	166,818
Shaw, G. W., assignee	166,842
Shedd, J., Shutter fastener	166,819
Shine, P. H., Chimney top and ventilator	166,725
Shock and Kellogg	166,702
Simmons, Elliott, and Fellows	166,756
Simmons and Glidden	166,765
Smith, I. O., Furnace for burning edgings, sawdust, &c., (reissue)	6,600
Smith, J. M., Saw gumming machine	166,727
Snow, W. B., Steam radiator	166,901
Snowden, A. C., Horseshoe	166,820
Spicer, S., Hame fastener	166,902
Spickler, W. R., assignee	166,715
Stacy, G., Manufacture of cut nails	166,821
Staub, J. P., Child's carriage	166,903
Stebbins, S. J., assignee	166,725
Stedman, E. P., Shifting rail for carriages	166,728
Stedwell, G. H., assignee	166,697
Stewart, A. W., Folding rocking chair	166,726
Stileman, R. T. H., Steam fire engine hydrant	166,904
Stohler, H. K. and T. F., Eaves trough hanger	166,905
Stoops, N. D., assignee, (reissue)	6,596
Strong, S., Brick pavement	166,822
Sullivan, N., Medical composition	166,823
Swartley, J. S., assignee	166,709, 166,710
Sykes, C. R., Inhaler	166,729
Taggart, S., Auger for flour packers	166,906
Teal, C. A., Hair picker	166,824
Tease, A., Harness saddle tree	166,907
Thayer, O. S., Washing machine	166,731
Thorp, A. H., Heating and ventilating device	166,825
Torley, W. E., Grain separator	166,826
Turpie, J., Loom for weaving hair cloth	166,732
Vail, O. E., Folding rocking chair	166,733
Van de Mark, C., Combined body weight and hand power	166,827
Veilleux, A., Bench vise	166,828
Wadsworth, W. S., Plow	166,734
Wagner, D. A., Bronzing machine	166,829
Walker, P., assignee, (reissue)	6,600
Walton, J. E., assignee	166,853
Walworth, C. C., Connecting steam, gas, or water pipes	166,735
Warder, W., assignee, (reissue)	6,594, 6,595
Watson, J., assignee	166,740
Wattles, J. W., Ring for spinning frames	166,909
Watton, H., Animal poke	166,908
Weaver, A. S., Sharpening machine	166,830
Westcott, N. W., Weft thread knitting machine	166,831
White, H., and M. Levy, Exhaust nozzle	166,910
White, S. S., assignee	166,843
Whiting, W., Electro-magnetic house alarm, (reissue)	6,599
Whittingham, C., assignee	166,759
Wilber, F. P., assignee	166,893
Willcox, R. F., Sewing machine treadle, (reissue)	6,602
Williams, S., Corn sheller	166,832
Wilson, E., Faucet	166,833
Wilson, W., Sewing machine corder, (reissue)	6,603
Winslow, E. F. and G. S., assignees	166,895
Wirsching, A., Printing telegraph	166,911
Woodruff, J. E., assignee	166,909
Woolfolk, L. B., Water cooler	166,736
Worster, A., Locking latch	166,834
Wynn, A. S., Loom stopping mechanism	166,737
Yingst and Hall	166,771
Young, A., Vernier	166,912

TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED AUG. 17, 1875.

166,677. BALE-TIES. James M. Albertson, New London, Conn. [Filed Dec. 10, 1874.]



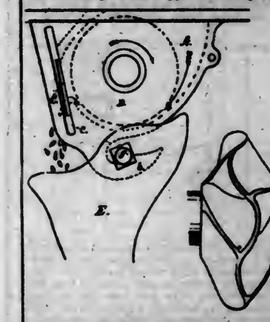
1. A bale-tie formed by a single piece or blank of metal, having top and bottom parts a b, and provided with two similar grooves extending entirely around it, for the reception of the ends of the bands, these grooves being at an angle with each other, and crossing upon opposite sides of the tie, substantially as herein shown and described.

2. A bale-tie having grooves which cross or intersect each other at a common point, C, said grooves being of a greater depth at the point C than at any other portion of the same, so as to better contain the two wires crossing each other at this point, substantially as described.

3. A bale-tie formed with two intersecting grooves, and provided with a spur, D, substantially as and for the purpose specified.

166,678. FORCE-FEED APPARATUS FOR GRAIN-DRILLS. Wales Aldrich, Dayton, Ohio, assignor of one-half his right to the Dayton Manufacturing Company, same place. [Filed June 8, 1875.]

Brief.—Within the hopper is journaled a seed-wheel, the periphery of which forms a zigzag line, and the irregular-shaped recesses diminish in capacity from the circumference to the center. On the lower part of the hopper is formed a hook for the reception of a spout, clamped together by a bolt, which also serves as a pivot-like support for the spout.

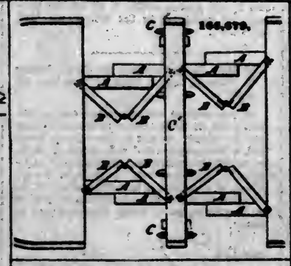


1. The herein-described feed-wheel, whose periphery forms a zigzag curved line, and whose sides are irregularly-shaped inclining recesses, diminishing in capacity from the circumference to the center, substantially as set forth.

2. The chamber A, constructed as described, and provided with the hook b and guide-plate c.

3. The receiving-spout B, clamped by the bolt or rivet g, in combination with the hook b of the chamber A, for forming the connection between the two parts, in the manner and for the purpose specified.

166,679. ROTARY-PUMP. John W. Bent, Chicago, Ill. [Filed June 7, 1875.]



The combination, in connection with a table of the sliding extensions A A, folding rails B B, and central support C C, the parts A A being supported by the central support, and the parts B B by the parts A A, substantially as specified, for the purposes set forth.

166,680. SEWER. Oliver Bond, Milwaukee, Wis. [Filed Feb. 8, 1875.]

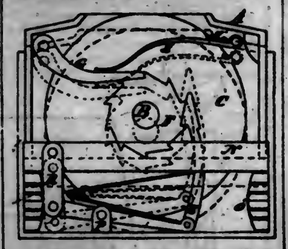
Brief.—The apparatus is made dust-tight around the journals and cover.



The box A, provided with removable caps K and rubber cap I, in combination with the removable cam B, provided with stove C, shaft G, rigid bearers F, and dust-tight cover D, constructed and arranged as shown and described.

166,681. COMBINATION-NUMBERING MACHINES. Thos. S. Bowman, St. Louis, Mo. [Filed Oct. 24, 1874.]

Brief.—An outer case has a movable ledge resting on springs, which support, at a little above type-height, an inner case provided with consecutive-numbering wheels. The ledge is connected to a pivoted lever carrying an upright pawl, which, at each sinking of the inner case under the impression, engages with a ratchet on the unit-wheel. A pivoted pawl on the unit-wheel, on the completion of each revolution, engages with a ratchet on the adjoining wheel, and moves it one notch, the succeeding wheels being similarly actuated. The part bearing the 0 slides in a slot in the wheel, and rides on a fixed cam, so that it may be cleared from the impression till the revolution of its wheel raises it.



1. The combination of the outer case M, the ledge N, springs O O', and the inner case A, containing a series of numeral-bearing wheels, substantially as described.

2. The wheel O', ratchet P, provided with the offset e, the pawl d, and dog H, provided with the point I, combined and operating substantially as described.

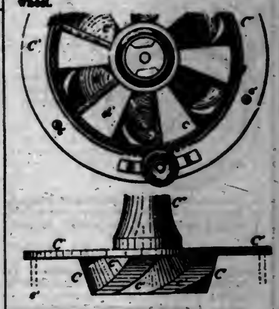
3. The combination of the numeral-wheel O', post J, stud K, cam L, and shaft B, substantially as described.

4. The combination of the outer case M, ledge N, springs O O', hook S, spring U, arm Q, post P, inner case A, wheel C, and its ratchet, substantially as described and shown.

5. The combination of the outer case M, ledge N, springs O O', hooks S, spring U, arm Q, post P, case A, wheel C, and its ratchet, dog H, pawl D, wheel O', and its ratchet, substantially as described.

166,682. WATER-WHEELS. H. W. Campbell and Joseph H. Johnson, Paducah, Ky. [Filed July 8, 1874.]

Brief.—The combination in a turbine water-wheel of a stationary hub, having inclined spiral chutes, and buckets constructed to have a greater area between them at inner ends than at the issues at the periphery of the wheel.

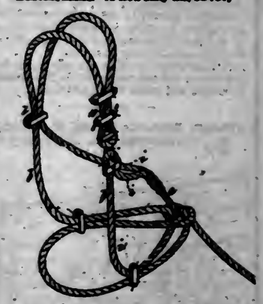


1. In a turbine water-wheel, the stationary center core C, projecting downward from plate O', and having the inclined spiral chutes c', as and for the purposes described.

2. The combination, in a turbine water-wheel, of the stationary core C, having inclined spiral chutes c', and the wheel A, having the buckets d, constructed to have a greater area between them at their inner ends than at the issues at the periphery of the wheel, as and for the purposes described.

3. The inclined discharge-openings f f through the bottom of wheel A, as and for the purposes described.

166,683. BOOT HEELING. Lorin C. Chase, Boston, Mass. [Filed May 22, 1875.]



1. A lifter made of one continuous piece of wire, as arranged and connected at various points so as to form all of the parts common to a five-ring lifter, substantially as described.

2. The combination of looped throat-latch and cheek-piece i h, looped head-piece e d, and connecting-hook n, substantially as and for the purposes set forth.

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166,084. STEEL GLASS-CUTTERS. Henry H. Clark, Washington, D. C. [Filed June 30, 1875.]

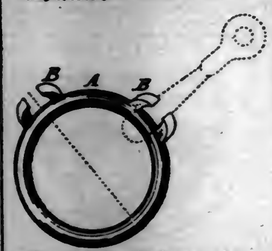


1. The guide-roller B, made of any suitable material, and inserted near the end of the cutter-frame, and above the steel cutter, as herein described, and for the purposes set forth.

2. The flanged conical wheel-cutter A, operating as herein described, and for the purposes set forth.

3. The combination of the guide-roller B and flanged conical wheel-cutter A with the handle C, as herein described, and for the purposes set forth.

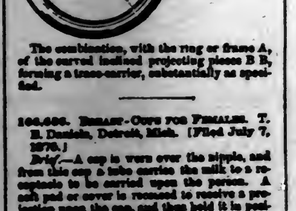
166,085. TRACE-CARRIERS FOR HARNESS. Edwd. A. Cooper, Lancaster, N. Y. [Filed July 8, 1875.]



The combination, with the ring or frame A, of the curved inclined projecting pieces B B, forming a trace-carrier, substantially as specified.

166,086. BREAST-CUPS FOR FEMALES. T. B. Daniels, Detroit, Mich. [Filed July 7, 1875.]

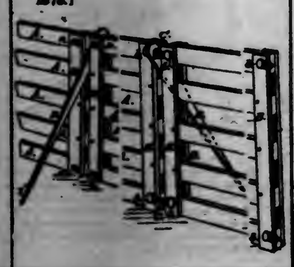
Brief.—A cup is worn over the nipple, and from this cup a tube carries the milk to a receptacle to be carried upon the person. A soft pad or cover is recessed to receive a projection upon the cup, and then hold it in position.



1. A device to be worn upon the person under the clothing for the purpose of receiving and retaining the fluid involuntarily discharged from the breast, consisting of a flattened nipple-cup, A, and the receptacle B, connected thereto by the small flexible tube, of suitable length to extend from the breast to the pocket, or other suitable part of the clothing, substantially as shown.

2. In combination with the cup A, having the tube a, the soft pad or shield B, recessed to receive and retain the cup, as shown.

166,087. PORTABLE FENCES. T. L. Davidson, Worth County, Mo. [Filed June 18, 1875.]

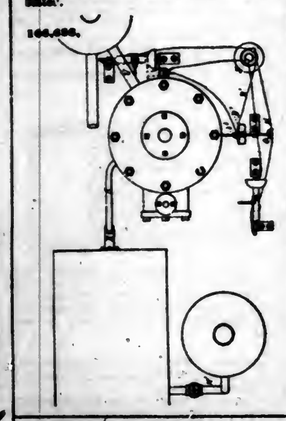


A portable fence consisting of a series of panels formed of bars A, united by uprights B, held together by the bolts b and nuts n, said panels being united by the chains C, attached on alternate sides of the panels, as shown, and supported at top by the props D, projecting on the side opposite to that on which the chain is attached, and fixed at bottom by the ground-hooks E, all for the purposes set forth, and in the manner specified and shown.

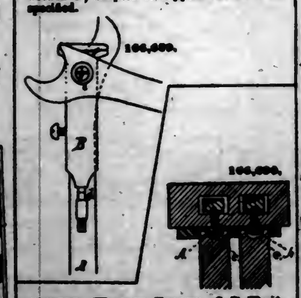
166,088. RECIPROCATING ENGINES. George B. Dixwell, Boston, Mass. [Filed May 22, 1876.]

In combination with the steam-engine cylinder, and its hot-air jacket or means of heating the cylinder, as and for the purpose specified, a thermometer and the electrical alarm apparatus or apparatuses, substantially as described, applied thereto, to indicate the extremes of temperature to be maintained in the cylinder to prevent the formation of mist in said cylinder, as or under circumstances as stated.

166,089.

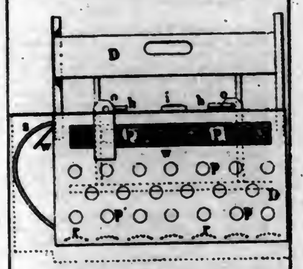


166,090.



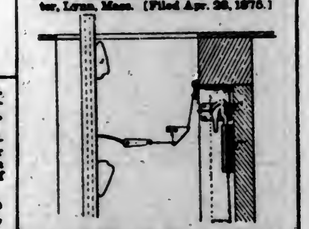
166,091. BOILER WASHING-MACHINES. G. B. Everson and L. L. Cramer, Macedon, N. Y. [Filed Apr. 17, 1874.]

Brief.—The attachment is intended to be placed in a wash-boiler, and has perforated sides, and springs at the ends, and a hand-dasher that moves in grooves at the ends within the attachment.



The herein-described wash-boiler attachment, having concave bottom *b*, convex protector *d* open at each end, and provided with triangular-shaped openings *s*, springs *s*, wings *w*, and sides *o o*, provided with hooks *h h*, dasher D, operating in vertical grooves *g*, apertures P and P', when the several parts are combined to operate substantially as and for the purpose set forth.

166,092. HATCHWAY-GUARDS. John C. Foster, Lynn, Mass. [Filed Apr. 26, 1875.]



In combination with brackets attached to the frame of an elevator, a series of levers, substantially such as are herein described, a spring for returning said levers to their original positions after they have been operated upon by the brackets, a spring, D', for holding an automatically-falling bar in position, and the bar A, the parts being connected and arranged to operate substantially as and for the purpose set forth.

166,093. KING-BOLTS FOR VEHICLES. Elisha Freeman, Mass. N. Y. [Filed May 27, 1875.]



The slip *f*, about the front axle of a wagon, having a double-jointed attachment to it, the upper part being a bolt, *a*, from the bolster A, with its ball-head *c* in a cavity in the upper part of the slip, and the lower part of the joint being made by the projection *l* on the slip-bar *g*, substantially as set forth.

166,094. WAGON-JACKS. Chester T. Drake, Evanston, Ill., assignor, by mesne assignment, to Seth A. Mathews, Washington, D. C. [Filed Aug. 7, 1875.]

Brief.—A wrench-receptacle, with tool therein, has a lug on each side passing into a lever as fulcrums thereon. The head of the wrench forms the wagon-bearing. The levers are of different lengths.

1. In combination with the hollow receptacle B, provided with the lugs *a a*, the levers A A', provided with the sliding catches *d d*, all operating as specified.

2. In combination with the hollow receptacle B and levers A A', arranged as described, the wrench D, adapted to support the axle, as specified.

166,095. WINDOW-FRAMES. J. F. Hoyt, Dayton, Ohio. [Filed Jan. 30, 1875.]

Brief.—A metallic ornamental strip in a window-frame, to conceal the sash-cords and reduce the friction of the sash.

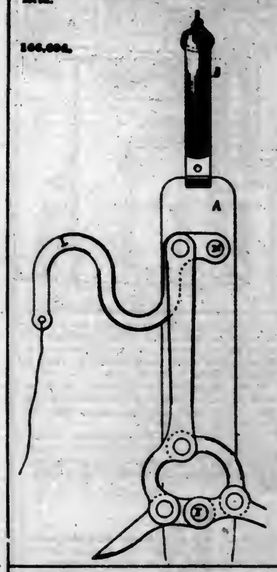
In a window-frame, the combination of the strip A, plate C, drop *h*, rubber *g*, and grooved sashes, substantially as described, and for the purpose specified.

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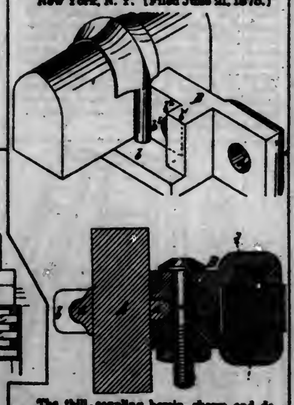
166,096. HORSE HAY-FORKS. J. P. Frizzi, Chillicothe, Mo. [Filed Dec. 6, 1874.]

The serpentine lever I, arranged to enter the eyes A and ring B, substantially as set forth.

166,096.



166,097. TRILL-COUPLINGS. Samuel A. Hathaway, Norwalk, Conn., assignor of one-half his right to George H. Stedwell, New York, N. Y. [Filed June 21, 1875.]



The trill-coupling herein shown and described, consisting of the stationary shoe-plate B attached to the axle-tree, and formed with shoulder *b'*, jaw *b''*, and socket *d*, and the removable shoe-plate C, provided with shoulder *c*, jaw *c'*, socket *d'*, said shoe-plates being secured together by the bolt J, in combination with the thill-strap or eye-plate G and pivot E, arranged and operating substantially in the manner and for the purpose herein set forth.

166,098. DUMPLAR-ALARMS. Heinz Hendl, Rochester, N. Y., assignor of one-half his right to Clark D. Page, same place. [Filed Oct. 9, 1874.]

1. The combination, with the hammer D and rod G, connected with the spindle of the door-knob, of the sliding pawl E pivoted to the end of the rod, and provided with the hook *d* and cam *f* for alternately engaging with and disengaging from the ring of the hammer, as herein shown and described.

2. The combination, with the knob-spindle K, of the crank-arm I and rod G, the latter connecting with the hammer-lever, and having a pin, *i*, and stop *o*, the whole constructed to operate, substantially as described, whereby the knob sounds the alarm in the initial movement, but is stopped before withdrawing the latch-bolt from its keeper, as set forth.

166,099. ANTAGONISTS FOR SHAFT ROCKING-CHAIRS. Chas. H. Hildreth, Chicago, Ill. [Filed Dec. 31, 1874.]



1. The plates A and F, attached to the sides of the rocker B and stand G, in combination with the two diverging springs C C, as and for the purpose set forth.

2. The plate A, provided with the hooks E; and the springs C, provided with the loops *i* D, in combination with the rods *h*, nuts *b'* *b''*, loops *i* and *i*, rocker B, and stand G, substantially as described and shown.

166,100. PRINTING-MACHINES. Nicholas B. Hooper, Brooklyn, N. Y., and T. S. Crane, Newark, N. J. [Filed June 2, 1875.]

Brief.—The belts, between which the hat-body is placed, have a reciprocating motion in opposite directions, imparted to them by means of a slide, receiving motion from a rotating crank-shaft, and straps connected to opposite ends of said slide, passing beneath and around in an opposite direction to each other, and secured to the elongated journal of the roll to which the belts are attached.

The crank G, connection E, lever D, and tightening apparatus *g g* and *f f*, arranged and operated under a table, B, in combination with the tablet C and straps *d d*, working above the table, and connected with the reciprocating mechanism over the rolls *e e*, in the manner and for the purpose described.

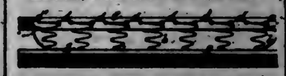
166,100. MOLDS FOR INGOTS. John Illingworth, Newark, N. J. [Filed Apr. 12, 1875.]

Brief.—Two covers are provided, one fast-hand and the other removed. The mold is first filled with the fast-hand cover applied; the removed cover is then substituted, and other metal poured in to fill the space.



In a mold for casting ingots of combined iron and steel, the covers A' and A'', as and for the purpose specified and shown.

166,101. SPRING-BEDS. John Johnson, Hartford, Conn. [Filed Dec. 7, 1874.]

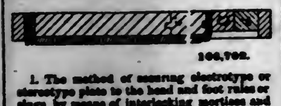


In a bed-bottom constructed as described, the connecting-links *f*, arranged between the intermediate springs of the outer rows and the surrounding frame *i*, and attached to the lower ends of the springs and to the frame, in the manner and for the purpose set forth.

166,102. SEPARATOR-PLATE HOLDERS. Ansel M. Kellogg and James J. Babcock, Chicago, Ill. [Filed Nov. 11, 1874.]

Brief.—The rods have square-shouldered grooves, to interlock both with the plate and bed-block at top and bottom.

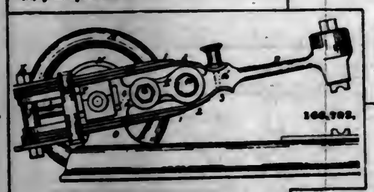
HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO BOSTON



166,702.

1. The method of securing electrotype or stereotype plate to the head and foot rules or slugs by means of interlocking mortises and tenons having horizontal surfaces, substantially as set forth.

2. The rule or slug, constructed to interlock with the electrotype or stereotype plate, and to interact with the bed-block, in combination with such plate and bed-block, substantially as specified.



166,702.

166,703. MALLETS FOR SMOOTHING SHEET METAL. Ansen C. Eldredge, William H. Clark, and William J. Clark, Salem, Ohio, assignors to Eldredge Cornice and Ornament Company, same place. [Filed June 7, 1875.]

Brief.—Improvements on Patent No. 133,663, to Clark, Eldredge, and Clark, August 4, 1874. The mallet-handle is jointed to the vibratory beam, and is embraced by springs fixed upon said beam.

1. The handle D, jointed to the vibratory beam E, in combination with the springs G', substantially in the manner as described, and for the purpose set forth.

2. The yoke H, bar I, sleeve J, keys I I, and bolt K, in combination with the springs G and vibrating beam E, in the manner substantially as described, and for the purpose specified.

3. The oil-cup Q and oil-hole *o'* in the handle D, in combination with the springs G' and said handle D, whereby both upper and lower springs are oiled at once, as herein set forth.

166,704. MILLING-MACHINE. William Krutzsch, Dayton, Ohio, assignor to O. W. Hogien and Charles H. Pease, same place. [Filed Apr. 10, 1875.]

Brief.—A vertical shaft, carrying a worm-wheel at its upper end, is connected, by bevel-gearing, with a horizontal shaft, which connects by the same means with a short shaft situated under the cutter, for traversing the T-slotted slide across the table. All of the shafts carry spur-wheels, which can be made to connect with those upon the cutter-shafts by conveniently-placed spur-gears. A right- and left worm upon a sliding shaft is to traverse into gear with the worm-wheel when it is desirable to have the slides operated by the machine. For convenience in taking up backlash, the half of the nut carried by the T-slotted slide, in which the operating-screw works, is made in longitudinal sections, which can be adjusted by set-screws.

1. The elastic collar J, slotted longitudinally upon its outer surface, and operated longitudinally, as described, in combination with the nut *y* and spindle K, substantially as set forth.

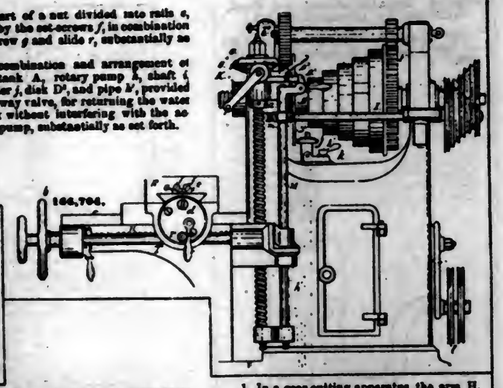
2. The shaft I, keyed, but arranged to slide in the shaft carrying in the pivoted bearing F, and provided with the right and left worm, for imparting motion to the cutter-shaft H, substantially as described, and for the purpose specified.

3. The centrically-pivoted link *c*, provided with the block *b*, in connection with the nut *d*, and the right and left worms upon the pivoted shaft I, substantially as set forth.

4. The combination and arrangement of the pivoted shafts O and M, T and U, *d* and *f*, each pair connected by the centrically-pivoted spur-wheels *g*, arranged as described, and also by the sliding bevel-gearing *i* and *s*, whereby the operator is enabled to set any or all of the shafts in motion from any one or all of the three cloud-points mentioned.

5. The part *d* of a nut divided into rails *c*, adjustable by the set-screws *f*, in combination with the screw *g* and slide *r*, substantially as set forth.

6. The combination and arrangement of the water-tank A, rotary pump B, shaft *i*, friction-roller *j*, disk D', and pipe *h'*, provided with a two-way valve, for returning the water to the tank without interfering with the action of the pump, substantially as set forth.



166,704.

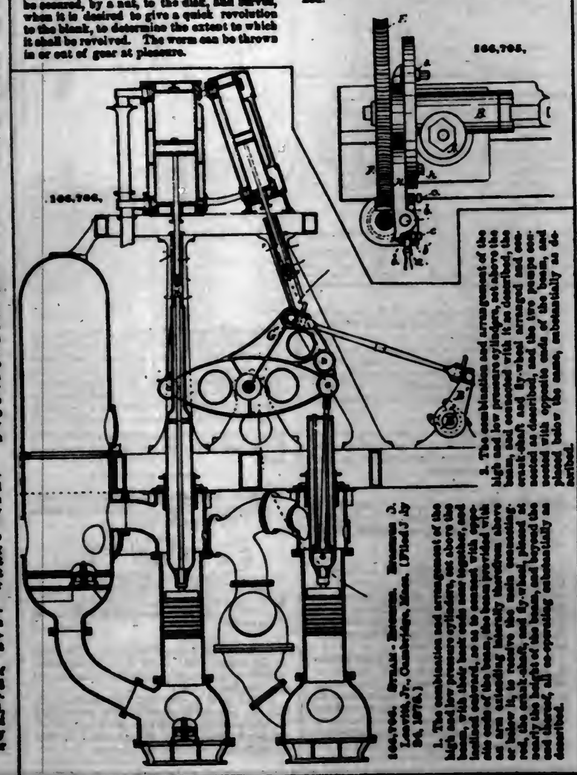
166,705. GEAR-CUTTING ATTACHMENTS. Wm. Krutzsch, Dayton, Ohio, assignor to Geo. W. Hogien and Chas. H. Pease, same place. [Filed Apr. 15, 1875.]

Brief.—The worm for revolving the worm-wheel is journaled in a box, which is pivoted to an arm clasped loosely upon the spindle. The crank which operates the worm is provided with a pointer, which indicates, by means of a scale upon an index-plate, the extent to which the checked blank shall be revolved. A bolt, which points toward an index upon the periphery of a slotted disk, can be secured, by a nut, to the disk, and serves, when it is desired to give a quick revolution to the blank, to determine the extent to which it shall be revolved. The worm can be thrown in or out of gear at pleasure.

1. In a gear-cutting apparatus, the arm H, arranged as described, to which is pivoted the worm and its bearings, in combination with a fixed slotted disk, G, and indicating-bolt *e*, substantially as herein set forth.

2. The adjustable pivoted plate b, provided with the set-screw *c*, in combination with the arm H and latch *a*, in the manner and for the purpose specified.

3. The combination of the standard A, bearing E, disk G, spindle T, arm H, worm-wheel F, and worm M, the whole arranged substantially as described, and for the purpose specified.



166,705.

166,706.

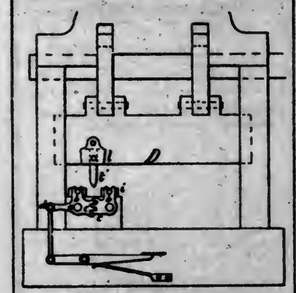
166,706. SPRING-BEDSTEAD. Thomas J. Lewis, Jr., Owensville, Ohio. [Filed July 24, 1875.]

1. The combination and arrangement of the bed, with low pressure cylinders, as above set forth, with tube connecting the cylinders, and bellows-chamber, as and for the purpose specified.

2. The combination and arrangement of the bed, with low pressure cylinders, as above set forth, with tube connecting the cylinders, and the steam-chamber and fly-wheel arranged and operated as described, and the two pumps connected with opposite ends of the bed, substantially as described.

166,707. METAL-PUNCHING MACHINE. Jas. B. Lindsay, Newark, N. J. [Filed June 26, 1875.]

Brief.—The bar to be punched is held in position by a pair of centering-jaws. One of the punches is carried in an adjustable slide, and can, consequently, be set at any desired distance from the other.



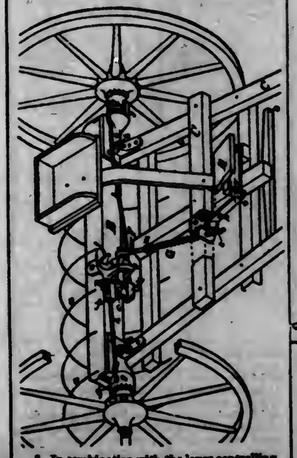
1. The self-centering clamp for holding bars, constructed with jaws *f f*, in combination with cranks or arms *b b*, gears *c c*, and treadle or lever, substantially as herein shown and described.

2. The combination, with the cross-head D, of the adjustable slide *l* and punches *i f*, substantially as herein shown and described.

3. The combination of the reciprocating cross-head, adjustable slide, punches, clamping devices, and lever, substantially as herein shown and described.

166,708. HORSE HAY-RAKER. C. B. Lipe, Syracuse, N. Y. [Filed Nov. 14, 1874.]

Brief.—Clutches on the rake-head, thrown into operation by a foot-board and pawller intermediate mechanism, engage with the supporting-wheels, whereby the teeth are lifted and the load discharged.



1. In combination with the lever connecting the movements of the clutch mechanism, the thrust-rod F, spring G, and moving rake-head E, whereby the rod and spring are adapted, by the movement of the rake-head, to retain the lever in connection with the clutch mechanism, substantially as described.

2. In combination with the connecting-lever connecting the movements of the clutch mechanism, the moving rake-head, the thrust-rod, and spring, automatic mechanism *f*, substantially as described, for releasing the thrust-rod when the rake-head is fully thrown-off, substantially as described.

2. The combination of the foot-board H, the pulling-bar *p*, the connecting-thrust-rod F, and the retaining-lever E, substantially as described.

4. The combination of the T-shaped bell-crank lever with the rods connecting the same to the clutch mechanism and the thrust-rod, the parts being relatively so arranged that the direct action of the thrust-rod is exerted upon the lever at right angles thereto, substantially as described.

5. The casting D, having the stud *e*, guard-bar *d*, segment with notches *e e'*, and arm *f*, as described.

166,709. AUTOMATIC DENTAL PLUGGER. George W. Lovis, Chicago, Ill., assignor of one-half his right to John S. Swartley, same place. [Filed Jan. 19, 1876.]

Brief.—Toggle-levers carry at their jointed upper ends a mallet, and a thumb-lever operates the levers, to throw down the mallet against the end of the tool, which is secured in a holder made up of a recessed plate, a band, and set-screw, whereby tools of different sizes are held.

1. The combination of the lever M, case A, connecting-pieces O O', the levers H, pieces J J, and mallet L, substantially as described.

2. The combination of the lever M, case A, and spring B, for restoring the mallet to position, as described.

3. The holder A, the recess-piece B, band C, with the screw D, and thumb-nut P, substantially as and for the purpose specified.

166,710. AUTOMATIC DENTAL PLUGGER. George W. Lovis, Chicago, Ill., assignor of one-half his right to John S. Swartley, same place. [Filed June 14, 1876.]

Brief.—Toggle-levers carrying a rotating mallet, with faces of different materials, are operated by forcing the plugging-tool against the filling of the tooth. A ring and spring-pin convert the plugger into an ordinary one, without the sliding motion and stroke of mallet.

1. The stock A, the tool-holder B, the cross H, the pivoted levers J J, pivoted cross I, and mallet M, as specified.

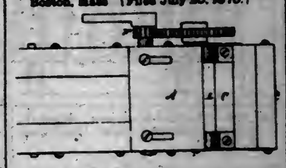
2. The pin W, ring T, tool-holder B, and stock A, substantially as described.

3. The mallet M, provided with the striking-surfaces S, of different material, and hung upon bearings, as and for the purpose described.

166,709.

166,710.

166,711. MACHINES FOR SPLITTING OR DRESSING WHALEBONE. F. H. Merriman, Boston, Mass. [Filed July 20, 1875.]



In the described machine for splitting or dressing whalebone, the combination of the gage L, the vibrator C, and the eccentric D, all being arranged as shown, and applied to the knife A and its supporting-frame B, substantially and to operate as specified.

166,712. TELEGRAPH-TRANSMITTERS. S. Middleton, Charleston, S. C. [Filed June 10, 1875.]

1. The finger-springs *a'*, in combination with the finger-keys K and K' and insulated cores *s'*, substantially as and for the purpose described.

2. The finger-keys K and K', having springs *g* applied thereto, as shown, in combination with the metallic letters V', substantially as and for the purpose described.

3. The bar Q, with its supports T and T' and adjusting-screws *x*, in combination with the metallic letters V', substantially as and for the purpose described.

166,712.

166,713. APPARATUS FOR THE MANUFACTURE OF ICE. Edward C. Negley, Robert H. Negley, and J. T. Cunningham, Pittsburg, Pa. [Filed July 15, 1875.]

Brief.—The vessel for water to be frozen has corrugated sides and bottom, to offset greater surface for contact of the air, which is the freezing agent. Outward pressure on the vessel is relieved by a hollow tube fixed on the vessel, or supported by a bridge resting on the refrigerator.

1. A vessel for the manufacture of ice, having corrugated sides and a ribbed or corrugated bottom, substantially as shown and described, and for the purposes mentioned.

2. The central tube B, concentrically as shown and described, and for the purpose mentioned.

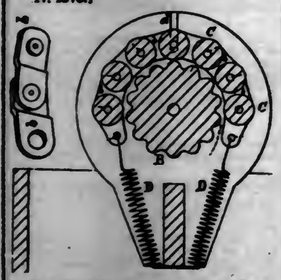
3. The combination of the parts B and feet C, or bridge F, substantially as shown and described, and for the purpose mentioned.

4. The combination of the corrugated vessel A, the central tube B, the supporting-bridge F, or the feet C, substantially as shown and described, and for the purposes mentioned.



166,713.

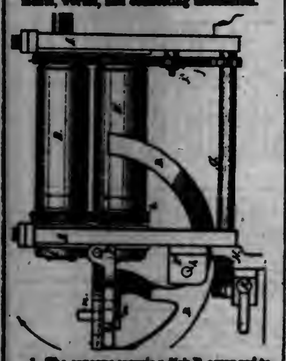
166,714. WASHING-MACHINES. Joseph E. Medgett, Canandaba, Iowa. [Filed July 17, 1875.]



In combination with the central roller B and small rollers C and springs D, the adjustable bearings b, each constructed in a separate part, and all connected together by loose joints, as described, to render each one of the small rollers separately adjustable, substantially as and for the purpose set forth.

166,715. MACHINES FOR TURNING FLANGES ON BOILER-HEADS. Richard C. Nugent, Dayton, Ohio, assignor of two-thirds his right to Wm. R. Spickler and H. H. Hendrick, same place. [Filed June 30, 1875.]

Brief.—The head is fixed upon the face-plate, with aperture on central pin, and edge to be turned up extending between the rolls. As the rolls are rotated the head upon the disk is fed up gradually by means of the segments, worms, and connecting mechanism.



1. The concave carrying-disk P, arranged to revolve upon the adjustable pivot n, in combination with the sliding-table R, and the ends of a pair of rolls, B B', substantially as and for the purposes specified.

2. The pivoted sliding-table R, provided with the adjustable bearing l, in combination with the segments D and worms E, substantially as described.

3. The segments D, in combination with the worm-shafts G, connection K, levers I, bearings F, and rolls B B', when the respective parts are arranged to operate in the manner and for the purposes specified.

4. The combination and arrangement of the rolls B B', disk P, bed-plate R, segments D, bearings F, worms E, levers I, connection K, shafts G, and connecting-gearing f f, the whole substantially as described.

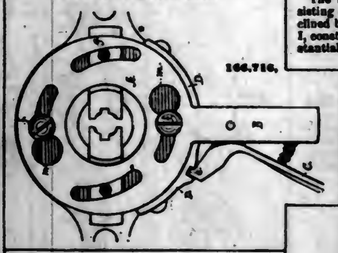
166,716. SCREW-CUTTING DIES. Richard C. Nugent, Dayton, Ohio, assignor of one-half his right to Geo. W. Hoglen and C. E. Pence, same place. [Filed Apr. 2, 1875.]

Brief.—A circularly-shaped body having opposite radial slots for the reception of the dies, which dies are provided with projections to work in the eccentric grooves in the face-plate. The body is also provided with an adjustable stop-plate, for regulating the inward throw of the dies through the medium of the handle of the face-plate and its attached spring-latch.

1. The face-plate A, provided with the circumferential slots and circular openings *m*, handle B, and spring-lever C, substantially as described.

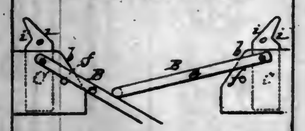
2. The adjustable plate D, provided with a transverse slot, in combination with the body E, spring-lever C, handle B, and face-plate A, substantially as described, and for the purpose specified.

3. The improved screw-cutting device, constructed substantially as set forth, and consisting of the body E, screws f, face-plate A, handle B, spring-lever C, and adjustable plate D, as and for the purpose specified.



166,716.

166,717. CAR-COUPLINGS. Geo. R. Owen, Cortland, N. Y. [Filed May 1, 1875.]



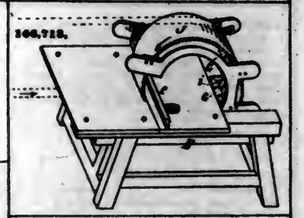
1. The combination of a vertically-vibrating coupling-ball, B, adapted to be held in an inactive position by means of stop f, the draw-bar A having beveled front edge *i* and coupling-pin O, having inclined front edge *i*, for forming a continuous backward inclination or summit, whereby ball B of the other draw-bar is directed upward to an engagement with pin O, substantially as specified.

2. The coupling-pin O, having slot *d* and projecting head *c*, with inclined edge *i* and central edge f', adapted for use substantially as specified.

166,718. OUTLINE-SAWS. Jos. M. Pabco and Frank M. Kinnman, Fitchburg, Mass. [Filed May 12, 1875.]

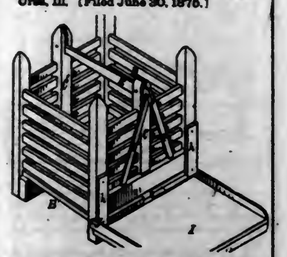
Brief.—The saw is provided with an internal groove, which receives a projecting rib upon the supporting-rails, thus enabling them to guide the saw.

The drum-saw J, provided with the interior groove K, in combination with the rollers G G, provided with the lenses *i*, fitting in the groove K, and the rollers I, journaled on the inner face of the channel A, all constructed to operate substantially as and for the purpose set forth.



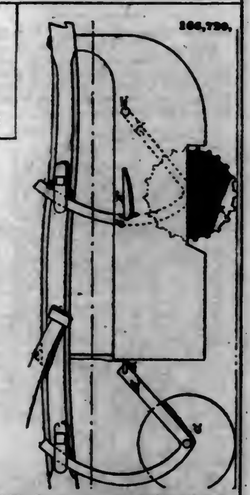
166,718.

166,719. FEED-RACKS. Matthias Ralph Urea, Ill. [Filed June 30, 1875.]



The improved feeding-crib described, consisting of the body A, provided with the inclined bottom B, gate F G, and hinged table I, constructed and arranged to operate substantially as and for the purpose specified.

166,720.

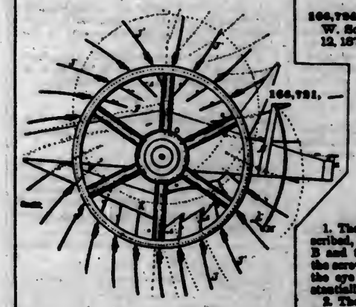


166,720. IMPLEMENTS FOR DISBUDDING CHEESE-HOOPS. H. F. Hess, Allen County, Kans. [Filed Mar. 6, 1875.]

Brief.—A bent-like diamond dag is provided at suitable point with an adjustable toothed wheel, which crushes the bugs into the bottom of the furrow. At the stern is another adjustable wheel, with a concave face or bead, which covers the insects crushed down by the toothed wheel. The machine is drawn repeatedly around the field to be protected.

A machine or implement so hereinbefore described, consisting of the body A, wings F F, and beam K, in combination with the toothed wheel H and covering-wheel G, adjusted and arranged as specified, and operated in herein-before described, for the purpose of effecting the destruction of the insect known as the chinch-bug.

HELIOTYPE. RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON



166,721.

166,721. ROTARY SPADERS. William C. B. Richardson, Cleveland, Ohio. [Filed Jan. 11, 1875.]

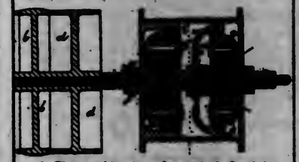
Brief.—A rotary spader with hinged teeth provided with a shaker and scraper.

1. In combination with the hinged spades J J', the scraper, consisting of the pivoted frame M and bent b', arranged to operate substantially as described, and for the purpose specified.

2. The shaker K, as arranged in relation to, and in combination with, the spades J', as and for the purpose specified.

166,722. INTERNAL GEARINGS OF ELEVATORS. Erhard Schlenker, Buffalo, N. Y., assignor of one-half his right to Burke L. Howard and Gilbert F. Howard, same place. [Filed Feb. 23, 1875.]

Brief.—The gearing is within the winding-drum to be operated—the whole on bearings, which revolve on a shaft made hollow for lubrication. A pinion fixed to the shaft operates, through others, gearing on the inside of a ring, which, at its hub, has another pinion, working, in a similar way, inner peripheral gearing on the drum.



1. The combination of the shaft O, pinion K, and gears l l, gear *n*, and pinion *o* with gears *p p* and gear *i*, the latter secured to, and all arranged within, the drum S, substantially as and for the purposes specified.

2. The bearing-frames f f', secured to the stationary frame of the machine, and arranged so as to form bearings for the shafts O, P, and p' p'', wheel *n*, and drum S, substantially as specified.

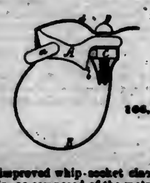
166,723. PAINT-BRUSHES. G. A. Schuster and J. L. Driscoll, Oakland, Cal., assignors to G. A. Schuster, same place. [Filed May 20, 1875.]

Brief.—The handle is attached to a clamp, in which the head of a brush is inserted, and as the clamp is drawn into a drip-cup its sides are made to grasp the brush.



The combination and arrangement of the drip-cup B, having the fastened sides I, with the brush-holder or devices A, B, F, and G, when arranged and operated substantially as and for the purposes set forth.

166,724. WHIP-SOCKET CLASPS. Erastus W. Scott, Wauregan, Conn. [Filed Jan. 12, 1875.]



166,724.

1. The improved whip-socket clasp, as described, viz., as composed of the metallic band B and the screw-nut C, in combination with the screw D and the saddle A, provided with the eye *a*, all arranged and to operate substantially as set forth.

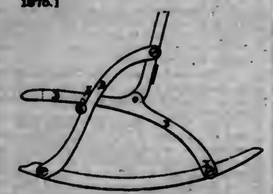
2. The band B, arranged with or to clasp the nut C on two opposite sides thereof, and having lips *b b* to embrace the nut on its other two opposite sides, all as set forth.

166,725. CEMENT TOPS AND VENTILATORS. Patrick H. Shinn, Chicago, Ill., assignor of two-thirds his right to Benj. C. Jones and S. J. Stebbins. [Filed Mar. 16, 1875.]



The combination of the stationary pipe D, the curved rotary pipe A, and vane *l*, the pipe B, the funnel C, spindle F, cross-pieces H and G, and bearing E, as specified.

166,726. FOLDING ROCKING-CHAIRS. Alex. W. Stewart, Boston, Mass. [Filed May 10, 1875.]



The curved pieces B B, forming rear legs and sides of the seat, the right braces D D, forming the front legs and supporting the back frame, and the bar R, provided with spurs or pegs K to hold the seat in position, in combination with the rockers *a* of a rocking-chair, substantially as described, and for the purposes set forth.

166,727. SAW-GUMMING MACHINES. Jos. H. Smith, Rochester, N. Y. [Filed July 28, 1875.]

Brief.—A vibrate spring adapted to be compressed to vary the range of motion or the feeding pressure; a rest sliding upon a rod, and adjustable thereon to grasp the blade, and a gage resting against the point of the tooth to determine the cut of the burr.

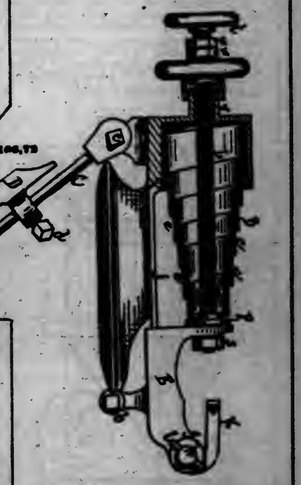
1. The combination, with the carriage E and screw L, of the coiled spring B, resting at one end against a shoulder of the main frame, and connected at the other with the screw, by means of a nut adjustable up or down on said screw, whereby the spring may be compressed a greater or less degree, to vary the range of motion or the feeding pressure of the milling-head, as herein described.

2. The combination, with the screw L and spring B, of the nut *p*, made adjustable upon the screw for the purpose of compressing the spring, and the hand-wheel *a*, for rotating the said pressure, as shown and described.

3. The combination, with the screw L and spring B, of the clamp-nuts *p a*, hand-wheels *t u*, and adjusting-nuts *v w*, arranged to operate in the manner and for the purpose specified.

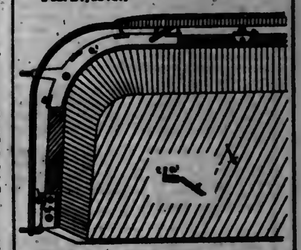
4. The combination with the rod C, pivoted to the main frame and adjustable to different positions on the pivot, of the rest D, provided with the slit a', to receive the saw, and adjustable vertically upon the rod by means of the set-screw *d*, as and for the purpose specified.

5. The combination, with the carriage E and burr or milling-tool G, of the gage K, projecting backward over the burr, and resting against the point of the tooth, to form a gage to the cut of the burr, as herein shown and described.



166,727

166,728. SHIPPING-RACKS FOR CARRIAGES. Miles P. Stedman, Ravenna, Ohio. [Filed Feb. 27, 1875.]



1. The sections *a' a' a' a'*, in combination with the cant-flange, substantially as and for the purpose set forth.

2. The sections *a' a'* and cant-flange, in combination with the supports *c c* of the bed-frame A, substantially as and for the purpose herein set forth.

HELIOTYPE. RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON

166,729. INHALERS. Chas. R. Sykes, Chicago, Ill. [Filed Jan. 27, 1875.]

Brief.—An outer and inner tube unite near one end, and carry a nasal ping. The inner tube does not extend entirely to the bottom of the outer, which has a closed lower end, as well as a lateral opening for entrance of air. An enlarged part of outer tube catches sediment.

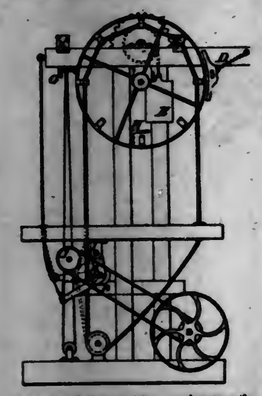


1. The combination of the outer cylindrical case A, the central or inner tube C, and lateral opening B in the single outer tube near its open end, substantially as described and shown.

2. The cylinder A, nozzle B, conduit-pipe C, bulb D, the neck F, and enlarged part E, as and for the purpose set forth.

166,730. HOISTING-MACHINES OR ELEVATORS. Richard Sicklenbon, Buffalo, N. Y., assignor of one-half his right to Rufus L. Howard and Gibson F. Howard, same place. [Filed Aug. 4, 1874.]

Brief.—Worked ordinarily by a hand-rope passing over a large wheel above and a small one below, or by a pulley rotating by friction from belting being pressed against the rope. A brake is operated by a lever struck by the platform or the top of its ascent, or by the longitudinal movement of a shaft, offseted by its rotation, and working in a nut.



1. In a hoisting-machine or elevator, the rope A and the wheel B, with shaft and gearing for operating the winding-drum X, arranged with relation to the cord O, lever n, and grooved wheels a and K, operated by mechanical power, as that either manual or mechanical power, or both together may be used at the will of the operator, and without special adjustment or alteration of any of the parts of the machine, substantially as and for the purpose specified.

2. The automatic safety-brake lever W, whereby the brake-shoe is operated by the tumbler H and the counter-weight R, substantially as described, and for the purposes set forth.

3. The brake-rod B, having the nut Y and spring S, in combination with the brake-shoe lever 4, pulley O, and rope F, and with the lever W, operating substantially as and for the purpose specified.

166,731. WASHING-MACHINE. Olney S. Thayer, Worcester, Mass., assignor of one-half his right to Charles W. Thayer, same place. [Filed June 30, 1875.]

1. In a washing-machine, substantially such as described, the corrugated rollers E F, ratchet O P Q, rod H and cam M, combined to operate substantially as set forth.

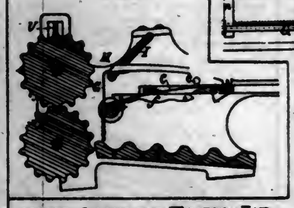
2. In a washing-machine, substantially such as described, the rollers E T, rubber *g*, rails *f*, and reciprocating stock B, provided with the spring C, and flange F, combined to operate substantially as set forth and specified.

3. In a washing-machine, substantially such as described, the bar D, provided with the spring C, in combination with the pitman H, crank I, stock B, rails *f*, and spring C, substantially as set forth.

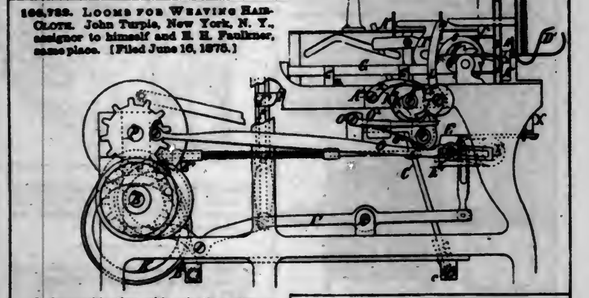
4. In a washing-machine, substantially such as described, the cup V, in combination with the stock B, substantially as set forth and specified.



166,731.



166,732. LOOMS FOR WEAVING HAIR-CLOTH. John Turpin, New York, N. Y., assignor to himself and H. H. Faulkner, same place. [Filed June 16, 1875.]



1. In combination with selecting-nippers and a pendulous hair-holder, the adjustable weight D', adapted to graduate the force with which the hair resists the plunge of the selector, as herein specified.

2. The slowly-rotating cam F' and bearer J', in combination with a hair-holder capable of being gradually changed in position thereby, as herein specified.

3. The vertical hinge or turning joint V and the selector N N', in combination with mechanism, substantially as described, for moving the selector vertically as it is carried across the path of the hook, as herein specified.

4. The horizontal hinge or turning joint W and the selector N N', in combination with mechanism, substantially as described, for moving the selector toward and partially into the shed, as described, so as to allow of liberating the hair therein, as and for the purposes herein specified.

5. The step or steps F' and their operating mechanism, substantially as described, and the finger I, whereby they are controlled, arranged to arrest the motion of the lay O and prevent its touching the goods when the machine is working idly, as herein specified.

6. The lever L and its operating mechanism, substantially as described, in combination with and controlled by the finger I, the movable hair-holder D, and the selector N, serving to hold the hair out of the reach of the selector after a hair is seized until the figure is completed, substantially as and for the purposes herein specified.

7. The selector-guide A', in combination with the selector N and with the cradle D, arranged to direct the selector, as and for the purposes specified.

8. In combination with the finger I, the hair-supports A'', standing close to the path of the selector N, for the purposes specified.

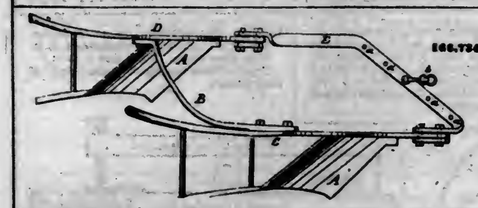
166,733. FOLDING ROCKING-CHAIRS. O. S. Vail, New York, N. Y. [Filed June 23, 1874.]

A folding rocking-chair, constructed with a seat, B, pivoted to the front and rear legs, guide-rods *a*, and pins *d* and *f*, in combination with rockers D, slotted plates E, and hinges *g*, arranged and operating as shown and described.

166,734. FLOWS. W. S. Wadsworth, Miami County, Kans. [Filed May 24, 1875.]

Brief.—Shackles or braces for securing two ordinary plows together.

In a gang-plow composed of two ordinary plows, the brace B, attached to the handle of one plow and to the beam of the other, in combination with the angular brace K, having the adjustable clevis *b*, substantially as shown and described.

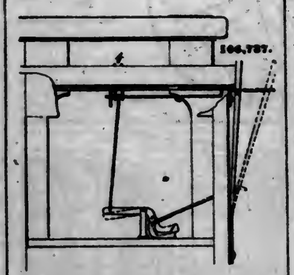


166,734.

166,735. CONNECTING STEAM, GAS, OR WATER PIPES. Caleb C. Walworth, Boston, Mass. [Filed July 3, 1875.]



The above-described improved process of connecting steam, gas, or water pipes, the same consisting in making one or both of the connecting-surfaces grooved or threaded, and swaging or driving together the parts thus formed to upset the grooved or threaded portion or portions, substantially as shown and described.



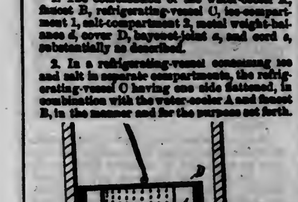
166,737.

166,736. WATER-COOLERS. L. B. Woolfolk, Lexington, Ky. [Filed July 16, 1875.]

Brief.—Ice and salt box, sunk by a weight in its bottom, is cut away on one side that water may not freeze next to the faucet. Weight is set against the cut-away side to restore the balance when freezing-box is raised and lowered by the cord. Cover of freezing-box is bayonet-jointed, and made larger than the box, that it may turn slightly around despite the corners of the box, to engage the lug and slot of the joint.

1. The combination of the water-cooler A, faucet B, refrigerating-vessel C, ice-compartment 1, salt-compartment 2, metal weight-balance *d*, cover D, bayonet-joint *e*, and cord *g*, substantially as described.

2. In a refrigerating-vessel containing ice and salt in separate compartments, the refrigerating-vessel C having one side flattened, in combination with the water-cooler A and faucet B, in the manner and for the purposes set forth.

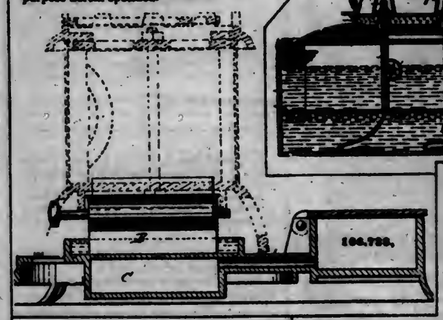


166,737. STOPPING MECHANISMS FOR LOOMS. Andrew S. Wyse, Providence, R. I. [Filed Feb. 26, 1875.]

In combination with the shipping mechanism of a loom and suitable connecting mechanism, the finger *f*, adapted to be reciprocated vertically through the lathe, all operating together substantially as described, to withdraw the finger below the shuttle-race, when the belt is shifted to the loose pulley, and retain it in that position as long as the belt remains upon the loose pulley, as and for the purposes set forth.

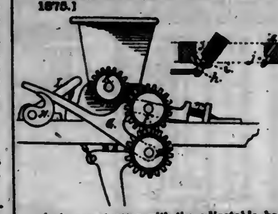
166,738. OIL-STOVES. Abram Q. Alle, Cleveland, Ohio. [Filed Aug. 6, 1875.]

In an oil-burning stove, the supplemental reservoir D, elevated as described, in combination with the depressed reservoir C, connecting-tube B, where the oil is kept separate from the stove, all constructed as and for the purpose herein specified.



166,738.

166,739. GRAIN-DRILLS. Wales Aldrich, Dayton, Ohio, assignor to Dayton Machine Company, same place. [Filed June 8, 1875.]



1. In combination with the adjustable bar B, having its ends slotted to receive the pendent arms *i*, pivoted just above the frame of the drill, the pivoted trigger A, catches *j*, and shifting-rod D, substantially as and for the purpose specified.

2. The cam G, spring *n*, wheels H, F, and E, cam H, and bar I, arranged in the manner and for the purpose set forth.

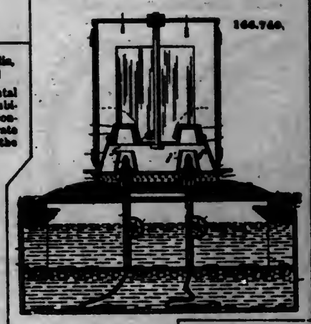
166,740. OIL-STOVES. Hosea Allen, Titusville, Pa., assignor of part of his right to G. Shamburg, E. G. Patterson, Jonathan Watson, and Robt. L. Karnochan. [Filed July 9, 1875.]

1. The combination, in an oil-stove, of the oil-reservoir, the burners, and the evaporating-chamber, constructed with a centrally-perforated lid, and having its walls perforated above the water-line, and an inwardly-projecting flange also above the water-line, to prevent the splashing of the water through the ventilating-apertures, while freely admitting the passage of air to the burners, as set forth.

2. The combination, in an oil-stove, of the oil-reservoir, the evaporating-chamber having perforated side walls and a centrally-perforated lid, the burners, the deflectors *f'*, and a supplementary diaphragm, G, and its deflectors, these members being constructed and operating substantially as hereinbefore set forth.

3. The combination, in an oil-stove, of the oil-reservoir, the evaporating-chamber having perforated side walls and a centrally-perforated lid, the burners, the deflector *f'*, the supplementary diaphragm G, its deflectors, and the illuminating-chamber, these members being constructed and operating substantially as hereinbefore set forth.

4. The combination of the burners, the deflectors *f'*, the illuminating-chamber, the diaphragm G, its deflecting-cones, their hinged hoods, and their handles, these members being constructed and operating substantially as hereinbefore set forth.



166,740.



166,741.

166,741. SAFETY CENTER-PINIONS FOR WATCHES. Chas. R. Bacon and Leotheld C. Brown, San Francisco, Cal., assignors to Cornell Watch Company, same place. [Filed June 19, 1875.]

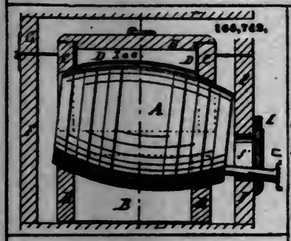
1. The combination, with a center-wheel of a watch, of a detachable center-pinion having teeth extended toward the center-wheel, and an intermediate check-spring placed between pinion and center-wheel, and attached at one end to the latter, substantially in the manner and for the purpose set forth.

2. A detachable safety center-pinion, provided with teeth extended to project beyond the solid center part toward the center-wheel, and form alternating recesses for the check-spring, substantially as specified.

166,742. BEER-REFRIGERATORS. John N. Robert, Denison, Tex. [Filed July 10, 1875.]

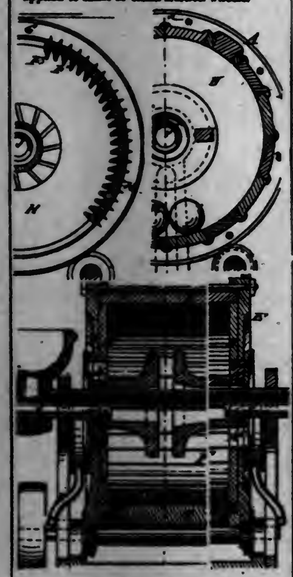
The beer-refrigerator formed of the old B, the ice-box O D E, and the outer box or case F G, constructed substantially as herein shown and described, to adapt it to receive a beer-keg, as set forth.

166,742.



WET AND DRY ORE CRUSHERS. Henry Bothhoff, Central City, Colo., assignor to himself and Charles F. Hendrie, same place. [Filed May 1, 1875.]

Brief.—As a wet-crusher: The ore admitted through hopper and hollow shaft into revolving cylinder is pulped by the balls, and passes out through registers adjustable vertically to raise or lower the central openings; thence passes through hoppers to amalgamating-coppers. Quicksilver may be introduced to the cylinder; or grates may be inserted in head-holes, and the pulp passed out through them into settlers, where the amalgam can be separated, ore in tailings which will not amalgamate to be then smelted. As a dry-crusher: Ore fed dry, and passes out through spaces between the staves, which are corrugated on the inner side. Cylinder revolved by power applied to shaft of small friction-wheels.



1. A wet-pulverizer for ores, discharging the pulp near its center through a series of registers, H, of varying altitude, thereby regulating the fineness of the crushed ore by its own gravity.

2. The combination of heads B B, having flanges C and lining H, with end-curved staves F, having rib, the said staves and heads being bolted together in the manner described.

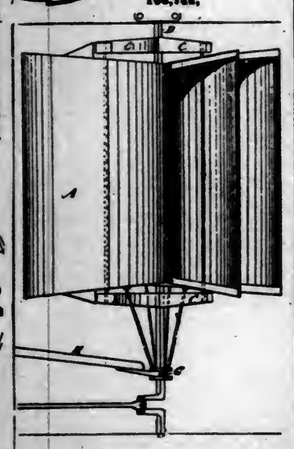
3. A dry-pulverizer for ores, having staves made narrow, bifurcated and corrugated on the inside, as and for the purpose specified.

166,743. WIRE-WEAVER. Horace J. Schinhall, Jr., Millington, Ill., assignor to himself and Samuel H. Foster, same place. [Filed July 24, 1875.]

Brief.—Jaws shaped like the eye of a staple, and pivoted at the middle of the top and bottom to horizontal arms reaching from the shaft, so that they may swing into radial positions to take the wind, and into a circle to close, so that the wheel will not be turned by the wind, and the buckets are connected to a slider on the shaft, which is moved by a lever to open and close the buckets, for starting and stopping the machine.



166,744.

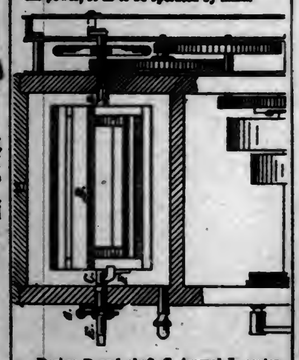


1. Curved fans A, pivoted to arms C of a shaft, D, to open and close in the manner described.

2. The combination of a slider, G, and lever H with curved fans A, pivoted to the arms of the wheel, as described.

166,745. CHURNS. John Butler, Berlin, Wis. [Filed July 10, 1875.]

Brief.—The dasher can be disconnected from the power, so as to be operated by hand.



Dasher B and shaft C, journal I, center shaft B, catch F, and pin G, all in combination, substantially as described.

166,746. TRAM-STICKER. John R. Dyer, Attica, Mich., assignor to himself and A. E. Fish, same place. [Filed May 8, 1875.]

Brief.—Means for adjusting the "quill" of the trammer.

166,746.



The combination of the tram A, adjustable lever B, adjusting-screw E, and quill H, substantially as and for the purpose set forth.

166,747. SUBMERGED-BOTTLE. James J. Christie, Camden, N. J., assignor of one-half his right to Jas. A. Armstrong, same place. [Filed June 14, 1875.]



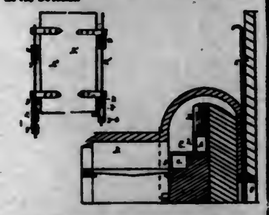
The nurse-bottle constructed of a body with a neck at one end, and a nipple integral with the body, upon the surface of the body proper of the bottle, for securing a vent-cap, substantially as and for the purpose set forth.

166,748. WATERPROOFING COMPOUNDS FOR LEATHER. James Clemm, Brooklyn, N. Y. [Filed Feb. 12, 1875.]

A waterproofing compound for leather, formed of paraffine, tallow, and resin, in about the proportions herein set forth.

166,749. FURNACE FOR BRICK-KILNS. W. S. Colwell, Pittsburg, Pa. [Filed May 20, 1875.]

Brief.—Fresh air is supplied to the products of combustion through the openings, and they may be conducted to different parts of the kiln by means of the flues and dampered arches. By turning the cements on the plate, the door can be raised to leave a draft-passage at its bottom.



1. The furnace B, provided with chamber C, spreader D, and flues J J1 m, and air-flues e f, with openings g h, substantially as herein described.

2. The furnace B, having chamber C, spreader D, flues J J1 m, air-flues e f, with openings g h, in combination with the dampers p and fire-arches q, substantially as herein described, and for the purpose set forth.

3. The doors A' B', provided with plates r', having eccentrics t, cranks y y', and stops v, in combination with the furnace B, whereby the doors are adjustable for admitting a current of air under them and over the fire in the furnace, substantially as and for the purpose herein before described and set forth.

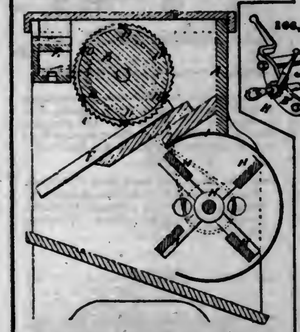
166,750. RAILROAD-RAIL-JOINT FASTENER. John Corson, Washington, D. C. [Filed June 30, 1875.]



The rail-joint fastener consisting of a saddle-piece having crown portion B and forked portions A A, which firmly embrace the web of the rails, and support the shouldered heads thereof while resting upon the flanges, in combination with the rails C C, cut away as to their heads to admit the crown-piece B, and having abutting webs and flanges, substantially as set forth.

166,751. COIN-SHELLING. Hiram C. Crookmore and John W. McMillin, Salado, Tex. [Filed Apr. 17, 1875.]

Brief.—The shelling-cylinder is provided at the feeding end with peripheral saws, to tear the husks from the ears.



The combination of the circular saws D and the strips C, applied to the periphery of cylinder B, radial and parallel to its axis, respectively, in combination with the open-side feed-box, as shown and described, whereby the husk-stripping and shelling operations are successively performed.

166,752. DENTAL PLUGGERS. T. Cromett, San Francisco, Cal. [Filed Mar. 25, 1875.]

1. In a dental plugger, the arm f, pivoted, as described, and having the plugging-point J secured to its outer end at right angles to the stem B, in combination with the spring-hammer C and intermediate segment-block O, substantially as and for the purpose described.

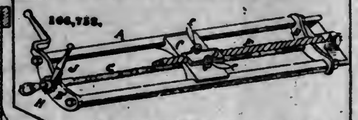
2. The segment-block O, pivoted at its angle, and having two faces at right angles to each other, in combination with the hammer C and movable plugging-point J, all combined and arranged to operate substantially as above described.

3. The cap W, with its shaft V and pinion U, in combination with the coupling-ring X, substantially as and for the purpose above described.

166,753. ROPE-STRETCHERS. C. C. Curtis, Stratford, N. H. [Filed Mar. 24, 1875.]

Brief.—The link at the end of the frame is secured to some stationary object. The rope is put through the guide at the other end, secured in the clamp, and stretched as the clamp travels on the screw, which is turned by means of the pawl at the front. The handle on the side prevents the frame from canting.

166,753.



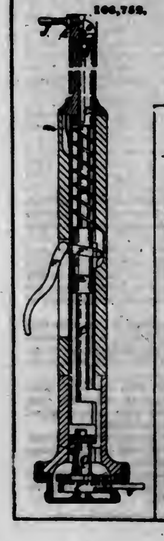
Is a rope-stretcher, constructed as described, the parallel rails A A, connected by the fixed heads B and B', the latter provided with the lever L, in combination with the sliding cross-head C, clamping-levers c c, cap D, screw O, pawl J, and guide M, all arranged to operate substantially as and for the purpose set forth.

166,754. METHODS OF ATTACHING PINS TO BROOCHES. Charles B. Dusenbury, Mansfield, Mass. [Filed Dec. 6, 1874.]

Brief.—The hinge extremity of the pin occupies the space between two projecting lips or ears, and the axis by which it is to be confined, and on which it is to turn, is made of the metal of the ears themselves, that is forced into the eye of the pin on each side by a punch.

The herein-described method of applying a pin to brooches and other articles by means of a suitable die or set-punch driven into one or both the lips d of the stud b from the out-side, to strike up or form upon the inside of such lip a tent or spur, e, which extends into the eye of the pin, in the manner and for the purposes specified.

166,752.

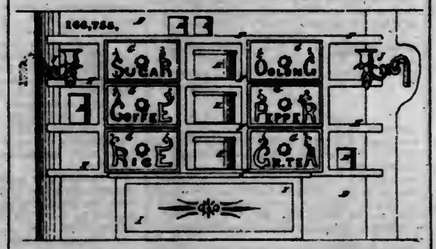


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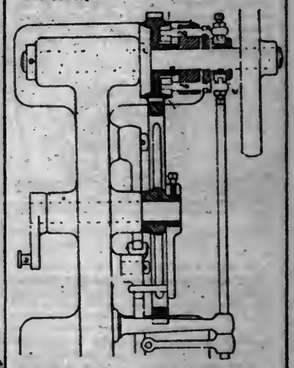
166,755. TOY STOVES. Elias Durisch, New York, N. Y. [Filed July 17, 1875.]

166,755.



A toy grocery-store, A B C, made of sheet-metal, and provided with the detachable sign and ornament D E, the shelves F, the drawers G, the boxes or canisters H, a movable counter, I, and the pivoted detachable candle-brackets or chandeliers J, substantially as herein shown and described.

166,756. HEELING-MACHINES. Alvin D. Elliott, Geo. E. Fellows, and Stephen A. Simmons, Lawrence, assignors to Jas. W. Brooks, trustee, Boston, Mass. [Filed June 24, 1875.]



1. The combination of the shaft adapted to move the heel-trimming mechanism of a heeling-machine with a toothed wheel on such shaft, and with a toothed wheel and clutch on a second shaft, to operate substantially as set forth.

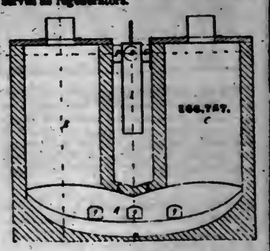
2. The rod g, fork f, collar d, and pins h, in combination with the clutch c and toothed wheel S, substantially as described.

3. The combination, with the clutch c c and toothed wheel S, of the spring r and connecting mechanism for regulating the friction between the clutch and wheel, substantially as described.

166,757. FURNACES FOR MELTING METALS. William R. C. Bustin, Milton, Mass. [Filed July 8, 1875.]

Brief.—The four chambers all open at bottom into the hearth. The chambers are filled with iron or steel, and gas and air, being admitted at opposite ends of the induction-pipe D, pass down through the pieces of metal in the chambers on one side of the furnace, are ignited, and the products of their combustion pass up through the metal in the chambers on the other side, and out by the downtake I. On reversing the valves, the direction of the air and gas is reversed, passing through the heated metal. The metal to be melted thus serves as regenerators.

166,757.



The compound furnace, substantially as described, composed of the main chamber A, the two pairs of auxiliary chambers B B' O O', and the pipe D, with its branches E F G H, and two valves K L, and edmit I, all arranged essentially in manner and to operate as and for the purpose specified.

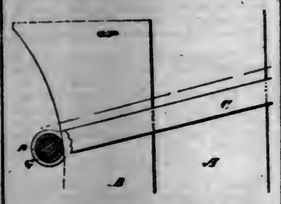
166,758. ROTARY BALANCED VALVE. O. M. Ferrar, Buffalo, N. Y. [Filed June 21, 1875.]

Brief.—The steam enters on each side of the valve, and is led to the cylinder, and exhausted therefrom by the oscillation of the valve. A passage on each side of the exhaust-passage allows steam to pass from the cylinder ports to the back of the valve, to assist in balancing it.



The cone-shaped valve C, provided with the passages J L J and the flattened sides *c c*, as and for the purposes specified.

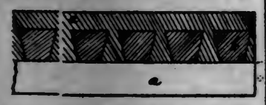
166,759. SCAFFOLD-CLAMPS. William C. Fellows, Toledo, Ohio, assignor to himself and C. Whittingham, same place. [Filed July 10, 1875.]



1. The combination of the roller D, bolt G, yoke-clamp C, block B, and post A, substantially as specified.

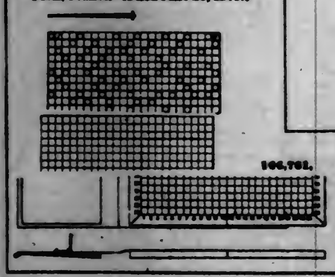
2. The block B, having a curved face whereon the clamp rests, substantially as specified.

166,760. CONSTRUCTION OF WALLS. Granville E. Field, Auburn, Me. [Filed June 29, 1875.]



The wall for buildings consisting of cross b and uprights a, prepared by immersion in tar or similar water-repellent substance, to prevent shrinking and swelling, as described, and having the spaces between and the surface covered with cement or like substance, substantially as and for the purposes set forth.

166,761. CRYPTOGRAPHY. A. L. Fleury, Paris, France. [Filed June 26, 1875.]



166,761.

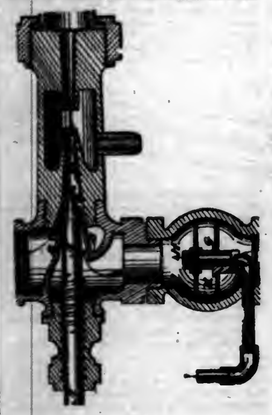
L As an improvement in cryptographic apparatus, the combination, with the perforated plate, Fig. 4, cross-lined to form squares, of the paper sheet, Fig. 6, prepared with corresponding squares, substantially as and for the purpose set forth.

2. The folding and framed tablet, provided on its horizontal and vertical margins with the serial numbers, in combination with the perforated plate and prepared-paper sheet, substantially as and for the purpose set forth.

3. In combination with the subject-matter of the above second clause of claim, the exterior wrapper or cover, as described and shown.

166,762. INJECTORS. Saml. Fowden, Philadelphia, Pa. [Filed July 17, 1875.]

Brief.—An ejector (supplementary) is applied in the supply-pipe of the injector, to lift the supply preparatory to starting the injector. The delivery of this ejector is a tube set in a check-valve arranged in the supply-chamber.



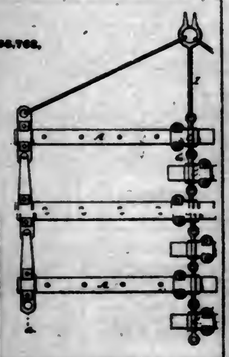
The combination of spindle A, water-tube B, steam-inlet C, and mixing-tube D with a suitable tube having valve G, tube H, and jet I, as and for the purpose specified.

166,763. HARROWS. Levi Francisco, Oakland, Wis. [Filed May 24, 1875.]

Brief.—Two sets of tooth-bars are secured together at the outer ends by hinge-couplings, the inner ends overlapping each other, and secured by links and clips.

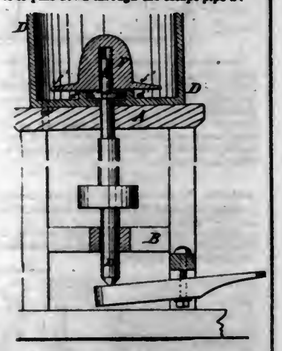
The two sets of parallel bars A and B, Fig. 1, having their outer ends coupled substantially as described, in combination with a single line of couplings for their inner ends, substantially as and for the purpose specified.

166,763.



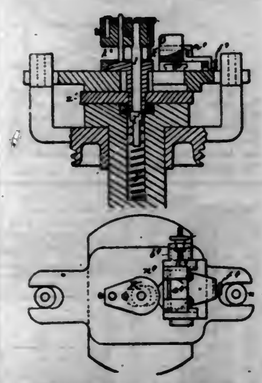
166,764. MACHINES FOR STUFFING HATS. Granville B. Fuller, Middletown, N. Y. [Filed July 2, 1875.]

Brief.—By the rapid rotation of the hat-block the surplus stuffening or sizing matter is thrown off the hat-body. Cylinder D catches the matter thus thrown off, and allows it to pass down through the escape-pipe *F*.



The vessel D, provided with annular flange *d*, shaft-aperture and discharge-opening *d'*, in combination with the driving and elevating shaft E, provided with collar *e'* and hat-block *F f'*, substantially as shown and described.

166,765. BOOT AND SHOE HEEL TRIMMER. Chas. W. Glidden, Lynn, and Stephen A. Simmons, Lawrence, assignors to Jas. W. Brooks, trustee, Boston, Mass. [Filed June 24, 1875.]



1. The heel-support and box and drivers, in combination with a loose plate for retaining the drivers in position, substantially as described.

2. The heel-support, box, loose plate, and rod *i*, in combination with and detachable from the heel-cutting mechanism, whereby the supports for heels of different sizes are made easily interchangeable, substantially as described.

3. The movable carriage, a turn-table with projecting pins and ledge *b'*, in combination with the plate grooved substantially as described, to move the turn-table and knife-holder, as set forth.

4. The combination, with the turn-table and trimming-knife, of an adjustable trimming-knife holder and slide-plate, to adjust the knife, substantially as described.

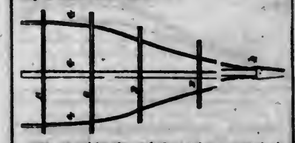
5. The combination of the knife *f* and cutting-gage *e'* with the gage *c* and heel-rest clamp, substantially as described.

6. The top-lift plate *n'*, box *k*, and heel-support, in combination with the locking-pin, substantially as described.

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166,766. GARDEN-TRELLISES. I. Goodspeed, Greenville, Conn. [Filed Mar. 22, 1875.]

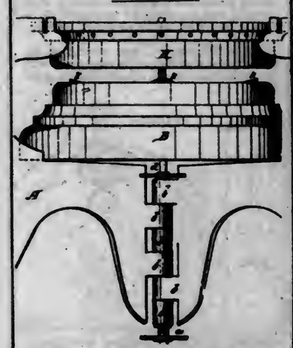
Brief.—A number of strips of wood are secured at the lower end by a pin and metallic cap or thimble. The uprights are spread and curved into any desired form, and held in place by notched cross-bars.



The combination of the strips *a*, notched cross-pieces B, pins *b*, and metallic clip C, substantially as and for the purpose set forth.

166,767. NURSERY-LAMPS. Clark I. Gorham, Chicago, Ill. [Filed July 14, 1875.]

Brief.—The tube lessens friction. The air-passages supply air to the inside of the flame rising from the openings in the upper plate. The adjustable ring can be adapted to vessels of different sizes.



1. The combination of the leaves A, tube *a*, rod or plate *c*, and slotted head *d*, all constructed and operating substantially as and for the purpose specified.

2. The combination of the support consisting of the frame A, the lamp E, and pendent ring-stay H, all constructed and operating substantially as and for the purpose specified.

3. In combination with the body of the lamp B, the upper plate C, having openings *f*, and a central depression, *g*, provided with an opening, *h*, and the slide *i*, all constructed and operating substantially as and for the purpose specified.

4. In a lamp, in combination with the plate C, having openings *f*, the air-passages *k*, substantially as and for the purpose specified.

5. In combination with the body of the lamp B and perforated plate *n*, the asbestos cloth or paper *p*, the springs S, and wire-gauze *r*, all constructed, arranged, and operating substantially as and for the purpose specified.

6. In combination with the standard, consisting of the leaves A, an adjustable ring, I, adapted to engage with the upper portion of the leaves A, substantially as and for the purpose specified.

166,768. STEAM-GENERATORS. J. Goulding, Worcester, Mass. [Filed July 6, 1875.]

Brief.—The water is partially converted into steam while passing in pipes through the connection-chambers. Should more water accumulate in the reservoir than is desirable, it is pumped out and recovered through an auxiliary pipe, also passing through the combustion-chamber, in which it is generated into steam.

In a steam-generator, the combination of the furnace A, provided with the partitions U T, the pump D, pipes I J K, and steam-chamber Q, constructed and arranged to operate substantially as set forth and specified.

166,769. SHOE TIPS OR PROTECTORS. Chas. T. Grilley, Boston, Mass. [Filed June 24, 1875.]



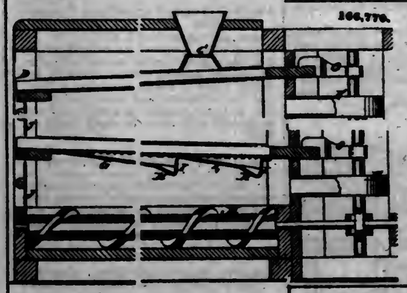
1. A shoe tip or protector built up of pieces of leather, substantially as described.

2. A shoe tip or protector for an upper, composed of two or more pieces of leather, united together, substantially as described, compressed, and adapted to present the edge of the leather outermost for a wearing-surface, substantially as set forth.

3. In the manufacture of leather tips or protectors for uppers, uniting the material to form the tips or protectors, and then compressing and hardening this leather in dies or molds, substantially as described.

166,770. MIDDLINGS-PURIFIERS. Richard W. Gunter, Carrollton, Mo. [Filed Apr. 24, 1875.]

Brief.—There is a fan for each sieve, the inlets and outlets for the air both being controlled by regulators. The discharge-passages for the material are protected by wind-breakers.



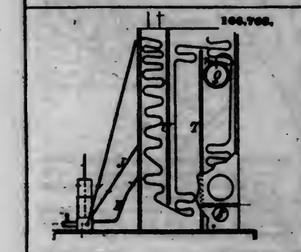
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166,771. CORN-SHELLERS. W. H. Hall and C. S. Tingle, Tiffin, Ohio; said Tingle assignor to said Hall. [Filed Apr. 30, 1875.]

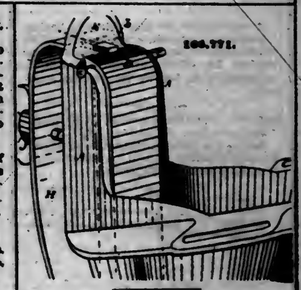
Brief.—The hopper has a rub-iron suspended within a recess at one side, and held against the ear by an adjustable spring, the upper end of which is formed into a tongue projecting through the raised back of the hopper over the top of the rub-iron, causing it in place.

The cheek-pieces A A, formed with a recess in the top edge for the reception of the pin which suspends the rub-iron, said rub-iron being secured by the end of the spring H, marked L, the end L of the spring H passing through the hole P in the back B, against which the rub-iron D rests, in combination with the hopper K, constructed as described, and for the purpose set forth.

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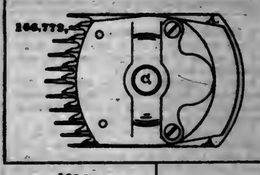


166,772. SHEEP-SHEARS. P. Harlow, Hyde Park, Mass. [Filed May 4, 1875.]



In multi-pointed sheep-shears, a lower cutter-plate having thin blades projecting as a guard beyond the upper cutter-plate, said blades being formed sled-runner shape on the under side toward the ends, each blade narrowing vertically to a knife-edge from the cutting-edge downward, and forming spaces, parallel, or nearly so, between the blades from the ends to the point of impact with the points of the upper cutter-plate.

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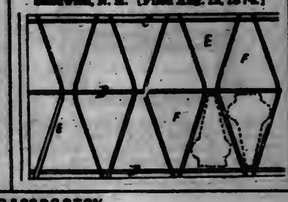


166,772. MOLDS FOR CASTINGS. Benjamin Harris, Marshalltown, Iowa. [Filed Nov. 21, 1874.]

1. A fusing mold-box having a cylindrical convexity, C, on its bottom, adapted to form an interior concave tearing-face on the under side of the lining metal poured in through the journal-box, substantially as described.

2. The rectangular journal-fusing mold-box A, provided with opposite handles B B and opposite lugs *a a*, at right angles to the handles, and the inside bottom of the box having a cast-molding convexity, C, substantially as described, and for the purpose set forth.

166,774. PACKING-BOXES. H. N. Hart, Sandwich, N. H. [Filed Aug. 12, 1874.]

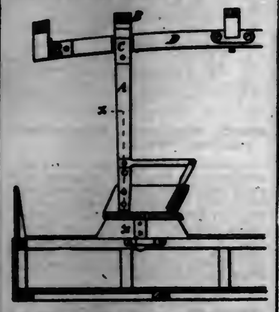


HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON

A seating-box for hose-chimneys, having a series of triangular compartments, E F, constructed and arranged in alternate order between the dividing-walls C, B, and D, substantially as and for the purpose specified.

166,776. TOYS FOR VEHICLES. J. F. Hager, St. Louis, Mo. [Filed Aug. 2, 1875.]

Brief.—The bows are united to the standards by metallic sockets, and to the side rails and hinged bonnet by sliding joints.



1. In a knock-down carriage-top, a bow made in three sections, A A and B, and united at the top by means of the metallic socket C, substantially as herein set forth.

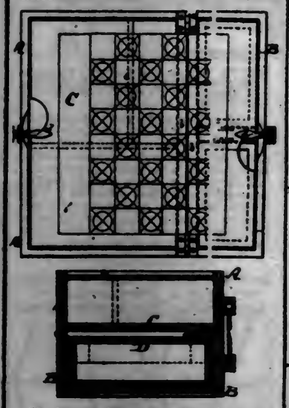
2. The combination of the sectional carriage-bows A B, side rails D D, and arched plates E, united together by sliding joints *b*, substantially as herein set forth.

3. The end rails G with hinged rails H, in combination with the sectional bows A B and side rails D, all united together by sliding joint *b*, substantially as and for the purposes herein set forth.

4. In combination with a carriage-top frame, constructed as described, a carriage-cover having the exterior part and lining so sewed together as to leave passages for the arched pieces B and E to pass between them, and provided with loops to fasten it to the frame, substantially as herein set forth.

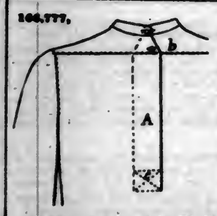
166,777. GAME-BOARDS. August Herzog, Gutenberg, N. J. [Filed July 12, 1875.]

Brief.—Instead of the ordinary backgammon-board in book form, the game-board is arranged as covers for the interior compartments of the box, the outside surfaces being dished.

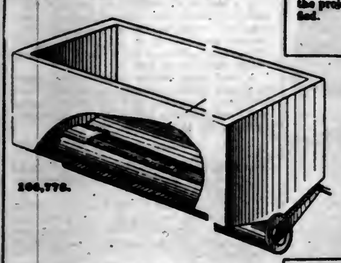


The box consisting of two hinged receptacles, A B, provided with the interior hinged covers C D, forming a game-board, substantially as herein shown and described.

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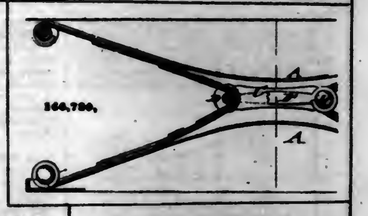


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166,780.



166,777. SHIRTS. John W. Hutchinson, Baltimore, Md. [Filed July 23, 1874.]

A new article of manufacture, an open-back shirt having at the back, yoke, and neck-band of the same the wide and straight lap A, stitched on at *c*, and tapering upward between the yoke and neck-band, as shown, and provided with the fastenings *a* and *b*, substantially as and for the purpose specified.

166,778. SUGAR COOLING AND DRAINING APPARATUS. Joseph H. Hymans, Alexandria, La. [Filed June 5, 1875.]

Brief.—The bottom of the cooler is inclined from the sides toward the longitudinal center. The slotted draining-tube is contained in a slotted sleeve or trough, rotated by a crank. The connection is closed when the sugar is hot; as it cools the opening is made gradually, being fully open when the sugar is cold and firm.

A sugar cooler and drainer composed of a cooling-vessel having bottom inclined from the sides to the central longitudinal slot, in connection with a right-fitting revolving draining-tube, provided with corresponding slots at diametrically-opposite points, substantially as and for the purpose set forth.

166,779. GRAIN-DRILL TUBES. George L. Ives, Galesburg, Mich., assignor to himself and Henry L. Keith, same place. [Filed June 12, 1875.]

A tooth for grain-drill tubes, consisting of front wedge-shaped furrow-opener A and shank C, the rear cavity D running through both, being straight to cross-line *f*, and passing out on a rearward curve near the bottom, as shown and described.

166,779.



166,780. VEHICLE-SPRINGS. Henry Jeffrey, Seymour, Ind. [Filed June 12, 1875.]

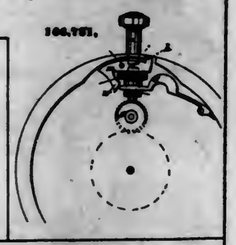
The top and bottom tension-springs A A, combined with intermediate leaf-springs, connected by shoe C, bolts D, and links D', as and for the purpose specified.

166,781. STEM WINDING AND SETTING DEVICES FOR WATCHES. Louis Kahn, New York, N. Y. [Filed Apr. 13, 1875.]

Brief.—A lever, operated by the sliding stem, has two projections—one for moving the sliding clutch and holding it in position while winding, and the other for automatically releasing the clutch by the closing of the case.

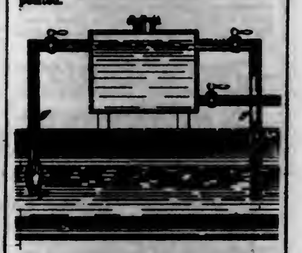
The double-armed lever, pivoted as described, and provided at its extremities with the projections *w* and *h*, substantially as specified.

166,781.



166,782. BOILER-CLEANERS. T. O. Kemp, Beamsville, Canada. [Filed June 5, 1875.]

Brief.—The water circulates through an outside chamber, in which the sediment is deposited.



The combination, with boiler and superposed reservoir, of pipes *g g*, provided with stop-cocks, one having mouths *n n* at surface of boiler-water, and the other more deeply down into said water, as and for the purpose specified.

166,782.



166,783. HARDENED SHAFTS. Eleazer Kempshall, New Britain, Conn., assignor to W. J. Phelps and W. P. Abernethy, Springfield, Mass. [Filed May 4, 1875.]

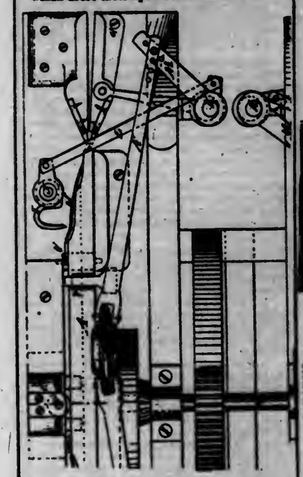
Brief.—An extra notch or shoulder on the rear end of the tongue locks it in place, and prevents its being accidentally opened.

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A snap-hook, having the hook *b'*, the inwardly-swinging tongue *c*, having at its rear end the mortise *d*, with shoulder *e*, and the spring *f* lying within the pocket *b'*, all constructed, combined, and arranged substantially as shown and described.

166,784. SHINGLE-MACHINES. John J. Kendall, Greensborough, N. C. [Filed May 8, 1875.]

Brief.—The machine is double, operating upon two shingle-bolts at the same time, rives the shingles from the bolts, and then conveys them automatically to the shaving-knives, which dress them upon both sides.



1. The combination of a double-faced stationary head and two rising-cutters with a reciprocating-rising head, substantially as shown and described, whereby a blank may be rived by each movement of the head, substantially as specified.

2. The combination of the spring-clamp F and feeder I with the movable rising-head, substantially as specified.

3. The feeder I, combined with the movable rising-head and the guideway E in the arrangement described, whereby the blank is shifted in front of the head when presented to the cutters, substantially as specified.

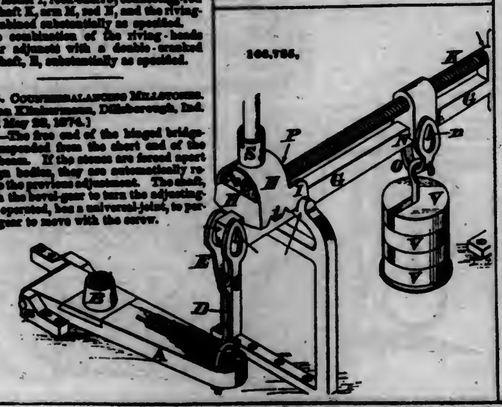
4. The oscillating cutter P, in combination with the connecting T, rock-shaft K, and the rock-shaft geared with the rising-head A, substantially as specified.

5. The feeder I, rock-shaft J, connecting-rod L, rock-shaft K, arm M, rod N, and the rising-head, combined substantially as specified.

6. The combination of the rising-heads and their adjuncts with a double-crushed driving-shaft, B, substantially as specified.

166,785. COUNTERBALANCED MILL-STONES. Hiram Kitchenman, Dillsborough, Ind. [Filed May 26, 1875.]

Brief.—The free end of the hinged bridge-tree is suspended from the short end of the balance-beam. If the stones are forced apart by foreign bodies, they are automatically returned to the previous adjustment. The shaft, by which the bevel-gear is turned, by which the adjusting-screw is operated, has a universal-joint, to permit the gear to move with the screw.



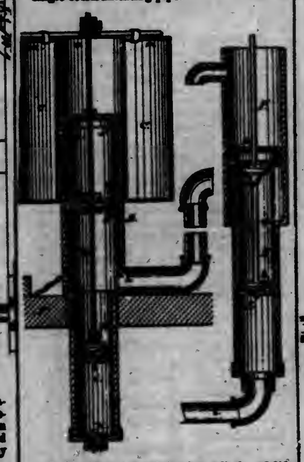
1. The combination of pivoted bridge-tree A *a*, having removable step B, detachable connection O D E, and steelyard G, having weights V, and whose supporting-bool F has bearings *f f*, as and for the purposes set forth.

2. The housing H, having chocks I I', provided with a series of notches, *i i'*, for changing the position of the bearings, as set forth.

3. In combination with the vertical shafts B T, the bevel-wheels P Q and coupling S, as and for the purpose set forth.

166,786. PUMPS. Adam Knecht, Rebecca, and Michael Knecht, Grantsville, Md. [Filed Apr. 10, 1875.]

Brief.—A differential force-pump is employed to operate, by means of the interposed column of water in the communicating pipe, a similar pump placed in the well. The differential character of the pump admits of all the water being delivered through the upper pump, and with the employment of but a single communicating pipe.



1. The force-pump A, having cylinder of differing bores, and open connected pistons fitting said bores, and double-valved rod applied to said pistons, as shown, in combination with an auxiliary differential pump, and both receiving its water from, and operating said auxiliary pump through, a single communicating pipe, *i*, all substantially as set forth.

2. The auxiliary differential pump B, having cylinder of different bores, and provided with valved pistons *e* and pistons *d*, containing automatic regulating or safety valve *g*, both upon the rod G, with or without the weight

166,786.

attached, in combination with a force-pump and communicating pipe, substantially as and for the purpose described.

3. The pump B, having one portion of the cylinder larger than the other, for the purpose of causing the pistons to move by supplying pressure between the two pistons, as shown and described.

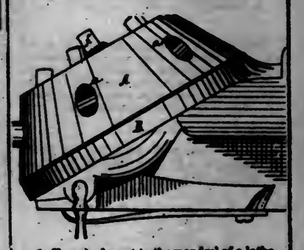
4. In a compound pump, as shown, a valve controlled by the stroke of the piston, and arranged to act automatically to regulate the volume of water in the cylinders and connecting pipe, substantially as described.

5. A weight, C, made and constructed in the shape of an annular vessel, or of any suitable form, to be filled with gravel or some other substance, in combination with the compound pump described and shown, for the purpose set forth.

6. The combination of the piston G, a rod or tube extending therefrom through the cylinder-head, and a crank-bar or tube suitably attached thereto and to the weight, as and for the purpose set forth.

166,787. TOOL-HOLDING ATTACHMENTS FOR METAL-LATHES. Wm. Kratzsch, Dayton, Ohio, assignor to G. W. Hughes and C. H. Penn, same place. [Filed Apr. 15, 1875.]

Brief.—A pedicled shank for attachment to the spindle of a lathe. The tools are carried in sockets made in a frustum at right angles to the sides. The frustum is pivoted to the shank at an angle, so that the tools may be alternately brought into line with the axis of the spindle by turning the frustum upon its pivot.



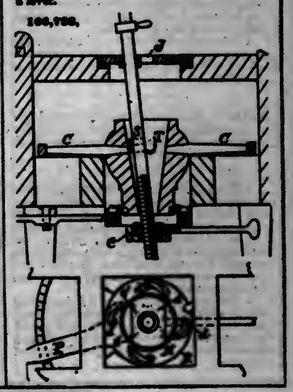
1. For attachment to the mandrel of a lathe, the tool-carrying frustum A and body B, the former attached to the latter at an angle, substantially as described.

2. The herein-described improved attachment, consisting of the body B, lugs *i*, pivot *f*, bearing *j*, disk *m*, ring A, and frustum A, provided with recesses *o* and set-screws *c*, all substantially as described, and for the purpose specified.

166,788. HUB-BORING MACHINES. John Lee, Lowan, Iowa. [Filed July 6, 1875.]

Brief.—The hub is clamped by a series of dogs attached to a ring, which is operated by a lever.

166,788.



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1. The self-centering device consisting of the movable ring N, having lever P and pivoted dogs d, in combination with circular guide O, having notches o', substantially as described.

2. In combination with the guide-plate G, having slot J, set-screw H, and cutter I, the self-centering devices consisting of the movable ring N, pivoted dogs d, circular guide O, having notches o', and lever P, substantially as described.

166,792. BRIDGING. Martin Loiner, New York, N. Y. [Filed Dec. 10, 1874.]

Brief.—The bristles are held upon the wires by twisting or braiding, and the wires are secured to the backing by being passed through slots or holes, and bent upon the opposite side from the face.

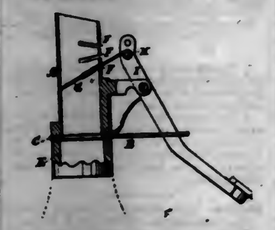


The combination, with block C, of the bristle-holding wires B, twisted and fastened over the block, as and for the purpose specified.

166,793. PROCESSES FOR PRODUCING AMALGAMATED SILVERING FOR MIRRORS. Jean J. E. Lenoir, Paris, France. [Filed Aug. 9, 1875.]

The process of amalgamating the silver films of mirror-surfaces by the application thereto of solutions of mercurial salts, substantially in the manner described, for the purpose of improving the color and increasing the durability of such mirror-surfaces.

166,794. SHOT-CHARGERS FOR SHOT-POUCHES. J. S. Long, Mikville, Ill. [Filed May 28, 1875.]



1. The cut-off valve S, having a cleaning-ring, O, in combination with the barrel A, having an offset, B, under the valve on the closing side, substantially as specified.

2. The casing of plate F for the gaging-valve G, arranged radially to the point of connection of the valve with the lever, substantially as specified.

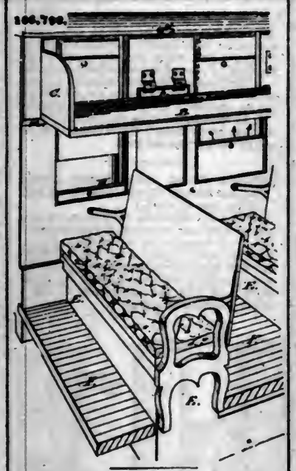
166,795. SLEEPING-CARS. Christian H. Lucas, Athens, Ga., assignee of one-half his right to J. F. Divine, Washington, D. C. [Filed Mar. 26, 1875.]

1. The berth B, forming the inner paneling of the car, supported upon the molding n, and secured to the side of the car by the catches a and plate b, in the manner set forth.

2. In combination with the berth B, the folding leaves C C, hinged to the side of the car, and forming, when open, the head and foot boards of the berth, as well as a part of its support, as described.

3. The folding-supports E E E, consisting of two continuous metallic standards, open below the floor of the car, with ends turned up through the floor under the catches and covered by the cast-castings, as shown and described.

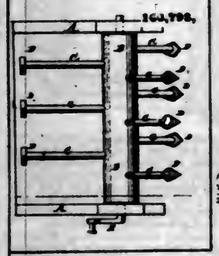
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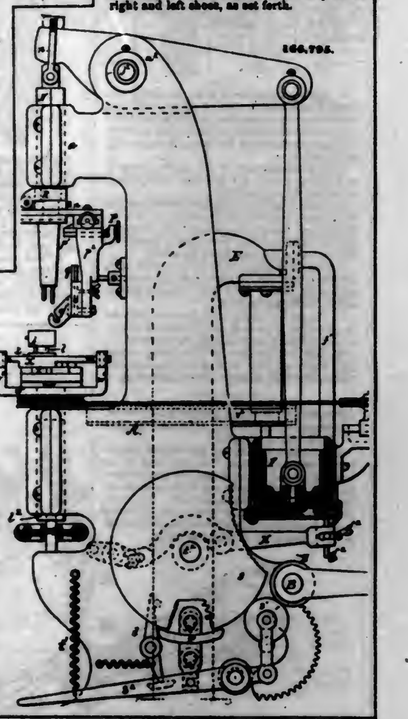
166,796. ICE-BREAKING. Joseph T. Martin, Newark, N. J. [Filed July 17, 1875.]

The ice-breaker, substantially as shown and described, consisting of the shaft B, carrying the radial arms C, said arms being rigidly secured to said shaft, and provided at their outer ends with ax or wedge shaped heads D, the whole mounted in a suitable frame, adapted to be secured to a vessel, in the manner shown and described.

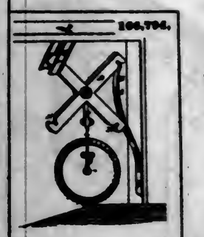
166,797.



166,798.



166,799.



166,794. FARE-BOXES. William C. McGill, Washington, D. C. [Filed June 12, 1875.]

In combination with the revolving frame B, spring E, arranged to hold the frame in such manner as to prevent a backward movement and to force the frame around, so that one of its arms will strike the ticket and press it from the opening into the receptacle below after having been partly thrown around by the ticket being forced through opening D, substantially as herein represented and shown.

166,795. MACHINES FOR ATTACHING AND TRIMMING HEELS. Gordon McKay, Cambridge, Hedley P. Fairfield, Boston, and Chas. W. Glidden, Lynn, assignors to Jas. W. Brooks, trustee, Boston, Mass. [Filed June 24, 1875.]

Brief.—The jack-plate is attached to a vertically-reciprocating bar depending from the end of a walking-beam, which is operated by compressed air acting through a cylinder, piston, and link. After the heel is secured to the boot or shoe, without its removal, the trimming mechanism is thrown into action. The knife-holder is carried by a turn-table, which is free to rotate in a reciprocating carriage, which is moved by projections on a cross-plate, which enter openings in the carriage, the cross-plate resting upon a spindle, which is moved by a band or cord attached to a sliding carriage, receiving motion from a rotating shaft.

1. The walking-beam and its connecting-rod and piston, adapted to be operated by compressed air, in combination with the bar N and last-carrying bar, substantially as described.

2. The jack-holding plate n' and the support for the heel-rest clamp, connected together through arm p', and together adjustable, substantially as and for the purpose described.

3. The bar N, in combination with the jack-holding plate n', adjustable on the bar, substantially as described, to adapt the jack to right and left shoes, as set forth.

166,795.

4. The heel-rest clamp Q, provided with hinged wings or levers 3, a spring, and piston 6, constructed and operating substantially as and for the purpose described.

5. The heel-rest clamp Q, provided with ears q', in combination with the adjustable slotted-arced support q', and arm p', and jack-holding plate n', substantially as and for the purpose described.

6. In a heeling-machine, the walking-beam F, link x, and bar N, in combination with the jack-bar and heel-rest clamp, connected with and carried by the bar, substantially as described.

7. In a machine for attaching heels, the plunger D of the air-compressing apparatus, provided with the perforated head d, movable plate, and plug, in combination with the support c, having opening d' to receive the plug, and with valve to retain the compressed air in the cylinder, substantially as and for the purpose described.

8. In a machine for attaching heels, the compressed air-receiver B, its connected pipe f', and the valve-chest G, in combination with the piston F, its link j, walking-beam bar N, and last-carrying bar, substantially as and for the purpose described.

9. In a heeling-machine, the crank b', adjustable two-part link C, and plunger D of the air-pump, substantially as and for the purpose described.

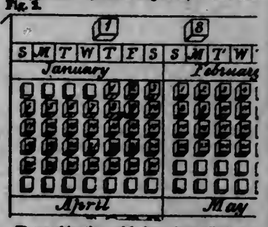
10. The combination of the valve-chest, valve, and valve-rod of a heeling-machine with the levers B h, and treadles for operating the levers, substantially as described.

11. The pivoted vibrating-radius bar, crank, and adjustable connection between the crank and radius-bar, in combination with the sliding carriage and cord for operating the heel-trimming mechanism, substantially as and for the purpose described.

12. The plate X, adapted to carry a heel-trimming mechanism, in combination with the forked cross-plate, provided with lugs n' n', substantially as and for the purpose set forth.

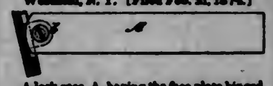
166,796. CALENDARS. David J. Miller, Santa Fe, N. Mex. [Filed June 17, 1875.]

Brief.—For each month forty-two adjustable pegs are provided, and upon each (according to the number of days in the month) are marked the date of the month and the number of the day in the year with relation to each other. In each month-column one or more of the adjustable pegs are provided with a supplementary indicating-slide, as shown in *Fig. 1.*



The combination, with the reciprocally-translatable dating-rods, of adjustable supplementary date-indicators a, substantially as and for the purpose herein set forth and described.

166,797. ADJUSTABLE FACE-PLATES FOR LOCKS. Eugene M. Hix and Jas. B. Hix, Westfield, N. Y. [Filed Feb. 21, 1874.]



A lock-case, A, having the face-plate hinged or pivoted to it, whereby the plate can be adjusted to the bevel edge of a door, substantially as described.

166,798. KNOCK-DOWN BEDSTEADS. Wm. H. Moore, Lebanon, N. H. [Filed June 5, 1875.]

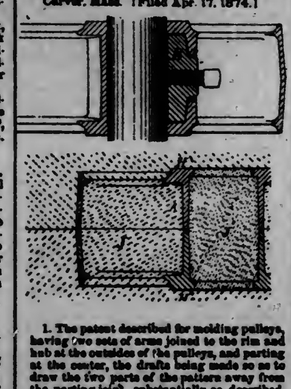
Brief.—The lower sections of the head and foot boards are held in place by the hooks, which rest in the cavities in the standards, and the upper sections are secured by the screws, the middle sections being held in grooves in the adjacent edges of the upper and lower sections.

166,798.



The combination, with the standards A, grooved at B and having cavity F, and the boards C D E, of the hooks G and screws H, applied as and for the purpose set forth.

166,799. CASTING PULLEYS. Jno. Murdock, Carver, Mass. [Filed Apr. 17, 1874.]



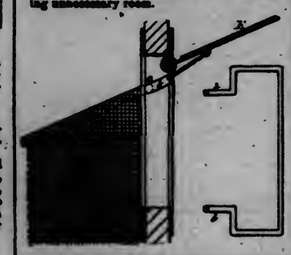
1. The patent described for molding pulleys, having two sets of arms joined to the rim and hub at the outsides of the pulleys, and parting at the center, the drafts being made so as to draw the two parts of the pattern away from the parting-joint, substantially as described.

2. The pulley made with two sets of arms joined to the rim at or near its edges, and to each other by a thin hub, as a new manufacture.

3. The recesses in the hub, in combination with the detached nuts and set-screws, substantially as described.

166,800. LETTER-BOXES. E. S. Newcomer, Oregon, Ill. [Filed June 10, 1875.]

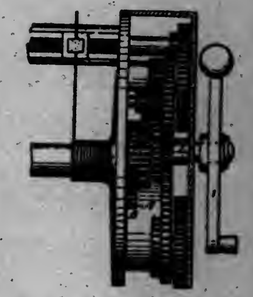
Brief.—The bag or receptacle is composed of net-work or other flexible material, and is attached at its mouth to a frame, (quadrilateral in shape,) which is pivoted to a door coincident with its letter-chute, and connected to the name-plate or cover of the chute in such manner that by raising the latter the receptacle will be distended, and upon lowering it the bag will collapse, thus not occupying unnecessary room.



The combination of a double letter receptacle, with a hinged bag at its mouth, provided with arms b a, connected to the door-plate E, forming the cover of the letter-chute, whereby, when the door-plate is raised, the mouth of the receptacle is extended to receive the letters, substantially as described.

166,801. TRAVERSE-MOTIONS. Charles L. Noe, Bergen Point, N. J. [Filed July 10, 1875.]

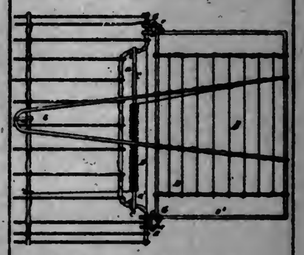
Brief.—One of the cog-rims operates to turn the screw in one direction, and the other turns it the reverse, thus producing a continuous traverse of the guide.



The combination of a master-wheel, having two half or nearly half circular cog-rims on opposite sides and in different planes, and two transmitting-pinions, the arrangement being such that one of said pinions transmits the motion direct, and the other transmits it through the first, and thus produces reciprocal motion, substantially in the manner described.

166,802. ANIMAL-TRAPS. Ebenezer Oliver, New York, N. Y. [Filed July 3, 1875.]

Brief.—Relates to the method of applying the spring to the door, and to the device for locking the door after it is sprung.



1. The combination of front body-wire, having offset a', with the short wire O, to enable coiled spring D to be applied, as shown and described.

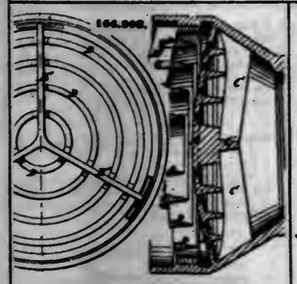
2. The trap-door B, having bottom wire prolonged laterally at each side, and having vertical extensions b' b', in combination with vertical wires E E attached to body-frame to allow the rings O to work, as specified.

3. The hooks a', formed in the upper part of the wires E, in combination with the sliding rings O and the wires b', substantially as and for the purpose herein shown and described.

166,803. HOSE-NOZZLES. Charles Oyston, Little Falls, N. Y. [Filed June 26, 1875.]

Brief.—The nozzle has a plate with concentric annular openings combined with connecting-arms. It also has concentric ring-wedges, with their connecting-arms below, and combined with the annular openings. The object is to divide the stream with the least resistance, and to prevent fouling from the impurities in the water.

166,803.

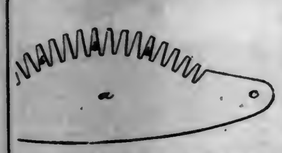


1. The plate B, provided with concentric annular openings, in combination with the arms C and the shell A, substantially as herein shown and described.

2. The concentric ring-wedges D and their connecting-arms E, in combination with the shell A, and with the concentric annular openings of the plate B, substantially as herein shown and described.

166,804. Blanks for Box-Toes of Boots and Shoes. Nathaniel R. Packard, Brockton, Mass. [Filed May 7, 1875.]

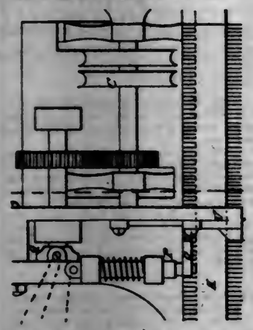
Brief.—The outer or toe portion of the blank to be turned under is notched or serrated.



As a new article of manufacture, the blank *c*, having the serrations *b*, and ears or prolongations *c*, substantially as described, for the purpose specified.

166,805. Machines for Sewing Hosiery-Seams. William Pearson, Philadelphia, Pa. [Filed Dec. 26, 1874.]

Brief.—The bed of the machine is so constructed that the needle-bar or work-supporting carriage may be entered at one end of the machine, and, after having traversed the entire length of the machine, to present the work to the action of the sewing mechanism, be discharged from the other end thereof. The cam which actuates the feeding-pawl is made adjustable, to regulate the throw of the latter, whereby the machine is adapted to work of different degrees of fineness.

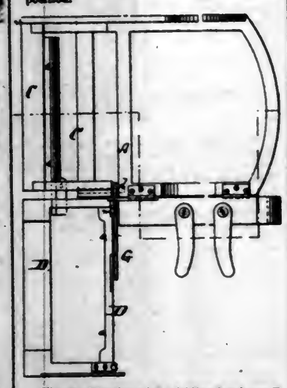


1. In combination with the bed or frame, constructed as described, the rock-bar or carriage K, provided with grooved points to receive and carry the loops of the edges of knitted fabrics in pairs to be sewed together, with a feeding mechanism engaging in teeth coincident in distance with the grooved points, by which the said bar may be fed entirely through the machine, and discharged therefrom after presenting the work to the sewing mechanism, as set forth.

2. The adjustable cam Q, combined with the rock-shaft P, and pawl O, and rock-bar K, as set forth and described.

166,806. Sofa-Bedsteads. John Petry, New York, N. Y. [Filed Jan. 18, 1875.]

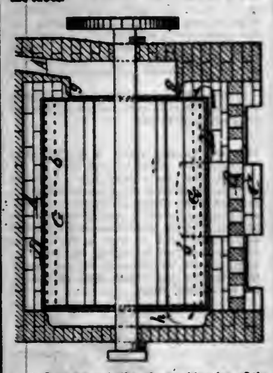
Brief.—The rod is pivoted to the stationary frame and folding head-rest, and guides the latter in its movement, and, in connection with the projecting leg, supports it in its extended position.



The combination of the folding head-rest D with the rod G, connecting it to the frame A, and with the projecting leg *i*, fixed head-rest C, and folding seat E, all arranged substantially as herein shown and described.

166,807. Rotary Steam-Boilers. Charles W. Pierce, New York, N. Y. [Filed July 17, 1875.]

Brief.—As the boiler revolves the water is caught up and carried over by buckets that partially surround the tubes. Chambers are provided at each end of the boiler, by which the products of combustion return through the tubes.

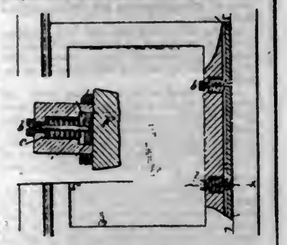


1. In a rotary boiler, the combination of the flue G with buckets *b*, substantially as set forth.

2. The combination, with a rotary boiler, of a furnace having annular flange *g* and annular chamber *h*, substantially as shown and described.

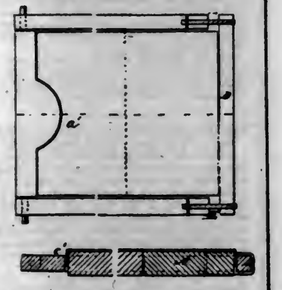
166,808. Ham-Holders. Seraiah M. Pratt, Cherokee, Iowa, assignor of one-half his right to H. C. Kellogg, same place. [Filed July 23, 1875.]

Brief.—A rubber-lined strip inserted in a mortise in the edge of the window-sash is made to bear with adjustable pressure against the window-frame by means of a spring-encircled screw-bolt, the cap of which projects a little beyond the inside line of the sash, giving the device ready adjustability.



The combination, with the window-sash, of the rubber-lined strip *a*, screw-bolts *c*, screw-caps *b*, and spiral springs *c*, in the manner and for the purposes set forth.

166,809. Ironing-Boards. Orlando S. Pride, Yonkers, N. Y., assignor to himself and John E. Woodruff, same place. [Filed Apr. 24, 1875.]



An ironing-board, in two parts, hinged together, combined with a frame, having sidebars B B, elastically connected with rear bar D, as and for the purpose specified.

166,810. Button-Hole Attachments for Sewing-Machines. Wm. Randel, Troy, N. Y. [Filed May 1, 1875.]

Brief.—To one end of the bed-piece of the attachment is pivoted a supporting-plate that carries the clamping and feeding mechanisms. This plate receives a vibratory motion from a reciprocating bar, acting upon a cam of peculiar construction, which is connected to the said plate. In the opposite end of this vibratory plate from its pivot, in suitable slides, are arranged blocks, carrying upon their under side detents, which engage with racks formed on the feed-bar that carries the clamping mechanism. The vibrating cam before mentioned has connected to its one side a wedge, which, through a guide on the supporting-plate, operates the said detents. The racks upon the feed-bar are formed on both edges of the same, with the teeth of the one pointing in an opposite direction to the other, so that, by operating a cam upon the supporting-plate, either the one rocks, or the other may be brought under the detents, as it is desired to feed the buttonhole either in the one direction or the other.

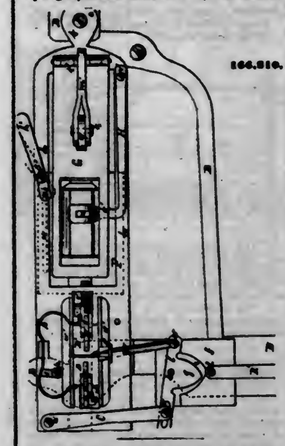
1. The combination of the feed-plate F, the feed-bar E with its ratchets *n* and *n'*, the dogs P and P' pivoted in the blocks D and D', respectively, the spring S, the reciprocating feed-wedge W, and the switch N, as and for purpose described.

2. The combination, with the plate O, pivoted at *h*, and the feeding and clamping mechanism, of the pivoted connecting-rod G, the cam-lever *i*, the reciprocating driving-rod R', provided with the pin *d*, cam *g*, and the plate *f*, as described, and for the purpose specified.

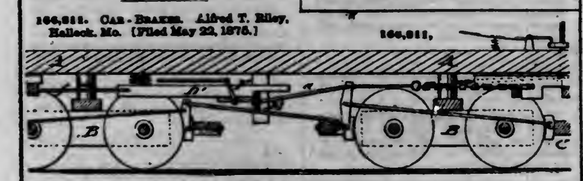
3. The combination, with plate O, pivoted at *h*, block D D', dogs P P', springs S and *s s'*, and the feed-bar E, of the pivoted connecting-rod C, cam-lever *i*, feed-wedge W, and reciprocating driving-rod R', as described, and for the purpose specified.

4. The combination of the feed-plate F, the feed-bar E with its ratchets *n* and *n'*, the dogs P and P', the blocks D and D', the spring S, the reciprocating feed-wedge W, the switch N', the plate O pivoted at *h*, the connecting-rod C, the cam-lever *i*, the reciprocating driving-rod R', pivoted with the pin *d*, the cam *g*, the plate *f*, the hinged clamp C, jaws *j j*, the spring H, and eccentric lever *m'*, as described.

166,810.

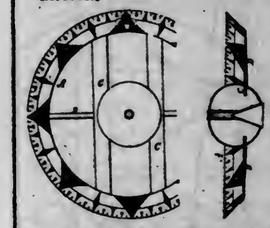


166,811. Car-Brakes. Alfred T. Riley, Hallock, Mo. [Filed May 22, 1875.]



The band-spring E, made fast at each end and about midway of frame A, in combination with brake-lever B connected therewith by rod *c*, as and for the purpose specified.

166,812. Mariners' Compasses. Edward S. Ritchie, Brookline, Mass. [Filed July 20, 1875.]



An improved liquid-compass card, composed of the concentrated buoyant air-vessel, the perforated plate or divided ring A, and one or more magnets, C, or sand and arms D, arranged and constructed substantially as set forth.

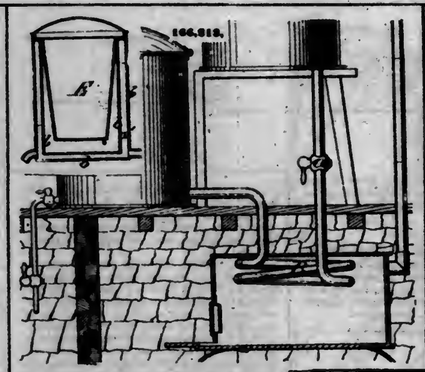
166,813. Apparatus for Threshing Buttons. J. C. Hoxie, Wauseon, Ohio. [Filed Feb. 13, 1875.]

Brief.—The suspended vessel is surrounded by an air-space, which is enveloped by a water-chamber.

166,813.

In an apparatus for tempering batter, a furnace, A, and a cold-water reservoir, C, in combination with a warm-water reservoir, D, having double surrounding walls, and an annular space, with a suspended vessel, E, substantially as and for the purpose set forth.

166,814.



166,815.

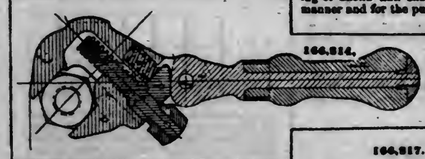


166,816. Welding Compounds. John Scott, Jr., and Amos S. Scott, Conteeville, Pa. [Filed July 17, 1875.]

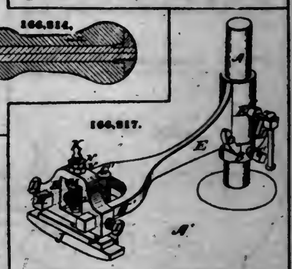
Brief.—Mixes the ingredients together in the proportions of one (1) part of kaolin to two (2) parts of sand.

The welding compound described, consisting of kaolin and sand, substantially in the manner and for the purpose set forth.

166,814.



166,817.



166,817. Variety-Moulding Machines. James Geary, Boston, Mass. [Filed Dec. 15, 1874.]

Brief.—The guard is made adjustable, so as to cover either of the two cutter-heads, as may be desired by the operator of the machine.

1. In a variety-molding or other wood-working machine, an arm or bar pivoted at a point equidistant from the right and left hand cutters, in such manner as to swing horizontally, carrying on its swinging end suitable devices for holding down the stock and protecting the workman's hands from the cutters, and adapted to be held so as to operate interchangeably with said cutters, substantially as described, for the purpose specified.

2. The vertical standard A, located at a point equidistant from the cutters, and having the adjustable collar B, provided with yoke D, in combination with the horizontally-swinging vertically-adjustable arm E, having suitable attachments on its swinging end, for holding the stock and protecting the workman's hands, and the right and left hand cutters G G, all arranged and operating substantially as and for the purpose specified.

3. The horizontally-adjustable cross-head H, having the spring pressure-block J, in combination with the swinging arm E, substantially as and for the purpose specified.

4. The pressure-block J, having the vertical rod K, lock-nuts N, collars M, and spring I, in combination with the cross-head H, substantially as and for the purpose specified.

166,818. Claw-Bars. Andrew Shaw, Petroleum, W. Va. [Filed June 26, 1875.]

Brief.—The clutch-jaw raises the spike; when partly drawn the leverage is increased by dropping the toothed end of the clutch, and fastening with the spring-bolt.

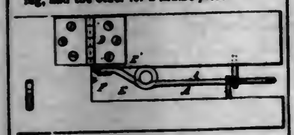


166,819.

The combination, with the lever A and clutch-bar B, having teeth H, of the spring trip-bolt F, substantially as shown and described.

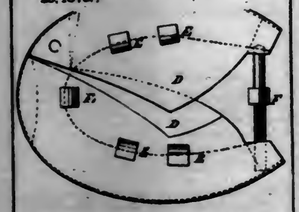
166,819. SHUTTER-FASTENING. Joel Shedd, Waltham, Mass. [Filed June 29, 1875.]

Brief.—The lever-catch is replaced by a single wire with spring-coil, serving as a fulcrum, and eyes at either end—one for a fastening, and the other for a thumb-piece.



A wire blind-fastener having a horizontal spring-arm, A', projecting end G, inclined or brace arm B', intermediate spring-coil E, and horizontal eye F, the same being constructed and adapted to be applied to the blind or shutter, substantially as and for the purposes set forth.

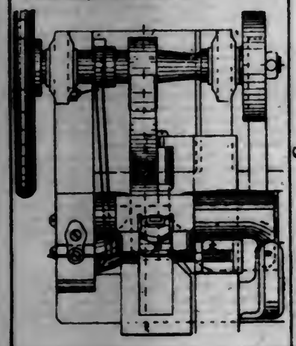
166,820. HOUSEHORSE. Arthur C. Snowden, South Norwalk, Conn. [Filed Jan. 20, 1875.]



The correspondingly-constructed plates D D, attached to an ordinary shoe by means of lugs E E and screw F, as shown and described.

166,821. MANUFACTURE OF CUT-NAILS. George Stacy, Montreal, Canada, assignor of one-half his right to Henry Mulholland, same place. [Filed June 26, 1875.]

Brief.—A pair of the ordinary dies for cutting bred-headed chisel-pointed nails, combined with the nipper, griper, and header of the ordinary cut-nail machine.



1. The combination, for the manufacture of headed chisel-pointed nails, of the dies *p q*, having the configuration, and supported and operated, as herein specified, with the header, the griping-lever, and the nipper, as shown and set forth.

2. The herein described improvement on that method of manufacturing chisel-pointed nails set forth in Letters Patent No. 165,360, the same consisting in operating in the manner described with a pair of cutting-dies of the structure and configuration specified, upon a square-edge nail-plate that is turned over after each cut to be again operated on by the same dies, and in subsequently subjecting the blanks or brad-headed nails thus produced to the heading operation, as set forth, for the production of headed chisel-pointed nails.

166,822. BRICK PAVEMENTS. Saml. Strong, Washington, D. C., assignor of one-half his right to Ebon C. Ingersoll, same place. [Filed July 22, 1876.]



A pavement composed of hard-burnt bricks, set upon their edges or ends upon a water-tight concrete foundation, with the interstices between them filled with tar, pitch, cement, grouting, or any other material that will render the pavement impervious to water, substantially as described.

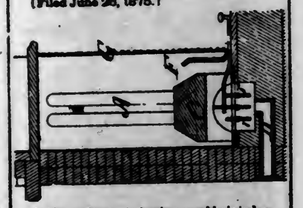
166,823. MEDICAL COMPOSITIONS. Nathan Sullivan, Humboldt, Tenn. [Filed Jan. 16, 1876.]

The medical composition consisting of a tincture of pulverized *Lygnodes Virginica*, prickly-ash root, and milkweed-root, in or about the proportions, substantially as and for the purpose set forth.

1. The hollow picking cylinder B, with toothed lugs C, having inwardly projecting blades or flanges O and spaces D between them, in combination with the casing A and with the chamber N, having a screen, P, above the outwardly conveying apron T, substantially as and for the purpose set forth.

2. The discharge-chamber N, with spout Q, screen P, and outwardly-conveying apron T, in combination with the automatically-operating roller R, substantially as and for the purpose set forth.

166,825. HEATING AND VENTILATING DEVICES. Alfred E. Thorp, New York, N. Y. [Filed June 26, 1875.]

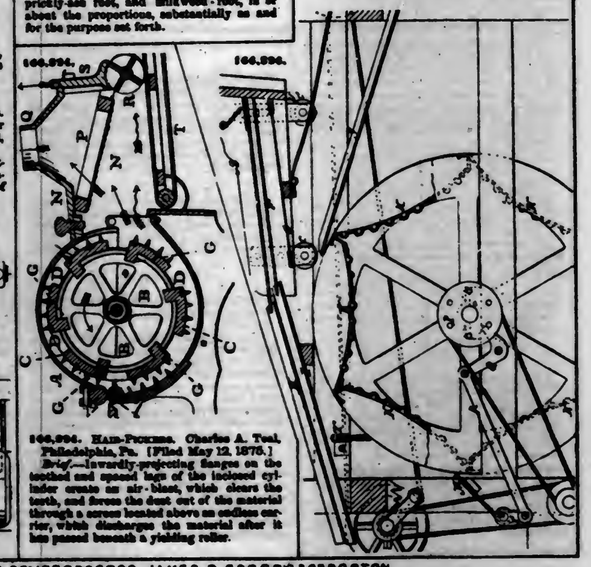


1. The radiator A, having a cold-air-induction pipe and register arranged below it, in combination with the deflecting and conducting plate F and screen G, substantially as described, and for the purpose set forth.

2. The combination of the deflecting and conducting plate F with the induction-tube D and steam-coil A, substantially as specified.

166,826. GRAIN-SEPARATORS. William B. Torley, Milwaukee, Wis. [Filed May 28, 1875.]

Brief.—A reciprocating feeder, provided with screens operating in connection with stationary chutes, runs off the larger foreign matters and the best wheat. The rest of the wheat, with seeds, &c., intermixed, falls upon a rotating polygonal drum having externally concave indented faces. The indentations receive the seeds and dust, while the wheat, being too large to settle into them, is received and thrown off by an intermittently-vibrating chute. A stationary brush aids to prevent the fall of the grain from the drum until the desired moment.



166,824.

166,824. HAIR-PICKERS. Charles A. Teel, Philadelphia, Pa. [Filed May 12, 1876.]

Brief.—Inwardly-projecting flanges on the toothed and opened legs of the inclosed cylinder create an air-blast, which clears the teeth, and forces the dust out of the material through a screen located above an endless carrier, which discharges the material after it has passed beneath a yielding roller.

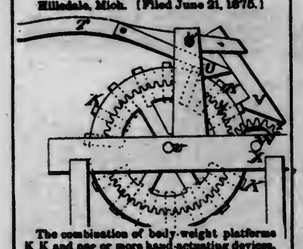
166,826.

1. A polygonal drum having externally concave and indented faces K, as and for the purpose specified.

2. The combination of a swinging chute and polygonal rotary separating-drum, as and for the purpose set forth.

3. The combination of a fixed brush and rotary indented polygonal drum, as and for the purpose described.

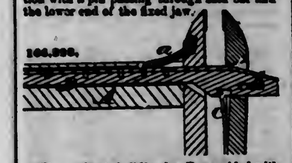
166,827. COMBINED BODY-WEIGHTS AND HAND-POWERS. Charles Van De Mark, Hillsdale, Mich. [Filed June 21, 1875.]



The combination of body-weight platforms K K and one or more hand-actuating devices, T U V, operating together, for applying both the weight of the body and power of the arms of the same person or persons simultaneously, to drive machinery or produce mechanical effects, substantially as herein specified.

166,828. BENCH-VISES. Anselm Veilleux, New Richmond, Wis. [Filed Mar. 6, 1875.]

Brief.—The movable jaw of the vise can be adjusted at any desired distance from the fixed jaw, by means of a bar adjustable through slots in the upper part of the jaws, and having perforations upon its upper surface to receive the end of a retaining-dog pivoted to the rear of the fixed jaw, and provided at its outer end with a slot for the reception of a wedge. Objects are firmly gripped between the jaws by an adjustable perforated bar passing through a notch in the lower end of the movable jaw, and operated by a toggle foot-lever through vertical slots in both jaws, in connection with a pin passing through said bar and the lower end of the fixed jaw.



166,828.

The perforated sliding bar D, provided with a slot at its outer end for the reception of the wedge b, and the stationary jaw B, having the dog a, in combination with the movable spring-jaw B', toggles G G', and sliding bar F, operating substantially as described.

166,829. BROOMING-MACHINES. Daniel A. Wagner, Buchanan, Mich. [Filed June 19, 1875.]

1. The combination, with the roller A, of the swinging hopper E, having lip b, adapted to be held in contact with the said roller, substantially as specified.

2. The combination, with the hopper E, of the adjustable gate W and adjustable partitions v v', substantially as specified.

3. The combination and arrangement of a removable drawer, I, with the inclines n n' q, brush f p n, cleaning-rollers G G' G', and brooming-rollers A D, substantially as specified.

4. The vibrating box J, in combination with the cleaning-roller G and brush n, substantially as specified.

5. The rigid table F f, in combination with the rollers D G G', substantially as specified.

166,829.

166,830. SHARPENING-MACHINES. A. S. Weaver, Joy, N. Y. [Filed Apr. 17, 1876.]

1. The cam-levers E and spring S, combined with table P, as and for the purpose set forth.

2. The rack-bar D, crane K, and arm F, jointed together and combined with yoke having pinion, to give a horizontal movement to the grinding-wheel.

166,830.

166,831. KNITTING-MACHINES. Nathaniel W. Woodcock, Providence, R. I. [Filed Oct. 10, 1875.]

Brief.—Improvement on the Abel Patent No. 165,537. As external notched wheel presses alternately inward. A "presser-guide" bears against the last-formed loops, and prevents them rising with the needles. The latch-guard is cut away at the point where the needles are divided, is curved downward at its ends, and is, as well as all the wheels and the weft-guide, is adjustable in several directions, so that they may be placed in proper relative positions on the machine. The "pockets" prevent undue compression and breakage of the yarn.

1. In a circular latch-needle knitting-machine, the combination, with the latch-needles and their seat-rib A'', of the external regulating-wheel E and the internal dividing-wheel C, constructed and arranged substantially as specified.

2. The combination, with the latch-needles of a knitting-machine and their annular seat-rib A'', of the internal presser-guide L, internal dividing-wheel C, and external latch-guard F, constructed and arranged substantially as specified.

3. The combination, with the latch-needles and cam-rise of a circular weft-thread knitting-machine, of the adjustable latch-guard F, having the form and arrangement herein shown and described.

4. In a circular weft-thread knitting-machine, the combination, with the latch-needles, cam-rise, and internal dividing-wheel C, of the longitudinally and axially adjustable weft-thread guide E, substantially as specified.

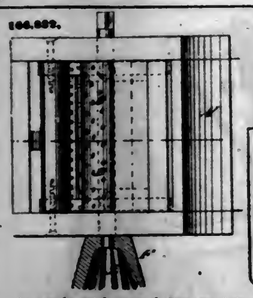
5. The annular needle-seat rib A'', grooved at A', and having the needle-bearings slotted outward through the external wall, in contact with the needles in their lower portions, and enlarged at their upper portions to form thread-pockets *b*, all said parts being constructed and arranged substantially as specified.

6. In a circular weft-thread knitting-machine, the knitting-head, consisting of the wheels B O I, the latch-guard F, and the thread-guides B D, each axially adjustable in two planes at right angles with each other, and longitudinally adjustable in two directions at right angles with each other, the post *f*, and the presser-guide L, all constructed and arranged in connection with the seat-rib A'', the latch-needles, and the frame of the machine, substantially as specified.

166,832. CORN-SHELLERS. G. Williams, Tobeconna, Tex. [Filed Apr. 24, 1875.]

Brief.—For removing small kernels before shelling the entire ear.

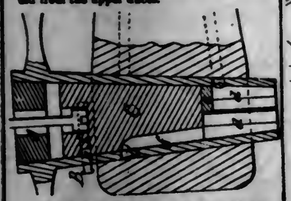
166,832.



An attachment for corn-shellers, consisting of block F, having a conical cavity with ribs or teeth on the inside, and arranged upon the extended end of cylinder-journal, as and for the purpose specified.

166,833. FAUCETS. Ebenezer Wilson, Otto, N. Y. (Filed Feb. 27, 1875.)

Brief.—The body of the faucet is provided with four ducts or passages, through which liquid can be drawn from different vessels. Said ducts are controlled by a rotating plug having apertures in it which register with said ducts. Inside of said rotating plug is located a smaller plug, (operated by a detachable key,) which controls the discharge of liquid from the upper ducts.



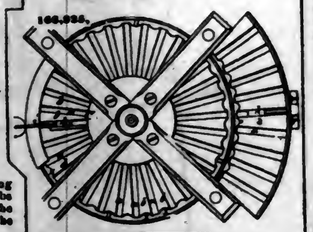
1. In a faucet, the tapering body A, having ducts 1 2 3 4, and the tapering plug B, having angular ducts *d* and perforations *b b*, combined and arranged substantially as specified.

2. The rotating tapering plug C, angular groove *f*, in combination with the plug B, having apertures *b* and ducts *d*, and the tapering body A, having ducts 1 2 3 4, substantially as specified.

3. The locking-key D, in combination with the interconnecting plugs C B and body A, substantially as specified.

In a machine for grinding wood-pulp, the combination of a revolving emery-rim and a stationary wheel formed with a series of radial grooves, *a*, and the partition *b* between said grooves formed with vertical grooves *x* at their outer ends, and slides *h* placed in the grooves *a*, all substantially as and for the purpose herein set forth.

166,835.



166,836. PAPER-WEIGHTS. John F. Adams, Irvington, assignor to John V. Brower and B. Brower, New York, N. Y. (Filed Dec. 23, 1874.)

Brief.—A cast-iron base carries a hone.

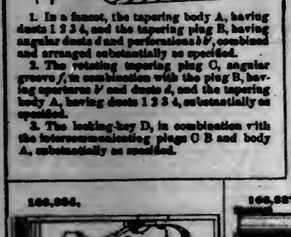


A paper-weight constructed, substantially as described, to serve as a support for the sharpening-hone, arranged as set forth.

166,837. MACHINES FOR STRIPPING LEATHER-BOARD, &c. Emery Andrews, Wolcottville, Ct. (Filed Jan. 20, 1875.)

Brief.—The knife is adapted to cut between two sets of feed-rolls, and above independently-adjustable guides provided with set-screws, for changing the inclination of the cutting-edge, as may be desired.

1. In combination with independent supporting-guides I I', a stripping and skiving knife, K, arranged and supported outside of the feeding-rolls in the direction of their length, or out of their plane or planes of rotation, instead of between the peripheries of the rolls, as heretofore, substantially as herein described, for the purposes set forth.



166,834.

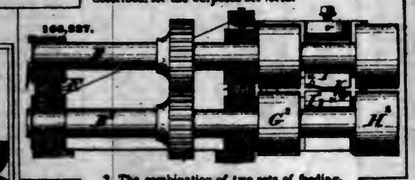


166,838. LOCKING-LATCHES. A. Worster, Groveton, N. H. (Filed Apr. 29, 1875.)

In a locking-latch, the combination of a locking-bolt provided with two arms, D and H, forming an obtuse angle on the under or lower side, as shown in the drawings, and provided with a pin, *c*, and notch *i*, the fixed pin *d*, the spring F, and the latch G, provided with the pin *h*, and operating on the pivot *f* near its center, together with the semicircular cam E, operating by means of the usual knob and shaft on the upper rear extremity of the latch G, as herein before described, and for the purpose set forth.

166,839. PAPER-STOCK GRINDERS. O. Abell, Walcott, Vt. (Filed June 10, 1875.)

166,839.



2. The combination of two sets of feeding-rolls, G G' H H', and a stripping and skiving knife, K, arranged between the inner ends of the two pair of rolls, to secure an equal feed on each side of the knife, and independent support and guidance at the cutting-point, substantially as herein set forth.

3. In combination with feed-rolls, a pair of supporting-guides, I I', constructed independently of the rolls, and of the knife and knife-stock, and adjustable correspondingly with the rolls, substantially as herein shown and described, for delivering the sheet metal to the knife, in the manner set forth.

4. The guides I I', provided with the pin *n* and set-screw *o'*, for supporting the respective edges of the knife K, and for adjusting the knife as to inclination, substantially as described.

5. The double clamp-stock, composed of the holder L and clamps M N, constructed and combined substantially as shown and described, for supporting the outer end of the knife, and for adjusting the same, in the manner set forth.

6. The combination of the edge-guide O, the main guides I I', the rolls G G' H H', and the knife K, arranged and operating substantially as herein shown and described, for the purpose specified.

166,836. PADLOCKS. William H. Andrews, New Haven, Conn., assignor to Mallory, Wheeler & Co., same place. (Filed July 9, 1875.)



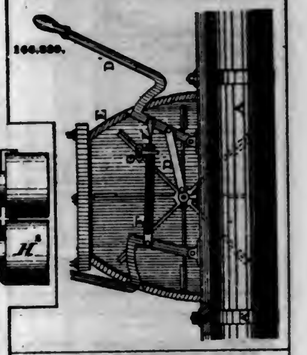
The combination, in a padlock, of the bar B, the pivoted catch C, the slot H in the edge of the lock, the rotating notched cam P, and drop E upon the outside for rotating said cam, and the key L, substantially as described.

166,839. PROPELLING MECHANISMS FOR BOATS. William Accough, Buffalo, N. Y. (Filed June 14, 1875.)

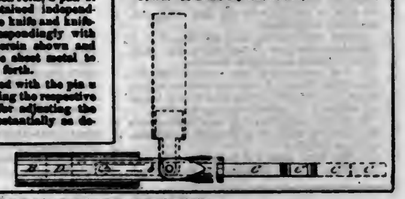
1. The pivoted levers D, extending through the front and rear walls of the paddle-box, in combination with the connecting-rods D' and F, cranks D', and the paddle-wheel C, the whole arranged to operate substantially as described, and for the use and purpose set forth.

2. The combination, with the boat levers D, extending through the front and rear sides of the wheel-box, of the connecting-rods, consisting of the socket F, sliding bar F', and the key G, whereby the levers are connected and disconnected, substantially as described and shown.

166,839.

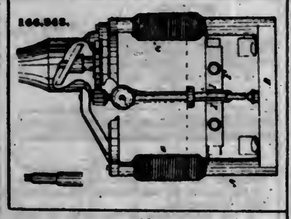


166,840. APPARATUS FOR CHARGING DRILL-HOLES. Barson G. Baldwin, Leighton, Iowa. (Filed July 20, 1875.)



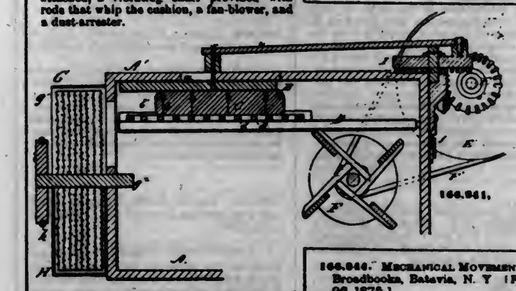
The improved blasting-charger herein described, consisting of the tube A, having the charge-tube or cylinder B pivoted thereto, and sliding rod C, having the button D pivoted thereto, combined and operating substantially in the manner and for the purpose hereinbefore set forth.

166,842.



166,841. CUSHION-CLEANING MACHINES. Job B. Barry, Philadelphia, Pa., assignor of one-half his right to William R. Jerome, same place. (Filed Feb. 26, 1875.)

Brief.—The box has a hinged lid with a sliding frame underneath, to which the cushion is attached, a vibrating shaft provided with rods that whip the cushion, a fan-blower, and a dust-arrester.



166,841.

1. A car-cushion-cleaning machine having a lid, A', provided with a traversing frame, B, substantially as shown and described.

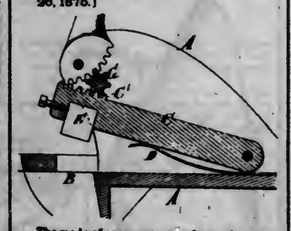
2. The combination, with the beater-shaft D and main shaft K, of the worm *e'*, wheel I, arm *i'*, and traversing frame B, operating in unison, substantially as shown and described.

3. A dust-arrester having a wire screen or disk or disks, *f*, for the purpose set forth.

4. The cylinder G, disks *c*, and case H, constructed and operating substantially as shown and described.

5. The combination of the box A, having the hinged lid A' and traversing frame B, the whipping-shaft D, having rods *d d*, the fan-blower F, shaft E, and dust-arrester G H, constructed and arranged for operation substantially as shown and described.

166,842. MECHANICAL MOVEMENTS. Peter Broadbooks, Batavia, N. Y. (Filed Jan. 26, 1875.)



The mode of communicating forward motion to the part C by means of the cam-headed lever F and the intermediate and interengaged traveling roller G, substantially as set forth.

166,843. BABY-JUMPERS. R. W. Caldwell, Zanesville, Ohio. (Filed Jan. 26, 1875.)

Brief.—The cradle and hobby-horse are interchangeable, and can be adjusted in different positions on the bar, according to the weight of the child.

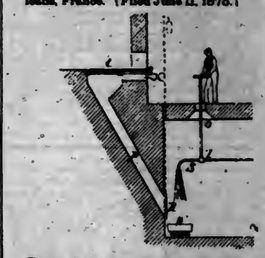
1. The combination of the base N, springs G G, slotted bar E, foot-rest I, and spring R, substantially as and for the purposes herein set forth.

2. The hobby-horse Z, base D, pommel V, chair B, and clamping device *p*, substantially as and for the purposes herein set forth.

3. The combination of the base N with its flat widened surface end M, springs G G and E, foot-rest I, crib A, loop S, clamping device *y*, and slotted bar E, substantially as and for the purposes herein set forth.

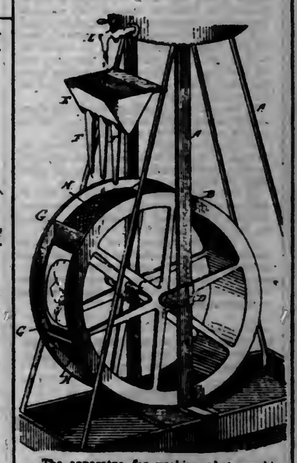
4. The combination of the hobby-horse Z, base or bottom D, pommel V, chair B, clamping device *y*, and the slotted spring-bar E, connected to the base M N, all substantially as and for the purposes herein set forth.

166,844. APPARATUS FOR ECONOMIZING FUEL. Louis Charles Ernest Carre, Orleans, France. (Filed June 11, 1875.)



The combination of the tilting grate A and chute F with the water-pipe S, arranged above the receptacle into which the coke is discharged, substantially as described.

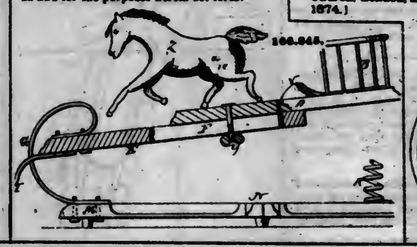
166,845. MACHINES FOR WASHING PHOTOGRAPHS. Jacob L. Caylor, Bonham, Tex. (Filed July 26, 1875.)



The apparatus for washing photographic prints, consisting, essentially, of the bucket-wheel C, having netted or woven fabric attached to its periphery for the reception of the pictures, the trough E, provided with distributing-spouts F, and the water-supply tank I above the same, provided with a tube and stop-cock for directing the water in the spout, all combined and arranged to operate substantially as and for the purpose described.

166,846. BALANCED VALVES. Walter Chas. Church, London, England. (Filed Mar. 2, 1874.)

166,845.



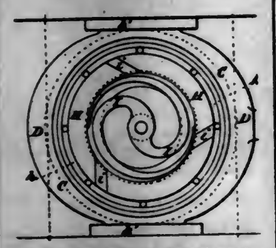
166,846.



166,843. ELECTRO-MAGNETIC DENTAL ENGINES. Joaquim Bishop, Sugartown, assignor to Samuel S. White, Philadelphia, Pa. (Filed Aug. 6, 1873.)

The herein before-described electro-magnetic dental engine, consisting of the combination of the frame, the revolving armature, independent electro-magnets of similar polarity, and the circuit-shifting break-lever, which throws one of the magnets into and the other out of action to reverse the direction of rotation of the armature, substantially as set forth.





1. The combination of the reciprocating frame D and the valve C, having a lateral bearing, by frictional contact with which an intermittent rotation is imparted, as described.

2. The combination of the valve C, loose ring H, sliding in contact with the top of the valve-chest, ring F, secured to the valve, and an L-shaped packing-ring, g, bearing upon the rings F and H, substantially as and for the purpose set forth.

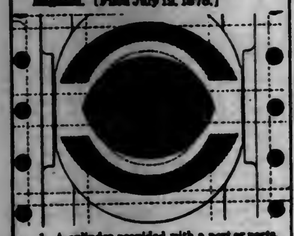
3. The packing-ring H, groove h, and channels i i, and recesses communicating with the groove, as and for the purposes set forth.

4. The combination of the valve-ring H, having a beveled inner edge, and spring I, bearing against said beveled edge, substantially as set forth.

5. The combination of the valve C, ring F, and metallic packing-ring g, confined between the two, and reduced to diminish its bearing on the ring F, as set forth.

6. The combination, with the L-shaped packing-ring g, adapted to bearing surfaces at right angles with each other, of the overlapping segmental plates e, filling the recess or rabbet on the internal side of the L-shaped ring, all as set forth.

166,850. PUMPS FOR STEAM-ENGINE CYLINDERS. Walter C. Church, Westminster, England. [Filed July 12, 1875.]



1. A cylinder provided with a port or ports, a a, curved and expanding in width from the center to the ends, all as and for the purpose set forth.

2. The combination of the curved port or ports a with the exhaust-port b, widest on its transverse diameter, as set forth.

166,860. HUB-BRACE. John K. Clark, Berlin, N. Y. [Filed Jan. 14, 1875.]

Brief.—The rod has a flange on its lower edge, and is passed through the socket from below, the thimble-pieces passing through side slots in the socket. These slots are closed when the rod is in place by the clamp-wire running over them.

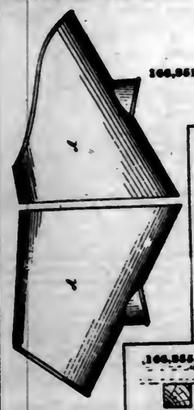
1. The rod C and the collar D, constructed with the slots G, in combination with the binding-wire E, having its ends arranged to close the slots G when the rod has been placed in the collar, and thereby secure the rod in place by the ends of the said binding-wire, substantially as described.

2. The combination of the collar D, constructed with the circular seat b, sockets H, and recesses G, extending laterally from the central opening F, the rod C having the flanges c and thumb-pieces e, and the wire E having its ends passed through the sockets H, substantially as described, and for the purpose set forth.

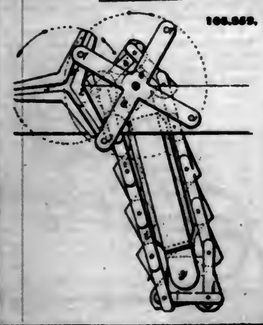
3. The collar D, constructed with the sockets H and bridges J, in combination with the rod C and binding-wire E, having its ends inserted beneath said bridges, and thereby securing the wires in place, substantially as set forth.

166,861. COAL-HODS. John Cochran, Purdy's Station, N. Y. [Filed Oct. 15, 1874.]

Brief.—The hod has a discharging-spout and a receiving one of larger size, which can also be used as a discharge.



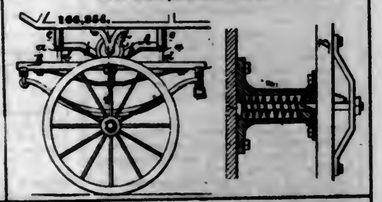
166,862.



The combination of two blocks, A A', having their sides a b c d and e f g h constructed as herein shown, said blocks adapted to be bent up into the shape of two oblique truncated cones, and united at their bases to form a coal-hod, substantially as set forth.

166,863.

166,864.



166,865.



166,866. RAILWAY-FROGS. Jas. Cumming, Buffalo, N. Y. [Filed May 10, 1875.]

Brief.—The flange-bearer rests upon a yielding cushion.

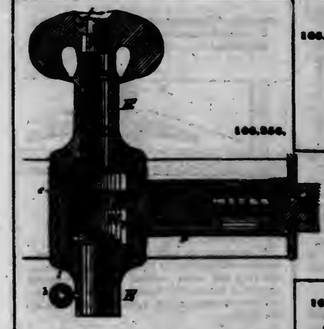
The combination, with the trunk-rails B B' and C C', intersecting each other at any angle, of a yielding bridge-piece, E, provided with the cushion F, and arranged within a recess in the chair-base, and held therein by the heads of the rails, substantially as described, and for the use and purpose set forth.

166,867. LOCKING-LATCHES. G. J. Dickson, Albany, N. Y. [Filed Apr. 2, 1875.]

1. The cross or double-hooked rod a of the sliding bolt C, within a bolt or swell, c, on the hollow spindle E, in combination with the inward projections or spurs i attached to said swell, substantially as specified.

2. The hollow tumbler H, in combination with the bolt or swell c on the hollow spindle E within which the tumbler is arranged, the inward projections or spurs i attached to said swell, and the cross or double-hooked rod a of the sliding bolt C, essentially as described.

3. The combination of the hollow spindle E, made in two parts and joined together at b, the hooks a b, the recess d d, and the bolt or swell c of the hollow spindle, provided with inward projections or spurs i i, substantially as specified.



4. The knob or thumb-piece A connected with the night-catch attachment or mechanism through the hollow spindle E, in transverse relation to the latter, for operation substantially as specified.

5. The arrangement of the hollow cylindrical tumbler H within the swell c of the hollow spindle E, in combination with the night-catch attachment G and the shouldered end of the sliding bolt C, substantially as and for the purpose specified.

6. The combination, with the sliding bolt C, the inward projections or spurs i on the swell c, and the hollow cylindrical tumbler H, of the box S on the sliding bolt, and the connecting-nut r, essentially as and for the purposes herein set forth.

7. The screw-box J, in combination with the case or shell B and sliding latch C, substantially as specified.

8. The combination of the screw-boxes or tubes P and J, with the hollow spindle E and sliding bolt C for securing the lock, essentially as described.

9. The sleeve or cylinder L, arranged within the hollow spindle F, and provided with one or more guards, e, in combination with the rotating key, bolt, or cylinder g and the hollow tumbler H, substantially as and for the purposes specified.

166,868. CHEMICAL TELEGRAPHY. Thomas A. Edison, Newark, N. J., assignor to himself and George Harrington, Washington, D. C. [Filed July 26, 1874.]

Brief.—Current passing through moistened paper causes evolution of hydrogen, which, uniting with tellurium of styles, forms hydrotelluric acid, leaving red mark on paper.

1. The method of recording telegraph or other signals by the electro decomposition upon moistened paper or other material of a stylus of tellurium

2. A paper moistened with hydrates of lime, potash, or the cyanides of potassium, for use with a tellurium stylus, for the purpose set forth

166,869. CHEMICAL TELEGRAPHY. Thomas A. Edison, Newark, N. J., assignor to himself and George Harrington, Washington, D. C. [Filed July 26, 1874.]

Brief.—Oxygen evolved at tin stylus forms protoxide of tin, which reduces the sesquisalt to a proto salt of iron, which combines with the ferro-cyanide of potassium, to form Prussian blue.

The combination of a sesquisalt of iron with the ferrocyanide of potassium, and a tin stylus, for the purpose set forth.

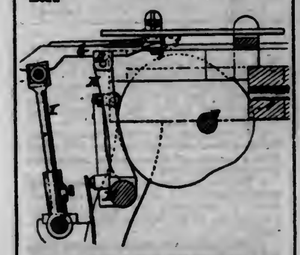
166,870. CHEMICAL TELEGRAPHY. Thomas A. Edison, Newark, N. J., assignor to himself and George Harrington, Washington, D. C. [Filed July 26, 1874.]

Brief.—Oxygen evolved at styles raises protoxide to a sesqui or per oxide, which combines with the sulpho-cyanide of potassium, to form red sulpho-cyanide of iron.

The combination of a protosalt of iron, sulpho-cyanide of potassium, and a non-oxidizable stylus, for the purpose set forth.

166,871. FEED DEVICES FOR NAIL-FORGING MACHINES. Lucius A. Dodge, Keeseville, N. Y. [Filed July ., 1875.]

Brief.—The gripper-slide G is mounted upon arms H I, attached, respectively, to the rock-shafts E and J, the object being to move it in a true horizontal plane. The cam C gives the backward and the spring F the forward movement.



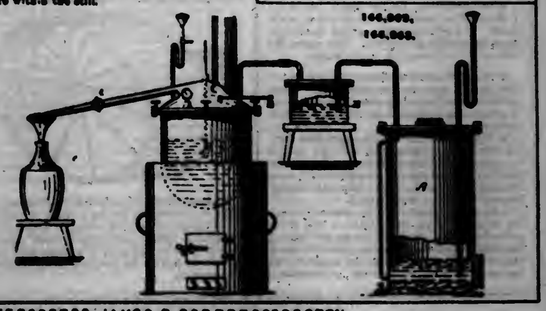
The combination, with the reciprocating gripper-slide G, of the supporting-pivots d d', carried by swinging arms H I, attached to rock-shafts E J, and constituting a free parallel motion for the support, guidance, and operation of said slide, substantially as specified.

166,872. MEANS FOR HOLDING CONDUCTORS' PUNCHES. T. B. Doolittle, Bridgeport, Conn. [Filed May 8, 1875.]

A holder, C, adapted for use with a check or alarm punch or fare-register, consisting of a part, a, for the back of the hand, a connecting-piece, d, and a band, c, for the wrist, all substantially as and for the purpose described.

166,873. APPARATUS FOR THE MANUFACTURE OF SALICYLIC ACID. Wilhelm Ebrenfried Graf, New York, assignor of one-half his right to Saml. W. Caufield, Piermont, N. Y. [Filed June 22, 1875.]

Brief.—A carbonic-acid apparatus and washer are connected with a still, which latter is furnished with a safety valve, and has a step-rest in the neck, in order to create pressure within the still.

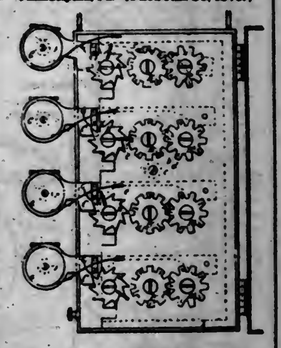


166,874. PROCESSES OF PRODUCING SALICYLIC ACID. Wilhelm Ebrenfried Graf, New York, assignor to himself and Saml. W. Caufield, Piermont, N. Y. [Filed June 22, 1875.]

Brief.—As an improvement upon the ordinary process, conducts it in a closed still under pressure.

The process herein described of manufacturing salicylic acid by conducting carbonic acid from a generator into a closed still, which contains a mixture of carbolic acid and an alkali, while its ingredients are heated, substantially as specified.

166,875. FARE-REGISTERS. David Eldridge, Philadelphia, Pa. [Filed Jan. 30, 1875.]



1. The movable visible indicators G, in combination with the bells or annunciators, to indicate the registry of the fare by both sight and sound, substantially as described.

2. The signal-wheels G, or equivalent device, in combination with the levers C, or other mechanism which operates the registering-wheels, in such a manner that each signal shall be set in motion simultaneously with the registering-wheel with which it is combined, substantially as set forth.

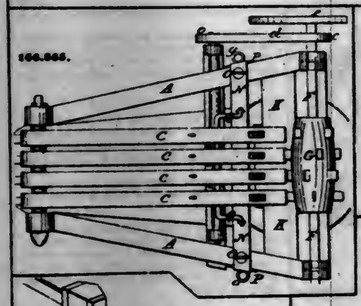
166,876. MEAT-CHOPPERS. Wm. L. Fallis, Wesley, Pa. [Filed June 6, 1875.]

1. The combination of the crooked rod Q with the pivoted cutter-carrying levers and frame of a meat-chopper, as and for the purpose set forth.

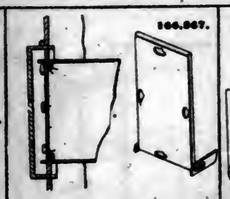
2. The stop-bar N for limiting the descent of the knives, provided with the slotted adjusting-plates P and the adjusting and clamp screws O p, whereby the stop-bar is adjusted, braced, and clamped in position, substantially as herein set forth.

166,877. 166,878.

166,866.



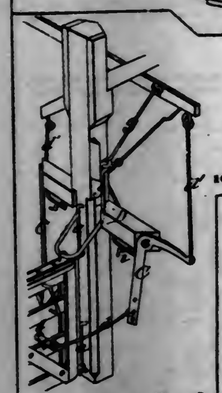
166,867.



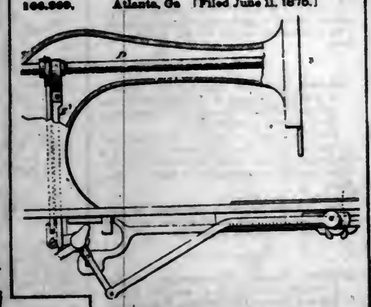
166,868.



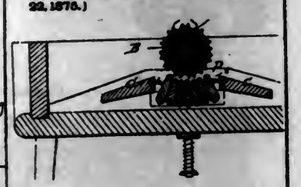
166,866.



166,869.



166,870.

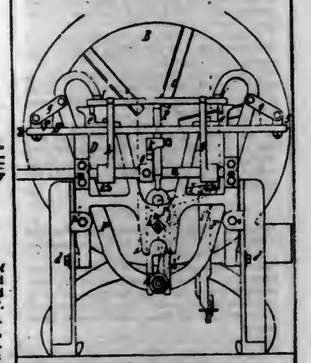


166,871. Washing-Machines George W. Holmes, Council Bluffs, Iowa. [Filed July 22, 1875.]

In combination with the aprons C C, vertically-pivoted plate, D D, and springs between the two, the India-rubber roller B secured around a shaft, and provided with longitudinal corrugations *x* and *y*, of unequal sizes, as set forth.

166,872. Machines for Jointing Staves. Edward Holmes and Britain Holmes, Buffalo, N. Y. [Filed Aug. 7, 1874.]

Brief.—The peculiar form of the parts to which the cutters on the cutter-wheel are attached enables it to throw the long shavings from the edges of the staves toward its periphery, from which they pass through a suitable orifice away from the machine.



1. The combination, with the cutter-wheel B of a stave-jointing machine, provided with the projections *b'*, of a case partially inclosing the cutter-wheel, and forming in connection therewith a fan, by which the shavings are collected and carried off, substantially as herein before set forth.

2. The combination, with the hinged frame D, stave rests, and clamping-arms F F, of the links *g g*, substantially as and for the purpose herein before set forth.

3. The combination, with the frame D and clamping-arms F F, of the link *s*, bell-crank lever I *l'*, and treadle and link J *j'*, substantially as and for the purpose herein before set forth.

4. The combination, with the swinging frame and clamping-arms, of the shaft *m*, guide-arms L, central support Z, and cam O, substantially as and for the purpose herein before set forth.

5. The combination, with the clamping-arms, provided with concave jaws *f*, of the pivoted self-adjusting rests *e'*, by which the staves are clamped and their edges presented to the cutter-wheel at different angles, according to the width of the staves, substantially as herein before set forth.

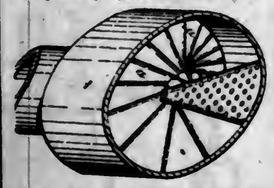
6. The combination, with the standards A and concave cutter-wheel, of the swinging curve-supporting frame D, with its pivots *d*, made vertically adjustable in slots in the standard A, to regulate the bilge or curve given to the edge of the stave, substantially as herein before set forth.

166,869. Sewing-Machines T. J. Harper, Atlanta, Ga. [Filed June 11, 1875.]

The combination, in a sewing-machine, of the driving-shaft D, the vertically-guided needle-bar C, the eccentrics E' and F' on said driving-shaft, the two rock-shafts E and F, connected independently to the said eccentrics, and carrying, respectively, arms H' and R, with the feed-lever H, hung upon a fulcrum, L, forward of the feed-bar, and extending back to, and in connection with, the said arms H' and R, whereby it receives a combined reciprocating and vertical vibratory movement, and the feed-bar *f*, all substantially as specified.

166,870. Spark-Arresters D Hawkesworth, Digby, Canada. [Filed July 26, 1875.]

Brief.—The sparks are intercepted by triangular inverted pans, arranged spirally in the smoke-stack from bottom to top, and extending laterally beyond the center.



The spark-arrester herein described, consisting of a cylinder, A, having a series of internal triangular plates, *a a*, arranged circumferentially and spirally, overlapping each other sidewise and at the points, substantially in the manner and for the purpose herein shown and specified.

166,866. Automatic Gates. Henry L. Furris and Cyrus Lewis, Alden, Ill. [Filed Apr. 24, 1875.]

Brief.—To open the gate, draw either of the levers E forcibly downward, which, through linked connections, raises the gate, releases the latch, and swings the gate against one of the catches *i*, formed upon the lower ends of endwise-movable spring-rods *j*. A pull upon the opposite lever E releases the latch *i*, and closes the gate.

The combination, with the catches *i* on the rods of endwise-movable rods *j*, of a spring for returning the said catches to their proper position for engagement with staple latches *h* on the gate, substantially as specified.

166,867. Gas Apparatus. Adonis Giachet, Alexandria, Va. [Filed July 21, 1875.]

Brief.—The retort forms the fire-back of the stove. The ebullition-pipe of the gas-holder has a broad disk-shaped top. Gas enters the holder below the surface of the water.

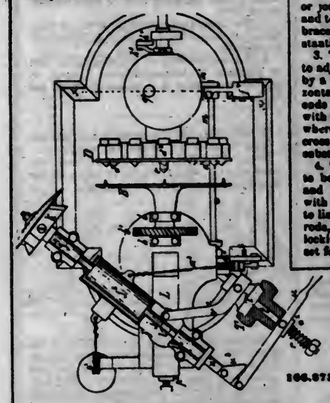
1. In combination with the stove and retort-door, the box-door, the inner edges of which project within the line of the door for the purpose of preventing leakage into the room, as described.

2. The combination of the retort-door having pivot-pins, as described, with the slotted supporting-arms, the construction being such that the door is capable of adjustment upon the supporting-arms, for the purpose of tightly closing the retort, as described.

3. In combination with the gasometer having its supply-pipe discharging in the lower part of the tank, the discharge-pipe *f'* having the disk-shaped cap *f'*, the construction being such that the gas enters at the edges of the cap and passes out at its center, as described.

166,873. Machines for Sawing Barrel-Heads. Edw. Holmes and Britain Holmes, Buffalo, N. Y. [Filed Aug. 7, 1874.]

Brief.—The frame carrying the saw-arbor is made adjustable toward and from the head-clamps in a line with their axis.



1. The combination of the clamping-heads, cutter, cutter-shaft, and swinging frame or bearings thereof, with the pivot of said swinging frame or bearings made adjustable in line of the axis of the clamping-heads, substantially as and for the purposes hereinbefore set forth.

2. The combination, with the clamping-head D, toggle-joint *f' f''*, and foot-lever *f'*, of the locking spring-catch *g*, substantially as herein before set forth.

3. The combination, with the clamping-head D and locking device, of the releasing-cam and shaft *h' i*, arm *h''*, hooked rod *h'*, and revolving cam *i*, substantially as and for the purpose hereinbefore set forth.

4. The combination, with the treadle of the clamping mechanism, of the rock-shaft *m*, arm *w'*, chain *w''*, spring *w'*, and swinging cutter-frame J, for simultaneously clamping the head-blank and swinging the cutter in contact with the latter, substantially as herein before set forth.

5. The combination, with the swinging frame and driving-shaft, of the clutch T T' and clutch-arm *v'*, substantially as and for the purpose herein before set forth.

6. The combination, with the friction-clutch T T' and arm *v'*, of the auxiliary releasing spring-lever *u* and adjustable stop *u'*, substantially as herein before set forth.

7. The combination, with the sliding pivot-block L and clamping-head D, of the oval cam *q*, roller *q'*, and mechanism connecting the latter with the block L for cutting the heads slightly oval, substantially as herein before set forth.

8. The combination, with the clamping-head D, provided with the oval cam *q*, of the weight *q''*, for causing the head D, after being released, to assume the proper position for the next cutting operation, substantially as herein before set forth.

9. The combination, with the swinging frame and sliding pivot-block L, of the chain *w'*, connecting with the treadle and provided with a spring for taking up the slack thereof, substantially as herein before set forth.

10. The spring head-rest *s*, arranged so as to be swung out of the way by the head-blank as it revolves, substantially as herein shown and described.

166,872. Adjustable Folding Tables. Cyrus S. Hood, Corning, N. Y. [Filed July 12, 1875.]

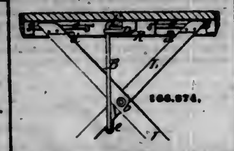
Brief.—The legs in each pair are loosely pivoted together in an X shape. The upper ends slide on rods, so that the table can be adjusted in height, and that the legs may also be folded against the table-top.

1. In a cutting and basting table, the combination, with the table T, of the supporting cross-legs L, having the horizontal rods *a*, with the table and the cross-joist-bolt *b* connection, whereby the legs may be adjusted upon their rod-hinges by a sliding movement cross-wise to raise and lower the table, and be folded with the table lengthwise, substantially as herein set forth.

2. The combination, with the legs L, hinged or jointed at *b* and *a*, to be adjusted in height, and to fold inward, as described, of the hinged brace-rod B and hold-fast button O *i*, substantially as and for the purpose described.

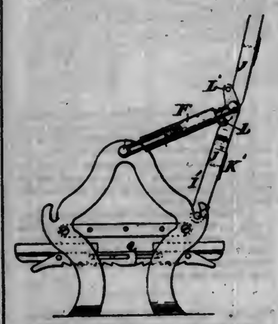
3. The combination, with the legs L, hinged to adjust the table to a greater or less height by a sliding movement cross-wise upon horizontal way-rods *a*, of side pins *c* on the hinged ends of said legs, the cross-rail E, provided with the notches *d*, and the brace hold-fasts *i*, whereby the legs are locked and braced both cross-wise and length-wise to support the table, substantially as herein set forth.

4. The combination, with the X-legs, hinged to be adjusted upon horizontal way-rods *a*, and provided with pins *c*, for interlocking with the cross-rail, of the steps *c'*, whereby to limit the movement of the legs upon said rods, to bring them coincident with the interlocking notches, substantially as herein set forth.



166,874.

166,873. Railway-Car Seats. Numon N. Horton, Kansas City, Mo. [Filed Dec 1, 1874.]



1. The stays E E' F, formed with screw-threads for adjusting the back, in the manner substantially as described.

2. The stays E E' F, constructed with screw-threads for adjusting the seat-back, and with a slot at each end sliding on studs on the seat arm and back, respectively, for the purposes set forth.

3. The combination of the pivoted central section H, the two end sections I I', arms J J', and the stops K K', as described, whereby the lower section is held in line with the central section, as explained.

4. The head-rest I and arms J, pivoted at the axis of the back H, and provided with stops L, to engage beneath the stays F, as set forth.

166,874. Compound Telegraph-Keys. Marcus L. M. Hunney, Menlo Park, assignor of one-half his right to Geo. W. Barker and William Ettinger, Jersey City, N. J. [Filed Aug. 6, 1875.]

Brief.—In base of key is formed a switch-board, so that by revolving the key it may be thrown into any desired one of the circuits connected thereto.

1. The combination, with a single key, of one or more naviles, each representing a different wire or circuit, and all so arranged that the movement of said key or its support serves to bring said key into suitable connection with any desired one of said wires or circuits, substantially as described.

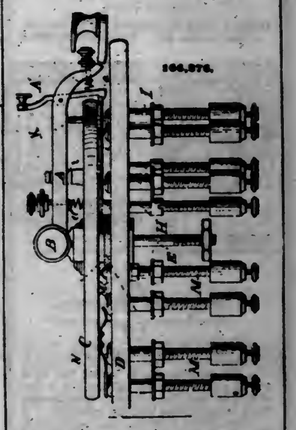
2. The combination of a single key-lever, contact-point, and anvils, as described, with a connector and local contact, so arranged that upon the movement of said key to connect with any one of the line-circuits the local battery and proper sounder connections are simultaneously made, substantially as and for the purposes set forth.

3. The combination, with the main or operative lever, of an auxiliary or spring lever, adapted to hold the main circuit closed when such circuit is not in use, whereby but a single contact-point is needed, substantially as and for the purposes set forth.

4. The combination of two disks or plates, one provided with a single key lever, and the other provided with one or more contact-points, through which various telegraphic circuits pass, one plate being movable in relation to the other, whereby the movement of one plate upon the other brings the key-lever into position to operate any desired circuit of the series, substantially as set forth.

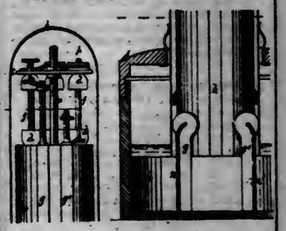
5. The combination of the key, the table C, and spring O with posts M, circle-connector M', and post N, substantially as and for the purposes set forth.

6. The combination of the key A and latch-spring A' *a* with the circuit-plate O, posts K and I *i*, substantially as and for the purposes set forth.



166,876.

166,877. Electric Lights. Stephane Alexandrovitch Kosloff, Paris, France. [Filed June 23, 1875.]



1. The carbon electrodes provided with insulated supports independent of the metallic conductor, substantially as herein described.

2. The combination of the carbon-pins *f*, having the enlarged ends *d*, with the metal conductors *e*, inserted into the said enlarged ends of the carbons, substantially as shown and described, for the object specified.

3. The combination of the carbon-pins *f*, having the enlarged ends *d*, the wires *e*, and the links *c*, flexibly connecting said wires and the principal conductors, as herein shown and described.

4. The supporting column *h*, arranged within and filling a portion of the globe or cover *k*, substantially as and for the purpose herein specified.

5. The combination of the globe h, the ori-ence h, and the valve n, surrounding said ori-ence horizontal and the plate, and constructed to permit the escape of the dilated air from the globe, and prevent the entrance of the external air, substantially as shown and described.

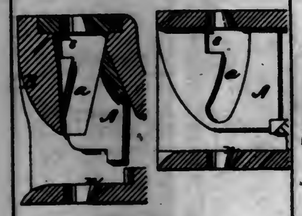
6. The combination of the thin sticks of carbon f, their enlarged ends d, the wires e, inserted in said enlarged ends, the flexible connections a, the insulating plate c, the plates r, screw i, pins p, washers q, and nuts k, substantially as and for the purpose described.

7. The combination, with the carbon of carbon electrodes, and a flexible connection connecting with the electric conductors, and constructed to automatically pass the electric current from one carbon electrode to the other in case of the breakage of either, as set forth.

166,878. DENTAL CEMENTS. M. T. Labbe, Paris, France. [Filed May 20, 1875.]

The herein-described dental cement, consisting of oxide of zinc, oxide of iron, calcined silica, in the proportions substantially as specified, combined with the agglutinating solution, consisting of chloride of zinc and hydrochloric acid, in the proportions and prepared substantially as described.

166,879. CAR-COUPLINGS. Wm. Lennon, Union Bridge, Md. [Filed July 23, 1875.]



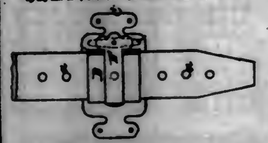


1. The coupling-pin F, having the cross-arms f f, and the lower end inclined or bevelled on its rear edge, as shown at n, substantially as and for the purposes specified.

2. The blocks A, having the grooves a a inclined downward and forward, in combination with the pin F, having cross-arms f f, substantially as and for the purposes set forth.

3. The blocks A, having the grooves a a, combined with the shoulders r r at the upper end of the grooves, and operating in combination with the pin F, as described, for the purposes specified.

166,880. BUCKLES. Laurens Looser, Brooklyn, E. D., N. Y. [Filed Aug. 6, 1875.]



A buckle composed of a guide-bar, B, for a belt or strap, a hinged bar, F, subscribing at right angles to the guiding-channel, and having a bevelled end and a spring beneath its back, substantially as shown and described.

166,881. INCRUSTA-TABLES. R. G. McClain, Bloomington, Ill. [Filed June 26, 1875.]

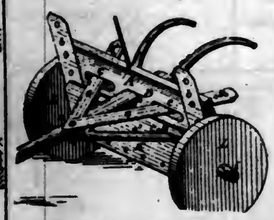
The combination, with the leaning-board A and hinged legs D D and E E, of the link b, notched rod c, and adjustable slide b, with set-screw d, and the sliding arms e e, substantially as and for the purposes herein set forth.





166,882. SCRAPERS. Joseph Megill, Coalton, Md. [Filed July 7, 1875.]

Brief.—A road-scraper with adjustable tongue, having two pairs of arms pivoted thereto, the lower pair diverging downward to act as braces, and both pairs passing through slots in the scraper-frame and secured by pins. The adjustable main frame is provided with a scraper and a plow, and with perforations to adjust it upon the side of the frame.



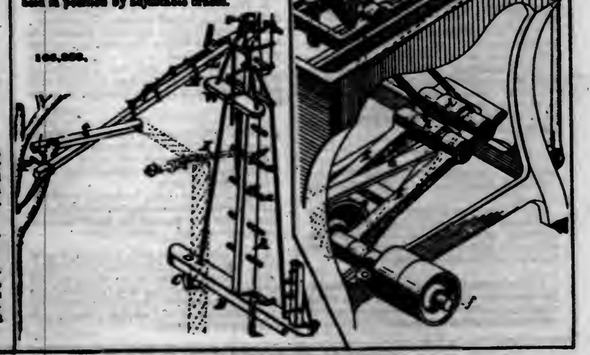
1. The combination of the adjustable tongue C, having two pairs of arms or brackets, e e e e, pivoted thereto, and the latter pair, e' e', diverging in a downward direction from e e, with the adjustable main frame A, having slots or perforations B B B B, and bar or scraper K, substantially as and for the purpose herein set forth.

2. The combination of the adjustable main frame A, having bar or scraper K, with the plow P, having perforations p p, by which it may be adjusted upon the side of said frame, substantially in the manner and for the purpose herein set forth.

166,883. LADDERS. Abraham S. Miller, Republic, Ohio, assignor of one-half his right to P. P. Wilber, same place. [Filed July 12, 1875.]

Brief.—The ladder consists of a single plane of timber, with cross-pieces or rounds passing through it, and is intended to be used in a vertical position. The base of said ladder is supplied with adjusting-timbers, and the ladder is held in position by adjustable braces.

166,884.



1. The combination of a vertical ladder-standard and a brace or stay-brace for securing the same to any object with which it may be used, substantially as herein described.

2. The combination of the standard A, base-beam B, and adjusting-post D, substantially as set forth.

3. The combination, with the brace or stay-bar L', of the serrated hooks U, substantially as set forth.

4. The combination of the adjustable seat or platform W, suspension-cord X, hook Y, and vertical ladder A a, substantially as set forth.

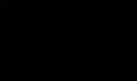
166,885. SHADE-HOLDERS. Thos. Morse, New York, N. Y. [Filed Feb. 13, 1875.]

Brief.—The radius-arms are provided with notches, with which the lower edges of the slots in the gravitating-arms engage.



The combination, in a shade-holder, of the gravitating-arms, provided with slots, with radius-arms extending from a central collar, said gravitating-arms and radius-arms being constructed to operate substantially as and for the purpose specified.

166,886. BEARING-SURFACES FOR SPINDLES. Elias D. Murby, New York, N. Y. [Filed Mar. 4, 1875.]



A bearing or wearing surface for journals and other purposes, composed of a paper coil or roll compressed in direction of its axis, substantially as specified.

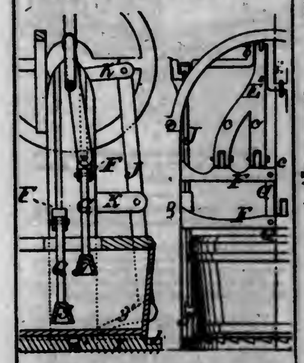
166,887. PREPARATIONS FOR BEARING-SURFACES FOR SPINDLES. Elias D. Murby, New York, N. Y. [Filed Mar. 4, 1875.]

The preparation of paper bearing and wearing surfaces for spindles and other purposes by the treatment of the paper with a hardening solution composed of glue and water, with or without other ingredients, substantially as specified.

166,888. SAWING-MACHINES. A. T. Nichols, Williamsport, Pa. [Filed June 8, 1875.]

The drum E E, hinged to the shaft f, free at their outer ends, and having pulleys h h, and acting as a guide and a tightener for the belt G, in combination with the device for moving the saw-frame, substantially as herein set forth.

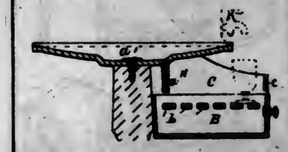
166,889. WASHING-MACHINES. Daniel Palmer, Mahlon Palmer, and Charles B. Briggs, Iola, Kans. [Filed June 5, 1875.]



The horizontally-reciprocating pounder-shafts G and their crank-heads F, moving vertically in guides, in combination with the crank-shaft C, pinions E' E', vibrating lever J, provided with pawl g, and the rotary tub and its support I, provided with a rack, all operating substantially as described.

166,890. STANDS FOR WATER-COOLERS. Christopher R. Porter, Philadelphia, Pa. [Filed July 6, 1875.]

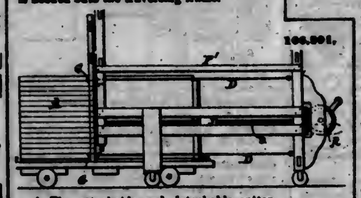
Brief.—A drawer receives the drip from the tumbler, and also from the platform that holds the cooler, said drawer being located near the top of the standard.



The sliding and removable drawer B, with its series of grate-bars b', and the supporting side pieces C C and their connecting-piece c, in combination with the platform a', provided with the drip-tube c', the said parts being constructed and arranged substantially as and for the purposes set forth.

166,891. SOAP-SHAVING MACHINES. John C. Babcock, Indianapolis, Ind. [Filed May 21, 1875.]

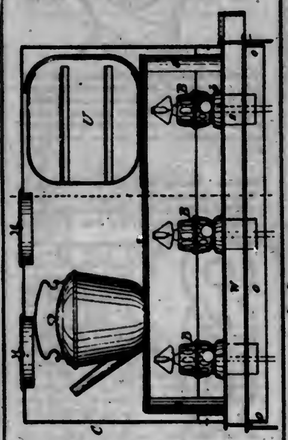
Brief.—The cutter-frame may be placed before the block of soap to be drawn backward, or behind the block to be pushed forward. It is hooked onto the traversing frame.



1. The attachable and detachable cutter-frame C, constructed as described, and held in place by iron rods D D, as and for the purpose herein shown.

2. The combination and arrangement of screw-rods O O, gearing E E, cross-bar J, slide-cover I, cutter-frame C, and connecting-rods D, with a suitable frame, F', operating substantially as and for the purpose herein set forth.

166,892. LAMP-STOVES. Mary F. Rathbun, Owego, N. Y. [Filed Jan. 2, 1875.]



1. The combination, with the closed movable cap C, provided with the open space c', of the inner stand a for cooking-vessels, the burners B, and the closed water-protection plate W, whereby the heat is supplied to all sides of the cooking-vessels within the chamber of the cap, and the reflection of the heat therefrom upon the surface-water prevented.

2. The water-plate W, provided with the burners B, in combination with the valved apertures or holes, passing directly through the water in the chamber-plate, to accommodate the wick-tubes, and keep them from being unduly heated, as shown and described.

3. The open-top reservoir O and the closed water-protection cover W, fitted within each other by the vertical marginal flanges e, whereby the water-plate, with its burners, may be removed from the reservoir to allow it to be filled quickly and easily, and prevent explosions.

166,893. CRUTCHES. William Redhoffer, St. Louis, assignor of two-thirds his right to W. H. Odell, St. Louis, and Jos. S. Odell, Kansas City, Mo. [Filed Dec. 4, 1874.]

Brief.—The elbow-rest is composed of a tin cylinder provided with seamless flanged rims at top and bottom. The cover has the hole through which the dasher-shaft passes re-enforced with an iron ring, so that it can be removed by a blow of the dasher without battering it. The dasher-shaft is wedged into the dasher, and a tin cap soldered over the end.



1. A churn-cylinder composed of tin-plate, constructed with flanged ends, and provided with a flanged base and a flanged rim, both of which are seamless, and which are united to the cylinder by a telescoped soldered joint, substantially as described.

2. The close-fitting concave tin-plate cap or cover of a reciprocating churn, with an iron shouldering rim at its center, substantially as described, whereby the removal of the cap may be effected without injury thereto by an upward blow of the dasher, as set forth.

3. The churn-dasher composed of the expanded wooden handle, the tube t, and plate f, in combination with the hollow frustums of cones, substantially as described.

166,894. WASHING APPARATUS. John F. Reilly, Washington, D. C. [Filed May 21, 1875.]

The combination, with cover A and pan B, of the intermediate longitudinal perforated steam-pipe E and the overflow-pipe H, arranged substantially as and for the purpose described.

166,895. STEAM-BRAKES FOR LOCOMOTIVES. Leonard B. Gallaway, Mount Vernon, Ill., assignor of one-half his right to Edward F. Winslow, St. Louis, Mo., and George S. Winslow, Mount Vernon, Ill. [Filed July 16, 1875.]

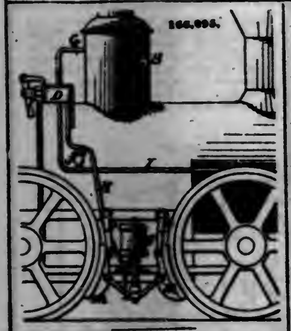
Brief.—A safety-valve is arranged in the supply-pipe, and delivers surplus steam into the exhaust-pipe.

1. In a locomotive steam-brake, the over-pressure valve J, placed in inlet-pipe H, which communicates from steam-chest to brake-cylinder, connected to and communicating with exhaust-pipe I, as and for the purposes described.

2. The combination, with the supply and exhaust pipes H I, communicating through the over-pressure valve J, of the slide-valve D, steam-drum B, and brake-cylinders B, all arranged as described, substantially as and for the purposes set forth.

3. The combination and arrangement of the exhaust-pipe I, leading from the slide-valve to the smoke-box of the locomotive, with the over-pressure valve J and supply-pipe H, substantially as and for the purposes specified.

166,898.



166,899. Fabrics for Coverlets. Henry Schoderwald, Philadelphia, Pa. [Filed May 31, 1875.]



A quilt fabric of compact, uniform texture throughout, double, and figured on both faces, consisting of alternate coarse and fine warps and wefts, the fine weft interwoven with and tying down the two warps alternately on the opposite faces, as set forth, thereby forming two fabrics, combining between them the coarse weft, which, with the fine warp, composes part of the figure, while in the remainder the coarse warp alone appears.

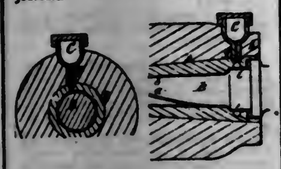
166,897. Stove-Ornaments Machines. C. E. Schoenmeyer, Cumberland, Md., assignor of one-half his right to J. H. Furey, same place. [Filed July 10, 1875.]



In combination with the adjustable jaw K and the movable jaw H, provided with a slotted arm, G, and pivoted at or near its bottom, the cam E and shaft C, arranged above the plane of the axis of the jaw, and operating to move the jaw H through a quarter circle, substantially as and for the purposes set forth.

166,898. Lubricating-Axles for Vehicles. Alexander Gabriel, Rochester, N. Y. [Filed July 10, 1875.]

Brief.—To equally diffuse the oil over the journals.

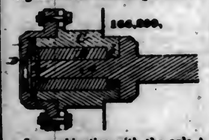


The spindle B, having the grooves a a, extending in spiral lines in opposite directions from the cavity c at one end of the spindle, and supported by the closed space d at the other, and adapted to operate in connection with the axle-box D and oil-cup C, substantially as described, for the purposes specified.

166,899. Car-Wheels. Andrew Schrock, Massillon, Ohio, assignor of one-half his right to Killinger & Co., same place. [Filed Jan. 26, 1875.]

Brief.—Cap on outside of wheel for excluding dirt while admitting lubricant.

166,900.



In combination with the axle A, sleeve B, and flanged hub C, the cap D, secured upon the exterior rim of the hub, as set forth.

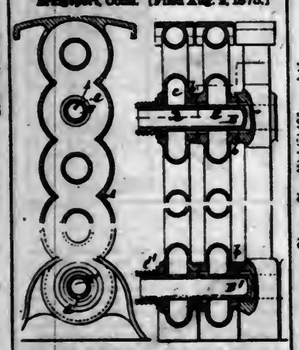
166,900. Caps. Adolph Schwarz, New York, N. Y. [Filed Aug. 6, 1875.]

Brief.—Provides an elongated "ear and neck muff," which may be attached to either side of the cap. When not in use it is wound around the lower part of the crown, and there fastened by suitable devices.



As a new article or manufacture, a head-covering, consisting of the crown portion A, provided with a fastening device, a, and folding visor C, the elongated neck and ear muff B, provided with fastening devices b c, substantially as described, and for the purpose set forth.

166,901. Steam-Radiators. William B. Snow, Brooklyn, N. Y., assignor to himself and Bates, Cole & Burnham Company, Bridgeport, Conn. [Filed Aug. 2, 1875.]



1. In a radiator composed of independent upright sections, the combination, with said sections, of perforated inlet- and egress pipes, constructed to unite or tie the several sections together at their joints, substantially as specified.

2. The screw-threaded flanged heads G G' in combination with the perforated pipes B B, and the radiator-sections A A, each heads forming chambers, between which and the nuts D D' on the said pipes the radiator-sections are clamped, substantially as herein set forth.

3. The obliquely-arranged perforations e in the ingress-pipe B, in combination with the upper curved or circular passages c of the sections A, substantially as and for the purpose specified.

166,902. Hame-Fastenings. Saml. Spicer, Goodrich, Mich. [Filed June 21, 1875.]

1. The lever C having a slotted aperture, c', for the pin a, teeth c', arranged to engage the teeth b of the slide, and also its free end, fitted to engage in the notch c', as and for the purpose set forth.

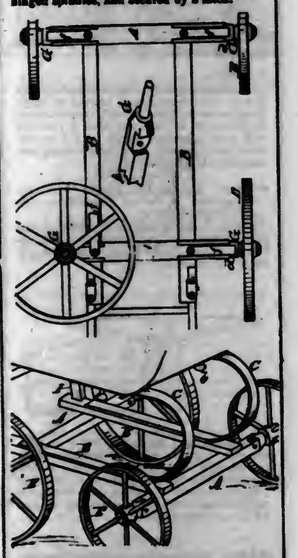
166,902.



2. The combination and arrangement of the body A, slide B, and slotted lever C, as and for the purpose set forth.

166,903. Children's Carriages. Joseph F. Staub, Greenville, Ill. [Filed June 23, 1875.]

Brief.—The carriage-body is fastened by a loop and set-screw to one end of the springs, the other being fastened to a frame supported upon axles having wheels fastened to them on hinged spindles, and secured by a latch.



1. A baby-carriage having its wheels placed upon hinged spindles, so as to turn the wheels under the supporting-frame, for the purposes herein set forth.

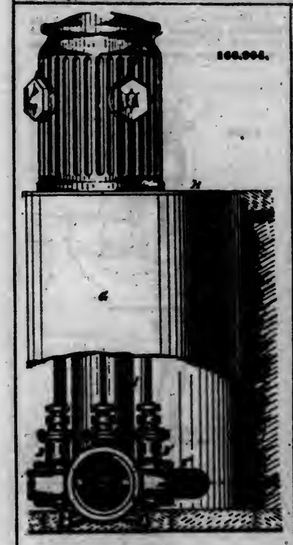
2. The combination of the supporting-frame A B, hinged spindles G, wheels E, and latches f, substantially as and for the purposes herein set forth.

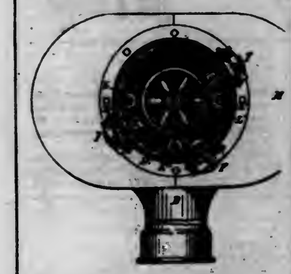
3. The combination, with the frame A B, supported upon folding wheels E, of the springs U C, the arb D, with loops a, and set-screws b, all substantially as and for the purposes herein set forth.

166,904. Steam Fire-Engine Hydrants. Richard T. H. Stillman, Philadelphia, Pa. [Filed June 10, 1875.]

Brief.—The valves are operated by a spur wheel or wheels and pinions, so arranged that they may be opened and closed together, or one or two valves may be operated independently of the others. The valve mechanism and lever part of hydrant are inclosed in a case of suitable material, as shown.

166,904.





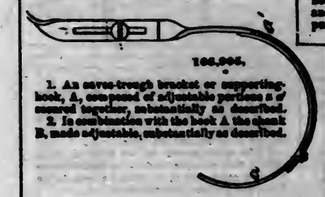
1. The combination of the main pipe D, branches E, E', and F, valve-casings E, E', and F', and vertical discharge-pipes G G G', substantially as herein shown and described.

2. The combination, in a steam fire-engine hydrant, of a casing, G, provided with an adjustable cover, H, and made of sufficient capacity to admit a person for the purpose of oiling or repairing the valves or any of the parts beneath the ground surface, substantially as shown and described.

3. The combination of the valve-rods K, K', and K'', pinions L, L', and L'', spur-wheel M, and bevel-wheel N, arranged to operate the main valves in unison or independently, as occasion require, substantially as shown and described.

166,905. Raven-Trough Hangers. Henry K. Stobler and Thomas F. Stobler, Mount Joy, Pa. [Filed July 17, 1875.]

166,905.

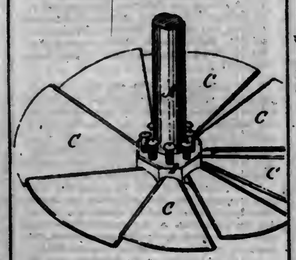


1. An eave-trough bracket or supporting-hook, A, composed of adjustable portions a a' secured together, substantially as described.

2. In combination with the hook A the shank B, made adjustable, substantially as described.

166,906. Augers for Flour-Packers. Samuel Taggart, Indianapolis, Ind. [Filed June 6, 1875.]

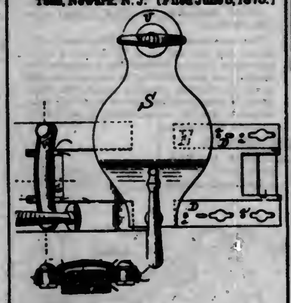
Brief.—The blades may be set at any angle desired in packing the various kinds of flour.



1. A flour-packing auger, having sectional or independent blades, capable of being set at any desired angle or degree of inclination, substantially as herein shown, for the purposes set forth.

2. The combination of the sectional adjustable blades C, having shanks a, with the hub B, shaft A, and fastening-screws b, as and for the purposes set forth.

166,907. Harness Saddle-Trees. Andw. Tone, Newark, N. J. [Filed June 5, 1875.]



1. The removable bridge I, constructed and operating substantially as and for the purposes set forth.

2. In a jockey-saddle, the removable bridge W secured to the lower end of the tree to hold the skirt and backband in place, as herein described.

3. Rest S, provided with extension U, in combination with turret V, or bolt, substantially as and for the purposes set forth.

166,908. Animal-Forks. Henry Weston, Scamp, Iowa. [Filed July 20, 1875.]

1. An animal-poke adapted to be placed longitudinally upon the face of the animal, having a nose-ring at the lower end, and a forwardly-projecting tongue at the top, as and for the purposes described.

2. The combination, with bar A, having nose-ring B and tongue C, of cross-bar D, and the rings and rods E F, as and for the purposes set forth.

166,908.



166,909. Rings for Spinning-Frames. J. W. Wattles, Canton, Mass. [Filed Mar. 24, 1875.]



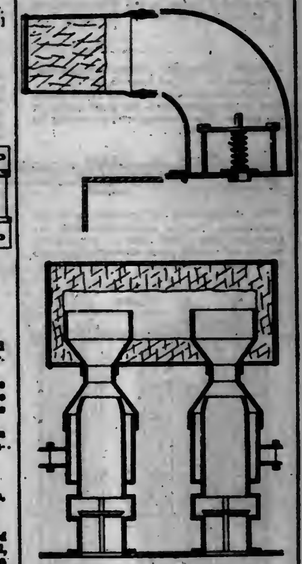
1. A spinning-frame ring provided with the two races a b, and the intermediate groove c entirely encircling it, and arranged as described.

2. A spinning-frame ring provided with two races, a b, and an eccentric, f, arranged therewith as specified.

3. The combination of a split or sectional annular or ring-holder, B, with a spinning-frame ring, A, provided with two races, and an intermediate groove, c, or eccentric f, or with both groove and eccentric, all being substantially as and to operate as specified.

166,910. Exhaust-Nozzles. Hartshorn White and Morris Levy, Phillipsburg, N. J. [Filed July 14, 1875.]

Brief.—The steam exhausts into an absorbent surrounded with a sheet of perforated flexible material, through which it escapes into the atmosphere.

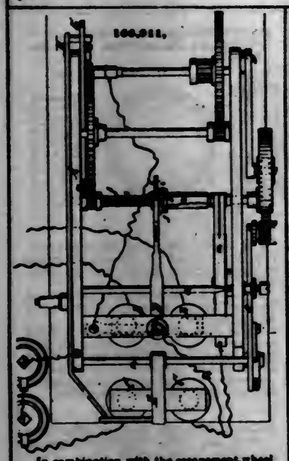


The combination, with a steam-pipe, of a perforated hood or lampmant constructed of rubber or other flexible material, and filled with an absorbent material, substantially as and for the object specified.

166,911. Printing-Telegraphs. Alois Wirsching, Brooklyn, E. D., N. Y. [Filed Apr. 30, 1875.]

Brief.—Circuit to printing-magnet is through a revolving pin upon escapement-wheel, and a revolving pin attached to toothed collar upon type-wheel shaft, the two being brought together by the stopping of the escapement-wheel. When the wheel begins to revolve, the pin upon it is carried forward by the strong of the coiled spring against a non-conducting pin projecting from the insulated collar.

166,911.



In combination with the escapement-wheel, mounted loosely on the type-wheel shaft of a printing-telegraph, and connected to the same by a spiral spring, and with the armature of the line-magnet, the pins *g h i*, insulated metallic collar *j*, spring *m*, and printing-magnet C, substantially as and for the purpose set forth.

166,919. Vernier. Alfred Young, Philadelphia, Pa. (Filed June 16, 1870.)

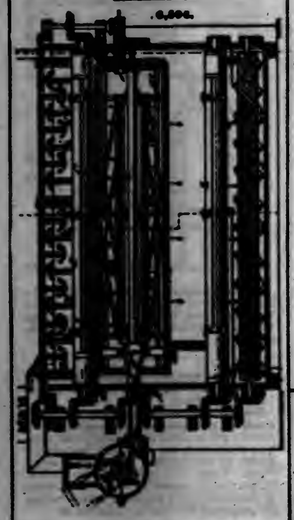
Brief.—Glass cover of the vernier is graduated to correspond with the graduations on the vernier, thus avoiding error in reading by reason of parallax.



166,919.

The vernier-cover A, provided with the graduations *a a*, in combination with the graduated plate C and plate D, carrying the vernier and vernier-cover, substantially as and for the purpose set forth.

6,506.



REISSUES.

6,506. Machines for Bolting Flour. W. F. Cochrane, La Fayette, Ind., assignor, by mesne assignments, to himself, Rodney Mason, and William Warder. Patent No. 37,221, dated Jan. 6, 1863; reissue No. 6,029, dated Aug. 20, 1874. (Filed July 26, 1870.)

1. In combination with the bolt and air pipes and valves for feeding and delivering without allowing the air to pass therewith, the collecting-chamber for simultaneously feeding, separating, and delivering the flour, while the light particles carried with the air current are deposited, and the blast continuously maintained, substantially as set forth.

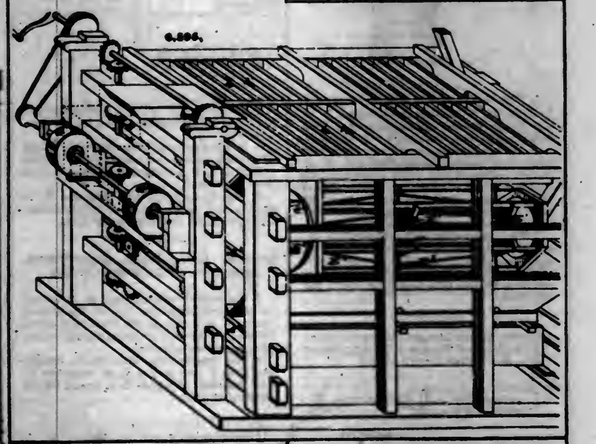
2. In combination with the screen and blast and suction-pipes, the collecting or deposit chamber, wherein dead-air spaces are formed for the deposition of the specifically heavier particles carried up by the atmospheric currents by gravity, substantially as set forth.

3. In combination with the screen and fan for inducing air-currents through the screen, the trapped feed, which prevents the passage of the air at the same time that it admits the meal to the chest, and the collecting or deposit chamber through which the air is forced, wherein the solid particles carried out by the current are deposited by gravity in the dead-air spaces, substantially as set forth.

6,506. Machines for Bolting Flour. W. F. Cochrane, La Fayette, Ind., assignor, by mesne assignments, to himself, Rodney Mason, and William Warder. Patent No. 37,221, dated Jan. 6, 1863; reissue No. 6,029, dated Aug. 20, 1874. (Filed Aug. 11, 1876.)

The combination, in a bolting-chest, of a screen and fan and pipe for directing an atmospheric current through the meshes of the screen, and the collecting or deposit chamber in the air-adduction passage, wherein the deposition of solid particles drawn up by the blast occurs by gravity, substantially as set forth.

6,506.

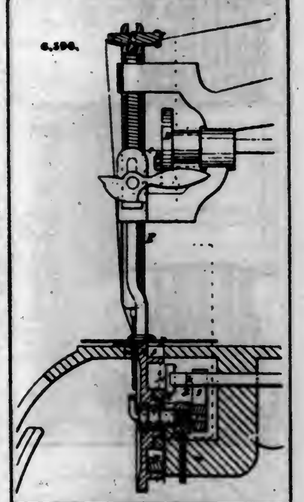


6,506. Sewing-Machine. Christopher Redgrave, Marlborough, N. H., assignor to Matilda D. Sharps, Philadelphia, Pa. Patent No. 60,093, dated Oct. 9, 1866. (Filed July 7, 1875.)

1. The combination of the horizontal rod B, having holes *r* for the passage of the thread, the pressure-pin *o*, and arbor B, substantially as and for the purpose set forth.

2. The combination of the screw *n* with the stationary projection J, having a slot, *t*, and the nut E, for adjusting and supporting the feed mechanism, substantially as set forth.

6,506.



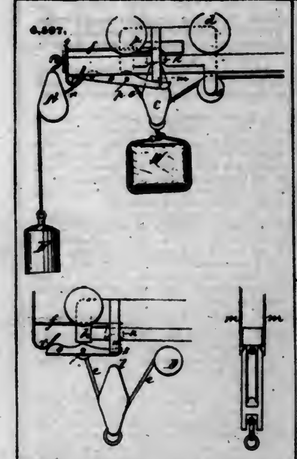
6,507. Hoisting Apparatus. Joseph Hoffman, Lebanon, N. J., assignor, by mesne assignments, of one-half interest to N. W. Hoffman. Patent No. 117,778, dated Aug. 8, 1871. (Filed June 21, 1875.)

Brief.—As soon as the body is raised to the desired position, the device is changed into a carrying apparatus, to carry the article raised.

1. The elevating pulley and the weight-ropes *a a*, the hooks *m m* or their equivalent, in combination with the lever *o o*, and incline *r*, for disengaging the pulley, substantially as and for the purposes set forth.

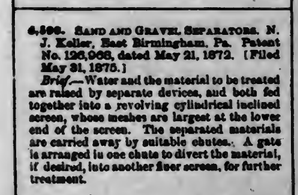
2. The arrangement of the hook or lever catch *f*, and movable block *k*, in combination with the catch-rods *n n*, lever *o o*, and frame A, as and for the purposes described.

6,507.



6,508. Sand and Gravel Separators. N. J. Keller, East Birmingham, Pa. Patent No. 126,003, dated May 21, 1872. (Filed May 31, 1875.)

Brief.—Water and the material to be treated are raised by separate devices, and both fed together into a revolving cylindrical inclined screen, whose meshes are largest at the lower end of the screen. The separated materials are carried away by suitable chutes. A gate is arranged in one chute to divert the material, if desired, into another finer screen, for further treatment.



6,508.

1. The combination of a dredging apparatus for dredging and elevating the material, a screen for separating the material, and a device for elevating and discharging water into the screen, substantially as specified.

2. The combination of a screen composed of two or more sections of different-sized mesh, two or more receptacles for receiving the separated material, and a device for supplying water to the screen, substantially as specified.

3. The combination of a cylindrical screen, suitable devices for elevating water and the material to be separated, and feeding the same to the screen, a receptacle or receptacles for the material which has passed the screen, and an elevator or elevators for conveying away the screened material.

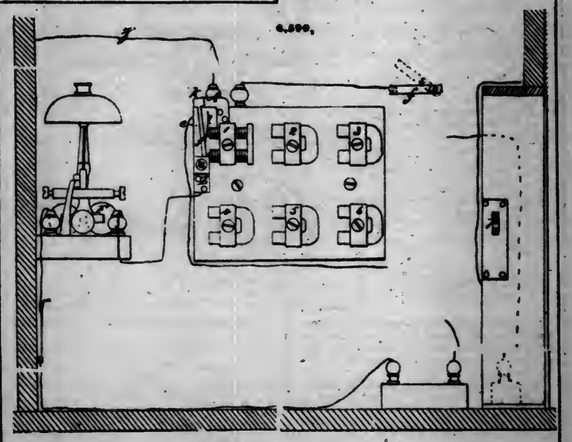
4. The combination of the screen E, chute F, provided with gate *e*, and the screen J, substantially as and for the purpose specified.

6,509.

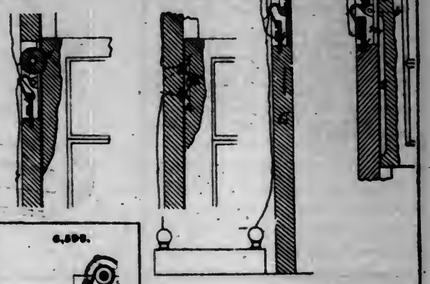
1. The improved house-alarm, substantially as hereinbefore described, consisting of the combination of the following elements, viz: first, a series of electro-magnetic circuits; second, an indicator to designate the respective circuits; third, an alarm apparatus common to all the circuits of the series; fourth, the window or door springs—the whole operating, as set forth, to put in operation the alarm apparatus that is common to all the circuits of the series, and to indicate the particular circuit of the series which is attacked.

2. The combination, substantially as before set forth, of the following devices, viz: the series of magnetic circuits, the alarm apparatus common to all the circuits of the series, and the switch for disconnecting a particular circuit of the series of circuits from the alarm apparatus without disconnecting the remainder of the series of circuits from that apparatus.

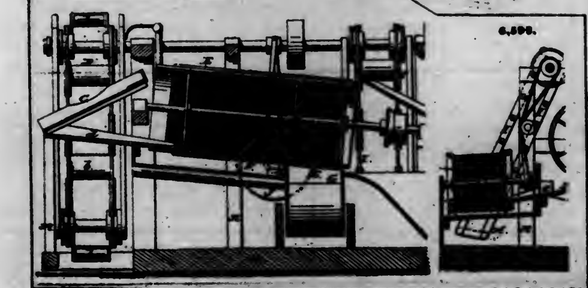
6,509.



6,509. Electro-Magnetic House-Alarm. Wm. G. Russell and Abraham Firth, Boston, Mass., executors of William Whiting, deceased, assignors to Edwin T. Holmes. Patent No. 20,970, dated July 20, 1858; extended seven years. (Filed July 23, 1875.)

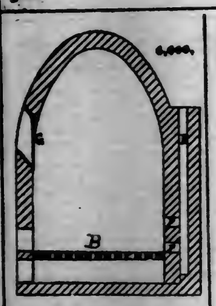


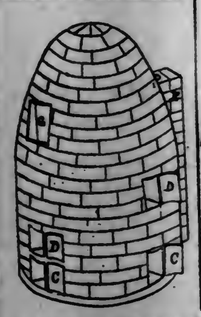
6,508.



6,600. Furnaces for Burning Refuse, Sawdust, &c. Ira O. Smith, Muskegon, Mich., assignee of one-half his right to F. Walker, same place. Patent No. 90,796, dated Feb. 16, 1870. (Filed June 29, 1875.)

1. In a refuse-burner, the combination of a combustion-chamber, a reverberating-dome directly above and forming the upper part of the combustion-chamber, and an exit for the products of combustion near the lower part of the combustion-chamber, substantially as and for the purposes set forth.





2. In a refuse-burning furnace, the combination of the self-closing door, hung upon the inner wall thereof, and the inclined chute terminating at such door, substantially as and for the purposes set forth.

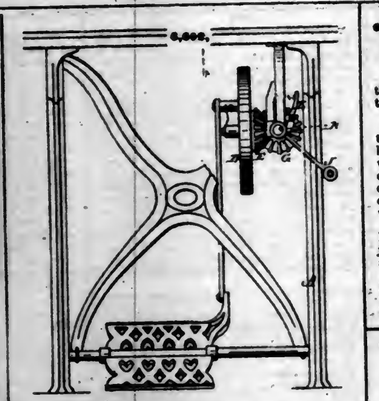
3. In a refuse-burning furnace, substantially as described, the grate B, doors C, D, and C, and the openings covered by them, the exit F, and flue E, combined to operate substantially as and for the purpose set forth

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6,001. EXPLOSIVE COMPOUNDS. Raymond Calsac, Toulouse, France. Patent No. 163,920, dated Mar. 30, 1875. [Filed June 26, 1875.]

1. A mining-powder composed of nitrate of potash, sulphur, lamp-black, and tanning-bark or sawdust, and sulphate of iron, substantially in the manner and in the proportions set forth.

2. The process of forming a compound for mining purposes which shall be incombustible at low temperature, and non-explosive except when under pressure, by first heating nitrate of potash, carbon, and sulphur, in the presence of sawdust and a solution of sulphate of iron, till a homogeneous liquid mass is produced, then cooling and drying the same, as described.



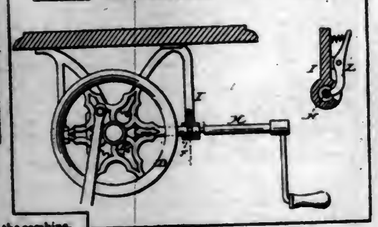
6,002. TREADLES FOR SEWING-MACHINES. Robert Francis Willcox, Memphis, Tenn. Patent No. 165,133, dated Sept. 16, 1874. [Filed July 19, 1875.]

Brief.—An attachment is provided whereby the motive power may be changed from treadle to hand-crank, and vice versa when desired.

1. The adjustable shaft arranged under the table to the right of the operator, having a hand-crank at one end, and provided with a wheel at the other end, which is engaged or disengaged at will from the operative wheel of the machine, so that the movement can be changed from treadle to hand power, or vice versa, substantially as set forth.

2. The combination, with the hand-wheel D of a sewing-machine, of wheels E G, adjustable shaft H, and crank J, substantially as and for the purposes herein set forth.

3. The combination of the adjustable shaft H, having circumferential grooves *x x*, and the spring-catch L, as and for the purposes herein set forth.

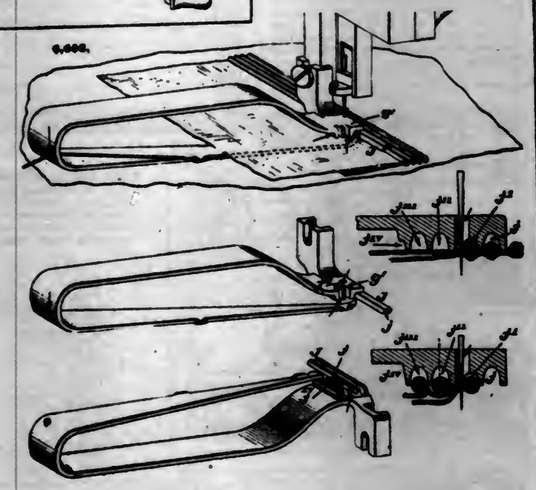


6,003. CORDERS FOR SEWING-MACHINES. Wm. Wilcox, Cincinnati, Ohio. Patent No. 146,736, dated Jan. 20, 1874. [Filed Feb. 18, 1875.]

1. A sewing-machine corder, provided with a foot having grooves on both sides of the needle-hole, for optional use in cording with single or double thicknesses, as explained.

2. In a sewing-machine corder, a presser-foot, provided with a prolongation or tongue, J, projecting toward the direction from which the goods are fed, as described.

3. In a sewing-machine corder, the presser-foot *g*, provided with a prolongation or tongue, J, and with notched grooves *g' g''*, located on the opposite side of the needle-hole from said tongue J, as described.



HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 8. TUESDAY, AUGUST 24, 1875. PRICE { $5,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

FRANK BOEHM & CO.—*Appeal.*

[*Appeal from the Examiner of Trade-Marks in the matter of the application of Frank Boehm & Co., for registration of trade-mark for* WINES, BRANDIES, &c.—*Decided August 2?*, 1875.]

The words in section 4937 of the Revised Statutes, "the class of merchandise and the particular description of goods comprised in that class," construed.

The word "Centennial" was sought to be registered as a trade-mark, to be applied to "that class of merchandise containing alcoholic spirits," and it was held that it was not required that the trade-mark should be registered for each of these articles of the general class of alcoholic spirits.

There appears to be nothing in the statute to prevent an applicant for registration of a trade-mark from including in his specification either a whole class of merchandise or several specified descriptions thereof. *Smith et al.* vs. *Reynolds & Jacobs*, (3 OFFICIAL GAZETTE, p. 214,) cited in support.

SPEAR, *Acting Commissioner:*

Applicants ask to have registered as their trade-mark the word "Centennial," to be used on the different brands of "wines and spirits" which they are engaged in manufacturing.

They state in their specification that—

the class of merchandise to which this trade-mark has been applied is that containing alcoholic spirits, and the particular goods comprised in such class to which this trade-mark has been or is intended to be appropriated, are Bourbon, wheat, and rye whiskies, wines, brandies, gins, and bitters.

The Examiner objects that the specification is not confined to a "particular description of goods," but comprises a general class of merchandise, whereas the law appears to contemplate that distinct descriptions of merchandise should be the subjects of separate applications.

The reference in the statute (sec. 4937) to the subject-matter of an application for registration of a trade-mark is contained in the first requirement, which is as follows:

First, by causing to be recorded in the Patent Office a statement specifying the names of the parties and their residences and place of business who desire the protection of the trade-mark; *the class of merchandise and the particular description of goods comprised in such class*, by which the trade-mark has been or is intended to be appropriated; a description of the trade-mark itself, &c.

Applicants state plainly what their class of merchandise is, and specify the particular description of goods comprised in such class to which they intend to appropriate their trade-mark.

I know of no decision of the courts, nor does the Examiner cite any in support of his position, that the law contemplates that different descriptions of the same class of goods should be made the subjects of separate applications. On the contrary, the most recently-published decision which has come to my notice gives the clause of the statute under consideration quite a different interpretation. This is the case of *Smith et al. vs. Reynolds & Jacobs*, (3 OFFICIAL GAZETTE, p. 214.) Smith had registered a trade-mark simply for "paints," a term as generic in its character as "alcoholic spirits." The court said—

It is also objected that although the registration-papers specify "paints" as the class of merchandise, yet there is no designation of the particular description of goods comprised in such class, to which the trade-mark is or is to be appropriated. But the parties describe themselves as engaged in the manufacture and sale of paints generally, which they state they use and have a right to use, and desire to have protected. They cover the whole class of merchandise called "paints," and every description of goods comprised in such class. That being clearly stated by them, any further specification was unnecessary.

It is true that the use of such comprehensive terms is a very bad practice, but the evil results appear to fall on those applicants alone who take the risk. For instance, in the case cited the defendants having shown that the trade-mark adopted by the plaintiffs had been previously used by another party on a certain class of paints, the court held that the registration was invalid and entirely so, because, unlike a patent, there was no provision by which a suit upon a registration could be maintained where the grant was valid to a part but not as to the whole. This danger of including within the terms of a registration more than applicants can maintain, will probably serve to restrict the practice of making the descriptions too comprehensive. At any rate, under the construction given it in the above-named case, there appears to be nothing in the statute to prevent an applicant from including in his specification a whole class of merchandise, as was there done, or of several specified descriptions thereof only, as is done in the present case.

To hold that the particular descriptions of goods specified by applicants in this case, with the exception perhaps of the word "bitters," do not belong to one class would seem to be an unnecessary refinement, since they may all be included and would commonly be recognized, though of diverse manufacture, under the same general terms. Since, therefore, applicants have stated the class and the particular description of goods under this class, unless it appears that the same mark has been applied to one or more of such articles prior to the present applicants, they are entitled to registration.

"Bitters," however, is a designation of a kind of goods not belonging exclusively to the class of alcoholic spirits. It cannot be properly embraced by this application, and it therefore should be stricken out.

With this exception the decision of the Examiner is reversed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, DISTRICT OF MASSACHUSETTS.

HENRY W. PUTNAM *vs.* E. D. WEATHERBEE *et al.*

[*In equity.—Before* SHEPLEY, *J.—May*, 1875.]

Where a patent has been a long time in existence, has been renewed by the Patent Office after the expiration of the original term and in the face of opposition, and has been sustained by the adjudications of several of the federal courts, the patentee is entitled to protection by a preliminary injunction, at least until the adjudication of some tribunal shall decide the patent invalid.

Where a motion for an injunction was heard outside the district where the suit was pending, the order withheld until the court should be sitting within the district.

The bottle-stopper fastening covered by the Putnam reissue of January 19, 1864, which consists of a piece of *wire* of U-form with the ends *returned* and connected to the bottle, (in order that the pressure on the cork or stopper may cause the fastener to hold more securely,) is not anticipated by the *sheet-metal* U-shaped yoke of the Allender fastening of 1855.

The *wire* embeds in the cork, under pressure from within, and thus prevents the fastener from "tripping;" it also presents a change of form which permits the fastener to be pressed off without injury to the thumbs of the operator or to the cork.

Consideration given to the fact that the Commissioner of Patents, in both granting and extending the patent, was aware of the nature of the Allender device, but held that the Putnam fastener contained something more than the mere substitution of a wire U-shaped yoke for a sheet-metal U-shaped yoke.

[This was a suit in equity brought for an alleged infringement of reissued letters patent granted to Henry W. Putnam January 19, 1864, for an "Improvement in Bottle-Stopper Fastenings." The invention will be found illustrated in the reported case of *Putnam* vs. *Hickey*, (5 Fisher, 334.)

The present suit came up upon a motion for a preliminary injunction. Although the suit was pending in the Massachusetts district, the motion was heard by the circuit judge, while sitting at Portland in July, 1874. His opinion upon the motion was as follows:]

[*W. H. Clifford* and *Thomas H. Dodge*, for complainant.
Benj. F. Thurston, for defendants.]

SHEPLEY, *J.*:

In the view which I take of the first claim of this patent, which is—

> Forming the fastener at the part that comes over the cork of a piece of wire of a U-form, with the ends returned and connected to the bottle, in order that the pressure on the cork or stopper may cause the fastener to hold more securely, as specified—

considering it in connection with the specification in the patent, it is not necessary that the wire which forms the U should be returned upon itself in a direction directly the reverse of that in which it is before the turn; but it is a sufficient compliance with the first claim of that patent, if the wire, instead of being returned in a reverse direction from that which it had before, is returned at right angles, or approximately so, so as to be connected with the wire which encircles the neck of the bottle in the manner specified in the patent.

In the construction which I give to this first claim there can be no question that the defendants' contrivance is an infringement. The only question, therefore, for consideration, is whether the first claim of this patent be or not a valid claim; and that question is one of significance, principally in its relation to the Allender contrivance. The Allender contrivance was considered by the Commissioner of Patents when this patent was granted. The disclaimer of the patentee clearly has reference to a contrivance like the Allender contrivance; and, taking that into consideration, the Patent Office granted the patent. It has since been sustained by the adjudications of several of the federal courts, it has been in existence a long time, and it has been renewed by the Patent Office after the expiration of the original term. Under these circumstances, I think this is a clear case, in which the patentee is entitled to the presumption, *prima facie*, which his patent gives, aided as it is by the long enjoyment and by the adjudications of the courts, and is entitled to protection by a preliminary injunction.

In the construction which I give of the claim, the only defense which could be maintained would be to destroy the validity of the plaintiff's patent; and I think, when the patent has been in existence so long, has been renewed after a contest, and has been adjudicated in favor of the patentee by the courts, he is entitled to the benefit of it, until the adjudication of some tribunal shall decide that his patent is invalid.

This case is pending in the Massachusetts district, and when the court is in session there, the order for a preliminary injunction will be issued.

I do not express any opinion as to the question which has been presented in the hearing on this case, as to the validity of the issue of this patent, with reference to the existence of the Allender contrivance; but, as I have before said, I think the position in which the patent stands entitles the patentee, upon well established principles, to the benefit of the legal presumption in his favor until that question is decided.

Subsequently the suit came on for final hearing before Judge Shepley. The following is the opinion of the court at final hearing:

SHEPLEY, *J.*:

This bill of complaint is founded on the reissued Letters Patent No. 1,606, dated January 19, 1864, and extended for seven years from and after the 15th of March, 1873, for an "Improvement in Bottle-Stopper Fastenings."

This invention is more particularly applicable to fasteners for the corks or stoppers of bottles for aerated waters. These bottles are generally filled under a pressure of two or three atmospheres, for the purpose of holding in solution the carbonic-acid gas with which the liquid is charged. The corks are forced down by the plunger of the bottling-machine, and it is desirable to have a stopper-fastening which can be turned over the cork while the cork is under the plunger, which shall hold the cork securely against the pressure tending to force it out and to "trip" the fastener after the plunger is withdrawn, and which can be withdrawn in one direction from over the stopper, when desired, and left in good condition for future use.

The nature of the complainant's invention is stated by him to consist "in forming the fastener of wire bent in such a manner that if the pressure upon the cork is sufficient to bind said wire-fastener it will retain the cork more firmly, and the cork required to be pushed in before the fastener can be pushed aside, thus causing the pressure to render the fastening more secure instead of more liable to failure."

In view of the state of the art as disclosed in the evidence, I find nothing in the previous inventions relied upon as anticipating the complainant's invention, which requires any extended statement, as, if the invention of Putnam was anticipated, it must have been by the invention described in the letters patent granted to John Allender, July 24, 1855, the bottle-stopper fastener of Allender most nearly approximating that of Putnam.

The Allender fastener at first glance appears to embody nearly every substantial characteristic of the first claim in the Putnam patent. Like the Putnam, it is intended and adapted for use in bottles to be filled with aerated liquids by means of a bottling-machine. It has a hinged bail or yoke of a U-form to allow room for the cork-forcing plunger of the bottling-machine, and to allow the fastener to be applied while the plunger is holding down the cork. Like the Putnam, it is adapted to be used with successive corks and is a permanent fastener. Putnam appears to have been aware of the existence of the Allender patent, for he disclaims "a fastener made of sheet metal with an U-shaped opening to pass the plunger," which disclaimer was clearly intended to apply to Allender's device. The Commissioner of Patents in granting the Putnam patent, and in extending it also when the extension was opposed, must have been satisfied that the use of the U-shaped wire yoke or bail in the Putnam fastener, with its ends returned and hinged upon the wire surrounding the neck of the bottle, contained something more than the mere substitution of the wire Ushaped yoke in the Putnam for the sheet-metal U-shaped yoke in the Allender fastener. The mere substitution of one known material for another in a known combination is not the subject of letters patent, though such substituted material is a cheaper or better one for the purpose. (*Bean* vs. *Smallwood*, 2 Story, 411; *Hotchkiss* vs. *Greenwood*, 11 Howard, 248; *Stimson* vs. *Woodman*, 10 Wall, 121.) Of late great care has been exercised at the Patent Office; and the recent very intelligent decisions in the Patent Office, refusing to issue patents where there has been only the exercise of taste and good judgment without invention in the substitution of one material for another in a known combination, require the courts to give to the decisions of the Office a most respectful consideration. I think it appears from the evidence in this case that there are not only great practical advantages in the use of a wire bail over the sheet-metal fastener, but that the result claimed by the patentee and aimed at in his invention of embedding the wire in the cork under pressure from within the bottle, so that it is impossible to swing the fastener to the left without first pressing the cork downward, thus preventing the fastener from tripping; while at the same time it presents a change of form (the convenient form of the Putnam fastener allowing it to be pressed off or aside from the cork without injury to the thumbs of the operator or to the cork itself) presents a patentable difference, and not such a mere substitution of one material for another as would exist in the case of the substitution of wire of one metal for wire formed of a different metal in the same form of fastener.

It is not always easy to draw the line of distinction between the embodiment of invention and the mere exercise of judgment and mechanical skill; and not without some hesitation have I reached the conclusion that there is sufficient invention in this case to sustain the first claim of the patent, in view of the state of the art as existing at the time of the Putnam patent.

The only remaining question is as to infringement. Construing the patent, as I do, that the return of the wire from the U does not mean necessarily a retroversion of the wire in the same direction and then a bending down at right angles, or nearly so, toward the neck of the bottle, but is sufficiently answered by a return at right angles, or nearly so, toward the neck of the bottle, the infringement in this case is clear. The defendants' fastener has the wire returned, so that the direction and result of the strain between the neck of the bottle and the surrounding wire and the U-formed fastener is the same as in the Putnam device.

Decree that defendants infringe the first claim of complainant's patent, and for injunction and account.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

MARGARET MYERS, EXECUTRIX, &c., AND EUGENE S. EUNSON *vs.* JOHN DUNBAR AND JEREMIAH HOPPER.

[*In equity.—Before* BLATCHFORD, *J.—November*, 1874.]

A final decree in an equity suit awarded a recovery in favor of the complainants for a specified amount, and then proceeded to decree that the defendants pay to the master the sum of $500 allowed to him as his compensation, less such sum as the defendants had already paid him, and that the complainants have execution for the sum awarded to them.

The defendants appealed from the whole of the decree, giving to the complainants a bond to respond for the amount which the decree awards to the complainants as a recovery, and a citation was issued and served. The defendants, having previously paid the master $35, refused to pay more; and the master applied for an attachment against them for $465: *Held*, that the provision for the payment of the master was not subject to be stayed in its operation by proceedings such as are employed to stay the execution of a decree *inter partes*. The attachment was granted.

[*F. A. Betts*, for the motion.
S. J. Glassey, opposed.]

BLATCHFORD, *J.*:

In this case a final decree was entered in May last on the report of the master overruling exceptions taken by both parties to his report, and ordering "that the compensation of the master herein be fixed, determined, and settled, (including what may have already been advanced or paid to him,) at the sum of five hundred dollars." The decree then proceeded to award a recovery to the plaintiffs against the defendants for the sum of $9,120 94, and $636 32 interest thereon from the date of the report to the date of the decree, being in all $9,807 26, and to decree, "that said defendants pay to

the master the said sum of five hundred dollars allowed to the master as compensation, less such sum as may have been paid or advanced to said master by the defendants, and that the complainants have execution or other proper process of the court for the said sum awarded to them."

The 82d rule in equity provides that "the compensation to be allowed to every master in chancery for his services in any particular case shall be fixed by the Circuit Court in its discretion, having regard to all the circumstances thereof, and the compensation shall be charged upon and borne by such of the parties in the cause as the court shall direct;" and that "the master shall not retain his report as security for his compensation; but, when the compensation is allowed by the court, he shall be entitled to an attachment for the amount against the party who is ordered to pay the same, if, upon notice thereof, he does not pay it within the time prescribed by the court." The 10th rule in equity provides that "every person, not being a party in any cause, who has obtained an order, or in whose favor an order shall have been made, shall be enabled to enforce obedience to such order by the same process as if he were a party to the cause." The defendants have paid to the master the sum of $35 on account of such compensation, and no more. Demand has been made upon the defendants by the master for the payment of the residue of the $500, but it has not been paid. Prior to the date of the master's report, the plaintiffs advanced to the master $100 on account of his compensation, and, after the date of the report and before the entry of the final decree, the plaintiffs advanced to the master $200 more on account of his compensation. The master now applies to the court for an attachment against the defendants for the $465.

The defendants have taken an appeal to the Supreme Court from the whole of the decree. They have given a bond with sureties in the penalty of $21,000 to the plaintiffs, conditioned that the appellants "shall prosecute their said appeal to effect and answer all damages and costs if they fail to make their plea good." The bond has been approved as to form and amount, and the sufficiency of the sureties and a citation has been issued and served. The citation was made returnable to the first day of the present term of the Supreme Court, now past.

In opposition to the granting of the application, the defendants contend that the 82d rule is subject in its application to the provisions of law regulating appeals; that the defendants have appealed from the whole of the decree, and have given security, by bond, for the full performance of its requirements if it shall be affirmed, and, therefore, all proceedings upon the decree are superseded and stayed: that the cause is pending in the Supreme Court; that injustice to the defendants will result if the application is granted, in case the defendants should succeed on the appeal, because the defendants will not be able to recover back from the master any money paid to him; and that, if the plaintiffs pay the amount due to the master, they will be able, if the decree is affirmed, to recover that amount on the bond.

Although the defendants have taken an appeal from the whole of the decree, their bond does not cover the amount directed to be paid to the master. It is a bond to the plaintiffs payable to the plaintiffs, and is a bond only to respond for the amount which the decree awards to the plaintiffs as a recovery, and for which execution is awarded to the plaintiffs by the decree. The bond is not one under which either the master or the plaintiffs could recover the $465 from the defendants. Notwithstanding the appeal it remains for this court to enforce the provision of the decree for the payment of the master.

Nor would the case be varied if the defendants had given a bond to the master to stay proceedings to enforce payment of his compensation. The order as to the compensation of the master might as well have been in a separate order, and not have formed a part of the final decree. The master is not a party to the suit in any sense, and it was not intended that a provision for his payment should be subject to be stayed in its operation by proceedings such as are employed to stay the execution of a decree *inter partes*. The 82d rule prescribes the mode in which an officer of the court is to be compensated, and where the court directs which of the parties is to be charged with and bear the compensation of the master, whether in the first instance or ultimately, the direction must be carried out as between the master and such party, however, ultimately, such party may be entitled as against the other party to the suit to relief or reimbursement in respect of the amount paid to the master. If the defendants succeed as against the plaintiffs in reversing the decree they will indeed not be able to recover back any money from the master, but it will be competent for the court, if, on such reversal, costs of the suit shall be awarded to the defendants, to regard the amount paid by the defendants to the master as a part of such costs, and to enable the defendants to recover such amount from the plaintiffs. The amount disbursed by the defendants to the master will merely take its place with other items of disbursements, as to which the defendants, with a decree against them, now have no recovery, but which may form part of a recovery in case they shall have a decree in their favor.

The application is granted.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date August 24, 1875.]

8,572 and 8,573.—Embroidery-Patterns.—EMIL CRISAND, New Haven, Conn., assignor to HENRY ST. JOHN, same place.—Cases GG and HH. Applications filed July 19 and August 9, 1875. Term of patents 3½ years.

8,574.—Picture-Frames.—ARTHUR B. DIMMET, Bloomington, Ill. Application filed July 22, 1875. Term of patent 7 years.

8,575.—Handle for Vases.—JOSEPH W. FISKE, New York, N. Y. Application filed July 6, 1875. Term of patent 7 years.

8,576.—Fan.—JOHN F. LANGWORTHY, New York, N. Y. Application filed August 16, 1875. Term of patent 3½ years.

8,577.—Ornamental Finger-Ring, &c.—AUGUSTUS R. LENDER, Washington, D. C. Application filed July 26, 1875. Term of patent 3½ years.

8,578 to 8,580, inclusive.—Fan.—SIMEON L. BARINDS, Memphis, Tenn.—Cases A, B, and C. Applications filed August 20, 1875. Term of patents 3½ years.

8,581.—Medal.—JOSEPH C. DEMING, Norfolk, Va. Application filed July 31, 1875. Term of patent 7 years.

8,582.—Dancing-Programme.—PHILIP HAKE, Hoboken, N. J. Application filed July 12, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date August 24, 1875.]

2,833.—Stove-Polish.—H. A. BARTLETT & Co., Philadelphia, Pa. Application filed August 17, 1875.

"words 'Fire-King.'"

2,834.—Tea.—NORVAL W. BURCHELL, Washington, D. C. Application filed August 14, 1875.

"word-symbol 'SPRING-LEAF.'"

2,835.—Tea.—KWONG ON CHEONG, San Francisco, Cal. (Re-registration.) Application filed June 26, 1871.

"'U. S.' in a diamond printed in black ink on thin Chinese paper, block letters, each letter one and one-fourth inch long by one and one-fourth inch wide at the widest part."

2,836.—Baking-Powder.—CLARK & HUNTINGTON, New York, N. Y. Application filed April 2, 1875.

"word 'Perfect.'"

2,837.—Stationery.—JOSEPH C. DEMING, Norfolk, Va. Application filed July 31, 1875.

"a venerable tree, whose thirteen roots represent the original thirteen colonies as named thereon. The trunk has at its base the words 'Declaration of Independence' around the date 1776, and the word 'Constitution' along its length upward. The eighteen branches represent the eighteen administrations, or rather Presidents of the United States, as indicated by their names thereupon. Upon the foliage the names of the thirty-seven States and twelve Territories now comprising the Union. The words 'The Century Plant' above the tree, and beneath them the date 1876. Below the tree a monogram of the initials 'J. C. D.' is arranged, the whole surrounded by a border of one hundred interlinked circles, with the dates beginning 1776 and ending 1876."

2,838.—Wrought-Iron Pipe.—EVANS, CLOW, DALZELL & Co., Pittsburg, Pa. (Re-registration.) Application filed September 1, 1870.

"'crescent' and monogram, the latter composed of the letters T and W, the whole arranged within a shield-shaped or suitable border."

2,839.—Tea.—MARTIN GILLET & Co., New York, N. Y., and Baltimore, Md. Application filed July 12, 1875.

"symbol, 'HE-NO.'"

2,840.—Fans.—MARTIN, GILLET & Co., New York, N. Y., and Baltimore, Md.—Case A. Application filed July 17, 1875.

"a representation of a bell."

2,841.—Fans.—MARTIN GILLET & Co., New York, N. Y., and Baltimore, Md.—Case C. Application filed July 17, 1875.

"the American eagle with wings outstretched, and standing with one foot upon a globe, and the other upon the United States shield, clasping a bundle of arrows."

2,842.—Fans.—MARTIN GILLET & Co., New York, N. Y., and Baltimore, Md.—Case D. Application filed July 17, 1875.

"the two faces of the centennial medal for the Philadelphia Exposition."

2,843.—Fans.—MARTIN GILLET & Co., New York, N. Y., and Baltimore, Md.—Case F. Application filed July 29, 1875.

"two soldiers half reclining upon a grassy knoll upon opposite sides of a dismantled cannon, having thereon the figures '76.'"

2,844.—Fans.—MARTIN GILLET & Co., New York, N. Y., and Baltimore, Md.—Case G. Application filed July 29, 1875.

"a race-boat adapted to be propelled by oars, and popularly known as a 'shell.'"

2,845.—Paint.—GEORGE E. GLINES, Brooklyn, N. Y. Application filed May 5, 1875.

"words 'SLATE ROOFING PAINT.'"

2,846.—Coffee, Spices, and Mustard.—JANNEY & ANDREWS, Philadelphia, Pa. Application filed August 17, 1875.

"words 'MY CHOICE.'"

2,847.—Rifle-Powder.—PAUL A. OLIVER, Wilkesbarre, Pa. Application filed June 26, 1875.

"word 'CREEDMOOR.'"

2,848.—White Lead, &c.—FRANCIS S. PEASE, Buffalo, N. Y. (Re-registration.) Application filed June 8, 1872.

"an emblematic or heraldic eagle."

2,849.—Fringes, Ribbons, and Trimmings of Silk.—SILBERMANN, HEINEMANN & Co., New York, N. Y. (Re-registration.) Application filed December 13, 1870.

"letters 'S. H. Co.,' interlaced."

2,850.—Clothes-Pins.—DANIEL STAPLES and JOHN S. BROWN, Moscow, Pa. Application filed April 17, 1875.

"word Moscow, with the letters S and B inclosed in diamond-shaped figures."

2,851.—Axes, &c.—THE DOUGLAS AXE MANUFACTURING COMPANY, Douglas, Mass. Case B. (Re-registration.) Application filed December 8, 1870.

"word 'Sharp.'"

2,852.—Axes, &c.—THE DOUGLAS AXE MANUFACTURING COMPANY, Douglas, Mass. Case A. (Re-registration.) Application filed December 8, 1870.

"word 'Hunt.'"

2,853.—Plows.—THE HIGGANUM MANUFACTURING COMPANY, Higganum, Conn. Application filed April 9, 1875.

"words 'CHARTER OAK.'"

2,854.—Medicine.—TILDEN & Co., New Lebanon, N. Y. (Re-registration.) Application filed May 23, 1871.

"words 'BROMO CHLORALUM.'"

2,855.—Hoes, Forks, Rakes, &c.—TUTTLE MANUFACTURING COMPANY, Naugatuck, Conn. Application filed December 1, 1874.

"word 'TUTTLE.'"

2,856.—Water-Closet Paper.—WILDER & Co., Ashland, N. H., and Boston, Mass. Application filed April 19, 1875.

"a crescent and a star, together with the words 'Oriental Mills Closet Paper.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date August 24, 1875.]

307.—Title: "Downs' East End Cologne."—B. W. DOWNS & Co., Lowell, Mass. Application filed July 20, 1875.

308.—Title: "Creedmoor Rifle."—PAUL AMBROSE OLIVER, Wilkesbarre, Pa. Application filed June 26, 1875.

309.—Title: "Orcutt's Salt-Rheum Cure."—D. ORCUTT & SON, Painted Post, N. Y. Application filed April 17, 1875.

310.—Title: "Peters' Catarrh Remedy."—C. W. PETERS, Fort Madison, Iowa. Application filed August 20, 1875.

311.—Title: "Peaches.—Carmine, Lamdin & Co."—JOHN A. SIMPSON, Baltimore, Md. Applicated filed August 13, 1875.

312.—Title: "The Dueber Watch-Case M'f'g Co."—THE DUEBER WATCH-CASE MANUFACTURING COMPANY, Cincinnati, Ohio. Application filed August 13, 1875.

313.—Title: "W. J. Wilcox & Co., Prime Leaf-Lard."—W. J. WILCOX & Co., New York, N. Y. Application filed August 17, 1875.

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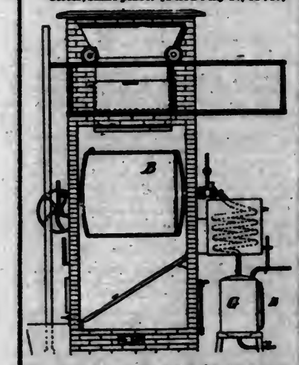
	Patent No.
Fry, W. T., Flask and bottle, (reissue)	6,613
Fuller, A., Faucet	167,092
Fuller, J. B., Argand gas burner	166,926
Fumers, N. H., assignee	167,041
Gaillac, E. G., Anchor tripper	167,093
Garton, W. J., Wax thread heating machine	167,094
Gates, C., Windmill	166,982
Gibbe, P. B., and J. C. Brown, Self setting animal trap	166,927
Gillingham, C. H. and A. L., Detachable link for chains	166,983
Goodyear, R. B., Shedding mechanism for looms	166,938
Goss, G. D., Mechanism for supporting leg rests for chairs	167,095
Gouge, H. A., Ventilator cap	166,984
Greenwood, W. M., and J. N. Clarke, Roll for making horseshoe blanks	167,096
Griswold and Pierce	167,116
Gustin, S. N., Animal poke	167,097
Hahn, I., Crane	166,985
Harper, P., Car coupling	166,987
Harper, W. H., Torpedo for oil wells	166,986
Hatfield, J., Paper bag machine	166,988
Heermance, C. W. and L. H., Strainer and funnel combined, (reissue)	6,614
Heffley, W. H., Machine for turning axles, (reissue)	6,615
Helmbach, G. W., Window screen	167,100
Henis, C. F., Pipe coupling	166,989
Heyl, G. A., assignee	167,130
Hickman, P., Folding chair	167,098
Hinkle, F., Device for operating throttle valves	167,099
Hull, M. B., and A. Eppler, Ash sifter	167,101
Hunter, A., Middlings purifier	167,102
Jennings, J. G., Water closet, (reissue)	6,616
Jewett, A., Collet for balance springs of watches	166,990
Jones and Freeman	166,981
Jones, E. J., Device for supplying steam blast to furnaces	167,103
Kast, J., assignee	166,913
Kepler, J. C., Proof staff for millstones	166,929
King, A. D., assignee	166,930
King, W. R., Hydrostatic compensatory apparatus for metallic bridges	166,930
Kruse, L. T., Hose bridge	166,991
Lachicotte, P. R., Polishing and scouring rice	166,952
Lachicotte, P. R., & Sons, assignees	166,992
Langley, S. D. C., Toy hoop or trundle	166,931
Lascell, G. W., Sewing machine needle	166,993
Lauder, J. N., Locomotive steam brake cylinder	166,994
Lauterman, A. P., Packing for stuffing boxes	167,104
Lawrence Curry Comb Company, assignee, (reissue)	6,605
Lawrence, W. E., Curry comb, (reissue)	6,605
Lee, H., Cornstalk puller	167,105
Lee, H. M., Preserving ferns, plants, &c	166,995
Lewis, O. D., assignee	167 021
Lewis, C. W., assignee	166 917
Line, C. O., Culinary vessel	167,106
Loomis, B. J., Key fastener	167,107
Ludwig, C. H., Champagne freezer	166,996
Lynam, J. T., Grain drill	166,997
Macaulay, A., Combined horse collar and hame	166,932
Maddock, T., Hand wash bowl	166,998
Marcy, J. J., Lantern	167,108
Marker, S. A., Safety loop for check reins	167,109
Matthiessen, F. O., Centrifugal machine in sugar manufacture	166,999
Matthiessen, F. O., Centrifugal machine in sugar manufacture	167,000
Matthiessen, F. O., Centrifugal machine in sugar manufacture	167 001
Maynard, C. G., assignee	167,026
McCray, W., Combined harrow and cultivator	167,002
McDowell, A., Heel trimming machinery	166,933
McGill, G. W., Pencil	166,934
McGilvray, W., assignee	167,134
McKay, W. W., Automatic gate	167,003
McPhail, J., Crown bar for steam boilers	167,004
Meigs, J. V., Machine for making and heading cartridge cases	167 005
Merrill, F. C., Side hill plow clevis	166,935
Metcalfe, H., Attaching magazines to fire arms	167,006
Miller, A., Farm fence	167,007
Miller, D. K., Permutation lock	167,008
Miller, W., Bobbin winder for sewing machines	167,111
Millner, G. W., Pipe and bolt vise	167,110
Mosslein, V., Spring power	167,009
Moffet, J., Globe valve	167,010
Monroe, G. O., Handle attachment for valises	167,011
Morrissey, J. H., Wrench	167,012
Murray and Stone	167,135
Nellermann, H., Fruit and jelly press	167,013
Neff, P., Lamp black apparatus	166,936
Neider, F. A., Buckle loop	167,014
Newman, M., Ironing table	167,112
Newton, S. S., Lamp	167,113
Norris, D. W., and N. E. Woods, Wringer	167,015
O'Brien Brothers Manufacturing Company, assignee, (reissue)	6 606
O'Brien, W. S., Harrow, (reissue)	6,606
Owen, B., Horse hay rake, (reissue)	6,617
Paraf, A., Fluxing composition	167,016
Parker, R. M. C., Spring hinge	167,114
Peak, T. T., Locomotive tire heater	167,115
Pease, J. A., Lamp burner	167,017
Perot, E. S., and H. C. Beltzeman, Chuck	167,018
Passenger, J. S., assignee	166,918
Pierce, D. L., and F. W. Griswold, Fire a'arm register	167,116
Piper, J. L., Machine for capping the joint flanges of hollow columns and cylinders	167,117
Potter, J. E., and A. J. Richardson, Jeweler's screw press	167,019
Powers, T. J., Paper box, (reissue)	6,618
Pritchett, W. H., Joint fastening for stair rails	167,118
Raddin, J., Car brake	166,937
Rankin, C. S., Fire place	167,020
Ray, B. F., Hand car	167,119
Reid, J. M., Mold for casting water traps	167,021
Reiyea, J. B., Vehicle top	167,022
Richards, J., Piston packing	167,023
Richardson and Potter	167,019
Richardson, H. J., Ruler	166,938
Richardson, W. H., Air and water heater	167,120
Rider, W. H., Corn marker	166,939
Ridgely, J. L., Jr., Lumber car	167,121
Rikli, M. A., Passenger car	167,122
Riley and Stanton	167,032
Ritchie, E. S., Mariner's compass, (reissue)	6,607
Rogers, J. S., Extracting gelatine from salted fish skins	167,123
Romadka Brothers, assignees	167,094
Romadka, A. V., Trunk	167,094
Rowbotham, J., Kindling wood bale	167,124
Ruhl, F. A., Lift pump valve	167,125
Ryder, H., Grate bar	167,126
Salaman, C. H., Pitman box for mowing and reaping machines	167,025
Sampson, W. S., Limekiln, (reissue)	6,608
Sandbach, T., Clamp	167,127
Sawyer, C. E., Label and tag machine	166 940
Schneider, B. B., Lamp	167,128
Schoonover, J. S., Machine for drilling metal	167,026
Seymour, A. B., Manufacture of horseshoes	167,027
Shaw, B. C., Side spar for vehicles	167,028
Shepard, W. A., Making quick burning fuel	166,941
Shirley, L., assignee	166,939
Sibley, L. D., Stereoscope	166,942
Sinclair, C., Hat	167,029
Skinner, C., Drum heater	167,129
Smith, C. D., Exhaust mechanism	167,131
Smith, C. H., assignee	166,919
Smith, E., Cattle alarm for locomotives	166,943
Smith, G. T. and A., Floor bolt, (reissue)	6,619
Smith, J. C., Arithmetical toy block	167,030
Smith, J., Jr., Expanding bit for horses	167,130
Smith, J. E., Sausage meat mixer	167,031
Stagg, D. I., Folding school desk	167,033
Stansbury, T. M. and A. F., Machine for bending tires	166,944
Stanton, E. W. and T. M. Riley, Commode ventilator	167,032
Steele, S. W., and J. Bayer, Marbleizing surfaces	167,034
Steiner, J., Wagon wheel	167,132
Stephan, J. J., Step ladder	167,037
Stephens, L. D., Ore washer	167,133
Stetson, G. R., Screw cutting die	166,035
Stevens, N. P., Machine for dressing valve seats, &c	167,038
Stevenson, A., Keel for boats	167,036
Stevenson, W. M., Rotary engine	167,134
Stone, F. D., and W. Murray, Apparatus for preserving eggs	167,135
Stratton, J. F., Boiler feed regulator	166,945
Street, C. W. F., Cheese vat	166,946
Taft, O. W., Picture nail	167,039
Taylor, F., Lock for fire arms	166,947
Theberath, C. M., Harness mounting	167,040
Thode, A., Washing fluid	166,948
Thornycroft, J. I., Screw propeller	167,136
Thurston, H. F., Wash boiler	166,949
Tieboat, J., Exercising machine	167,137
Topliff, J. A., Carriage bow	166,950
Towle, H. E., assignee	167,057
Troll, J., Tellurian	167,138
Tyler, S. W., Harvester, (reissue)	6,609
Underdown, A. R., Overcoat	167,139
Van Syckel, S., Grate bar	166,951
Vermilion, J. W., Slide valve	167,140
Vom Hofe, W., Bottle stopper	167,141
Von Dochs, W., Paging and numbering machine	166 952
Wales, S., Lever buckle	167,041
Walker, J., Stamp mill feeder	167,042
Ward, W., assignee	167,094
Ward, W. H., Car coupling	167,043
Ward, W. H., Friction power brake	167,044
Wardwell, C. P. S., Wire straightening machine	166,953
Ware, P., Jr., Carrying calfskins	167,142
Washburn, M. E., Turbine water wheel	167,143
Weathers, J., Combined sash holder and curtain fixture	167,144
Wegener, C., assignee	166,991
Wells, W., Planing machine	167,145
Wickey, A., assignee	167,095
Wilkerson, B. M., Business card	167,045
Williams, H. A., Machine for making crimping tacks, awls, &c	167,046
Williams, White, & Co., assignees, (reissue)	6,615
Winchester, E. S., Rock drill, (reissue)	6,620
Winkler, G. R., Disk steam engine	167,146
Wolfenden, Shore & Co., assignees	166,998
Wood, D., Brick machine	167,147
Woodruff, F. B., assignee	167,115
Woods and Norris	167,015
Woodville, J., Car wheel lubricator	167,048
Woodward, F. R., Rotary paper cutter	166,954
Wright, J. C., Railroad rail joint	167,047

TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED AUG 24, 1875.

166,912. APPARATUS FOR DRYING MALT. George Clark, Buffalo, N. Y., assignor of one-half his right to Jos. Kast and Chas. F. Bitter, same place. [Filed July 17, 1875.]



1. The combination of the cylinder B, condenser F, reservoir G, and glass indicator-tube H, as and for the purposes specified.

2. The combination and arrangement of the flues K K M and damper *g*, substantially as and for the purposes set forth.

166,913. PORTABLE CARBURETED-HYDROGEN-GAS MACHINES. Jos. M. Clark, Lancaster, Pa. [Filed July 15, 1875.]

Brief.—Two hydrogen-gas generators are connected at the bottom with an acid-reservoir placed between them, and having a central partition. The carburetor, containing cotton and excelsior, surmounts the acid-reservoir.

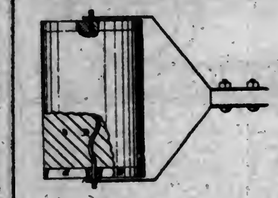
3. The generator A, fitted with an inverted bell, D, and having a perforated vessel, B, supported therein, in combination with the acid-tank E and carbon-department I, all constructed and operating as specified.

4. The vessels A E and inverted bell D, in combination with the carbon-department I, pipe I, and stop-cock *h*, for the purposes set forth.

5. The carbon-vessel I, provided with a burner and service-pipe connection, and having a pipe from each generator passing through a packing of cotton and excelsior therein, in combination with the independent acid-tank E and generators A, substantially as and for the purpose described.

166,914. LAWN-ROLLERS. David Copeland, Jr., Rochester, N. Y. [Filed May 3, 1875.]

Brief.—Two metallic heads are formed with dovetail arms and rim, connected by an axial crooked shaft, the ends projecting beyond the heads to form journals. The body of the roller is composed of concrete material, and is formed by tamping the concrete in a mold containing the heads and shaft, the dovetailed form of the heads and crooked shaft holding all the parts firmly together.



In a lawn-roller, the concrete body, the crooked shaft, and the dovetail heads and arms, all combined substantially as shown and described.

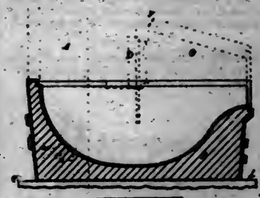
166,915. CEMENT SEWER-TRAPS AND MOLDS THEREFOR. David Copeland, Jr., Rochester, N. Y. [Filed Mar. 23, 1875.]

Brief.—The sewer-trap is made in sections composed of hydraulic cement.

1. A street sewer-trap consisting of sections A, B, and C, composed of hydraulic cement, and constructed as shown in Figs. 1, 2, and 4, so as to flare on all sides upward to a line considerably above the overflow, to prevent burning or injury by frost, as set forth.

2. The flask composed of the sections or sides H and hollow core G, in combination with the follower I, or its equivalent, constructed and arranged to operate conjointly as and for the purpose of molding the hydraulic-cement base B for sewer-traps.

3. The concave semicircular flask composed of the plates P and T and follower N, or its equivalent, constructed as and for the purpose set forth.

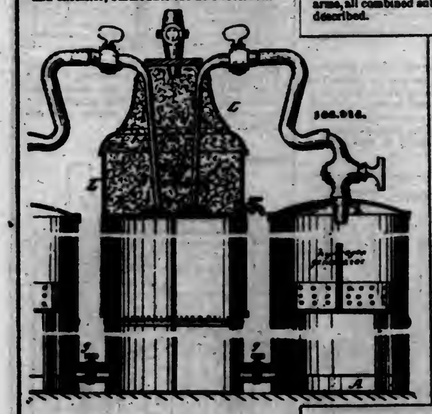


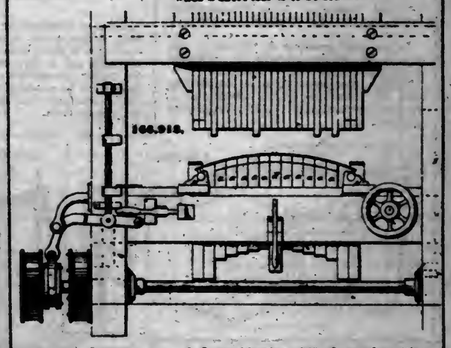
166,917. INSECT-DESTROYING COMPOUNDS. George W. Davis, Boston, Mass., assignor of one-half his right to Charles W. Lewis, same place. [Filed July 13, 1875.]

The composition of matter, consisting of carbonates of lime and magnesia, crude potash and iron pyrites, substantially as described, and for the purpose set forth.

166,918. MACHINES FOR SETTING CARRIAGE-SPRINGS. Thomas B. De Forest, Birmingham, Conn., assignor to Sarah A. De Forest and J. S. Passenger, same place. [Filed July 6, 1875.]

Brief.—The former is made in sections, and is carried by a vertically-moving slide. A series of weights arranged to slide vertically, but independently of each other, in a cross-beam of the frame, force the leaf upon the former as the latter comes in contact with them. Adjustable stops prevent the contact of the former with the unnecessary weights, when a short leaf is to be set.





1. In combination with a former for setting carriage-springs, a series of vertical weights arranged to force the leaf onto the former, substantially as set forth.

2. In combination with a former for setting carriage-springs, a series of vertical weights, the lower or bearing ends constructed transversely concave, so as to bear upon the edges of the leaf, substantially as described.

3. In combination with a former for setting carriage-springs, a series of vertical weights, the lower ends of which are hinged, so as to turn transversely, substantially as described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

4. In combination with a former for setting carriage-springs, a series of vertical weights constructed with internal grooves, and provided with a water supply, so as to allow a free flow of water onto the set springs.

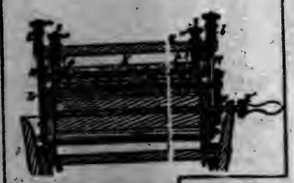
5. In combination with a former for setting carriage-springs, and a series of vertical weights for forcing the leaf onto the former, the adjustable stops S S', substantially as and for the purpose described.

166,919. WEATHER-STRIPS. W. H. Douglass, Chicago, Ill., assignor to C. H. Smith, same place. [Filed Feb. 10, 1875.]



In a weather-strip, a single strip of metal, secured to an elastic or other suitable strip by means of eyelets, substantially as described.

166,920. COMBINED WASHING AND WRINGING MACHINES. George C. Eastman, Lewiston, Me. [Filed Apr. 14, 1875.]





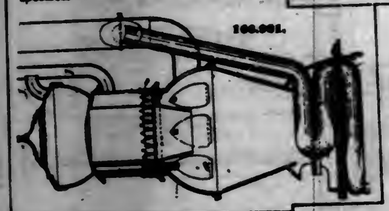
166,920.

The two rollers E I, geared together, as described, in combination with the three rollers K F F, arranged and provided with yielding pressure devices, the hangers M M, springs l l o o, screws n n g g, and bolts n n r r, as set forth, all being applied to and arranged in the frame B, as specified.

166,921. STOVES. John Wheeler Elliot, Toronto, Canada. [Filed Apr. 20, 1875.]

1. The water-reservoir A, pivoted by the pipe C, in combination with the pocket or cesspool D, substantially as specified.

2. The water-reservoir A, in combination with the steam-pipe J, and hot-air pipe I, arranged substantially as and for the purpose specified.

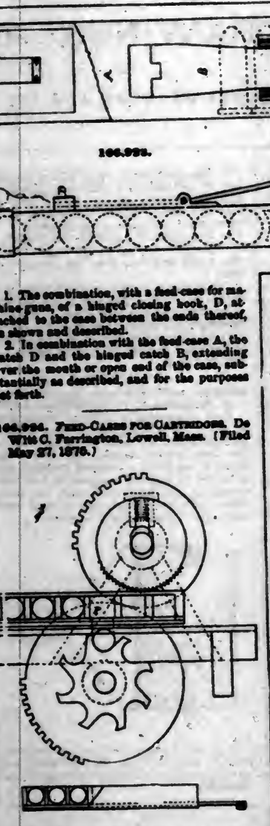


166,921.

166,922. PHOTOGRAPHIC PLATES. Oliver R. Evans Thierolf, Pa. [Filed Jan. 2, 1875.]

A photographic printing-surface, consisting essentially of disks white pearl powder, oxide of zinc, and collodion, combined in about the proportions, and prepared in the manner, substantially as hereinbefore described.

166,923. CARTRIDGE-FEEDING CASES FOR MACHINE-GUNS. De Witt C. Farrington, Lowell, Mass. [Filed May 27, 1875.]



A box or receptacle for cartridges, provided with compartments or guides to retain the cartridges in place, adapted to be used as a feed-case, and to be passed horizontally over the hopper or receiver of a machine-gun, either by hand or in combination with proper mechanical means, substantially as and for the purpose set forth.

166,924. FEED-CASES FOR CARTRIDGES. De Witt C. Farrington, Lowell, Mass. [Filed May 27, 1875.]

166,924.

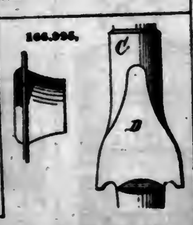
1. The combination, with a feed-case for machine-guns, of a hinged closing hook, D, attached to the case between the ends thereof, as shown and described.

2. In combination with the feed-case A, the catch D and the hinged catch B, extending over the mouth or open end of the case, substantially as described, and for the purposes set forth.

166,925. TUBE-EXPANDERS. Eli W. Fleet, Battle Creek, Mich., assignor to himself and Geo. D. Edmonds, same place. [Filed Apr. 6, 1875.]

Brief.—The tool is rotated and the projecting ends of the tube turned by the projecting recessed wings.

The above-described tube-expander, consisting of the spindle C, with flattened part D, having projecting lips d with curved notches e therein, all formed of one piece of metal, substantially as and for the purposes herein set forth.



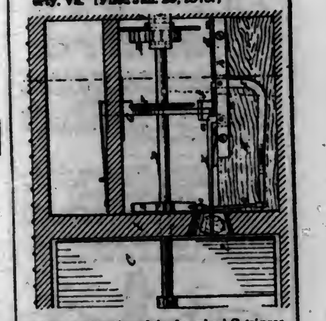
166,925.

166,926. ARGAND GAS-BURNERS. Jim B. Fuller, Brooklyn, N. Y., assignor of one-half his right to J. N. Crandall, Norwich, Conn. [Filed Aug. 4, 1875.]

1. The combination of the slotted or perforated tube F, the pin G, made and cut out as described, so as to form the inlet J, and the bushing E, all constructed and arranged within the pillar of an argand gas burner, substantially as and for the purposes described.

2. The combination of the lever H, the pin G, the tube F, and the bushing E, substantially as set forth.

166,927. SELF-SETTING ANIMAL-TRAPS. Peter B. Gibbs and James C. Brown, Liberty, Va. [Filed Jan. 20, 1875.]



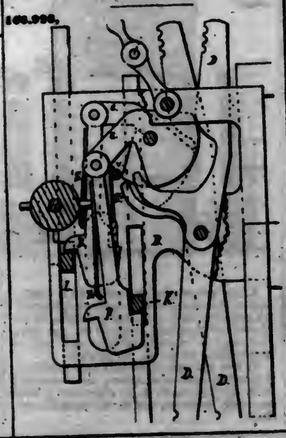
The combination of the fan-wheel C, trigger K, dog I, and pawl G with a rainbet, F, shaft D, spider L, lever A, links e, and winding apparatus E, all constructed and arranged for operation, substantially as shown and described.

166,928. ARGAND GAS-BURNERS. Jim B. Fuller, Brooklyn, N. Y., assignor of one-half his right to J. N. Crandall, Norwich, Conn. [Filed Aug. 4, 1875.]

1. The combination of the slotted or perforated tube F, the pin G, made and cut out as described, so as to form the inlet J, and the bushing E, all constructed and arranged within the pillar of an argand gas burner, substantially as and for the purposes described.

2. The combination of the lever H, the pin G, the tube F, and the bushing E, substantially as set forth.

166,929. SELF-SETTING ANIMAL-TRAPS. Peter B. Gibbs and James C. Brown, Liberty, Va. [Filed Jan. 20, 1875.]



166,929.

The combination of the fan-wheel C, trigger K, dog I, and pawl G with a rainbet, F, shaft D, spider L, lever A, links e, and winding apparatus E, all constructed and arranged for operation, substantially as shown and described.

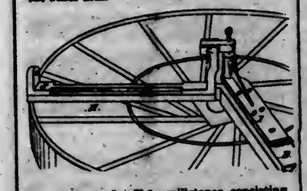
166,930. SHEDDING MECHANISMS FOR LOOMS. Robt. B. Goodyear, Philadelphia, assignor of one-half his right to Wolfenden, Shore & Co., Cardington, Pa. [Filed June 16, 1875.]

1. The jacks F, constructed with springs S S', in combination with the pin V and lifter and depresser bars K K', as described, and for the above purpose.

2. In an open-shed harness-motion, for the purpose of giving the heddles a full movement in either direction up or down, and holding them in that position as long as desired, the combination of the vertical lifting and depressing bars K K', vertical jack F, provided with the springs S S', lever-cam E, and vertical lever D, substantially as described.

166,930. PROOF-STAFFS FOR MILLSTONES. Jacob C. Kepler, Richmond, Ind. [Filed Mar. 9, 1875.]

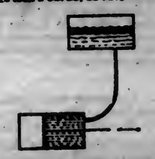
Brief.—The under surfaces of two arms, articulated at their ends, have paint or other substance on them. These surfaces are adjusted into a common plane by set-screws passing through ears on one arm, at the point of articulation, acting on a vertical portion of the other arm.



1. The proof-staff for millstones, consisting of a metallic bar having a lower level surface, provided with an articulated wooden arm having a lower level surface, and being capable of vertical adjustment to bring the level surfaces of the bar and arm into the same horizontal plane, substantially as set forth.

2. The metallic bar H having its lower surface level; provided with the vertical stud O having the lugs R and S, provided with the set-screws K and L, in combination with the wooden arm D having its lower surface level, provided with the metal plate J having the vertical stud I, constructed and operating substantially as and for the purposes set forth.

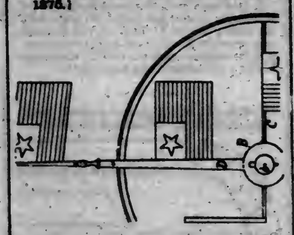
166,931. HYDROSTATIC COMPENSATORY APPARATUS FOR METALLIC BRIDGES. Wm. B. King, Wilkesbarre Point, near Wilkesbarre, Pa. [Filed Feb. 18, 1873.]



1. The combination, in a bridge or other analogous structure, of the cylinder secured upon one part of the structure, the piston of said cylinder connected with another part of the structure, the elevated tank containing liquid, and a pipe connecting the tank directly with the cylinder, these members being constructed and operating, substantially as hereinbefore set forth, to cause the hydrostatic pressure to act directly upon the movable parts of the structure, and to compensate said movement by the simple inlet or efflux of the liquid into or out of the cylinder.

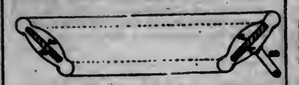
2. In a bridge or other analogous structure, the combination, substantially as hereinbefore set forth, of a series of cylinders, each connected with its respective portion of the structure; a series of pistons correspondingly connected and working in the cylinders; an elevated tank containing liquid; a supply-pipe connecting this tank with one of the cylinders, and provided with a check-valve to prevent the return of the fluid to the tank; and a pipe connecting the flowing-chambers of the two cylinders, whereby an excess of strain upon a movement of one set of connections is transferred to or compensated by the other.

166,932. TOY HOOPS OR TROUBLES. Saml. D. C. Langley, Erie, Pa. [Filed June 18, 1875.]



The improved rolling or trundle hoop, herein described, provided with the decorated rods C, the hub B, and weighted rod D, all constructed and arranged to operate substantially as specified.

166,933. COMBINED HORSE-COLLARS AND HAMES. Aulay Macaulay, Cambridgeport, Mass. [Filed June 17, 1874.]



As a new article of manufacture, a horse-collar as constructed, consisting of the flexible continuous flat spring-steel band A, provided with staple B, bolts D D, D's C C, covering H, and stuffing F, all combined and arranged substantially in the manner described, as and for the purpose set forth.

166,934. HEEL-TRIMMING MACHINERY. A. McDowell, Lawrence, Mass. [Filed July 6, 1875.]



166,935. LAND-SLIDE APPARATUS. Peter Noll, Gambier, Ohio. [Filed June 17, 1875.]

Brief.—Detachable depositing plate fastens to the collecting-surface. Car underneath channeled to pass the burners. Brush or scraper, held against and carried by the car, pressed against the surface by a spiral spring. Burners may be turned aside, or pressed and pivotal surfaces swung aside, to facilitate cleaning of the surface.

166,936. PENCILS. Geo. W. McGill, New York, N. Y. [Filed May 24, 1875.]

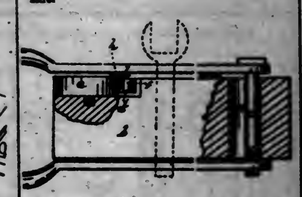


1. The erasive head or tip for pencils, having longitudinal projections or grooves formed in its base, to adapt it to be inserted and retained in a metal holder having a corresponding conformation, substantially as described.

2. The metallic tubular holder, provided with longitudinal projections or grooves, whereby it is adapted to receive and hold a rubber erasive head, substantially as described.

166,937. TIME-BELL-FLOW CHECKERS. F. C. Merrill, South Paris, Me. [Filed May 31, 1875.]

Brief.—A stud upon the clevis travels in crescent-shaped recess in the front end of the beam, while a longitudinal slot for the clevis-bolt allows it to move forward and back, and automatically change the draft from side to side.

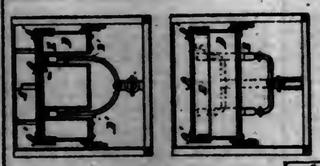


1. In combination with the clevis c, having the bolt e and stud b, and the beam h, having the slot d, the plate c, having the curved slot f, the said slots being arranged and constructed as shown and described.

2. In combination with the clevis, made as described, and having the bolt and stud, the slotted plate c, having the opening i, as and for the purposes set forth.

166,938. LAND-SLIDE APPARATUS. Peter Noll, Gambier, Ohio. [Filed June 17, 1875.]

Brief.—Detachable depositing plate fastens to the collecting-surface. Car underneath channeled to pass the burners. Brush or scraper, held against and carried by the car, pressed against the surface by a spiral spring. Burners may be turned aside, or pressed and pivotal surfaces swung aside, to facilitate cleaning of the surface.



1. As an apparatus for the manufacture of lamp-black, the combination, with the burner B, of a convex surface A, located above the flames from the said burners, with its convexity toward the said flames, substantially as and for the purpose described.

2. The combination, with the burners B, and a surface, A, located above the flames from the said burners to receive the deposits of lamp-black, of adjustable depositing cups A' at all the edges of the said surface, substantially as and for the purpose described.

3. The combination, with burners B and surface A, of a car, D, with recesses D', to permit it to pass by the burners, substantially as and for the purpose described.

4. In an apparatus for the manufacture of lamp-black, the combination, with depositing-surface A, of burners B, located beneath the same, the said burners made adjustable, so as to be removed from the said surface to facilitate cleaning off the deposits, substantially as and for the purpose described.

5. The combination, with the convex surface A, substantially as described, of car D, scraper or brush E, and spring E', substantially as and for the purpose described.

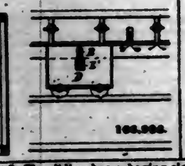
6. In an apparatus for the manufacture of lamp-black, the combination, with the burners B, of the convex surface A, substantially as described, the said surface A being readily removable from the burners, for the purpose of facilitating the cleaning of deposits therefrom, substantially as and for the purpose described.

7. The combination, with the burners B, of the suspended surface A, shaft F, and crank G H, substantially as and for the purpose described.

8. In an apparatus for the manufacture of lamp-black, the combination, with a depositing-surface, of burners projecting from the back of the said surface, just through, but not beyond, the said depositing-surface, substantially as and for the purpose described.

166,927. CAR-BRAKES. John Reddin, Lynn, Mass. [Filed Nov. 11, 1874.]

Brief.—Twin-beams operating through sliding rod, slotted beams, and toggles.

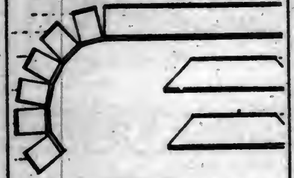


166,928.

3. The sliding bar c, having slotted projection c', to allow of the lateral adjustment of the links, substantially as set forth.

4. In a train-brake, the combination of the continuous central bar A and its stops with the sliding toggles B' B' B' B', substantially in a square form within the line of the wheels, and the connecting-rods C' C' C' C', and brake-beams 4, all substantially as set forth.

166,929. BOILERS. H. J. Richardson, Brooklyn, E. D., N. Y. [Filed May 26, 1870.]

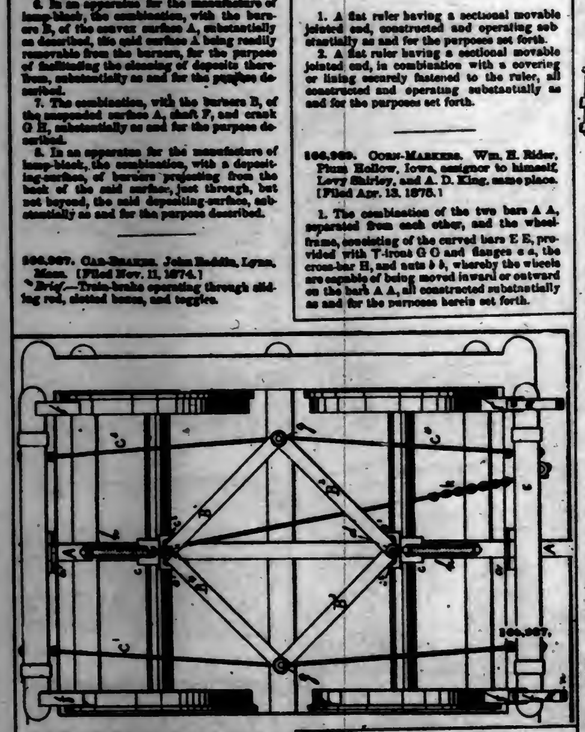


1. A flat ruler having a sectional movable jointed end, constructed and operating substantially as and for the purposes set forth.

2. A flat ruler having a sectional movable jointed end, in combination with a covering or lining securely fastened to the ruler, all constructed and operating substantially as and for the purposes set forth.

166,930. CORE-MAKERS. Wm. H. Rider, Plum Hollow, Iowa, assignor to himself, Levy Shirley, and A. D. King, same place. [Filed Apr. 13, 1875.]

1. The combination of the two bars A A, separated from each other, and the wheel-frame, consisting of the curved bars E E, provided with T-irons G G and flanges a a, the cross-bar H, and nuts b b, whereby the wheels are capable of being moved inward or outward on the bars A A, all constructed substantially as and for the purposes herein set forth.



166,927.

1. The combination, with the brake beam and shoe, of the bracket m and cushion n, substantially as and for the purpose set forth.

2. The combination of the central bar A and its stops with the spring h and sliding box c, substantially as and for the purpose set forth.

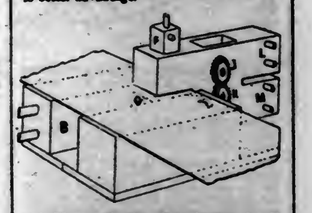
3. In combination with the bars A A, the laterally-adjustable wheels I, and the shaft C with cranks H, the plow M, connected to the straps s s and to the bar H, and laterally adjustable, in conjunction with the wheel I, all substantially as set forth.

3. The combination, with the circle J, of the pivoted bar K, with vertical arms L L, the friction-rollers m m, latch p, wheel P, and syringe n n, all substantially as and for the purposes herein set forth.

4. The combination, with the swiveled wheel P and latch p, of the plow M', connected and pivoted straps s' s', loop m, rods r r, and foot-treadle N', all substantially as and for the purpose herein set forth.

166,940. LABEL AND TAG MACHINES. Chas. E. Sawyer, Boston, Mass. [Filed Feb. 10, 1874.]

Brief.—The tags are fed over heating-boxes, and the patch strip over others, which soften the gum or cement, when the ribs unite the patch and pressure is upon the tag. The strip may be fed at an angle, so that it may be cut to better advantage.



1. The combination of the heating-box B with the cutters or dies F and G, or their equivalents, constructed substantially in the manner described, as and for the purposes set forth.

2. The combination of heating-boxes L and M, with feed-rolls J K and dies F G, or equivalents, constructed substantially in the manner described, as and for the purposes set forth.

3. The combination of the heating-box B with the feed-rolls J and K, dies F and G, heating-boxes L and M, constructed to operate substantially in the manner described, as and for the purposes set forth.

166,941. PROCESSES FOR MAKING QUICK-BURNING FUEL. Wm. A. Shepard, New York, N. Y. [Filed Jan. 5, 1875.]

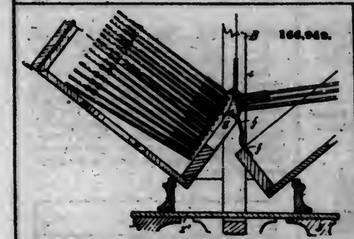
The process of making a quick-burning fuel, which consists in expelling the air and moisture of materials, such as are specified, placed in a close chamber, by means of superheated steam; then producing a vacuum by injecting a spray of cold water; then saturating the material while in vacuo with petroleum, the lighter products of which have been removed, and then drying the fuel in the chamber by sending through it a current of air, substantially as described.

166,942. STEREOSCOPES. L. D. Sibley, Vineland, N. J. [Filed Mar. 17, 1875.]

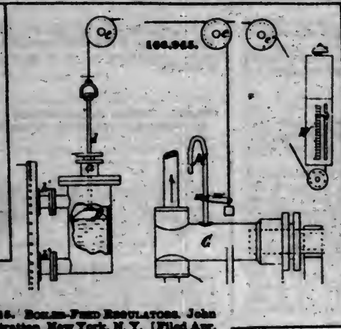
1. In a stereoscope, a platform, p, for supporting the back of a book, holding a series of pictures, and provided with an edge over which the leaves of the book are turned, substantially as shown and described.

2. The box made in two hinged parts, O O', opening from each other, each part being adapted for supporting the back and displaying the pictures as they are viewed from either side of the apparatus.

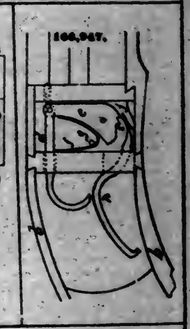
3. In combination with the lenses of a stereoscope, mechanism operating substantially as described, whereby they may be adjusted to or from each other, for the purpose set forth.



166,943.



166,944.



166,947.

4. The leaf-frame of the book, for the reception and holding of stereoscopic pictures, constructed of continuous wire extending around all its four sides, substantially as and for the purposes set forth.

5. In combination with the wire frame o p q r, the notches s at their inner sides, whether made on the wire or on a separate piece, s', and applied to the frame, as and for the purpose set forth.

6. The movable and adjustable bars s, provided with swinging or sliding catches t, adapted to engage with teeth u on the leaves, substantially as and for the purpose set forth.

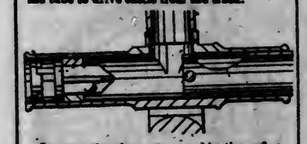
7. The movable and adjustable bars s, provided with swinging clasps v, adapted to receive and clasp the edges of the pictures, substantially as and for the purpose set forth.

8. The pieces t u, constructed as described, from sheet metal, and bent so as to form both the catch or pawl t and the clasp u, about at right angles to each other, and provided with a pivot-hole near its angle, substantially as and for the purpose described.

9. In combination with the swing-frame R, the reversible or turning lens-support fE, as and for the purpose described.

166,943. CATTLE-ALARMS FOR LOCOMOTIVES. B. Smith, Bloomington, Ill. [Filed June 1, 1875.]

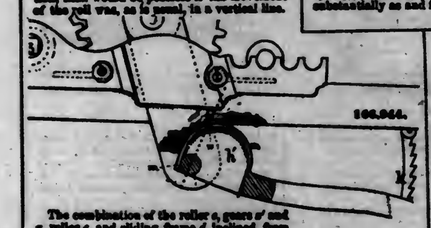
Brief.—The device consists of a telescopic arrangement of tubes and a valve, so arranged that when one tube is pushed within the other the valve is opened and steam admitted from the boiler, whereby projectiles are thrown from the tube to drive cattle from the track.



In a cattle-alarm, the combination of a movable tube and a wing-valve, substantially as set forth.

166,944. MACHINES FOR RENDERING TIMBER. Thomas M. Stansbury and Alex. F. Stansbury, Cambon, Ill. [Filed May 10, 1875.]

Brief.—The middle roll c is connected by gearing to the roll to which power is applied, and is journaled in a sliding frame somewhat inclined from a vertical line, and toward the roll with which it is geared, thus permitting to the middle roll a greater latitude of movement, while still retaining the gear connection, than would be possible if the movement of the roll was, as is usual, in a vertical line.



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The combination of the roller c, gears c' and g, roller c, and sliding frame d inclined, from the perpendicular toward said roller c, substantially as and for the purposes set forth.



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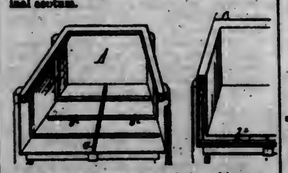
166,945. BOILER-FEED REGULATORS. John F. Gerstner, New York, N. Y. [Filed Apr. 20, 1875.]

Brief.—When the water in the boiler rises above its proper level, the valve in the air-pipe attached to the pump is opened, when the pump will work freely, yet be held in condition for working the moment the water falls and the cock is closed.

The cock m is the pipe M, adapted to induct air into the pump, as represented, in combination with the feed-pump G and with the float D, moving with the water-level of the boiler, as and for the purposes specified.

166,946. CHEESE-VATS. C. W. F. Street, Lanark, Ill. [Filed June 12, 1875.]

Brief.—The vat sits in a larger vessel, and below and at the outer sides of the inner vessel, water of any desired temperature circulates, jetting from the transverse tubes beneath, on opposite sides thereof, as said transverse tubes are held centrally by a longitudinal centam.



1. The partition a in the tank A, and in combination therewith the steam-pipes b', perforated in opposite directions on opposite sides of said partition, substantially as described.

2. The combination, with the tank A, of the horizontal steam-pipes b b', passing along the sides of the vat above the center thereof, and the perforated branch pipes b', passing below said center and across the bottom of the tank, so as to insure an equal distribution of the steam in said branch pipes, as and for the purpose set forth.

166,947. LOCKS FOR FIRE-ARMS. Ferdd. Taylor, Danbury, Conn. [Filed June 29, 1875.]

The hammer c, provided at its upper end with a pivoted hook, d, to serve as a means for cocking, in combination with a double spring, f, held in place by the stud or pin f', substantially as and for the purpose set forth.

166,948. WASHING-FLUIDS. Adolph Thode, Brooklyn, N. Y. [Filed Apr. 6, 1875.]

A washing-fluid consisting of potash, borax, chloride of sodium, soapwort, and water, in about the proportions specified.

166,949. WASH-BOILERS. H. F. Thurston, Porter, Me. [Filed June 7, 1875.]

Brief.—The base of the vessel, upon which the clothes-receptacle is secured, has three boiling-chambers on its bottom, which open at their inner sides into bridges connecting them together, the bridges having valves opening inward. From the tops of the chambers pipes conduct the boiling water into the center and sides of the clothes-receptacle, from which it passes through strainers and the valves in the bridges back into the boiling-chambers.



The wash-boiler constructed as described—that is, having the base a, provided with the chambers b b b, openings c, perforations f, the side pipes g, the inner pipes h, the bridges i, with their openings and valves, plate j, receptacle k, and drainage l, all as herein set forth.

166,950. CARRIAGE-BOWS. John A. Topliff, Elyria, Ohio, assignor of one-half his right to George H. Ely, same place. [Filed Nov. 10, 1874.]



1. In combination with the bent tubes of bow-sockets and wood bows or fillings, a steel or other hard-metal plate, welded or otherwise fastened within the tube to the cast-iron, substantially as and for the purpose specified.

2. The combination, with the metal tubes of bow-sockets, of a wooden filling, substantially as and for the purpose set forth.

166,951. GRAIN-RAKE. Samuel Van Syckel, Titusville, Pa., assignor to Geo. H. Clarke, Brooklyn, N. Y. [Filed July 20, 1875.]

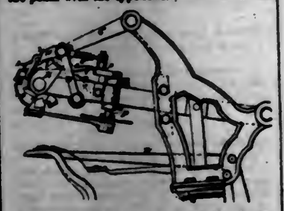
Brief.—The bay-bar is kept in position by steps or lugs on top and a transverse bay at the bottom. By the removal of said bay the interlocking bars may be separately removed.

1. The combination, with the interlocking bars A A and bay-bar B, of the adjustable or removable steps C C, for preventing the bay-bar from springing upward, constructed and operating substantially in the manner described and specified.

2. The combination, with the interlocking bars A A and key-bar B, of the adjustable or removable stops C C and stationary stops or projections D D, constructed and operating substantially in the manner described and specified.

166,962. PAGING AND NUMBERING MACHINES. Wm. Von Deuhn, Chicago, Ill., assignor to Culver, Page & Hoyne, same place. [Filed Dec. 11, 1871.]

Brief.—The type-wheels are journaled to and between the bifurcated ends of lever B, and are inked by a reciprocating lever, q, which, together with an intermittingly-rotating ink disk, R, receives motion from the type-lever through the medium of toggle-levers C D. The type-wheels are brought into proper relation with each other by a suitable pawl and ratchet, and locked in position by cams h and g of washer f, and sliding dog d, and are kept elevated above the mast-bolt, when at rest, by a spring surrounding the rod that connects the pedal with the type-lever.



1. The peripherally-notched disk N, whereby the operative pawl rotates the type-wheel, in combination with the type-wheel and its aligning-bar, substantially as specified.

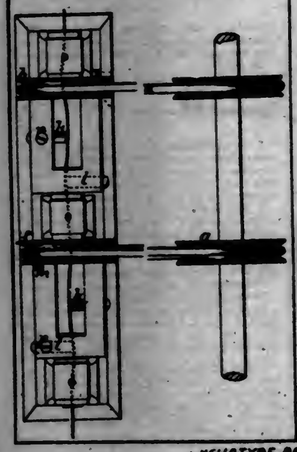
2. The aligning bar M, provided with a dependent cam or wedge-shaped projection, o, in combination with the disk N, whereby said bar is raised out of engagement with the type-wheel, substantially as specified.

3. The combination of the guide-plate or form K, pawl H, rider L, and ratchet I, substantially as specified.

4. The combination of the knee-lever C D D, the lever B, pawl H, and ratchet I, all constructed and operating substantially as specified.

5. The cam h, combined with cam g, upon the interposed steel cam-rocker f of the type-wheel, for the purpose of drawing the dog d into a locked position, substantially in the manner specified and shown, whereby the ordinary spring is dispensed with.

166,963. WIRE-STRAIGHTENING MACHINE. Chas. P. S. Wardwell, Lake Village, N. H. [Filed Feb. 27, 1875.]



The combination of two wire-straightening, A B, revolving in opposite directions, operating substantially as and for the purpose herein specified.

166,964. ROTARY PAPER-CUTTERS. Frank R. Woodward, Hill, N. H. [Filed Mar. 5, 1875.]



In combination with a suitable handle, a rotary cutter for cutting textile fabrics, paper, pasteboard, leather, glass, &c., which is shaped to the frustum of a cone, with a base slightly convex, so as to bring the bearing-point of the cutter on the pin, on which it turns, at one extremity of the hole in the cutter, and obviate friction against the side of the slot in the handle, in which the cutter is pivoted, substantially as described and specified.

166,965. METHODS OF MAKING A SUBSTITUTE FOR BUTTER FROM THE OILS OF ANIMAL FATS. Wm. B. Andrew, New York, N. Y. [Filed Aug. 12, 1870.]

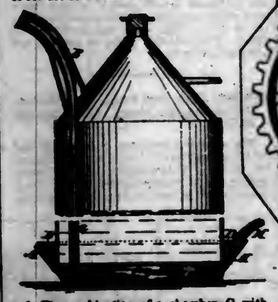
1. The process of obtaining a product as a substitute for cooking butter, consisting of churning by itself suitably-prepared oil obtained from animal fat, whereby the oil globules are broken up, and afterward subjecting it to a low temperature, as described.

2. The process of manufacturing artificial butter by churning by itself suitably-prepared animal oil, as described, and then combining the product thus obtained with butter already formed upon cream, the oil product being placed in the churn and churned until a thorough amalgamation is effected, when the mass will partake of the flavor of natural cream butter, as described.

3. The product herein described, consisting of animal oil alone, and of the character described, having the globules broken up, and having the appearance and consistency of butter, as shown and specified.

166,966. OIL-CANS. John Ashwith, Chicago, Ill. [Filed July 24, 1875.]

Brief.—The drip-pan, attached to the bottom of the can to catch the drip from the nozzle, is provided with a chamber, out of which is a nozzle passing into the pouring-nozzle, so that the drip may be poured out with the contents of the can. It also has another nozzle for pouring out of the drip-pan, or for use as a handle to a can.



1. The combination of a chamber, C, with the drip-pan A and can, said chamber having a passage from the pan into it, and a nozzle for pouring out from it, substantially as specified.

2. The combination of a nozzle, G, with the drip-pan and the nozzle E of a can, substantially as specified.

3. The nozzle E of a drip-pan attachment to a can, located relatively to the can to serve for a handle thereto, substantially as specified.

166,967. NUT-LOCKS. David Beaton and S. A. Beaton, Philadelphia, Pa. [Filed Jan. 6, 1875.]

Brief.—A cup shaped washer has a pawl pivoted to the side, to engage with a ratchet on a part of the nut within the cup, by which loosening of the nut is prevented. The pawl is also provided with an arm projecting in the opposite direction, to engage with a circumscribing ring, which is turned by means of a wrench, to disengage the pawl to permit removal of the nut.

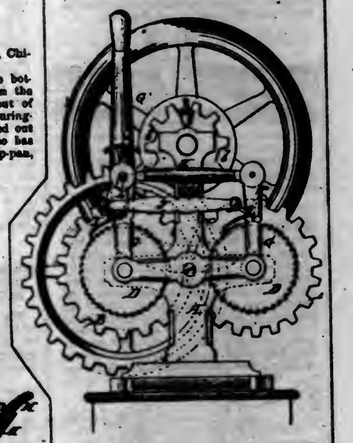


1. The nut D, provided with the serrated collar F, in combination with the cup-shaped washer E and dog J, constructed and operating as set forth.

2. The combination, with the serrated nut and locking dog or pawl, of the disengaging band M, substantially as and for the purpose set forth.

166,968. MECHANICAL MOVEMENTS. Andrew Beck and Israel Beck, Philipsburg, Pa. [Filed July 2, 1875.]

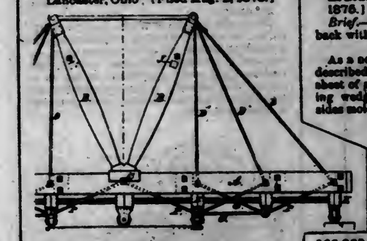
Brief.—A pair of double ratchet-wheels, with pinions, give motion, through a gear-wheel, to a pinion on a fly wheel, a connecting-rod thereon effecting reciprocating motion. One ratchet-wheel, operated by an extended lever, actuates the other by parallel motion-rods. Motion reversed by the forked end of a small lever moving crank-arms on the pawl-axles.



1. The combination, with the shafts a, e, and d, gear-wheels B, E, C, and b, and fly-wheel K, of the double ratchet-wheels D D, levers G G, connecting-bar H, and double pawls I I, substantially as and for the purposes herein set forth.

2. The combination of the double pawls I I, cranks c c, connecting-bar J, and shifting-lever L, all constructed substantially as and for the purposes herein set forth.

166,969. DRAW-BRIDGES. Wm. M. Black, Lancaster, Ohio. [Filed Aug. 2, 1875.]



1. In combination with the chords of turning draw-bridges, pairs of diverging posts placed over the pivot-beam, substantially as described, and for the purpose specified.

2. In combination, pairs of diverging posts placed on the chords of a turning draw-bridge over the pivot-beam, supporting-rods extending from the tops of the posts to graded points on the chords, substantially as shown, and for the purpose specified.

3. In combination with pairs of diverging posts placed on the chords of a turning draw-bridge over the pivot-beam, and supporting-rods extending from the tops of the posts to graded points on the chords, the connecting-bars F and diagonal tension-bars G, with the ring H, substantially as shown, and for the purpose specified.

4. In combination with the chords A, the diverging posts B, and the supporting-rods D, the tension-arm O and the rods P, substantially as described, and for the purpose specified.

166,970. TRUSS-BRIDGES. Wm. M. Black, Lancaster, Ohio. [Filed July 17, 1875.]

Brief.—An upper chord is combined with a catenarian arc composed of sections or sets of eye-bars, united by hitch-plates, and radial compression-posts, and diagonal tension-bars, by which the different strains are distributed. The lower chord is suspended by sets of diverging bars connected to the said hitch-plates. A cap with cleat and posts unites the upper chord and corner post, to protect the joints from the weather.

1. In combination with a catenarian tension-arc, an upper chord, radial compression-posts, and diagonal tension-bars, substantially as shown, and for the purpose specified.

2. The catenarian tension-arc C, composed of sections or sets of eye-bars, united by the hitch-plates D, substantially as shown, and for the purpose specified.

3. In combination with a catenarian tension-arc and end main posts, a lower chord, composed by sets of diverging bars, substantially as shown, and for the purpose specified.

4. The cap J, substantially as shown, and for the purpose specified.

166,971. RIDGE-AND-FASTENINGS. G. Bostwick, Aurora, Ill. [Filed Nov. 12, 1874.]

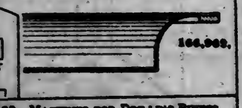


An open angle-iron post for bedsteads, having side plates E, with face-grooves b, for the fastening-wedges c of the side rails and the head and foot boards, substantially as set forth.

166,972. PAPER PICTURE-FRAMES. Oliver K. Bradford, Boston, Mass. [Filed Jan. 18, 1875.]

Brief.—The flaring rim is re-enforced at the back with a wooden frame.

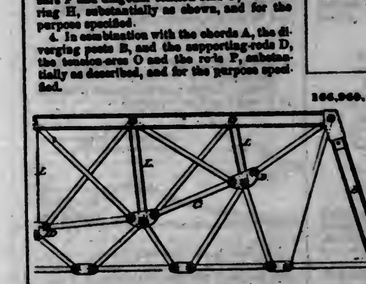
As a new article of manufacture, the above-described paper frame, as constructed of one sheet of straw-board or similar material, having wedge-shaped corners cut out and the sides molded to form a flaring frame, as shown.



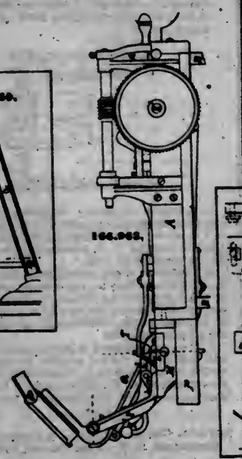
166,973.

166,973. MACHINES FOR DRILLING RIVETS. Mellen Bray, Newton, Mass. [Filed June 11, 1875.]

Brief.—A vibratory hopper with reversed circular chute attached, by virtue of which the rivets which pass out of the hopper heads up are delivered to an inclined stationary chute with the heads down, their passage down the inclined chute being facilitated by the strokes of a spring hammer to jar the chute. As they pass from the chute they are pushed into the notches of an intermittingly-revolving carrier-wheel, which carries them between two dies, which clamp and hold them while being drilled, after which the carrier conveys them in front of a discharger, which ejects them.



166,974.



1. In combination with an automatically-operated drill, a hopper, into which solid rivets may be placed in bulk, and from which they are discharged in regular order with their heads all in one direction, an inclined chute, down which the rivets slide to the drilling-point, and a pair of clamping-dies, arranged to seize the rivet, hold it while it is being drilled, and release it again when the drilling is completed, substantially as described.

2. In an apparatus for separating rivets, the combination of the finest inclined chute G, the curved shield r, the vibratory chute E, having a semi-circular end concentric with the axis about which it vibrates, and with the curved shield r, and a hopper attached to, and arranged to vibrate with, the chute E, substantially as described.

3. In combination with an automatically-operated drill, a hopper for separating the rivets, and an inclined chute leading therefrom, an intermittingly-rotating wheel or disk, provided with a series of pockets in its periphery, each adapted to receive a rivet from the chute and convey it into position to be drilled, substantially as described.

4. The combination of the carrier-wheel n and a pair of annular shields, O O, all constructed, arranged, and operating as and for the purposes described.

5. The combination of the inclined chute Q, carrier-wheel n, a pair of annular shields, O O, and the reciprocating plunger u', all constructed, arranged, and operating as and for the purposes described.

6. The combination of an intermittently-rotating carrier-wheel, provided with a series of pockets in its periphery, a pair of fixed or stationary shields, placed one upon either side of the said carrier-wheel, and a reciprocating plunger, arranged to discharge the drilled rivet from the carrier-wheel, substantially as described.

7. In combination with an automatically-operated drill and a pair of clamping-dies mounted upon the main frame A, the supplementary movable frame M, having mounted thereon the rivet separating and feeding devices, substantially as and for the purposes described.

8. In combination with an automatically-operated drill, a pair of clamping-dies, and an intermittently-rotated carrier-wheel, having a series of pockets in its periphery, the detent-wheel N and detent spring or lever N', arranged to operate substantially as described.

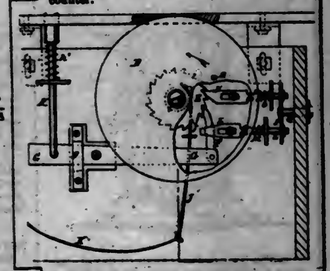
9. In combination with a hopper for separating rivets and an inclined chute leading therefrom, the lever t, provided with the hammer-head t', the cam T, provided with a series of lifter-toes, and the spring t', all arranged to operate as and for the purposes described.

10. The combination, with an automatically-operated drill, of a pair of movable clamping-dies, f f, a pair of vibrating levers, J J, and the two edge cylinder-cams a and c', all arranged and operating substantially as described.

11. The saddles or frames J', pivoted to the levers J J, and adjustable thereon by means of the set-screws h' h', and having mounted therein the trunks h' h', all as and for the purposes described.

166,975. CLOTH-MEASURE REGISTERS. Jas. Brown, Jr., Matteawan, N. Y. [Filed July 21, 1875.]

Brief.—To be placed beneath the store-counter, each depression of the push-pin registering one yard upon a figured drum, whose edge shows through a slot in the counter.



The combination of the register-wheel D, the ratchet-wheel R, the push-pawl P, the lever G, the push-rod and spring H h', the drum, cord, and spring I J K, the guard and spring L M, the stop-pawl and spring N O, the cross-bar P, and pull-rod Q, with each other and with the case A, to adapted the device to be attached to a store-counter, substantially as herein shown and described.

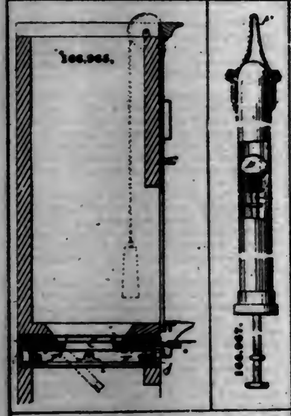
166,976. GRATES FOR COOKING-RANGES. C. H. Carling, New York, N. Y. [Filed July 21, 1875.]

Brief.—The central rectangular portion of the grate is pivoted at the rear, and may be dumped. The grate-frame is mounted on rollers, and may be rotated.

1. The combination of the rectangular pivoted grate O with the circular rotary plate f and with the top plate A, that has a rectangular opening, hereafter termed plate t, and ring j, all arranged substantially as herein shown and described.

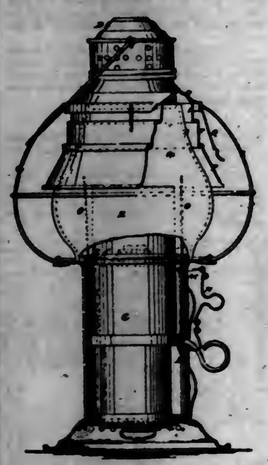
2. The combination of the rotary plate f, grate-casing P, rectangular grate O, handle s, and bolt s with each other, all substantially as herein shown and described.

166,965.



166,967.

166,966. SIGNAL-LANTERNS. Geo. J. Cove, Elizabeth, N. J. (Filed May 6, 1876.)



1. The intermediate handle H, flexibly connected with the two spring-catches L M, as and for the purposes specified.

2. The three wires O, passing up the sides of tubes G H, and resting against the globe, as and for the purposes described.

3. The spring-catch Q, pendent from cap D, and combined with the sliding sections of shade P, as and for the purposes set forth.

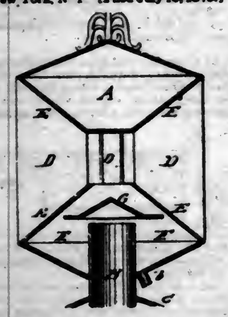
166,967. COMBINATION SYRINGE. Wm. P. Clotworthy, Baltimore, Md. (Filed Aug. 12, 1876.)

Brief.—A tip adapting a female syringe for male use is covered over an ordinary glass syringe by a rubber sleeve. The piston is made up partly of a hollow rubber bulb filled with air.

1. In combination with a syringe having a rounded and perforated end, as described, the spunk F, constructed to receive and fit the barrel of the syringe, and held to it by an elastic tubular collar, G, in the manner and for the purpose set forth.

2. In combination with the barrel and piston-rod of a syringe, the bulbous hollow spherical rubber piston D, constructed and operating in the manner and for the purpose specified.

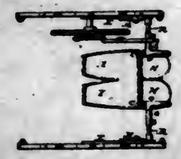
166,968. CHIMNEY-COWLS. Emeal Cole, New York, N. Y. (Filed July 10, 1876.)



1. The combination of cowl A, tube B, cap C, partitions D, and plates E with base-chamber F, in the manner and for the purpose described.

2. The combination of chamber F and diaphragm G, to conduct the rain-water to spout I, in the manner specified.

166,969. ADJUSTABLE SEWING-MACHINE TREADLES. James A. Curtiss and Samuel G. Burleigh, Grand Rapids, Mich. (Filed May 3, 1876.)

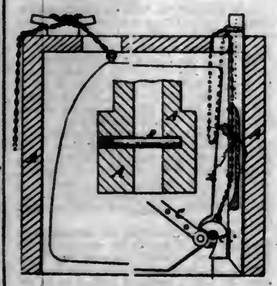


1. A treadle for sewing-machines, having two separate shafts, S, attached to foot-plates H I at points C, in combination with the adjustable bearings M E, substantially as and for the purposes set forth.

2. The hollow shafts S, with extension-rods R, inserted and held to any desired position, by means of set-screws or other device, for the purpose of adjusting the treadle to machines of different widths, substantially as and for the purposes set forth.

3. The arm a, attached to horizontal shaft S, and held in any desired position by thumb-screws or equivalents, in combination, with the extension-rods R and foot-plates H I, substantially as and for the purposes set forth.

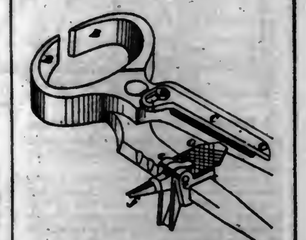
166,970. CENTER-BOARDS. J. L. Dickerson, Hempstead, N. Y. (Filed July 24, 1876.)



The combination of center-board trunk A, having a hole bored into but not through its timbers, a bolt, D, shorter than said hole, and a superimposed plug of wood to be driven into said hole, as and for the purpose specified.

166,971. HORSESHOEING TOOLS. Carl R. Donner, San Francisco, Cal. (Filed June 22, 1876.)

Brief.—To one lever of the nippers is attached an adjustable sliding thimble carrying a grooving-tool, by which a channel is cut in the hoof to receive the clinch of the nail, and also carrying a serrated plate to act as a clamp. The clinching is done by means of an adjustable plate on the other lever pressing or bending it down.

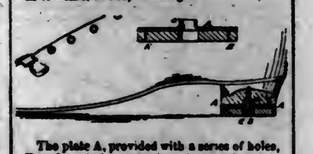


1. The scoop shaped graver *f*, adjustably fitted to the handles of a forceps, for the purpose of channeling the hoofs, substantially as and for the purpose described.

2. The laterally-adjustable plate C and vertically-adjustable plate C, in combination with the handle of the nippers B, substantially as and for the purpose set forth.

166,972. HEEL-PLATES. Geo. Dunlop, Williamsburg, N. Y. (Filed Dec. 28, 1874.)

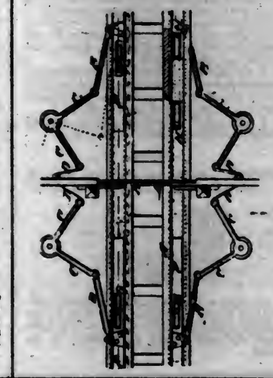
Brief.—The heel may be adjusted or turned as it wears, to keep it straight.



The plate A, provided with a series of holes, E, and a tabular projection, e', in combination with the pin C attached to the heel of a boot or shoe, and screw D, substantially as herein described.

166,973. RAILROAD-GATES. J. H. Eberhart, Sumter, S. C. (Filed July 17, 1875.)

Brief.—A railroad-gate operated by the moving train by means of a dog secured to a slide which moves in proper ways; said dog being released from contact with the attachment upon the train by a spring arranged in the under side of the slide-frame, when the gate has been properly opened or closed. The gate is connected to the slides by suitable bell-crank and lever connections.

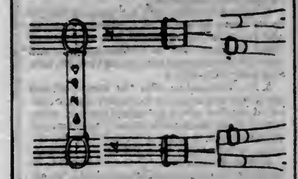


1. The combination of springs H with the slides F and dogs G, the springs being located at each end of the space traversed by the dogs, substantially as specified.

2. The combination of the slides F and bell-cranks C, and their connecting-rods D E, in the arrangement whereby in opening the gate sets the slide for closing it, and by closing the gate both slides are set for opening it, substantially as specified.

166,974. SUSPENDERS. Robt. Henry Eddy, Boston, Mass., assignor to A. G. Eddy, same place. (Filed July 6, 1871.)

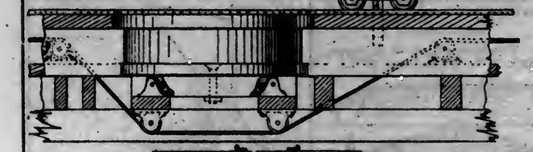
Brief.—The shoulder-straps are connected by an extensible and adjustable cross-strap.



As a new article of manufacture, suspenders composed of two independent shoulder-straps, A A, and the adjustable cross-strap B, constructed and applied thereto, substantially as shown and described, and for the purpose set forth.

166,975. DEVICES FOR PROPELLING CARS. William Eppelsheimer, San Francisco, Cal. (Filed June 26, 1876.)

Brief.—An improvement in devices in which the cars are propelled by a traveling rope, consisting of a slot and passage-way through the turn-table or switch, through which the grappler can pass, thereby obviating the necessity of unlocking it at such points. The bed upon which the turn-table rotates is provided with rollers beneath the table, under which the rope passes, so as not to interfere with the action of the turn-table.

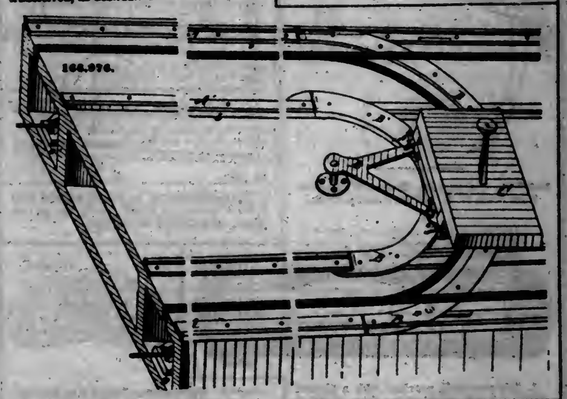


1. The construction of a railway-track provided with a subterraneous rope-chamber and a continuous narrow opening through the covering of such chamber, intended to be traversed by a rope-grappling device attached to a car, with a turn-table or switch, provided also with a rope-chamber under its surface-floor, and a slot through such floor into said chamber, which may open respectively into the rope-chamber and slit in the road-way of the main track, whereby the grappling device and its standard, attached to a car running on the road and across the switch or turn-table, may pass from the rope-chamber under the main track into the rope-chamber and slot in a branch track, or the reverse, all substantially as and for the purpose described.

2. The combination, with a railway-track, provided with a subterraneous rope-chamber, as described, of a turn-table, provided likewise with a sub-surface chamber similar to that under the railway-track, and also a passage underneath the body of said table, whereby the rope traveling under the railway-track may avoid the said table and leave it free to turn on its pivot, all substantially as described.

166,976. MEANS FOR TURNING CARS ON SHORT CURVES. William Eppelsheimer, San Francisco, Cal. (Filed July 6, 1876.)

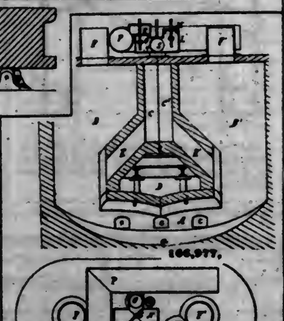
Brief.—A device for transferring cars from one track of two parallel lines to another, consisting of broad metal plate-rails extending in a semicircle from track to track, and a forked pivoted radius-bar, the outer ends of which are secured to the inner ends of the car. The car, when in motion, is caused by the radius-bar to follow the curved track, and thus is transferred, as desired.



In combination with two railway-tracks laid in the same street, the curved ways B and B' and the forked pivoted lever D, as and for the purpose described.

166,977. FURNACES FOR SMELTING ORE. Wm. H. C. Bostic, Milton, Mass. (Filed July 3, 1876.)

Brief.—Air and combustible gas are forced through ore and pig metal, and the products of combustion are conducted through similar charges, which thereby become heated and reduced.

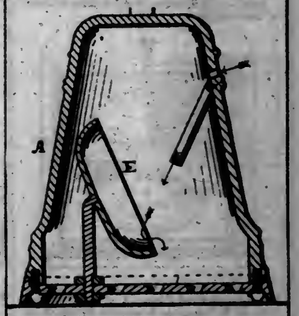


1. The compound furnace for treating ore and pig or scrap metal, the same being composed of the main chamber A, the two ore-receiving chambers B B', the metal-receiving chambers C C', the connecting-passages E E', and the system of gas and air inlet conduits I H H' L N, dampers K S, air-escape-regulating valve R, and odeet P, all being arranged and combined substantially as and to operate as described.

2. The compound furnace, as provided with the reparation chamber or space D, arranged with the main and auxiliary chambers A B B' C C' and the inclined passages E E', substantially in manner as described and represented.

3. In the manufacture of iron from the ore, or in remelting iron, the above-described process, which consists in forcing air and gas in separate columns through charges of metal, or ore and metal, and passing the resultant products of combustion through like charges, and next, by reversal of the direction of the said currents, passing the air and gas through the last-mentioned charges, and the products of combustion thereof through those first mentioned, whereby the charges to be melted serve to heat the gases for melting them, all being substantially as set forth.

166,978. TOY MONEY-BOXES. Alb. Feigl, Philadelphia, Pa. (Filed July 31, 1875.)

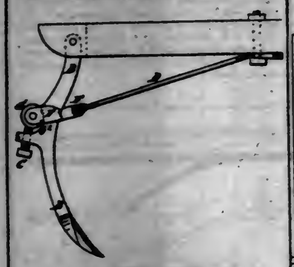


The toy money-box A, in combination with an inclosed gong or alarm, E, arranged to be sounded by the descending coin deposited in the box, substantially as and for the purpose set forth.

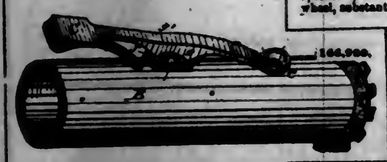
166,979. CULTIVATOR-TEETH. John Flynn, Menahen, Wis. (Filed May 15, 1876.)

Brief.—A slip-tooth with a spring and devices for changing the force required to move it from working position.

The combination of spring D F and wheel G with the pivoted tooth B, having the concavity b', leg b', and set-screw C, as shown and described, to operate as specified.



166,960. UMBRELLAS. George W. Francis, New York, N. Y. (Filed Feb. 12, 1875.)



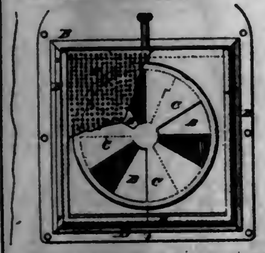
1. The runner B, provided with a pivoted spring-catch, C, made of one piece of metal, the cup-shaped end f of which is furnished with a central aperture, e', and its sides f f turned down for pivot-bearings, and the other end turned over and under to form the spring i, substantially as described.

2. In combination with spring-catch C, the groove a in the stick, terminating at both ends in concave cavities b b', having central projections c, for engaging with the aperture e' of spring-catch, substantially as and for the purpose herein specified.

3. The combination of runner B with spring-catch C, groove a, concave cavities b b', and pins c, when constructed and arranged substantially in the manner and for the purpose herein set forth.

166,961. COMBINED SPARK-ARRESTERS AND STOVE-REGISTERS. Thos. R. Freeman and Perley Y. Jones, Hyon, Wis. (Filed June 12, 1875.)

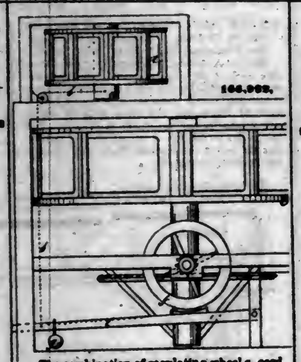
Brief.—The furaminous plate slides in front of the register.



The combination of frame B, having pivoted valve C, grooved frame D, and furaminous plate E, to form a spark-arrester for stoves, as set forth.

166,962. WINDMILLS. Chesley Gates, Locust Grove, Mo. (Filed June 26, 1875.)

Brief.—A small wind-wheel for regulating the speed of the large one is arranged when it is subject to the varying wind, and has a cord attached to its hub and connected to the brake-lever, so as to pull it against another wheel with more or less force, according to the action of the wind on it. The effect is varied by the adjustable weight.



The combination of regulating-wheel a, cord b, lever c, and the wheel f with the power-wheel, substantially as specified.

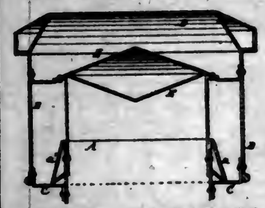


166,963. DETACHABLE LINKS FOR CHAINS. C. H. Gillingham and A. L. Gillingham, Geigerville, Ill. (Filed Jan. 30, 1875.)

Brief.—The link has a transverse slot at each end, and a longitudinal slot in the center. A T-shaped piece is fitted in the central slot, and is locked in place by a pin or rivet.

The body A and key B, constructed substantially as herein shown and described, and secured to each other detachably by a rivet or pin, C, as set forth.

166,964. VENTILATOR-CAPS. H. A. Gouge, New York, N. Y. (Filed Aug. 1, 1874.)



The tube A, overlapping body B, and rim-projecting deflector E, combined with the angular cornice-plate a', as and for the purpose specified.

166,965. CRANES. Ignatius Hahn, Pittsburg, Pa. (Filed June 26, 1875.)

Brief.—The post is hinged at bottom to a frame that has a circular bearing, and horizontal rotation in a water-annulus attached to the axle of wheels, which run on ways. Arms from this axle extend to a forward axle, to sustain the horizontality of the former. Moving freely in the annulus is a hydraulic cylinder, working a piston hinged to the forward part of the bottom of the post.

1. The combination of the crane-post, jib, and frame, the crane-post being hinged to the frame, so that the jib and post travel together in a vertical plane around a common axis, substantially as and for the purpose specified.

2. The combination of a crane-post, its supporting stand or frame, and suitable mechanism for raising and lowering the post and its load, the post being connected to its stand by a hinge joint or connection, and the power for raising and lowering the post being applied directly thereto, substantially as and for the purpose specified.

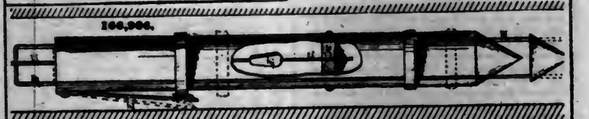
3. In combination with a crane-post hinged to its stand or frame, an oscillating cylinder and piston, the piston acting upon the post to raise and lower the same, substantially as and for the purpose specified.

4. In combination with a crane-post hinged to its frame or stand, an oscillating cylinder and piston acting upon the post to raise and lower the same, and an annular cylinder and piston for raising and cushioning the post, substantially as specified.

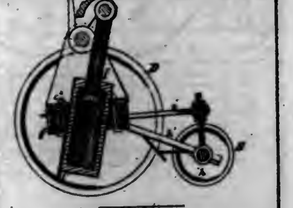
5. In combination with the crane-post and the piston and cylinder for raising the post upon its vertical pivot, a vertical rod and cross-arm or mechanism, substantially the same, for adjusting and preserving the level of the cylinder, substantially as specified.

6. The combination of the crane-post, its frame or stand, the oscillating cylinder for operating the post, and a single pair of supporting-wheels, the several parts being relatively arranged, so that the points of support, center of trunnions, and fulcrum are in a vertical line, whereby the weight of the load is transmitted directly to the ground, substantially as and for the purpose specified

166,966.



166,967. CAR-COUPLINGS. Peter Harper, Marshall, Tex. (Filed Mar. 29, 1875.)



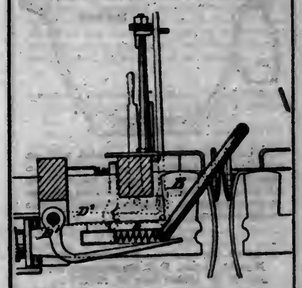
166,968. BOLTS FOR OIL-WELLS. W. R. Harper, Shamburg, Pa. (Filed May 10, 1875.)

1. The combination and arrangement substantially as herein shown and described of the spring L L, the bail D D, ring F, the rod C, the bridge H, and hammer I, by which the renovator is made to suspend itself in the well, and the explosion produced by the manipulations of the single cord B, substantially as set forth.

2. The described arrangement and combination of the cylinder M, with its springs N N, rods O O and P P, operating in connection with the shell A and its attachments, substantially as and for the purposes set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON

166,967. CAR-COUPLINGS. Peter Harper, Marshall, Tex. (Filed Mar. 29, 1875.)



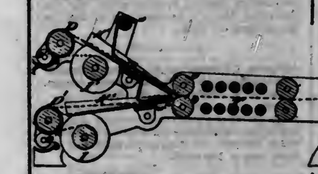
1. A car-coupling composed of draw-bar, with upright hook-piece, a coupling-link swinging in a slot of the same, and a forked link controlling and raising lever, substantially as and for the purpose set forth.

2. The forked link controlling and raising lever, operated by intermediate spindle and lever connection from the platform, in combination with a retaining-hook mechanism of the spring buffer-rod, to hold link in raised position till released by concussion of cars, as set forth.

3. The combination of forked link-controlling lever, its operating mechanism, and the retaining hook-arm of the buffer-rod with a fulcrumed lever engaging the hook-arm, for admitting direct adjustment of link into horizontal or other position, as and for the purpose specified.

166,968. PAPER-BAG MACHINES. James Hatfield, Cincinnati, Ohio. (Filed Aug. 24, 1874.)

Brief.—The machine takes webs of paper from several reels, folds into continuous tubes, then folds the ends of these tubes into the form of satchel-bottom bags, then severs a bag-length from each tube, and delivers the completed bag from the machine. Two or more sizes of bags may be made side by side at the same time by peculiarities of the feed mechanism.



1. The folding-plates h' and m, constructed in parts laterally adjustable, as and for the purpose herein-before set forth.

2. The folders, composed of plates h' and m, arranged alternately above and below each other at their wide ends, with their narrow ends terminating in one common horizontal line, substantially as for the purpose set forth.

3. The expanding-bars o' mounted upon the bar i, substantially as shown, to constitute an adjustable former for the interior of the tube, as set forth.

4. The adjustable external guide o''', combined with the internal adjustable former-bars o', substantially as set forth.

5. The expander a, substantially as set forth, combined with the rollers B B and Y' Y''.

6. The combination of the expanding-bars q, with the rollers Y'' at the ends of the vibrating arms J J, for the purpose set forth.

7. Rollers E and B, provided with movable rings c, for the purpose set forth.

8. Combined with the feed-roller E, the spring i, to take up the continuous motion of the driver P'', combined with a suitable intermittent step, substantially for the purpose set forth.

9. The disk G, provided with the lugs s', arranged alternately nearer and farther from its center, combined with the feed-rollers, take-up springs i, and bar s', substantially as and for the purpose set forth.

10. The jaws J, hinged at point g between the feed-rollers E, and having attached to and moving with them the bars L L', folders P P', and knife m, mechanism for holding, folding the bottoms of the bags, and for severing the tubes, substantially as and for the purpose set forth.

11. The folding-bars P and P', pivoted in swinging frame 18, hinged to the jaw-levers J, and arranged and operated substantially as and for the purpose set forth.

12. The reciprocating arms f, provided with springs g' to open and spread the end of the bag, substantially as and for the purpose set forth.

13. Folding-bars L and L', pivoted to and moving with jaws J, and operated substantially as and for the purpose set forth.

14. Shaft 12, arm f', spring s'', and pattern r'', combined with slotted frame A, and operated substantially as and for the purpose set forth.

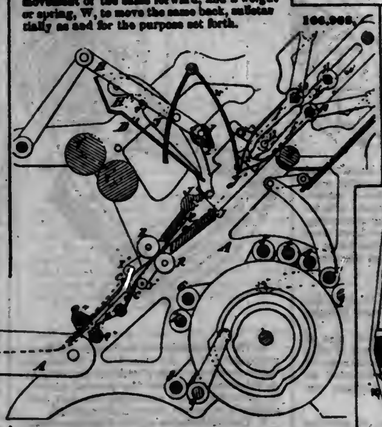
15. The adjustable expanding bars or former o o pivoted to the bar i, which is provided with rollers e e, and combined with the rollers Q'' Q'' Y'' Y'', whereby said former is kept in place, as set forth.

16. The reciprocating holder s'', combined with reciprocating shaft 11, slotted sliding slotted plate w, arranged and operated substantially as and for the purpose set forth.

17. The blades I I S, to constitute a three-bladed griper, as described, to close separately the bottom folds of the bag, in the manner described, and convey said bag away from the jaws J, as set forth.

18. Combined with two gripers I I S, and reciprocating frame H, a cam, H'', to guide the movement of the same forward, and a weight or spring, W, to move the same back, substantially as and for the purpose set forth.

166,969.



1. The folding-plates h' and m, constructed in parts laterally adjustable, as and for the purpose herein-before set forth.

2. The folders, composed of plates h' and m, arranged alternately above and below each other at their wide ends, with their narrow ends terminating in one common horizontal line, substantially as for the purpose set forth.

3. The expanding-bars o' mounted upon the bar i, substantially as shown, to constitute an adjustable former for the interior of the tube, as set forth.

4. The adjustable external guide o''', combined with the internal adjustable former-bars o', substantially as set forth.

5. The expander a, substantially as set forth, combined with the rollers B B and Y'' Y''.

6. The combination of the expanding-bars q, with the rollers Y'' at the ends of the vibrating arms J J, for the purpose set forth.

7. Rollers E and B, provided with movable rings c, for the purpose set forth.

8. Combined with the feed-roller E, the spring i, to take up the continuous motion of the driver P'', combined with a suitable intermittent step, substantially for the purpose set forth.

9. The disk G, provided with the lugs s', arranged alternately nearer and farther from its center, combined with the feed-rollers, take-up springs i, and bar s', substantially as and for the purpose set forth.

10. The jaws J, hinged at point g between the feed-rollers E, and having attached to and moving with them the bars L L', folders P P', and knife m, mechanism for holding, folding the bottoms of the bags, and for severing the tubes, substantially as and for the purpose set forth.

11. The folding-bars P and P', pivoted in swinging frame 18, hinged to the jaw-levers J, and arranged and operated substantially as and for the purpose set forth.

12. The reciprocating arms f, provided with springs g' to open and spread the end of the bag, substantially as and for the purpose set forth.

13. Folding-bars L and L', pivoted to and moving with jaws J, and operated substantially as and for the purpose set forth.

14. Shaft 12, arm f', spring s'', and pattern r'', combined with slotted frame A, and operated substantially as and for the purpose set forth.

15. The adjustable expanding bars or former o o pivoted to the bar i, which is provided with rollers e e, and combined with the rollers Q'' Q'' Y'' Y'', whereby said former is kept in place, as set forth.

16. The reciprocating holder s'', combined with reciprocating shaft 11, slotted sliding slotted plate w, arranged and operated substantially as and for the purpose set forth.

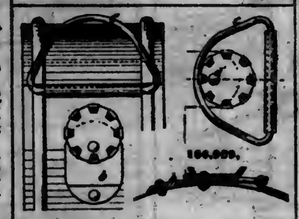
17. The blades I I S, to constitute a three-bladed griper, as described, to close separately the bottom folds of the bag, in the manner described, and convey said bag away from the jaws J, as set forth.

18. Combined with two gripers I I S, and reciprocating frame H, a cam, H'', to guide the movement of the same forward, and a weight or spring, W, to move the same back, substantially as and for the purpose set forth.

19. Combined with the gripers I I S, the guide-plate H'' and guide-rods s', constituting a conveying-basket, arranged and operating to deliver the bags to the pressing-rollers, in the manner set forth.

20. Severing-blade w', constructed with a series of sharp-edged or lancet blades, set close to face and overlapping, so as to present a continuous cutting-edge, and operated in the manner and for the purpose set forth.

21. In combination with the operative mechanism of a paper-bag machine, feeding devices operating at different speeds, whereby the said machine may simultaneously produce bags of different sizes.



166,969.

166,970. FIFE-COUPLINGS. Chas. F. Henis, Philadelphia, Pa. (Filed May 22, 1875.)

1. The eccentric and eccentric plate, in combination with the hinged loop, for the purpose set forth.

2. The combination of the eccentric, eccentric plate, rivets d d', hinged loop c, and the sheet metal of which the coupling is composed, substantially as shown and described.

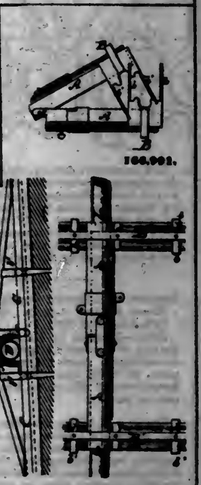
166,970. COLLETS FOR BALANCE-SPRINGS OF WATCHES. Augustus Jewett, Lynn, Mass. (Filed Feb. 8, 1875.)

Brief.—A collet constructed as described, so that the inner end of the balance-spring may be attached as near as possible to the center of the balance.



A collet for the balance-spring of a watch, formed so as to bring one of its sides close to the arbor of the balance-wheel, the end of the spring being inserted diagonally into the side so formed, substantially as described, for the purpose specified.

166,969.



166,971. HOBS-REMOVER. Leavitt T. Kruse, New York, N. Y., assignor of one-fourth his right to Charles Wegener, same place. (Filed July 31, 1875.)

Brief.—A hose-jumper consisting of arched rails supported by prongs which straddle the street-rails and are driven into the ground; said arched rails being connected transversely by a hose-casing, jointed in the middle, whereby the jumper can be folded when not in use.

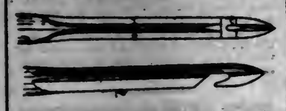
In a hose-bridge, the combination of the jointed casing A with the arched rails B B', which have the prongs b b', all substantially as herein shown and described.

166,972. SCOURING AND POLISHING RICE. P. R. Lachicotte, Waccamaw, (Georgetown P. O.,) S. C., assignor to P. R. Lachicotte & Sons, same place. (Filed Apr. 17, 1875.)

The method of scouring and polishing rice by applying friction-surfaces to the previously-hulled article comminuted with the ash of rice-chaff, as set forth.

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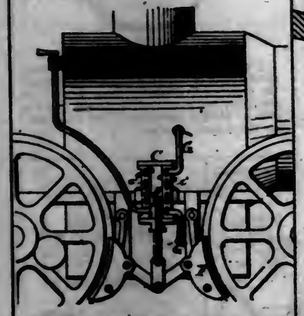
166,995. SEWING-MACHINE NEEDLES. Geo. W. Lowell, Syracuse, N. Y. (Filed Apr. 14, 1875.)



The needle herein described, having the longitudinal grooves in the contiguous elevated quarters, extending from the point, back, or eye, upward to or nearly to its top c, thereby a thin tongue, b, is formed, all being constructed as shown and described.

166,996. LOCOMOTIVE STEAM-BRAKE ATTACHMENT. Jos. H. Lander, Concord, N. H., assignor to himself and Sam. M. Penn, St. Albans, Vt. (Filed July 6, 1875.)

Brief.—The cylinder is provided with a hot-water jacket.



In a locomotive driving-wheel steam-brake, the cylinder C, constructed with double walls *c c* and intermediate space or jacket *d*, extending downward from top to bottom, with inlet and outlet pipes *f* G', communicating therewith, and adapted to receive direct from the boiler a constant stream or circulation of hot water, as and for the purposes described.

166,998. PERMANENT PENCIL PLATES, &c. Henry M. Lee, London, Great Britain. (Filed Sept. 10, 1874.)

Brief.—Blackboards, &c., constructed upon or in imitation of composition of cork or cuttle-bone, with natural or metallic pencil, or India dyes. May be mounted on pasteboard, &c., or on frames of cloth, oilcloth, linen, paper, varnish, or paint.

The process herein described, of pressing and preserving grasses, ferns, &c., by first thoroughly drying them (if the blooming specimens be selected; secondly, washing them; thirdly, drying them between sheets of blotting-paper; fourthly, pressing them by suitable means; fifthly, drying them; and, sixthly, arranging them between plates of glass hermetically sealed, as and for the purposes described.

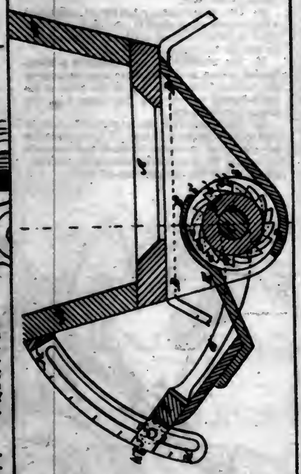
166,999. CHANDELIER-PENDANT. Charles H. Lemcke, New York, N. Y. (Filed July 26, 1875.)

1. The combination, with revolving shaft C, supported in frame over cooler, of the cross-bar D, provided with pivoted arm E on each end, the said arms having corresponding end jaws, as and for the purposes specified.

2. The combination, with arms E E, of screw F, pivoted to one arm, and passing through the other, and provided with clamp-nut, as and for the purposes described.

166,997. GRAIN-DRILLS. John T. Lyman, Louisville, Ky. (Filed June 8, 1875.)

Brief.—Passing through the lower part of the hopper is the shaft, upon which is keyed one or more wheels having projections that are made concave on the front and rounded on their rear side. Around the bearing of the shaft, on the inner surface of the box, are formed projections, slightly eccentric, for the reception of a curved cut-off, the rear end of which projects rearward and upward, and is attached to a cross-bar that moves on a guide, and one for adjusting the amount of seed to be sown.



1. The combination of the box B, the dropping-wheels D *F*, the shovelers *b' b'*, and the valve or circular plate B with the seed-hopper A, the cross-bar F, and the pivoted arms G, for controlling and equalizing the feed, substantially as herein shown and described.

2. The combination of the dropping-wheels D *F*, the valve or circular plate B, the cross-bar F, and the pivoted arms G with the curved and slotted bar E, arm J, and the index K, substantially as herein shown and described.

166,998. HAND WASH-BOWLS. Thos. Middleditch, Trenton, N. J. (Filed Aug. 4, 1875.)

Brief.—The bowl has the circumferential grove and escape-hole, to allow the water which has risen over the top to flow off.

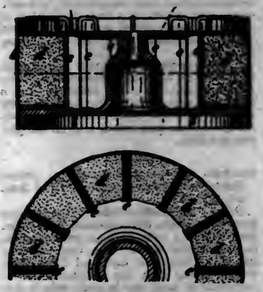


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A hand wash-bowl, A, provided with an overflow or waste-way, B, combined with a groove, *a*, running around the entire rim *b*, substantially as shown, and provided with one or more vent-holes, *c*, leading from said groove to the waste-way B.

166,999. CENTRIFUGAL MACHINES IN SUGAR-MANUFACTURE. F. O. Matthiessen, Irvington, N. Y. (Filed July 23, 1875.)

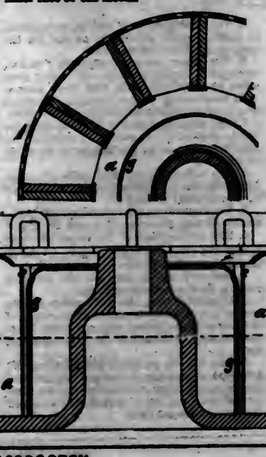
Brief.—The pillars *c* are firmly fixed to the top of the disk *b*, and their upper ends are fitted to and support the deflector *f*. The pillars *c*, serving as a lap-joint for the molds, prevent the liquor from losing out through the molds *d*, while the deflector *f* maintains the treating-liquor in contact with all parts of the outer wall *e*.



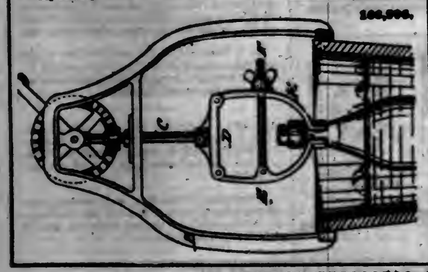
The perforated cylinder A, provided with the vertical pillars *c*, in combination with the deflecting flange *f*, substantially as and for the purpose set forth.

167,000. CENTRIFUGAL MACHINES IN SUGAR-MANUFACTURE. F. O. Matthiessen, Irvington, N. Y. (Filed July 23, 1875.)

Brief.—To insure a uniform action upon the sugar-blocks of a prescribed quantity of steaming-liquor, which is introduced into the receiver upon between the central partition and the inner faces of the molds.



The perforated drum of a centrifugal machine, substantially such as described, provided with the vertical pillars *c*, in combination with the series of distributing-pipes *e*, substantially as shown and described.



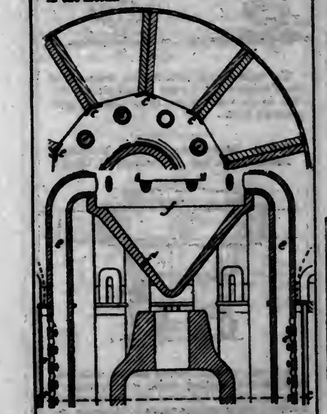
166,998.

167,000.

In a centrifugal sugar-liquoring apparatus, substantially such as described, the circular partition *g*, arranged within the perforated cylinder A, substantially as shown, and constituting the inner boundary of an annular chamber, *c*, of prescribed capacity, substantially as and for the purposes set forth.

167,001. CENTRIFUGAL MACHINES IN SUGAR-MANUFACTURE. F. O. Matthiessen, Irvington, N. Y. (Filed Aug. 10, 1875.)

Brief.—The white liquor is poured in the reservoir *f*, after the molds containing the hard sugar have been placed in the drum. The centrifugal machine is then put in motion, and the white liquor is driven by centrifugal action up the inclined conical bottom of the reservoir, and outward into the distributing-pipes, down which it falls, and from which it is injected, through the perforations *e'*, directly against the inner faces of the sugar contained in the molds.

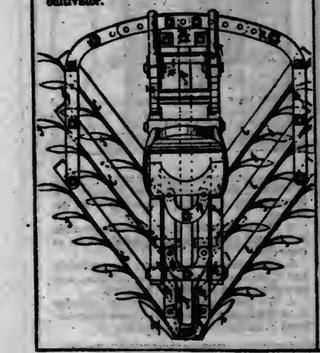


1. The combination of a series of perforated distributing-pipes, arranged as shown with reference to the inner faces of the blocks of sugar contained in the molds, with a central receiver having a downward conical bottom, substantially as and for the purposes described.

2. The perforated drum of a centrifugal machine, substantially such as described, provided with the vertical pillars *c*, in combination with the series of distributing-pipes *e*, substantially as shown and described.

167,002. CORRUGATED HARROWS AND CULTIVATORS. Wm. McCrey, Black Oak, Mo. (Filed June 5, 1875.)

Brief.—A center beam has three pivoted side beams on either side, with spreading-bars and handles at the rear end. The teeth are flat and curved, and each teeth in the side bars capable of independent adjustment. The teeth on the center beam can be removed, converting the implement into a straddle-row cultivator.



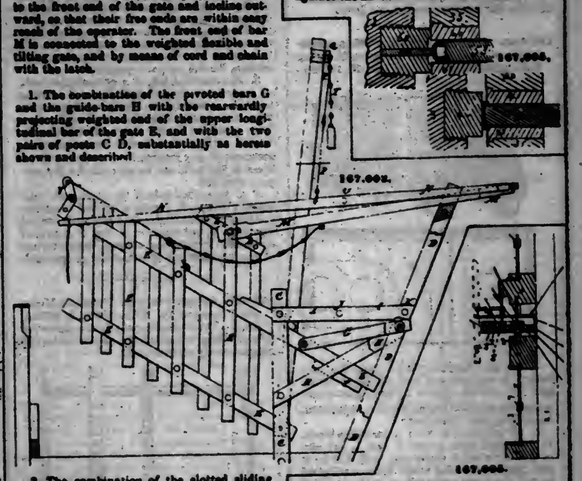
1. The combination of the central bar A, the side bars or wings C, the pivoted connecting-bars D E F, and the adjustable connecting-bars H, with each other, to form the framework of the machine, substantially as herein shown and described.

2. The teeth J, constructed as described, and secured adjustably to the wings C, substantially as herein shown and set forth.

167,003. AUTOMATIC GATES. W. W. McKay, Conlan, Iowa. (Filed July 3, 1875.)

Brief.—To the opposite sides of the rear end of bar M are pivoted the rear ends of end-wise-movable levers N, which project forward to the front end of the gate and incline outward, so that their free ends are within easy reach of the operator. The front end of bar M is connected to the weighted flexible and tilting gate, and by means of cord and chain with the latch.

1. The combination of the pivoted bars G and the guide-bars H with the rearwardly projecting weighted end of the upper longitudinal bar of the gate E, and with the two pairs of posts C D, substantially as herein shown and described.

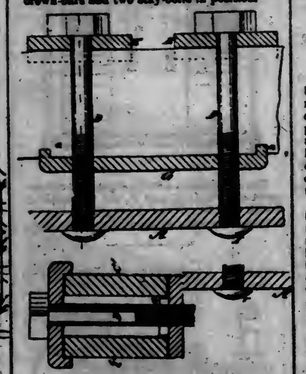


2. The combination of the slotted sliding bar M and the levers N with the gate E, and with the rear pair of posts D, substantially as herein shown and described.

3. The combination of the pivoted bar Q, the chains P and T, and the weight U with the levers N, by which the sliding bar M is operated to open and close the gate, substantially as herein shown and described.

167,004. CROWN-BARS FOR STEAM-BOILERS. Jas. McPhail, Ellis, Kans. (Filed Mar. 1, 1875.)

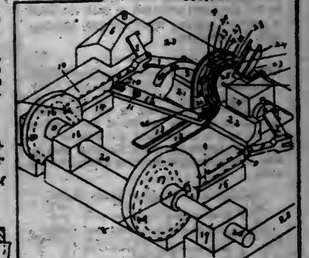
Brief.—Lock-bars serve to secure a pair of crown-bars and two stay-bolts in position.



The detachable lock-bar U, having end legs *a a*, in combination with the crown-sheet A, the crown-bar formed of the separate parts or sections C' C', the bolts D D, and the tie-plates B B, as shown and described, for the purpose specified.

167,005. MACHINES FOR MAKING AND FOR HEADING CARTRIDGE-CASES. Jos. V. Meigs, Lowell, Mass. (Filed Dec. 8, 1874.)

Brief.—A rotatable circular die-plate, 36, carrying three tubular dies, placed vertically between its hub, abutting against two uprights, 26 and 27. An anvil-die in reciprocating block 3, actuated by toggles, and another block, 4, likewise reciprocated by toggles, that carries three punches corresponding to the three dies. Operation: The anvil is forced up against the die-plate on the one side, and a slug of metal having been rolled down into the die through chute 24, one of the three punches drives the metal into the die and against the anvil.



1. The combination, substantially as herein before set forth, of a die-plate, a hollow die mounted therein, in which die the blank cases or lumps of metal are headed or formed, a punch acting within the hollow die to head or make the case, and a resisting die, which is held or locked in contact with the hollow die during the operation of the punch in heading or forming the case, for the purpose specified.

2. The combination, substantially as hereinbefore set forth, of a die-plate, a hollow die mounted therein, a reciprocating die, a punch reciprocating in the hollow die, and mechanism, substantially such as described, for holding the hollow and reciprocating dies together during the action of the punch in heading or forming the case, whereby both dies are held or locked together while the punch is acting, for the purpose specified.

3. The combination, substantially as hereinbefore set forth, of a bed-plate, supports thereon, an intermittently-revolving die-plate mounted between the supports, hollow dies carried by the die-plate, a resisting-die, and a reciprocating punch acting in succession in the hollow dies as they come into line with the resisting-die, for the purpose specified.

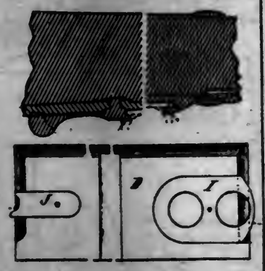
4. The combination, substantially as hereinbefore set forth, of an intermittently-revolving die-plate, hollow dies mounted there-

in, a rotating die, and a reciprocating head carrying a series of punches, each acting simultaneously in its corresponding hollow die, whereby the blank-cases or lamps of metal are inserted, formed, and ejected by a continuous operation, each punch acting simultaneously on its respective blank or case, and successively upon each.

4. The combination of a reciprocating rack, the gear-sleeve, its internal ratchets, the die-plate, its internal pawl, the ratchets on the periphery of the die-plate, and pawls on the die-plate support, substantially as set forth.

5. The combination of a bed-plate, a driving-shaft, cams, jointed pieces, the toggle-joints, a sliding punch-holder, a rotating-head, a die-plate, its rack, gear, and lever, substantially as and for the purposes set forth.

167,006. MEANS OF ATTACHING MAGAZINES TO FIRE-ARMS. Henry Metcalfe, U. S. A., Springfield, Mass. [Filed Dec. 16, 1874.]

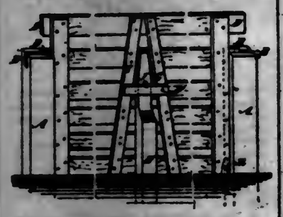


1. The combination, with a gun, of a projection to support one end of the block D, and the pivoted lever c, to bear against and grasp the opposite end of the cartridge-block, substantially as described.

2. In combination with a cartridge-block, D, provided with plates J and I, the pivoted lever c and a projection, both said lever and projection being made upon or attached to the gun, and arranged to hold the block in a secure position upon the gun, substantially as described.

167,007. FARM-FENCES. Andrew Miller, Guntersville, Ala. [Filed June 12, 1875.]

Brief.—The top boards of the panels extend and rest in notches in the top of the ground-posts. The middle of the panel is passed over a ground-post and secured by a pin. The lower corners of the panel pass inside of mortises at the sides of the ground-post.



The combination, with panel having mortises D D, of top-notched posts A B, bottom steps E, slotted cross-pieces F G, tenons H, and pin J, as shown and described.

167,008. FIRESTARRER-LOCKS. Daniel K. Miller, Philadelphia, Pa. [Filed May 18, 1874.]

1. The combination, in a lock, of a driver forming part of or attached to a rotary spindle, a series of tumblers turning independently of each other, and an automatic device, which, upon the spindle being turned in one direction, is carried with the spindle and operates one or more tumblers, and when the spindle is turned in the opposite direction, is caused to recede immediately from the tumblers without turning with the spindle, as set forth.



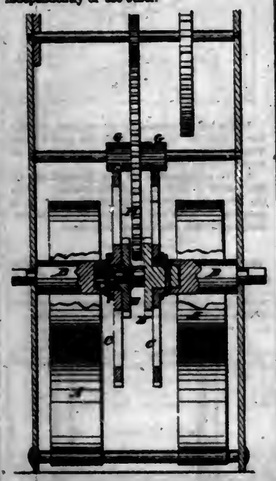
2. The combination, in a permutation-lock, of a driver attached to or forming part of the spindle and having only a rotary movement, a bolt, an automatic carrier, operated by the driver on the spindle, and a series of independent tumblers, whereby the said tumblers are turned and adjusted in respect to the bolt by a rotary movement of the driver in one direction, for the purpose specified.

3. The combination, in a permutation-lock, of a carrier, a bolt, and a series of rotating tumblers, whereby the tumblers most remote from the carrier after the whole series have been once set by the latter, must be again turned by the carrier before a separate readjustment of any intermediate tumbler, in respect to the bolt, can be effected, for the purpose specified.

4. A permutation-lock in which are combined a driver, F, having a beveled shoulder, h, and shoulders or steps i, a series of notched tumblers, E, and a carrier or dog, F', operated by the said driver F and adapted to the notches of the tumblers, all substantially as specified.

167,009. SPRING-POWERS. Valentine Mosslein, Waterloo, Ill. [Filed June 5, 1875.]

Brief.—The two spring-shafts are connected by a coupling which allows one to be turned independently of the other.



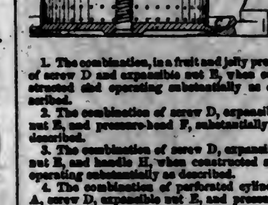
The combination of two independent spring-powers, A, B, C, E, and F, and the coupling I with a pinion, G, and driving-wheel H of a transmitting-train, substantially as specified.

167,010. GLOBE-VALVES. John Moffat, Passaic, N. J. [Filed Jan. 9, 1875.]



The body a having the plain tapering metallic valve-seat c, in combination with metallic conical V-shaped ribbed valve f and screw-spindle e, all constructed and arranged substantially as and for the purpose herein specified.

167,011. HANDLE ATTACHMENTS FOR VALISES. George O. Monroe, Newark, N. J. [Filed July 16, 1875.]



The valise-handle attachment, composed of the T-headed loop b c and slotted plate d riveted to the valise frame, as and for the purposes set forth.

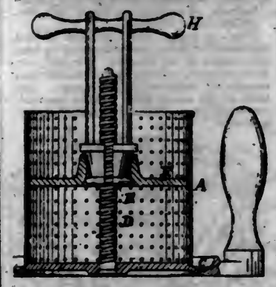
167,012. WRENCHES. John H. Morrissey, Indianapolis, Ind. [Filed July 10, 1875.]



A wheel-wrench, having socket, with diametrically-extending arms, in combination with the recessed hub-band of a vehicle-wheel, having locking-springs applied thereto for retaining the wrench in position to turn the nuts, and in reversed position without engaging the same, substantially as and for the purpose set forth.

167,013. FRUIT AND JELLY PRESSES. Henry Niedermann, Newport, Ky. [Filed July 14, 1875.]

Brief.—The vat is made in sections, so that it may be expanded, so as to slide up and down the screw, or contracted, so as to engage the screw and operate the pressure-head.



1. The combination, in a fruit and jelly press, of screw D and expansible vat E, when constructed and operating substantially as described.

2. The combination of screw D, expansible vat E, and pressure-head F, substantially as described.

3. The combination of screw D, expansible vat E, and handle H, when constructed and operating substantially as described.

4. The combination of perforated cylinder A, screw D, expansible vat E, and pressure-head F, substantially as described.

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167,014. BUCKLE-LOOPS. Fredk. A. Neider, Madison, Ind. [Filed July 10, 1875.]

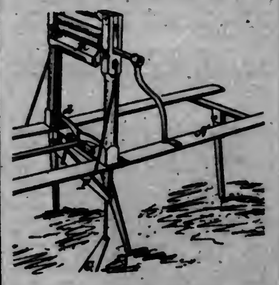




An improved buckle-loop composed of flanged buckle-fastening plate tacked to the leather parts, in connection with a metallic box sliding and locking thereon, substantially in the manner and for the purpose set forth.

167,015. WRINGERS. Daniel W. Norris and Newell B. Woods, Elgin, Ill.; said Norris assignor to Frank Woods, Pittsburg, Pa. [Filed Feb. 6, 1875.]

Brief.—Pressure is applied to the rollers by a treadle, a spring, levers, and rods; a detachable drip-board, that may be applied in front or rear of the rolls.



1. The lever or levers F G, combined with the bowed spring E, the links c c', the bar B', the rods d d, and the rolls C D, substantially as and for the purposes set forth.

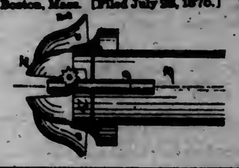
2. The removable drip-board adapted to be attached in front or rear of the rolls at —, combined with the keys or buttons a, and the roll shafts and standards, substantially as and for the purposes set forth.

167,016. FLUXING COMPOSITIONS. Alfred Forel, San Francisco, Cal. [Filed July 20, 1875.]



A composition to be used as a flux, in the manner described, said composition consisting of a mixture of sulphate of soda or potash, and pulverized charcoal, in the proportions herein specified.

167,017. LAMP-BURNERS. Julius A. Fraser, Boston, Mass. [Filed July 28, 1875.]

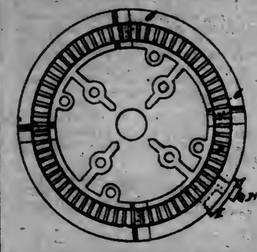


1. In combination with the removable cap E, provided with flame-orifice, the air-ducts c, attached to the sides thereof, and adapted to conduct air to the sides of the flame, substantially as set forth.

2. The detachable cap E, provided with air-ducts c, in combination with the tube B, reservoir C, and wick-tube D, substantially as and for the purpose set forth.

167,018. CHUCKS. Edward S. Parot and H. C. Bottenman, Philadelphia, Pa. [Filed June 26, 1875.]

Brief.—The circular rack D is raised or lowered, to put it in or out of gear with the cogs on the jaw-screws, by turning a circular cam-piece under B, and the present invention is a peculiar mode of securing said cam-piece at either end of its movement.



The combination of stop-lug I with the shank H of the shifting-ring E and the slotted shell of the chuck, substantially as specified.

167,019. JEWELLERS' SCREW-PLATES. Jas. B. Potter and Alfred J. Richardson, Providence, R. I. [Filed Apr. 26, 1875.]

Brief.—The nut is made separate, so that it may be replaced when worn. The lower collar of the rest passes freely over the lower screw-thread.

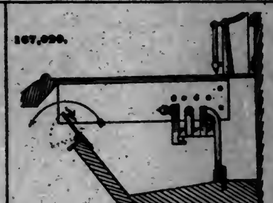


1. The nut E, constructed separate and attached to the frame A, in combination with the slides H, all constructed as and for the purposes set forth.

2. The combination, in a jeweler's press, of the stop F with the right and left screws and the nut E, as and for the purpose specified.

167,020. FIRE-PLACES. Charles S. Rankin, College Hill, Ohio. [Filed June 19, 1874.]





In combination with a fire-place having recesses in the sides of its jambs, double folding doors, which are permanently hinged to the sides of the jambs, and are capable of being folded into the recesses therein, substantially as specified.

167,021. MOLDS FOR CASTING WATER-TRAPS. John M. Reid, Montreal, Canada. [Filed Feb. 9, 1875.]

Brief.—The screen can be folded back into a recess at the side of the fire-place.



1. The screw e and V, each made of one piece of metal and slightly tapering, in combination with the blocks A A', introduced at the head of the pipe, as and for the purposes set forth.

2. The swinging loop r and key or wedge, in combination with the screw V e, as and for the purposes set forth.

167,022. VEHICLE-TOPS. Jerome B. Relyea, Hicksville, assignor to himself and Lewis B. Brewster, Bryan, Ohio. [Filed June 12, 1875.]

Brief.—The plate screws onto the bow of the top.



An attachment for the rear bow of a vehicle-top, consisting of a rubber block, B, recessed in the middle, and projecting beyond the cap-holders a' a' of plate A, as and for the purpose specified.

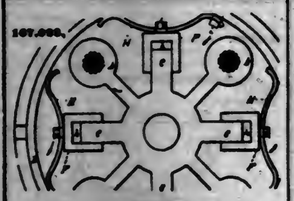
167,023. PISTON-PACKINGS. J. Richards, Philadelphia, Pa. [Filed Aug. 2, 1875.]

1. The combination of the clips F, flanges A, and springs E, with the arms or legs c, and packing-rings C C and D, for cutting out the packing, substantially as set forth.

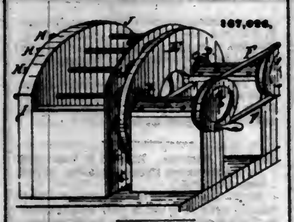
2. The combination of a spring, E, with the outer packing-ring D, having a pin, f, and a clip, F, having a slanting-pin, f', whereby to prevent the turning outward of said ring D, substantially as set forth.

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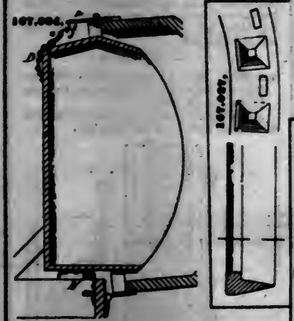
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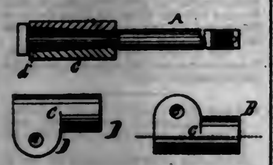
167,026. TRUNK. Antony V. Romadka, Milwaukee, Wis., assignor to Romadka Brothers, same place. [Filed June 24, 1875.]



In combination with a hinged removable trunk-tray, the chain D and hook *d*, adapted to engage with the staple *f* of the trunk-loop E, in the manner and for the purpose described.

167,028. PITMAN-BOXES FOR MOWING AND REAPING MACHINES. Christn. H. Salmonsen, Quincy, Ill., assignor to himself, Andrew Wichey, and Reuben Bortner, same place. [Filed July 6, 1875.]

Brief.—The pitman-box is made reversible to increase or lessen the height of cut of the sickle-bar. The box has an aperture gradually incurved from a circle at one end to an oval at the other, to allow of horizontal play.



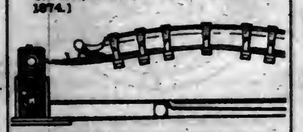
The pitman-box C, composed of the parts B and D, provided with the apertures *d* and *c*, as and for the purpose substantially as described.

167,029. MACHINES FOR DRILLING METAL. James G. Schoonover, Corry, Pa., assignor of two-thirds his right to C. G. Maynard and G. H. Allen, same place. [Filed Feb. 24, 1875.]

Brief.—A reciprocating movement is given to the studded plate B by eccentric connections with the driving-shafts. A series of small disks are attached rigidly to the series of bit-shafts. The studs on the plate B are made to enter holes in the disks, and serve as cranks to revolve them when the plate is reciprocated.

The combination, substantially as herein shown and described, of the perforated disks G G, attached to the bit-shafts H H, reciprocating plate or disk B, provided with studs L L, small cranks B B, washers D D, and disks O O.

167,030. SIDE SPRING FOR VEHICLES. Benj. C. Shaw, Indianapolis, Ind. [Filed Dec. 5, 1874.]



The side spring for carriages herein described, consisting of long steel spring or plate L and shorter plates J and K superposed upon the long springs between the center and either end thereof and the wooden bar D, all secured together by clips, substantially as set forth.

167,031. HATS. Chas. Stastnik, New York, N. Y. [Filed July 19, 1875.]

Brief.—Provides the interior of a hat with an adjustable diaphragm, so that its weight or pressure will be upon the tip of the cranium in lieu of the forehead.



The curved supporting-wires C, combined with a screw-plate, B, in the manner described, to enable it to be adjusted to a higher or lower position in the hat.

167,032. ARITHMETICAL TOY BLOCKS. John C. Smith, Brooklyn, N. Y. [Filed June 7, 1875.]

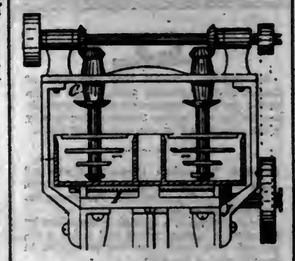
Brief.—The blocks are preferably triangular in shape, to stand readily upright upon their bases.



The arithmetical toy herein described, consisting of blocks of wood or other material of various lengths, divided on one side into parts, with arabic numerals, by pictures, and containing upon another side a numeral or word indicative of the number of said pictures, substantially as and for the purposes specified.

167,033. SAUSAGE-MEAT MIXERS. John B. Smith, Buffalo, N. Y. [Filed July 22, 1875.]

Brief.—A suitable vessel is revolved by proper gearing, and at the same time one or more sets of mixers are rotated in the tub.

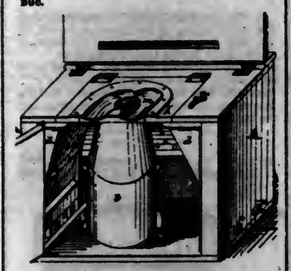


1. A meat-mixer consisting of a suitable vessel and a series of arms for mixing arrangement, substantially as and for the purposes described.

2. The combination of one or more series of arms with a rotating or movable meat box or tub, substantially as and for the purposes specified.

167,034. COMMODE-VENTILATORS. Ephm. W. Stanton and Thomas M. Riley, Philadelphia, Pa. [Filed Jan. 26, 1874.]

Brief.—A case with inlet-openings for the passage of air into the pot-compartment, and valves for regulating the draft, in combination with an air-chamber, which partly surrounds said compartment, being divided therefrom by perforated partitions, through which the odor is caused to pass by the draft, and escape into a sensitive valve chamber, and from thence through a pipe into a chimney or other flue.



1. A commode having inlet-passages provided with valves for regulating the passage of air into its interior, around the pot, and outlet-passages communicating with a chimney or flue, for the purpose of ventilating the commode, substantially as set forth.

2. The combination of the vertical lever H and links *e* with the lid *c* and valves *f*, for the automatic opening and closing of the latter, substantially as set forth.

3. The swinging valve *w*, in combination with the case A and pot *b*, for closing the mouth of the pot *b*, the valve being closed by the vertical lever H, substantially as set forth.

4. The compartment *c* having sensitive valves *y* for preventing a back draft into the air-chamber *f*, substantially as set forth.

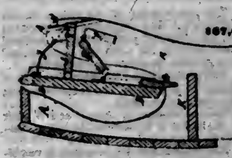
5. The stamped cast or sheet up by means of dies, substantially as set forth.

6. The pot *b* having perforations *v*, in combination with the cover *u*, the said cover closing the perforations, substantially as and for the purpose set forth.

167,035. FOLDING SCHOOL-DESKS. David I. Stagg, New York, N. Y. [Filed May 26, 1875.]

1. The combination of the folding or hinged arms H and the connecting or stationary plate F with the leaf D and the standards A, substantially as herein shown and described.

167,036.



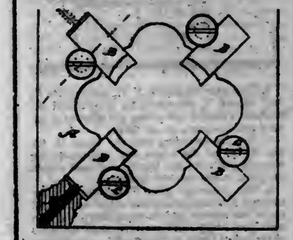
2. A folding school-desk provided with bars J, arranged as shown and described, to serve both as handles to the leaf and brace to the shelf.

167,037. PROCESSES OF MARBLEIZING SURFACES. Samuel W. Steele and Jos. Bayer, Northfield, Vt. [Filed Jan. 14, 1874.]

1. The series of compositions for marbleizing surfaces, consisting, essentially, of the following-named ingredients, to wit: No. 1, spirits of turpentine, boiled oil, gum-sandrac, saltpeter, beef's gall, and coloring matter; No. 2, spirits of turpentine, boiled oil, nitric acid, and coloring matter; and, No. 3, gum-arabic, sugar, glue, beef's gall, and water, in the proportions substantially as and for the purposes set forth.

2. The process of marbleizing surfaces, consisting, essentially, of first painting the same with composition No. 1, and then dipping in composition No. 3, upon which has been floated composition No. 2, substantially in the manner and for the purpose described.

167,038. SCREW-CUTTING DIES. George R. Stetson, New Bedford, Mass. [Filed Aug. 6, 1875.]



1. The chasers B fitted to tapered slots in the solid die-stock A, and secured by a binding-screw, C, in the manner described.

2. The combination, with the chaser B fitted in a tapered slot and secured by a binding-screw, C, of an adjusting-screw, E, substantially as specified.

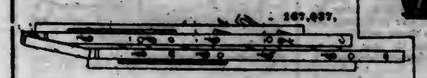
167,039. EYELS FOR BOATS. A. Stevenson, Kittery, Me. [Filed Apr. 19, 1875.]



The new article of manufacture described, to wit, a keel for a boat or vessel with stem and stern post all made of a single piece of wood bent in the form required, substantially as described.

167,040. STEP-LADDERS. John J. Stephan, Boston, Mass. [Filed July 29, 1875.]

Brief.—The steps of the ladder are pivoted to the stiles in such a manner as to admit of the ladder's being completely folded up when not in use.



167,037.

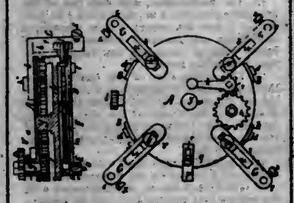
1. A folding step-ladder in which the ends of the steps are pivoted between parallel stripes *a b c d*, forming the sides of the ladder, substantially as and for the purpose described.

2. The steps *f*, pivoted at each end on a line at right angles to the direction of the length of the sides of the ladder, substantially as and for the purpose set forth.

3. In combination with the strips *a b c d*, the upper stem *m*, secured to the strips *b d* by pivoted hinges, substantially as and for the purpose described.

167,041. MACHINES FOR DRESSING VALVE-SEATS, &c. Nathan P. Stevens, Hopkinton, N. H. [Filed July 3, 1875.]

Brief.—The tool-bearing wheel is supported by a disk pendent from adjustable legs, which are adapted to be secured to the projecting screws of a steam-engine cylinder, or by bolts inserted in the hollow legs to other objects to be operated upon.



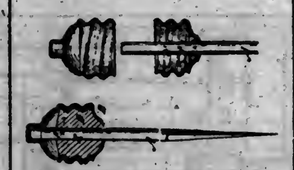
1. In combination with the tool-wheel C, and its supporter A, provided with mechanism for revolving the said tool-wheel, the series of slotted adjustable legs G, substantially as described, held to the said supporter by clamp-screws *e* going through the slots of the said legs.

2. An adjustable leg, G, composed of the slotted bar *a*, the tube *f*, and set-screw *x*, as explained.

3. In combination with the tool-wheel C, and tool-carrier E, the supporter D extended diametrically across the center of the tool-wheel, and constructed to enable the tool to be moved from under the center of the wheel outwardly to or beyond its circumference, all as set forth.

4. The combination of the series of adjustable pins E, with the tool-wheel C, and with its supporter A, grooved in and around its circumference, as specified.

167,042. PICTURE-NAILS. Owen W. Taft, New York, N. Y. [Filed June 26, 1875.]



1. The improved picture-nail head made of two stamped sheet-metal parts, B C, having the sides ornamented with spiral corrugations forming screw-threads, by which the cap is connected to the permanent part, substantially as specified.

2. The permanent part of a picture-nail head composed of a stamped and spirally-threaded sheet-metal cap, B, and a filling of solder, D, substantially as specified.

167,043. HARNESS-MOUNTINGS. Charles M. Theberath, Newark, N. J. [Filed May 6, 1875.]

167,043.



Harness-mountings of the character set forth, formed with turned-up or raised and projecting metal edges, and having laid in the recesses or shoulders so provided the covering or plating, substantially as described.

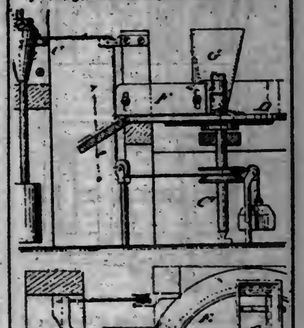
167,044. LEVER-BUCKLES. Sgoorney Wales, New York, assignor of one-half his right to Nathaniel H. Furman, Tarrytown, N. Y. [Filed Nov. 20, 1874.]

Brief.—The lower end of the short arm of the lever is bent in a plane parallel with that of the back plate.

A buckle having the cam-lever B C P, substantially as and for the purpose specified.

167,045. STAMP-MILL FEEDERS. S. Walker, Sonora, Cal. [Filed Apr. 24, 1875.]

Brief.—The table revolves with the hands of a watch. Saddle motion is imparted to it from the stamp-shaft, as it descends, by the conical pulley thereon, lever on the stamp-frame, intervening pulleys, and weighted rope, which acts by friction on the table-shaft, while recoil is prevented by friction of the cog-or ratchet and pawl. Ore is fed to the table by the hopper and passes around until deflected by the adjustable guide plates to the mortar.

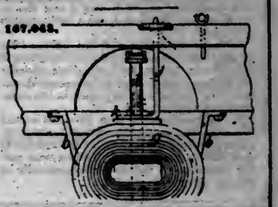


1. The combination, with collar B and lever C, of disk D, having ring E, director F, and hopper G, as and for the purpose specified.

2. The combination of the rotating disk-shaft, fixed pulley, and weighted rope and pulley connection with adjustable actuating-lever and inverted conical collar of stamp-shaft, to revolve gradually the disk in connection with strokes of shaft, as set forth.

3. The combination of ore gage-piece or director, having guide-plate and set-screws, with supporting-piece of shaft-hub and surrounding rim, to be set to feed greater or less quantity of ore, substantially as described.

167,046.



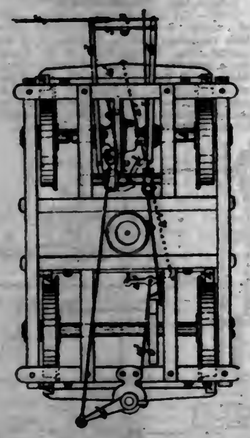
167,642. CAR-COUPLERS. Wm. H. Ward, Auburn, N. Y. (Filed Mar. 4, 1875.)

1. The lifter *j k*, for the coupling-pin *d*, having a sliding movement upon and independent of the latter, to allow it to descend to the lowest position beneath the platform out of the way, when the pin is elevated in position for coupling, as set forth.

2. The combination with the L-shaped lifter *j k*, having a sliding movement upon and independent of the pin *d*, of the guide *n* and the coupling-pin, whereby the lifter is supported in its lowest position when the pin is supported for coupling, as set forth.

167,644. FRICTION POWER-BRAKES. Wm. H. Ward, Auburn, N. Y. (Filed Jan. 28, 1876.)

Brief.—Pulling-cord brings friction-disks together, which, through rods and levers, by momentum of train, operate brakes. Amount of friction regulated by ballast weights.



1. The disks *a c c c* on one of the axles of each car, combined with the brake-connecting devices, for applying and releasing the brakes of the cars truck and those of the corresponding truck at the other end of the car, substantially as set forth.

2. The combination, in a friction power-brake, of the rotating main-disk *a* and the disks *c c* with the yoke-levers *d d*, their connecting joint-lever *e f f*, and the ball-cord *n*, whereby the disks *c c* are forced against the rotating disk *a* to make the frictional contact, substantially as set forth.

3. The combination, with friction brake-disks *a c c*, levers *d f f*, and the ball-cord *n*, of the chain *p* and the armed rock-shaft *r r'*, connecting with the brake-beam, whereby the outer disks are allowed a partial rotation with the main-disk, to put on and hold the brakes until the ball-cord is allowed its freedom, all substantially as set forth.

4. The combination, with the train-cord *s* and the branch lines *m*, of the double and cone pulleys *l f j*, weights *k m'*, and the bent-ed levers connecting with the friction-disks, whereby the friction-disks are put into operation through the medium of the train-cord, and held in operation until said cord is released, as described.

5. The double cone-pulley *j*, in combination with the ballast-weight *k*, cord *i*, and the lever devices of the friction-disks, substantially as set forth.

6. The combination, with the pulleys *l f j*, of the loose washers *o o* and the projections *p p'* and *q q* on the washers and pulleys, whereby the pulleys *l f* may have an independent motion to compensate for any slack in the train-cord, as described.

7. The combination, with the disks *c c c* and the main-disk *a*, of the slotted connecting-yokes *y y*, whereby the disks *c c c* are caused to rock either, to loosen their abutment part-tial rotation with the disk *a*, substantially as and for the purpose set forth.

8. The combination, with disks *c c*, having both a sliding and partial rotary motion in relation to the axle-disk *a*, of the bearing-sleeves *r r'*, as and for the purpose set forth.

9. The combination, with the friction-disks *c c* and the levers *d d*, of the double spring *g*, for suspending and opening the levers, as and for the purposes set forth.

10. The combination, with the adjustable clamp *s* on the rod *f'*, the joint-lever *f f'*, and the friction-disks, of the hook *p*, substantially as and for the purpose set forth.

11. The combination, with the friction-disks *c c*, chain-connection *p*, and the armed rock-shaft *r r'*, connecting with the brake devices, of the arm *c*, rod *s'*, and counter-weight *t*, as and for the purpose described.

12. The combination, with the friction-disks *c c*, chain *p*, connected on opposite sides of center of the disk, armed rock-shaft *r r'*, and rod *u*, with the double-cranked rod *v' v'' v'*, and the rods *v'* and *v'*, connecting the brake-bars, as and for the purpose set forth.

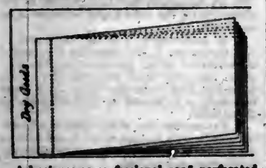
13. The combination, with each car, of the graduating-weights *k m'*, their cords *i m'*, pulleys *l f j*, and the branch line *m*, whereby a loaded car may receive a greater amount of brake force by increasing the weights, substantially as set forth.

14. The combination of the truck-wheels, the rod *u*, double crank-rods *v'*, *v''*, and *v'*, and the rod *v'*, connecting the double brake-bars *v'* and *v'* of the wheels of one axle, whereby the brakes are applied to the opposite sides of the wheels of one axle of each truck, substantially as set forth.

15. The disks *c c*, provided with the air and dust holes *y*, as and for the purpose set forth.

16. The branch line *m*, in combination with the pulleys *l f j*, weights *k m'*, and the braking devices, whereby each car is provided with its own means for applying the brakes without regard to the ball-cord or platform-brakes, substantially as set forth.

167,645. BUSINESS-CARDS. B. M. Wilkerson, Baltimore, Md. (Filed Oct. 15, 1875.)



A business or professional card perforated near one of its edges, and having that part of its back between the perforations and its edge dry-gummed, substantially as and for the purpose set forth.

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1. The combination of the rollers, having the coincident disc or grooves for forming tenks, &c., provided with the raised notched surfaces forming the sides and edges of said disc or grooves, as shown and described.

2. The combination, with the friction-disk *a*, of the feeder S L, lever M, and cams O and Q, substantially as specified.

3. The combination of cams U and W with lever M, feeder S L, and the die-rollers, substantially as specified.

4. The cams U and W, arranged in combination with lever M and its spring P, and in relation to cam O, whereby the feeder is enabled to shift back on the wire for a new bold, as described.

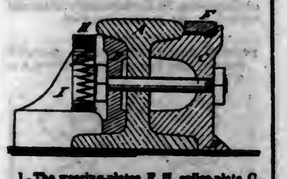
5. The grapers *a b*, combined with the die-rollers and the feeder S L, substantially as specified.

6. The combination of grapers *a b*, cutters X Y, and the feeder S L with the die-rollers, substantially as specified.

7. The roller-bearings, mounted on ways and provided with an adjusting-screw, in combination with automatic feed mechanism, substantially as specified.

167,647. RAILROAD-RAIL JOINTS. Joseph C. Wright, Monocasy Station, Pa. (Filed Apr. 24, 1875.)

Brief.—A rail-joint provided with a yielding flange and tread-bearer to prevent the pounding of the ends of the rails by the impact of the wheels.

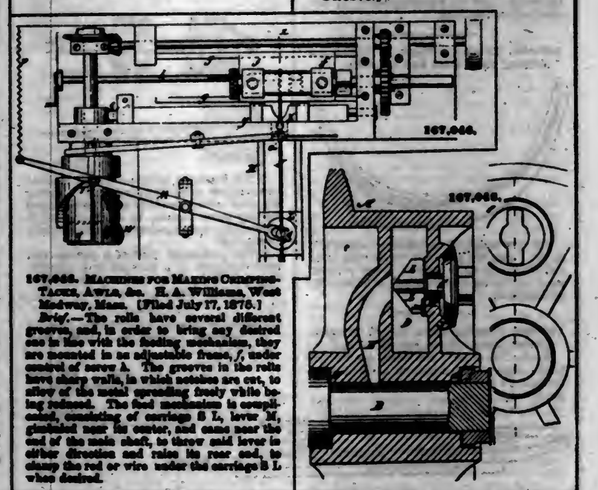


1. The wearing-plates F H, splice-plate C, and blocks I, combined as shown and described, whereby the plates are allowed to extend and contract, as set forth.

2. The inside-spring wearing-plate H, for the flange of the wheel, and outside-spring wearing-plate for the tread, combined with a rail-joint in the manner described.

3. The wearing-plate F, arranged in the channel E of the splice-plate to spring or yield under the wheels, and fastened thereto by the ends bent around the projections at the ends of the splice-plate, substantially as herein described.

167,648. CAR-WHEEL LUBRICATORS. Jno. Woodville, Washington, Ind. (Filed Apr. 24, 1875.)



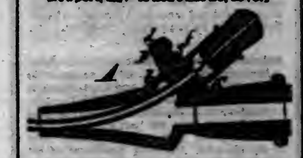
167,649. MACHINES FOR MAKING CHENILLE-TACKS, AWLS, &c. H. A. Williams, West Medway, Mass. (Filed July 17, 1876.)

Brief.—The rolls have several different grooves, and, in order to bring any desired one in line with the feeding mechanism, they are mounted in an adjustable frame, *f*, under control of screw A. The grooves in the rolls have sharp walls, in which notches are cut, to allow of the metal spreading freely while being reduced. The feed mechanism is complicated, consisting of carriage S L, lever M, pivoted near its center, and cams near the end of the main shaft, to throw said lever in either direction and raise its rear end, to clamp the rod or wire under the carriage S L when desired.

1. A car-wheel, having between the arms an oil-chamber, D, provided with inlet K and outlet E, as the middle thereof, as shown and described.

2. The combination, with ring C and chamber D, having oblong hole K, of a stopper, C, having wings L L, working over a spiral incline, M, as and for the purpose specified.

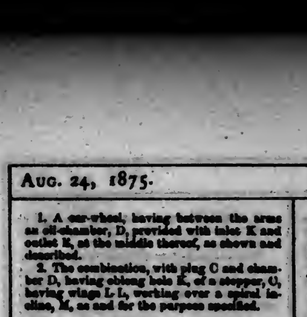
167,650. BEER-FAUCETS. John G. Adam, Newport, Ky. (Filed June 26, 1876.)



in a beer-faucet, the top A, provided with the offset *h*, in combination with the standard F, having a tenon, *d*, the slotted follower E, pointed *a*, and set-screw *f*, substantially as and for the purpose set forth.

167,650. WINDMILLS. John Q. Adams, Macomlin, Ill. (Filed Jan. 4, 1876.)

Brief.—A turn-table in which an inner stationary hollow cylinder is used, provided at its base with two circular bands or steps, on the outer one of which the outer movable cylinder rests and turns, the outer movable cylinder being also provided at its top with an inner circular band, bearing against the stationary cylinder near its top, by which construction an annular space is left between the bottom of the cylinders. There is also an outer cylindrical casing surrounding the wind-wheel shaft, and having a removable top, for the purpose of removing or gaining access to the shaft. Rotary seals on the governing-wheel are formed with threaded openings to receive the connecting-rods of the wind-wheel, in order to present the sections of the wheel equally to the wind.



1. The inner stationary cylinder *a*, provided at its base with the circular bands or steps *d d'*, in combination with the outer cylinder *d'*, having an inner circular band, *d'*, at its top and an outer circular band, *d'*, at its base, whereby an open annular space is left between the cylinders, substantially as described, and for the purposes set forth.

2. The outer cylindrical casing O, surrounding and supporting the wind-wheel shaft, the top *o'* of which is removable, substantially as described, and for the purposes set forth.

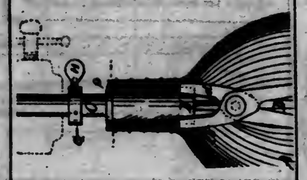
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3. The sand S, rotating on its axis, attached to the outer face-plate of the governing-wheel A, and provided with the screw-threaded portion in its bend, in combination with the adjustable connecting-rod G', having its inner end screw-threaded, substantially as described, and for the purposes set forth.

4. The combination of the plates W and pivots *i*, with the radial arms and independent motions of the wind-wheel, substantially as described, for the purpose specified.

167,651. BROOM-MAKING MACHINES. W. R. Allen, Galesburg, Ill. (Filed Jan. 4, 1876.)

Brief.—To make a broom upon the handle-socket a hollow mandrel enters the socket, at the inner end of which it is held by cogs, while the broom is formed around said cogs, the part of the mandrel on hold ends of heal, to prevent damage to trimming-tools.

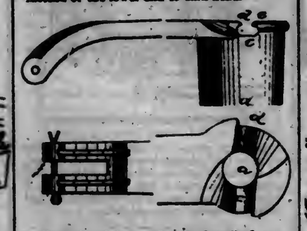


1. The mandrel C, having the conical or tapering portion *c*, covered with soft metal, or other pliable compound, substantially as and for the purpose specified.

2. The mandrel C, having the tapering end *c*, in combination with the lugs D, having the tongue E, collar G, and thumb-screw H, substantially as and for the purpose specified.

167,652. WIRE-FENCE TIGHTENERS. H. P. Barnes, Bristol, Ill. (Filed July 31, 1876.)

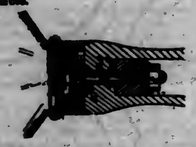
Brief.—To render the instrument, from its own weight, less liable to withdraw the head *a* from the coil opened in, when the instrument is secured to the wire by the claw *f*. The groove and points *c d e* are formed at the top instead of the lower end of said head.



The wire-tightener herein described, consisting of a head, *a*, having a groove, *c*, in the top, and projections *d e* thereon, and an arm or lever, *b*, provided with a notch, *f*, substantially as and for the purposes set forth.

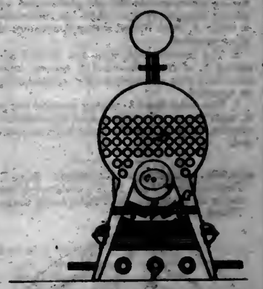
167,653. MODES OF ATTACHING LAMP-BOWLS AND OTHER GLASS ARTICLES TO PEDESTALS. Samuel S. Borrie, Rutherford Park, N. J. (Filed Mar. 4, 1875.)

Brief.—The shell may be in one piece and filled with plastic glass when the bowl is blown, or it may be made in two pieces, which are held to their embrace of the bottom by the thimble.



The metallic shell E, in combination with the bolster J and bolt K, substantially as and for the purpose shown and described.

167,654. FLUE AND TUBULAR STEAM-BOILERS. Isaac Burton, Williamsport, Pa. (Filed July 14, 1876.)



1. In a horizontal tubular boiler, the supporting water-legs, forming the sides of the fire-box, ash-pit, and combustion-chamber, and extending the entire length of the boiler, diverging downwardly from the crown-sheet in a straight line, substantially as described and shown, for the purposes set forth.

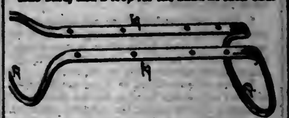
2. In a horizontal tubular boiler, the combination of the supporting water-legs, forming the sides of the fire-box, ash-pit, and combustion-chamber, and extending the entire length of the boiler, diverging downwardly from the crown-sheet in a straight line, and the circular crown-sheet, substantially as described and shown.

3. In a horizontal tubular boiler having a circular crown-sheet, the crown-sheet extended to the rear into a cylinder which passes through the back sheet of the boiler, and is provided with a proper opening, so as to give entrance into the water and steam space of the boiler, substantially as described and shown.

4. In a horizontal tubular boiler, two or more sediment-collectors, M M', placed in the combustion-chamber and connecting the inner sheets of the water-legs, the said water-legs being provided with hand-holes in their outer sheets opposite to the ends of the said collectors, when the several parts are constructed and arranged substantially as described and shown.

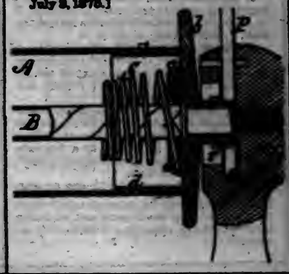
167,655. HANDLES FOR WARE-BOILERS, &c. Joseph W. Bates, Mississippi, Miss., assignor of one-half his right to Hiram Cole, Washington, D. C. (Filed July 10, 1876.)

Brief.—The handle is composed of a single unit of metal, bent so as to form two parallel side bars, and a loop for the head at each end.



The double handle D D, with parallel connecting-bars E E, substantially as and for the purposes herein set forth.

167,656. CURTAIN ROLLERS AND BRACKETS. Geo. W. Beers, Bridgeport, Conn. (Filed July 8, 1876.)

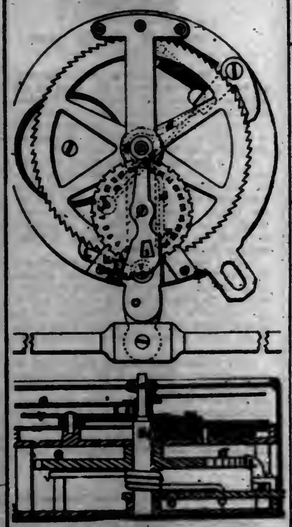


1. In a certain roller, the pawl D, having screw-threaded recess r, cylindrical recess r', groove g, and pawl P, in combination with spring s, arranged in the said groove, and notching the pawl, ratchet-wheel e on roller-head A, roller A, shaft B, and spring S, substantially as specified.

2. The combination, with the shaft B and spring S, of the roller-head A, having inner annulus a, with attaching-lugs a', substantially as specified.

3. The roller-head A, having annular flange d, inner ring a, with lugs a', and edge ratchet-wheel e, adapted for use substantially as specified.

167,667. FARMERS'-REGISTERS. John B. Benton, New York, N. Y., assignor of his right to Hamilton B. Towle, same place. [Filed Mar. 12, 1875.]



1. The actuating-lever C and spring w, in combination with a common central pivot around which they both turn or act, substantially as set forth.

2. The combination of an actuating-lever and a spring-wheel of a spring, arranged to actuate the wheel by its force in one plane, and to furnish force to produce friction in another plane, substantially as set forth.

3. One or more disks, W V, in combination with an adjustable hand, c, for the purpose of showing any change in the relative positions of adjustable and permanent hands making indications on a dial or dial, substantially as set forth.

4. The combination of a movable hand or indicator and a permanent hand or index of a registering apparatus, and an alarm actuated by the same prime mover, substantially as set forth.

5. The combination of the index-hands of a registering-machine and one or more disks, W V, carrying in combination with a registering-disk, J, substantially as set forth.

6. The combination, with a ratchet-wheel, of the stop s and pawl L, provided with inclined recess l' to hold the ratchet-wheel at the termination of its predetermined motion, substantially as set forth.

7. The combination, with a frictional or clutch device, of a shoulder, in order that the adjustable hand, c may be moved by a key independent of any motion of the supporting-shaft, substantially as set forth.

8. The rod E, provided with one or more handles fixed upon the same, in combination with a registering mechanism, and actuating such registering apparatus substantially as set forth.

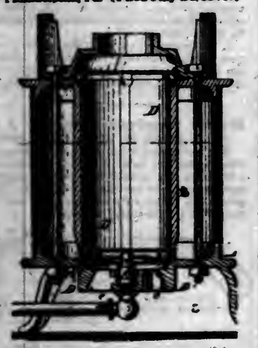
9. The rod E, provided with one or more portable or detached wrenches or handles, in combination with a registering mechanism, and actuating such registering apparatus or mechanism substantially as set forth.

10. The combination, with a registering mechanism and an actuating-lever, of an intermediate spring or motor placed under tension by the movement of the actuating-lever impelled by the hand of the operator in one direction, and acting in motion the registering mechanism upon the return movement of the lever in the other direction, substantially as set forth.

11. In combination with the mechanism of a registering-machine actuated by a wrench or handle worked by the hand of the operator, a spring to drive said mechanism by the reaction of the same after it has been put into a state of tension, substantially as set forth.

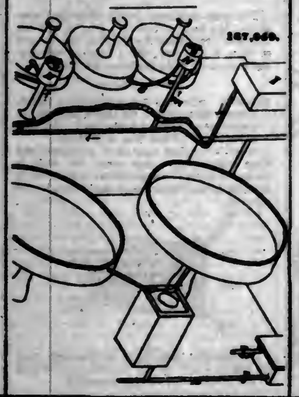
12. The means of attaching to, and releasing the instrument from, the place where used, by means of the hook or horn and the parts bearing upon the same, substantially as set forth.

167,668. Gas-Stoves. John Q. Birkey, Philadelphia, Pa. [Filed July 24, 1875.]



In a gas-stove, the combination, with the cylinder D D', made in two parts, as described, of the contracted air-inlets c c, inlets i i, and annular diaphragm h, with the burner or tip E arranged in the center, substantially as and for the purposes herein set forth.

167,669. Fodder-Cutters. Martin Bell, Jr., Sandusky City, Ohio. [Filed July 24, 1875.]



1. In a fodder-cutter, the combination, with the knife-head B, of the adjustable gage-plate C, provided with the lugs a a, and the adjusting-screws b b, substantially as and for the purposes set forth.

2. The combination, with the knife-head B, of the gage-plate C, provided with the lugs a a, and the adjusting-screws b b, and the feed-roller D, provided with the adjusting-screws c c, substantially as and for the purposes set forth.

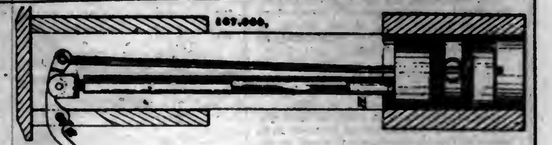
167,670. Distributing Quicksilver in Quartz-Mills. Martin P. Boss, Virginia City, Nev. [Filed July 13, 1875.]

Brief.—Quicksilver is forced by water-pressure up into an elevated tank, and is thence distributed through measuring-vessels to the amalgamator; thence will charge to settlers and a strainer, and back to the elevated tank.

The elevated tank I, connected with measuring-vessel N by means of pipes l m, with their cocks or plug c and the conducting-tubes s, all combined and arranged to operate substantially as and for the purpose described.

167,671. Force and Suction Pumps. Benj. Branson, Barnesville, Ohio, assignor to himself, Jos. Branson, and Levi Branson, same place. [Filed Apr. 6, 1875.]

Brief.—Forms the air chamber of a long tube of small bore, and combines the same with the piston as a rod, the peculiar form of air-chamber procuring steadiness of the stream during slow motion of the pump.



1. In a force-pump, an air-chamber constructed in the form of a long tube of small bore, for the purpose of procuring a slower action of the compressed air, a retarded delivery of the water therefrom, and a consequent steadiness of the stream from the pump when the latter is operated slowly, substantially as shown and described.

2. The combination of two pistons, one placed above the other in the same cylinder, and two piston-rods connected therewith and to the same operating-lever, the rod of the suction-piston passing through the force-piston, and one or both of said piston-rods made hollow, to form an elongated air-chamber to produce a steady stream of water, all substantially as and for the purposes set forth.

167,672. Hame-Attachs. C. A. Brockett, Kansas City, Mo. [Filed July 16, 1875.]

Brief.—A wall-auger consisting of a square shaft with spiral sections, provided with vertical and transverse grooves for the admission of air. The shaft may be grooved, slot, to correspond with the vertical grooves in the sections.

1. The sections D of a wall-auger, provided with one or more grooves or recesses, and interior grooves g in the hub C, as and for the purpose herein set forth.

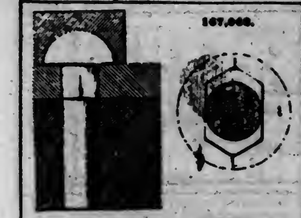
2. The combination of the shaft A, having point B and one or more longitudinal grooves, a; the sections C D, with one or more interior grooves, g, and the collets f between the sections and at the bottom, substantially as and for the purpose herein set forth.

167,673. Dies for Bolt-Heading Machines. Joseph Browning, Philadelphia, Pa., assignor of one-half his right to Wm. C. Allison, J. W. Allison, and T. B. Allison, same place. [Filed Apr. 19, 1875.]

Brief.—The particular hexagonal shape of the cock-squaring die-cavity (seen when the die is closed) makes it possible to turn the blank without so widely separating the die-sections as is required in dies presenting quadrangular cavities. Otherwise the invention is fully explained by the claim and drawings.



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The combination of the bending-die of a bolt-machine with dies H and K, which, when closed, present an opening of the shape illustrated and described, for the formation of the square neck of the bolt, in the manner specified.

167,675. Watch-Case Springs. Ansel S. Buckalew, Colusa, Cal. [Filed June 30, 1874.]

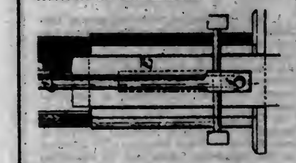
Brief.—A watch-case spring that may be readily fitted to different sizes of cases by filing the projections, said projections being made very thin and slight.



As a new article of manufacture, the watch-case spring consisting of the flat bar A, having its inner edge curved, and formed with the spring a at one end, the lateral projection B at the other end, and the depending support B near the middle part, said projection and support being constructed as shown, and for the purpose specified.

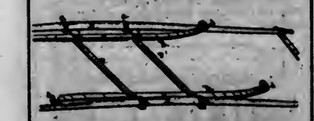
167,676. Self-Packing Piston-Connections. George W. Burr, East Lime, N. Y. [Filed July 24, 1875.]

Brief.—The piston being operated from below by a cross-head attached to the piston-rod, and extending out through side slots in the cylinder, there to connect with the pitman or brake rod. Flat slides running in guide-rims are applied to cover the slots, which, by atmospheric pressure, work tightly over the same, thereby enabling the stuffing-box to be dispensed with, and a direct vertical unobstructed course for the water afforded.



The combination, with a cylinder, A, provided with slots a a, of the piston-connection D, passing through said slots, and the slides E E, covering said slots and forming a packing, substantially as herein described.

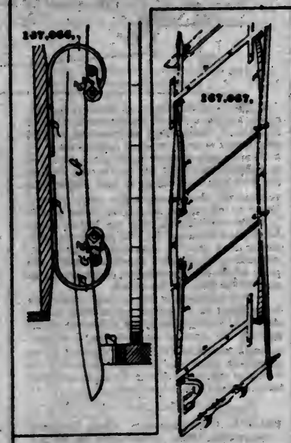
167,677. Gallows-Grabbers. Edwin Chamberlin, Troy, N. Y. [Filed Apr. 2, 1875.]



The longitudinal springs B B and transverse springs D E, in combination with shackles C, spars A A, blocks S, rigid cross-bars L and Q, all constructed and arranged to operate substantially as and for the purpose herein set forth.

167,678. Vehicle-Springs. Edwin Chamberlin, Troy, N. Y. [Filed Apr. 10, 1875.]

The combination, with the side bars A A and vehicle-body C, of the irons D, with springs E, cross-bars G, with arms b, the bolts c, and rubber springs d, all substantially as and for the purposes herein set forth.



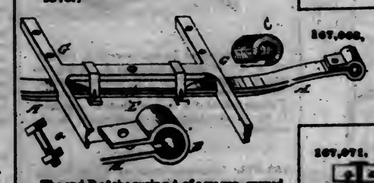
167,679. Side-Spar Vehicles. Edwin Chamberlin, Troy, N. Y., assignor of two-thirds his right to Leo Chamberlin and Edward Chamberlin, same place. [Filed Apr. 3, 1875.]

1. The steel spring B, having angular projection c, in combination with the side spars A and cross-rods F, substantially as and for the purpose herein described.

2. The rigid cross-bars C and side spars A, in combination with the springs B, extending to near the center, and secured, by the angular projections c, to the spars A, and constructed substantially as and for the purpose herein set forth.

3. The body cross-rods F, with crank-loop f, shaft f', springs B, and cross-bars C, in combination with the spars A, the springs B reaching near the center, and secured to the spars, all constructed and arranged substantially as and for the purpose herein set forth.

167,680. Vehicle-Springs. Edwin Chamberlin, Troy, N. Y., assignor of two-thirds his right to Leo Chamberlin and Edward Chamberlin, same place. [Filed Feb. 24, 1875.]



The end B of the spring A of a wagon, curved so as to form an eye, and provided with perforation c, in combination with the crank-loop D, packing C and b, bolt c, and cross-bars G, all constructed and arranged substantially as and for the purposes set forth.

167,681. Low-Water Indicators. C. E. Christian, Erie, Pa. [Filed May 10, 1875.]

Brief.—A fusible plug inserted in the crown-sheet melts when the water in the boiler gets low, and allows a valve-stem to drop, which, in turn, opens a valve that admits steam to the whistle.

The combination, with the boiler A and crown-sheet B, of the collar E, with valve-seat c therein, fusible plug m, valve-rod d, with valve h, the spring i, and whistle-lever G, all substantially as and for the purposes herein set forth.

167,682. Vehicle-Springs. Edwin Chamberlin, Troy, N. Y., assignor of two-thirds his right to Leo Chamberlin and Edward Chamberlin, same place. [Filed Feb. 24, 1875.]

167,683. Combined Gauge and Umbrella. John N. Colby and John H. Coffin, Mystic Bridge, Conn. [Filed June 9, 1875.]

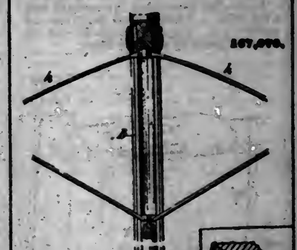
Brief.—When the frame is closed, the ribs and stretchers fall into longitudinal slots in the hollow stem, and by a turn of the slide they are entirely inclosed in the stem.

1. In a combined cane and umbrella, the combination, substantially as described, of a slotted tube, forming the stem of a cane, with ribs and stretchers adapted to the slots of the tube, as set forth.

2. The combination of the inner tube B, the rib A, hinged to the end of the same, and slide D, and the stretchers hinged thereto, with the outer tube A, admitting of a limited lateral movement on the said inner tube, all substantially as set forth.

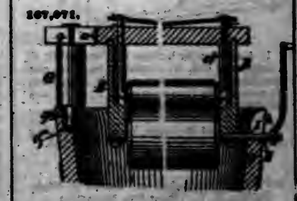
3. The combination of the runner F, the screw-pin e, the slide D, and outer and inner tubes A and B, all substantially as specified.

4. The combination of the outer and inner slotted tubes and rib A with the runner E and its internal projections m.



167,670. Washing-Machines. Gideon W. Cole, Canton, Ill. [Filed July 22, 1874.]

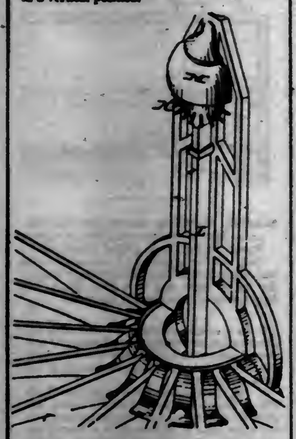
The roller-carrying frame A B B, having block D and tongue J, constructed as described, in combination with the tub K, having groove g'', slot h, and grooved plate L, substantially as and for the purpose specified.



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167,072. CLOTHES-FRAME. G. G. Crowley, Somerville, N. Y. [Filed Feb. 11, 1875.]

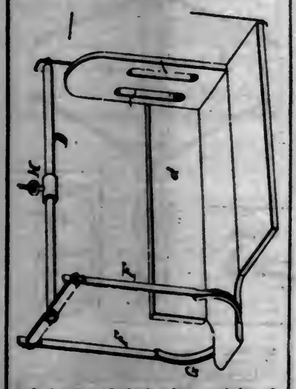
Brief.—A vertical sliding bar has a cap attached at the upper end with radial pins, which hold the arms in place when they are folded in a vertical position.



The cap M, constructed as stated, and provided with the pegs N, in combination with the bar L, for the purpose set forth.

167,073. FRACTURE APPARATUS. S. Darby, Philadelphia, Pa. [Filed June 12, 1875.]

Brief.—The fracture-bar is suspended from a rod above it, which extends lengthwise and parallel to it. The rod is connected with the supporting-cord by a sliding sleeve.



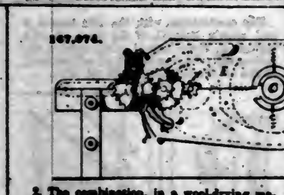
1. A support for broken legs consisting of a suspended box, A, pivoted at one end, and provided at the opposite end with a segment, B, arranged to turn on a stud, F, all as and for the purpose set forth.

2. The combination of the suspended box A with the bar or frame D, and the sliding block E, as and for the purpose described.

167,074. WOOL-DRYING. James M. Dale, Buffalo, N. Y. [Filed Feb. 19, 1875.]

Brief.—Air may be discharged into part E, either above or below the support a.

1. The combination, in a wool-drying machine, having a receiving-chamber, D', of the drying-grate E, the supporting-rollers J J, and the fan G, the whole arranged in said receiving-chamber, substantially as and for the purpose described.



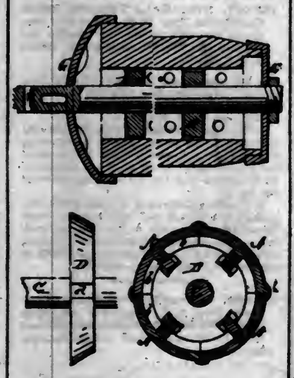
167,074.

2. The combination, in a wool-drying machine, having a fan, C, an air-trunk, D', and a picker, F, constructed as described, so that the current of air is impelled against the wool, at its entrance, of an air-guide plate, arranged to partially surround the picker and deliver the wool below the center of said picker, and prevent the wool from the fan being carried by the reverse revolution of the picker.

3. The combination, with the drying-chamber K, and air-trunk D', of a wool-drying machine, of a pivoted conveyer-apron, I, constructed to be adjusted above or beneath the grate of the drying-chamber, substantially as and for the purpose described.

4. In a machine for drying wool with which is combined an air-forcing mechanism, and an air-trunk, arranged to impel a current of air against the wool at its entrance, a drying-chamber, connected with said machine by an adjustable spout, and arranged to receive the wool and the air for drying the same, substantially as shown and described.

167,075. CORN-SHELLER. Chas. Dockrey, Zanesville, Ohio. [Filed June 24, 1875.]



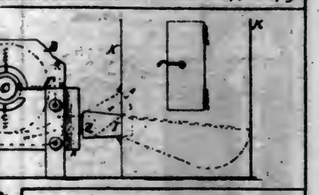
The corn-barrel herein described, consisting of the perforated staves A A, having the closing-strips b b, ribs B B, inclines a a', internal cones b b, conical disks D D, having T-shaped slots d d, central shaft C, and cone E C, all constructed and arranged as described.

167,076. MANUFACTURE OF LEAD TRAPS. Frederick H. De Bois, New York, N. Y. [Filed July 12, 1875.]

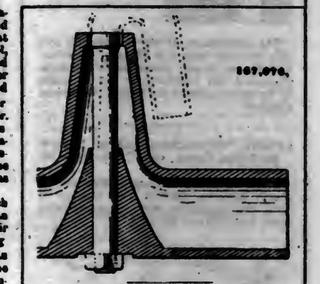
Brief.—The pistons working in the receiving-cylinders A' A'' move the two streams of lead with equal speeds, and, therefore, supply the same amount of lead to all parts of the orifice, when the straight parts of the trap are to be formed. When the curved parts are to be formed, the speed of one of the streams is reduced, while that of the other is increased, in virtue of which the pipe will be caused to bend over toward the side which is supplied with the least amount of lead.

1. As an improvement in the art of making lead traps for plumbers' use, the ejectment of two or more convergent streams of metal moving with unequal velocities through an annular orifice or die, substantially as herein shown and described.

2. The improved apparatus herein described and shown, to be used in the manufacture of lead traps for plumbers' use.



167,076.



167,077. TURBINE REGENERATIVE CONVERTERS. Wm. P. Durbe, Philadelphia, Pa. [Filed Mar. 17, 1875.]

Brief.—Turns the converter by surrounding one end of the extended axis with a cylinder, in which is a rotating piston attached to the axis. On admitting steam or water on either side of a diaphragm in the cylinder, the piston revolves and turns the converter.

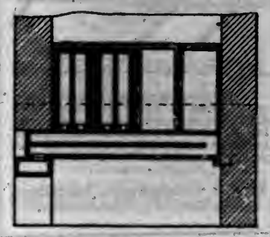


1. The combination, with the arm of Bessemer converters, of partially-rotating pistons, working in cylinders or segments of cylinders attached to a suitable support, whereby, through the application of suitable pressure upon said pistons, the converters may be turned or tipped, substantially as described and shown.

2. The combination of radial pistons C, attached to the arm of Bessemer converters, with cylinders B and abutments D, attached to the supporting framework in which the converters move, and with suitable pipes *f f*, for conducting fluids and vapors, under pressure, to the cylinders, for the purpose of turning or tipping the converters, substantially as described and shown.

167,078. GRATES FOR GENERATING GAS FOR FUEL. Wm. Beloth S. Durbe, New York, N. Y. [Filed Feb. 1, 1875.]

Brief.—Grates are made gaseous by mixing with clay to their manufacture combustible material.





167,079.

1. Furnace grates for generating gas for fuel, and for consuming or distilling fine coals and other finely-comminuted fuels, made from fire-brick, or other suitable refractory materials, substantially as described and shown.

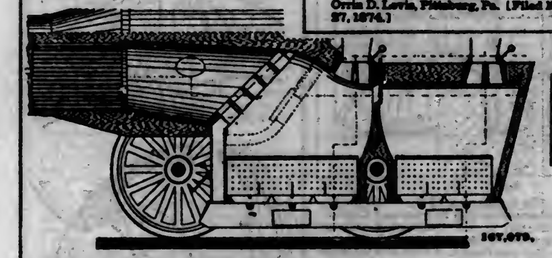
2. The combination of vertical perches and perforated grates running parallel to each other through gas-producers and furnaces with ordinary grate-bars, substantially as and for the purposes described and shown.

3. The combination of vertical perches and perforated grates with tipping grate-bars, for the purpose of facilitating the removal of cinders, substantially as and for the purposes described and shown.

4. The combination of vertical perches and perforated grates with air-boxes, designed for heating the air passing through said grates, and also for permitting mixtures of air, steam, or other vapors and gases to pass through said vertical grates while common air is passing through the ordinary grates, substantially as described and shown.

167,079. FIRE-BOXES FOR LOCOMOTIVE AND OTHER BOILERS. Beloth S. Durbe, New York, N. Y. [Filed Feb. 20, 1875.]

Brief.—The furnace is divided into compartments, in which coal is coked and the gases extracted. Valves are arranged in partition to regulate the admission of said gases to a perforated diaphragm, through which air is also admitted; air and gases issuing in jets simultaneously from separate apertures into a combustion-chamber, where they are mingled and consumed.



167,079.

1. In locomotive and other horizontal boilers designed for burning fuel as a gas, fuel-combustion chambers confined within the water-walls of the boilers, divided by gas-burning diaphragms, through which all the gases generated in the fuel-chambers and the air effecting their combustion, pass and mingle in fine converging streams or jets, substantially as described and shown.

2. The diaphragm specially designed for these boilers, constructed of iron, with iron pipes for the flow of the gases from the fuel-chamber, in such wise as that the air to be combined with the heated gases produced in the fuel-chamber shall circulate around the iron pipes in the diaphragms through which the gases pass to the combustion-chamber, and thus become highly heated before the combustion occurs, while preventing the overheating of the iron casing, substantially as described and shown.

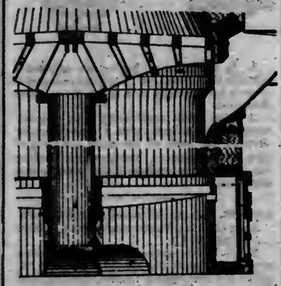
3. Water or other gas-tight and heat-resisting diaphragms, provided with gas-tight valves in them, and arranged so as to divide and entirely separate the different fuel-chambers, when more than one is used, and enable each fuel-chamber to be more or less completely shut off from the gas-distributing chamber and combustion-diaphragm, substantially as described and shown.

4. The combination of the gas-producing chambers, gas-distributing chambers, gas-burning diaphragms, and combustion-chambers in gas-burning boilers, substantially as herein described and shown.

5. In boilers constructed to burn gas from either wood or coal, or both, the combination of transverse diaphragms containing valves, with longitudinal water-diaphragms separating the fuel-chamber into two or more distinct chambers, substantially as described and shown.

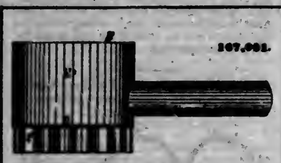
167,080. VERTICAL GAS-BURNING BOILERS. Beloth S. Durbe, New York, N. Y. [Filed Mar. 9, 1875.]

Brief.—Air is supplied to the combustion-diaphragm through a vertical stand-pipe located in the center of the boiler.



The combination with vertical steam-boilers with internal fire-boxes, the gas-burning diaphragms *a*, air-pipes *b*, &c., and feeding-hoppers *d d*, substantially as described and shown.

167,081. CULINARY IMPLEMENTS. Jerry Hibbert, Martin's Ferry, Ohio, assignor, by mesne assignments, to W. A. Conklin and Orrin D. Lovis, Pittsburg, Pa. [Filed Nov. 27, 1874.]



167,081.

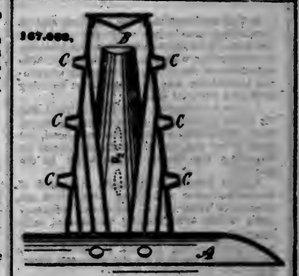
As a new article of manufacture the culinary implement herein described, consisting of the hollow cylinder A, with corrugated cutting edge B, corrugated cutting and crimping edge C, perforated diaphragm D, and hollow handle F, substantially as specified.

167,082. WASH-BOILERS. Jacob D. Hyler, Pittsburg, Pa. [Filed May 31, 1875.]

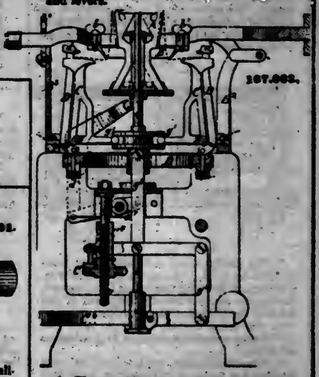
The improved steam clothes-washer, consisting of the perforated base A, central oblong and tapering shell B, having flanged openings C, at different heights respectively, and communicating by separate flues *c* with the base A, and having, also, the end flues *d*, all constructed and arranged substantially as shown and described.

167,083. MACHINES FOR SHAPING AND BLOCKING HATS. Rudolf Hohenmayer, Yonkers, N. Y. [Filed July 6, 1875.]

Brief.—The lifting of the hat-block is effected by means of a hand-lever, operating through a rock-shaft, levers, cross-head, and links, rendered adjustable by means of a screw, and graduated to certain sizes by a scale or gage. The hat-block is expansible, and the lifting mechanism is so combined with the expanding mechanism that they occupy under all circumstances the same position with relation to each other. The expanding mechanism is combined with a graduated scale and adjusting mechanism, so that the hand-lever, which expands the block, may be readily set for effecting the precise degree of expansion required. The hat-block and its lifting mechanism is combined with brim-stretching tongs, which are capable of being opened and closed independently of either the contracting mechanism or the beading-ring, and the tongs are rendered adjustable by means of a controlling-ring and a screw. The brim-stretching tongs are composed of numerous jaws, the lower members of which have extended flaring surfaces for receiving the hat-brim and directing its edge into the open mouths. The upper jaws are opened, closed, and clamped upon the brim by means of a clamping-ring and levers, and maintained in any desired position by means of stops on the hand-lever. Each upper jaw is combined with a spring, which secures effective operation on brims of varied thicknesses. The contracting-tongs are operated by a controlling-ring and levers.



167,083.



1. The combination, with the hat-block mounted on a sliding spindle, of the cross-head, links, double levers, rock-shaft, and hand-lever, substantially as described.

2. The combination, with the hat-block and lifting mechanism, of a graduated scale or gage and an adjusting-screw, substantially as described, whereby the operator may readily adjust the lifting mechanism for lifting the block to any required height.

3. The combination, with the hat-block, its expanding mechanism, and its lifting mechanism, of a rock-shaft, substantially as described, whereby, in operation, the expanding mechanism and the lifting mechanism are maintained at all times in the same position with relation to each other, regardless of their position with relation to other parts of the machine.

4. The combination of the hat-block and its expanding mechanism with the graduated cams and the adjusting-screw, which operates in conjunction with the expanding-lever substantially as described, whereby the expanding mechanism may be adjusted for blocking hats of a required size.

5. The combination, with the hat-block and its lifting mechanism, of the stretching tongs, their contracting-levers, the crown-band, the hand-wheel nut, and the stationary screw for adjusting the levers, substantially as described.

6. The contracting-tongs, composed of transverse lower and upper jaws, which are capable of being opened and closed independently of the contracting mechanism, substantially as described, in combination with a contracting-ring and its adjusting-screw, substantially as and for the purposes specified.

7. The stretching tongs, composed of a series of vertically-sliding short upper jaws, and vertically-stationary long lower jaws, substantially as described.

8. The vertically-moving clamping-jaws of the tongs, in combination with a clamping-ring and levers, substantially as described, whereby the said jaws may be simultaneously made to engage with and clamp the brim of a hat, as set forth.

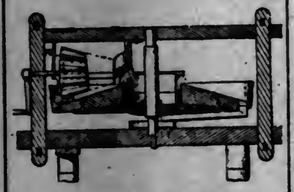
9. The combination of the clamping-ring, which opens and closes the jaws of the tongs, with the link and a clamping-lever provided with cams, substantially as described, whereby the jaws may be correctly maintained in position whether opened or closed.

10. The combination, with the vertically-moving jaws and their clamping-ring, of the springs attached to each jaw, substantially as described, whereby said jaws may properly close upon brims of varied thickness.

11. The combination of the contracting-tongs, composed of the series of upper and lower jaws, with their controlling ring and levers, substantially as described, whereby the outward and inward movement of said jaws may be simultaneously effected.

167,664. Butter-Workers. P. Embree, West Chester, Pa. [Filed July 6, 1875.]

Brief.—The butter-worker has a fluted conical roller, journaled at one end in an adjustable hanger, to allow the roller to deviate from a radial line, so as to work the butter toward the center. There are also adjustable scrapers hung in hangers to throw the butter under the roller. The crown-wheel in the center of the rotating table forms a discharge-pipe for such milk as may be thrown over it by the action of the roller.



1. The combination, substantially as hereinbefore set forth, of the rotating table, for supporting and carrying the butter to be worked, having the crown-wheel forming part of the sides of the central milk-collecting chamber, with the fluted conical roller, the table and roller being connected together by gearing, as set forth.

2. The combination, substantially as hereinbefore set forth, of the rotating table having a central gear-wheel, with the fluted conical roller journaled at one end in a fixed bearing, and at the other in an adjustable hanger, as described, whereby said roller may be moved and adjusted from a radial line with respect to the table, for the purpose of working the butter substantially toward the center of the table.

3. The combination, with the rotating table having a central gear-wheel and milk-collecting chamber, of the butter-guides suspended from adjustable hangers at each end of the roller, whereby the said guides can be moved with the roller and the distance between said guides and the table regulated to prevent the triturating of the butter, substantially as described.

4. The combination of the rotating table having the central gear-wheel, the adjustable butter-guides, fluted adjustable roller, and discharge-spout leading from the peripheral groove, substantially as herein shown and described.

167,665. Pipe-Tongs. James M. Evarts, New Haven, Conn. [Filed Nov. 24, 1874.]



1. In a pipe-tongs, having an adjustable jaw, the slot surrounded by beveled or rounded guards substantially as and for the purpose described.

2. Pipe-tongs constructed with the fulcrum-pin, combined with a screw passing through the head of the same, the ends of said screw lying in bearings and holding the jaws together, substantially as shown and described.

167,666. Machines for Blocking Hats. Eben C. Fales, Foxborough, Mass. [Filed July 16, 1875.]

Brief.—The invention is an improvement on applicant's Patent No. 139,133, dated May 20, 1873; and it consists in the reciprocating head D, provided with a series of spring-ribs, C, which, when pressure is applied to their crown-head, flatten out the brim of the hat, otherwise blocked in the machine.

1. The combination of the block A, sectional stretching-ring B, cross-head I, bed P, flexible ribs C, and cross-head D, substantially as and for the purpose specified.

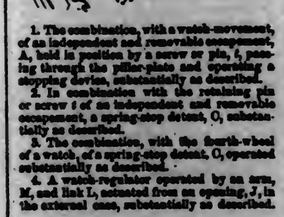
2. The combination, in a machine for blocking hats, &c., constructed to operate substantially as herein before described, of the cross-head D and the elastic ribs C, arranged to press and flatten out the brim of the hat, as and for the purpose specified.

167,667. Grate-Bars. William Farris, Yarmouth, Me. [Filed Jan. 7, 1875.]

1. The grate-bar formed of plate *a*, arched its whole length, as described, and having perforations at *b*, and provided with suitable projecting pieces *d*, substantially as and for the purposes set forth.

2. In combination with the arched grate-bars *a*, constructed as described, the rake or slicer *g*, perforated at *c*, and arched to fit over and operate upon said bars, substantially as and for the purposes set forth.

167,668. Locking-Latches. P. S. Potter, Cassenovia, N. Y. [Filed June 18, 1875.]



1. The fence-bar I, in combination with the arbor B and tumblers C, substantially as represented and set forth.

2. The tumblers C, having a series of notches, in combination with the fence-bar I, arbor B, and thimble A, having grooves *a a*, substantially as described.

3. The elliptic springs D, in combination with the arbor B and fence-bar I, substantially as and for the purposes set forth.

4. The bolt G, having a recess, *b'* which is bounded on one side by the irregular edge *c'*, and on the other side by the straight edge *d'*, in combination with the cam and stop E, and the springs L and M, substantially as and for the purposes specified.

167,669. Escapements for Watches. Frederic Pitt, Ottawa, Canada, assignor of one-half his right to Wm. Fingland and Benj. J. Draper, same place. [Filed June 2, 1875.]

Brief.—A removable plate, holding the escapement and regulating devices, is held in position by a single screw, which operates a stop device for stopping the movement of the remaining parts of the works when the escapement is removed.

1. The combination, with a watch-movement, of an independent and removable escapement, A, held in position by a screw or pin, *i*, passing through the pillar-plate and operating a stopping device, substantially as described.

2. In combination with the retaining pin or screw *i* of an independent and removable escapement, a spring-stop detent, O, substantially as described.

3. The combination, with the fourth-wheel of a watch, of a spring-stop detent, O, operated substantially as described.

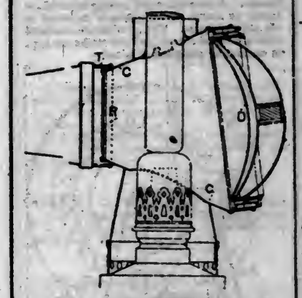
4. A watch-regulator operated by an arm, M, and link L, actuated from an opening, J, in the external case, substantially as described.

167,670. Magic Lanterns. C. Fontayne, New York, N. Y. [Filed July 9, 1875.]

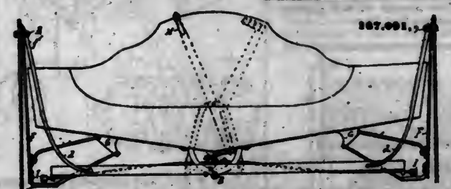
1. In a magic lantern, the combination of a reflector with a magnifying-lens, when the axis of the support of said reflector forms such an angle with the axis of the lens as to prevent the projection of the image of the burner on the screen.

2. In combination with the reflector D and the cone C, the springs H for holding the reflector D in proper position when cone adjusted, substantially as described.

3. The combination of the reflectors D and C, with the pivoted bearings between the two, substantially as described.



167,671. Swinging Rests for Reps. T. P. Ford, Brooklyn, assignor of one-half his right to Thos. S. Dick, Green Point, N. Y. [Filed June 4, 1875.]

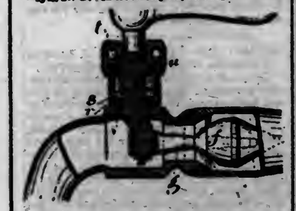


1. The berth carried and balanced on an oscillating axle, B, at or near the center of its length, in combination with the frame-carriage C, suspension-rods *d d*, oscillating cross-beams D, and guide-frames F constructed to the carriage, and jointed at the top to the cross-beam D, and by a double connection-rod to the under side of the berth at G, substantially as and for the purpose set forth.

2. In a swinging berth, the means of locking and controlling the movements of the carriage-frame between the bulk-heads, consisting of bolts I I, combined with a system of levers, substantially as described, operated by a hand-lever, H, and ratchet, or its equivalent, substantially as and for the purpose above set forth.

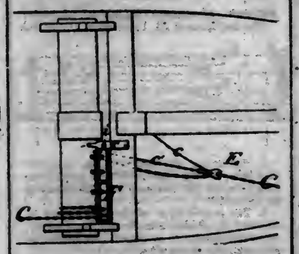
3. The described method of compensating, in a suspended and self-balancing berth, for the preponderance of weight in the upper part of the human body by supporting the berth at a point in its length more or less removed from its center, such point of support being located beneath the lowest point of the berth, substantially as set forth.

167,672. Faucets. Albert Fuller, Brooklyn, N. Y. [Filed May 31, 1875.]



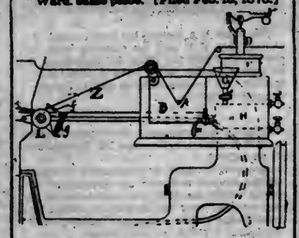
1. The packing-gland, made of the rim *a*, screwing upon the outside of the cylinder containing the packing *c*, and the cylindrical follower *f* passing into the gland-chamber, in combination with the spindle *f* and collar *e*, substantially as set forth.

167,673. Anchor-Trippers. R. G. Gallee, Jonesport, Me. [Filed June 5, 1875.]



In an anchor-tripping device, the sparred rotating tripping-bar F, with a means for preventing its rotation, in combination with the claw E and chains *c c'*, substantially as and for the purpose set forth.

167,674. Wax-Thread-Heating Machines. Wm. J. Garton, Toronto, Canada, assignor of one-half his right to Wm. Ward, same place. [Filed Feb. 16, 1875.]



1. The described combination and arrangement of the steam-generating boiler, its dome and safety-valve, the cistern or compartment B, the upper water-supply tank G, the lower water-tank H, adapted to be supplied from tank G, and their respective tapes *t* and *u*, the whole *o* erating as and for the purpose set forth.

2. The steam-drum I, arranged to turn upon a hollow perforated steam-pipe, in combination with the thread-guides *b f* and spring *g*, all substantially as and for the purpose described.

167,675. Mechanisms for Supporting Log-Rests for Chairs. George D. Goss, Boston, Mass. [Filed June 1, 1875.]

1. The slide-frame C, provided with the grooves *b* and perforated ears *f*, in combination with the chair A, provided with the studded brackets D and the support-rods E, all being arranged and applied as set forth.

2. The leg-rest B and its two rods H K, (one being supported by stationary and the other by pivoted arms, as described,) in combination with the slide-frame C and the slotted and botched plates F F G G, applied to it as set forth.

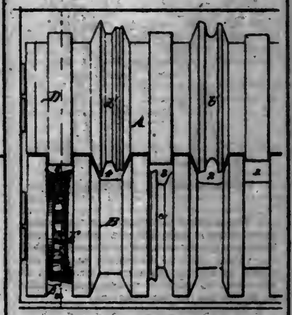
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3. The combination of the rod M, slide-frame C, leg-rest B, notched plates F F G G, rods H K, and arms I L, all arranged substantially as specified.

167,676.

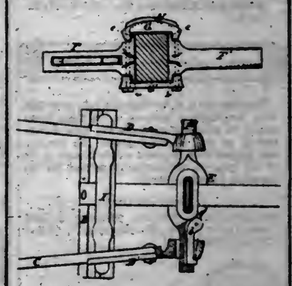


167,676. Rolls for Making Horseshoe-Blanks. Wm. M. Greenwood and John N. Clarke, Cincinnati, Ohio. [Filed Aug. 9, 1875.]



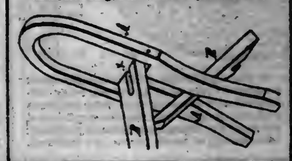
The combination of the rolls A and B, one provided with a die with convex projections and shoulder upon its face for forming corrugations and nail-crease upon the shoe-blank, the other being provided with a plain counter-die, the two arranged to work together, substantially as described.

167,677. Animal-Power. Gaml. N. Gastia, Mexico, N. Y. [Filed July 2, 1875.]



The combination, with the tongue, of the crown-head, consisting of the steam-pieces F F, having beveled flanges *c c*, the clamps G G, and the staple H, secured by nuts, substantially as and for the purpose specified.

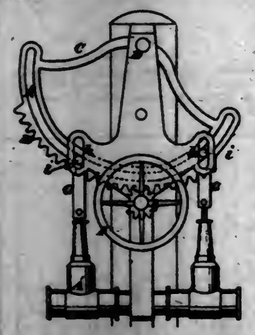
167,678. Folding Chairs. Francis Hickman, Reading, Pa. [Filed Apr. 1, 1875.]



The within-described chair, consisting of the part A, cut out as shown, the part B hinged thereto, and having slot *s* and stop C, and the part B hinged about midway to the part A, all substantially as and for the purpose herein set forth.

167,099. Device for Operating Throttle-Valves. Philip Bishkl, San Francisco, Cal. (Filed June 22, 1875.)

Brief.—The rock is controlled by the pinion-wheel, and closes one valve while it opens the other.

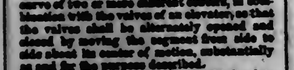


1. The segment C, formed in a continuous curve of two or more different centers, in combination with the valves of an elevator, so that the valves shall be alternately opened and closed by moving the segment from side to side about its center of motion, substantially as and for the purpose described.

2. The stationary guide-plate *f* with its slots *h*, in combination with the yoke G and pins *i* of the valve-stems and the slotted segment C, the whole constructed to operate substantially as and for the purpose herein described.

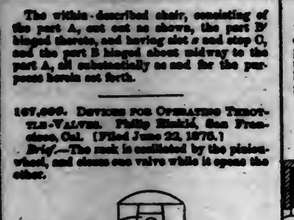
3. In combination with the slotted segment C, connected as shown, and provided with the toothed rack R, the operating pinion and rope-wheel F and the safety-stop L, substantially as herein described.

167,100. Window-Screens. George W. Helmbach, Allentown, Pa. (Filed July 17, 1875.)



The screens A B, having side rails provided with longitudinal grooves, *c*, on their inner edges, in combination with the bars D, attached to the meeting-rails of the screens, and formed with tenons *b* on their ends to fit in the grooves, substantially as and for the purpose herein set forth.

167,101. Ash-Sifters. Maurice B. Hull and Andrw. Rapier, Brooklyn, N. Y. (Filed July 1, 1875.)



1. The combination of the two independent perforated shells A' A², the former being constructed with the solid cylindrical gudgeons *c'* *c'*, and the latter with the hollow cylindrical gudgeons *c²* *c²*, fitting upon the solid gudgeons, substantially as herein shown and described.

2. The perforated shells A' A², provided with hollow gudgeons *c'* *c'* and solid gudgeons *c²* *c²*, one of the latter having the projecting pin *b*, in combination with the collar C, having the notch *a* and constructed to pass by and lock behind the pin *b*, substantially as and for the purpose described.

167,102. Middlings-Purifiers. Andrew Hunter, Quincy, Ill. (Filed Mar. 18, 1875.)

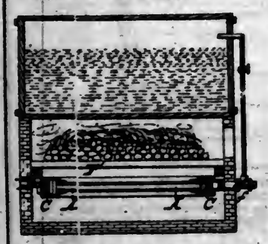


1. The screen provided with the longitudinal strip, in combination with a knocker or knockers, for the purpose, and substantially as described.

2. The combination of the spring-bar E, hammer F, pivoted arm H, and hammer H', with the screen B, arranged and operating substantially as described.

167,103. Devices for Supplying Steam-Blast to Furnaces. Evan J. Jones, Indianapolis, Ind. (Filed Aug. 14, 1875.)

Brief.—Steam is supplied through pipes having tapered ends and longitudinal openings. The area of the opening is regulated according to the amount of end pressure brought to bear upon the pipes.



The pipes A A, having the longitudinal V-shaped slots B B and the tapering ends, in combination with the pipes or receptacles C C, having sockets, screw rods or plates D D, and nuts *d d*, substantially as and for the purpose set forth.

167,104. Packings for Stuffing-Boxes. A. P. Lasterman, Chicago, Ill. (Filed July 24, 1875.)

Brief.—The shaft is surrounded by spiral wedge-shaped sections, the interstices between which are filled with elastic material, and covered by a flexible outer covering, the whole being placed within the ordinary stuffing-box.



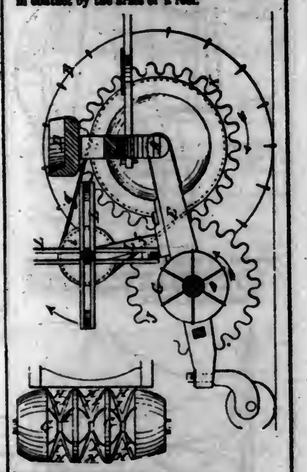
1. The combination of the spiral wedge-shaped sections, adapted to fit around the journal or shaft, the flexible or elastic covering surrounding the same, and the journal-box within which the whole is combined, substantially as described.

2. The combination of the spiral wedge-shaped packing-sections, the grooves at their ends, and binding-ring for holding them in place, and the outer covering of elastic material wound in successive layers around the same, substantially as described.

3. The combination of the spiral wedge-shaped packing-sections, the elastic packing in the interstices between the same, and the elastic or flexible outer covering, substantially as described.

167,105. Cotton-Stalk Pullers. Henry Lee, Mahaleyville, Ind. (Filed June 11, 1875.)

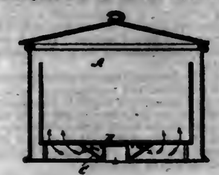
Brief.—Two bearing-wheels, each provided with cog-gear, have a bent or arched axle-tree, to which is journaled a roller-frame, the rear end of which is supported upon caster-wheels. A grooved roller, having a forced rotation by means of cog-gears, is mounted in the pivoted frame. The grooves are provided with V-shaped blades, and the stalks are kept in contact by the arms of a reel.



1. In a field stalk-puller, the combination of a revolving pulling-cylinder, having circumferential angular grooves and biting and pulling rings located therein, with the revolving reel, substantially as herein described.

2. The combination, with the pulling-cylinder frame E, hinged to the axle, and supported by the casters F, of the gear-wheels J K, at each end of the cylinder and axle, as and for the purpose described.

167,106. Outlawry Vessels. O. O. Linn, Indianapolis, Ind. (Filed Jan. 26, 1875.)



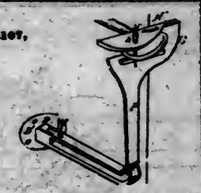
The detachable perforated outwardly-flaring ring C, combined with the sleeve D, which holds it in place, the partially-perforated plate B, which rests upon its open top, and the vessel A, as shown and described.

167,107. Key-Fasteners. B. J. Loomis, Ashtabula, Ohio. (Filed July 21, 1875.)

Brief.—A hinged and slotted standard suitably secured to the door, and having its free end bent upward, carries an arm provided at one end with a loop fitting to the slotted standard, and at the other with a pair of jaws, which receive and pass over the loop of the door-key, a fastening-pin securing the same in position, and all tampering with the key being thereby prevented. There is also a catch, which, when the device is turned down out of the way, secures it in folded position, the slot in the standard permitting ready adjustability to keys of varying lengths or thicknesses.

1. A key-fastener, consisting of a support, D, hinged standard B, provided with the slot *c*, arm F, and jaw G, substantially as and for the purposes described.

167,107.



2. The combination, with the slotted standard E, of the jaw F and pin H, in connection with a key, C, substantially as and for the purposes described.

3. The combination of catch I with the standard E and arm F, substantially as and for the purposes described.

167,108. Lanterns. J. J. Marcy, Bridgeport, Conn., assignor to Bridgeport Brass Company, same place. (Filed July 24, 1875.)

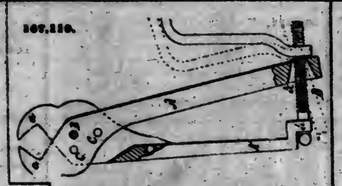
167,109.



1. The combination, substantially as hereinbefore set forth, of the independent combination H, pivoted to the removable lantern-cap B, the yoke-shaped frame R, secured to the bonnet of the lantern, and passing through vertical elongated openings or slots *f* in the cap of the lantern, as and for the purpose described.

2. The slots *f f*, formed by slitting the metal of the cap or top D, and turning in the edges, to constitute inwardly-projecting wings *e e*, in combination with the upper cross-bar of the yoke-frame R, essentially as described.

167,110.

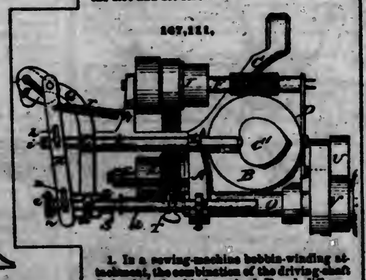


A pipe and bolt vise consisting of T-screw D, combined with lever A, having oblong hole *a'*, and bar A', having open-slotted end projection *a'*, as and for the purpose specified.

167,111. Bonnet-Wirings for Sewing-Machines. Wm. Miller, Boston, assignor to himself and Augustus Seaver, Milford, Mass. (Filed June 9, 1875.)

Brief.—The heart-cam, which gives motion through the bar and lever to the rod that carries the thread-guide, is made capable of being rotated at different rates of speed by being connected with a system of differential pulleys. The motion of the thread-guide can thus be adapted to different-sized thread or silk. The guide is made in two parts, jointed, and provided with a spring to ensure its constant contact with the bobbin. The bar, keyed to the fulcrum-plate, connects the rods, and is provided with a spring, which preserves the contact of the rod with the cam. The fulcrum-plate is made adjustable by means of the slot and set-screw.

167,111.

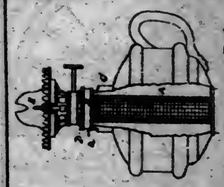


1. In a sewing-machine bobbin-winding attachment, the combination of the driving-shaft O, having the friction-wheel P and differential pulleys V, the intermediate arbor L, having two sets of differential pulleys, K U, the arbor F, having the differential pulleys J and worm-gear G, and the gear-wheel S having the cam O', all located in a suitable frame, connected and arranged as set forth, and adapted to rotate the cam O at different rates of speed, substantially as and for the purposes specified.

2. The reciprocating thread-guide T, in combination with the sliding bars S *k*, connecting bar or lever R, spring *r*, fulcrum-plate *p*, and cam O', substantially as and for the purpose specified.

3. The thread-guide T, composed of the two parts *g h*, jointed or hinged together and provided with the spring *s* and eye *i*, substantially as and for the purpose specified.

167,112. Lamps. Stephen S. Newton, Binghamton, N. Y. (Filed Mar. 12, 1875.)

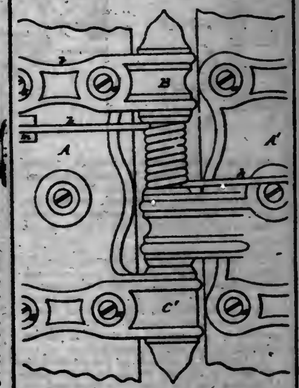


1. The herein-described safety attachment for lamps, consisting of collar C, the metal collar B, the gauze A, attached to the collar B, and the non-conducting collar D, substantially as set forth.

2. In a lamp, the combination of the collar C, the supplemental collar B, and the friction-strip *a*, substantially as set forth.

167,113. Grape-Hooks. R. M. O. Parker, Memphis, Tenn. (Filed June 29, 1875.)

Brief.—A spring-hinge, having a removable cap and separable cap-plate, receives the spread arms of the coil-spring in suitable notches upon the leaves. There is also an eli-socket, having within it a transverse bearing, cast with the leaf and socket, upon which the lower end of the plate or spindle-arm rests.



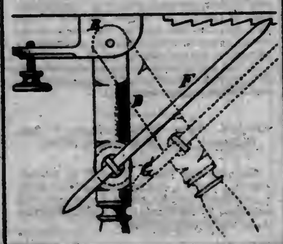
1. A hinge-leaf having an eli-socket, C', and within the same the transverse bearing *d*, cast with said leaf and socket, substantially as specified.

2. The combination, with the leaves A A', removable cap B, and spindle-arm *c'*, of the spring *c* and its spread arms *b b*, bearing in recesses *a a* in said leaves, substantially as specified.

167,114. Locomotive-Tire Heaters. T. T. Peak, Bidora, Iowa, assignor of one-half his right to F. B. Woodruff, same place. (Filed May 28, 1875.)

Brief.—The inner free edges of the fire-boxes and cap are to be clamped against the faces of the tire, to secure a tight joint.

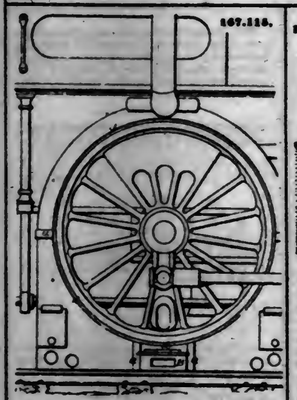
167,115. Fishing-Rods. Edward Payson, Jr., Boston, Mass. (Filed June 28, 1875.)



The improved safety-loop for check-reins, herein described, consisting of a sleeve, *c*, having one or more projecting perforated lugs, *d*, arranged and operating substantially as and for the purpose shown and specified.

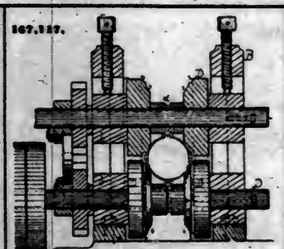
167,116. Pipe and Bolt Vises. George W. Milliner, Charlotte Town, Prince Edward Island. (Filed July 1, 1875.)

167,116.



A sectional tire-heating furnace, adapted to be built up around a tire, and composed of loose fire-boxes and a cap, having free inside circular edges *d* jointed together, substantially as specified.

167,117.

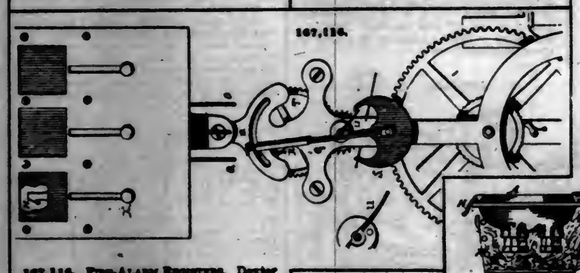


3. The roller-dies D, having each a gripping face, 4, arranged in pairs, to be operative simultaneously on joints on the opposite sides of a hollow post passing through between them, substantially as set forth.

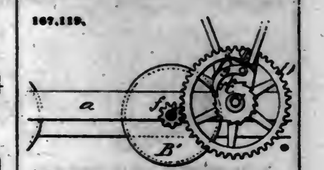
4. The roller-dies D, having each a gripping face, 4, arranged in pairs, to be operative simultaneously on joints on the opposite sides of a hollow post passing between them, each dies being movable vertically, and also longitudinally, on their shafts, substantially as set forth.

5. The combination of roller-dies and intermediate buttress-rolls, arranged for engaging simultaneously the different sides of a hollow post, substantially as and for the purposes set forth.

167,118.



167,119.

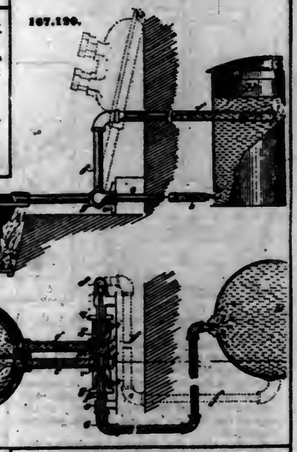


167,120. AIR AND WATER HEATING. Wm. H. Richardson, San Francisco, Cal. [Filed Apr. 5, 1875.]

1. The earthen-heater A A, provided with inner partition *p*, opening *q*, fired pipes *c c'*, and socket S attached thereto, operating with the fired pipe F, provided with outlets *r r'*, groove *m*, set-screw *t*, condensing-pipes *f f'*, and water or air supply B, substantially as and for the purposes herein set forth.

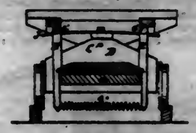
2. The vessel A A, provided with partition *p*, that divides it into unequal but communicating compartments *a* and *b*, whereby, through the indoct and educt pipes *c c'*, a current may be established, as described, substantially as and for the purposes specified.

167,120.



167,121. LUMBER-CART. J. L. Ridgely, Jr., Harrisonville, Md. [Filed July 17, 1875.]

Brief.—Frame supported on truck by perpendicular pieces, which may be forced from their rest by sliding bar. The load then dips and discharges on the heavier side.



1. The combination with a truck, running on a suitable track, of a load-receiving frame, B, having cross-bars B' B' B' that form the bearing of load and pivoted on a medius axis to said truck, as shown and described, whereby the lumber may be dumped by its own weight in the manner specified.

2. The combination, with truck and laterally-tilting frame, of arms E E, pivoted at *d*, having shoulder *e*, and connected at lower end by spring, as and for the purposes set forth.

3. The combination, with locking-arms E E of the spring-held slide-bar, having cam H movable at the time, in the manner and for the purposes specified.

167,118. JOINT-FASTENINGS FOR STAIR-RAILS. William H. Pritchett, Anacostia, D. C. [Filed Mar. 27, 1875.]

1. In combination with a jointed rail, having a round hole or mortise to inclose the nut and washer, the canal-cylindrical bearing-surfaces of the nut or washer adjusted on the joint-bolt to bear against the walls of the round hole or mortise in the rail, substantially as and for the purpose described.

2. The combination of the nut A, washer B, bolt D, and tightening-nut E, substantially as and for the purpose described.

167,119. HAND-CARS. Benjamin F. Hay, Baltimore, Md. [Filed July 3, 1875.]

The vibrating forked levers G G, ratchet-wheels *e*, pawls *g*, and spur-wheel D on shaft C, combined with the pinion *f* on axle *b'*, and sustained by the beams *a a* of the truck-frame A, as shown and described.

167,116. FIRE-ALARM REGISTERS. Dexter L. Pierce and Frank W. Griswold, Providence, R. I. [Filed July 29, 1875.]

Brief.—Striking mechanism, through medium of hook and rod, causes a lettered plate to fall every time a blow is given on the gong.

1. The three series of numbered plates G, sliding in suitable guides, and so operated as to designate the number of the box struck.

2. The levers K, having a cross-bar, J, and rack L, in combination with the lever M and rod O, the whole combined and operating together, in the manner substantially as described, for the purposes specified.

3. The hook S, actuated by the wheel E, in combination with the rod Q, for the purpose of raising the rod O, in the manner and for the purposes described.

4. The combination of the hook S, the rod Q, the wheel T, and the lever U, the whole arranged and operating together in the manner substantially as described.

167,117. MACHINES FOR CASTING THE JOINT-FLANGES OF HOLLOW COLUMNS AND CYLINDERS. J. L. Piper, Pittsburg, Pa. [Filed June 10, 1875.]

Brief.—The rails are designed to engage blocking-caps over and upon the abutting dovetailed flanges of the seven longitudinal sections of the column.

1. In a machine for compressing dovetail joints on hollow posts, a pair of roller-dies, D, having each a gripping-face, 4, for engaging the lips or sides of the female part of the dovetail, in combination with suitable guides, arranged to operate on the opposite side of the hollow post, and above and below the flanges thereof, substantially as set forth.

2. A pair of roller-dies, D, having each a gripping-face, 4, for producing the joint, and an extension, *b'*, which shall bear on the hollow post outside the joint, substantially as and for the purposes set forth.

167,122. PASSENGER-CARS. Mathias A. Bühl, Niederuzwyl, Switzerland. [Filed June 11, 1875.]

1. The combination of a series of adjoining compartments, A, with a passage, B, extending throughout the length of the car along one side of the same and having its doorways in line, as and for the purpose set forth.

2. The lamps *s*, arranged at the intersection of the compartment and passage partitions, as and for the purpose described.

167,122.

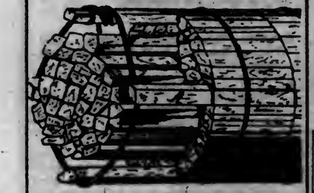


167,123. PROCESSES OF RETRACTING GELATINE FROM SALTED FISH-SKINS. John S. Rogers, Gloucester, Mass. [Filed Feb. 27, 1875.]

The process, substantially as described, of treating salted fish-skins for the procuring of their gelatine, such consisting in certain specified steps—to wit, soaking and agitating them in cool water, so as to desalt and decrude them, and afterward boiling them in fresh water and removing superfluous matters therefrom, and finally straining or filtering and evaporating to dryness the gelatinous solution, as set forth.

167,124. KINDLING-WOOD BALES. John Rowbotham, Philadelphia, Pa., assignor to William Rowbotham, same place. [Filed May 21, 1875.]

Brief.—Separate bundles, set end to end, are fastened together by long sticks partly severed at the divisions.

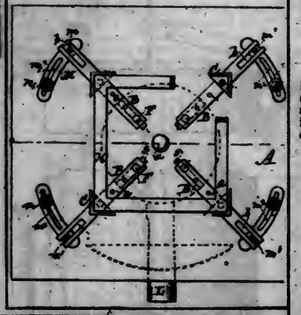


As a new article of merchandise, a bale of kindling-wood consisting of detachable bundles connected together so as to form the said bale, substantially as described.

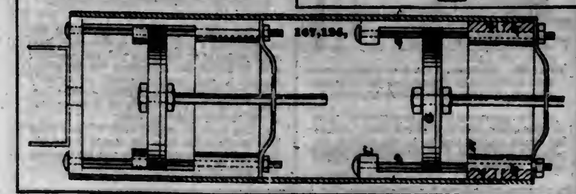
167,125. LIFT-PUMP VALVES. F. A. Rehl, Stockton, Cal. [Filed June 12, 1875.]

Brief.—The rods on the side of the box serve as guides for the valve.

The part A, with its arms B and slotted legs C, the seat E, and the valve G, slotted at opposite sides, as shown, in combination with the bolts or rods D, when the latter serve to secure the parts together and guide the valve at the same time, substantially as herein described.



167,126.



167,126. GRATE-BARS. Henry Ryder, Somerville, Mass. [Filed Feb. 12, 1875.]

Brief.—The stationary bars have cast upon them end caps, which partially or wholly overlap the adjacent movable bars, and prevent them being clogged in their movements.

1. Each stationary grate-bar B, provided with the end caps or grids D D, as described, fastened to or cast in one piece with it, and to so project from it as when the bar is in place in the grate to either partially or wholly overlap the next adjacent movable grate-bars, all being substantially as set forth and represented.

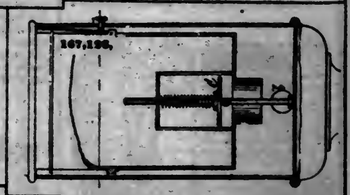
2. The movable grate-bars C, provided with the ends slots *b b* in each, in combination with the stationary bars B and their end caps or grids D, arranged to lap over the movable bars, and to have spaces a between the several grids of each range of them, all as specified.

3. Each movable grate-bar C, as provided with the two recesses or notches *d d*, and the straight friction-roller bearings *e e*, all being arranged as specified.

167,127. CLAMPS. Thos. Sandbach, South Bend, Ind. [Filed Feb. 2, 1875.]

Brief.—Picture-frames of various forms and different sizes are clamped upon the bed-plate by means of four adjustably-attached malleable discs of angular internal form, in connection with a similar number of sliding bars adjustable in slotted segmental plates, the whole being operated by a cam-lever.

167,126.



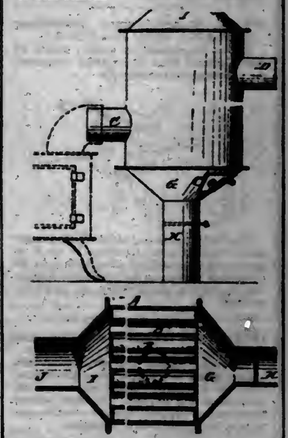
The combination of the adjustable slotted bars M, provided with the studs *m'*, and the bars or rods B, having the slots *b*, constructed to operate substantially as and for the purpose shown and described.

167,128. LAMPS. Bennett B. Schneider, New York, N. Y. [Filed Aug. 12, 1875.]

The combination of a catch applied to lock the reservoir when inserted to its place in the receiver, and a spring-valve applied to the bottom of the reservoir, substantially as specified.

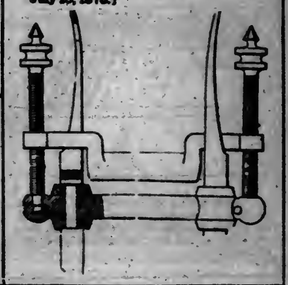
167,129. DRUM-HEATERS. Curtis Skinner, Waterloo, Canada. [Filed Feb. 4, 1875.]

Brief.—Supplied with cold air from the room or from without.



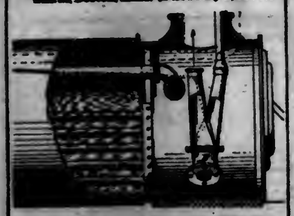
In the suspendent and detachable drum-heater for stoves, shown and described, the shell A having tubes B B, chamber I, inlet and outlet pipes O D, cold-air chamber G having door *a*, and the cold-air duct H with damper X, all combined as set forth.

167,130. EXPANDING BITS FOR BORERS. John Smith, Jr., Gloucester, N. J., assignor to Geo. A. Hoyt, Philadelphia, Pa. [Filed July 10, 1875.]



The combination, in an expanding bit, of the cross-bar A and the parallel bar E, adjustable to and from the bar A, as set forth.

167,181. Exhaust Mechanism. Chas. D. Smith, Boston, Mass. [Filed July 6, 1875.]



In combination with the exhaust-pipe C a steam-engine, a bifurcated pipe, the branches of which extend from a common pipe connected with said exhaust-pipe, the upper end of one branch opening into the smoke-stack, and the other into the open atmosphere, or communicating with a pipe extending to the feed-water tank, or to the blast device, the device being provided with a valve at the junction of its two branches, by means of which the steam may be directed through either at will, substantially as described.

167,182. Wagon-Wheels. John Steiner, Manton, Cal. [Filed June 9, 1875.]

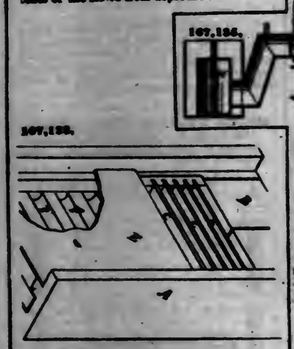
Brief.—Supplementary spokes drawn by screws toward fixed rim, thereby straightening spokes and stretching tire.



The device consisting of the supplementary arms or spokes D and the flange or rim F, together with the cutting screw-bolts *a*, for the purpose of tightening the tire and strengthening the wheel, substantially as herein described.

167,183. Gun-Washers. L. D. Stephens, Gold Run, Col. [Filed Feb. 10, 1875.]

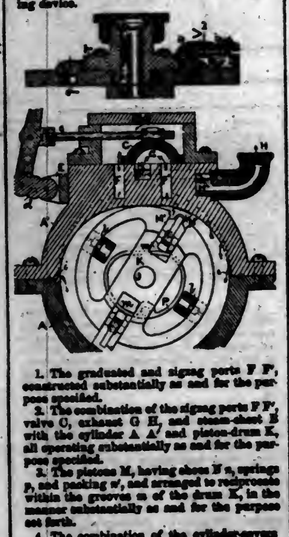
Brief.—A chimney provided with a false bottom, which is separated from the bottom proper by a grating, through which the finer particles of ore, &c., fall. The false bottom serves as a cover, protecting the valuable contents of the sluice from depredation.



A sluice having its bottom B at different levels, and provided with the gratings G, and the riffles F, protected by the plate E, substantially as and for the purpose herein described.

167,184. Rotary Engines. W. M. Stevenson, Sharon, Pa., assignor of one-half his right to W. McGilvray, same place. [Filed Apr. 20, 1876.]

Brief.—The tapering zigzag ports serve to diffuse the steam, and prevent it acting injuriously against any portion of the surface of the drum. The shaft is journaled in adjustable bearing-boxes attached to the cylinder-heads. Should the drum become worn, so as not to form a close connection with the abutment, it can be raised by means of the adjusting device.



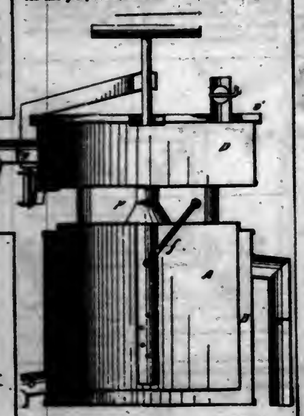
1. The graduated and zigzag ports F F', constructed substantially as and for the purpose specified.

2. The combination of the zigzag ports F F', valve G, exhaust G H, and steam-chest E with the cylinder A A' and piston-drum K, all operating substantially as and for the purpose specified.

3. The pistons M, having shoes N *n*, springs P, and packing *n'*, and arranged to reciprocate within the grooves *m* of the drum K, in the manner substantially as and for the purpose set forth.

4. The combination of the cylinder-covers Q, drum K, and cylinder A A' with the adjustable bearing-boxes T, substantially as and for the purpose specified.

5. The combination of the cylinder-covers Q with the adjustable bearing-boxes T and the adjusting device V, substantially as and for the purpose specified.

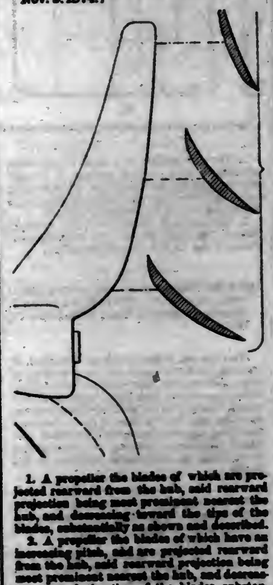


167,185. Apparatus for Preserving Eggs. Frank D. Stone and W. Murray, Cleveland, Ohio. [Filed July 19, 1875.]

1. The apparatus for the treatment of eggs, or other substances to preserve them, consisting of the receptacles A D, the pipe F, air-pump E, and valves *g f*, substantially as and for the purpose described.

2. The combination, with the receptacles A D and the air-pump, of the steam-jacket B surrounding the said receptacle A, substantially as and for the purpose described.

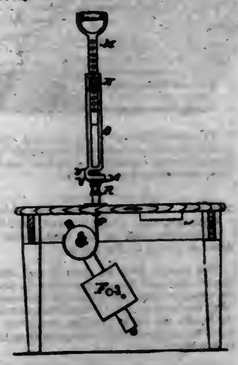
167,186. Screw-Propellers. J. I. Thornycroft, Chiswick, Great Britain. [Filed Nov. 9, 1874.]



1. A propeller the blades of which are projected rearward from the hub, said rearward projection being most prominent nearest the hub, and decreasing toward the tips of the blades, substantially as shown and described.

2. A propeller the blades of which have an increasing pitch, said are projected rearward from the hub, said rearward projection being most prominent nearest the hub, and decreasing toward the tips of the blades, substantially as shown and described.

167,187. Registering-Machines. John Tidmarsh, Brooklyn, N. Y. [Filed June 28, 1875.]



1. The combination, in an operating-machine having a platform, of a rock-shaft having a pulley at or near each end, and provided with an adjustable depending weight, straps secured to and passing around, or partially around, said pulleys, and lifting-handles connected with the said straps, all substantially as and for the object specified.

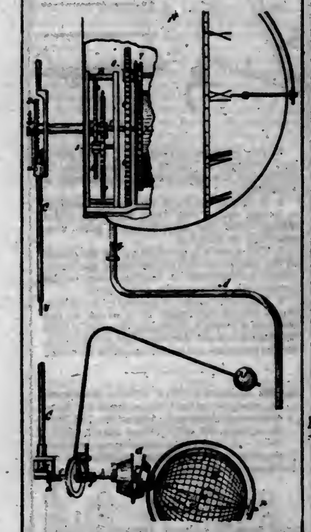
2. The hook D, spring-catch W, and block B, in combination with the straps P and lifting-handles, substantially as and for the purpose described.

3. The combination, with the weighted rock-shaft and the adjusting-screw, of the toothed dial K and nib *j*, substantially as and for the purpose described.

4. The combination of the weight F, constructed in sections, with the rock-shaft C and the device for turning it, substantially as and for the purpose described.

5. The handles constructed in parts M O, connected to each other by means of the guide N and set-screw, whereby the handles may be extended or contracted by a sliding connection, substantially as described.

167,188. Tellurians. Joseph Troll, Belleville, Ill. [Filed May 10, 1876.]



1. In a tellurian, the combination of the sun S, earth E, and connecting-rod C, carrying the earth globe, placed eccentrically to the sun's center, so that the earth in its revolutions around the sun will show its perihelion and aphelion, as described.

2. The combination of the shaft 1, wheel *a*, pinion *c*, connecting-rod and sleeve C, the wheel being made removable, so that the revolutions of the earth and moon around their own axis may be shown independently of the sun, substantially as shown.

3. The combination of the earth E, its connecting-sleeve C, and rod *p*, for attaching it to the sun, and a counter-balance, substantially as described.

4. In combination with the moon M, the independent ring H, provided with a suitable handle, for illustrating at the will of the operator the phases of the moon, substantially as shown.

5. The combination of the universal joint *g* and the ball-caps G, one of the caps being adjustable, so as to show different inclinations of the earth, substantially as specified.

6. In combination with the sun S, the joint *g* in the rod A, for giving the plane of the ecliptic different inclinations, substantially as described and shown.

7. In combination with the sun S, a curved or semicircular gas-pipe provided with a burner, the pipe being rigidly secured to the counter-balance-rod, and arranged so as to revolve around the sun and always keep the burner in the same relative position to the earth E, substantially as specified.

8. In a tellurian, the sun S, having a clock-work within it and a dial upon its face, for representing the hour of the day, substantially as shown and described.

167,189. Overcoats. A. R. Underdown, Philadelphia, Pa. [Filed May 21, 1875.]



An overcoat in which the front edges are inclined from top to bottom of the coat, and are combined with an overlapping flap, as and for the purpose herein set forth.

167,190. Slide-Valves. John W. Vermilion, Elkridge Landing, assignor to C. H. Brown, Baltimore, Md. [Filed July 12, 1876.]

Brief.—When the main steam-port in the valve uncovers the corresponding port in the cylinder, the small opening in the opposite end of the valve registers with the channel in the valve-seat, thereby admitting two currents of steam to the cylinder. As the piston approaches the end of its stroke, steam from the chamber in the valve enters the cylinder and forms a cushion for the piston.



1. The valve H, having the passages *d e*, chamber *e*, openings *f g*, and main steam-ports *h i*, substantially as and for the purposes specified.

2. The valve H, having therein the passages *d e*, openings *f g*, and main steam-ports *h i*, in combination with the apertures *l* and recesses *b* in the chest, and the channels F G, arranged with reference to the cylinder steam-ports D E and recesses *b*, substantially as specified.

167,191. Bottle-Stoppers. W. Vom Hofe, New York, N. Y. [Filed July 30, 1875.]

Brief.—The lever is pivoted at the top of the standard. As the former is pressed down the ball is drawn up and slightly over the latter, thereby firmly pressing and holding the stopper in the bottle-neck.



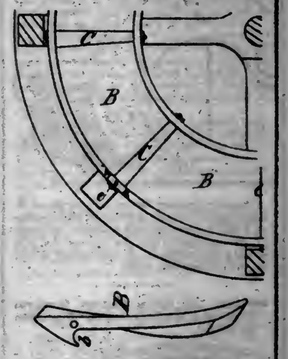
The lever C, provided with two round holes, one to receive the fixed pin *b*, and the other to receive the ball D, in combination with a plate A, which carries the stopper E, and is provided with legs *a*, supporting the pin *b*, and with a semi-head, B, provided with pivot *d*, on which the ball swings, all constructed and operating substantially in the manner herein described.

167,192. Processes of Curetting Calf-Skins. Preston Ware, Jr., Boston, Mass. [Filed June 15, 1874.]

As a new article of manufacture, leather curried, blackened, and finished without oil or other fatty stuffing, as and for the purposes herein set forth.

167,193. Turbine Water-Wheels. Milo B. Washburn, Indian Lake, N. Y. [Filed June 26, 1876.]

Brief.—The wheel is hastened or retarded by the exit of the water in accordance with the head of water, and the invention consists in combining with the buckets of a turbine pivoted gates, which are adjustable to or from the lower edge of the said buckets, whereby the discharge of water from the wheel may be regulated. The wheel has two concentric annuluses, to which are rigidly or detachably secured a number of buckets, which have warped surfaces, and fit snugly to the peripheries of annuluses, between which they are arranged at a suitable distance apart in an inclined position, and with their concaved surfaces upward. The gates are provided with journals, by means of which they are attached to annuluses, as also bolts to keep them in position.



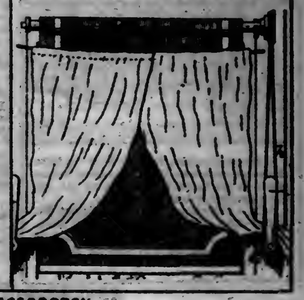
1. The combination of the vibrating and adjustable gates C with a valve-wheel having inclined buckets B, and rings *a a'*, substantially as specified.

2. The clamping-bolts *d*, in combination with the rings *a a'*, buckets B, and vibrating gates C, substantially as specified.

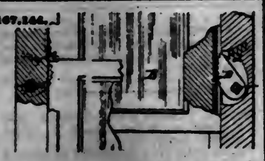
3. The buckets B, having shoulder *b*, and being a warped and concaved surface, in combination with the rings *a a'* and vibrating gate C, substantially as specified.

167,194. Combined Sash-Holders and Curtain-Fixtures. James Weathers, Greensburg, Ind. [Filed July 22, 1876.]

Brief.—A serrated cam operated by a crank-handle, and automatically held by a suitable spring, engages with a rubber strip inserted longitudinally in a groove of the sash, to hold the window in desired position. Combined with this sash-holder is a central pulley, so arranged upon the shaft, next the crank-handle, as to hold and tighten, or adjust, the curtain-cords, thus utilizing the same shaft for a support and cord-tightener in curtain-fixtures.



167,166. [illegible]

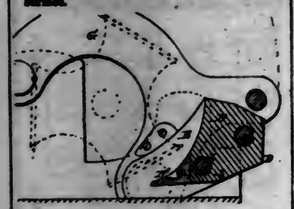


1. The combination, with a window-frame and sash, of the toothed or serrated cam D, spring d, and rubber strip e, substantially as and for the purposes herein set forth.

2. The combination of the cam D, shaft b, lever E, central pulley G, and curtain-cord A, substantially as and for the purposes herein set forth.

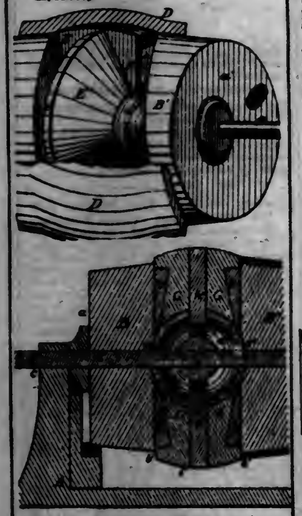
167,165. PLANING-MACHINES. Wm. Wells, Salem, Mass. (Filed June 10, 1875.)

Brief.—Each sectional chip-breaker has a pivoted toe-piece to allow for inequalities of surface.



The chip-breaker, formed of a series of independently-moving sections D, each section of which is provided with a pivoted toe-piece, D', in combination with the spring-rod d, pivot-bar e, and levers G, all substantially as and for the purposes set forth.

167,164. DISK STEAM-ENGINES. Gustavus R. Winkler, Williamsport, Pa. (Filed June 21, 1875.)



1. In a disk-engine, the disk F, in the form of two obtuse cones with hemispherical bosses united at the bases, substantially as and for the purposes set forth.

2. In a disk-engine, the combination of the double-cone disk F and the diagonal abutments E F', the several parts constructed and arranged substantially as and for the purposes set forth.

3. In a disk-engine, the combination of the diagonal parallel plane heads b and the curved casing D, the whole inclosing a diagonal chamber, E, of the form of a central segment of a sphere, substantially as described.

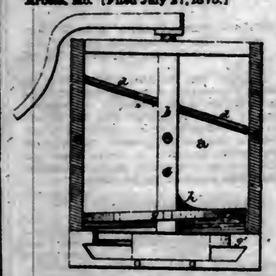
4. In a disk-engine, the combination of the pistons G, having rounded outer ends, and the diagonal disk-chamber E, with parallel plane sides, having the rounded casing D, substantially as and for the purposes set forth.

5. In a disk-engine, the combination, with the disk E', of the pistons G, the spring g', and cross-piece g, constructed and arranged substantially as and for the purposes set forth.

6. In a disk engine, in combination, the double-cone disk, having the pistons G and the diagonal disk-chambers E E, all constructed and arranged substantially as and for the purposes set forth.

7. In a disk-engine, the combination of the disk E', the disk-chamber E and the ports H I, adapted to admit and exhaust steam continuously upon each side of the disk, for the purpose of balancing the same, substantially as explained.

167,167. BRICK-MACHINES. Daniel Wood, Arbela, Mo. (Filed July 27, 1875.)

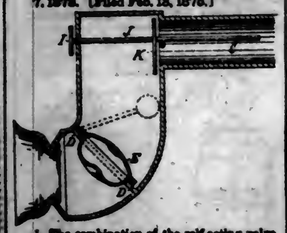


1. In a brick-machine, the false floor g, secured to the shaft b so as to revolve with it and close the opening through the floor over the molds when the molds are taken away, to prevent the clay from running out, as described.

2. The combination of the false floor g, secured to the revolving shaft b, carved plate h, for forcing the clay into the molds, and lever 4, for pushing the molds from the supporting-frame 1 3, as and for the purposes specified.

REISSUES.

6,606. STEAM-TRAPS. C. A. Frederickson, Brooklyn, N. Y. Patent No. 136,421, dated Feb. 4, 1873; reissue No. 6,606, dated Oct. 7, 1873. (Filed Feb. 13, 1875.)

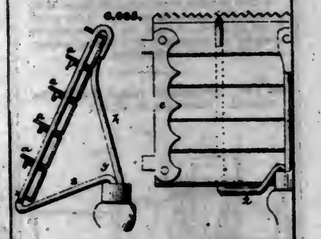


1. The combination of the self-acting valve E, closing by its own weight, the valve-seat D', and guards to prevent lateral movement of the valve, substantially as and for the object specified.

2. The indicator composed of the plate I, rods J J, and plate K, in combination with a sparking-tube, substantially as shown and described.

6,607. CURRY-COMBS. Wm. H. Lawrence, New York, N. Y., assignor to the Lawrence Curry-Comb Company. Patent No. 120,893, dated May 9, 1871. (Filed Mar. 29, 1875.)

Brief.—The teeth are formed on an edge or the edges of a series of trough-shaped plates, toothless edges of which brace the contiguous toothed plates. The handle is attached to the plates by wires passing through them and bent back at the end, and an inclined brace strengthens the connection.



1. The curry-comb containing comb-plates and contiguous plates without teeth, to strengthen the comb-plates, substantially as specified.

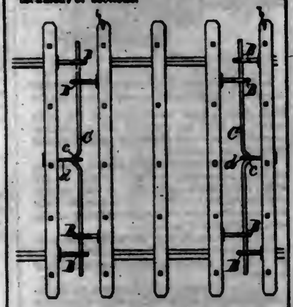
2. A comb-plate for a curry-comb, made in a trough shape, with teeth upon the wider flange a, and the other flange, b, plain, substantially as specified.

3. The wires 2 2, extending from the shank of the handle through the flanges of the comb-plates, and returned at the front edge of the curry-comb, substantially as set forth.

4. The combination, with a curry-comb having a handle connected by a shank to the comb, of a brace, h, extending diagonally from the handle toward the front edge of the comb, for the purposes and substantially as set forth.

6,608. HARROWS. W. S. O'Brien, Kewanee, Ill., assignor to the O'Brien Brothers' Manufacturing Company. Patent No. 156,643, dated Sept. 29, 1874. (Filed July 7, 1875.)

Brief.—A bend in the coupling-rod prevents it slipping out of place, and permits easy detachment of sections.



The coupling-rod C, having a crook or loop, c, arranged to operate with a hook, d, for securing said coupling-rod in the ears B B and the harrow sections to each other, substantially as described, and for the purpose specified.

6,609. MARKING' COMPASSES. H. S. Ritchie, Brookline, Mass. Patent No. 99,195, dated Apr. 7, 1869. (Filed July 27, 1875.)

1. The combination of the auxiliary air-vessel or indicator E and the connecting-rod B with the magnet or magnets g, or the same and its or their air-tight or buoyant case D, the whole being arranged within the vessel or case A, to contain water or other proper fluid, and so as to operate together substantially as above specified.

2. The combination of either or both the buoyant air-vessels D E with their shaft or rod B by means of gimbals h, the shaft or rod B being arranged and supported within a case, A, substantially in manner and so as to operate as described.

3. The combination of an auxiliary buoyant vessel, c, with the rod or connector B, the magnet, or the same and its buoyant case D, and the auxiliary case or vessel A, containing water or other suitable fluid, so as to operate therein substantially as hereinbefore specified.



4. The compass-card, having the cardinal divisions marked upon it, affixed to the external periphery of the float E, substantially as specified.

5. The combination of a hollow globe, b', open at top and bottom, and its supporting-gimbals, with the water case or vessel a, and the magnet buoyant air-vessel therein.

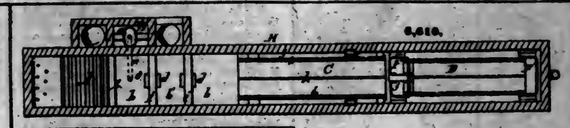
6. The magnet air-vessel, as made of an elongated form, and as having its magnet or magnets arranged lengthwise within it, substantially as represented in Figs. 6, 7, and 8 of Sheet 2, and as hereinbefore specified.

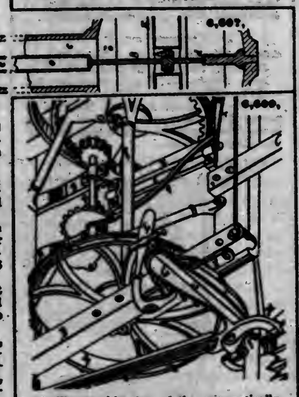
7. The combination of two or more buoyant radial floats or arms, a^1 a^2, with the elongated magnet-vessel, the said arms being for the purpose hereinbefore stated.

8. The combination of a graduating-ring, f', with the radial-armed float E, its connecting-rod B, and the magnet-float D, when arranged and combined within a water-vessel, A, in manner and so as to operate substantially as described.

9. In a mariner's liquid compass, the float which carries the indicating-card therefor, as made with one or more openings for the passage of the liquid through it, for the purpose specified.

6,610. [illegible]





1. The combination of the automatically-adjustable head-piece G, swivel or turn piece M, with the cutting apparatus, substantially as and for the purpose set forth.

2. The combination of the swivel-piece M, the shoe l, the flexible joints o e, and the head-piece G, so that the shoe and front part of the cutter-bar may have an automatic tilting motion independently of the up-and-down movement of said head-piece, substantially as specified.

3. In a two-wheel harvesting-machine, having an axle connecting the wheels, a support for the driving mechanism of the cutters, made in one piece, the weight of which and that of the driving mechanism of the cutters being arranged between the main wheels, and sustained by the axle thereof, substantially as described, and for the purpose set forth.

4. The piece D, which supports the intermediate shafts and gear-wheels, constructed substantially as described, to form a shield from the under side to the crank-shaft e, substantially as specified.

5. The slotted lever L, movable on its fulcrum-pin, in combination with the head-piece G and cutting apparatus, as and for the purpose set forth.

6. The adjustable rod or stop c, head-piece G, and swivel-piece M, in combination with a cutting apparatus that is flexible at its inner end and is automatically adjustable, substantially as described.

7. The inclined ratchet springs and pawls, arranged on the axle of the driving-wheel, in combination with the cams h, substantially as described, and for the purpose set forth.

6,611. FURNACES FOR REDUCING ORES OF PRECIOUS METALS. James H. Boyd, Chicago, Ill. Patent No. 144,184, dated Nov. 4, 1873. (Filed Jan. 9, 1875.)

Brief.—Ore is pulverized, fed through hopper nearest the stack into the revolved desulphurizing-cylinder, passed through connecting-pipe into revolved roasting-cylinder, and onto the reducing-hearth. Hot air passes through the desulphurizing-chamber to oxygenize the agitated ore. Fluxes are introduced by the second funnel to the roasting-chamber. Slag runs continuously from the surface of metal in the reducing-chamber. Heavy metals are stirred in contact with lead. Bullion formed of lead and precious metals is withdrawn into the overflow-pot, which has a gate to regulate the height of metals in reducing-chamber. Iron, copper, &c., are raked off. Sections and condenser may be applied to air-outlet to save vaporized products. Products of combustion pass through reducing-chamber and through roasting-cylinder, and around the desulphurizing and oxygenizing cylinder. Cold air enters at the rear and bottom of the furnace, and passes forward to the grate.

1. The combination of the cylinder D, heated on the outside only, and the cylinder C, receiving the flames directly within, as specified.

2. The combination and arrangement, substantially as shown and described, of the inclined revolving ribbed cylinders C D, severally heated, as described, and reducing-chamber B, constructed and operating in the manner essentially as described.

3. The reducing-chamber B, provided with the hearths b b' b'', bridges c c' c'', and ducts d, substantially as specified.

4. The combination and arrangement of the fire-grate A, reducing-chamber B b b' b'', cylinder C, and cylinder D, all inclosed by the furnace-walls, substantially as specified.

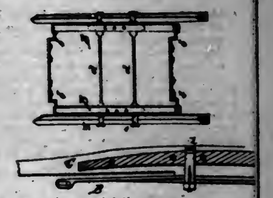
5. The combination of the cylinder C, friction-rollers v v, cogged rim T, cog-wheel S, shaft g, spider r, cylinder D, worm P, shaft P, and screw Q, substantially as specified.

6. The arrangement and combination of the ingress k, air-space K, arches n n', compartment J, air-space M, and grate A with the reducing-chamber E, cylinders C and D, and compartment J', for the purpose of warming the air to supply the grate, substantially as specified.

7. The combination and arrangement, with relation to the cylinders C D and reducing-chamber B, of the funnel-pipes E E' E'', for feeding in at various points the pulverized ore and fluxes and reducing agents during the operation of the furnace, substantially as specified.

8. The combination of the reducing-chamber B, divided into the hearths b b' b'' at different levels, the ducts d, condenser-pipe e, and overflow-pot W, whereby the height and flow of the metals in the reducing-chamber may be regulated, substantially as specified.

6,612. VEHICLE-SPRINGS. Edwin Chamberlin, Troy, N. Y., assignor to himself, Leo Chamberlin, and Edwd. Chamberlin, same place. Patent No. 151,274, dated May 26, 1874. (Filed July 26, 1875.)



1. The side bars A and springs B, in combination with transverse bars d, forming a center bearing for the springs B, substantially as herein set forth.

2. The side bars A, cross-bars d, and springs B, either beneath or inside the side bars, in combination with the body D, the springs being connected to the side bars to form a center bearing for the springs, and the body being connected to the springs near their ends, substantially as and for the purposes herein set forth.

3. The body-loops b, provided with pivots c, in combination with springs B and bars A and d, substantially as and for the purpose set forth.

4. The plate C, in combination with the bar A, substantially as and for the purpose set forth.

6,613. GRAIN-PURERS. Charles Fitzhenry, Tiffin, Ohio. Patent No. 109,609, dated June 1, 1875. (Filed Aug. 11, 1875.)

Brief.—Slits the rubber radially to facilitate contraction and expansion of it.

One or more radial slits, C, in the periphery of the rubber collar, substantially as described.



6,613. FLASKS AND BOTTLES. WM. T. FRY, Brooklyn, N. Y. Patent No. 40,269, dated Oct. 20, 1863. [Filed July 20, 1875.]

Brief.—A screw-collar fastened upon the neck in any suitable manner, adapted to receive a screw-cap, cork or rubber lined, and secure it upon the mouth of the bottle, so that the lining material shall form a tight and impervious joint with the edge of the neck of the bottle, so preventing access of the liquid to either the metal or the cement with which the collar may be secured to the neck.

The combination of the screw-collar C, fastened upon the glass neck A in any suitable manner, and the screw-cap B, provided with the cork or other elastic top-lining D, adapted to force and hold the lining D down upon the edge of the glass neck and form an impervious joint therewith, substantially as shown and described.

6,614. STRAINERS AND FUNNELS COMBINED. C. W. HEERMANCE and L. H. HEERMANCE, New York, N. Y. Patent No. 123,068, dated Nov. 12, 1872. [Filed July 3, 1875.]

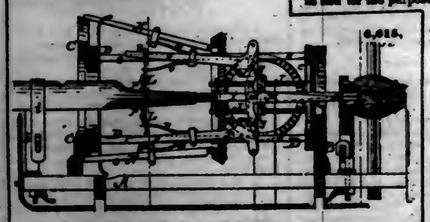
Brief.—When not desirable to use the strainer and funnel together, the former may be swung up by the hinged device shown.



As a new article of manufacture, the strainer C D, funnel A B, and the hinged device E, constructed and combined, as and for the purposes described.

6,615. MACHINES FOR TURNING AXLES. W. H. Holley, Rochester, Ind., assignor, by mesne assignments, to Williams, White & Co., Moline, Ill. Patent No. 106,264, dated Aug. 16, 1870. [Filed May 21, 1875.]

Brief.—The cutter which shapes the axle is secured to one end of a lever, and this lever is pivoted to a revolving frame, which carries it and the cutter around the axle in its cutting operation. The action of the cutter is controlled by the bearing of the opposite end of the lever against the inner face of the thimble to which the axle is fitted.



1. A lever or series of levers carrying at one end a cutter arranged to operate on the axle, with its opposite end bearing against the inner surface of a thimble, in combination with mechanism, substantially such as described, for imparting to said lever a rotating and also a longitudinal movement, as set forth.

2. The combination and arrangement of the rotary frame D, longitudinally-sliding frame I, and transversely-sliding cutter-heads L, substantially as herein shown and described.

3. The combination, with the frame I, herein described, of the two sets of nuts n n, which can be adjusted to reverse the direction of the feed, as specified.

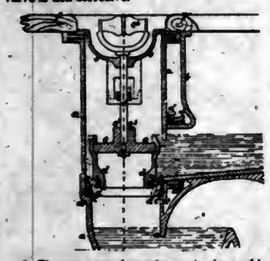
4. The cutter-heads L, levers r, links s, and the levers M, which revolve in the thimble, combined and arranged substantially as shown and described.

5. The combination of the pressure-levers N with the cutter-heads and the fixed cam P, substantially as and for the purpose herein shown and described.

6. The springs V V, combined with the levers r, links and levers M, to cause their simultaneous action, in the manner set forth.

6,616. WATER-CLOSETS. Josiah George Jennings, Palace Wharf, Stangate, England. Patent No. 127,062, dated Mar. 26, 1872. [Filed July 14, 1875.]

Brief.—The water-supply to the bowl is measured by means of the graduated opening in the retarding-piston. The seat of the pull-valve is non-corrosive.



1. The non-corrosive valve-seat c, in combination with the valve d, pan b, and siphon-trap e, substantially in the manner set forth.

2. The combination of a retarding-piston, f, and a graduated channel, l, with the supply-valve and with the pan of a water-closet, whereby the quantity of water admitted to the pan may be regulated substantially as described.

3. The siphon-trap e, with a side opening or socket, e', in the ascending limb thereof, to which a pan, b, is adapted, substantially as set forth.

6,617. HORSE HAY-RAKES. Benj. Owen, Dayton, Ohio. Patent No. 159,340, dated Feb. 2, 1875. [Filed Mar. 13, 1875.]

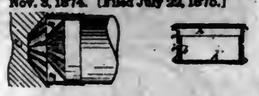
Brief.—The rake is operated by toggle-levers, and held in working position by a foot-lever.

1. The hand-lever M, having two arms joined at the outer ends, the upper of which serves as a bearing for the projecting end of the foot-lever G, and the lower comes in contact with the bar K of the shafts, substantially as described, and for the purpose specified.

2. The combination of the hand-lever M, constructed as described, with the foot-lever G, bars n, and the tilting head of a horse hay-rake, when the respective parts are arranged, as and for the purpose specified.

3. The bar D, having its forward edge rounded, as shown, and the slotted guide-bar E, forming a rigid portion of the rake-head, in combination with the teeth F, passed through the bar E, and the orifices in the vertical portion of the bar D, and secured to its rounded edge by means of the clips c, which allow them a slight vertical, but very little lateral, motion, substantially as described, and for the purpose specified.

6,618. PAPER BOXES. ANNE POWERS, New York, N. Y., executrix of TIMOTHY J. POWERS, deceased. Patent No. 156,591, dated Nov. 3, 1874. [Filed July 22, 1875.]

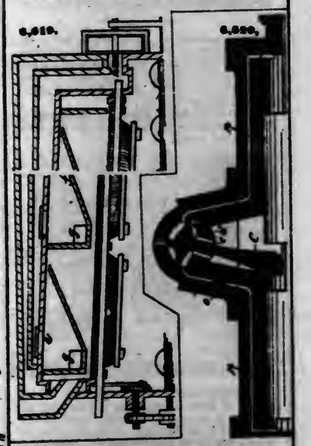


As a new manufacture, a paper box the body or cover of which is composed of a hollow cylinder, one end of which, to form the bottom or top, is folded inward and pressed without being cut, and covered with a disk of paper, as described.

6,619. FLOUR-BOLTS. George T. Smith, Minnesota City, and Aaron Smith, Hastings, Minn. Patent No. 126,406, dated Feb. 4, 1873; reissue No. 6,106, dated Dec. 29, 1874. [Filed Apr. 1, 1875.]

1. In combination with a flour-bolting surface having different numbers of cloth, adapted to deliver the material in different grades of fineness, a movable or traveling brush, or a series of movable or traveling brushes, below the bolt-cloth, and arranged on a line or lines parallel with the conveyer of the machine, and moving at right angles thereto, for cleaning the bolt-cloth without carrying material lengthwise of the machine, substantially as set forth.

2. In a flour-bolting machine having different numbers of cloth, adapted to deliver the material in different grades of fineness, and having an air-chamber divided into sections by means of transverse partitions or walls, a series of brushes, each shorter than the spaces between said walls or partitions, and so arranged that each brush shall traverse a section of cloth corresponding to a section of the air-chamber, substantially as set forth.



6,620. ROCK-DRILLS. Edwd. S. Winchester, Boston, Mass. Patent No. 165,045, dated July 13, 1875. [Filed Aug. 17, 1875.]

1. The solid plug-valve provided with the steam-passages c, less in diameter than the ports b, to prevent the entrance of fragments of rock or other foreign material.

2. The solid plug-valve provided with the ports b, with the steam-passages c arranged at right angles thereto, whereby elongated particles entering the passages c are prevented from passing through the ports b, as set forth.

3. In combination with the oscillating valve provided with the arm C, the inlet-passage O, arranged to deliver the inflowing steam or air directly against said arm, and thereby assist in completing the full movement of the valve, whereby the engine is prevented from stopping on its forward stroke when the piston stops short of its full movement, as set forth.

4. In combination with the spring-arms C of the valve, the rubber or other elastic filling F, substantially as and for the purpose set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 9. TUESDAY, AUGUST 31, 1875. PRICE { $4.00 per year—single. $4.00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

GEORGE E. KING *vs.* ROBERT WERNER.

[*In equity.—Before* BLATCHFORD, *J.—August*, 1874.]

The claim of reissued letters patent No. 3,001, for "Improvement in Fluted Puffing," granted Geo. E. King, June 23, 1868, (original February 26, 1867,) namely, "The within-described puffing as a new article of manufacture, the same being formed by crinkling, gathering, or irregularly waving one portion of the strip of muslin or other material simultaneously with fluting it along the edges of such portion, as at *g*, and forming flattened borders or portions *h* outside of the flutes, or between two next adjacent rows of them, to receive stitching, substantially as specified," claims the puffing without reference to whether it be made by hand, or by machinery, or how otherwise, and the claim held void in view of the prior existence of a puffing known as the Pipe puffing formed on a sewing-machine.

The only proper construction of the word "simultaneously" in this claim is merely that, in the finished article, one portion is seen to be crinkled, and at the same time the parts at the edges of each portion are seen to be fluted, and the portions outside of the flutes are seen to be flattened borders.

To regard the word as referring to the idea that, in any given cross-section, the crinkled portion, the fluted portions, and the flattened borders are formed at one and the same time, is to introduce an element which has regard to something beyond the conformation, shape, and structure of the puffing as an article of manufacture, and which has to do with the process of making it. This would make the claim repugnant to the subject-matter of the patent.

The fact that the flutes of the Pipe puffing being made by the process of gathering were not as regular and uniform as are flutes made by fluting-rollers, raises a question of degree and of appearance, and not of conformation.

The claim of reissued letters patent No. 3,000 for "Improvement in fluting-machines" granted to George E. King, June 23, 1868, (original February 26, 1867,) namely, "The guide E, constructed with one or more curved or arched portions, *c'*, in combination with suitable fluting-rollers, substantially as herein set forth, for the purpose specified," presents, as the main feature of the machine, the device for pulling away the fabric before the fluting-rollers grasp it too firmly, so as to get an increased width of fabric opposite the pair of plain rollers, such device being an arched guide, the arch of which raises up the fabric, so that the fabric rides over it, and so is pulled away from the fluted parts of the rollers.

The Werner machine uses a detent or finger and a platform opposite the plain rolls of the rollers, the fabric being held back from the fluting-rollers by the pressure of the detent upon the platform. The detent and the platform form the two surfaces of a guide, between which the fabric passes, and they divert the fabric from what would otherwise be its course, so as thereby to pull out an extra width. The variation of construction is merely mechanical and not substantial.

[*S. D. Law* and *Manuel A. Kurzheedt*, for complainant. *Orlando Dorsey* for defendant.]

BLATCHFORD, *J.*:

This suit is brought on two reissued letters patent granted to the plaintiff. One is No. 3,000 for an "improvement in fluting-machines." The other is No. 3,001 for an "improvement in fluted puffing." Both of them are dated June 23, 1868, and were issued on the surrender of original letters patent granted to the plaintiff, as inventor, February 26, 1867.

The specification of No. 3,001 says:

> My invention consists in the production, as a new article of manufacture, of a puffing applicable to shirt-bosoms, trimming, or other purposes of dress, in which the completed article, prior to laundering or washing, is made up of either a single row, or two or more parallel series of rows, each consisting of flattened borders with flutes running along their inner edges, and a puffed, or gathered, or crinkled surface or surfaces between the flutes.

It further says that the puffing represented in the drawing accompanying the patent consists of flattened portions with flutes arranged along the inside edges of such flattened parts or borders, and with a crinkled or gathered surface to the portions lying between the flutes, longitudinal rows of stitching being afterward, it may be, passed through the flattened borders, at, say, their edges "to render permanent the conformation of the puffing," and, if necessary, stripe or tapes basted on along such flattened parts. It further says:

> The mechanism, where machinery is used for the purpose necessary to produce a puffing of this character, may be varied, but

for the purpose of illustrating how, or one way in which the same may be done automatically, or by mechanism, it will suffice here to refer briefly to a machine for the purpose, which was secured to me by letters patent No. 62,492, of the United States, bearing date February 26, 1867, and which is now the subject of an application for reissue. Thus the piece of muslin or other fabric may be entered through a hollow inclined guide formed partly of an arched and partly of a straight form to or between rollers and pressers, the rollers being made with flattened ends or portions that act in concert with the pressers, to form the flat portions A of the puffing, and with grooves or flutes inside of such flattened ends, to establish the flutes g, while the intervening portions of the rollers opposite the arched portions or portions of the guide are further from each other, and simply serve to act in a light manner upon the curved surfaces of the puffed, gathered, or crinkled portions i of the material as produced by or through the arched portions of the guide, that give an irregular or wavy surface to such portions by reason of the width of the material passing out of or through the arched portions of the guide being greater than the distance between the fluted portions of the roller. The longitudinal rows of stitching e, in or along the flattened portions A, may either be put in by hand or by any suitable sewing-machine. A puffing is thus made having gathered, crinkled, or wavy portions i without having recourse to laundering or washing to effect such conformation, thereby economizing labor and material, and putting the article in a finished state on the market in that fresh condition which washed goods are devoid of.

The claim is in these words:

The within-described puffing, as a new article of manufacture, the same being formed by crinkling, gathering, or irregularly waving one portion of the strip of muslin or other material simultaneously with fluting it along the edges of such portion, as at g, and forming flattened borders or portions A outside of the flutes, or between two next adjacent rows of them, to receive stitching, substantially as specified.

The article of manufacture claimed, the patentee denominates, as a whole, a "puffing." As he describes it in the claim it consists of a crinkled, gathered, or irregularly-waved portion, of a fluted portion along each edge of such first-named portion, and of a flattened border or portion outside of each fluted portion, to receive stitching, to render permanent the conformation. The specification points out, as features of the article, that it presents the appearance it does without being washed or laundered, and that its gathered, crinkled, or wavy portion has such conformation given to it without having recourse to laundering or washing.

A patent had been granted to the plaintiff on the 23d of October, 1866, for an "improvement in fluted puffing for shirt bosoms," in which he claimed, as an article of manufacture, what he called a "fluted puffing," made by fluting, by mechanism, and in a regular manner, a strip of muslin or other material throughout its length, and compressing and flattening down the extremities of the flutes to form straight and regular borders on either and opposite sides of the flutes, and afterward machine-stitching said borders along and at the union of the borders with the flutes. It is manifest that this article, for the space between the flattened portions, consists, as made, and before being washed or laundered, wholly of flutes; that, in order to convert such fluted portion into a crinkled, gathered, or irregularly-waved portion it is necessary to launder or wash it, and that such conversion can be made by laundering or washing it. Figure 1 of the drawing represents a face view of the puffing "previously to its being washed," and represents it as wholly in flutes between the flattened portions. Figure 4 of the drawing represents a face view of the puffing "after having been washed and as sewed between the plaits of a shirt-bosom," and represents all the part that is in view, which is the part between the flattened portions, as being crinkled, gathered, or irregularly waved. In view of this patent of 1866, the reference in the specification of reissue No. 3,001 to the formation of the crinkled portion of the puffing, without recourse to washing or laundering, becomes intelligible.

The specification of No. 3,000 says:

This invention is designed for making puffing applicable to shirt-bosoms, trimming, or other purposes of dress, in which the article as it issues from the machine is (without having recourse to laundering) delivered in a complete form, either singly or in two or more series or rows, composed of flattened borders with flutes running along their inner edges and puffed or crinkled surfaces between the flutes. The invention consists in a guide constructed with one or more curved or arched portions, in combination with one or more suitable fluting-rollers, whereby the material, in passing through the machine, is fluted and contracted laterally as it were, or drawn up between the flutes, to produce the required crinkled surface or surfaces in the puffing."

Two fluting-rollers one above the other are placed in a frame with their ends projecting through large vertical slots formed in the ends of the frame. The lower roller is supported in semicircular bearings formed in the lower ends of the slots, and is furnished at one end with a crank. The upper roller works in semicircular bearings formed in sliding blocks placed upon the ends thereof, and pressed down upon the same by a spring, the tension of which may be regulated by means of a vertical screw situated centrally in the top of the frame.

When desired, the upper roller may be held within a given distance of the lower roller by vertical set-screws, situated one at each end of the top of the frame, and acting upon the sliding or adjustable bearings. The puffing is represented in one of the figures of the drawing, and is formed of strips of any suitable fabric, and of a width, when finished, nearly or quite equal to the length of the fluting-rollers, and is formed with longitudinal portions, which are fluted transversely to the length of the strip; also, with portions outside of the fluted portions, in which the fabric is pressed flat, and through which longitudinal rows of stitching are formed, to render permanent the conformation of the puffing; and, also, with portions between the fluted portions, which are intended to be wider than the parts just described, and which are puffed or crinkled in such manner as to possess an irregular wavy surface. In order to form these several portions of the puffing, each of the fluting-rollers is formed with as many annular or circumferential series of grooves and flutes as there are fluted portions upon the puffing, with as many plain narrow annular faces as there are flattened portions, and with as many plain and comparatively broad portions as there are puffed portions in the finished puffing, each of the said parts of the rollers being of the same width as that portion of the completed puffing which it is designed to shape, and the plain and comparatively broad circumferential faces or portions being of such diameter that, when the two rollers are in proper position, those upon one roller will be situated at such distance from those upon the other, that no considerable pressure will be exerted upon the fabric in passing between them, and the several series of grooves and flutes upon one roller gearing into those upon the other roller. There are pressers, the rearmost end of each one of which is curved downward and fitted upon the upper rearmost part of each of the plain narrow annular faces of the lower roller, while its forward end is curved upward in contact with the forward sides of the corresponding plain narrow annular face upon the upper roller, the rearmost ends of the pressers being pressed against the lower roller by set-screws passing through a horizontal bar or brace secured upon the rear of the frame. Fixed upon the forward side of the frame, in front of the lower roller, is a horizontal supporting-brace, which has fixed upon it an inclined plate, upon which is supported an inclined guide, E, which is composed of two pieces of sheet metal secured one over the other, at such a distance apart as to permit the passage of the cloth or fabric between them, and those parts of the guide in front of the plain and comparatively broad cylindrical portions of the rollers are curved up or arched transversely, as shown at a', in such manner that the width of the fabric passed between each pair of such plain and comparatively broad portions will be greater, if stretched out to its full extent, than the width of said portions, so that the fabric, by means of its increased width, will be crinkled or puffed in passing between said portions. The end of the strip of fabric from which the fluted puffing is to be formed, is passed into and through the guide, and between the rollers, and a rotary motion is communicated to the rollers. The fabric is drawn lengthwise between the rollers, those portions thereof which pass between the several opposite series of grooves and flutes in the two rollers being fluted, while those portions thereof which pass between the smooth annular faces of the rollers, being formed into gathers by the fluting of the fabric at the sides or edges thereof, are pressed flat by passing under the pressers, as the fabric is drawn along, at the same time that those portions of the fabric drawn through the curved or arched parts of the guide, being, if stretched to their full extent, of a width greater than that of the smooth and comparatively broad cylindrical portions, and being also gathered by the fluting formed at their sides or edges, are caused to assume a crinkled or puffed form, as they are passed between the said smooth and comparatively broad portions, the distance between such opposite portions being such that no pressure is exerted upon the fabric passing between them beyond that required to simply press the convex surfaces thereof downward to a sufficient degree to insure the shaping thereof into the puffed condition just described. The extent to which the material will be thus contracted laterally, as it were, or drawn up between the flutes, will be governed by the excess in length of the arched portions of the guide over a straight line or lines connecting such arched portions at their base. By these means the fluted puffing is brought into the form required in the finished article, without the necessity of washing the same in order to bring the puffing into such form. To complete the puffing, longitudinal rows of stitching are formed in the flat parts of the puffing to retain it in shape. The foregoing description is found in the specification. The claim is in these words:

The guide E, constructed with one or more curved or arched portions, a', in combination with suitable fluting-rollers, substantially as herein set forth, for the purpose specified.

In view of the prior existence of the puffing called the Pipo puffing, it is impossible to sustain reissue No. 3,001. The puffing claimed in that reissue is claimed as a new article of manufacture without reference to whether it be made by machinery or by hand, or how otherwise. Any prior article which had as its characteristic features, as an article of manufacture, the features set forth in that reissue as the characteristic features of the puffing claimed therein, is an anticipation of the patent. The Pipo puffing was made on a sewing-machine, but it was formed complete without laundering or washing, and it consisted of flattened borders, with flutes running along their inner edges, and a puffed or gathered or crinkled surface between the flutes, and longitudinal rows of stitching were passed through the flattened borders to render permanent the conformation. The flutes were formed by the process of gathering, and were not as regular and uniform, each flute with every other flute, as where flutes are made by fluting-rollers. But this is a question of degree and of appearance, and not of conformation.

The claim of reissue No. 3,001 speaks of forming the puffing by crinkling one portion of the strip "simultaneously" with fluting it along the edges of such portion, and forming flattened borders outside of the flutes. If the word "simultaneously" be construed as referring to the idea that, in any given cross-section of the strip, the crinkled portion, the fluted portions, and the flattened borders are formed at one and the same time, then an element is introduced which has regard to something beyond the conformation of the puffing as an article of manufacture and its shape and structure when completed—an element which has to do with the process of making it. The specification, in its descriptive part, in no manner makes any part of the invention to consist in any part of any process of making the puffing, or of any machinery or apparatus for making it, nor does it suggest that the parts embraced in any cross section are to be made simultaneously with each other, or that any peculiarity in conformation would result from so doing. Therefore, such a construction of the word "simultaneously" would make the claim repugnant to the subject-matter of the patent. The only proper construction, then, of the word is that it merely means, that, in the finished article, one portion is seen to be crinkled, and, at the same time, the parts at the edges of such portion are seen to be fluted, and the portions outside of the flutes are seen to be flattened borders.

We come now to the consideration of the machine used by the defendant, and alleged to infringe reissue No. 3,000 in making the puffing which is alleged to infringe reissue No. 3,001. The defendant's machine is described in letters patent granted to him January 7, 1873, for an "improvement in crimping and fluting machines." He uses, in connection with fluting-rollers, as the specification of his patent states—

a detent or finger, by which a portion of the fabric is held back, and thereby formed into V-shaped, but more or less irregular, lateral waves and crinkles.

Between the fluted portions of the fluting-rollers are plain zones. The free end of the detent bears against a platform midway of the plain zones. The fabric, in its passage to the rollers, passes over the platform and under the detent, which is a spring, and which so presses the fabric against the platform, while the rollers are drawing the fabric forward, as to detain or hold back that portion of the fabric which is so pressed by the detent, and cause it to be crinkled in the space between the inner edges of the flutes. This result is attained because the same thing is done as in the plaintiff's machine—that is, the width of the fabric passed between the pair of plain zones is greater than the width of such zones, and as the fluting gathers the

fabric, the portion of it which passes between the pair of plain zones is crinkled. The defendant's machine has pressers which make flattened borders along the outer edges of the fluted portions, through which stitching may be made.

The main feature of the plaintiff's machine is the device for pulling away the fabric before the fluting-rollers grasp it too firmly, so as to get the increased width of fabric opposite the pair of plain zones. The plaintiff shows how this is to be done by an arched guide. This arch raises up the fabric. The fabric rides over it, and so is pulled away from the fluted parts of the rollers. The obstacle interposed by the arched guide pushes up the fabric to an apex. There would be no difference in mode of operation if the fabric were pushed down to a given point by an arched guide. The defendant interposes an obstacle which pulls back the fabric from the fluted parts of the rollers. The mode of operation is the same as in the plaintiff's machine, and the result is the same. The only difference is that in one the center of the extra width moves upward as the pull is made, and in the other it does not; but, in each, the detaining instrument diverts the fabric from what would otherwise be its course, so as thereby to pull out the extra width. I think the variation is merely mechanical and not substantial, and that the defendant's machine is an infringement. The detent and the platform form the two surfaces of a guide between which the fabric passes, and these surfaces hold it so as to pull it away from the flutes. The two surfaces of the plaintiff's guide do the same thing.

Reissue No. 3,000 is not successfully attacked as to the novelty of its claim.

As to the Robjohn patent and Robjohn machine, and Robjohn guides 1 and 2, the machine was designed to make two double-fold ruffles at one and the same time. It has no provision for taking up an increased width of material, or for crinkling a central portion of the material. Nor could such guides, or the guides S and T, produce, in connection with the Robjohn machine, the results produced by the mechanism covered by the claim of reissue No. 3,000. The flat Muller guide No. 5 falls within the same category. The Muller guide No. 5, with the arched projection, has not two surfaces between which the material passes; and, used, as it always was, with the Muller rings Nos. 3 and 4, which were diamond embossing-rings, and made a diamond figure on the material, and occupied all the space not occupied by the fluting-rollers, it does not present the combination set forth in the claim of reissue No. 3,000 for the purpose specified in that reissue.

The Weitling machine and apparatus, whether as originally presented to the Patent Office, or as existing and used before King's invention, did not contain the combination of the claim of reissue No. 3,000. Moreover, such use as was made of it before King's invention was wholly experimental, and it was abandoned by its inventor as an abortive experiment.

There must be a decree for the plaintiff, as to reissue No. 3,000, for an account of profits and damages, with an injunction, with costs.

In the two suits brought against the vendors of puffing, on reissue No. 3,001, the bills must be dismissed, with costs.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date August 31, 1875.]

8,583.—Inkstand.—BLOOMFIELD BROWER, New York, N. Y. Application filed July 7, 1875. Term of patent 7 years.

8,584.—Silk Fabric.—JOSEPH COIGNET, New York, N. Y., assignor to HAMIL & BOOTH, same place. Application filed August 14, 1875. Term of patent 3½ years.

8,585.—Glass Fruit-Dish.—GEORGE E. HATCH, East Cambridge, Massachusetts, assignor to NEW ENGLAND GLASS COMPANY, same place. Application filed August 18, 1875. Term of patent 3½ years.

8,586 to 8,589 inclusive.—Carpet.—ALFRED HEALD, Philadelphia, Pa., assignor to HUGH MCCALLUM, ORLANDO CREASE, ANDREW J. SLOAN, and WILLIAM MCCALLUM, same place. Applications filed August 21, 1875. Cases E', F', G', and H'. Term of patents 3½ years.

8,590.—Carpet.—WILLIAM KERR, Philadelphia, Pa., assignor to JOHN GAY, same place. Application filed August 11, 1875. Term of patent 3½ years.

8,591.—Badge.—JOHN S. LITTELL, Newark, N. J. Application filed August 9, 1875. Term of patent 14 years.

8,592.—Fancy Cassimeres.—WILLIAM B. WEEDEN, Providence, R. I., assignor to the WEYBOSSET MILLS, same place. Application filed August 4, 1875. Term of patent 7 years.

8,593.—Flag.—JOSEPH C. DEMING, Norfolk, Va. Application filed August 26, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date August 31, 1875.]

2,857.—Hardware.—FRANK ARMSTRONG, Bridgeport, Conn. Application filed August 10, 1875.

"letters 'F.' 'A.,' arranged in the form of a monogram."

2,858.—Umbrellas and Parasols.—BARNETT & SHAW, Boston, Mass. Application filed July 21, 1875.

"words 'THE TOURIST.'"

2,859.—Beer.—BENJAMIN BATES, Baltimore, Md. Application filed August 23, 1875.

"word 'TONIC.'"

2,860.—Soap.—R. W. BELL & Co., Buffalo, N. Y. Application filed August 6, 1875.

"a pictorial representation showing a scene in a sea-port, the principal figures being a group of emigrants just landed from a vessel."

2,861.—Chemical Compound.—BROWER & Co., New York, N. Y. Application filed July 3, 1875.

"a cut or picture in which is grouped a number of insects, rats or mice, a chest or box, and the picture of a man clad in high hat, long dress-coat, short striped pants, and in the attitude of gesticulation or speech-making; also, the words and letters 'Yankee Rat & Roach Killer.'"

2,862.—Brackets, Children's Savings-Banks, &c.—THEODORE CROMMELIN, New York, N. Y. Application filed January 23, 1874.

"letters 'T. C.,' inclosed within a heart-shaped device."

2,863.—Wood-Stoves for Cooking Purposes.—W. C. DAVIS & Co., Cincinnati, Ohio. Application filed July 31, 1875.

"the word 'FAVORITE.'"

2,864.—Balsam.—JOHN FOLEY, Dayton, Ohio. Case A. Application filed June 14, 1875.

"words 'FOLEY'S INDIAN BOTANIC BALSAM FOR THE LUNGS.' These have been arranged, as shown in the accompanying facsimile, above and below the representation of a landscape, in the foreground of which, and a little to the left, is the figure of an Indian standing upon the bank of a stream, and holding in his right hand a bow, and in his left, partly extended, a bundle of herbs, symbolical of the source from which the balsam is obtained. On the opposite bank of the stream, which is covered with trees, are two deers at the water's edge drinking."

2,865.—Balsam.—JOHN FOLEY, Dayton, Ohio. Case B. Application filed June 14, 1875.

"a cut representing a landscape, in the foreground of which, one at each side, are the figures of two Indians upon the bank of a stream. The one at the left is kneeling upon a rock under a tree, and leveling his gun at a deer standing upon an island in the midst of the stream. The Indian to the right has in his right hand a bow, and in his left a bundle of herbs, representing the source from which the balsam is prepared. On the farther bank of the stream is a thick forest. Over the border of this picture the sun is seen rising, and in his divergent rays is the word 'FOLEY'S.' Just under the cut are the words 'INDIAN BOTANIC BALSAM.'"

2,866.—Lard, Pork, &c.—ANDERSON FOWLER, New York, N. Y. Application filed June 22, 1875.

"the crown and the words 'James Wright' and 'Registered Crown Brand.'"

2,867.—Woven Woolen Fabrics.—GIBSON & TYLER, Minneapolis, Minn. Application filed July 31, 1875.

"a star having five radial points, and the word 'NORTH' arranged within the circle of the points of the star, so that a single letter of the word will be between two of the radials."

2,868.—Bitters.—MORITZ HERZBERG, New York, N. Y. Application filed July 9, 1875.

"words 'Botanic Aromatic Bitters,' and a fac-simile of my signature, 'Morits Herzberg.'"

2,869.—Flour.—IMES, MEYER & Co., St. Louis, Mo. Application filed June 16, 1875.

"device, mark, design, cut, or print of a diadem, and the word or name 'Diadem.'"

2,870.—Flour.—F. W. JENKINS & BRO., Pittsburg, Pa. Application filed June 25, 1875.

"word 'Sun' and the design of a sun rising, setting, or in any other position."

2,871.—Flour.—F. W. JENKINS & BRO., Pittsburg, Pa. Application filed July 14, 1875.

"word 'PENN.'"

2,872.—Flour.—THOMAS C. JENKINS, Pittsburg, Pa. Application filed August 9, 1875.

"words 'Erin's' and 'Irish,' a harp, and shamrock or trifoliate leaves."

2,873.—Soap.—LAUTZ BROS. & Co., Buffalo, N. Y. Application filed July 8, 1875.

"word 'ACME.'"

2,874.—Rubber Erasers.—RHODES LOCKWOOD, Boston, Mass. Application filed June 24, 1875.

"word 'velvet.'"

2,875.—Medical Compound.—HATTIE N. LYON, Flora, Ill., executrix of BRADFORD H. LYON, deceased. Application filed June 24, 1875.

"words and letters 'Truth to All,' 'B. H. L.,' the letters 'B. H. L.' being inclosed in an ornamental scroll or border."

2,876.—Indigo-Blue Dye.—JEROME MARBLE & Co., Worcester, Mass. Application filed June 11, 1875.

"the words 'Patent Indigo Blue Dye' and the letters 'M' and 'D,' with the symbol '&' interwoven in a monogram."

2,877.—Cigars.—MASSACHUSETTS CIGAR-MAKERS' CO-OPERATIVE ASSOCIATION, Westfield, Mass. Application filed July 6, 1875.

"the words 'Lake Pleasant Brand,' in connection with a view of Lake Pleasant."

2,878.—Woven Cotton Fabrics.—MINOT, HOOPER & Co., New York, N. Y. Application filed July 17, 1875.

"the words 'Dwight Company, Chicopee, Extra Heavy,' with an inscribed star."

2,879.—Woven Cotton Fabrics.—MINOT, HOOPER & Co., New York, N. Y. Application filed July 17, 1875.

"combination of words and figures as follows, to wit: The words 'Great Falls' arranged at top, and the word 'Company' at bottom, of a representation of the Falls of Niagara."

2,880.—Woven Cotton Fabrics.—MINOT, HOOPER & Co., New York, N. Y. Application filed July 17, 1875.

"combination of the encircled anchor, the rays, and the words 'Anchor Brand" and 'Dwight Co.'"

2,881.—Rubber Boots and Shoes.—NATIONAL RUBBER COMPANY, Bristol, R. I. Case A. Application filed June 21, 1875.

"words 'IMITATION LEATHER RUBBER.'"

2,882.—Rubber Boots and Shoes.—NATIONAL RUBBER COMPANY, Bristol, R. I. Case B. Application filed June 21, 1875.

"the words 'GOODYEAR'S RUBBER LEATHER.'"

2,883.—Rubber Boots and Shoes.—NATIONAL RUBBER COMPANY, Bristol, R. I. Case B. Application filed July, 7, 1875.

"the word 'MONITOR.'"

2,884.—Rubber Boots and Shoes.—NATIONAL RUBBER COMPANY, Bristol, R. I. Case A. Application filed July 7, 1875.

"the word 'CENTENNIAL.'"

2,885.—Medical Compound.—AUGUSTA M. RODGERS, Brooklyn, N. Y. Application filed June 18, 1875.

"the words 'WHITE FLUID, OR DR. ABERNETHY'S CURE FOR BRIGHT'S DISEASE OF THE KIDNEYS.'"

2,886.—Medical Compound.—AUGUSTA M. RODGERS, Brooklyn, N. Y. Application filed August 4, 1875.

"the words 'Abernethy-ated Remedies.'"

2,887.—Flour.—GEORGE SWIGART, Belleville, Ill. Application filed June 16, 1875.

"the design, device, mark, cut, or print of a magnolia flower."

2,888.—Tin-Plate.—N. & G. TAYLOR COMPANY, Philadelphia, Pa. Case A. Application filed June 28, 1875.

"representation of an eagle."

2,889.—Tin-Plate.—N. & G. TAYLOR COMPANY, Philadelphia, Pa. Case B. Application filed June 28, 1875.

"the figure of a key-stone."

2,890.—Tin-Plate.—N. & G. TAYLOR COMPANY, Philadelphia, Pa. Case C. Application filed June 28, 1875.

"the figure of a circle."

2,891.—Flour.—THE EMPIRE MILL COMPANY, St. Louis, Mo. Application filed August 16, 1875.

"the words 'RIGHT BOWER.'"

2,892.—Combined Seed-Sowers and Cultivators.—VAN BRUNT & DAVIS, Horicon, Wis. Application filed July 12, 1875.

"the word 'MONITOR.'"

2,893.—Indelible Ink.—A. LYMAN WILLISTON, Northampton, Mass. Application filed January 29, 1872.

"the words 'Payson's Indelible Ink,' in connection with the fac-simile autograph 'J. Payson Williston.'"

2,894.—Blind-Hinge.—CLARK & Co., Buffalo, N. Y. Application filed July 30, 1875.

"the words and letters CLARK'S GRAVITY-LOCKING BLIND-HINGE."

2,895.—Tonics.—TRUMAN S. FOOTE, New Haven, Conn. Application filed July 19, 1875.

"the word 'WA-HOO.'"

2,896.—Medicine.—JOHN A. HOLMES, Boston, Mass. Application filed August 21, 1875.

"the words or name 'OLD MAN OF THE MOUNTAIN.'"

2,897.—Force-Pumps.—WILLIAM J. JOHNSON, Newton, Mass. Application filed July 29, 1875.

"the figure of a pump and a bucket or pail."

2,898.—Gloves.—WERTHEIMER & Co., New York, N. Y. Application filed August 11, 1875.

"the letters 'W. & Co.,' and the words 'Princess of Wales.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date September 1, 1875.]

314.—Title: "Corning's German Cologne."—WILLIAM O. CORNING, New Canaan, Conn. Application filed August 24, 1875.

315.—Title: "Delaware Oil."—PETER GERARD, Philadelphia, Pa. Application filed August 24, 1875.

316.—Title: "Olive Catarrh Remedy."—JOHN GREEN, Somerville, Mass. Application filed August 13, 1875.

317.—Title: "**Bailey's Patent Iron Block-Plane.**"—THE STANLEY RULE AND LEVEL COMPANY, New Britain, Conn. Application filed August 28, 1875.

318.—Title: "**Dr. Goldsmith's Celebrated Swiss Tonic.**"—G. F. WHITNEY, Boston, Mass. Application filed August 25, 1875.

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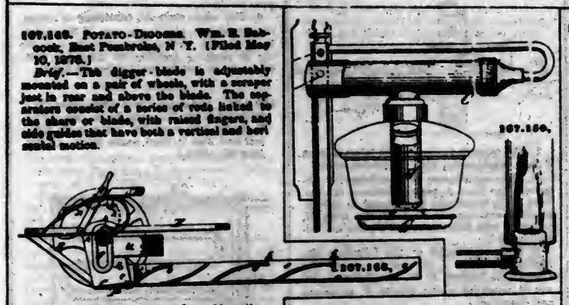
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED AUG. 31, 1875

167,160. POTATO-DIGGER. Wm. H. Babcock, East Pembroke, N. Y. (Filed May 10, 1875.)

Brief.—The digger-blade is adjustably mounted on a pair of wheels, with a scraper jointed in rear and above the blade. The supporters consist of a series of rods linked to the share or blade, with raised fingers, and side guides that have both a vertical and horizontal motion.

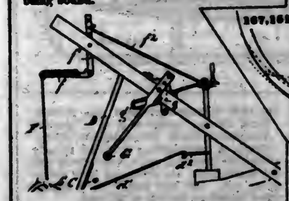


1. The combination of the adjustable guiders *f f*, the clutches *h h*, the connecting-bar *J*, the pulley *k*, the lever *l*, the springs, and the curved piece E, substantially as described, and for the purpose set forth.

2. The piece F, the pins *e e*, the rods *d d*, the inclined projections *o o e*, the sides *r r*, the bolts *r r*, the hinges *t t*, the cross-bars *o o*, and the levelor *u*, substantially as described, and for the purpose hereinbefore set forth.

167,169. DROPPER FOR HARVESTERS. Jno. Babcock, Liberty Prairie, Ill. (Filed Apr. 10, 1875.)

Brief.—The platform, having received the grain, is swung around and tilted, depositing the grain crosswise, a position facilitating its being bound.





1. An improved dropper, consisting of the platform B, its slats *b* arranged crosswise to the cut grain, supporting bars C on a horizontal shaft, D, connected by arm *d*, connecting-rod *d'* to a power-shaft, E, all arranged in combination, by means whereof the dropper can be moved to one side out of the track of the reaper, substantially as and for the purpose set forth.

2. The dropper attachment consisting of the platform B, hinged to its supporting-bars C, the turn-shaft D, springs *c c'*, connecting-rod F, spring *f*, pivoted arm *f'*, connecting-rod *f''*, and power-shaft E, in combination, by means whereof the said platform after receiving the grain is tilted to facilitate dropping its grain, as herein set forth.

3. The grain-pole G, its crank attachment *g*, slotted bar *g'*, and connection to power-shaft E to operate as and for the purpose set forth.

167,170. VAPOR-BURNER. Chas. H. Bell, Philadelphia, Pa. (Filed July 23, 1875.)

Brief.—The fluid from its vessel and the air to be mixed therewith are turned on through the same valve. The pipes for supplying the fluid are provided with a cotton packing interposed between them and an inner concentric wire-gauze cylinder.

1. The combination of the pipes H and C, and packing S, and wire-gauze cylinder E contained in them, substantially as and for the purpose described.

2. The combination of the valve D, the pipes A, L, and C, communicated and arranged substantially as and for the purpose described.

167,161. HAND-TRUCK. Henry H. Bailey, Assumption, Ill. (Filed Apr. 17, 1875.)

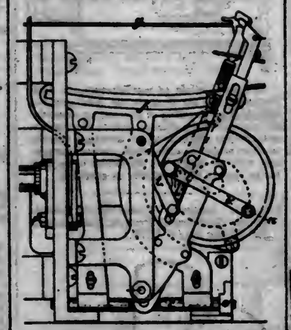
1. A vertically-adjustable platform for hand trucks, which, when not in use, lies flat upon the truck, but is elevated in the act of loading or transporting a load, and depressed in unloading the same.

2. A platform for a hand-truck, beveled from underneath at its outer end, so as more readily to get hold of the load to be lifted.

3. The combination of the platform B with the truck A, crank-arms *a a'*, and levers *d d'*, substantially as shown and described.

4. The combination of the handle and lever with the axle, at the center of the axle, whereby the lever applies power to the center of the platform, for the purpose specified.

167,162. LOCKS FOR WEAVING FILED FABRICS. Everton B. Bigelow, Boston, Mass. (Filed July 14, 1875.)

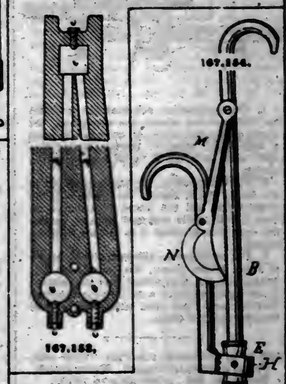


1. The combination of two oscillating shafts, constructed and operated substantially as herein described, one shaft being adapted to draw the pile-wires from the cloth, and the other to insert them in the shed of the warp, substantially as specified.

2. The inserting-carrier, adapted to receive an oscillating movement toward and from the loop, in addition to its usual movements, and irrespective of the direction of its movement toward and from the cloth, substantially as and for the purpose specified.

167,163. GRATE-BAR. Thomas Cain, Lake Douglas, Great Britain. (Filed Jan. 9, 1875.)

The herein described grate-bar, having horizontal water-passages *b b'* arranged longitudinally therein, and horizontal transverse chambers *d d'*, provided with plugs *e*, said passages and chambers being formed in the process of casting the said bar, substantially as and for the purpose set forth.



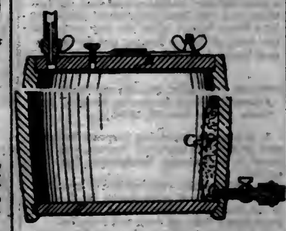
167,164. PRUNING IMPLEMENTS. William Carr, West Hayden, Ohio. (Filed May 10, 1875.)

Brief.—Upon an upright hooked standard a cutter slides freely and carries a curved blade. The cutting-blade is pivoted to the upper part of the standard, and again pivoted to the curved hook, which serves as a second blade. A direct downward pressure severs the limb operated upon.

The combination of the rod B, slide E, foot H, hook I, and bar M, having the knife N, substantially as specified.

167,165. APPARATUS FOR PREPARING AND DISTRIBUTING LIQUID MANURES. Ephraim H. Cummings, Chicago, Ill. (Filed July 31, 1875.)

Brief.—A cask having a removable head, into which coarse manure is placed, and provided with a supply and a discharge pipe. Before the discharge-pipe, on the inside of the cask, is a screen or filter, to prevent the material from entering and stopping the flow of liquid when the same is being drawn off.

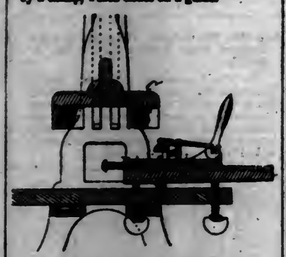


The combination of the manure-chamber A, the screened filter F G, the water-supply pipe K, and the discharge-hose L, for the purpose of connecting liquid manure and distributing the same, substantially as set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

167,154. Machines for Cutting Paper Collars and Cuffs. Chas. H. Dunham, New York, N. Y. [Filed Jan. 11, 1875.]

Brief.—The falling platen has a knife or die extending around three sides of the collar or cuff blanks, which are held to the cutting-bed by a clamp, which slides on a guide.



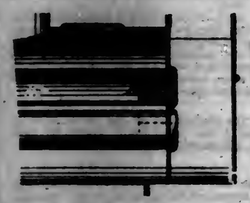
1. The combination, substantially as before set forth, of the clamp, the clamp-bed, the clamp-guide, and platen C, arranged to have a cutting-die attached thereto, having one open side, to adapt it to be used with the clamp.

2. The combination, substantially as before set forth, of the clamp, the clamp-bed, the clamp-ways, and the platen C, arranged to have a cutting-die attached thereto, having one open side, to adapt it to be used with the clamp.

3. The combination, substantially as before set forth, of the clamp, the clamp-bed, the lamp-guide, the clamp-ways, and the platen C, arranged to have a cutting-die attached thereto, having one open side, to adapt it to be used with the clamp.

167,167. Bushings for Fire-Tubes and Flues of Steam-Boilers. Henry Deeds, Baltimore, Md. [Filed July 14, 1875.]

Brief.—Retains products of combustion within the tubes by means of burnt-clay thimbles inserted within the ends of the tubes.



A steam-boiler tube, constructed with one portion of its length of light tubular metal, and the other portion of heavy burnt clay, the burnt clay portion being constructed with a bore, which is of smaller diameter than the metal portion of the tube, and inserted into the discharge or other end of the metal portion a short distance, and supported upon the fire-sheet, and kept from longitudinal movement by a lange formed upon the clay portion of the tube, all in the manner and for the purpose herein described.

167,168. Preparing Plates for Printing. Albert Friedrich Rehberein, Munich, Bavaria. [Filed Dec. 30, 1874.]

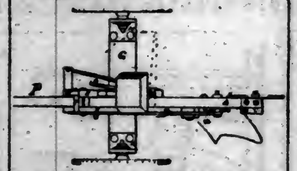
1. A plate for engraving purposes having a coat of soft lead deposited thereon, and prepared in the manner hereinbefore fully described.

2. A composition or compound of graphite, silver powder, and gutta-percha, in or about the proportions specified, as and for the purposes herein fully set forth and described.

3. The process of preparing negative plates for obtaining copper clamp-ways or plates for printing from, and other purposes, consisting of the employment of the coatings matter claimed in the first and second clauses, in the manner substantially as hereinbefore fully set forth.

167,169. Gulley-Plows. Robt. R. Penner, Urbana, Ill. [Filed Dec. 21, 1874.]

Brief.—Devices for changing the fulcrum-point of the lever, and for holding the plow in the ground or above it.



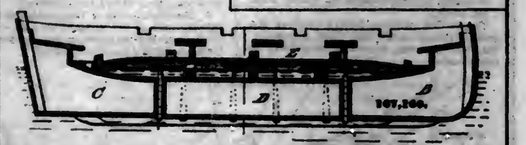
1. The lever D, provided with fulcrum-irons *d d'*, in combination with the fulcrum-post.

2. The combination of the following elements: the beam A, pivoted between the timbers B E, which may be adjusted to any desirable point upon the axle C, the lever D, provided with fulcrum-irons *d d'*, and the fulcrum-post T.

3. The combination of the following elements: the lever *d*, pivoted to one of the timbers B, timbers B E, plow-beam A, lever D, arm-bar *g*, and tongue F, as shown and described.

167,170. Life-Boats. Lawrence F. Frame, Jersey City, N. J., assignor to himself and Jos. J. Walton, New York, N. Y. [Filed Aug. 4, 1875.]

The protecting-desk E, in combination with the air-chambers A, A, B, and C, and with or without the center air-chamber D, substantially as herein set forth.



167,170.

167,171. Anti-Friction Devices for Furniture-Drawers. John D. Preese, Chicago, Ill. [Filed Feb. 18, 1876.]



As a new article of manufacture, an anti-friction device for drawers for furniture, the said device consisting of the casting *f* cast for attachment to the drawer, and to receive the anti-friction rollers O and *o*, arranged therein at right angles to each other, and set for attachment with the case when the device is applied to the drawer, substantially as specified.

167,172. Electro-Therapeutic Apparatus. Elizabeth J. French, Philadelphia, Pa. [Filed July 9, 1875.]



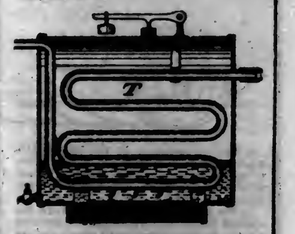
1. The galvanic element consisting of the triple strip A', formed of strips of zinc, copper, and brass, substantially as and for the purpose set forth.

2. The triple strip A', consisting of strips of zinc, copper, and brass, combined at one end, and formed into the shape of a horse-shoe-magnet at the other end, substantially as and for the purpose set forth.

3. The triple strip A', in combination with the eye B, substantially as and for the purpose set forth.

4. The triple strip A', consisting of strips of zinc, copper, and brass, one of the strips being formed with the laps or folds *a*, holding or securing together all the strips, substantially as and for the purpose set forth.

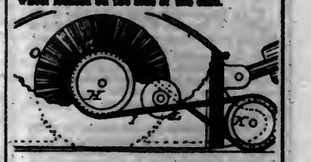
167,173. Apparatus for Preparing Oil-Well Gas for Heating Furnaces. Wm. S. Gillen, Pittsburg, Pa., assignor to himself and Jos. D. Beal, same place. [Filed May 22, 1874.]



The trap T, having oil-and-water pipe coil *c* partially immersed in water, and having perforations *y* in the immersed bottom of the coil for the escape of water therefrom, substantially as herein shown and described.

167,174. Car-Couplings. Geo. S. Gladding, Chester, assignor to C. B. Rogers, Deep River, Conn. [Filed Jan. 28, 1875.]

Brief.—A helical spring is wound spirally around the propelling-roller, which latter and the brush-roller are connected by a spiral-spring belt. The belt passes over a central wheel located on the side of the case.



1. A carpet-sweeping device in which the propelling-roller is provided with a helical spring coiled around it, for the uses and purposes substantially as described.

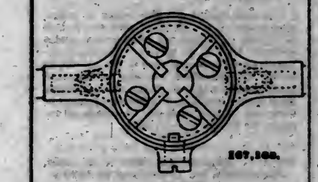
2. In combination, the brush O, provided with the wheel H, wheel I, and wheel K, and the spring-belt J, substantially as and for the purposes set forth.

3. In combination, the roller D, provided with the spiral spring E, wheel K, having its groove spirally indented, wheel L, brush O, having the wheel H, with its groove spirally indented, and spring-belt J, substantially as and for the purposes set forth.

167,175. Die-Stocks. John J. Grant, Hartford, Conn., assignor to the Pratt & Whitney Company, same place. [Filed June 4, 1875.]

1. The combination of the bolts *b* and the shoulder *b'* with a die-stock, for the purpose of securing the die in its place when in use, substantially as herein described.

2. A die-stock with a circular collet or disk, held in place by spring-bolts and slot and pin, substantially as herein described.

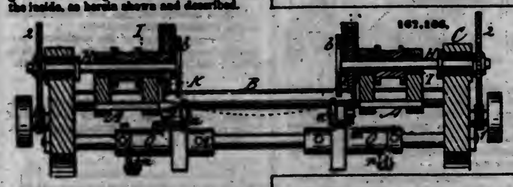


167,166.

167,176. Machines for Chamfering and Grooving Barrels. J. Greenwood, Rochester, N. Y. [Filed Mar. 10, 1875.]

Brief.—The barrel is revolved by two friction-wheels acting upon the inside near each end.

1. In a machine for cutting and chamfering barrels, the combination, with the adjustable supporting-rollers *a a*, of the interior driving-rollers *b b*, situated upon the same axis with the cutters, and close thereto, and serving to give the revolving motion to the barrel from the inside, as herein shown and described.



167,166.

2. The interior driving-rollers *b b*, eccentrics K K, cams L L, and shafts H I, resting one within the other, on the same axial line, combined with the adjustable supporting-rollers *a a* and movable carriages A A, in the manner and for the purpose specified.

3. In a machine for cutting and chamfering barrels, the combination, with the carriages A A and cams G G, of the shafts B B, fixed longitudinally, but turning axially, and serving the double purpose of ways for the carriages and the bearing for the cams, and allowing the adjustment of said parts for different-sized barrels, as herein described.

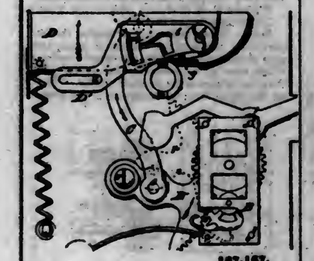
4. The combination, with the shaft B and carriage A, of the cam G, constructed with the segments *g g'*, resting in the lug *f* of the carriage, as shown and described.

5. The combination, with the cam G and cam-head E, of the crank *c*, connecting-rod E, and cam C, with arms *a a*, as and for the purpose specified.

6. The combination, with the cam L and cutter-head K, of the cap M, covering the said parts, and serving as a bearing to the inner shaft H, as described.

167,177. Alarm-Locks. Lev Griswold, Johnstown, N. Y., assignor to David Hays and Nathan P. Wells, same place. [Filed Feb. 2, 1875.]

Brief.—A lock-bolt having a vertical as well as a sliding motion is so connected with an alarm mechanism that when the bolt is forced up an alarm will be sounded.



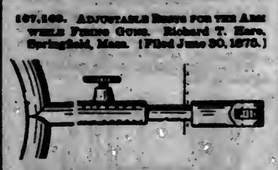
167,177.

167,178. Keys for Locks. Lev Griswold, Johnstown, N. Y., assignor to David Hays and Nathan P. Wells, same place. [Filed Feb. 2, 1875.]



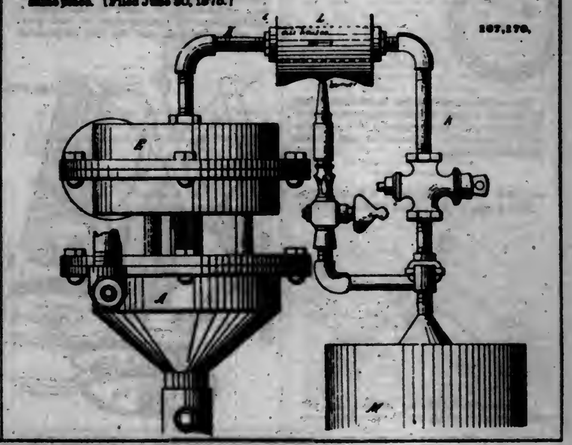
In combination with the barrel A, handle B, and bit *f*, the spring connecting-rod E, bent at *g*, as shown, whereby the bit is held in the closed or open position, substantially as described.

167,179. Adjustable Rests for the Arm while Firing Guns. Richard T. Hare, Springfield, Mass. [Filed June 30, 1875.]



An adjustable rest for supporting the arm in aiming and firing guns, constructed so as to receive the weight and support the arm at or near the elbow in a direct or straight line from the body, substantially as herein described.

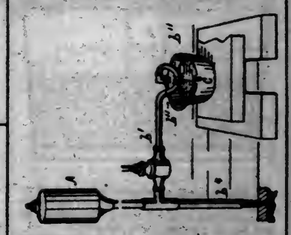
167,180. Carpet-Sweepers. T. H. Herrington, Pittsburg, Pa., assignor to A. F. Keating, same place. [Filed June 30, 1875.]



167,179.

167,181. Apparatus for Melting Solder. John P. Hayes, Philadelphia, Pa. [Filed Feb. 13, 1875.]

Brief.—To be carried about by workmen, and fixed in the door while used.



The apparatus consisting of the fountain A, tubes B and *b'*, with downward-projecting jet *b''* and the retort *b'''*, in combination with the solid gimlet-screwed extension *b'* of the vertical tube B, the whole being constructed and supported as and for the purposes hereinbefore set forth and described.

167,182. Sheet-Metal Cans. John Herget, St. Louis, Mo. [Filed May 1, 1875.]

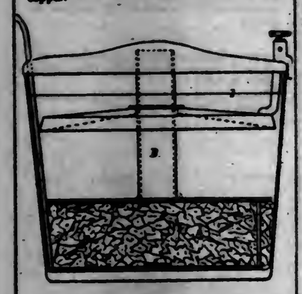
167,173.



The beads *c* of cans formed to have an indenting edge, *b*, as herein shown and described, in combination with the body of cans formed with beads *a* and overlapping edge *a'*, by means whereof an air-tight and secure joint is had, substantially as described and shown.

167,174. Galvanic Batteries. Edward A. Hill, Chicago, Ill. [Filed July 20, 1875.]

Brief.—Prevents the flow of the sulphate of copper to the zinc by means of a tube and plate of lead suspended above the sulphate of copper. While furnishing a plate upon which the copper will be deposited if the sulphate-of-copper solution rises too high, the tube and plate present also a convenient means for the introduction of the fresh sulphate of copper.



1. The device B, constructed of lead or other insoluble metal, when supported above the bottom of the containing cell, substantially as and for the purpose herein specified.

2. The combination of the device B with the copper or — plate, having supports fixed or resting thereon, substantially as and for the purpose specified.

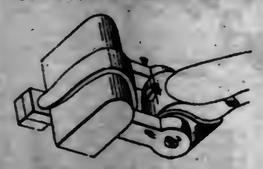
167,175. Watch-Case Tools. C. Hopkins-Waltham, Mass. [Filed Jan. 2, 1875.]

Brief.—The tool is provided with cutting and burnishing edges, for fitting watch-cases.



The teeth *a a*, across the lower curved face of the tool A, and the knife-edges *a' a'*, extending therefrom to the rounded end *d*, substantially as herein before described, and for the purposes set forth.

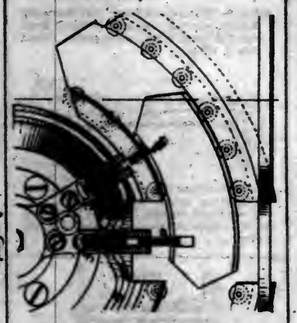
167,176. Table-Cover. J. B. Johnston, New York, N. Y. [Filed Nov. 20, 1874.]



1. The center C, having orifice *c*, and pivoted between the legs *a a* of the clip, in combination with the thill-iron B, having the projection *b* and shoulder *b'*, substantially as set forth.

2. The combination of elastic socket C, pin *d*, the legs *a a* of the clip, and thill-iron B, the socket to operate as a support for the thill, substantially as set forth.

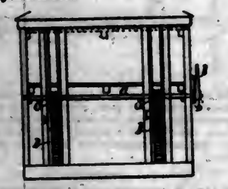
167,176. Shuttle-Motion for Looms. Chas. I. Kase, Milford, Conn. [Filed Jan. 12, 1875.]



The raceway, composed of or provided, both on its front and back edges, with flanged or grooved guide-rollers, in combination with a shuttle, having its bearing-edges constructed to correspond, whereby said shuttle is not only directed but supported by the rollers, substantially as specified.

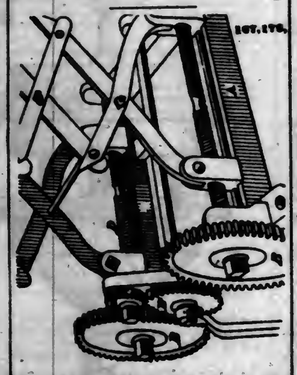
167,177. Stock-Cars. William W. Kerr, Chicago, Ill., assignor of two-thirds his right to I. L. Shroeder and J. C. Goodrich, same place. [Filed Jan. 20, 1875.]

Brief.—Apparatus for raising and lowering adjustable deck.



In stock-cars having adjustable decks, the combination of the shaft *a*, carrying the pinions *b'*, racks B, to work in the slides *b*, ratchet-lever D', ratchet-wheel *b'*, and pawl *d*, substantially as and for the purpose set forth.

167,178.



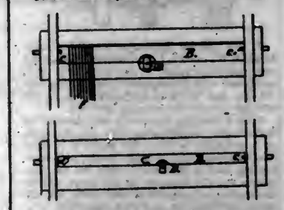
167,179. Metallic Columns. C. H. Leidy, Phœnixville, Pa. [Filed Aug. 12, 1875.]



1. In a metallic column, the wedge-shaped blocks *g*, substantially as shown.

2. The combination of the sections *a*, having the beveled flanges *h*, blocks *g*, clamps *k*, bolts *i*, and nuts *j*, substantially as set forth.

167,180. Wash-Boards. Oliver D. Longhead, Lowell, Mass., assignor of one-half his right to Hart Amzi Tidmarsh, same place. [Filed Mar. 17, 1875.]



The combination, in a wash-board, of the bar B, the studs C C, and the button D, substantially as and for the purpose described.

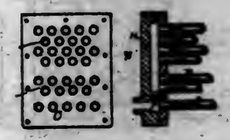
167,181. Cleaning Obstructions from Pipes of Ice-Machines. William H. H. Mallory, Cambridge, Mass. [Filed May 17, 1875.]

Brief.—Does it by introducing with other ammoniacal gas vapor of benzine.

In the process of manufacturing ice by the agency of ammoniacal gas, the combination of benzine vapor with the ammoniacal gas, for the purpose of preventing the formation of clogging deposits in the circulating-pipes, all substantially as described, and for the purpose set forth.

167,182. Congealers or Condensers. William H. H. Mallory, Cambridge, Mass. [Filed July 24, 1875.]

Brief.—When used in a congealer, the vapors enter the smallest cluster of pipes, and pass successively through the larger clusters. When used as a condenser, the vapors pass from the largest to the smallest cluster. Water on the plates form the chambers of the heads.

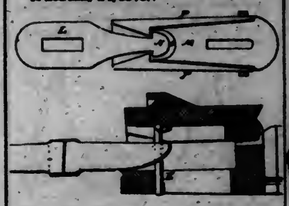


In a bank of pipes the tube-sheets of which are not connected to each other, except by the tubes themselves, whereby free expansion and contraction are allowed, the combination of the vertical heads H and H' and the respective tube-sheets, thus forming the chambers H N O P, with the clusters of pipes A, B, and C, all substantially as described, and for the purpose set forth.

167,183. Compositions for Coating Leather. Henry Morgan, Boston, Mass. [Filed Dec. 7, 1874.]

The improved leather dressing compound, consisting of an ammoniacal solution of shellac and the new aniline color of Fournier, compounded essentially as set forth.

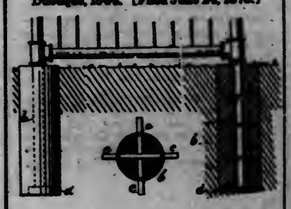
167,184. Car-Couplings. Louis C. Mayne and James S. Murphy, Piney Creek, Pa. [Filed May 24, 1875.]



1. The draw-head, slotted on its lower face, and provided with the hinged lid A, having the swinging-pin E, substantially as described, and for the purpose set forth.

2. The joint L, provided with the coupler-head H, in combination with the joint M, having the center O and lateral springs P P, having recesses near their outer ends, substantially as described, and for the purpose set forth.

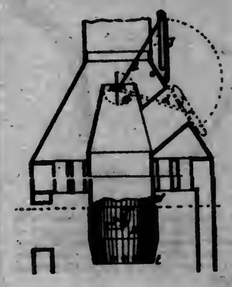
167,185. Fence-Posts. A. Y. McDonald, Dubuque, Iowa. [Filed June 24, 1875.]



The post *b*, cross-rods *c*, and nut *d*, held in position by a concrete material applied in a plastic condition, substantially as described.

167,186. Steam-Heaters. J. P. McKenney, Amsterdam, N. Y. [Filed June 30, 1875.]

Brief.—It is expected that the escape of gas from the central extension will precede, by a slight interval, the admission of air on opening the door.



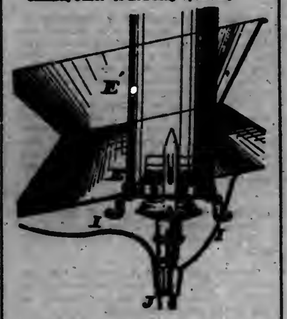
In a steam-generator, the gas-receiving chamber O, provided with the valve H in its upper end, and projected upward within the dome-chamber above the boiler proper and beneath the exit-flue, to be heated by the hot gases drawn from the fire-chamber through the boiler-flues, in combination with a fuel reservoir surrounded by a water-space, and provided with a lateral branch or chute conveyed by a door, whereby the gases generated from the fuel in the discharge end of the reservoir may be received and ravelled above the branch, and be there held by its combustion, for a ready discharge to the exit-flue above when the said valve is opened, substantially as and for the purpose set forth.

167,187. Reflectors. C. M. Marsh, Cincinnati, Ohio. [Filed May 7, 1875.]



The combination of the parabolic reflector R, capable of being placed on the chimney in either a nearly vertical or nearly horizontal position, the hook *p*, threaded wire P, and thumb-nut Q, all as herein shown and described.

167,188. Reflectors. C. M. Marsh, Cincinnati, Ohio. [Filed May 7, 1875.]



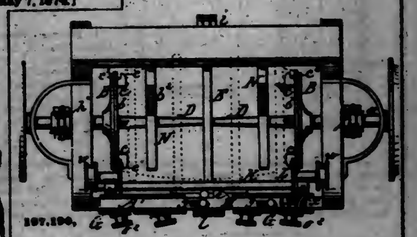
The combination of the connected reflectors R R', flexible wire supports I I, and clip J, all constructed as and for the purposes specified.

167,189. Lanterns Mica. Chas. F. Mason, Auburn, Me. [Filed July 30, 1875.]

Brief.—The flexible loop is easily detached and packed with the handle and fixing-rod.



167,190.



Machines for Threshing and Separating Rakings. James Naylor, Jr., and John Greenwood, Rochester, N. Y. [Filed May 24, 1875.]

Brief.—The barrel is revolved between two adjustable rotating heads, the staves being set to even length by two swinging circular saws, the hoops being forced onto the barrel by revolving disks placed diagonally to its axis.

1. The clamping-head B, provided with the packing *b*, to receive the ends of the staves and prevent vibration or breaking of the same, and having the sharp-edged dogs or spurs *c*, to hold the ends of the barrel while under action, as herein shown and described.

2. The spurs *c*, constructed with the sharp-edged projections *c'*, to cut into and hold the barrel, and provided with the square notches *c''*, to receive the saws in squaring the ends of the barrel, as herein shown and described.

3. The combination, with the rotary clamping-heads B B, of the two boxes or bearings G G and the two sets of trussing-rollers F H, set angularly, and capable of motion toward each other, to bear against the truss-hoops upon the opposite quarters of the barrel, as shown and described.

4. The combination, with the trussing-rollers F H and boxes G G, of the screw-bolts *e*, forming bearings for the rollers, and made adjustable longitudinally in the boxes by means of the shoulders *e' e''* and nuts *e'' e'''*, as and for the purpose specified.

5. The combination, with the trussing-rollers H H, screw I I, and treadle K, of the lever I, connecting-rods *c c*, slide M, and dog J, the whole arranged as described, so that the lower ends in succession upon the rollers, carry, and treadle, to truss the barrel, saw the ends, and then release the barrel from the clamping-heads, as herein shown and described.

6. The combination, with the clamping-heads B B, of the truss-bars F F, resting in line with the bottom of the clamping-heads, and concentric therewith, for the purpose of discharging the barrel by its own rotation when released, as herein shown and described.

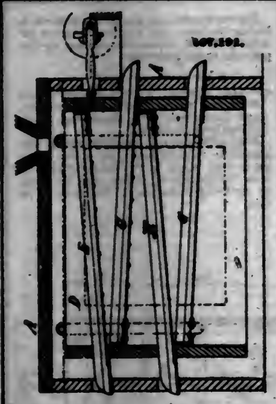
7. In a machine for trussing barrels, the combination, with the clamping-heads B B, of the saws L L, resting outside the clamping-heads, and attached to swinging or sliding bearings *c c*, whereby they may be brought into and out of contact with the ends of the barrel, as shown and described.

167,191. Ore-Sieves Machines. David Nevin, Georgetown, Colo., assignor to himself, Robert A. Nevin, and J. O. Stewart, same place. [Filed Aug. 2, 1875.]

Brief.—The ore, fed through the hopper, passes upon the first sieve, from which the coarser particles pass off through the outer frame, while the finer are sifted through to the sieve below, and pass out on the other side of the outer frame. This separation of the ore can be repeated by multiplying the number of sieves. The whole inner frame carrying the sieves is operated by the crank and shaft I, outside the outer supporting-frame. The meshes may be made smaller and smaller in the several sieves.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON

167,102.

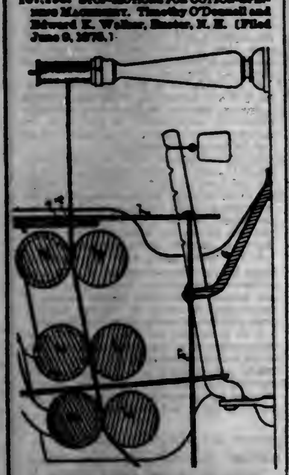


Two or more severally-inclined cut-sizing sieves, partly inclosed in frames A and D, one of which frames is stationary, and the other reciprocating, substantially as and for the purposes set forth.

167,103. SOLUTIONS FOR CLEANING GOLD, SILVER, &c. Granville M. Norwood, Beverly, Mass. [Filed July 9, 1875.]

The herein-described solution for cleaning gold, silver, &c., formed of water, cyanide of potassium, ammonia-water, cream of tartar, oil of anise-seed, or similar aromatic substance, and pea-nutshell shaft, substantially in the proportions set forth.

167,104. STOP-MOTION FOR COTTON-SPINNING MACHINERY. Timothy O'Donnell and Edward K. Walker, Baxter, N. H. [Filed June 9, 1875.]

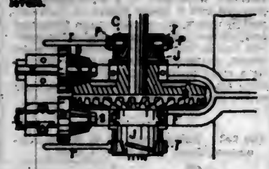


1. The combination of the series of plates I, with the intervening guide-bar J, and the levers F, adapted to be operated by the roving, as herein explained, whereby any undue slackening or tightening of a roving is communicated to the plates and thus certain motion, essentially as and for the purposes stated.

2. The plate I, provided with the eye b, through which the roving, when broken, passes without being acted upon, and with the shoulder c, the latter being of such character as to exert an intermittent motion upon the driver until the plate I is lowered to its quiescent limit by the continued drawing of the roving, substantially as and for the purpose stated.

167,105. HEAD-BLOCKS FOR SAW-MILLS. George M. Felton, Warren, Pa., assignor of one-fourth his right to F. B. Rice, same place. [Filed May 3, 1875.]

Brief.—The cutting-bars may be moved together or alternately by means of a system of bevel-gearing operated by rockers and pawl-levers.

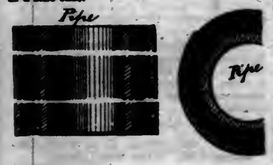


1. The combination of the double-faced bevel-gear wheel B, the pinions D D', the shafts and rockers E E, and levers L L, and handle H, substantially as set forth.

2. The combination of the cylinders J J, the plate P P, rings and handles r r, and clutches O O, with the wheel B, and frame F, substantially as and for the purposes hereinbefore set forth.

167,106. PROTECTING WATER-PIPES FROM FREEZING. Andrew M. Rankin, Nyack, N. Y. [Filed June 3, 1874.]

Brief.—Rendering water-pipes impervious to atmospheric action by enveloping or covering them with a layer of paper, then felt, and again with paper, and inclosing the whole in a zinc case.



1. The method of protecting water-pipes, or rendering them impervious to atmospheric action, consisting in enveloping or covering the pipe first with a layer of paper, then felt, then again with paper, and inclosing the whole in a zinc case, substantially as and for the purposes described.

2. The material or coating for rendering water-pipes impervious to the action of the atmosphere, consisting of one or more envelopes of paper, intermediate filling of felt, and inclosing metallic case, arranged and applied substantially in the manner herein shown and described.

167,107. DENTAL PLUGGERS. Geo. Bebbins, Philadelphia, Pa., assignor to S. S. White, same place. [Filed July 12, 1875.]

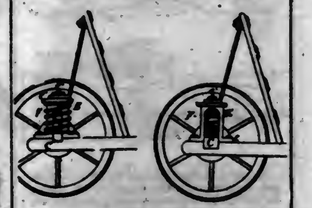
Brief.—By the same rotation of the crank, two pinions are operated to strike blows upon the head of a spring-plugger instead in the same case with them.

1. In a dental plugger, the combination, substantially as hereinbefore set forth, of the casing, the crank-shaft, its pinions, the mallets carried thereby, and the spring-plugger or tool-holder, whereby a series of positive blows may be given directly upon the tool.

2. The combination, substantially as set forth, of the casing, the head in which the crank-shaft is mounted carrying thereon, and the chuck-screw collar, whereby the distance between the crank-shaft and tool may be varied to regulate the force of the blow.

167,108. WHEELBARROWS. Nestor Rolland and Jean Francois Van Hoorde, Hamion, Belgium. [Filed Jan. 22, 1875.]

Brief.—The axle is journaled in a spring bearing



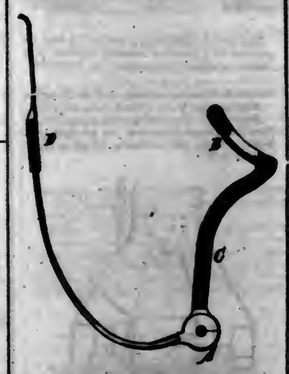
1. The combination, in a wheelbarrow having its wheel loosely mounted on the axle, as set forth, of the axle C with the spring-guide or barrel B and spring F, affixed outside or inclosed within the barrel B, substantially as set forth.

2. The combination of the barrow A, brace G, and spring barrel or guide B, substantially as specified.

3. In a wheelbarrow having its wheel loosely mounted on the axle, the axle C, in combination with a spring, F, the frame L, guide-rods F F, and the brace G, substantially as and for the purposes shown and described.

167,109. UMBRELLA SUPPORTERS. J. B. Shannon, Chicago, Ill. [Filed July 26, 1875.]

Brief.—The usual hook stem with curved ring is reversibly hinged to the support, so that it may serve equally well for universities and reversities, without bending into different shapes.

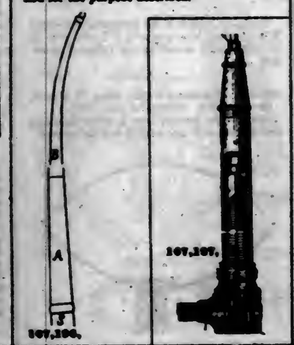


The arrangement of the hook stem C with the curved ring B and the hinge-piece A of the parasol-supporter D, said stem being reversible and adapted for use in either universities or universities, as and for the purpose described.

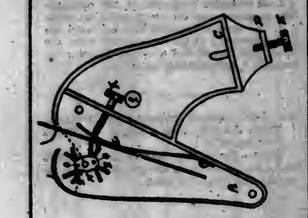
167,110. SHAFT-TIPS. Silas H. Raymond, Grand Rapids, Mich. [Filed July 26, 1875.]

Brief.—Metallic tip with wooden filling in end.

The metallic socket A, provided with the wooden filling B, in combination with the shaft S, when constructed substantially as and for the purpose described.



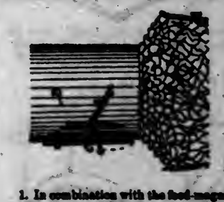
167,111. KNIFE-SCOURING MACHINES. C. G. Singer, Pennville, Pa. [Filed July 27, 1875.]



The combination of the flanged box A with the ratchet P in a slotted hub, N, pinion G, spring or bearing plate L, set-screw K, supported by the covering-plate B, which is provided with ledges C D and binding-screw E, gearing F G, the whole constructed and arranged as and for the purpose specified.

167,112. FUEL-CUT-OFFS FOR MAGAZINE-STOVES. D. Smith, Albany, N. Y. [Filed May 21, 1874.]

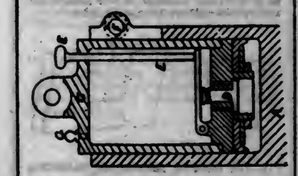
Brief.—When not in use the cut-off is supported at the side of the magazine upon the rest.



1. In combination with the feed-magazine of a stove the cut-off C, constructed as described, and connected with the said magazine by an arm, a, so as to be capable of being turned up against the breast or side of the magazine, or of being suspended beneath the discharge end of the same, substantially as and for the purposes set forth.

2. In combination with the feed-magazine B and the cut-off C the holding pin or projection c, whereby the said cut-off will be supported ready for use against the breast or side of the said feed-magazine, substantially in the manner set forth.

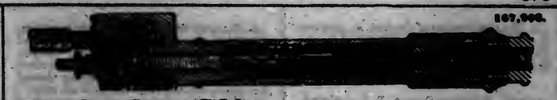
167,113. HYDRAULIC ADJUSTABLE PISTONS. Monroe Stannard, Hartford, Conn. [Filed June 26, 1875.]



1. A tightening or packing piece, the side of which is adjustable by means of a rock and pinion or its equivalents, and also by means of a hollow cylinder, receiving a hollow plunger containing a liquid, which may be allowed to flow into the hollow cylinder or head, into the hollow plunger by means of a valve changing their relative positions, and consequently raising the piston or die to any height required, substantially as described.

2. The combination of the devices A, B, C, D, and E, for the purpose of adjusting the relative positions of A and C, substantially as described.

3. The clamping device F, in combination with A and C, and the devices by which they are set in position, substantially as described.



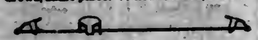
167,113.

167,114. DENTAL PLUGGERS. Eli T. Starr, Philadelphia, Pa., assignor to S. S. White, same place. [Filed July 12, 1875.]

Brief.—The spring-hook, which is operated by a viper-wheel, is held out of contact by means of a sliding sleeve, so that the operation of the mallet is stopped without stopping the rotating motor-power.

The combination, substantially as hereinbefore set forth, of the viper-wheel, the spring-hook on the mallet, the disengaging-incline, the mallet-spring, and the sliding sleeve, whereby the spring-hook is held out of contact with the viper when retracted by the slide, and automatically thrown into action by releasing it.

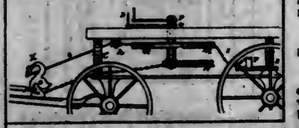
167,115. DIRECTION-CARDS. A. R. Thurber, Providence, R. I., assignor to Cyrus F. Andrews, same place. [Filed Mar. 24, 1875.]



As a new article of manufacture, a direction-card having attached to it any convenient number of fastenings, each consisting of a disk with a tongue to grasp the edge of the card, and a number of pointed shanks to be driven into the box or package to be addressed, the whole constructed in the manner and for the purpose specified.

167,116. VELOCIPEDE. Chas. J. Walter, Lancaster, Pa. [Filed June 1, 1875.]

Brief.—Device for detaching the horse guiding and stopping the vehicle in case of runaway or accident.



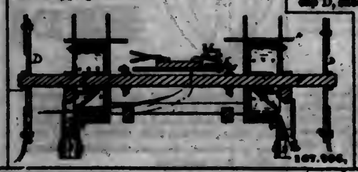
1. The combination of the foot-lever P Q and semicircular flanged wheels M N on a single shaft, V, constructed and arranged substantially as and for the purpose specified.

2. In combination with foot-lever Q and the segmental wheel M, the connections i, with the cross-bolster X at one end of said wheel and the connection I at the other end, with the brake arrangement F, G, and g, substantially arranged and operated as and for the purpose described.

3. In combination with foot-lever P and segmental wheel M, the connecting chain or chains J for guiding the vehicle, substantially as and for the purpose set forth.

167,117. GUM-PLASTERS. P. O. Wessell, Plainfield, Ill. [Filed Feb. 16, 1875.]

Brief.—Upon the axle of the bearing-wheels is a cog, with which a bevel-wheel on a vertical shaft gears, for correcting inaccuracies that may occur in placing, by the card not being deposited on a line with the previous lift, by retarding or accelerating the speed of the dropping-wheels.



167,118. WINDOW-BEAD FASTENERS. A. F. Werner, Rochester, N. Y. [Filed July 22, 1875.]

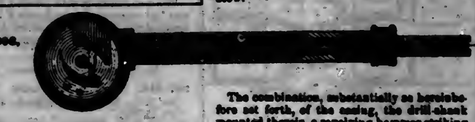
Brief.—The ordinary hook-and-eye fastener, for holding the window-bead stop at the sides, is combined with a pivoted button at the top of the window, swinging over the stop-bead, the construction rendering both the outer and inner stops readily removable.



In combination with the stops A B, the side fastenings, consisting of the inclined hooks and eyes b d, and the top fastening, consisting of the pivoted buttons f g, the whole constructed and arranged to operate in the manner and for the purpose specified.

167,119. DENTAL DRILLS. Samuel S. White, Philadelphia, Pa. [Filed July 9, 1875.]

Brief.—A pin upon a rotating wheel, which carries the spring-hammers, strikes a star-wheel, and rotates the drill slightly at each blow.



167,119.

The combination, substantially as hereinbefore set forth, of the casing, the drill-chuck mounted therein, a revolving hammer striking the drill-chuck, a retracting-spring, and a stud on the hammer, acting on the drill-chuck to turn it after each stroke of the hammer.

167,120. NASAL INHALERS. John H. Yates and Charles B. Trent, Sharon, Wis. [Filed Jan. 19, 1875.]

Brief.—The cone of an inhaler is divided by an inner partition, thus increasing the length of the air-passage without corresponding increase of length of cone. The closing-cap for the end is fitted with packing, and serves also to secure and close the lateral side opening for the admission of air.

1. The combination of the cone A, partition B, lateral aperture a in the side of the single outer tube near its open end, and cap D, substantially as hereinbefore set forth.

2. The combination of the cone A, partition B, lateral aperture a, cap D, packing c or its equivalent, and nozzle b, whereby both the aperture a and the nozzle b are opened and closed by the simple removal and replacement of the cap D, substantially as hereinbefore set forth.

2. The combination of the cone A, partition B, and lateral aperture *a* in the side of the single outer tube near its open end, as substantially as herein before set forth.

167,210. FURNACE-DOORS. R. H. Ashcroft, Boston, Mass. [Filed May 27, 1875.]

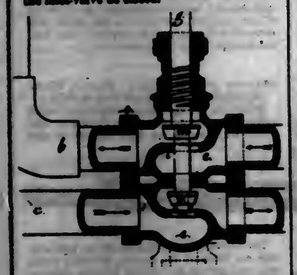
Brief.—An inside swinging flap allows the fuel to fall upon the grate from a hopper. Air is admitted to the surface of the fuel through an aperture at the bottom of the door, and deflected downward by a shield on the inside of the furnace-wall.



In combination with a steam-generator or other fire-front, an inwardly-swinging door, a fuel-hopper, and an air-passage, the parts being arranged substantially as and for the purposes specified.

167,211. VALVES FOR STEAM-RADIATORS. Wm. C. Baker, New York, N. Y. [Filed Mar. 31, 1875.]

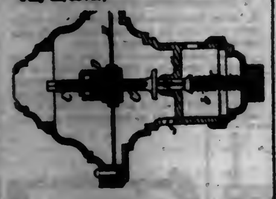
Brief.—The valves of the inlet and exit pipes are governed by a single stem. This obviates condensation of steam within the radiator in case the exit-valve alone be closed, or the back flow of steam from other parts of the apparatus, which is liable to take place if the inlet-valve be closed.



1. The valve-body *c*, provided with connections for the four pipes *a*, *b*, *d*, and *f*, and with the diaphragms *l* and *n* and valve-seats, in combination with the valves *m* and *o* upon the stem *p*, substantially as and for the purposes set forth.

2. The steam and water pipes of a steam-radiator, contiguous to each other and connected to one double-seating cock or valve, to open or close each pipe simultaneously by one movement, substantially as and for the purposes set forth.

167,212. AIR AND GAS OR FLUID REGULATORS. Benj. Bates, Baltimore, Md. [Filed July 12, 1875.]



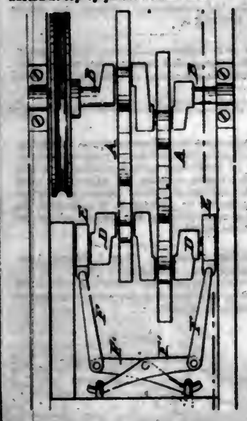
1. In an air or gas regulator, the combination of the expanding-cover cone C, the valve E, and spiral spring D, whereby said valve is raised and lowered to regulate the flow from the hole in the outlet, and preserve a uniform pressure, substantially as described.

2. The combination, in a pressure-regulator, of a pivoted bearing-point of the valve H, and a fixed bearing of the adjusting-stem, whereby the bearing of the valve is made coincident with its axis, and all lateral binding thereof prevented, substantially as herein set forth.

3. The combination, in a pressure-regulator, in which the valve and its adjusting-stem have a pivotal point of contact of the central post *c*, the under valve-stem *b*, and the valve-spring E, substantially as and for the purposes as herein set forth.

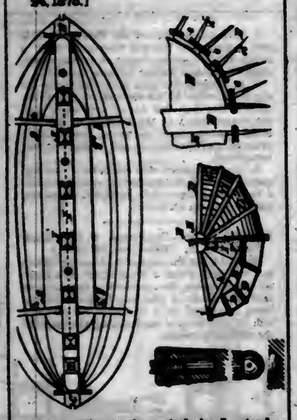
167,213. MECHANICAL MOVEMENTS. Philip Bellinger, Paoli, Ind. [Filed July 17, 1875.]

Brief.—Two parallel shafts, each having a pair of cranks, are connected by rods operated by hand and foot. The bearings of the front shaft are in posts pivoted below, and connected at top by pivoted cross-bars.



The combination, with pivoted standards E and link-connected cross-levers F F, of double crank-shafts B D and the levers A, whose fulcrums revolve around the crank-pins, as and for the purpose specified.

167,214. COLLAPSIBLE BOATS. Edward L. Berthon, Romsey, England. [Filed May 24, 1875.]



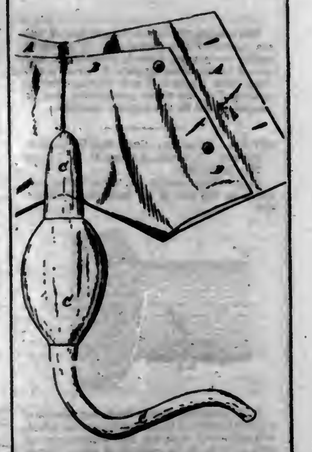
1. In a collapsing-boat, the keelson I, extending longitudinally and centrally, and covered at its ends to the stem and stern-posts in such manner as to curve on a beam or support thereto, when provided with hatches J J for storing provisions, &c., substantially as herein shown and described.

2. In a collapsing-boat, the combination of the side timbers D D, stem-post B, stern-post C, quadrant-blocks E E, links *e e*, and straps *d d*, all arranged to operate in the construction as shown, and for the purposes set forth.

3. The strut A, provided with a T-head adjusting-screw, *f*, at the top, to catch under the upper side timber, and a spherical lower extremity, *i*, substantially as shown.

167,215. RUBBER DRAWERS FOR INVALIDS. Maria Bradley, New York, N. Y. [Filed July 24, 1875.]

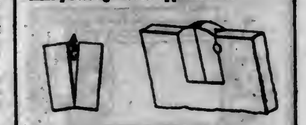
Brief.—The rubber drawers to be worn in bed have a pipe made integral with them, for conducting away the urine.



Improved rubber drawers for invalids formed of the body A B, open at the sides, and the tube C, formed integral with the drawers, substantially as herein shown and described.

167,216. PROCESSES OF MOUNTING OF FITTING DIAMONDS OR METALLIC HOLDERS. Joseph W. Branch, St. Louis, Mo. [Filed July 6, 1874.]

Brief.—The diamond is fastened by embedding it by the pressure of two heated metallic plates against its opposite sides.



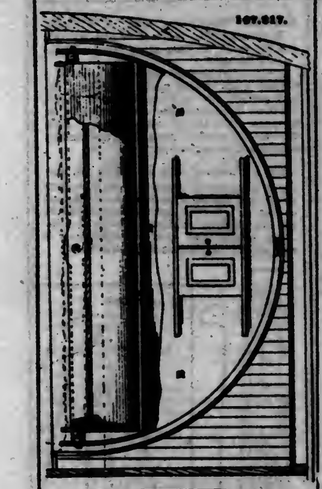
1. The mode of inserting or embedding diamonds in metallic holders or tools solely by the agency of heat and pressure, substantially as and for the purpose shown and specified.

2. A metallic diamond holder or tool, having the diamond inserted or embedded solely by the agency of heat and pressure, substantially as and for the purpose shown and specified.

167,217. STEERING RUDDER. R. W. Brown, Galveston, Tex. [Filed July 10, 1875.]

A bank of a steamer or other vessel, consisting of the two semi-cylinders *B* and C, hung in journals to right angles to each other, and each provided with openings for the introduction of baggage or other bulkhead, substantially as described.

167,217.



167,218. MALARIA-STOVES. Joseph A. Buckwalter, Boyer's Ford, Pa. [Filed July 20, 1875.]



In a magazine-stove, the combination of the inclined smoke-flue A, constructed and arranged to operate below the mouth of the fire F, as described, with the annular space which is between the magazine C and the body B, substantially as and for the purposes herein before described.

167,219. LID-LIFTERS. T. B. Carpenter, New Haven, Conn. [Filed Aug. 9, 1875.]

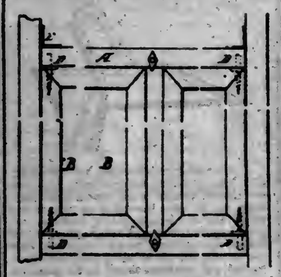
Brief.—The hook is intended to engage with the rim of a pot or kettle, and then effect means for tipping.



1. The lid-lifter A, made with the projection *b*, having the tipping-hook C pivoted to the same, and extending beyond the pivot, to operate in connection with the hook, all the said parts constructed and combined to operate in the manner described.

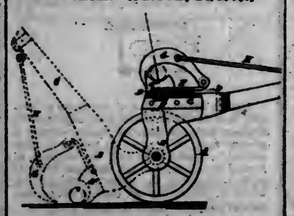
2. The tipping-hook C, made with the notch at the bottom of the shoe *c*, as described, pivoted to the projection *b*, and limited in its motion by the projection *b* and the handle of the lid-lifter A, all the said parts constructed and combined to operate in the manner described.

167,220. WINDOW-SCREENS. A. A. Carter, Philadelphia, Pa. [Filed Aug. 2, 1875.]



The combination of the frames B, formed of the molding described and shown, with the collar screw-pivots D, bar A, and angle-piece E, constructed as set forth and described.

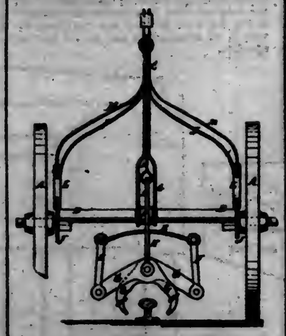
167,221. TRUCKS FOR MOVING SAFES, &c. Charles W. Carter, Terre Haute, Ind., assignor to himself and Geo. W. Travis, Cape Girardeau, Mo. [Filed July 24, 1875.]



The combination of the swiveled heel-plate D F, the T-plate F, the pivoted hook G, and the rods H I with the widened lower end of the bar C, the axle B, and the wheels A, substantially as herein shown and described.

167,222. TRUCKS FOR CARRYING SAFES, AXLES, &c. Chas. W. Carter, Terre Haute, Ind., assignor to himself and G. W. Travis, Cape Girardeau, Mo. [Filed July 24, 1875.]

Brief.—Double set of grapples, one for operating near the ground, the other above, and both worked by a sliding rod.



1. The combination of the collar or sleeve D, the cross-bar E, the links or bars F, the bent lever-hooks G *f*, the loop or U-bar H, and the sliding rod *f*, with the forked handle C, the bent axle B, and the wheels A, substantially as herein shown and described.

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2. The combination of the triangular frames J, the connected cords K, the pivoted hooks L, the bail M, and the rod I with the handle C, the bent axle B, and the wheels A, substantially as herein shown and described.

167,223. SAFETY-PAPERS. G. W. Casilear, Washington, D. C. [Filed July 8, 1875.]

Brief.—Paper is adapted for revenue-stamps, &c., which are printed on the rear side of the paper.



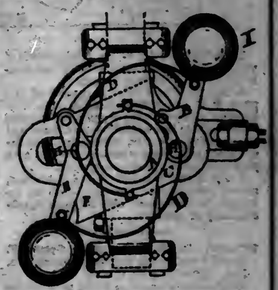
As a new manufacture, a safety-paper having embedded in its fiber side a woven fabric or warp, in such manner that both the paper-stock and embedded fabric or warp shall lie, practically, in the same plane, exposed to view, and be capable of separation, in the manner and for the purposes herein before set forth.

167,224. PROCESSES OF TREATING MAIZE. Louis Chicoux, Corvignano, near Trieste, Austria. [Filed Aug. 27, 1875.]

The process herein described of separating the oily from the farinaceous constituents of maize by first steeping the grain in a solution of sulphurous acid, then crushing it so as to leave the germs unbroken, and finally screening and drying, all substantially as specified.

167,225. GOVERNORS FOR STEAM-ENGINES. Thomas M. Corbett and Henry Campbell, Milwaukee, Wis.; said Corbett assignor to said Campbell. [Filed Mar. 10, 1875.]

Brief.—As the levers are thrown in or out by the rotation of the shaft and balls, the eccentric is forced to one side or the other by the inclined edge-plate.



1. Hub A, projection B, eccentric I, cross-bar K, and plate F, all in combination, substantially as set forth.

2. Collar C, springs D D, levers E E, and adjustable weights I I, in combination with plate F and cross-bar K, substantially as described.

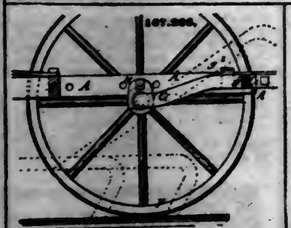
3. Hub A, projection B, cross-bar K, and eccentric I, all in combination, substantially as set forth.

4. Cross-bar K, with eccentric I, placed a little on one side of it, in combination with plate L, substantially as set forth.

167,226. CULTIVATOR-FRAMES. W. M. Conlan, Quitman, Mo. [Filed Apr. 17, 1875.]

Brief.—The central axle extends backward horizontally, bearing the seat, and is supported by levers upon the side bars of the frame. The axle and seat can be tilted forward to convert the machine into a walking-cultivator.

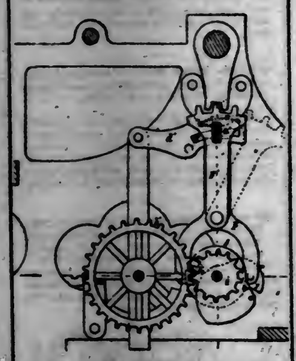
167,886.



The combination of the adjustable bearings H and axle G g', provided with a bar, I, to receive the cant, and with supporting-hooks g', with the perforated side bars A, the crossbars B C, the tongue D, the braces E, and the wheels F, substantially as herein shown and described.

167,887. PRINTING-PRESSES. C. B. Cottrell, Westerly, R. I. (Filed July 11, 1874.)

Brief.—The invention relates to the peculiar devices for stopping, locking, and starting the cylinder between the impressions.



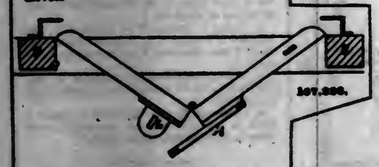
1. The combination of the locking-catch *c* with the divided segmental lever F F' and rock-lever *f*, substantially as specified.

2. The segmental lever composed of two parts, F F', and a locking-catch, *c*, in combination with rock-lever *f* and notched plate *f'*, arranged to lock and unlock said parts, and also to lock the part F, which gears with the cylinder, to the frame when disconnected from part F, all substantially as specified.

3. The slotted rock-lever *f* and the cam *f'*, geared relatively to the cam-shaft to be actuated, in combination with the catch *c'*, substantially as specified.

167,888. GRAIN-CAR DOORS. George F. David and Charles Wilding, Indianapolis, Ind. (Filed May 25, 1875.)

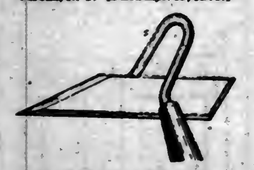
Brief.—Doors hinged on inside so as to open outward by pressure of grain when pin is removed.



167,889.

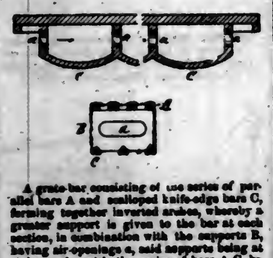
In combination with a grain-car, a door constructed in two equal halves, hinged together on the inside, so as to allow the doors to open outwardly, and secured together, when fastened in the door-frame, by a bar, E, having a pin, F, at one end, to receive the key-holder I, and key J, constructed and arranged to operate substantially as specified.

167,889. WEEDING-HOE. A. S. Dunham, Verona, N. Y. (Filed Apr. 19, 1875.)



A cultivating and weeding hoe consisting of a long, straight, narrow blade, with one end thereof inclined to the principal working edge, and the edge beveled to an edge on the upper side, and having a long shank, *b*, projecting up therefrom, and reserved back to the line of the hoe-blade, where it is joined with the handle, the whole being constructed, arranged, and combined as and for the purposes above specified.

167,890. FURNACE GRATE-BARS. Edward Marion Hrdman, Lykens, Pa. (Filed Aug. 6, 1875.)



A grate-bar consisting of one series of parallel bars A and scalloped knife-edge bars C, forming together inverted arches, whereby a greater support is given to the bar at each section, in combination with the supports E, having air-openings *e*, said supports being at right angles with the series of bars A C, by which a greater cold-air surface is exposed, substantially as set forth.

167,891. STOP-MOTIONS FOR STRAIN-RECEIVERS. Thomas Byrom, South Manchester, Conn. (Filed Apr. 10, 1875.)

Brief.—When the engine runs at the great a degree of speed the centrifugal device opens the valve which supplies steam to the auxiliary cylinder. The piston thereof, being raised, opens the valve over the pipe leading to the condenser, and destroys the vacuum therein.

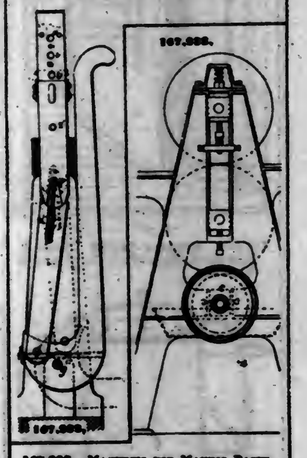
The combination of auxiliary steam-piston A, the steam-piston rod A', having piston A', air-valve *f*, and a connection with engine-rod *a*, the condenser F having connections *f' f²*, the weighted lever D supported on a suitable catch, the lever E', and the centrifugal device E, all arranged as and for the purpose specified.

167,892. CARRIAGE-JACKS. A. W. Field, Vergennes, Vt., assignor of one-half his right to F. W. Coe, same place. (Filed July 24, 1875.)

Brief.—The bearing-bar is composed of a central piece vertically adjustable by a pin and perforations between two other pieces. On these bar, perforations once and a half the distance apart of the others give to them the effect of a subdivision. It is operated by a lever and connecting-piece.

The combination, with the sliding bar, having at its upper end the adjusting-perforations *e e*, of the bearing-arms between which said sliding bar is carried, having the perforations *e' e'* spaced apart once and one-half the distance between two adjacent perforations of said sliding bar, substantially as specified.

167,893.

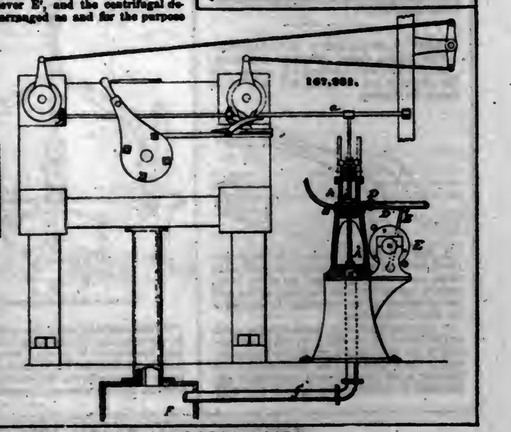


167,893. MACHINES FOR MAKING PASTE-BOARD. Benjamin F. Field, Lima, Ohio. (Filed Dec. 24, 1874.)

Brief.—Improvement on Patent No. 162,942. Sheets are pasted and pressed together by rolls, which yield to accommodate sheets of varying thickness.

The combination of the platform, the frame, the paste-box, the transferring-roll T, and the two large rolls P R, of equal size, the rolls T P, and the rolls P R, being, respectively, adjustable with relation to each other, and the roll R bearing against the roll P with a yielding pressure, substantially as and for the purposes set forth.

167,894.

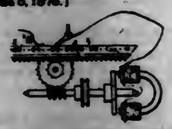


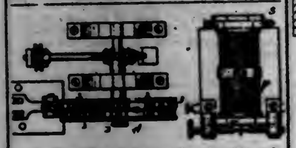
In combination with the engine-frame, the steam-cylinder, the steam-piston and its rod, the cross-head, the pitman, the crank-shaft, the eccentric, the eccentric-rod, the valve-stem, and the valve, the governor-shaft, the governor-arms, the governor-balls, the bell-crank lever, the rod connecting the bell-crank lever with the valve-stem, the sliding sleeve, the rod connecting the sliding sleeve with the bell-crank lever, the lever, the rod connecting the lever with the sliding sleeve, the rock-shaft, the arm, the rod connecting the arm with the lever, the lever, the rod connecting the lever with the arm

4. The hooked rod J, pivoted into the wall of the furnace G, in combination with one or more hooks, a, on the basin A, substantially as described.

5. The vent c, having a perforation through its upper, combined with the basin A, hollow standard B, conduits b, and hollow rim a, substantially as described.

167,940. AUTOMATIC-TELEGRAPH APPARATUS. Otto Halbat, Jersey City, N. J. [Filed June 6, 1876.]





1. The rollers 3 3 upon the wires 2 2, and within the grooved wheel or bar, in combination with the cord d and circuit-closing mechanism, substantially as set forth.

2. The swinging circuit-changer or needle o within the helix p, and the permanent magnets r and s, arranged as set forth, in combination with the bar x, that connects the said magnets r s and the helix w, surrounding such bar, as set forth.

3. The pictorial lever I and ink-roller F, operated by the magnets s s' and electric circuits, in combination with the blade u and rollers u', for moving a strip of paper in contact with such blade and contiguous to the ink-roller, for the purposes set forth.

4. The combination, in a telegraph transmitting-instrument, of movable circuit-closing rollers or blocks, a key, a magneto-electric machine, and gearing connecting the parts, substantially as specified, for transmitting reverse currents alternately and at intervals, to form the message, as set forth.

167,942. CHAIR-MACHINES. Wm. Edward Hammond, Baltimore, Md. [Filed Jan. 10, 1876.]

Brief.—The frame that supports the usual roller is in this machine arched, and leaves a space under it and in the rear, so that a wrapper can be fed to it either from the right or left. The wrapper can be put on right or left handed, as upon opposite sides of the frame posts and supporting plates are automatically brought into position every time the frame is reciprocated. The bight of the belt is tightened and the wrinkles taken out of the wrapper by a roller under the belt.



1. In a cigar-machine, the combination of the apron C, the traveling roll or bar E, suspended with an open space beneath and behind both ends, and two projecting posts-plates, one on each side of the machine, substantially as and for the purposes set forth.

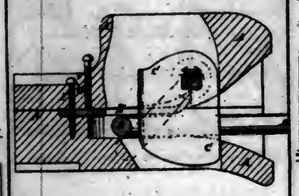
2. In a cigar-machine, the combination of the apron C, the traveling frame and roll or bar E, and the traveling smoothing bar or roll F, substantially as and for the purposes described.

3. In a cigar-machine, the combination of the apron C, the traveling frame and roll or bar E, and the automatically-adjustable posts or gage plates G G, substantially as and for the purposes described.

4. The telescopic or longitudinally-adjustable scrap-filler box H, adapted to be used in connection with the cigar-machine herein described, substantially in the manner and for the purposes set forth.

167,944. CAR-COUPLINGS. Henry C. Hervey and George H. Abrams, Athens, N. Y. [Filed July 3, 1875.]

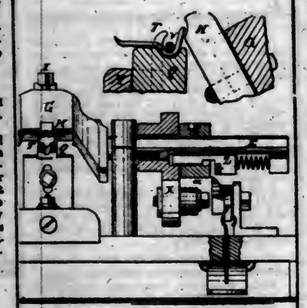
Brief.—The bifurcated spring guides the dog and holds the link.



The combination, with a link, B, and pivoted dog C, of a bifurcated spring, E, to hold the one and guide the other, as and for the purpose set forth.

167,945. BUCKLE-MAKING MACHINES. H. C. Hickox, Philadelphia, Pa. [Filed May 10, 1876.]

Brief.—On the re-entering side of the rocking yoke is fixed adjustably a bar, that cooperates to bend the tongue of the buckle around its bar, with the upper end of a former or anvil, that has two horns, between which the tongue is placed. The crank turns free on the yoke-shaft, the clutch-slide being held, ordinarily, out of contact with the crank by a wedge on the end of foot-lever, that may at will be depressed to withdraw the wedge, and thus contact the vibratory crank with the yoke-shaft.



1. The combination of chambered bit H, set in a rocking yoke, G, with a grooved holder, G, having horns T T, as and for the purpose described.

2. The combination of spring-slide E, having bevel e, the shaft-collar c, the crank X, and the lever Y, having wedge d, as and for the purpose set forth.

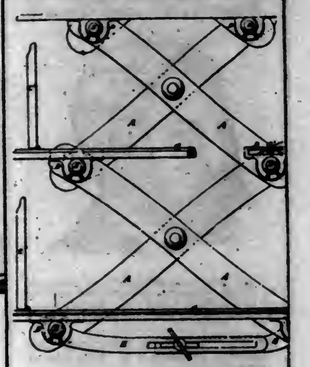
3. The combination, with rocking yoke G, of sliding stop g, as and for the purpose specified.

167,946. SUSPENSION BOOK-RACKS. F. F. Hill, Exeter, Conn. [Filed May 6, 1876.]

1. The metal plates D, having slots in the upper portion, in combination with the pegs B, shelves C, and pivoted bars A, said plates being secured to the shelves by the screws on which they slide, as shown and described.

2. The combination of the lock-bars E and hand-screw f with the pegs B, the pivoted bars A, and the shelves C, substantially as herein shown and described.

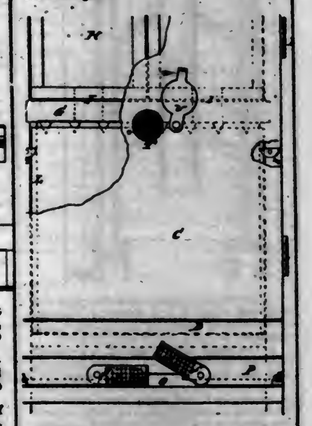
3. The combination of the hinged ends f with the shelves C, the pegs B, and the pivoted bars A, substantially as herein shown and described.



4. The combination, with the upper pivoted bars A, of a plate, F, pivoted to the rear bar, and having holes in its upper and lower ends to receive the suspending nails or screws, so that the nail or screw passing through the lower hole may project into the angle between the said bars A, substantially as herein shown and described.

167,947. BEE-HIVES. Samuel Hinson, West Newton, Pa. [Filed May 6, 1875.]

Brief.—The brood-chamber and honey-box above it are usually darkened by the large door forming the front of the whole box, there being inner walls of glass. The honey-boxes rest a partition, both having coincident openings, the partition adapted to slide out with the boxes. The entrance at the base is through a sliding bar having a channel toward its ends, for the escape of moths, which seek the light.

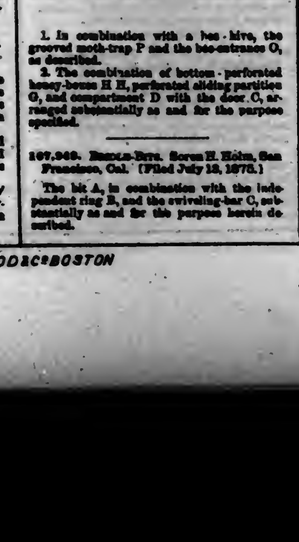


1. In combination with a bee-hive, the grooved moth-trap P and the bee-entrance O, as described.

2. The combination of bottom-perforated honey-boxes H H, perforated sliding partition G, and compartment D with the door C, arranged substantially as and for the purpose specified.

167,948. BEE-HIVES. Samuel Hinson, West Newton, Pa. [Filed May 6, 1875.]

Brief.—The brood-chamber and honey-box above it are usually darkened by the large door forming the front of the whole box, there being inner walls of glass. The honey-boxes rest a partition, both having coincident openings, the partition adapted to slide out with the boxes. The entrance at the base is through a sliding bar having a channel toward its ends, for the escape of moths, which seek the light.



1. In combination with a bee-hive, the grooved moth-trap P and the bee-entrance O, as described.

2. The combination of bottom-perforated honey-boxes H H, perforated sliding partition G, and compartment D with the door C, arranged substantially as and for the purpose specified.

167,949. BEE-HIVES. Samuel Hinson, West Newton, Pa. [Filed May 6, 1875.]

Brief.—The brood-chamber and honey-box above it are usually darkened by the large door forming the front of the whole box, there being inner walls of glass. The honey-boxes rest a partition, both having coincident openings, the partition adapted to slide out with the boxes. The entrance at the base is through a sliding bar having a channel toward its ends, for the escape of moths, which seek the light.

1. In combination with a bee-hive, the grooved moth-trap P and the bee-entrance O, as described.

2. The combination of bottom-perforated honey-boxes H H, perforated sliding partition G, and compartment D with the door C, arranged substantially as and for the purpose specified.

167,950. SUSPENDER-BUTT. Soren H. Holm, San Francisco, Cal. [Filed July 12, 1875.]

The bit A, in combination with the independent ring B, and the swiveling-bar C, substantially as and for the purpose herein described.

167,948.



167,949.

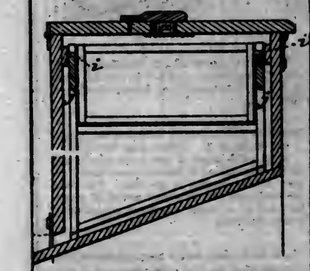


167,950. VEHICLE-BODY CORNER-IRONS. Nathan L. Holmes, Racine, Wis. [Filed Apr. 3, 1875.]

In angle-irons for wagon-bodies, section B, having flanges b b and a T-shaped tenon, d, in combination with the section C, provided with flanges e and T-shaped mortise f, substantially as and for the purpose set forth.

167,950. BEE-HIVES. Peter Hommell, Marietta, assignor of two-thirds his right to J. W. Hommell, Dyberlle, and M. H. Hommell, Marietta, Miss. [Filed July 10, 1876.]

Brief.—The sides of the brood-frames are prolonged above the frames, notched to receive pins fixed in the comb-frames, thus forming supports for the comb-frames.



In a bee-hive, the bee-brood frames D, having the extensions f, cleft at their upper ends, in combination with the swinging honey-frames, with journals f, substantially as described.

167,951. HAND-PLANTERS. D. W. Hughes, St. Louis, Mo. [Filed Jan. 20, 1876.

Brief.—Within the lateral edges of the pivoted blades is secured the flexible conical conductor for conducting the seed to the earth.

In a corn-planter, the combination, with the hinged blades A A', and the sliding dropper c, of the flexible conical seed-conduit D, substantially as specified.

167,952. SHUTTER-WORKERS. Jacob D. Bingham, Prairie City, Ill. [Filed July 24, 1876.]

Brief.—An elbow-lever pivoted on the window-sill inside the sash has its second joint so arranged as to throw one arm above and the other below the stop-plate. A link-connection with a T-shaped lever, one end of which is pivoted to the sill, and the other connected with the lower edge of the shutter, serves to actuate the devices; and there are also stops or upwardly-projecting lugs arranged on a stop-plate, which operate to fasten the shutter in open or closed position.

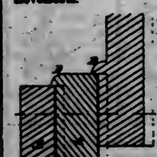


1. The combination of elbow-lever A B, having one arm above, the other below, the stop-plate C, pivot D, link F, T-shaped lever G, and link I, with a window-shutter, J, substantially as specified.

2. The combination of stops K, on the stop-plate C, with the elbow-lever A B, link F, T-shaped lever G, link I, and shutter J, substantially as specified.

167,953. CAST-IRON PILES. John F. Hinds, New York, N. Y. [Filed June 6, 1876.]

Brief.—Piles for foundations, &c., connected side by side by interlocking grooves and ribs, with spaces left in the grooves to allow of the displacement of the sediment. An overlapping flange on the top of the piles engages with next pile below it, and prevents vertical movements.

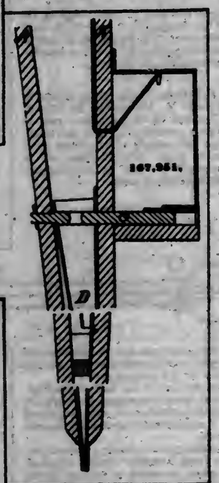


1. Piles connecting together, side by side, an interlocking groove in one and rib on the other, when the groove is arranged to afford space in addition to that required for the rib, in which to dispose of the sediment, substantially as specified.

2. The combination of an overlapping flange, D, with a pile constructed to be connected to other piles side by side, substantially as specified.

167,954. MACHINES FOR COUNTING STOCK. Wm. P. Jeans and David H. Bailey, Ferndale, Cal. [Filed Oct. 15, 1874.]

Brief.—For counting live stock by causing the stock to pass through a narrow passage with a swinging side, a registering mechanism being connected with said swinging side by a suitable arrangement of levers.



1. The device consisting of the swinging side D of a passage, together with the lever-arm F, with its rods G and H, and the perforated wheel I and inclined plane J, the whole constructed to operate substantially as herein described.

2. The winged rods D, lever-arm F, rods G H, and perforated wheel I, having the lug f, in combination with the wheel a, with its pawls P or toothed wheel x, hammer-arm y, bell a, and counting-dials, as set forth.

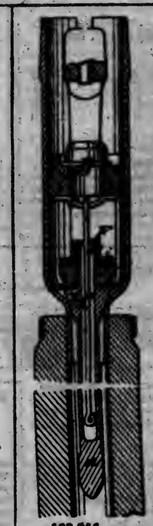
167,955. CULTUS ATTACHMENTS. John S. Johnston, Rockford, Ill. [Filed June 26, 1875.]

Brief.—Devices for adjusting and stop for limiting the motion of colters.

1. The clutch-block F, clutch-arms I, and colter M, combined with the connecting-piece D, substantially as specified.

2. The adjusting guard K K', combined with the clutch and the connecting-piece D, substantially as specified.

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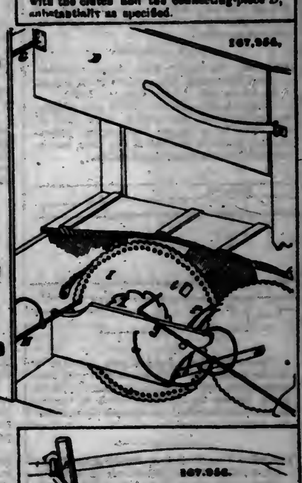
1. In a metal coulter or check valve for wood or metallic pumps, the tubular valve-case A, having tapered conical collar b and flange c, substantially as shown and described.

2. The plunger and check valve a, having collar b, constructed with conical and adjustable weight D, cover-cap F, connecting and guiding rod E, and plunger B, substantially as specified.

167,956. ORGANS-VALVES. H. O. Johnson, Greencastle, Ind. [Filed July 3, 1876.]

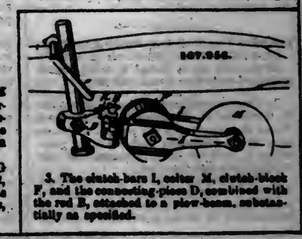
Brief.—The plunger and check valve a, having collar b, constructed with conical and adjustable weight D, cover-cap F, connecting and guiding rod E, and plunger B, substantially as specified.

167,956.



167,957. CLOTHES-DRYERS. Jacob Bowers, Jr., Lancaster, Pa. [Filed Aug. 2, 1875.]

Brief.—The arms are pivoted to the post, and have a sliding motion, and are held in position by a set-screw. The arms are made of two pieces, and the ends are bent to form a hook.



1. The arms B, pivoted to the post A, and provided with the hooks a, substantially as specified.

2. The arms B, pivoted to the post A, and provided with the hooks a, and set-screw b, substantially as specified.

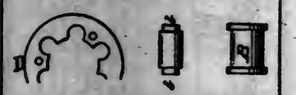
167,958. CLOTHES-DRYERS. Jacob Bowers, Jr., Lancaster, Pa. [Filed Aug. 2, 1875.]

Brief.—The arms are pivoted to the post, and have a sliding motion, and are held in position by a set-screw. The arms are made of two pieces, and the ends are bent to form a hook.

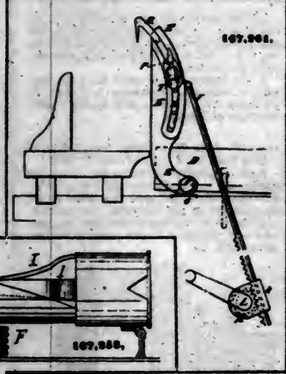
1. The arms B, pivoted to the post A, and provided with the hooks a, substantially as specified.

2. The arms B, pivoted to the post A, and provided with the hooks a, and set-screw b, substantially as specified.

167,887. SEDAN'ES. Patrick Kavanagh, Comerio, N. Y. [Filed July 17, 1875.]



The intermediate rollers C C, made solid, with journals b b on their ends, in combination with the flanges, center spool B, side plates D D, and outside sheave A, all constructed substantially as and for the purposes herein set forth.



167,888.



167,888.

167,889. WIRE-SOCKETS. D. A. Kelsey, Quincy, Ill. [Filed June 10, 1875.]

Brief.—The socket, being hinged and provided with a spring, is adapted to hold the rules.

1. The socket D, hinged as specified, and provided with the spring F, substantially as set forth.

2. The combination B and H, arranged and operating in the manner specified.

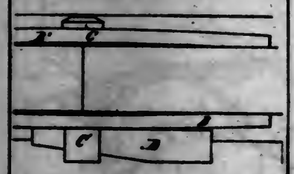
3. The combination of the socket D, spring F, and fingers I F, as described.

167,890. SPOKES AND FELLY FASTENER. J. L. Kendall, Pemberough, Mass. [Filed Feb. 9, 1875.]

An article of manufacture consisting of sponge and pulp filling, and a hooking-recessed thereto, substantially as and for the purposes specified.

167,891. RAILWAY-RAIL.—JOHN FAIRMAN, Tidioute, P., King and Edwin A. King, St. Louis, Mo. [Filed Mar. 11, 1875.]

Brief.—A rail-joint in which two elliptic spring fish-plates are secured at the joint of the rails by a square bolt, which passes through a slot in the end of the rails, and is secured in place by an upset wedge.



The combination of the elliptic fish-bars B B', the square bolt C, in connection with the slotted rails, and said parts fastened by a fastening device, D, all constructed as herein shown and described, to operate as and for the purpose set forth.

167,892. LOG-TURNERS. Henry Knowlton, Otter Lake, Mich. [Filed July 31, 1875.]

Brief.—The log is turned by a dog, which receives motion from a crank and pinion.

1. The combination of the eccentric plate O, the socket G, the hook-bar R, the spring S, and the stop T with the pivoted button or lever H, the connecting-rack J, the gear-wheel K, and the shaft L, substantially as herein shown and described.

2. The combination of the eccentric F and the spring I with the hinged cleat D, and with the button or lever H, that carries the hook R, substantially as herein shown and described.

167,893. HOSE-COUPLINGS. M. M. Lewis, New York, N. Y., assignor to himself and A. O. Aubery, same place. [Filed July 31, 1875.]

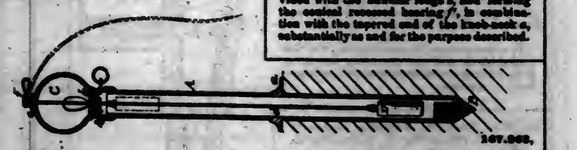
Brief.—The device consists of two pieces, substantially. The cylindrical piece that goes within the hose has a circumferential rib for passing the elastic substance into a groove in the outer clamping device, as shown. The external hinged coupling is brought closely about the hose by the thumb-screw, the rabbet allowing of close compression.



The hinged two-part tubular coupling B, provided with flanges b' b', groove b'', and rabbet b', as shown and described, to enable it to be used independently, or with a middle-ribbed inner coupling, as set forth.

167,894. HITCHING-POSTS. Thos. Maguire, Port Jervis, N. Y. [Filed July 24, 1875.]

Brief.—The bottom of the hollow post is provided with a pointed plug, with slot in its side, to allow the escape of any water that may get in the post. It is provided with a stopping arrangement near its top, to clamp the strap at any desired point.



167,894.

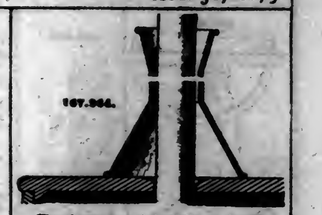
1. In a hitching-post, the combination of the hollow post A and pointed plug B, having slot a, as and for the purposes set forth.

2. The combination of the hollow hitching-post A, cap C, with diaphragm b, weight D, and rope, or its equivalent, E, with disk e and strap-hook f, substantially as and for the purpose set forth.

3. In a hitching-post having a hollow stationary post, with a weight therein attached to a rope, chain, or strap, a locking device arranged within the post for locking the rope at any desired point, as herein set forth.

167,895. GRAIN-GATE. Wesley Mason, Jefferson Township, Hillsdale county, Mich. [Filed Mar. 11, 1875.]

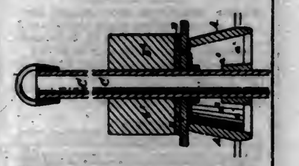
Brief.—The cap has a flaring bottom and top, the bottom being larger than the top. It is placed over the hole in the chute-cover, the slotter passing up through the cap, and prevents the splashing of the cream over the floor and the person operating the churn.



The churn-cap, substantially as described above.

167,896. COMBINED OVERFLOW-VALVE AND OVERFLOW-PIPE. Bernard McGrann and John Sohn, New York, N. Y. [Filed July 24, 1875.]

Brief.—When the weighted valve is lifted the water flows through the openings in the socket. Should the water rise above the central pipe it will waste and prevent overflow, as described.



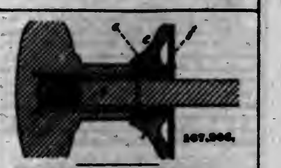
The combination of the overflow-pipe C with the weighted valve B b' b', and the socket A a' a', substantially as herein shown and described.

167,897. KNOB-ROSES. John Moore, Brooklyn, E. D., N. Y. [Filed Aug. 10, 1875.]

Brief.—The metal of the knob-spindle and all its connections is entirely concealed from view within a recess in the rose. The rose, the knob, and also its shank are all of porcelain, and as no metal is in sight, no polishing is ever required.

1. A back plate and a rose, against which the back plate rests, provided with an annular ledge within its central opening in combination with a thimble which moves into or upon the back plate, and is entirely within said central opening, and, by means of a flanged collar, rests upon the ledge in the rose, and secures the rose to the back plate.

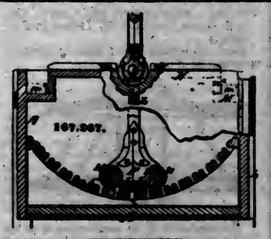
2. The hollow flanged thimble f, entirely within the central opening of the rose c, provided with the annular ledge e, and forming the central recessed bearing f', in combination with the tapered end of the knob-neck a, substantially as and for the purpose described.



167,897.

167,898. WASHING-MACHINES. Thomas McGuire Morris, Wabash, Ind., assignor to himself and Freeman Algar, same place. [Filed June 19, 1875.]

The combination of the grooved, slotted, and knobbed adjustment-heads b, and their locking-springs L, with the pivoting-rod J and the levers F of the oscillating rubber H I, and with the rods-bar A, substantially as herein shown and described.



167,897.

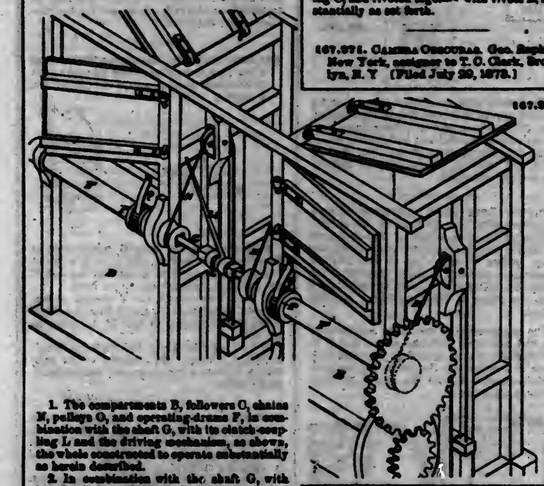
In a lantern, the guard-wires D upon opposite sides, extending above the reflector B', and having eyes d, in combination with the tail G, whereby the lantern is perfectly balanced, and the tail may be sufficiently large to be swung to the arm without swinging before the lantern, substantially as and for the purpose set forth.

167,899. FIRE-PROOF STRUCTURE. James D. Pierce and J. R. Smith, Milwaukee, Wis. [Filed Oct. 2, 1874.]



A fire-proof structure constructed with corrugated iron A, flat iron B, and fire-proof filling C, and riveted together with rivets E, substantially as set forth.

167,900. RAILING-FENCES. D. L. O'CONNOR, Covelo, Cal. [Filed June 28, 1875.]

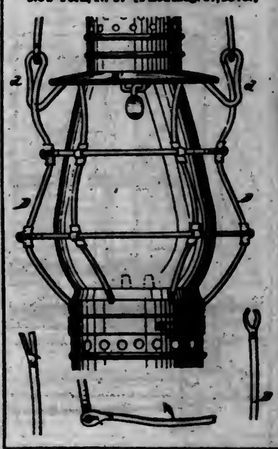


167,900.

1. The compartments B, followers C, chains E, pulleys G, and operating-drums F, in combination with the shaft G, with its clutch-coupling I, and the driving mechanism, as shown, the whole constructed to operate substantially as herein described.

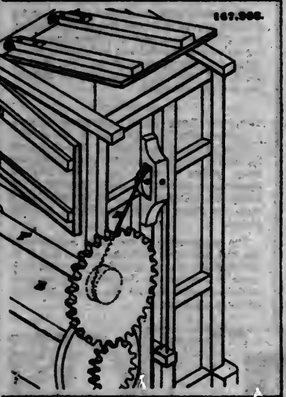
2. In combination with the shaft G, with its clutch I, and the independent rotating drums F, the ratchet-wheels P and pawls Q, substantially as and for the purpose herein described.

167,901. LANTERNS. Theodore B. Osborne, New York, N. Y. [Filed Aug. 17, 1875.]



167,901.

167,902. CAMERA OBSCURAS. Geo. Stephens, New York, assignor to T. C. Clark, Brooklyn, N. Y. [Filed July 20, 1875.]



167,902.

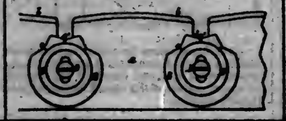


167,902.

The prism A, tube B, tube C, wheel F, pinion G, rod H, and sectional dark chamber K, all combined, arranged, and operating substantially as and for the purposes described.

167,903. GUIDES FOR SPOOLING AND WINDING MACHINES. Geo. Richardson, Lowell, Mass. [Filed July 20, 1875.]

Brief.—The guide is made in the form of a rotary flat disk, provided with radial slits of varying widths for different-sized threads, and with tapering throats to guide the thread into the slits. A rotary adjustable yarn-rest, shorter in form, is secured to the rail by means of a screw-bolt passing through the guide, rest, and rail, and fastened by a nut.



167,903.

1. The rotary flat plate or disk yarn-guide B, provided with a series of radial slits, *c c'*, and a tapering throat, *d*, to each, all being as and for the purpose described.

2. The combination of the rotary adjustable yarn-rest C with a slitted guide and the guide-rail A, all being arranged as described.

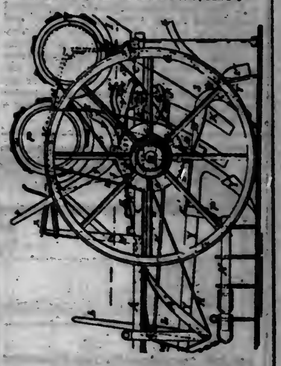
167,904. TOOL-HANDLES. W. H. Schwin, Talladega, Ala. [Filed Jan. 26, 1875.]

Brief.—Implements such as hoes, rakes, forks, &c., are attached to their handles by clamping the tang of the tool between a metal head, provided upon its rear part with a wedge-shaped rigid jaw, having projections upon its lower and inner surface, and a perforated jaw adjustable upon the head by a screw arranged exterior to and above that portion of the head in which said jaws move, and journaled in a shoulder on the head, and threaded in the heel of the movable jaw.



In a tool-handle, the combination, with the head *a*, provided with the shoulder *a'*, and projection *a''*, and the movable jaw *c*, of the adjusting-screw *d* arranged exteriorly to the shaft *a'*, and journaled in the shoulder *a'*, and threaded in the heel of the movable jaw *c*, substantially as and for the purpose shown.

167,905. FIRE-LIGHTERS—DISTRIBUTORS, PLANTERS, AND CULTIVATORS. Bolivar Bonfield, Cartersville, Ga. [Filed June 5, 1875.]



167,905.

1. The combination of the three plows Y B' D', the brackets A', the cross-bar C, the connecting-rod B'', the covering-plate T, and the weight U' with the tongue A and the distributing-spouts J K of the machine, substantially as herein shown and described.

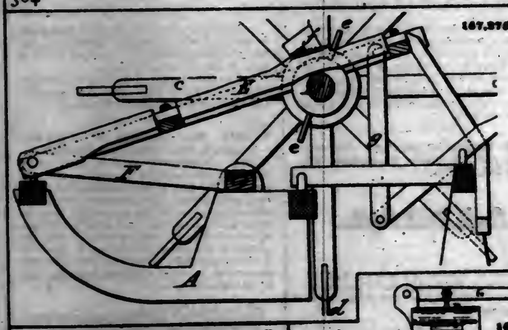
2. The combination of the fifth-rods D', the U-bar B', the rock-shaft B', the weighted cross-bar C', the cords H', the pulleys I', the rigid arm J', the rod K', and the lever L', with the plows Y B' D', and the frame-work of the machine, substantially as herein shown and described.

167,906. CORN-MACHINES. Wm. F. Sevier, Marshall, Mo. [Filed Apr. 17, 1875.]

Brief.—Mounted upon a shaft is a pivoted frame that carries an axle, on either end of which revolves marking-wheels. The axle, at about midway of its length, is provided with tappets, that strike projections on an oscillating bar for actuating the seed-slide.

The vertically-moving frame F, pivoted to the shaft A, and carrying marking-wheels, in combination with the axle D, having tappets *a*, oscillating bar B, having arms *f f*, and the sliding bar G, substantially as described, and for the purpose set forth.

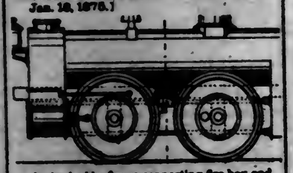
167,276.



167,278.



167,276. LOCOMOTIVE-ENGINES. Thos. T. V. Smith, Yarmouth, Nova Scotia. (Filed Jan. 16, 1875.)

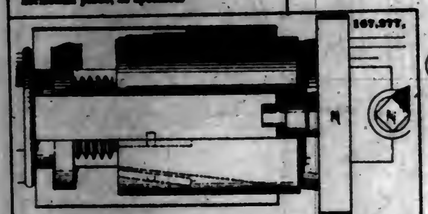


1. An inside frame connecting fire-box and cylinders, as described, and provided with a bolster, D, in combination with an outside frame and pivoted bolster, H, substantially as described.

2. The inner frame composed of longitudinal bars bolted to rear overhanging fire-box, and connecting it with the cylinders and transverse bars in front, substantially as set forth.

3. The combination, with inner and outer curved bar frames, bolts, and overhanging fire-box, of the sliding stays, whereby the weight of overhanging fire-box is suspended on outer frame, while it is free to swivel or move in a horizontal plane, as specified.

167,277.



167,278.



167,277. CHECKS FOR HOLDING BACK HORSES WHEN RIDING TURNING. W. Bell Smith, Charleston, S. C. (Filed July 17, 1875.)

Brief.—An expanding mandrel, which fits in the bore of the coupling, is used for centering the same in position. The flange upon the mandrel rides in a slot of the base-plate, and carries the nut with which the adjusting-screw engages.

The plate A, in combination with the movable expanding mandrel B and screw F, all constructed and operating substantially as and for the purpose described.

167,278. CAR-COUPLINGS. H. H. Spafford, Strongsville, Ohio. (Filed Nov. 24, 1875.)

Brief.—The rounded and curved shoulders of link and draw-head allow link to be set either horizontally or at any angle to enter opposite draw-head.



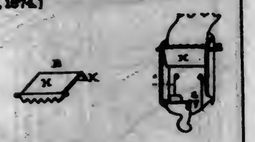
The link D, with shoulders *c* above, and *c'* below, curved and rounded, in combination with fulcrum-bearing *a* of a draw-head, having a shoulder curved and hollowed to correspond with the shoulder of the link, pearl E, pin F, and lever G, substantially as and for the purpose described.

167,279. SODA-BEDS. Augustus Spiegel, Indianapolis, Ind. (Filed Feb. 24, 1875.)

Brief.—The main section of the lounge can be drawn out horizontally, after which the lower section is drawn up on the inclined planes by means of the straps attached to the rollers, the rollers of the lower section resting upon the steps at the tops of the inclined planes.

The combination of the lower section G of the bed, provided with the rollers E E E E, the inclined planes G G G G, provided with steps D D at the top, the straps J J, the roller F, the sheave K, and the cord L, substantially as specified.

167,280. BUCKLES. Sherwood Wales, New York, assignor of one-half his right to M. H. Parsons, Tarrytown, N. Y. (Filed Oct. 8, 1874.)



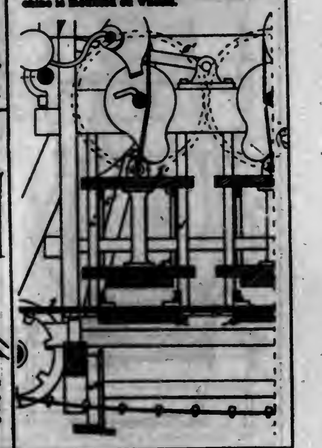
1. In a buckle, the lever B, constructed as described, with leaf H, and with or without fold K, as arranged so to conceal the end of the material, substantially as set forth.

2. In a lever-buckle, the V-shaped projections or indentations G, struck from the sheet-metal bed or tongue, as and for the purpose set forth.

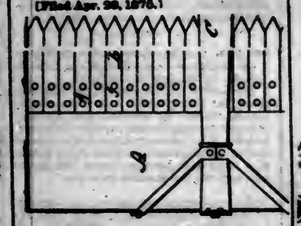
3. In a lever-buckle, a bed-plate cut longitudinally without the removal of its substance, to form a spring-tongue, substantially as set forth.

167,281. BLOCK-PRINTING MACHINES. Frederick Walton, Staines, Great Britain, assignor to American Linoleum Manufacturing Company, New York, N. Y. (Filed Mar. 22, 1875.)

Brief.—Web of cloth is carried under plates by endless belts having pins extending upward into holes in the cloth. The printing blocks reciprocate at right angles to the direction of the cloth, and receive their color from a proper color-trough. The working faces of plates are as apart as the width of the blocks, so that the blocks register with every second fall of plates. The whole machine is mounted on wheels.



167,282. GATHERING MACHINES FOR GATHERING GRAIN-SHEAVES. Jos. R. Symmes, Hamilton, Ohio. (Filed Apr. 30, 1875.)



A hand-instrument for gathering bine-grass and red-top seed, composed of a receptacle, A, elastic teeth, B B, rod, handle C, constructed to operate substantially as and for the purposes herein specified.

167,281. BLOCK-PRINTING MACHINES. Frederick Walton, Staines, Great Britain, assignor to American Linoleum Manufacturing Company, New York, N. Y. (Filed Mar. 22, 1875.)

Brief.—Web of cloth is carried under plates by endless belts having pins extending upward into holes in the cloth. The printing blocks reciprocate at right angles to the direction of the cloth, and receive their color from a proper color-trough. The working faces of plates are as apart as the width of the blocks, so that the blocks register with every second fall of plates. The whole machine is mounted on wheels.

167,282. GATHERING MACHINES FOR GATHERING GRAIN-SHEAVES. Jos. R. Symmes, Hamilton, Ohio. (Filed Apr. 30, 1875.)

A hand-instrument for gathering bine-grass and red-top seed, composed of a receptacle, A, elastic teeth, B B, rod, handle C, constructed to operate substantially as and for the purposes herein specified.

1. The combination, substantially as before set forth, of the endless carrying and supporting bands fitted with pegs projecting from their upper surfaces, (to enter holes punched in the margins of the fabrics,) the supporting-table, and the reciprocating platen for the color-block.

2. The combination, substantially as before set forth, of the endless carrying-bands fitted with pegs, the supporting-table, and the presser-roller for pressing the fabric upon the pegs of the supporting-bands.

3. The combination, substantially as before set forth, of the endless carrying-bands fitted with pegs, and the perforating apparatus, whereby the cloth may be punched in the same machine in which it is carried along.

4. The combination, substantially as before set forth, of the series of reciprocating platens for the color-blocks, the color-blocks supported by spaces, and the guide-bars for said platens arranged opposite the ends of the spaces between said color-blocks.

5. The combination, substantially as before set forth, of the cloth-moving mechanism, the supporting-table, the series of platens for the printing-blocks, and the series of color-tables arranged to reciprocate horizontally between the supporting-table and the platens.

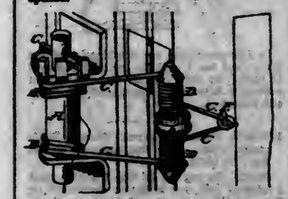
6. The combination, substantially as before set forth, of the reciprocating color-table for the color-pad, the paint-trough, and the doctor.

7. The combination, substantially as before set forth, of the supporting-table, the endless carrying-bands, the recessed rubber-wheel, and the pin-thrower.

8. The arrangement, substantially as before set forth, of the supporting-bed, the intermittent cloth-moving mechanism, the series of platens for the printing-blocks, the series of reciprocating color-tables for the color-pads, and the frame of the machine upon supporting-wheels, the whole constituting a locomotive block-printing machine for printing fabrics by means of a series of blocks.

167,283. DOOR-SPRINGS. Lemuel A. Warner, Prescott, Ill. (Filed Apr. 12, 1875.)

Brief.—A supplementary or intermediate coil-spring, formed from the same rod or wire in the form of the arms or levers of the main device, and having a suitable pin passing through it, constitutes an elastic silver-joint, there being a loop attachment to the door, and a short or its equivalent on the door-frame, for suitable fastenings for the ends of the arms; the construction being such that, by means of the silver-joint, the arm is folded up when the door is closed, and is allowed to open and lengthen out when the door is opened.



1. The coil-spring D composed of two equal parallel coils, formed in the two parts of the arm or lever C, with suitable fastenings for the ends of the arms, in the manner described and in connection with the pin *b*, constituting an elastic silver joint, whereby the arm is folded up when the door is closed, and is allowed to open and lengthen out when the door is opened, constructed and operating substantially as described and shown, for the purpose specified.

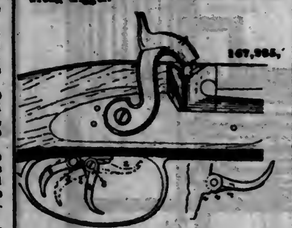
2. The improved door-spring, consisting of the shaft A, or its equivalent, the spring B, the arm or arms C C, the loop E, and the collar D, all substantially as described, and for the purpose specified.

167,284. ANTOMATIC TURNSTILE FOR FIRE-ARMS. Henry Wallbaum, Syracuse, N. Y. (Filed July 12, 1875.)

1. An adjustable trigger or fire-arms, to arranged as previously to regulate the length of stock to the person by acting the trigger forward or backward in a line with the trigger-guard.

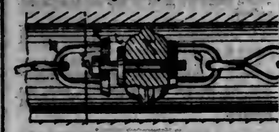
2. In double-barrel guns, a front trigger pivoted or hinged onto the trigger-block, so that it can be turned up out of the way of the finger, for preventing mistakes in pulling the wrong trigger.

167,285.



167,285. CORN-PLANTER. William Wahrer, Evansville, Ind. (Filed July 10, 1875.)

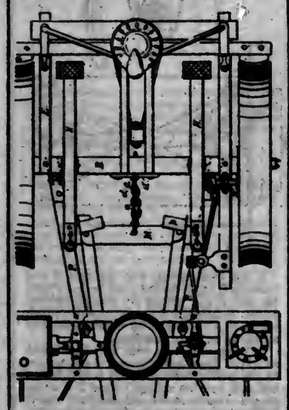
Brief.—By unscrewing the binding-yoke a seed basket can be slipped on the bolt when desirable to renew. By screwing the set-yoke more or less tightly on the bolt, the basket is more or less compressed and expanded in a radial direction, admitting of an accurate fit of the same to the barrel. The basket has the top swivel, as described.



The combination basket A and set-yoke D, swivel-yoke E of a bolt, B, having head B', flange-plate C, and end screw working in a plate of set-yoke D, as and for the purpose specified.

167,286. CORN-PLANTERS. Sumi. Wright, Troy, Ohio. (Filed May 3, 1875.)

Brief.—The wheel and runner frames are flexibly connected by bands hinged at one end, and by an eyebolt, forming a partial swivel at the opposite end. Attached to the runner-frame, and pivoted upon the wheel, are two independent foot-levers, for elevating either side of the runner-frame separately.



1. The combination and arrangement of the foot-levers H, axle B, pivoted beams F, and cross-bar M, substantially as described, and for the purposes specified.

2. The beams F, in combination with the forward and rear frames of a corn-planter, when hinged to the axle so as to allow of only a vertical motion, and united to the forward frame by means of eyebolts, forming a partial swivel, substantially as described, and for the purpose specified.

167,287. TOBACCO-CUTTERS. James L. Adams and J. G. Hondin, Montreal, Canada; said Hondin assignor to said Adams. (Filed May 20, 1875.)



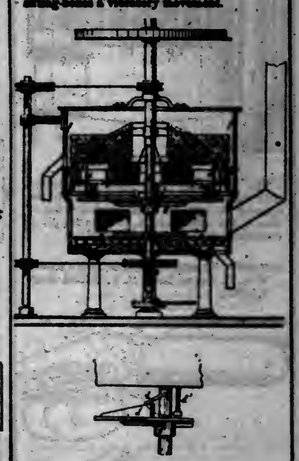
The described machine for shredding tobacco, in which are combined the feeding-plate G, shaft S, disks C, and knife H with the fixed curved plate D', and the knife-plate D, having journal-bearings in the disks, and adjustable by means of set-screw F to regulate the thickness of the cut, as set forth.

167,288. PROCESSES FOR ORNAMENTING CHINA, GLASS, &c. Samuel M. Adams, New York, N. Y. (Filed May 11, 1875.)

The method herein described of ornamenting china, glass, &c., by means of vitrifiable colors mixed with water, and applied to the object to be decorated in a coating of the desired thickness, a design being then printed on or otherwise applied to such coated surface with oil, and then such part of the coating not covered by the said design being brushed off or otherwise removed, the article so decorated being subsequently subjected to heat for the purpose of burning on or fixing the design upon the same, substantially as set forth.

167,289. MILLS. Jules Andre, Paris, France. (Filed Apr. 20, 1875.)

Brief.—Means for giving the cloths of the sifting-boxes a vibratory movement.



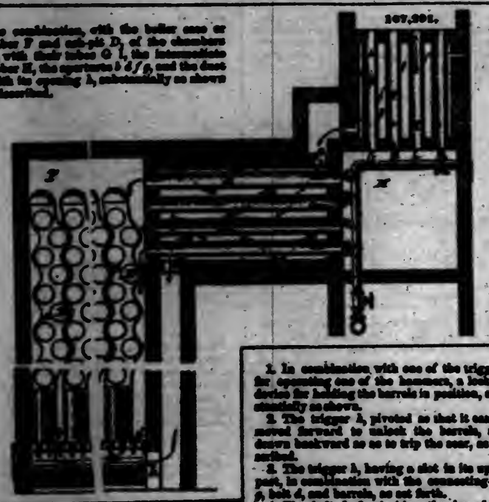
In combination with the sifting-boxes *a* in a millstone, the rod *f*, extending down from each box, the levers *d*, and revolving cams *j*, substantially as and for the purposes described.

167,290. FURNACES. Benjamin T. Babbitt, New York, N. Y. (Filed June 28, 1875.)

Brief.—Air to the fire-box is heated by being passed through chambers, inclosing the fire-holes.

The combination, with the boiler case or chamber F and ash-pit D, of the chambers B J, with their tubes C I, the intermediate chamber H, the apertures b f g, and the door L, with its opening k, substantially as shown and described.

167,891.



167,892. Smoke-Burning Range. Benjamin T. Babbitt, New York, N. Y. [Filed June 30, 1875.]

Brief.—Heated air is led into the fire-box through vertical tubes that pass through a heating-plate.



The air-heating tubes F, in combination with the smoke-jacket or return flue I, the cylinder E, with its direct smoke-tubes or flues C, the outer case A, and the ash-pit J, essentially as shown and described.

167,893. Breech-Loading Fire-Arms. Wm. H. Baker, Lisle, N. Y. [Filed Aug. 7, 1875.]



1. In combination with one of the triggers for operating one of the hammers, a locking device for holding the barrels in position, substantially as shown.

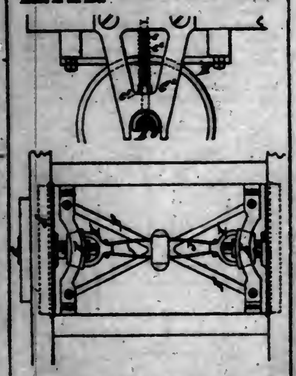
2. The trigger A, pivoted so that it can be moved forward to unlock the barrels, and drawn backward so as to trip the cock, as described.

3. The trigger A, having a slot in its upper part, in combination with the connecting-rod B, bolt d, and barrels, as set forth.

4. The bolt d, for locking the barrels in position, so connected to the hammer-trigger that the barrels cannot be fired until the bolt is forced forward to lock the barrels in position.

167,894. Gun-Trigger. Ramon Rueda, Madrid, Spain. [Filed June 11, 1875.]

Brief.—Each wheel is mounted upon short independent axle, having outside and inside bearing; said inside bearing being supported in a frame, and capable of horizontal movement in an arc.



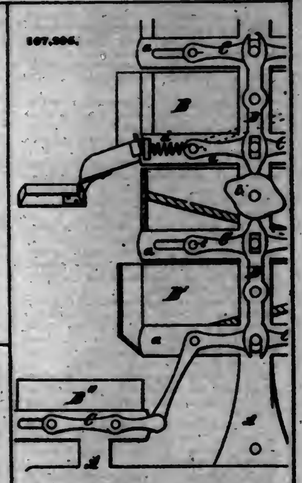
1. The combination, with the axle B and bearings C D, of the rod e and spring S, and the axle G and springs G², whereby vertical motion is allowed to the bearings, either simultaneously or independently of each other, substantially as herein described.

2. The combination, with the wheel A and axle B, of the exterior bearing C and hanger G², the interior bearing D, and slotted bar or frame E, and the springs I I and J J, all arranged as herein shown and described, whereby the wheel is enabled to adapt itself to different curves, and automatically resume its position after passing the same, substantially as set forth.

167,895. Axle-Skeins. William Hammon, Pittsburg, Pa. [Filed Apr. 20, 1875.]

Brief.—A series of graduated sleeves, supported by a vertical standard, are carried by a cam and crank, and made to deliver the material oiled in different places, according to size.

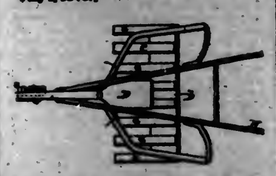
167,896.



1. The combination, with the vertical series of vibrating screens B B B B, of the vibrating receptacles B² B², substantially as described.

2. The standards A, having the slotted arms a, supporting the beam B B and the vibrating mechanism thereof, substantially as and for the purposes specified.

167,897. Potato-Digger. David Botsford, Warsaw, N. Y., assignor of one-half his right to F. Cushings, same place. [Filed July 1, 1875.]



In a potato-digger, the combination of the teeth c and bar b with the removable shovel D, having its sides turned over so as to form a sleeve to fit the teeth, substantially as shown and described.

167,897. Grain-Cleaning. Theodor Bühlmann, Chiens-Zug, Switzerland. [Filed Apr. 26, 1875.]

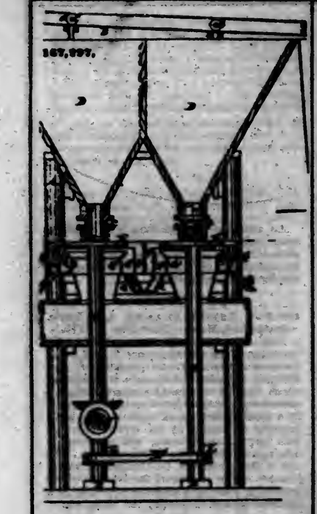
Brief.—The grain is fed from a hopper upon a rotating disk, and is thrown thereby off by the centrifugal impulse derived therefrom, falling into a succession of receiving boxes. Blowers attached to and rotating with the disk breast the grain into discharge-spouts. A dust-chamber situated immediately below, and communicating with, a suction-fan receives the light impurities caught by the draft from the grain as it flies off the disk.

1. The combination, substantially as described, of the hopper D, the rotary disk R, and casing G, divided into a series of concentric annular compartments, as and for the object specified.

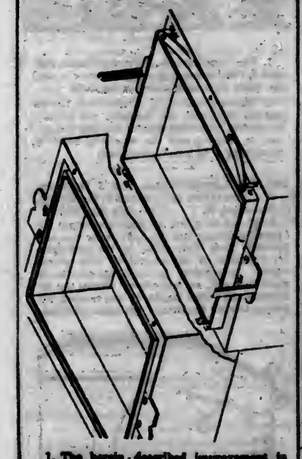
2. The combination of the rotary disks R, having the spherical R² attached thereto, with the casings G, divided into concentric annular compartments, and provided with spouts Q, substantially as and for the object hereinbefore described.

3. The combination of the horizontal rectangular supporting sieve-frame F, the sieve E, and the transverse cover cross-bars C, resting at their ends against the sides of the sieve-frame E, and constructed to be adjusted for varying the longitudinal play of the frame relative to or from each other, substantially as described.

167,898.

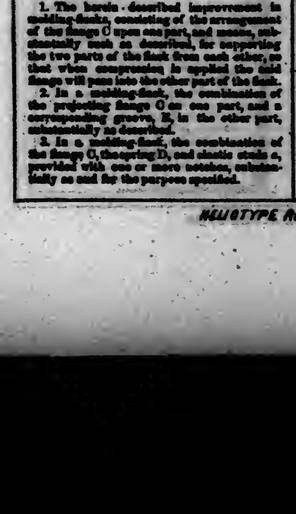


167,898. Molding-Machine. Benjamin B. Bennett and Geo. T. B. Manley, Stamford, Conn. [Filed Apr. 27, 1875.]



4. The combination, with the rotary disks E and the casings G, constructed with a series of compartments, of the dust-box H, arranged below, and communicating with the said disks and casings, and the fan O, connected with the dust-box by the vertical flue N, substantially as and for the purposes described.

167,899. Molding-Flasks. Benjamin B. Bennett and Geo. T. B. Manley, Stamford, Conn. [Filed Apr. 27, 1875.]



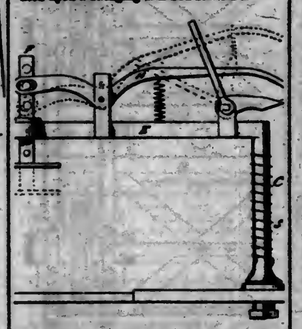
1. The herein-described improvement in molding-flasks, consisting of the arrangement of the flanges C upon one part, and recess, substantially such as described, for supporting the two parts of the flask from each other, so that when compression is applied the said flange will pass into the other part of the flask.

2. In a molding-flask, the combination of the projecting flange C on one part, and a corresponding groove, E, in the other part, substantially as described.

3. In a molding-flask, the combination of the flange C, the spring D, and elastic studs a, provided with one or more notches, substantially as and for the purposes specified.

167,900. Molding-Machine. Benjamin B. Bennett and Geo. T. B. Manley, Stamford, Conn. [Filed May 4, 1875.]

Brief.—A press-platen adjusted and operated upon a swinging arm and standard.



1. The combination of the arm E, the slide F, carrying the platen G, the lever H, cam I, and its lever P, substantially as described.

2. The combination of the post C, the arm E, platen G, and lever H, all substantially as set forth.

3. The combination of the arm E and the mechanism thereon, the pivoted post C, supporting said arm and mechanism, and the spring S, for automatically turning the apparatus, substantially as described.

4. The combination of the arm E, lever H, cam I, and its lever P, and the slide F, with the platen G hung to the said slide by a loose or universal joint, substantially as set forth.

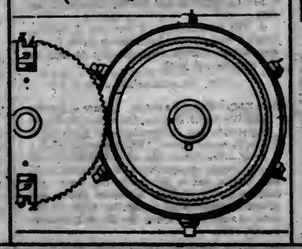
167,901. Hair-Tie Retainers. Geo. Burnham, Jr., Yardleyville, Pa. [Filed June 30, 1875.]



The within-described neck-tie retainer, consisting of the spring-arms b b' for grasping the fold of the collar, and the spring-tongue b for holding the tie, all constructed and arranged as set forth.

167,902. Knitting-Machine and Knit Fabrics. Frank Burns, Waltham, Mass. [Filed June 12, 1875.]

Brief.—A needle is taken out of one or more points in the circle, and the rotating rollers in the present operate to alternately press and raise the bands of two needles on each side of the space left by the needle which has been taken out. These two needles, therefore, form loops only at every alternate revolution of the machine, and these loops are twice the length of those in the body of the fabric.



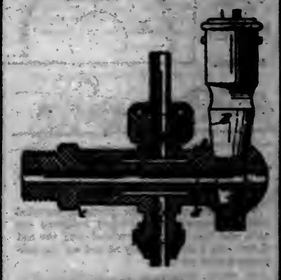
1. In combination with a rotary knitting-machine, a rotating pressure-wheel, provided with one or more rollers, D, adapted to rotate intermittingly, and press alternately upon two needles on each side of the space left by the removal of one needle, substantially as and for the purposes herein set forth.

2. The rotary pressure-wheel U, provided with the rollers D, constructed as described, with notches *a a*, recess b, and tongue d, in combination with the hook h and spring f, substantially as and for the purposes herein set forth.

3. A knitted fabric, having one or more seams, c, and a rib, w, of long loops on each side of each seam, substantially as shown and described.

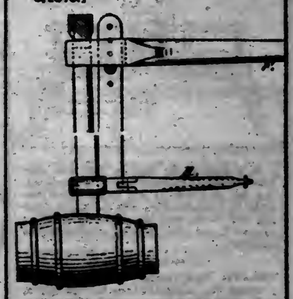
167,903. Pot-Cocks for Locomotives. Fred A. Casey, Elkhart, Ind., assignor of one-half his right to E. Bourge, same place. [Filed Feb. 24, 1875.]

Brief.—For winter use the movable hollow plug is screwed against the seat in the body of the cock, when steam from the boiler will enter the chamber surrounding said plug and prevent freezing. Water from the cylinder and chamber passes out through the channels leading from the latter. For summer use the joint between the plug and its seat is broken, the channels for the escape of water closed, and the water in the steam-jacket pumped to the boiler.



The combination, with the barrel A and plug or key B of a pot-cock, of the hollow plug C, forming steam-tight joints at *c d*, the annular chamber *f*, inlet h, and outlet i, all substantially as and for the purposes herein set forth.

167,904. Tire-Tightening Machine. J. Champlin, Penn Yan, N. Y. [Filed Aug. 5, 1875.]

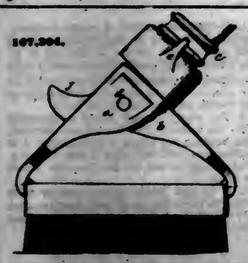


In a tire-tightener, the forked lever F, in combination with the fulcrum G and tongs H, all substantially as and for the purpose set forth.

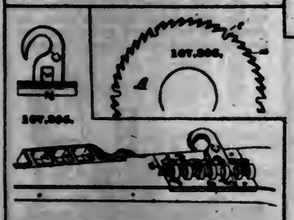
167,905. Mop and Broom Holders. C. B. Clark, Buffalo, N. Y. [Filed Aug. 4, 1875.]



167,894.



The combination, with the fixed jaw *a*, having a slotted screw-threaded shank, *i*, and a thumb-nut, *c*, applied thereto, of the movable jaw *b*, pivoted within said slotted shank, and having its rear end constructed with a lever, *j*, on which the nut operates, so that said rear end is controlled by the nut, and formed to center the shank by tightening said nut, substantially as and for the object specified.

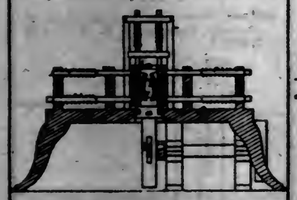


167,895. HARNESS-MAKERS' J. P. Clopton, Milan, Tenn. [Filed Mar. 6, 1875.]

The combination of the plate B, provided with the curved hooks *b b* and hollowed out at *a*, and the hook C, provided with the rod *d*, and slot *f*, substantially as and for the purpose herein set forth.

167,896. MACHINES FOR PITTING COATINGS TO LASTS. Louis Goin, St. Hyacinthe, Canada. [Filed Apr. 2, 1875.]

Brief.—The counter is pressed around the form by means of yielding jaws and rollers.



In a machine for shaping boot and shoe counters, with rollers to bend, as described, the last or former D and its operative carriage B, in combination with the lateral-yielding jaw E E, and the vertically-yielding presser F, and roller G, being substantially as specified.

167,897. GAS-TRAPPERS. C. H. Cox, Richmond, Va., assignor of one-half his right to Josiah I. Martin, same place. [Filed Aug. 14, 1875.]

Brief.—Peculiar frame-work of cross-pieces supporting independent small-sided vessels, on which rests operating-bar, containing springs and cut-body.

1. In a car-truck, the combination of the rectangular frame A B, interior beams A' A' and B' B', and cross-beams *c c*, as shown and described.

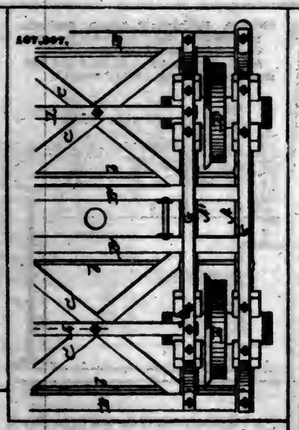
2. The combination of the hangers D, journal-boxes *d*, wheels E, with short axles *e*, strap-bars G, connecting-bars *f*, and springs H, all substantially as and for the purposes herein set forth.

167,898. MACHINES FOR PUNCHING AND PERFORATING PAPER. William Dunkin, Brooklyn, N. Y. [Filed June 26, 1875.]

The circular cutter A, having teeth upon its periphery, with bevel or knife edges *c*, and lantern *a* at suitable intervals, and of sufficient depth to extend below the cutting-surfaces of the teeth, substantially as and for the purpose specified.

167,899. FOLDING AND PERFORATING MACHINES. William Dunkin, Brooklyn, N. Y. [Filed Aug. 12, 1875.]

Brief.—The folding-arm has a perforating-blade, which perforates the sheets, and then turns back and permits the folding-blade to carry them between the rolls. A rotary cutter then makes a line of perforations on the line of the second fold, while the sheet is on the way to the second set of folding-rolls. The sheets, when folded, are perforated on the folds, so that they can be easily separated by tearing.



1. The combination, with a paper-folding mechanism, substantially as described, of a rotary perforator, whereby the sheets are folded and perforated on the line of the next fold, for the purpose set forth.

2. In a paper-folding machine, the combination of the rotary perforator B, clamping disks or plates *g*, and carriage *i*, arranged to slide endwise and vertically within a frame, *k*, substantially as and for the purpose specified.

3. The combination of the arm *f*, folding-blade *l*, and pivoted perforating-knife F, constructed to operate substantially as and for the purpose set forth.

167,900. PILE FABRICS. Henry J. Davies and Walter D. Davies, Brooklyn, N. Y., assignors to Jas. G. Bennett and Andrew H. Smith, same place. [Filed Mar. 6, 1875.]

Brief.—The fabric has curved form and serrations, which present area of different radii and length, and is set up in bat form by a carding-engine, having a conical doffer, and otherwise constructed to produce a curved bat, such as shown in Patent No. 155,393, September 29, 1874.

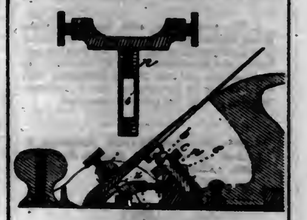
167,901.



An article of manufacture from which to make ladies' skirts, &c., consisting of a felt cloth of a curved form, having selvages which present area of different radius and length, as and for the object specified.

167,902. BENCH-PLANES. L. L. Davis, Springfield, Mass. [Filed Mar. 3, 1876.]

Brief.—The bit is adjustable longitudinally by means of an abutting piece formed upon the base of the stock, and provided with an obliquely-threaded socket, and a support upon which the bit rests, said support having a threaded pin upon its lower part, and operated by a thumb-screw turned upon it. The bit is laterally adjustable by set-screws provided with large flanged heads, and operating in bearings on either side of the support. The size of the throat can be changed by an adjustable wedge in rear of the bit, the whole secured in place by a set-screw operating in a cross-bar located in front of the plane-iron.

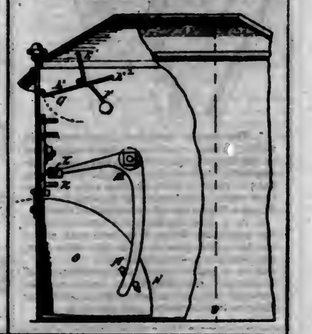


1. The combination of the adjustable support *b*, the lateral adjusting-screws *a a*, and the screw E, substantially as set forth.

2. The combination of abutment D, the adjustable support *b*, the threaded pin *n*, nut *o*, the lateral adjusting-screws *a a*, the wedge *f*, and its screw *p*, and the clamping-screw E, substantially as herein described.

167,903. LETTER-BOXES. Jas. J. De Barry, T. J. Lendqvist, and Almiras T. Lendqvist, Brooklyn, N. Y. [Filed July 30, 1875.]

Brief.—A weighted tilt-plate discharges the deposited letters into the body of the box, and prevents their abstraction by the particular arrangement of its serpentine wire guard-wings. In opening the discharge-door to remove the mail, an angle-lever raises the indicating-disk the length of one ratchet, exposing to view the time of the next collection.

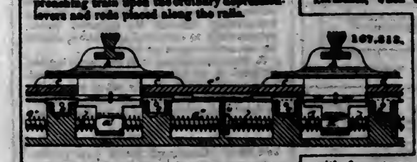


1. The combination, substantially as described, of the mail-opening H, rock-shaft D, radial arms E E', weighted arms F, and drop-bar G, the whole constructed and arranged to operate substantially as described.

2. The combination, with a street letter-box, provided with an opening, I, the rotating ratchet-indicating-disk, provided with a series of pins on its rear face, the angle-lever M, and drop-door O, provided with the pins N N, for operating said lever and ratchet-disk, substantially as described.

167,904. RAILWAY-SWITCHES. Clifford P. Dayton, New York, N. Y., assignor of one-half his right to Henry B. Pratt, same place. [Filed May 10, 1875.]

Brief.—A railway-switch in which the movable rails are secured to chairs, which have a downward-projecting arm or flange, through which passes a rod carrying coiled springs, which act to keep the rails in proper alignment with the main line. Said chairs have overhanging guards, which slide upon curved seats on top of the box, which contains the operating mechanism. The rails are secured in position by spring-levers, which carry pins or lugs, which pass into holes in the operating-lever, and they are withdrawn and the rails released by the action of the wheels of an approaching train upon the ordinary depression-levers and rods placed along the rails.



1. The sliding plate A, with its projection *a'*, in combination with the spring-bar *a''*, switch-bar *c*, and box *b*, in the manner and for the purpose herein described.

2. The raised and curved plates *e e e*, formed upon the cover *d'* of the box *b*, in combination with the sliding plate A, in the manner and for the purpose herein described.

3. The bars *d d*, curved at or near their center, having formed upon them the projecting points or lugs *g'*, in combination with the switch-bar *a*, springs *d''*, follower *d'''*, and retracting-rods *m*, in the manner and for the purpose herein described.

4. The recesses *g g*, formed within the box *b*, to receive the springs *d d*.

5. The box *b*, when constructed and arranged as herein described, so as to contain within the same the spring-bar *a''*, switch-bar *a*, bars *d d*, springs *d''' d'''*, and recesses *g g*, in the manner and for the purpose herein described.

The joiner's or carriage-maker's clamp herein described, comprising the clamp-arms A B, sliding metallic jaw or casting E, and the clamping-screw C, all constructed and combined substantially as herein set forth.

167,905. OVERALLS. George R. Hagar, Boston, Mass. [Filed Dec. 11, 1874.]

Brief.—Each section of the waistband may be adjusted independently of the other

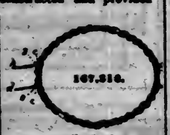


A pantaloon-garment provided with a bottom waistband, *a*, strap or straps C secured thereto, and with a pair of buckles, *b b*, the whole being arranged and constructed in the manner substantially as set forth.

167,906. OVERALLS. George R. Hagar, Boston, Mass. [Filed Mar. 10, 1875.]

1. A waistband for pantaloon and other garments, when constructed and provided with four straps, *d d'* and *b b'*, and their respective buckles *a*, *c*, *m*, and *e*, in the manner and for the purpose set forth.

2. A hollow waistband, provided with a strap and buckle, when the opening for the passage of the strap out of the waistband is lined with leather *d*, or its equivalent, for the purpose set forth.



167,907. OVERALLS. George R. Hagar, Boston, Mass. [Filed Aug. 27, 1875.]

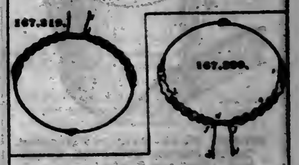
A strap for a waistband for pantaloons and other garments, made partly of cord or other round and suitable material, and partly of cloth or other flat material, substantially as and for the purposes set forth.



A waistband for pantaloons and other garments, when provided and arranged with a strap or straps, and with two buckles, *a* and *a*, at the sides, and another, *p*, in the middle, in the manner substantially as and for the purpose set forth.

167,908. OVERALLS. George R. Hagar, Boston, Mass. [Filed Mar. 10, 1875.]

A hollow waistband for garments, when such is constructed and provided with two straps, *c c'*, attached to the waistband, two buckles, *f*, and two blank buckles, *b b'*, in the manner and for the purposes set forth.



167,909. OVERALLS. George R. Hagar, Boston, Mass. [Filed Mar. 10, 1875.]

An unattached strap, *d*, provided with two buckles, *f f*, in combination with a waistband made in two parts, *a* and *b*, each of which is provided with a loop or blank buckle, *c* or *c'*, in the manner and for the purpose set forth.

167,910. OVERALLS. George R. Hagar, Boston, Mass. [Filed Mar. 10, 1875.]



A waistband for garments, when constructed and provided with two straps *b b'*, and four loops or blank buckles, *c c'* and *d d'*, in the manner and for the purposes set forth.

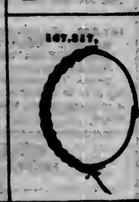
167,911. WRISTLETS AND NECK-YOKES. Geo. W. Eddy, Waterford, N. Y., assignor to L. K. Eddy, Philadelphia, Pa. [Filed July 8, 1875.]



1. As an improvement in the construction of wristlets and neck-yokes the tubular body A and the central re-enforce or sleeve B, constructed substantially as described.

2. In combination with the tubular body A the wood filling applied therein, substantially as shown and described.

3. In combination with the tubular body A the terminal or caps D, constructed and applied substantially as set forth.



167,912. JOINTS OF CLAMPS. W. J. Dealey, Camden, N. J. [Filed July 7, 1875.]

Brief.—The space in the rear of the clamping-screw can be varied, to hold various-sized articles, by means of a longitudinally-adjustable jaw or metallic casting, composed of two side and two end connecting-plates, and provided with ribs, which hold it in place while sliding by bearing against the inner sides of the longitudinal bars.



167,913. OVERALLS. George R. Hagar, Boston, Mass. [Filed Mar. 10, 1875.]

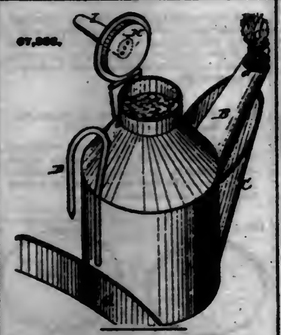
167,914. MINERS' LAMPS. William Byron and Richd. C. Cook, Hyde Park, Pa. [Filed Mar. 17, 1875.]

Brief.—The lamp is provided with an oiling-spout.

1. In a miner's lamp having the oil-reservoir A and lid or cover B, the oiling-spout I, located in the cover and forming part of the lamp, substantially as and for the purpose herein set forth.

2. The combination, with a miner's lamp, of the stationary metallic cup-piece G and the stationary hook above the same, all substantially as set forth.

167,202.



167,204. Rock-Drilling Machine. Camille Fevrier, Gouvieux, Switzerland. [Filed Aug. 6, 1874.]

Brief.—A stationary cylinder is furnished with a hollow rod and piston, which carries the working-cylinder. Compressed air admitted back of the hollow piston feeds up the drill-cylinder, to which air is conducted through the hollow piston-rod. A pawl on the cylinder engages in a rack, and holds the cylinder stationary until the anvil advances sufficiently to raise the pawl.



167,204.

1. The rock-drilling machine, consisting of the pivoted bars B, the fixed cylinder A secured between the rear ends of the bars, and provided with the piston and piston-rod D, and the sliding cylinder K, supported by the bars, and provided with the piston-rod D, and containing the piston I, the drill-carrying rod M, all arranged and operating as shown and described.

2. In a rock-drilling machine, the combination of a sliding cylinder, K, provided with the drill-operating piston, and moved continuously forward by means of a cylinder and piston behind it, and a dog, T, attached to the sliding cylinder, engaging in a fixed rack, to prevent the advance of said cylinder, and arranged to be released by the piston when the latter is at full stroke, as shown and described, whereby the drilling-cylinder is advanced by the direct and instantaneous action of the rear piston in regular steps or stages, and automatically.

3. In combination with the stationary cylinder A, piston C, and sliding cylinder K, the hollow piston-rod D, serving both to communicate motion to the cylinder K and to conduct air or steam thereto.

4. In combination with the cylinder K and the arm T pivoted thereto, the piston I, arranged and operating as shown and described.

5. In combination with the hollow piston-rod D, and the bars B having the teeth p, the small pinions r mounted in the rod D, and engaging in the teeth, as shown.

167,205. Bird-Cages. John L. Fisher, Buffalo, N. Y., assignor to Caroline Fisher, same place. [Filed Jan. 9, 1875.]

Brief.—The lower ends of the vertical wires are inserted in the tubular horizontal band, and bent at right angles and held by a key.



In a bird-cage, the combination, with the band B, of the vertical wires C, having right-angled hooks at their lower extremity, whereby they are locked within the said band by the circular wire F, substantially as described.

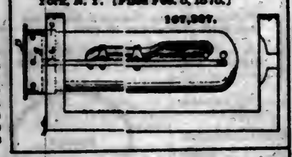
167,206. Cane-Shellers. Jos. S. Foster, Auburn, N. Y. [Filed July 30, 1875.]

Brief.—Special construction of casing, whereby the rub-iron and its adjusting-screw are secured or detached simultaneously with and by the same fastenings as the two parts of the casing.



The combination of the case A B with spout C, having smooth and straight interior sides, the ribbed spring H, placed in the top of the spout, and the bolt I and set-screw f, passing through holes cast in the edges of the two halves of the spout, substantially as and for the purposes herein set forth.

167,207. Thermometers. Jos. Gall, New York, N. Y. [Filed Feb. 6, 1875.]



1. As a new article of manufacture, a transparent thermometer-case, perforated at its upper and lower ends, and closed at its upper end by a cap, within which is fitted a device wherein is received the upper end of an inclosed thermometer-scale, said scale being adjusted and held in position thereby, substantially as described.

2. The combination of a transparent thermometer-case, perforated at its two ends, with a thermometer and scale, substantially as and for the purposes described.

167,208. Diaper-Pins. Elam H. Gaylord, Waterbury, Conn. [Filed May 11, 1875.]



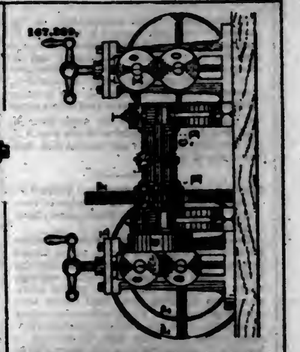
As a new article of manufacture, the herein-described diaper-pin, consisting of a single piece of wire, pointed at one end, and at the other bent into a transverse loop, and this loop doubled to form the hook or guard *d* for the point of the pin, and the wire bent or coiled to form the spring C, the point turned into the said loop, substantially as set forth.

167,209. Machines for Making Rope-Moldings. Henry Glass, Buffalo, N. Y., assignor of one-half his right to Peter C. Glass, same place. [Filed May 26, 1875.]

Brief.—The material from which the molding is to be formed is caused to pass through a rotating cutter, which gives it the desired shape.

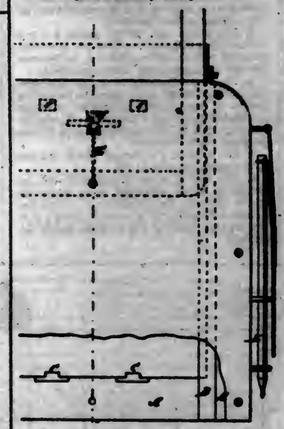


1. The combination, with the frames I I, having the bearings for the cutter-head, and for the main shaft, of the shaft D, pinion E, spur-wheel F, cutter-head C, and the feeding device, consisting of the shoulders B B', provided with adjustable yielding bases, and the grooved friction-wheel G, the wheels arranged to operate substantially as described, and for the purposes set forth.



The combination, with the grooved frame A, having bottom cushions O and slots J, of the plate O, provided with cord E, as and for the purposes described.

167,210. Combined Bolsa and Ottoman. Jos. S. Gold, Washington C. H., Ohio. [Filed Mar. 6, 1875.]



1. As a new article of manufacture, a bolsa and ottoman, combined substantially as described.

2. The combination, with the bolsa A, of the ottoman B, hinged thereto, substantially as described.

167,211. Extension-Tables. Ferdinand Goldmark, Williamsburg, Brooklyn, N. Y. [Filed Feb. 3, 1875.]

Brief.—The leg-frames are forced out by spiral springs, and support the hinged leaves in an extended position.

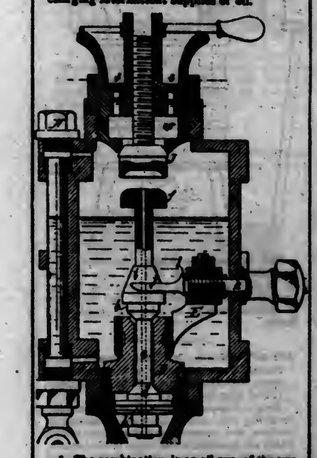
1. The combination, with the extension-leaves parts of the table, of springs applied to the said slides, substantially as described, for the purpose set forth.

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2. The coiled springs *a c*, the guide-rods *b b'*, the bearing C, in combination with the slides B E and B' E', and the fall-leaves D D' of the table, all arranged and combined substantially as described, and for the purpose set forth.

167,212. Oil-Cups. John Graham, Philadelphia, Pa., assignor to George R. Kirk, same place. [Filed Apr. 7, 1875.]

Brief.—The oil-cup is secured to the cylinder of valve-chests of steam-engines, in which the valves are operated by the pressure of steam within the cylinder, for the purpose of discharging intermittent supplies of oil.



1. The combination, in an oil-cup, of the two valves *b* and *d*, with the conical valve *i* and forked arm *j*, all substantially as set forth.

2. The gage-tube K, contained within a recess in the side of the cup, across the front of which recess extends a rib, *y*, as and for the purpose set forth.

3. The combination of the sleeve *r* and its perforated flange *s*, with the passages *s* and chamber *w* in the plug P, and with the valve J, all substantially as and for the purposes set forth.

4. The combination of the hollow stem *e* and its head *f*, with the valve J, all substantially as set forth.

5. The combination of the sliding valve *d*, with the stem *e*, its fixed valve *h*, and ring *h*, all substantially as set forth.

167,213. Gas-Burners. Samuel Griffith and John H. Patterson, Cincinnati, Ohio. [Filed Mar. 22, 1875.]

Brief.—Pressure produced by crowding distributed by supporting-pieces throughout the trunk.

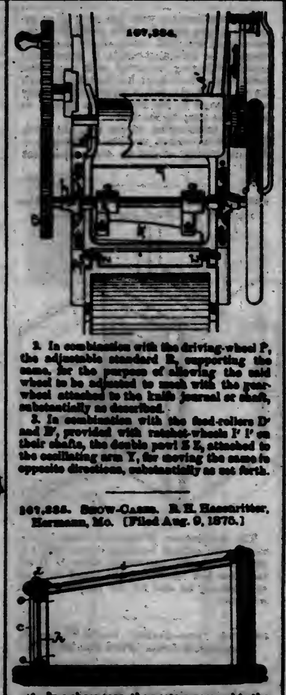


The slotted coupling-heads C *c* and C' *c*, in combination with the draw-bar N, bars b and *b*, springs B and B', fixed blocks F and F', cross-timbers D D, and extra dills *a a*, all arranged substantially as and for the purpose set forth.

167,214. Straw-Cutters. Wm. H. Hall, Tiffin, Ohio. [Filed July 22, 1875.]

Brief.—The journal-boxes bearing the knife-shaft have a slight oscillating motion, to allow the adjustment of the knives to the cutter. The box bearing the driving-wheel is adjustable to regulate the mesh of the wheel in accordance with the adjustment of the knives. The feed-rollers are moved by a double pawl.

1. The journal-boxes F F, in which the knife-shaft has its bearings secured on the main frame C on opposite sides, and capable of a slight oscillating movement for adjusting the knives to the cutters, all substantially as set forth.



2. In combination with the driving-wheel P, the adjustable standard R, supporting the same, for the purpose of allowing the said wheel to be adjusted to mesh with the gear-wheel attached to the knife journal or shaft, substantially as described.

3. In combination with the feed-rollers D' and E', provided with ratchet-wheels F' F' on their shafts, the double pawl S S, attached to the oscillating arm Y, for moving the same in opposite directions, substantially as set forth.

167,215. Snow-Guard. B. H. Hasenritter, Hermann, Mo. [Filed Aug. 9, 1875.]

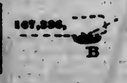
1. In a show-case, the posts *a*, secured to the base and top by means of the screws *d d'*, and braced in position at both ends by the strips *e*, the said strips also serving to hold the glass in position, substantially as shown.

2. The bottom *a*, posts *a*, and screws *d d'*, in combination with the doors *c*, glass *h*, top *i*, and strips *e*, as shown and described.

167,216. Manufacture of Dental Plates. Fred. Hohmann, Bowling, and Gilbert G. Hickman, Philadelphia, Pa. [Filed Apr. 17, 1875.]

Brief.—In order to secure a piece of soft rubber to a dental base, a piece of metal with prongs on one side is inserted in the base in process of manufacture, with a piece of paper or like material placed between it and said plate. After the plate is prepared, the paper is removed, and in the hollow formed by it the soft rubber is placed.

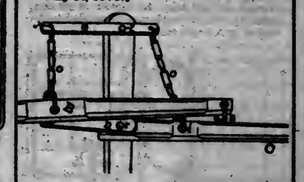
167,216.



B

1. The combination, with the retaining or adjusting plate B, of the piece of material C, interposed between said plate and the dental base during attachment of the plate to said base, and subsequently removed for location of the rubber or other strip of the base, as set forth.

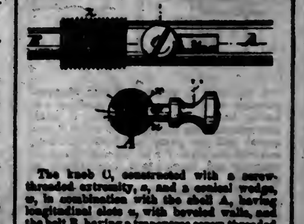
167,217. Draft-Equalizers. Almon Hunt and Benj. M. Butterfield, Macomb Ill., said Butterfield assignor to said Hunt. [Filed July 24, 1875.]



The lever C, arm *a*, lever *c*, and flexible chains *c c*, in combination with the double-tree B, as and for the purpose set forth.

167,218. Door-Bolts. Henry J. Ess, Seymour, assignor to himself and H. Maiden, Bridgeport, Conn. [Filed July 17, 1875.]

Brief.—A cylindrical shell, screw-threaded, and with driving-nick at one end for its more easy insertion into an auger-hole mortice, is provided with a detachable knob-screw, constructed with a conical wedge on its shank near the knob. One or more longitudinal slots in the body of the shell or bolt-case have beveled walls, with which the conical wedge of the knob engages, to lock the sliding bolt in desired position.



The knob C, constructed with a screw-threaded extremity, *a*, and a conical wedge, *c*, in combination with the shell A, having longitudinal slots *s*, with beveled walls, and the bolt B, having a transverse screw-threaded socket, *v*, substantially as and for the purpose specified.

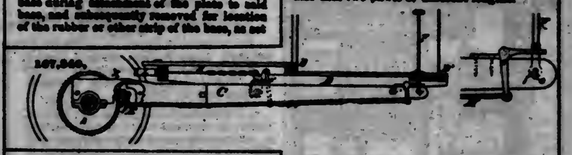
167,219. Device for Securing Rubber Tires. John Stewart Stewart, Memphis, Pa., assignor to himself, Orrin Luten, Wm. Newberry, and James F. Caldwell, same place. [Filed Mar. 30, 1875.]



As the improvement herein before described, the combination, with the tube, of the flange F turned inward or rolled over the flared end thereof, as set forth, for the purpose specified.

167,220. Car-Starters. Ashby A. Jones, Utica, N. Y., assignor to himself and J. F. Chamberlain, same place. [Filed Dec. 26, 1874.]

Brief.—Dispenses with tube heretofore used to limit play of trunk-rod in starting the pawl in position before operating the starting mechanism. Substitutes small pin and slot; also uses two parts of different lengths.

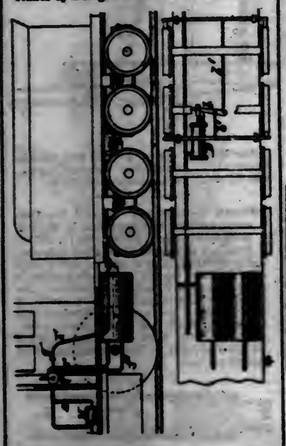


The combination, with the main lever C, having the vertical slot *c*, of the foot-rod F, having the yoke and bolt *f*, the elbow-lever G, rod H, a pawl, and a ratchet-wheel fast on the axle, as shown and described.

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167,841. PNEUMATIC CAR-BRAKE. Henry F. Knapp, New York, N. Y. (Filed July 6, 1875.)

Brief.—There are two tanks—one for compressed air, the other to contain a vacuum, either or both of which may be applied to the brakes by a single cock.

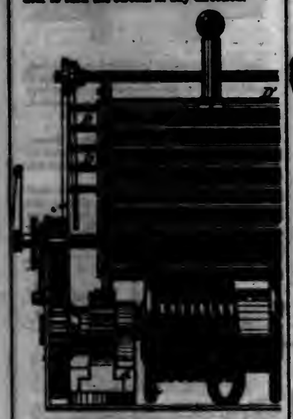


1. The cock G, constructed with diagonal passages *a a*, and transverse passages *c d*, having branches *e f*, for operation in alternate relation with the pipes *e F* and *f F*, connected with the pump and brake-cylinders, and with the pipes *f' e'* of the compressed-air reservoir and vacuum-tank, substantially as specified.

2. The combination of a vacuum-tank and compressed-air reservoir with the pump and brakes, substantially as and for the purposes described.

167,842. PASSENGER'S EXTENSION-LADDER. Sebastian Kern, Louisville, Ky. (Filed May 7, 1875.)

Brief.—The ladder-rounds are covered with tubes of india-rubber, to prevent the feet from slipping, and also to prevent the formation of ice. The ladder, as it is extended, carries with it a hook, which is secured to the upper end by an adjustable socket, which enables the operator to turn the steam in any direction.

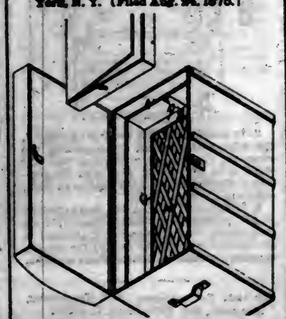


1. In combination with the connecting-tube D D of an extension-ladder, the elastic tubes D', substantially as and for the purposes set forth.

2. In combination with the ring of an extension-ladder, the adjustable socket H O, the parts being arranged substantially as shown, whereby the discharge-nozzle M is rendered capable of having imparted to it a vertical movement, a movement horizontally through the arc of a circle, and of being placed at any required angle in the ring of the ladder, as and for the purposes set forth.

3. The combination of the rod, the hook, the adjustable socket, and the discharge-nozzle, substantially as and for the purposes set forth.

167,843. TROUSER. James W. Kroppe, New York, N. Y. (Filed Aug. 24, 1875.)



The combination of skeleton frame G, provided with central webbing H and bolts *b b*, with the convex perforated strips D D attached to the interior of the trunk-body, all substantially as and for the purposes herein set forth.

167,844. TUG-SLIDE. David W. Leahy, Pleasant Hollow, Iowa. (Filed Mar. 26, 1875.)

The combination of the bars A A, having slots *a a*, and bars *b b*, cross-bars D D, and central bent cross-bar B, all substantially as set forth.

167,845.

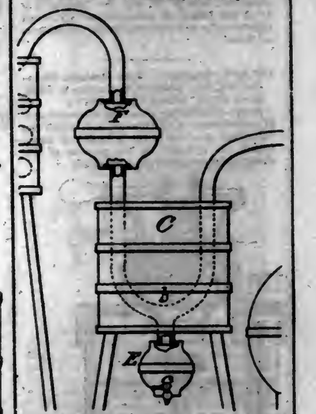


167,846. LAMP-FOUNTS. Chas. F. Lindsey, West Meriden, Conn., assignor to Bradley & Hubbard Manufacturing Company. (Filed July 27, 1875.)

1. A lamp-fount constructed with a central socket, B, combined with a metallic bushing, *a*, substantially as and for the purpose specified.

2. In combination with a lamp-fount constructed with a central socket, B, the base D, constructed with a spindle, C, corresponding to said socket, and with the screw S as a means for attaching the said base to the fixture, substantially as described.

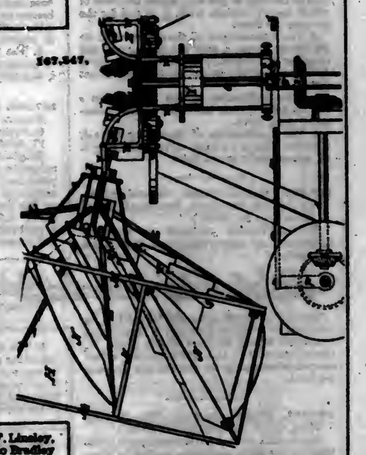
167,846. STILLS. Edwin D. Lovejoy, Buffalo, N. Y. (Filed May 1, 1875.)



The intermediate water-condenser C, in combination with the still A, pipe D, bent in U-shaped form in the condenser C, and provided with the bulbs B F, and the worm W, substantially as and for the purpose set forth.

167,847. WIND-FOWER. Austin Lowe, Saline, Kans., assignor of two-thirds his right to D. C. Skinner and T. R. Skinner. (Filed May 10, 1875.)

Brief.—The combination of two horizontally-revolving wind-wheels turning in opposite directions, and mounted on independent shafts, which are arranged at an angle to the horizon, the wind-wheels being provided with pivoted self-feathering or adjusting sails, which are connected with a governing mechanism.

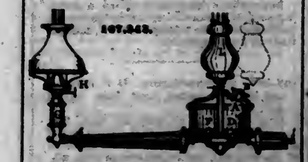


1. The combination of the horizontally and reversely revolving wind-wheels H I, having self-feathering or adjusting sails B', independent driving-shafts F, inclined bearings, blocks E, turn-table D, and central vertical power-transmitting shaft O, geared to the wheel-shafts, as and for the purposes set forth.

2. A wind-wheel of a conical or dished form, provided with a series of movable sails or blades, F', arranged and operating as set forth.

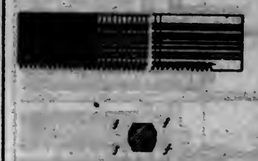
167,848. LAMPS. John Mayer, Buffalo, N. Y. (Filed Feb. 18, 1875.)

Brief.—The feed-tubes are supplied from the reservoir through apertures in the connecting-piece.



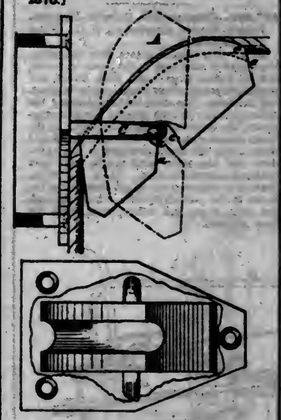
In a lamp constructed as herein described, the combination of the two branches E with the central supporting-piece D and the walls of the oil-tank A, for giving additional strength to the said branches, substantially as shown and described.

167,849. METALLIC STRIPS FOR SHOE-NAILS. Gordon McKay, Cambridge, Mass. (Filed July 15, 1875.)



A strip for shoe-nails, pointed and corrugated or grooved longitudinally, as described, to form bolding projections *b* on each nail, substantially as set forth.

167,850. CLOTHES-LINE FASTENERS. Henry Moss, Baltimore, Md. (Filed Mar. 29, 1875.)



In combination with the staple or axis C, the removable block A, constructed with the curved back, having a longitudinal groove, *d*, extending from the top of the block to the inclined biting-surface *f*, and the inclined surface *e*, enlarged recess E, and shoulder *b*, all substantially as shown and described.

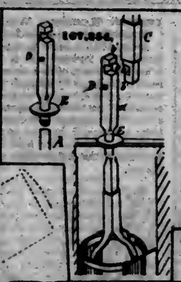
167,851. PROPELLERS FOR GAS-JETS. Jos. W. Mayhew, Ansonia, Conn. (Filed Aug. 16, 1875.)

The herein-described gas-jet protector, as an article of manufacture, consisting of the base A, provided with the socket B, and combined with the closed guard D hinged to the said base, substantially as specified.

167,852.



167,854.

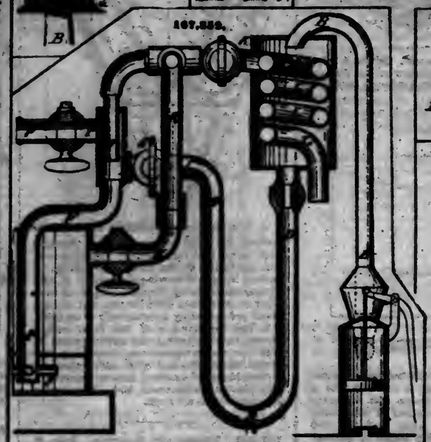


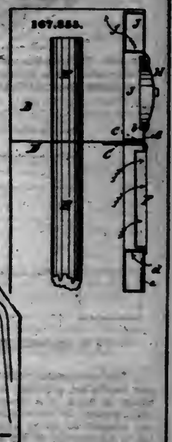
1. A sectional shaft, having its ends formed square, said squared ends being recessed in such manner as to form a rectangular hook or hook coupling when two sections are joined or locked together, substantially as shown and described.

2. The combination of two sections of shafting, constructed substantially as shown and described, with the square coupling, sleeve C and the stud or pin D, as and for the purposes specified.

3. The supporting collar or disk E, in combination with a sectional shaft, constructed and arranged substantially as shown and described, and for the purposes set forth.

167,855. HEATING AND VENTILATING ROOMS. John S. Oldershaw, Baltimore, Md. (Filed Aug. 13, 1875.)





1. The combination of the front plate A, having flanges C C, with the flue-stopper plate D, as and for the purposes described.

2. The combination, with the flue-stopper plate D, of the front plate A, having the detachable register F, and the detachable cap H, as and for the purposes described.

3. The combination, with the flue-stopper plate D, of the front plate A, having the ventilating-flue J, opening into the chimney-flue above, and into the room below, substantially as described.

4. The combination, with the chimney-flue and register, of the flue-stopper plate, having an extensible and adjustable portion, G, to adapt it to different-sized flues, substantially as described.

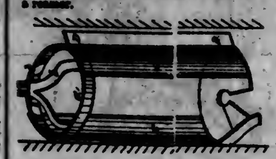
167,856. APPARATUS FOR BURNING HYDROCARBONS. John Nelson, Red Wing, Minn. (Filed Mar. 6, 1875.)

Brief.—A steam-pipe leading from the boiler supplies steam to the heating-tank and atomizer.

The combination of the tank C, containing the coil I, trap-pipe D, for conveying oil to the atomizing-chamber, steam-pipe O, located above the pipe D within the atomizing-chamber F, and steam-pipe E, which serves the double purpose of conveying steam to the heating-tank, and to the atomizing-chamber, all arranged for operation substantially as shown and described.

167,857. HARPS-ADJUSTER. D. L. Newcomb, Kenton, Ohio. (Filed Apr. 26, 1875.)

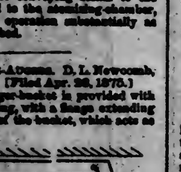
Brief.—The upper bracket is provided with a side piece or wing, with a flange extending the entire length of the bracket, which acts as a reamer.



In an earth-auger constructed substantially as described, the combination of the side piece or wing *d* with the flange D, substantially as specified, and for the purposes set forth.

167,858. SHAFT-COUPLINGS. D. L. Newcomb, Kenton, Ohio. (Filed June 26, 1875.)

167,859.

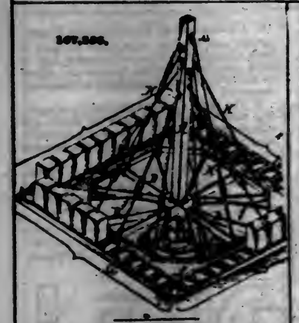


1. A cam-filing and soldering machine in which a platform, C, having a number of straight sides, is provided, with cells arranged in said sides to receive and securely retain two or more series of cams, all as set forth.

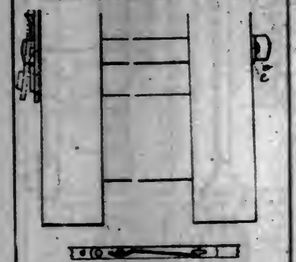
2. The within-described platform, consisting of four or other desired number of sides, connected to the vertical shaft A by arms D and adjustable tie-rods H, all substantially as set forth.

3. The shallow trough on the platform for receiving the drippings from the cams, in combination with the discharge-pipe *f* and the trough at the base of the shaft, all substantially as described.

167,856.



167,857. Heddle-Frames. Edwin S. Pike, Worcester, Mass., assignor to Geo. Crompton, same place. [Filed July 19, 1875.]

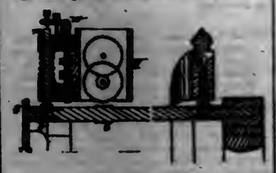


1. The combination, with the heddle-frame and heddle-bar, provided at one end with a holder or head, of a tongue and a spring-plate secured to the side bar of the frame, and adapted to spring away from the side bar in the direction of the length of the heddle-bar to hold the heddle-bar taut, substantially as described.

2. The combination of a movable hook with a spring-plate connected with the side bar of the heddle-frame, and interposed between one end bar of the frame and the head, and adapted to operate substantially as described.

3. The combination of the heddle-bar, slotted at a, with the holder c, constructed as described, and adapted to enter the slot in the bar, substantially as described.

167,858. Measuring Mechanism for Rattan-Machines. W. H. Richardson, Fitchburg, Mass. [Filed June 10, 1875.]



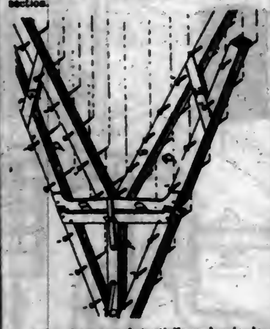
1. In a rattan-machine, the shaft h, provided with the worm-screw i, and hung to be thrown into and out of engagement with the register by the passage or non-passage of material, in combination with a reversing mechanism, substantially as and for the purpose set forth.

2. The registering mechanism H, in combination with the vertical bar n, provided with the pin k and the spring o', all constructed to operate substantially as and for the purpose set forth.

3. In combination with a rattan-machine, a registering mechanism arranged and applied to be automatically thrown into and out of action on the entrance and exit of a strand of cane, substantially as and for the purposes set forth.

167,859. Harrows. William S. Rowland, Plainville, Pa. [Filed July 14, 1875.]

Brief.—The harrow is made in three sections. The forward one is triangular. The other two consist of two converging bars, each secured together by suitable cross-pieces. The outer bars are hinged by hooks to the outer corners of the triangular section, and are upon a line of divergence with them. The rear sections are hooked together at the forward ends of the inner beams, and held down by a spring attached to the middle beam of the triangular section.



1. In a harrow, substantially as herein described, the front wedge-section A, provided with hinged and vertically-movable tongue C, and connected at the rear outer corners by hooked hinges with wing-sections B B, said wing-sections being likewise hinged to each other at their inner front corners, and all combined and operating substantially as set forth.

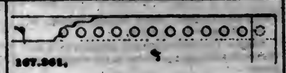
2. The combination of the front wedge-shaped section, having the stiffening-arm F, with the rear wing-sections, detachably connected therewith, and with each other, by hooked hinges, the several bars or beams suitably provided with teeth, and all operating substantially as set forth.

167,860. Dyeing and Printing. John S. Sellon and Robert Pinkney, London, England. [Filed July 12, 1875.]

Brief.—Uses a solution of chloride of vanadium, or of any vanadiate, in connection with an animal dye, such as cochineal.

A dyeing or printing compound consisting of the salts or compounds of vanadium and animal dyeing or printing materials.

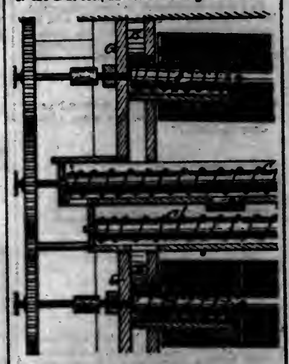
167,861.



Impression writing-sheets having a stiffening material, b, cemented upon the edge through perforations in the principal sheet A, substantially as herein specified.

167,862. Rolling-Ovens. D. N. Sprisler and Eli P. Campbell, Troy, Ohio. [Filed Apr. 15, 1875.]

Brief.—The rods all pitch one way. The "chop," having passed through the top reel of one compartment, is carried back to the head of the next reel, and so on through them all.

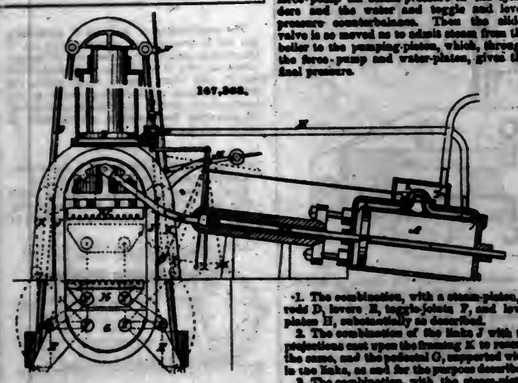


In a baking-chest, the combination of closing rods B B with ribs a a, conveyors C C C C, slides D D, gatherers E E, and fenders b b, all constructed and arranged as herein set forth.

167,863. Combination Cotton-Pressing. John F. Taylor, Charleston, S. C. [Filed June 12, 1875.]

Brief.—The exhaust steam from the pumping-engine is admitted to the press-cylinder, and, by piston, cross-head, rods, levers, and toggles, raises the lower platen, partially pressing the bale. The slide-valve equalizing the steam-pressure on both sides of the pumping-piston, the latter is at liberty to recede by the water-pressure caused in the water-piston and force-pump till steam-pressure in the cylinders and the water and toggle and lever pressure counterbalances. Then the slide-valve is so moved as to admit steam from the boiler to the pumping-pistons, which, through the force-pump and water-piston, gives the final pressure.

167,864.



1. The combination, with a steam-piston, of rods D, levers B, toggle-joints F, and lever-platen H, substantially as described.

2. The combination of the links J with the projections cast upon the framing K to receive the cams, and the pedestal C, supported within the links, as and for the purposes described.

3. The combination with the steam-pistons P P and water-pistons Q, working in their respective cylinders A' B', of the valve E, constructed with a port, as shown and described, which adapts it to establish communication between the spaces in the steam-cylinder, on opposite sides of the pistons, as and for the purpose specified.

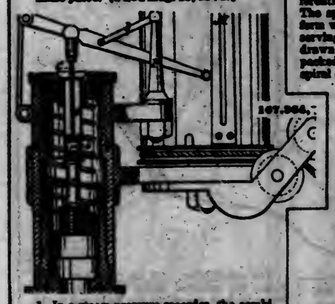
167,865. Garment-Form. A. B. Simonds, New York, N. Y. [Filed June 26, 1875.]

Brief.—The sheets have a clean border of white paper pasted to them, the paste passing through holes in the cotton sheet.

4. The combination of the valve E with the valve-gear M and the tappet F, operated by the piston B, as and for the purposes described.

5. The combination of the cylinder A', having an equalizing-valve, E, the cylinder and pistons A B, which operates the toggle-arms, the communicating pipe H', the water-piston and cylinder, the water-pipe and cylinder P' and P, and the pistons G' and B', upon one and the same rod, as and for the purpose set forth.

167,866. Indicators for Steam-Engines. Jos. W. Thompson, Salem, Ohio, assignor to himself and Buckeye Engine Company, same place. [Filed Aug. 19, 1875.]



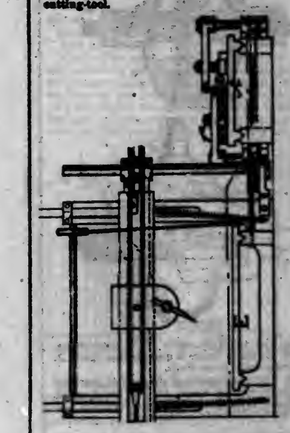
1. In a steam-pressure recorder, the combination, with the working-lever, carrying the marker, of a movable fulcrum, a fixed standard, P, and link b, connecting the lever directly to the standard, substantially as shown and described, for the purposes specified.

2. In a steam-pressure recorder, the combination with the reciprocating drum of the spring O, spring-case, the disk having hub c, and clamping screw-nut S, all as shown and described, to permit the spring-tension to be adjusted as desired.

3. The combination of rod C and stud d, having corresponding concavity and convexity, and the screw-socket for connecting said parts C d to the piston or movable part, to form a universal compensating joint, as shown and described.

167,867. Machines for Dressing Stone. William Henry Thompson, Islington, England. [Filed June 11, 1875.]

Brief.—The sectional outline of the molding, or other-shaped work required to be cut, is represented by surfaces upon a horizontal plane, to form a guiding or pattern surface, which acts by means of levers, quadrants, and chains, to govern the movements of the cutting-tool.

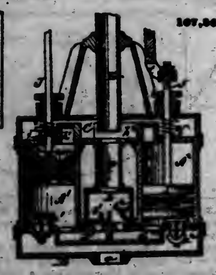


The combination, in a machine for cutting and working stone, &c., of a reciprocating work-carrying bed, a pattern, a tool-carrying cross-beam, a tool-holding saddle arranged as said cross-beam, and an intermediate mechanism, substantially as described, for imparting a rising and falling motion to the cross-beam, and a longitudinal movement to the tool-saddle, as and for the object specified.

167,868. Pumps. Hiram Tyler, Geneseo, N. Y. [Filed Feb. 6, 1875.]

Brief.—The pistons are constructed of two cups placed with their bottoms toward each other, and, having one or more rubber disks placed between them, each cup has a circumferential groove and an offset on its under side. The spaces between the disks and the cups form water-chambers, the water and the disks serving as packing. To prevent air being drawn in by the piston-rods, the latter are packed with rubber disks held in place by spiral springs.

167,869.

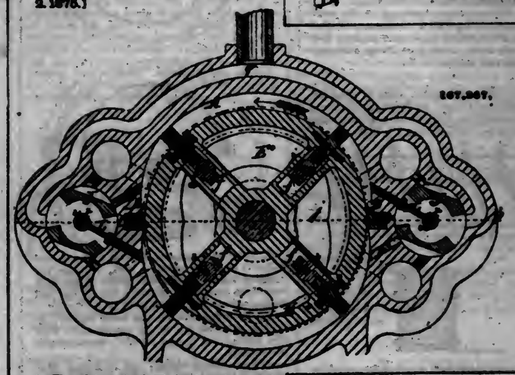


1. In combination with a pump, substantially as herein described, the piston-packing, consisting of the cups a a, provided with the grooves and shoulders, as described, and one or more rubber disks, a, placed between them, substantially as and for the purposes herein set forth.

2. The combination, with the cylinders A' A² and chambers B C, of the valve-chambers L D D, cylinders P P' P², passages d d' and h' h², and the various valves, as described, substantially as and for the purposes herein set forth.

3. The packing-disks *a a* and spiral spring *w*, arranged around the piston-rod J within the chamber C, substantially as and for the purposes herein set forth.

167,870. Rotary Engines. Archibald R. Vondenark, New York, N. Y. [Filed June 2, 1875.]



1. The piston-wheel F, having the radial cavities f, in combination with the pistons E, having the anti-friction rollers g, and arranged in said radial cavities and gudgeons h, having rollers i working in anti-grooves in the cylinder-heads, substantially as described.

2. The combination of the radially-arranged pistons E, the packing-strips k, provided with inclined guide-recess fitting in recesses in the ends of the pistons, and springs *m* and *n*, for forcing the packing-pieces in a radial direction, and against the cylinder-heads, substantially as described.

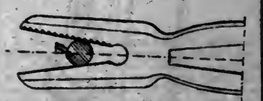
3. The abutments D, provided with the packing-strips *o*, and springs *b*, for forcing the same outward, in combination with the piston-wheel B, and the cylinder-heads B', having the grooves *s* and bridges *c*, all substantially as described.

4. The combination of the reversing-valve J, with the oscillating supply-valve L, and mechanism for actuating said supply-valve, substantially as set forth.

5. The disks M' N', and intervening spring *s*, in combination with the cut-off valve L, with the shaft O of the engine, and with a shaft, O', transmitting motion to the working-mechism, substantially as shown and described.

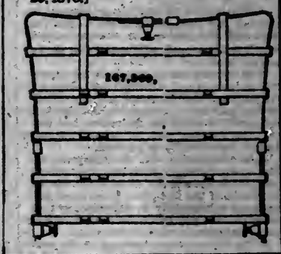
6. The combination of a compound cam, M *b'*, with the cut-off valve L, substantially as shown and described.

167,871. Pipe-Wrenches. G. W. Weitt, Philadelphia, Pa., assignor to himself, H. P. Carpenter, and H. M. Shortridge, same place. [Filed June 16, 1875.]



The within-described wrench, having the inclined edge of one jaw plain, and that of the other with teeth inclined, as set forth.

167,872. Pillow-Case Frames. Thomas E. Walter, Philadelphia, Pa. [Filed Jan. 29, 1875.]



A pillow-case frame consisting of a series of adjustable hoops, B, supported by a rectangular frame, A, capable of being enlarged and contracted, all as set forth.

167,870. CAR STARTING AND BRAKES. T. L. Webster, Brooklyn, N.Y. (Filed July 6, 1875.)

Brief.—The same pressure of treadle applies brakes and sets car-starting pawl. When released, retracting-spring causes pawl to turn ratchet-wheel, and removes brakes from wheels. Automatic spring-slides engage with rock on treadle-bar, holding it up or down. These slides may be removed from and held out of engagement.



167,870.

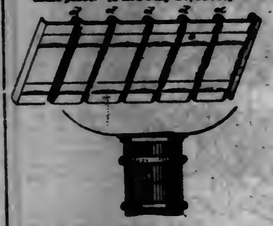
1. The pivoted vibratory lever, operated by hand or foot piece, as described, in combination with the brakes, the starting ratchet-wheel, and the pawl, substantially as shown and set forth.

2. In combination with the lever for operating the braking and starting mechanism, the vertically-movable foot-piece and the spring-locking mechanism, arranged substantially as described, to allow the depression, but prevent the rising of said foot-piece, whenever desired, substantially as set forth.

3. In combination with the foot-piece, the two spring-locking mechanisms, the one to prevent the rise and the other to prevent the depression of the foot-piece, constructed and arranged substantially as described, so that either or both may at will be thrown into or out of engagement with the foot-piece.

4. The brakes proper, mounted on the journals of, and moving with a cross-bar, provided with end slides, which take their bearing and move in the truck, bearing, or frame, substantially as shown and set forth.

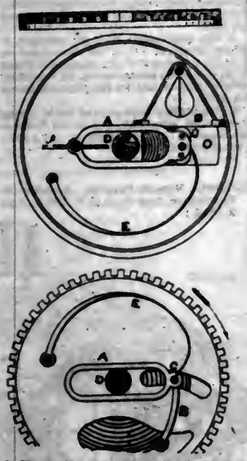
167,871. LAMP-SOCKETS. Wm. N. Weeden, Waterbury, Conn., assignor to the Benedict & Burnham Manufacturing Company, same place. (Filed July 27, 1875.)



The herein-described coupling for attaching lamp-sockets to their pedestals, consisting of a strip of sheet-metal with the vertical external corrugations *f* and transverse depressions or projections, substantially as and for the purpose specified.

167,872. MAINSPRING ATTACHMENTS FOR WATCHES. Marshal Wheeler, Big Rapids, Mich. (Filed July 9, 1875.)

Brief.—An attachment for equalizing the force of the mainspring by drawing its outer end nearer the center when the watch is wound up, and the force of the spring is greatest, and returning it toward the circumference as the spring is unwound and its power decreased.



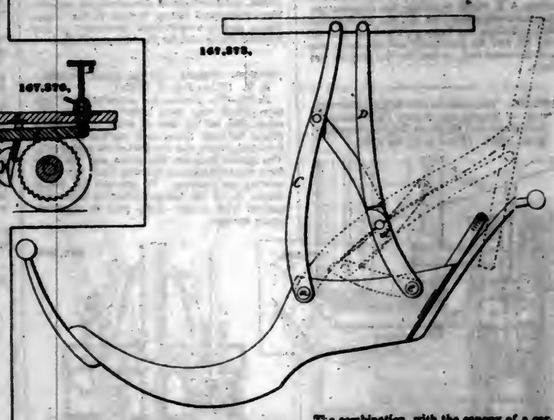
1. The combination of the sliding bar A and roller C with the scrolled disk, whereby the roller is drawn inward the center of the disk when the time-piece is being wound up, and forced outward in unwinding, as set forth.

2. The rod E, having the outer end of the spring attached thereto, in combination with the sliding bar A and roller C, substantially as set forth.

3. The slotted sliding bar A, fitting over the stem D, the stem serving as a guide to the bar, so as to keep it in position as it moves back and forth, substantially as specified.

4. The combination of the sliding slotted bar, stem D, and auxiliary spring E, substantially as shown.

167,873. CARRIAGE-TOPS. George R. Whitmore, New Haven, Conn., assignor to the New Haven Folding-Chair Company, same place. (Filed July 27, 1875.)

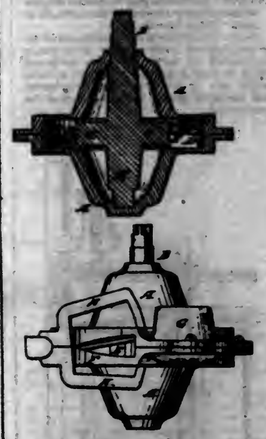


167,873.

The combination, with the canopy of a carriage, the principal brace C, the auxiliary brace D, both hinged to the body and to the top, the one jointed, and with an arm extending from said joint and hinged to the other brace above, substantially as described.

167,874. ROTARY PUMPS. O. H. Whitney, Waukegan, Ill. (Filed July 14, 1875.)

Brief.—Upon the edge of a central drum a flange follows a regular spiral one-half round the drum, and returns upon the other half to itself, following a like spiral in an opposite direction. This flange traverses an annular channel, the inner wall of which is formed by the edge of the drum. A double swinging valve or cut-off embraces the flange between its "fingers' ends," projecting, with adjacent inlet and outlet, a regular valve-action, and suction and discharge of water.

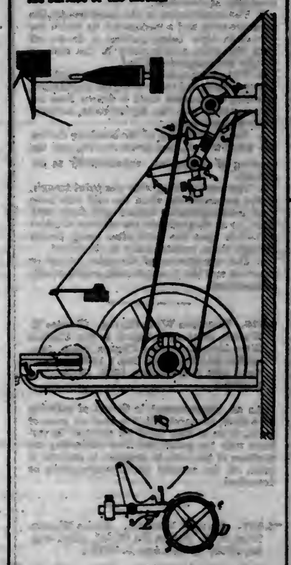


1. The swinging valve H, in combination with the spiral flange B and annular space D, substantially as set forth.

2. The combination of the case A, provided with an annular space, D, with the shaft B, cylinder C, spiral flange E, and swinging cut-off H, substantially as described.

167,875. SPOOLING AND DOUBLING MACHINE. James Wild, Springfield Township, Delaware County, and Emanuel Key, Philadelphia, Pa. (Filed Mar. 24, 1875.)

Brief.—The stopping device acts directly upon the driving mechanism, to arrest the motion of the machine. The spool or bobbin is driven by a revolving drum, which acts upon the surface of the thread.

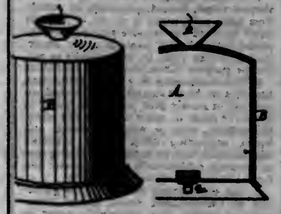


1. The cylinder D, carried by a shaft, from which the spool is driven, and provided with one or more ribs, *c*, in combination with a series of fingers, E, each constructed to ride on the threads, and suspended adjacent to said cylinder, whereby each finger, when depressed, is struck by one of said ribs, all as and for the purpose set forth.

2. The combination of the spool or bobbin, resting with its covered portion on the driving-drum B, the fingers E, controlled by the threads passing to the spool, and the ribbed cylinder D, from which motion is communicated to the drum, all as set forth.

167,876. OMAR-MAKERS' PASTE-BOXES. Michael Wilhelmi, Chicago, Ill. (Filed July 22, 1875.)

Brief.—The paste-receptacle or paste-reservoir has fitting into it at the bottom a plunger, for pressing the paste out, when desired, into a hopper at the top, for convenience in dipping the fingers into it. This plunger is hollow, and contains water for keeping the paste cool, and then prevent it from becoming sour.



The vessel A, fitted with the base-ring *c*, and the cap B, provided with the finger-cup *b*, constructed and combined in the manner and for the purpose set forth.

167,877. CONVERTIBLE MOPPER. John M. Wilkinson, Jackson, Tenn. (Filed July 19, 1875.)

The scalloped wheel B, having the cams *b' b'*, in combination with the supporting-frame A, perforated frame D, to receive the dasher-shaft C, gearing *d e*, chain or cord *f*, and weight *g*, substantially as and for the purpose set forth.

167,878. TOILET-POWDER BOTTLES. Chas. F. Williams and John T. Hilborne, Amesbury, Conn. (Filed Feb. 26, 1875.)

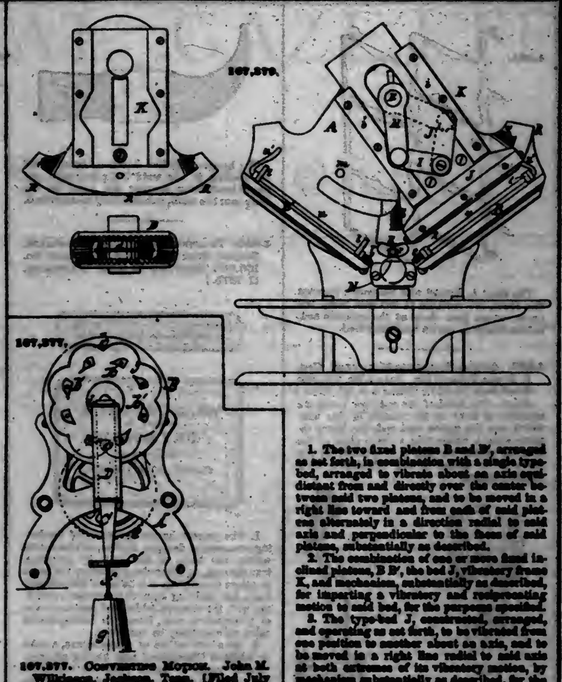
Brief.—This stopper has a head with a flange projecting downward, the outer surface of which fits the neck of the bottle, and an aperture, one or more, through said flange or neck of the bottle, which is closed by forcing the stopper down, but exposed by slightly raising, but without removing, the stopper, so that the contents of the bottle may be sprinkled from said aperture.



The herein-described toilet-powder bottle, consisting of the body C, stopper A, with its flange B, combined with one or more apertures exposed by raising said stopper, substantially as specified.

167,879. PRINTING-PRESSES. W. P. Wyman, Chelsea, Mass. (Filed July 6, 1875.)

Brief.—The press has two platens set at such an angle that the vibrating bed carrying type-form may swing from one to the other, and give the impression by complicating toggle-lever. Ink is applied to the type as it swings across a fountain between the platens.



167,879.

167,877.

1. The two fixed platens B and B', arranged as set forth, in combination with a single type-bed, arranged to vibrate about an axis equidistant from and directly over the center between said two platens, and to be moved in a right line toward and from each of said platens alternately in a direction radial to said axis and perpendicular to the faces of said platens, substantially as described.

2. The combination of one or more fixed inclined platens, B B', the bed J, vibratory frame K, and mechanism, substantially as described, for imparting a vibratory and reciprocating motion to said bed, for the purposes specified.

3. The type-bed J, constructed, arranged, and operating as set forth, to be vibrated from one position to another about an axis, and to be moved in a right line radial to said axis at both extremes of its vibratory motion, by mechanism automatically as described, for the purpose of giving an impression at two different points, as specified.

4. The combination of the bed J, frame K, rocker-shaft R, crank-arm M, and toggle-link I, all arranged to operate as and for the purposes described.

5. In combination with the bed J and frame K, the locking pin or bolt *j*, arranged to alternately lock the frame K to the frame A and to the bed J, as and for the purposes described.

6. In combination with a type-bed, arranged to vibrate from one position to another about an axis, and to reciprocate in each of said positions in a line radial to said axis, the rocker-shaft R, arm M, link I, bevel-pinion *d*, and bevel sector-gears D, all arranged to operate substantially as described.

7. In combination with two fixed platens, inclined toward each other, and a type-bed, arranged to vibrate away from said platens in a direction nearly parallel to the line thereof and about an axis, and to reciprocate in a right line toward or from said platens in a direction radial to said axis, one or more inking-rollers, placed near the lower end of said platens, and mounted upon springs, in position to ink the face of the type while the type-bed is being vibrated from one position to the other, substantially as described.

8. The combination of the ink-cylinder N, spindle P, frame O, spring *n*, distributing-roll *o*, yokes *p p'*, and inking-rollers *r q*, all arranged and operating relative to the type-bed, substantially as described.

9. In combination with the inking-rollers *r q*, mounted in or on a yielding frame, the eccentrics E, formed upon or secured to the frame K, arranged and operating as and for the purposes described.

REISSUES.

6,661. MANUFACTURE OF BEVELGEARS. Jos. Ball, Brooklyn, N. Y., assignor, by mesne assignments, to Samuel Rayner & Co. and John G. Preble. Patent No. 106,451, dated Aug. 16, 1870. (Filed Apr. 2, 1875.)

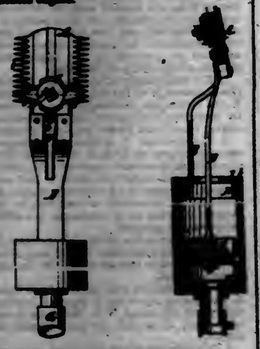
6,664.



The sheet A, formed with recesses a b across the sheet, the recesses at one end being the exact reverse from those at the opposite end, substantially as shown and described.

6,665. ANGLE-GRINDING MACHINE. Geo. F. Bynon, Poland, Me. Patent No. 169,039, dated Sept. 28, 1871. [Filed Apr. 20, 1875.]

Brief.—The hand of the operator holds the machine to duty by the handle, in line with which are the pinion and rod, the latter reciprocating a cutter over a comb-plate at the end, the pinion moving in a cylinder by the power of air forced in and withdrawn by a suitable engine.



1. In combination with a shearing or clipping cutter, comb-plate, and handle, an air-engine, operated by a vibrating column of air connected in a tube which is between the said engine and the pump or power generator, substantially as and for the purpose described.

2. The removable screw-head J, with the rod D rigidly attached, in combination with the pinion connected to the cutter-head, substantially as and for the purpose described.

3. The casket moving supporting cutter, the comb-plate and its handle, the cylinder, the pinion and its pinion, and the pipe G, combined substantially as and for the purpose described.

4. The cutter-head and cutter, in combination with the longitudinally-grooved comb-plate, substantially as and for the purpose described.

5. The cutter having an arching form in cross-section from its point to its heel, as shown, and made with two beveled horizontal cutting-edges on either side of the comb-plate, substantially as described.

6. The cutter having an arching form between its points, as shown in Fig. 5, and an arching form between its cutting-edges, as shown in Fig. 6, and beveled horizontal cutting-edges on its front and rear, and on both sides of the cutter-head, substantially as and for the purpose described.

6,666. CLAW-HAMMER. Dexter W. Parker, Meriden, Conn., assignor to Chas. Parker, same place. Patent No. 147,467, dated Feb. 10, 1874. [Filed Sept. 30, 1874.]



The handle-described hammer, constructed by placing in the mold the previously-prepared head, then pouring the metal for the body into the mold, substantially as described.

6,667. TRANSPARENT ADVERTISING-SOAPS. Stephen Stevens, Pittsburg, Pa. Patent No. 169,038, dated July 18, 1870. [Filed Aug. 11, 1870.]

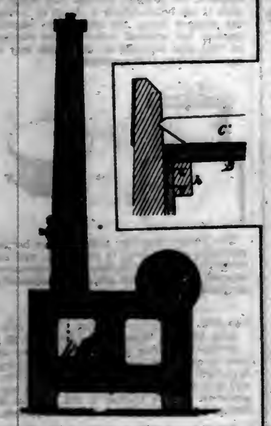


1. The process herein described of producing ornamental designs, figures, or characters within the body of the soap, by printing, transferring, or otherwise producing the same in colors directly upon a tablet of transparent soap, and molding upon or otherwise combining with the same an additional tablet or cake of transparent soap, forming a homogeneous cake, substantially as described.

2. As a new article of manufacture, a cake or tablet of transparent soap having an ornamental design or figure produced within its body in pure colors, without the intervention of supporting materials for the same, substantially as described.

6,668. MACHINES FOR PAINTING WIRE-CLOTH. Chas. H. Waters, Groton, assignor to the Clinton Wire-Cloth Company, Clinton, Mass. Patent No. 94,880, dated Dec. 1, 1869; reissue No. 4,462, dated July 4, 1871. [Filed Jan. 17, 1870.]

Brief.—The wire-cloth is drawn from a reel through a paint-trough, then through elastic pressure-rolls, and is brushed by a revolving brush, after which it is drawn off into the drying-room.



1. The combination of the wire-cloth beam, the paint-trough, and the pressure-rolls, substantially as described.

2. The combination of the paint-trough, the pressure-rolls, and a mechanism by which the wire-cloth, after being painted, is drawn off from the rolls, substantially in the manner and for the purpose specified.

3. The arrangement of the paint-trough, the pressure-rolls, and the drawing-off mechanism, whereby the painted cloth is drawn from the pressure-rolls into the drying-room, substantially as described.

4. The combination of the brushing device, the paint-trough, the pressure-rolls, and the drawing-off mechanism, substantially as described.

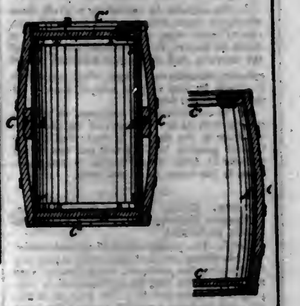
5. The combination, with the paint-trough, of the pressure-rolls when the said rolls have their axes adjustable toward and from each other, so as to graduate the amount of paint to be left upon the cloth after being drawn through the trough, substantially as described.

6. The combination of the paint trough or reservoir and the pressure-rolls, substantially as described.

6,669. PAINTING WIRE-CLOTH. Charles H. Waters, Groton, assignor to the Clinton Wire-Cloth Company, Clinton, Mass. Patent No. 94,880, dated Dec. 1, 1869; reissue No. 4,462, dated July 4, 1871. [Filed Jan. 7, 1870.]

As an improvement in the art of painting wire-cloth, immersing it in a bath or mass of paint, so as to fully cover all parts of its surfaces with the paint, and then subjecting the surfaces of the cloth to pressure to squeeze or press off the surplus paint, substantially as described.

6,670. PAPER VESSEL. Elisha Waters, Troy, N. Y. Patent No. 81,441, dated Aug. 25, 1868. [Filed Apr. 5, 1875.]



1. A closed cylindrical, tank-like, or barrel-shaped vessel, formed essentially or mainly from paper-pulp, paper in sheets, or paper or straw board of any suitable quality, and supported internally by hoops *h*, or by an extended wooden shell, D, substantially as and for the purpose herein shown and described.

2. The combination of a closed cylindrical, tank-like, or barrel-shaped vessel, formed essentially or mainly from paper-pulp, paper in sheets, or paper or straw board of any suitable quality, with or without internal end hoops, supporting-disks, or an extended wooden shell, with an exterior protecting case or covering, substantially in the manner and for the purpose herein set forth.

3. The combination of a cylindrical, tank-like, or barrel-shaped vessel, formed essentially or mainly from paper-pulp, paper in sheets, or paper or straw board of any suitable quality, and having interior end hoops *h h*, with the disks or heads B, resting upon and affixed to said hoops, substantially as and for the purpose herein shown and described.

AUTOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 10. TUESDAY, SEPTEMBER 7, 1875. PRICE { $3,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

ELISHA WATERS.—*Appeal.*

[*Appeal from the Principal Examiner in the matter of the application of Elisha Waters for reissue of Letters Patent No. 81,441 for* "IMPROVED VESSEL FOR HOLDING PETROLEUM AND OTHER LIQUIDS."—*Decided June 4, 1875.*]

Where a patent covered a hermetically-sealed vessel composed of two parts, the interior one of paper supported by internal hoops and the exterior one of wooden staves and heads, for the transportation of volatile liquids: *Held*, that the patentee could not lawfully modify his patent upon reissue by omitting the words "hermetically sealed," and dispensing with the exterior casing, and reforming his drawings accordingly.

A patent which covers merely the combination of a tight paper vessel and its casing cannot properly be expanded upon reissue to embrace paper barrels and vessels generally, with or without exterior coverings; nor can it be made to embrace paper packages "of any suitable shape or configuration."

The case of *Curtiss vs. Bobe* (17 Wall, 463) cited.

THACHER, *Commissioner:*

The applicant in his patent states his invention to be—

> A new and useful method of making hermetically-sealed packages suited to commercial purposes for holding and transporting petroleum and its products, spirits of turpentine, and other liquids of a volatile nature, by which all loss by leakage or evaporation, and its resultant dangers, is prevented.

Farther on, after enumerating the disadvantages of vessels made simply of wood, in respect to leakage caused by springing of the joints, &c., and the difficulty of curing these defects by any sort of lining, he proceeds to state how he proposes to remedy these evils by his invention. He describes his invention as consisting of two parts, as follows:

> Now, one part of my invention consists in forming, substantially or mainly from paper-pulp, paper in sheets, paper or straw board, or vegetable parchment of any suitable kind or quality, a cylindrical conical frustum or barrel-shaped closed vessel, supported internally by end hoops or a wooden shell, and so constructed as to be composed practically, and, as it were, of a single stave without any joint corresponding to those between ordinary wooden staves, through which the contents of the vessel can escape; and where such vessels are intended for liquids I coat, size, or cement the continuous inner surface, or permeate the whole fiber of the paper vessel with any known varnish, or other substance or compound insoluble in and suited to effectually resist the action and prevent the leakage of the particular liquid the vessel is prepared to contain, and, when desirable, I make the vessel so formed amply strong enough to sustain, without any change of form, leak or break, its full capacity of liquid.
>
> As the handling and transportation of heavy paper vessels necessarily wears and abrades the exposed parts, it becomes desirable to use some method of protecting them, which, while effectual and lasting, shall be as economical as possible. This I effect by another part of my invention, which consists in surrounding the paper vessel with stout but roughly-made wooden cask, barrel, or tank, as the case may be, so fitted to the outer surface of the paper vessel that while the latter cannot move within the wooden envelope it shall be independent of the casing along the edges or joints of its staves, so that whenever any one stave shall be sprung inward beyond the next one the interior paper vessel shall yield freely without injury to itself or the loss of any of its contents.

His claim reads:

> A closed cylindrical tank-like or barrel-shaped vessel, formed essentially or mainly from paper-pulp, paper in sheets, or paper or straw board of any suitable quality, and supported internally by disks or hoops at the ends, or an extended wooden shell, substantially as described herein.
>
> I also claim a closed cylindrical tank-like or barrel-shaped vessel, formed essentially or mainly from paper-pulp, paper in sheets, or paper or straw board, with or without internal end hoops, or an inner wooden shell, substantially as described, in combination with an exterior protecting-case formed of wooden staves and heading, and fitted or secured to the paper vessel, substantially as set forth, so that the paper vessel shall not turn within the wooden case, and yet shall be free or separable therefrom along the joints of the staves.

From the language of the patent already quoted, from the more detailed description of the method of constructing the several parts of the invention, and from the drawings and the model, only one conclusion can be arrived at as to the nature of the device set forth thereby, and that is that it is a perfectly close or hermetically sealed vessel for the transportation of volatile or other liquids constructed in two parts, viz: first, an inner compartment or vessel made of paper or similar material, supported internally by hoops or a wooden shell with its interior surface coated with a resisting composition; and, second, an outer protecting-case formed of wooden staves and heading, and so fitted and

secured to its paper vessel that while it affords the latter protection from outside pressure or abrasion leaves it entirely free from contact with the joints of the staves.

The applicant now seeks to *amend* his patent by striking out the words "hermetically sealed," dispensing with the exterior casing, "when desirable," reforming his drawings accordingly, and broadening his claims to meet the requirements of the new case.

In short, the patent being restricted to the combination of the paper vessel and its outer casing is now sought to be expanded to embrace paper barrels and vessels generally, with or without an exterior casing, when constructed with certain internal supports.

The claims of the reissue application are as follows:

1. In a barrel or vessel made of paper, substantially as described, the internal end supports or braces A, substantially as and for the purpose herein shown and specified.
2. In a barrel or vessel made of paper, substantially as described, the combination of the sides A, with the end supports or braces A, and heads B B, substantially as and for the purpose herein shown and specified.
3. The combination of a paper barrel or vessel, A, with or without the internal end supports or braces A with an exterior protecting case or envelope, C, substantially as and for the purpose shown and specified.

The third claim is substantially the same as the second of the patent.

The applicant, in reply to the objection that the patent was restricted to hermetically-sealed vessels, states that it is evident that he did not so limit himself, from the fact that on the second page of his patent he used the words "and where such vessels are intended for liquids," &c. The paragraph in which these words are used has already been quoted, and it will be seen that in addition to furnishing the inner paper vessel with an outer protective casing he therein proposes to coat the inner surface of said vessel with some insoluble compound to more effectually prevent leakage, &c., but there is no hint whatever as to his intention to construct the paper vessel without its being completely closed from the outer air, protected from leakage, and surrounded entirely by an exterior wooden vessel.

His mention, too, of the fact that the vessel so constructed may be used to contain pulverized material as well as liquids does not imply that its construction was to be changed when so employed.

Figures 1 and 2 in applicant's drawing represent the invention *without the exterior protecting-case*. No such drawings accompanied the original application, and they are entirely at variance with the model. So far, then, as the alterations already mentioned are concerned, I agree with the Examiner that this is an attempt to expand the patent so as to cover, broadly, paper barrels and similar paper vessels, which finds no justification in the original specification, drawings, or model.

The language used by the United States Supreme Court in the case of *Carlton* vs. *Bokee*, (17 Wall., 463,) in disapproving of just such attempts may be applied here:

> We think it proper to reiterate our disapprobation of these ingenious attempts to expand a simple invention of a distinct device into an all-embracing claim, calculated by its wide generalizations and ambiguous language to discourage further invention in the same department of industry, and to cover antecedent inventions.

The same objection applies, although in a less degree, to the effort of the applicant to broaden his specification and claim, so as to embrace within his method paper packages "of any suitable shape or configuration." He bases this correction on the fact of having used the words "tanks or cisterns" and "tank-like," but these words are invariably used in his patent in immediate connection with the word cylindrical, and all through his specification his illustrations and explanations are confined to cylindrical bodies, and the words mentioned appear to be used only in reference to casks or vessels that are not strictly cylindrical in shape, but nearly so.

Admitting that these words tank, tank-like, and cistern have a broader signification in the patent than I have here given, they are sufficiently ample and definite in scope to protect the applicant in all that legitimately belongs to him, and the substitution therefor of a general all-comprehensive term is unwarranted, although I do not see how the question of form is a material one in the construction of the vessel.

The action of the Examiner is affirmed.

ELLICOTT D. AVERELL.—*Appeal.*

[*Appeal from the Examiners-in-Chief in the matter of the application of Ellicott D. Averell for letters patent for* "METALLIC STITCH FOR BOOKS."—*Decided July* 9, 1875.]

A device used for fastening together sheets of paper, pamphlets, and other documents, is anticipation of a like device used for securing together the leaves of a book in lieu of the ordinary binders' stitching. The mere application of the device to books in the process of binding does not make it patentable.

THACHER, *Commissioner:*

Applicant claims—

> A folded book stitched by means of metallic-wire rivets inserted in the punctured fold of the back and clinched on the outside, substantially as herein shown and described.

The reference given is English patent of Frederick Gye, Jr., No. 9,399, 1842. Gye shows, describes, and claims pieces of wire pointed at each end, so as to readily penetrate papers, pamphlets, and other documents, and when passed through them the ends of the wires are folded down so as to bind or hold the papers together in substantially the same manner as applicant proposes to adopt the device in the binding of books. In addition, Gye shows loops or rings formed upon the back of the wire by giving it a single twist, for the purpose of connecting different documents together by a cord, or for hanging them up; but he says that these loops may be dispensed with, and then it is quite obvious that the only function of the wires is to take the place of thread-stitches in holding the series of sheets or folded leaves together.

Applicant, however, insists that there is nothing in Gye's case to show that he intended to substitute the wires for the ordinary thread-stitching in the binding of *books*. To be sure the word *books* is not mentioned by Gye, but as a book is nothing more than a collection of sheets of paper, with a sheet of the same or other material added for a cover, there is no force whatever in the objection. Neither does the manner of clinching the ends of the wires, whether on the inside or the outside, nor the length of the wires used by each, make any patentable difference between the two devices.

The decision of the Examiners-in-Chief is affirmed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, NORTHERN DISTRICT OF NEW YORK.

J. WINSLOW JONES *et al.* *vs.* G. LEWIS MERRILL AND OSCAR F. SOULE.
SAME *vs.* JOHN H. NOYES *et al.*
SAME *vs.* W. B. OSTRANDER *et al.*

[*In equity.—Before* WALLACE, *J.*]

An adjudication in favor of a patent at final hearing, and after full consideration of elaborate proofs touching the validity of the patent, must be held controlling upon an application for a preliminary injunction, unless cogent evidence is presented in addition to that which was found insufficient upon the final hearing.

While the fact that the defendant has obtained a patent for his process is not controlling in proceedings for an injunction, it is entitled to some weight.

The process covered by the patent of John W. Jones, assignee of Isaac Winslow, May 13, 1862, for preserving corn in its green state, involves three distinct features, each of which is essential to the result: First, separating the kernels from the cob; second, placing them in their natural juices in cans; third, sealing the cans hermetically and subjecting them to heat by water or steam until the kernels are thoroughly cooked.

This patent would not be infringed by a process in which the corn, whether on the ear or removed therefrom, is thoroughly cooked by the direct application of steam before it is canned.

Where it appeared that the defendants subjected their corn to the direct action of steam, or otherwise "cooked" it, before canning it, but heated it again in a steam-bath after canning, a preliminary injunction under the Winslow patent was denied, although grave doubts were entertained as to whether that part of the defendants' process which was adopted prior to the canning was anything more than a colorable departure from the patented process.

Where defendants claimed to cook their corn in the ear thoroughly before subjecting it to heat in the sealed cans, but the printed label on their cans, prepared when they had no interest to warp the facts, stated that the corn was "cut from the cob while fresh *and sealed at once*, and then prepared by an entirely new process," &c.: *Held*, that in proceedings for an injunction the defendants must be concluded by the statement they thus published to the world.

Where complainants were chargeable with knowledge of defendants' acts, but permitted them to continue their manufacture, and in response to an inquiry as to whether they regarded defendants' process to be an infringement, returned an answer that led defendants to believe that they did not, an injunction was refused.

It is a general principle of equity jurisprudence that the court will not lend its extraordinary aid, by way of preliminary injunction, to any claimant who has encouraged or acquiesced in an infringement of his right, or unreasonably delayed in prosecuting for its violation.

Compensation for damages accrued and protection from future damages is all such a complainant is entitled to. This provided for by a bond.

[Motions for preliminary injunctions to restrain alleged infringements of letters patent granted to John W. Jones April 8, 1862, and May 13, 1862, for certain inventions of Isaac Winslow, relating to a new and useful improvement whereby corn in its green state is preserved in hermetically-sealed cans. The first of the patents was for the product; the second, for the process.]

[*W. H. Bright, W. H. Clifford,* and *E. W. Fox,* for complainants.
Smith, Markham & Smith, for Merrill & Soule.
Tower & Joslyn, for Noyes *et al.*
Sedgwick, Kennedy & Tracy, for Ostrander *et al.*]

WALLACE, *J.*:

The defenses interposed in these actions to the validity of the complainants' patents must be regarded as unavailing to the defendants for the purposes of this motion, because of the decision of the court in the first circuit in the case of *J. Winslow Jones et al.* vs. *Sewall*. It was there adjudicated upon final hearing, after full consideration, that the defenses that Isaac Winslow was not the original discoverer of the improvement; that it had been patented abroad, and described in public works prior to his alleged discovery; that it had been in public use or on sale for more than two years before his application for a patent, and had been abandoned to the public use, were not sustained by the proofs. That adjudication must be held controlling upon an application for a preliminary injunction, unless cogent evidence is presented in addition to that which was found insufficient upon the final hearing. The new evidence which has been adduced here as to prior use, is far less satisfactory than that which was held insufficient there, and the additional proof on the subject of prior publication is open to the same objections which were regarded as fatal there to this branch of the defense.

Upon the final hearing of these cases they must be determined each upon its own merits, and the validity of the patents will be an open question; but for present purposes the only question for consideration must be whether or not the defendants have infringed. In determining this question it is first necessary to ascertain the scope and extent of the patents, because the result of the controversy may hinge entirely upon the conclusion whether the right covers a broad claim or a narrow one. It was not necessary in the case in the first circuit to give accurate consideration to this question, because the defense stood solely on the validity of the patents and conceded infringement if they were valid.

The construction which seems to be the reasonable one, according to the liberal interpretation now accorded to patents, and in view of the history of the art of preserving fruits and vegetables, is, that the process secured to complainants involves three distinct features, each of which is essential to the result he has produced. These consist in the preservation of the corn by first separating the kernels from the cob; second, placing them in their natural juices in cans; and, third, sealing the cans hermetically and subjecting them to heat by water or steam until the kernels are thoroughly cooked. Adherence to these three features in the process is deemed vital to the result which the specifications signify as the great advantage and the *sine qua non* of the discovery—viz., the preservation of the article in its natural juices so that the milk of the corn will not be evaporated, its flavor rendered insipid, or its aroma lost. If any one of these three features of the process is discarded in the process of the defendants, there is no infringement. (*Hill* vs. *Thompson*, Webs. Pat. Cases, 225.) They cannot escape liability, however, by the substitution of a feature which is but a colorable departure from either of those claimed by the patentees.

It seems not to be necessary to discuss the argument for the complainants by which a broader right is claimed under the patent for the product. The only product

which is secured to the patentees is the one derived from the process which alone gives vitality to the claim. The product patent is not one for corn preserved green, but for corn preserved green by the process particularly described.

Applying the rules adverted to as the test of infringement, it is quite apparent, so far as the facts now appear, that the defendants, Merrill & Soule, do not infringe by the process they adopt; because they discard one of the steps of complainants' process and substitute one in its place, which complainants very clearly repudiate as fatal to success. While complainants place their corn in hermetically-sealed cans, and cook it by the application of water or steam to the cans, in order, as they state, that the juices of the corn shall be coagulated without evaporation or dilution, these defendants apply steam directly to the corn. The complainants disclaim this method, on the theory that when thus cooked the corn is insipid and unpalatable. In order to obviate the escape of the aroma and the evaporation of the milk and juices of the corn, these defendants have invented an apparatus which seems to accomplish the desired result, for which a patent has been granted them. One test of infringement is whether or not the process adopted by the alleged infringer is a sufficient departure from that of the patentee to amount to a substantive invention sufficient to support a patent as for a new thing. (Curtis on patents, sec. 321.) While the fact that they have obtained a patent is not controlling, it is entitled to some weight. It would seem that their substitute is one differing in principle from complainants. Clearly this is so, if their corn is thoroughly cooked by the direct application of steam before it is canned. The fact that after canning their corn they heat it again in a steam bath, militates somewhat against this conclusion. If that part of their process which is adopted prior to canning is but a colorable device, without practical result, or the process is really accomplished by the steam bath subsequently applied, they cannot escape liability. But upon the evidence now presented they must prevail on this question, and as to them an injunction is therefore denied.

As to the defendants, John H. Noyes and others, (who constitute the "Oneida Community,") they claim to have used a different process from complainants, in that they cook their corn in an open vessel before canning it in a sirup, which they describe. The serious difficulty in the way of this defense lies in the doubt which the affidavits leave, as to whether or not this is anything more than a colorable departure from complainants' process. They cook their corn but a short time in the open vessel, and it is far from clear whether this part of the process has any material effect in the final result. It would be unjust, however, to determine this question adversely to them upon the affidavits used on this motion, and for this reason an injunction should be denied. Aside from this consideration, complainants, as to these defendants, are justly open to the imputation of laches. One of the assignors of the complainants visited defendants' manufactory in 1868, and saw their process, which, as then practiced, in the most adverse view to defendants, was not less an infringement than that now used by them. The complainants are chargeable with the knowledge of their co-owners of these facts, and from the time he became owner until the present, they have permitted these defendants to continue manufacturing. In addition to this, it appears that, in 1873, defendants sent a messenger to complainants for the express purpose of ascertaining if their process was considered by complainants a violation of the patents, and from information then received were evidently led to believe that it was not. They were not intentionally misled, doubtless, but complainants should have given them more explicit information, if they intended to treat them as infringers. These facts should shelter them upon this application.

As to these defendants the injunction is denied.

As to the defendants, Loomis, Allen & Co., they claim to use a different process from complainants, because they cook their corn in the ear thoroughly before subjecting it to heat in the sealed cans. But an exhibit of one of their cans of corn, as offered for sale by them, is produced, upon which is a printed label, which states—

> This corn is picked when at proper size for table use, and cut from the cob *while fresh and sealed at once*, and then prepared by an entirely new process, &c.

They also claim that their corn is cooked subsequently in the sealed cans, in a "liquid compound," but fail to describe this compound. They concede that they have contributed to a fund to contest the validity of complainants' patents. Affidavits on part of complainants present admissions of one of the defendants that the cooking of the corn before canning it is so slight as to produce no effect upon it; whereby a strong inference arises that this feature is merely an evasive departure from complainants' process. If their label truthfully advertises their process, the conclusion that they have infringed is no longer a matter of inference, but is clearly proved. It may be explained upon the final hearing, but as the case now stands they must be concluded by it. It is in direct conflict with the process which they now claim to have pursued. It was made when they had no interest to warp the facts. If untrue, it was a misrepresentation to their patrons, and until it is explained in some manner consistent with good faith, they must be held to the statement which they published to the world.

Notwithstanding the strong case made against these defendants, they are entitled to the benefit of other considerations, which render it inequitable to grant an injunction against them unconditionally. The complainants have to a certain extent slept upon their rights for many years, during which time a large amount of capital has been embarked in all parts of the country in the business of preserving corn by processes substantially similar to theirs, in ignorance of the right they now assert to the exclusive monopoly of such business. If these rights had been promptly asserted, many individuals would have been saved from the jeopardy which now menaces their investments, and among them are these defendants. It is a general principle of equity jurisprudence that the court will not lend its extraordinary aid to any claimant who has encouraged or acquiesced in an infringement of his right, or unreasonably delayed in prosecuting for its violation. Compensation for damages accrued, and protection from future damages, is all such a complainant is entitled to. An order to secure such remedy will be made in this case.

As to these defendants an injunction is granted, unless within thirty days they file with the clerk of this court a bond in the penalty of $20.000, with sufficient sureties conditioned for the payment of such sum, if any, as may be decreed in favor of complainants on the final hearing of the cause, to be approved in form and as to sufficiency of sureties by the clerk of this court. And defendants must file monthly statements, under oath, with the clerk, of the amount of their manufacture and sale of preserved corn during the pendency of this action.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date September 7, 1875.]

8,594 and 8,595.—Carpets.—THOMAS BARCLAY, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Applications filed August 25, 1875. Term of patents 3½ years.

8,596.—Band for Plated Ware.—RUDOLPH CHRISTESEN, West Meriden, Conn., assignor to the MERIDEN BRITANNIA COMPANY, same place. Application filed April 20, 1875. Term of patent 7 years.

8,597.—Coffee-Mills.—JOHN GIRARD, New Britain, Conn., assignor to LANDERS, FRARY & CLARKE, same place. Application filed July 6, 1875. Term of patent 7 years.

8,598.—Carpets.—HEINRICH F. GOETZE, Boston, Mass., assignor to ROXBURY CARPET COMPANY, same place. Application filed August 25, 1875. Term of patent 3½ years.

8,599 to 8,603, inclusive.—Carpets.—ETIENNE GUIRAUD, New York, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass. Applications filed August 25, 1875. Term of patents 3½ years.

8,604.—Match-Safes.—THOMAS B. HARKINS, Bristol, Pa. Application filed August 26, 1875. Term of patent 3½ years.

8,605.—Gasalier.—CHRISTIAN HERTER, New York, N. Y. Application filed August 27, 1875. Term of patent 3½ years.

8,606.—Carpets.—JUDSON E. HILL and WILLIAM H. DEACON, Philadelphia, Pa., assignors to JOHN BROMLEY & SONS, same place. Application filed August 25, 1875. Term of patent 3½ years.

8,607.—Carpets.—ALFRED LILLEY, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed August 25, 1875. Term of patent 3½ years.

8,608 and 8,609.—Carpets.—DAVID MCNAIR, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Applications filed August 25, 1875. Term of patents 3½ years.

8,610 to 8,613, inclusive.—Carpets.—JOSEPH M. CHRISTIE, Kidderminster, England, assignor to LOWELL MANUFACTURING COMPANY. Applications filed August 25, 1875. Term of patents 3½ years.

8,614 to 8,635, inclusive.—Carpets.—JOSEPH M. CHRISTIE, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Applications filed August 25, 1875. Term of patents 3½ years.

8,636.—Fabrics.—EDWARD C. CLARK, Rockville, Conn. Application filed August 30, 1875. Term of patent 3½ years.

8,637 to 8,642, inclusive.—Carpets.—CHARLES W. SWAPP, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Applications filed August 25, 1875. Term of patents 3½ years.

8,643.—Shawls.—HERRMANN BERG, Philadelphia, Pa. Application filed June 23, 1875. Term of patent 7 years.

8,644.—Printing-Types.—HERMAN IHLENBURG, Philadelphia, Pa., assignor to MACKELLAR, SMITHS & JORDAN, same place. Application filed August 25, 1875. Term of patent 14 years.

8,645.—Bed.—GILBERT H. PRINDLE, Philadelphia, Pa. Application filed August 28, 1875. Term of patent 7 years.

8,646.—Trimming.—GILBERT H. PRINDLE, Philadelphia, Pa. Application filed August 28, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date September 7, 1875.]

2,899.—Medical Preparation.—J. W. CAMPION & Co., Philadelphia, Pa. Application filed August 13, 1875.

"the figure of a circular band containing the word 'Wishart's,' and inclosing the words 'Pine Tree.' With the band there is entwined a scroll, whose ends project in opposite directions, in which ends are the words, respectively, 'Tar,' 'Cordial.' On the body of the scroll are the words 'For all Lung Diseases.' Pine trees flank the circular band, or are in the rear of the ends of the scroll."

2,900.—Soap.—ISAIAH WARREN, Wheeling, West Va. Case A. Application filed August 26, 1875.

"word 'Emerald.'"

2,901.—Soap.—ISAIAH WARREN, Wheeling, West Va. Case B. Application filed August 26, 1875.

"word CENTENNIAL."

2,902.—Toilet Preparations.—HERMON W. ATWOOD, New York, N. Y. Application filed July 31, 1875.

"a monogram formed of the letters 'H. W. A.'"

2,903.—Wood-Working Tools.—BAILEY TOOL COMPANY, Woonsocket, R. I. Application filed July 29, 1875.

"the figure of a battle-ax, surrounded by the words and letters 'Bailey Tool Co., Woonsocket, R. I.'"

2,904.—Shirts.—BLOOMER, KING & Co., New York, N. Y. Application filed August 10, 1875.

"the design shown in the accompanying fac-simile, which is composed of an arbitrary cipher on a scrolled escutcheon, arranged with reference to the words 'New York City Shirts,' the particular device upon the said escutcheon being the cipher B. K. & Co., arranged and depicted as shown."

2,905.—Combs.—BENJAMIN F. BRITTON, New York, N. Y. Case A. Application filed August 5, 1875.

"the representation of a human head having upon it a semi-circular comb or band, with a second comb or band extending back therefrom."

2,906.—Fertilizers.—LEMUEL L. CROCKER, Buffalo, N. Y. Application filed July 12, 1875.

"a heraldic emblem of a nearly square and shield like shape, having a cross thereon, and in central position, and at the junction of the two bars of the cross the picture of a buffalo in the act of leaping."

2,907.—Silk Goods.—WILLIAM H. DE FOREST, New York, N. Y. Application filed July 22, 1875.

"a female figure holding a rod with serpents coiled around it, a lion lying by her left side, and a portion of a shield and flags at her right side, with buildings and chimneys in the background at the left of the female figure. Above this female figure I place an eagle holding an olive-branch and the motto 'E Pluribus Unum.' Above this engraving, as described, I place the word 'Home,' and below the engraving the word 'Spun.'"

2,908.—Polishing-Powder.—DETROIT POLISH COMPANY, Detroit, Mich. Application filed August 18, 1875.

"words 'Diamond Polish,' and the representation of a diamond with divergent rays inclosed in a lozenge."

2,909.—Washing-Blue.—EASTMAN & BROOKE, Philadelphia, Pa. Application filed August 16, 1875.

"word 'Irish,' in conjunction with the representation of a dancing woman."

2,910.—Whisky.—FRIEBERG & WORKUM, Cincinnati, Ohio. (Re-registration.) Application filed August 24, 1870.

"words 'Cabinet Bourbon, Kentucky,' arranged in a triangle and inclosing the letters 'O K' in combination with our initials 'F. and W.,' and our autographic signature."

2,911.—Umbrellas and Parasols.—HEITER & GANS, New York, N. Y. Application filed August 6, 1875.

"a cross with an umbrella in the center, surrounded with the words 'Higgins Automatic.'"

2,912.—Redistilled Liquors.—HENRY W. SMITH & Co., Covington, Ky. Application filed August 16, 1875.

"a heraldic shield and the letters 'H. W. S. & Co.,' inscribed in it between two parallel lines."

2,913.—Bottled Wines.—I. H. SMITH'S SONS, New York, N. Y. Application filed June 12, 1875.

"the representation of the 'Mission San Gabriel' building."

2,914.—Ruches, Ruffings, and Collarettes.—JOEL THOMAS, Philadelphia, Pa. Case A. Application filed June 11, 1875.

"word 'Kuequenaka.'"

2,915.—Ruches, Ruffings, and Collarettes.—JOEL THOMAS, Philadelphia, Pa. Case B. Application filed June 11, 1875.

"a representation of a ship sailing close to the wooded bank

of a stream, while underneath the picture are described the words 'The ship Shield,' cruising before the present site of Phila. in 1678."

2,916.—Snuff.—WEYMAN & BROTHER, Pittsburg, Pa. Application filed July 28, 1875.

"a monogram, comprising the letters 'W. C.'"

2,917.—Sewing-Machines.—WILLCOX & GIBBS SEWING-MACHINE COMPANY, New York, N. Y. Application filed July 27, 1875.

"a monogram of the Roman capital letters 'W' and 'G.' The letter 'W' of said monogram is formed by a representation or drawing of four or more sewing-machine needles arranged at proper angles to form the letter; and the letter 'G' of said monogram is formed by a representation or drawing of the frame, needle bar, and cloth-table of a sewing-machine of the style made by said corporation."

2,918.—Sewing-Machine Needles and Attachments. WILLCOX AND GIBBS SEWING-MACHINE COMPANY, New York, N. Y. Case B. Application filed July 27, 1875.

"Roman capital letter 'W.,' followed by the mark or character '&,' signifying 'and,' and the Roman capital letter 'G.'"

2,919.—Smoked Meats and other Provisions.—J. P. WRIGHT & Co., Philadelphia, Pa. Application filed July 24, 1875.

"words 'QUAKER CITY.'"

2,920.—Combs.—BENJAMIN F. BRITTON, New York, N. Y. Case B. Application filed August 5, 1875.

"a pictorial representation of two semicircular combs, attached together at or near their ends."

2,921.—Cotton Fabrics.—GREENVILLE MANUFACTURING COMPANY, Providence, R. I. Application filed August 31, 1875.

"word 'Lily.'"

2,922.—Bread-Raising Material.—RUMFORD CHEMICAL WORKS, Providence, R. I. Application filed July 19, 1875.

"words 'Bread Preparation.'"

2,923.—Soap.—SCHULTZ & CO., Zanesville, Ohio. Application filed June 19, 1875.

"words or name 'Saint Patrick.'"

2,924.—Plows.—ALEXANDER SPEER & SONS, Pittsburg, Pa. Application filed July 13, 1875.

"word 'Lone' in connection with a star."

INDEX OF INVENTIONS PATENTED SEPTEMBER 7, 1875.

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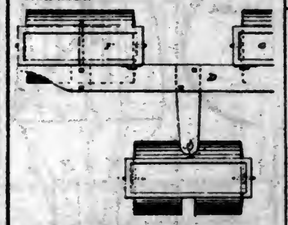
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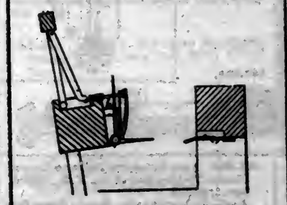
167,380. LAND-ROLLER. Ephraim H. Adams, Lykens Township, Crawford County, Ohio. [Filed Apr. 8, 1875.]

Brief.—There are three rollers—one in front and two in line in the rear. Each has an independent motion. This motion for the rear rollers is limited by a stop-plate, which is permanently attached to the bar that carries the roller-frame.



The stop-plates I I, in combination with the pivoted roller-frames F G and transverse bar D, as and for the purpose set forth.

167,381. STOP-MOTIONS FOR LOOMS. Benj. F. Arnold, Westerly, R. I. [Filed Feb. 24, 1875.]



In a weft-stop motion, a weft-feeler, consisting of a part or portion of the reed made movable, substantially as and for the purpose herein set forth.

167,382. SEWING-MACHINES. W. d. Brobwith, Newark, N. J. [Filed Jan. 30, 1875.]



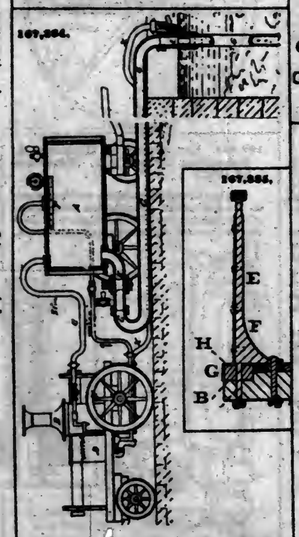
1. The combination of the hook or under bastle secured to the shank D, pivoted directly to the bed-plate A on its under side, lever C, similarly pivoted and working in substantially the same plane with the shank D, and the link F, connecting the two, constructed and operating substantially in the manner described and specified.

2. The combination of the tension G and the slotted bar E, whereby the tension is rendered adjustable in its relative position to the hook or under needle, substantially in the manner described and specified.

167,383. COMPOSITIONS FOR GLAZING ROASTED COFFEE. Jas. H. Bell and John H. Conrad, Chicago, Ill. [Filed July 27, 1875.]

A composition for glazing roasted coffee, composed of pure water, molasses, turmeric, flour, alumbol, and gum arabic, substantially as herein before set forth.

167,384.



167,385.

167,384. APPARATUS FOR HEATING SEWERS AND SEWER. Reinhold Boekius, Brooklyn, N. Y. [Filed July 13, 1875.]

Brief.—Improvement on Patent No. 142,308, August 26, 1873. Drives the steam through tank and suction-pipe, and out through a pipe having a stop-cock, either through the furnace fire or other decoctions. Condenses by water making vacuum in both tank and suction-pipe. The soil may rise immediately, or by a stop-cock in suction-pipe, may be held back, and admitted at will.

1. The combination of the tank A, hose C, and cock or valve J, whereby the vacuum is caused in said tank and hose, in order to operate upon the soil instantaneously, substantially as herein set forth.

2. The combination of the tank A, and boiler B, with the hose C, cocks or valves J L, and steam-pipe O, substantially as and for the purposes herein set forth.

3. The combination of the boiler B, tank A, sprinkler F, valve or cock J, pipe K, and hose C, to operate upon the soil, substantially as herein set forth.

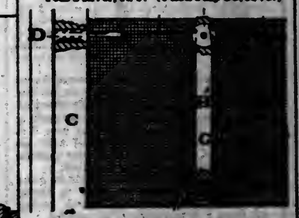
167,385. CAR-PLATFORMS. Geo. M. Brill, Philadelphia, Pa. [Filed July 9, 1875.]

1. The metallic sheathe G, encircling the fronts, sides, and backs of the ends of the platform-sill B, substantially as and for the purposes set forth.

2. The lower plate H, formed with the encircling sheath G, substantially as and for the purposes set forth.

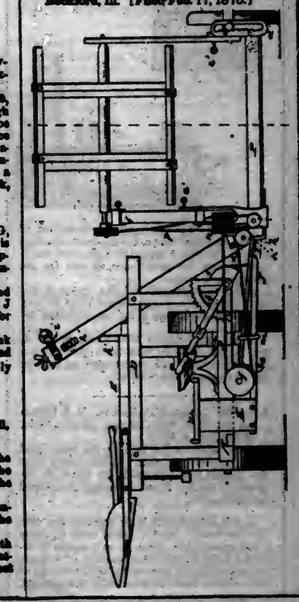
3. The sheathing H, in combination with the bracket F, formed therewith, and operating substantially as and for the purposes set forth.

167,386. WINDOW-SCREENS. J. R. Chase, Tom's River, N. J. [Filed July 30, 1875.]



The gauze-frame C, in combination with the spring-spars D, connections E, rotating disk or arm F, and operating-cord H or J, as substantially as and for the purpose set forth.

167,387. HARVESTERS. Andrew J. Cook, Wichita, Kans., assignee of one-fourth his right to Ralph Emerson and W. A. Talcott, Rockford, Ill. [Filed Feb. 17, 1875.]



1. The combination of the hinged bars I I with the segments c, chains d, rack h, and lever e, for raising, lowering, and holding the inner ends of the cutter-bar and carrier-frame F, substantially as specified.

2. The combination of the bars or levers J with the hinged bars I, stirrups w, and blades w' stand, with its supports K, substantially as described.

3. The coupling-frame, consisting of the hinged bars I and cross-bracer r, substantially as set forth.

4. The combination of the pulleys or wheels k l j with the belt or chain p, arranged as described, whereby the elevator is held against the table B, substantially as specified.

167,889. WAGON-SEAT. S. B. Conover, Jersey City, N. J. [Filed Aug. 12, 1875.]

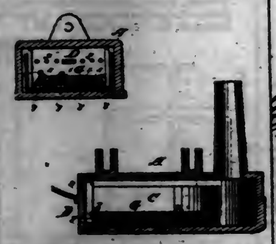
Brief.—The plate of the top plate slides in the tubes of the bottom, and are guided by the guide-rod moving in a groove.



1. The combination of the supporting-frame A, which is made in one piece with the two parallel tubes *b b* that are partly closed at the bottom, with the top plate B made in one piece with the two pendent pins *d d*, having enlarged heads *e e*, and with the springs *f f*, all combined to operate substantially as herein shown and described.

2. The combination of the guide-rib *g* and guide-groove *i*, with the plate B, having the pins *d d*, and with the frame A, having the tubes *b b*, substantially as specified.

167,890. SAD-IRON HEATER. Gideon W. Cottingham, Rockport, Tex., assignor to himself and James P. Cottingham, same place. [Filed Aug. 12, 1875.]



1. The grate G, constructed as described, of the longitudinal bars *a*, having draft-openings *c* near the upper edge, and grooved longitudinally on the under side, as and for the purposes set forth.

2. The combination of the grooved and perforated grate G, and the end plate D, with lower draft-openings *p*, for the purposes set forth.

3. The combination of the hollow iron A, pan G, and plate D, with draft-openings *p i*, and the grate G, all constructed as and for the purposes herein set forth.

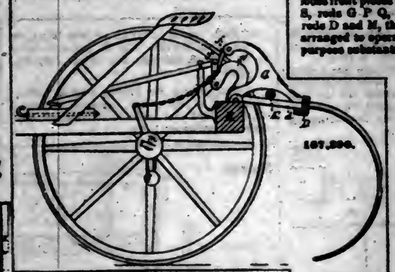
167,892. HORSE HAY-RAKES. R. J. Downing and H. D. Van Compen, Dayton, Ohio. [Filed Feb. 6, 1875.]

Brief.—Device for locking the rake-head automatically on its rise. Called spring upon the pressure-bar, adjustable by screw, to depress the teeth. Teeth fastenings shortened for lubrication.

1. The hinged rack H, in combination with the foot-lever I, pawl *f*, forked lever G, chain A, and spring-latch *m*, as a means of temporarily locking the lifting devices of a horse hay-rake without preventing the discharge of the collected loads, substantially as described.

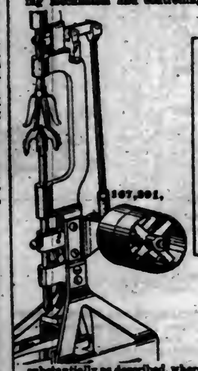
2. The adjustable coiled springs *b'*, in combination with the rake-teeth, the pressure-bar E, and screw *s* for adjusting the springs upon said bar, substantially as described.

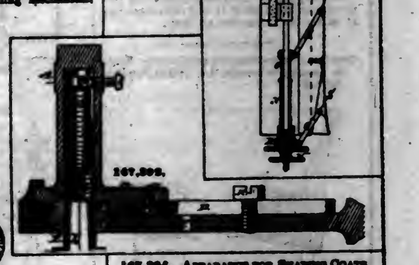
3. The thimbles C, provided with the chamber *b'* and dowel-pins, substantially as described, and for the purpose specified.



167,891. HAT-STRETCHING MACHINES. R. Bolsinger, Yonkers, N. Y. [Filed June 25, 1875.]

In a hat-stretching machine which operates on the corrugation principle, the combination of co-operating stretching devices with driving mechanism and controlling mechanism, substantially as described, whereby one of said devices is properly driven with a reciprocating movement, and the two devices gradually brought into working communication with each other for stretching a hat, and separated when the hat is to be removed, as set forth.





167,893. RATCHET-DRILLS. H. C. English, Wilmington, Del. [Filed May 4, 1875.]

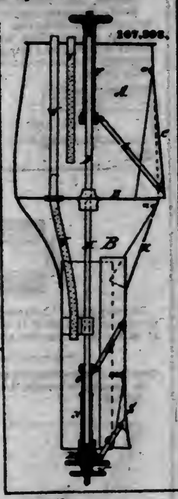
Brief.—A wheel with two grooves in it receives the tool-holder. Two levers—one a short arm pivoted to the cap, and having a segment of gear at its lower end, which meshes with a segmental piece carrying a pawl, and the other a long arm, fitted also with a pawl at its lower end. The pawls alternately wedge and loosen in the grooves of the wheel, so that the drill is turned continuously in the same direction by opposite motions of the operating-lever. The hole for the reception of the steel carrier is eccentric, in virtue of which the toothed upper end of the said carrier is made to engage with a regulating-bolt, which holds it for a long or short interval, according to the depth to which it (the bolt) is inserted.

1. The combination, substantially as herein shown and described, of the hand-lever F, slotted lever D, toothed at its lower end, geared pinion J, grooved wheel B, and tool-holding spindle B.

2. The combination, substantially as herein shown and described, of the grooved wheel B, pawls K K', geared pinion J, levers F D, spindle B, with the hole for the reception of the steel-carrier out of center, steel-carrier C, provided with toothed head E, regulating-bolt G, and cap A.

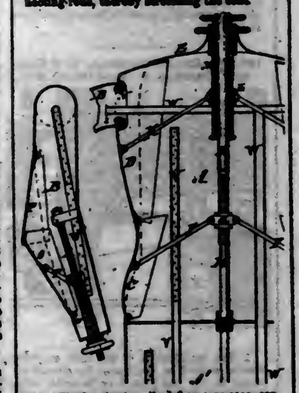
167,894. PANTALOONS-FUSEERS. Charles Franke, New York, N. Y. [Filed Jan. 18, 1875.]

The herein-described pantaloons-fuseer, consisting of the chambers A and B B, provided with hinged parts or sections C and K, loose front pieces I, with hinged bottom pieces S, rods G F Q, sleeves or nuts P N E, and rods D and M, the whole being combined and arranged to operate in the manner and for the purpose substantially as set forth.



167,895. APPARATUS FOR SHAPING COATS. Charles Franke, New York, N. Y. [Filed Apr. 1, 1875.]

Brief.—By turning the thumb-pieces the hinged sections are moved outward by the connecting-rods, thereby stretching the coat.



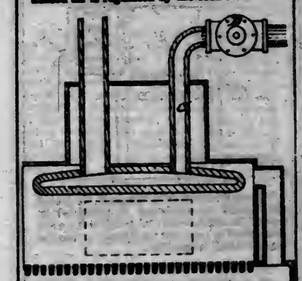
1. The herein-described frame or case, consisting of the chambers or casings A' A and B B, of the proper form for shaping a coat, and provided with hinged sections C, D, O and F, in combination with rods P, K, and T, operated by spindles H R and sleeve M, together with suitable steam-pipes V, W, X, and W', the whole being arranged to operate together in the manner and for the purpose substantially as set forth.

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2. The sleeve-casings B B, attached to the hinged sections D by means of a ball or socket joint, H, substantially as and for the purpose described.

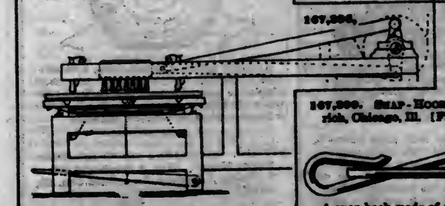
167,896. METHOD OF PROCESSING OF HEATING BUILDINGS. Chas. Franke, New York, N. Y. [Filed May 26, 1875.]

Brief.—The flow of water for hydrating the heated air is regulated by the cock D.



The within-described method or process of heating buildings, consisting in combining with the hot air produced in a furnace steam generated in a dry chamber, B, into which the steam-producing water is admitted in regulated quantity only as fast as required for generating the desired proportion of steam, supplying the said combined hot air and steam to the several apartments to be heated, substantially as and for the purpose herein specified.

167,897. CLOTH-SCOURING MACHINES. Charles Franke, New York, N. Y. [Filed June 2, 1875.]



1. The combination, in a cloth or clothes scouring machine having reciprocating brushes, of a supporting-frame, a platform to sustain the cloth or clothes, and pressure-holders (, constructed and operating substantially as described, to hold the cloth or clothes to the platform against the lateral action of the brushes.

2. The combination, in a cloth or clothes scouring machine, the reciprocating brushes, the pressure-holders (, constructed and operating substantially as described, and a laterally-moving or removable platform.

3. The combination, in a cloth or clothes scouring machine, of the pressure-holders (, constructed and operating substantially as described, and a platform mounted on springs, for the purpose specified.

4. The combination, in a cloth or clothes scouring machine, of two platforms, having anti-friction bearings interposed between them, for the purpose set forth.

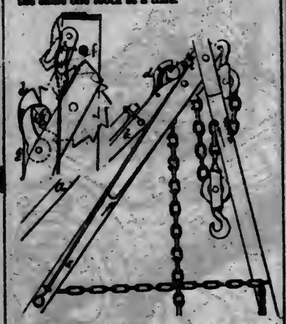
5. The combination, in a cloth or clothes scouring machine, of two platforms on springs, a treadle, K, and a cam, O.

167,897. SHAFT-COUPLING. Charles Franke, New York, N. Y. [Filed Apr. 6, 1875.]

In a shaft-coupling a valve-chamber, A, with the inlet B and outlet C on a straight line with each other, the combination of the valve-stem G, with slotted arm A extending therefrom at right angles, and the valve B, adjustable on said arm, substantially as and for the purpose herein set forth.

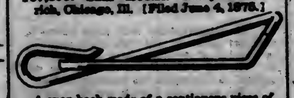
167,898. DRESSERS. Burton Freeman, East Attleborough, Mass., assignor of one-half his right to J. McAnerney, Attleborough, Pa. [Filed May 6, 1875.]

Brief.—By the change in the position of the spring attached to the movable rod, the lever-arm may be operated to raise a weight or lower the same one tooth at a time.



The combination, in a derrick, of the lever A, the curved lever *b*, the pawl *d*, check-pawl B, and ratchet-wheel C with the springs *g* and *f* and rod K, the whole operating together substantially as and for the purpose set forth.

167,899. SNAP-HOOKS. Harry C. Goodrich, Chicago, Ill. [Filed June 4, 1875.]



A snap-hook made of a continuous piece of spring-wire bent into form, as described, so that the ends pass each other in parallel planes, and having the outer end adapted to facilitate the attachment of a ring, as substantially as specified.

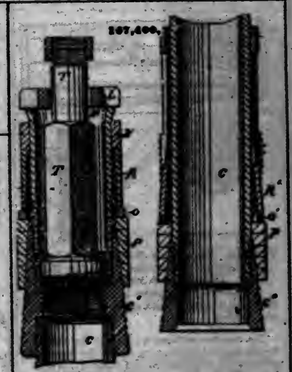
167,900. PACKING FOR STUFFING-BOX OF WATER-PRESS OIL-WELLS. James P. Gordon, Karn's City, Pa. [Filed Apr. 22, 1875.]

Brief.—Elastic ring-shaped packing is wedged outward between the ridged outer surface of hollow cones attached to the ends of the tube-section, and the walls of the well—the lower one by lifting the section and cone with it, (the packing being prevented from rising by barbed rings and a conical ring above it,) the upper one by rings and a nipple, which screws downward into the cone.

1. The combination, with the lower end of a joint of well-casing, C, of the cone C', packer P', open ring O, loose conical ring R', barbed wedges W, and ring Y, all constructed, arranged, and operating substantially in the manner and for the purpose described.

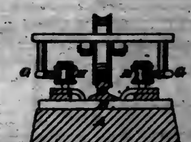
2. The combination, with the upper end of a joint of well-casing, of the cone C, packer P', open ring O, loose ring R, nipple N, bush I, and cap T, all constructed, arranged, and operating in the manner and for the purpose specified.

3. In combination with any required length of well-casing, devices, constructed and operating substantially in the manner hereinbefore specified, attached to the upper and lower ends of the same, whereby said casing may be made self-sustaining at any desired point in an oil



or artesian well, and have a water-tight packing inserted and fixed between its ends and the well-walls, for the purpose of shutting off a water-course or vein, substantially in the manner set forth.

167,901. RECEIVING RAILWAYS. William H. Harrison, Livermore, Cal. [Filed July 29, 1875.]



The improvement on single-track railways, the same consisting of the guiding-rails G, when secured to the car, in combination with the pulleys H, when secured upon each side of the rail, substantially as herein described.

167,902. SIDE-HILL PLOWS. R. I. Knapp, Half-Moon Bay, Cal. [Filed Aug. 12, 1874.]

Brief.—An elbow lever or rod, extending downward from between the handles, carries a double hook, which can be turned from side to side to secure the plow in position.



In a side-hill plow, constructed as described, the mother J, provided with the rod K and handle M, all arranged to operate substantially as and for the purpose set forth.

167,903. PIANO-FORTES. Geo. C. Mosmer, Mott Haven, N. Y. [Filed Mar. 30, 1875.]

1. In combination with the bridge B, applied in front of and above the wrest-plank C, the perforated wrest-plank and the fillers b b, extending through the perforations of said wrest-plank and behind said bridge, all being so arranged that the strings pass beneath the bridge and above the wrest-plank, and that the fillers extend between the said bridge and the tuning-pins which project above the face of the wrest-plank, substantially as herein shown and described, and for the purpose specified.

2. The piano-bridge B, combined with the hard-rubber inlay *c*, cast or molded in the bridge, substantially as herein shown and described.

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167,402.





167,403.

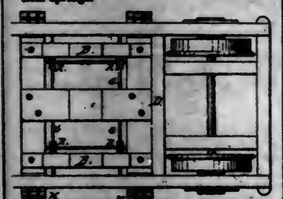
167,404. RECEIPT-TABLE SLIDES. Geo. H. Maxwell and James B. Forster, Delhi, N. Y. [Filed Jan. 6, 1875.]

Brief.—Central wooden slides, the tongues of which project to both edges of the outer or main slides.

The wooden sections A, having the continuously-separating tongues B, and notches and grooves *a b*, and groove and stops *d e*, in combination with the sections C, having the tongues and grooves *a b* and projections *c*, in the manner and for the purpose herein specified.

167,405. CAR-TRUCKS. Richard McNulty, Nashville, Tenn. [Filed Mar. 6, 1875.]

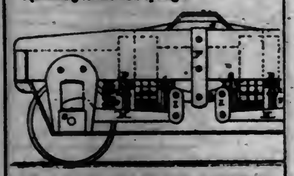
Brief.—Car-body supported on bolster-frames, which rest on necks of suspended elliptical springs.



The combination of a four-wheeled truck, center bolster-frame, elliptical springs K K K, supports G G and D D, straps E E, and supporting-pieces B B, all substantially as and for the purpose set forth.

167,406. CAR-TRUCKS. Richard McNulty, Nashville, Tenn. [Filed Nov. 4, 1874.]

Brief.—Car-truck supported on system of equalizing levers and springs.



The combination, with a four-wheel truck, of the springs F F, spring-levers H H, straps I I, lever G, and stirrup F, substantially as and for the purposes set forth.

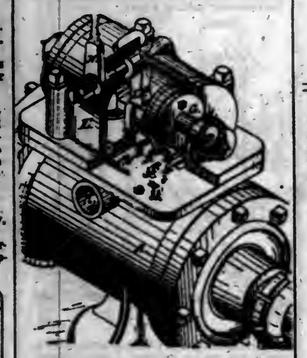
167,407. WAGON-REGULATOR. Ralph S. Morehen, Zanesville, Ohio. [Filed July 8, 1875.]



As an improvement in regulating mechanism for thills-pieces, the bridge A, constructed with projection or cleat A' and curled edge or tongue *a*, in combination with the equalizing-lever F, and G, and balance-spring C, all permanently united to or formed a part or fixture of the balance-bridge, whereby the bridge containing the entire regulating device may be readily removed or secured in place in a one-piece without alteration of the parts, substantially as and for the purposes described.

167,408. DEMOIT-ACTING ENGINES. James B. Paddock, Chicago, Ill. [Filed July 27, 1875.]

Brief.—The auxiliary valve is started by steam from main cylinder, and carries the remaining portion of its stroke by steam admitted from the steam-chest. The main valve contains a supplemental exhaust-valve, which governs the exhaust from either end of the auxiliary piston-valve.





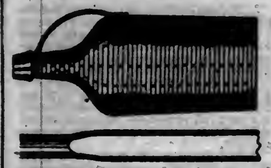
1. The combination, with main piston B, auxiliary piston G, and main steam-valve H, of a system of ports composed of *ae'* and *ae*, *bf* and *bf'*, arranged substantially as described, to accomplish the results specified.

2. The combination, with auxiliary piston G and main steam-valve H, of an exhaust-valve, I, and a system of ports composed of *ae'*, *c'*, and *d*—*bf*, *b'* and *d*, arranged substantially as described, to accomplish the result specified.

3. The combination, with auxiliary cylinder F, auxiliary piston G, and combining-cylinder O, of channel *e*, and auxiliary exhaust-valve I, arranged substantially as described, to accomplish the result specified.

167,409. PROCESSES OF TREATING RATTAN. Carlton Newman, San Francisco, Cal. [Filed May 11, 1875.]

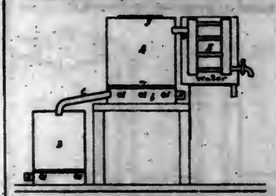
Brief.—Strips of rattan are flattened by being passed between two pressing-rollers, which are gaged to the desired thickness, for the purpose of preparing them for weaving into rattan-ware or wicker-ware.



The process of flattening strips of rattan by compression previous to weaving them into rattan-ware or wicker-work, substantially as and for the purpose above described.

167,410. APPARATUS FOR OBTAINING TAR FROM SEA-WEED. William H. Braddick, Boston, Mass. [Filed July 20, 1870.]

Brief.—Passes products of combustion from a furnace through sea-weed in a kiln, and the products from the kiln through a condenser. Applies air-blast to both furnace and kiln. May omit furnace. Lixiviates ashes of the weed to get iodine, &c.



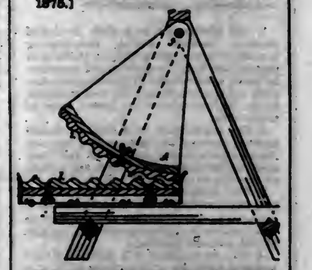
The combination of the furnace B, the grated kiln A, and the condenser E, connected by pipes C D, and furnished with one or more air-blast pipes to lead into the furnace or into the kiln, or both, as specified.

167,411. NAPKIN-HOLDERS. Charles Rowland, New York, N. Y., assignor to Cassels C. Green, Washington, D. C. [Filed Aug. 17, 1875.]



As a new article of manufacture, a napkin-holder provided with a suitable receptacle adapted to hold a bouquet, and having a suitable containing-base for maintaining the holder in position, as hereinbefore set forth.

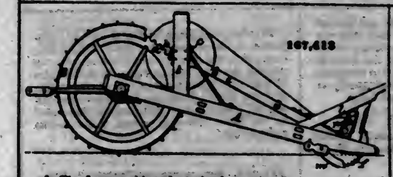
167,412. MACHINES FOR COMBINATING SHEET METAL. Wm. B. Smith and Oliver P. Smith, Allegheny, Pa. [Filed Jan. 28, 1875.]



In a machine for corrugating sheet metal, the combination of the oscillating segmental section *f*, with the reciprocating bars G, the same being provided with detachable corrugated face-pieces *i* and *i*, respectively, substantially as and for the purpose hereinbefore described and set forth.

167,413. ICE-CUTTING MACHINES. Joseph Schuster, Syracuse, N. Y. [Filed June 9, 1875.]

Brief.—Fore part of main frame rests on axis of driving-wheel; rear end rests on ice, carries the markers, and has guiding-handles. Fore end of said frame rests on uprights from main frame; rear end adjustable vertically. Toothed flange of driving-wheel operates gearing which revolves the saw.



167,413



167,414.

1. The frame *c*, hinged at the forward end on the counter-shaft, which has its bearings in standards *f f*, back of the traction-wheel, and suspended at the rear and from the adjustable cross-bar *r*, and carrying thereat the pulley *s* and saw *f*, in combination with the carriage A, mounted at the front on the axle of the traction-wheel B, and resting on the ice at the rear, and provided with handles *l* and standards *i*, constructed substantially as described and shown, for the purpose set forth.

2. The combination of the pendent saw-frame *c*, herein described, cross-bar *r*, provided with springs at the ends, slotted guides *a a*, having notches for supporting the said bar *r*, and carriage A, all constructed and operating substantially as herein described, for the purpose set forth.

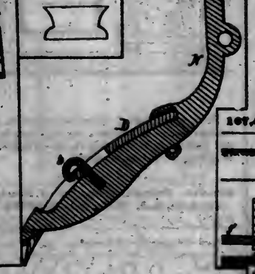
3. The ice-cutting machine herein described, consisting of the carriage A, mounted at the forward end on the axle of the traction-wheel, and resting on the ice at the rear, the traction-wheel B, having gear *a* attached to its side, pinion *b*, and pulley *s* on the counter-shaft, having its bearings in standards *f f*, back of the traction-wheel, the frame *c*, hinged at the forward end on said counter-shaft, and carrying the saw *f* and pulley *s* at the rear end, and suspended thereat from the cross-bar *r*, which latter is supported by notches in slotted guides *a a*, and held thereon by springs on the ends of said bar, and the adjustable gages *n n*, all constructed and combined to operate substantially as described, for the purpose specified.

167,414. WHEAT SCREENING AND SCALPING. David Sims and John Hostek, Leavenworth, Kans. [Filed Nov. 6, 1874.]

Brief.—The grain is subjected to the action of steam in the upper part of the revolving cylinder, falls through the perforations at its lower end into the hopper, whence it is directed by the wing-valve into one of the two equal compartments of the drying-bin. It is claimed that in grinding grain thus prepared the bran separates cleanly and in mass from the flour.



167,414.



167,415.

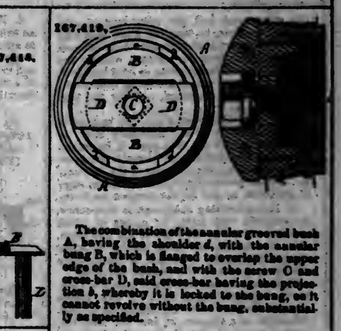
1. The outer and stationary cylinder A, provided with the closing heads B and the outlet *b*, in combination with the inclosed revolving, perforated, and scanner-headed cylinder D, the grain-pipe *c*, and the steam-pipe *f*, substantially as and for the purposes specified.

2. The partitioned bin C, in combination with the hopper-bottomed cylinder A, and the handled wing-valve *m*, substantially as and for the purposes specified.

167,415. LIGHTNING-RODS. F. W. Spang, Reading, Pa. [Filed Oct. 20, 1874.]

Brief.—For purpose of making good earth-connection.

The combination of pipe A with drain or gutter B and perforated pipe D, all electrically connected, and forming a lightning-conductor, substantially as described.



167,416.

167,416. TICKET-HOLDER. Albert Stephenson, St. Louis, Mo. [Filed May 10, 1875.]

A ticket holder or case, having a slit, *a*, for the entrance as well as delivery of the tickets, in combination with a revolving spindle, B, having slits *b'*, by means whereof the turning of said shaft coils, as well as uncoils, said tickets, substantially in the manner herein shown and described.

167,417. GLOBES FOR GAS-LIGHTS. Townsend Trudeau, Ottawa, Canada. [Filed Jan. 24, 1872.]

A gas globe or shade, having its lower opening from two and a half to five inches, height from three to six inches, and its upper opening from six to nine and a half inches diameter, the said dimensions being proportioned to each other in the various sized globes, substantially as herein set forth, the globe to be arranged with the narrowest part of the lower opening on or nearly on a level with the top of the burner, substantially as described.

167,414.

167,417.

167,418.

167,418. TAKE-UP PAWLS FOR LOOMS. S. S. Walker, Crompton, R. I. [Filed July 24, 1875.]

The wire hook *b*, in combination with the pawl D and lever E, substantially as and for the purpose specified.

167,419. RAIL-JOINTS. Wm. B. White, Birmingham, Conn., assignor to himself and William Lindley, same place. [Filed July 23, 1875.]

Brief.—The bung consists of two pieces, the top overlapping flange-plate and the cross-bar, the two being united by the screw-bolt. By turning the bung the cross-bar moves in the annular groove of the bush in such a manner as to prevent the bung falling out.

167,419.

The combination of the annular grooved bush A, having the shoulder *d*, with the annular bung B, which is flanged to overlap the upper edge of the bush, and with the screw C and cross-bar D, said cross-bar having the projection *b*, whereby it is locked to the bung, so it cannot revolve without the bung, substantially as specified.

167,420. NAIL-CUTTING MACHINES. Wm. Westerman, Boston, Mass. [Filed July 29, 1875.]

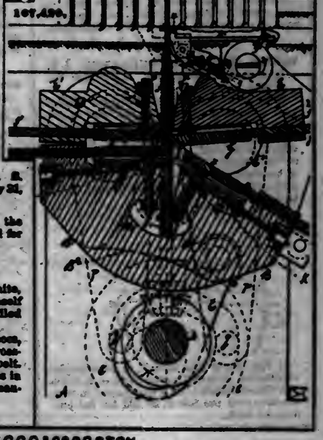
Brief.—An oscillating double cutter-stock, carrying two series of cutters, to act in conjunction with two single cutter-stocks placed above, each carrying a single series of cutters. A rack, (placed above the machine and carrying, vertically, a series of nail-sheets,) provided with mechanism by which it is alternately progressed to bring each sheet successively over the space between the cutters. A feed-screw on each side of the machine, provided with partially-straight and partially-inclined threads, (the upper threads being notched, forming teeth which cut notches in the edges of the sheet,) to take into notches in the sheet, and feed it down by means of the inclined portions, and hold it while being cut, by means of the straight portions.

1. In nail-cutting machines, the double cutter-stock herein described, made of one single casting, having a space for the nails to fall through, with one or more ribs connecting the two sides to each other, and constructed to hold a series of cutters on each side, substantially as and for the purpose set forth.

2. In nail-cutting machines, the two single cutter-stocks, each holding a series of cutters, in combination with the double cutter-stock holding two series of cutters, substantially as and for the purpose set forth.

3. In nail-cutting machines, the combination of a single cutter-stock and a series of cutters on each side, and a double cutter-stock and two series of cutters thereon, with mechanism for holding the single cutter-stock in a state of rest while the cutting is done, and to raise it up out of the way at other times, substantially as described, and for the purpose set forth.

4. In nail-cutting machines, a feed-screw, constructed to work in notches in the edge of the nail-sheet, with threads inclined part of



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the way round, and the other part of said threads straight, to feed the sheet down by the inclined part of the threads while the sheet is disengaged from the cutters, and by the straight part of the threads to hold the sheet at rest while the cutters are doing their work, substantially as described, and for the purpose set forth.

5. In nail-cutting machines, the cutters G G', having spaces F and adjoining spur, in combination with the feed-screw S, by means of which the nail-sheet can be and is fed down to the operative cutting-edges of the said cutter, thereby preventing waste at the last edge of the sheet, as and for the purpose set forth.

6. In nail-cutting machines, a rotating screw, constructed with heads, by means of which notches are cut in the edge of the nail-sheet, the screw at the same time feeding the sheet toward the cutter by means of the notches thus cut, as and for the purpose set forth.

7. In nail-cutting machines, a supply-rack, *b'*, having grooves in its sides and spaces through the bottom for the nail-sheets to pass, arranged on a support, *a*, over the machine with a space or slot, *a'*, through which the nail-sheets can pass from the rack to the cutters, combined with mechanism by which said rack can be intermittingly moved along, successively delivering the nail-sheets therein contained to the cutters through the slot *a'*, substantially as described, and for the purpose set forth.

8. The device for moving the rack in such manner as to deliver each sheet in it successively into the nail-machine as it is cut into nails, consisting of the hook *e* and the vibrating arm *p'*, in combination with the spring *s'*, all constructed and arranged, as described, so that the hook will be moved with a positive motion in the direction the rack is to move, but by a yielding motion in the opposite direction, so that when a sheet is passing down it will limit the motion of said hook in the direction of the sheet, and so that when the sheet has passed down out of the way said hook will pass back to another notch, *e'*, and at next forward movement will move the rack far enough for the delivery of another sheet, as and for the purpose set forth.

9. The tilting cover *M*, in combination with the cover I, the wedge K, the cutters F, and the center-stock B therewith connected, as and for the purpose set forth.

167,491. CAR-REPLACERS. O. J. Williams, Buffalo, N. Y. [Filed June 5, 1874.]



The inclined rail D, pivoted to and in combination with the clamp C, having a hook, *c*, and a vertical arm, *a*, which rests upon the base of the rail, all substantially as set forth.

167,492. HAYER-TROUGH HANGERS. J. P. Allcock, Cleveland, Ohio. [Filed Mar. 30, 1875.]

Brief.—The cross-bar is provided with a hook at one end for changing the hand on the trough. The other end of the bar is bent at a right angle, and the bent portion is provided with a short stud, which penetrates the side of the trough. A wire is secured to the cover of the roof, and bent around over the suspension-strap, to prevent any lateral sway of the trough.

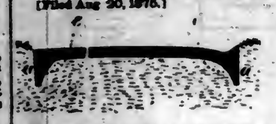


1. The arm G and hook F, in combination with the bar B, as and for the purposes set forth.

2. The standard I, pin *i*, and plate J, in combination with the bar B, as and for the purpose set forth.

3. The clamp K, having in the end thereof an eye, *d*, for the admission of a nail, whereby to secure the upper end of the clamp to the roof, and arranged in relation to the strap H and in combination therewith, and to the eaves of a building, in the manner substantially as described, and for the purpose set forth.

167,493. PAVEMENTS. Nathan B. Abbott and John P. Cranford, Brooklyn, N. Y. [Filed Aug. 20, 1875.]



The skirt or dike *c* beneath the edge of the bituminous or other concrete pavement, as and for the purposes set forth.

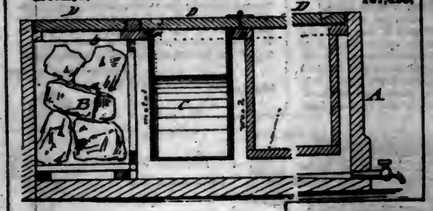
167,494. MANUFACTURE OF SHOE-PEGS. Francis D. Ballou, Abington, Mass. [Filed June 26, 1875.]



1. The process of forming peg-wood, consisting in first grooving or recessing the strip on the edge destined to furnish the point of the peg, and then bending or inclining the walls of the recess to form the point, substantially as described.

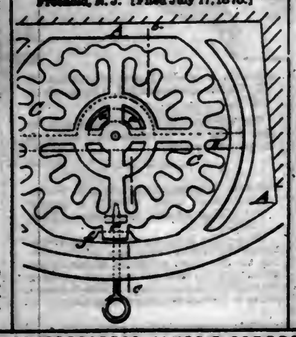
2. As a new article of manufacture, a shoe-peg, having the construction, substantially as described.

167,495. REFRIGERATORS. H. H. Barnes, Brooklyn, N. Y. [Filed Aug. 14, 1875.]



The combination of the casing or box A, and ice-receptacle B, pendent cooling-vessels C, and separately-hinged lids D, all arranged as set forth, for the object stated.

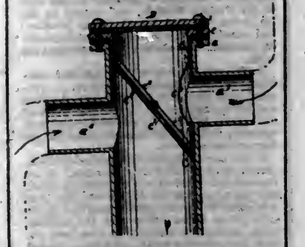
167,496. FIRE-PLACE GRATES. J. Bowden, Freehold, N. J. [Filed July 17, 1875.]



In a fire-place grate having the central projection *a*, to prevent the grate from being dumped at the rear, the combination, with the pivoted grate C, having recesses at the sides of part *a*, of the grate-frame A, having recess at either side of projection *f*, as shown and described, whereby said grate may be depressed at the front whenever moved either to the right or left.

167,497. STRAINERS FOR PUMPS. L. Blum, Germantown, N. Y. [Filed Aug. 14, 1875.]

Brief.—The strainer is arranged directly in the path of the supply-stream. The sediment falls to the bottom, and may be removed, when desired, by unscrewing the lower cap.

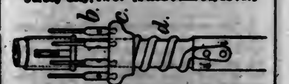


The combination of the cylinder A, having a cap, B, screwed upon its lower end, and a cap-plate, D, bolted to its flanged upper end, and provided with an inlet-pipe, *a'*, and an outlet-pipe, *a''*, and the tube C having a flange formed upon its upper end, a wire-gauze plate, *c'*, attached to its beveled lower end, and a hole, *c''*, formed in its side, with each other, to adapt the device to be attached to a pump-pipe, substantially as herein shown and described.

167,498. CLAMPS FOR LADIES' DRESS-SUPPORTERS. Hyacinth A. Stier, Jersey City, N. J. [Filed Apr. 10, 1875.]

The drum-bar for clamp C, having arms *g' g'*, held at the crossing by band *g''*, and inwardly bent to form hooks *g' g'*, all being in the same plane with shank, as shown and described.

167,499. UMBRELLA-TIP CUPS. F. B. Brown, Jersey City, N. J. [Filed June 14, 1875.]

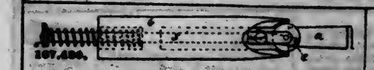


1. The combination of the tip-cup *c* and spiral spring *d*, when constructed and arranged to operate substantially as and for the purposes set forth.

2. The spring *d* surrounding the handle loosely, and connected at one end to said handle, in combination with the tip-cup sliding upon the handle, and against which the spring acts, as set forth.

167,500. CORRUGD OUTSIDE-WHEELS AND FASTENING DEVICES FOR SAME. J. W. Carver, Lynn, assignor to himself and G. E. Morrison, East Boston, Mass. [Filed June 29, 1875.]

167,490.



1. A shoemaker's tool composed of the paneling-tool *a*, handle *b*, sliding shank *c*, marking-wheel *d*, and cutter *e*, the said parts being constructed and arranged substantially as shown and described.

2. The combination of the marking-wheel *d* and cutter *e*, attached to the sliding shank *c*, substantially as and for the purposes described.

3. The combination of the marking-wheel *d* and cutter *e*, adjustably connected with each other, and arranged for joint and simultaneous operation, as set forth.

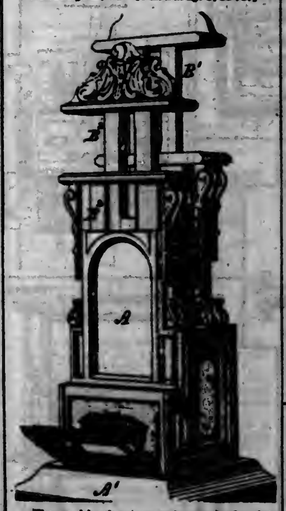
4. The combination of the shoulder *i* of the paneling-tool *a*, acting as a guide, with the marking-wheel *d* and cutter *e*, one or both, as shown and described.

167,491. TELL-COUPLINGS. Frank Chapman, Auroraville, Wis., assignor of one-half his right to N. R. Rollen, same place. [Filed Feb. 1, 1875.]



In combination with a wagon-slip, the bolt D, having the head *c* and pivoted button H, and the loose collar F, having the inwardly-projecting flange *f*, and provided with the yielding spring G, operating substantially as and for the purpose set forth.

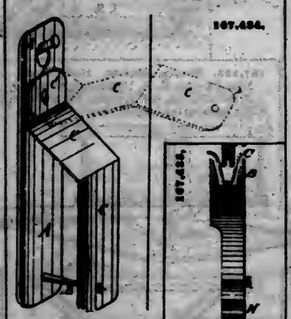
167,492. PARLOR-BASES. R. G. Chestnutt, Philadelphia, Pa. [Filed Aug. 6, 1875.]



The combination, in a parlor-stand, of an inclosing case or stand, A, and extensible sliding frames B B', arranged to operate substantially as set forth.

167,493. PAPER-BAG HOLDERS. George E. Cleveland, Camden, Me. [Filed July 3, 1875.]

The end-perforated angle-plate C, swiveled to turn laterally on plate A, and made elastic to spring over or off a pin, B, as and for the purpose specified.



167,494.

167,495. SPRING-POWER REGULATORS. Orrin Collier, Sacramento, Cal. [Filed June 5, 1875.]

Brief.—The spring-brake is adapted to the form of the lever, and avoids the groove and head.

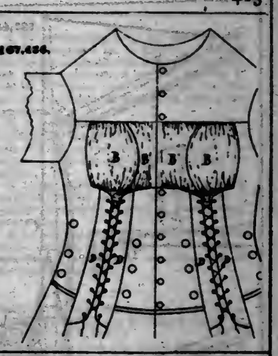
The combination, with wheel A, of a lever, B E H, forked at the upper end, and having between the forks a spring, C, constructed as shown, and for the purpose specified.

167,496. UMBRELLA-GARNITURE. Susan Taylor Converse, Woburn, Mass. [Filed Apr. 24, 1876.]

1. In a stanchion, the gores C and lining-flaps D D, combined and arranged substantially as described, with those parts of the garment which extend below and around the abdomen and hips, as and for the purposes specified.

2. The pieces B and D', combined and arranged together and with the garment, substantially as shown described.

167,497.



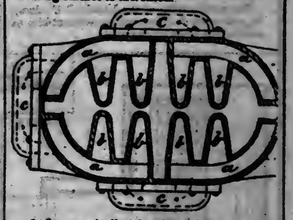
1. The clamp C, constructed with the enlarged central slotted portion *c*, and inclined or bevel under portion *b'*, substantially as and for the purposes described.

2. In combination with the clamp C C', constructed as described, the lid B, constructed with the central projecting portion B' B', and bevel-edged portion *b*, substantially as and for the purposes described.

3. The combination of jar A, lid B, constructed with the projecting bevel-edged portion B' *b* and center-pin B', and clamp C C', constructed with the enlarged slotted central portion *c*, and inclined or bevel faces *b'*, as and for the purposes described.

167,498. CAST-IRON SECTIONAL BOILERS. John F. Daniels, Boston, Mass. [Filed Feb. 11, 1875.]

Brief.—The vertical sections have hollow inward projections cast thereon, whereby the heating-surface is increased.



1. In a vertically-jointed cast-iron sectional boiler, as herein shown, the hollow vertical projections *b b b b*, cast to the shell, substantially as and for the purpose set forth.

2. The sectional cast-iron boiler as herein shown, consisting of two or more hollow sections, *c c c c*, hollow projections *b b b b*, and the circulating-pipes *d d d d*, as and for the purpose set forth.

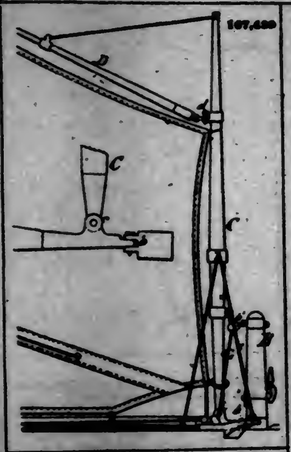
167,499. HINGED MASTS FOR BOATS. Chas. H. Davenport and Wm. M. Porter, Washington, D. C. [Filed Feb. 16, 1876.]

1. The falling mast C, stayed, as shown, to the sill F, in combination with the standing mast B, substantially as shown and described.

2. The standing mast B, stayed, as shown, in combination with the falling mast C and halliard G, when the mast C, gaff D, boom E, and sail F are made permanently in one, as shown and specified.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

167,439



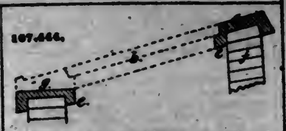
The supplemental bed B, for holding the supply-fuel for the fire, constructed and applied to have the fuel exposed to the direct action of the fire without having the draft pass through the supply-fuel previous to its being placed upon the fire-bed proper.

167,442. TUNNELING-MACHINES. Olney B. Dowd, New York, N. Y. [Filed Aug. 6, 1875.]

Brief.—The cone of the tunneling-machine has a central hollow shaft, provided with a revolving arm, with passages to conduct water or air to the arm, so as to thin and loosen the earth. One or more tubes in the bottom of the cone can be projected through to loosen boulders, &c. The loosened earth is conducted into the cone by a receiving-pipe, and passed out of the top by a discharge-pipe.

1. The combination of tubes A C, shaft E, and arm F, substantially as described.
2. The combination, with cone A C and revolving arm F, of passages J K, by which to conduct water or air to the arm, substantially as specified.
3. The shaft E and arm F, having water-passages J, as described.
4. The combination of one or more tubes W with the cone A C, substantially as specified.
5. The combination of receiving-pipe P, water-pipe H, and discharge-pipe I with the cone A C, substantially as specified.

167,444.



The cover for sewer-chimneys, consisting of the circular cover *a*, provided with flanges *d e*, and the channel *g*, substantially as set forth and shown.

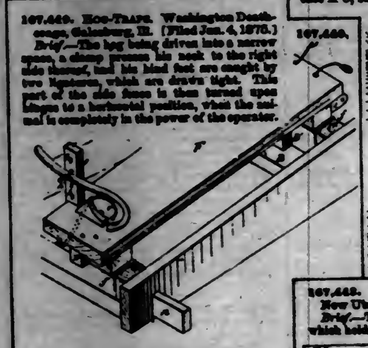
167,445. MACHINES FOR MAKING SPLIT KEYS. Willard H. Parr, New Haven, Conn. [Filed Aug. 14, 1875.]

Brief.—Two sets of cutters for severing the wires into blanks, and two sets of dies, pushers, and formers, for bending said blanks to the desired configuration.

1. A die, G, constructed and arranged substantially as specified.
2. The combination of a former, F or F', and a pusher, E, with a die, G, substantially as specified.
3. The combination of way D and cutters A C with the pusher E, former F, and die G, substantially as specified.
4. Two sets of cutters, A C, pushers E, formers F, and dies G, arranged and organized in one machine with one crank-shaft, J, substantially as specified.

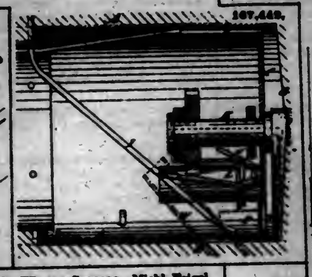
167,439. HOG-TRAPS. Washington Deatherage, Shineburg, Ill. [Filed Jan. 4, 1875.]

Brief.—The hog being driven into a narrow space, a clamp presses his neck to the right side thereof, and his hind feet are caught by two fingers, which are drawn tight. The part of the side frame to them bend upon hinges to a horizontal position, when the animal is completely in the power of the operator.

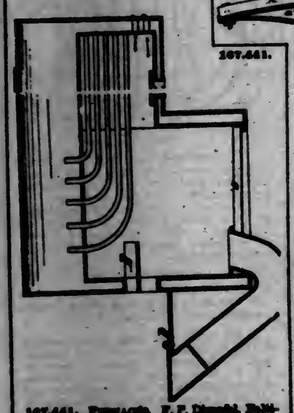


The combination of the beams E F, clamp G, and cords J J, operating substantially as and for the purpose specified.

167,440.



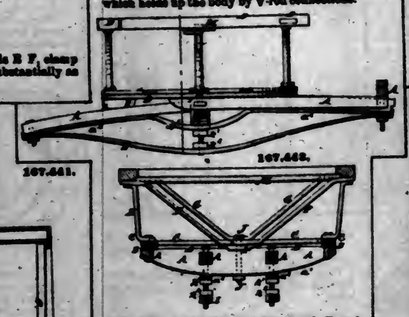
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167,441. FURNACES. F. P. Dimpfel, Baltimore, Md. [Filed July 1, 1875.]

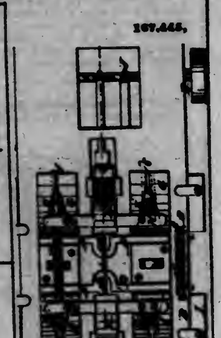
167,442. WAGON-SPRINGS. Michl. Feigel, New Utrecht, N. Y. [Filed Aug. 6, 1875.]

Brief.—The tie-rod supports the platform which holds up the body by V-rod connections.



1. The combination of the V-rod F and tie-rod M, with the body D, the platform A, and the king-bolt J, substantially as herein shown and described.
2. The combination of the tie-rods L with the platform A, the bars or plates *a'*, the bolts K, and the rods M, substantially as herein shown and described.

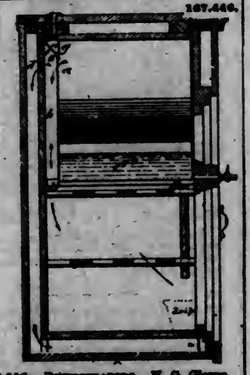
167,443.



167,443. MAN-HOLE COVERS FOR SEWERS. Daniel H. Furnald, Bangor, Me. [Filed Mar. 6, 1875.]

Brief.—An annular cover with flanges for embracing the masonry, upon which it rests in an inclined position, having a central opening covered by a grating, and a channel at one side for the admission of water.

167,446.



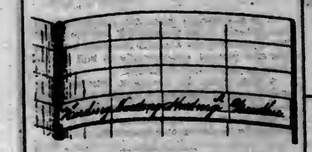
167,446. REFRIGERATORS. E. G. Glover, Glasgow, Mo. [Filed July 24, 1875.]

Brief.—Cold air from ice-box into food-chamber, and between walls of refrigerator; also, warm air passing up and out is prevented from entering ice-box by a flange depending from the cover.

The combination of ice-receptacle, having inclined perforated rear flange, and forming with rear walls, an intermediate ventilating-flue, with a perforated cover, having a pendent flange that cuts off direct air communication between ice-receptacle and ventilating-outlet for the passage of air outside of the refrigerator, all as and for the purpose specified.

167,447. COPY-BOOKS. R. P. Goodman, Clinton, Iowa. [Filed July 9, 1875.]

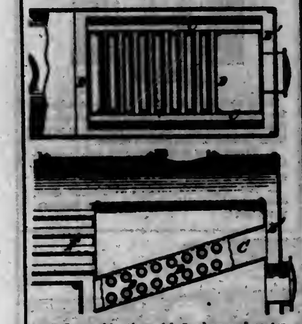
Brief.—The copy moves up and down on the cord, then being brought immediately above the line to be written upon, and covering the line previously written upon.



In a copy-book, the cord B, in combination with the sliding and reversible slip A, having a copy on each side, capable of being used on either one of the two adjacent pages of the book, substantially in the manner and for the purpose set forth.

167,448. LOCOMOTIVE-BOILER FURNACES. Wm. F. Granzier, Muncy, Pa. [Filed Aug. 16, 1875.]

Brief.—A series of longitudinal and transverse pipes forms an interposed diaphragm across the furnace, by means of which the products of combustion are impeded, and an additional water-heating surface exposed to the fire.



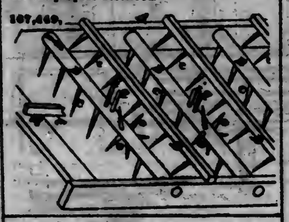
1. In combination with fire-box and water-legs, the tubes C, and transverse tubes D, substantially as set forth.
2. In combination with the fire-box of a locomotive-boiler, a transverse water-bridge formed by the pipes C and D, when the latter are placed in front of the fire-box, and arranged so as to impede the circulation only in that part of the box, the space at E being left open, substantially as set forth.

167,449. HARROWS. Jos. B. Greene, Elliott, Cal. [Filed May 17, 1875.]

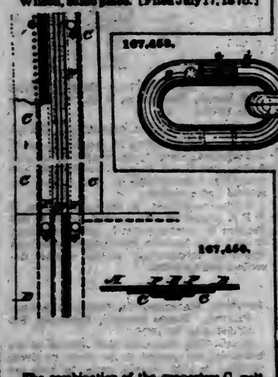
Brief.—A series of journaled bars are mounted in a rectangular frame. Each bar is furnished with a row of teeth for cultivation, and a radial cut for causing rotation. A set of bars are hinged upon the top of the harrow, provided with stops and lifters, so that the teeth-bars, in succession will make one turn. Stationary shares are secured above each teeth-bar, and as the bars rotate the teeth are freed from weeds and other obstructions.



The rotating shafts B B, with their radial spikes c c and harrowing-teeth c c a, step-pins f, and lifting-pins g, in combination with the levers F loosely attached to the frame A at one end, and provided with the pins or projections h and lifting projection p, all combined and arranged to operate substantially as and for the purpose described.



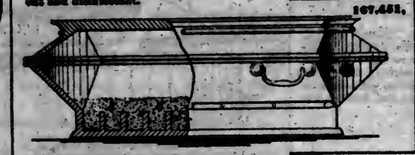
167,450. HOOPS. Harry Hall, Fenton, Mich., assignor to Maunsell and Harry E. Wilson, same place. [Filed July 17, 1875.]



The combination of the supporters C, rail B, and flat wires or wheelbarrow F with the front A, hook B, and counter D, substantially as and for the purpose set forth.

167,451. BURIAL-CASES. David W. Hunt, San Francisco, Cal. [Filed May 6, 1875.]

Brief.—The bottom of the coffin is furnished with coils to contain dry earth as an absorbent and disinfectant.



A coffin furnished upon its bottom with coils for retaining dirt, or an equivalent absorbent beneath the body, as and for the purpose specified.

167,452. MANUFURS' COMPASSES. Geo. Ban, Montreal, Canada. [Filed July 26, 1875.]

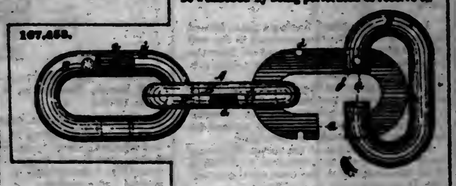


1. In combination with any magnetic needle the transverse bar D, carrying many minute magnets placed with like poles one way, and being practically a magnet, pointing E. and W., attracted toward a piece of iron like an ordinary magnetic needle, as shown and described.
2. In combination with any compass the longitudinal bar carrying many minute magnets of like poles pointing one way, and acting as a magnetic needle, as shown and described.
3. In any compass the combination of the longitudinal bar A and transverse bar D equally attracted by any object, substantially as described.
4. In combination with the magnetic needle A and bar D, a compensator, of iron or steel, operating in the manner described, and for the purposes set forth.

167,453. LOCKS. William A. Ingalls, Alton, assignor to Rushven W. Files, Chicago, Ill. [Filed Apr. 6, 1875.]

Brief.—The rivet that unites the parts is made homogeneous with one of the sections, and is located near the opening, so that the ends of the link in the line of strain may not be weakened by being perforated to receive it.

167,453.



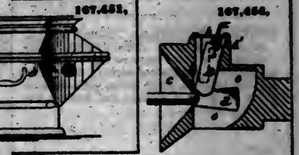
The link A, made in two parts, B B', each part provided with the opening a to admit the adjacent link, and connected, one to the other by the lug *f*, located at the side of the part B', and made as a homogeneous part of the same, and adapted to pass through the part B near opening c, forming a pivot on which the latter can freely turn, as specified.

167,454. CAR-COUPLINGS. Edward Lewis, Dover, Del. [Filed July 30, 1875.]

Brief.—The coupling-pin, having a swinging and vertical movement, runs with its side pins into grooves, and rests upon the shoulder.

1. The combination of the grooves a and shoulders *g*, formed into an elevated extension, A', of the draw-head A, with the pins *b* of the coupling-pin B, and plate A to retain the coupling-pin in position, substantially as shown and described.

167,454.



2. The combination of the groove a, having its forward end opened at *c*, and its rear portion enlarged, with the coupling-pin B capable of a vertical and a rocking motion, substantially as and for the purposes described.
3. The combination of the draw-head A A', groove a, and plate A with the flat coupling-pin B, having its point made angular fore and aft, substantially as and for the purposes set forth.

107,456. INDIA-RUBBER ERASER. Nicolas Lockwood, Boston, Mass. [Filed June 24, 1875.]

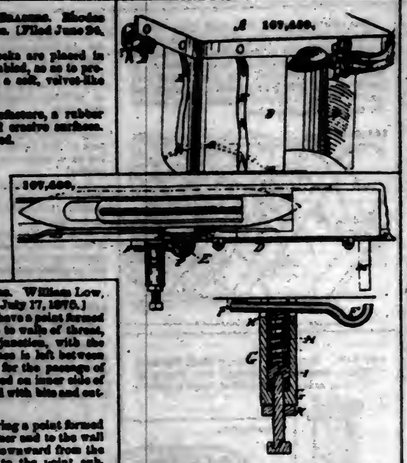
Brief.—A number of blocks are placed in a revolving vessel and tumbled, so as to produce by frictional contact a soft, velvet-like finish upon their surfaces.

As a new article of manufacture, a rubber eraser, having soft finished erasive surfaces, all substantially as described.

107,456.



107,456.



107,457. RABBET-ADJUSTER. William Low, Webster, Mich. [Filed July 17, 1875.]

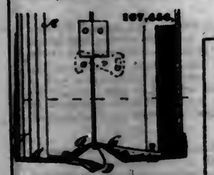
Brief.—The cutting-bits have a point formed by a curve from inner ends to walls of throat, and downward from the junction, with the bottom to the points. Space is left between the bits on opposite sides for the passage of stems. Valves are arranged on inner ends of bottom curve, to correspond with bits and cutters.

1. The cutting-bits D having a point formed by the curve F from the inner end to the wall of the throat, and curved downward from the junction with the bottom to the point, substantially as specified.

2. Two pointed cutting-bits, D, arranged at opposite sides of the center with space between for the passage of stems, in combination with the bottoms G, spirally molded for clearance, substantially as specified.

3. The combination of the valves G, having inner ends curved to correspond with curves F of the throats with the bottoms G and cutters D, substantially as specified.

107,456.



107,457.



107,457. SETTING GUAGE. Herbert G. Mackinney, North Attleborough, Mass. [Filed June 10, 1875.]

The polished stellated and slotted reflector C, as described, in combination with the open-ank jewel A and its series of supporting-standards d of the frame E, all being arranged and applied substantially as specified.

107,458. CULTIVATORS. Martin McNitt, Mound Station, Ill. [Filed July 10, 1875.]

Brief.—The teeth upon rolling cross-bars are turned to any desired angle by manipulating the handles, which latter also serve as pawls engaging a ratchet, and locking the bars in position.



The combination, with the ratchet-bars F and the rock-bars C, carrying teeth E, of the combined handles and pawl K, pivoted in supports I, and arranged to operate in the manner shown and described.

107,459. CHILDREN'S CARRIAGES. Henry C. Mosely, Corunna, N. Y. [Filed June 28, 1875.]

Brief.—The hood rod is fastened in the curtain, and enables it to be more readily folded.

The combination of the hood rod G, with curtain D and square top A, as shown and described.

107,460.

107,460. LOOM SHUTTLE-BOXES. John H. Moore, Fisherville, N. H. [Filed July 10, 1875.]

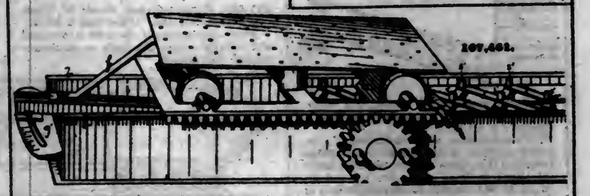
1. The spring device, consisting of the cylinder or post G, spring H, crooked lever F, and adjusting-screw J, combined with the protection-rod D and finger E, constructed and operating substantially in the manner described and specified.

2. The combination of the spring device G H F J, protection-rod D, with finger E, and dagger M, shuttle-binder L, and a projection or stop, c, on the loom-frame, constructed and operating substantially in the manner described and specified.

107,461. MACHINES FOR PUNCHING BOILER-PLATES. James Morgan, Pittsburg, Pa. [Filed Aug. 19, 1875.]

Brief.—The extensible rack secured to the bed-plate, and guided in its travel by rivets working in slots therein, serves to vary the distance between the holes as punched. The rivets at the joints form the ratchet-teeth. The pawl is suspended from the carriage, and is raised from the rack by means of a slide provided with a wedge-shaped projection.

107,461.



1. The combination of traversing carriage, a table pivoted thereon, a rigid bar extending from the table and engaging an adjustable guide-bar, substantially as and for the purposes set forth.

2. An extensible rack, a, in combination with a feed-carriage and pawl, substantially as and for the purposes described.

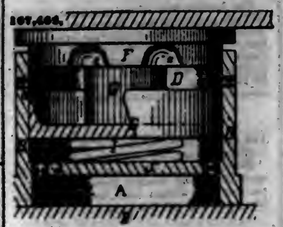
3. An extensible rack, a, fastened to the frame at one point of its length, as at *d*, and guided in its extensible movement by one or more projections and slots, substantially as and for the purpose set forth.

4. In combination with the adjustable guide-bar *g*, a graduated fastening-plate, *g'*, substantially as set forth.

5. The slide *i*, having an inclined or wedge-shaped projection, *f*, in combination with the pawl *n*, having an arm, *n'*, substantially as set forth.

107,462. BALANCED VALVES. Geo. Mesmer, Philadelphia, Pa. [Filed June 28, 1875.]

107,462.



1. In a balanced valve, the combination of the cylinder D, the pistons E F, and apertures for conducting the steam to the space between the said pistons, substantially as and for the purpose shown and described.

2. The piston E, having a thin tapering shell, *c*, in combination with the cylinder D, said shell being forced, by the action of the steam, steam-tight against the piston D, substantially as shown and described.

107,463. STOP-COCKS. Chas. F. Murdock, Detroit, Mich. [Filed Aug. 26, 1875.]



1. A stop-cock or valve having an adjustable valve-seat as constructed and arranged in combination to the gate or valve-seat as to adjust itself thereto as the gate is closed.

2. The case or shell having its side in which the opening *a* made inclined, substantially as and for the purpose set forth.

3. The plate O, arranged within the shell, so as to hold the self-adjusting seat in position, as set forth.

107,464. FLY-TRAPS. Rufus Nutting, Wheaton, Ill. [Filed Sept. 13, 1874.]

Brief.—An oblong trap provided at one end with a death-hole and a wire-gauze stopper. A fastening device to connect the body and bottom, and spurs projecting upward from the bottom for bait-holders.



1. A fly-trap prison having the death-hole H and guard-stopper I in the end C, constructed and combined substantially as and for the purposes described.

2. The footboard balconies J, having the grooves L, in combination with the strips G, attached to the prisons A B, substantially as described.

3. A trap for flies, consisting of the frame A B C, covered with suitable material, having a death-hole, I, provided with the bottom G, sliding between the balconies J, and provided with upright spurs to receive the bait.

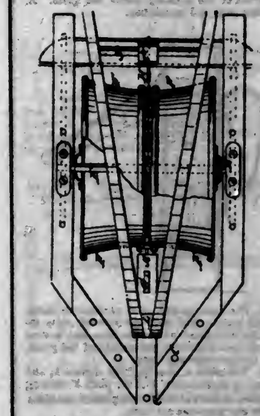
107,465. CARTRIDGE-CASES FOR BLASTING. Paul A. Oliver, Williamsburg, Pa. [Filed Aug. 21, 1875.]



A telescopic cartridge-shell for blasting purposes, made of a main shell, with one or more tubular pieces or sections jointed thereto, to adjust the shell to any required length, substantially as specified.

107,466. COTTON-PLANTERS. Jas. R. Oates, Pecan Point, Ark. [Filed June 28, 1875.]

Brief.—Attached to a branch of the opener, and extending rearwardly, is a chain which works in the central seed-discharge opening formed for drawing out the cotton-seed. The chain is secured at the rear to the opener.



The combination of the seed-distributing chain H with the opener G, and with the seed-dropping cylinder F, substantially as herein shown and described.

107,467. FEEDING AIR TO FURNACES. W. J. O'Neil, Newport, Ky. [Filed Jan. 7, 1875.]

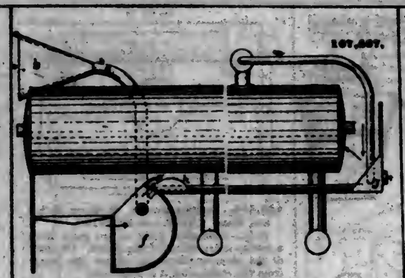
Brief.—The air from an enlarged hollow bridge-wall, in which it is heated, is deflected against a second bridge-wall, where it is made to commingle with the products of combustion issuing from the throat of the furnace, by which means the smoke and gases are said to be consumed.

1. The above-described smoke-consuming device, consisting of pipe *h*, air-chamber *f*, deflecting-plate *g*, the second bridge-wall *h*, pipe *i*, heat air-chamber *j*, and pipe *d*, combined and operated substantially as and for the purposes set forth.

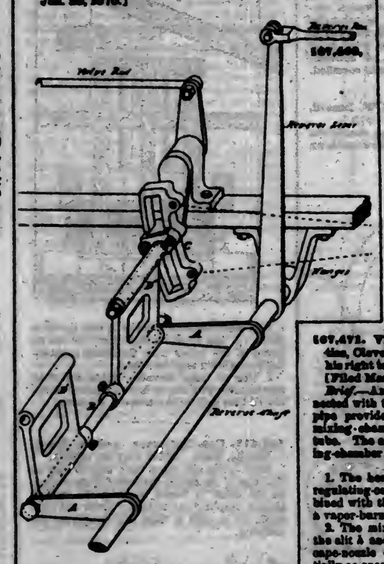
2. The deflecting-plate *g*, in combination with second bridge-wall *h*, air-chamber *f*, pipe *i*, and heat air-chamber *j*, combined and operated substantially as and for the purposes set forth.

3. The bridge-wall *h*, in combination with deflecting-plate *g*, and air-chamber *f*, combined and operated substantially as and for the purposes set forth.

107,467.



107,468. REVERSING-GEARS FOR LOCOMOTIVES. Jonathan Ord, Pittsburg, Pa. [Filed Jan. 22, 1875.]



The connecting-rod B, in combination with the lifting-arms A A, carriers D' D'', and radial link C, as and for the purposes set forth.

107,469. NUT-LOCKS. John G. Perry, Kingston, R. I. [Filed Mar. 29, 1875.]

Brief.—The double locks are united by their raised locking parts. In the single lock the locking part surrounds a loose circular washer.



1. The double locking device C C, united by the raised portions, substantially as described.

2. The combination of the locking device *f* and the circular washer E, substantially as described.

107,470. GLASS MOUTHPIECES. A. Phillips, New York, N. Y. [Filed July 24, 1875.]

The ornament herein described, comprising the cone A, body B, cap C, and pipe cone D, all constructed substantially as herein set forth.

107,470.



107,471. VAPOR-BURNERS. Chas. E. Frentzen, Cleveland, Ohio, assignor of one-half his right to Jno. P. Humphrey, same place. [Filed Mar. 2, 1875.]

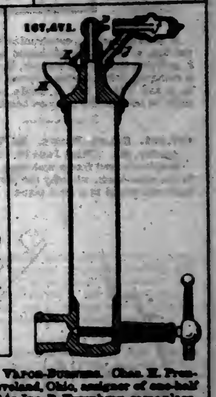
Brief.—An annular heating-chamber connected with the mixing-chamber by a supply-pipe provided with a regulating-cock; the mixing-chamber provided with an internal tube. The air needed is forced into the mixing-chamber by the vapor.

1. The heating-burner E, provided with a regulating-cock, *g*, in the supply-pipe, and combined with the mixing-chamber and burner of a vapor-burner, substantially as specified.

2. The mixing-chamber F, provided with the slit *h* and tube *f*, combined with the escape-nozzle of a vapor-generator, substantially as specified.

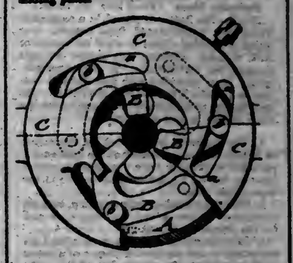
3. The combination of the escape-nozzle C D, mixer F, heater H, and burner E, substantially as and for the purpose described.

107,471.



107,472. DIE-STOCKS. Virginius J. Reese, Greenfield, Mass. [Filed July 2, 1875.]

Brief.—The guide-jaws are elbow-levers pivoted to the stock at one end, and provided with pins to work in eccentric grooves in a sliding plate.



The improved die-stock A, provided with adjustable end-pivoted guides B B B, having leg *b*, and the slide-plate C, having slots *a*, curved eccentrically, as shown and described.

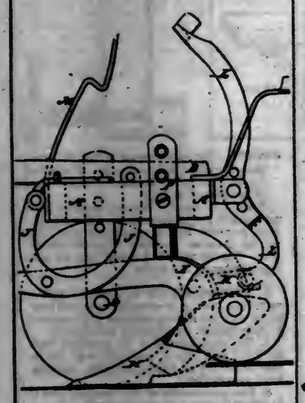
167,473. MARKING-POT. Wm. H. Bodden, Toronto, Canada. [Filed Feb. 20 1875.]



A marking-pot, A, constructed with a cover top, c, and a funnel-shaped mouth-tube, b, and provided with a stopper, B, attached to a swinging yoke, d, with a spring brush-holder, f, and with a ball, h, inside, all substantially as and for the purpose herein specified.

167,474. SULKY-PLOWS. Eli W. Russell, Ashley, Mo. [Filed June 10, 1875.]

Brief.—Curved frame and lever connection to the plow-beam, whereby the plow is drawn back and raised in a level plane.



The combination of the adjustable beam G, the pivoted curved bars J, the rigid arm K, and the lever L with the frame A B and the plow H I, substantially as herein shown and described.

167,475. BUTTER-WORKERS. P. Shaw, Salisbury, Mass. [Filed Mar. 20, 1875.]

Brief.—The butter is placed in a receptacle which has a perforated false bottom, over which are placed cloths to allow the escape of milk without allowing any butter to pass through the perforations. A hollow reciprocating head provided with a perforated bottom and cloths is used to beat the butter. Ice may be put in the hollow head, and under the false bottom to cool the butter.

1. The improved butter-working apparatus, as herein shown, consisting of the frame a b c, portable work-table f m n o p, and the reciprocating head g h i, for the purposes and in the manner set forth.

2. The reciprocating hollow head g, with its perforated bottom k and covering i, as and for the purposes set forth.

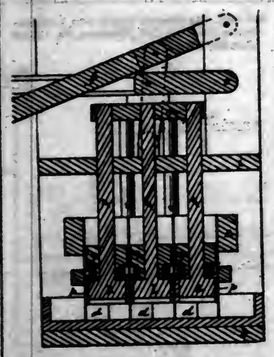
3. In combination with the work-table f, the reciprocating and perforated plate s of a lower cloth attached to the outer edge of the plate e and an upper cloth, p, secured to or near the center of the said lower cloth, substantially as and for the purposes described.



167,476.

167,476. BOTTOM-MOLDS. P. Shaw, Salisbury, Mass. [Filed Apr. 19, 1875.]

Brief.—Stampers made in two parts have a motion independent of the molds. One part of the stamper serves to release the butter from the other after it is stamped.

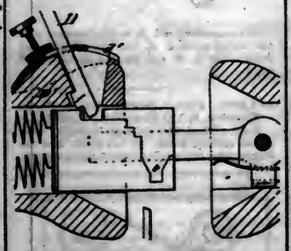


1. A butter-stamper, made in two movable parts, i p, one of which shall serve for the removal of the butter from the other, substantially as shown and described.

2. One or more movably molds, d d d, in combination with one or more movable stampers, i i i, as and for the purpose set forth.

167,477. CAR-COUPLINGS. Archibald Smith, Omaha, Nebr. [Filed July 31, 1875.]

Brief.—The pin drops from step to step on the edge of the spring-cushioned friction-plate on the latter is forced inward by the wedge-shaped coupling-bar, entering blunt end first-most, till at last it falls, and completes the coupling.



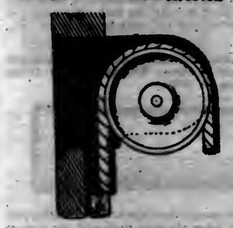
1. The combination of a draw-head, having a sliding, wedge-shaped, and spring-cushioned friction-piece, with a wedge-shaped link-bar and a locking lever-pin for automatically coupling, substantially in the manner and for the purposes set forth.

2. The combination of the draw-head with a swinging wedge-shaped link-bar that is pivoted to a lateral detachable pivot-pin locked securely to the draw-head, and cushioned by a supporting-spring, substantially as and for the purposes set forth.

3. The sliding friction-plate constructed with outer step-shaped recesses, in combination with swinging lever-pin, dropping therein for retaining friction-plate in draw-head, substantially in the manner described.

4. The combination of swinging lever-pin, sliding in a closed arc plate applied thereto, with the recessed top guide part of draw-head, and a fastening clamp-screw for locking rigidly lever-pin and friction-plate for positive coupling of link-bar, substantially as shown and described.

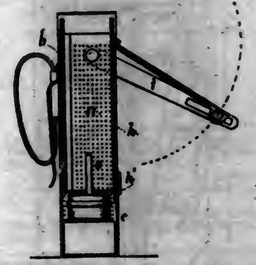
167,478. HAME-PULLETS. Jacob Smith, Chicago, Ill. [Filed Mar. 20, 1875.]



As an improved article of manufacture the herein-described sash-pulley, formed with a solid plate face, c, and frame or pulley-case, having a solid shoulder, e, whereby the sash-pulley is let in flush with the window-frame, projecting the cords forward and concealing them from view, substantially as set forth.

167,479. POCKET-LANTERNS. J. Stevens, Orange, N. J. [Filed Feb. 24, 1875.]

Brief.—Air-space between perforated sheet-metal case and glass reflector. A guard-plate in front of the opening below the glass. A leather case and match-box.



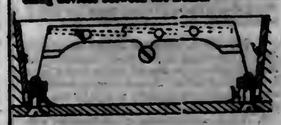
1. The combination of a perforated sheet-metal lantern-case with the silvered glass reflector introduced within the case, and having an air-space between the metal and the glass, for the purposes set forth.

2. The arms e, bent A, front c, glass h, and lamp, in combination with the plate F forming a guard in front of the opening below the glass h, for the purposes set forth.

3. A case, made of leather or similar material, adapted to receive a lantern, in combination with a match-box, with a swinging cover inserted at the bottom of such case, for the purposes set forth.

167,480. HOT-AIR REGISTERS. Edward A. Tuttle, New York, N. Y. [Filed June 30, 1875.]

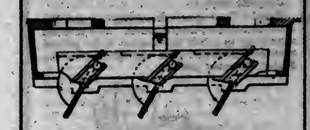
Brief.—The wall-frame is a fixture. The register-frame extends backwardly at a different angle, and opens is adapted for the fastening devices between the frames



The combination of wall-frame and register-frame, fitting closely together in front, and having lugs for fastening-screws in a different angle between said frames, as and for the purposes specified.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

167,481. HOT-AIR REGISTERS. Edward A. Tuttle, New York, N. Y. [Filed May 28, 1875.]

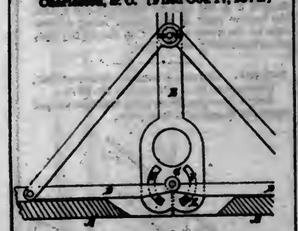


1. The segmental roller for carrying the slide and the slot and pin for working the fan, arranged on opposite sides of the slide, substantially as specified.

2. The pin for working the fan, arranged half the length of the throw of the slide from the pivot of the fan, in combination with a groove or slot of forty-five degrees of inclination in the slide, substantially as specified.

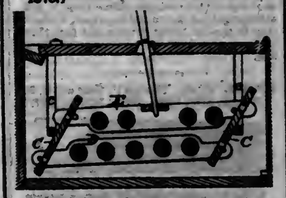
3. The notch N of the fan and the stop-projection O of the frame, combined and arranged as and for the purpose specified.

167,482. SQUARES. William H. Walker, Charleston, S. C. [Filed Oct. 17, 1874.]



The straps D D, made fast to arms A at one end, pivoted at the other on pin G of the tongue B, and held to said tongue by pins E E traveling in the arc-slots F F, as and for the purpose specified.

167,483. WASHING-MACHINES. David Warnock, Percival, Iowa. [Filed June 24, 1875.]



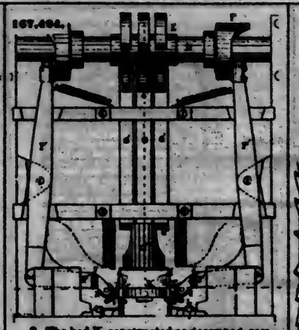
1. In combination with the body A the two slotted washing-boards C, the roller-frames D and E, having their ends mounted in the bar-rods, and the hand-lever B, arranged substantially as shown.

2. The washing-machine, consisting of the body A, provided with the vertical grooves c, the boards C, provided with journals and slots, the roller-frames D and E, and the hand-lever B mounted in the top of the body, all arranged to operate as shown.

167,484. PAPER COLLAR AND CUFF MACHINES. Elbert Wilder, Manchester, N. H., assignor to Ira Green, same place. [Filed Mar. 10, 1875.]

Brief.—A three-part plunger, actuated by cams, bills upon the fabric when laid upon its mold-bed. The central plunger is withdrawn, while side rollers advance and turn over the edges of the fabric, after which the end plungers rise. The blank is pasted and held upon its bed by feeding-points at the corners, which rise and fall automatically.

1. The bed K, having a concave surface longitudinally, bottom-bed formers, and edge-creasers F', combined with the former f, composed of a middle plate, f', and end plates f², substantially as and for the purpose described.



2. The bed K, constructed as described, combined with the standard gage-rods d, operated substantially, substantially as and for the purpose described.

3. The combination of the cams F F' F², levers F³, plungers G G', carrying the formers f f', and levers F⁴ carrying rollers H H, substantially as and for the purpose described.

4. The combination of the cams F' F², with the flanges G G', carrying independently the plates f f', for the purpose of folding and folding the blanks at the same time.

5. The combination, in a paper collar and cuff machine, of the shaft carrying the cams F F' F², plungers G G', which operate independently the former-plates f f', levers F⁴, which operate the rollers H, the bed K, with gage-rods d, having the automatically-reciprocating vertical movement, all substantially as and for the purpose described.

167,485. PROCESSES OF COLORING ENAMELED PHOTOGRAPHS. Wm. W. Williams, Houston, Tex. [Filed June 19, 1875.]

The process herein described of coloring enameled photographs, consisting in first passing on a glass plate coated with dry layers of collodion and gelatine, a transparent photograph, then backing it with one or more layers of transparent paper, and then laying colors thereon in the usual manner, substantially as and for the purpose set forth.

167,486. AMALGAMATORS. Chas. H. Aaron, San Francisco, Cal. [Filed Feb. 25, 1875.]

Brief.—The pulp is drawn by the oblique paddles into the revolving cylinder, and ejected through the end openings. Inner surfaces of paddles are faced with copper. Oval vessel holds bath of mercury. Pulp flows continuously through inlet and outlet in cover.



1. A closed case or vessel, A, containing hollow rotating wheel B, with its oblique floats or buckets c c c and end openings d d, substantially as and for the purpose above described.

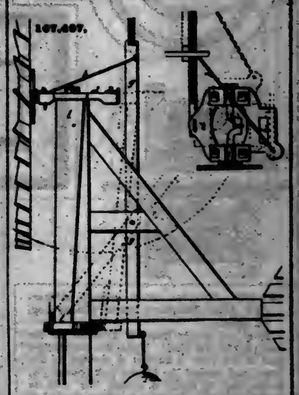
2. In combination with the horizontally-divided vessel A, the hinged frame F for supporting and raising the wheel B without interfering with its continued rotation, substantially as and for the purpose described.

167,487. WHEELBARROWS. Samuel M. Abbott, Wilmington, Ill. [Filed Mar. 6, 1875.]

Brief.—The turn-table is pivoted to one side of the mast, and is upheld at its outer side by a support, of which the lower end extends down to the collar, which is loosely clasps.

Pivoted to the frame of the tail-vane is the small vertical vane, which is connected to the outer edge of the turn-table by means of a rod, so that when the wind blows violently the vane is forced backward, so as to draw the turn-table and wheel around toward the tail-vane out of the wind. A weight is attached to the lower end of the vertical vane, which draws it back to a vertical position when the wind moderates.

167,487.

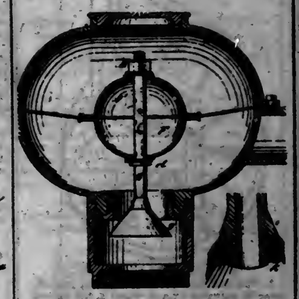


1. The yielding turn-table d, pivoted to one side of the mast and upheld at its outer side by a support, l, substantially as shown.

2. The combination of the yielding turn-table, support l, rod k, vertical vane j, tail-vane and mast, substantially as set forth.

167,488. GAS-REGULATORS. Jos. Adams, Washington, D. C. [Filed Apr. 27, 1875.]

Brief.—Improvements on Patent No. 159,202, May 4, 1874. The hemispheres of the balloon grasp the diaphragm loosely. The valve is covered with an elastic material, which is, with the valve, held to the stem by means of a nut.



1. The combination, with the valve-stem, having shoulders i, of the pieces k and j, the flexible covering m, and the nut h, substantially as and for the purpose described.

2. The hollow stem O, having perforation f and a flange, d, in combination with the nut H, and the two hemispheres of the balloon, substantially as and for the purpose specified.

167,489. ROTARY ENGINES. Luther Adams, Manteno, Ill. [Filed Aug. 14, 1875.]

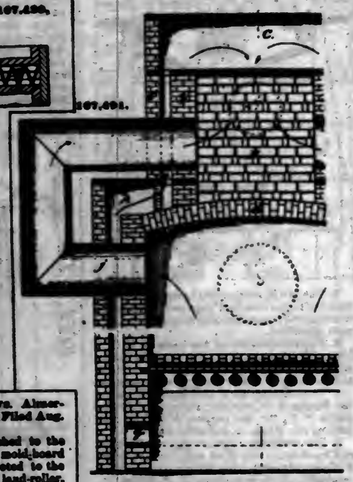
A rotary engine or pump, consisting of a cylindrical casing, provided with sliding valves, and having an oval rotary plunger adapted to move therein, mounted eccentrically upon a journal passing through the heads, and channeled, as described, said channels opening respectively into annular grooves in the opposite heads communicating with the induction and eduction ports, substantially as described and shown.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

167,490.

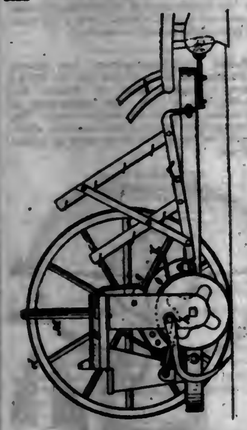


167,491.



167,490. ROLLERS AND HARROWS. Almerin P. Allen, Denmark, Iowa. [Filed Aug. 31, 1874.]

Brief.—A center-beam is attached to the rear part of the plow. Upon the mold-board side of the plow a harrow is pivoted to the beam, and behind the harrow is a land-roller, in the rear of which is a seed-box with its seed-distributing appendages. The rear end of the beam is supported upon an adjustable wheel, and forms a support for the driver's seat.



1. The combination of the spring pawl N, lever M, carrying-axle of wheel J, the curved perforated bar O rigidly attached to the frame Q, and the roller and plow, as shown and described, whereby the roller may be adjusted relative to said wheel, corresponding to the depth of furrow, as set forth.

2. The improved cultivating and seed-dropping attachment for plows, formed by the combination of the seed-hopper, the harrow, and the roller, said parts being arranged as shown and described, to operate as specified.

167,492. APPARATUS FOR MANUFACTURING BRASS.—Asa. John M. Ayer, Chicago, Ill. [Filed Aug. 28, 1875.]

Brief.—Air passes from the ash-pit beneath the grate-bars up through the hollow walls into chambers above, whereby it is highly heated. The gases from the furnace pass through a regenerator located above it. The grate-bars are cast round, and are provided with a barrel in the end for inserting a turning-bar.

1. The combination of a generating-chamber and a regenerator, located above and heated by the same, as set forth.

2. The combination of chambers A, flues *f*, regenerator B, and exit-pipe N, as as and for the purpose described.

3. The air-flues, located immediately below the grate, in combination with the hollow wall and chamber C, as and for the purpose described.

4. In combination with the generating-chamber A, the chambers *p* C, and intermediate passages between the side and back walls for heating the air, as described.

5. In combination with the chamber A, the *f*, regenerator B, and exit-flue *n*, the air-heating system described, and exit-flue S.

6. The grate-bars *i i*, cast round and with a square barrel, whereby each bar may be turned completely around, as and for the purpose described.

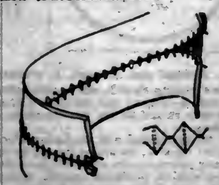
7. The combination of the grate-bars *i i*, the heating-bar *i*, and the heat-plate K, as set forth.

8. The combination of the grate-bars *i*, the heating, and the inclined shield or plate *m*, for the purpose described.

9. A gas-generating apparatus, in which the products of combustion are regenerated, and the air to form a combustible gas with them is heated directly by means of the generating-chamber, all as described.

10. The generating-furnace, having hollow or double walls and chambers, whereby the heat of the furnace is utilized to heat air in its passage between the walls, as set forth.

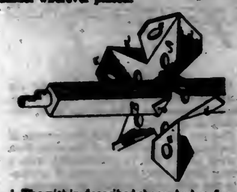
167,493. METHODS OF UNITING KNIT GOODS, &c. Helen A. Blanchard, Boston, Mass., assignor to John Bigelow, trustee, same place. [Filed Mar. 11, 1876.]



The described improvement in the art of uniting the edges of knit goods and hosiery by an elastic seam, which consists in sewing the two thicknesses of goods directly together in the manner and by the means specified, with the diamond overstitch-seam formed by stitches passing alternately directly through the goods and outside of the same, as set forth.

167,494. CHURN-DASHERS. John D. Bright and J. H. De Guire, Terrell, Tex. [Filed July 26, 1875.]

Brief.—The dasher is formed by being struck up from a single piece of metal. The portions struck up to allow the dasher to be passed over the dasher-rod form springs to hold the dasher wherever placed.

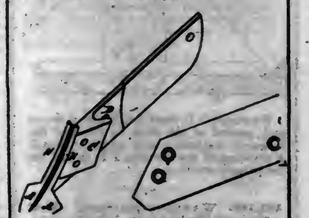


1. The within-described churn-dasher, formed of a single sheet of metal and in star-shape, with alternating upward and downward flanges *a a*, and with central spring-lips *b b*, all substantially as set forth.

2. The combination of the perforated sheet-metal plate A with alternating up-and-down flanges *a a*, the central spring-lips *b b*, and the hollow shaft B, the dasher being adjustable on the shaft and held by the spring-lips, all substantially as set forth.

167,495. CUTTER-SUPPORTS. Manfred Coll, Richmond, Va. [Filed Oct. 19, 1874.]

Brief.—Devices for carrying a double scraper upon the frame of a turn-plow.



The center piece or axle D, provided with shovel-point A, overlapping nose-piece E, and side flanges C, as shown and described, to adapt it to be applied to the clevises of a turn-plow in connection with the two wings, as specified.

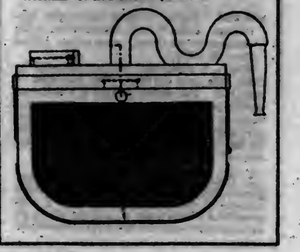
167,496. FILES. Charles F. Carr and S. S. Wilson, Adel, Iowa. [Filed July 31, 1876.]



1. As an improvement in files, alternate sections of coarse and single cuts *a* and *a'*, respectively, substantially as and for the purpose specified.

2. As an improvement in files, a series of diagonal grooves or channels, *a'*, extending across the face of the same, substantially as and for the purpose shown.

167,496. CONDENSED RESPIRATORS AND INHALERS. James Carrick, Glasgow, North Britain. [Filed Oct. 20, 1874.]

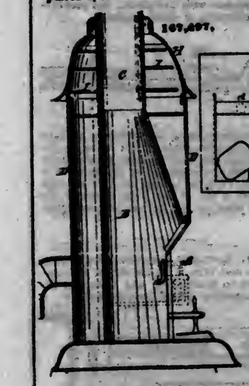


1. The general combination and arrangement of parts constituting the herein-before-described respiratory and inhaling apparatus—that is to say, a case formed, as described, in two compartments, the one to contain medicated matter, the other a filtering medium, which latter compartment is provided with means for keeping said filtering medium moist, in combination with a tube terminating in a mouth-piece, and inlet and outlet valves, by which communication of said tube with the atmosphere and the case is regulated, substantially as shown and set forth.

2. The mouth-piece for respirators and inhalers, consisting of the mouth-piece *h*, valves *h'*, *h''*, and flange *h*, constructed, arranged together, and applied substantially as described, and shown in Figs. 6 and 7.

167,497. HEATING-STOVES. MATTHIAS C. O Church, Petersburg, W. Va. [Filed July 15, 1876.]

Brief.—The cover being raised, vessels of water for hydrating the atmosphere may be placed upon the shelves.



1. The detachable hook B, having flanges *a a*, in combination with the outer casing D, having guideways *b b*, as and for the purpose described.

2. In a heating-stove, the smoke-pipe C, ascending vertically from the heating-chamber, and having the partition-plates I attached thereto, in combination with the detachable cover H having a hole therein of greater diameter than the smoke-pipe, so as to leave, when placed around the latter, an annular outlet, *c*, as and for the purpose described.

3. The combination of the detachable hook B having flanges *a a*, the outer casing D having guideways *b b*, the perforated partitions I, the smoke-pipe C, and the detachable cover H having an annular outlet, *c*, substantially as described, and for the purpose specified.

167,498. STOVE-SHELVES. Albert Olin, Deal, N. Y. [Filed July 1, 1876.]

Brief.—The spoke-tenon is elliptical in form.



A spoke having an end which is elliptical in cross-section, and provided with a flanged metallic tip, fitted thereon and resting against the outside of the felly, and having a small stem projecting from it and extending into the felly, whereby increased strength in the end of the spoke is secured, and the weakening of the felly by a large cavity therein is avoided, all substantially as set forth.

167,499. RAILROAD-SWITCHES. G. G. Coats, Newark, N. J. [Filed Aug. 26, 1876.]

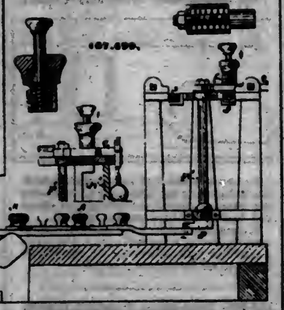
Brief.—The switch-rails, when moved for a side track, are retained automatically in the main track, and retained firmly in position until again changed by the switch-bar.

1. In a railway-switch, the combination, with the rails A, of the bar C, having the legs *d*, the weighted arms or levers K pivoted to suitable supports K', when operating substantially as and for the purposes set forth and shown.

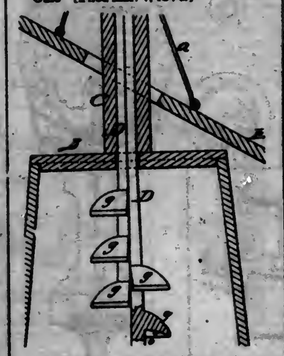
2. The combination, with the rails A, of the rod or bar B, crank F, shaft F', lever G, bar-fans *e*, and springs *f'*, when operating substantially as and for the purposes set forth and shown.

3. The combination of the lever G, stop-pin *f* actuated by spring *f'*, and friction-rollers *g*, arranged and operating substantially as and for the purposes set forth and shown.

167,499.



167,500. CRUSHER. James F. Coe, Raleigh, Ohio. [Filed Mar. 7, 1874.]



The concave-cover semicircular imperforate dashers *f f*, and vertically-reciprocating rods D D, in combination with the rods *a a*, lever E, top B, and tubular standard, embracing the dash-rods, constructed and arranged substantially as shown and described.

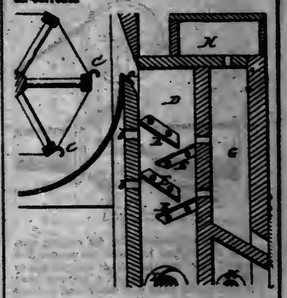
167,501. BILLIARD-TABLE CUSHIONS. Hugh W. Callender, New York, N. Y. [Filed July 20, 1875.]



A billiard-table cushion or cushion-strip composed of India-rubber, with two or more layers of canvas, or other material that will not stretch readily, interposed therein, and having a metal strip arranged in the rubber and interposition to two of the said layers of canvas, the whole, constructed and arranged to operate in the manner described.

167,502. FLOUR AND MIDDLINGS PURIFIER. Austin M. Comstock, Battle Creek, Mich. [Filed Feb. 24, 1876.]

Brief.—After the material is bolted through the reel it is taken up by the cup-shaped troughs on the reel, and delivered through suitable openings into an exhaust chamber or chambers, in which the light impurities are separated and carried off by the ascending air-currents.



1. The combination of the belt A, provided with an exterior cup-shaped trough, C, on each longitudinal rib, the opening *c*, the chamber or chambers D, and a fan for creating air-currents through said chamber or chambers, all substantially as set forth.

2. The combination of the belt A, having cup-shaped troughs C, as described, the openings *c*, the chamber or chambers D, the inclined shelves E E, arranged to overlap one another, and alternately on opposite sides, and a fan for creating air-currents through said chamber or chambers, substantially as set forth.

3. The combination of the belt A with troughs C C, and the chambers D and G, arranged with their respective conveyers I and K, and fan L, substantially as and for the purposes herein set forth.

4. The combination of the belt A with troughs C C, chambers D, with shelves E, chambers G, conveyers I K, vacuum-chamber H, and fan L, all constructed and arranged to operate substantially as and for the purposes herein set forth

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167,503. MANUFACTURE OF GUNPOWDER. Hermanus Courtenille, New York, N. Y., assignor, by mesne assignments, to Triumph Safety Powder Company, Baltimore, Md. [Filed Feb. 27, 1875.]

The process of manufacturing powder by compounding, under treatment of direct and externally-applied steam, of metallic sulphates, peat, charcoal, and nitr or fats with nitrates and sulphur, in the manner and in the proportions substantially as herein set forth, whereby the product is made complete while under treatment in mass.

167,504. METALLIC VESSELS. R. T. Orvell, New Bedford, Mass. [Filed Aug. 10, 1876.]

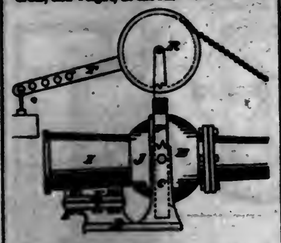


1. In a metallic vessel, the combination of a center metallic head or end, an outer head or filling piece, and projecting edges formed by the can body and center head, and internally bent down upon the outer head or filling piece, as and for the purpose described.

2. The combination, in a metallic can or vessel, of the following elements, namely: a center metallic head or end, an outer wooden head or filling piece, an external covering metallic plate, and projecting edges inwardly bent upon said covering-plate, substantially as shown and described.

107,505. JAMES VON HUTHMANN NOEHLER, J. J. Crawford, San Francisco, Cal. [Filed Aug. 10, 1875.]

Brief.—The nozzle is joined to the water-pipe by a ball-and-socket joint, thus allowing easy movement under pressure. The nozzle-lug is pivoted to the standards. The elevation of the nozzle is effected by the chain, drum, and weight, as shown.



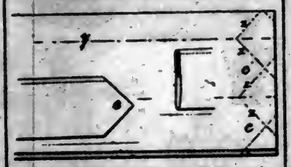
1. A ball-and-socket joint for uniting nozzles to water-pipes, to which the socket B is connected upon or forms part of the pintle or universal joint, while the ball or globular head J is arranged to enter said socket and be fixed in position, substantially as shown described.

2. The nozzle D, with its socket B, mounted between standards G G inside of the journaled ring F, in combination with the pipe I, with its globular head J connected upon the lugs h and removable casing K, substantially as and for the purposes described.

3. In combination with the pipe I and nozzle D, united by a ball-and-socket joint, the diaphragm or extinguishing pipe, composed of the overlapping circular blades or coils l l, substantially as and for the purposes described.

4. The drum R, fixed to the shaft q and connected with the nozzle D by means of the chain or rope S, in combination with the lever or pendent drum T and adjustable weight U, substantially as and for the purposes described.

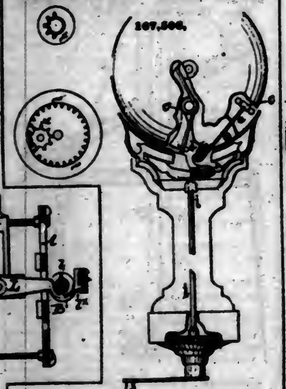
107,507. HOOP-TIES. Albert P. Dumont, Reading, assignor to Dumont, Temple & Co. Boston, Mass. [Filed July 6, 1875.]



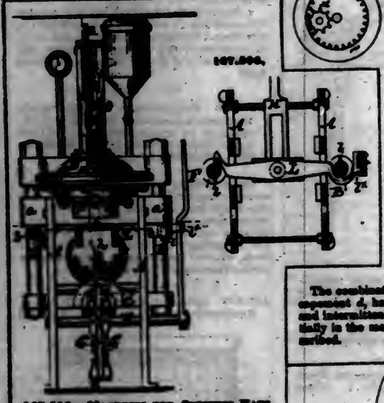
1. As a new article of manufacture, a metallic tie folded along the lines *y y*, *x x*, and having the loosened edge *h*, substantially as shown and described, for the purposes specified.

2. As a new article of manufacture, a folded metallic tie, having a loosened edge, *h*, and points *c c* alike on both sides of the tie, substantially as and for the purposes specified.

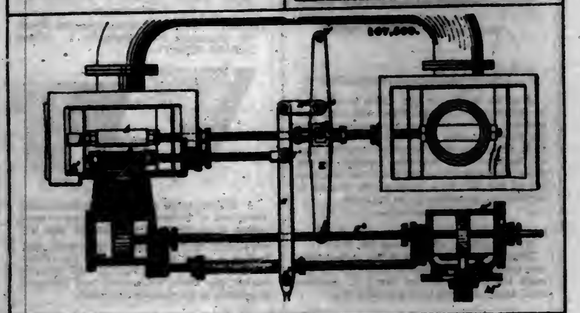
107,508. DOOR-SPRING. Frederic G. Daniels, Portsmouth, R. I. [Filed Feb. 20, 1875.]



107,508.



107,508.



The combination of the rervsiving rod *i*, escapement *d*, hammer and rod *c e*, spring *o*, and intermittent or escaped gear *A*, substantially in the manner and for the purposes described.

107,509. STEAM-ENGINE. Henry Dewey, Leeds, England. [Filed Aug. 1, 1874.]

Brief.—The main piston moves the main valve through a part of its stroke, and also moves the valve of the subsidiary cylinder. The admission of the steam to the main valve is effected by the movement of the piston of said subsidiary cylinder.

1. The combination, with the main valve and of the lever E, one end of which is connected by intermediate mechanism with the main piston, and the other end with the piston-rod of the subsidiary cylinder, substantially as and for the purposes described.

2. The combination of the lever E, connected to the main piston, the rod C, piston C, valve E, lever E, link E', and the subsidiary cylinder M', substantially as and for the purposes described.

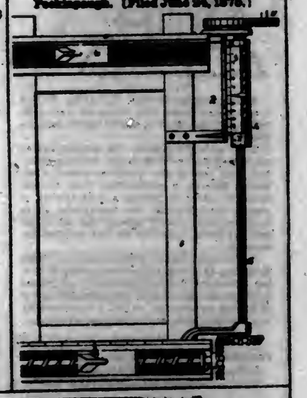
107,510. GALVANIC BATTERIES. Benjamin F. Dawson, New York, N. Y. [Filed July 24, 1875.]

Brief.—For the purpose of keeping fresh acid in contact with the plates, and preventing the collection of effete matter.



The combination of the perforated positive plate A, negative plate B, and agitating device arranged between the same, substantially as described, whereby, when the agitator is operated, it will act to draw the fluid through and force it out of the perforations in the positive plate, as and for the purpose specified.

107,511. SAW-MILL HEAD-BLOCKS. Theo. Dilger and Wm. B. Dunn, Alton, Ind., assignees to themselves and Abraham H. Pottsgrough. [Filed June 24, 1875.]



107,512. SAW-MILL HEAD-BLOCKS. Theo. Dilger and Wm. B. Dunn, Alton, Ind., assignees to themselves and Abraham H. Pottsgrough. [Filed June 24, 1875.]

Brief.—The dogs are made to slide in the head-block, and when they are moved in one direction they are caused to engage with the log, and when moved in the opposite direction they are caused to disengage from the log, by means of the lever and connecting-rod.

1. The combination, with the head-block and the dogs *d d'*, of the lever *f*, connecting-rod *g*, and the lever *h*, substantially as and for the purposes described.

2. The combination, with the head-block and the dogs *d d'*, of the lever *f*, connecting-rod *g*, and the lever *h*, provided with the fulcrum-pin *i*, substantially as and for the purposes described.



107,513. FEEDING OR SUPPORTING RAIL. Ezekiel Sweitzer, Valparaiso, N. Y. [Filed Nov. 30, 1875.]

1. The novel process of stiffening hats and other felted articles, which consists in subjecting them to a steam-bath after they have been shaped on a blocking-block, and while they are retained on blocks, which prevent them from shrinking out of shape, substantially as described.

2. The improvement in the art of stiffening hats and other felted fabrics, which consists in applying thereto the stiffening matter after they have been properly shaped and dried on a shaping-block, and subjecting them to a steam-bath, while retained on blocks which retain them in the shape imparted by the shaping-block, substantially as described.

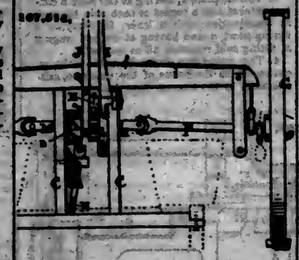
3. An apparatus for stiffening hats, composed of a steam-tight chamber, provided with a suitable valve-door, a shaping-block adapted to form a steam-tight joint, with an opening in the chamber, and a locking device for securely holding the block when forced against the chamber, substantially as described.

4. The combination, with a steam-chamber, of a shaping-head, neck, conical shank, locking-cam, and locking-shank-rod, substantially as described.

5. The combination of the curved block, the block, and curved clamp, substantially as described.

107,514. CHURN-BOW CLIP-DEVICE. Jos. W. Fenton, Moore, Ill. [Filed Aug. 14, 1875.]

Brief.—Recess on the side of the bearing, which is closed by a plate on one side and formed a shutter. In making the combination the wheels sometimes slip, and would pass irregularly, but for the notches and lever which is used to force the wheels forward after being elevated. The draw with the clamp-bands is for connecting the pole by indirect movement of the wheels. Motion is imparted to the slide by a forked lever working on the flange of the nut-wheel on the axle.



In a corn-planter, the combination of the frame B, provided with marked-wheel d, crank-lever f, guard i, lever J, vibrating lever N, and rear E, provided with sub-cutter s, substantially as and for the purposes set forth.

107,515. SEWING-MACHINES. Warren L. Fish, Norwalk, N. J. [Filed May 5, 1875.]

Brief.—A collar provided with a sleeve is rigidly attached to the driving-shaft of a sewing-machine. The fly-wheel, provided with a hub, is mounted loosely upon the sleeve. The connection of the fly-wheel to the collar is effected by locking the fly-wheel to the collar. When the fly-wheel is disconnected it may be used to operate a bobbin-winder by contact with its driving-wheel, while the sewing-machine is at rest. The details of the locking device are described in the claim and clearly shown in the drawings.



107,515.



107,515.

In a sewing-machine, the combination, with the main or driving shaft C, and fly-wheel A, having a head recess, *a*, of the collar E, provided with the sleeve *b*, the recessed pin *c*, having the head *e*, and the hub or post *f*, the several parts being arranged and operating substantially as shown and described, and for the purposes set forth.

107,516. FLUE-CLEANER. Bedford Fisher and Wm. Whitaker, Mt. Pleas. Ill. [Filed June 28, 1875.]

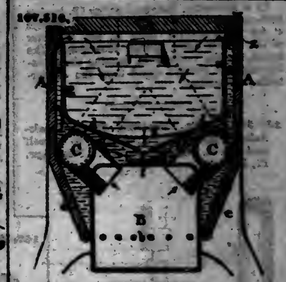
Brief.—Water circulates through the partitions in the bottom. These are made portable, and discharge water at bottom when raised from their seat in the apparatus.

1. The combination of the boiler A, having dotted sides or bottom *f* corresponding upon the inside and from B O O, shown by *r r r o o o*, respectively, the removable partitions, shown O O, forming the spaces *s* and the flues *t*, shown, and the portable fly-brush sweeps, substantially as described.

2. The removable fuel and ash holes, composed of the boiler A, holes shown O O, sleeves B, substantially as shown D E F, cover G, and clamp-plate H, constructed, arranged, and operating as and for the purposes set forth.

3. In combination, the bottle B, having dotted or outlined holes d d, with openings *i i*, and screws *j j* or screw-shank *k*, as shown and described, arranged, and operated.

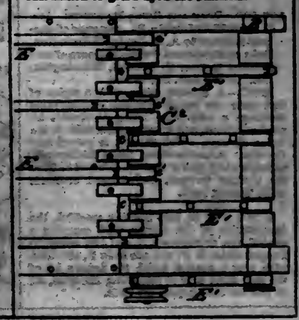
107,517. PROPELLING-MACHINES. John F. Finch, Joliet, Ill. [Filed Aug. 14, 1875.]



The propelling apparatus, consisting of the frame A, mounted upon wheels B B and C C, the pulleys or drums I I', and the sweep-bearing K, E, and K, with the pulleys E and E, and driving-wheels D D, the whole being arranged to operate substantially as herein set forth.

107,518. WIRE-STRETCHER. Samuel H. Fowler, Davenport, Iowa. [Filed June 30, 1875.]

Brief.—The stretching screw moves at a speed greater than the rotation given, thereby causing the pinchers, preventing undue accumulation of grain upon the cylinders.



107,519. WIRE-STRETCHER. E. S. Fowler, New Haven, Conn. [Filed Nov. 30, 1875.]

As an article of manufacture, the knife-bar, with the socket D on its lower end, the fixed jaw E at its upper end, and the movable arm F, and its one piece, combined with a correspondingly-shaped jaw, H, and screw to draw the said shaped jaw, substantially as specified.

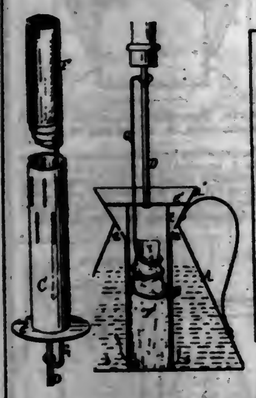
107,520. HARVESTERS. James H. Fowler, Davenport, Iowa. [Filed June 30, 1875.]

Brief.—The elevating screw moves at a speed greater than the endless apron conveying the platform, preventing undue accumulation of grain upon the platform.

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In a harvester, the spool-pulley C, having pulleys *a* for the elevator-belts D, and pulleys *b* for the conveyer-belts E, the diameter of the former being greater than that of the latter, for the purpose of running the elevator-belts at greater speed than the carrier-belts, as specified.

167,580. FIRE-KINDLERS. David Frankfeldter, Wabaunsee, Ind., assignor to himself and Jos. A. Culp, same place. [Filed Apr. 17, 1875.]



1. The combination of the torch-tube C D, rod D, handle E, wire G, and wick-roll F, the said torch being adapted to enter the tube B of a can, A, in the manner and for the purpose set forth.

2. The can A, having the flaring top A', perforations *a*, and socket B, provided with the openings *b* at the lower end, in combination with a torch, C, substantially as and for the purpose specified.

3. The combination of the can A, having the flaring top A', openings *a*, and socket B, provided with the openings *b*, with the torch C, provided with the head C', and wick-roll F substantially as described and shown.

167,581. PREPARED CORKS FOR STOPPERS. C. G. Frueh, New York, N. Y. [Filed Feb. 24, 1875.]

Brief.—Cork stoppers are impregnated with albumen, and then exposed to the action of steam or heated air, which makes them fast in the neck thereby, and will resist to boiling containing different liquids, as they become impermeable to both liquids and gases.

1. A cork-stopper, impregnated with albumen.

2. The process of treating cork-stoppers by first impregnating them with albumen, and then exposing the same to the action of steam or heated air, substantially as set forth.

167,582. BOLT AND RIVET MACHINES. John G. Gote, Philadelphia, Pa., assignor of one-half interest to A. G. Dodds, Wilmington, Del.; said Gote and Dodds assignors of part interest to Geo. G. Lobdell, Wilmington, Del. [Filed Apr. 30, 1875.]

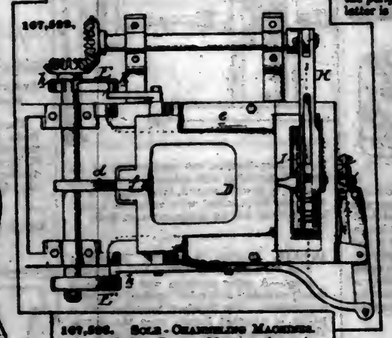
Brief.—A circular plate, with a series of dies near its margin, formed of removable inclosed in a frame, and plate being revolvable by part in the lever, and an adjustable tube in the frame, through which the rod is passed into the dies. A header-frame and a former-rod, through which power is communicated to force the plunger forward, and flanged connecting-disks drive it back.

1. In a rivet or bolt heading machine, the combination of the driving-shaft carrying a central cam or eccentric, A, and two eccentric flanged disks, B B', and the slide D, provided with pins *c* against which the flanges *b b* of the said disks bear in reversing the slide, all as and for the purposes set forth.

2. The combination of the cutting-tube to, secured in a stationary position on the frame of the machine, and the die-plate I, provided with a series of detachable tubular dies, *g*, each extending completely through the plate, and having a collar at the front end, between which and the end of the tube *o* the bar is received, all as set forth.

3. The die-plate I, having at the edge a central rotation and a recess at each side thereof, in combination with a lever, H, carrying a spring-pawl, *n*, and having at the end rings *s s*, fixing said recesses, all as set forth.

4. The removable and adjustable tube *o*, connected to the frame of the machine, substantially in the manner described.



167,583. METALLIC SEALS. F. G. Hopkins, New York, N. Y. [Filed June 10, 1875.]

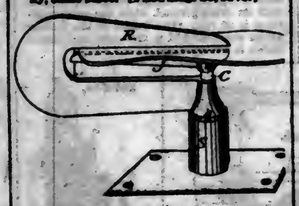
Brief.—The locking-pieces cross the closing-wire at an angle thereto, and extend beyond the periphery of the seal, to indicate that the latter is provided with the same.



A wire and lead seal, constructed as herein described, with one or more locking-pieces of hard metal, applied transversely to the seal-body which receives the wire bow or shackle, and with their ends projecting beyond the periphery of the disk, to show the existence and position of the locking-pieces.

167,584. CHEESE CUT-OFFS. Thomas B. Harrison, Quincy, Ill., assignor of one-half his right to Sylvester F. Burdett, same place. [Filed July 16, 1875.]

Brief.—All form the water common by the waste-pipes giving time for the damming of the road. When the water-chamber becomes sufficiently full its weight counterbalances the other weight above, and brings the end down in position to discharge water into the cistern. The rain ceasing, the position of the waste-water chute is restored.



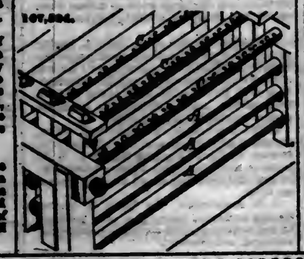
1. A pivoted goose-neck holder and clamping device for holding, supporting, and turning the soles of boots and shoes during the channeling process, substantially as herein set forth.

2. The combination, with the pivoted goose-neck, of an intermediate vertically movable clamping-jaw J adapted to clamp and support the sole, so as to admit of the circuit of a channeling-tool, substantially as described.

3. The combination, with a rotary clamping sole-holder having a fixed and movable jaw, B J, of a pendent support, S, upon which the sole-holder rests and turns, substantially as herein set forth.

4. The combination, with the vertically-movable clamp-jaw J, of the stem C, and the spiral spring 2, whereby the clamp-jaw is constantly pressed upward, and the sole clamped between the jaws.

5. The jaw E, having an open face, D, and provided with removable clamping-plates *c c'*, for the purposes set forth.



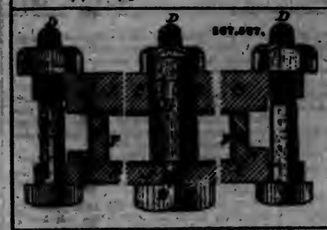
A cut-off, consisting of two water-ways, divided by the plate F and F', the chamber H, and pivot F', with the pipes U and W, and partition-plate D, the whole combined, arranged, and operating substantially as described.

167,585. MOLDS FOR FORMING ARTIFICIAL GRANITE. William Hart, Detroit, Mich. [Filed Mar. 15, 1875.]

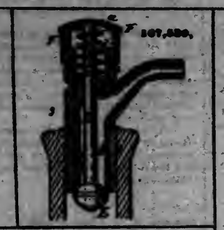
1. In combination with the mold A, B, and C, constructed as shown, the detachable lining F, fitted to and caused to cover the entire inner surface of the said mold, substantially as and for the purpose specified.

2. The herein-described mold, consisting of the bottom plate A, removable flanges B, cover C, sweeping-bolts D and D, and centre-pin H, all constructed to operate in the manner and for the purpose substantially as shown.

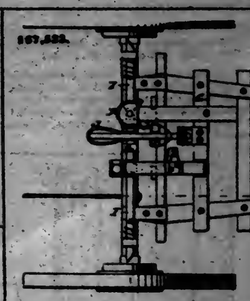
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167,587.



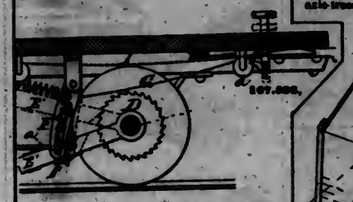
167,588.



167,589.

167,586. GAS-REGULATORS. Robert H. Hutchinson and Benj. W. Nevell, Philadelphia, Pa. [Filed Aug. 14, 1875.]

Brief.—Pressure on the treadle draws forward the vertical guides, and so pulls the pawl into engagement with the ratchet on the axle. Then the draft of the horses elevates the outer end of the horizontal guide-lever, and so starts the car.



167,586.

1. The combination of an end-wise-movable pawl, E, vertically-vibrating guide-lever F, and slotted vibrating hanger F' with chain G, pulley *d*, and treadle-pin H, for throwing the pawl in contact with the rack-wheel and shackle I L, pulley J A, lever J, and end-wise-movable draw-bar K, substantially as specified.

2. The combination, with a pawl, E, having lugs *a*, of a vibrating guiding-lever, F, having slots *b*, and vibrating hangers F, having slots *c*, substantially as specified.

167,587. PIPING-POSTS. George W. Hatch, Fortman, Ohio. [Filed July 28, 1875.]

In a fence consisting of the uprights B B and the horizontal rails A A passed between the uprights, the combination of the L-shaped perforated steps D attached to the uprights, and the rods G G connected directly to the uprights and passed through the perforations in the steps, and extended into the earth for supporting the fence above the ground, all substantially as set forth.

167,588. DUMPING-WAGONS. Philipp Hartman and Joseph Hartman, Jr., Tiffin, Ohio. [Filed May 24, 1875.]

Brief.—The body is supported at the front and rear by removable bars.

The combination, in a dumping-wagon, of the box A, hung on transoms B, with the side or bed-frame timbers C C, the bars D and E in the front and rear ends, with the straight axle-tree, all as and for the purposes set forth.

167,588.

167,589. BOTTLE-STOPPERS. P. Henry, New York, N. Y. [Filed July 2, 1875.]

Brief.—The air-inlet hole shown allows the air to be admitted to the bottle while the stream is flowing, making it uniform and solid. The device shown is designed to fit into the aperture in a cylindrical stopple.

The combination of the tube B, having the air-opening *g* and the tubular extension A, with the valve-rod D, valve E, spring *d*, and thumb-piece F, substantially as herein shown and described, the whole being adapted to use as an ornate stopple, A, as specified.

167,590. DEPOT-PLATFORM RAILWAY-SIGNALS. Francis Hartman, Reading, Pa. [Filed Aug. 30, 1875.]



167,590.

1. In a torpedo for railroads, the ductile metal strip C, when passed into or through the bottom or sides of the metallic case or cap, substantially for the purposes herein set forth.

2. The combination, with the case or pellet A and cap B of the ductile metal strip C, passed through the same, and perforated, as described, and the rivets D D, substantially as and for the purposes herein set forth.

167,591. HOOKS FOR HAT-RACKS. J. Hollingsworth, Chicago, Ill. [Filed Mar. 6, 1875.]

Brief.—The teeth are raised to clamp the hat by means of bars sliding on the rods, retracted by springs, and caused at will to engage with notched bars on the driving-wheels by means of a sliding wedge-shaped bar passing between the adjacent ends of the pairs-bars, and operated by a foot-lever.

The wedge-shaped bar J, connected to the foot-lever, and provided with a retracting-spring, in combination with the sliding bars I I and sustaining rods-board A, substantially as and for the purposes herein set forth.

167,592. BUTTER-TABLES. W. J. Hughes and J. A. Lenhard, Clyde, Ohio. [Filed July 14, 1875.]



1. In combination with the large board A the small board A', hinged to the rear end, and adapted to be folded down out of the way, substantially as and for the purposes described.

2. In combination with the small board A' the spring-clamp D *d*, secured in the end thereof, and adapted to be used either with the large or small board, substantially as and for the purposes described.

3. In combination with the large board A the bench-legs B, and clamp C *c'*, provided with rubber cushions or feet *b a*, as and for the purposes described.

4. The treading-board, composed of large board A, supported upon bracket-feet, and clamp B C, small board A' hinged to the larger board, provided in its end with a spring-catch, D *d*, and adapted to be folded or dropped down out of position when desired, and iron-rest E, all constructed, arranged, and operating substantially as described.

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167,580. GAS-LOCKER. George E. Hurd, Clinton, assignor to A. E. Brainard, Brainard, Conn. [Filed May 20, 1875.]

The herein-described rowlock, consisting of the two arms A A, mounted on the jointed spindle B, and arranged in the cast C, substantially as described, and so as to be folded, or turned below the edge of the boat, without removal from the cast.

167,580.



167,587.



167,587. HARROW. Alfred H. Isham, Lawrence, Kans. [Filed Mar. 29, 1875.]

Brief.—The pintle has a double-barbed lug near its upper end, and this fits into a corresponding recess in the bar of the hinge. The design of the barbs of the hinge tends to crowd down the pintle and keep it in position.

The combination, with a hook-hinge, A B, having a spindle, C, with head D, of the triangular projection c, having both sides inclined, forward on or with the head D, and the recesses *d d*, formed in the leaves of the hinge, substantially as and for the purposes herein set forth.

167,588. HATS AND CAPS. Martin Isidor, New York, and Ferdinand Isidor, Brooklyn, N. Y. [Filed July 3, 1875.]



As a new article of manufacture, a hat or cap the crown of which is made up in sections from plush or napped goods, and has its crown surface broken up by lines of ornamentation, and lines of ornamentation partially connecting the crown which unite the sections together, substantially as herein shown and described.

167,589. PROPELLERS FOR VESSELS. Fredericks Jacob Hoesch, N. J. [Filed Aug. 30, 1875.]



In a propeller, the automatically-adjustable paddles A, when constructed and arranged to operate substantially as and for the purpose set forth and shown.

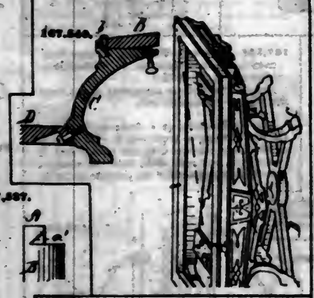
167,590. BELLOWS-TABLES. Clemens Joerguns, Chicago, Ill. [Filed July 6, 1875.]

1. A cast-metal supporting-frame for a billiard-table, consisting of the legs C and connecting-frame D, substantially as described.

2. In a billiard-table having a metallic supporting-frame, substantially as described, the carrying-girts B, set inwardly away from the ends of the main frame, substantially as shown and set forth.

3. The bolts b, arranged to secure the main frame to the supporting-frame, and the set-screws tapped through the latter for leveling the table, all combined and arranged substantially as described.

167,640.



167,641. MUSIC-LEAF TURNERS. Frank G. Johnson, Chicago, Ill. [Filed June 12, 1875.]



1. The combination, with the plate D, having the four studs d, of the cords f, hooks i, and springs h, for turning said wheel, substantially as described and shown.

2. The combination of the plate D, provided in the ears C, and provided with the guard segments *c' c' c' c'*, and the studs *d*, the arms F, each having a guard center, f, at its lower end, the levers H H', cords f, hooks i, and springs h, substantially as described and shown.

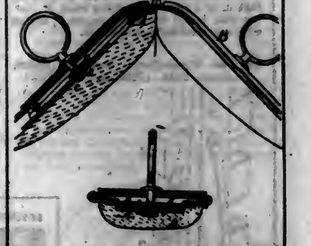
3. The combination, with the plate D, having notches in its periphery, of the springs h, substantially as and for the purposes set forth.

167,642. HEAD-MUFFS. James R. Elsbree, New York, N. Y. [Filed July 21, 1875.]



As a new article of manufacture, the herein-before described protector, consisting of the body A, provided with the button-hole a and *a*, and buttons B and *b*, the elastic bands C and C, the nose-band D *d*, and the openings E and E, substantially as and for the purpose specified.

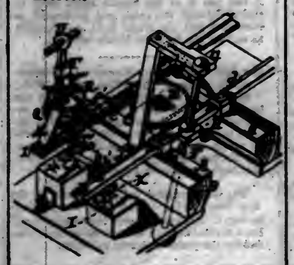
167,643. HARNESS-SADDLES. J. F. Ebner, Orange, N. J. [Filed Apr. 17, 1875.]



1. The turret-bars *d*, arranged in recesses *e* formed in the metallic frame A, in combination with the bars *a*, having openings for the passage of the shanks *c* of the turrets, and constructed to retain and hold the turret-bars in place, as set forth.

2. In a pig-saddle, metallic jockeys made in two detached sections, each section being provided with a pin and with a hole to fit corresponding holes and pins in the tree, substantially as described.

167,644. LOOMS FOR WEAVING MATTING. Sui Kuh, Grand Junction, Iowa. [Filed Aug. 11, 1875.]



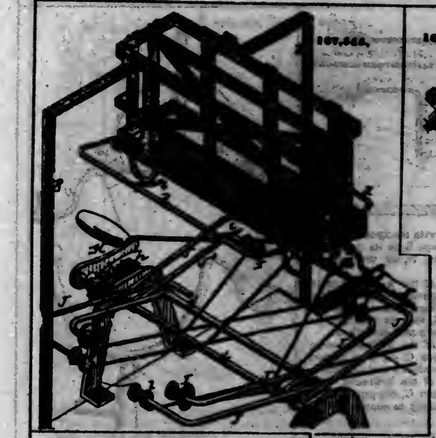
1. In a machine for weaving matting, the basket C, divided into two compartments, and provided with the sliding bottom D, having rods *d*, with fingers *e*, substantially as and for the purposes herein set forth.

2. The combination of the horizontal shafts G, geared together as described, and each provided with one or more sets of L-shaped arms, J, with spools I, constructed and arranged to operate substantially as and for the purposes herein set forth.

3. The combination of the horizontal shafts G, with their sets of L-shaped arms and spools, and winding-roller K, all substantially as and for the purposes herein set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

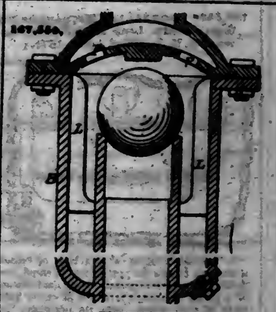
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167,646. SUPPORTS FOR FLYING LAMPS. Hugh H. V. Lilley, Milford, Mass., assignor to himself and Thos. Lilley, same place. [Filed Dec. 21, 1874.]

Brief.—The edge of the neck of the funnel is turned inward, to prevent the edge from choking against the wick when the neck is inserted in a lamp. A spring attached to the body of the funnel forces the side of the funnel against the wick, and thus holds it and the burner securely while the lamp is being filled.

1. A funnel of ordinary construction, with the edge of the neck beveled inward, as specified.

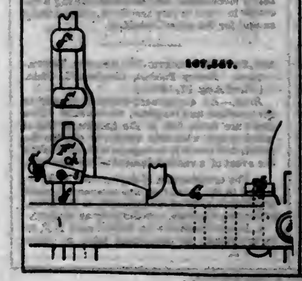
2. A spring attached to a funnel, in combination with the neck of the lamp-filler, for the purpose of securing the wick and burner of a lamp, substantially as specified.

167,647. MACHINES FOR TURNING SPOKES. Charles W. Lothian, Groton, assignor to Lemuel B. Frost, Orange, Conn. [Filed Jan. 26, 1875.]

Brief.—The cutting-tool is adjusted by a screw, the head of which bears against the tool.

The combination, with the detachable cutter-plate *f*, clamped in place by set-screw *e*, of the screw *f'*, applied to cutter-holder F, with its head over the upper edge of the said plate for the purpose of holding it against end-wise displacement, substantially as specified.

167,647.



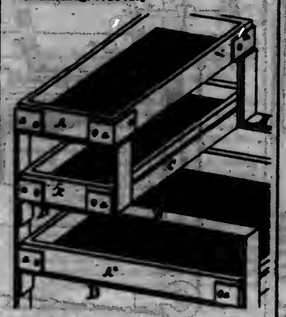
167,648. FURNACE FOR FELTING LAMPS. Hugh H. V. Lilley, Milford, Mass., assignor to himself and Thos. Lilley, same place. [Filed Dec. 21, 1874.]

Brief.—The sides of the furnace are made to incline toward each other, and the bottom is made with a double curve, and is constructed with a view to the more perfect distribution of heat.

1. The combination, with the furnace B, of the inclined sides *a a*, substantially as and for the purpose set forth.

2. The combination, with the furnace B, of the curved bottom *b*, substantially as and for the purpose set forth.

167,649. PIPE-UNIONS. Daniel S. Lowman and Henry T. Owen, Lebanon, Md. [Filed Aug. 6, 1875.]



The combination, with the frame B C D, having the tray-racks in different horizontal planes and in the relative position shown, so as to occupy the space below the oven and fire-box of a cooking-stove, of the removable trays A A' A', substantially as and for the purpose set forth.

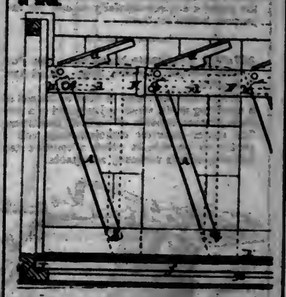
167,650. PIPE-VALVES. Thomas Maguire, Port Jervis, N. Y. [Filed July 24, 1875.]

Brief.—The inner tube, forming a valve-seat, is rigidly secured to the walls forming the outer chamber by the ears shown.

The valve, substantially as described, having the external wall B and central tube C, connected at their upper ends by the ribs L, as and for the purpose set forth.

167,651. CATTLE-STALLS. James R. Marsh and Ira Bell, Brother Falls, N. Y. [Filed July 21, 1875.]

Brief.—The stanchions are so arranged that any number of cattle can be secured at once, or they can be secured one by one. The floor is arranged to allow an increase or decrease of area.



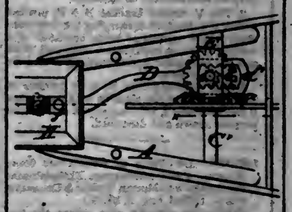
1. The combination, substantially as shown and described, of the fixed stanchions B, the stanchions A, pivoted at their lower ends, the rail C, having the slots *c*, and arranged at the sides of the upper ends of the pivoted stanchions, and the longitudinally-moving slide F, having the laterally-projecting pins *f* passing through the slots in the rail C, as and for the object specified.

2. The sections I F and the guides L, so arranged relatively to each other as to admit of changing the area of the said floor, substantially as described.

3. The sections I F and their projecting joists *f*, in combination with the recesses J, of the beams K, substantially as described.

167,652. CORN-PLANTERS. R. H. Matthews, Muncie, Ind. [Filed Jan. 6, 1875.]

Brief.—The seed-slide is made with a double rack, and is reciprocated by a segmental pinion on the journal of the bevel-wheel, which gears with a shorter wheel secured to and revolving with the bearing-wheel.



The dropping-slide D, having the double rack *d* at one end and perforations *f f* at the other end, in combination with the hopper H, bevel-wheels *a b*, and toothed segments *a a*, substantially as and for the purpose set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

167,548. PROPELLING MECHANISMS FOR CANAL-BOATS. Louis W. McKenney, Jersey City, N. J. [Filed Apr. 3, 1875.]



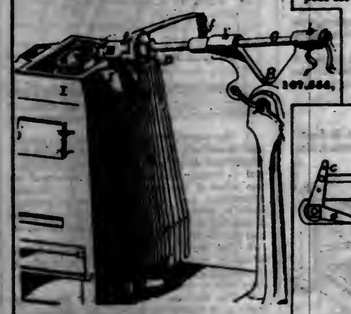
1. The combination, with a boat or vessel, a chain or chains for propelling the same, and pulleys for supporting and driving said chain, of a pulley or pulleys arranged at one or both ends of such vessel, with its periphery, or their peripheries, below the bottom of said vessel, substantially as herein set forth.

2. The combination, with the boat A and pulley G, of the frame H, carrying the latter and secured to the former, and adjustable vertically with reference to the same, substantially as herein set forth.

3. The combination, with the pulley G, of the guard *a a* A, substantially as and for the purpose herein set forth.

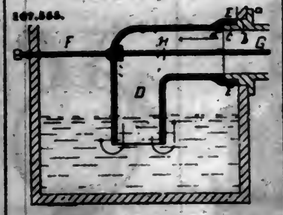
167,549. SCRIBING-MACHINES. Levi Pearson Morrison, London, Eng. [Filed Apr. 2, 1875.]

Brief.—The saw-clamp is fixed to the end of a reversing shaft, which is journaled in a pivoted headstock capable of vertical oscillation. The rubber-reservoir communicates with a pencil on its side, in which a transverse top sobbing-bar is vertically adjustable.



167,550. DIP-PIPES OF HYDRAULIC GRAIN-MAINS. Peter Ellenberger, Philadelphia, Pa., assignor to Morris, Tasker & Co., same place. [Filed Aug. 2, 1875.]

Brief.—The movable pipe passes the hydraulic main at the side, and the dip-pipe, extending within, is joined to it by a cone and socket joint. A rod is secured to the vertical side of the dip-pipe, whereby it is turned into or out of the moving liquid.



1. The combination, with the hydraulic main A and the ascension-pipe B, or its extension C, of a rotary dip-pipe, D, for the purpose shown and described.

2. The combination of the hydraulic main A, straddle-pipe or transverse extension C of the ascension-pipe, its flange *c* and extension *b a*, and the dip-pipe D, with its enlargement E, substantially as shown and described.

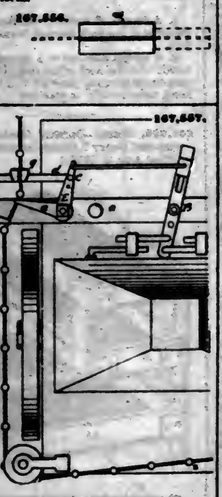
3. The combination of the hydraulic main A, straddle or extension C, dip-pipe D, and bolt F, substantially as shown and described.

4. The combination of the hydraulic main A, straddle or extension C, dip-pipe D, bolt F, and rod O, substantially as shown and described.

167,552. CORNERED MITERS, LEVELS, AND PLUMBS. John Murray, Cumberhedon, assignee of one-half his right to William McKeon, Philadelphia, Pa. [Filed Feb. 12, 1875.]

Brief.—Designed for use with an ordinary try-square, the slit receiving the blade, and the base resting upon the stock of the square.

The level-stock A, having water-ends B, and channels D, substantially as and for the purpose set forth.

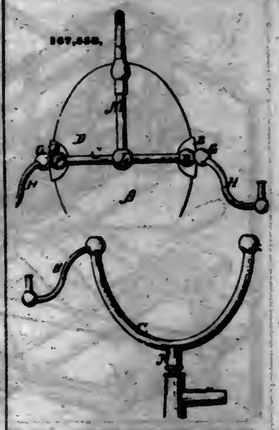


167,553. CHECK-ROWERS. Levi J. Odell, Fairbury, Ill. [Filed July 24, 1875.]

Brief.—Forked angular levers are centered upon a transverse beam, and connected together. Passing through the end of first one and then the other lever is a heated rod, that imparts a vibrating motion to them and to the seed-slide by a connecting-bar.

In a check-rower for planters, the combination, with a pair of forked stock or angle-bars, *c c*, of the connecting-bar *d* and its loop or eye *g* for the passage of the operating-rod, substantially as specified.

167,554. TOILET-MIRRORS. Henry Felsted, New York, N. Y. [Filed Feb. 26, 1875.]

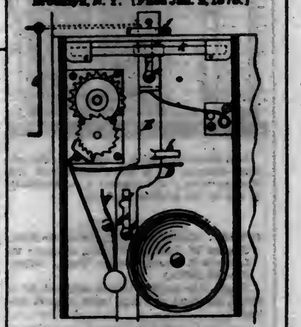


1. In combination with a mirror-glass, a gas-conveying tube and suitable bracket-arms or bearers, substantially as and for the purposes described.

2. In combination with the glass A, the arm B, arms E, bearings D, tube C, and set-screw F, whereby the glass may be adjusted relatively to the tube C, substantially as and for the purposes described.

3. The tubular frame C and bracket-arms H, in combination with the handle O, adapted to be secured to the frame C, substantially as and for the purposes set forth.

167,555. DOUBLE-ACTION. W. A. Parker, Brooklyn, N. Y. [Filed Jan. 2, 1875.]



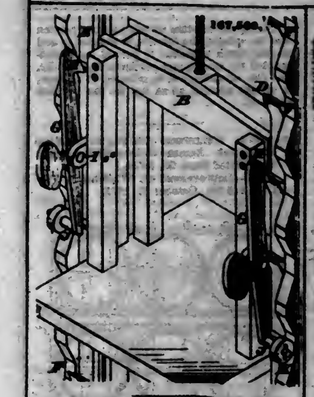
The vertical slide B, provided with the notched guide-slot *f* and lug A, in combination with a suitable stop for holding the slide until released, and a spring, *i*, for elevating the slide, a spring, *j*, for engaging the notched slot with the lever *k* when the slide is depressed, and a lever, D, connected with the alarm mechanism, and on which the lug A operates in order to stop the alarm, substantially as and for the object specified.

167,556. AUTOMATIC BRAKES FOR RAILWAYS. Henry Tuerck, Cleveland, Ohio. [Filed Aug. 27, 1875.]

Brief.—An escapement-pallet is pivoted to the platform and weighted on one side. Two pawls are made fast in the headway, one of which comes with side weight to vibrate the pallet, and comes it to engage with the rack in the event of a sudden descent of the platform.

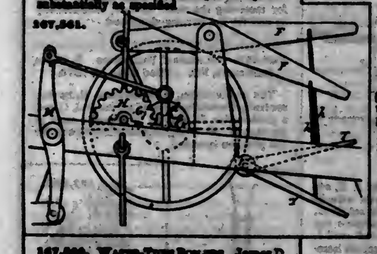
1. The combination of duplex rack D F, established in the headway, and escapement-lever or pallet G, pivoted concentrically to the latter, or their equivalents, substantially as set forth.

2. In combination, with duplex rack D F, or its equivalent, the overpoised latch or pallet G H I J.



167,560. SEWING-MACHINES. Cornelius Pease and Geo. W. Whitacre, Huntington, Ind. [Filed July 24, 1875.]

The sewing-machine, having the levers F and treadles T connected by rods A, and the quarter-crank shaft G, saw-crank, shaft, pitman, and saw-lever M, arranged to operate substantially as specified.



167,561. WAGON-TONGUE SUPPORTS. James D. Pierce, Rhinebeck, Wis., assignor of one-half his right to John B. Smith, same place. [Filed Dec. 29, 1874.]

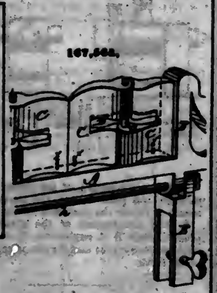


1. In a steam-boiler the shell A, coil B, inverted or embedded half-way in said shell, and chimney I, all arranged and combined substantially as set forth.

2. Inside shell A, coil B, embedded as described, combustion-shell E, collar and bolt C and D, steam and water spaces F and G, grate H, and chimney I, all in combination arranged substantially as described.

167,562. ART OF KNITTING SUCCESSIVE AND OTHER ARTICLES. Frederick W. Pelle, Lorden Kelsher, and Hollis Pelle, Fort Gibson, Miss. [Filed Oct. 24, 1874.]

The improvement in the art of knitting two or more garments at the same time upon the same set of needles, the same consisting in setting up on the needles the loops of each garment, so that they alternate one with the other, and in removing them in the same order, substantially as described.



167,563. RAKE-HOLDERS. Edwd. H. Porter, William H. Reeves, and Charles B. Page, Morrisville, Vt. [Filed Feb. 10, 1875.]

1. The cams O O, pivoted on the rod *a*, in combination with the spring D, passed in front of the rod, and the rods resting in grooves on the rear sides of the cams, substantially as set forth.

2. The combination of the bar A, having standards B B formed in one piece, and rods *a a* with two grooved cams, O O, pivoted on said rods, and spring D, substantially as and for the purposes set forth.

3. The combination, with a rake-holder having downward-projecting ears or lugs *c c* on its heel, of the bars F E, pivoted at their lower ends, and provided with shoulders *d* at their upper ends, the set-screws h, rod A, and rod *i*, all substantially as and for the purposes set forth.

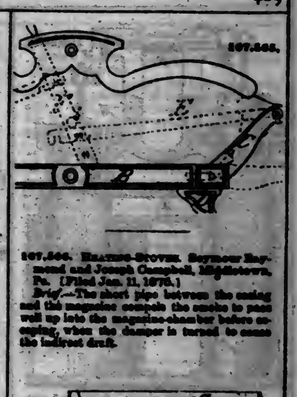
4. The combination, with arms temporarily attached to the dash-board, of a rake-holder adjustable rotatively on said arms, whereby the rake-holder may be set in proper position, no matter what the angle of the dash-board, substantially as set forth.

167,564. SUPPER, Thomas Samuelson, Philadelphia, Pa. [Filed June 10, 1875.]

1. In a sash, having hinged arms O O, the combination of the vertically-sliding lever E and the rods E F, substantially as specified.

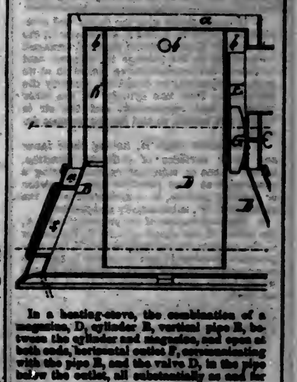
2. The lever F, having studs *a a'*, and the rods E E, having notches *a* in combination with the hinged arms O O of a sash, substantially as specified.

3. The stop S, in combination with lever F, connecting-rods E F, and hinged arms O O, substantially as specified.



167,566. HEATING-STOVES. Seymour Raymond and Joseph Campbell, Mifflintown, Pa. [Filed Jan. 11, 1875.]

Brief.—The short pipe between the casing and the magazine connects the smoke to pass well up into the magazine-chamber before escaping, when the damper is turned to cause the indirect draft.



In a heating-stove, the combination of a magazine, D, cylinder B, vertical pipe E, between the cylinder and magazine, and open at both ends, horizontal outlet F, communicating with the pipe E, and the valve D, in the pipe below the outlet, all substantially as and for the purposes set forth.

167,567. GATES. Charles C. Redmond and Henry H. Rhodes, San Jose, Cal., assignees of one-half their right to A. H. Evans, Washington, D. C. [Filed Aug. 7, 1875.]



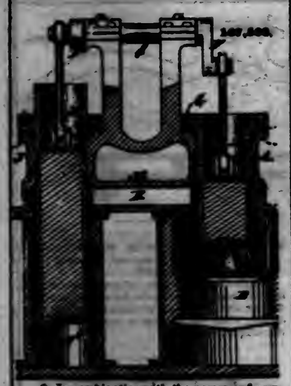
1. A gate or door, constructed as shown, in which the entire gate swinging horizontally on side hinges can be opened on either side, but in opposite directions, substantially as and for the purpose set forth.

2. The gate or door E, in combination with the hooks *c c* and catches G, substantially as and for the purpose set forth.

167,568. AIR-BRAKES. Alex. K. Esler, Walton, N. Y., assignor to Esler, Wooster & Co., same place. [Filed Aug. 2, 1875.]

1. The compression-chamber F, with its cocks I, arranged below the air-passage M, which connects said chamber with the lower O of the engine, whereby the lubricating material is restrained from clogging the passage M and other parts connected therewith, and is collected in the bottom of said chamber, substantially as specified.

107,569.



2. In combination with the power and compression cylinders A and J, and heater C, the regenerator E, composed of plates d, arranged horizontally in the passage M, between said cylinders, and communicating therewith at its ends, substantially as described, whereby the air passing from one cylinder to the other traverses said regenerator, and the air is heated and cooled, as and for the purposes described.

3. The relief-flaps H, having their inner and outer surfaces of different breadths, edged by one or more curves, and having a sharp edge at their junction with the plates or curving surface, in combination with the passage G, substantially as specified.

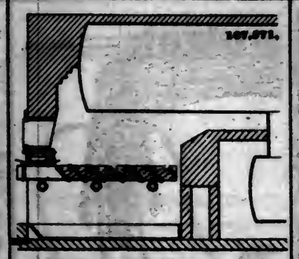
4. The combination of the power-cylinder A, the piston B, the shield or table D, the heater C, the passage M, and regenerator E, the compression-chamber J, and its piston L, and the compression-cylinder J, and its piston K, the whole being arranged essentially as herein set forth.

107,570. CHILLED-IRON FOR LAUNDRY OR RAILROAD. Albert Holden, Allegheny, Pa., assignor to himself, Richard Holden, and Edward S. Heffernan, same place. [Filed July 10, 1875.]

Claim.—A compound combining resin, glue, caustic soda, and salt-soda, substantially as and for the purposes specified.

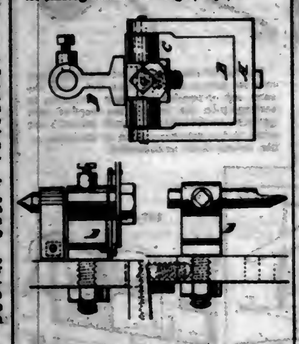
107,571. GRAIN-SEPARATOR. I. G. Boyer, Boyerton, Md. [Filed Feb. 25, 1875.]

Brief.—Improvements upon Patent No. 114,658. Construction and arrangement of devices for removing the straw.



107,572. PLANING-CUTTER. G. V. Garver, Huntington, W. Va. [Filed July 30, 1875.]

Brief.—A pivoted top plate with adjustable center attachments, dogs, angle-iron, and stud, for planing locomotive-wedges, keys, &c.



1. The combination of the frame A B, adjustable top plate C, and the center attachments D D, for the purposes herein set forth.

2. The combination of the adjustable top plate C, dogs E E, angle-iron H, and stud I, with nut-screw b, as and for the purposes herein set forth.

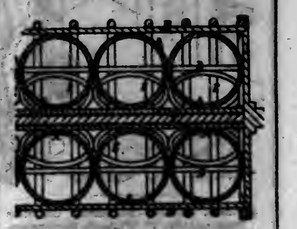
107,573. GRINDING-MILLS. George Sidney, Philadelphia, Pa. [Filed Mar. 24, 1875.]

Brief.—The work interposed between the adjusting-cone and the bearings of the spindle, turns with the latter, but slides freely upon it to permit adjustment.

The upper or other suitably shaped portion s of the spindle, the thimble w, adapted to and having depth sufficient to permit the adjustment of the said upper portion of the spindle, and the adjusting-nut v, adapted to o screw, s, on the spindle, all as and for the purposes set forth.

107,574. CYLINDERS FOR PAPER-MAKING MACHINES. Samuel Sellers, Philadelphia, Pa. [Filed Sept. 23, 1874.]

Brief.—Improvement on Whitcomb's Patent No. 143,501, October 21, 1873.



A cylinder for paper-making machinery and other purposes, constructed with bent or ring-shaped wires for supports between the axis and the surface to please united to the axis, and having independent outer rings or bands for receiving the outer surface, substantially as and for the purposes described.

107,575. GLASSES' DIAMONDS. F. Sipes, Baltimore, Md. [Filed June 14, 1875.]

The combination, with the head B, having centrally-located recesses, of a diamond, C, and a guide-roller, D, located at opposite ends of the face of the head, substantially as and for the purposes specified.

107,576.



107,576.

107,577. CHIMNEY-CAP. Wm. M. Smith, West Meriden, Conn., assignor to the Meriden Britannia Company, same place. [Filed Aug. 10, 1875.]

The herein-described coiled cover, consisting of the cap A, constructed with a recess upon its under side to produce an overhanging edge, and with a cover, B, attached thereto, combined with a separate body, D, inclosed by the rim of the cap, substantially as described.

107,578. FURNACE. Horatio M. Smith, Chicago, Ill. [Filed July 6, 1875.]



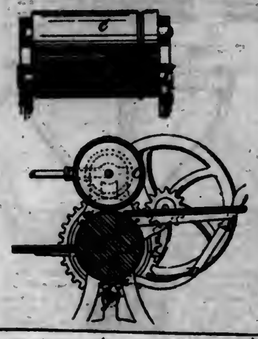
1. In a furnace, the combination, with the rear grate-surface and its supporting-wall, a descending partition arranged to form a throat or chamber at the junction of the grate and wall, the same adapted to be partially banked up with fuel, as set forth.

2. In a furnace, the combination, with the rear grate-surface and its supporting-wall, a descending partition arranged to form a throat or chamber at the junction of the grate and wall, and air-supply pipes or openings debouching at the crown, or in front of said arch, as set forth.

3. The grate G, partition F, and dead-plate f combined with the bridge-wall D, for the purpose described.

107,579. ROOFING APPARATUS. H. H. Smith, New York, N. Y. [Filed Aug. 6, 1875.]

Brief.—A calendering-roller that may be heated inwardly, and a cloth-covered roller geared together, so that they move with different velocities. The calendering-roller has a circumferential groove, and the covered roller has a corresponding projection.



107,580. PEN-HOLDERS. Daniel M. Sweeny, New York, N. Y. [Filed Aug. 20, 1875.]

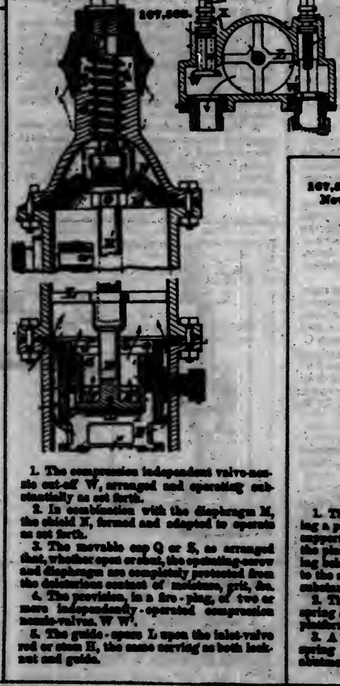


1. A pen-holder, the barrel or tip of which is formed of a metal tube having a corrugated or fluted base, substantially as shown, and for the purposes described.

2. A pen-holder, the barrel or tip of which is formed of a metal tube having a corrugated or fluted base, and which is provided with a pen-retaining nib, substantially as shown and described.

107,581. FIRE-PLUGS. John A. Stacy, Cincinnati, Ohio. [Filed July 13, 1875.]

Brief.—The hydrant has compression-section, each independently movable by separate valves, which caps protect the operating-screw, carrying an arbors for turning wrenches. The rod has a guide, which also acts as a lock-nut.



1. The compression independent valve-seats cut-off W, arranged and operating substantially as set forth.

2. In combination with the diaphragm M, the shield N, formed and adapted to operate as set forth.

3. The movable cap Q or S, as arranged and shown, whether open or closed, the operating-screw and diaphragm are completely protected from the deleterious contact of moisture, grit, &c.

4. The provision, in a fire-plug, of two or more independently-operated compression-seats-valves, W W.

5. The guide-spoke L upon the inlet-valve rod or stem H, the same serving as both lock-nut and guide.

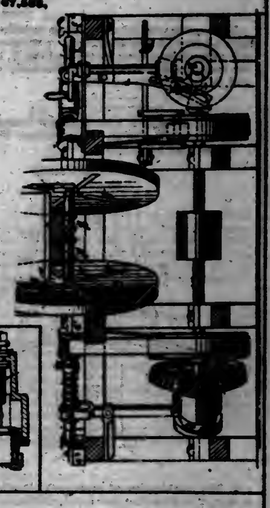
107,582. MACHINES FOR TRIMMING BOOTS. Albert Sheeran, Brooklyn, N. Y. [Filed June 30, 1875.]

Brief.—Two revolving disks, provided with cutters, are placed at an angle to each other, with a table between them, upon which the last is placed while the ends are being trimmed.

1. The combination, substantially as hereinbefore set forth, of the two rotary cutter-disks, mounted upon suitable shafts, and having cutting-knives on their inner faces, with a mechanism for adjusting the said cutter-disks and their shafts toward or from each other without affecting the rotary motion of the same, in the manner and for the object specified.

2. The combination, with the cutter-disks, of the stop mechanism for arresting the advancing motion of said disks immediately on the completion of the desired cut, substantially as herein described.

107,583.



107,584. PORTFOLIO-STANDS. D. J. Stein, New York, N. Y. [Filed July 20, 1875.]



1. The combination, with a folio-stand having a platform, a, a vertical abutment, b, and supporting side pieces e, of a flap hinged upon the platform, and having its lower end extending below the platform, where it is subjected to the action of a spring for closing the flap, substantially as described.

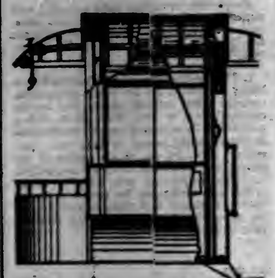
2. The combination of the bracket f and spring f with the flaps B B, abutment b, and platform c, substantially as described.

3. A secondary flap hinged upon the hinged spring side flaps, in combination with the abutment b and platform c.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

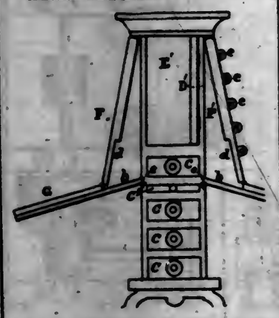
HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

167,586. SHAMPOO-CANE. John Stephenson, New York, N. Y. (Filed Aug. 7, 1874.)



The combination of a bonnet, B, provided with a mirror, b, with an opening, or an opening covered by a transparent medium, F, in the front end of a street-car, substantially as and for the purposes set forth.

167,587. BEARING AND WRITING DESK. Elizabeth W. Dolan, Philadelphia, Pa. (Filed Mar. 24, 1875.)



1. The combination of paper-racks H with a case, A, and reading and writing folding tables G or G', substantially as and for the purposes described.

2. The book and magazine case A, having reading-doors F F', hinged at the top to the cabinet, and folding tables G G', hinged to the lower part of the said doors, and supported, when open for use, by brasses b on the doors, and notches or rabbets e on the case, substantially as described and shown.

3. The combined book and magazine case, reading and writing tables, and paper-racks, constructed on demand, consisting of a case, A, provided with notches or rabbets e, and having shelves B in the middle, drawers C, sliding tables G', doors D D', pigeon-holes and space E F in the ends, swinging doors F F', provided with recesses d, folding tables G G', provided with brasses b, and paper files or racks H on the sides, substantially as and for the purposes described.

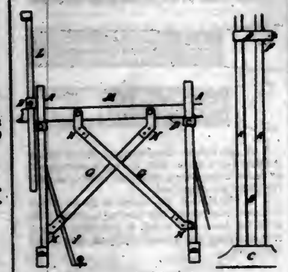
167,588. PREPARATIONS OF BATTER OF EGGS. Wm. Osborn Stoddard, New York, N. Y. (Filed May 31, 1875.)

1. The process of desiccating batter of eggs, consisting in drying the mixed batter evenly and by means of a flexible sheet of tin, and upon a rotating cylinder previously prepared with said sheet, substantially as described.

2. The product herein before described, consisting of desiccated batter of eggs having the natural color and substantial qualities of the fresh, moist batter, free from offensive odor, and containing about the proportions of forty-five per cent. of fat and oil soluble in ether, and forty per cent. of soluble albumen.

167,589. SCAFFOLDS. Levi W. Swafford, Vicksburg, Miss., assignor to himself, J. S. Horan, and Charles F. Tuth, same place. [Filed July 30, 1875.]

Brief.—The uprights are secured to standards, and have a wedge-shaped slot their entire length to receive the cross-pieces or supporting-timbers, which are adjusted at any desired height by a screw-clamp. The cross-timbers are cut away, so as to cross each other, and are provided with metallic plates and set-screws for ready attachment to the standards and cross-pieces. The steadying-braces are provided with plates and set-screws at one end, and at the other end with a flat perforated plate for attachment to the floor. A slotted post for bracing the device against the ceiling fits over the cross-timbers, and is secured by screw-clamps.



1. In an adjustable portable scaffold, the supporting post or upright, consisting of timber A, secured to a standard, C, and slotted its entire length by a tapering or wedge-shaped opening, B, and clamp D E F, as and for the purposes set forth.

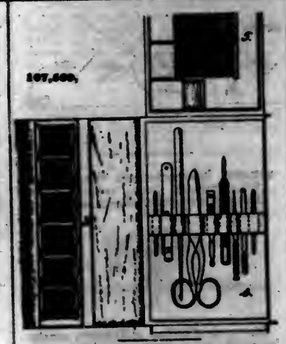
2. In an adjustable portable scaffold, the braces G cut away at G', and provided at each end with jaws or plates H and clamping-screw I i, as and for the purposes described.

3. In combination with the slotted posts A B, the door-brace J, provided at one end with clamping-screw, and at the other with a perforated angle-plate, J', as and for the purposes described.

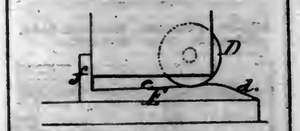
4. In combination with the timber M, the ceiling-brace L and clamp D E, as and for the purposes described.

5. The adjustable portable scaffold, composed of slotted posts A B C, cross-braces G, door-braces J J', timber M, and clamping devices D E F, and with or without the ceiling-braces L L', all constructed, arranged, and adapted to operate as described.

167,590. DOOR-CHECKER. W. Vandeventer, Peoria, Ill. [Filed June 15, 1875.]



Brief.—An angular corner-plate secures a friction-roller to the corner of the door, which roller rides upon a track-plate, with double inclines and a stop.



The angular frame C, provided with the roller D, and recessed in the lower face of the door, and flush with it, in combination with the track-plate E, having the inclines d e, and stop f, constructed as described, and for the purpose set forth.

167,591. SLICING-POLISHING MACHINES. P. H. Walsh, Waterbury, Conn. [Filed Apr. 12, 1875.]

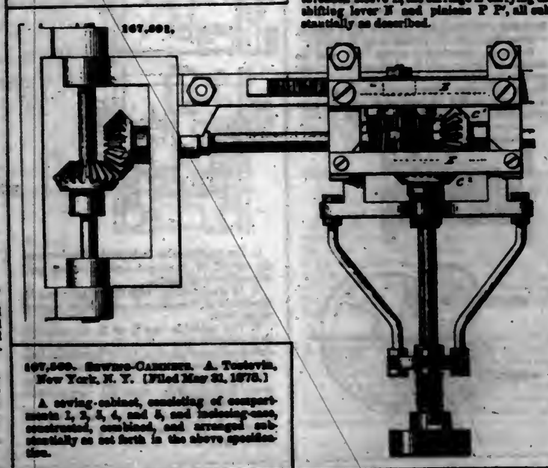
Brief.—A horizontally-swinging frame, provided with a driving-shaft, supports a polishing-frame, which is automatically moved back and forth by means of a sliding sleeve having right-hand screw-threads at one end and left-hand threads at the other, with which two pinions in a swinging frame alternately engage, actuated thereto by adjustable stops.

The combination of the swinging arm A', provided with adjustable stops E E', the driving-shaft C carrying the right- and left-threaded sleeve I, the carriage B carrying the shifting lever F and pinions P P', all substantially as described.

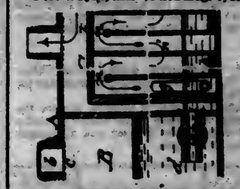
167,592. SEWING-CABINETS. A. Tesierin, New York, N. Y. [Filed May 31, 1875.]

A sewing-cabinet, consisting of compartments 1, 2, 3, 4, and 5, and inclining-case, constructed, combined, and arranged substantially as set forth in the above specification.

167,593.



167,594. CARBURETTERS. Daniel L. Westcott, Fort Wayne, Ind. [Filed Aug. 7, 1875.]



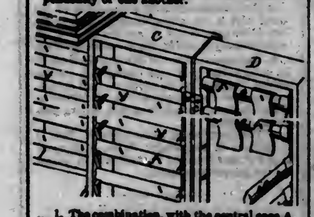
1. The case A, having at one end the reservoir B, with feed-pipe d leading into the chamber f of the chest, in combination with the removable box C, substantially as described.

2. The combination, with the chest A, of the removable box C, having its inner and outer walls covered with an absorbent cloth, and provided with the air-inlet pipe g and outlet-pipe g', substantially as described.

3. The removable box C, having vertical division-walls D D', removable strips h h, and absorbent cloth, substantially as and for the purpose set forth.

167,595. TICKET-CASES. Isaac White, Cedar Rapids, Iowa. [Filed July 21, 1875.]

Brief.—The doors of the main case are made in vertical sections, hinged together in such manner as to form receptacles independent of the main case. These doors are so connected together and pivoted to their case that the outer sections, (when folded upon the inner sections and both together closed upon the main case,) become the inner sections. The ticket-bars are hinged to swing outward independently of one another.

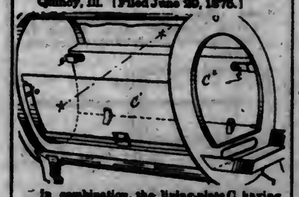


1. The combination, with the central case A, of the hinged extensible case-sections C D, having the inner sections C of such extension pivoted at their inner front corners a, to admit of their being folded and unfolded, each with the other, and to the central case A, in the manner substantially as herein set forth.

2. The bearers or holding-arms e of a coupon-ticket holder, hinged to their cases separately and independently of each other, to admit of being swung out from the case and loaded independently of each other, substantially as and to obtain the advantages herein stated.

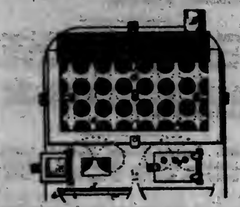
3. An extensible case of two or more hinged sections, pivoted to the main case to admit of their being folded therewith, with their rear sides b d on a line with the narrow sides of the case, and with their outer sections C forming the fronts of doors of the case A, substantially as described.

167,596. HEATING-STOVES. Thos. White, Quincy, Ill. [Filed June 30, 1875.]



In combination, the lining-plate C, having the flanges b b and stops c c, and the lining-plates C' C', having the hooks d, notches f, and buttons g, constructed and arranged substantially as and for the purposes set forth.

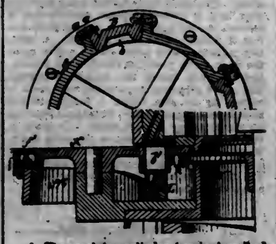
167,598. SEWING-MACHINES. Joseph H. Williams, South New Market, N. H. [Filed Apr. 12, 1875.]



1. In combination with the exit end of the tube-sheet of a tubular boiler, a perforated sliding plate, G, that closes over the ends of the tubes from above, so as to retain a volume of hot air in the upper parts of the tubes, and to cause the heated products of combustion to flow along the lower portions of the tubes, as described.

2. The sliding damper G, in combination with the exit end of the tube-sheet of a tubular boiler, the damper having its opening so as to close the upper tubes more than the lower ones, and thus equalize the flow of heated air through all of the tubes, as specified.

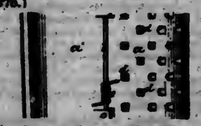
167,599. FRUIT-MACHINES. Carmi H. Williams, St. Paul, Minn., assignor of two-thirds his right to Charles D. Williams and Charles M. Parker, Jr., same place. [Filed Feb. 16, 1875.]



1. The receiving-cylinder herein described, consisting of the alternate sections A and B, provided with side flanges a a, and the sections B, having interior vertical recesses b, substantially as and for the purposes herein set forth.

2. The combination, with the stationary case-wheel M, of the rotating mold-table K, and the detachable follower L, each provided with under cams L', side recesses N N', passages f f', and perforated top f', all constructed and operating substantially as set forth.

167,597. CORN-SHELLING IMPLEMENTS. J. M. Wilson, Nashua, N. H. [Filed Jan. 19, 1875.]



A head-corn-sheller, consisting of the toothed concave plate a and smooth concave plate a', each hinged to the other, and provided with the spring e supported on the hinging-rod b, substantially as and for the purposes described.

167,600. RAILROAD-RAIL JOINTS. Samuel H. Wilmer, Cincinnati, Ohio. [Filed July 24, 1875.]

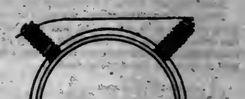
Brief.—A rail-joint fastener in which a chamfered sole-plate is held to the under side of the rails by double flared or wedge-formed chocks or clamps, which are drawn toward each other by horizontal bolts passing through them, and through channels or grooves in sole-plate, and bearing against under side of rail.



The rail-joint fastening, composed of the chamfered sole-plate B O O D D O O G G O', doubly-flared chocks I i i J J' i' i J J', and slotted bolts E F F F, the whole being combined and adapted for use with an ordinary notched rail, in the manner herein explained.

REISSUES.

6,969. STEERING-RIGGS. Wolcomus Jenckes, Manchester, N. H., assignor to Geo. Draper & Son. Patent No. 20,027, dated May 25, 1858; reissue No. 5,702, dated Dec. 23, 1873. [Filed July 31, 1875.]



1. The combination of a ring-rail, provided with a passage through it for the spindle, with a ring and with adjusting mechanism, whereby such ring may be moved or adjusted with relation to the spindle-passage, and to placed concentric with the spindle, substantially as described.

2. A ring-rail having seats of the contents for the rings made larger in diameter than the seat or portion of the ring to enter it, in combination with rings and with adjusting mechanism, whereby the rings may be placed concentric with the spindle, substantially as specified.

3. The combination, with a ring-rail and a ring, of adjusting devices adapted to operate against different parts of the periphery of the ring to adjust the same concentric with the spindle, substantially as described.

6,970. GRAIN-CLEANING MACHINES. Gerner B. Throop, Syracuse, N. Y. Patent No. 165,676, dated Feb. 11, 1875. [Filed June 3, 1874.]

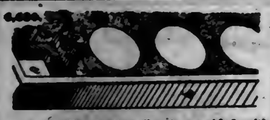
1. In combination with a receiving cleaning apparatus, a contracting case and head A, having on them concentric rings of various diameters, upon which the contracting case is drawn and gradually reduced in size as the brush wears away, substantially as and for the purposes herein set forth.

2. In combination with a contracting cylinder, a revolving brush, having a solid or continuous surface, substantially as set forth.

3. The fan-blower C, disconnected from the cleaning-case, for the purposes herein set forth, with openings o o around its head A, and the feather-bladed fan-wheel f, as shown, as combined as to direct the auxiliary blast upward through the annular space b and air-flues, all as herein specified.

6,971. ELECTRO-METAL TYPE. Thos. Hyatt, New York, N. Y. Patent No. 166,888, dated July 20, 1875. [Filed Aug. 28, 1876.]

6,680.



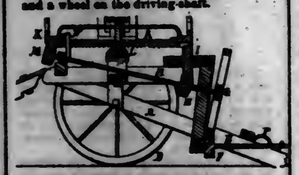
1. An illuminating-tile, A, provided with cross-bars *a'* and *a''*, that have the form of inverted arches, the abutments *a''* of which arches are flush with the upper surface of said tile, substantially as and for the purpose specified.

2. An illuminating-tile provided with cross-bars, each of which has a portion of its upper surface flush with the upper surface of said tile, while another portion is removed to permit the plastic filling to pass from one lens-opening to another, and form an interlocked seam of the same, substantially as and for the purpose shown.

3. An illuminating-tile, having a portion of its upper surface composed of emery combined with adhesive material, substantially as and for the purpose set forth.

6,681. HORSE-POWERS. Ole C. Sturle, Milwaukee, Wis., assignor to himself and J. C. Overby, same place. Patent No. 160,612, dated May 21, 1872. (Filed May 26, 1875.)

Brief.—The master-wheel operates two pinions, one on each side of it, one attached to the driving-shaft, and the other acting as an intermediate pinion between the master-wheel and a wheel on the driving-shaft.

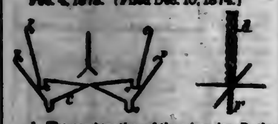


1. The combination of frame A, tongue C, and loops P P, substantially as described.

2. The combination of master-wheel K, pinions F, H, I, and M, wheel G, lugs E, rollers L, and tumbling-rod B, arranged to be operated substantially as described.

3. A horse-power, with a master-wheel, in combination with pinions H, I, and M, arranged substantially as set forth.

6,682. BED-BOARDS AND BOLSTERS. Edward P. Woods and Daniel Sherwood, Lowell, Mass., assignees to themselves and Cyrus H. Latham. Patent No. 70,769, dated Nov. 12, 1867; reissue No. 5,269, dated Feb. 4, 1873. (Filed Dec. 10, 1874.)



1. The combination of the wire ring B, the ribs C having feet *c*, and the continuous spiral *d*, substantially as described.

2. The combination of the wire rings *a a* with the central supporting-stem F, substantially as described, supporting them upon the base of the holder.

3. The combination of the wire ring B, the wire rings *a a*, and the central supporting-stem F, substantially as described, the rings *a a*, connected together by controlling clasps or binders, and to the ring B by loops at the top end of each rib C.

4. The combination of the wire rings *a a*, the central supporting-stem F, and the ribs C, substantially as described.

5. The compound twisted wire sheath A, having its wires and strands B soldered or connected together at their internal tangential points, substantially as described.

6. The wire handle of the stand, provided with a loop on its upper end, formed of the twisted wire sheath B, substantially as described.

7. The rings *a*, constructed each of a single wire, substantially as described, said wire being led from the sheath, bent into proper form, and united to itself at or near its junction with the sheath.

8. The combination of the ribs C with each other and with the central wire stem F, by the wires of the latter binding them together, substantially as described.

6,683. DENTAL PLATES. Daniel M. Lamb, London, Canada. Patent No. 160,667, dated Feb. 9, 1875. (Filed May 26, 1875.)

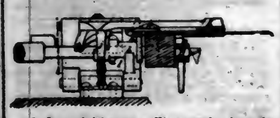
A dental plate constructed of the vulcanized inspissated juice of a plant of the asclepias or milkweed family.

6,684. DENTAL PLATES. Daniel M. Lamb, London, Canada. Patent No. 160,667, dated Feb. 9, 1875. (Filed May 26, 1875.)

A dental plate constructed of a vulcanized compound of the inspissated juice of a plant of the asclepias or milkweed family, and caoutchouc or other vulcanizable gum, and sulphur or its equivalent.

6,685. PLAITING ATTACHMENTS FOR SEWING-MACHINES. William Walker, Brooklyn, N. Y., assignor to George H. Wooster. Patent No. 141,610, dated Aug. 5, 1873. (Filed Aug. 20, 1875.)

Brief.—The cloth is carried forward by a pair of nippers reciprocating simultaneously, and a vertically-vibrating arm in advance of their limit of stroke striking the cloth on its under side produces a fold, which is always made upon the upper surface of the cloth. The "striker" swings down in time to allow the nippers to carry the fold under the presser-foot. The upper nipper-plate presses the cloth against the lower on their forward motion, but is lifted from the cloth on the reverse movement. The lower nipper-plate has a straight edge, and is mounted upon a spindle that is secured in a swinging frame, the outward motion of which is limited by a screw. A laterally-projecting arm acted on by a cam upon the main shaft produces the forward motion, and a spring causes the backward motion. The upper nipper-plate provided with teeth is carried by an arm, which is hinged to the spindle carrying the lower, whereby it receives its reciprocating motion, while it is made to vibrate vertically by a cam on the main shaft, which acts in a laterally-projecting arm kept in contact by the spring previously mentioned. The striker is mounted on an arm actuated by a cam in like manner.



1. In a plaiting or ruffling mechanism, the combination of an arm or nipper carrier with a pair of reciprocating nippers or jaws, the upper member of which is adapted to be shut or closed upon and move the cloth or material forward for a fold, and to be opened and release itself from the material on the return-stroke of the nippers, both members of the nippers reciprocating forward and backward simultaneously, and to the same distance, substantially as described.

2. The horizontally-reciprocating under-plate *f* and its carrier, in combination with the upper plate, adapted to be reciprocated by the carrier of the under plate, and with mechanism for automatically lowering and raising the upper plate, substantially as described, with relation to the under plate, to engage or free the material lying on the under plate, substantially as described.

3. In a plaiting or ruffling mechanism, the combination, with a cloth-carrier, of a bender or fitter adapted to bend the cloth for a fold prior to its being carried forward, substantially as described.

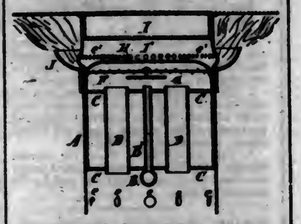
4. The combination, with a presser and a bender adapted to move the material in substantially a perpendicular direction, of a cloth-carrier adapted to move the material forward in substantially a horizontal direction and complete the fold started by the bender, substantially as described.

5. The combination of a bender and cloth-carrier, adapted to operate substantially as described, with a feeding mechanism to move the material after the fold is completed, substantially as set forth.

6. In combination, a vertically-movable bender, reciprocating nippers, and a cloth plate or support, the bender being interposed between the nippers and support, substantially as and for the purpose described.

6,686. GAS-STOVES. John J. West, Chicago, Ill. Patent No. 160,944, dated May 18, 1875. (Filed June 14, 1875.)

Brief.—The flame is directed against the bottom of the vessel to be heated by means of the flange. The diffuser and diaphragm mix the air and gas.



1. The combination, in a gas-stove, of the external flame-protecting shield or flange J and the gas-ports *c c*, substantially as and for the purpose specified.

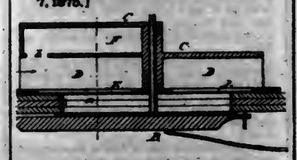
2. The chamber I', inclosed by the outer walls of the stove, and having therein the ports or openings *c' c'*, in combination with the shield or flange J, projecting from the outer wall, and arranged somewhat below the said ports, substantially as shown and described, and for the purposes set forth.

3. The combination, in a gas-stove, of the outer wall A, the wire-cloth diaphragm F, the cap I, the gas-ports *c c'*, and the shield J, all substantially as and for the purposes specified.

4. The combination of the pipe B', flues D D, annular flange H, and chamber I', having therein the ports or openings *c c'*, all operating together in connection with a diffuser in a gas-stove, substantially as and for the purposes specified.

5. The combination of the pipe B', flues D D, diffuser G, diaphragm F, flange H, openings *c c'*, and chamber I', substantially as and for the purposes set forth.

6,687. ORGAN REED-BOARDS. Alfred W. Wilcox, Worcester, Mass. Patent No. 140,750, dated July 8, 1873. (Filed Aug. 7, 1875.)



1. An auxiliary air-chamber, F, provided with an opening, *b*, in combination with a reed cell or chamber, D, of a musical instrument, substantially as and for the purpose set forth.

2. A reed or tube board, C, provided with cells D and auxiliary communicating-chambers F, substantially as set forth.

6,688. ORGAN REED-BOARDS. Alfred W. Wilcox, Worcester, Mass. Patent No. 140,750, dated July 8, 1873. (Filed Aug. 7, 1875.)



The combination of a valve and sounding board, A, constructed of thin veneers laid and glued together crosswise of the grain, with the tube or reed board B of a musical instrument, substantially as and for the purpose set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 11. TUESDAY, SEPTEMBER 14, 1875. PRICE { $5,00 per year—single. $4,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

GEORGE E. GLINES.—*Appeal.*

[*Appeal from the Examiner of Trade-Marks in the matter of the application of George E. Glines for registration of a* TRADE-MARK.]

SPEAR, *Acting Commissioner:*

This appeal is taken from the refusal of the Examiner to register as a trade-mark the words "Slate Roofing Paint," which applicant proposes to apply to a specified kind of paint intended for roofs.

I find by an examination of the specification in this case, as well as of the patent referred to in the specification, that the paint to which applicant proposes to apply this trade-mark is not composed of slate to any considerable extent, having less than two per cent. of that material. I cannot, therefore, agree with the Examiner that the terms are purely descriptive. Upon careful consideration, I am inclined to think that they are not in any sense such terms as would naturally be employed in the ordinary use of the language to describe any composition of this general description, and that therefore the words are arbitrarily chosen and sufficiently out of the ordinary signification to constitute a peculiar mark.

It is no objection to a mark sought to be registered as a trade-mark that it is appropriate to the article to which it is to be applied, or suggestive of good qualities, or peculiarly fit in any such way. In the present instance the words used as a trade-mark may be suggestive of qualities in the peculiar paint, resembling or thought to resemble slate-roofing. It is not slate-roofing, but an article sufficiently distinct from it; nor is it slate-paint; and, as I have said, although the words are suggestive, they are not descriptive according to the ordinary use of the language.

For these reasons I must reverse the decision of the Examiner, and authorize the registration of the trade-mark in accordance with the prayer of applicant.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

CHAS. G. JOHNSEN *vs.* IRA BEARD.

[*In equity.—Before* WOODRUFF, *Cir. J.—April*, 1875.]

Where it appeared that the drawing of a patent had been changed at the time of the reissue thereof, and the complainant in a suit under the reissue had introduced a duplicate of the Patent Office model which conformed to the drawing of the reissue: *Held*, that the defendant ought to be permitted to show the condition of the model at the time when it was filed in the Patent Office and at the date of the original patent.

A motion to reopen a case for the introduction of such proofs, it being alleged that the testimony was newly discovered, was entertained at final hearing, and was allowed.

The invention disclosed in Letters Patent for bale-ties, granted to Chas. G. Johnsen as assignee of Charles Swett, October 23, 1866, held not to be substantially the same as that embodied in the "Eureka" tie, and that the making, using, and selling of the "Eureka" tie is no infringement of any exclusive privilege legally vested in the patentee by the reissue of said patent as made May 7, 1872.

[This was a suit in equity for an alleged infringement of Letters Patent of the United States for bale-ties, granted to Charles G. Johnsen as assignee of Charles Swett, May 7, 1872. This patent was a reissue of an earlier patent granted the same patentee October 23, 1866, (antedated April 23, 1866,) upon an application originally filed in the Patent Office in the year 1856. At the time of the reissue the drawing was amended to conform to the model *as it then was*. The defendant in the suit set up that this change was unwarranted and vitiated the patent.

A duplicate of the model conforming in all essential particulars to the drawing of the reissue, and certified

to by the Commissioner of Patents several months subsequently to the date of the reissue, was put in evidence by the complainant.

After the proofs were closed the defendant moved to open the record for the introduction of testimony to prove the condition of the model at the time when it was filed in the Patent Office, as well as at the time of the grant of the original patent, it being alleged in support of the motion that the defendant had discovered, after the proofs were closed, that the model had been changed after its filing in the Patent Office, and that, originally, and even as late as October 23, 1866, it was in the condition shown in the drawing of the original patent.

This motion first came up in an interlocutory proceeding, and, after argument by counsel, was denied upon the ground that the essence of the allegation was fraud in the grant of the reissue, and in a collateral proceeding like a suit for infringement, the question of fraud could not be inquired into.

When the case came on for final hearing the motion was renewed. The question having been argued at considerable length, the court took it under advisement and rendered the following oral decision:]

[*Samuel A. Duncan* and *Geo. Gifford*, for complainant.
J. H. B. Latrobe and *Geo. Harding*, for defendant.]

WOODRUFF, *Cir. J.*:

In regard to the motion which was made in the case yesterday, I am constrained to the conclusion that fairness and justice to this defendant require that he should be permitted in some way to put upon the record in this cause the fact, if it be a fact, that the original record of the patent, embracing, of course, the patent, specification, and model, is not before the court.

I understand it to be an important point in the defense that the reissued patent is broader in its scope than the original. I am bound to assume that the court has to determine that question by an examination of the record, and cannot go outside of it for information. I understand the Supreme Court to have settled, distinctly and finally, that this court cannot enter into the examination of any question of fraud upon the Commissioner who granted the reissue, or of any matter which is outside of the record; and that the only power which the courts have over reissues, when their validity is sought to be impeached upon such grounds, is to look at the record of the original patent and of the reissue, and to determine upon their face whether or not as matter of law the reissue is a lawful one without inquiring by what means it was procured, and without inquiring what matters of facts were laid before the Commissioner of Patents; but assuming, in the first instance, that so far as matters of fact were involved, *de hors* the record, the act of the Commissioner in granting the reissue, is final and conclusive. If that be the view in which I am bound to deal with this case under the instructions of the Supreme Court, then this court is to be furnished with the record of the original patent on the one hand and with the reissue on the other, and then, governed by legal principles, declare whether that reissue patent is or is not valid. In order to do that the court must have, first, the original record, and that, without any inquiry, as I have said, as to what was before the Commissioner on the reissue. I have nothing to do with that; but I am to be furnished with the original record.

A model is produced here and certified to be a copy of a model which is now, or was when the testimony was taken, in the Patent Office at Washington. I do not perceive that that is conclusive. If the Patent Office had been burned and all the models destroyed, and this question had then arisen, I think the parties must have been permitted to show what that original record was. If they differed on the subject they would have been permitted to take proof, so that when the court came to pass upon the question they would necessarily have to determine, first, what was that record, and, second, does the reissued patent conform to it, or has it gone beyond the scope and limit of the original. If that be the correct view of the subject then the party producing a certified copy of a model from the Patent Office does not conclude the defendant. He may, and the defendant should be permitted to show that what he produces is the original, or a true copy of the original. I can readily suppose a case in which for some purpose, if the model at Washington had been destroyed, the defendant might have in his possession a certified copy of the original model as it was filed and made by the Patent Office directly after it was filed, and so might be able to place before the court a certified copy of the original model.

I quite agree that the question is not entirely without doubt. It may be and has been very plausibly argued that, for this court to enter into an inquiry of what was the original model, is to enter into an inquiry whether or not the Commissioner was not deceived when he made the reissue. That question may be incidentally involved; but after all the main question is not whether the Commissioner of Patents was deceived or defrauded, but whether, in point of fact, the reissue conforms to the original.

I am constrained to hold that the defendant ought to be permitted to place this fact upon the record. Certainly the Supreme Court has not yet gone so far as to say that what was the original model may not be proved in the court for the purpose of making the comparison which the Supreme Court say may be made.

To deny this motion would be to deprive the defendant, if a final decree shall be entered against him, of an opportunity to review this question, because he will have no opportunity to say to the Supreme Court that the judgment or decree should be reversed, because he was not permitted to show what was the original model with which the reissue was compared. I think that the defendant ought not to be placed in that situation. If I was inclined to believe that it would ultimately have no effect upon my determination of this case, I am not so clear upon this subject but that I should deem it my duty to give to the defendant the benefit of an exception, so that my ruling upon so important a question as this may be, in favor of the plaintiff, might be the subject of review. The Supreme Court may go the whole length, and say that the court was not at liberty to inquire what the Commissioner had before him; but if they say that they will go further than they have in any opinion yet gone. Up to this point they say that the court *may* look at the record. If the court *may* look at the record the parties have a right to bring that record before the court in a form which is authenticated by evidence satisfactory to the court that the record which they offer is correct.

I am, therefore, disposed to give the parties an opportunity to make this proof, unless the parties are still of opinion that such proof would not effect their case, and prefer to admit it. If they do, of course, the case may go on.

[The parties thereupon stipulated, for the purposes of the suit, a state of facts regarding the former condition of the model, and the case proceeded to a final hearing. The conclusions of the court were expressed as follows:]

WOODRUFF, *Cir. J.*:

My conclusions in this case are, first, that Charles Swett, the person named in the bill of complaint as assignee of the complainant, and therein alleged to be the inventor of the invention and improvement for which the letters patent therein mentioned were issued to the complainant, was not the inventor of any tie or mode of fastening cotton-bale ties made or used by the defendant herein; nor any tie, buckle, or method of fastening cotton-bale ties which is substantially the same in construction, or operating in substantially the same way as the ties made and used by the said defendant.

Second, that neither the original patent issued to the said complainant on the 23d day of October, 1866, upon or for the alleged invention of Charles Swett, in the said bill of complaint mentioned, nor the specification annexed thereto, nor the model of the alleged invention, nor any record of such invention in any manner shows, claims, intimates, or suggests a tie or method of fastening cotton-bale ties which is substantially the same in construction, or operates in substantially the same way as the tie made or used by the defendant herein.

Third, that the practicability of employing the tie or method of fastening made and used by the defendant was not conceived by the said Swett, nor by the complainant until after the said original patent was issued, and was borrowed from the suggestions of other parties.

Fourth, that if the reissued patent granted to the complainant dated May, 7, 1872, and the claims made in the specification annexed thereto, must be construed so as to include (as the patented invention) the tie or method of fastening used by the defendant and called the "Eureka tie," such reissue is invalid.

Fifth, that the defendant has not, by making, selling, and using the said Eureka tie infringed any right of the complainant, and such making, using, and selling is no infringement of any exclusive privilege legally vested in the complainant, or to which he is in any manner entitled.

The statement of these conclusions is sufficient to enable counsel to prepare a decree in such more technical or specific form, if any, as may be proper.

The state of my health forbids that I should attempt an elaborate discussion of the various points very ably presented by the counsel for the respective parties.

Let the bill of complaint be dismissed with costs.

U. S CIRCUIT COURT, WESTERN DISTRICT OF PENNSYLVANIA.

HENRY C. MEYER, FREDERIC R. SMART, AND SAMUEL J. SNIFFEN *vs.* GEORGE C. BAILEY AND S. A. BAILEY.

[*In equity.—Before* MCKENNAN, *Cir. J.—Decided May term*, 1875.]

1. An *assignee*, under the patent act of 1836, is one who has transferred to him in writing the whole interest of the patent, or an undivided part of such whole interest, in every portion of the United States.
2. A *grantee* is one who has transferred to him in writing the exclusive right under the patent to make and use, and to grant to others to make and use, the thing patented, within and throughout some specified portion of the United States.
3. If a part of the whole patent has been vested in another, so as to constitute him an assignee within the meaning of the statute, an efficacious surrender can be made only by the concurrence of both of the owners of the patent; but this may be manifested by the assignee by his direct co-operation in the surrender, or his subsequent ratification of it.
4. The owner of an exclusive territorial right under a patent may ratify a reissue thereof in which he did not join, by making an assignment under such reissue.
5. It is not essential to the validity of a reissued patent that a transferee of an interest in the original patent, who is not an assignee within the meaning of the statute, concur in the surrender.
6. Nor is it necessary to aver in a bill brought under a reissued patent that the grantee of a territorial right acted with the patentee in the surrender of the original patent or concurred in the reissue thereof.
7. M., the patentee, assigned the State of Pennsylvania to B., and afterward reissued the patent. Subsequently to the reissue B. assigned his title to an interest in the State of Pennsylvania, except as to certain counties, under the *reissued* patent, to the complainants, who, under the title thus acquired, filed a bill in equity against the defendants. Defendants demurred on the ground that B.'s interest was outstanding at the time of the surrender, and that he did not appear to have been a party to or to have assented to or approved of the surrender, and therefore the reissue was void: *Held*, that B. was not an assignee within the meaning of the statute, and therefore it was not necessary for him to concur in the surrender in order to give validity to the reissue.
8. The bill sets out complainant's title to the exclusive right, title, and interest under the patent, to the State of Pennsylvania, excepting certain counties, and then avers that the defendants "are *now* constructing, using, and vending" the infringing goods. * * * * * "in the western district of Pennsylvania," concluding the averment as follows: "All of which acts and doings are in violation of the exclusive rights and privileges, *so as aforesaid* vested in your orators, under and by virtue of the said recited reissued letters patent." *Held*, that these averments, taken in connection with statement of complainants' title, necessarily import a charge of infringement *after the grant to the complainants*; and, also, *within* the *territory covered by the grant*.

[This was a bill in equity to restrain the infringement of letters patent granted to John G. Murdock on the 26th day of May, 1863, for Improvement in Hydrants, and reissued May 11, 1869.

Murdock, on the 18th of September, 1867, assigned the full and exclusive right for the State of Pennsylvania, under the original patent, to one Augustus Buerkle. Subsequently, on the 11th day of May, 1869, Murdock surrendered the original patent and received a reissue thereof. On the 27th day of January, 1875, Buerkle assigned the entire title to and interest in the State of Pennsylvania, under the reissued letters patent, excepting certain counties, to the complainants.

George C. Bailey, one of the respondents, demurred to the bill on three grounds, which are fully stated in the opinion.

The case came up on the demurrer.]

[*W. Bakewell* and *T. B. Kerr*, for complainants.
G. H. Christy, for respondents.]

MCKENNAN, *Circuit J.*:

One of the defendants demurs to the bill on three grounds—

1. That the reissue upon which the suit is founded was granted upon a surrender of the original patent by the patentee after he had made an assignment of "the full and exclusive right, title, and interest in and to the said (original) letters patent and invention, in and to the State of Pennsylvania," while said assigned interest was outstanding, and it does not appear that

the assignee was a party to or assented to or approved of said surrender.

2. That the infringement complained of is not averred to have been committed within the territory covered by the assignment to the complainants.

3. That it is not averred that the infringement was committed after the date at which the interest of the complainants in the patent accrued.

Of the two last clauses of demurrer it is sufficient to say that they rest upon too narrow an interpretation of the averments of the bill, and are therefore unfounded in point of fact.

The bill sets out the date of the reissue, and the grant of a defined and exclusive territorial interest in it to the complainants, and then avers "that the said defendants are *now* constructing, using, and vending to others to be used and sold, large numbers of hydrants and street-washers, in some parts thereof, substantially the same in construction and operation as in the said reissued letters patent mentioned, the exclusive right and privilege to make and use which and vend to others to be used is thus by law vested in your orator." And, further, that the defendants have "made and used and intend still to continue to make and use the said improvements in the western district of Pennsylvania, *all of which acts and doings are in violation of the exclusive rights and privileges, so as aforesaid vested in your orators under and by virtue of the said recited reissued letters patent.*"

Taking these averments in connection with the statement of the complainants' title to which they refer, they import necessarily a charge of infringement after the date of the reissue and of the grant to the complainants, and within the territory covered by the grant. They allege infringement at and before the date of the bill, and, therefore, after the date of the reissue and the grant within the western district of Pennsylvania, "in violation of the exclusive rights and privileges *so as aforesaid* vested in" the complainants, and therefore within the territory in which, as before stated, they were granted the exclusive right to make, use, and vend the invention. This is too clear for contention, and the demurrer therefore cannot be sustained on either of these grounds.

The bill avers that the patentee, on the 18th day of September, 1867, "by an assignment in writing, sold, assigned, and transferred unto Augustus Buerkle the full and exclusive right, title, and interest in and to said letters patent, in and to the State of Pennsylvania."

The interest thus granted was outstanding at the time of the surrender by the patentee of the patent, and this constitutes the gravamen of the first clause of the demurrer. The 13th section of the patent act of 1836 provides for the surrender of a patent by a patentee, if he is at the time sole owner of the patent by his personal representative after his death, and by an assignee when there has been an assignment of the original patent. If a part of the whole patent has been vested in another, so as to constitute such an assignee within the meaning of the act, an efficacious surrender can be made only by the concurrence of both the owners of the patent; but this may be manifested by the assignee by his direct co-operation in the surrender or his subsequent ratification of it.

The bill does not aver that Buerkle, the assignee, joined in the surrender of the original patent; but it does aver a fact from which his adoption and ratification of the act of the patentee, in making the surrender, is conclusively deducible. He accepted the reissued patent and transferred to the complainants a part of the interest in it which was originally vested in him by the patentee. There could be no more expressive form of ratification by him of the act of the patentee. This is set out in the bill and is sufficient, in any aspect, to avert the objection to the validity of the reissue.

But, if this were not so, he was not an assignee within the contemplation of the act, whose concurrence in the surrender of the original patent is required to give validity to the reissued patent. What is meant by an assignee seems now to be settled by repeated adjudication, and by the explicit definition of the act of 1836. In *Taylor* vs. *Fuel* (6 Cranch) it was held, under the act of 1793, that one to whom was transferred all the rights secured by a patent, excepting certain counties in the State of Vermont, was not an assignee within the meaning of the law, but a mere grantee of a sectional interest in the patent. And in *Whittemore* vs. *Cutter*, (1 Gallison, 429,) it was held that the transferee of an undivided part of an entire patent was an assignee. From these decisions it results that only a person who is invested with the entire ownership of a patent or an undivided part of the whole, is to be regarded as an assignee.

Such, also, is the import of the act of 1836, in the 11th section of which it is provided that "every patent shall be assignable in law, either as to the whole interest or any undivided part thereof, by any instrument in writing," and this assignment "and *also* every *grant* and *conveyance* of the exclusive right under any patent to make and use and grant to others to make and use the thing patented within and throughout any specified portion of the United States shall be recorded," &c. The distinction established by previous judicial decision between an assignee and the grantee of a sectional interest in a patent is evidently contemplated by this section, as it is also by the 14th section, which authorizes the bringing of suits by "patentee, assignee, or grantee of the exclusive right within and throughout a specified part of the United States."

It was, therefore, properly determined in *Potter* vs. *Holland*, (1 Fisher, 333,) that "an assignee is one who has transferred to him in writing the whole interest of the original patent, or an undivided part of such whole interest in every portion of the United States, and no one, unless he has such an interest transferred to him, is an assignee. A grantee is one who has transferred to him in writing the exclusive right under the patent to make and use, and to grant to others to make and use, the thing patented within and throughout *some specified portion* of the United States."

Now it has been seen that besides the patentee and his personal representatives, an assignee only is authorized to surrender a patent and obtain a reissue. It is a plain sequence from this that the concurrence in the surrender of a patent by a transferee of an interest in it who is not an assignee within the meaning of the statute, is not essential to the validity of a reissued patent.

Was Buerkle, then, such an assignee as the statute contemplated? Evidently he was not. The transfer to him embraced only the State of Pennsylvania, and within its limits his interest was exclusive. He was, therefore, not an assignee within the statutory definition, but merely a grantee of an exclusive right under the patent to make and use the thing patented within and throughout a specified part or portion of the United States, and it was not necessary to aver that he united with the patentee in the surrender of the original patent.

The demurrer must, then, be overruled, and the defendant ordered to answer.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date September 14, 1875.]

8,647.—Medal.—WILLIAM B. CUNNINGHAM and PHILIP HILL, Philadelphia, Pa. Application filed August 9, 1875. Term of patent 3½ years.

8,648.—Piano-Forte Leg.—CHARLES E. HOFFMEISTER, New York, N. Y. Application filed August 20, 1875. Term of patent 7 years.

8,649.—Casting.—ALBERT P. REGER, Philadelphia, Pa. Application filed August 9, 1875. Term of patent 3½ years.

8,650.—Gridirons.—WALTER P. WARREN, Troy, N. Y., assignor to FULLER, WARREN & Co., same place. Application filed June 23, 1873. Term of patent 3½ years.

8,651.—Caps.—MORITZ ISIDOR and FERDINAND HEIN, New York, N. Y. Application filed July 30, 1875. Term of patent 3½ years.

8,652.—Waist-Belt.—WILLIAM C. SHIMONECK, Washington, D. C. Application filed September 8, 1875. Term of patent 3½ years.

8,653.—Back-Comb.—WILLIAM C. SHIMONECK, Washington, D. C. Application filed September 8, 1875. Term of patent 3½ years.

8,654.—Fan.—HENRY B. SOMMER, Philadelphia, Pa. Application filed August 27, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date September 14, 1875.]

2,925.—Cigars.—F. DE BARY & Co., New York, N. Y.—Case A. Application filed June 21, 1875.
"the words 'LA PERLA,' with the other features of the label as described."

2,926.—Cigars.—F. DE BARY & Co., New York, N. Y.—Case B. Application filed June 21, 1875.
"words 'La Perla,' and the border, as described.

2,927.—Spices.—A. G. GILMORE & Co., Scranton, Pa. Application filed July 14, 1875.
"a circular figure, across the center of which is a band, and below which is a parallelogram or base connected with the circular part."

2,928.—Albumen-Paper.—GOTTLIEB GENNERT, Greenville, N. J. Application filed August 6, 1875.
"letters and figure 'S. & M.'"

2,929.—Medical Compound.—DANIEL LANGELL, Apple Creek, Ohio. Application filed June 23, 1875.
"the figure of the man with the plate in his left hand, with representation of smoke ascending therefrom in and about the mouth and nostrils of the figure, and the word 'D. Langell's New Asthma and Catarrh Remedy,' and the printed directions for using the same."

2,930.—Machinery-Bearings.—LEBBEUS W. LATHROP, New York, N. Y. Application filed June 26, 1875.
"words 'The Lathrop Antifrictionette.'"

2,931.—Sewing-Machines.—JOHN B. MYERS, Cleveland, Ohio. Application filed June 25, 1875.
"words 'Great Western' 'Sewing-Machine' associated with the monogram composed of the letters 'G. W.'"

2,932.—Paints.—D. STEINER & Co., New York, N. Y. Application filed July 24, 1875.
"word 'WOODBINE.'"

2,933.—Combs.—THE INDIA-RUBBER COMB COMPANY, New York and College Point, N. Y. Application filed June 2, 1875.
"words and letters 'Sole Manufacturer's of Goodyear's India-Rubber and Gutta-Percha Combs,' arranged in connection with a representation of the India-Rubber Comb Company's factory at College Point, Long Island."

2,934.—Goods made out of the Hard Compound of India-Rubber.—THE INDIA-RUBBER COMB COMPANY, New York and College Point, N. Y. Application filed June 2, 1875.
"words 'India-Rubber Comb Company,' arranged in connection with a representation of our factory at College Point, Long Island."

2,935.—Prepared Meats.—WILSON PACKING COMPANY, Chicago, Ill. Application filed July 24, 1875.
"a representation of a group of objects, consisting of a can of the form we are accustomed to use, to the right of which is a plate with a lump of meat, slices of the same, and a knife and fork upon it, and to the left the removed wrapper of the can."

2,936.—Remedy for St. Vitus' Dance or Chorea.—HARRIET E. WRIGHT, New York, N. Y. Application filed July 2, 1875.
"words 'VITUS' REMEDY.'"

2,937.—Jewelry.—FREEMAN S. ALLEN, Washington, D. C. Application filed September 11, 1875.
"word 'CENTENNIAL.'"

2,938.—Cigars.—CHARLES BECKERT, Allegheny, Pa. Application filed June 18, 1875.
"representation of a checker-board."

2,939.—Corn-Flour.—GLEN COVE STARCH MANUFACTURING COMPANY, New York, N. Y. Application filed September 10, 1875.
"picture of Indians and growing corn in the foreground, and a factory in the distance."

2,940.—Flour.—C. A. PILLSBURY & Co., Minneapolis, Minn. Application filed February 17, 1875.
"design of the letters forming the word 'Best.'"

2,941.—Overalls, Shirts, and Drawers.—M. ROSENBACH & Co., Philadelphia, Pa. Application filed July 12, 1875.
"word-symbol 'Seventy-Six.'"

2,942.—Tea.—PAXSON VICKERS' SONS, New York, N. Y. Application filed June 19, 1875.
"words 'National Tea Bank.'"

2,943.—Sewing-Machines.—WHEELER & WILSON MANUFACTURING COMPANY, Bridgeport, Conn. Application filed July 17, 1875.
"shield within a circle with perpendicular bars and a horizontal row of stars, and bearing thereon the monogram 'W. & W.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date September 14, 1875.]

319.—Title: "**The Atwood Cologne.**"—HENRY W. ATWOOD, New York, N. Y. Application filed July 31, 1875.

320.—Title: "**Japanese Wafers.**"—JOHN M. CARTER, Newburyport, Mass. Application filed August 18, 1875.

321.—Title: "**Florentine. A new Iron Water.**"—JOHN R. COLEMAN, St. Louis, Mo. Application filed September 2, 1875.

322.—Title: "**Harris' (Sherwood's) Cough Specific and Lung Balsam.**"—JOHN J. HARRIS, Evansville, Ind. Application filed September 6, 1875.

323.—Title: "**Hamburger Seife.**"—LAUTZ BROTHERS & Co., Buffalo, N. Y. Application filed July 8, 1875.

324.—Title: "**Recipe and Directions for making Crystal Maple-Sugar.**"—JONATHAN LEONARD, Norwalk, Ohio. Application filed May 19, 1875.

325.—Title: "**Testel's Compound Extract of Buchu, Cubebs, and Copaiva.**"—WM. HENRY TESTEL, Jackson, Mich. Application filed August 24, 1875.

COPIES OF SPECIFICATIONS AND DRAWINGS.

Persons desiring copies of all specifications and drawings of any particular class of patents can purchase them at the rate of ten cents each, and have them mailed, free, to their address, as soon as possible after the patents are issued, by leaving a deposit of not less than three dollars with the Commissioner of Patents. The index of classes for subscribers, date of September, 1871, is furnished gratis to any applicant.

In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

Copies of the specifications and drawings of design patents will be furnished by the Patent Office at the cost of making them. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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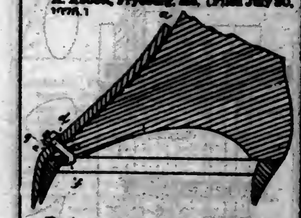
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Huber, E., Road scraper	167,668
Hunt, C. B., Manufacturing twist drills	167,766
Hunter, W. R., Car coupling	167,767
Hunzinger, G., Reclining chair, (reissue)	6,641
Hurd, G. R., assignee	167,648
Irish, N. E., Neck yoke coupling	167,768
Irons, R. O., assignee	167,725
Jenifer, G. L. S., Compound for soap	167,669
Johnson and Bondran	167,736
Johnson, A. F., Fare register	167,670
Johnson, G. B., assignee	167,696
Johnson, J., Railway frog point	167,671
Johnson, W. J., Soap holder	167,769
Jones, T., assignee	167,610
June, French, and Brayton	167,738
Kelly, E. W., assignee	167,767
Kelly, J., Corn planter	167,612
King, H. B., Toy whistle	167,672
Kitchen, W. R., assignee	167,680
Knapp, A. M., Rubber nipple	167,613
Knifton, G. W., Clothes clamp	167,673
Knight, J., Key fastener	167,674
Koch, R., and H. Müller, Universal turning lathe	167,614
Koehler, H. G., Hose and pipe coupling	167,675
Lambert, R. C., Machine for lasting boots and shoes	167,676
Lankler, C., assignee	167,797
Leiss, J., Carpet beater and cleaner	167,770
Letchworth, J., assignee	167,646
Lewis, W. J., Sash balance	167,677
Lilliendahl and Wolfe	167,814
Logan, T. H., and J. B. Thompson, Loom shuttle spindle	167,678
Loosley, R. O., assignee	167,804
Lovell, M. N., Clothes drier	167,615
Madden, M., Car brake shoe	167,616
Markoe, F., Balancing toy	167,771
Massey, O. W., Cotton gin	167,679
Mayo, M. C., Carpenter's plane	167,772
Maule, F. L., Pipe cutter	167,773
McCamish and Taylor	167,804
McClure, J. W., Churn	167,774
McDougall and Richey	167,691
McEntire, R. S., Sofa bedstead	167,680
McFadden, W. C., assignee	167,616
McGill, Richmond and Ryan	167,788
McKnight, C. G., assignee	167,685
Meyer, G., Device for pitching barrels	167,681
Miller and Stream	167,803
Miller, W., Fare register	167,682
Mills, H. R., Camp bed	167,617
Miner, S. B., Snow plow	167,775
Minor, J. W., Three wheeled dray	167,776
Mulberry, J. C., Planer chuck	167,618
Müller and Koch	167,614
Munson, F., and L. R. Dick, Heating drum	167,777
Newton, W. R., assignee	167,799
Nickerson, M. R., and N. M. Tripp, Baby walker	167,683
Nothelm, H. F., Middlings purifier	167,619
Noyes, W., Cartridge loading device	167,778
Nuttall and Stevenson	167,707
Nystrum, J. W., Burning hydrocarbons	167,684
O'Brien, J., Artificial leg	167,779
Ogan, P. M., assignee	167,621
Oliver, J., Casting mold boards, (reissue)	6,642
Oliver, J., Chill for casting mold boards, (reissue)	6,647
Olmsted, J. J., Electro-magnetic telegraph	167,685
Ormond, M., Plow	167,686
Osborn, H., assignee	167,724
O'Shea, A. J., Printer's quoin	167,780
Owen, J. D., and G. M. Custer, Rein holder	167,781
Parker, L. A., Sewing machine caster	167,782
Pascal and Deane	167,749
Pharis, I. E., assignee	167,601
Phelps, F., assignee	167,754
Phillips, G. A., assignee	167,797
Phillips, H. H., Machine for painting cloth	167,783
Pierce, G. R., Spoon hook for fishing	167,784
Pitcher, E., Sinker for fishing lines	167,687
Plume and Belcher	167,634
Pond, W. E., Sphygmoscope	167,785
Pope, H. D., Device for hanging pictures, mirrors, &c	167,786
Puffer, A. D., Making soda water fountains	167,688
Radenacher, M., assignee	167,633
Ramsdell, S. B. F., assignee	167,652
Randell, A. J., Steaming table	167,689
Reckendorfer, J., assignee	167,739
Redstone, A. E., Printing press	167,787
Reel and Steel	167,704
Renton, C., Forming the ends of carriage slat bows	167,690
Richards, T. C., Adjustable hook for hanging pictures	167,620
Richey, J., and L. H. McDougall, Coffin	167,691
Richmond, W., T. Ryan, and J. McGill, Smut mill	167,788
Ripley, G. B., assignee	167,607
Roberts, M. S., Horseshoe	167,789
Robinson, D. S., Paint oil compound	167,622
Robinson, S. F., Hand stamp	167,631
Roth, C. F., and E. G. Barker, Rotary engine	167,692
Russell, A., Capstan	167,693
Ryan, McGill, and Richmond	167,788
Sands, C. J., Flower pot	167,790
Sangster, J., Fare register	167,623
Sargent, C., Siding gage	167,791
Savage and Vanorder	167,808
Schifferly, C., Clothes drier	167,694
Schmelzer, J., Refrigerator	167,695
Schneider, B. B., Lamp	167,792
Schonmeyer, F. E., Egg beater	167,696
Seaman, J. H., Extension or drop light gasalier	167,697
Searles, A. M., assignee	167,622
Settle, E., Leather finishing machinery	167,698
Seymour, W. H., Shingling bracket	167,699
Share, P. T., Rash fastener	167,624
Shaw, A., assignee	167,802
Shevill, B., assignee	167,688
Shiels, A., Invalid lounge	167,700
Silver, H. A., Elastic butt plate for fire arms	167,701
Smith, E., Scroll sawing machine	167,794
Smith, R. D. O., Water closet	167,702
Smith, W. B., Cutter holder for planing machines	167,793
Smith, W. H., assignee	167,804
Smitheon and Wilson	167,720
Snively, J. S., Wheel harrow	167,703
Snow, W. D., Gas governor	167,795
Snowden, H., assignee	167,603
Somers, D. M., Manufacture of metal tubing	167,796
Souter, J., Grain drier	167,797
Spelman, I. H., Tire setting machine	167,798
Stanford, C. P., Ore feeder	167,625
Stattmann, C., Combined collar and muff	167,799
Steel, S. S., and G. W. Reel, Crozing and leveling tool	167,704
Stellwagen, J. B., Tool for setting tubes in artesian wells	167,626
Stephens, W. A., Furnace for the manufacture of iron and steel direct from ore	167,800
Stetson, T. D., Weighing scales	167,705
Stevens, B. A., Refrigerator	167,706
Stevenson, W. W., and I. Nuttall, Picker staff check	167,707
Stoddard, W. O., Apparatus for desiccating egg batter	167,801
Stone, A., Boot and shoe pegging stand	167,802
Stoops, N. D., assignee	167,747
Story, J. M., Sleigh	167,627
Stream, A., and D. Miller, Rotary engine	167,803
Summers, J. P., Earth auger	167,628
Sutton, J., Clothes drier	167,708
Sykes, H., Wooden frame for hinged awnings	167,709
Tapley, J. F., Calendar	167,629
Taylor, F., Ditching machine	167,805
Taylor, H. H., and A. McCamish, Steam car brake	167,804
Tetley, W., Apparatus for holding meat in cutting	167,710
Thom, R. H., Steam generator	167,711
Thompson and Logan	167,678
Thompson, R., Blank feeding attachment for swaging machines	167,630
Thompson, S., Stone sawing machine	167,806
Toepperwein, E. A. F., Magazine fire arm	167,712
Townsend, H. E., assignee	167,676
Toye, N., Hot air furnace	167,631
Tripp and Nickerson	167,683
Trudeau, T., Gas burner	167,713
Turney, G. L., Paper box machine	167,807
Ulrich, W., and C. Hachmeister, Harness rosette, (reissue)	6,643
Underhill, P. S., Lamp burner	167,714
Vanorder, J. W., and G. Savage, Rotary engine	167,808
Vaughan, W. R., assignee	167,765
Waas, M. A., Trunk stay	167,809
Weaver, T., Dumping wagon	167,715
Webber, J. J., Game apparatus	167,716
Weld, G., assignee	167,772
Welles, R. J., Wrench	167,717
Wellman, J., assignee	167,635
Wells, H. M., Window shade clasp or fastening	167,810
Wernimont, G., Car coupling	167,718
Westcott, D. L., Carburetor	167,811
Whaley, B. B., Alphabet exhibitor	167,812
Wheeler and Wilson Manufacturing Company, assignee	167,630
Wilder, Bolus & Co., assignees	167,734
Wilder, R. A., Colliery plant	167,719
Williams, R. S., Preparing dental fillings	167,813
Willox, A., assignee	167,737
Wilson, G. R., and G. Smithson, Brick machine	167,720
Wolfe, D. J., and G. A. Lilliendahl, Torpedo envelope machine	167,814
Wood, G. F., Band saw	167,721
Wood, J., assignee	167,671
Woolsey, W. F., Furnace for destroying insects	167,722
Wright, W., Blind stop	167,815
Young, C. A., Paper box	167,723

TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED SEPT. 14, 1875.

167,600. TOE-WARMERS FOR HORSES. Wm. H. Abbott, Fryeburg, Me. [Filed July 30, 1875.]



The improved toe-weight herein described, consisting essentially of the part *a*, recessed to fit the hoof, having the slot *c* and toe-calk *b*, in combination with the arm *d*, having the hook *f* and the nut *g*, as and for the purposes set forth.

167,601. ROOFING. Andrew Albright, Newark, N. J. [Filed Apr. 2, 1875.]

Brief.—A malleable metal skeleton shoe is provided with lugs projecting both from the inner and outer lower edges, to be bent or clinched over a rubber fillet, to hold it in place, and which fitting may be extended over a rib on the inside to form an interlocking joint.



1. The plate A, provided with slots *a*, and groove *c*, in combination with the elastic filling E, constructed and operating substantially as and for the purposes set forth.

2. A central tubular roller (or elastic substance) and metal bearings, constructed with an elastic lateral guard, I, formed upon a projecting rib, *r*, substantially as and for the purposes set forth.

167,602. LOCOMOTIVE. George W. Alden, Dunmore, assignor of one-half his right to I. B. Pharis, Golden, N. Y. [Filed Dec. 20, 1874.]



The improved liquid-measure herein described, consisting of the spherical body A having both ends open, and the loose bottom B, having its rod *a* extending upward for the purpose of drawing the liquid to the top, constructed and operating substantially as shown and specified.

167,603. SHOE-ASSORTMENT FOR CHILDREN. Marion Brinkerhoff, Mansfield, Ohio. [Filed Aug. 30, 1875.]

1. The stairway A, constructed or provided at the bottom with box or drawer C, downwardly-projecting entrance-foot-D, and perforations I F, as and for the purposes described.



2. In combination with the chimney A, with perforations I F, the case-mantel B, constructed with slanting or inclined partitions *b b'* and valve F, as and for the purposes described.

167,604. [illegible]

167,605. [illegible]

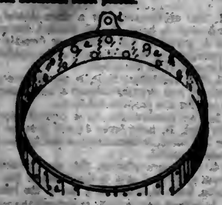
167,606. UNIVERSAL JOINTS AND CLAMPS. Thos. J. Carrick, Baltimore, Md., assignor to Henry Snowden and Chas. H. Grosman, same place. [Filed May 26, 1875.]

Brief.—Two flexible clamps for rods, a cone projection on the side of one fitting into a cone in the other, a cone-headed, square-shanked cone-bolt passing through both.

A combination of clamping-blocks, with projecting conical sleeves, and cone-seats to fit, with a cone-headed and nut to clamp and fasten by a single half-turn of said nut, to form a universal joint and clamp.

167,607. VALVES FOR PNEUMATIC PUMPS. William R. Chisholm, Cleveland, Ohio. [Filed July 23, 1875.]

Brief.—The combination of a flexible head-valve with reinforced steel plates.



1. A head-valve, composed of an elastic flexible spring head and a flexible pliable body, substantially as set forth.

2. The head-valve described, in combination with the leg *i* and pin *f*, substantially as set forth.

3. An air-port ring, *c* or *c'*, in combination with a combined steel and India-rubber head-valve, substantially as described.

167,608. MECHANICAL DIE-PRESS DRIVING MECHANISM APPARATUS. William Parmer, New York, N. Y. [Filed Aug. 28, 1875.]

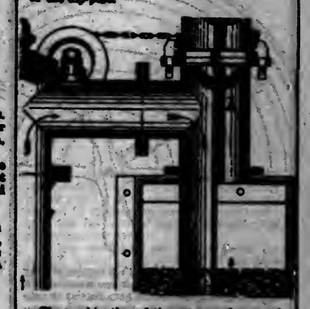
Brief.—Rubber extend from the top of the bar, in which the dip-pipe works, down into a cushioning liquid, and through these pass the connecting rods from the lever to the dip-pipe.

The combination of a movable dip-pipe with the expanding rods *b* and the sealed pipes *g*, arranged substantially as described.

167,609. [illegible]

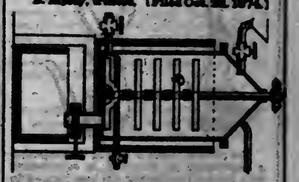
167,610. ROTARY VALVES FOR DIP-PIPES. William Parmer, New York, N. Y. [Filed Aug. 28, 1875.]

Brief.—The rotary valve, having a central partition, forms the top of the dip-pipe, which also has a central partition. One-half of the pipe extends into the cushioning liquid in the hydraulic main, and the other half opens above the liquid. The valve opens to open communication with either side, so as to close the passage between the retort and the short side of the dip-pipe.



The combination of the rotary valve *a* and the partitioned dip-pipe *b* with the hydraulic main and the stand-pipe, substantially in the manner described.

167,611. PROCESSES OF SEPARATING THE VARIOUS CONSTITUENTS OF FAT, &c. T. M. Fell, Brooklyn, N. Y., assignor to Geo. B. Bisbey, trustee. [Filed Oct. 28, 1874.]



1. The method or process of treating fats and oils for the separation of their various constituents, herein before described.

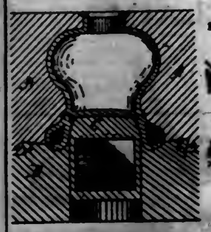
2. The method or process of obtaining the separate constituents of crude animal fats, by treating the same with diluted sulphuric acid, steam, and petroleum-naphtha, all the said steam and in the proportions of the several ingredients, and by the consecutive steps, substantially as herein before set forth.

167,612. MANUFACTURE OF GLASSWARE. James C. Gill, Pittsburg, Pa., assignor to John Adams & Co., same place. [Filed July 6, 1875.]

Brief.—The parts of the article are pressed or fitted together while visible thereof, when at a temperature that will cause the glass to fuse.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

No. 167,608.



1. The method, herein described, for forming blown-glass articles, consisting in folding or pressing together parts of a blown-glass article while within the mold, and at a welding temperature, or such a temperature as will cause the glass to reunite.

2. A blown-glass article having a bowl and base or foot formed in a single piece and at one operation, the cavities of the bowl and base having no connection one with the other, substantially as specified.

167,609. GRATES, John Hohenwald, Allegheny, Pa. (Filed June 1, 1875.)

Brief.—The curved bars of the agitator are concentric with the grate-bars.



An agitator, movable with a turning sliding motion on the bottom bars, in combination with a grate having its bottom bars curved or running in unison with the circular path or motion of the agitator, substantially as and for the purpose specified.

167,610. LAMP-FASTENING, Worcester Haddock, Pittsburgh, Pa., assignor to himself, Henry Gaskins, and Thomas Jones, same place. (Filed Feb. 6, 1875.)



The pivoted clamp F having the projection *f*, constructed as described, in combination with the hook A, having the bars inclined to the point b and the guides B B, substantially as hereinbefore described and set forth.

167,611. BOOT-BOTTOMING, W. S. Hill, Boston, Mass. (Filed Feb. 20, 1875.)

Brief.—The flexible spring is designed to maintain a constant pressure upon the valve equal to the tension of the spring.



1. The pawl *d*, in combination with the ratchet-wheel *c*, provided with pins *g g* and *f f*, and shaft *c*, operated by spring *e*, in the manner and for the purpose specified.

2. The combination of the adjustable spring *h*, the pawl *d*, and the diaphragm *a*, operating in connection with a heat-regulating device, in the manner and for the purpose specified.

3. The combination of the air-chamber D and diaphragm *a*, with the pawl *d*, and the ratchet-wheel *c*, operating in the manner and for the purpose specified.

167,612. CORN-PLANTERS, John Kelly, Troy, Ohio. (Filed Mch. 10, 1875.)

Brief.—To the wheeled frame is pivoted a beam that extends forward, and is secured to the runner-frame. To a cross-bar is pivoted a weighted, notched hook, that works through a slot in the longitudinal beam, and engages with cross-bars therein, for elevating or depressing the runner-frame by a lever working over a toothed sector.



1. The combination, in a corn-planter, of hand-lever L, hook B, and beam *a*, for raising or lowering the runners, or forcibly depressing the same, at the will of the operator, substantially as described.

2. The combination, in a corn-planter, of hook B and counter-balance *c*, substantially as and for the purpose set forth.

3. The combination, in a corn-planter, of the hook B, hand-lever L, and footboard counter and catch, substantially as and for the purpose specified.

4. In a corn-planter, the combination of beam *a*, pivoted at *d* to the frame of the machine, hook B, resting in a slot in the beam *a*, as described, and lever L, to actuate the same, for the purpose set forth.

167,613. BURNER NOZZLES, A. M. Kinne, Providence, R. I. (Filed Aug. 6, 1875.)

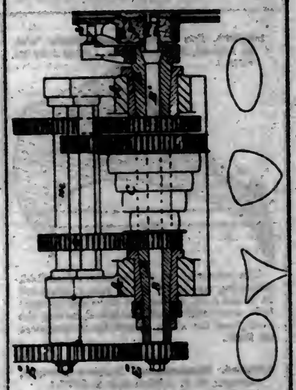
Brief.—A fine lateral division in the very slight outer end of the nipple closes automatically when the chief jet ceases, and this acts as a valve to prevent the falling back of the milk in the suction-tube.



In a rubber nipple, the combination of a thickened rod and a fine lateral division, *a*, all arranged as and for the purpose set forth.

167,614. UNIVERSAL TURNING-LATHE, Richard Koch and Hermann Müller, Dortmund, Prussia. (Filed Mar. 12, 1875.)

Brief.—The face-plate of the lathe is so connected with the system of gearing, by which it is driven, as to describe ovals and other forms in its rotation.



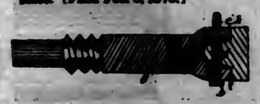
A bent-crank, A, with two mandrels, B and B', having a common center, in combination with the wheels E E', shaft *a*, wheels E'' and E''', eccentric F, face-plate G, and rest H, connected with said face-plate, the whole being arranged and operating together in the manner and for the purpose substantially as herein described.

167,615. GLOVERS'-DRESSES, M. M. Lovell, Erie, Pa. (Filed Feb. 19, 1875.)



In combination with the uprights A A and screwbolt B B, the hinge C, constructed and operating substantially as shown, and for the purposes mentioned.

167,616. GAS-BRACE SCREWS, Michael Middan, Harrisburg, Pa., assignor of one-half his right to William G. McFadden, same place. (Filed Feb. 6, 1875.)



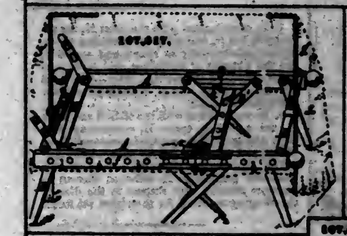
The combination of the claw *a*, provided with the flanges 1 and 2 and perforated tongue *c*, with the plunger-rod C, having perforated lips 3 and 4, bolt b, perforated at *c*, and constructed with a cam-shaped head *d*, and combining pin or split key passing through said perforations *c*, substantially as and for the purpose set forth.

167,617. CARS-SEATS, Elwyn B. Mills, Port Huron, Mich. (Filed Nov. 17, 1874.)

Brief.—The corners of the rods and upon the water-proof fabric can be applied to the structure to form a shelter-tent.

The combination of the fitting and adjustable frames A B and end bottom B with the rods *f*, rods *g'*, and open *g*, said rods being adapted to receive the water-proof fabric F, substantially as set forth.

No. 167,617.



No. 167,620.



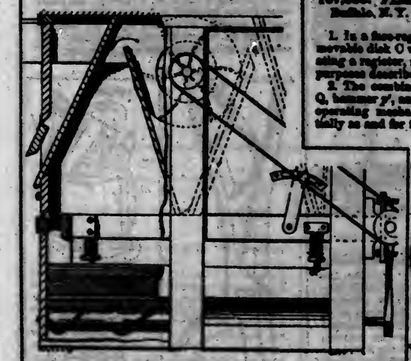
167,618. PLANER-CHUCKS, James O. Mulberry, Grand Rapids, Mich., assignor of one-half his right to Francis A. Barnes. (Filed June 8, 1875.)

Brief.—The socket in the lower part or base B of the chuck has in it a quarter-circular block, G, and the upper plate A has a semi-circular plate, H, so that, when brought together, the socket is three-quarters filled, allowing of adjustment or movement to the extent of ninety degrees or a quarter circle.



The combination of the base B, to be attached to planer-head having the double sockets F K, right-angular plate G, and plane surface T with the plate A, having the projecting circular surface F and counterwater plane H, and carrying the chuck-jaws, substantially as described and for the purpose set forth.

167,619. MINERAL-PAINTING, Hermann F. Nothaker, Milwaukee, Wis., assignor of one-half his right to Edward C. Nothaker, same place. (Filed Apr. 9, 1875.)



The combination, with a longitudinally reciprocating or vibrating shaker, screen, or conveying-frame, supported on pivoted hangers or levers, or springs for supporting the same, whereby the hangers or levers are kept in their relative working position, substantially in the manner shown and described.

167,620. ADJUSTABLE HOOKS FOR HANGING PICTURES, Thos. C. Richards, West Winsted, Conn. (Filed Feb. 15, 1875.)

The combination, with a hook for hanging pictures, of an adjustable slide or hanging-plate, substantially as described, whereby the said hook is adapted to moldings of different size and shape, substantially as set forth.

167,621. HAND-STAMPS, Samuel F. Robinson, Quincy, Ill., assignor of one-half his right to Philip M. Quinn, St. Louis, Mo. (Filed Apr. 10, 1875.)

Brief.—The type are placed between the central jaws and the spring rules, and are secured by the clamping-ring.



The combination of the plate C, the clamping D, central jaws E, and concentric spring-rules F F, the whole combined, arranged, and operating substantially as described.

167,622. PAINT-OIL COMPOUNDS, Darius S. Robinson, Cleveland, Ohio, assignor of one-half his right to Anthony M. Scarlett, same place. (Filed Mar. 18, 1875.)

1. The above-described process of making a mineral oil by grinding a mixture of cotton-seed and linseed oil, and then expressing the oil from the meal thus made, substantially in the manner and for the purposes set forth.

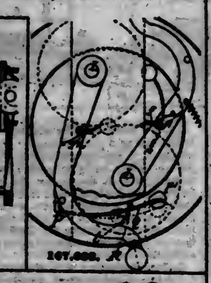
2. The above-described paint-oil compound, consisting of the oil obtained by the above-claimed process, sulphate of zinc, sugar of lead, india-rubber, and black oxide of manganese, substantially as described.

167,623. FARE-REGISTERS, Jos. Sampster, Buffalo, N. Y. (Filed Aug. 2, 1875.)

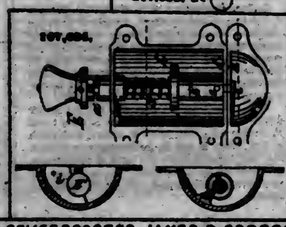
1. In a fare-register, the combination of the movable disk C with the mechanism for operating a register, substantially as and for the purposes described.

2. The combination of the spring P, plate Q, hammer *p'*, and stationary pin E with the operating mechanism of a register, substantially as and for the purposes specified.

The combination, with a longitudinally reciprocating or vibrating shaker, screen, or conveying-frame, supported on pivoted hangers or levers, or springs for supporting the same, whereby the hangers or levers are kept in their relative working position, substantially in the manner shown and described.



167,624.



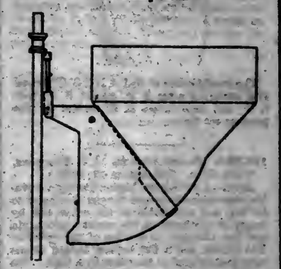
167,625. PAINTINGS FOR THE MINNOWS-BAILS OF SEINES, Philip T. Shaw, Baltimore, Md. (Filed July 22, 1875.)

Brief.—As an improvement on Patent No. 166,194, October 11, 1870. The keeper and bolt are so constructed that, as the bolt moves, it will both lock the ends and draw them tightly together. There are also guides, which serve to guide the end of the bolt accurately into the keeper, allowing it to move only when in position for locking or unlocking, and likewise holding the bolt at two places when the device is locked.

The combination of keeper K, cam H, incline *i*, bolt B, pin *a*, spur *n*, and right-angled slot *a o*, substantially as and for the purposes set forth.

167,626. GUN-FIRERS, Chas. F. Stansbury, San Francisco, Cal. (Filed May 1, 1875.)

Brief.—A stationary hopper is connected with a movable mouth-piece or chute. The bottoms of both are formed on the arc of a circle, whose center is at the pivot upon which the chute works. The chute moves backward and upward like a sleeve over the mouth of the hopper, and discharges a portion of ore at each blow of the stamp-stem.



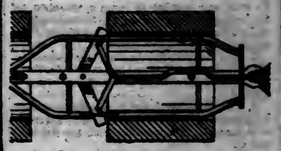
1. The combination, with an oscillating ore-stamp feeder, having its bottom formed on the arc of a circle, of an ore-hopper, having the back of its discharging-mouth curved to coincide with the curve of the feeder-bottom, for the purposes set forth.

2. The oscillating ore-stamp feeder described, having its pivot placed to the front side of the center of gravity, in combination with the stamp-stem, so that when its forward end is depressed by said stamp-stem it will return to its normal position by its own gravity, as and for the purposes set forth.

3. The oscillating ore-stamp feeder described, having its bottom formed on the arc of a circle, and having its pivot placed to the front side of the center of gravity, in combination with the stamp-stem, constructed and arranged, substantially as described and shown.

4. The combination, with an oscillating ore-stamp-feeder with its bottom formed on the arc of a circle and having its pivot placed to the front side of the center of gravity, of a stop for governing the extent of the forward motion of the feeder, substantially as described and shown.

167,627. TOOLS FOR SETTING TUBES IN ARTESIAN WELLS, Jacob B. Stollwerck, Frankfurth, Ill. (Filed Aug. 10, 1875.)



The bar A and rods C, forming a sign with a small lever rod, and the combination therewith of the yokes *d d*, levers *e e*, toggles *f f*, trip-rod *g*, and trip-line *h*, substantially as and for the purposes set forth.

167,627. SLEDGES, Joseph M. Story, Cincinnati, Ohio. (Filed Jan. 6, 1875.)

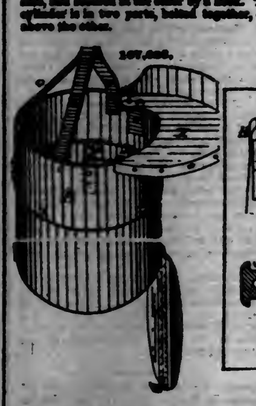


No. 167,677.

The combination of disk A E O O', wheel D d, swinging arms B F, cranks F F', rods G G', and hand-levers H H', as and for the purpose set forth.

167,680. BARB-ANVILS. J. P. SIMMONS, Tiffin, Ohio. [Filed Aug. 12, 1875.]

Brief.—A cylindrical basket having a movable runner and conveyer hinged at one end to its top, and adjustable at the other end by means of pin-holes on the runner, and a pole and line attached to the top of the cylinder. The basket has a flat bottom hinged at one side, and secured at the other by a hook. The cylinder is in two parts, bolted together, one above the other.



No. 167,680.

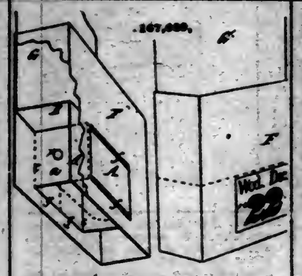
1. The movable bit, runner, and conveyer B, with any number of holes *a*, attached to the cylinder at one end by a pivot or hinge, *d*, and at the other end by a pin, *b*, and line F F', as herein set forth and described.

2. The movable flat bottom C, attached to the cylinder by a hinge on one side and a hook on the opposite side, as herein shown and described.

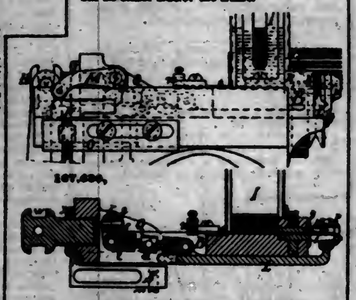
3. Two cylinders A and B, attached together by means of bolts, which can be used together or separately, in connection with the flat bottom C.

4. The combination of the movable bit, runner, and conveyer B, pivot *d*, pin *b*, two lugs F F', any number of holes *a*, cylinders A and B, movable flat bottom C, attached by a hinge and hook, with bottom G Q Q, substantially as herein set forth and specified.

167,682. CALENDARS. James F. Tapley, Springfield, Mass. [Filed Aug. 6, 1875.]



No. 167,680.

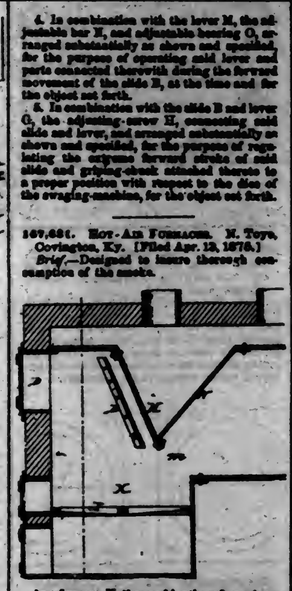


No. 167,682.

1. In an attachment for feeding wire-blanks to the dies of a nozzle-crowning machine, the plunger *a*, in combination with the slide B, lever I, spindle *g*, and griping-chuck *i*, arranged substantially as shown, for the purpose of forcing an intercepted blank from said hopper through said spindle into its proper position in said griping-chuck, and removing a crowned blank therefrom during the backward movement of said slide, substantially as and for the object set forth.

2. In combination with the griping-chuck *i*, the step *j*, and spring *k*, arranged between the jaws of said griping-chuck, substantially as shown, for the purpose of preventing the crowned blank from being thrust from its proper position in said griping-chuck into the spindle *g* during the crowning operation upon said blank, as specified.

3. In combination with the griping-chuck *i* and thimble *p*, the flatted bar L, bars *t* and *t'*, double adjusting-screw *u*, lever *v*, rock-shaft *q*, and levers M and Q, for the purpose of forcing said thimble upon the jaws of said chuck, or removing the same therefrom, substantially as shown and described, and for the object set forth.



No. 167,680.

4. In combination with the lever M, the adjustable bar N, and adjustable bearing O, arranged substantially as shown and specified, for the purpose of operating said lever and parts connected therewith during the forward movement of the slide B, as the time and for the object set forth.

5. In combination with the slide B and lever Q, the adjusting-screw H, connecting said slide and lever, and arranged substantially as shown and specified, for the purpose of regulating the extreme forward stroke of said slide and griping-chuck attached thereto to a proper position with respect to the dies of the swaging-machine, for the object set forth.

167,681. HOT-AIR FURNACES. N. Toye, Covington, Ky. [Filed Apr. 13, 1875.]

Brief.—Designed to insure thorough consumption of the smoke.

In a furnace, X, the combination of openings D *a*, plate L, wall H, and flitwork *n*, plate L being removed sufficiently for from wall H to allow the passage of air between them, as and for the purpose specified.

167,683. FARMERS' TOOLS. Michel Bolles, Prentiseville, Wis. [Filed Aug. 14, 1875.]

An improved groove-cutter, formed by the combination of the handles A B, the straight jaw C having a notch, *c*, formed in the inner edge of its forward end, the curved jaw D having an edge, *d*, formed upon its forward end, and the spring B with each other, substantially as herein shown and described.

167,690.



167,692.

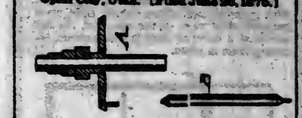


167,690. FASTENINGS FOR BOTTLE-STOPPERS. William H. Hale, Maywood, assignor to himself and Mathias Bodenmacher, Boston, Mass. [Filed Aug. 12, 1875.]

Brief.—The stopper-plate and bridge or guide form one piece. The device shows the usual loop, hole, and stopper. The cam-lever is fulcrumed on a cross-bar resting upon the upper eyes of the hole, and has a bifurcated handle. The stopper is fastened or released by depressing or raising said lever-handle when the former is in proper position.

The cam-lever *a*, pivoted to a swinging frame, A, suitably attached to the neck of the bottle, in combination with the looped guide *g*, extending over the lever, the cap *c*, with or without the groove *d*, and the stopper *f*, all constructed to operate substantially in the manner and for the purpose set forth.

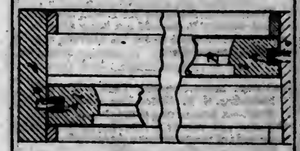
167,684. HOLLOW STAFFS FOR WAGONS. William A. Belcher and David J. Pierce, Ophir City, Utah. [Filed June 26, 1875.]



The hollow staff A, provided with the solid driven plug B, as and for the purpose specified.

167,685. WINDOW-SASH TIGHTENERS. Jos. Bowes, Boston, assignor to J. Wellman, Marblehead, Mass. [Filed Aug. 12, 1875.]

Brief.—The central studs draw the closed sash tightly against the parting bead, making a close joint against the admission of dust, and preventing noise.



The combination of studs *g* and sockets *h* with a sash and sash-frame, substantially as described, for the purpose specified.

167,686. LAND DRAINS AND COOLERS. Geo. Bogue, Jr., Cincinnati, Ohio. [Filed May 20, 1875.]

Brief.—From the rendering-tank lard is run into catch-basin, where impurities settle, thence along the devious passage, successively, over the steam-heater and water-cooler.

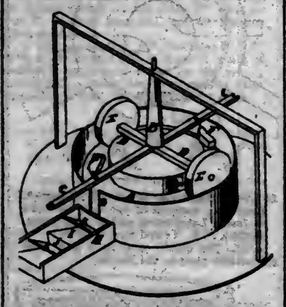
1. In a lard cooler and drier, the combination of a catch-basin and two or more chambers, having deflecting sides with openings at alternate ends, substantially as and for the purpose set forth.

167,687. COMPOSITIONS FOR PRESERVING BEES. Joseph K. Brown, Bonneville, Mo. [Filed Jan. 19, 1875.]

The compound of clams and lime, in equal proportions, dissolved in hot water, for the preservation of eggs, substantially as specified.

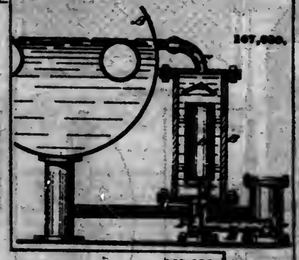
167,688. OIL GRINDERS AND AMALGAMATORS. Charles Boehm, Copperopolis, Cal. [Filed Mar. 10, 1875.]

Brief.—The ore is fed into a circular trough in which it is crushed by two heavy rollers. Between the rollers are two drags, for the purpose of stirring and completing the crushing of the mass of ore.



In combination with a circular trough, A, two revolving bars, C D, arranged at right angles and bearing a pair of drag-weights, F F, and a pair of crushing-wheels, H H, as specified.

167,689. FEED-WATER REGULATORS. C. M. Bridges, Leon, Iowa, assignor to himself and Orrel Babbitt, same place. [Filed Aug. 6, 1875.]



No. 167,689.



No. 167,689.

2. In a lard cooler and drier, the combination of a catch-basin, two or more chambers, having deflecting sides with openings at alternate ends, and one or more of heating or cooling chambers beneath said chambers, substantially as and for the purpose set forth.

3. In a lard cooler and drier, the combination of a catch-basin having an outlet-cock and chambers having deflecting sides and openings at alternate ends, substantially as and for the purpose set forth.

4. In a lard cooler and drier, the combination of a catch-basin having outlet-cock with chambers having deflecting sides and openings at alternate ends, and heating and cooling chambers, having outlet-cocks, substantially as arranged, and for the purpose set forth.

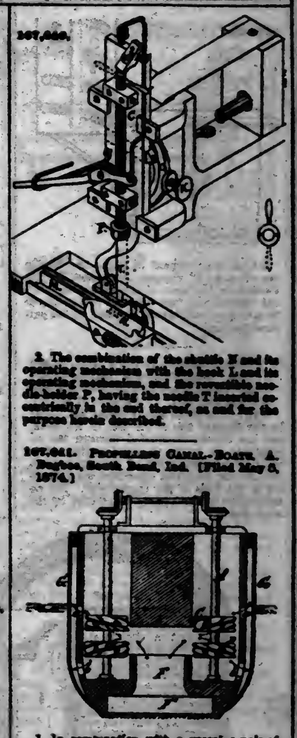
The feed-chamber B, feed D, passage E, and valve I, combined with the boiler and the pump, in the manner described, to open a circulating-passage through the boiler and feed-pump when the feed fails, and close it when the feed fails, substantially as specified.

167,690. STEAM-MANIFOLDS. S. H. Brown, Lowell, Mass. [Filed Jan. 6, 1875.]

Brief.—The needle is located eccentrically in the end of the needle-bar, which is adapted to be turned upward in bearings formed in a supporting-plate, so that the path of the said needle may be brought in juxtaposition with either the shields or keeper on a lock or chain-stitch is desired to be formed. A button on the supporting-plate locks the needle-bar in position after the same has been adjusted.

1. The reversible needle-holder F, having the needle T inserted eccentrically in the end thereof, in combination with the bottom S, as and for the purpose described.

167,692. PROPELLING CANAL-BOATS. A. Boyton, South Bend, Ind. [Filed May 6, 1874.]

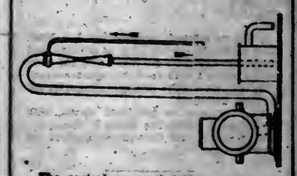


No. 167,692.

1. In combination with a vessel a pair of turbines, C and D, having their buckets arranged in reverse positions, induction-apertures a and b, and chamber-aperture F', substantially as and for the purpose set forth.

2. In combination with the elements enumerated in the first claim, the main G with oblique plates G', substantially as and for the purpose specified.

167,693. CONDENSERS. Henry W. Bulkley, New York, N. Y. [Filed Oct. 7, 1874.]



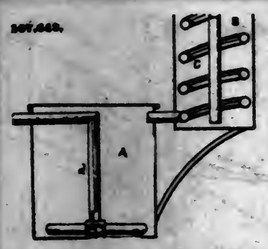
The conical or parabolical nozzles and straight connecting-tank, as described, in combination with a steadier water-opening, when the action is independent of any valve or valves, steam-jets, or streams of water under pressure, but is elevated solely by a descending column of discharge-water, sufficiently high to overcome the pressure of the atmosphere, the whole arranged substantially as described.

167,695. APPARATUS FOR MAKING VINEGAR. E. Burlingame, Centreville, R. I. [Filed Aug. 1, 1874.]

Brief.—The vessel that holds the wash is provided with a radiating perforated tube through which air is forced. Connected with the vessel is another vessel provided with a worm for returning any alcohol evaporated from the wash to the vessel containing it.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

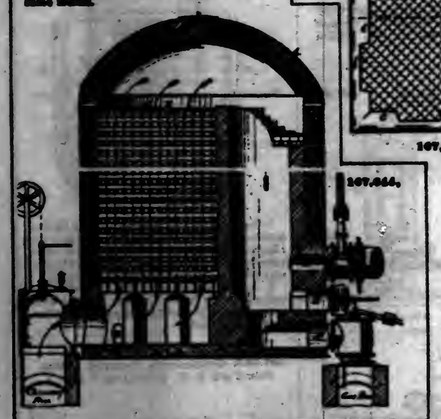
167,642.



As an improvement in apparatus for the manufacture of vinegar, the vessel B, provided with the worm C, in combination with the vessel A and tube *d*, having radiating perforated arms, substantially as and for the purpose specified.

167,643. REGENERATIVE HOT-BLAST STOVES. Chas. Cochrane, Grange, Shenbridge, and Edward Alfred Cowper, Westminster, England. [Filed Mar. 16, 1875.]

Brief.—The waste heating-gases, fire, enter by the circular flue at the side of the oven, and are equally distributed through the regenerator by means of a distributing-plate covering the entire top of the regenerator, and having recurved apertures surrounding to the flue of the regenerator. The returning air is also equally distributed by the same means.



1. The cylindrical regenerative hot-blast stove described, having a flue at one side, and inlets and outlets on the other side, and having the flue K with recurved apertures surrounding the regenerative passages, as and for the purposes described.

2. In regenerative hot-blast stoves, with checker-work filling, the plates K with apertures of smaller area than the passages of the checker-work.

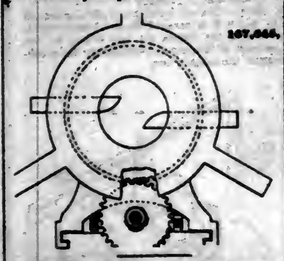
167,644. MACHINES FOR CUTTING ROLL-PAPER. Lewis P. Ochsie and Lemuel Frank, New York, N. Y. [Filed Feb. 10, 1875.]

Brief.—To movable ring-shaped changing standards are attached number revolving cutter-heads, having suitably-moving knives, which are automatically fed forward to the center and retracted.

1. A machine for cutting roll-paper into sections without unwinding, constructed of stationary and movable changing-standards with revolving cutter-heads and simultaneously-feeding cutting-knives, the whole being arranged and operated substantially in the manner and for the purposes set forth.

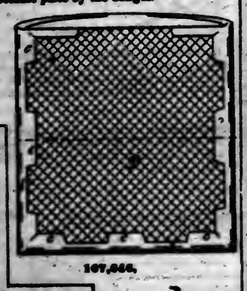
2. The combination, with the ring-shaped roll-changing standard, of a revolving cutter-head with one or more cutting-knives, feeding by suitable mechanism from the circumference of the head toward the center, and back again on reversing the motion of the cutter-head, substantially as specified.

167,645.



167,646. CARRIAGE-STEPS. R. A. Cowper, Lancaster, assignor of one-half his right to Josiah Leinbaugh and W. P. Darling, Buffalo, N. Y. [Filed Aug. 6, 1875.]

Brief.—The elastic covering is held upon the metallic plate by the flanges.

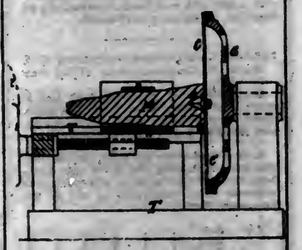


167,647.



167,648. MEAT-CUTTERS. Emil I. Degreat, Newburg, N. Y. [Filed Dec. 4, 1874.]

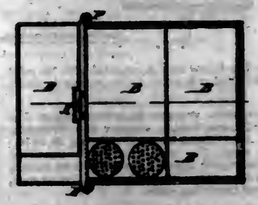
Brief.—A cone having sharp cutters presses the meat and crowds it laterally, so that the inner ends of the cutters can shave it off clean.



The rotary cutter-head G, knife C C', and cone A, substantially as and for the purpose specified.

167,649. DRAWER-RUNNER. James S. Davis, Monroe, Mich., assignor to himself and G. B. Hurd, same place. [Filed July 10, 1875.]

Brief.—The liquid-holding can is provided with grooved projections, which slide upon perpendicular ways on the case, and the can serves as a cover or door to the drawers, securing them in place.



The combination of the can D with the case A and drawer B, the said can being fitted to slide in the case and secure the drawers, substantially as specified.

167,650. MACHINES FOR BENDING WIRE FRAMES OF BOTTLE-STOPPERS. Charles de Quillfeldt, New York, N. Y. [Filed July 10, 1875.]

Brief.—The wire blanks are fed on a table inboard to a recess in the main frame, where they are acted by a vertically-sliding plunger that bends down to a concave bed-block, and hold thereon while horizontal side shafts slide in and revolve to form the eyes in the sides of the frame, whereupon side plungers above them shafts bend over its ends. On the retreat of these operating parts the completed frame is delivered by a pivoted, hook-shaped extractor, actuated by the vertical plunger.

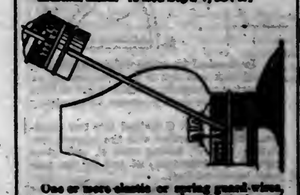
1. A machine for bending the wire frames of bottle-stopping devices, composed of a vertically-sliding plunger and bed-block, sliding and revolving eye-forming shafts, end-bending side plungers, and swinging extractor, all arranged to operate substantially in the manner and for the purposes set forth.

2. The combination of the recessed main frame and feed-hopper with the grooved descending main plunger for imparting the first bending to the wire blank, substantially as set forth.

3. The combination of the grooved plunger with the concave bed-block and the revolving spring-shafts, having central pins and raised cones, to receive inclined position of wire frame and formation of eyes at both sides, as set forth.

In the herein-described handle, the combination, with a shield, A, having an opening, *a*, made in the socket portion B, of the bow D, constructed with a leg, *b*, on its cross-bar, operating in the opening *a*, in the manner and for the purpose specified.

167,651. LANTERNS. Anthony M. Dubois, Adrian, Mich. [Filed Sept. 7, 1874.]



One or more sheets or spring guard-wires, having pivotal connection to the body and dome of a lantern, and in combination therewith, arranged and operating to shut of the newly-renewed air-supply by contraction of the guard-wires and movement of the dome, substantially as shown and described.

167,652. BOLT-CUTTERS. Daniel I. Degreat, Newburg, N. Y. [Filed Dec. 4, 1874.]

Brief.—A cone having sharp cutters presses the nut and crowds it laterally, so that the inner ends of the cutters can shave it off clean.

The rotary cutter-head G, knife C C', and cone A, substantially as and for the purpose specified.

167,653. MACHINES FOR BENDING WIRE FRAMES OF BOTTLE-STOPPERS. Charles de Quillfeldt, New York, N. Y. [Filed July 10, 1875.]

Brief.—The wire blanks are fed on a table inboard to a recess in the main frame, where they are acted by a vertically-sliding plunger that bends down to a concave bed-block, and hold thereon while horizontal side shafts slide in and revolve to form the eyes in the sides of the frame, whereupon side plungers above them shafts bend over its ends. On the retreat of these operating parts the completed frame is delivered by a pivoted, hook-shaped extractor, actuated by the vertical plunger.

1. A machine for bending the wire frames of bottle-stopping devices, composed of a vertically-sliding plunger and bed-block, sliding and revolving eye-forming shafts, end-bending side plungers, and swinging extractor, all arranged to operate substantially in the manner and for the purposes set forth.

2. The combination of the recessed main frame and feed-hopper with the grooved descending main plunger for imparting the first bending to the wire blank, substantially as set forth.

3. The combination of the grooved plunger with the concave bed-block and the revolving spring-shafts, having central pins and raised cones, to receive inclined position of wire frame and formation of eyes at both sides, as set forth.

167,654. CARRIAGE-SEAT SUPPORTS. Thomas Hall, Jr., Cleveland, Ohio. [Filed Feb. 10, 1875.]

Brief.—The seat-supporting springs are connected to the body-bolster by a bracket, and to the axle by a bracket, and the seat-supporting springs are connected to the brackets by a bolt, which passes through the ends of the springs and the brackets, and has a nut on each end.

1. The combination of the bracket C, the bracket D, and the seat-supporting springs A, substantially as and for the purpose specified.

2. The combination of the bracket C, the bracket D, the seat-supporting springs A, and the bolt *a*, substantially as and for the purpose specified.

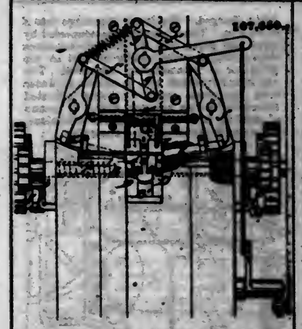
167,655. CARRIAGE-SEAT SUPPORTS. Thomas Hall, Jr., Cleveland, Ohio. [Filed Feb. 10, 1875.]

Brief.—The seat-supporting springs are connected to the body-bolster by a bracket, and to the axle by a bracket, and the seat-supporting springs are connected to the brackets by a bolt, which passes through the ends of the springs and the brackets, and has a nut on each end.

1. The combination of the bracket C, the bracket D, the seat-supporting springs A, and the bolt *a*, substantially as and for the purpose specified.

2. The combination of the bracket C, the bracket D, the seat-supporting springs A, and the bolt *a*, substantially as and for the purpose specified.

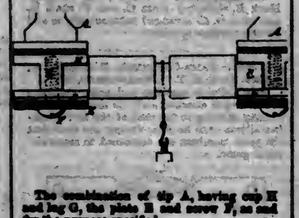
167,656.



4. The combination of main plunger, having recessed side shoulders, with the sliding side plungers to bend the ends of wire frames, as specified.

5. The combination, with the vertically-sliding plunger B, having notch *f*, of the pivoted, hook-shaped extractor F, having projection *i*, to operate as shown and described.

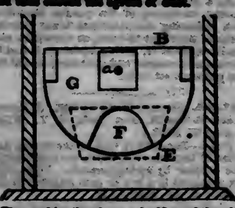
167,657. ROLLER-BEARINGS FOR STEERING-GEAR. Saml. Dyer, Natick, R. I. [Filed June 10, 1875.]



The combination of tip A, having cup E and leg G, the plate H and screw F, as and for the purposes specified.

167,658. AXLE-SKEINS. Alfred C. Perrin, Philadelphia, Pa. [Filed May 22, 1875.]

Brief.—The oscillation of the pivoted oscillating lever in its supporting-case intermittingly closes the oil-case-holding opening therefrom, and then checks the egress of dust.



The combination, in an axle-skein, of the pivoted oscillating lever E, supported opposite E upon H, pivoted arm G, and semi-circular D, constructed and arranged substantially as described.

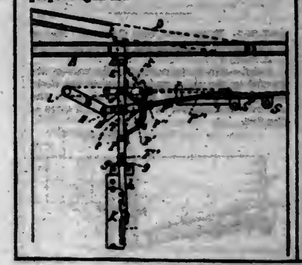
167,659. BURNERS. James Fleming, Chicago, Ill. [Filed June 4, 1875.]

Brief.—The valves are seated and operated by shaft moved by gear-wheels, as shown. The shaft has screw-bolt and collar connected in order to receive longitudinal motion. The movement of said collar opens and closes the exterior waste-valve.

1. In combination with valve F and seat F', located at the lower end of pipe D adjacent to the steam-cocks, the shaft G and screw-bolt K', the latter connected to the shaft, whereby a longitudinal movement is imparted to said shaft for opening and closing the valve by the rotation of the bolt, as specified.

2. In combination with valve F and seat F', located at the lower end of pipe D adjacent to the steam-cocks, the shaft G and screw-bolt K', the latter connected to the shaft, whereby a longitudinal movement is imparted to said shaft for opening and closing the valve by the rotation of the bolt, as specified.

3. In combination with valve F and seat F', having the valve-rod M', the shaft G and collar valve K, the latter located between valve F and the steam-cocks, as and for the purposes specified.

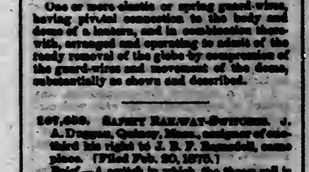


167,660. RETRACTILE CHAINSTAY. Cleveland F. Dandelake, New York, N. Y. [Filed July 10, 1874.]

A compression for making hydraulic cement, consisting of the artificial silicatures of lead, tin or other silicate of aluminium, and the oxyd or minerals known as Adler's earth, and designated by the analysis as herein mentioned, with the lime or the carbonate thereof, in the manner and for the purpose as herein set forth.

167,661. BOLT-CUTTERS. Daniel I. Degreat, Newburg, N. Y. [Filed Dec. 4, 1874.]

Brief.—A cone having sharp cutters presses the nut and crowds it laterally, so that the inner ends of the cutters can shave it off clean.



The rotary cutter-head G, knife C C', and cone A, substantially as and for the purpose specified.

167,662. MACHINES FOR BENDING WIRE FRAMES OF BOTTLE-STOPPERS. Charles de Quillfeldt, New York, N. Y. [Filed July 10, 1875.]

Brief.—The wire blanks are fed on a table inboard to a recess in the main frame, where they are acted by a vertically-sliding plunger that bends down to a concave bed-block, and hold thereon while horizontal side shafts slide in and revolve to form the eyes in the sides of the frame, whereupon side plungers above them shafts bend over its ends. On the retreat of these operating parts the completed frame is delivered by a pivoted, hook-shaped extractor, actuated by the vertical plunger.

1. A machine for bending the wire frames of bottle-stopping devices, composed of a vertically-sliding plunger and bed-block, sliding and revolving eye-forming shafts, end-bending side plungers, and swinging extractor, all arranged to operate substantially in the manner and for the purposes set forth.

2. The combination of the recessed main frame and feed-hopper with the grooved descending main plunger for imparting the first bending to the wire blank, substantially as set forth.

3. The combination of the grooved plunger with the concave bed-block and the revolving spring-shafts, having central pins and raised cones, to receive inclined position of wire frame and formation of eyes at both sides, as set forth.

167,663. BURNERS. James Fleming, Chicago, Ill. [Filed June 4, 1875.]

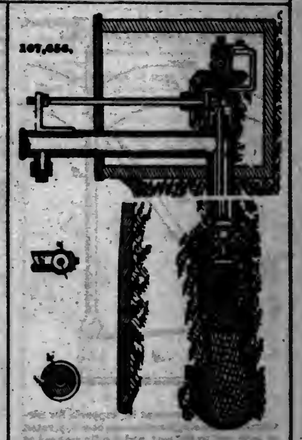
Brief.—The valves are seated and operated by shaft moved by gear-wheels, as shown. The shaft has screw-bolt and collar connected in order to receive longitudinal motion. The movement of said collar opens and closes the exterior waste-valve.

1. In combination with valve F and seat F', located at the lower end of pipe D adjacent to the steam-cocks, the shaft G and screw-bolt K', the latter connected to the shaft, whereby a longitudinal movement is imparted to said shaft for opening and closing the valve by the rotation of the bolt, as specified.

2. In combination with valve F and seat F', located at the lower end of pipe D adjacent to the steam-cocks, the shaft G and screw-bolt K', the latter connected to the shaft, whereby a longitudinal movement is imparted to said shaft for opening and closing the valve by the rotation of the bolt, as specified.

3. In combination with valve F and seat F', having the valve-rod M', the shaft G and collar valve K, the latter located between valve F and the steam-cocks, as and for the purposes specified.

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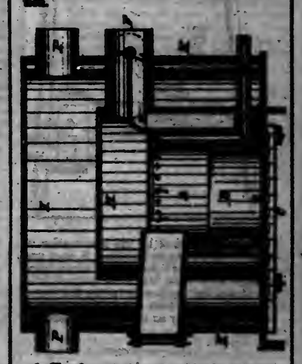


1. The fire-pot A, cast with the air-space jacket cavity around its upper and lower ends, and the water-passage opening into the fire-pot, and the vertical passage communicating with said top and bottom passages, in combination with the horizontal air-passage A communicating with the external air, as and for the object specified.

2. The combination, in a hot-air furnace, of the double casing K I, the base G, the fire-pot A, having upper and lower, and central and with the discharge-water partition D, the steel radiating-frame E, passing over the fire-pot and the heated pipe F, passing through the double casing and connecting with the frame, the upper one of which opens into the drum H, with the lower one in position and extends beneath the diagonal partition of the fire-pot, as and for the purpose described.

167,665. HOT-AIR FURNACES. H. D. Frost, Akron, Ohio. [Filed June 24, 1875.]

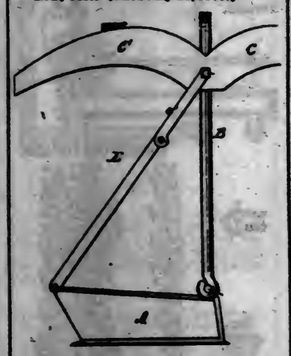
Brief.—Air is thoroughly heated in the passages in the walls of the fire-pot before it is supplied to the surface of the fire. The indirect draft passes around the diagonal partition.



1. The fire-pot A, cast with the air-space jacket cavity around its upper and lower ends, and the water-passage opening into the fire-pot, and the vertical passage communicating with said top and bottom passages, in combination with the horizontal air-passage A communicating with the external air, as and for the object specified.

2. The combination, in a hot-air furnace, of the double casing K I, the base G, the fire-pot A, having upper and lower, and central and with the discharge-water partition D, the steel radiating-frame E, passing over the fire-pot and the heated pipe F, passing through the double casing and connecting with the frame, the upper one of which opens into the drum H, with the lower one in position and extends beneath the diagonal partition of the fire-pot, as and for the purpose described.

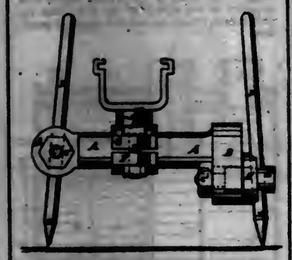
167,669. GARMENT-TOPS. A. W. Gilbert, Lodi, Ohio. [Filed July 20, 1875.]



1. As an improvement in supports for carriage-tops, the single continuous bow B, pivoted at each end to the seat, and rigidly secured at the top on each side to the central portion of the sides of the right canopy-frame C C', in combination with single-jointed bows B, pivoted to the frame C at the junction of the frame and bow, and to the rear of the seat, as and for the purposes described.

2. In combination with the single continuous pivoted support or bow B and single-hinged bows E, the right canopy-frame composed of double arched or curved sides C, made in one piece, and cross-bars C', rigidly secured at its central portion to the bow B, as and for the purposes described.

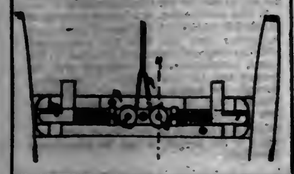
167,670. TRIMMER FOR RAKE-TEETH. Jos. G. Gilchrist, New York, N. Y. [Filed June 29, 1875.]



The tripod, formed by the combination of the shaft A, having a cross-head, B, upon one end, the three bolts C, having transverse holes through their ends, the three pointed sold legs D, and the washers E, having half-round notches formed in their outer sides with such notches, substantially as herein shown and described.

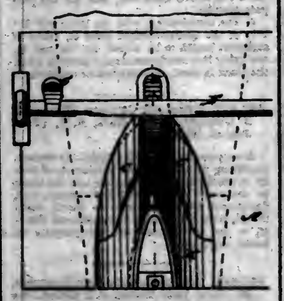
167,671. HORSE-DISCHARGING APPARATUS. Johnson W. Glover, Mount Sterling, Ky., assignor to himself and Wm. B. Kinkead, same place. [Filed July 17, 1875.]

Brief.—A weight attached to the cord withdraws the spring-bolts, thus disunking the animal upon the overturning of the vehicle.



The spring-catch bolts A, cord D, pulleys C, and weight E combined and arranged with the whiffletree of a carriage, for automatically detaching the traces when the carriage turns over, substantially as specified.

167,672. CHEESE-MACHINES. Thomas J. Greenwood, Warren, Ill. [Filed July 10, 1875.]



The combination of bed-piece A, crimping-block B, clamping-plate C, cam F, shaft E, and lever G, all arranged substantially as and for the purpose specified.

167,673. GRAIN-COCKTRIER. C. B. Hackley, New York, N. Y. [Filed June 10, 1875.]

Brief.—Point numbers and score numbers are arranged concentrically on the same disk. A long opening in the path of the score number allows it to be seen during the time that the point numbers are advanced to score another game.



As a new article of manufacture, a gauge-marker, consisting of the circular revolving disk C, having the outer and inner threaded series of numerals thereon, as described, and the front plate E, having openings F and G therein, all arranged and operating as and for the purpose set forth.

167,674. POCKET-BOOK LOCKS. J. Hazen and S. Beebe, New York, N. Y. [Filed Aug. 28, 1875.]

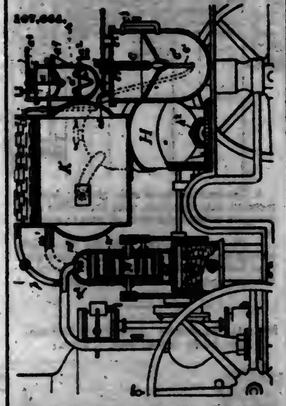
Brief.—The loop or bolt of the closing-flap is formed between rolls, which are held against one another by spring-pressure. These rolls are arranged in a box or case attached to the outside of the pocket-book.



The combination, with the loop G of a pocket-book, of a series of sliding wires, E, and one or more springs, C, arranged and operating substantially in the manner described.

167,675. FIRE-EXTINGUISHERS. Henry C. Hart and Hermanius H. St. J. Ellis-Lee, Adrian, Mich. [Filed Dec. 28, 1874.]

Brief.—The cold-tank, which supplies the main generator, is divided into two chambers, one of which, that one may be filled while the other is operating. Pressure is brought upon the surface of the cold from an auxiliary generator, which forces it into the main generator. Two of the latter are used, that one may be at work while the other is being charged. The latter discharges into a gasometer. These parts are so connected by pipes and cocks that the pressure operates throughout, and the supply of acid to the generator is automatically controlled. The gas is incorporated with a stream of water from the steam-pump by being admitted therewith into an ejector, where, by means of jackets receiving in opposite directions, the water is rendered into a fine spray.



1. In chemical fire-extinguishers, containing an acid-tank and one or more generators, an automatic pressure for generating gas to force the acid into the main generator, substantially as herein set forth.

2. The acid-tank C divided into two chambers, *c c'*, and provided with the valve *d'*, connecting-pipe *f'* having cock *d'*, and glass pipes *e' f'*, substantially as and for the purposes herein set forth.

3. The generator A, having chamber *a* for the acid, and chamber *a'* for the carbonate, in combination with the acid-tank C and the gas-pipes H and *l*, the acid-tank being connected with the generators H and I by the pipes F and G, substantially as and for the purposes set forth.

4. In a chemical fire-extinguisher, the method of impregnating the water with carbonic-acid gas, by exerting the water to a fine spray, and, while in that condition, allowing it to come in contact with the gas under pressure, substantially as herein set forth.

5. The agitator B, provided with paddles revolving in opposite directions, in combination with an apparatus for supplying gas thereto, and with a water-supply, substantially as and for the purpose set forth.

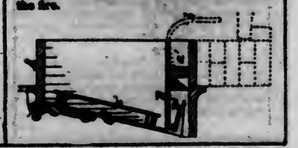
6. The combination of the generator A and acid-tank C with the pressure-H and I as an angle of about forty-five degrees, and the gasometer K, with their respective connections, substantially as described.

7. A fire-extinguisher provided with an agitator having means for the admission of water and gas separately preparatory to charging the water with the gas, substantially as described.

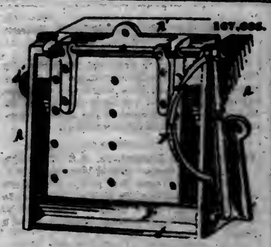
8. The combination of a steam-pump, a gas-generating apparatus, and an agitator, all connected to a suitable frame-work, and mounted on a truck, substantially as herein set forth.

167,676. PORTABLE-DOOR GUARDS. Henry T. Hayden, Washington, D. C. [Filed Sept. 2, 1875.]

Brief.—Air-ducts, controlled by valves, are formed in the sides and bottom of the door-casing, for admitting currents of air to the combustion-chamber at the front and sides of the fire.



167,676.



1. The vertical air-ducts *a* at the sides of the furnace-door, and between the double walls or side plates of the casing, in combination with a valve or valves for controlling the admission of the currents of air, substantially as described.

2. The lower horizontal air-duct *a'*, underneath the door and coal-chute, and between said chute and the casing-door A', in combination with a valve, D', controlling the admission of air to the front of the fire, as described.

3. The combination of the vertical ducts *a* and horizontal duct *a'*, and the valves for controlling the admission of air through the same, with a furnace-door, substantially as and for the purpose set forth.

167,677. SHOULDERS. Edwin W. Higbee, Northampton, Mass. [Filed Apr. 10, 1875.]

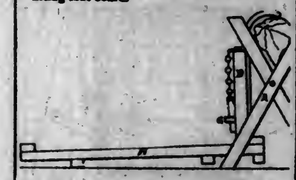
Brief.—A short and long blade are combined, with a collar upon one of them, which fits closely upon the valve, and not only acts as a stop, but also prevents the hair and soft parts from obstructing the view.



In a bivalve-speculum, the combination of of the short blade B, contracted at *b* and expanded at *b'*, so as to serve both as a stop and guard, and a long blade, A, to which the former is hinged, substantially as and for the purpose set forth.

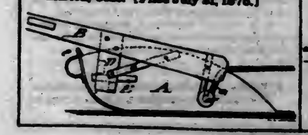
167,678. WOOD-HOLDERS FOR SAW-BUCKS. Sanders Hollingsworth, Pike Township, Marion County, Ind. [Filed Mar. 11, 1875.]

Brief.—The wood is firmly held in the beak while being sawed by means of a metal hook adjustable in an upright post attached to a sliding foot-board.



In combination, with the foot-board H, the upright post D, and adjustable hook C, constructed as described, and used in connection with a saw-buck, substantially as specified.

167,679. ROAD-SCRAPERS. Edwd. Huber, Marion, Ohio. [Filed July 27, 1875.]

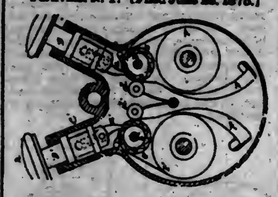


In combination with the body A of the scraper, having the horizontal side rim B, the spring-catches D, having the legs *d d* arranged as specified, and the bail C, having looped end, and handles B B attached thereto above the pivots *c'*, all as shown and described, to operate as specified.

167,680. COMPOUNDS FOR SOAP. Gustavus L. S. Junker, Cincinnati, Ohio. [Filed Aug. 28, 1875.]

The improved compound for soap, consisting of water, sal soda, carbonate of ammonia, borax, salts of tartar, common salt, and hard-coarse soap, combined substantially in the proportions and as herein before specified.

167,681. FARE-REGISTERS. A. P. Johnson, Parkville, N. Y. [Filed June 28, 1875.]



1. The combination, in a fare-registering device, of an imprinting-roller, *c*, presser-roller *d*, and plunger D, the said several parts being constructed and operated substantially as described, and arranged to record each fare received upon a continuous strip of paper, F, as set forth.

2. In a fare-registering apparatus provided with an imprinting-roller, *c*, and a bell, H, the plunger D, having a projection, *f*, formed on one side, and a pawl, *e*, pivoted thereto on the opposite side thereof, and arranged substantially as set forth, to strike the bell, and record the fare by one and the same stroke of the said plunger.

167,682. RAILWAY FROG-POINTS. James Johnson, Harrogate, England, assignor to Joseph Wood, Red Bank, N. J., and Edwin H. Bennett, New York, N. Y. [Filed Jan. 28, 1876.]

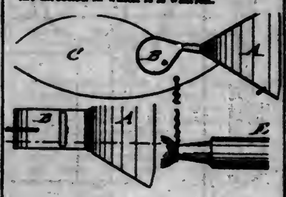
Brief.—An improved mode of making the angular junction in that class of frog-points which are made from railway-rails. Instead of cutting away a portion of both rails, as usual, the intersecting rail alone is cut, and is fixed to the web and head of the main rail, leaving it of full proportions and strength, without vacant spaces between the webs.



A railway-crossing or frog-point, formed or grooved or tapered rails A and C, secured together by means of plates *d e* and bolts *f f*, substantially as shown and described.

167,683. TOY WHISTLES. Henry B. King, Paterson, N. J. [Filed July 17, 1875.]

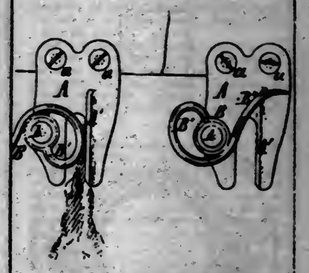
Brief.—To the whistle, having a flaring mouth to collect air, is attached a vane for keeping the funnel always to the wind, or in the direction in which it is whirled.



1. The toy whistle herein described, having the flaring or funnel-shaped mouth A and the vane C, all arranged as and for the purpose described.

2. The whistle or reed E, flaring mouth A, vane C, cord or wire D, and handle B, substantially as described.

167,684. CLOTHES-CLAMPS. G. W. Knibb, New York, N. Y. [Filed July 20, 1875.]

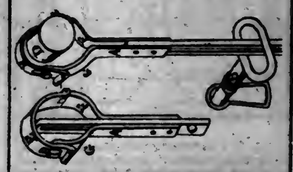


1. The clamping-piece B, turning on the axis *b*, in combination with the fixed part A, having the inclined projection A', as described, whereby the holder is adapted to hold the clothing by friction, and likewise it entirely on its being pulled downward, substantially as herein specified.

2. The projection A', having the inclined portion, as described, in combination with the turning part B, and adapted to arrest and avoid the rebound of the arm or lever B', as and for the purposes herein specified.

167,685. KEY-FASTENERS. James Knight, Denver, Colo. [Filed July 3, 1875.]

Brief.—A detachable key-fastener is formed with two bent arms, having a hinged top, opening out, and clasping over the shank of the door-knob. A slotted or extensible arm slides between the bent arms, and its entrance end, passing down through the loop of the door-key, holds the key in place, and prevents tampering with it, the construction being such that the slotted arm gives ready adjustability, or, when slid entirely in, makes the device compact and portable.



1. In a key-fastener, the slotted arm C, sliding between the bent arms F and G, substantially as described and shown.

2. The bent arms F and G, hinged and shaped to the top E, substantially as set forth and shown.

3. The combination of the slotted arm C, with the bent arms F and G, and the hinged top E, substantially as shown and described.

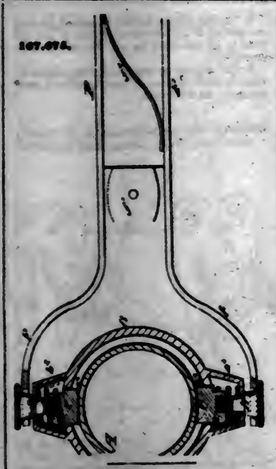
167,686. HOSE AND PIPE COUPLINGS. Henry G. Koehler, Cleveland, Ohio. [Filed Aug. 14, 1875.]

Brief.—When one section is inserted in the other, the spring-catch engages with the corresponding groove, thus uniting the parts. Uncoupling takes place by releasing the catches with the thumb or tongs shown.

1. The combination of the part A, made with the external shoulder *a'* and the ring-groove *a''*, the part B, made with the internal shoulder *b'* and the hollow projections *b''*, the beveled catches C, the screws D, and the springs E with each other, substantially as herein shown and described.

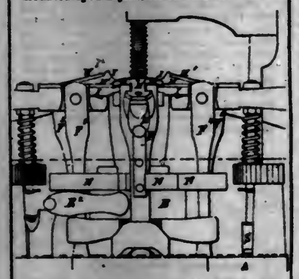
2. The combination of the tongs F *f' f''* with the screws D of the coupling A B C D E, substantially as herein shown and described.

167,076.



167,076. MACHINERY FOR LASTING BOOTS AND SHOES. Richard C. Lambert, Quincy, assignor of one-half his right to Henry H. Townsend, Boston, Mass. (Filed Feb. 6, 1875.)

Brief.—The last, with the upper drawn upon it, when mounted upon a standard in the machine is surrounded by an elastic ring or band, which presses against the lower edge of the upper, folding it over upon the insole in position to be secured by any suitable fastening. The ring or band is held by clamps mounted upon adjustable standards.



1. In a machine for lasting boots and shoes, an endless band or ring of rubber or other suitable elastic material entirely surrounding the last at or near its tread-surface, with its inner edge pressing against the upper upon the last and adapted to be mechanically raised and lowered along the sides thereof, and to press the upper over upon the inner sole, all substantially as and for the purpose described.

2. The elastic band or ring I, in combination with the pivoted levers H H, secured thereto by the clamp-plates H', substantially as described.

3. In combination with the endless band or ring of rubber I and the vibrating levers H H carried thereby, a series of standards pivoted at one end to a suitable support, and at their upper ends to the levers H H, substantially as described.

4. The disks E and F, one or both, having attached thereto one or more toggle-bars, F, in combination with one or more pivoted standards, carrying at their upper ends the levers H H, and the elastic band or ring I secured thereto, substantially as described.

5. The disks E and F, mounted upon adjustable bearings and connected together by suitable gearing to compel their operation in unison, in combination with the elastic band I, levers H H, standards F, F', F², F³, F⁴, and F⁵, one or more, and one or more toggle-links, E, all arranged to operate as and for the purposes specified.

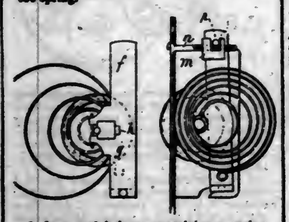
6. The standards F, F', F², F³, F⁴, and F⁵, one or more, pivoted to adjustable supports, in combination with the elastic ring or band I and levers H, all substantially as and for the purposes described.

7. In combination with the elastic band I, levers H H, and standards F, F', F², F³, F⁴, and F⁵, one or more, the springs L L, arranged to force the movable ends of the standards, the levers H, and band I, toward the last or shoe, substantially as described.

8. In combination with the band I, and levers H, springs J J, arranged to act upon the levers H, substantially as described, for the purpose specified.

167,077. SASH-BALANCE. Wm. J. Lewis, Denver, Colo. (Filed Aug. 4, 1875.)

Brief.—A metal casing is fitted with an inner detachable frame carrying a steel ribbon-spring, the strain of which tends to rotate a rubber-faced roll, and thus raise or support the sash. The axle of the pulley has its bearings in journal-boxes, which are arranged to slide in slots or openings cut in the frame-work, and rest against an elastic pad introduced into their openings. Legs upon the inner frame rest in curvilinear slots of the outer case, and suitable nuts and screws adjust the tension of the spring.



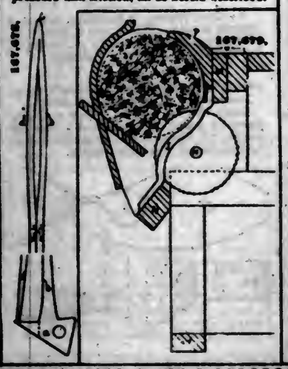
1. In a sash-balance containing a spring, the strain of which tends to turn the roll and to raise or support the sash, the combination of the casing *a*, provided with curvilinear openings *d*, the frame *f*, the nut *m*, and the screw *n*, all constructed as described, and co-acting as described.

2. In a sash-balance containing a spring, the strain of which tends to turn a roll, and raise the sash, the pulley *o*, the periphery of which is covered with rubber, in combination with the journal-box *g* and elastic pad *h*, as and for the purposes described.

167,078. LOCK-SHUTTLE SPINDLES. Thos. H. Logan and Jas. B. Thompson, Lowell, Mass. (Filed June 17, 1875.)

A split shuttle-spindle, constructed as described, with a head, *c*, slotted vertically in its under side, a vertically-expanding friction-bow, *b' b'*, near the tip *c*, a fulcrum, *b² b²*, near the center, and a frictional tensioned rear bottom spring-lever, *d*, entering the slot *g* and operating to retain the rear end of the cop and the yarn, and, by its fulcrum and leverage alone, to expand the bow and increase its outward pressure and friction, all as herein described.

167,078.



167,079.

167,079. COTTON-GIN. Orrin W. Mooney, Macon, Ga. (Filed June 28, 1875.)

The front board Q with interior curve, the rib-board P with interior curve, and the curved upper portion of the ribs J, combined and forming the major part of a circle in the roll-box, so that the cotton is ginned by the saws in a circular roll, substantially as set forth.

167,080. SOFA-BEDSTEAD. R. S. McMaster, Burlington, Iowa. (Filed Mar. 22, 1875.)

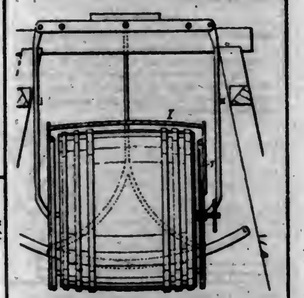
Brief.—The hinged foot of the lounge are arranged and adjusted in such a manner as to give the lounge a low position when used as a lounge, and high position when used as a bed.



The combination, with a lounge, of the hinged folding foot A, substantially in the manner and for the purpose set forth.

167,081. DEVICES FOR PITCHING BARRELS. Gustavus Meyer, Quincy, Ill., assignor of one-half his right to Julius Franke, same place. (Filed Apr. 7, 1875.)

Brief.—A frame, supporting a shaft, which serves as an axle for a double walking-beam, provided with hangers pivoted to the end of the arms of the walking-beam. At the lower end of the hangers there is a cage for casks, &c., for the purpose of turning the casks from a horizontal to a vertical position. One of its ends is constructed to revolve the cask when in vertical position.



1. The frame A, having the shaft B, which serves as an axis for the double walking-beam E, provided with the pivoted hangers H, in combination with the receiver I, substantially as and for the purpose shown and described.

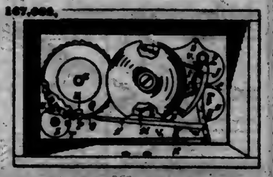
2. The receiver I, provided with the turn-table or receiving end J, substantially as and for the purpose shown and described.

3. A cage or receiver, I, supported in pivoted hangers H, substantially as and for the purpose shown and described.

167,082. PANS-REGISTERS. William Miller, Boston, Mass., assignor to Chas. A. Shaw, same place. (Filed Mar. 18, 1876.)

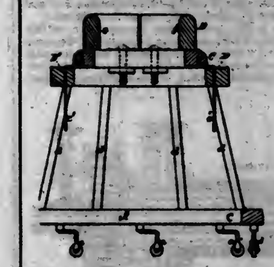
RELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

167,083.



In a fare-register, provided with an alarm mechanism arranged to operate substantially as set forth, the numbered pinion-wheel O, provided with the pin Y, the wheel W, provided with the pins X, the numbered plate U, notched plates S Q, pawl E, and V, and lever G, combined to operate substantially as and for the purposes specified.

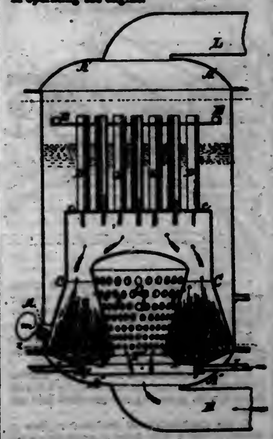
167,084. BABY-WALKERS. Miranda B. Mathewson and Nathan M. Tripp, South Wareham, Mass. (Filed June 10, 1875.)



The improved child's walking-stand, as described, consisting of the cage A, the ring C, the semi-rings *g g*, the latch-arms or racks *e' e'*, the pinion D' D', and wedges E E, arranged and applied as specified.

167,085. DURHAM HYDROCARBONS. John W. Nystrom, Philadelphia, Pa. (Filed July 29, 1875.)

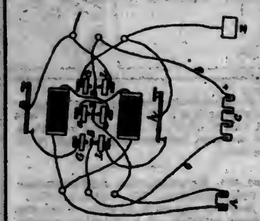
Brief.—By means of a blast combustion is supported, and the products thereof forced into the steam-space, to be used with the steam in operating the engine.



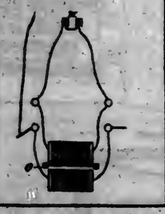
The hereinbefore described apparatus, in which the water casing or cylinder A, combustion-chamber C, tubes D and D, oil-reservoir F *f*, and pipes H, I, K, and L, are combined to operate in the manner and for the purpose substantially as specified.

167,086. ELECTRO-MAGNETIC TELEGRAPH. Jos. Channel, Providence, R. I., assignor of one-half his right to Chas. G. McKnight and Geo. Chesterton, same place. (Filed May 15, 1875.)

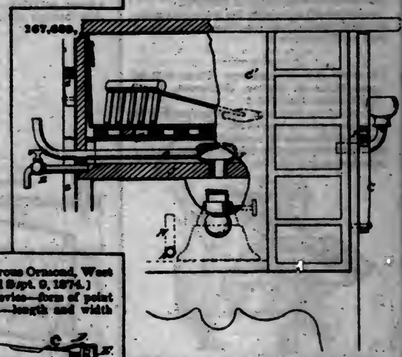
The combination, with a telegraph line, of a commutator, charging the line with alternating currents, a pair or series of pairs of keys, and a pair or series of pairs of relays, one of the keys of a pair acting to cut off from the line the + currents only, the other to cut off the − currents, and one relay of each pair being arranged so as to vibrate by the passage therethrough of + currents, and the other by the − currents, and both relays arranged to give a signal or close a local circuit upon the cutting off from the line of the currents affecting it, substantially as and for the purposes described.



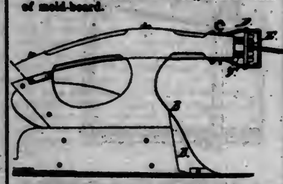
167,087.



167,088.



167,086.



1. The clevis D, having slots *d* on its upper and lower arms, and the sliding bar E held against the notches of the clevis by the springs F, substantially as shown and described.

2. The point-share B and colter B' made in one piece, the colter standing nearly vertical and ending in a short, small point, the rear of the colter being deeply grooved to fit upon a lug or projection, *b*, upon the front edge of the plow-frame, all constructed substantially as shown and described.

167,087. GRATING FOR FURNACE-DOORS. R. Fletcher, Brooklyn, N. Y. (Filed July 10, 1875.)

1. The combination, with a shaker, B, cast in a single piece, of an end-looped wire, A *a'*, having the concealed swivel in each end, all constructed and arranged substantially as and for the purposes described.

2. As a new article of manufacture, consisting of shaker B, concealed swivel-wire A *a'*, and rigidly-fixed hook C, substantially as shown and described.

167,088.



167,088. MARINE SODA-WATER FOUNTAIN. A. D. Puffer, Boston, Mass. (Filed May 24, 1875.)

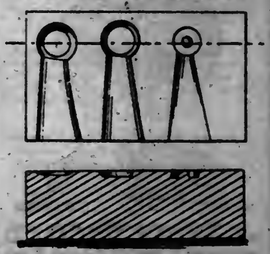
Brief.—Longitudinal grooves are formed in the inner shell or lining opposite the seams in the outer shell, to insulate and prevent the lining from the heat produced in soldering or brazing the seams. Internal pressure is applied to restore the lining to its cylindrical form.

The herein-described manufacture of soda-fountains, consisting, first, in reducing the diameter or exterior bulk of the inner vessel to obtain an air-space; second, in soldering or brazing the seams of the outer vessel or shell; and, thirdly, in restoring the inner vessel, by suitable internal pressure, to its primitive form, essentially as and for the purposes stated.

167,089. STEAMING-TABLES. Ambel J. Randall, Belvidere Seminary, N. J. (Filed July 17, 1875.)

In combination with a table, the case C, containing the steam-chamber I, having water-admission pipe Q, discharge-faucet R, lamp or gas-pipe F, and discharge-pipe O, for the purposes described.

167,090. PROCESSES FOR FORMING THE ENDS OF CARRIAGE-SLAT BOWS. Chas. Burton, Meriden, Conn. (Filed July 24, 1875.)

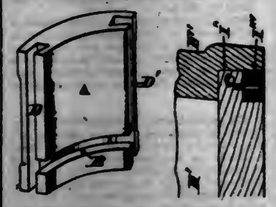


The method herein described of shaping the ends of carriage-slat bows, &c., consisting in passing them through a series of dies with tapering edges, of gradually-increasing inclination and of decreasing width and increasing depth, substantially as and for the purpose set forth.

RELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

167,691. COFFIN. James Bisbey and L. H. McDougall, Cincinnati, Ohio. [Filed Aug. 23, 1875.]

Brief.—The coffin is composed of wooden sides and bottom, inserted in metallic corner-pieces. Those of the corner-pieces have vertical dovetail grooves at each edge, and a groove along the bottom, to receive the edges of the wooden plate. The fourth metallic corner has a mitred in place of the bottom, grooved so that it may be driven into place after the rest of the coffin is set up. A plug of wood closes up the opening left at the bottom of the mitred by the tongued end of the board.



1. The coffin-body, consisting of the metallic corner-pieces A A' A'' A''', each having the dovetail grooves D D' in its vertical edges for the end and side boards F F' H H', said side-board and one end-board having the horizontal grooves B I F F', and the other end-board the rabbet I'', for the tongued edges of the bottom-board, substantially as set forth.

2. In combination with the composite coffin or burial-case body, as described, the described plug or filling-piece J.

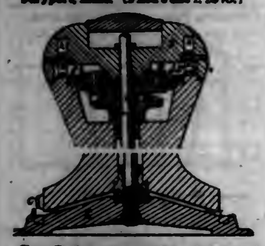
167,692. ROTARY ENGINE. Chas. F. Rose and Elias G. Barber, Whitewood, Iowa. [Filed Mar. 29, 1875.]

Brief.—The abutment valve is operated by a grooved cam on the shaft. To reverse the operation of said valve, the connecting-rod is moved to the opposite side in a slotted plate attached to the valve-rod.



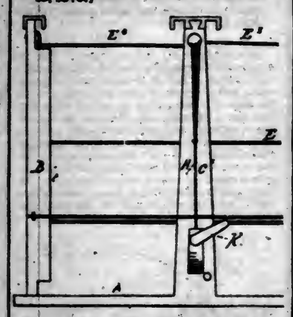
The cam-grooved disk *n* on the axle of the cylinder B, in combination with the jointed pitman *r s*, reversible crank *n*, and duplex oscillating valve *k*, substantially as and for the purposes shown and described.

167,693. CAPSTAN. Albert Russell, Newburyport, Mass. [Filed June 1, 1875.]



For effecting rotary motions of the barrel, as described, the combination applied to the capstan-head F, barrel A, and shaft B, and consisting of the gear *f* and one or more pawls, *c*, applied to the head, the wheel G, its gear or gears *e*, and one or more pawls, *g*, the stationary ratchet-wheel H, fixed to the shaft B, and the internal gear *f* and the range of ratchet-teeth *h* applied to the barrel, all being arranged substantially as specified.

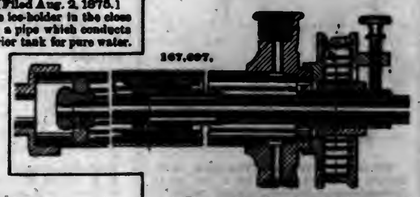
167,694. CLOTHES-DRIER. Conrad Schiffarty, North Manchester, Ind. [Filed July 15, 1875.]



A clothes-drier, consisting of the base-piece A, standards B B' C', guides *c*, sliding bars D, lines E, E', F, F', and H, and windlass K, all combined and operating together as described.

167,695. REFRIGERATOR. John Schmaltzer, Cincinnati, Ohio. [Filed Aug. 2, 1875.]

Brief.—A removable ice-holder in the close ice-box, provided with a pipe which conducts drip through the inferior tank for pure water.



1. In combination with an ice-chamber, G, having a clear-water tank, I, at the bottom of the same, and implanted therein, the removable receptacle F *n*, and the waste-pipe P, whereby the contents of said receptacle are prevented commingling either with those of said tank or with the interior of the refrigerator.

2. The pipe Q, communicating with the upper portion of the refrigerator A, and provided with the automatic vent or relief valve S and condensing-guard R, for the purpose designated.

167,696. EGG-BEATERS. Friedrich H. Schwenger, Cleveland, Ohio, assignor of one-half his right to O. B. Johnson, same place. [Filed Mar. 15, 1875.]

1. The egg beater or agitator, consisting of receptacle A, provided with cover E, hollow central dash C, and suitable handle or shaft D, whereby the said dash is operated, substantially as and for the purposes described.

2. In an egg-beater, the combination of cover E and perforated central dash C, substantially as and for the purposes described.

167,697.



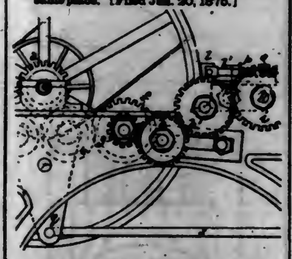
1. In combination, with the drop-tube and the main stem of the gearing, of a spring to turn the drop-tube and the friction-brake, and the cam which operates the same, said friction-brakes being connected with a loose collar, substantially as and for the purpose specified.

2. The combination, with the drop-tube O and tube A', of the friction-brakes I I and cam K, substantially as herein specified.

3. The combination, in a gearing, of friction-brakes and a cam for operating the same, and a spring for turning the drop-tube, said spring operating independently of the friction-brakes and the cam, substantially as described.

4. The combination of a double cam and the friction-brakes with the drop-light tube O and its spring, substantially as described, whereby, when the drop-light tube O is turned in one direction by the spring, the brakes will bear upon the inner surface of the tube A, as set forth.

167,698. LEATHER-FINISHING MACHINERY. Edward Sotile, Brooklyn, N. Y., assignor of one-half his right to Benjamin Sherill, same place. [Filed Jan. 20, 1875.]



1. In combination, the driving-shaft *a*, cog-wheels *d e f g h i k l*, screw *k*, and mortar *l*, arranged to operate substantially as and for the purposes described and set forth.

2. The mortar *l*, with its shaft *F*, blocks *m* and *n*, spring *o*, and regulating-nut *p*, in combination, as and for the purposes set forth.

3. The combination of drum *b* and mortar *l* with the cog-wheels *d*, *e*, and *e' f g h i*, and screw *k*, with guides *f j*, as described and set forth.

4. The combination of the shaft *r*, plate *s*, wheels *r* and *s*, with lever *z*, arranged to operate in manner and for the purposes described and set forth.

5. The combination of lever *z*, rocking plate *y*, wheels *r* and *s*, cog-wheel *d* on driving-shaft *a*, wheels *f g h i k l*, and screw *k*, when arranged to operate substantially as described and set forth.

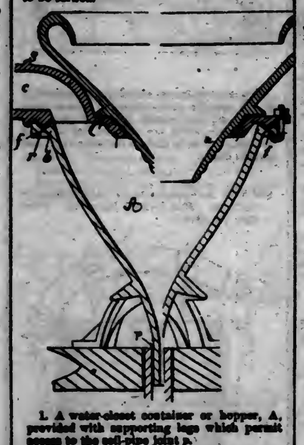
167,699. SHINGLING-BRACKETS. Wm. H. Seymour, Gloversville, N. Y. [Filed Aug. 28, 1875.]



The bottom plate *a*, having back of the jaw the hole *b* of the form described, with the cams or sockets *c c* thereto, and the lever *e*, having back of the jaw the shoulders *e e* on its sides, and the spur *f* on top, constructed to operate as described and shown, in combination with the brace *b* and bar *h*, substantially as and for the purpose set forth.

167,700. WATER-CLOSETS. R. D. O. Smith, Washington, D. C. [Filed Aug. 10, 1875.]

Brief.—The lower part of the hopper has the supporting-legs shown, so that the joint between the former and the soil-pipe is exposed to view. The upper portion of the hopper has the circumferential groove seen, and into this fits the rib of the cover, making a tight joint, and allowing the bowl and cover to be turned.



1. A water-closet container or hopper, A, provided with supporting legs which permit access to the soil-pipe joint *p*.

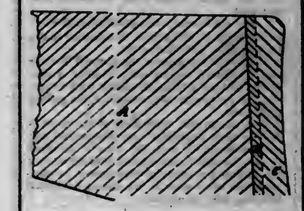
2. A water-closet container, A, combined with a circular adjustable cover, C, provided with a circular rib, *r*, adapted to fit in said groove, and compress the putty or other calking matter, to insure a tight joint, as and for the purpose set forth.

3. A water-closet container, A, constructed with a circular groove, *b*, in its upper edge, combined with a cover, C, provided with a circular rib, *r*, adapted to fit in said groove, and compress the putty or other calking matter, to insure a tight joint, as and for the purpose set forth.

4. A water-closet container, A, constructed with a circular top, and provided with an overhanging flange, *q'*, combined with a cover, C, and hook-bolts *d*, which engage under said flange, and permit an adjustment of and rigid attachment of said cover.

5. A water-closet container and cover, C, provided with an opening for the admission of the neck *n* of the receiver or bowl, combined with a conical flange depending from the edge of said opening, for the purpose set forth.

167,701. BLASTS BUTT-PLATES FOR FIRE-ARMS. Hugh Adams Silver, Cornhill, London, England. [Filed Dec. 18, 1874.]



As a new article of manufacture, a recoil cushion or pad for fire-arms, constructed of a base-plate, B, of hard rubber combined with a cushion, C, of soft rubber, the two being secured together to form one body of varying degrees of hardness, substantially as set forth.

167,702. WHEEL-HARROWS. J. S. Sutrby, Greencastle, Pa. [Filed July 8, 1875.]

Brief.—The harrow is made in four sections, all hinged together, the two outer ones by long hinges, and placed outside the wheels. Levers are so situated that the outside harrows can be turned up over the wheels, and the inner ones raised for transportation.

1. A wheel-harrow having frames completely outside of the wheels, substantially as set forth.

2. A wheel-harrow having one or more frames or frames between and one or more frame or frames outside of the wheels, substantially as expressed.

3. A wheel-harrow, the frames of which are arranged in sets, one frame of each set being outside of, and the other frame of the same set inside of, the wheel, substantially as set forth.

4. A wheel-harrow having frames arranged in sets, one frame outside of, the other inside of, the wheel, and connected as stated, so that any set or any frame may be operated and done operate independently of any other set or frame, substantially as set forth.

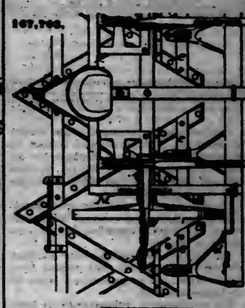
5. The yokes E, having their front ends pivoted to the bar D, and their rear ends hinged to the harrow-frames F, substantially as stated.

6. The rear yokes E', having their front ends pivoted to the bar D, as specified, and provided with the spring-bolt *k*, all so as to permit the suspension of the frame in a vertical position, substantially as set forth.

7. The segmental cog-guide *f*, for the uses set forth.

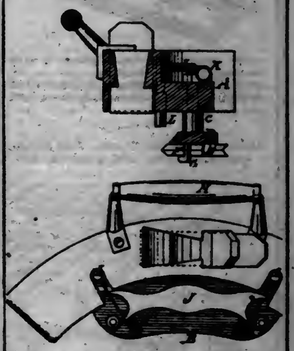
8. The slot *x'*, for the uses and purposes substantially as set forth.

167,703.



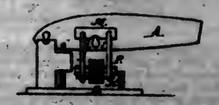
167,704. CROZING AND LEVELING TOOLS. Saml. S. Steel, Martin, and Geo. W. Reed, Woodville, Ohio. [Filed May 10, 1875.]

Brief.—A planing-bit for leveling the barrel and a crozing-tool are arranged in a segmental stock, which is provided with a suitable handle. The planing-bit is secured in a recess in the stock, and the crozing-tool is attached to the inner edge of a projecting plate upon the lower part of the stock. The crozing-tool is prevented from cutting while the barrel is being leveled by means of studs or pins attached to a frame adjustable by springs, and passing through orifices in the stock.



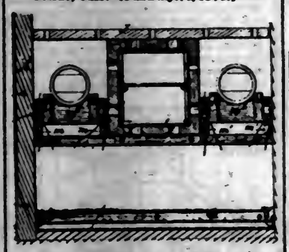
A combined crozing and crozing tool, constructed substantially as described—that is, having a projection B, studs O O, plate D, springs E E, adjustable pins L L, and handle M, as shown and described.

167,705. WHEELBARROW-SCALES. Thomas D. Stetson, New York, N. Y., assignor to E. and T. Fairbanks & Co., St. Johnsbury, Vt. [Filed Dec. 30, 1874.]



In combination with the knife-edges *i j*, fixed in the fixed and centred levers B A, the blades M H and connecting-loops or loop P, arranged to serve as and for the purposes herein specified.

167,706. REFRIGERATOR. B. A. STOVER, Toledo, Ohio. [Filed Apr. 1, 1875.]



1. The combination, substantially as herein before set forth, of the removable bottom, its lining provided with upturned edges, the detachable cantons and the flanges secured thereto and overlapping the edges of the lining, for the purpose specified.

2. The combination, with the refrigerator-chamber, of a removable sectional lining, one section of which holds the other in place, substantially as set forth.

3. The lining for the refrigerating-chamber, constructed as described, with turned front and back edges, and a separate back plate, for the purposes specified.

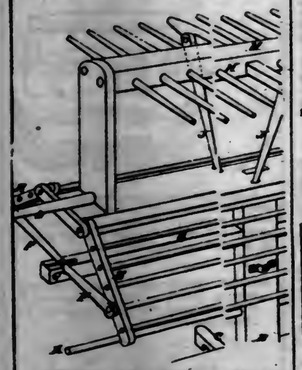
4. The combination, substantially as herein before set forth, of the removable rack secured in the refrigerator, and the removable barrel-holder or support sliding in the rack through the refrigerator-door.

167,707. PICKER-STAFF CHECKER. William W. Stevenson and Isaac Nuttall, Taunton, Mass. [Filed Aug. 26, 1875.]



The improved picker-staff arrester or shuttle-check described, consisting of the case B, strap E, pad D, and spring C, constructed and arranged to operate substantially as set forth and specified.

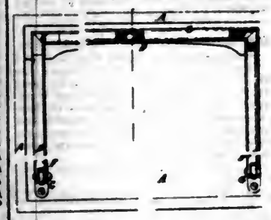
167,708. CLOTHES-DRIER. John Sutton, Deep River, Iowa. [Filed June 12, 1875.]



1. The racks B B, pivoted to opposite sides of plate D, and provided with the pivoted braces F, and the notched arms G, projecting from standard E, equilibrium between the racks, as shown and described, to operate as specified.

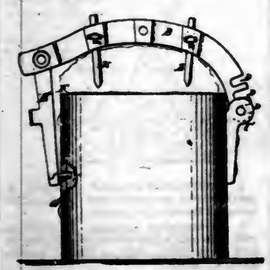
2. The racks B, braces J, standards I, top plate D, standard E, platform A, racks B, braces F, and arms G, combined and arranged substantially as specified.

167,709. WOODEN FRAME FOR HINGED AWNINGS. Henry Sykes, New York, assignor to himself and William Campbell, Brooklyn, N. Y. [Filed July 24, 1875.]



The swing-frame, consisting, essentially, of the metallic screw-threaded elbow-couplings E and the wooden bars B C, provided with recess, which are screwed into the said couplings, so as to make a perfectly rigid and smooth frame.

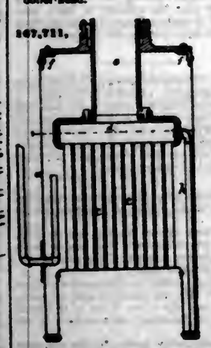
167,710. APPARATUS FOR HOLDING MEAT IN CUTTING. Wm. Tetley, Pana, Ill. [Filed Feb. 13, 1875.]



A detachable meat-holder for butchers' blocks, consisting of lever B having the front hook E, rear fulcrum-bearings D, and intermediate pins K L, as shown and described.

167,711. STEAM-GENERATOR. Royal H. Thom, Syracuse, N. Y. [Filed Feb. 6, 1875.]

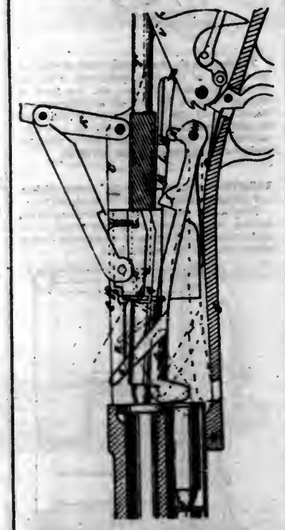
Brief.—The lower end of the smoke-stack is connected to a movable combustion-chamber, to which the fire-tubes are attached. When the tubes expand or contract the smoke-stack rises and falls through a stuffing-box in the boiler-head.



1. The combination of the tubes c, movable chamber d, and sliding smoke-pipe e, passing through a stuffing-box in the top of the boiler, constructed and arranged substantially as and for the purposes set forth.

2. The combination of the straight air-tube b with the movable adjustable chamber d, as described, and passing down through the water-leg within the boiler, so as to accommodate it to the expansion and contraction of the tubes c, as specified.

167,712. MAGAZINE FIRE-ARM. Emil A. F. Toepperwein, Reuss, Tex. [Filed July 24, 1875.]



1. The spring O, in combination with the cartridge-lifter, substantially as specified.

2. The bar L and stops M N on the breech-closer, in combination with the cartridge-lifter G, having the arm H and the projection J, and being arranged on a pivot, W, substantially as specified.

3. The combination of the spring R with the cartridge-lifter and the breech-closer, substantially as specified.

167,713. GAS-BURNER. Tecumseh Trudeau, Ottawa, Canada. [Filed May 22, 1875.]

Brief.—The tip and the pieces supporting the shade can be inclined in any direction by means of the ball-and-socket joint.



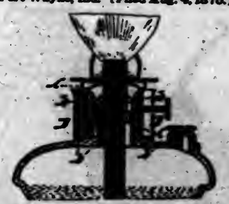
1. A gas-pillar, fitted with a ball-and-socket joint, for the horizontal adjustment of the gallery and shade, substantially as shown and described.

2. In a gas-burner, the combination of a removable tip, C, and a tube, E, attached to the tip and removable therewith.

3. The combination of the parts D E F, or their described equivalents, forming a gas-pillar, having a ball-and-socket joint to permit the horizontal adjustment of the gallery and shade.

4. A gas-burner, consisting of the parts D E F, or their described equivalents, and the removable tip C, with the tube E attached thereto, as shown, the construction permitting the gallery and shade to be adjusted horizontally, and the burner to be changed without affecting said adjustment.

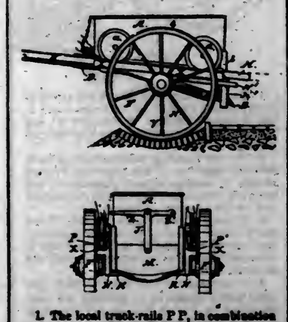
167,714. LAMP-BURNER. P. S. Underhill, Fort Wayne, Ind. [Filed Aug. 4, 1875.]



1. The cylinder or shield B in combination with the foraminated burner A, an air space or chamber being provided between the same, substantially as and for the purpose set forth.

2. The cylinder or shield B, having the flange b', and burner A, in combination, substantially as and for the purposes specified.

167,715. DUMPING-WAGONS. T. Weaver, Harrisburg, Pa. [Filed July 24, 1875.]



1. The local truck-rails P P, in combination with the extensible rails H H, when the latter are applied loosely as switches on the sides of the former, and arranged to have a common grade with them, that the bed A, provided with the trundles c c, may be moved back and forth thereon manually to various points on the graded way, for the purposes set forth.

2. The extensible switch structure, made with the rails H H rigidly combined with each other at their rear ends, and upheld thereat by the feet H', for the purposes set forth.

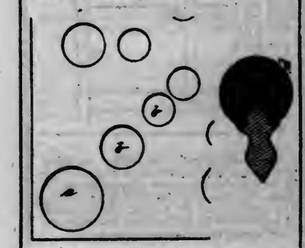
3. The track-platform, composed of the side frames P N, the cross-head Q, and the cross-tie K, all constructed and arranged to admit the bed A into it and to allow it free exit to the rear, as set forth.

4. The switch-treadle H H', in combination with the staples g on the thills G G, to carry the device, and with the spring-catch H' to retain the device on the truck, as shown and described.

5. The slide M, the lever E, and link J, in combination with a cart-bed, A, all arranged for operation as set forth.

167,716. GAME APPARATUS. J. J. Weber, St. Clair, Pa. [Filed June 17, 1875.]

Brief.—A board having different-sized holes, at which a rubber ball having an attached spike is thrown or pitched.



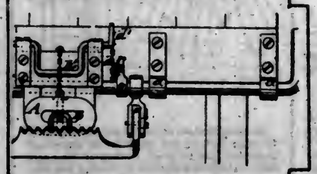
167,717. WRENCHES. Richard J. Wells, St. Joseph, Mo. [Filed May 28, 1875.]



The handle H, threaded and movable on screw-shank, to form an adjustable jam-nut to the revolving nut F', as shown and described.

167,718. CAR-COUPLINGS. G. Wernimont, Dubuque, Iowa. [Filed Aug. 21, 1875.]

Brief.—The crank-lever operates the guide and at the same time the pin.

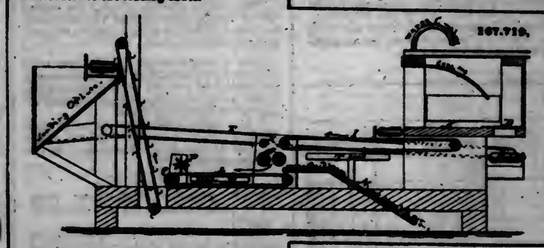


1. The combination, with the coupling-link, of a serrated link-guide and lateral crank-shaft provided with supporting-arms for holding the link for coupling, substantially as and for the purpose set forth.

2. The combination of the lateral crank-shaft, crank-arm, and chain with a swinging crank-frame, connecting-chain, and coupling-pin for raising and dropping the pin in uncoupling and coupling, as set forth.

167,719. COLLIERY-PLANTS. R. A. Wilder, Orenaca, Pa. [Filed Aug. 12, 1875.]

Brief.—The coal is dumped into the chutes and delivered to a platform, where it is washed by water from pipes or nozzles, the water and the dirt escaping through the screen. The lumps which are not to be broken are thrown by hand upon the side conveyers, and carried directly to the loading-chute. The remainder is thrown upon the conveyers in front of the platform and carried to the breakers, from which it falls upon the next conveyer, on each side of which the pickers are seated to cull the waste by hand, and is finally delivered by an elevator to the loading-chute.



1. The assorting-platform, in combination with chutes, screens, and conveyers.

2. In combination with an assorting-platform, the conveyer to take the coal directly to the loading-chutes or pockets.

3. The pressure-pipe under the breaker, in combination with the conveyer, whether moving with or against the current from the pipe.

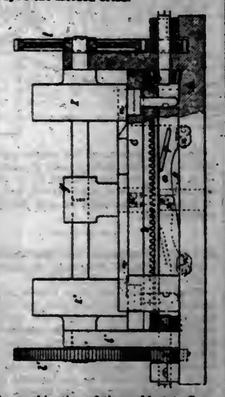
4. The seats or benches and conveyer, placed parallel to each other, allowing the latter to carry the mixed coal and slate in front of the former, as described, so that the coal and slate will pass before all the pickers.

5. The revolving raker F, in combination with the conveyer L and slate-separator Q.

6. The combination of the conveyer at the top of the chutes, with the trunker J, conveyer L, elevator M, and storing pockets or platforms, substantially as set forth.

167,720. BRICK-MACHINES. Geo. R. Wilson and George Smithson, Washington, D. C. [Filed Aug. 19, 1875.]

Brief.—The outer ends of the molds, being farther from the axis of the mold-plate, passes under the rollers more rapidly than the inner portion. The movement of the mold-wheel and rollers coact to give a twist to the pressure exerted upon the molded brick.



1. The combination of the mold-plate C, revolving around a vertical axis, with the rollers I I' revolving around horizontal axes, substantially as and for the purposes specified.

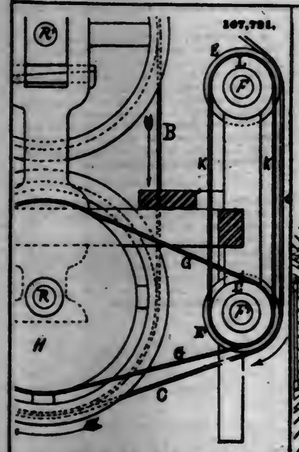
2. The mold-plate C, provided with plungers a' having stems m' and grooves o', combined with the rollers I I' and bed-plate A, having a step, q, inclined planes o and ribs p, substantially as and for the purposes herein specified.

3. The combination of the mold-plate C, yoke f, plungers and stems a' m', and rollers n', with the rollers I I' revolving around horizontal axes, substantially as specified, and for the purposes set forth.

4. The mold-plate C and rollers I I', combined with the yoke f placed at an angle, as described, and inclined knives or boards s, substantially as and for the purposes herein specified.

167,721. BAND-SAWS. George F. Wood, Philadelphia, Pa. [Filed May 3, 1875.]

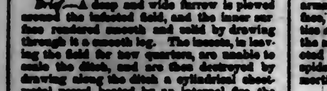
Brief.—The saw is relieved from tensile strain by means of a system of counter-pulleys and counter-shafts, arranged upon a vertical frame in front of the saw-table, in connection with a belt of suitable material passing over the outside of the saw-blade, and over the counter-pulleys directly opposite to the saw-pulleys.

167,721. 

The arrangement of the carrier-pulleys B and B', counter-shafts F and F', pulleys I, I', I, and H, and belts K and G, in combination with the belt C, saw-blade B, and pulleys A and A', substantially as and for the purpose specified.

167,722. PUDDLING FURNACE DOOR. James Armstrong, Birmingham, Pa. (Filed Dec. 17, 1874.)

Brief.—A deep and wide furrow is plowed around the infested field, and the inner surface rendered smooth and solid by drawing through it a smooth log. The insects, in leaving the field for new quarters, are unable to scale the ditch, and are then destroyed by drawing along the ditch a cylindrical sheet-metal vessel, heated by an internal fire, the radiated heat destroying the insects.

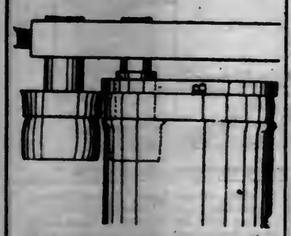


167,722.

The improved insect-destroying furnace herein described, being an oblong hollow metal case, adapted in shape to the shape of the furrow in cross-section, and provided with ash-doors, grate, smoke-pipe, and a tongue, all substantially as specified.

167,723. PAPER BOXES. Charles A. Young, Providence, R. I. (Filed Dec. 17, 1874.)

Brief.—The rim is placed in the end of the box, where it is passed between the compressing and bead-forming rollers.

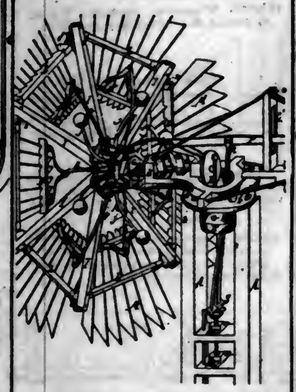


1. A paper box provided with the projecting bead and having a compressed rim, substantially as described.

2. The ring B, in combination with rollers, arranged substantially as herein described, and for the purpose specified.

167,724. WINDMILLS. James A. Allen, Albion, assignor to himself and H. Osborn, Sheridan, Mich. (Filed May 4, 1875.)

Brief.—The application of a centrifugal governor to a sliding head carrying the wheel-arms, and rotating with a hub at the end of the wheel-shaft. The centrifugal force of the weighted arms slides the head upon the hub, and, through a system of levers, shifts the angles of the sails.



The combination of the spider H, flanged on its outer face for the reception of the wheel-arms, and having a set of lugs on its inner face, with the sliding hub F, having the mortises *s* and the governor-arms J and levers K, the said governor-arms and levers being pivoted in the said lugs on the inner face of said spider, and having their ends project into the mortises in the sliding hub.

167,725. BURGLAR-ALARMS. Jos. R. Allen, Lionville, Pa., assignor of one-half his right to B. O. Irons, same place. (Filed June 8, 1875.)

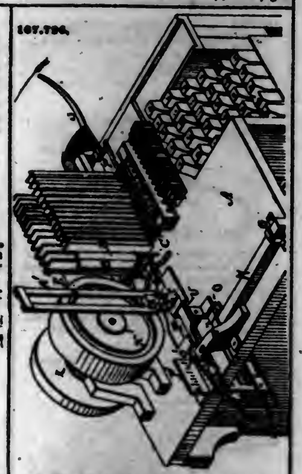
Brief.—Wire frames, covering the entire door or window, are connected with the alarm apparatus, so that an entry cannot be effected without giving an alarm.

1. In a burglar-alarm, the wire frame C, with rib *c*, suspended from the window-frame, in combination with the wires D, bell-crank E, and an alarm mechanism, substantially as and for the purpose set forth.

2. In a burglar-alarm, the suspended wire frames C, wires D, and bell-cranks E, all detachably connected with each other, for the purpose set forth.

167,726. TYPE-SETTING MACHINES. Robt. T. P. Allen, Farmdale, Ky. (Filed July 26, 1875.)

Brief.—Types are expelled from perpendicular tubes by pushers, which eject them so that they lie sidewise on the sliding stick. The vibrating pusher propels them toward the right end of the stick, and also moves the stick along as matter accumulates upon it. The line is raised by a lever, which forces it backward into the galley. The motion of lever releases stick from its ratchet, and it is drawn back by a spring. The type-pusher or shuttle is held up to work by a coiled spring, which gives it a yielding motion.



1. The combination, with the key-levers of a type-setting machine, of the levers J and L, bar H, shuttle-carriage S, standard A', and spring β, all substantially as and for the purpose herein set forth.

2. The combination, substantially as hereinbefore described, of the type-stick F, type-shuttle S, carriage S, and standard A', and spring G', arranged to operate in the manner and for the purposes set forth.

3. In combination with the type-stick F and shuttle S, arranged to operate as described, the lever S' and gate V, for the purpose of transferring the type to the form, substantially as herein set forth and shown.

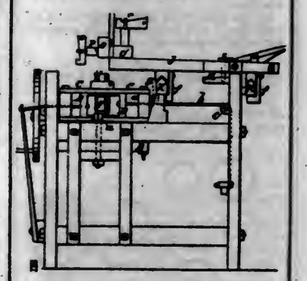
4. In combination with the type-stick, provided with a ratchet at its rear end, the pawl M', cord *n*, and lever S', arranged to operate as herein described and shown.

5. In combination with the type-stick, ratchet and pawl and lever S', the spring Y, secured to the standard W and pointer O', for the purpose of returning the type-stick to its original position after the type have been transferred to their type-form, substantially as herein set forth and described.

6. In combination with the sliding type-stick and sliding type-pusher, the type-shield W, for the purpose of retaining the type in place upon the type-stick, substantially as herein set forth and described.

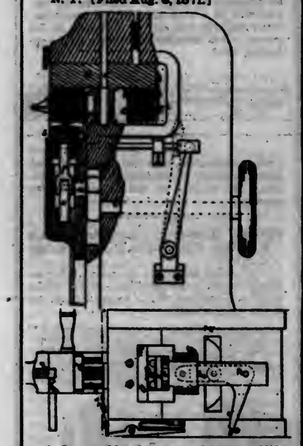
167,727. DOVETAILING-MACHINES. Charles P. Bails, New Windsor, Md. (Filed July 6, 1875.)

Brief.—The vertical cutter-head moves laterally to make the double cut.



The combination of the vertical reversing cutter-head, the horizontally-sliding carriage D, made in two pieces and carrying the cutter-head, the horizontal guides C for supporting the carriage, and the vertical adjustable tool B, upon which the guides are placed, substantially as and for the purpose described.

167,728. MANUFACTURE OF BOOT AND SHOE HEELS. Stephen W. Baldwin, Yonkers, N. Y. (Filed Aug. 6, 1871.)



1. In a machine for compacting a set of lifts for a boot or shoe heel independently of the boot or shoe, a nail-hole plate, against which the heel-blank is compacted and consolidated, and a gang of movable punches operating through the nail-hole plate to punch the nail-holes in the blank while under pressure, substantially as described.

2. In a machine for compacting a set of lifts for a boot or shoe heel independently of the boot or shoe, a nail-hole plate, against which the heel-blank is compacted and consolidated, and a gang of drivers for driving the nails, substantially as described.

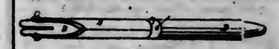
3. In a machine for compacting, punching, and inserting nails in a boot or shoe heel, a perforated plate, against which the heel is compacted and consolidated, and through which it is pointed and loaded, substantially as described.

4. In combination with the nail-hole plate, against which the heel-blank is clamped, and with the clamp-plate *c*, a gang of drivers, by which all the nails are driven and their heads left protruding from the heel-blank, substantially as described, for the purpose specified.

5. In combination with the heel-holding and nail-driving mechanism, the ejectors, substantially as described.

167,729. PEN-HOLDERS. Emile Barberot, Paris, France, assignor to J. Reckendorfer, New York city. (Filed Aug. 31, 1875.)

Brief.—The pen is ejected by revolving either cylinder.

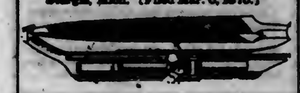


The combination, with the inner tube, its centering ferrule, and retaining prongs or fingers, of the revolving outer tube, held between said prongs at one end, and the ferrule at the other end, as shown and set forth.

167,730. LUBRICATING COMPOUNDS. Bust F. Bartlett, Dunkirk, N. Y. (Filed July 29, 1875.)

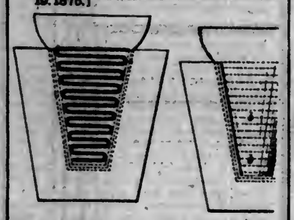
The lubricating compound composed of the ingredients and in the proportions as follows: One gallon lard or other oil, five pounds rock-salt, and three pounds of sulphur, all in the manner and for the purpose herein set forth.

167,731. FILE-HOLDERS. E. Baumgartel, Sturgis, Mich. (Filed Mar. 6, 1875.)



The herein-described file-holder, consisting of the parts A A', adjustably secured together by the bolt and nut B B', and having the ribs and grooves described, each part provided with a socket to receive an end of the file, and a handle, all constructed and arranged substantially as described and shown.

167,732. ELASTIC GORINGS FOR SHOES. H. A. Blanchard, Boston, Mass. (Filed Aug. 19, 1875.)



An elastic goring, consisting of a rubber thread and a sheet of material, united by a sewing-thread, substantially as and in the manner described.

167,733. TOOTH-PICKS. Garret S. Brice, Jersey City, N. J. (Filed June 14, 1875.)

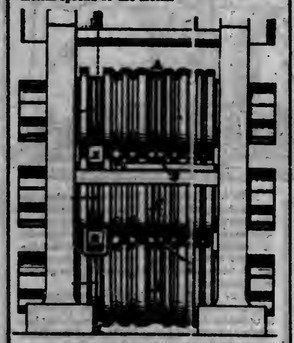
Brief.—The tooth-pick is slipped between the springs, which may be drawn in or out of the case.



The curved springs *d' d'*, set as shown, in the movable tube D, and inclosed within the parts A B C, so as to be thrust out and withdrawn at pleasure, as specified.

167,734. ROLLS FOR ROLLING METAL. A. B. Belden, Cincinnati, assignor to Wilder, Belden & Co., Cincinnati, Ohio. (Filed June 21, 1875.)

Brief.—The roughing passes or grooves 1, 2, 3, and 4 are each and all provided with small supplemental V-shaped grooves in their upper and lower walls, which tend to guide the bar in its proper path, and also to prevent lateral spread of the metal.



The three-high rolls, having the alternately-grooved passes 1 2 3 4 for the purpose of rolling iron on edge from a mash-bar, in the manner set forth.

167,735. CUSPADORES. George Booth, Philadelphia, Pa. (Filed July 15, 1875.)

1. The bottom D, made of cast metal, and having hollow legs *d d d* to avoid unnecessary weight, and at the same time elevate the vessel, as shown and described.

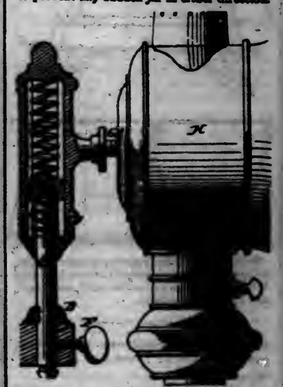
2. The cast-metal bottom D, having an annular flange, *d'*, for the purpose specified.

3. In combination with a sheet-metal body, C, a cast-metal bottom, D, united to said body by a flange, *c*, lapping over the annular flange *d'*, as set forth.

4. A cast-metal bottom for cuspadores and other vessels, having hollow legs *d d d* and an annular flange, *d'*, as shown and described.

167,736. WAGON-LAMP SUPPORTS. Thos. Boudren and George H. Johnson, Bridgeport, Conn. (Filed July 10, 1875.)

Brief.—Within the support there is a diaphragm pressed upon each end by a spring, to prevent any sudden jar in either direction.



1. In combination with a lamp for vehicles, one or more supports provided with springs arranged with relation to the weight of the lamp, so that they will act in opposite directions, substantially as herein set forth.

2. The combination of the lamp-supporting case A, interior diaphragm B, springs *a a*, and spindle C, all constructed substantially as and for the purpose herein set forth.

3. In a lamp-support, the combination of the case A, springs *a a*, diaphragm B, spindle C, with collar D and the set-screw F, all substantially as and for the purpose herein set forth.

167,737. MEDICAL COMPOSITIONS. Louis P. Brand, New Orleans, La., assignor of one-half his right to Auguste Wilson, same place. (Filed June 1, 1875.)

The composition of matter for medicine consisting of simaruba, dog-grass, and nitrate of potassa, substantially as specified.

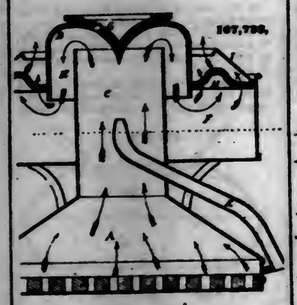
167,738. SPARK-ARRESTERS. Robert Brayton, David Jones, and Orsino S. French, Fremont, Ohio. (Filed July 13, 1875.)

Brief.—The sparks and cinders passing out of the uptake are deflected into a water-reservoir located therein.

1. The base A, fire C, shell D, and removable deflecting-cover G, in combination with the reservoir F, substantially as described, and for the purpose set forth.

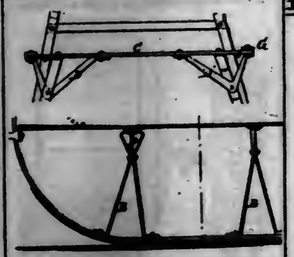
2. The herein-described spark-arrester, consisting of the base A, fire C, shell D, door G, wire-cloth H, hood I, exhaust-pipe K, and reservoir F, substantially in the manner as described, and for the purpose set forth.

167,739.



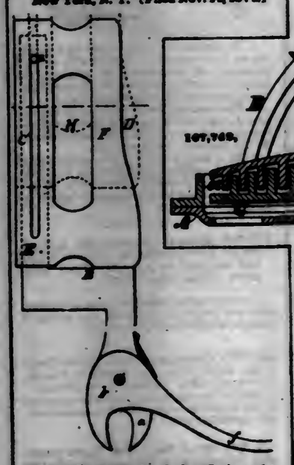
167,739. SLEIGH. Thomas Brown, Forest Lake, Pa. [Filed May 3, 1875.]

Brief.—The sleigh is made entirely of spring-steel.



The herein-described running-gear for sleighs, composed of the spring-steel runners A, braces B C D, and guards G, constructed, combined, and arranged as shown.

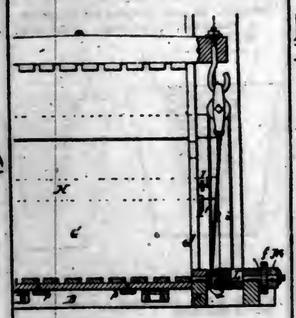
167,740. WAR-BEDSTEADS. I. N. Burdick, New York, N. Y. [Filed Nov. 14, 1874.]



The nail-extractor herein described, consisting of the parallel shank-sections O' O', having the guide-stud a, and connected by the curved shoulder B, above a b, spring-lever f, and the reciprocating hammer-handle D, having slotted sleeve E, hand-rod H, and gripping portion F, substantially as specified.

167,741. COTTON AND HAY PRESSES. Wm. H. Burgess, Jackson, N. C. [Filed May 6, 1875.]

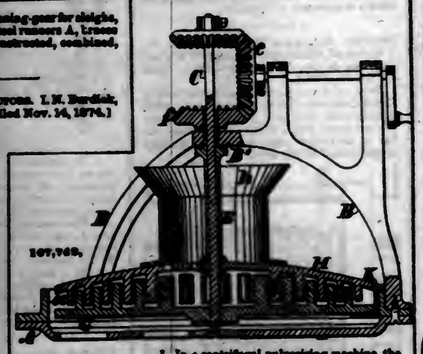
Brief.—An upright frame has, at bottom, a short winding-shaft on each side, their axes in a line, operating by ratchet-levers, ropes passing through blocks suspended to platen above.



1. The headed bars I F, provided with the pins a a, in combination with the doors G G' and notched bars H H, as and for the purposes set forth.

2. The combination of the windlasses L L, arranged lengthwise of the press, and provided with pulleys d d, the notched levers M M, with bars N N, ratchet-wheels f f, and pawls h h, all constructed substantially as set forth.

167,742. PULVERIZING-MACHINES FOR CLAY AND SIMILAR SUBSTANCES. John K. Caldwell, Philadelphia, Pa. [Filed Aug. 19, 1875.]



1. In a centrifugal pulverizing-machine, the combination of the fan or convex disk G, and the concave disk H, said disks being armed with steels or projections, revolving in opposite directions, and relatively so arranged that the distance between them diminishes from center to circumference, substantially as shown and described.

2. In a centrifugal pulverizing-machine, the combination of two studded disks revolving in opposite directions in horizontal planes, the steels ff projecting from the faces of the disks, substantially as shown and described.

3. The combination of the base A, standards B B B, shafts O R, gear-wheels e f, and disks G H, combined for operation substantially as shown and described.

4. In combination with the base A, the scraper K, attached to the disk G and revolving therewith, substantially as shown and described.

167,743. RAILROAD-SWITCHES. Dennis F. Cavanaugh, Greensburg, Pa. [Filed July 28, 1875.]

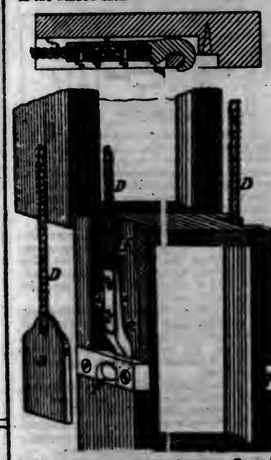
Brief.—A switch in which the movable rails are prevented from accidental displacement, by pressure of flange of wheels, by the employment of a stationary lug or projection, which engages with similar projection on the pitman which connects the rails with the operating shaft.



The combination, with the crank-shaft and switch or siding rail B, of the shouldered pitman g and stops h, as and for the purpose specified.

167,744. GAME-CORD FASTENERS. Herbert N. Connor, Philadelphia, Pa. [Filed July 2, 1875.]

Brief.—The end of the cord being securely held in a channeled hook, which works under and engages with a recessed catch-bar in the window-sash.



The combination, with the vertically and transversely recessed sash C, of the recessed catch-bar F and concavely-channeled hook H, provided with the concave-convex plate c recessed thereto by screws f passing through and holding the cord D, substantially as shown and described.

167,745. ICE-PICKS. Martin Corwin, Unionville, Conn. [Filed Feb. 26, 1875.]

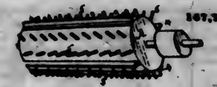


As a new article of manufacture, an ice-pick having a hollow spheroidal-shaped handle, constructed of two parts, and having a polygonal cone formed thereon, whose angles form breaking-edges, said handle being attached to the pick, substantially as shown and described.

167,746. MACHINERY FOR FURNISHING HATBODIES. William H. Orcutt, Philadelphia, Pa., assignor of two-thirds his right to T. W. Hagaman, same place. [Filed Aug. 20, 1875.]

Brief.—Interposes detachable plain-edged fur-plates between the picker-teeth, so as to avoid using expensive fur-plates provided with serrated edges. These plates are less in height than are the picker-teeth, so as to not interfere with the function of the latter.

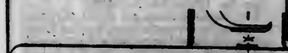
167,746.



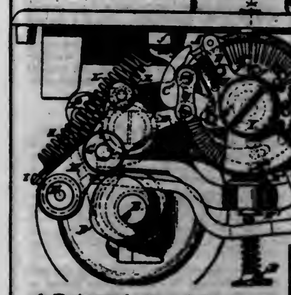
The within-described picker-cylinder, consisting of the body A, sheet-metal fan-plates A, and the picker-teeth B, substantially as and for the purpose set forth.

167,747. SEWING-MACHINES. Cyrus S. Cochrane, Philadelphia, Pa., assignor to H. D. Stoops, same place. [Filed Aug. 20, 1875.]

Brief.—Improvement on Letters Patent No. 165,792. A crown-wheel gears with a pinion on the feed-shaft, and is operated by a vibrating lever, the one end of which is pivoted to the frame of the machine, and the other or free end is connected by means of a link to an oscillating plate, carrying a pawl which engages with ratchet-teeth on the said crown-wheel. A pattern-cam, operated by a pawl and ratchet, is arranged midway between the ends of the lever, and is provided with slots through which drops a pin on the said lever as each slots, during the revolution of the cam, are brought in proper relative position to the said pin, thereby allowing the said lever to vibrate to its fullest extent, which movement revolves the feed-plate and changes the direction of the feed, while at other times this pin rests upon the periphery of the cam between its slots, and the revolution of the feed surface is prevented. The crown-wheel, in addition to the ratchet-teeth on its periphery, is provided with apertures in its side, into which may engage pins, carried by the oscillating-plate that carries the pawls, the engagement of either the one or the other of which pins with the said apertures is regulated by a second plate adapted to be manipulated by hand.



167,747.



1. The improved pattern wheel or cam, consisting of a rotating cylinder provided with slots, openings, or indentations at one end, in combination with the driving-shaft and levers which operate the crown-wheel, which gives motion to the feed-plate, substantially as described, whereby an intermittent rotary motion is imparted to the feed-plate at proper intervals to change the direction in which the fabric is moved, to form the desired configuration of the stitches.

2. The combination of the slotted rotating pattern wheel or cam, the oscillating lever operated by a cam on the driving-shaft, and a pin, pawl, or projection, adapted to drop through the slots on the pattern-cam as they are successively presented, and allow the lever to move to its full extent for the purpose of rotating the crown-wheel, and thus change the line of motion of the feed-plate.

3. The combination, substantially as herein described, of the cam D, attached to the driving-shaft, the lever E, carrying the adjustable pin K, the pattern-wheel M, operated by a pawl and ratchet, and connecting, secured to the driving-wheel, the lever V connected to the lever E, and carrying the pawls A' and D' D', the controlling-lever O', and the ratchet-and recessed crown-wheel W gearing into the pinion of the feed-wheel shaft, all arranged to operate substantially as herein set forth.

4. The combination, substantially as herein set forth, of a cam attached to the driving-shaft, an oscillating lever, operated by said cam and secured by means of a link at its end to an auxiliary lever mounted upon a short journal or stud, secured to the lower part of the machine, the crown-wheel formed with ratchet-teeth on its periphery, operated by said pawl, and a pinion-wheel, into which gears the said crown-wheel, for the purpose of imparting an intermittent rotary motion to the dentated feed-plate, substantially as described.

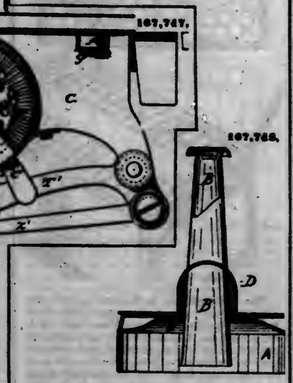
5. The combination, substantially as herein set forth, of the oscillating lever, operated by a cam on the driving-shaft, and carrying an adjustable pin, the slotted pattern-wheel operated by a ratchet and pawl, which derives its motion from a cam on the driving-shaft, and the oscillating pawl-lever and crown-wheel, mounted on a common journal, said pawl-lever being provided with sliding spring bolts or pawls adapted to work into recesses on the face of the wheel and impart an intermittent rotary motion to the same, substantially as and for the purpose set forth.

6. In combination, with said pawl-lever, provided with sliding spring bolts or pawls and the recessed crown-wheel gearing into the pinion-wheel on the feed-plate shaft, a regulating lever for throwing the pawl and sliding bolts and pawls into and out of gear with the crown-wheel for the purpose of varying the motion of the cams to change the pattern of the stitches, substantially as described.

7. The combination, with the driving-shaft and levers E V, and crown-wheel W, operated as described, the driving-shaft O' carrying the feed-plate and its attachments with the levers for imparting a vertical and horizontal reciprocating motion to the feed-plate, substantially as described.

167,748. WASH-BOILERS. Omer Davis, Bourbon, Ind. [Filed Feb. 23, 1875.]

Brief.—The lower chamber is extended above the rack and perforated.

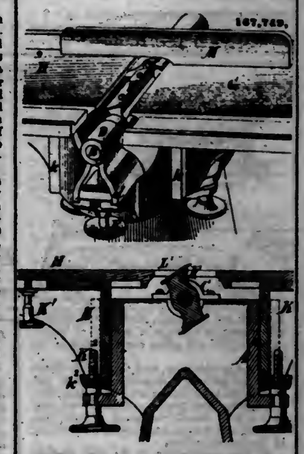


The combination of the receiver A, provided with perforated chamber D, the tube B, and perforated plate O, substantially as shown and described.

167,749. PLANING-MACHINES. William H. Deane and George W. Pearl, Cincinnati, Ohio, assignors to J. A. Fay & Co., same place. [Filed Apr. 24, 1875.]

Brief.—For obviating the use of a third table the gap between the tables at one end of the cutter-head is bridged by a slide, working in a longitudinal groove in one table and a recess in the end of the other. The tables are supported upon brackets arranged in guides on transverse webs upon the columns of the machine, and are vertically and horizontally adjustable, independent of each other, and can be held at any required elevation by set-screws passing through longitudinal slots in the brackets into nuts or taps in the tables, and set-screws supported in lugs on the webs and working in nuts fixed on the brackets.

167,749.



1. The combination of table H, slide I, slotted in a longitudinal groove therein, and table G, having a recess, I', in the end adjacent to table H, substantially as and for the purpose specified.

2. The combination of table G or H, slotted bracket K I', guides h h, screw K', nut I', and screw K', substantially as and for the purpose specified.

167,750. VACUUM CAR-BRAKES. F. W. Hamon, Watertown, N. Y. [Filed Nov. 20, 1874.]

Brief.—The vacuum is derived from the automatic escape of steam from the boiler, or the safety-valve may be opened by the engineer. The brakes are controlled by a two-way cock, and may be applied from the vacuum-chambers or from the safety-valve. Should the train separate the brakes are put on automatically from a tank on each car. The flexible piston is supported by a metallic plate. A separate cylinder is used for each truck.

1. In a vacuum power-brake for railway-trains, a steam air-ejector, in combination with an automatically-operating valve, substantially in the manner and for the purpose herein set forth.

2. The combination, in a vacuum power-brake, of an automatically-operating steam air-ejector, C, with a storing vacuum-chamber or chambers, D, and the connecting brake-pipes O and F, substantially in the manner and for the purpose herein set forth.

3. The combination of a steam air-ejector, C, and an automatically-operating ejector-valve, A, connected therewith, with a vacuum-chamber, D, or chambers, and an intermediate check-valve, c, substantially in the manner and for the purpose herein set forth.

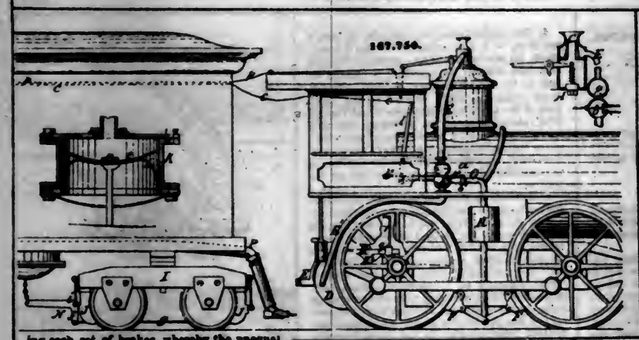
4. The combination of a steam air-ejector, C, and an automatically-operating valve, A, connected therewith, with a vacuum-chamber, D, arranged upon the locomotive, and a vacuum-chamber or the chambers located upon each car, the brake-pipes O and F, and the two-way cock g, substantially as and for the purpose herein set forth.

5. The flexible pistons I, provided with a re-enforcing-plate, c, which is free from air-connection or edge attachment with said piston, in combination with the vacuum-chamber K, whereby the said plate serves as a shield to re-enforce the flexible piston under the action of the vacuum only in the cylinder, as herein set forth.

6. The combination, with the flexible pistons I, of the steam air-ejector C, the locomotive and car vacuum-chambers D, and the brake-pipes O, uniting these parts for joint operation.

7. The combination, with the flexible pistons I, of the steam air-ejector C, the locomotive and car vacuum-chambers D, and the brake-pipes O and F, uniting these parts for joint operation.

8. The combination of the separate flexible pistons I, with each truck, one piston operat-



ing each set of brakes, whereby the unequal adjustment or breakage of one set of brakes or levers will not effect the efficiency of the others.

9. The combination, with the flexible pistons I, of the ball-crank connecting-levers N, pivoted to the brake-beams by a swiveling joint, t, whereby both trucks and the levers may have a joint lateral movement or deflection, without injury to or interrupting the working of the flexible pistons.

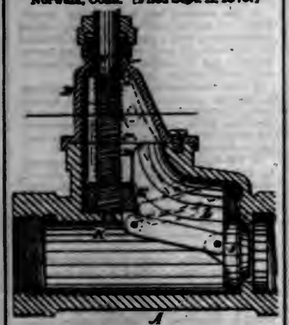
10. The combination of the cock-shifting piston R, the three-way cock Q, and the spring s, with the brake-pipe P, the locomotive vacuum-chamber D, and the steam air-ejector C, whereby the cock may be opened and closed, for the purpose of applying or releasing the vacuum at the will of the engineer.

11. The combination of the three-way cock Q, the vacuum-chamber D, and the brake mechanism of a continuous rod or chain, l, uniting the several cars of the train, whereby the cocks of each car may be opened at once throughout the train by the accidental separation of the train at any point to apply the brake to all the cars.

12. The combination, with the three-way cock Q, the vacuum-chamber D, the braking mechanism, the connecting rod or chain l of the train, of the automatic griping-lever n, whereby the said cock is held open after the separation, to maintain the pressure on the brakes.

13. The combination, with the valve T, of a piston, Y, which is open to the atmosphere, and of a larger diameter than said valve, to keep the latter closed by the pressure of the outer air, substantially as herein set forth.

167,761. STOP-COCKS. Oscar T. Earle, Norwalk, Conn. [Filed Sept. 11, 1875.]

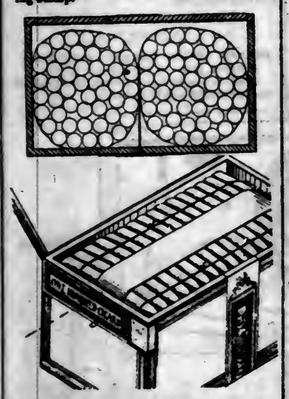


1. The combination, in a stop-cock, of the valve J, connecting-rod I, horizontal spindle-stop and nut-stop K, nut L, located outside the valve-way, and spindle F, substantially as described and shown.

2. The combination, in a stop-valve, of valve J, connecting-rod I, horizontal spindle-top and nut-stop K, nut L, spindle F, ring s working in its groove and against the inner and upper wall of bonnet B, guard D, and handle G, all operating in the manner substantially as shown and described.

167,762. REVENUE-GUARDS FOR CIGAR-BOXES. Oscar T. Earle, New York, N. Y. [Filed Feb. 20, 1875.]

Brief.—The cigars are secured in the box without injury by means of a strip of flexible material placed tightly over, or, preferably, around them, and so arranged in connection with a revenue-stamp, of usual construction, as to have its ends covered and protected by such stamp, whereby the removal of the cigars, singly or in bulk, without destroying the guard-strip, is absolutely prevented, while at the same time the box is left free to open for the inspection of its contents, without involving the rupture or cancellation of the covering-stamp.



The combination, in revenue-guards for cigar-boxes, of a revenue-stamp of the ordinary construction with a ribbon, tape, cord, wire bandage, or other flexible strip attached thereto, and placed under the lid, and arranged over or around the cigars in the box, the ends of such strip, tape, cord, or bandage being passed out through a slot or slots in the box-body or over the edge of the same, and secured directly to the stamp or immediately underneath and in contact with the same, substantially as and for the purpose set forth.

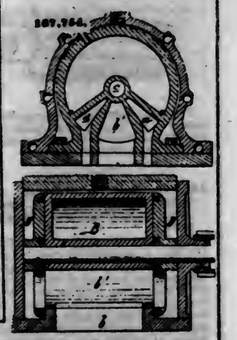
167,763. LOOM-SHUTTLES. A. Edwards, Providence, R. I. [Filed July 2, 1875.]



A loom-shuttle provided with a yielding eye, consisting of a tube, C, which is pivoted as described, and actuated by a spring, D, substantially as and for the purpose specified.

167,764. OSCILLATING BALANCED VALVES. Alonzo W. Eldredge, Big Rapids, assignor of one-fourth his right to Fitch Phelps, Mecosta, Mich. [Filed June 17, 1875.]

Brief.—A chamber with steam and exhaust ports at both ends receives and exhausts steam through two oscillating valves, which face each other.



The valves D D, constructed as described, and mounted upon the rock-shaft C, in combination with the hollow elevated valve-seat B, provided with the ports *a' a' b'*, substantially as and for the purpose set forth.

167,765. PROCESSES AND APPARATUS FOR PREVENTING THE ACCUMULATION OF TARRY HYDRAULIC MAINS. David H. Fox, Reading, Pa. [Filed July 20, 1875.]

Brief.—Jets of steam are forced down into the tar in the hydraulic main, keeping it agitated and in a liquid state, so that it will readily flow off by the waste-pipe. Jets of water are forced in opposite directions diagonally across the gas-ascension pipe rising from the main, for the purpose of condensing and washing down the tar. A pipe with stop-cock extends from the top of the vaporizer to the tar-tank



1. For the purpose of preventing the continuous deposits of carbonaceous matter or tar in the hydraulic main B from becoming too thick or stiff to flow freely out through the usual tar-line waste-pipe *b'*, the process of injecting live steam down into the liquid contents of said main, and thus, by the constant agitation and the consequent intimate mixing of the steam with the carbonaceous matter in the main, keeping the contents in a freely fluent condition, as herein before set forth.

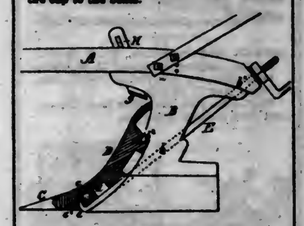
2. The apparatus consisting of the steam-pipe E provided with a plurality of lateral pipes, *c' c'*, opening into the interior of the hydraulic main, and receiving steam from any suitable generator, substantially as and for the purpose hereinbefore described.

3. The cold-water jet pipes 2 2, horizontally arranged to inject sprays of cold water in opposite directions into the take-off pipe D from any suitable pressure-source, substantially as and for the purpose described.

4. The pipe I, provided with the stop-cock *f* at its upper end, in combination with the steam-heated vaporizer H, provided with a stop-cock, *h'*, near its upper end, and the tar-tank G, having the lower end of said pipe I immersed in the liquid in said tank, the said parts being constructed and arranged substantially as set forth, for the purpose of relieving the vaporizer H from the pressure of vapor by opening the stop-cock *f* as soon as the stop-cock *h'* shall be closed, especially at the close of the day's work, as described.

167,766. PLOWS. Irvin Freeman, Corpus Christi, Tex. [Filed Sept. 3, 1875.]

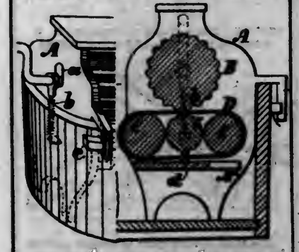
Brief.—Point and mold-board secured to the frame by a hook-bolt from the under side, which also is used to fasten the rear end of the cap to the beam.



1. The combination of the mold-board, provided with the slotted projecting hook D', and the share C, having the recessed projection c, with the oblique hook-rod E and skeleton S, having lip *b'*, as shown and described.

2. The combination, with a share recessed on the under side, and the skeleton having lip *b'*, of the hook-rod E, passing through the rearward-projecting portion *b'* of said skeleton, and securing it to the beam, in the manner specified.

167,767. WASHING-MACHINES. G. Friend, Philadelphia, Pa. [Filed Aug. 2, 1875.]

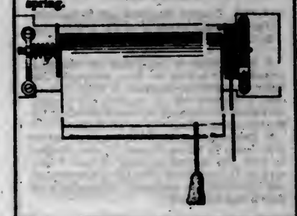


1. The improved washing-machine herein described, designed for attachment to a common crank-bolt, and consisting of the frame A A A' A', having the rollers O O and B, the former provided with the endless band D, held in place by holding-pins *d d*, and the latter having spring-bearings in the vertical slots *a a*, with the L-shaped clamps E E resting upon the edge of the tub, and notched on their depending arms, and wedges *e e*, the several parts being constructed and combined for operation substantially as shown and described.

2. The combination, with the frame A A of a roller washing-machine, of the L-shaped clamping-arms E, having notches in their depending portions, and the curved wedge *e*, corresponding to the cylindrical form of the tub, substantially as shown and described.

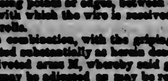
167,768. CURTAIN-FIXTURES. L. H. Gunn, New York, N. Y. [Filed Apr. 6, 1875.]

Brief.—At one end of the roller a spiral spring presses against the bracket, and at the other end of the roller the bracket is made box-shaped, to receive one or more pieces of rubber, through which the journal of the roller passes, and against which rubber a washer is pressed by the action of the coiled spring.



The roller a, pulley a, spring g, washer h, rubber i, and box-shaped bracket, when all are combined for operation substantially as specified.

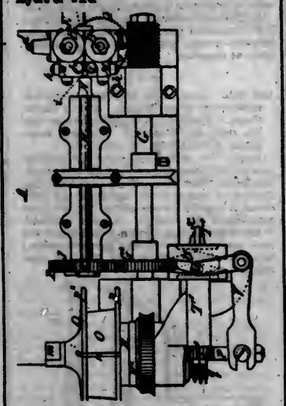
167,769. ROLLING-PINS. John R. Osborne, Washington, D. C. [Filed Jan. 28, 1875.]



The rolling-pin, consisting of the cylindrical shank C, two sides parallel, or nearly so, forming an ink-reservoir at E, and the rounded point D, all constructed substantially as and for the purpose specified.

167,770. MACHINES FOR SCREW-THREADING WIRE. Louis Cobbs, Boston, Mass., assignor to the American Cable Screw Wire Company, same place. [Filed Aug. 27, 1875.]

Brief.—The machine comprises a pair of feed-rolls, griping device—viz., a pair of sharp-edged revolving horizontal disks, a hollow revolving shaft, having a nose-piece, in which the cleaner is located, a revolving and laterally-reciprocating rod, and devices for gradually reducing the speed of the reel to the varying circumference superinduced by the successive layers of wire.



1. In a machine for cutting screw-threaded wire in indefinite lengths for use in the manufacture of boots and shoes, the combination, with the feed-rolls and a revolving cutter, of intermediate griping and straightening devices, co-operating to hold the wire and prevent it from turning or twisting while under the action of the cutter.

2. The combination, with the griping and straightening devices whereby the wire is held from turning or twisting, of a hollow nose, *i*, projecting from the cutter-head H in line centrally with the feed of the wire, and lying close to and between the griping devices, to form thereby a continuation of the holding and straightening device, and present the wire firmly for the action of the revolving cutter.

3. The griping and holding devices for the wire, consisting of rolls provided with circumferential grooves *g* and fine or blades *f*, resiliently arranged to form a series of holding and pressing points or edges, between and in contact with which the wire is received from the feed-rolls.

4. The combination, with the griping-rolls constructed substantially as herein described, of the pivoted arms M, whereby said griping devices may be adjusted as may be required to give a proper pressure upon the wire.

5. The combination, with the revolving cutter-head H and the hollow receiving-nose *i* thereof for the wire, of the cutter L in the slotted head, arranged to form the thread at the point where the wire leaves the nose *i* and enters the slot *j*, substantially as and for the purpose described.

6. The cutter L, constructed as described and shown.

7. The combination, with the feed-rolls B B, the griping devices, and the revolving cutter-head, of the hollow driving-shaft H, in line with the feeding and griping devices, and forming a continuous support therefrom for the threaded wire to the spooler.

8. The feeding-rolls B, in combination with the long-shouldered boxes D, adapted to fit in the recesses *b* in the frame, and the adjusting-screws *d*, substantially as and for the purpose described.

9. The combination, with the feeding-rolls B and their shaft-carrying boxes D, of the gear-wheels E F F' and the worm F of the counter-shaft G, whereby a definite feed of the wire is obtained.

10. The combination, with the train of gearing G' I J K, connecting the revolving cutter-shaft H with the counter-shaft G, of the worm F and cog-gearing E F' F' of the feed-rolls, whereby the latter are driven directly from the hollow driving-shaft.

11. The combination, with the revolving screw-cutter k and its hollow receiving and containing shaft H for the wire, of a spooler, O, having a movement at right angles to the line of the threaded wire, and adapted to receive said wire as it is delivered from the revolving cutter-shaft.

12. The combination, with the screw-cutting, wire-feeding, and delivering devices, of a spooler for the wire, having a removable end disk, Q, substantially as and for the purpose herein set forth.

13. The combination, with the screw-cutting, wire-feeding, and delivering devices, of a spooler constructed with a removable end disk, Q, and a slightly-tapering hub, O, substantially as and for the purpose herein set forth.

14. The spooler O, provided with the grooves a and *c* in its body and flanges, substantially as and for the purpose set forth.

15. The combination, in a spooler for receiving and coiling screw-threaded wire from a hollow cutter-shaft, of a friction device, operating automatically to regulate the speed of the spooler according to the varying diameter of the coil, substantially as herein described.

16. The combination, with the spooler and the friction-disk R, of the pins *s s*, whereby the spooler is united to the friction-disk, but is free to have an axial movement with its carrying-shaft.

17. The combination, with the spooler and the friction-disk R, of the bushed gear-wheel S', the sleeve S, and worm T on the counter-shaft G, whereby the spooler receives its maximum speed, yet is independent of the positive action of the gear by reason of the friction device.

18. The combination, with the spooler and the bushed driving-gear S' and the support for the friction-sleeve S, of a friction device having a yielding or combined pressure upon the friction-disk R, and ring *r*, substantially as and herein set forth.

19. The combination, with the spooler and its axially-movable shaft P, of the ball-crank device V, its operating-cam U, gear-wheel T', and the sleeved worm-gear T', whereby the spooler is moved back and forth, substantially as herein described.

21. The combination, with the screw-cutting, wire-feeding, and delivering devices, and a spooler having a compound rotary and an axial movement, of a cam, U, constructed to give said spooler and its shaft a movement equal to the width of the coil, substantially as herein set forth.

22. The combination, with the cam-driving shaft P and the spooler, of a cam, U, made fast to its shaft T', and unclamped therefrom by the means and for the purpose herein set forth.

167,771. WASHING-MACHINES. George W. Grubb, East Coventry, Pa. [Filed Apr. 12, 1875.]

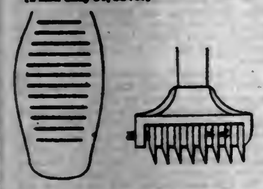
1. In a washing-machine, the combination of a vessel having sides *f f*, inclined outward from the rear to the front, with a detachable vibrating rubber, E, as set forth.

2. The combination of the vessel W and its inclined base with a frame or stand on which the said vessel may be adjusted, substantially as and for the purpose herein set forth.

167,762.



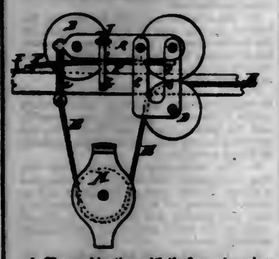
167,762.—HANDLES FOR HOOPS AND HOOPS. Charles F. Hill, Baltimore, Md., assignor to himself and George D. Hill, same place. [Filed May 31, 1875.]



1. As a new article of manufacture, an intermediate having transverse slits to increase its flexibility, substantially as described.

2. The knife-blades *c c*, arranged in an order corresponding to the outline of the ball of a cake, so that the longest blades shall be in the center, and the shortest at the respective extremes of the curve, substantially as and for the purpose specified.

167,763.—HOISTING APPARATUS. Nicholas W. Hoffman, Lebanon, N. J., assignor of one-half his right to Jos. Hoffman, same place. [Filed Mar. 31, 1875.]



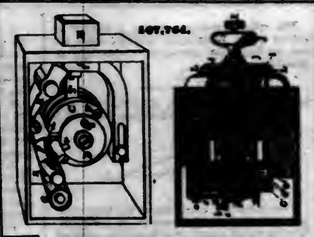
1. The combination, with the frame A, spring J, hooks G, and the hook F, provided with sloping ways *f'*, of the step I and sheave H, all constructed and operating substantially as shown and described.

2. The combination, with the frame A, sheave D, rope or fall B, sheave H, and cord *c*, of the spring *d*, hooks G, sliding hook F, provided with sloping ways *f'*, and the step I, arranged and operating substantially as shown and described.

167,764.—CONDENSER-LOCKS. Hermon C. Hervey, Ayer, Mass. [Filed Apr. 28, 1875.]

Brief.—The lock is provided with projecting arms that engage with pins on the tumbler-wheels, so as to distribute or discharge the said wheels to the act of unlocking the bolt.

167,764.



1. The adjustable graduated ring I, with its flange *i*, in combination with the knob J, sliding pins *j*, and conical pointed set-screw J, whereby the graduated ring may be released and readjusted to any position desired, substantially as described.

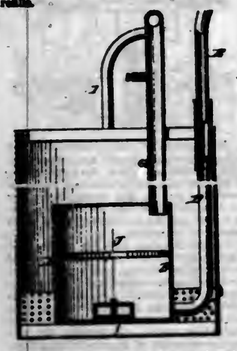
2. The pawl F, with its detent *e* and finger *e*, the weighted lever G, with its projections *l l'*, and the connecting-arm E, with its detent *c*, in combination with the notched driving-wheel D, and the notched combination-wheels C' C' C', substantially as and for the purposes set forth.

3. The combination of the driving-wheel D, with its pin *c*, the connecting-arm E, with its curved projection *b* and detent *c*, the pawl F, with its detent *e*, and the locking-lever H, with its projection *d*, substantially as set forth.

4. The combination of the distributing-arms T T', connected with the bolt B, and the combination-wheels with their pins *g*, substantially as described.

167,765.—APPARATUS FOR SUPPLYING LOCOMOTIVES WITH WATER. Henry Howe, Council Bluffs, Iowa, assignor of one-half his right to Walter R. Vaughan, same place. [Filed June 26, 1875.]

Brief.—The steam, entering either supply-pipe at will, presses down the float in the tank, and forces water through the discharge-pipe. The cut-off valves are so arranged that when steam is applied to one of the flexible pipes connected the valve in the other is closed. When steam is shut off that remaining in the tank condenses, not being allowed to escape; then a vacuum being created the tank soon refills.



The combination of the submerged tank B, having float J and valve C, the pipe G and steam-pipe H, having flexible pipes I I, with valves *a a*, and the pipe D, having swiveled spout E, all used for supplying water to the tender by means of steam from the locomotive acting upon the float in the water-tank, substantially as set forth.

167,766.—PROCESSES OF MANUFACTURING TWIST-DRILLS. Charles B. Hunt, Springville, Pa. [Filed May 1, 1875.]

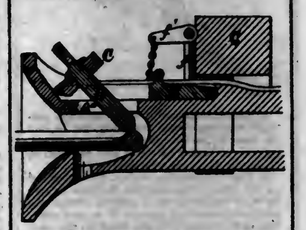
The process of forming a twist-drill consisting in tempering the blank, then forging or hammering it into the form of two straight grooves with a curve at top and bottom, then twisting it while hot, and again hammering and tempering it, substantially as described.

167,766.



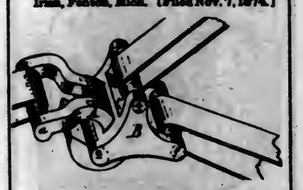
167,767.—CAR-COUPLINGS. W. R. Hunter, Toledo, assignor to himself, B. W. Kelly, Painesville, and J. G. Fisher, Toledo, Ohio. [Filed May 17, 1875.]

Brief.—The yoke has within its ends a pivoted block fastened to the pin.



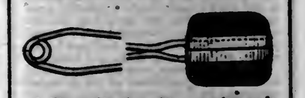
The hereinbefore-described car-coupling, in which the draw-bar A, yoke B, pivoted block C, and coupling-pin D are constructed, combined, and operate in the manner and for the purpose specified.

167,768.—NECK-YOKE COUPLINGS. N. B. Irish, Fenton, Mich. [Filed Nov. 7, 1874.]



The hook A, having the bifurcated ends of its shank connected by a pin, *a*, in combination with the casting B, provided with pins *c*, *c'*, *c*, and *f*, for the purpose set forth.

167,769.—SOAP-HOLDERS. Wm. J. Johnson, Newton, Mass. [Filed July 12, 1875.]



1. The combination, with a soap-box made in two parts, as set forth, of A spring-wire handle having one of its ends attached to one part of the box and the other to the other part of the box, and formed substantially as shown and described, so that while normally holding together the two parts of the box the pressing together of its outer portion will force the offset of separating said parts, as specified.

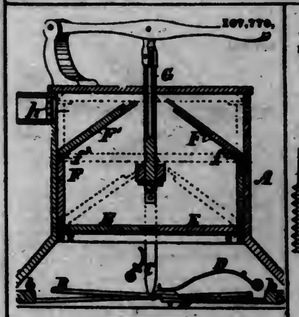
2. The combination, with the wire-wire ends A A and flanges, of spring-wire handle C, substantially as and for the purposes set forth.

167,770.—CARPET BEATERS AND CLEANERS. Julius Lotz, Philadelphia, Pa. [Filed Aug. 2, 1875.]

1. A machine or apparatus for cleaning carpets while laid on the floor, embracing the following instrumentalities: A light box or case, a series of rods or beaters, and a valve or valves for drawing up the dust raised by the beaters, substantially as set forth.

2. The combination of the series of beaters B B, frame F, valves H and H', and plunger G, with the tappets C, arms *c'*, bars I, and springs D, the several parts being constructed and combined for operation, substantially as shown and described.

167,770.



167,771.—BALANCING TOYS. Fredk. Marbee, Philadelphia, Pa. [Filed Aug. 4, 1875.]

Brief.—Relates to the method of attaching the balancing-weight.

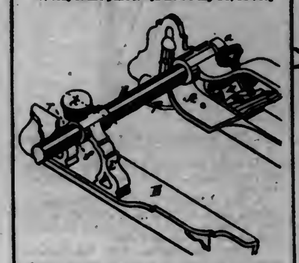


1. In combination with the stand B of a balancing toy, the weight B, having a neck, *c*, for insertion in said stand, as shown and described.

2. The combination of the stand B, having ears *f f*, the weight B, having a neck, *c*, and the disk D, passing through said ears and neck, substantially as shown and described.

3. A balancing-weight, B, formed with a neck, *c*, for passing through a stand, and an opening for the passage of an axis, said weight and neck being cast or formed in one piece, substantially as and for the purposes shown and described.

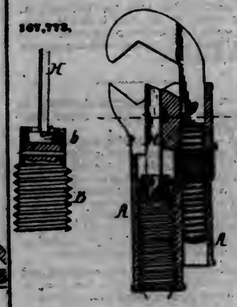
167,772.—CARPENTERS' PLANES. Matthias C. Mayo, Boston, Mass., assignor to J. G. Weld, same place. [Filed July 14, 1875.]



1. The divided clasp C, provided with bearing C', slot *f*, and clamping-screw *d*, adapted to hold and embrace the arm D of a stock, A, substantially as shown and described.

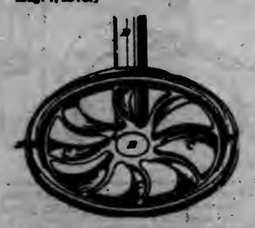
2. The combination, with the curved plate C, provided with a lip or flange, *c*, of the cutter I, pivoted clamping-lever H, provided with concave enlargement *c'* and adjustable gage E, substantially as shown and described.

167,773.—PIPE-CUTTERS. Francis I. Meade, Philadelphia, Pa. [Filed Apr. 17, 1875.]



A pipe-cutting instrument, in which are combined a screw-stem, B, a cutter, H, having an enlargement, *d*, and a flanged ferrule, *b*, by which the said enlargement is connected to the stem, the whole being adapted to the body A of the instrument, as set forth.

167,774.—CHUCKS. Jacob W. McClure, St. Louis, Mo., assignor of one-half his right to William H. Garrett, same place. [Filed Aug. 7, 1875.]

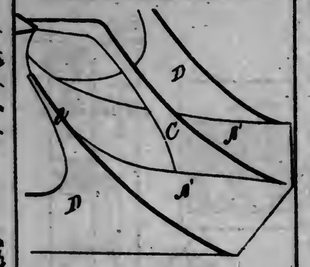


1. The chuck-shaker formed of hub A, inclined radial spokes or vanes C, and rim D, having circular recess D', as and for the purpose set forth.

2. The combination of the propeller-shaker C D, firmly attached to shaft H, and short-curving hand-sleeve or handle E, substantially as and for the purpose set forth.

3. The combination of the rotatory shaker A C D and shaft H, with handle E, and bolt *c*, as and for the purpose set forth.

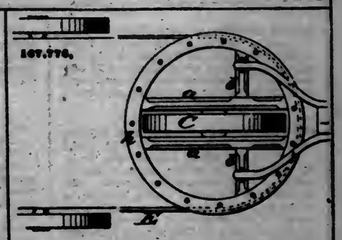
167,775.—SNOW-PLOWS. S. B. Miner, St. Peter, Minn. [Filed Apr. 10, 1875.]



The double-inclined shovels A' A' extending to the front end of the plow, in combination with the inclined cutter C, wings D D, and mold-boards *b b*, whereby the snow is carried rearward and discharged laterally on each side of the track, substantially as described.

167,776.—THERM-WHEELED DRAFT. John W. Miner, Middleborough, Mass. [Filed Mar. 20, 1875.]

167,776.

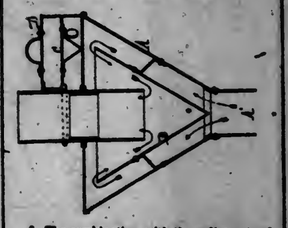


1. A third or guiding wheel, C, having its axle-bearings in bars which are rigidly secured to a horizontal flanged ring movable about its axis, in combination with the embracing-strap E, secured to the bed A of the vehicle, substantially as described.

2. The flanged ring formed of two metal flanges, *b b*, bolted to an intermediate wooden body, *g*, and applied to the bed A, substantially as described.

167,777.—HEATING-DRUMS. Frank Munson and L. B. Dick, Buchanan, Mich. [Filed June 17, 1875.]

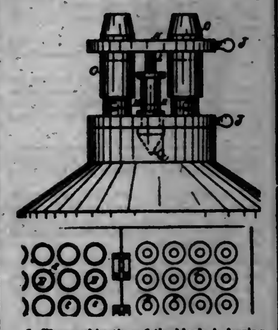
Brief.—The shelf is supported on the drum and can be revolved around the pipe.



1. The combination, with the radiator A, of the shelf C, supported above the surface of said radiator, and capable of a complete revolution around the stove-pipe, substantially as described and shown.

2. The combination, with the radiator A, of the shelf C, supported above the surface of said radiator, and the cover D, substantially as described and shown.

167,778.—CARTRIDGE-LOADING DEVICES. Warren Noyes, Gorham, N. H. [Filed Mar. 10, 1874.]



1. The combination, with the plate F, the powder or shot cup and fixed cover-rod L, & with cover H, the charger I, outer shells C, and inner registered shells, and cut-off valves J J, substantially as and for the purposes set forth.

2. The cartridge-filling device herein de-

scribed, consisting of the perforated base A B C, having cushioned and hinged cover D and E, and the powder-and-shot case provided with adjustable charges, as described, and the rammer F G H, when combined to operate substantially as and for the purposes set forth.

167,779. ARTIFICIAL LEGS. Jos. O'Brien, Kalamazoo, Mich. [Filed Dec. 20, 1874.]

Brief.—A flat spring, bearing upon the inner end of the lever-arm, brings it back to position when forced in either direction. The movement of the heel is guided by a curved recess, on which the end of a metallic arc works. This arc of metal is secured to the leg portion above the heel, and has connected with it a spring to throw the heel forward. A metal-valve turns upon the leg portion in pivoted between circular chocks upon the thigh portion, and heel secured to it a pendent plate. A spring within the leg portion works between this upon a crescent-shaped cross-bar.



1. The toe-section D, pivoted to the section C at *a*, in combination with the knuckle articulation, the spring *s*, the step *s'*, and the bearings *b*, substantially as described.

2. The foot C, connected to the leg-section B by means of a ball-and-socket joint, in combination with the arc *f* and spring *g*, substantially as described.

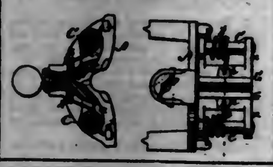
3. The ankle-shield E, attached to the foot by means of side springs *h*, substantially as described.

4. The semicircular tenon G, pivoted between the cheeks I I, and having the patella-plate *j* secured to it, in combination with the spring K and the cross-bar J, substantially as described.

167,780. PRINTERS' GROOMS. A. J. O'Hara, Jersey City, N. J. [Filed July 30, 1875.]

A printers' quoin, composed of a guide-frame, A, follower B, and screw C, which extends in the cross-bar of the guide-frame, all combined and operating substantially as shown and described.

167,781. HEMP-HOLDERS. John D. Owen and Geo. M. Coulter, Mattoon, Ill. [Filed Jan. 20, 1875.]

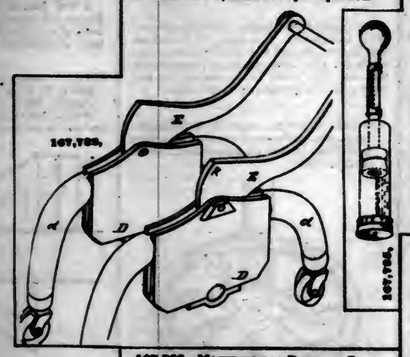


The combination, with the bed-plate A, having clamps for securing it to the desk-board, of the independently-acting cams G G having lugs *a b*, springs *b b*, and hung on posts O O, all as set forth.

167,782. SEWING-MACHINE CASTERS. L. A. Parker, Norwalk, Ohio. [Filed June 26, 1875.]

Brief.—A transverse sliding bar, carrying a pair of casters, works within a slide-box secured to the treadle-shaft, there being one arranged on either side of the sewing-machine table. A cam-lever with projecting handle is pivoted within and near the top of the slide-box, and serves to actuate the bar, forcing it down to raise the machine on the casters, or, by releasing it, rests the weight thereof on the feet of the table in normal position.

The combination, with the caster-feet and transverse sliding bar *c*, of the cam-lever E, and slide-box D, substantially as specified.



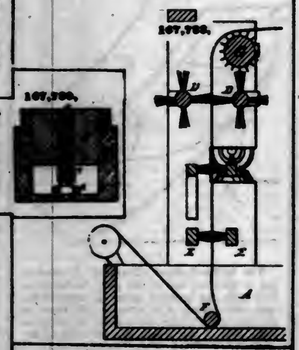
167,783.

167,783. MACHINES FOR PAINTING GLOVE. Henry H. Phillips, Suffolk, N. Y. [Filed July 10, 1875.]

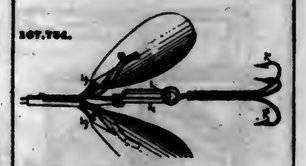
Brief.—Delivery-roller is armed with spurs, over which the fabric is intended to pass without nearing the surface.

1. The zinc-rest A, having the guide F, in combination with the stationary brushes B B and rotary brushes D D, arranged on opposite sides of the fabric to be cleaned, and roll G, armed with points, substantially as and for the purpose set forth.

2. The combination, with a outer or zinc rest and its contained guide, of a bearing-roll G, having its cylindrical surface composed of bearing-points over which the fabric passes, for the purpose set forth.



167,784.



The above-described spoon-hook, having, in combination with rod *r* and hooks *a*, the sliding and revolving sleeve *s*, with two spoons directly opposite each other, attached thereto by hinges *s*, supported by springs *s*, substantially as and for purpose set forth.

167,785. SPHYGMOSCOPE. W. R. Pond, Stockton, Cal. [Filed Aug. 30, 1875.]

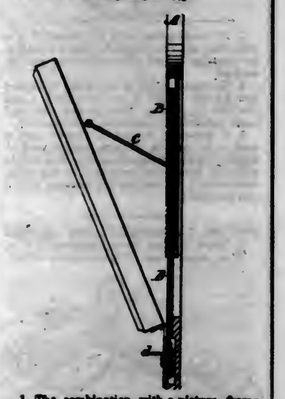
1. A sphygmoscope provided with a terminal or indicator tube, whose outer end terminates in a bulb or enlarged chamber closed to the atmosphere, substantially as set forth.

2. The combination of a fluid-receptacle, a terminal or index tube, and a bulb or air-chamber closed to the atmosphere, and communicating with said tube, substantially as set forth.

3. In a sphygmoscope, the combination, with the terminal or indicator tube, of a scale adjustable thereon, substantially as set forth.

4. The combination, with the fluid-receptacle, of a terminal tube or indicator, provided with a piston end, and fitting and movable in the fluid-receptacle, to regulate the height of column in the instrument, substantially as set forth.

167,786. DEVICES FOR HANGING PICTURES, MIRRORS, &c. Harvey D. Fogg, Dayton, Ohio. [Filed Aug. 30, 1875.]



1. The combination, with a picture-frame or mirror, of the links C and a sliding bar, D, to which the lower part of the frame or mirror is hinged, as and for the purpose described.

2. The combination of the holder case B, having teeth or notches *a*, with the sliding bar D, having a rod, *b*, pawl *c*, and latch *d*, as and for the purpose described.

3. The combination, with the picture-frame, of the links C, sliding bar D to which the picture-frame is hinged, the rod *b*, pawl *c*, latch *d*, and case B, having teeth *a*, for the purpose described.

167,787. PRINTING-PRESSES. Alex. R. Rodgers, Westchester, D. C., assignor of one-half his right to Daniel Reed, same place. [Filed Apr. 24, 1876.]

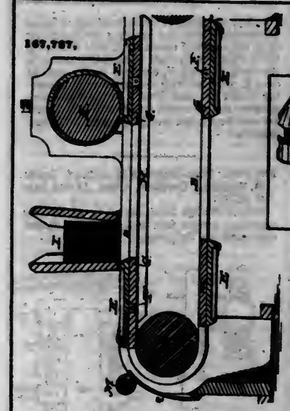
Brief.—An endless belt, carrying several forms, passes under the hopper, from which a card is taken and held over the bed by the fingers, and carried under the impression-roll, when it is deposited into a suitable receptacle.

1. The endless apron or belt B, having forms E attached thereto, in combination with the ink-roller M, the impression roller or cylinder K, and the card trough or hopper I, substantially in the manner and for the purposes set forth.

2. The automatic feed-fingers or card-separators O, in combination with the shields R, to protect them from ink in passing the ink-roller, substantially as set forth.

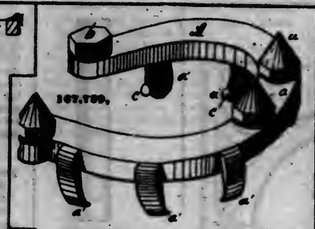
167,788. SHUT-MILLS. William Richmond, Thomas Lyon, and Jas. McGill, Lockport, N. Y. [Filed Apr. 17, 1875.]

Brief.—Arrangement of parts to secure accurate adjustment of the brushes.



1. In combination with the horseshoe A, the pallet *a*, having their faces countersunk, substantially as described.

2. In combination with the base A of a horseshoe, the fastening-lugs on opposite sides, provided, respectively, with the horizontal inwardly-projecting screws *a*, and the inwardly-projecting flanges *a'*, whereby said shoe may be fastened and unfastened by merely turning the screws against the side of the hoof, substantially as described.

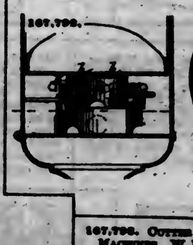


167,789.

167,790.



167,790.



167,791.



The combination of the frame A, exterior hollow box B, having the slide b, with the cutter C, double springs *c c'*, and marker D, all constructed and operated substantially as and for the purpose hereinbefore set forth.

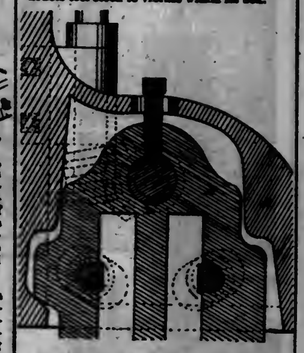
167,792. LAMPS. Bennett B. Schneider, New York, N. Y. [Filed Aug. 12, 1875.]

1. The oil-reservoir provided with an independent locking-stop for operation in connection with a locking-slot or opening in the receiver, in combination with a separate connection for the valve in the bottom of the reservoir, whereby the closing of the valve is insured when unlocking the reservoir to remove the latter, essentially as described.

2. The combination, with the valve F, constructed to turn and at the same time move axially, of one or more spiral grooves, *h*, and tents or projections *i*, substantially as and for the purposes specified.

167,793. CUTTER-HOLDERS FOR PLANING-MACHINES. W. Bell Smith, Charleston, S. C. [Filed July 17, 1875.]

Brief.—The worm and wheel cause the double tool-stock to vibrate within its box.



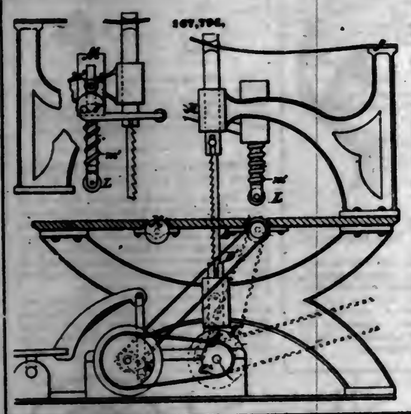
The box A and double tool-stock B vibrating in same, in combination with worm and worm-wheel, all constructed and operating substantially as and for the purpose described.

167,794. SCROLL-SAWING MACHINES. H. Smith, Philadelphia, Pa. [Filed July 27, 1875.]

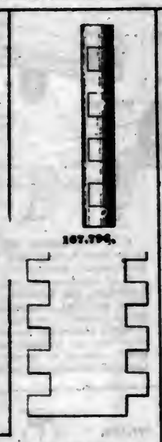
Brief.—The pressure-roller is supported in bearings attached to the lower part of a rod vertically adjustable in a post secured to an arm projecting above the table. The roller is held down by a spiral spring operating upon the rod, to which it is connected and can be raised, when required, by a pivoted cam-lever, working against an anti-friction roller secured to a short shaft on said rod.

The pressure-roller *k*, held down by the spring *m'*, in combination with the cam-lever *l*, for raising it when required, substantially as set forth.

167,796.

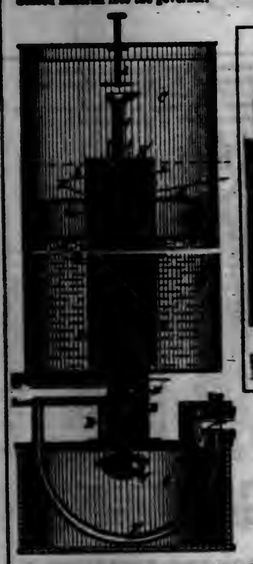


167,796.



167,796. GAS-GOVERNORS. WM. D. SHOW, Brooklyn, N. Y. [Filed Aug. 20, 1875.]

Brief.—The hollow valve is carried by a tubular stem attached to the float, and projecting upward to admit of the insertion of shot, whereby the center of gravity of the valve and float is kept as low as possible. The siphon-trap prevents the entrance of condensed material into the governor.



1. The gas-holder float, consisting of the body H, dome H', and sheath S, tube t, and hollow ball-valve V, all constructed and combined in the manner and for the purposes specified.

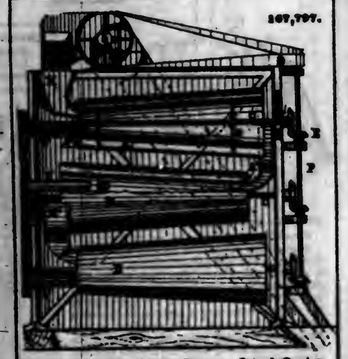
2. The combination with the float H H' S, tube t, and valve V, of the chamber O', valve-seat tube E, and cones D, perforated at top with holes f, and laterally with holes h, all constructed and arranged as and for the purpose specified.

3. The combination, with a gas-governor, of the siphon-trap T, connecting the inlet and delivery pipes, to prevent the entrance of condensed matter into the governor, and provide for its escape into the meter in the manner described.

167,796. MANUFACTURE OF METAL TUBING. Daniel M. Somers, Brooklyn, N. Y. [Filed Apr. 12, 1874.]

The method of making short metallic tubing by bending a blank of metal into a tubular form, then coating its entire surface with soft metal or alloy, which unites its edges, and then forcing the same by a mandrel through dies, substantially as described.

167,797.



167,797. GRAIN-DRIERS. Joseph Boutar, Buffalo, N. Y., assignor of two-thirds his right to Chas. Lenfest and G. A. Phillips, same place. [Filed Aug. 2, 1875.]

Brief.—The conveying-drums are provided on their interior surfaces with longitudinal elevating ribs. An air-blast is forced through the dust and its branches.

1. In a drying apparatus, the combination, with a suitably arranged frame, of the conical non-perforated drums arranged one above the other, and revolving with their axial lines in a horizontal plane, with the larger end of one drum opposite the smaller end of the next, substantially as described.

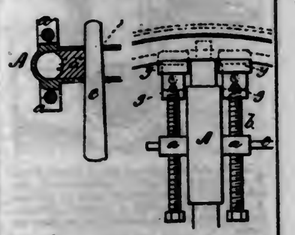
2. In a drying apparatus, the combination, with the non-perforated conical shell B, of the longitudinal radially-projecting ribs A', spiders D, and the shaft C, said shaft being arranged horizontally within a suitable frame, and rotated by mechanism, substantially as described, for the use and purpose set forth.

3. In a drying apparatus, the combination, with the drums B, arranged horizontally within a suitable frame, of the hopper K', hot-air duct R, and receiver L, said drums consisting of conical non-perforated shells, having spider-arms D and shafts C, and the inwardly-projecting rim A", and revolving in a horizontal plane, substantially as described, for the purpose stated.

4. The combination, with the skeleton frame X, provided with the bearings for the shafts C, of the series of revolving drums B, having bevel-wheels E on their ends, connected with the upright shaft F, hoppers K K', and the duct R, provided with the branches U, extending within the said drums B, the whole constructed and arranged substantially in a manner and for the use and purpose set forth and described.

167,798. TIRE-SETTING MACHINES. Irwin H. Spelman, Cortland, Ohio. [Filed July 3, 1875.]

Brief.—Wedge locks device to spoke. By operating screws felly and spoke are forced apart and tire tightened.



The U-shaped spoke-plate A, having threaded ears a a and slots c, the slide-block d, having grooves f h, the set-screws g having swivel-caps g, and the wedge e, all constructed and combined as described.

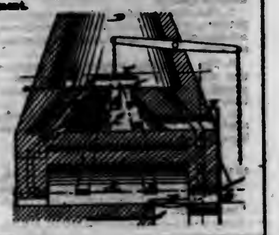
167,799. CORRUGATED COLLARS AND MUFFS. Christian Stutzmann, New York, N. Y. [Filed Jan. 20, 1875.]



In a combined collar and muff, the flexible supporting-piece O arranged between the front and lining of the collar and muff, and extending the entire length of the collar-piece and entirely around the muff, substantially as described, whereby the shape of the latter and the collar is preserved, as and for the purpose specified.

167,800. FURNACES FOR THE MANUFACTURE OF IRON AND STEEL. DEDICT FROM CHR. WILLIAM A. STEPHENS, Bordentown Station, N. J. [Filed Mar. 4, 1875.]

Brief.—By the flame gases from the lower chamber are admitted, either to the upper chamber or the stack. The ore roasted in the upper chamber is passed by flues to burners which carry it to chamber A for further treatment.



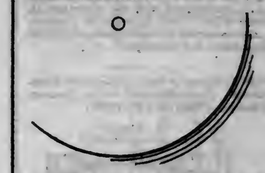
1. The combination, in a furnace for making iron and steel, of the lower arched chamber A, the fire-place B, stack D, and the conical ore-chamber C, superposed between the stack and the arched chamber, and communicating with the latter by passages c c, substantially as described, for the object specified.

2. The combination, with the arched chamber A, fire-chamber B, stack D, and conical chamber C, superposed between the stack and arched chamber, and its upper end opening into the stack, of the passages c c, communicating with the arched and superposed chambers, the flues f forming a continuation of the passages c and communicating with the stack, and the dampers E, g, and g, for closing and opening the flues f and the open end of the chamber C, as set forth.

3. The combination, with the upper and lower chambers A B and stack D, of the passages d d, communicating between the above H I of the upper and lower chambers and with the stack, substantially as and for the purpose herein specified.

167,801. APPARATUS FOR DESICCATING EGG-BATTER. William Osborn Stoddard, New York, N. Y. [Filed May 31, 1875.]

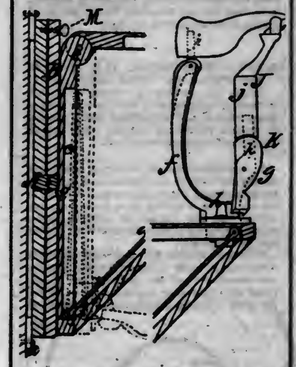
Brief.—Upon the ordinary base is used a dried film of egg-batter. Thereon other egg-batter is desiccated.



1. A film of dried batter of eggs, in combination with the base to which it is applied and adheres, in order to receive a layer or layers of moist batter of eggs to be desiccated, substantially as described.

2. The combination, with a base having a surface of non-resinous, unodoriferous wood, stone, slate, or other specified material, having the characteristic set forth of an adhering film of dried batter of eggs, substantially as described.

167,802. BOOT AND SHOE PEGGING STANDS. Andrew Swan, Ticonderoga, N. Y. [Filed May 1, 1875.]

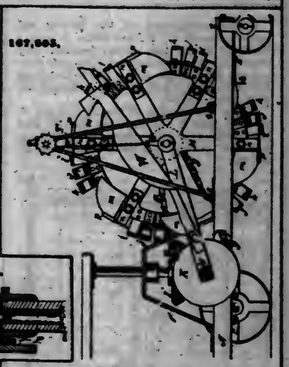


1. In a boot and shoe sticking stand, the combination of the step-jointed rods D with the plate C and hinged leaf B, substantially as specified.

2. The combination of the jointed rods D, plate C, hinged leaf B, and pivoted plate E, substantially as and for the purpose set forth.

3. The pivoted cam K, provided with the projection k, and detachable arm J, having the support H, in combination with the arm f, having projecting pin p, adapted to receive the last L, all substantially as shown and described.

167,803.



1. The vertically-adjustable excavating-wheel, provided with a series of curved loosening blades and shovels, i, j, and k, in combination with the frame L, chain-wheels K and K', chain g, and driving-shaft H, substantially as and for the purpose set forth.

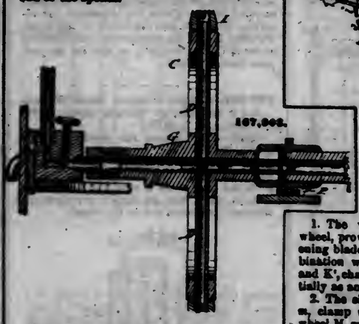
2. The shovel, composed of the side pieces m, clamp n, and scraper p, attached to the wheel M, substantially as and for the purpose set forth.

3. In a ditching-machine, the driving-axle D, revolving in adjusting journal-boxes, and provided with friction-wheel F, in combination with the connections F', lever F'', and friction-wheel G, upon the driving-shaft H, as and for the purpose set forth.

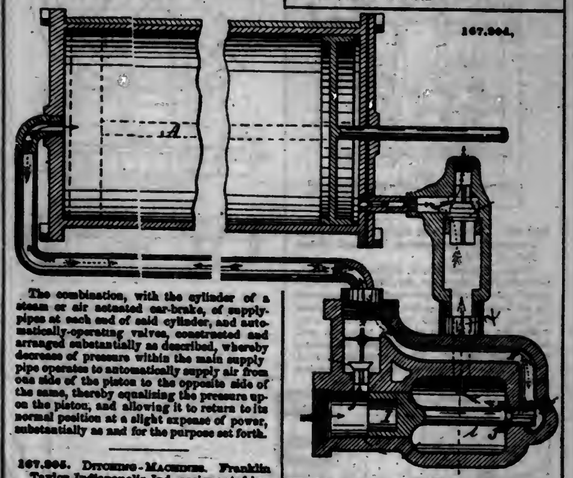
4. The portable bridge E, provided with the guiding-rollers r and side pieces g, as and for the purpose specified.

5. The double cone windlass V, provided with a crank and ratchet, and mounted upon the removable frame T, in combination with the chains w, swivels w', and wheel M, as and for the purpose set forth

167,804.



167,804.



The combination-of hollow shaft G, hollow spoke D, having caps I, with parts x, and the interior sliding tube J, provided with parts a a and a' a', the exterior sleeve L, and lever P, all constructed substantially as and for the purposes herein set forth.

167,805. STEAM CAR-BRAKE. HORACE H. Taylor and Alfd. McCamish, Beardstown, assignors of one-third their right to Wm. H. Smith, same place; said Taylor, McCamish, and Smith assignors of one-fourth interest to Robert O. Loosley, Rock Island, Ill. [Filed Aug. 30, 1875.]

The combination, with the cylinder of a steam or air actuated car-brake, of supply-pipes at each end of said cylinder, and automatically-operating valves, constructed and arranged substantially as described, whereby decrease of pressure within the main supply-pipe operates to automatically supply air from one side of the piston to the opposite side of the same, thereby equalizing the pressure upon the piston, and allowing it to return to its normal position at a slight expense of power, substantially as and for the purpose set forth.

167,806. DITCHING-MACHINES. Franklin Taylor, Indianapolis, Ind., assignor to himself and Thomas B. Chandler, same place. [Filed June 5, 1875.]

Brief.—The excavating-wheel is made vertically adjustable, and is provided with a series of curved blades and shovels of peculiar forms, which loosen and deliver the earth onto a pivoted oblique double apron, located on each side of the wheel. The bucket-shovel is composed of side pieces and a scraper, held in place by a clamp. Frictional gearing is used. The wheel is adjusted by a double cone windlass and ratchet on a removable frame. Grade-rails and pins, against which friction-wheels on the frame revolve, guide the machine.

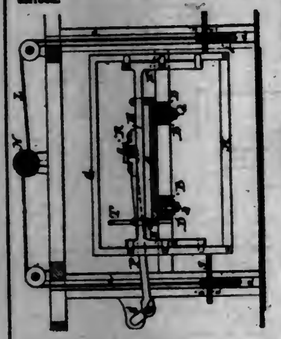
6. The grade-rails O, in combination with the grade-pins h, provided with clamps for the reception of the rails, as shown and described.

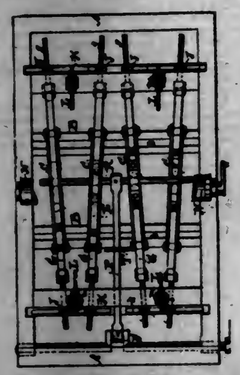
7. The combination of the excavating-wheel M, provided with curved loosening blades and shovels, with the pivoted oblique double apron W, arranged substantially as shown and specified.

167,806. STONE-SAWING MACHINES. Saml. Thompson, Hart's Falls, N.Y. [Filed Aug. 30, 1875.]

1. The combination of the driving and guide frame E F, the saw-frame G sliding vertically therein and moving longitudinally therewith, the stationary but adjustable driving and guide-frame guides C, and the rising and falling saw-frame guides J, substantially as herein described.

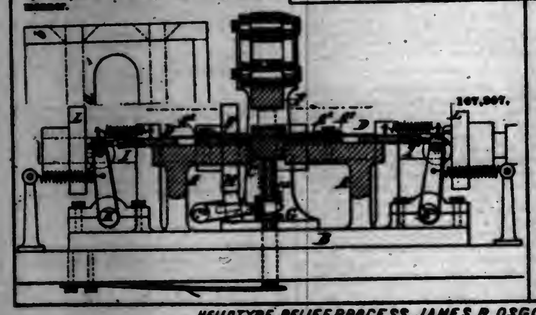
2. The combination of the driving-rod P, its fixed guide T, and the cross-head R, with the driving and guide frame, and saw-frame and their guides, substantially as herein described.





167,807. PAPER-BOX MACHINES. George Leonard Turney, London, England. [Filed Feb. 4, 1875.]

Brief.—A paper blank, of the form shown, is placed over the pieces, the detachable former is laid onto it, and the pressing-plate depressed for an instant, causing the sides of the blank to turn upward. The pieces is held down while the plate rises and the side and end folders advance. The plate then descends, completing the box. The former is removed by hand, and the box pasted in any suitable manner.



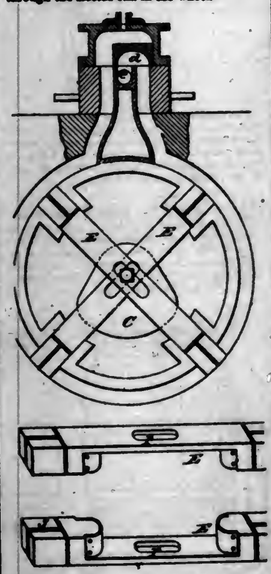
167,807.

1. The novel construction of box above described, consisting of a creased and folded blank composed of a lining-paper and a covering-paper, with an oval or other shaped hole cut therein to give access to the interior of the box, each lining and covering papers being so arranged as to form guides for the reception of a sliding lid for closing the box.

2. The combination, in a machine for manufacturing boxes from paper blanks prepared as described, of the creasing-table A, the rectangular piston C, with its projection for receiving the blank, and the former E, the pressing-plate F, and the alternately-reciprocating slides D D', substantially as and for the purpose above set forth.

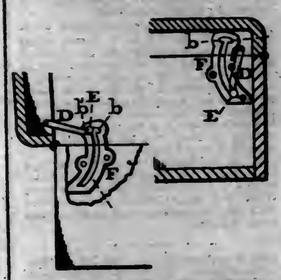
167,808. ROTARY ENGINES. Jacob W. Vanorder and George Sloyage, Sioux, Iowa. [Filed Apr. 7, 1875.]

Brief.—The pistons are provided with a longitudinal slot at the center, through which passes the axis of the engine. Said pistons are also cut away in their middle portions, to receive the cam which is attached to the fixed axis, by which they are caused to reciprocate through the slotted rim in the wheel.



The pistons E, cut out and slotted in their middle portions, in combination with the fixed cam C and retaining slotted rim-wheel B, as shown and described, to operate as specified.

167,809. TRUNK-STAVE. Maurice A. Wess, Philadelphia, Pa., assignor of one-half his right to Jos. F. Field, same place. [Filed Aug. 2, 1875.]



As an improvement in the art, the lower plate F, rigidly connected to the body of the trunk, and having a longitudinally-extending slot, c, and slots *b b'*, projecting laterally therefrom, in combination with the upper arm D, pivoted to the lid and formed with a button, E, all constructed, arranged, and operating as herein shown and described.

167,810. WINDOW-SHADE CLASPS OR FASTENERS. Henry Marshall Wells, Toronto, Canada. [Filed July 27, 1875.]



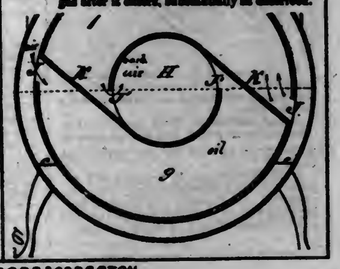
The within-described shade or curtain holder, composed of the two clasping parts A and E, one part being materially longer than the other, the coiled spring C, and the arms or handles D E, projecting beyond the coiled spring the whole formed of a single piece of wire, and the ends of the wire being adapted to be inserted and concealed within the coiled spring, substantially as set forth.

167,811. CARBURETTERS. D. L. Westcott, Fort Wayne, Ind. [Filed Aug. 4, 1875.]

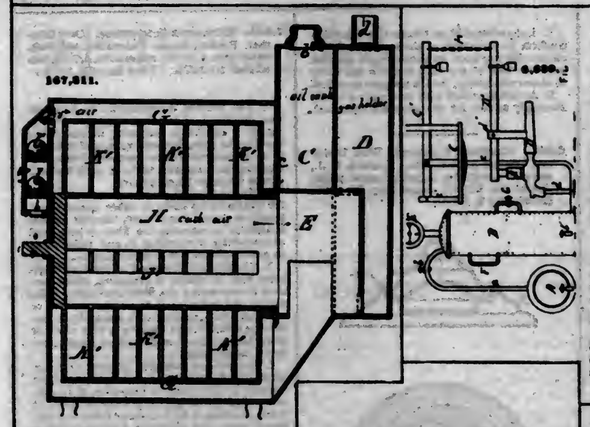
Brief.—The air-blowing cylinder revolves in a tank of hydrocarbon fluid, which rises in about its axis, and is provided with a number of vertical partitions, between which the air passes and becomes carbureted.

1. In a carburetter, the revolving cylinder G, having the tube H, the vertical and longitudinal partitions K K', and openings J J', whereby the air or gas is carried down into the hydrocarbon fluid and discharged uniformly into a suitable receptacle from the tube of said cylinder, as described.

2. In a carburetter, the combination, with the revolving cylinder G, as described, and the feed-chamber O, of the gas-chamber D, provided with valves, to prevent a return of the gas after it enters, substantially as described.



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167,811.

6,660.

167,812. ALPHABET-REMINDERS. Barnett B. Whaley, Brooklyn, N. Y. [Filed Apr. 17, 1875.]



1. The holders B' B', constructed of a station frame to receive and hold removable cards, &c., in combination with the box or casing A; and the operating-keys E connected with the holders, and projecting through the box, all constructed and arranged substantially as and for the purpose described.

2. The cases A, having the cushion F applied to its bottom, in combination with the pivoted holders B' and the keys E, as and for the purpose described.

167,813. PREPARING DENTAL FILLINGS. R. S. Williams, New York, N. Y. [Filed June 7, 1875.]

Brief.—The foil may be plain, or roughened by shrinkage between papers heated and pressed, or between sheets of stretched rubber allowed to contract. It is formed into the shapes shown, and formed as claimed. Evaporation of the volatile substance then causes



The process hereinbefore described of preparing foil for dental purposes, by causing the last or overlapping layer of foil to adhere to the foil next beneath it by or with the aid of collodion or other substance dissolved in a volatile fluid, substantially as described.

167,814. TORPEDO-ENVELOPE MACHINES. D. J. Webb and Gustavus A. Lilienthal, Jersey City, N. J. [Filed Aug. 10, 1874.]

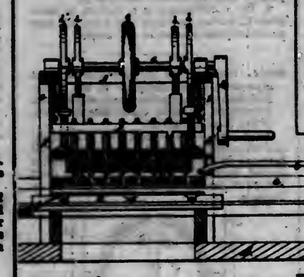
Brief.—The paper is placed on the perforated cutting-board, when the slotted perforated plate carrying rubber cushions on its face descends, and holds the paper in position, while the sliding gang-knives cut it into shape opposite. The plungers then descend, forcing the paper through the cutting-board into the movable perforated holding-plate.

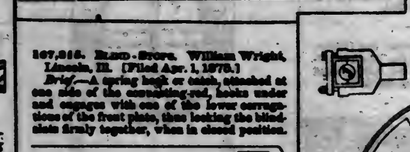
1. The combination of the plate B, having pins b, with the perforated plates C, D, and E, operating substantially as and for the purpose specified.

2. In combination with a machine for cutting and forming paper torpedo-envelopes, the perforated holding-plate E, operating as and for the purpose herein specified.

3. The combination of the gang-knives f f, the grooved perforated plate D, and the plate b, arranged to cut and form the paper into envelopes, substantially as described.

4. The combination of the perforated plate D with the perforated grooved plate C, which is provided with rubber bearing-surfaces, for the purpose of holding the paper in position when being cut and formed into paper torpedo-envelopes, substantially as described.





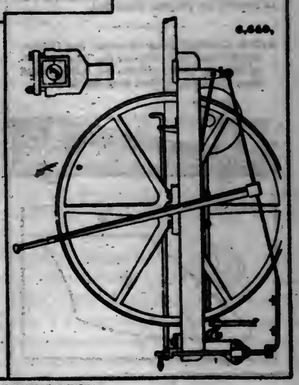
167,814.

167,815. BLIND-STOPS. William Wright, Lincoln, Ill. [Filed Apr. 1, 1875.]

Brief.—A spring hook or catch, attached at one side of the connecting-rod, hooks under and engages with one of the lower corrugations of the front plate, thus locking the blind-plate firmly together, when in closed position.



The spring hook or catch H, in combination with the corrugated plate D, having ledges projections a a, and spring G, having coils c c, and bent arms b, all substantially as and forth.



6,660.

REISSUES.

6,660. APPARATUS FOR FORCING LIQUORS. John F. Bennett, Pittsburg, Pa. Patent No. 126,010, dated Apr. 23, 1872; antedated Apr. 12, 1872. [Filed Aug. 2, 1875.]

Brief.—The air in the reservoir is compressed by the inflowing water. It then passes to the tank, an equable pressure being maintained. When the pressure exceeds the standard limit, the lever mechanism, connected with the flap-plunger, shuts off the water until the pressure returns to a normal state. The air-receptacle has the pressure-gage and attachments shown.

1. In combination with a barrel or similar receptacle for containing liquid or draft, a reservoir for compressed air to exert aeriform pressure upon the liquid, and an automatic device to regulate and render uniform the pressure of the aeriform body upon the liquid in the barrel, substantially as specified.

2. The combination of the tank B, (divided or undivided,) pressure-valve C, and hydrant or pipe D, when combined to act substantially as set forth.

6,659. HARVESTERS. John Gere, Brattleborough, Vt. Patent No. 30,682, dated Dec. 27, 1860; reissue No. 1,120, dated Jan. 15, 1861; extended seven years. [Filed May 17, 1875.]

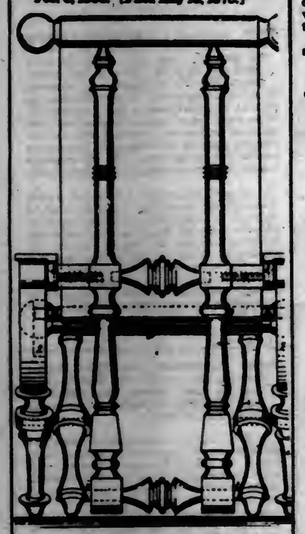
1. The combination, substantially as above set forth, of the finger-beam projecting laterally at one side of the main frame and stiff-draft tongue, and of both the running-wheels of the harvester, the hinged link connecting the finger-beam and main frame, and the hand-lever connected with the inner end of the finger-beam, for the purpose of turning up the outer end thereof upon the lower hinge-pivot of the said link as an axis.

2. The combination, substantially as before set forth, of the finger-beam projecting laterally at one side of the main frame and stiff-draft tongue, and of both the running-wheels of the harvester, the link connecting the finger-beam and main frame, the hand-lever connected with the inner end of the finger-beam, and the second lever upon the main frame.

3. The combination, substantially as before set forth, of the cutter-stock, the crank for driving the same, the connecting-rod, and the swivel journal-box of the connecting-rod, having its pivots arranged longitudinally of said connecting-rod.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

6,441. REAPING-CRADLE. Geo. Hunsinger, New York, N. Y. Patent No. 59,410, dated Feb. 6, 1866. [Filed May 10, 1875.]



1. The combination, with the leg-frames, or two pairs of legs pivoted together, and provided with a suitable seat, of a back-frame, mounted at its lower end on one of the leg-frames, and suitably connected above to other portions of the chair, substantially as and for the purpose described.

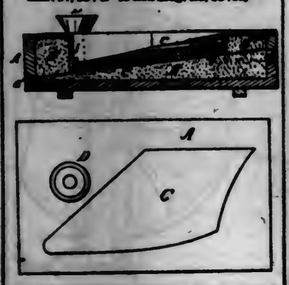
2. The combination, with the two leg-frames, a back-frame, and a seat and back, of a cord, bar attached to said seat and back at their junction, and having its ends arranged in grooves 3 3 in one of the leg-frames, substantially as and for the purposes described.

3. The combination, with the back-frame and the two leg-frames, of arms K K, or their equivalents, pivoted to the rear upper portions of one of the leg-frames and to the back-frame, as and for the purposes described.

4. In combination with the leg-frames, back-frame, and connecting-arms K K, means for varying or adjusting the arms relatively to the leg-frame to set and hold the back at different inclinations, as set forth.

5. A seat-frame, having one set of its cross-bars extended upward above the level of the seat, in combination with a back-frame which is coupled or connected to said seat-frame above the level of the seat, all substantially as and for the purpose described.

6,442. CASTING MOLD-BOARDS. Jos. Oliver, South Bend, Ind. Patent No. 70,263, dated Apr. 28, 1868; reissue No. 6,321, dated Mar. 17, 1874. [Filed Aug. 20, 1875.]



1. A chamber-chill, its bottom constructed to conform to the shape of the mold-board, the chamber being open its entire length parallel with the face of the chill to allow the water to steam off rapidly, for the purpose specified.

2. A chill provided with core-seats *c c*, substantially as and for the purpose described.

6,443. HARROWS-ROSETTE. Wm. Ulrich and Charles Hachmeister, Newark, N. J., assignors to Andw. Albright, same place. Patent No. 90,610, dated May 25, 1869. [Filed July 9, 1875.]





1. The combination, in a rosette, of a metal base-plate with a base of compressible composition.

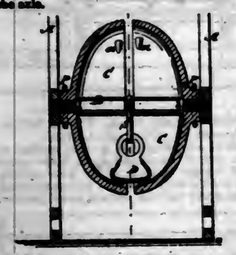
2. The combination, in a rosette, of a metal base-plate with a base of compressible composition united by means of rosette or bolt B.

3. The combination, in a rosette, of the base-plate B with the hard-rubber boss A.

4. The combination, in a rosette, of base-plate B, having rosette *m*, with a suitable boss or center-piece secured in said recess.

6,444. CHEEK-YOKE. Elijah C. Barton, East Hampton, Conn., assignor to the Gong-Bell Manufacturing Company, same place. Patent No. 150,033, dated May 19, 1874. [Filed Aug. 14, 1876.]

Brief.—The bells revolve with the wheels, and are rung by means of tappets, with which they are furnished, coming in contact with a tongue loosely hung to the axle. The draft is applied through a bail loosely pivoted on the axle.



1. The combination, with the connected wheels A A, of one or more bells, arranged between, and connected to, said wheels, so as to revolve simultaneously therewith, and to ring when so revolving.

2. The combination of the loosely-connected tongue or draft-bar P with the wheels A A, and intermediately arranged revolving bell or bells.

3. The combination of the following elements: the wheels A A, a pair of open-mouthed or gong-shaped bells, B C, provided with striking mechanism, and an axle or cross-rod, D, connecting the said wheels.

6,445. EXPLOSIVE COMPOUNDS. Carl Dittmar, Boston, Mass. Patent No. 145,402, dated Dec. 9, 1873; reissue No. 6,750, dated Feb. 10, 1874. [Filed May 22, 1875.]

1. The process, substantially as hereinbefore described, of treating vegetable fiber to render it explosive, consisting in converting the fiber to pulp, desiccating it, and reducing it to grains, powder, or compact forms, and treating the same with nitric or nitric and sulphuric acids, all as explained.

2. The process of preparing vegetable fiber for treatment by acids or other specified materials to render it explosive, the said process consisting in reducing the fiber to pulp, and subsequently desiccating it, and reducing it to grains, powder, or compact forms.

3. The process described of treating vegetable fiber to render it explosive, which consists in converting the fiber into pulp, desiccating and reducing it to powder, grains, or compact forms, soaking it in a starchy or saccharine solution, and treating it with nitric or nitric and sulphuric acids and an alkaline solution, as set forth.

4. The process described of preparing vegetable fiber for being rendered explosive, which consists in converting it into pulp, drying it, and reducing it to grains, powder, or compact forms, treating it with nitric or nitric and sulphuric acids, and adding to it nitrate or chlorate of potash or nitro-glycerine, all as stated.

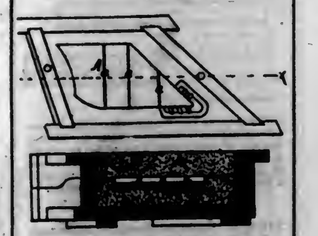
5. As a new or improved manufacture, the described explosive compound, consisting of starch, sugar, nitrate or chlorate of potash, or nitro-glycerine, and the granular or compact and solidified vegetable fiber, as herein before set forth.

6,446. PROCESSES OF MAKING PAPER-PULP FROM PALM. James P. Hayes, Washington, D. C. Patent No. 151,022, dated June 2, 1874. [Filed Mar. 27, 1876.]

1. Paper and paper-stock made partly or wholly from palm, and possessing the peculiar fiber, had the glossy or tacky-silicious ivory appearance and distinguishable properties, substantially as described.

2. The within-described process of making paper material from variegation of palm, wherein the subsumen is cut or torn into pieces of suitable size, then cooked in a close digester with thorough agitation and under steam-pressure, in a weak solution of alkali, naphtha, benzine, or soap, as set forth; then completely ground while steam passes freely through the grinder and intermingles with the material in grinding, reducing and bleaching it, the material being finally washed, all substantially as set forth and described.

6,447. CHILLS FOR CASTING MOLD-BOARDS. James Oliver, South Bend, Ind. Patent No. 90,573, dated Feb. 2, 1869; reissue No. 6,321, dated Mar. 11, 1873. [Filed Sept. 6, 1875.]



A chill for casting mold-boards for plows, constructed to conform to the shape of the mold-board, and provided with counterbored recess or openings of sufficient width to allow the escape of gas or steam while they prevent the entrance of molten metal therein when it is poured upon the chill, substantially as described.

NEW-TYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 12. TUESDAY, SEPTEMBER 21, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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NOTICE.

UNITED STATES PATENT OFFICE,
Washington, D. C., September 29, 1875.

Employés of the Office have been strictly prohibited, under penalty of dismissal, from furnishing copies of official records, except when ordered through the regular official channel. It is understood that the practice has grown up, partly because of difficulty in procuring copies promptly, by regular order, when required for immediate use. That no such inconvenience may arise, orders for copies needed immediately, will, upon request, be made special, and filled at once.

ELLIS SPEAR,
Acting Commissioner.

COMMISSIONER'S DECISIONS.

LOUIS MCMURRAY.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the application of Louis McMurray for patent for manufacture of* SOLDER-WIRE.—*Decided September* 28, 1874.]

A claim covering the manufacture of solder-wire by cutting a cord from the periphery of a solder-disk, and compressing it into finished form between rollers, is not anticipated by a patent for manufacturing zinc wire, by cutting a cord from a zinc disk, rounding its corners by compressing-rollers, and then drawing it out through a draw-plate, because solder-wire could not be made by the zinc-wire process.

Where an applicant avails himself of a portion of a plan and mechanism used to make one article, and supplies to it the steps necessary to constitute a complete and novel process for making another article, a patent should be granted.

THACHER, *Commissioner:*

The alleged invention in this case is clearly stated in the following claim:

The manufacture of solder-wire by cutting up the solder disk or stock into a cord and then subjecting this cord to compression between roller-shaping dies, substantially as shown and set forth.

The above claim stands rejected on English patent of William Newton, No. 10,256 of 1844.

In this patent Newton describes his method of manufacturing zinc wire as follows:

In commencing the manufacture of wire, a plate or sheet of zinc of about the thickness of the wire intended to be produced is taken, and must be cut into strips or rods by means of the ordinary shears or apparatus used for slitting or cutting up iron, or the rotary cutters hereafter described may be employed. These strips are cut off in widths equal to the thickness of the metal plate, so as to form *square rods*. These rods are then rounded off by passing them between grooved rollers, after which they are passed through the draw-plate, or they may be conducted direct to the draw-plate, without employing the grooved rollers.

In Newton's case, then, the zinc is first cut into *square rods*, and, if advisable, the corners rounded by passing the rod between grooved rollers, and finally the wire is reduced to any desired size by "drawing" it through suitable dies.

In applicant's case the cutting-disks are provided with an adjustable gage, so that strips of sheet-solder of different widths can be cut from the disk, and as the metal is sufficiently pliable the strips, whether narrow or wide, can be compressed into cylindrical, semi-cylindrical, or other shaped wire of different sizes.

The solder-wire cannot be manufactured by subjecting it to Newton's process for making finished-zinc wire, as solder is not sufficiently ductile to admit of "drawing."

Applicant, by availing himself of a portion of the mechanism used in the manufacture of zinc wire, has produced a new result in the production of a valuable and improved article in a new way, and in so doing has transformed an incomplete process in the art of manufacturing zinc wire into a complete and novel process in the art of manufacturing solder-wire.

As the result effected in this case is new and useful,

and the inventive faculties appear to have been exercised in its production, I am convinced that a patent should issue for the invention applied for.

The decision of the Board is reversed.

GEORGE W. CASILEAR AND W. C. McINTIRE.

[*In the matter of the application of George W. Casilear and W. C. McIntire for letters patent for* IMPROVEMENT IN STAMPS, &c., *filed August*, 1875.—*Decided September* 27, 1875.]

The practice established in the Rouse and Stoddard case (7 OFFICIAL GAZETTE, 169) of suspending action upon an application, when that application is found to cover subject-matter embraced by a prior and rejected application, for the purpose of obtaining evidence from the prior applicant, if possible, of the abandonment of the invention by him by reason of public use or sale, abolished.

It having been decided by the courts that abandoned applications are no bar to the issue of a patent, they cannot delay that issue, and are not to be regarded at all.

The statute and the decisions of the courts being sufficient notice to rejected applicants, they and not the Office must be held responsible for any injury resulting from the abandonment of their applications.

SPEAR, *Acting Commissioner:*

It is alleged by applicants that one of their claims is held to cover subject-matter set forth in a rejected and abandoned application, and, in view of that fact, they ask that the rule requiring the Examiner in such cases to institute an inquiry for the purpose of ascertaining whether the invention embraced by the abandoned application has been brought into public use, be waived in this instance. They base their request upon the ground that the practice, under the rule mentioned, is unauthorized by law and practically inoperative. The practice referred to was established in the case of *Rouse and Stoddard*, (7 OFFICIAL GAZETTE, 169.) In accordance with the long-continued practice of the Office, the Primary Examiner had given, as one answer to the application of Rouse and Stoddard, a prior rejected application covering part of the same subject-matter included by their application. The doctrine had been recently distinctly announced by the United States Supreme Court, in the case of *Brown* vs. *Guild*, (6 OFFICIAL GAZETTE, 392,) that a mere application for a patent which had been withdrawn and never renewed was not a bar to a further patent for the same invention; and that where the invention had never been perfected or brought into actual use by the prior applicants, but had simply been experimented with by them, the mere fact of having unsuccessfully applied for a patent could not take the case out of the category of abandoned experiments. This decision was deemed by the Commissioner as obligatory upon the Office in its practice in regard to rejected and abandoned applications, and he accordingly held that the same should no longer be cited to defeat subsequent applicants for patents. At the same time it was his opinion that, as he was not only the guardian of the rights of inventors, but of the interests of the public as well, it was his duty to inform himself before granting a patent to the subsequent applicant whether that invention had not become the property of the public by reason of the introduction and public use of the same by the prior applicant. To this end he directed the Examiners that whenever such cases arose, letters of inquiry should be forthwith dispatched to the prior rejected applicant and his attorney of record, for the purpose of ascertaining whether the invention had been brought into actual use—at the same time informing them that an application was then pending for the same invention, and that the inquiry was made for the purpose of determining the right of the subsequent applicant to a patent therefor. The information was required to be in the form of affidavits, and counter affidavits were also to be received from the other applicants, if they desired.

The Commissioner declared he had no doubt that he had ample authority under the law to institute such an inquiry; but it was a question with him as to how such an investigation should be prosecuted. He admitted the fact of the unsatisfactory nature of *ex parte* evidence, but, under the restrictions of the law, was unable at the time to devise any better mode than an *ex parte* inquiry.

It will be seen, then, that the course finally adopted to obtain the information desired was in the nature of an experiment, the success or failure of which could alone be determined by experience.

And now that the practice has been fully tried, and it is alleged not only by present applicants but by many others, examiners as well as applicants, to be not only inoperative, but the cause of large additional labor on the part of the Office, which in effect has been entirely fruitless as respects the object it was designed to accomplish, it is eminently proper that such objections should be considered, and if the practice is found to be detrimental rather than beneficial, the same should be abolished.

In the first place it is urged that the proceeding being in the nature of an inquiry merely, the information returned by the person addressed is entirely voluntary on his part. He may, too, as is often done, refuse or neglect to reply at all. If he responds, the proceeding being an entirely *ex parte* one, and no provision made for examination or cross-examination, the bare statement of the party in interest must be received, and, if uncontradicted by opposing affidavits, must be acted upon without question. Indeed, there is little opportunity for opposing evidence in the absence of any provisions for the examination of witnesses, notice of time of taking testimony, day of hearing, &c.

Consulting his own interest alone, the person addressed may, with the hope of securing a renewal of his old application, conceal or withhold evidence that would have shown public use of the invention, or having lost interest or faith in the invention, or actuated with no desire to benefit others, he may give testimony which, on its face, would amount to evidence of abandonment or public use of the same in a completed form, yet, if tested by a proper examination, might have shown simply an unsuccessful and abandoned experiment. Thus, it is alleged, the proceeding recognizes the existence of contesting parties, and yet there is an entire absence of nearly all regulations analogous to a trial in court for judicially determining the matter in dispute. It is also urged that the Office, having decided that a rejected and abandoned application was not a sufficient reference on the ground established by the courts, that it was not legal evidence of a completed invention, and was therefore to be treated, so far as the merits of its subject-matter were concerned, as having never been filed, or as a dead letter, it is hardly consistent with such a view to ask the rejected applicant, as is now done in the circular sent out by the Office, to state the extent and character of the public use by him of "the invention fully described and shown in your" (his) "application."

The experience of the Office for the past few months has established the truth and force of these objections in a majority of cases. Examiners have found that, in order to fully comply with the requirements of this practice, a more critical examination than ever of rejected applications is necessary, and that after performing the additional labor of instituting the inquiry in question, they are left in no better condition to properly decide the case than before. I have concluded, therefore, to abolish the practice in the case of those applications filed prior to the passage of the act of 1870. The propriety of this course is, I think, manifest on every ground. In contemplation of the law, as interpreted by the decisions cited above, (and with the interpretation in those decisions I have nothing now to do,) these applications and the inventions for which they were made are absolutely abandoned, so far as these applicants are concerned, beyond the possibility of recall. To attempt to make them, therefore, the basis of action in instituting proceedings for the purpose of determining whether or not a patent would be valid if issued to a subsequent applicant, would be, in my judgment, to usurp the functions of the courts, and that in relation to questions of a nature the most difficult to decide. In the attitude in which the Office now stands toward the applications last considered, there can be no other possible object in attempting to enter into communication with the parties whose applications have been abandoned. The notice cannot be of any benefit to them if it do not serve to defeat the subsequent application.

In respect to applications filed since the passage of the act of 1870, in which cases the Office holds that only the application is abandoned, and that the parties may file new applications, it might be urged that the Commissioner should notify these parties and give them an opportunity to file a new application. But these applications must unquestionably be held to be abandoned under the statute, except under certain conditions, the judgment of which is in the discretion of the Commissioner.

If these abandoned applications are no bar to the issue of a patent, then they cannot delay that issue, and are not to be regarded at all. For if I may not delay a pending application on account of them, but must proceed at once with the examination, and am bound, in case no statutory bar appear, to issue the patent, then it is idle to notify the parties to these abandoned applications, and offer to give them opportunity to file new applications. Even while I am sending notices, I must issue the patent. But if any injury be done them, it is not without remedy. The patent is notice to them. In fact the statute was notice, and the decisions of the courts, and those who have abandoned these applications, and not the Office, must be held responsible for any injury that may happen.

The course I have indicated seems to me to be a logical consequence of the position taken by the Office in the decisions which I have cited, and, until reversed, those decisions must stand with all their consequences.

I direct, therefore, that the practice of sending the circulars named be discontinued, and that no further examination be made of abandoned applications.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date September 21, 1875.]

8,655.—Toy Money-Bank.—CANDIDE W. CRÔTEAU, Philadelphia, Pa. Application filed August 24, 1875. Term of patent 7 years.

8,656.—Pipe.—CLOUSE D. GRIMM, Glenwood, N. J. Application filed September 10, 1875. Term of patent 3½ years.

8,657.—Cigar-Box.—MAX HILSON, New York, N. Y. Application filed August 26, 1875. Term of patent 3½ years.

8,658.—Fancy Worsted or Woolen Fabrics.—AARON JEWELL, Lawrence, Mass., assignor to the WASHINGTON MILLS, same place. Application filed July 14, 1875. Term of patent 7 years.

8,659.—Gantlet-Boxes.—BYRON G. SHULTS, Johnstown, N. Y. Application filed January 2, 1875. Term of patent 3½ years.

8,660.—Stove.—WILLIAM TWEEDDALE, Brooklyn, N. Y. Application filed June 26, 1875. Term of patent 7 years.

8,661.—Jaws of Mop and Brush Holders.—CHARLES B. CLARK, Buffalo, N. Y. Application filed September 2, 1875. Term of patent 14 years.

8,662.—Cane or other Handle.—THOMAS R. LOVETT, Philadelphia, Pa. Application filed July 30, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date September 21, 1875.]

2,944.—Yeast.—SAMUEL AGER, Somerville, Mass. Application filed July 6, 1875.
"words 'SURPRISE EXTRA DRY HOP YEAST.'"

2,945.—Thrashers and Separators.—ALTON AGRICULTURAL WORKS, Alton, Ill. Application filed August 6, 1875.
"word 'CHAMPION.'"

2,946.—Self-Indexing Files.—WILLIAM A. AMBERG, Chicago, Ill. Case A. Application filed July 31, 1875.
"words 'self-indexing.'"

2,947.—Self-Indexing Files.—WILLIAM A. AMBERG, Chicago, Ill. Case B. Application filed August 5, 1875.
"word 'Indexicon.'"

2,948.—Fertilizers.—ATLANTIC AND VIRGINIA FERTILIZING COMPANY, New York, N. Y. Case A. Application filed June 12, 1875.
"VIRGINIA PATRONS."

2,949.—Stove-Polish.—H. A. BARTLETT & CO., Philadelphia, Pa. Application filed August 26, 1875.
"'Salamander' and the picture of a lizard in flames of fire."

2,950.—Brass, German-Silver, and Silver-Plated Goods.—BROWN & BROTHERS, Waterbury, Conn. Application filed July 24, 1875.
"a human hand and a star."

2,951.—Whisky.—JOHN E. CASSIDY, Watertown, Mass. Case B. Application filed July 31, 1875.
"words 'Salt Mash Bourbon Whiskey.'"

2,952.—Miners' Lamp-Wick.—ROBERT CHADWICK, Lower Merion, Pa. Application filed July 22, 1875.
"miner's lamp."

2,953.—Liniment.—GEORGE CLEIS, Goshen, Ind. Application filed July 19, 1875.
"elephant with a cloth strapped over its back and the words 'Dr. Cleis' French Liniment' inscribed upon said cloth."

2,954.—Fluting-Machines.—CHARLES FELDER, Newark, N. J. Application filed July 31, 1875.
"word 'CHAMPION.'"

2,955.—Spool-Threads.—GEORGE F. FOSTER, Brooklyn, N. Y. Application filed August 6, 1875.
"letters 'N. E. T.' printed on a diamond-shaped figure, in connection with the words 'London Mills.'"

2,956.—Shirts.—FOSTER & MERRILL, Boston, Mass. Application filed August 6, 1875.
"words 'IMPERIAL SHIRT.'"

2,957.—Carpets.—WILLIAM H. HANKINSON, New York, N. Y. Application filed February 17, 1875.
"word 'ORIGINAL.'"

2,958.—Soap.—EDWARD KRAFFT & CO., New York, N. Y. Application filed August 2, 1875.
"words 'CRYSTAL SALICINE.'"

2,959.—Satin Goods.—LEISLER & SOMMERHOFF, New York, N. Y. Application filed June 26, 1875.
"letters 'St. & S.' and the figure of a star."

2,960.—Gin.—LESZYNSKY & TROUP, New York, N. Y. Application filed July 24, 1875.
"word 'SULTANA.'"

2,961.—Axes.—J. FEARON MANN, Bellefonte, Pa. Application filed August 21, 1875.
"words 'The Red Mann Axe.'"

2,962.—Pressed Cake-Soap.—ROSELL H. MEAGLEY, Binghamton, N. Y. Application filed July 23, 1875.
"letters and word 'R. H. Meagley' and the words 'Tip Top.'"

2,963.—Nautical Instruments.—ROBERT MERRILL & SONS, New York, N. Y. Application filed July 31, 1875.
"star, in the center of which is the letter M."

2,964.—Spices.—PACKARD & JAMES, New York, N. Y. Application filed September 14, 1875.
"letters 'A A A.'"

2,965.—Spices.—PACKARD & JAMES, New York, N. Y. Application filed September 14, 1875.
"letter 'A.'"

2,966.—Spices.—PACKARD & JAMES, New York, N. Y. Application filed September 14, 1875.
"letters 'A A.'"

2,967.—Spices.—PACKARD & JAMES, New York, N. Y. Application filed September 13, 1875.
"a diamond-shaped figure."

2,968.—Cream of Tartar.—PACKARD & JAMES, New York, N. Y. Application filed September 14, 1875.
"letters 'A A A.'"

2,969.—Cream of Tartar.—PACKARD & JAMES, New York, N. Y. Application filed September 14, 1875.
"letters 'A A.'"

2,970.—Cream of Tartar.—PACKARD & JAMES, New York, N. Y. Application filed September 13, 1875.
"diamond-shaped figure."

2,971.—Cream of Tartar.—PACKARD & JAMES, New York, N. Y. Application filed September 14, 1875.
"letter 'A.'"

2,972.—Dress and other Dry Goods.—A. PERSON, HARRIMAN & CO., New York, N. Y. Case A. Application filed August 23, 1875.
"sheep's head and covering, resembling a fleece."

2,973.—Dress and other Dry Goods.—A. PERSON, HARRIMAN & CO., New York, N. Y. Case B. Application filed August 23, 1875.
"word 'GOLDEN-FLEECE.'"

2,974.—Dress and other Dry Goods.—A. PERSON, HARRIMAN & CO., New York, N. Y. Case C. Application filed August 25, 1875.
"bird above a body of fire."

2,975.—Dress and other Dry Goods.—A. PERSON, HARRIMAN & CO., New York, N. Y. Case D. Application filed August 25, 1875.
"word 'PHŒNIX.'"

2,976.—Brandies.—VE. PLANAT & CO., Cognac, France. Application filed September 13, 1875.
"PLANAT & CO., in combination with a representation of a winged griffin."

2,977.—Orange Marmalade.—THOMAS RITCHIE & CO., Jacksonville, Fla. Application filed September 4, 1875.
"orange and orange-leaves in connection with the words 'Florida Orange Marmalade,' arranged above, and the firm-name, 'Thomas Ritchie & Co., Jacksonville, Fla.,' arranged below the picture of the orange."

2,978.—Soap.—ROBINSON BROS. & CO., Boston, Mass. Application filed September 4, 1875.
"word 'Fashion.'"

2,979.—Watches.—SCHWOB BROTHERS & CO., New York, N. Y. Application filed July 8, 1875.
"Congress Watch. New York."

2,980.—Watches.—LOUIS STRASBURGER & CO., New York, N. Y. Application filed August 11, 1875.
"words 'Leopold Huguenin' in connection with the figure of a locomotive."

2,981.—Carpenters' Planes.—THE STANLEY RULE AND LEVEL COMPANY, New Britain, Conn. Application filed January 27, 1875.
"patented plane, showing the adjusting screw or nut of said plane."

2,982.—Refrigerators and Ice-Chests.—THE ST. LOUIS WOODEN GUTTER MANUFACTURING COMPANY, St. Louis, Mo. Application filed August 28, 1875.
"word 'Centennial.'"

2,983.—Driers, Drying-Oils, and Varnishes.—WALTER & FIELDING, New York, N. Y. Application filed June 16, 1875.
"word 'Ozone.'"

2,984.—Superphosphate.—WATTSON & CLARK, Philadelphia, Pa. (Re-registration.) Application filed October 22, 1870.
"letters W. C. with a small × placed between them."

2,985.—Fertilizers.—MANUFACTURERS' COMBINATION, New York, N. Y. Application filed September 16, 1875.
"letters and words, as follows:
G. S. G.
Georgia State Grange."

2,986.—Evaporated Sugar-Corn.—THOMAS ROBERTS & CO., Philadelphia, Pa. Application filed September 13, 1875.
"arbitrary word-symbol "RIVERTON,' in connection with the word 'SUGAR-CORN,' and the monogram 'T. R. & Co.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date September 21, 1875.]

326.—Title: "Balser's Fever and Ague Cure."—GUSTAVUS BALSER, New York, N. Y. Application filed September 15, 1875.

327.—Title: "Mrs. R. P. Finch's Transformer for Curling the Hair."—MRS. R. P. FINCH, South Bend, Ind. Application filed September 11, 1875.

328.—Title: "Dr. Bull's Celebrated Pectoral Compound Cough-Syrup."—A. C. MEYER & Co., Baltimore, Md. Application filed July 29, 1875.

329.—Title: "The Irish Fairy Glow-Starch."—KELLY, RILEY & Co., Millville, Pa. Application filed September 4, 1875.

TO CORRESPONDENTS.

Persons ordering drawings of patents, or making inquiries in regard to patents, must always state the name of the inventor, subject-matter, and date. In making inquiries in regard to applications for patents letters must state the name of the applicant, subject-matter, and date of filing. In ordering drawings by classes, under the subject-matter index of September, 1871, (furnished gratis on application,) it will be understood that the Office cannot take upon itself to make selections of certain lines of inventions, embracing portions only of the patents in the classes as specified. The number of classes has been made as ample as the conduct of the business in this office will readily permit. An order should, therefore, embrace the entirety of a given class or classes. They cannot be subdivided unless ordered specifically by number, name, and date.

The cheapness of the copies, and the comparatively small number of patents in each of the one hundred and seventy-six classes, render an order by class by no means an onerous undertaking.

BOUND VOLUMES OF PATENTS.

The bound volumes of patents, containing the specifications and drawings of patents in full from May 30, 1871, to within a few months of date, may be consulted at the following places:

Astor Library, New York city.
American Society Civil Engineers, New York city.
Bronson Library, Waterbury, Ct.
Court of Appeals, Syracuse, N. Y.
Cooper Union Library, New York city.
Cornell University, Ithaca, N. Y.
City Library Association, Springfield, Mass.
Congressional Library, Capitol.

And at the United States District Courts of—

Alexandria, Va.	Erie, Pa.	New Haven, Ct.
Atlanta, Ga.	Fort Smith, Ark.	New Albany, Ind.
Brooklyn, N. Y.	Grand Rapids, Mich.	New Orleans, La.
Buffalo, N. Y.	Huntsville, Ala.	Ottumwa, Iowa.
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Davenport, N., Law Library, Troy, N. Y.
Engineers, Chief of, Washington, D. C.
Free Public Library, Worcester, Mass.
Free Public Library, Boston, Mass.
Franklin Institute Library, Philadelphia, Pa.
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Grosvenor Library, Buffalo, N. Y.
Illinois Industrial University, Champaign, Ill.
Mercantile Library, New York city.
Mercantile Library, Galveston, Texas.
Mechanics' Institute, San Francisco, Cal.
Mercantile Library, Philadelphia, Pa.
New Britain Institute, New Britain, Ct.
Odd-Fellows Library, San Francisco, Cal.
Ohio Mechanics' Institute, Cincinnati, Ohio.
Peabody Institute, Baltimore, Md.
Public Library, Cincinnati, Ohio.
Public Library, Chicago, Ill.
Public Library, Indianapolis, Ind.
Public Library, Lawrence, Mass.
Public Library, Lynn, Mass.
Public School Library, St. Louis, Mo.
Patent Office, Great Seal, London, England.
Stevens Institute of Tech., Hoboken, N. J.

Also at the following State libraries:

Albany, N. Y.	Des Moines, Iowa.	Montpelier, Vt.
Augusta, Me.	Frankfort, Ky.	Nashville, Tenn.
Atlanta, Ga.	Harrisburg, Pa.	New Orleans, La.
Annapolis, Md.	Hartford, Ct.	Providence, R. I.
Austin, Texas.	Indianapolis, Ind.	Richmond, Va.
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Columbia, S. C.	Little Rock, Ark.	Springfield, Ill.
Carson City, Nev.	Lincoln, Neb.	Topeka, Kan.
Dover, Del.	Montgomery, Ala.	Trenton, N. J.

Also at State Historical Societies of Madison, Wis., and St. Paul, Minn.; and at Territorial libraries of—

Boise City, Idaho.	Santa Fé, N. Mexico.	Washington, D. C.
Cheyenne, Wyoming.	Tucson, Arizona.	Yankton, Dakota.
Denver, Colorado.	Virginia City, Mon.	

Watertown Library, Watertown, Mass.
Yale College Library, New Haven, Ct.
Y. M. C. A. Library, New York city.
Y. M. C. A. Library, Pittsburg, Pa.
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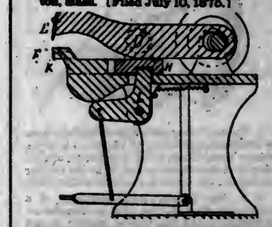
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Porter, A. W., and F. M. Grimes, Air and gas carbureter	168,048
Porter, C. T., assignee	167,865
Potter, N., Horse power	167,930
Power and Rasines	167,937
Prahar, L., Pocket book fastener	167,931
Price, J. W., Harrow	167,932
Prouty, L. C., Draw iron for street car poles	167,933
Pruyn, R. L., Shutter fastener	167,934
Pruyn, R. L., Sash fastener	167,935
Pugh, J. H., Gas apparatus	168,049
Pullman and Field, (reissue)	6,648
Pullman, G. M., assignee, (reissue)	6,651
Ralston, J. C., Attachment to soap cutting machines	167,936
Rasines, A., and T. E. D. Power, Button hook	167,937
Ray, R., Clip for felloes and tires	167,938
Rice, Barton, and Fales Machine and Iron Company, assignee	167,962
Richmond, Emerson, and Clark	168,007
Ridgway, D. H., assignee	168,065
Riesel, H., Automatic bale rolling attachment for compressors	167,939
Robbins, H. R., Sad iron	168,050
Robling, M., Boot and shoe	168,051
Robinson, L., Sink	168,052
Rowley, B. L., Bit for bridles, (reissue)	6,656
Salisbury, G. P., and C. S. Wells, Device for necking cartridge shells	167,940
Salter, J. T., assignee	168,006
Sayles, J. P., Settee	168,053
Schaeffer, L., Roundabout	167 941
Schneider, J. J., and A. S. Meek, Harness cockeye	168,054
Scott, J., Composition for elastic stamps	167,856
Seaman, J., Inside Venetian blind	167,949
Selts, G. W., assignee	168,040
Seyfang, G., Coal hod	167,857
Shelby, G. C., Railroad crossing	168,055
Sheldon, J. H., assignee	168,006
Sherwood, A. T., Spring bed bottom	168,056
Shipe, W. S., Plane guide	167,943
Shoemaker, J. A., and D. D. Jones, Nut lock	167,944
Silver, S. P., and G. H. Swords, Hat brushing machine	167,945
Smith, A. K., Oscillating joint for pitman connections	167,948
Smith, C. A., Shutter fastening	168,057
Smith, D. L., Buckle	167,947
Smith, J. F., assignee	167,888
Smith, W., Adjustable dam	167,946
Spang, H. W., Electric railroad signal	168,058
Spang, H. W., Electric railroad signal	168,059
Speir, R., and J. Mather, Apparatus for condensing vapors, gases, &c	168,060
Spencer and Gilmore	167,891
Sperry, B. E., Polishing machine	167,858
Standfer, J., Sash holder	167,949
Steele, F., Dash pot for engines	167,950
Steventon, A. N., and T. F. McGrath, Stock car	168,061
Stewart, J., Paper ruling machine	167,859
Stillman, O. M., Steam piston	167,860
Stockwell, E., Time lock	168,062
Stoddard, R. T., Book supporter	167,951
Stout, G. H., Addressing machine	167,952
Swallow, A., Burnisher holder	167,953
Swords and Silver	167,945
Taplin, A., Lamp burner, (reissue)	6,650
Taylor, G. E., Sheet iron blank	168 063
Thistle, J., assignee	167,977
Thomas, H., Planer chuck	168,064
Thornton, J., assignee	167,917
Thornton, J. J., Compound balance staff for watches	168,065
Thorson, L. E., Automatic gate	167,954
Trissler, W. H. and H. W., Eaves trough hanger	167,955
Twitchell, H., Water wheel	167,956
Ulrich, F. H., Tailor's measure	167,957
United States Soap Stone Manufacturing Company, assignee	168,030
Upson, A. S., assignee	167,867
Vandercook, F. E., Corset fastening	167,958
Vanstone, S., Feed device for rolling mills	167,861
Vanvoorhis, E. T., assignee	167,944
Varwig, H., assignee	167,921
Vassie and Willson	167,864
Vint, R., Heel for boots and shoes	167,959
Wade, A. M., Machine for spooling yarn	168,066
Wagner, L., Molasses pitcher	167,862
Wagner, T., assignee	167,941
Walker, H. L., Sewing machine shuttle	168,067
Walker, J. T., Horseshoe	168,068
Walker, W. H., Bale tie	167,960
Wallace & Sons, assignees	167,958
Waples, W. T., assignee	168,069
Warren, A. R., Suspenders	167,961
Washburne, G., assignee	168,031
Waterbury Buckle Company, assignee	167,947
Watson, J., Ironing board	168,069
Webber, C. C., Centrifugal machine	167,962
Weeden, W. N., Clock case	167,963
Weld, H., Windmill attachment	167,964
Wells and Salisbury	167,940
Wetherill, W. C., Derrick	167,863
Wheatley, W. M., assignee	167,997
Wheeler, E., Sleeping car, (reissue)	6,651
Whitcomb, J. E., assignee	167,974
White, J. S., Fly trap	168,071
White, J. W., assignee	167,883
Whiting, A. F., Seal lock	168,070
Williams, J., Tube cleaner	168,072
Willson, F. M., and W. Vassie, Lamp bracket for sewing machines	167,864
Wilson, D., Jr., and T. Hall, Whirl for spooning machines	167,965
Wilson, J. A., Preserving meat	168 073
Winfield, H., and W. F. Flynn, Cultivator	168,074
Wintera, J. E., Farm fence	167,966
Winton, A., Furnace grate for steam generators	168 075
Wright and Brooke	167,873
Wright, J. C., Nut lock	167,967
Young, L. L., assignee	167,977

TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED SEPT. 21, 1875.

167,916. SAGE-EDGE-TRIMMING MACHINES. Chas. J. Addy and Ezra B. Abbott, Boston, Mass. (Filed July 10, 1875.)



1. In a sole-edge-trimming machine, the combination of the vibrating cutter E, with cutting-block and mud-guide F, acting together, substantially as described, and for the purpose set forth.

2. The combination of the knife E, the cutting-block and mud-guide F, and the movable guide H K, all operating together, substantially as described, and for the purpose set forth.

167,917. COMBINED SHOWER AND BATH COCKS. Harry J. Bailey, Pittsburg, Pa. (Filed July 29, 1875.)

Brief.—A double nozzle is attached to a hot and cold water faucet. To one nozzle a hose is attached, which conveys water to a shower-nozzle. Water is admitted directly to the bath-tub through the other nozzle.



1. In combination with a bath-tub supply-pipe and cock, a bath-tub discharge-nozzle, *b*, a shower-supply nozzle, *b'*, and a cock or valve intermediate between the nozzles and water-supply pipe, substantially as described, whereby the water-supply may be wholly shut off from both nozzles, or turned into either nozzle alone, by the adjustment or throw of the valve-cock or cock.

2. A double reversible nozzle, *b b'*, arranged on the discharge-pipe *a*, with parts arranged substantially as and for the purposes set forth.

3. The combination of cock B, pipe *a*, double nozzle *b b'*, hose *c*, and rose E, substantially as described.

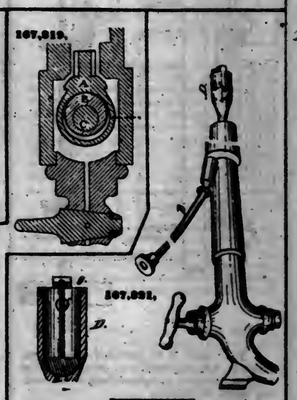
167,918. TRUSSES. Herman Becker, Philadelphia, Pa. (Filed Aug. 2, 1875.)

Brief.—A swinging rotating stem carries the pad, which can turn upon this stem either to the right or left, according as pressure is desired upon either side. The stem carries a ratchet with teeth turned in either direction, and a sprig-pawl, with rectangular central opening, is pivoted upon the surface of the pad.

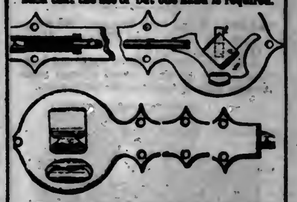


In a hernial truss provided with a swinging joint for connecting the hernial pad A to the body-band B for the purpose of rendering the truss readily adjustable for either the right or left side of the person, as described, the combination, with the hernial pad A, of the rotary stem *d* and its ratchet-toothed cylinder *d'* and spring-lever 12, constructed and arranged substantially as set forth, for the purpose of enabling the wearer of the truss to readily adjust and secure the position of the pad A as as to bear against either the right or left side of the rupture or directly against the front of the same, as the wearer may desire, substantially as described.

167,919. SASH-FASTENERS. E. W. Bretnall, Elizabeth, N. J., assignor to H. L. Fleming, same place. (Filed Mar. 15, 1875.)



Brief.—A spring-bolt, let into the lower edge of the sash, is withdrawn by forcing down a knob, the shank of which works in a vertical slot, while the guide passes downward along one of the edges of a V-shaped slide. The pressure being released, the action of the spring returns the knob, slide, and bolt to their former position, the construction being such that the use of but one hand is required.



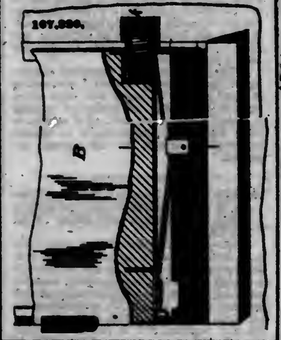
The knob *a*, guide *c*, and V-shaped slide *f*, operating in connection with a spring-bolt, *h*, arranged and combined substantially as shown, for the objects herein set forth.

167,920. AUTOMATIC GLARE GAGE-COCKS. Albert W. Bee, San Francisco, Cal., and I. Wilson Garrett, Philadelphia, Pa. (Filed Mar. 26, 1875.)

Brief.—While the glass tube is filled with water and steam, the automatic valve is kept open by its gravity; but when the glass breaks the rush of water or steam closes the valve. In case of leakage, by reason of the deposition of scale on the bearing-surfaces of the valve, the ordinary valve may be closed steam-tight by hand, when the scale can be removed. The cam is turned by means of the stem and handle to open the automatic valve.

The combination, in an automatic glass gage-cock, substantially as described, of an automatic valve, with a cam on the stem of an ordinary screw-valve.

167,920. WEATHER-STRIPS. G. P. Bennett, Coventry, R. I. (Filed Feb. 17, 1875.)



The combination of the door B, strip D, spring *f*, having the bracket H, roller *i*, and cam-plate *k* fastened to the door-frame, all constructed substantially as and for the purpose described.

167,921. VENT-FAUCETS. Rudolph Brenner, Cincinnati, Ohio, assignor to Henry Varwig, same place. (Filed Nov. 6, 1874.)

In combination with the faucet, the sliding air-duct D, with its outer end open to receive air, and its inner end provided with the enlargement D, valve E, guide-rod *f*, and bar or cap *g*, constructed substantially as and for the purpose described.

167,922. APPARATUS FOR COILING SPRINGS. Charles G. Buttrick and Timothy B. Flanders, Holyoke, Mass. (Filed Apr. 6, 1875.)



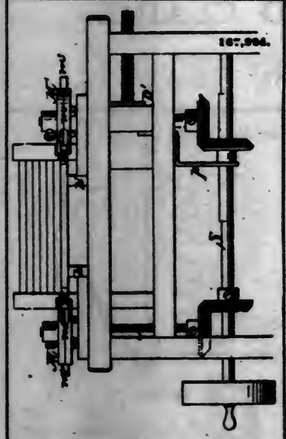
1. The combination of the sleeve J, having the flange F and screw-thread *i*, with the whirl W and spindle B, in the manner and for the purpose described.

2. The combination of the step C, rail D, and hollow plug F, in the manner and for the purpose specified.

167,923. MACHINES FOR COMPREHENDING THE HEADS OF BLIND-SLATS. Edwin Cather, Fort Deposit, Md. (Filed Jan. 28, 1875.)

Brief.—The slats are placed in a vertical hopper, and the lower one has its ends compressed by means of suitable recesses in two receiving carriers, at the same time that it is carried forward to make room for the succeeding slat.

167,894.



1. The wheels M M', provided with the recesses *n* and projections *n'*, adapted to the purposes referred to, substantially in the manner herein described.

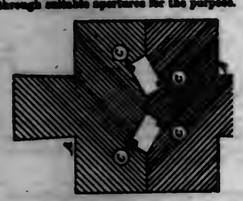
2. The combination of the two compressing and beradditing wheels M M', constructed to rotate simultaneously with equal speed in opposite directions, so as to rotate and act upon both ends of a slat simultaneously.

3. The combination of the two wheels M M' with the slat-supports and feed-grooves, substantially as and for the purposes specified.

4. The stationary compressing and berating wheel M, combined with the adjustable wheel M', substantially as and for the purposes set forth.

167,895. DIES FOR FORMING WIRE-RODS, &c. A. G. Cone, Worcester, Mass. [Filed Aug. 11, 1875.]

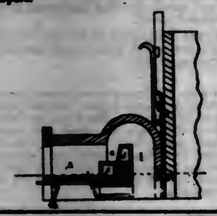
Brief.—For shearing discs of resins and dust, water, steam, or air is forced through them through suitable apertures for the purpose.



The improved forming-disc A, having passages C C, with longitudinal openings D at the angles of the matrices, substantially as and for the purposes set forth.

167,896. FURNACES FOR BRICK-KILNS. W. S. Colwell, Pittsburg, Pa. [Filed May 10, 1875.]

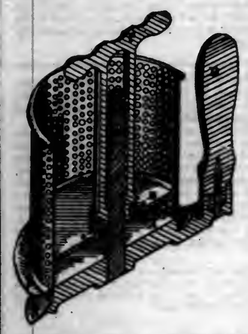
Brief.—Air is supplied to the products of combustion at various points, and they can be directed to different parts of the kiln by means of the adjustable partition and the dampers.



1. The furnace B, having fire-chamber D, flame-chamber *e*, distributing-chamber *i*, air-flues *f* and *g*, arranged, as specified, with relation to said chambers, so that three different series of air-jets are commingled with the results of combustion.

2. The distributing-chamber *i*, provided with an adjustable partition, *w*, in combination with two or more furnaces and a kiln, the fire-arches of which are provided with dampers, substantially as herein described, and for the purposes set forth.

167,897. FRUIT AND JELLY PRESSES. Carter Cook and Walter W. Bostwick, Cincinnati, Ohio, assignors to W. W. Bostwick & Co., same place. [Filed May 15, 1875.]

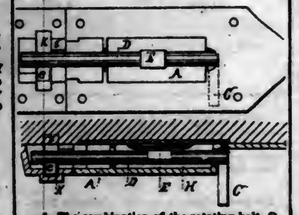


1. In the jelly-press above described, the combination of disk-piston B, having central hub bored and notched at *a a'*, perforated piston-rod or handle C, having lugs *b b* projecting from the lower edge of its periphery, and plugs *c c*, all constructed in the manner and for the purposes described.

2. The jelly-press herein described, consisting of base A, having channel *f*, terminating in spout *g* upon its upper and outer edge, cover B, open-ended and perforated cylinder *F*, piston B, and piston-rod C, all of said parts being constructed and arranged to operate substantially as and for the purpose described.

167,898. BOLTS. Francis H. S. Crane, Newark, N. J., assignee of one-half his right to Edwin D. Peckhorst, same place. [Filed May 15, 1875.]

Brief.—A rotating and sliding catch-bolt has a fastened section, thumb-piece, and suitable spring. The projecting end of the bolt is formed into a ward or key, which engages with and works within a suitably notched and recessed case or keeper, the construction being such as to readily lock sliding doors or the like together, and as readily to detach them, by simple movements of the self-locking bolt only.



1. The combination of the rotating bolt D, provided with thumb-piece O and fastened section E, the spring H, and the case A, as and for the purpose specified.

2. In combination, the bolt D, having thumb-piece O, ward *c*, and section E, the spring H, the case A, and the case or keeper K, having projection I and raised part *k*, all substantially as and for the purpose set forth.

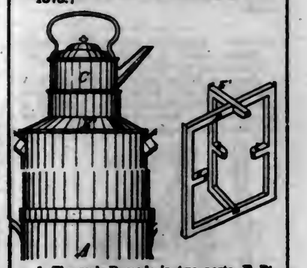
167,899. BOOT AND SHOE FASTENINGS. H. R. Dennett, Boston, Mass. [Filed May 6, 1875.]



1. The improvement in shoe-fastenings herein described, consisting of the plate A, cap *g*, sleeve *f*, and rivets *h* and *i*, combined and arranged as shown, and attached to the shoe by sewing and the rivets, in the manner described.

2. A clasp for shoe-laces, composed of a continuous piece of wire, bent to form the enlargement *s* and the narrow portion *p*, and having its ends brought together and twisted to afford means for its attachment to a boot or shoe, substantially as and for the purpose specified.

167,900. STEAM COOKING APPARATUS. G. H. Ferris, Brooklyn, N. Y. [Filed Nov. 1, 1873.]



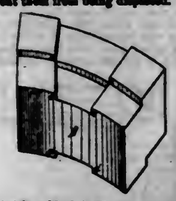
1. The rack D, made in two parts, B B', locked or otherwise connected together, and provided with the shelves *l l*, extending inward to form a support for the edges of the separate receptacles, as specified.

2. In combination with rack D, the case B and boiler A, the latter provided with the ledges *b b'*, adapted to receive the lower end of the rack and case, as specified.

3. In combination with cover B', the rim *c*, adapted to form a steam-condensing chamber, C', between the lower surface of the kettle and upper surface of the cover, and communicating with the interior of the case through opening *e* and pipe *f*, as specified.

167,901. BRICKS FOR CONSTRUCTING RECUPERATIVE FURNACES. Morrison Foster, Allegheny, Pa. [Filed Feb. 20, 1875.]

Brief.—Bricks of voussoir form provided with longitudinal and transverse shoulders, to prevent them from being displaced.

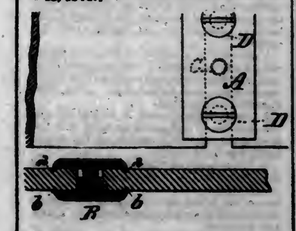


1. A brick or block having convex and concave faces, and sides provided with longitudinal shoulder, substantially as specified.

2. A brick or block having convex and concave faces, and provided with longitudinal and transverse shoulders, substantially as specified.

HELIOTYPE RELIEF PROCESS JAMES R. OSGOOD & CO. BOSTON

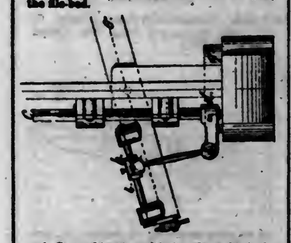
167,889. CLASPS FOR MACHINE-BELTING. George H. Fox, Boston, Mass. [Filed Aug. 13, 1875.]



The combination, in a belt-clasp, of the plates A B, provided with clamping-jaws *a a b b* placed diametrically opposite each other, with the screws D D, and spring C, substantially as set forth.

167,890. FEED MECHANISMS FOR FILE-CUTTING MACHINES. James Garland, Central Falls, R. I. [Filed Aug. 18, 1875.]

Brief.—A vertically-reciprocating shaft and lateral arm, with ball-and-socket connection to arm upon a horizontal rocking shaft, having also an arm on its end, carrying a pawl for rotating a ratchet upon the screw carrying the file-bed.

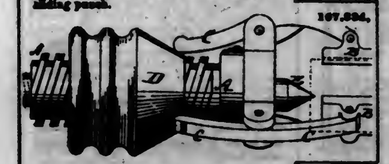


1. In combination with the adjustable bed *a*, the rock-shaft *i*, the arm *b* adjustable on the rock-shaft *i*, and the ball-and-socket connection with the reciprocating rod *c*, substantially as and for the purpose specified.

2. The combination, with the adjustable bed of a file-cutting machine, of a feeding device, operated by the reciprocating rod *c* and the intermediate adjustable mechanism, substantially as described, by which the motion is transmitted directly, substantially as and for the purpose set forth.

167,891. CHECKING DEVICES. Mary A. Greenwood, Fitchburg, Mass., administratrix of Mark T. Greenwood, deceased. [Filed Mar. 12, 1875.]

Brief.—The pivoted jaws, forced together by central nut and levers, clamp any shape of cord, when it is marked or centered by the sliding punch.



The centering device herein described, consisting of the punch B, tubular threaded shank A, central nut D, levers C, and pivoted jaws B, combined and operated as and for the purposes set forth.

167,892. TIRE-SHRINKING MACHINES. Jos. D. Hatton, Northfield, Iowa. [Filed Apr. 27, 1875.]

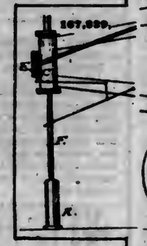
Brief.—The indicator is attached to the permanent bank, and is connected to one of the levers by a rod, the levers being operated by a double eccentric.



The improved tire-shrinker herein described, consisting of the combination of the anvil A, back K, carrying-cams B, and indicator S, rod O, levers H, jaws J, connecting-rods O, double eccentric L, and lever F, as and for the purposes set forth.

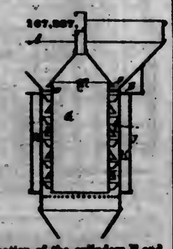
167,893. CHECK-GUARDS FOR HARNESS. Frederick Howard, Hyde Park, Ill. [Filed May 20, 1875.]





The check-guard, consisting of the vertical loop C for receiving the check-rein, and the horizontal loop B, containing the spring D, and also receiving the saddle-hook E, as hereinbefore described, and for the purposes set forth.

167,894. APPARATUS FOR STEAMING GRAIN. John C. Hunt, Chicago, Ill., assignee to Chicago Wood-Steaming Machine Manufacturing Company, same place. [Filed Jan. 9, 1875.]



1. The combination of the cylinders E and G, the annular ledges I, and the steam-chamber B, substantially as and for the purposes specified.

2. The combination of the cylinders E and G, the steam-chamber B, the annular ledges I, the hoisting-drum J, and air-holes O, as and for the purposes specified.

167,895. DRIVING BELTS AND BANDS. R. G. Isaacs, Kingston, Jamaica, British West Indies. [Filed July 14, 1875.]

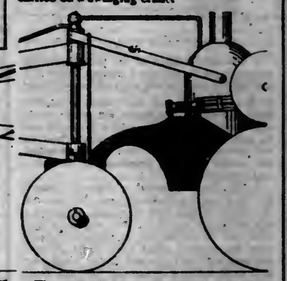


1. A driving belt or band, A, the ends *a* of which are provided with cups or ferrules *a'*, holes *a'*, and grooves or channels *a'*, and connected together by means of a spring, B, interposed between (and having its periphery or sides in a continuous line with the periphery or sides of the belt or band and connected to) the ends *a* by means of extensions *b* passing through the holes or eyes *a'*, and resting within the grooves or channels *a'*, in the manner and for the purposes described.

2. A flat driving belt or band, A, provided at each end with a cup or cover, *a'*, and having its ends *a* connected together by means of a spring, B, composed of a series of wires or strips of material, the extensions *b* of each end of which are passed through the ends and bent down against the opposite sides of the band A, in the manner and for the purpose described.

167,897. STEAM ROAD-RAMMERS. Samuel Johnson, Philadelphia, Pa. [Filed Aug. 26, 1875.]

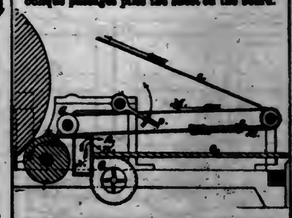
Brief.—A steam road-rammer, in which the reciprocating rammer and driving-cylinder are carried on a swinging crane.



The portable steam-rammer hereinbefore described, the same consisting of the combination, with a suitable carriage supporting a boiler and a furnace, of the cranes D D, steam-pipes S S', cylinder C, and rammer R, all constructed, arranged, and operating substantially in the manner and for the purpose specified.

167,898. DELIVERING APPARATUS FOR PAPER-PRESSES. John W. Kellogg, Philadelphia, Pa. [Filed Nov. 13, 1873.]

Brief.—The sheet is held against the air-entering delivery-tapes by a blast of air until its rear end is knocked down by the automatic striker, when another blast of air from the oblique passages piles the sheet on the board.



1. The combination of the tapes M, passing over the two larger series of pulleys G and F, the blower *p*, the blower O, and the air-chamber I, provided with two separate series of air-passages, *n* and *n'*, adapted to deliver and pile the sheets on the fly-board, substantially as described and set forth.

2. The combination of the smaller pulleys

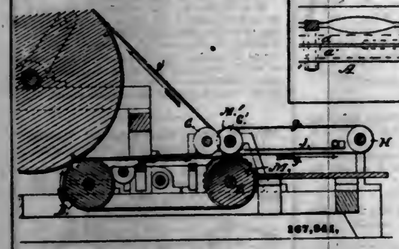
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H on the rearmost spindle, the second impression-cylinder A, with their endless tapes c, and the outer fly-pulleys F, on the same spindle with series H, and the inner fly-pulleys G, on their own spindle, and the endless tapes M, traveling over them, all constructed and arranged substantially as and for the purpose described

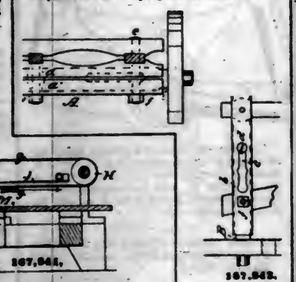
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167,841. DELIVERING APPARATUS FOR PRINTING-PRESSES. John W. Kellberg, Philadelphia, Pa. [Filed Nov. 3, 1873.]

Brief.—The paper is carried from the cutting-cylinders by the tapes passing around the roll, which is provided with gear-wheels at its opposite ends of varying diameters, and as the larger is connected with the rolls carrying the second series of tapes, they will be made to travel faster than the first series, to allow the striker time to knock the end of the sheet down, and return to position before the next sheet arrives.



167,841.



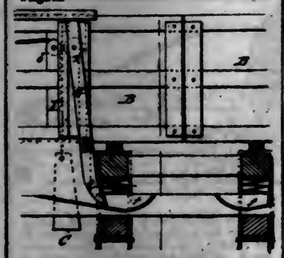
167,842.

1. The combination of the second impression-cylinder A, spindle d, having pulleys G, the endless tapes c, the main cutting-cylinder B, fly-cylinder C, and their series of endless tapes traveling over them, the whole set in motion by means of the gears B', D, E, and C', and adapted to carry the sheet from the web and conduct it rearward between the said two series of tapes, substantially as shown and described.

2. The combination of cylinder C, gears E and M, of varying diameters, mounted thereon, the pinion M' mounted on spindle e, spindle e, the pulleys G' and H on their respective spindles, and the endless bands g adapted to conduct the severed sheet back to its place of delivery with an increased rate of speed over that imparted to it by the said first two series of tapes, substantially as and for the purpose set forth and described.

167,842. GATES FOR RAILROAD-CROSSINGS. Silas Keller, Wrightsville, Pa. [Filed July 7, 1875.]

Brief.—A railroad-gate operated by weight of passing train upon vertically-yielding sections of the track through vibrating levers, the lower ends of which are cam-shaped, and when the truck is depressed the cams bear against inclined surfaces, thereby throwing outward their upper ends, which have friction-rollers working in vertical ways in the gate, thereby causing them to be moved outwardly. They are returned to position by weights.



1. The combination of the elevated movable rails D D, hinged levers G G, having cam-ends e e, and the rearmost f f, substantially as and for the purposes herein set forth.

2. The combination of the hinged levers G G, having friction-rollers h h, the sliding gates B B, with guides I I, ropes o o, and weights O O, substantially as and for the purposes herein set forth.

167,843. WAGON-AXLES. Joseph R. Lantz and Thomas L. Mitchell, Marrowbone, Ill. [Filed July 21, 1875.]

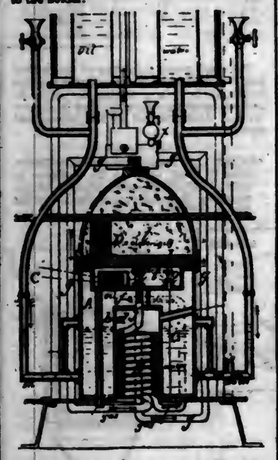
1. The octagonal-shaped axle-sections B, in combination with the hexagonal box A, formed in sections a a', and bolt or rod d, for tightening and clamping the sections upon the axle, substantially as specified.

2. The hexagonal box A, composed of the sections a a', the latter having slot b and shoulders c, in combination with the octagonal axle-sections B and set-screw d, substantially as and for the purpose set forth.

167,843.

167,844. PROCESSES AND APPARATUS FOR THE MANUFACTURE OF ILLUMINATING-GAS. Thomas W. Lion, Brantsville, Va. [Filed July 10, 1875.]

Brief.—Oil and water are vaporized, the oil-vapor passed through a heating-coil, and the two vapors enter a chamber where they are subjected to the action of electricity. From this chamber the gas enters a second chamber, where it is again acted on by electricity, and thereby purified and improved. It is then passed through a heating-coil and carbureter to the holder.



1. The process of manufacturing illuminating-gas, consisting in subjecting highly heated hydrocarbon vapor to the action of electricity, substantially as described.

2. The process of manufacturing illuminating-gas, consisting in subjecting heated hydrocarbon vapor to the action of electricity to produce a fixed gas, and then subjecting said gas to the action of electricity, substantially as described.

3. The process of manufacturing illuminating gas, consisting in subjecting heated hydrocarbon vapor to the action of electricity, and then passing the resultant gas through a carbureter, substantially as shown and described.

4. The mixing-chamber I, containing the insulated electric battery C and laminated charcoal or its equivalent, and supplied with superheated steam and carbon-vapor inlets, substantially as described.

5. The cylindrical retort A, divided into the two chambers b and c, and provided with the central fire-chamber d containing the superheating-coils, as shown.

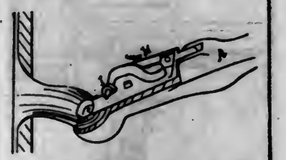
6. The cylindrical retort A, divided into the chambers b and c, in combination with the chamber d communicating with the two chambers of the retort, and containing the electric battery and charcoal, substantially as shown and described.

7. The combination of the battery C charged with salt, the gauze-basket X, and hydrocarbon-vapor chamber, as and for the purpose described.

8. The combination of the retort, containing two separate chambers, the mixing-chamber I, communicating with the chambers of the retort and containing the electric battery, and the chamber I communicating with the mixing-chamber and containing a thermo-battery.

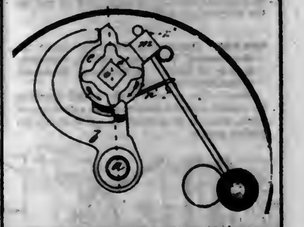
9. The combination of the retort A, provided with chamber I, the perforated plate k, and the hood n, as shown.

167,845. COMBINATION BELL-JOINTS. O. C. Little, Sheboygan Falls, Wis. [Filed Aug. 31, 1875.]



A coupling consisting of the arm A, provided with a concave cup, a, the concave-cover plate B, the part C with a hook, E, and spring H, and the loop I, all combined, together as and for the purposes described.

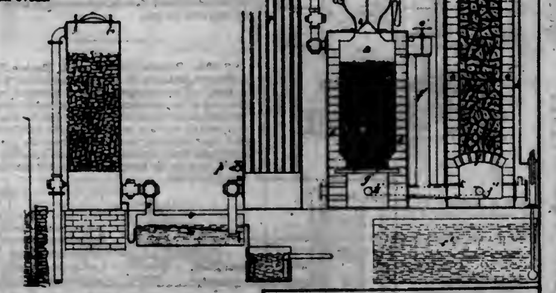
167,846. DOOR-BELLS. Edward M. Lockwood, West Meriden, Conn., assignor to Edward M. Lockwood and Charles Page. [Filed Mar. 17, 1875.]



The combination of the socket f, the striker e, the pivoted lever h, and the spring g, all operating to strike the bell by rotating the socket in either direction, substantially as set forth.

167,847. PROCESSES AND APPARATUS FOR THE MANUFACTURE OF ILLUMINATING OR HEATING GAS. Thaddeus S. C. Lowe, Norristown, Pa. [Filed Mar. 10, 1875.]

Brief.—Produce anthracite or bituminous coal in gas-generator. May use any kind of wood; saw-dust, coal-dust, or asphaltum. Products of combustion from gas-generator heat brick in superheater, and also tubes of air-oven in stack of superheater. This hot air is forced into base-chamber of the gas-generator and of the superheater. In the latter it meets products of combustion from gas-generator, and causes flame and higher degree of heat in superheater. When contents of both generator and superheater are incandescent, shuts out air from both; diverts gases from gas-generator downward through tubes of steam-generator, developing and heating steam; directs steam from its generator downward through superheater, and upward through generator; also admits substances containing volatile carbon (such as bituminous coal, petroleum, resin, cotton-seed, coal-tar, asphaltum, fats, waste of oil-refineries) into contents of gas-generator. May omit steam or may admit heated steam directly from steam-generator into gas-generator, and pass products through superheater, and either through tubes of steam-generator to washer, or directly to washer, or may pass steam through the superheater and the gas-generator, and thence pass all through another superheater. May be several gas-generators and air-ovens.



167,847.

1. For the manufacture of illuminating and heating gas, the process which consists of dropping or otherwise admitting in limited quantities, continuously or intermittently, hydrocarbon oils or other carbonaceous substances, liquid or solid, onto the top of a thick mass of coal or other carbonaceous substance, in a state of incandescence, in a close chamber previously heated by direct internal combustion, with or without the introduction of steam, and thence, for the purpose of superheating and fixing the gases of said chamber, passing them from said chamber into and through a second chamber, which also has been previously heated by direct internal combustion, substantially as set forth.

2. The process for producing an illuminating-gas, which consists of superheating steam, by passing it through a chamber previously heated by direct internal combustion, then causing cold steam to pass through a mass of coal or other carbonaceous substance, in a state of incandescence, in a close generating-chamber, to decompose the steam, and afterward, for the purpose of still further heating the gases of said generating-chamber, and thereby producing a more fixed gas, passing the gases from said generating-chamber into and through another superheating-chamber, which has been previously heated by direct internal combustion, substantially as set forth.

3. The combination of the generator a, superheater d, heat-restorer f, and flue-pipe for forcing air through the pipe h, around the tubes of the heat-restorer f, through pipes l, l', and f, into the chamber p, for generating and securing intense combustion in said chamber p, substantially as set forth.

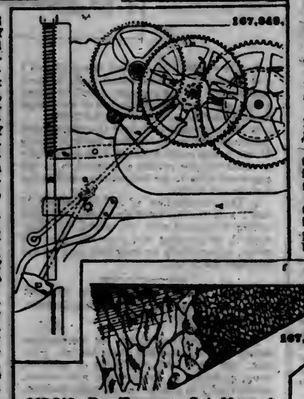
4. The combination of the generator a, superheater d, heat-restorer f, elevated oil-tank m, the upright tubular boiler r, with their several connecting-pipes and other appurtenant parts, as described, constituting apparatus for rapidly evolving illuminating-gas, and fixing the same in its gaseous condition, substantially as set forth.

5. The combination of the generator a, superheater d, heat-restorer f, elevated oil-tank m, upright tubular boiler r, wash-box s, scrubber p, with their several connecting-pipes and other appurtenant parts, as described, constituting apparatus for rapidly evolving illuminating and heating gas, fixing the same in its gaseous condition, and purifying the same preparatory to storage or immediate use, substantially as set forth.

167,848. FOG-SIGNALS. Wm. S. Martin, Baltimore, Md. [Filed Aug. 10, 1875.]

The fog-bell B, hammer C, vibrating shaft a, bar b, sliding spring-bolt D, lever g, disk e, gear-wheel E, provided, respectively, with pins actuating the said bar and bolt, all combined substantially as described.

167,847.



167,848.



167,849.

167,849. FUEL-KINDLERS. C. A. Maynard, St. Louis, Mo. (Filed May 28, 1875.)

A fire-kindler composed of mineral coal, resin, or its equivalent, wood, and a paper bag combined, substantially as described.

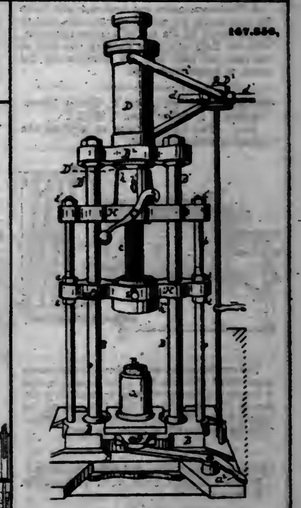
167,850. MACHINES FOR MAKING TUYERES. Edward J. Milliron, Johnstown, Pa. [Filed Aug. 10, 1875.]

Brief.—Plastic earthy material is hammered while heated, and compressed, perforated, and shaped into tuyeres for Bessemer converters.

1. The combination of a steam-actuated piston-stem and tuyere-mold, substantially as and for the purposes set forth.

2. A cross-head, H', carrying a mold-cap, F, in combination with a mold, a, substantially as and for the purposes set forth.

3. A cross-head, H, as a carrier for the perforators c, having a detachable connection with a steam hammer, ram, or piston-stem, and in combination therewith, substantially as described, whereby the tuyere-blank may be perforated and hammered, and the perforators withdrawn through the action of the piston-stem.



167,850.

4. The combination of the cross-head H carrying perforators c, cross-head H' carrying mold-cap F, and mold a having a perforated bottom, substantially as and for the purposes set forth.

5. As a means of discharging the finished tuyere, the piston-stem D', acting directly or indirectly against the end of the tuyere, in combination with a movable bottom, a', a fixed unjointed mold, a, and counterweighted arms g', relatively arranged, substantially as set forth.

6. The cross-heads H H', playing on the posts B', in combination with the lifting-rods p and piston-stem D', substantially as set forth.

7. The combination of steam-actuated piston-stem, a perforating cross-head, a compressing cross-head, and mold, substantially as and for the purposes set forth.

8. The combination of steam-actuated piston-stem, a perforated cross-head, a compressing cross-head, and mold with a removable perforated mold-bottom, substantially as set forth.



167,851.

167,851. HOOP-BENDS. Joseph A. Miller, Providence, R. I. [Filed Mar. 17, 1875.]

1. The combination of the hoop-rod, consisting of the barrel a and disks or wheels b b secured to the barrel, with the arms c c, one end of each being shorter, secured from the center of the rod, than the other, substantially as and for the purposes described.

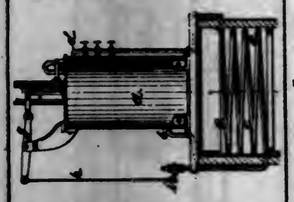
2. The curved arms c c, secured together to form the support for a hoop-rod, as and for the purposes set forth.

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3. The combination, in a hose-reel, of a frame for supporting the reel in one position and to be supported by the reel in a reverse position, with the disks or cheeks forming the ends of the reel, and also used for transporting the same, as herein described.

167,863. STOVES. John A. Moore, Providence, R. I. (Filed Aug. 7, 1875.)

Brief.—The feed operates to regulate the supply of water admitted.



The combination, with a stove, of the heater *a*, provided with the fire *b*, the pipes *d*, *e*, and *f* connected therewith and surrounding the fire on all sides, and the feed *f*, operating the supply-valve *i*, the whole constructed substantially as and for the purpose set forth.

167,864. TURN-BOTTOM FOR STOVE-DOORS. William Morand, Troy, N. Y. (Filed July 6, 1875.)



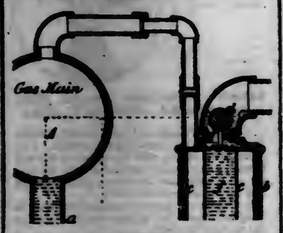
1. In combination with a stove-door having the socket *b* therein, and door-casing having the bottom-bearing *b* thereon, the turning and end-wise-moving stem A, with its bottom-finger D, collar E, hand-piece F, and spring G, all arranged to operate as shown and described.

2. In combination with a door having the socket *b*, and door-casing having the finger-bearing *b*, the turning and sliding stem A, with its finger D, collar E, and hand-piece F, the spring G and the chisel-socket J, all arranged together substantially as shown and specified.

3. In combination with a door having the socket *b* in a turning thimble, I, Fig. 3, in the socket *a* in the door, the stem A, with its finger D, collar E, and hand-piece F, and the spring G, surrounded with the collar by the thimble, and all arranged to operate as shown and described.

167,865. DRAWS FOR GAS-MAINS. John Nader, Madison, Wis. (Filed Feb. 20, 1875.)

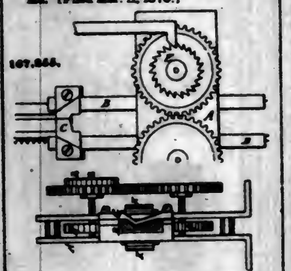
Brief.—When the tension of the gas equals a determinate hydrostatic pressure the float-valve rises, and the liquid is discharged from the main. When this pressure is diminished the valve falls again into its seat.

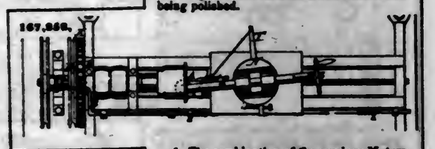


1. The combination, with the gas-main A, of the automatic drain, consisting of the connecting-pipe *c*, float-chamber *b*, valved float *e d*, and overflow-pipe *i*, operating as herein set forth.

2. The combination, with the gas-main and the automatic drain, of an equilibrium-valved pipe uniting these parts for joint action, substantially as herein set forth.

167,866. ATTACHMENTS TO SHOE-PEGGING MACHINES. James H. Oliver, Baltimore, Md. (Filed Mar. 11, 1875.)





1. The combination of feed-wheels H and I and ratchet E and the rollers K K, or their equivalents, for the purpose of feeding waxed strips, and forming the points of shoe-pegs, as herein before described and set forth.

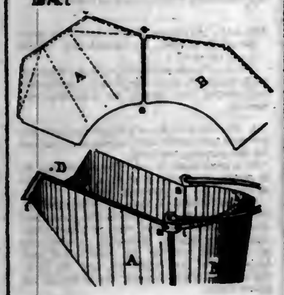
2. The angular-edged knife C, arranged and combined with the guides B B, the feed-wheels H and I, and guide-rollers K K, substantially as described, for cutting a channel, *a*, in the peg-wood strip i, for the purpose and in the manner set forth.

3. The combination of the feed-wheels H and I with the ratchet E and guides B B and rollers K K, and with the angular cutting-knife C, for pointing and grooving peg-wood strips, substantially as described, and for the purpose set forth.

167,867. COMPOSITIONS FOR BRASS STAMPS. James Scott, Hamilton, Canada. (Filed June 12, 1875.)

An improved compound for composition stamps for ornamenting with bronze, gold-leaf, and silver-leaf, consisting of gelatine, syrup, glycerine, in combination with tannin, substantially as and for the purpose specified.

167,868. COAL-HODS. George Seyfang, Buffalo, N. Y., assignor to Heinz, Pierce & Himmelsbaur, same place. (Filed June 22, 1874.)



1. The blank A, consisting of a sheet of metal having the linear front *b c*, obtuse-angled sides *b a d* and *c e*, and the curved back or bottom *d e*, when the said lines *d a*, *a b*, *c e*, and *e c*, are all straight lines, and the sheet adapted to be bent in the lines *f*, *g*, to form the front of the coal-hod, the portion outside the lines *f a*, *g e*, the side wings *f f*, and the base of the mouth D, substantially as described, and for the use and purpose set forth.

2. The blank B, constructed with the obtuse-angled front *f b g*, and having the sides *a c*, *i h*, at or nearly at right angles with the lines *a b*, *i f*, said lines *a d*, *c i*, *h f*, *h g* being all linear, and the sheet adapted to be rolled or bent to form the back of a coal-scuttle, substantially as described, and for the use and purpose set forth.

3. The sheets A B, when their outer edges are constructed of straight lines only, and a continuous piece of wire without indentations or curves inclosed therein, substantially as described and shown.

167,869. POLISHING-MACHINES. Barton R. Sperry, Batavia, Ill. (Filed May 10, 1875.)

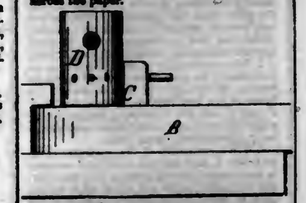
Brief.—The polishing-wheel is mounted on the end of a horizontal shaft, journaled in a vertical head-block, which is pivoted to a reciprocating carriage, so that a weight attached to a lever radiating horizontally from the pivoted head-block serves to press the grinding-wheel against the inner surface of the article being polished.

1. The combination of the carriage M, turn-table N, the arm T, the weight V, the shaft P, and polishing-wheel Q, whereby the polishing-wheel is caused to press constantly against the inner surface of the bottle, and at the same time yield to its varying size and shape, as described.

2. The spring S, in combination with the pivoted lever *r*, stop 10, cord or chain X, and weight V, for gradually relieving the arm T of the weight, so as to allow the turn-table N to gradually turn and carry the emery-wheel toward the center of the bottle, as specified.

167,870. PAPER-RULING MACHINES. James Stewart, Washington, D. C. (Filed Mar. 20, 1875.)

Brief.—The slotted guide is fastened to the side of the machine at any desired angle. The pen-beam is adjusted by means of the screw-rod and pivoted block, so that it is parallel with the edge of the sheet. By this device lines of any degree of obliquity may be ruled across the paper.

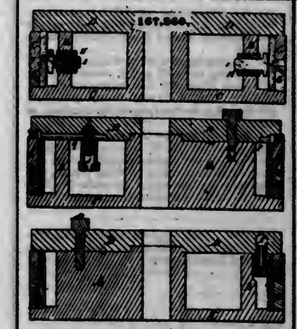


The combination of the adjustable guides B, sliding carriers C, and adjustable pivot-heads D, with the pen-beam G, constructed and operating substantially as and for the purpose herein specified.

167,871. STEAM-PISTONS. O. M. Stillman, Westerly, R. I. (Filed Mar. 20, 1875.)

Brief.—The piston-rod is centrally adjusted by means of screw-plugs and plungers in the cylinder. One of the check-valves controls the admission of steam to throw the plungers out, the other the exit of steam that may escape around the plungers into the outer chamber. The segments in the follower are forced out by pressure of steam from the interior of the piston.

167,866.



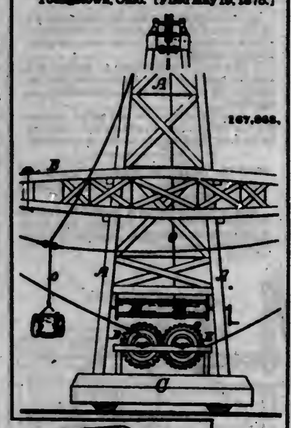
1. The screw-plugs H in the ring B, in combination with the plunger I, for the purpose of adjusting and controlling the position of the piston-rod, substantially as herein described.

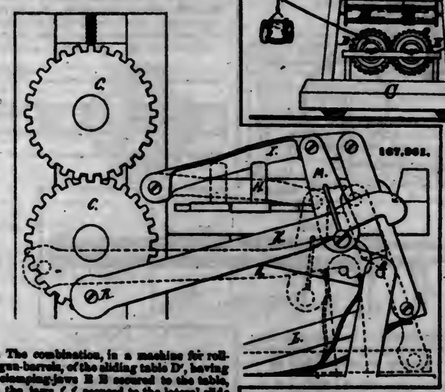
2. The combination of the plungers I with the inner and outer chambers of the piston and the check-valves J and K, for the purpose of pressing outwardly the band F, substantially as herein described.

3. The combination of the devices L *o p* with the inner and outer chambers of the piston, substantially as and for the purpose herein described.

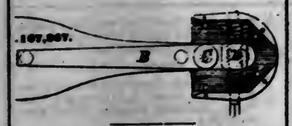
4. The combination of the devices M *q r s* with the inner or steam-pressure chamber of the piston, substantially as herein described.

167,867. DERRICKS. William C. Wetherill, Youngstown, Ohio. (Filed May 19, 1875.)



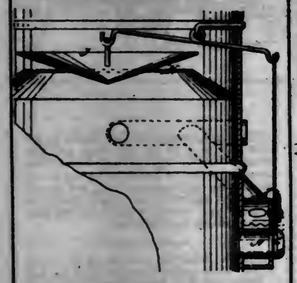

C
C
O
K
K
K

167,867.



167,868. HEATERS. M. W. Baily, Pottstown, Pa., assignor to himself and R. J. Baldwin, same place. [Filed Aug. 10, 1875.]

Brief.—The valve is operated by the opposite forces of the hot-air current and of gravity. When the hot-air registers above are closed, the valve falls, and by means of levers opens the air-inlet entering above the fire. When a full flow of hot air is utilized, the valve is raised, the above air-inlet closed, and an inlet below the grate is opened.



The combination of a valve, J, in the hot-air passage with the registers C D and the passages A B, for feeding and checking the fire, substantially in the manner described.

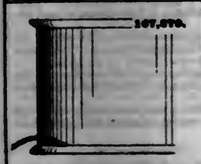
167,869. REMOVABLE DRIP-CUPS FOR ARGAND LAMPS. Alphonse Boudet, Clifton, assignor to Charles F. A. Hinrichs, Brooklyn, N. Y. [Filed Aug. 28, 1875.]

The drip-cup c, for an Argand-lamp burner, connected to the burner, substantially as set forth, so as to be moved radio horizontally front beneath the air-tube of the burner, as specified.

167,869.



167,870.



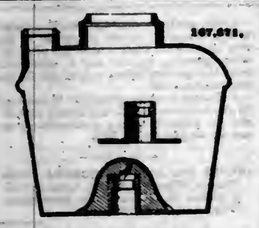
167,870. METALLIC CASE. George W. Bell, Brooklyn, N. Y. [Filed Mar. 12, 1875.]

1. A cord or covered wire inserted in a joint, seam, or flange of a sheet-metal vessel, having a projecting end to serve as a packing rod opener thereof, combined substantially as and for the purposes set forth.

2. A flanged joint or seam for a sheet-metal vessel, inclosing a fibrous or elastic packing-cord, substantially as and for the purposes set forth.

167,871. LAMPS. Ebenezer Hutchison, Brooklyn, N. Y. [Filed July 30, 1875.]

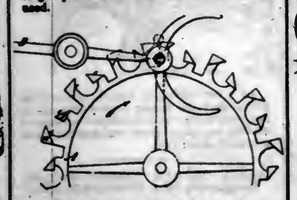
167,871.



The combination of the lamp, Fig. 1, with its socket, Fig. 2, and the pillar with its catch or projection, Fig. 3, substantially as described, and for the purpose specified.

167,872. ESCAPEMENTS FOR WATCHES. E. Bouvenin, La Heutte, Switzerland. [Filed July 24, 1875.]

Brief.—An escape-wheel, formed with two rows of reversely-inclined teeth, acts upon a single pallet instead of the two commonly used.



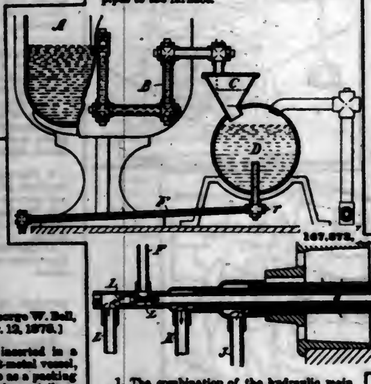
1. Two rows of reversely-inclined teeth, a b, on the side of the escape-wheel, in combination with a single pallet, C, in the lever, substantially as specified.

2. The teeth a b, arranged to receive and lock the pallet by their points, and give the impulse by their inclines, substantially as specified.

3. An escapement-lever and pallet, consisting of a simple lever, D, and a pin, C, attached to the lever by fitting in a hole, as described.

167,873. COAL-TAR BURNERS. Howard A. Brooks and William F. Wright, Albany, N. Y. [Filed Aug. 7, 1875.]

Brief.—The refuse tar is purified by passing through a strainer to a reservoir, from which it descends through pipes jacketed by water-pipes to the furnace.



1. The combination of the hydraulic main A, inverted discharge-siphon B, strainer C, and receiving-vessel D, substantially as set forth.

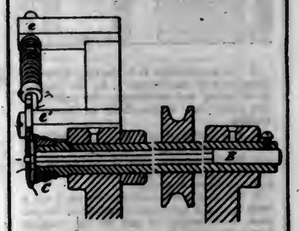
2. In combination with the furnace E, the coal-tar reservoir D, graduating feed-pipe F, having the removable angle part r, and the discharge-pipe G, substantially as set forth.

3. The combination of the discharge-pipe G, in communication with a supply of coal-tar, and the surrounding pipes H I, in communication with each other and with water supply and discharge pipes J K, substantially as described.

4. The combination of the discharge-pipe G, surrounding pipes H and I, communicating with each other and with water supply and discharge pipes J K, coal-tar-supply pipe F, and injecting air-blast pipe L, substantially as described.

5. In combination with the furnace E, having a closed ash-pit, X, under a fuel-supporting grate, s, the coal-tar-supply pipe F, discharge-pipe G, injecting air-blast pipe L, and blast-pipe M, discharging air under the fuel-grate of the furnace, substantially as described.

167,874. EDGE AND SOLE TRIMMING MACHINES. James H. Russell, Boston, Mass. [Filed July 14, 1875.]



1. In a heel or sole trimming machine, the combination of a rotary edge-trimming cutter and a rand-knife, arranged to rotate in unison therewith, but around an independent axis, the position of which, relative to the axis of the edge-trimming cutter, may be varied by the pressure of the boot or shoe, according as the width of the projecting portion of the heel or sole is greater or less, substantially as described.

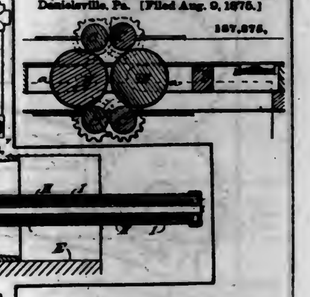
2. The combination of the hollow or sleeve shaft B, cutter C, spindle E, and rand-knife b, all constructed and arranged to operate substantially as described, for the purposes specified.

3. The cutter C, provided with the recess or groove c, in combination with the rand-knife b, adapted to rotate about a movable or variable axis, as and for the purposes described.

4. In a heel or sole trimming machine, the combination of a rotary edge-trimming cutter, a rand-knife, adapted to rotate about a movable axis, and a yielding rand guide or shield, inclosing the rand-knife and forming a bearing for its spindle, substantially as described, for the purposes specified.

167,875. SLATE-POLISHERS. Jas. H. Coffin and Phaon S. Klotz, Slatington, assignors of one-third their right to Geo. S. Coffin, Danielsville, Pa. [Filed Aug. 9, 1875.]

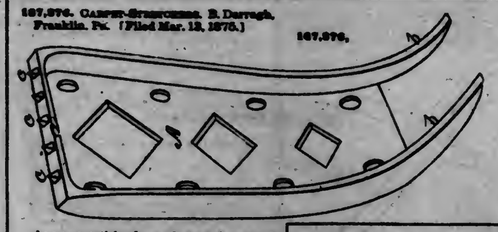
167,875.



The elastic adjustable polishing-rollers B, feeding-rollers C, having adjustable bearings w, and receiving-rollers C', in combination with the frame B, main frame A, and hinged frame A', all constructed and arranged as and for the purpose specified.

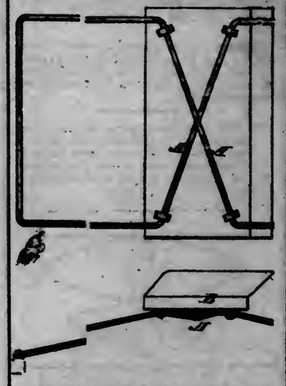
167,876. CARPET-STRETCHERS. B. Darrough, Franklin, Pa. [Filed Mar. 12, 1875.]

167,876.



As a new article of manufacture, the curved metallic plate A, provided with the prongs b b at one end and projecting points c at the other end, substantially as and for the purpose set forth.

167,877. WAGON-SPRINGS. L. B. Dotterer, Union, N. Y. [Filed Aug. 28, 1875.]



The springs A, inclined or curved upward from the ends toward the middle, and bent inward, crossing each other, for attachment to wagon axles and box or seat, substantially as set forth.

167,878. COTTING-IRES. Albert J. Dexter, St. Louis, Mo. [Filed June 30, 1875.]

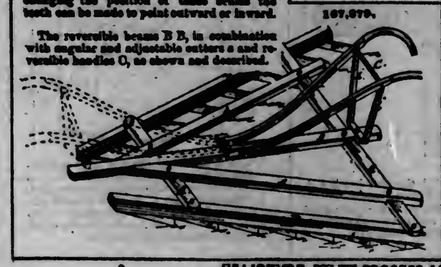
A carrying-ink, composed of the ingredients, viz: Nut-galls, sulphate of iron, gum-arabic, sugar, water, glycerine, nitrate of silver, and thorns, all combined substantially as specified.

167,879. COMBINED HARROWS AND CULTIVATORS. John W. Dilley, Macomb, Ill. [Filed Dec. 30, 1874.]

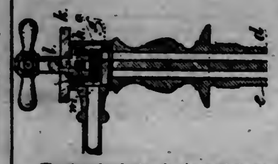
Brief.—The frame consists of a central beam and two diverging side beams, secured at their front and rear ends by transverse beams. Reversible handles are attached to the central beam. They are made of thin steel plates, secured by screws or bolts to diverging beams, which are in turn bolted to the ends of the cross-beams. They project obliquely at an angle from the beams, and by changing the position of these beams the teeth can be made to point outward or inward.

The reversible beams B B, in combination with angular and adjustable cutters a and reversible handles C, as shown and described.

167,879.



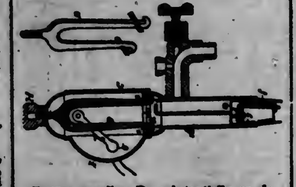
167,880. RADIE-FAUCETS. James Deming, Bridgeport, Conn., assignor to himself and Peay & Pier, same place. [Filed June 11, 1875.]



The pipes d and e, terminating at their upper ends in the chamber A, that is provided with the movable screw-cap h, in combination with the disk-valve g and spring m within the chamber h, stem i, and joint o, substantially as set forth.

167,881. PUMPS. Thomas Dowling, Gloucester, Mass., assignor to himself and I. C. Mayo, same place. [Filed Apr. 2, 1875.]

Brief.—The air-chamber is coupled to the pump-barrel by a slotted coupling engaging under a flange on the latter, and secured by a nut on the top of the former. The hose enters the air-chamber through the side *b*, a projection upon it, and is supported in an adjustable journal-bearing secured to a projecting stud.



1. The coupling D, substantially as described, arranged within the air-vessel C, connected with the pump-barrel by a notched flange thereto, and provided with a nut, H, as set forth.

2. In combination with the pump-handle provided with the arm I, head J, and journal K, arranged as set forth, the bearing L, applied to the journal, and connected with the air-vessel, and provided with the pivotal and set screws, all substantially as specified.

3. The vessel C, arranged and combined with the shaft J, the projection I, and the pump-handle, all as and for the purpose set forth.

167,882.



167,882. MODES OF INSERTING DIAMONDS INTO SAWS FOR SAWING STONE. James B. Hodgson, Beaver Falls, Pa. [Filed Aug. 23, 1875.]

1. The process of fitting and setting diamonds into metallic plates by first incasing them in soft tough metal by gentle and even pressure, and then pressing the diamonds and their casings into harder metal plates, substantially as described.

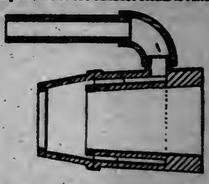
2. The process of fitting and holding diamonds in metallic plates or surfaces by embedding them by pressure into the metal when the metal is soft and cold, substantially as described.

3. The spring-holder B, having slot b, in combination with the metal plates 2 2, metal casing 1, and diamond C, constructed in the manner and for the purposes described.

4. The mode or process, as above described, of embedding diamonds in metal plates, and then removing the surplus metal to expose the cutting-edges of the diamonds, and fitting the cutting-edges to the exact position with relation to the saw by removing the metal around the diamond, substantially as described.

167,883. EXHAUST-PIPES FOR LOCOMOTIVES. Jas. C. Farmer, Providence, R. I., assignor of one-half his right to John W. White, Dedham, Mass. [Filed May 14, 1875.]

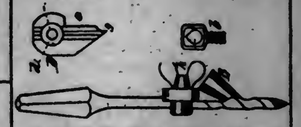
Brief.—An outer chamber is provided, having outlet-pipes at its bottom, by which the back pressure of the exhaust steam is relieved.



An exhaust-pipe for locomotive and other similar engines, constructed with a double wall and intervening relief-chamber, as described, into which relief-chamber a portion of the exhaust steam overflowing the inner wall may be deflected by the back pressure, and thence find an outlet by means of suitable escape-pipes at or near the bottom of the chamber, substantially as and for the purpose hereinbefore set forth.

167,884. COUNTERSINKS. Thos. P. Farmer, Boston, assignor to himself and Edwd. M. Farnsworth, Revere, Mass. [Filed May 6, 1875.]

Brief.—The countersink can be readily applied to bits of different diameters by means of a screw, the head of which is provided with an opening, having its inner half semicircular, and its outer half wedge-shaped in cross-section, in connection with a longitudinal groove on the inside of the countersink, and an opening in the head of the screw, through which the screw passes and is secured in position by a thumb-nut.

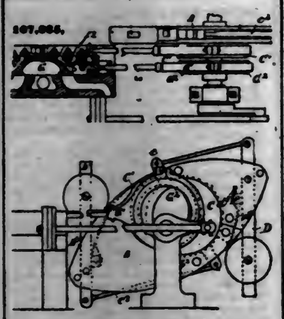


The combination of the screw h, provided with the opening f and nut k, with the countersink B, provided with the groove c and the opening e, constructed and operating as shown and described, and for the purpose set forth.

167,885. GOVERNORS. Jacob Fulker, St. Louis, Mo. [Filed June 3, 1875.]

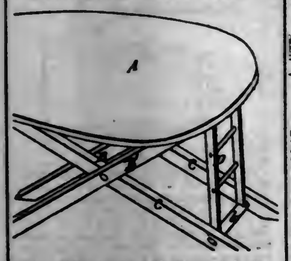
Brief.—Centrifugal action changes the angle of the crank carrying the eccentric, to which is attached the main valve, which also changes its position. At the same time the eccentric in the housing changes the stroke of the cut-off valve, thus cutting off steam at any position of the piston.

167,884.



The governor cut-off, consisting of a housing, B, containing the eccentric C, connected by rods f^1 f^2 to lever-arms D D^1 which carry the balls, as shown and described, also the eccentric C^1, made to control a cut-off valve formed to have the parts f f^1 f^2 and the further eccentric C^2 connected to slide-valve G, having parts g g^1 g^2, all said parts being constructed and combined to operate in the manner and for the purpose set forth.

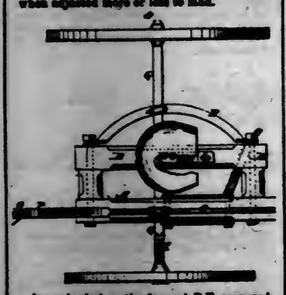
167,886. IRONING-TABLES. J. W. Field, Rockford, Ill. (Filed Mar. 20, 1875.)



In a folding ironing-table, the top A, having the legs B' and folding-brace D hinged thereto at one end, in combination with the legs C hinged to the legs B', and provided with the cross-bar b, substantially as described and for the purpose set forth.

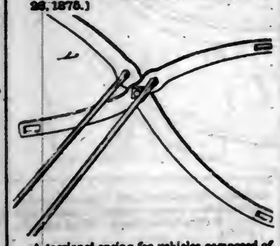
167,887. WHEEL-PLOWS. Jos. Flow, Pilot Point, Tex. (Filed July 3, 1875.)

Brief.—One side of the frame made longitudinally-adjustable, and plow-beam hung in two sets of rigid guides to hold the plow when adjusted more or less to land.



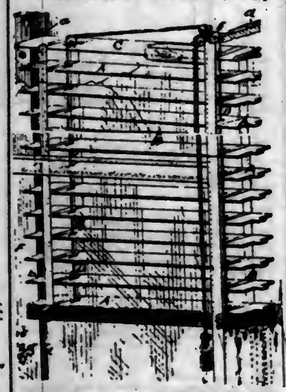
In a wheel-plow, the frame A B E, arranged with one side longitudinally adjustable upon the axle G, in combination with the two sets of rigid guides K M and slotted plow-beam J, whereby the plow is gaged to take more or less land, substantially as shown and described.

167,888. CARRIAGE-SPRINGS. John Fredenburgh, Greene, N. Y., assignor to himself and J. F. Smith, same place. (Filed Aug. 26, 1875.)



A torsional spring for vehicles composed of a steel rod secured at both ends rigidly to lever-arms swinging in opposite direction from each other, to create torsional strain in the steel rod, substantially in the manner and for the purpose set forth.

167,889. VENETIAN BLINDS. T. Fuyat, Woonsocket, R. I. (Filed June 11, 1875.)



1. The combination, with the window-frame having the grooves d, of the blind, consisting of the slats A, suspended from the piece C, pivoted to said window-frame and connected with the slats by tapes or bands B, as herein described.

2. The combination, with the blind consisting of the slats A connected by the tapes B, and thereby suspended from the piece C pivoted to the window-frame, of the rod F, one end of which is secured to the piece C, or to an arm, c, projecting from it, and the other end, by means of notches or teeth f, bearing against a fixture, g, attached to the window-frame, the whole arranged for the purpose of adjusting the slats to any desired angle, as herein set forth.

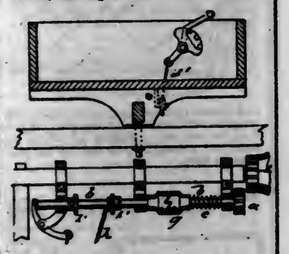
167,890. MOLDERS' FLASKS. H. H. Garrett, Albany, N. Y. (Filed May 20, 1875.)



The combination, with the plate-bracket B, carrying the stop-pin or eye, of the set-pin D, provided with the open c, or its described equivalent, and the key E, substantially as and for the purpose set forth.

167,891. REIN-HOLDERS. Hugh Gilmore and Jos. T. Spencer, St. Louis, Mo. (Filed Mar. 6, 1875.)

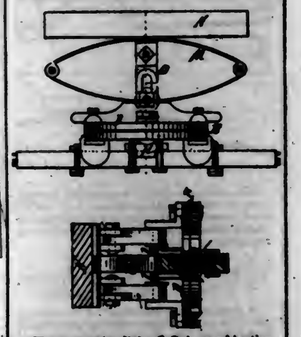
Brief.—By operating a lever a pinion on a sliding shaft is thrown into gearing with another on the bit. To the shaft a cord is connected, running to the horse's head. This is wound by the forward revolution of the wheel, securely hitching him.



The combination of lever and cord d d^1, and sliding shaft b A, having end pinion c, spring e, shank g, and cord A, with the rear axle of a vehicle, having cog-wheel B, as and for the purpose specified.

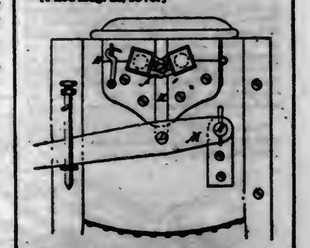
167,892. WHEELS-SPRINGS. Moritz Gluck, New York, N. Y. (Filed June 29, 1875.)

Brief.—A reach is dispensed with, the fifth-wheel and bolster being connected to the body of the vehicle by hinged vertically-sliding links.



The connecting-links O O, in combination with the spring M, rigid body N, and disk B, substantially as and for the purpose set forth.

167,893. CRUSHER. Elias Grant, Napa, Cal. (Filed Aug. 21, 1875.)

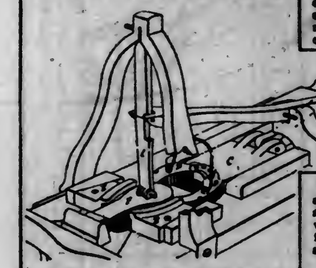


1. The oscillating breaker A, having corrugated sides D, arranged eccentric to the plane of their oscillation, substantially as specified.

2. The sliding rod K, coupled by stud J to the slotted breaker-arms I, and connected detachably by stud L to the detachable hand-lever M, substantially as specified.

167,894. MACHINES FOR BENDING AND SWAGING HORSESHOES-BLANKS. Robert Hale and Robert W. Hale, Chicago, Ill. (Filed Sept. 3, 1875.)

Brief.—The guides for the formers are recessed to form ways for ends of the blanks.



1. The formers D D, recessed in the crosshead C, in combination with the die constructed in two portions, the guides E E, recessed, as shown, and suitable mechanism for raising or lowering one portion of the die, substantially as and for the purpose set forth.

2. The die constructed in two parts, with the lower part recessed to form a concavity in a horseshoe, in combination with the guides E, recessed, as shown, the formers D D, recessed at their outer ends, and the discharge-opening M, substantially as and for the purpose set forth.

167,895. HORSE-BOOTS. John B. Hall, St. Paul, Minn. (Filed July 31, 1875.)



1. A horse-boot or wrapper, constructed with a lining and perforated with holes to allow of ventilation, substantially as described.

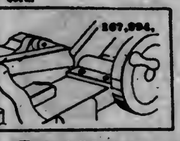
2. A horse-boot or wrapper, having a plate, substantially as does at F, for the purpose described.

3. A horse-boot or wrapper, having sponge or other soft porous material for the reception of glycerine held to the bottom of the foot by a metallic spring-plate attached to a horse-boot, substantially as described.

167,896. HARROWS. Isaac N. Harbaugh, Brighton, Iowa. (Filed Feb. 1, 1875.)

Brief.—A pair of truck-wheels support a center-beam extending rearwardly, the rear end being supported by a caster-wheel. The sections of the harrow are hinged to this central bar, which also supports the driver's seat, and from which either wing of the harrow can be raised by means of a lever and cord.

167,894.



The truck S R, having caster-wheel D, seat E, pendent bars a a, levers b b, foot-rest and treadle d, and pulley h, in combination with the carriage A A and harrow-sections Nos. 1 and 2, substantially as and for the purpose above and described.

167,897. RATCHET-BRACES FOR METAL-DRILLS. H. C. Hart, Unionville, Conn., assignor of one-half his right to J. S. Upson, same place. (Filed May 20, 1875.)

Brief.—A socket-piece upon the tool-holder is adapted to receive the end of the brace, which is connected therewith by a pin, so as to form a joint. A spring-catch upon the tool-holder is thrown into a recess in the socket-piece, when the brace is to be operated in the ordinary manner, and prevents the holder from turning therein. Two stops—one on each side of the brace—prevent, when thrown downward, the socket-piece to be received without operating the holder. When it is desirable to turn the holder left handed, the right-hand stop is thrown backward, thereby allowing the joint to yield, and permit the end of the brace to come into frictional contact with the holder, and vice versa.



1. In combination with the body of a bit or tool-holder, the socket C, and D of a brace or lever, and stops c c, all operating together substantially as described, and for the purpose set forth.

2. In combination with the body of a tool-holder, the socket C, recess f, and spring-catch i, all substantially as described, and for the purpose set forth.

167,898. CORSETS. Daniel H. Horne, New York, N. Y. (Filed July 10, 1875.)



A corset, having the wire-gauze cups B open at upper part and supported at lower by stay-sockets, as shown and described.

167,899. WALKING-DOLLS. A. H. Hotchkiss, Cheshire, Conn. (Filed Mar. 4, 1875.)

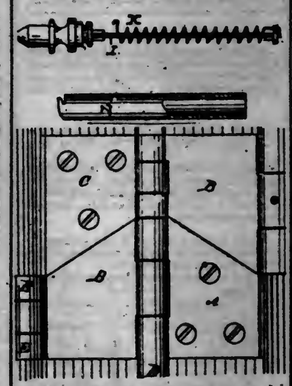
167,899.



A walking automaton figure, provided with clock-work, and having the shoes or feet a a, wheels r rr, ratchet h, and springs S and G, all said parts being combined, constructed, and arranged to operate substantially as and for the purpose described.

167,900. COMBINATION SPRING-HINGES. G. S. Horne, New York, N. Y., assignee of one-half his right to O. A. Horne, same place. (Filed Aug. 6, 1875.)

Brief.—A double-acting spring-hinge, adapted to swing a door both ways, as well as to hold it in closed position, and prevent sagging, is formed of two outer plates or levers, and a sectional center-plate, each half of which is diagonally divided, and all the plates provided with suitable knuckles or hinge-connections. A tubular pintle carries a combined torsion and spiral spring, one within the other, connected at their inner ends by a small socket-head, and the torsion, which passes entirely through the spiral, at its outer end, to a ratchet-nib. The diagonal division of the center-plate, increasing the length of this compound or combination spring, utilizing space and doubling power.

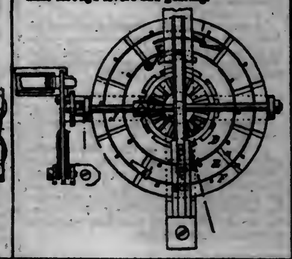


1. The combination and arrangement of the diagonal center-plates B B, giving an increased length of springs, and acting, by the compound or combination springs D D, on first plate A, and, by hinge knuckles or connections O O, on third plate C, forming a hinge held at every point of its motion to either one of the corners of the casing, as set forth and described herein.

2. The combination and arrangement of the torsion and spiral springs I and K, respectively, the one acting within the other, and connected at the inner end by means of a suitable socket-head, i, and fastened, respectively, to the two outer plates, forming a compound or combination spring, D, acting within the tubular pintle L, in the manner described and shown, and for the use and purpose hereinbefore set forth.

167,901. REGISTERS. Frederic J. Hoyt and William H. Hoyt, Batavia, N. Y. (Filed Mar. 13, 1875.)

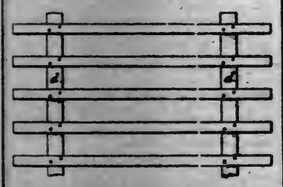
Brief.—A register to be placed in freight-cars, and operated by the sliding door moving against a dog, which actuates the register-dials through levers and gearing.



1. The combination of registering or commutation coal-disks, with a car and sliding door thereof, and connecting mechanism, substantially as described, adapted to be operated for turning the disks and changing the coal number or character whenever said door is moved, as and for the purpose set forth.

2. The rings D, E, and F, wheel H, pinion I, and shaft J, combined for the purpose described.

167,999. SPRING BED-BOTTOMS. Isaac N. Hoyt and Elmer Hoyt, Wayland, Mich. [Filed Sept. 16, 1874.]



A spring bed-bottom, having diagonal bindb, in combination with slats a and c, and transverse supports d, substantially as and for the purpose set forth.

167,000. SOCKET-ROD SOCKETS. Plympton H. Jenks, Petrolia City, Pa. [Filed Apr. 10, 1875.]

Brief.—The socket is lowered into the well against the broken rod or tube. The wedge is driven by the rod down onto the rod until a firm hold is obtained, which enables the operator to withdraw it.

1. The socket A, wedge B, and plunger C, substantially for the purpose described, either with or without the groove K.

2. The socket A, for the purpose described.



167,000.



167,004.

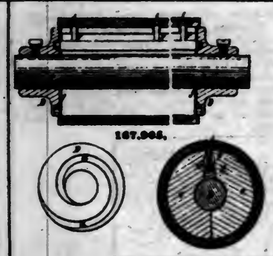
167,004. ROLLERS FOR RUFFING SOLES. J. B. Johnson, Lynn, Mass. [Filed Aug. 10, 1875.]

Brief.—The buffing-roller is provided with springs acting upon pins, whose points are protected by sand-caps.

In combination with a buffing-roller or its body, A, a series of movable blunting points or spurs, C, and springs D and screws G for operating them, all being applied substantially as and for the purpose specified.

167,005. ROLLERS FOR RUFFING SOLES. J. B. Johnson, Lynn, Mass. [Filed Aug. 10, 1875.]

Brief.—The shaft is provided with two sand-grooved heads that bear against the ends of the buffing-roller. The buttons or eyed clamps that secure the sheet of sand or emery paper are connected to a bar, the ends of which enter the sand-grooves of the heads, and by turning the shaft the clamps are drawn within the roller and secure the paper.



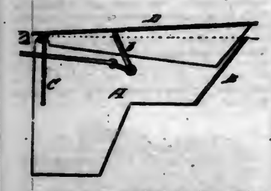
167,006.

1. The combination of the hooks F, the bar E, and the grooved heads D, arranged and applied to the body of the roller and its shaft H, as set forth.

2. The combination of the oval clamps I, with the hooks F, the bar E, and the grooved heads D, arranged and applied to the roller body and its shaft, as specified.

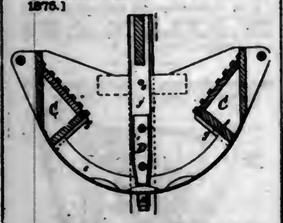
167,006. BLOWERS FOR FIRE-PLACES. J. C. Kennedday, Big Lick, N. C. [Filed Mar. 29, 1875.]

Brief.—The adjustable plate is placed on a level with and forms a portion of the hearth-surface. When desired it may be raised to introduce air under the grate, an operating-rod leading to the side of the fire-place for that purpose.



In a blower, as described, the frame or box A B C, hinged top D, and movable bow b, combined with the hearth of a fire-place, substantially for the purposes herein set forth.

167,007. WASHING-MACHINES. Thomas B. Kirkwood, Dublin, Ind. [Filed July 31, 1875.]

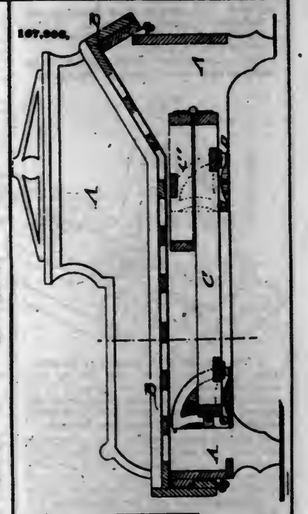


The combination, with oscillating axle-box, having the parallel lengthwise ribs c, and terminal ribs β, attached to the under face of chambers C, of the stationary vertical rack, formed of a series of bars, whose ends project into the grooves between the aforesaid ribs, all as shown and described.

167,008. SOFA-BEDSTEADS. John B. Kline, Cincinnati, Ohio. [Filed June 19, 1875.]

1. A bed-lounge composed of a main frame, A, a sliding seat-section, B, and of a supplementary section, C, with a hinged head-piece, C', arranged within frame A, substantially in the manner and for the purpose set forth.

2. The combination of a main frame, having equidistant side guides and supporting pins or lugs, with a supplementary section swinging on pivoted arms in a level with the drawn-out seat-section, to be locked in this position, substantially in the manner and for the purpose set forth.



167,008.

1. The ferrule B, having mortises b b and spring-bearing and socket C, constructed and adapted to serve as specified.

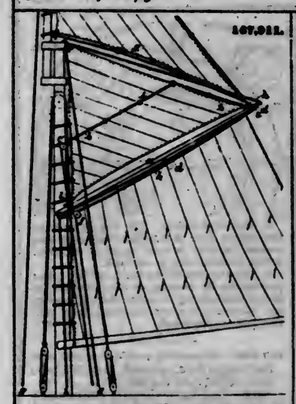
2. The combination of the posts A A, having slots a' and socket-piece C, with the head and foot boards, when constructed and arranged as shown and specified.

167,010. CHURCH-PEWS. Israel Lancaster, Richmond, Ind. [Filed Jan. 20, 1875.]



A seat-back for churches, in which the front side of the back is covered with a single piece of veneer, which extends over and around the cap to the under side thereof, the edge or joint of the veneer being fastened and concealed by the longitudinal strip C, substantially as described.

167,011. RIDING AND FURLING GAFF TOP-SAILS. Benjamin F. Loerow, Salem, Mass. [Filed Aug. 19, 1875.]

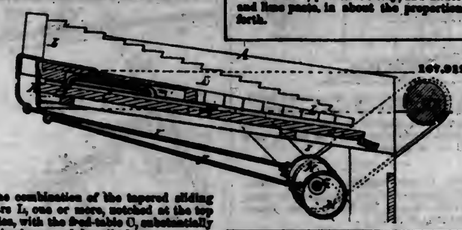


167,012.

1. The device consisting of the lower gaff top-sail B, provided with a brail, b, attached to the outer corner of the same, and extending thence along the upper edge to a suitable point, c, and thence diagonally across the sail, as shown, for hauling or furling the sail to the mast, and also having a sheet, d, attached to the outer corner, and passing over pulleys e f, for the purpose of setting the sail, all constructed and arranged substantially as shown.

2. The upper gaff top-sail C, provided with sheet h for spreading and brail g for furling, said brail running through eyes along the edges of the sail, as shown, and passing from pulley f to the deck, substantially as set forth.

167,013. FENDERS FOR THRASHING-MACHINES. Alex. Washington Lockhart, Sacramento, Cal. [Filed May 8, 1875.]



167,013.

1. The combination of the tapered sliding feed-bars L, one or more, notched at the top and sides, with the feed-table C, substantially as herein shown and described.

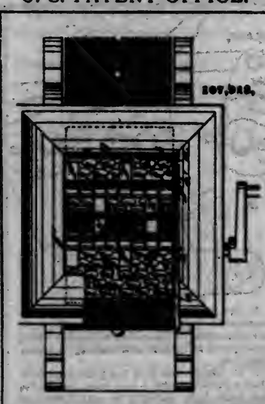
2. The combination of the guides M m' with the grooved feed-arms L and the feed-table C, substantially as herein shown and described.

3. The combination of the shaft G, the eccentrics H, the connecting-rods J, and the bars K with the feed-arms L, substantially as herein shown and described.

167,015. MACHINERY FOR MIXING AND MOLDING ARTIFICIAL FUEL. Emile F. Loisseau, Philadelphia, Pa. [Filed Aug. 21, 1875.]

Brief.—Screw-blades or shafts, revolving in opposite directions, feed the composition to the molding-cylinders. Improvement in apparatus for which Patent No. 167,695 was granted February 17, 1874, to same party.





167,015.

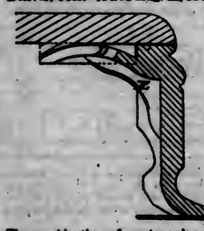
1. The solid or hollow molding-cylinders, having on their outer surfaces a series of cavities or recesses, which are connected, by small channels or openings, with the adjoining cavities, to allow the escape of air and excess of material, substantially as and for the purpose set forth.

2. The molding-cylinders, having smaller cavities or recesses at the ends of the alternating rows of the larger molding-cavities, and being also connected by small channels therewith, for the purpose of avoiding large united spaces on the roller-surfaces, substantially as specified.

167,016. COMPOSITIONS FOR ARTIFICIAL FUEL. Emile F. Loisseau, Philadelphia, Pa. [Filed Aug. 21, 1875.]

A composition for artificial fuel, consisting of coal-waste, pulverized clay, and diluted rye and lime paste, in about the proportions set forth.

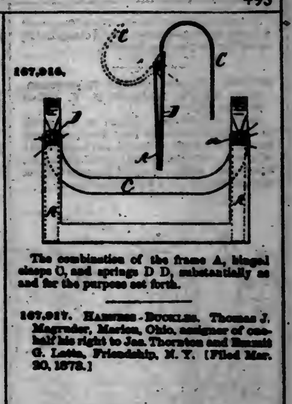
167,017. STOVE-LIDS. Ira A. Loveley, Denver, Colo. [Filed Aug. 21, 1875.]



The combination of a stove-lug, having curved and bossed tongue, with a curved groove formed by recessed socket projecting at the under side of the stove-base plate, substantially in the manner and for the purpose specified.

167,018. POCKET-BOOKS. Sylvanus Lown, Springfield, N. J. [Filed Aug. 16, 1875.]

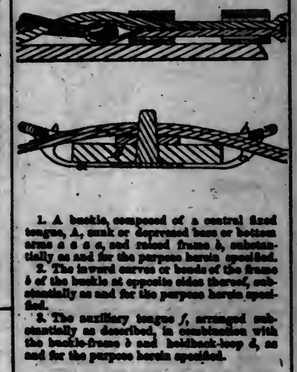
Brief.—Provides the "closing-flap" of pocket-books and similar articles with a hinged spring-clasp to keep it closed or opened, as desired.



167,016.

The combination of the frame A, hinged clasps C, and springs D D, substantially as and for the purpose set forth.

167,017. HARNESS-BUCKLES. Thomas J. Magruder, Marion, Ohio, assignor of one-half his right to Jas. Thornton and Hannah G. Lasbe, Friendship, N. Y. [Filed Mar. 20, 1873.]

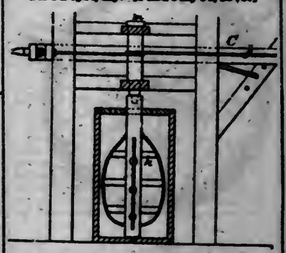


1. A buckle, composed of a central fixed tongue, A, sunk or depressed base or bottom arms c c c c, and raised frame b, substantially as and for the purpose herein specified.

2. The inward convex or bends of the frame b of the buckle at opposite sides thereof, substantially as and for the purpose herein specified.

3. The auxiliary tongue f, arranged substantially as described, in combination with the buckle-frame b and buckhook-loop d, as and for the purpose herein specified.

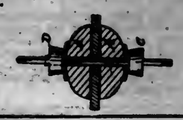
167,018. CRUSHER. Wm. P. Mangum, Cropper's Depot, Ky. [Filed July 14, 1870.]



In a chute mechanism, the slide-bar C, string b, hooked pin d, having square neck, and the key e, substantially as and for the purpose set forth.

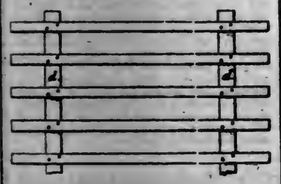
167,019. RUBBER-CHAIN-PUMP BUCKETS. Jared S. Manley, Canton, Pa. [Filed July 17, 1875.]

Brief.—The rubber bucket is made in three pieces, the central piece being a circular disk, which is clamped between the hemispherical pieces, and can be readily detached when worn.



1. The combination of registering or commutation coal-disks, with a car and sliding door thereof, and connecting mechanism, substantially as described, adapted to be operated for turning the disks and changing the coal number or character whenever said door is moved, as and for the purpose set forth.
2. The rings D, E, and F, wheel H, pinion I, and shaft J, combined for the purpose described.

167,902. SPRING BED-BOTTOMS. James N. Keyt and Minot Keyt, Wayland, Mich. [Filed Sept. 10, 1874.]

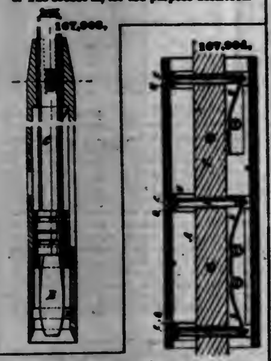


A spring bed-bottom, having diagonal block b, in combination with slats a and c, and transverse supports d, substantially as and for the purpose set forth.

167,903. SOCKET-ROD SOCKETS. Plympton B. Jenks, Petrolia City, Pa. [Filed Apr. 10, 1876.]

Brief.—The socket is lowered into the well against the broken rod or tube. The wedge is driven by the rod down into the tool until a firm hold is obtained, which enables the operator to withdraw it.

1. The socket A, wedge B, and plunger C, substantially for the purpose described, either with or without the groove K.
2. The socket A, for the purpose described.



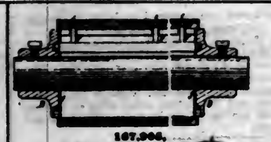
167,904. ROLLERS FOR BUFFING SOLES. J. B. Johnson, Lynn, Mass. [Filed Aug. 10, 1875.]

Brief.—The buffing-roller is provided with springs acting upon pins, whose points are protected by tower-caps.

In combination with a buffing-roller or its body, A, a series of movable blocking points or spurs, C, and springs D and screws G for operating them, all being applied substantially as and for the purpose specified.

167,905. ROLLERS FOR BUFFING SOLES. J. B. Johnson, Lynn, Mass. [Filed Aug. 10, 1875.]

Brief.—The shaft is provided with two case-grooved heads that bear against the ends of the buffing-roller. The buttons or eyed clamps that secure the sheet of sand or emery paper are connected to a bar, the ends of which enter the case-grooves of the heads, and by turning the shaft the clamps are drawn within the roller and secure the paper.

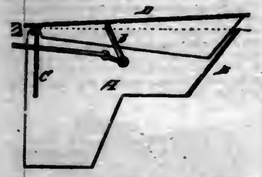




1. The combination of the hooks F, the bar E, and the grooved heads D, arranged and applied to the body of the roller and its shaft K, as set forth.
2. The combination of the eyed clamps I, with the hooks F, the bar E, and the grooved heads D, arranged and applied to the roller body and its shaft, as specified.

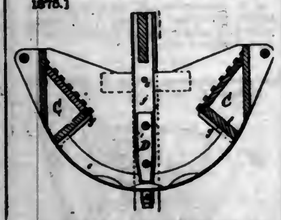
167,906. BLOWERS FOR FIRE-PLACES. J. C. Kennedy, Big Lick, N. C. [Filed Mar. 29, 1875.]

Brief.—The adjustable plate is placed on a level with and forms a portion of the hearth-surface. When desired it may be raised to introduce air under the grate, an operating-rod leading to the side of the fire-place, for that purpose.



In a blower, as described, the frame or box A B C, hinged top D, and movable bow b, combined with the hearth of a fire-place, substantially for the purpose herein set forth.

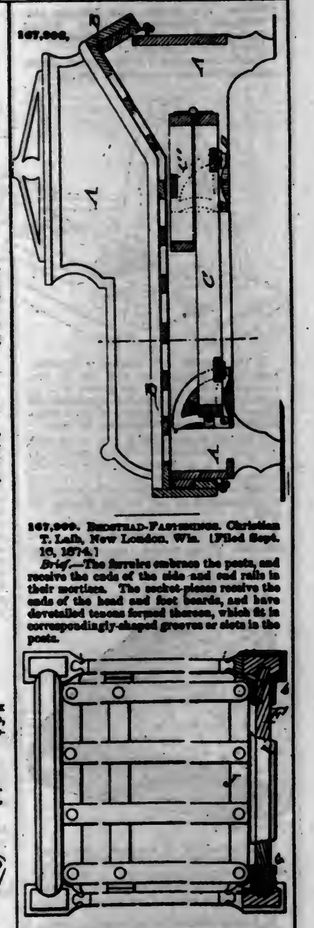
167,907. WARMING-MACHINES. Thomas B. Kirkwood, Dublin, Ind. [Filed July 31, 1875.]



The combination, with oscillating axle-bar, having the parallel lengthwise ribs e, and terminal ribs p, attached to the under face of chambers C, of the stationary vertical rack, formed of a series of bars, whose ends project into the grooves between the aforesaid ribs, all as shown and described.

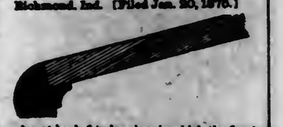
167,908. SOFA-BEDSTEADS. John B. Kline, Cincinnati, Ohio. [Filed June 19, 1875.]

1. A bed-lounge composed of a main frame, A, a sliding seat-section, B, and of a supplementary section, C, with a hinged head-piece, C', arranged within frame A, substantially in the manner and for the purpose set forth.
2. The combination of a main frame, having equidistant side guides and supporting pins or lugs, with a supplementary section swinging on pivoted arms to a level with the drawn-out seat-section, to be locked in this position, substantially in the manner and for the purpose set forth.



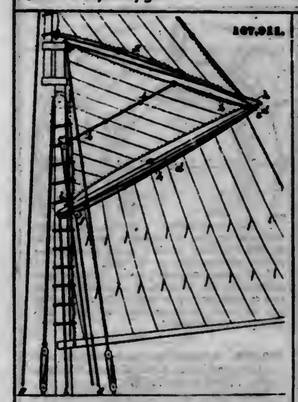
1. The ferrule B, having mortises b b and spring-bearing and socket C, constructed and adapted to serve as specified.
2. The combination of the posts A A, having slots a' and socket-piece C, with the head and foot boards, when constructed and arranged as shown and specified.

167,910. CHURCH-PEWS. Israel Lancaster, Richmond, Ind. [Filed Jan. 20, 1876.]



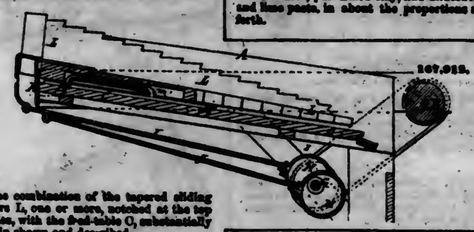
A seat-back for churches, in which the front side of the back is covered with a single piece of veneer, which extends over and around the cap to the under side thereof, the edge or joint of the veneer being furnished and concealed by the longitudinal strip G, substantially as described.

167,911. ROOFING AND FURLING GAFF TOP-SAILS. Benjamin F. Loewy, Salem, Mass. [Filed Aug. 19, 1875.]



1. The device consisting of the lower gaff top-sail β, provided with a brail, b, attached to the outer corner of the same, and extending thence along the upper edge to a suitable point, c, and thence diagonally across the sail, as shown, for hauling or furling the sail to the mast, and also having a sheet, d, attached to its outer corner, and passing over pulleys e f, for the purpose of setting the sail, all constructed and arranged substantially as shown.
2. The upper gaff top-sail C, provided with sheet b for spreading and brail f for furling, said brail running through eyes along the edges of the sail, as shown, and passing from pulley f' to the deck, substantially as set forth.

167,912. FEEDERS FOR THRASHING-MACHINES. Alex. Washington Lockhart, Sacramento, Cal. [Filed May 8, 1875.]

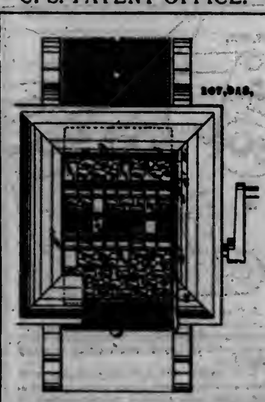


1. The combination of the tapered sliding feed-bars I, one or more, notched at the top and sides, with the feed-table O, substantially as herein shown and described.
2. The combination of the guides M m' with the grooved feed-arms L and the feed-table O, substantially as herein shown and described.
3. The combination of the shaft G, the eccentrics H, the connecting-rods J, and the bars K with the feed-arms L, substantially as herein shown and described.

167,913. MACHINES FOR MIXING AND MOLDING ARTIFICIAL FUEL. Emile F. Loisseau, Philadelphia, Pa. [Filed Aug. 21, 1875.]

Brief.—Mirror-bladed or shafts, revolving in opposite directions, feed the composition to the molding-cylinders. Improvement in apparatus for which Patent No. 147,883 was granted February 17, 1874, to same party.



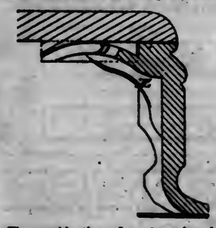


1. The solid or hollow molding-cylinders, having on their outer surfaces a series of cavities or recesses, which are connected, by small channels or openings, with the adjoining cavities, to allow the escape of air and excess of material, substantially as and for the purpose set forth.
2. The molding-cylinders, having smaller cavities or recesses at the ends of the alternating rows of the larger molding-cavities, and being also connected by small channels therewith, for the purpose of avoiding large contact-spaces on the roller-surfaces, substantially as specified.

167,914. COMPOSITIONS FOR ARTIFICIAL FUEL. Emile F. Loisseau, Philadelphia, Pa. [Filed Aug. 21, 1875.]

A composition for artificial fuel, consisting of coal-waste, pulverized clay, and diluted rye and lime paste, in about the proportions set forth.

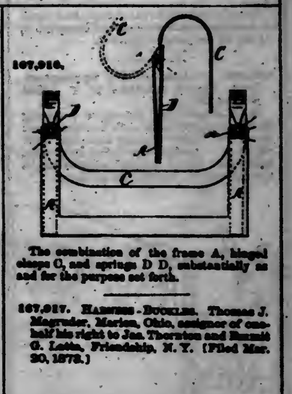
167,915. STOVE-LEGS. Ira A. Lovejoy, Denver, Colo. [Filed Aug. 21, 1875.]



The combination of a stove-leg, having curved and bevel tongue, with a curved groove formed by recessed socket projecting on the under side of the stove-base plate, substantially in the manner and for the purpose specified.

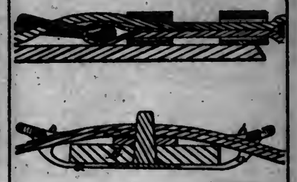
167,916. POCKET-BOOKS. Sylvanus Lyon, Springfield, N. J. [Filed Aug. 16, 1875.]

Brief.—Provides the "closing-flap" of pocket-books and similar articles with a hinged spring-clasp to keep it closed or opened, as desired.



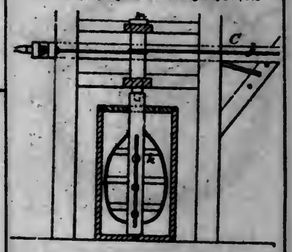
The combination of the frame A, hinged clasps C, and springs D D, substantially as and for the purpose set forth.

167,917. HARNESS-BUCKLES. Thomas J. Magruder, Marion, Ohio, assignor of one-half his right to Jas. Thornton and Ransom G. Lotts, Friendship, N. Y. [Filed Mar. 20, 1876.]



1. A buckle, composed of a central fixed tongue, A, sunk or depressed bars or bottom arms a a a a, and raised frame b, substantially as and for the purpose herein specified.
2. The inward curves or bends of the frame b of the buckle at opposite sides thereof, substantially as and for the purpose herein specified.
3. The auxiliary tongue f, arranged substantially as described, in combination with the buckle-frame b and buckboard-loop d, as and for the purpose herein specified.

167,918. CRUSHER. Wm. P. Mangum, Grogan's Depot, Ky. [Filed July 14, 1876.]



In a chain mechanism, the slide-bow C, spring b, headed pin d, having square neck, and the key e, substantially as and for the purpose set forth.

167,919. BOILERS-GRAIN-PUMP BUCKETS. Jared S. Manley, Canton, Pa. [Filed July 17, 1876.]

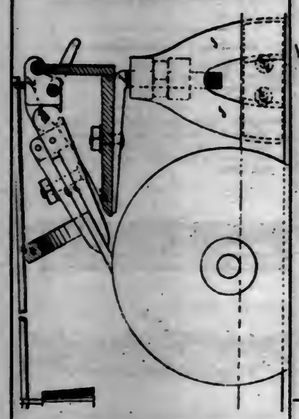
Brief.—The rubber bucket is made in three pieces, the central piece being a circular disk, which is clamped between the hemispherical pieces, and can be readily detached when worn.



The combination of two corresponding plates A A and intermediate disk *d* with clamp B O D, as and for the purpose specified.

167,080. PLANER-CUTTER SHARPENER. Gerry Manvel, Rochester, N. Y. (Filed May 26, 1876.)

Brief.—The clamps, pivoted to traversing blocks, are supported at their front ends upon the edge of a table vertically and horizontally adjustable. The clamps are united by a bridge, upon which rests a weighted lever, having its rear end secured to a traversing block.



1. The clamps C, jointed at D to the traversing supports B, combined with a table that supports said clamps at H, and rests upon adjustable standards I J, as and for the purpose described.

2. The combination of weighted lever Q, traversing block N, and bridge O, with the clamps C D, and the traversing supports B, as and for the purpose specified.

167,081. CHAMPLAIN. Fredk. McLoren, New York, N. Y. (Filed Aug. 12, 1875.)



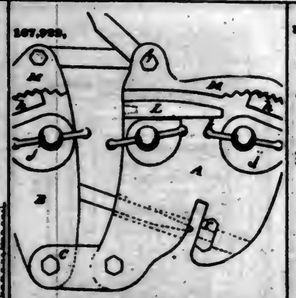
1. The combination of the wire-frame B, carrying the crystals C, with the brush pipes a and burners d, of a chandelier, substantially as and for the purpose specified.

2. The combination of the wire-frame B, carrying the crystals C, with the brush pipes a, burners d, brush pipes b, and burners c, all substantially as herein shown and described.

167,082. TIME-OPERATING MACHINES. John H. Mintz, Pine Bobles, Col. (Filed Sept. 4, 1876.)

Brief.—The blades are adjustable toward and from the center block for straight or curved work. For straight work the straight side of blade L is the cut; for curved work, as fires, the cutside is changed by central cam, between the curved side of the blade and the body of the machine.

167,083.



1. The parts A and B, having the curved corrugated projection M, in combination with the adjustable jaws h and the cams *i*, the whole constructed to operate substantially as herein described.

2. In combination with the parts A B, with their adjustable jaws h and cams, as shown, the guide L for straight or curved work or belt-mortising, substantially as herein described.

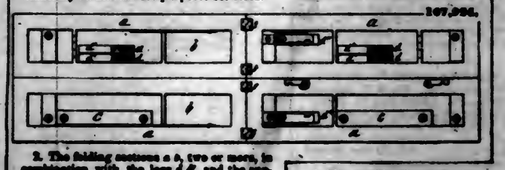
167,084. BLIND-SLAT ADJUSTER. George A. Myers, Brooklyn, E. D., N. Y. (Filed July 24, 1876.)

Brief.—A dovetailed block, sliding in a grooved or dovetailed plate attached to the inside of the window-blind, is operated by an adjustable knob or set-screw, the connection with the blind-slats being by a suitable link and hook, the construction allowing the slats to be readily adjusted or held in desired position.

The combination, with the pivoted blind-slats O C, of hook E, link F, dovetailed block G, screw I, and grooved or dovetailed plate H, as shown and described, to secure said slats in any adjustment.

167,085. PAPER-HANGERS' TABLES. John Orgill, Hartford, Conn., assignor to himself and Jeremy W. Bliss, same place. (Filed Mar. 6, 1876.)

1. The combination of folding sections a b, with legs *d d'*, and supporting-plate *e*, substantially as and for the purpose set forth.

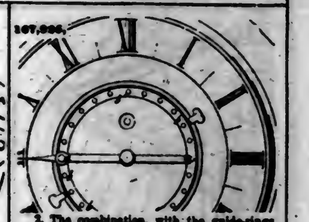


2. The folding sections a A, two or more, in combination with the legs *d d'*, and the supporting-plate *e*, and hinged legs *d''*, all constructed substantially as and for the purpose set forth.

167,086. WATCHMEN'S TIME-CHECKS. T. D. Osborne and W. W. Le Grande, Louisville, Ky. (Filed Aug. 21, 1876.)

1. In watchmen's time-checks, the combination, with the hour-hand of the clock, and a band-spring and pin applied thereto, of a spring-depressing device, of the glass front, and of a series of time-registering pins, sliding in a guide-ring, arranged to be moved back at fixed periods of time, substantially in the manner and for the purpose set forth.

167,086.

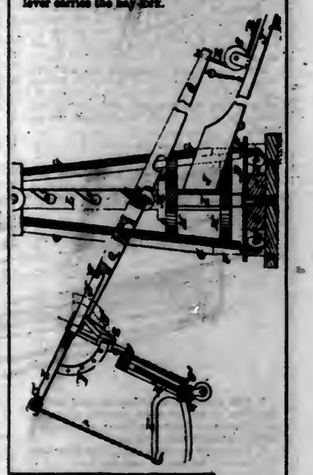


2. The combination, with the guide-rings and sliding pins, of a sliding base-ring, that carries the pins forward again for removed section, substantially as set forth.

3. The hour-indicating hand, having eye or perforation for passage of operating-pin at end of band-spring to strike the registering-pin below at or about the final time, substantially as described.

167,087. APPARATUS FOR GATHERING AND RELEASING HAY. Alfred J. Park, Virginia, Mo. (Filed Aug. 6, 1875.)

Brief.—Four legs on friction-rollers, and a central post, form a pyramidal frame, revolved around a platform by an attached lever having a ground roller, through a pulley on the top of which passes a horse-rope from the end of a lever fulcrumed on the post. This lever carries the hay-fork.



167,088. ATTACHING FOR CULTIVATORS. Jeremiah Rhodes, Jr., Bloomington, Ill. (Filed Aug. 21, 1876.)

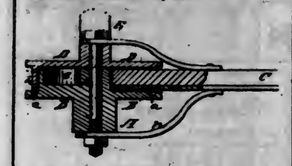
1. The combination of the base A B C D, the wheels and sections E F, the posts G, the cross-frames H, and the central pivoting-post I, the sweep J, the grooved posts L, the adjustable flanged fulcrum-shaft O, the stationary flanged fulcrum-shaft P, the adjustable holding-lever Q, the holding-rope R, and the guide-pulley S, with each other, substantially as herein shown and described.

2. The combination, with the connected frame F G and platform H, of the wheels E, the over-running disk D, and the drum C, all arranged as and for the purpose set forth.

3. The frame G, having a central post, I, that passes through drum C and the platform H, to take the strain from wheels, in the manner specified.

167,087. PIPE-WRENCH. W. A. Parker, Marshfield, Mo. (Filed July 27, 1876.)

Brief.—The eye upon the end of the reach turns upon the bolt which projects from the upper side of the lower plate.



The plate B, having groove *a*, flange *b*, and bolt *d*, and plate D having flange *b*, in combination with axle A, spring-bar E, and reach C, having eye E, all substantially as and for the purposes set forth.

167,088. CAR-STARTERS. Lewis C. Parker, Robinson, Kans. (Filed Aug. 26, 1876.)

Brief.—Frame to be clamped to track, to give purchase for drawing car forward.



1. In a car-starter, the frames A, in combination with the wheels *c* and hooks M, as set forth.

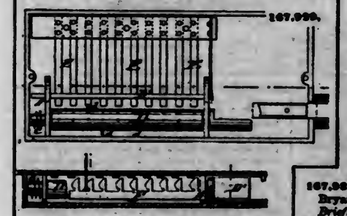
2. The spool D, lever *b*, in combination with a rope or chain, F, as specified.

3. The combination of the frames A, standard C, spool D, lever *b*, hooks M, and draw-rod M, as set forth.

4. In a car-starter, the combination of the wheels *c* and draw-rod *m*, substantially as specified.

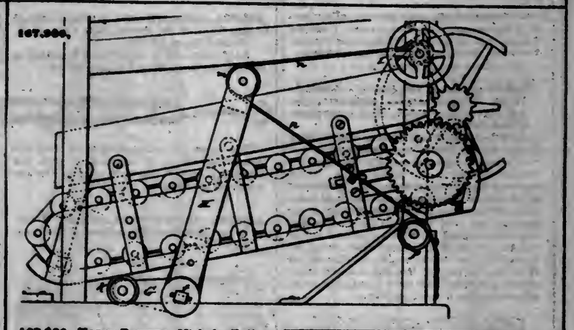
167,089. COMBINATION-LOCKS. Alfred E. Peters, Moncton, Canada. (Filed July 10, 1876.)

Brief.—A spring-acted roller is provided with interchangeable pins that are acted upon by spring-bars, depressed by a pin inserted through perforations in the face-plate. The spring-bars are engaged by a sliding and toothed spring-bar, that releases the preceding spring-bar and secures thereby the return of the spring-acted roller, except when the correct combination is set in regular succession, which prevents the return of the roller, and allows the throwing of the bolt.



1. A combination-lock composed of a series of spring-bars capable of being depressed at the free ends, a sliding and toothed spring-bar, and a spring-roller with interchangeable pins and recesses, and, substantially as and for the purposes set forth.

2. The combination of the spring-bars, capable of depression by a pin inserted through holes of the face-plate, with a sliding and spring-acted bar, having teeth and recesses corresponding to the number of springs, so as to lock each spring when depressed, and release the same by the locking of the next spring, substantially as set forth.



167,090. HORSE-POWERS. Nicholas Potter, Troy, Pa. (Filed Mar. 24, 1876.)

1. The combination, with the track-frame D, having posts or bars E F, as described, of the boxes or bearings *o o* on the shaft *a*, and the adjustable slotted bar I, substantially as and for the purposes herein set forth.

2. The combination, with the track-frame D, of the shaft *f*, arms G, with rollers K, lever H, with pulley *n*, idle-pulley *p*, and windlass I, with rope *s*, all substantially as and for the purposes herein set forth.

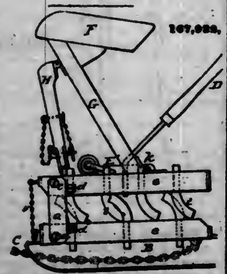
167,091. POCKET-BOOK FASTENERS. Louis Prahar, New York, N. Y. (Filed Aug. 21, 1876.)

Brief.—The rivet heretofore employed to form the pivotal point of the latch B, and attached to the frame A, is dispensed with by forming the socket *a'* in the latter, and the circular or ball-shaped end *b'* on the former.

The combination of plate A, having socket *a'*, with latch B, provided with circular or ball-shaped end *b'*, whereby the pivotal point of the latch is established, all substantially as set forth.

167,092. HARROWS. Joseph W. Price, Bryan, Ohio. (Filed July 24, 1876.)

Brief.—The harrow is made in two sections transversely to the line of draft, and so hinged as to be folded inwardly, teeth to teeth. One section is provided with runners upon the upper side, when in working position, and upon which the harrow is drawn when folded. The seat is hinged by its double standard to both sections when working, but to one when folded.



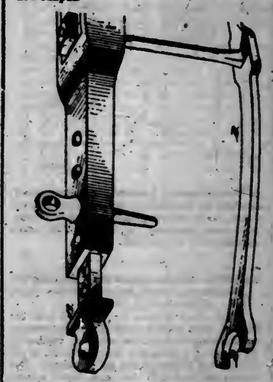
1. The combination, with a folding harrow consisting of two transverse sections, of a folding seat, substantially as specified.

2. The folding harrow-seat, having the hinged standard G and front prop H hinged to said standard, substantially as specified.

In testimony that I claim the above I have,

167,093. DRAW-IRONS FOR GUNNEY-CAR POLES. Lyman C. Prouty, Lowell, Mass. (Filed June 23, 1876.)

Brief.—Adjustable to cars of different sizes and shapes.



The combination of the draw-iron A, having adjusting-holes therein, with the perforated pole C, adjusting-pin, and the brace-iron B, all substantially as and for the purpose set forth.

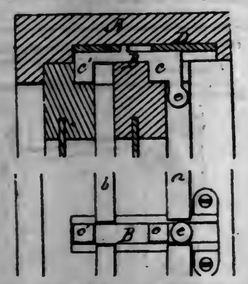
167,094. SHUTTER-FASTENERS. Robert L. Freyn, Baton Rouge, La. (Filed Aug. 14, 1876.)

Brief.—The ordinary outside blind catch or hook, engaging with a staple in the wall, is actuated from inside by a half-circular vibrating lever, with rod or handle attachment, the lever passing under the hook, and a push or pull movement of the handled rod operating the blind-catch from inside the room.

The combination, with the vertically-vibrating book *c* on blind A and catch *f* on the wall, of the vertically-vibrating operating-lever *e* and rod *E*, substantially as specified.

167,925. SASH-FASTENERS. Robert L. Pruyn, Baton Rouge, La., assignor of one-half his right to Saml. L. Hart, same place. [Filed July 31, 1875.]

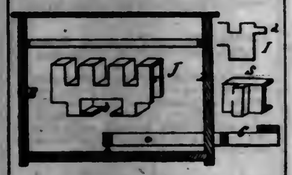
Brief.—A sliding bolt, recessed into the jamb of the window-frame, is provided at each end with a raised lug or stop, which engages with suitable notches on the lateral edges. These terminal lugs, in connection with the central guide-strip and the detachable beads or inner guide-strips, serve to lock the upper and lower sash, so that they cannot be lowered in the one case or raised in the other, so that either one may be raised or lowered and locked independently of the other, and, likewise, so that the one may be lowered and the other raised, and both at the same time locked when adjusted in the desired position.



The sliding bolt B, having terminal lugs *c c'*, adapted to be received into recesses, respectively, in the central guide-strip *b* and detachable inner guide-strip *a'* of a window-frame, substantially as specified.

167,926. ATTACHMENTS TO SOAP-CUTTING MACHINES. John C. Ralston, Indianapolis, Ind. [Filed June 10, 1875.]

Brief.—Bars of soap are received from the cutting-wires upon a series of blocks, each alternate one of which is movable vertically. By pressing a lever the soap-bars are separated, each alternate one being raised. The blocks are attached to a tape, which admits of their having a slight lateral motion to spread the bars of soap and accelerate their drying. This motion is given them by pulling the end of the tape.



1. The combination of a series of alternately stationary and movable blocks for separating adhering bars of soap, substantially as herein set forth.

2. The combination of the stationary blocks I and movable blocks J, arranged alternately, and a movable or sliding frame, B, for operating the movable blocks, substantially as and for the purposes herein set forth.

3. The blocks J, grooved and cutout described, and provided with the end projections *d*, in combination with the grooved bars F G of the main frame, for the purposes herein set forth.

4. The blocks J, grooved as described, and provided with lips *i*, in combination with the sliding frame B and grooved bars F G, for the purposes herein set forth.

5. The combination of the series of blocks I J, arranged as described, and a series of fingers, B, connected together and fitting in the grooved bars F G and fast grooves of the block, substantially as and for the purposes herein set forth.

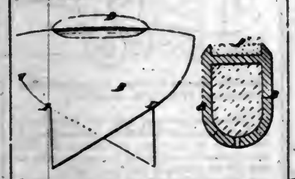
167,927. BUTTON-HOOKS. Antonio Restrepo and Thos. E. D. Power, New York, N. Y. [Filed June 16, 1875.]

Brief.—The end of the cylinder is slotted to conceal the hook when it is screwed in.



The screw extension-case, made with the transverse slot *b*, in combination with the traverser *d* and button-hook *c*, as and for the purposes set forth.

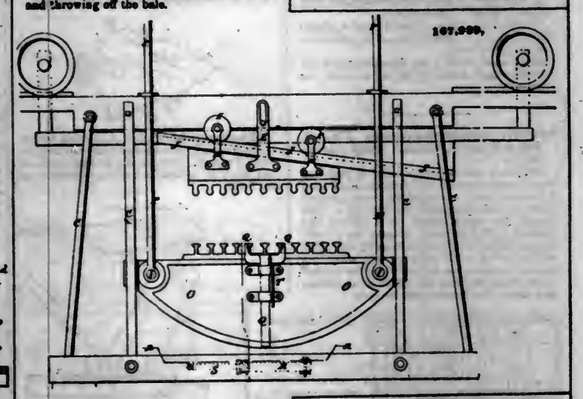
167,928. CLIPS FOR FELLOES AND TIRES. Robert Bay, Carrollton, Miss. [Filed Aug. 21, 1875.]



The improved felly and tire clip, composed of bars A and fingers B D E, substantially as specified.

167,929. AUTOMATIC BALE-HOLDING ATTACHMENTS FOR COMPRESSORS. H. Riesel, Galveston, Tex. [Filed Aug. 6, 1875.]

Brief.—The bale having been pressed and bound, the follower sinks with it, and in doing so a bar at its side, with prong extensions under the bale, is caught and caused to rise by a spring-bar within the frame, thus tilting and throwing off the bale.



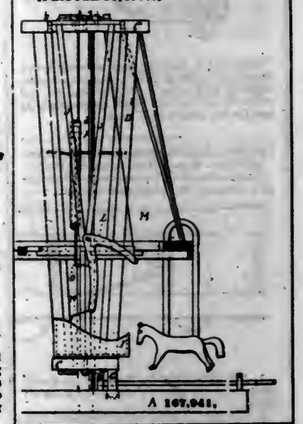
The bar Q, provided with two or more forwardly-projecting prongs upon its upper end, the spring-latch R S, and the inclined bar T, in combination with the follower O and base A, substantially as herein shown and described.

167,930. DEVICES FOR HOLDING GARMENTS-SKIRTS. O. F. Goldsbury and O. S. Wells, New Haven, Conn. [Filed June 10, 1875.]

Brief.—A coiled spring, in the shape of a frustum, is placed between the shoulders of the mandrel, and, when the die is forced down upon the cloth, prevents, by its yielding pressure, the end walls of the cone from wrinkling.

The frustum-shaped and coiled spring A in combination with the piece B, substantially as and for the purpose described.

167,931. ROUNDABOUTS. Levi Schaeffer, Philadelphia, Pa., assignor of one-half his right to Theophilus Wagner, same place. [Filed Jan. 30, 1875.]



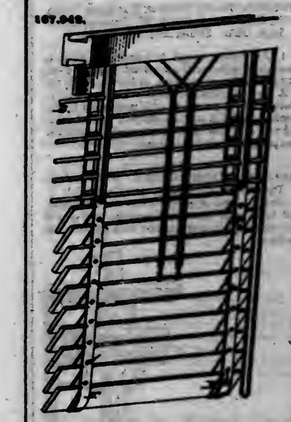
1. In a revolving pleasure-carriage having laterally-swinging frames and seats, the bell-crank levers L and cords M M', in combination with each frame and the revolving carriage-frame, whereby the lateral position of the seats is regulated by the riders, substantially as set forth.

2. In a revolving pleasure-carriage having laterally-swinging frames provided with seats, an air pump or spring to prevent the sudden return of the seats to their inward position when the revolution of the carriage-frame is arrested, substantially as described.

3. In a revolving pleasure-carriage, the laterally-swinging frames J', in combination with the cross-frames H and pivoted hangers K, substantially as and for the purpose described.

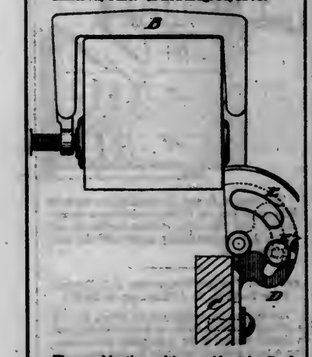
167,932. DRESS SKIRTING. John Seaman, Andover, N.Y.; Emeline Seaman, administratrix, assignee of one-half interest to Jas. Ford, same place. [Filed Feb. 19, 1875.]

167,933.



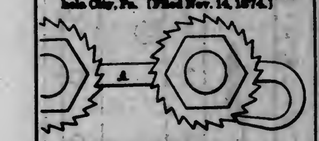
In a window-blind, the straps F, in combination with the loops K and recessed slots B, united by eyelets, substantially as described, and for the purpose set forth.

167,934. PLANE-GUIDES. Walter S. Shinn, Minerva, Ohio. [Filed Aug. 14, 1875.]



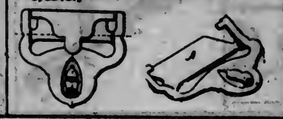
The combination, with a guide-strip, C, of plane-dumping yoke B, having recessed extension B, the pivoted slotted arc-piece D, and the clamp-screw F, as and for the purpose specified.

167,935. NUT-LOCKS. John A. Shoemaker and David D. Jones, Pittsburg; said Jones assignor to H. T. Vanvoorhis, Monongahela City, Pa. [Filed Nov. 14, 1874.]



The herein-described independent spring-plate A, provided with perforations *e* for the reception of the bolts, and spring-ends A' A' curved and widened for engagement with the nut-teeth, whereby two nuts may be locked upon their respective bolts by one and the same spring-plate, and the said plate be securely held in position by the bolts and nuts, substantially as set forth.

167,936. HAY-ELEVATING MACHINES. Simon P. Siver and George H. Swords, Fishkill Landing, N. Y. [Filed Sept. 4, 1875.]



1. The combination, with the vertically-adjustable sectional hinged gate C, of the supporting ridge-pole D, rack-bars E, gear-wheel F, shaft G, and its actuating mechanism, substantially as specified.

2. The combination, with a dam having an adjustable chute-gate, C, of the outlet-dam sections H H', substantially as specified.

3. The combination, with the abutments A A', of a stationary of the side pieces M, posts *a a'*, and detachable sections H H', substantially as specified.

4. The combination with the vertically-movable outlet-dams sections H H', of the end-vibrating saws S, substantially as specified.

167,937. BOBBINS. Dwight L. Hoxie, Waterbury, Conn., assignor to the Waterbury Buckle Company, same place. [Filed Feb. 8, 1875.]

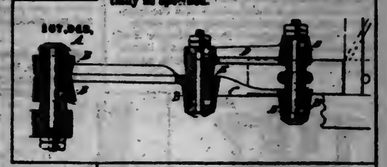


1. A buckle-frame, having the arms *a* formed thereon by transverse cuts *d*, with the inwardly-projecting tenacious *e*, substantially as described.

2. In a buckle-frame, substantially such as described, the bars A, struck below the plane of the part D, substantially as and for the purpose specified.

167,938. OSCILLATING JOINTS FOR PITMAN-CONNECTIONS. Albert E. Smith, Nebraska, Ohio. [Filed May 8, 1875.]

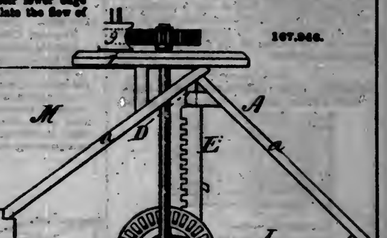
The clamping-bar D, with journal E and socket B, combined with the double journal A and rod C, having two sockets, B, substantially as specified.



167,939. SASH-HOLDERS. John Shaefer, Toronto, Canada, assignor to T. B. Fuller, same place. [Filed July 16, 1875.]

Brief.—A face-plate with retaining-cups, and provided with a segmental ratchet, is recessed beneath, for the sliding of an angular slotted plate. There is also an eccentric disk, provided with an arm and knob, the latter containing a spiral spring, which throws a ratchet-bar in and out of engagement with the segmental ratchet of the face-plate, the construction being such that when the device is tightened up to lock the sash the sliding angular plate is directly under a stationary plate on the sash-frame, preventing the raising of the sash from the outside, a similar plate also preventing the sash from falling down by the jolting of railway-cars.

167,940.



1. The combination, with the vertically-adjustable sectional hinged gate C, of the supporting ridge-pole D, rack-bars E, gear-wheel F, shaft G, and its actuating mechanism, substantially as specified.

2. The combination, with a dam having an adjustable chute-gate, C, of the outlet-dam sections H H', substantially as specified.

3. The combination, with the abutments A A', of a stationary of the side pieces M, posts *a a'*, and detachable sections H H', substantially as specified.

4. The combination with the vertically-movable outlet-dams sections H H', of the end-vibrating saws S, substantially as specified.

167,941. BOBBINS. Dwight L. Hoxie, Waterbury, Conn., assignor to the Waterbury Buckle Company, same place. [Filed Feb. 8, 1875.]

1. The combination, with the vertically-adjustable sectional hinged gate C, of the supporting ridge-pole D, rack-bars E, gear-wheel F, shaft G, and its actuating mechanism, substantially as specified.

2. The combination, with a dam having an adjustable chute-gate, C, of the outlet-dam sections H H', substantially as specified.

3. The combination, with the abutments A A', of a stationary of the side pieces M, posts *a a'*, and detachable sections H H', substantially as specified.

4. The combination with the vertically-movable outlet-dams sections H H', of the end-vibrating saws S, substantially as specified.

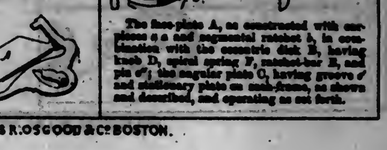
167,942. BOBBINS. Dwight L. Hoxie, Waterbury, Conn., assignor to the Waterbury Buckle Company, same place. [Filed Feb. 8, 1875.]

1. A buckle-frame, having the arms *a* formed thereon by transverse cuts *d*, with the inwardly-projecting tenacious *e*, substantially as described.

2. In a buckle-frame, substantially such as described, the bars A, struck below the plane of the part D, substantially as and for the purpose specified.

167,943. OSCILLATING JOINTS FOR PITMAN-CONNECTIONS. Albert E. Smith, Nebraska, Ohio. [Filed May 8, 1875.]

The clamping-bar D, with journal E and socket B, combined with the double journal A and rod C, having two sockets, B, substantially as specified.



167,944. SASH-HOLDERS. John Shaefer, Toronto, Canada, assignor to T. B. Fuller, same place. [Filed July 16, 1875.]

Brief.—A face-plate with retaining-cups, and provided with a segmental ratchet, is recessed beneath, for the sliding of an angular slotted plate. There is also an eccentric disk, provided with an arm and knob, the latter containing a spiral spring, which throws a ratchet-bar in and out of engagement with the segmental ratchet of the face-plate, the construction being such that when the device is tightened up to lock the sash the sliding angular plate is directly under a stationary plate on the sash-frame, preventing the raising of the sash from the outside, a similar plate also preventing the sash from falling down by the jolting of railway-cars.

167,945.



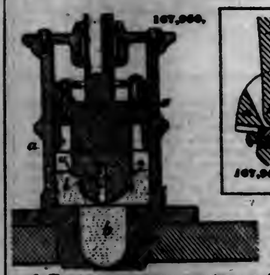
The face-plate A, as constructed with recesses *a a* and segmental ratchet *b*, in combination with the eccentric disk B, having knob D, spiral spring F, ratchet-bar E, and pin *e'*; the angular plate C, having groove *c* and stationary plate on sash-frame, as shown and described, and operating as set forth.

167,860. DASH-POTS FOR ENGINES. Ferdinand Steale, Brooklyn, N. Y., assignor to American Steam and Water Recorder Company, same place. [Filed Aug. 20, 1875.]

Brief.—After the plunger fills the mouth of the well oil continues to escape through the lateral opening, which is gradually closed as the plunger passes down. The oil that is confined in the well stops the movement of the valve of the engine just as the valve rests upon its seat, thereby preventing concussion. The valves in the piston allow surplus oil to escape, and also air to pass out when the engine is started

1. The plunger A, having a rounded or tapering lower end, an opening through it, and the shoulder *c*, in combination with the cylinder *a* and well *b*, substantially as set forth.

2. The air-chamber *i* in the plunger *h* of the dash-pot, in combination with the lateral discharge-opening *j*, and the well *b*, as set forth.



3. The dash-pot cylinder *c*, piston *e*, and openings through the piston, in combination with the valves *n*, opening outwardly, for the purposes set forth.

4. The combination, with a dash-pot having a well, *b*, in the bottom and a plunger, *h*, upon the piston *e*, entering such well of the cast *c*, surrounding the plunger *h*, and resting upon the bottom of the dash-pot, for the purposes set forth.

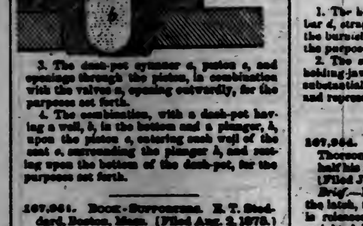
167,861. BOOT-SUPPORTERS. R. T. Shedard, Boston, Mass. [Filed Aug. 2, 1875.]



The combination, with the body A, the fixed plate B, and the sliding spring-plate C, of the slotted bar D, and pin *c*, substantially as and for the purposes set forth.

167,862. ADDRESSING-MACHINES. George E. Scott, New York, N. Y., assignor to himself, John I. Davenport, and Geo. Bliss, same place. [Filed Mar. 16, 1875.]

Brief.—The paper is fed between the impression-cylinder and the printing-cylinder, carrying the independent printing-heads, which latter are partially rotated by means of the star-wheel and stop at each revolution of the cylinder. An accelerated motion is given to the paper by the pawl and ratchet operating on the feed-rolls.

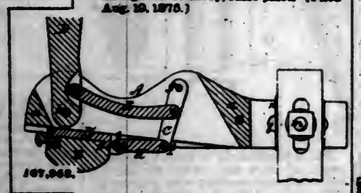


1. The combination, in a printing press, of a cylinder containing separate shafts, heads, and type-holders, turned progressively, with a series of cutters that slit the web of paper longitudinally between the lines of impressions, substantially as specified.

2. The combination, with a printing-cylinder, containing separate shafts, type-holders, and heads, of an impression cylinder and mechanism, substantially as described, for giving to the same an accelerated movement between one impression and the next, for the purposes and as set forth.

3. In a printing-press, a cylinder containing a series of printing heads upon shafts arranged in a circle, in combination with a star wheel at the end of each shaft, and a stationary stop that turns the shafts and heads in succession and progressively, as the cylinder revolves, substantially as set forth.

167,863. SCRUBBERS-HOLDERS. Alexander Swallow, Beloit, Wis., assignor of one-half his right to C. Libby, same place. [Filed Aug. 19, 1875.]

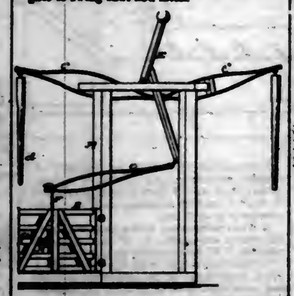


1. The holder or arm A, provided with the bar *d*, straps C, connecting-rod E, connecting the burnisher with the handle D, as and for the purpose specified.

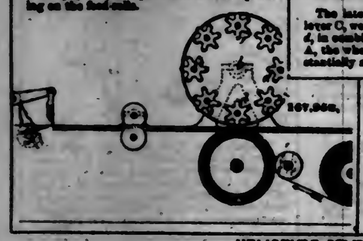
2. The shoe B', with its guiding-grooves, holding-jaws, and slot for the bar-connection, substantially as and for the purpose described and represented.

167,864. AUTOMATIC GATES. Lewis B. Thorson, Clinton, Wis., assignor of one-half his right to S. S. Northrup, same place. [Filed June 2, 1875.]

Brief.—By pulling on either of the handles, the latch, through the operating mechanism, is released and the gate swung open, the weighted lever assisting to operate the gate after it has traversed half its sweep. A reverse movement of the handles causes the gate to swing shut and latch.



The latch G, pitman H, crane F, jointed lever C, weighted-lever E, levers C', and pulls *d*, in combination with the gate B and frame A, the whole constructed and arranged substantially as and for the purpose specified.





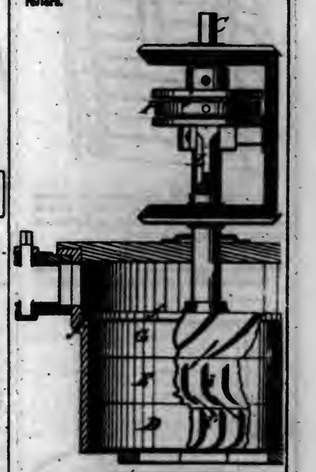
167,865. RAVEN-THROUGH HANGERS. Wm. H. Trimbur and Henry W. Trimbur, Cleveland, Ohio. [Filed Aug. 27, 1875.]

1. An eaves-trough hanger made of two parts, and adjustably connected together to fit eaves-troughs of any size, as herein set forth.

2. The combination of the longitudinally-slotted bar B, provided with projection *h*, and hooks *a* and *d d*, and the strip C, formed with a hook, *c*, at one end, substantially as and for the purposes herein set forth.

167,866. WATER-WHEELS. E. Twitchell, Peinkit, N. Y. [Filed June 19, 1875.]

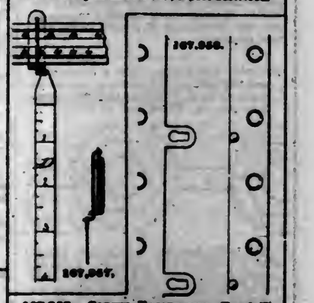
Brief.—Two or more wheels are employed, all rotating in opposite directions and on different shafts, in combination with anti-friction rollers.



The wheels D and E, rotating in opposite directions and on different shafts, in combination with the anti-friction rollers *d* and plates J J', substantially as and for the purposes set forth.

167,867. TAILORS' MEASURES. F. H. Ulbrich, New York, N. Y. [Filed Aug. 6, 1875.]

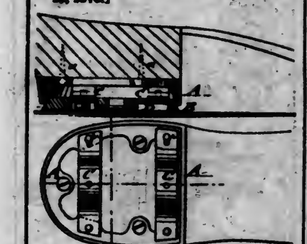
The sliding hip-indicators to clasp, having a pivoted cross-pin with hook-eye looking into a slotted flange of its base-plate, and retaining a tape-measure securely in the eye part, substantially as and for the purpose described.



167,868. CORSET-FASTENERS. Frank K. Vandervoort, Amenia, Conn., assignor of one-half his right to Wallace & Sons, same place. [Filed June 30, 1875.]

The method herein described of attaching clasps to corsets by means of the corset-flaps provided with eyelets, the lacing-cord and the clasps having corresponding perforations, substantially as set forth.

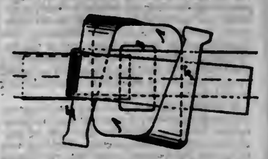
167,869. HUBS FOR BOOTS AND SHOES. Robert Vint, Brooklyn, N. Y. [Filed June 29, 1875.]



1. The combination of elastic and centrally-tapering heel-plate B, the obversely-tapering cone A, and the lead-springs C C, attached to and playing upon portions of said cone, as and for the purposes set forth.

2. A heel-piece, B, constructed with super-posed shoulders A, arranged as and for the purpose specified.

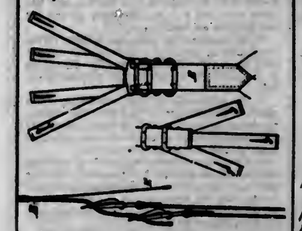
167,870. BALE-TIES. William H. Walker, Charleston, S. C. [Filed July 21, 1875.]



The improved bale-tie buckle herein described, the same being constructed of a plate, A, having central closed slot B, and the bent arms B B, the latter projecting from diagonally-opposite corners of said plate, and in opposite directions, as shown and described, for the purpose specified.

167,871. SUSPENDERS. Aaron B. Warren, Lawrence, Mass. [Filed June 18, 1875.]

Brief.—The drawers' straps are adjustable independently from the pantaloons' buttonstraps.

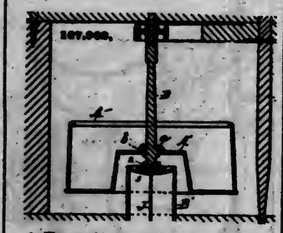


1. Suspenders composed of the dorsal and shoulder straps A A B, the two buckles to each of them, and the trousers and drawers buttoning straps of said buckles, all arranged and combined substantially as specified.

2. In combination with the subject-matter of the above, the auxiliary dorsal strap B, arranged as and for either of the purposes set forth.

167,872. CHRYSOTOGAL MACHINES. Chas. G. Webber, Holyoke, assignor to Bliss, Barton & Pyles Machine and Iron Company, Worcester, Mass. [Filed Aug. 6, 1875.]

Brief.—The drum is provided with a concave surface, which rests upon a corresponding convex surface on the main shaft. Motion is imparted to the drum solely by the frictional contact of these surfaces. The shaft terminates in a convex plate which rests in a concave plate, which latter is the larger, so as to admit of lateral motion of the lever and of the shaft.

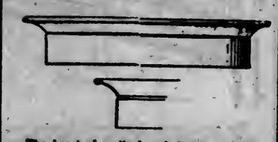


2. The combination of the receptacle or drum A, provided with a concave hub, *c*, with the shaft B, provided with a convex supporting and driving surface, *b*, substantially as and for the purposes set forth.

3. The combination, with the lever and 1 of shaft B and the concave supporting-surface 2 of the stand or supporting-base B', of the freely-moving convex step 3, substantially as and for the purposes set forth.

4. The combination, with the step 3 and swinging shaft B, of the vertical spring J, substantially as and for the purposes set forth.

167,873. CLOCK-CASES. Wm. H. Weeden, Waterbury, Conn., assignor to Benedict & Burnham Manufacturing Company, same place. [Filed July 20, 1874.]



The herein-described sash for clock-fronts, formed from a single piece of metal, the shoulder *d* produced by doubling the metal inward, substantially as set forth.

167,874. WHEELS, ATTACHMENTS. Henry Weld, Hale, Ill. [Filed June 21, 1875.]

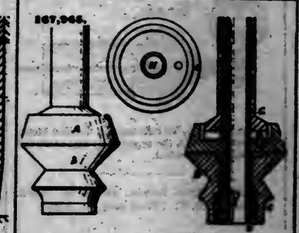
Brief.—The center-rod of a churn is connected with the pump-rod through an elbow-lever, the upper end or arm of which is connected to the frame by a fixed pivot, while the other is connected to the pump-rod through a double pivoted link. When the pump-rod is reciprocated in either direction the outer arm of said lever is caused to be reciprocated in both directions.



The combination, with the pitman or pump-rod actuated by the wind-wheel, of the sleeve-lever pivoted to the frame, and the double-pivoted link for connecting it with the pitman, arranged and operating substantially as described.

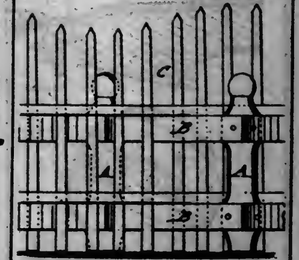
167,875. WHEELS FOR SPINNING-MACHINES. David Wilson, Jr., and Titus Hall, Lawrence, Mass.; said Wilson, Jr., assignor to said Hall. [Filed Feb. 20, 1875.]

Brief.—The whirl is held to the guard and spindle-tube by the friction of the spring, as also by taking hold of the guard the rotation of it and the bobbin may be arrested, while that of the whirl is allowed to continue.



The combination of the conical guard A, the band-whirl B, the friction-spring C, the pressing-cap D, and the tube E, provided with the opening E, all in the manner and for the purpose herein set forth.

167,876. FARM-FENCES. Jos. H. Winters, Pleasants, Ohio. [Filed Jan. 11, 1875.]



The fence, consisting of two rows of posts, A A, intermediate pailings O on stringers O', and zigzag slats B, all constructed and arranged substantially as and for the purpose specified.

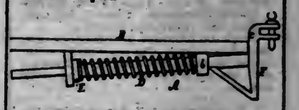
167,877. NUT-LOCKS. Joseph C. Wright, Monocacy Furnace, assignor of one-half his right to John B. Hosher, Philadelphia, Pa., and J. M. Cook. [Filed May 14, 1875.]



The contracting spring D, provided with the ratchet E, in combination with the washer A and nut C, substantially as and for the purpose set forth.

167,878. DRAW-BARS FOR STEAM-C. W. Franklin F. Adams, Erie, Pa., assignor to himself and Alonzo Farrar, Brookline, Mass. [Filed Aug. 10, 1875.]

Brief.—Draw-bar adjusts itself to angle of elevation of pole.



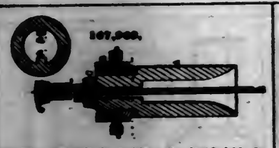
1. The combination of coupling-clip C having abutment F, bar A, and spring D, substantially as and for the purpose set forth.

2. The combination of car-platform B, spring D, bar A, and coupling C having stop *c*, and abutment F, all substantially as and for the purpose set forth.

167,879. SCREENING-BEANS. Jos. Archer, Baltimore, Md. [Filed Mar. 24, 1874.]

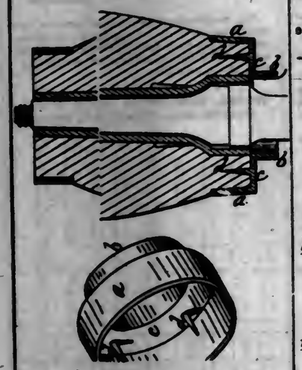
Brief.—The bit-socket is provided with internally-arranged ribs, to serve as bearings for the divided bit.

167,969.



The socket B, for holding the dividal block A, provided with the separating-ribs *a' a'*, for the purpose specified.

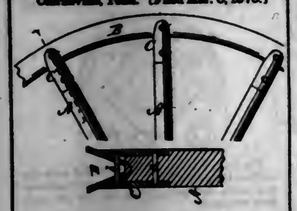
167,970. HUB-REAMER. David W. Baird, Geneva, N. Y. [Filed Apr. 16, 1875.]



As a new article of manufacture, the combined belt-band and sand-band, consisting of the reverse flanges *a b*, vertical web *c*, and space *d d*, as and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

167,971. WHEELS-WHEELS. Ephraim Ball, Clarksville, Tenn. [Filed Mar. 6, 1875.]



The combination of a wooden spoke, A; metallic felly B, and a metallic socket or ferrule, C, placed upon and riveted to the end of the spoke, and its outer end fitting over and riveted to the felly, substantially as set forth.

167,972. WASH-STANDS AND WATER-CLOSETS COMBINED. Robert C. Ball, Oakland, Cal. [Filed June 8, 1875.]

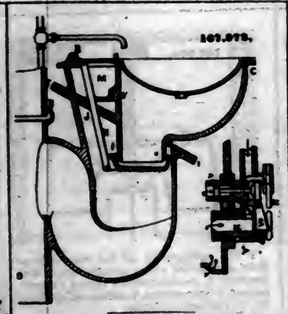
Brief.—On lifting the bowl the device may be used as a closet. The water-supply is controlled by raising and lowering said bowl, a tank and valve mechanism operating as described.

1. In combination with a water-closet, the trunk-basin A, hinged at B, when said trunk-basin operates to open the faucet K when raised its seat, substantially as and for the purpose described.

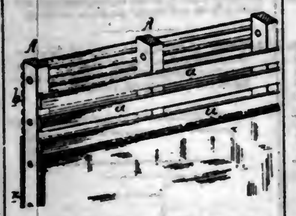
2. The rod H, connecting the pan G and trunk-basin together, so as to operate to open and close the discharge by raising and lowering the trunk-basin, substantially as described.

3. The faucet K, cylinder V, and piston T, latch W, and lever R, as in Figs. 4 and 5, operating together for the purpose and in the manner substantially as described.

167,973.



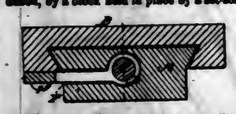
167,973. CONSTRUCTION OF WALLS. Geo. H. Ballentine, Philadelphia, Pa., assignor to Elizabeth Ballentine, same place. [Filed May 26, 1875.]



The mode herein described of forming the walls of buildings—that is to say, by first constructing a frame with posts A and strips *b* and *c*, applying plaster to form the inner sides of the rooms, then filling the body of the frame with composition and smoothing the latter on the outer face, where B issues between the strips *a*, as specified.

167,974. GLIDE-REST FOR METAL-TURNING LATHES. George F. Ballou, Pawtucket, R. I., assignor to Henry N. Fisher and John B. Whitcomb, Waltham, Mass. [Filed June 10, 1875.]

Brief.—A slot, extending out at one end, is formed in the side of the stationary part of the rest. The shank of the nut is bolted to the slide, and, when the slide is placed in position, rides in the slot referred to. The end of the slot is filled, when the nut has been introduced, by a block held in place by a set-screw.



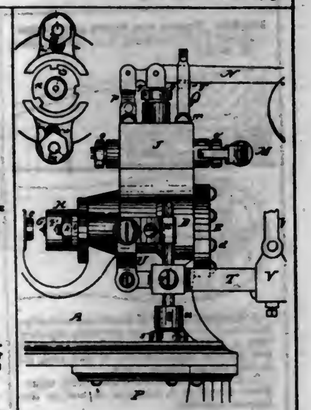
1. The part A of the slide-rest, having the slot for the shank of the nut, and the chamber for the nut extended out through one end in such manner that the nut can be put in and taken out, and the slide put on and taken off, while connected together, substantially as specified.

2. The bush K, combined with the part A of the slide-rest having the slot for the shank of the nut, and the chamber for the nut, extended out through one end, substantially as specified.

3. The combination of the block I and the screw J with the part A of a slide-rest having the slot for the shank of the nut extended out through one end, substantially as specified.

167,975. HYDRAULIC PUNCHES. Joshua B. Barnes, Fort Wayne, Ind. [Filed July 26, 1875.]

Brief.—The oil is forced into the cylinder by means of a force-pump placed within a reservoir arranged beneath the bed of the machine. A safety-valve connected to a lever having an adjustable weight regulates the degree of pressure to the thickness of the sheet operated upon.



1. The combination, with a hydraulic punching-machine, consisting of a piston carrying a punch and working horizontally within a cylinder, and operated by a liquid forced alternately through passages communicating with the cylinder at the rear and front of the piston-head, said passages being controlled by a slide-valve, of a pump and reservoir arranged beneath the bed of the machine, substantially as and for the purpose set forth.

2. The combination, with a hydraulic punching-machine, having a reservoir and pump arranged beneath the bed of the same, of supply and exhaust passages communicating with the pump and reservoir, and the valve-chest and the cylinder, within which works the piston, the exhaust-passage also communicating with a passage to which is connected a safety-valve, each passage being arranged in relation to each other to operate substantially as and for the purpose set forth.

3. In a hydraulic punching-machine, a regulating safety-valve, by which the degree of pressure upon the piston may be regulated to the thickness of the metal sheet operated upon, substantially as described.

4. The piston F, carrying the punch G, working within the cylinder D, and the reservoir P, with a suitable force-pump, in combination with the chest K and valve L, and the ports *a a'* and *a a'*, substantially as and for the purpose set forth.

5. In combination with the safety-valve, consisting of the stem *g*, lever X, and adjustable weight O, the spring-arm Q, with cut-out *g'*, substantially as and for the purpose specified.

6. The adjustable stripper, consisting of the plate H H, with cars *i i* and slots *f f'*, whereby the stripper will admit of longitudinal adjustment in relation to the punch, substantially as and for the purpose specified.

7. The piston F, carrying punch G, and the reservoir P, with suitable force-pump, and the slide and adjustable safety-valves, in combination with the arrangement of ports *a*, *a'*, *a*, *a'*, and *p p'*, substantially as described, and for the purpose set forth.

167,976. SASH-FASTENERS. E. B. Beach, West Meriden, Conn., assignor of one-half his right to H. B. Beach, same place. [Filed Aug. 26, 1875.]

Brief.—The hollow bolt-tube is constructed with an end piece projecting out beyond the attaching-plate, and this projecting end is slotted and recessed, forming a bayonet-lock, to receive the ends of a cross-pin passing through the forward end of the spring-bolt, the cross-pin being allowed to flatten over the extremity of the bolt-tube when the bolt is fully withdrawn; the construction being specially adapted for use in sashes having a central rail, and but two glasses in a sash.



The bolt-tube A, having a projecting end in front of the attachment-plate D, slotted and recessed, as herein before described, in combination with the spring-bolt B and cross-pin C, substantially as described.

167,977. THIMBLE. Jasper N. Bell, Fort Dodge, Iowa, assignor to L. L. Young and John Thistle, same place. [Filed June 14, 1875.]

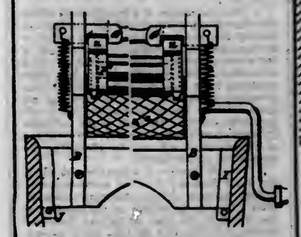
Brief.—An inside supporting-spring is used with a hollow rubber pad. This spring is so arranged as to be removed and again inserted, so as to bring the pressure to bear at any required point.



The combination, in a trunk, substantially as described, of a hollow rubber hemisphere or an elastic belt supporting a pad, and provided with a spring, which may be moved and arranged in different positions to produce a greater pressure upon any side desired, all as and for the purposes specified.

167,978. WASHING-MACHINES. Thomas P. Benton, Prairie du Sac, assignor of one-half his right to John H. Dalton, Coatsville, Wis. [Filed Apr. 26, 1875.]

Brief.—The flanged segmental plates, in which the upper rollers are journaled, are pivoted by legs to the cross-bar that moves in the slots of the standards.



The combination, with the flanged journal-segments F, central legs *n*, and pivots *o*, of the connecting-bar G, recessed to receive said legs and pivots, and arranged to hold the segments in their angular relation with said bar while permitting free rocking motion, substantially as specified.

167,979. MARBLE-CEMENTS. Alex. Bong, Grand Rapids, Mich. [Filed Aug. 4, 1875.]

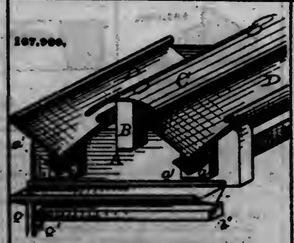
Brief.—To every one hundred pounds of calcined gypsum, dehydrated and pulverized, are added one pound of powdered alum, one-half pound of sulphate, and a half pound of sulphate of zinc.

The herein-described marble-cement, made by combining with gypsum, calcined and dehydrated, as set forth, alum, sulphate, and sulphate of zinc, substantially in the proportions and manner specified.

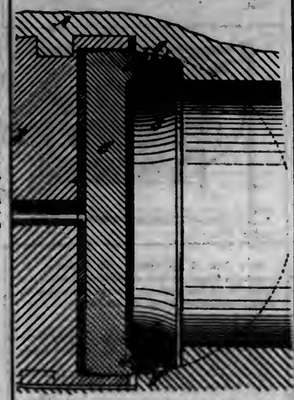
167,980. ICE-PLOUGHS FOR REFRIGERATORS. Hermann Brandish, Decatur, Ill. [Filed Aug. 10, 1875.]

In a refrigerator, substantially as described, the combination, with the stringers A and joists B, of the curved metal strips C, metal gutters D *d' b*, and wooden gutters *a* and *b'*, and the pipes *c c'*, as and for the purpose set forth.

167,981.



167,981. GAS-CHECKS FOR ORDNANCE. L. W. Broadwell, Fielding, near Vienna, Austria. [Filed May 31, 1875.]

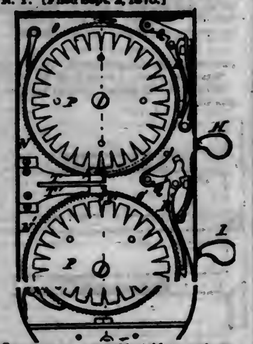


1. The gas-ring, having the internal arch or convex surface *f*, substantially as herein described.

2. The combination, in a gas-ring, of the internal and external arches *f g*, substantially as and for the purpose described.

3. The groove or grooves *h*, in the external convex surface or arch *g*, substantially as and for the purposes described.

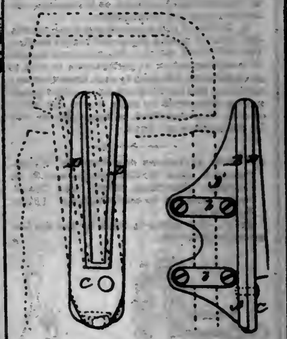
167,982. REGISTERING AND RECORDING MACHINES. Franklin W. Brooks, New York, N. Y. [Filed Sept. 2, 1875.]



One or more removable tablets, each complete in itself, combined with a passenger-register, and operated by the register mechanism while beyond the reach of the operator thereof, and constituting, when removed from the instrument, a permanent record of the number of fares received, which cannot be readily diminished or changed without detection.

167,983. REED-HOLDERS. Benj. F. Brown, Catlin, Ind. [Filed Aug. 20, 1875.]

Brief.—The two plates are forked and one worked eccentrically upon the other.



The combination of the plate A, with tapering jaws B B, and the plate C, with tapering jaws D D, eccentrically pivoted to the plate A, substantially as and for the purposes set forth.

167,984. FRICTION-CLUTCHES FOR EXTENSION-CHANDELIERS. R. C. Bruen, Brooklyn, N. Y., assignor to himself and C. T. Bruen. [Filed Aug. 26, 1875.]



A friction-clutch for extension-chandeliers, constructed of a tapering shell, A, a friction-clamp, C, and of an adjusting device, E, the whole being combined and adapted to operate substantially as described.

167,985. HAT AND FUR BOXES. J. C. Budd, Brooklyn, N. Y. [Filed Aug. 31, 1875.]

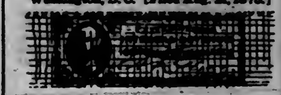


The combination of a sliding cover, A, a box, C, and a cover, B, provided with two flanges, *b c*, and an intervening filling-piece, *d*, substantially as described.

167,986. PROCESSES OF DECOMPOSING OZOKERITE. Hugh Burgess, Boyer's Ford, Pa. [Filed July 14, 1875.]

The within-described process of decomposing ozokerite—that is to say, subjecting it while it is maintained at a dull-red heat to the action of steam, which is forced into and through the mass of heated ozokerite, substantially as herein set forth.

167,987. REVENUE-STAMPS, CHECKS, &c. George W. Casilear and Wm. C. Mollenhen, Washington, D. C. [Filed Aug. 31, 1875.]

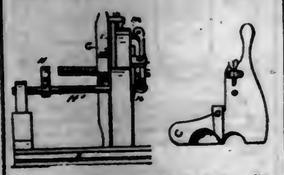


1. A postage or other stamp, check, or other evidence of value printed upon paper composed of paper-stock and an embedded open woven fabric or warp, so that the impression shall be visible partly on the paper and partly on the embedded material, as hereinbefore described, as a new manufacture.

2. A sheet of postage or other stamps, checks, &c., printed upon a paper and textile surface, the individual stamps, &c., rendered capable of ready separation by perforations or cuts, so arranged with reference to each other that any and every line between any two parallel points will be intersected by some one of the series of cuts or perforations, substantially as and for the purpose set forth.

167,889. MACHINES FOR CUTTING WOOD-SCREWS. Geo. W. Chamberlin and S. G. Cushing, Pittsburg, Mass.; said Chamberlin assignor to said Cushing. [Filed Sept. 4, 1875.]

Brief.—The cutter is fixed to the die and movable therewith.

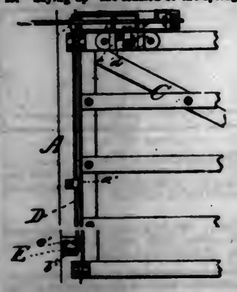


1. In a wood-screw-cutting machine, a die, F, in combination with the cutter O, substantially as and for the purpose set forth.

2. The combination of the gage H and gage-rod H' with the lever I, spring n, and pin m, for automatically operating the dies, substantially as set forth.

167,890. DOOR-SPRINGS. Orrin F. Comfort, Evansville, Wis. [Filed July 3, 1875.]

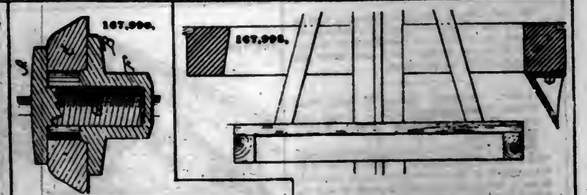
Brief.—A torsion-spring secured in suitable bearings has its upper end bent over and extended from the jamb over the top rail of the casing, thence downward beyond the upper edge of the door, and is combined with a horizontally-vibrating lever, having its fulcrum on the same top rail, and an upwardly-projecting spur or catch secured to the upper edge of the door; the construction being such that the door, when opened at any angle less than ninety degrees, will be automatically closed again; but when the arc of ninety degrees is passed, the spur automatically releases the hooked extension of the spring, and the door is held wide open. There is also at the lever end a notched plate of peculiar construction, for "laying up" the tension of the spring.



1. In a torsion door-spring, the combination of the spring D, having extensions *b b'* and hooks *c c'*, with the plate B, having notches *i*, *i'*, and *j*, substantially as specified.

2. The combination, with the spring D, having hooked extension *b* and spur *p*, for automatically releasing the spring, of the vibrating lever F, substantially as specified.

3. The combination, with a torsion-spring, D, of an upwardly-extending spur, *p*, upon the door, for automatically releasing the spring; and the horizontally-vibrating lever F, having its fulcrum upon the top rail, substantially as specified.



167,896.

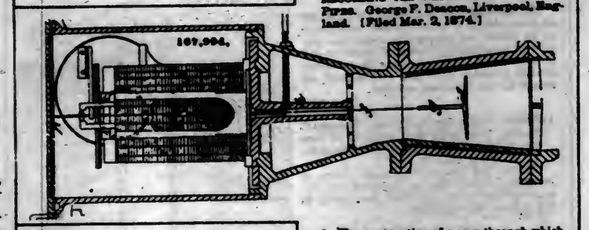
167,896.

CHAIN-PUMP BUCKETS. William Cooper, Ypsilanti, Mich., assignor of two-thirds his right to Charles E. Cooper and James C. Cooper, same place. [Filed Aug. 14, 1875.]

Brief.—The lower disk has the socket shown, to receive the screw-bolt and protect it from rust.

A hatchway whose sides consist of plates inclined to the line of ascent of the elevator, which sides are either constructed in the hatchway when new or attached to it when old, substantially in the manner and for the purpose specified.

167,897. APPARATUS FOR INDICATING AND RECORDING THE VELOCITY OF WATER IN PIPES. George F. Deacon, Liverpool, England. [Filed Mar. 2, 1874.]

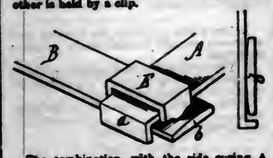


167,897.

The disk B, provided with a socket, F, having a closed end, in combination with the screw G of the disk A, whereby the end of said screw is protected, as set forth.

167,901. CARRIAGE-SPRINGS. James Cunningham, Rochester, N. Y. [Filed Aug. 30, 1875.]

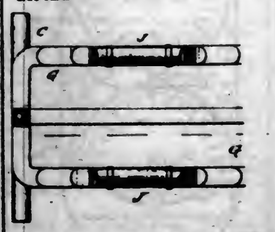
Brief.—The end of one spring bent over the other is held by a clip.



The combination, with the side spring A and cross-spring B, of the bent end *a* of the side spring, the curved bearing *b* of the cross-spring, and the clip E, securing the said parts together, the whole arranged to operate in the manner and for the purpose specified.

167,902. CARRIAGE-SPRINGS. H. M. Curtis, Ypsilanti, Mich. [Filed Aug. 30, 1875.]

Brief.—The U-shaped springs support the side bars.



The U-shaped springs G G, constructed as described, in combination with the head-block B, axle C, and side bars J J, substantially as and for the purposes herein set forth.

167,903. HATCHWAYS. Charles M. Dubois, Philadelphia, Pa. [Filed Sept. 4, 1875.]

1. The combination of a pipe through which the water flows, a disk or ball movable therein to vary the area of the water-way, a weight or spring acting in opposition to the pressure of the water on the disk or ball, and an indicator connected directly with the disk or ball, these members being constructed to operate in combination, substantially as hereinbefore set forth, whereby the velocity of the water will be shown by the position of the indicator without other mechanism, and the accuracy of its indications will not be affected by the momentum of the water.

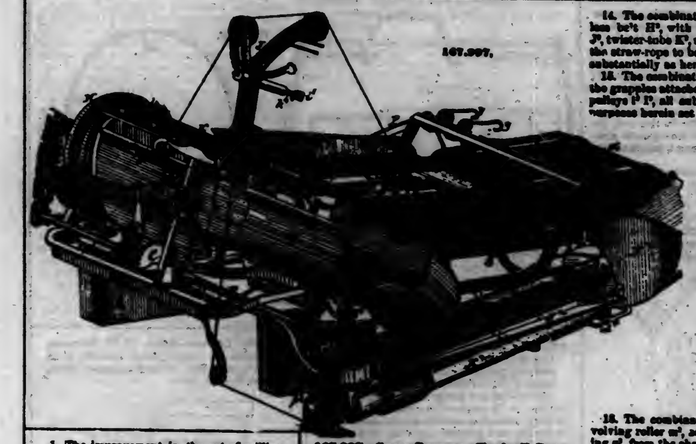
2. The combination of a pipe through which the water flows, a disk or ball movable therein to vary the area of the water-way, a counterpoise acting in opposition to the pressure of the water on the disk or ball, an indicator moving with the disk or ball, and a traversing-chart actuated by clock-work independently of the indicator, which merely traverses its surface, these members being constructed to operate in combination, substantially as hereinbefore set forth, whereby the waste of flow of water during any given period may be registered automatically and accurately.

3. The combination, substantially as hereinbefore set forth, of the disk or ball, its supporting rod or wire, the pipe through which it passes, and a waste-pipe to carry off the water which leaks through between the rod and pipe, whereby a stuffing-box is dispensed with.

4. The combination of the pipe, the ball or disk, the annular induction water-way, and the stand-pipe through which the supporting-wire of the disk passes, these members being constructed to operate in combination, substantially as hereinbefore set forth.

167,904. FLOUR-MILLS. Theodore G. Delaplaine, Frederick, Md., assignor of one-half his right to Henry M. Buchanan, same place. [Filed Apr. 7, 1875.]





167,907.

1. The improvement in the art of milling, hereinbefore set forth, which consists in cooling the burrs while grinding, for the purpose of excluding air.

2. The combination, substantially as hereinbefore set forth, of the burrs, the feed-tube, and a packing encircling the tube and covering the eye of the burr, to exclude air therefrom while grinding.

3. The combination, substantially as hereinbefore set forth, of the casing-burrs inclosed therein, a tube through which the grain is fed to the burrs, and a cap or cover which seals the casing and excludes air from the burrs while grinding.

4. The grinding apparatus, herein before set forth, consisting of the combination of the burrs, a casing surrounding the burrs, packing covering the eye of the burr, a cover for the casing, and a feed-spout passing through the cover and packing, for the purposes set forth.

167,906. HANDSAWS. Henry Disston, Philadelphia, Pa. [Filed Dec. 30, 1874.]

Brief.—The handle is forced against the butt of the blade, and caused to grips the blade, by providing the back of the blade with a small shoulder, against which the upper forward part of the handle fits, and forcing the butt in the arc of a circle, and causing it to a slot corresponding therein in the handle by transverse bolts of tapering form.



The saw-blade A, its curved butt and shoulder *a*, and the handle B, adapted to the blade and shoulder, in combination with the transverse bolts, whereby the handle is caused to grips the blade, and is forced against the butt, all substantially as specified.

167,907. GRAIN-BINDERS. Charles H. Dunmellon, Indianapolis, Ind., assignor to himself, B. B. McCord, and Wm. M. Wheatley, same place. [Filed Jan. 9, 1875.]

Brief.—The endless platform-apron delivers the cut grain to a secondary apron, by which it is carried to the receiver, where it is bound automatically by a straw rope, made from straw carried for that purpose.

1. The combination of the shaft D, lever arm G, train of cog-wheels *f*, and the wheel or disk H, provided with the semicircular double rack-bar A, substantially as and for the purposes herein set forth.

2. The combination of the rotary reciprocating disk H, having lugs *i i*, the disk I, having leg *k*, and the spring-hook *m*, substantially as and for the purposes herein set forth.

3. The combination, with the rope-carrying arm J, and the grooved disk I to which it is attached, of the cord *n*, pulleys *p*, and spring *s*, arranged substantially as and for the purposes herein set forth.

4. The combination of the shaft or rod *o* with teeth *y* and crank *x*, the lever F, spring *s*, and the cam *v* on the wheel or disk H, substantially as and for the purposes herein set forth.

5. The steel springs *f'*, arranged in form a clutch for holding the rope carried down by the arm J, as herein set forth.

6. The spring-guide *h'*, attached to the rope-arm J, and provided with the semicircular flange *h*, in combination with the stationary half-circle *p* and twister R, substantially as and for the purposes herein set forth.

7. The combination of the twister R, shaft *m'*, pinions *n' p'*, shaft *s'*, clutch *s*, and main shaft B, all substantially as and for the purposes herein set forth.

8. The combination, with the shafts B *s'* and clutch *s'*, of the elbow-lever *o'*, rod *w'*, spring-arm *R'*, and projection *a'* on the rope-arm J, all substantially as and for the purposes herein set forth.

9. The combination of the shaft *s'*, crank *p'*, pitman *r'*, lever T, rod *s'*, and knife S, all substantially as and for the purposes herein set forth.

10. The carrying-aprons N N, running parallel with each other, in combination with the cutter, twister, tucker, and chutes, arranged between said aprons, and the rope-running rope-carrying arm J, substantially as set forth.

11. The combination of the tucker V, shaft *b'*, pinion *d'*, rack-bar *f'*, frame or gate W, and cam or eccentric *y*, all substantially as and for the purposes herein set forth.

12. The combination, with the shaft B and cam or eccentric *y*, of the clutch *h'*, compound lever E, spring *t'*, and cam A' on the disk H, substantially as and for the purposes herein set forth.

13. The combination, with the endless rope-carrying belt B', and its rollers, shaft *s'*, pinions *d' p'*, and shaft B, of the clutch *s'*, elbow-lever D', L-shaped lever O' with pin *o'* and the cam *b'* on the disk H, all substantially as and for the purposes herein set forth.

14. The combination of the hopper H', reel-bars *be't* H', with its grappers, chute-board *p'*, twister-tube K', and twister L', for making the straw-rope to be used in the grain-binder, substantially as herein set forth.

15. The combination of the endless belt H', the grappers attached thereto, and the flanged pulleys I' I', all substantially as and for the purposes herein set forth.

16. The combination of the twister L', shaft *m'*, pinion *n'*, bevel-wheel *k'*, shaft *s'*, clutch *s*, cog-wheel M', flanged pulley P, shaft *o'*, clutch *s'*, lever N', flanged pulley P', and V-belt, all substantially as and for the purposes herein set forth.

17. The combination of the shaft B, pinion *d'*, bevel-wheel M', flanged pulley P, shaft *o'*, clutch *s'*, lever N', flanged pulley P', and V-belt, all substantially as and for the purposes herein set forth.

18. The combination of the corrugated revolving roller *e'*, actuated, by means of pulley *p'*, from the shaft *s'*, and the yielding corrugated and revolving roller *o'*, substantially as and for the purposes herein set forth.

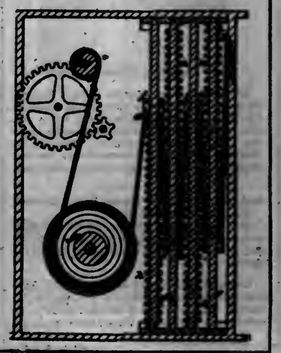
19. The rollers *b' b'* and the roller *b'* placed on a stud projecting from a slide, *q'*, for taking up the slack of the rope, substantially as herein set forth.

167,908. VALVES FOR WATER-CLOSETS. Peter D. Donnelly, New York, N. Y., assignor of one-half his right to S. Hamilton, same place. [Filed Aug. 30, 1875.]



The bellow valve G, having one or more perforations, *g*, let in face, and fitted-in the annular *b* so as to admit of water passing around and into it, in combination with the flexible disk I and the valve-cone A, with its valve-opening *d*, the inlet D, and outlet H, substantially as specified.

167,909. MECHANICAL MOVING. John W. H. Deubler, Philadelphia, Pa., assignor of one-half his right to Wm. V. T. Cramer, same place. [Filed Apr. 26, 1875.]

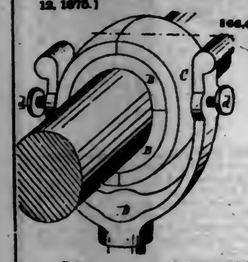


1. A mechanical motor, receiving impulse from a series of spiral springs, connected by means substantially as described, so as to produce motion corresponding in duration to their aggregate lengths.

2. The combination, with the spiral springs *h h*, of the sliding plates *f f*, the pulleys *e e* attached to said plates, and the cord *c*, passing around said pulleys from the winding-shaft, and causing the plates to rise and descend alternately when the springs are compressed, and allowed to expand, substantially as described.

3. In a motor, the double frame, constructed and operating as and for the purpose set forth.

168,000. BOWLOCKS. John H. Dougherty, South Bay City, Mich., assignor to himself and Rodney Hills, same place. [Filed July 12, 1875.]

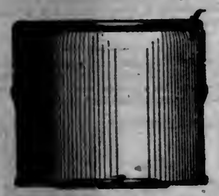


168,000.



The oar-lock described, consisting of the collar B, constructed in two parts, and having the groove *b* on its outer surface; the sleeve C, made in two parts, and having the rib *c* on its inner surface, adapted to turn in the groove on the collar B, and the forked thole-pin D, the said sleeve C, collar B, and oar being pivoted to the forked end of the said thole-pin by the trunnion-screws *d*, when the several parts are constructed and arranged to operate substantially as described and shown.

168,001. PANT-CLAMP. Jos. F. Drummond, New York, N. Y. [Filed July 24, 1875.]

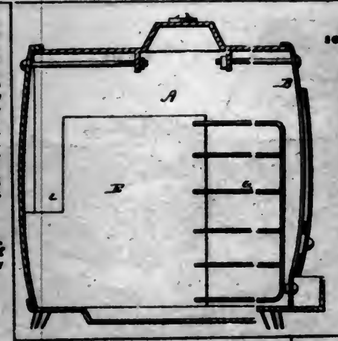


The combination, with the body of the can, having a permanently closed and soldered filling-opening at its one end, and a free outside opening and fastening cover at its opposite end, of a supplementary hermetically-closed or cement-sealed cover within the free outside cover, essentially as herein described.

168,002. STOVES. James Duffy, Quincy, Ill. [Filed June 30, 1875.]

Brief.—The chamber connects with the orifice, and, together with the grating, keeps the fuel from contact with the adjacent wall of the stove.

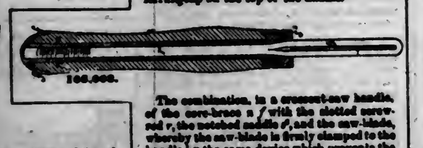
The combination, with the stove A B C, having exit-flue D on one side of the chamber E, having rear aperture *e*, and the grating G, substantially as and for the purposes set forth.



168,000.



168,000.

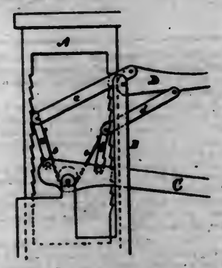


The combination, in a crescent-saw handle, of the cam-brace *n f* with the slotted screw-rod *r*, the notched saddle *s*, and the saw-blade, whereby the saw-blade is firmly clamped to the handle by the same device which prevents the latter from splitting, substantially as herein shown and described.

168,003. CROSSCUT-SAW HANDLES. John L. Edgar, Coopersville, Mich., assignor of one-half his right to H. W. Peace, Williamsburg, N. Y. [Filed Apr. 6, 1875.]

Brief.—The saw-blade is firmly clamped to the handle by means of a metal rod, passing through a circular metallic saddle, shouldered at the top and grooved upon the under side, and inserted in a longitudinal bore fitted in the lower part of the handle; said rod being provided at its lower end with a slot for the reception of the end of the blade, and having a screw-thread upon its upper end, which engages with an interior-threaded cam-brace and fixture-cap on the top of the handle.

168,004. LIFTING-JACKS. G. W. Edwards, Chatham, N. J., assignor to himself, L. M. Adams, and Ezra Codington, same place. [Filed May 11, 1875.

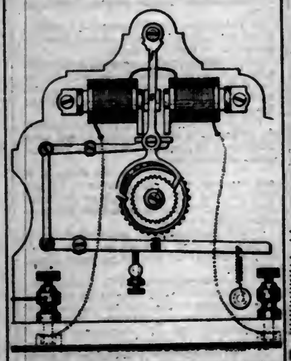


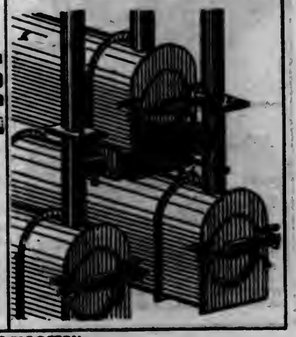
The lifting-jack, consisting of the frame A, cams B, levers O D, dogs *a b*, straps *c d*, and spring *e*, when operating substantially as and for the purposes set forth and shown.

168,005. GAS APPARATUS. Frederick H. Hutchinson, Detroit, Mich., assignor of two-thirds his right to Wm. W. Morton, J. T. Salter, J. E. Sheldon, and James Allen, Chicago, Ill. [Filed Jan. 13, 1875.]

Brief.—Impregnates non-resinous wood with hydrocarbons, distills it, and fixes the gas, may place such treated wood and untreated wood in distilling-retort, passing gas from former over latter; or mixes treated and untreated woods; or places treated wood in one distilling-retort and untreated wood in the other; or places untreated wood in distilling-retorts, and passes their gases over hydrocarbon lid into the upper and inner retort, and fixes the mixture in the outer retort; or untreated wood and solid hydrocarbons in distilling-retorts, with or without liquid hydrocarbons, as above; or with the solid hydrocarbons in the inner and mixing retort.

168,006. PRINTING-TELEGRAPHS. Thomas A. Edison, Newark, N. J., assignor to the Gold and Stock Telegraph Company, New York, N. Y. [Filed June 1, 1874.]





1. Two electro-magnets in the electric circuit, with an armature moved between their cores in consequence of reversing the polarity of the pulsating current, and connecting the lever and type-wheel, in combination with the neutral cores of the electro-magnet and the armature that operates the printing-lever, as set forth.

2. The arrangement of the type-wheel lever and armature between two electro-magnets, and an armature and lever at one side of the type-wheel, operating an impression-pad at the opposite side of the type-wheel, substantially as set forth.

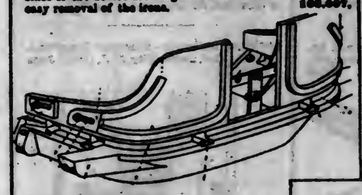
1. The mating-retort described, composed of the outer retort K and the inner removable retort I, having a pipe, F, which passes through a proper opening in the bottom of the retort K, substantially as described and shown.

2. In combination, the retort I, having lugs *e f*, with retort K, having steps *g h*, substantially as and for the purpose described.

3. In combination, the chamber I, the retort I, having pipe F, and the retort K, all constructed and arranged substantially as described.

168,007. FORMERS FOR BENDING CARRIAGE-SEAT IRONS. Lowe Emerson, Alexander J. Clark, and John T. Richmond, Cincinnati, Ohio. [Filed Aug. 28, 1875.]

Brief.—The different irons of carriage-seats are bent by hand to the correct form upon the flanges on the outside of the former. The sides of the device are hinged to allow of the easy removal of the irons.



168,007.

The former or block, herein described, for shaping and fashioning shifting rails and seat-irons for carriages, substantially as and for the purposes set forth.

168,008. HOMINY-MACHINES. Seraphin Regnah, Cincinnati, Ohio, assignor to himself and John B. B. Lindner. [Filed July 12, 1875.]

Brief.—A box or double platform with flanges designed to slide on ways. The screens and mill-hole punches are supported on springs, so as to be forced down by a drop falling on them from above, their operative ends projecting below the table. Both screens and punches may be adjusted to different angular positions relative to a horizontal plane by set-screws.

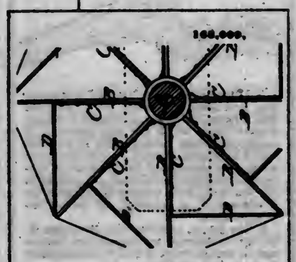
1. The combination, in the slide or carriage A A', of the crossing-punches B B, and perforating-punches M M' n n', when adapted to operate successively upon the heated blank, in the manner explained.

2. The combination of slotted carriage B *d d* O D D', vertically-oscillating screens E F K K', and adjusting devices H H' I I' P P J J' *f*, as and for the purposes specified.

3. The combination of slotted carriage B F O L L' I I', vertically-oscillating punches M M' n n' U, and adjusting devices Q q, Q' q, R r, R' r', S S', and T T', as and for the object designated.

168,009. TURBINE WIND-WHEELS. Louis G. Palmer, Sioux Fo, M. Mer. [Filed Apr. 14, 1875.]

Brief.—A wind-wheel composed of a hub and radial parallel spokes, with sails and receivers, in combination with a suitable shaft and supporting-frame, substantially as and for the purposes herein before set forth.



168,009.

A turbine wind-wheel adapted to field use, composed of a hub, A, and radial parallel spokes B, with sails O and receivers D, in combination with a suitable shaft and supporting-frame, substantially as and for the purposes herein before set forth.

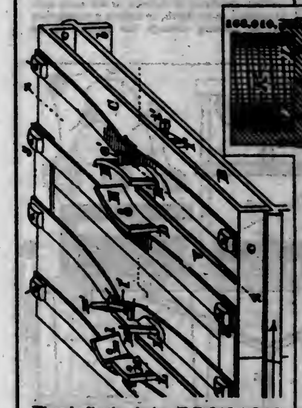
168,010. ROCK-DRILLS. Gideon Frisbee, Reading, Pa. [Filed Sept. 9, 1875.]

Brief.—An annular bit is provided with an inner and an outer barrel, either or both of which have channels, through which the water passes to the face of the bit without coming in contact with the core at any point. A relief-valve permits the escape of water from the inner barrel while the drill is at work, but admits air and vapor during the withdrawal of the core.

1. The combination, with an inner barrel, of an annular bit and a hollow drill-rod or outer barrel, when either the bit or the outer barrel, or both, are constructed with channels, substantially as described.

2. The combination, with a hollow drill-rod or outer barrel, of an inner barrel constructed with a relief-valve, operating substantially as described.

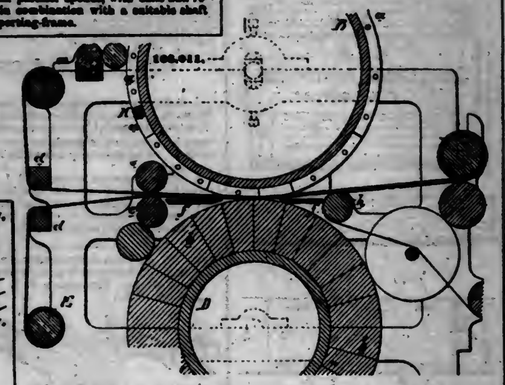
3. The combination, with the inner and outer barrels and the relief-valve, of the coupling K, cone G, and cap H, all constructed and arranged substantially as described.



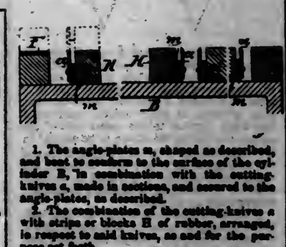


168,010.

168,011. MACHINES FOR CUTTING OUT GARMENTS. John L. Fry, Philadelphia, Pa., assignor of one-half his right to J. Keeley, same place. [Filed June 26, 1875.]



168,011.



1. The angle-plates *a*, shaped as described, and bent to conform to the surface of the cylinder E, in combination with the cutting-knives *c*, made in sections, and secured to the angle-plates, as described.

2. The combination of the cutting-knives *c* with strips or blocks H of rubber, arranged, in respect to said knives, as and for the purpose set forth.

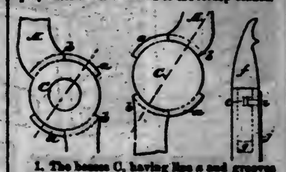
3. The combination of the cylinders B and D with the cloth-rollers B B, stretching-bars *d d*, feed-rolls *e e*, and plate *f*.

4. The combination of the cylinders B and D with the plate *f*, roller *h*, sprue *i*, and cylinder *j*.

5. The combination of the lower cylinder D with the upper knife-carrying cylinder B, having adjustable bearings, and provided with projecting friction-rings F, as covered to the same as to be readily detachable, as and for the purpose set forth.

168,012. DRIVING PUNCHES. Louis J. P. B. Gaillard, Paris, France. [Filed July 30, 1875.]

Brief.—The blades of the forceps have central bosses, with lips and grooves, which secure the parts without the aid of the usual rivet. The beak is detachable by means of an eccentric groove, which, when rotated to a certain position, lifts out the spring fastening-pin, which holds the beak to the forceps-blades.



1. The bosses C, having lips *a* and grooves A, in combination with the parts A B of a forceps, substantially as described.

2. The detachable beak *f*, provided with a cheek, *c*, adapted to fit in a socket in the end of one of the jaws of a forceps, which is provided with a spring-catch adapted to engage a crescent-shaped recess in the cheek *c* when said recess is brought opposite to it, and to be automatically thrown out of said recess by the rotation of the cheek in order to release the same, substantially as described.

168,012. DEVICES FOR SECURING AND CANCELING REVENUE-STAMPS. F. C Hamilton, New York, N. Y. (Filed July 27, 1875.)







1. The described method of applying stamps to liquor-barrels or other packages and canceling the same, to insure the collection of tax, consisting essentially of combining with a revenue-stamp of ordinary construction a strip of metal or other suitable material of less width applied to the under side of the stamp, permitting the stamp to be applied in the usual manner to the package, and leaving the interposed strip and the portion of the stamp beneath which it is placed to be freely removed in destroying or canceling the stamp, substantially as set forth.

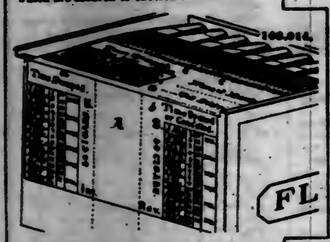
2. A stamp-holder, constructed as described, with a protecting lug or cover and lip, adapted to puncture and fold beneath the stamp, substantially as and for the purposes set forth.

3. A stamp-protector, constructed substantially as herein described, to hold and conceal a duplicate stamp or coupon, substantially as and for the purposes set forth.

168,014. REVENUE-STAMPS FOR CIGAR-BOXES. F. C. Hamilton, New York, N. Y., assignor to Edwd. J. Brooks, same place. [Filed Feb. 16, 1875.]

Brief.—The stamp carries a set of coupons equal to the number of cigars in the box, and a table showing the date of stamping, which are inclosed within the box-cover, and tables indicating the date of stamping and opening, which are secured to the box-side.

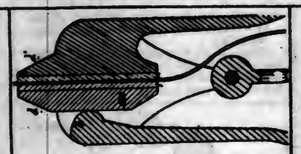
168,014.



1. The cigar-box stamp herein described, constructed with date-tables *a b c*, arranged and adapted for use in manner substantially as described.

2. The coupons *a*, provided with serial numbers, as described, and employed in connection with a cigar-box stamp, in the manner and for the purpose specified.

168,015. FIRE-ESCAPE. Frank M. Herman, Ottumwa, Iowa, assignor to himself and John Sinclair Herman, Tecumseh, Nebr. [Filed July 24, 1875.]



1. A fire-escape consisting of a flat metallic band, A, and a slide provided with jaws *d d'*, having flat parallel faces between which the band is passed, and to which the slide may be clamped, all substantially as and for the purpose described.

2. The combination of the band A, free at its inner end, and so annular case, G, open at the sides and adapted to receive and retain the band when coiled, and to permit the lateral withdrawal thereof, all as set forth.

168,016. SETTING-INSTRUMENTS FOR ATTACHING BUTTONS TO WEARING APPAREL. David Heaton, Providence, R. I. (Filed July 26, 1875.)



1. In the hereinbefore-described button-setting instrument, the upper jaw A, provided with a recess, E, having an inclined or wedge-shaped bottom and a slot and groove, F, in combination with the lower jaw B, provided with a dovetailed recess, G, adapted to receive a correspondingly-shaped sliding piece, H, having a die upon its upper surface, and adjusted in position through the medium of the set-screw I, substantially as described, and for the purpose set forth.

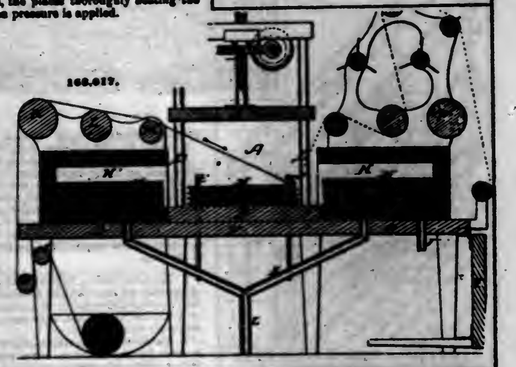
2. The jaw A, provided with the recess E, having an inclined or wedge-shaped bottom and an arched grooved slot, F, substantially as shown and described.

3. The dovetail sliding piece H, constructed with a suitable die upon its upper surface, adapted to slide in the recess G, in combination with the set-screw I and the lower jaw B of a setting instrument, substantially as and for the purpose specified.

168,017. CLOTH-PRESSES. Wm. Hobden, Boston, Mass. (Filed Aug. 13, 1875.)

Brief.—Heated plates are interposed between the folds of a pile of cloth as it is placed in a press, the plates thoroughly heating the cloth when pressure is applied.

168,017.



1. The described process of papering-up and hot or warm pressing cloth, consisting substantially in making a pile composed of single layers of cloth, and heated leaves M, surfaced with paper, arranged alternately, and subjecting the pile thus formed to the action of a press, substantially as and for the purpose specified.

2. The combination of the press A, leaves M, and heating-chambers H H', substantially as described.

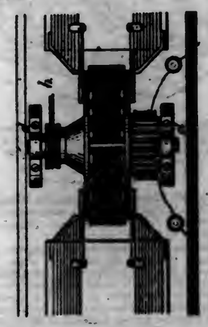
3. The adjustable guide-pins E E', in combination with the press A and leaves M, having the orifices *a*, substantially as and for the purpose specified.

4. The heating-chambers H H', having hollow walls or steam-spaces, in combination with the leaves M.

5. In a machine for pressing cloth, the combination of the press A, heating-chambers H H', leaves M, delivering and removing rollers and winding-roller Q, or folding-table T, all substantially as specified.

6. The leaves M, composed of press-paper M', inclosing a body or filling, substantially as described, for the purposes specified.

168,018. MAGNETO-ELECTRIC MACHINES. Otto Heikel, Jersey City, N. J. (Filed June 5, 1875.)



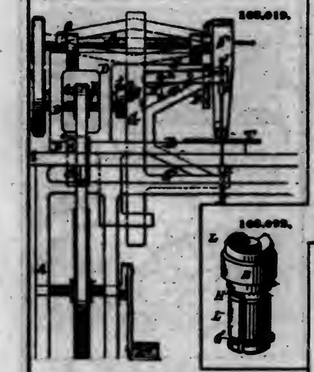
1. The magneto-electric machine, containing helices that are connected together and combined with the circuit-wires, cores, and stationary magnets, arranged substantially as set forth, to produce a continuous circulation of the electric current in one direction, as specified.

2. The revolving core *a*, contiguous to the stationary magnets, in combination with the helices, arranged in respect to the core, substantially as set forth, to induce a continuous current flowing through the helices, as set forth.

168,019. SCROLL-SAWING MACHINES. Isaac F. Hicks, Pine Plains, N. Y. (Filed July 13, 1875.)

Brief.—The machine is so constructed as to render it available for the purpose of boring and sawing in cutting scroll-work.

168,019.



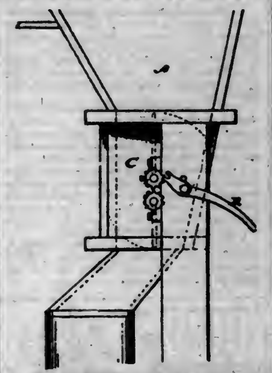
168,020.

1. The combination of the table A, bed-plate B, arranged above the said table, the clamping-bars C C, constructed with the slots *c'*, hooked ends *c*, which hook over the edge of the bed-plate B, and the bays C', passing through the slots in the hooked bars, as and for the object specified.

2. The combination, with the saw-frame or arm G', of the guiding-rod F, arranged as shown and described, for the purpose specified.

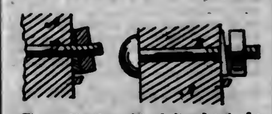
3. The combination of the hinged or pivoted frame G, shaft K, fan-wheel R, and fan-chamber P, arranged as shown and described, for the purpose specified.

168,020. DOUBLE-ACTING VALVE CUT-OFFS TO FLOUR-PACKERS. Augustin M. Hobbs, Wesapeo, Wis. (Filed Mar. 30, 1875.)



Tube C, having independent valves E, and if secured to shafts provided with cogged segments separately engaging with and operated by lever D, as and for the purpose specified.

168,021. NUT-BOCKS. Cassius Holton, Reading, Pa., assignor of one-half his right to Pulaski Farvell, Fredericksville, Ill. [Filed Mar. 6, 1875.]



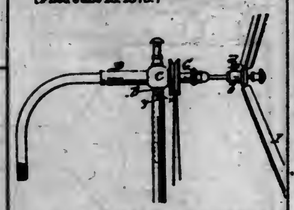
The combination, with a bolt and nut, of a washer having a bearing-face for the nut inclined in respect to the axis of the bolt, as set forth.

168,022. METHODS OF SECURING SPINDLE-STEPS IN THEIR SUPPORTS. A. S. Hopkins, Pascoag, R. I. (Filed Aug. 12, 1875.)

Brief.—The body of the step is provided with grooves extending entirely around it. Part of the spring-catch fits within the upright groove, and its arms, when the step is placed in position, fall alternately into the circumferential grooves.

The improved means of securing the step B in the rail A, described, the same consisting of the connected grooves G G', and the catch L, provided with the arms E H, substantially as and for the purpose set forth and specified.

168,023. FANS FOR DENTAL ENGINES. R. B. Hopkins and G. A. Beidler, Philadelphia, Pa.; said Beidler assignor to said Hopkins. [Filed June 12, 1875.]



1. The combination of a dental engine or lathe, and a fan connected therewith and operated by the same power that operates the engine or lathe, substantially as and for the purposes herein set forth.

2. In a dental engine having a fan attachment, the combination of the ratchet-connection *x y*, with the hollow standard A, shaft B, and shaft G, substantially as and for the purposes herein set forth.

168,024. OVENS. Elijah Hunter, Scott Dale, Pa. [Filed July 15, 1875.]



1. In combination with the fly-wheel C, carrying the pin *c* and roller *c'*, and attached to a shaft located at the bottom of the oven, the damper-shaft journaled on top of the oven, and having the depending arm D terminating in a link open at its lower end, to facilitate connection and removal, substantially as shown and described.

2. The hopper G and measure cover *g'*, so arranged as to catch the splash and admit air, as set forth.

3. In combination with the reciprocating paddle D', two breakers, B B', arranged, in respect to the damper, substantially as and for the purpose specified.

168,025. COMPOSITE MANTELS FOR FIRE-PLACES. David K. Jones, Cincinnati, Ohio. [Filed June 9, 1875.]

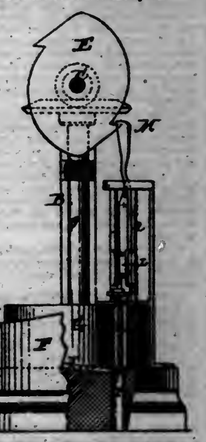
The combination, in a fire-place mantel, of the cast-metal casing G I, beneath or behind, and cast-metal pilaster I, in front, of a flat and comparatively extended body piece, O, of slate, stone, or marble, the whole being united by concealed bolts E, substantially as set forth.

168,026. MACHINES FOR ROLLING METAL TUBES. Chester L. Johnson, Whitechorough, assignor of one-half his right to B. T. Babbitt, New York, N. Y. (Filed Apr. 26, 1875.)

Brief.—A roll and a curb bound an intervening space, that gradually diminishes in width from the lowest toward and to the highest point of the curb, in which a sheet tube, placed on a vertical mandrel, is both rotated and revolved, and thereby reduced and elongated, until finally the mandrel is withdrawn by the cam, through the medium of the hooked lifting-rod, and the tube falls through an aperture in the bottom of the space.

168,026.





1. The combination, with the roller G and rim F, of the groove J in the bottom of the channel I, for engagement with the mandrel, and the opening F at the narrowest portion of said channel, for delivering the finished tube, substantially as shown and described.

2. The combination of the lifting-cam E and vertically-reciprocating notched or forked bar M, for withdrawing the mandrel from the finished tube, substantially as shown and described.

168,027. SLEEPING-CARS. R. P. Kellogg, New York, N. Y. (Filed July 20, 1875.)

Brief.—Tubular sectional cushions stowed away during day, but fastened by legs and sleeves, so as to remain upright and rigid at night. Panels sliding in arch-arms, and so shaped as to conform to their contour when reversed, and form partition between heads and feet of successive berths.

1. The combination, in a convertible parlor and sleeping car, of the folding cushioned frames of the upper and lower berths, provided with front rails, with the removable transoms, provided with fixed leg-bosses O, and the sliding locking-sleeves K, whereby both the upper and the lower berth-front rails are secured and supported, substantially as herein set forth.

No. 168,027.



2. The berth-supporting stanchions, consisting of a brace and a middle removable section, F G, and a fixed socket-bracket, H, the section G having a fixed lag-bolt, O, and a sliding locking-sleeve, K, substantially as and for the purpose herein set forth.

3. The berth-supporting stanchions, consisting of a fixed top section and intermediate section, provided with lugs, as shown, and a base-section, which is also adapted to support a chair for day travel, substantially as herein set forth.

4. The combination of the detachable reversible panel H with the chambered and board of the chair, the panel corresponding in contour with said chair end when inserted into the same, substantially as described.

5. In combination with the stanchion E, having supporting lugs and openings, and the car-wall provided with counterpart socket-plates, the detachable partition-panel F, having pin, sliding bolt, and hooks, as and for the object stated.

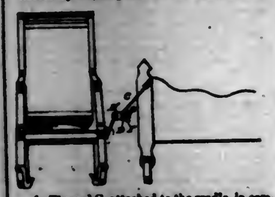
6. The stanchion E, having perforated lugs m, in combination with the detachable car-rain-roll, having hooks n, as and for the purpose set forth.

7. The combination, with the sectional removable stanchion G, provided with the pin G^1, and the pedestal F, provided with the slot b, of the sliding locking-sleeve K, substantially as and for the purpose herein set forth.

8. The combination of the stanchion-collar O, provided with the lugs m and e, with the rail S, and the removable partition F, as and for the purpose herein set forth.

168,028. DEVICES FOR ROCKING CRADLES. Lauris L. King, Lake View, Ill. [Filed May 21, 1875.]

Brief.—The cradle is rocked by a person sitting in the chair, to which the cradle is connected by a spring-rod and clamping device.



1. The rod C, attached to the cradle, in combination with a clamp, whereby the rod can be attached to the chair, substantially as and for the purposes specified.

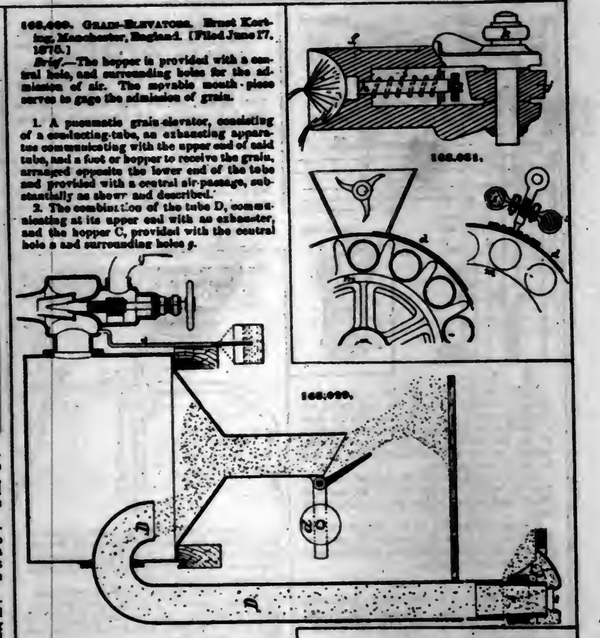
2. In combination, the bent spring-rod C, pivoted to the cradle, and provided with the block D, having therein the pins a a, the nut F, and the block D', the latter attached to the chair, provided with the screw-pin e, and having the holes d' d' therein, all substantially as and for the purposes specified.

168,029. GRAIN-ELEVATORS. Ernst Kertting, Manchester, England. [Filed June 17, 1875.]

Brief.—The hopper is provided with a central hole, and surrounding holes for the admission of air. The movable mouth-piece serves to gage the admission of grain.

1. A pneumatic grain-elevator, consisting of a conducting-tube, an exhausting apparatus communicating with the upper end of said tube, and a foot or hopper to receive the grain, arranged opposite the lower end of the tube and provided with a central air-passage, substantially as shown and described.

2. The combination of the tube D, communicating at its upper end with an exhauster, and the hopper C, provided with the central hole a and surrounding holes g.

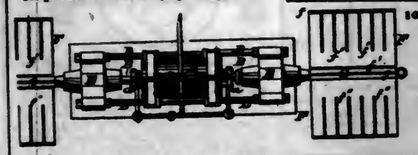


3. In a pneumatic grain-elevator, the combination of a conducting-tube and a feed-hopper, provided with a central air-passage, substantially as shown, so that the distance between the hopper and the end of the tube may be increased or diminished at will, whereby the admission of grain may be varied, and at the same time the grain and air permitted to enter the mouth of the tube together.

4. In combination with the fixed tube D and fixed hopper C, provided with the central air-passage a, the movable mouth-piece b, provided with the external screw-thread and arranged as shown.

168,030. MACHINES FOR MANUFACTURING PENCILS. Reinhold Lenstrom, Cincinnati, Ohio, assignor to the United States Scoop-Stone Manufacturing Company, same place. [Filed July 19, 1875.]

Brief.—Relates to the devices for dividing the pressed bar into the proper lengths.



1. The table F, formed with oppositely-inclined leaves provided at each side with an upward-turned edge, f, and having the parallel vertical slots f'' and f''', in combination with the cylinder E and knife H, substantially as and for the purpose shown.

2. In combination with the cylinder E and table F, the bar G, provided with the vertical longitudinal flange g, pivoted to or upon said table and arranged to reciprocate within the opening f' and across the discharge-opening e', substantially as and for the purpose set forth.

168,031. COAL-AGGLOMERATING PRESSES. Antoine Germain Lasserre, Paris, France, assignor to Gratiot Washburn. [Filed July 26, 1875.]

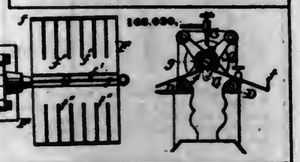
1. The combination of the laterally and conjointly operating molding and compressing pistons f with the main wheel m, substantially as and for the purpose herein set forth.

2. The combination of the internal pistons h, with the molding and compressing pistons f, substantially as and for the purpose herein set forth.

3. The combination of the curved levers i, the internal pistons h, and the retracting-springs i, with each other and with the molding and compressing pistons f, substantially as and for the purpose herein set forth.

4. The combination of the main wheel d, the molding and compressing pistons f, and the internal pistons h, with each other and with the pressure inclined planes d' d', and the retracting inclined planes h' h', substantially as and for the purpose herein set forth.

5. The arrangement of the curved apron d, with the laterally-operating pistons f and the main wheel m, substantially as and for the purpose herein set forth.



168,032. COMPOSITE ROOFS. Richard Lee, New York, N. Y. [Filed Aug. 6, 1875.]

Brief.—A series of angular slats are secured to the rafters in such a manner as to form a close sheathing where they join said rafters, and a corrugated upper surface, upon which is placed a water-proof compound, consisting of twelve gallons dissolved India-rubber, fifty gallons metallic paint, and sand sufficient to bring the mixture to a plastic state.



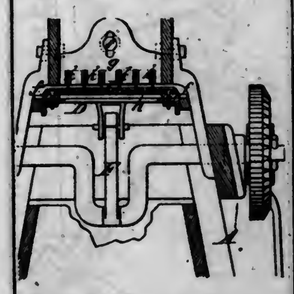
1. The sheathing-pieces B, constructed and applied substantially as above described, so that their under sides form a continuous close surface, and their upper surfaces form a succession of receptacles, D, for the reception of a coating material, substantially as set forth.

2. The combination of the sheathing-pieces B, made and applied to the rafters or floor-beams A, substantially as described, with a coating, E, in such a manner that the coating fills the depressions D formed by the sheathing-pieces, substantially as set forth.

3. The above-described composition of india-rubber, metallic paint, and sand, as a coating for roofs, substantially as set forth.

168,033. VEGETABLE-CUTTERS. J. T. Lohr, Manistee, Mich. [Filed Aug. 21, 1875.]

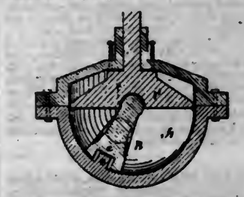
Brief.—The transverse cutting-knife is grooved on its upper surface. In this groove the shredding-knives are secured. The shredding-knives pass through combs at the completion of the cut, to clear them of the vegetables.



The horizontal transverse double-cutting knife J adjustably secured to the reciprocating hopper-bottom D, over a hole, h, and grooved longitudinally, in combination with vertical knives b and combs g, substantially in the manner and for the purpose described.

168,034. ROTARY PUMPS. William Lyon, Newark, N. J. [Filed July 30, 1875.]

Brief.—In a hemispherical case a semicircular piston is revolved by a disk moving on the plane of section of the sphere, being hinged or jointed diametrically thereto. A stud raised on the concave surface of the hemisphere, and out of the axial line of the shaft, engaging in a slot in the edge of the piston, so modifies the motion of the latter, when revolved, that the capacities on either side of the piston alternately increase and diminish, producing the sucking and forcing action of the pump.

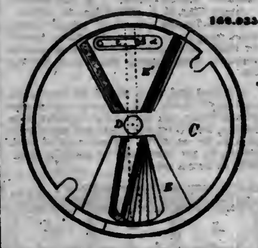


In a rotary pump, a semi-spherical case, A, provided with the ports b and hub or guide-pin c, the partition B, having the groove e, and the grooved disk C, constructed and arranged to operate substantially as set forth and shown.

168,035. ROTARY ENGINES. William Lyon, Newark, N. J. [Filed Aug. 20, 1875.]

Brief.—The case is provided with inclined abutments, which throw the oscillating segments into position to receive steam in their passage over them.

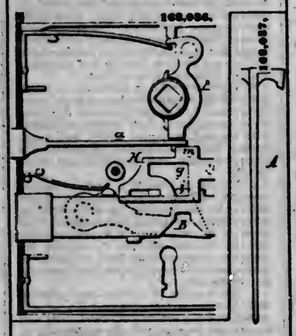
168,036.



In a rotary engine, the combination, with the case B, constructed as described, of the revolving disk C, provided with the segments E and E', operating in conjunction therewith, substantially as and for the purposes set forth.

168,036. REVERSIBLE LATCHES. P. Mathes, Easton, Pa. [Filed Aug. 20, 1875.]

The plate H, provided with the projection f, recess g, and lug m, in combination with the lever E b, the latch D, having the stem a, and the tumbler B, provided with the stud i, substantially as and for the purpose set forth.



168,037. NAILS. Albert Marchiki, Jersey City, N. J. [Filed Aug. 23, 1875.]

Brief.—The nail is provided with a hook portion, either formed with the body or detachable, for the purpose of binding or steadying an adjoining piece of wood.

1. A nail, the head of which forms one or two hooks which project from one or from opposite sides of the shank of the nail, and the bottom edges of which are sharp and provided with inclined shoulders, substantially as shown and described.

2. The combination, of a detached head, B', with a nail, A, said head being provided with a hole for the reception of the shank of the nail and with a sharp-edged hook, one or more, substantially as set forth.

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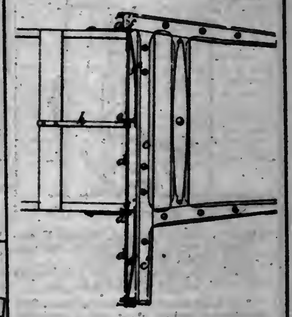
1. The combination of the casing A with the horn or spiral D, substantially as and for the purposes set forth.

2. The casing A, horn or spiral D, face-disk B, and the tube F, of a diver's lamp, in combination with the weight H, as and for the purposes set forth.

3. The horn or spiral D, in combination with the button d, as and for the purposes specified.

168,039. SLEIGHS. George McConnell, Oconto, Wis. [Filed May 19, 1875.]

Brief.—Allows thills to be shifted to either side of the road, and dispenses with usual front cross-bar.



1. The combination of the thill-bar c, having the projection c', plate-bar d, of equal length therewith, springs c^2 c^2, and sleigh-frame having eyes e e attached to the runners thereof, but without the usual front cross-piece, as shown and described.

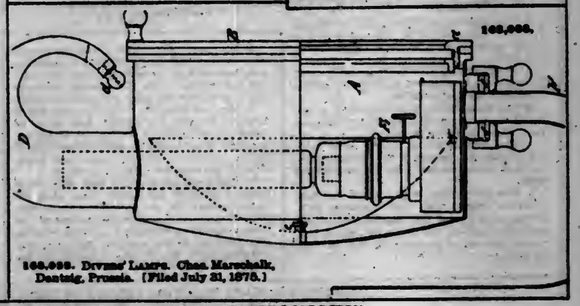
2. The combination of the thill-bar c, having the projection c', plate-bar d, of equal length therewith, springs c^2 c^2, and sleigh-frame having eyes e e, attached to the runners thereof, with the intermediate plate-brace strap k, as described.

168,040. COMBINED GATE-HINGES AND CLOSING-RODS. William H. McCormick, Muncie, Ind., assignor to himself and G. W. Stotts, same place. [Filed Aug. 6, 1875.]

Brief.—A gate-hinge of ordinary construction is provided with a double-armed staple, one portion of which serves as a bearing for an elevating and closing rod, the upper end of which is attached to the gate; the construction being such that the closing-rod acts as a brace, and the gate, when thrown open, slides upward, but closes automatically when released, thus combining the hinge with the elevating and closing devices.

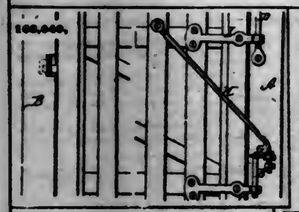
The gate-hinge herein described, consisting of the rod E, double-armed staple G, and strap I, having curved end, in combination with the elevating and closing rod H, having one end attached to the gate, and the other having its bearing in the arm G, all substantially as described, and for the purposes set forth.

168,038.



168,041. DIVERS' LAMPS. Chas. Marschalk, Dantzig, Prussia. [Filed July 31, 1875.]

168,040.



168,041. CAR-COUPLINGS. George H. McGlothlen and C. L. McGlothlen, Clarinda, Iowa. (Filed Aug. 21, 1875.)

Brief.—The guide raises the link into the draw-head, and the lifter raises the pin.

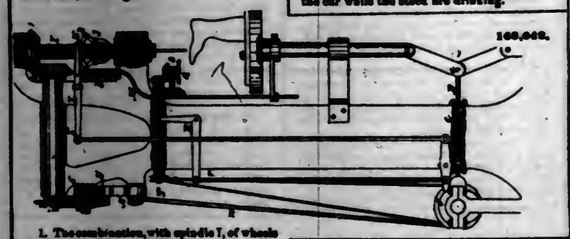
1. In a car-coupling, the combination of the draw-bar A, having link *a*, and a vertically-vibrating link-raiser, B, and an angular pin-lifting part, D, substantially as set forth.

2. The combination of a draw-bar, A, having link *a*, a vertically-vibrating link-raiser, B, and an angular pin-raiser, D, with a draw-bar, A', having an end-iron movable and guided pin, E, and rods or ways E', for raising the link-lifter B, substantially as specified.

3. The draw-bar A, having lifter B, provided at its front end with arrow-head b' and arms *c*, in combination with rods or ways E' on draw-bar A', substantially as described, and for the purpose set forth.

168,042. SCREW-PROPELLER MACHINES. A. G. McKnight, Philadelphia, Pa. (Filed June 12, 1875.)

Brief.—The screw-threaded wire is automatically inserted in the leather, and the screw covered of the length desired.



1. The combination, with spindle I, of wheels 1 2 3 4 5, rock-lever H H', rod *n*, and pulley O, having wrist-pin *o*, to move the spindle up and down.

2. The combination of lever L, rod P, lever P, and shaft, having cam *p*, to lift the spring-lever L at the time specified.

3. The combination, with nippers J, of collar K, cranks *k k*, lever L, and spring *l* to cause the nippers to take on the wire.

4. The combination of rotary screw-holding spindle and nippers of the horizontal rotary and sliding cutter Q, for the purpose set forth.

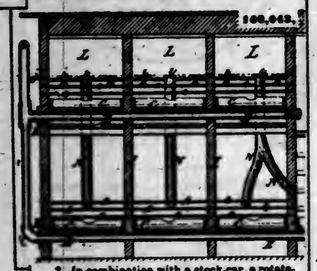
5. The combination, with the rod that connects the toggles with their operating cam, of the spiral spring and fastening-sleeve, the rod being made in two parts, as shown, and for the purpose of allowing the last to yield vertically.

168,043. STOCK-CARS. J. R. McPherson, Jersey City, N. J. (Filed May 21, 1875.)

Brief.—Trough rotated by tubular shaft, which supplies it with water. Same trough for feed. Arrangements to keep apparatus protected from animals entering or leaving car.

1. A feed and water trough for stock-cars, combined with the pipe or conduit which supplies it with water, and arranged to be turned into position for feeding the stock, and out of such position for emptying the contents of such trough, by the same pipe or conduit, essentially as herein set forth.

168,043.



2. In combination with a stock-car, a rotatable feed and water trough and the conduit by which it is supplied with water, crossing the doorways, and presenting, when turned down to empty their contents, the solid sides of said trough and its conduit, for the passage thereover of the stock in loading and unloading the car, substantially as set forth.

3. The combination, in a stock-car in which the feed and water troughs cross the doorways thereof, of hinged platforms B and interior platforms D, both forming a junction with the feed and water trough and a continuous platform therewith, for loading and unloading stock over said feed and water trough.

4. The combination, in a stock-car having rotatable feed and water troughs turned into and out of positions by the conduits E, by which they are supplied with water, of fixed pipes G G^2, connecting with said conduits and the elevated reservoir F, whereby the movable trough-conduits form extensions or continuations of supply-pipes fixed upon the end of the car.

5. The troughs of a stock-car, provided with overflow mouths or spouts *f*, in combination with the conduits E, which carry and supply said troughs, and the water-shoots *f*, whereby any overflow will pass off outside of the car while the stock are drinking.

6. The combination, with a rotatable trough of a stock-car, of the feeder-bars *e* extending longitudinally in the wall-openings and having the rotation with the troughs, substantially as and for the purpose herein set forth.

7. The combination, with feed and water troughs adapted for double-deck cars, of branch pipes G G^2, connecting the supplying conduits of said troughs with the reservoir F above, whereby both the upper and lower troughs are supplied by the same pipe.

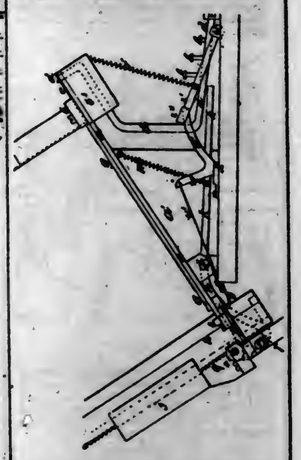
8. The combination, with feed and water troughs adapted for double-deck cars, of branch pipes G G^2, connecting the upper and lower trough-conduits E with sections of different diameter, whereby a uniform circulation through all the conduits and an equal water-supply in the troughs or basins are obtained.

9. The combination, with the sectional doors B B^2 in a stock-car, of the bolts *b b*, provided with right-angled ends *c c* and confining-eyes *b'*, occupying positions on the upper edge of the lower door when closed and held in their fastened positions by the upper door closing over the abutting ends *c c* of said bolts, as herein set forth.

10. The combination, with the trough-section crossing the doorway, of the branch pipes H H^2 and the elevated wall-bin, whereby the said trough is supplied with feed without obstructing the doorway.

168,044. TYPE-SETTING MACHINES. Adam Miller, Malvern, England. (Filed Nov. 2, 1874.)

Brief.—The letters are pushed out of their respective tubes by pushers operated by keys. They then slide fast first down an incline having side guides, which gather them into a narrow throat. They then pass into a stick, which moves down to make a place for next letter.



1. The composing-stick A, arranged within the fixed rest *f* at right angles to an inclined plane, *a*, and having the rest *f* on its edge, in combination with the ratchet-wheel *c*, pinion *p'*, rectangular frame *h i*, having the bent end *n* and pawl *h'*, and the pivoted levers *S' S²* for vibrating the frame *h i* in order to operate the ratchet-wheel and impart a downward movement to the composing-stick, substantially as herein set forth and illustrated.

2. In combination with the pivoted lever for discharging the types, the pivoted forked lever *s' s²*, lever *u u'*, cord *o'*, cam *s*, and composing-stick A, substantially as and for the purpose herein set forth and shown.

3. The trough-shaped composing-stick A arranged at right angles to the inclined plane as the lower end thereof, in connection with the supplementary operation for moving the stick downward, independently of the lever for discharging the types, the same consisting of the pivoted arm *s*, the cord *o'*, pulley *b*, and the pivoted lever *u u'*, substantially as herein specified.

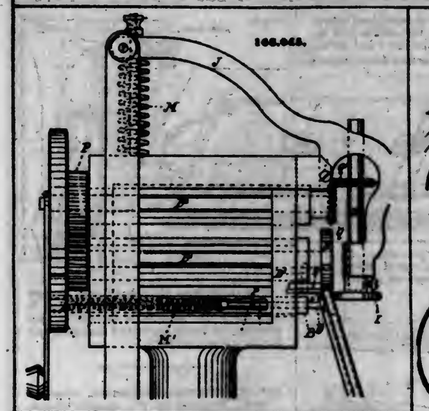
168,045. CHANNEL-CUTTING AND MOLDING FOR DOORS AND SHUTTERS. Thomas L. Miller, Philadelphia, Pa. (Filed July 8th, 1875.)

1. The combination of the channel-opener G, gage-wheel H, and molding-wheels H and I, arranged and operating in relation to each other, substantially as and for the purpose set forth.

2. The combination of the wheel I and shaft I^2 with the lever J, substantially as and for the purpose set forth.

3. The combination of the spring M' with the hollow shaft H, and channel-opener G, as and for the purpose set forth.

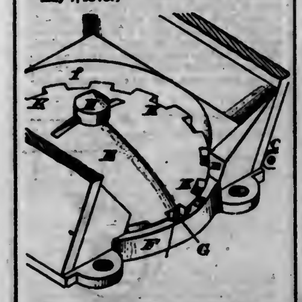
168,046.



168,047.



168,046. COOK-PLANTERS. Edmond Morgan, Dublin, Ind., assignor to himself and L. Lovell Lawrence, same place. (Filed May 7, 1875.)



In combination with the notched hopper-back B *b*, the conical revolving dropper-disk E, seated in a circular depression of the bottom F, and having peripheral indentations E corresponding to the size of the grain on edge, a portion of said notched disk E and of said bottom F protruding in rear of the hopper, and bottom protrusion F' having the orifice G and shallow peripheral curb *g g'*, to insure and enable observation of the grain dropping, as and for the purpose set forth.

168,047. MASSIMUS COOKING-STOVES. J. S. Perry, A. Dibley, and E. S. Liddle, Albany, N. Y., assignors to J. S. Perry, trustee and executor, W. S. Perry, and A. Dibley, same place. (Filed Mar. 4, 1875.)

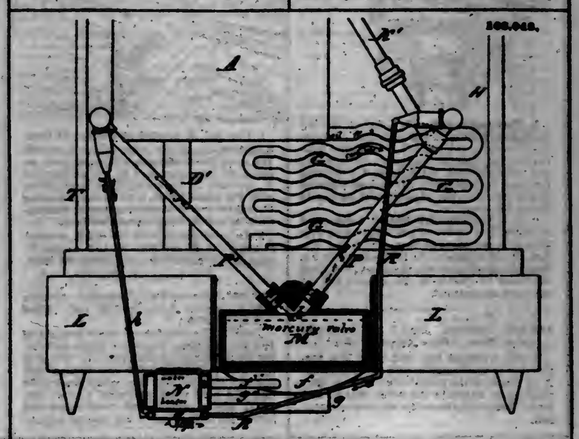
1. The combination of a culinary attachment, having flues and openings, substantially as described, with a heating-stove, having an ascending and descending flue upon the rear, and openings by which the said flues may be made to co-operate with those of the culinary attachment, all substantially as and for the purpose specified.

2. The combination described of the flues D, Q, and T of the culinary attachment, with the ascending and descending flue on the rear of the heating-stove.

3. The combination described of the flues F, Q, and T of the culinary attachment, with the diagonal flue in the base of the stove, and the ascending and descending flues at the rear of the same, all as set forth.

4. The combination of a heating-stove, having an ascending and descending flue at the rear, with the side plates of the culinary attachment, by which plates, in conjunction with the stove-chambers *a' b'*, are formed the heating air preparatory to its admission into the oven, all substantially as described.

168,048.



168,048. AIR AND GAS CARBURETORS. A. W. Porter and F. M. Grimes, New York, N. Y. (Filed July 14, 1875.)

Brief.—The inflow of oil is automatically regulated by a valve and float. The carbureter is set in a water-tank, which is provided with an annular water-heater and connecting-pipes. A mercury-valve automatically shuts off the supply of gas to the burner under the water-heater, when the temperature of the water in tank rises to 70° Fahrenheit. A taper-burner, however, remains constant, and relights the main burner when the temperature falls, and allows a renewed flow of gas.

1. The vaporizing-conduit G, formed of hollow corrugated folds, substantially as described.

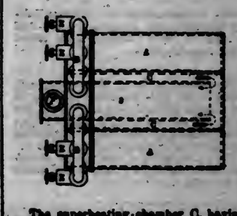
2. A carbureting-chamber having the passages J and partitions *c*, combined with the conduit G and the chamber E, containing a float, D', substantially as described.

3. In a carbureting apparatus, the tank L, main *f g*, pipes *f' g'*, heater N, burner S, and its taper, in combination with the mercury-vessel M and pipes P P^2 K K', substantially as described.

4. In an air or gas carbureting machine, a broad horizontal corrugated vaporizing fold or conduit, with intermediate spaces between the folds, combined with an automatic feeding device, substantially as described.

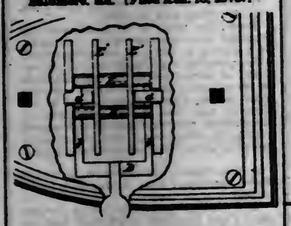
168,049. GAS APPARATUS. John H. Pugh, Baltimore, Md. (Filed July 20, 1875.)

Brief.—Distilling-retorts connected severally with a fining-retorts, having an inner chamber communicating with the single stand-pipe. Such inner chamber may be removable. Dispenses with hydraulic seal.



The superheating-chamber C, having the stand-pipe F, and consisting of the inner and outer cylinders b and *a*, the cylinder b being open at its lower end, and a space left between said end and the rear wall of the outer cylinder *a*, in combination with the retorts A, pipes B, and valves E, whereby a communication is established or cut off between said retorts and the space existing between the walls of the cylinders *a* and *b*, substantially as and for the purpose specified.

168,049. SAD-IRONS. Henry B. Robbins, Baltimore, Md. (Filed Aug. 16, 1875.)



1. The combination, in a sad-iron, of the handle-wedge e, having side concavities *d' d'* thereabove, with rollers E E that are moved up and down in oblique slots of bearings, to lock and unlock the handle, as described.

2. The combination, with loose rollers E E, of the spring-jointed wedges D D, having arms *d*, and the bifurcated hand-lever B, to move said rollers at the time and in the manner specified.

168,050. BOOTS AND SHOES. Mathias Robbins, Scranton, Pa., assignor of one-half his right to Peter Robbins, same place. (Filed June 10, 1875.)



1. The combination of the wooden sole and heel A B, with transverse grooves or slits *a*, the sole-leather casing or facing C, the upper D, and the horizontal staples B B', applied as specified, to secure the parts together without crossing or spanning the grooves *a*.

2. The combination of the wooden sole A B, sole-leather casing or facing C, and sheet-metal covering G, as set forth.

168,051. SPOON. Lafayette Robinson, Medina, N. Y. (Filed June 9, 1875.)

Brief.—The sink has three strainers. The upper one serves to separate and retain coarse particles, and also as a support for vessels. The two lower strainers serve the purpose described.



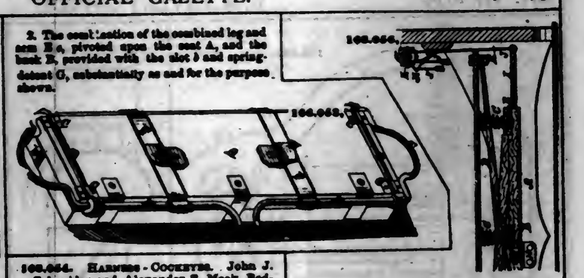
1. The combination, with a sink, A, having an inclined bottom, i, and depressed chamber *d*, of the stationary grate E, constructed with the vertical flange *n* resting on the offset *c*, and provided with the notches *o o*, forming strainers for separating the coarser particles before reaching the pipe-strainer, as herein shown and described.

2. In a cast-iron sink having a depressed chamber, *d*, the notched grate E, resting over said chamber, the disk-strainer *f* at the bottom of said chamber, and the strainer-pipe *f*, located beneath and over the pipe C, the whole combined to operate in the manner and for the purpose specified.

168,052. SPITTOON. John F. Hayles, Stockbridge, Mass. (Filed Apr. 2, 1875.)

1. The combined legs and arms B *a*, constructed as shown, and combined with the seat A by means of the chain D *d d'*, which is journaled upon or within the lower side of said seat, substantially as and for the purpose specified.

2. The combination of the combined leg and arm B *a*, pivoted upon the seat A, and the bank E, provided with the slot *b* and spring-detent G, substantially as and for the purpose shown.



168,053. HARNESS-COCKEYE. John J. Schneider and Alexander S. Mock, Bedford, Iowa. (Filed June 29, 1875.)

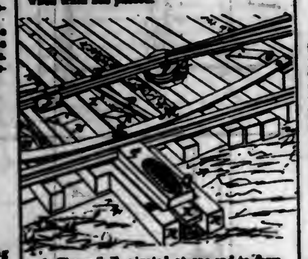




The tees A, provided with the arm *a*, and having a slotted chamber, in combination with the clip B, provided with the arms and bevel heads *b b*, and plug C, constructed to operate substantially as and for the purpose set forth.

168,054. RAILWAY-CROSSINGS. Christopher C. Shelby, Jersey City, N. J. (Filed Mar. 18, 1875.)

Brief.—An improved frog-crossing, in which a pivoted swinging rail is substituted for the ordinary frog, said rail being actuated through a curved thrust-lever, which is moved by the flanges of the passing wheels on the side track, the main line being open at all times. A spring returns the movable rail to proper position when train has passed.



1. The rail B, pivoted at one end to form a continuation of the inner rails B D of both the main track and the side track, and connected at the other end to the sliding bar K, operated by the spring Q, in combination with the guard-rail M, pivoted to the bearing O, and secured to the sliding bar K, substantially as and for the purposes set forth.

2. In combination with the rail B, secured to the plate F, the plate G and washer H, substantially as and for the purposes set forth.

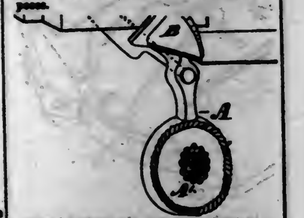
168,055. BEDDING-BED-BOTTOMS. Andrew T. Sherwood, Amador City, Cal. (Filed Aug. 4, 1875.)

Brief.—The foundation-frame consists of two side and three cross-bars, upon which latter the coiled springs are attached. Two side spring-supporting rails either are attached and connect with the cross-bars, which receive the chain A, and winding around a shaft, provided with a ratchet and pawl, raises and lowers the bed-bottom to any desired height.

The combination of the bar I, cord J, short shaft K, ratchet-wheel L, and spring-pawl M with the pivoted bed-bottom H U D E F G, substantially as herein shown and described, and for the purpose set forth.

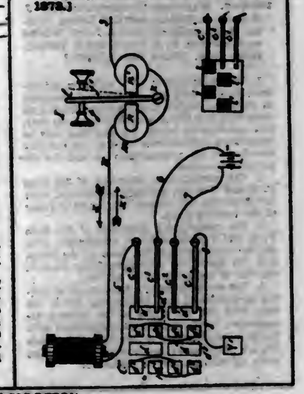
168,057. SHUTTER-FASTENERS. Chas. A. Smith, Philadelphia, Pa., assignor of one-half his right to Daniel Hoffer, same place. (Filed Aug. 20, 1875.)

Brief.—An ordinary swivaled turn-buckle, having a weighted button, is provided with a triangular head or catch, arranged on a short arm, at an angle of about forty-five degrees to the shank. The rear edge of this triangular catch is formed with a laterally-projecting ear or flange, nearly at right angles thereto, thus providing a wide surface, upon or against which the shutter impinges, preventing injury to the wood-work, and for anti-rattling purposes.

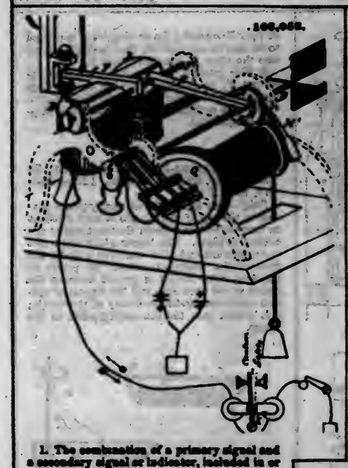


The improved swivaled turn-buckle, consisting of the shank A, having the weight A', and provided with the triangular catch B, arranged obliquely thereon, and having its front and rear edges inclined, as shown, and its rear edge formed with the laterally-projecting ear or flange *a*, substantially as shown and described, for the purpose set forth.

168,058. RAILROAD-SIGNALS. H. W. Spang, Reading, Pa. (Filed Dec. 22, 1875.)



168,059.



1. The combination of a primary signal and a secondary signal or indicator, instituted in or operated by the same circuit of electrical conductors, when the movements of the secondary signal are dependent upon or controlled by the reversal of a battery-current through said circuit, effected by the movement of the primary signal, substantially as herein set forth.

2. The combination of primary signal S, circuit-changer C, one or more galvanic batteries, intermediate conductors, and a polarized electro-magnet, which operates or controls a secondary signal or indicator, substantially as described.

3. The combination of shaft D, signal S, spring H', and wheel H, having in its periphery the curved fixed notches *c*, substantially as and for the purpose set forth.

168,060. RESETTING RAILWAY-SIGNALS. H. W. Spang, Reading, Pa. (Filed Mar. 17, 1875.)

1. The combination of one or more insulated sections of railway-track, a main or primary battery and connector, electro-charging relay-magnets, and local or secondary batteries as electric signaling apparatus, and intermediate conductors between the foregoing, arranged and operated for producing a series of signals in said signaling apparatus, or a change signal by a series of reverse currents, substantially as described.

2. The combination of insulated section A of railway-track, battery B, commutator C, relay-magnet M, levers I P, metallic points *p p' p' p'*, battery B', wires 5, 6, 8, 9, 10, 11, 12, 13, and L', electric signaling apparatus H, arranged and operating substantially as described.

3. The combination of two insulated sections of railway-track, A A', main or primary battery B, commutator C, relay-magnet M, levers I P, metallic points *p p' p' p'*, battery B', wires 5, 6, 8, 10, 11, 12, 13, 14, 4, and L', electric signaling apparatus H, and relay-magnet M', battery B', ground-plates G G', and intermediate conductors connecting the two sections A A', all arranged and operating substantially as shown and described.

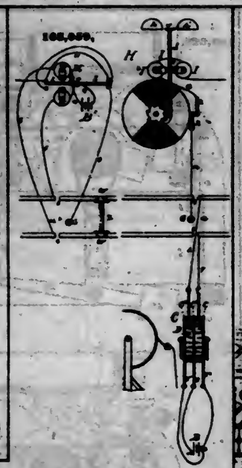
4. The combination of signal-disk Y, shaft *s*, toothed wheel E, escapement *j*, lever J, and poles *l l'* of an electro-magnet, substantially as described.

5. Relay-magnet M, having levers I P, which are insulated from each other and vibrate respectively between metallic points *p p' p' p'*, in combination with battery B', signaling apparatus H, and intermediate conductors of a local or secondary circuit, substantially as described.

6. Magneto-electric inductor P', the armature D' of which and wire coil are vibrated by lever L' between magnets S S', in combination with the rails of a railway-track, substantially as and for the purpose set forth.

7. Galvanic tube U, in combination with an induction-coil, in which the primary current of battery B' is opened and closed by lever P of relay M', oscillating between metallic points *p p'*, as described.

168,061.



2. An insulated section of single-track railway, having arranged at each end thereof a main or primary battery and commutator connected with a polarized relay-magnet at the end of section opposite the end where the battery is, each of said relays controlling an electric signal at a distance from it, substantially as described.

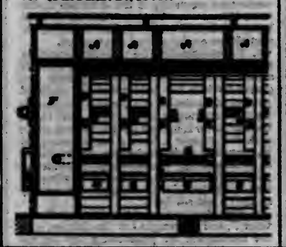
168,062. APPARATUS FOR CONDENSING VAPORS, &c. Robert Rowe, Greenock, and John Mather, Cathcart-on-Tyne, North Britain. (Filed July 10, 1875.)

Brief.—Vapor to be condensed is drawn into the apparatus by a current of air laden with moisture. The partially-condensed vapor strikes a baffle-plate, and, being deflected downward out of the line of the blast, flows quietly backward along the shaft, and out through a hole bored in the shaft into the cool compartment below.



The apparatus herein described, consisting of the shelves B, blocks C, provided with tapered openings D, baffle-plates F, pipes H, *d*, and *e*, and tanks G, all combined and operating together as described.

168,063. STEAM-GAGE. ABM. M. Shrewsbury and Thomas F. Medrath, Newark, assignors to John B. MacPherson, Jersey City, N. J. (Filed Apr. 27, 1875.)

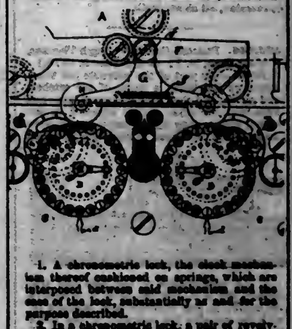


1. In a stock-car, a feed and water trough composed of separate sections, each section fitting between two wall-posts, and supported upon a continuous chain, whereby all the troughs may be simultaneously turned into position for feeding or watering, or turned up out of the way, substantially as described.

2. In a car for transporting live stock, the combination of the bins A, provided with the supply-openings E and chutes D, partitions *c*, operated by the rods *b*, and levers *a*, arranged to operate substantially as and for the purpose described.

3. In a car for transporting live stock, the combination of troughs C, chafts D, and levers E, substantially as and for the purposes set forth and shown.

168,065. TIME-LOCKS. Henry Stockwell, Stamford, Conn. (Filed Mar. 10, 1875.)



1. A chronometric lock, the clock mechanism thereof enshrined on springs, which are interposed between said mechanism and the case of the lock, substantially as and for the purpose described.

2. In a chronometric lock, a pair of revolving disks provided with a series of adjustable pins, whereby the locking and unlocking of the lock may be fixed at any desired hours or periods of time, substantially as and for the purpose described.

3. In a chronometric lock, the adjustable pins for determining the time of locking or unlocking, in combination with friction-stops, for securing them in the desired positions, substantially as and for the purpose described.

4. In a chronometric lock, the combination of two separate and independent clock mechanisms, each having a revolving disk provided with a series of adjustable pins, over which the yoke rides, with locking or dogging mechanism connected to lock, and operated by either one or both of said disks, substantially as and for the purpose set forth.

5. In a chronometric lock, a yoke resting upon moving supports, which are actuated by independent clock mechanisms, the motion of any one of which supports will, through said yoke, effect the locking and unlocking of the lock, substantially as shown and described.

6. In a chronometric lock constructed to automatically lock and unlock, a yoke-device operated and released by the clock mechanism, and intermediately between the clock mechanism and the locking mechanism, to prevent the operation of the clock mechanism from being stopped by the blocking of the bolt mechanism of the lock, substantially as shown and described.

7. In a chronometric lock, two revolving disks, with a series of adjustable pins, and connected, to be reversed independently of their axes or not, as may be desired, substantially as and for the purpose described.

8. In a chronometric lock, the combination of the yoke, pivoted to the lever, with one or more revolving disks, and with rollers bearing thereon, substantially as and for the purpose described.

9. In a chronometric lock, the combination of the yoke, having a pitching device, with the lever and gate or dog, substantially as and for the purpose described.

10. In a chronometric lock, the yoke pivoted to and in connection with the locking lever, as and for the purposes described.

11. In a chronometric lock, the combination of an oscillating lever with the yoke pivoted to it, and with a sliding dog or block, substantially as and for the purpose described.

12. In a chronometric lock, the combination of an oscillating lever with a counter-weight and yoke, substantially as and for the purpose specified.

168,666. SHEET-IRON BLANKS. G. B. Taylor, Philadelphia, Pa. [Filed May 26, 1875.]



As a new article of manufacture and commerce, plates of sheet-iron tinned on both sides and at all the edges, and shaped for convenience into, or forming parts of, articles of tin-ware without being sheared prior to such conversion, all as set forth.

168,667. PLANER-CUTTERS. Hugh Thomas, New York, N. Y. [Filed June 8, 1875.]

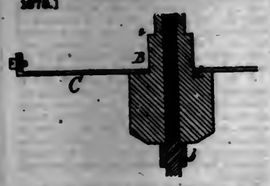
Brief.—One part of the movable jaw is adjusted on the base by means of the ratchets and pawls, and then fixed by screw-bolts and nuts, and the other part is adjusted by entablature, and fixed by screws and nuts. Supplementary jaws are used to hold small articles.



1. The combination of the base and stationary jaw A B, grooved, as at E, to receive the screw H, and provided with ratchets D, with the movable jaw composed of the parts C O O, shown as being slotted, the part C provided with pawls N, and adjustably attached to the base, and the part O adjustably attached to the part C by screw-bolts, through their respective slots, substantially as shown and described.

2. The pins R, constructed with their faces tapering to their edges r, and with tongues s s on the upper parts of their jaws having grooved backs in combination with jaws B C, having the grooves t, substantially as and for the purpose herein described.

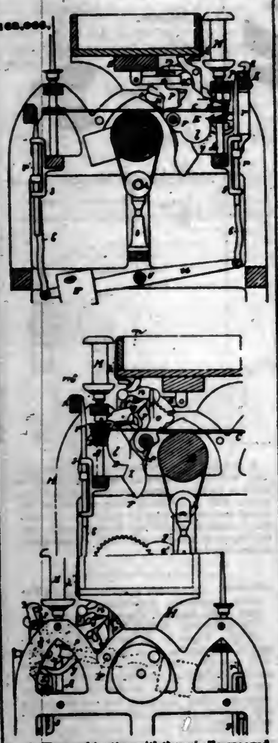
168,668. COMPOUND BALANCE-STAFFS FOR WATCHES. John J. Thornton, Cleveland, Ohio, assignor of one-half his right to Dan E. Ridgway, same place. [Filed May 18, 1875.]



The compound balance-staff for watches described, consisting of the staff proper, A, having the pivots turned on its ends, and a shoulder near its middle, above which it is screw-threaded, and the internally-threaded sleeve or collet B, which screws onto the said staff proper until it abuts against the said shoulder, the said sleeve or collet B being provided with shoulders d d, for supporting the hub of the balance C and the hair-spring collet, substantially as described and shown.

168,669. MACHINERY FOR SPOOLING YARNS. Axel M. Wade, Lawrence, Mass. [Filed July 8, 1875.]

Brief.—The rate of revolution of the bobbin-spindle is automatically increased on the upward movement of the bolt from a lower to the next higher groove of a conical pulley, and when the upward is full and the belt has reached the highest groove, it is automatically returned by one stroke of the shifter to the lowest groove.



1. The combination, with the spindle-grooved conical pulley B, as described, and the belt-shipper E, of mechanism, substantially as specified, for periodically moving the shipper E, whereby the driving-band is caused to move successively from one groove up into the next one of a series of grooves, a b c d e, of said pulley, said mechanism consisting of the rack m and its catch-pawl G, the hook n', lever I, hooked pawl n, toothed sector o, shaft F, stopper p, catch q, reciprocating bar K, (provided with mechanism for operating it as described,) ratchet-wheel s, retaining-pawl p, lever-pawl r, stud s', and vibrating arm M', all applied and arranged substantially as shown and set forth.

2. The combination of the spindle-grooved conical pulley B, as described, the belt-shipper E, and the mechanism for periodically moving the shipper to cause the driving-band to be moved upward successively from groove to groove of said pulley B, with mechanism, substantially as described, which, as the spool-head having been completed, causes the driving-band to pass from the highest down into the lowest of the grooves of the pulley, said mechanism consisting of the detacher O, elevator F, and the weight l of the shipper, all being connected, applied, and arranged essentially as explained.

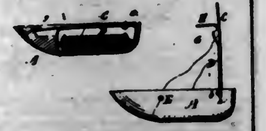
3. The combination, for periodically moving the shipper E, whereby the driving-band is caused to be moved successively from one groove up into the next one of the series of grooves of the conical and grooved spindle-pulley B, of the rack m and its catch-pawl G, the hook n', lever I, hooked pawl n, toothed sector o, shaft F, stopper p, catch q, reciprocating bar K, (provided with mechanism for operating it, as described,) ratchet-wheel s, retaining-pawl p, lever-pawl r, stud s', and vibratory arm M', all applied and arranged substantially as shown and set forth.

4. The combination of the detacher O, elevator F, and the weight l of the shipper, with the mechanism for periodically moving the shipper E, whereby the driving-band is caused to be moved successively from one groove up into the next one of the series of grooves of the conical pulley B, substantially as specified, for periodically moving the shipper E, whereby the driving-band is caused to be moved successively from one groove up into the other of the said pulley B.

5. The guide-wheel h and its gravitating-carrier a', in combination with the driving-band, the spindle-pulley, and the shipper, provided with mechanism for operating the shipper, as specified.

168,670. SEWING-MACHINE SHUTTLES. H. L. Walker, Guelph, Canada. [Filed May 17, 1875.]

Brief.—The lower of two spring-plates pivoted in the top of the shuttle is bent down at its forward end, and holds the front end of the bobbin in place. The upper plate has a slot in its forward end, that fits over a pin in the front of the shuttle, to retain the plates in position. The thread is passed between the plates at the open end, and the degree of tension regulated by its proximity of the notch; it is placed into the connecting-point of the plates.

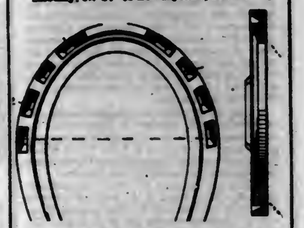


1. The spring-plate D, having the notches a, the slotted bent rod H, and the bridge G, combined with the spring-plate C, provided with the notch F, and plates being fastened together and pivoted to the shuttle, substantially as and for the purposes specified.

2. The spring-plate C, having the slot b and spring-plate D, provided with the slot f, pivoted to the shuttle and riveted together, as shown, combined with the bobbin B and pin g, substantially as and for the purposes specified.

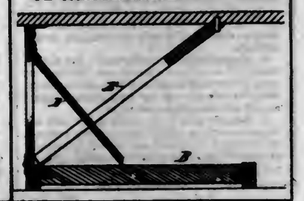
3. The shuttle-body A, provided with the pin g, in combination with the plate C, having the slot b, substantially as and for the purpose specified.

168,671. HORSESHOES. James T. Walker, Albany, N. Y. [Filed Apr. 17, 1875.]



The herein-described horseshoe, formed of a single piece of metal, with the outer ridge b, having the toe-calk projecting from and formed therewith, and of a width equal to one-half the width of the shoe, and having the nail-holes c, all as set forth.

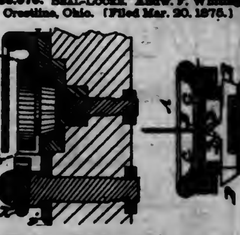
168,672. INCRUSTE-BOARDS. John Watson, Williamsport, assignor of one-half his right to William T. Wagner, Philadelphia, Pa. [Filed Dec. 8, 1874.]



The combination of the base B, ironing-board A, frame C hinged to both ironing-board and base, and the braces D and E, the former being hinged at the top to the frame C, and the latter being forked, jointed at its lower end to the base, crossing the brace D at right angles, and having at its upper end a recess for receiving a stud upon the ironing-board, all as set forth.

168,673. FLY-TRAPS. J. Spence White, Prescott, Wis. [Filed Aug. 20, 1875.]

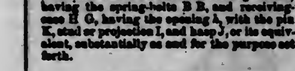
Brief.—A spring-hoop for closing the entrance to the trap, and sustaining the light from the feeding-board.



A fly-trap, having a conical-shaped bowl, open in the center, and made of glass, wire, or other suitable material, surmounted by a glass receiver, and having a spring-hoop with thumb-piece, all combined for the purpose and in the manner herein shown and described.

168,674. TUBE-CLEANERS. John Williams, Canton, Mass. [Filed May 26, 1875.]

Brief.—The scraper or cutters may be expanded or contracted to fit varying-sized tubes.



1. The improved tube-cleaner described, consisting of the staff A, collet I, spring H, stocks B B', plates F, and blade C, combined to operate substantially as and for the purpose set forth.

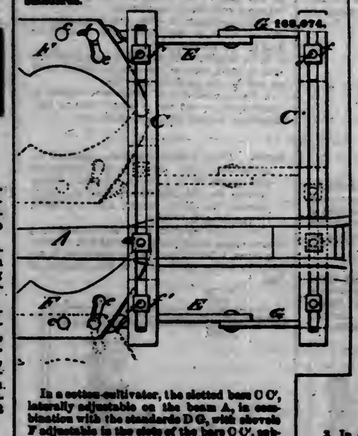
2. In a tube-cleaner, substantially such as described, the plate F, provided with the plate e e, substantially as and for the purpose set forth and specified.

168,675. PROCESSES OF PRESERVING MEAT. John A. Wilson, Chicago, Ill. [Filed June 30, 1875.]

The above-described process of preserving cooked meat in a solid form—that is to say, cooking the meat, freeing it from bone and gristle, packing it compactively dry, without gravy or added liquid, into a can of suitable form to collapse readily, until the can is full of meat, then sealing the can and heating it, and puncturing and resealing, substantially as specified.

168,676. CULTIVATORS. Henry Winfield and Wm. P. Flynn, Pantego, N. C. [Filed June 5, 1875.]

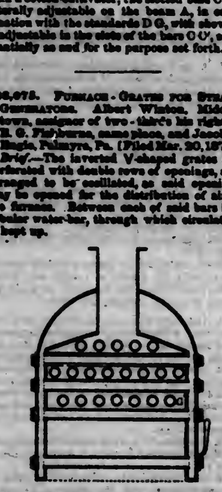
Brief.—Arrangement and adjustability of the cross-bars upon the beam, of the standards in the bars, and of the shovels upon the standards.



In a cotton-cultivator, the slotted bars C C', laterally adjustable on the beam A, in combination with the standards D G, with shovels F adjustable in the slots of the bars C C', substantially as and for the purpose set forth.

168,677. FURNACE-GRATES FOR STEAM-GENERATORS. Albert Whitlock, Middletown, assignor of two-thirds his right to H. G. Fitzburne, same place, and Josiah S. Hagin, Palmyra, Pa. [Filed Mar. 20, 1875.]

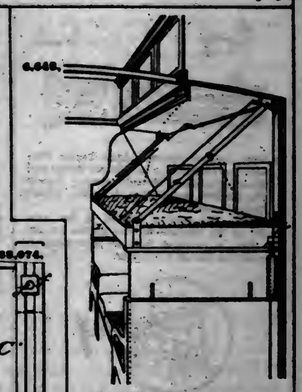
Brief.—The inverted V-shaped grates are perforated with double rows of openings, and arranged to be oscillated, so said openings may be opened for the distribution of air to the furnace. Between each of said bars is a tubular water-bar, through which circulation is kept up.



The combination, in a steam-generator, of alternate inverted V-shaped oscillating grate-bars and tubular water-bars, they being arranged to operate substantially as set forth.

REISSUES.

6,646. SLEEPING-CARS. Ben Field, Albion, N. Y., and Geo. M. Pullman, Chicago, Ill., assignors, by mesne assignments, to Geo. M. Pullman. Patent No. 60,093, dated Sept. 19, 1866; reissue No. 2,925, dated Feb. 11, 1868; reissue No. 3,254, dated Jan. 6, 1869. [Filed July 27, 1875.]



In combination with the upper berth, a recess formed against the side of the car, the parts being so constructed that the berth may occupy a horizontal position at night, and be turned up into such recess by day, substantially as described.

4. In combination with the stationary back of the seat-frame, a movable piece, which, when placed in position for night use, extends substantially from the cloth to the wall of the car, and operates to complete the partition between the adjoining lower berths, substantially as set forth.

5. In combination with two adjoining upper berths, but separate therefrom, a movable partition in one piece, which, when placed in position for night use, serves as the head-board of the one berth and the foot-board of the other, and which can be moved away from between the sections, so as to leave the upper part of the car clear by day, substantially as described.

6. A box or tray adapted to contain a mattress, and connected with the wall of the car at the upper edge of one of its sides, substantially as set forth, whereby it can be made to occupy a lower position at night and leave more room under it by day than if otherwise constructed and supported.

7. An upper berth, having its outer or wall side made inclined or sloping, substantially as and for the purpose set forth.

8. The construction and arrangement of a seat-back, with the back and seat-cushion hinged together and disconnected from the seat-frame, so that the back-cushion may be placed horizontally on the seat-frame, and the seat-cushion extended to meet the seat-cushion of the opposite seat, substantially as described.

6,650. PUMPS. Wm. J. Johnson, Newton, Mass. Patent No. 30,480, dated Oct. 30, 1860; extended seven years. [Filed Aug. 4, 1875.]

Brief.—A stirrup is attached to the cylinder above the suction-orifice, to receive pressure by the foot of the operator, and so hold the pump in position.

A stirrup, in combination with and arranged upon the cylinder of a pump above the suction-orifice or water-inlet, substantially as described.



6,660.

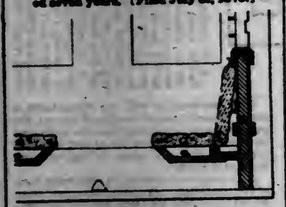
6,660. LAMP-BURNERS. Alvin Taplin, Forestville, assignor to the Bristol Brass and Clock Company, Bristol, Conn. Patent No. 119,061, dated Sept. 19, 1871. [Filed Sept. 11, 1876.]

Brief.—The wick is pressed to the inner tube by the ratchets as it is moved up, and its form is changed from an approximately flat field to that of a cylinder.



The ratchets C C', having their two shafts *e e'* geared together by spur-wheels *d* at one end of each, in combination with the inner tube of a V or U shape, the sides of which are parallel with the axes of the ratchets, essentially as shown and described.

6,661. SLEEPING-CARS. Eli Wheeler, Sherrill, N. Y., assignor, by mesne assignments, to Geo. M. Pullman, Chicago, Ill. Patent No. 88,499, dated Sept. 30, 1869; extended seven years. [Filed July 31, 1876.]



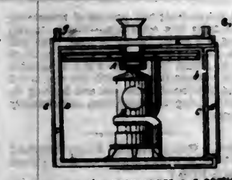
1. Movable diaphragms or partitions, which aid in dividing the car into compartments when the berths are arranged for sleeping, and which can be moved out of the way to afford ventilation and otherwise accommodate the passengers during the day, substantially as described.

2. Movable diaphragms or partitions, which aid in supporting the upper berths, and in dividing the car into compartments when the berths are arranged for sleeping, and which can be moved out of the way during the day, to afford ventilation and otherwise accommodate the passengers, substantially as described.

3. In combination with the upper berths, movable diaphragms or partitions, constructed and arranged to operate substantially as set forth, so that while forming the head and foot boards of such berths at night, with capacity of being moved out of the way by day, they will also permit the circulation of the air above the berths, as described.

4. In combination with the box-formed supports of the seats, the seat bottoms and backs, constructed and arranged to operate in the manner specified, so that when the bottoms of the seats are turned over to fill up the space between each pair of seats the bed clothing in the box will be exposed, so as to be readily removed, and, when the seats are turned down to fit the place occupied by the bottoms, the boxes will thereby be closed up and a continuous bed formed from the one partition to the other, substantially as set forth.

6,662. RAILROAD-CAR HEATERS. Edward H. Ashcroft, Lynn, assignor, by mesne assignments, to E. A. Ballou, Boston, Mass., assignor to Edward H. Ashcroft. Patent No. 54,062, dated May 15, 1866; reissue No. 2,917, dated Apr. 14, 1868. [Filed Aug. 2, 1875.]



6,662.

1. In a car, the water-space *c*, a portion of which is led or conducted through or around a stove or furnace, whereby the entire water in the space *c* is heated for the purpose of warming said car or apartment.

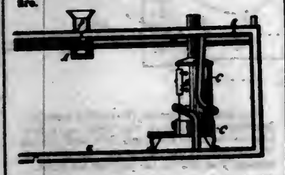
2. In combination with the water-space *c* the induction or feed pipe *f*, substantially as and for the purposes shown.

3. In combination with the water-space *c*, one or more vents or escapes, *g*, substantially as and for the purpose described.

4. The combination of the stove or furnace S, water-space *c*, and one or more vents, *g*, substantially as and for purposes shown.

6,663. FIRE-EXTINGUISHERS. Edward H. Ashcroft, Lynn, assignor, by mesne assignments, to E. A. Ballou, Boston, Mass. Patent No. 54,062, dated May 15, 1866; reissue No. 2,917, dated Apr. 14, 1868. [Filed Aug. 2, 1875.]

Brief.—The apartment is surrounded by a water-space, which communicates with shower-ing-pipes, a fusible plug being employed to arrest the water, until fused by the presence of fire.



1. A car or other apartment, provided with a water tank or space, *c*, in combination with one or more showering-pipes, *f*, and a fusible-plug apparatus, substantially as and for the purpose shown.

2. In combination with the water-space *c*, the fusible plug A and *i*, substantially as and for the purpose shown.

6,664. INCRUSTATION APPARATUS. Gideon W. Cottingham, Rockport, Tex., assignor, by mesne assignments, to the Cottingham Boiling Machine Company. Patent No. 144,742, dated Nov. 18, 1873. [Filed Aug. 19, 1876.]

Brief.—In a suitable frame a table is moved horizontally by means of rollers and cords under a sad-iron, which is moved vertically by means of levers, pulleys, and cords.

1. The vertically-moving iron, in combination with a horizontally-reciprocating table, and mechanism to operate both the iron and table, as and for the purpose herein specified.

2. In an ironing-machine, the vertically-moving iron and horizontally-reciprocating table, and the crank L, arranged on the front, whereby one person can operate the table and govern the iron, substantially as and for the purpose described.

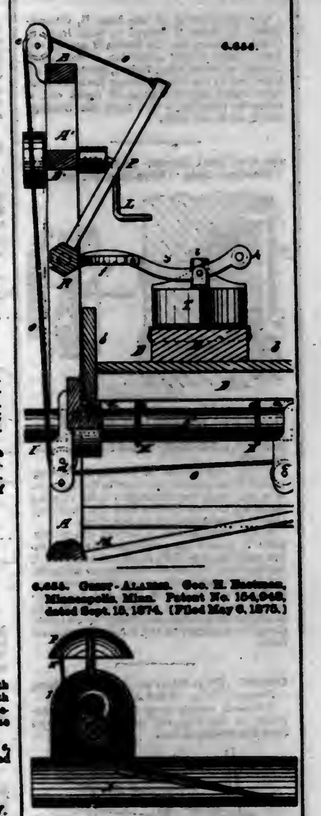
3. The table D, having base *b*, vertical parts *b' b'*, and elevated portion E, substantially as and for the purposes herein set forth.

4. The horizontally-reciprocating table D, in combination with the rollers *a*, rollers F, and cords H H, substantially as and for the purposes herein set forth.

5. The table D, having base *b*, vertical parts *b' b'*, and elevated portion E, in combination with the guides C C and rollers *a a*, substantially as and for the purpose specified.

6. The curved arm S, having handle *h* and bracket *f' f'*, in combination with the pivoted iron T, rock-shaft R, and uprights S S, all constructed and arranged for operation, as and for the purpose specified.

7. In combination with the iron T, the arm S, rock-shaft R, lever P, cord O, and treadle M, all constructed for operation as and for the purpose specified.



6,664.

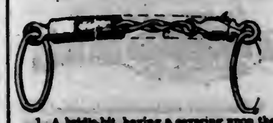
6,665. GRIST-ALARMS. Geo. H. Eastman, Minneapolis, Minn. Patent No. 164,048, dated Sept. 15, 1874. [Filed May 6, 1875.]

1. The combination of a grist-alarm with the conduit-pipe for the passage of grain in a mill, substantially as and for the purpose set forth.

2. In combination with the grain-conduit A, a swinging pallet, B, and suitable mechanism for giving an alarm, substantially as and for the purpose set forth.

3. The grain-conduit A and the swinging pallet B, in combination with the detent-pawl H, clock-mechanism E F', hammer K, and alarm P, all constructed, arranged, and operated substantially as set forth.

6,666. BITS FOR BRIDLES. S. L. Bowley, New Britain, Conn. Patent No. 76,921, dated Apr. 14, 1868. [Filed Aug. 9, 1876.]



1. A bridle-bit, having a covering upon the mouth-piece of soft vulcanized compound, molded upon the bit and fixed thereon by heat, substantially as specified.

2. In a bridle-bit the combination of the covering of vulcanizable compound and the end ferrules or abutting pieces, substantially as described.

3. In a bridle-bit the combination of a chain or flexible mouth-piece, with a covering of soft vulcanized rubber or gum, so as to form a flexible bit, substantially as specified.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 13. TUESDAY, SEPTEMBER 28, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

WATERS, FARRINGTON, AND POWELL *vs.* YOST AND WALLACE.—*Interference.*

[*Appeal from the Examiners-in-Chief in the matter of the interference between the application of Benj. F. Waters, Joel Farrington, and Charles R. Powell, and the application of George W. N. Yost and O. D. Wallace, for letters patent for an* "IMPROVEMENT IN HARVESTERS."—*Decided May* 3, 1875.]

In a claim for a combination of devices, the only novel element therein being entirely separate and distinct from the others, and accomplishing in itself an entirely independent result: *Held*, that as this feature was not the joint invention of either of the respective joint parties to the record, neither party was entitled to a patent, and the interference must therefore be dissolved.

THACHER, *Commissioner:*

The invention in controversy consists of a combination of devices for raising the cutting apparatus of a harvester. These devices consist of a lever pivoted to the tongue, and provided at its lower end with a cogged segment which gears into a cogged rack-horn rigidly attached to the front end of the main frame; a chain depending from the rack-horn, the lower end of which is secured to a coupling-arm, and a second chain secured to the tongue, and then extended up over a pulley on the extremity of the rack-horn, then downward and attached to a tilting-lever, which is pivoted to the coupling-arm near its outer end, and the lower end of which rests upon the projecting heel of the cutter-bar. The coupling-bar is attached to the front end of the main frame, and the cutter-bar is hinged to the outer end of the coupling-arm. By pulling back the lifting-lever, the rack-horn and end of the main frame are raised, carrying with them the chains attached thereto, which in turn raise the coupling-arm and cutter-bar. The outer end of the cutter-bar is raised much faster and higher than its inner end by the operation of the second chain fastened at one end to the tongue and at the other to the tilting-lever, after passing over the pulley on the end of the rack-horn. The accelerated speed of this chain also takes up the slack necessary to be had in giving freedom of movement to the cutter-bar.

The first feature of the combination above described—viz, the lever pivoted to the tongue, or to one side of the main frame, with a cogged segment upon its end and gearing with a cogged rack, for the purpose of hoisting the front end of a vibrating frame and cutter-bar of a mowing-machine—is old, as may be seen by reference to the patent of S. S. Allen, April 7, 1857, and others that might be mentioned.

The only really novel feature in the combination in question is the manner of connecting the lever with the cutter-bar by means of the chain connected at one end to the tongue, then passed over a pulley on the end of the rack-horn and attached at the other end to the lever fixed upon the heel of the cutter-bar. The operation of the latter-named feature, by which an accelerated motion is given to the chain, thereby raising the end of the cutter-bar to a greater height than the remaining parts of the apparatus, does not depend for its merit upon its connection with the lever and cog arrangement, but accomplishes an entirely separate and independent result in itself. It being, too, the only novel feature of this invention, the right of priority in this contest should be awarded to that party who was the first to clearly describe its advantages, propose its adoption upon a mowing-machine substantially in the manner and form now claimed, and who actually embodied it in that form, or was diligently proceeding thereto. Now, upon carefully considering the testimony adduced in this case, I find that neither of the joint parties to this interference is the inventor of this device, or claims to be. Of the parties upon whom rests the burden of proof in this case—Waters, Farrington, and Powell—

Waters and Farrington admit that Powell originated and adopted this particular feature, while they simply urged upon him its connection with the lever and cog rack arrangement, of which they claim to be the inventors. On the other hand, Yost gives credit to Wallace for the lever arrangement, and both concede to one R. D. Warner the origin of the pulley upon the end of the rack-horn and the passing over it of the chain from the tongue to the cutter-bar.

It would be difficult to decide, upon the contradictory testimony in this case, to which of the persons named (Powell or Warner) belongs the title of prior inventor, and until these parties appear as contesting applicants, such a decision would be unnecessary and uncalled for.

Neither of the parties, as they appear upon the record, being inventors of the essential subject-matter in dispute, neither is entitled to receive a patent, and the interference is therefore dissolved.

CARTER AND DWYER *vs.* PERRY AND DICKEY.—*Interference.*

[Appeal from the Examiner of Interferences in the matter of the interference of Carter and Dwyer against Perry and Dickey, relating to applications for patents for "IMPROVEMENT IN STOVES."—*Decided September 20, 1875.]*

Rules relating to the right of parties to make a joint application will not be enforced more rigidly by the Office than by the courts. The oath, therefore, of the joint applicants will be considered as strong presumptive proof in their favor, and they will be given the benefit of all doubts.

It is well settled that if two inventors are on equal terms in respect to the invention, such as partners in the business, and both contribute to the essential parts of the organization regarded as a whole, the patent would be invalid if issued to one of them.

The interference being on the following claims of one of the joint parties: First, the combination of ascending and descending flues placed on the rear side of a stove, illuminating windows or doors in the draft-chamber, base-section, and the free open space R between the top surface of the grate or fire bed and the base of the fire pot or combustion chamber proper; and, third, the grate-frame constructed with legs, supported upon and in combination with a flange or projections upon the side wall of the draft-chamber base-section, substantially as described: *Held*, that, considered apart from the question of novelty, the claims were for two combinations of elements intimately related, accomplishing a new result when so combined, and forming an essential part of one complete organization. The case on this point distinguished from *Potter & Wilson* (2 Fish., 102) and *Birdsell* vs. *McDonald* et al. (6 O. G., 682) cited in support.

These combinations being the product of the mutual suggestions and joint efforts of the respective joint applicants, the origin of each of their mental conceptions, or the order of them in time, has no material weight, and their applications held to have been properly made.

SPEAR, *Acting Commissioner:*

It appears from the record in this case that the Examiner of Interferences discussed the question of priority of invention, and came to certain conclusions in regard to it, but he also found that, in accordance with his view of the case, neither Carter and Dwyer, on the one hand, nor Perry and Dickey on the other, were properly joined in their respective applications. He, therefore, dissolved the interference, and assigned a limit of thirty days for appeal from his decision upon this point. Some question has been raised as to the propriety of his action, or rather, in relation, more especially to the form of it, and a motion was made simultaneously with this appeal, for the purpose of setting aside this decision on the ground that it was improperly made, and that the action taken by the Examiner should have been a suspension of the interference with reference to the Primary Examiner for determining this question of joint or several invention.

I need not go into any extended discussion of this matter, since it is one of form merely, or will be with my view of the case as brought before me by this appeal. Rule 59 provides for a dissolution of the interference when there has been such irregularity in declaring it as would preclude proper determination of the question of right between the parties, in which case appeal lies to the Commissioner in person. In case some statutory bar appeared during the prosecution of the interference to the issue of any patent for the invention in dispute, then it was provided that the interference should be suspended, and the Commissioner's attention be called to it, in order that he might decide whether or not it should be referred to the Primary Examiner for determination by *ex parte* proceeding of the question of patentability.

I believe it has been the custom of the Commissioner, although such matters are purely *ex parte*, to hear both parties, in order that he might be as fully informed as possible in relation to the merits of the case. I have, therefore, listened to the arguments of counsel representing both parties to this controversy. In point of fact, as the matter stands, it is impossible to determine the question of right between the parties until this preliminary question raised by the appeal be settled. This question is not whether there be anything patentable to award the one party or the other, but whether there be any party to whom the invention could be awarded. The patentability of the subject-matter has not been called in question by either party. The Examiner found that there was no proper party on either side to whom the patent could issue. In his judgment the testimony taken showed that neither Perry and Dickey on the one hand nor Carter and Dwyer on the other could properly apply as joint inventors of the device claimed in the first and third clauses in their respective applications. In relation to the attitude of the parties it should be stated that the appeal is taken by Perry and Dickey. They assert for themselves joint invention, and admit that Carter and Dwyer, so far as the evidence goes, are properly joined in their application. Carter and Dwyer, though taking no appeal, content themselves with denying the correctness of the Examiner's decision against themselves, and the whole force of their argument was spent in the effort to show that the decision is correct as against Perry and Dickey. The appeal, however, by one party, inevitably brings up the whole matter, since I could not properly overrule the decision of the Examiner unless satisfied as to the proper standing of both. It was urged by counsel for Carter and Dwyer, first, that Perry and Dickey were not joint inventors of the subject-matter of the first and third claims; and that, as the Examiner decided, Perry was the inventor of the subject-matter of the first and Dickey of that of the third claim; further, that Williams, an employé of Perry and Dickey, should be joined with them in the application. I cannot think it my duty, as urged by counsel for Carter and Dwyer, to enforce the rules relating to this matter more rigidly against these joint applicants than would the courts if the same question were before them. Undoubtedly the courts might overlook defects in mere form, in order to save the rights of parties, but this is not strictly a question of form, like the omission of an oath or a defect in the form of a claim, but an inquiry as to the proper parties to whom the patent should issue. Indeed, if any reason exists for variation from what would be considered the ruling of the courts, it would seem to point to greater leniency in such a matter as this, for the purpose of the interference, under the law, is simply to determine the question of priority of invention. That was the issue defined by the Office, and I am bound to believe that it was that issue, and that alone, which Perry and Dickey had in view in giving their testimony in this case. So that, even if the Commissioner pursued the ordinary practice of the Office and searched in the testimony for evidence bearing upon matters outside of the issue prescribed by the law, it would seem to be unwise in considering this testimony to set up any presumption against applicant's oath of joint invention. Further than this, leaving the alleged claim of Williams out of consideration (and he is not asserting any for himself) it does not concern the public or the Office, nor could it rightfully concern Carter and Dwyer, whether Perry and Dickey should make application jointly or severally. For if they are the prior inventors of separate and independent parts no patent could issue to their opponents, or would be valid if issued, and it is the same thing whether Perry and Dickey have joint or separate patents. Since, therefore, the rights of no other parties are concerned, and the patent is taken at the risk of the applicants themselves, it would seem good policy, in considering questions like this to give the joint applicants the benefit of any doubt which might exist; to leave the matter (as was said in *Neal* and *Adams* vs. *Daniels*, C. D., 1871) where the parties themselves have placed it; or, (as was said in *Wheeler* vs. *Russell* and *Miller*, C. D., 1872,) not to allow the presumption of joint invention once created by filing an application upon a joint oath to be overthrown, except by evidence of the most unequivocal character. The inquiry raised by this appeal leads into metaphysical subtleties difficult if not impossible to disentangle, and may concern operations of the human mind known only, if known at all, to the parties themselves. Only upon two conditions can the way in such an inquiry be plain and sure. One is when the invention is not a unit, and it is clear or conceded that each of the parties made distinct and independent improvements on the same machine, (*Potter* vs. *Wilson*, 2 Fish., 107,) and the other is where the invention was made by one party without any possibility of communication with the other. If, therefore, in this case the invention be an entirety, a single complete organization, not properly separable into its elements without detriment to the whole structure, or, if, being separable into parts, each of which could properly be subject of claims as a distinct improvement upon the same stove, and the parties are proven to have been in conference, and to have made mutual suggestions in the course of the contriving and experimenting by which the stove was produced, I do not think I should be justified in going behind their oath, unless constrained by evidence perfectly clear and inexplicable on any other hypothesis than that of independent invention. It should be observed that the applicants Perry and Dickey are on equal terms in respect to the invention, partners in the business, and not in any relation of employer and employé, and neither can have any ground for appropriating the efforts or suggestions of the other in any way whatever. In such a case it is well settled that if both contribute to the essential parts of the organization regarded as a whole, the patent would be invalid if issued to one, (*Watson* vs. *Blagden*, 4 Washington C. C. Reports, 580.) The claims of Perry and Dickey, covering matters which are the subjects of this controversy, are as follows:

1. The combination of ascending and descending flues placed on the rear side of a stove, illuminating windows or doors in the draft-chamber base section, and the free open space R between the top surface of the grate or fire bed, and the base of the fire-pot or combustion-chamber proper.

3. The grate-frame constructed with legs, supported upon and in combination with a flange or projections upon the side wall of the draft-chamber base-section, substantially as described.

I proceed first to consider whether in any way or to any extent these two combinations form a part of one complete whole. The first and third claims of Carter and Dwyer are the same in substance as those quoted, and the Examiner decided in relation to them that Carter is the inventor of one and Dwyer of the other. I must assume that the combinations are new and patentable. I could not go into any consideration of the questions of invention or novelty at this stage of the proceedings unless there were manifest error; but even on the hypothesis that the combinations were old or were separately conceived of, yet if being put into one stove any new result or improved result were produced, not due to the action of the separate parts alone, that would constitute an invention, and make those who had first embodied them in a stove, joint inventors. Referring to the parts specified in the claim, and viewing them in relation to each other, I find that the location of the ascending and descending flues, with reference to the illuminating windows or doors in the draft-chamber base-section, is such as to give ample space for those windows or doors; that the open space between the top surface of the grate and the base of the fire-pot is opposite the window or door, for the purpose of allowing the light from the incandescent coal exposed in that free space to radiate through the windows, and also to allow clinkers to be removed by a poker introduced through the opening. In this construction it further appears that this grate must be isolated from the sides of the draft-chamber base-section, in order to allow a free circulation of air, which must rise around the grate, and be fed freely to the burning coal, in order to produce the required vivid combustion. Further, that the grate must be made capable of adjustment at different heights, in order to adapt it to different sizes of coal which may be used in the stove, and that the coal of whatever size may be properly exposed in the free space opposite the windows. Now the legs occupying but little room allow free circulation of air around the grate, and, at the same time, admit of the easy adjustment of the grate by replacement or otherwise, to regulate the space between the grate and fire-pot. There seems to me to be a close and intimate connection between all these parts. The illuminating windows are allowed room by the location of the flues. They depend for their function upon the open space between the grates, and, more remotely, upon the open space for the admission of the air around the grate.

The open spaces above the grate and around it have certain relations to the supports.

This is a very different case from that considered in *Potter* vs. *Wilson*, cited above, where the improvement in the feed of a sewing-machine was the subject-matter of one claim, and the improvement in set-screw above the needle the subject matter of the other, parts manifestly independent in construction and operation, though used on the same machine.

In the case of *Birdsell* vs. *McDonald* et al., (6 O. G., 682,) which was a suit founded upon a patent for machine for getting out clover-seed, the machine consisted of separate parts for thrashing, hulling, bolting, screening, fanning, and conveying, claimed in combination, all of which, in themselves, were old. The court held:

> The machine, though made up of several elements, is a unit. Its purpose is to get out clover-seed and prepare it for use. All its parts co-operate for that result, and are necessary to that end. Without either there would be a failure to the extent of the function which it performs, and the work intended to be accomplished would be imperfectly done. It is not necessary that every function should be performed simultaneously.

The organization under discussion is more clearly a unit than was that before the court in the case just referred to. The parts are intimately related, and the result appears to me to be a new result by reason of the union of the combinations claimed in the two clauses of claim. The stove thus made up and presented as the subject of letters patent was unquestionably made under the joint direction and joint efforts of Perry and Dickey. Does the fact (even if it be a fact) that one party separately conceived of one part and the other of the other part, or that, for their better protection, two claims are made, each covering less than the whole, constitute them any the less joint inventors? Further, in relation to the invention of Perry and Dickey, the elements which are included in the first and third claims, so far as I am informed, had no legal existence prior to their embodiment in the stove, which is the subject of this controversy. I believe that the attempts at separate embodiments of the claims were mere experiments which could not be the foundation of a patent. Whatever, therefore, may have been the original conceptions, or by whichever party originated, the embodiment is the only patentable invention, and that (leaving out the claim set up for Williams) was made by both in co-operation. Neither the origin of the mental conceptions, therefore, nor the order of them in time, has any material weight in the consideration of this question. It is not the conceptions that we deal with here, but the joint production. When the complete stove was made then the invention was made, and those who made the completed stove were the inventors of it. Therefore, without going any further into the investigation of the relation of the parties in respect to the combinations claimed in the two clauses taken separately, I should not feel justified in overturning the oath of these applicants, and putting them to the risk of taking out separate patents against their own wish; and on this ground, so far as I am informed, Carter and Dwyer have the same standing as the appellants, and must be considered joint inventors for the same reason.

The testimony of Perry and Dickey and Williams in relation to their respective acts and suggestions in the production of the invention in controversy entered so largely into the discussion at the hearing that I cannot dismiss it without some notice. I have examined, so far as seemed necessary or profitable, the very voluminous testimony submitted in the case. It seems clear that Perry's was the leading mind in the conception of the subject-matter of the first claim, and that Dickey was more prominent in bringing forward the subject of the third claim. Yet it is equally clear that there was mutual consultation at almost every step in the organization of the stove. This is repeatedly asserted by the witnesses, Perry and Dickey. Now, granting that Perry conceived the subject-matter of the first and Dickey the subject-matter of the third claim, yet, if in perfecting and embodying the invention each received suggestions from the other, it is absolutely impossible for any one, excepting themselves, to determine to what extent those suggestions modified the original conceptions of the other, or entered into the invention. Whatever statements either party may have made, therefore, in regard to the invention which might appear to indicate that each regarded himself as separate inventor of the respective combinations, I am bound to consider these declarations in the light of their oath, and of the further declarations in respect to the mutual suggestions made by each party; and it is not any matter of surprise if each party, being first to conceive of one or the other of the inventions, and having in view, in giving the testimony, only the matter of priority, should have spoken of the combination as his own invention. To take those unguarded expressions as conclusive and as sufficient to destroy the force of their oath and their testimony as to the mutual suggestions, would seem to me unwise and unsafe.

In respect to the part which Williams is alleged to have taken in the invention, it seems necessary only to say that the Examiner did not find him to be a joint inventor of the matter in controversy. I am satisfied that there is nothing in the evidence to sustain the claim set up for him. Whatever he may have done he did as a skilled workman, and contributed nothing of his own, amounting to a new and complete organization. I agree with the Examiner in that respect, but must overrule his decision and adjudge the parties to be joint inventors in accordance with their oath. The case is, therefore, remanded to the Examiner of Interferences, who will proceed, as soon as practicable, to determine the question of priority between the parties.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date September 28, 1875.]

8,663.—Glassware.—JAMES C. GILL, Pittsburg, Pa. Application filed September 4, 1875. Term of patent 7 years.

8,664.—Children's Carriages.—LEONARD B. HARRINGTON, Jr., Boston, Mass. Application filed March 6, 1875. Term of patent 7 years.

8,665.—Handles for Dinner, Tea, and Toilet Sets.—CHARLES F. HAVILAND, Paris, France. Application filed July 15, 1875. Term of patent 3½ years.

8,666.—Bottles.—GEORGE C. OVENS, Red Bank, N. J. Application filed September 17, 1875. Term of patent 7 years.

8,667 and 8,668.—Pans.—CHARLES ROWLAND, New York, N. Y.—Cases A and B. Applications filed August 26, 1875. Term of patents 3½ years.

8,669.—Illuminating-Sign.—FREDERICK MCLEWEE, New York, N. Y. Application filed September 17, 1875. Term of patent 7 years.

8,670.—Druggists' Shop-Bottles.—WILLIAM R. WARNER, Philadelphia, Pa., assignor to WILLIAM R. WARNER & Co., same place. Application filed September 1, 1875. Term of patent 7 years.

8,671.—Druggists' Shop-Bottle.—WILLIAM R. WARNER, Philadelphia, Pa., assignor to WILLIAM R. WARNER & Co., same place.—Case B. Application filed September 22, 1875. Term of patent 7 years.

8,672.—Bases for Inkstands.—BLOOMFIELD BROWER, New York, N. Y. Application filed July 7, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date September 28, 1875.]

2,987.—Corsets.—M. K. BORTREE & Co., Jackson, Mich. Application filed August 18, 1875.
"words 'DUPLEX CORSET.'"

2,988.—Cod-Liver Oil.—BURTIN & ARMSTRONG, Terre Haute, Ind. Application filed August 4, 1875.
"words 'Glyconin and Cod Liver Oil'" and the monogram 'B. A.'"

2,989.—Washing-Blue.—C. H. FISCHER & Co., New York, N. Y. Application filed July 2, 1875.
"a representation of a group or series of balls."

2,990.—Liquid and Paste Paints.—FRENCH, RICHARDS & Co., Philadelphia, Pa. Application filed July 17, 1875.
"figure of the buck's head and the word 'Trade-Mark' between the antlers."

2,991.—Cigars, &c.—HEPPENHEIMER & MAURER, New York, N. Y. Application filed June 18, 1875.
"words 'THE BIG BONANZA.'"

2,992.—Medicine.—T. F. X. KISSLING & Co., Lockport, N. Y. Application filed August 25, 1875.
"letters 'T. F. X. K. & Co.,'" and the word 'Lauingen,' and the arrangement of said letters and word."

2,993.—Leaf Tobacco.—MAYER BROS., New Orleans, La. Application filed August 16, 1875.
"figure of an elephant and the words 'Black Elephant.'"

2,994.—Whisky.—MILLS, JOHNSON & Co., Cincinnati, Ohio. Application filed August 25, 1875.
"stag and the word 'Antler.'"

2,995.—Paper Collars.—MOSELEY & MOODY, New York, N. Y. Application filed July 17, 1875.
"word 'BRIGNOLI.'"

2,996.—Polish for Linen, Muslin, &c.—JAMES M. MUNYON, Philadelphia, Pa. Application filed August 30, 1875.
"word 'STARCHOLINE.'"

2,997.—Cords, Fringes, Ribbons, &c.—SILBERMANN, HEINEMANN & Co., New York, N. Y. (Re-registration.) Application filed December 13, 1870.
"words 'Honest Measure.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date September 28, 1875.]

330.—Title: **"Pepsinated Food for Infants and Invalids."**—ALEXANDER GARCEAU, Boston, Mass. Application filed September 20, 1875.

331.—Title: **"Teethina—The only Tooth-Powder approved by the Tremont Dentistry of Boston."**—JAMES L. OLIVER, Boston, Mass. Application filed September 18, 1875.

332.—Title: **"50 Superior Carriage-Bolts of Best Refined Iron."**—THE PECK, STOW AND WILCOX COMPANY, Southington, Conn. Application filed September 20, 1875.

COPIES OF DRAWINGS OF BACK ISSUES.

Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 13, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 30, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)	6,500
SEWING-MACHINES and attachments	2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes	4,000
PRINTING; including presses, type, and printers' furniture.	2,500
FELTING and HATS; including caps, bonnets, flock, &c.	1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs	1,400
CARRIAGES and WAGONS	6,000
BRIDGES; including ferry-guards, girders and columns, piers	408
CARDING, CLOTH, CORDAGE, KNITTING, SILK, SPINNING, WEAVING	4,800
RAILWAYS, complete, about	3,500
ELECTRICITY, (in progress,) to July, 1871	888
TEXTILE, (in progress,) to July, 1871, about	4,800

REMITTANCES.

All money sent by mail, either to or from the Patent Office, will be at the risk of the owner. In no case should money be sent inclosed with models. All payments to or by the Office must be paid in specie, Treasury notes, national bank-notes, certificates of deposit, or post-office money-orders.

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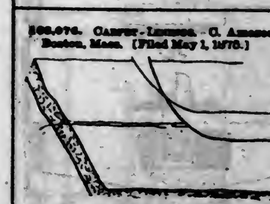
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Young, W. D., Machine for rolling horseshoe blanks	168,205

TITLES, DRAWINGS, AND CLAIMS

OF

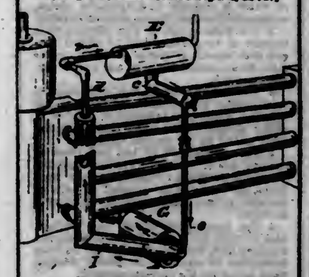
PATENTS GRANTED SEPT. 28, 1875

168,076. CARPET-LINING. C. Arnesen, Boston, Mass. [Filed May 1, 1875.]



A quilted carpet-lining having strips of paper pasted to the lines of loops and to the adjacent paper envelops over the said lines of loops and paper envelops on one or both sides, substantially as shown and described, for the purpose set forth.

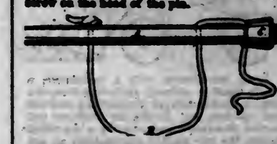
168,077. BOILER-FURNACE. V. D. Anderson, Springfield, Ohio. [Filed Sept. 4, 1875.]



The herein described boiler-feeder, consisting of the water-tank B, connected to the mud-drum C by a pipe, *c*, and the steam-pipe F, connected with the mud-drum and the boiler, with the check-valve *d*, constituting the tank B with the steam-space I at the volume of the boiler, the whole being arranged to operate substantially as described.

168,078. HORSE-HAY. Geo. Armstrong, Rhodes, Ill. [Filed July 28, 1875.]

Brief.—The strap is connected, on adjustment, at any desired point by means of a clamping-screw on the head of the pin.



1. The combination, with the hooking-pin and loop-strap, of a screw device at the heel for hooking the strap by pressure of the screw against it, substantially as specified.

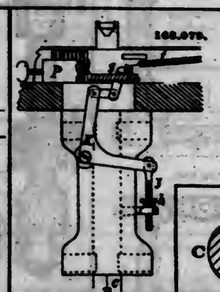
2. The combination, with the pin A and loop-strap B, of the screw-ferrule or nut C, substantially as specified.

168,079. ADJUSTABLE-MACHINES. Albert Baker, Westfield, Pa. [Filed May 25, 1875.]

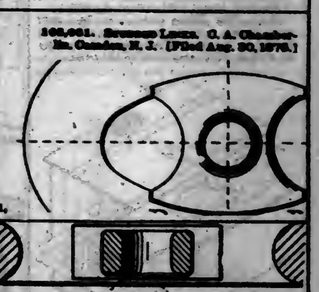
Brief.—The sliding gulley is moved by a slotted bar, which changes and moves it forward when actuated by a bell-crank lever.

1. The rib O on the side of the gulley P, in combination with the notched plate *g* and spring *f*.

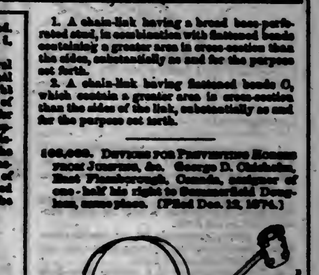
2. In combination with the rib O on the side of the gulley P, the notched plate *g*, and spring *f*, the arm I, rod J, adjustable rod L, and lever K, when arranged as described, to produce the results substantially as specified.



168,079.

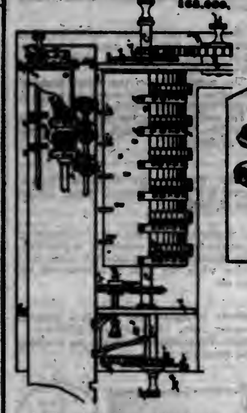


168,081.



168,080. CALCULATING-MACHINE. Edmund D. Barbour, Boston, Mass. [Filed Feb. 6, 1875.]

Brief.—A cylinder is provided with several series of sliding teeth set in longitudinal grooves, and so arranged as to be brought into position to operate the gear-wheels of the register. A special provision is made for the decimal transfers; and the results of operations are transmitted to the series of registering-wheels, which are all arranged on the same shaft. By means of a sliding and transfer paper pressed upon the raised figures of the said registering wheels or disks, a printed impression of the numerical results may be made, when desired.



168,080.

1. The calculating-machine, having a single revolving cylinder, with sets of separate teeth sliding in grooves, separately or together, into a position to operate upon a register, substantially as described.

2. The handle H, gear-wheels F' and E', and worm-gear E'', for imparting a feed motion to a register.

3. The detaching-wheel K, handle K', pinion K'', and pinion K''', for the purposes described.

4. The wheels V and V', and handle V'', for registering the quotient upon the common dials of a calculating-machine.

5. The hollow spindle E, having pinions E, with beveled hubs *r* and *r'*, and the studs *t* and *t'* and *v* and *v'* attached to the cylinder, for effecting the carrying of the tens.

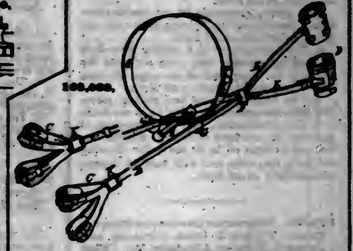
6. In combination, with the spindle E and pinion E, with beveled hubs, the pinion *n*, dial *n'*, and projection *p*, or their equivalents, substantially as described.

7. The carrying-wheels E, with beveled hubs, substantially as described.

1. A chain-link having a broad base perforated steel, in combination with fastened beads centrically a greater area in cross-section than the sides, substantially as and for the purpose set forth.

2. A chain-link having fastened beads C, which contain a greater area in cross-section than the sides of the link, substantially as and for the purpose set forth.

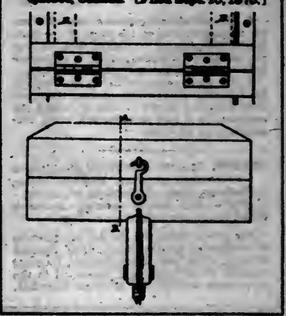
168,082. DEVICE FOR PREVENTING HORSES FROM JUMPING, &c. George D. Chisholm, East Farnsborough, Canada, assignor of one-half his right to Summerfield Douglass, same place. [Filed Dec. 22, 1874.]



168,083.

The combination of the girt A, having the rings C C, the longitudinal straps B B, passing through the rings C C, and having at the ends the rings E E, and liberated or split straps O O and the straps D, connected with the straps B B, and provided at its ends with the tapering elongated leggings D, the whole being constructed and arranged substantially as and for the purpose described.

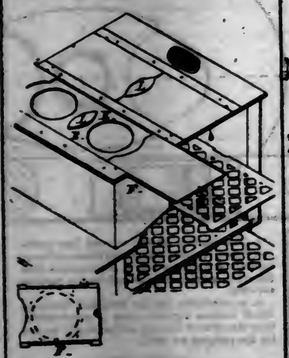
168,084. KNIFE-SCOURER. J. H. Clapham, Quebec, Canada. [Filed Sept. 10, 1875.]



The covered hinged case C C, open at each end and provided with dovetailed recesses for the polishing-plates A A, and springs B B, and secured by the clamp D, as shown and described.

168,664. COOKING-STOVE. G. Comstock, Keokuk, Iowa. [Filed Sept. 6, 1875.]

Brief.—The sliding plate serves as a shelf when drawn out. Its outward movement is limited by the stop. The oven-shelf is nearly on a plane with the bottom of the oven.



1. The combination of a sliding stove-rest-hole lid, with a channel thereafter on the stove-top, and between two elevated portions thereof, substantially as set forth.

2. A sliding stove-hole lid, in combination with holding projection B over its edge, substantially as set forth.

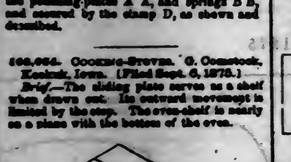
3. A sliding stove-hole lid, in combination with a stop to prevent its being drawn out too far, substantially as set forth.

4. The combination of a sliding stove-hole lid, having concave end, with a device for holding the inner end of its edge F when drawn out, substantially as set forth.

5. The combination of two sliding stove-lids with the central division I, as set forth.

6. The combination, with the stove-oven, of the shelf M, arranged to slide in and out under and in front of it, to serve for drawing out pans, &c., cake, and with holding device, substantially as set forth.

168,665. EXTENSIBLE BRACES FOR HEDGE-FRAMES. William T. Dunn, Pittsburg, and James F. Hillman, Allegheny, Pa. [Filed Sept. 1, 1875.]



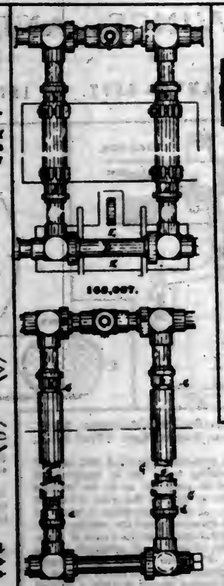
1. The self-adjusting shoes e, capable of automatic adjustment to the slope of the construction, permanently connected with, to, and in combination with, the parts a d, extensible by a screw-joint, substantially as set forth.

2. The shoes e attached to the outer ends of the extensible parts a a by means of U-shaped clips d playing loosely in shoes or bosses b, the combination of said parts named being substantially as set forth.

168,666. FLAMED COMPOSITION FOR MAKING ORNAMENTAL ARTICLES. Frank B. Dudley, Hastings, Mich. [Filed Aug. 24, 1875.]

Brief.—Any desired coloring matter is added to the composition.

The plastic compound for the manufacture of ornamental articles, consisting of Spanish whiting, white lead, crude varnish, Dammar varnish, Japan drier, and linseed-oil in the proportions substantially as herein described.



168,667. VULCANIZING HOSE OR TUBING. James B. Forsyth, Boston, Mass. [Filed Jan. 2, 1875.]

1. The improved process above described for vulcanizing tubing by means of heat applied internally, as described, while the tubing is covered, as set forth.

2. The combination of the hollow mandrel G, the pipes B and D, and couplings b and d, arranged together as described.

3. The combination of the pipe B, couplings b and d, pipe D, and carriage E, arranged together as described.

168,668. VULCANIZING HOSE OR TUBING. James B. Forsyth, Boston, Mass. [Filed May 22, 1875.]

The improvement in the art of vulcanizing hose, above described, consisting in introducing the heating medium through pipes into the hose while the hose is surrounded by heated air.

168,669. BAKING-PAN. Lydia A. Friend, Denver, Colo. [Filed June 8, 1875.]

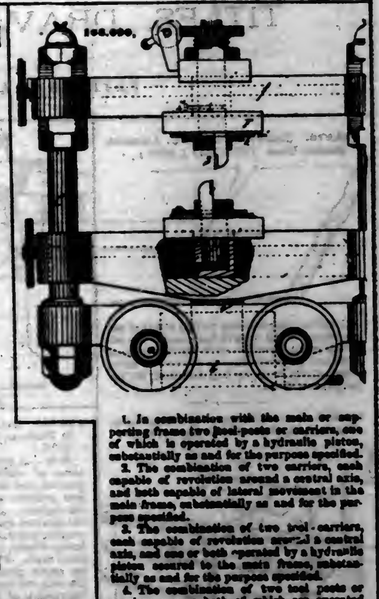
Brief.—Upon withdrawing the pin the hoop can be removed.



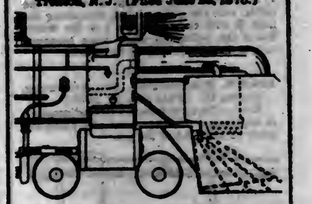
The combination of the hoop I, provided with the clasp, pin, and groove, as specified, and the bottom K, as shown and described.

168,670. MACHINES FOR THRASHING METAL. Stanislaus Hahn, Pittsburg, Pa. [Filed Apr. 24, 1875.]

Brief.—Two cross-beams—the one adjustable vertically and the other movable vertically by a hydraulic ram—support, respectively, the two shear-blade holders, and these holders are free to rotate, and also free to be moved laterally upon the beams, the screws being used for the latter purposes. The whole machine is mounted on two pairs of wheels.



168,671. STEAM-ANNEALING. W. Halsted, Trenton, N. J. [Filed June 28, 1875.]



1. In combination with a locomotive, a smoke-stack or chimney projecting from the engine directly forward horizontally over the cow-catcher, and having its forward end turned downward, and entering a box which covers the cow-catcher, substantially as and for the purpose set forth.

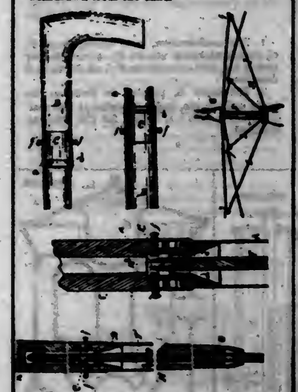
2. In combination with a smoke-stack or chimney projecting horizontally from the locomotive, a triangular box or covering over the cow-catcher, the combination serving to convey the sparks and ignecus matter directly forward from the smoke-stack, and then down upon the trunk forward of the locomotive.

3. In combination with the box which covers the cow-catcher, a tank or water-compartment located in the top of such box, and provided with perforations or water-outlets in its bottom, to permit the water to drip through the same, substantially as and for the purpose set forth.

4. In combination with the box that covers the cow-catcher, and with a water-dripping apparatus, the corrugated or grooved plate beneath the cow-catcher, and inclining backward, and serving to receive the falling water and the embers or sparks, and to extinguish them, all substantially as set forth.

168,672. CANES AND UMBRELLAS. Cornelius Theodore Harris and August Klindworth, Cleveland, Ohio. [Filed Aug. 4, 1875.]

Brief.—The plates press against the spring-cushion, whereby the umbrella-rod may be withdrawn from the cane.



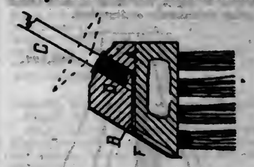
1. The handle B of the cane, herein described, provided with a slotted ferrule, C, and D, having a slot, *c d d*, therein, with a ball-mouth opening, in combination with section A thereof and pin *e*, substantially as set forth, and for the purpose specified.

2. In combination with the cane constructed as herein described, the umbrella consisting of the tubular handle F, rod F', rest ((and rib G, brace *f*, band G', and collar H, in the manner substantially as described, and for the purpose set forth.

3. The plates *f' f'*, in combination with the rod F and cushion *x x*, in the manner substantially as described, and for the purpose specified.

168,673. WATER-SPRINKLER. H. T. Hollenbeck, Philadelphia, Pa. [Filed July 15, 1875.]

Brief.—The water passes to the blocks through a hollow handle, and thence through the head, where it strikes a metal deflector, which spreads the water in front of the brushes.



In a water-brush, the combination of the block A, brushes B, spray-chamber E, pipe C, and the spray-deflector F, as shown and described.

168,674. COMBINATION-LOCKS. Charles D. Judd, East Haven, Conn. [Filed Apr. 26, 1875.]



1. The circular plate *d*, attached to the cone-spindle, and provided with curved slots for engaging the pins *a*, attached to the bolt B, and moving the bolt B back and forth, in the manner described, substantially as and for the purpose set forth.

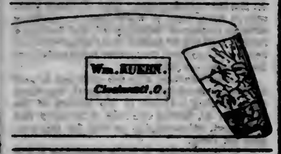
2. The spindle made in two pieces and connected by pins, in the manner described, allowing the outer part to be turned nearly a revolution before the pins again engage each other to move the inner part of the spindle, substantially as set forth.

168,675. DEVICES FOR SECURING THE RODS IN HEDDLE-FRAMES. Lemuel J. Knowles, Worcester, Mass. [Filed Aug. 20, 1875.]



The combination, with the end pieces B B, of the harness-frame and heddle-bars provided with end slots *b b* of the holding and supporting pieces *a a*, provided with bands *b*, hooks *b*, bearing-surfaces adjoining the hooks for steadying the heddle-bars, and screws and nuts *b*, substantially as and for the purpose set forth.

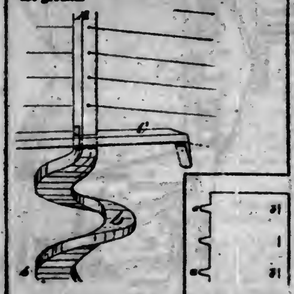
168,676. MANUFACTURE OF OIL-PICTURES FOR TRANSFERRING. William Keehn, Cincinnati, Ohio. [Filed June 21, 1875.]



The process of producing transferable pictures in opposite colors, consisting in the use of two sets of sheets, A and B, one side of each of which sheet A has its sized surface marked or imprinted with the light-outline or border, the sheet with a transparent oil-color, on which the picture is subsequently painted, the sheet sized bordered and painted surface of sheet A being then pasted face downward upon the sized surface of sheet B, from which sheet A when pasted, so as to leave the picture proper adhering face downward to sheet B, and ready for the final transfer to the object to be decorated, substantially as set forth.

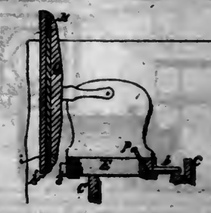
168,677. PRESS-FORM. John W. Letcher and T. J. Smith, Johnstown, N. Y. [Filed May 17, 1875.]

Brief.—A post in one solid piece of metal, its lower end flat and spiral, and perforations for wires through its upper part, enters the earth through a metal sill held to the surface of the ground by a leg which is stricken into the ground.



168,678. SEWING-GAGE. Christian B. Lenox, Atlanta, Ga., assignor of one-half his right to John F. Divine, Wilmington, Del. [Filed July 24, 1875.]

Brief.—Cushions hinged together, and all contained in dovetailed recess of bank. Gage adjustable forward and back on fixed frame.

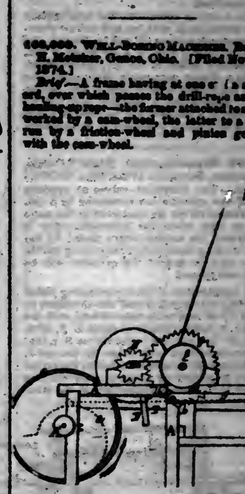


1. The combination of the bottom frame C, cast-frame E, bands *b c*, and steps *c c*, all constructed and arranged in the manner and for the purpose set forth.

2. The combination, with the bank F, provided with the dovetail bands *d*, of the jointed cushion G H H', constructed as described, for the purpose stated.

168,679. WELL-BORING MACHINE. Reuben H. Webster, Genoa, Ohio. [Filed Nov. 28, 1874.]

Brief.—A frame having at one end (a standard, over which passes the drill-rope and the hoisting-up rope—the former attached to a lever vertical by a cam-wheel, the latter to a drum run by a friction-wheel and pinion gearing with the cam-wheel.



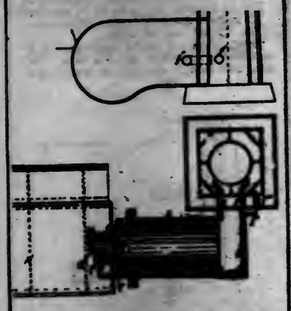
In a well-boring machine, the combination of the cam D, lever or walking beam I, rope O, sheave F, standard E, and drill H, with a windlass, consisting of the pinion N, cog-wheel O, shafts M P, and brake, comprising a wheel, G, band R, and lever S, all as herein before set forth.

168,680. SHEET-METAL TUBES. John C. Milligan, South Orange, N. J. [Filed July 8, 1875.]

As a new article of manufacture, a sheet-metal tube the longitudinal seam of which is formed by a series of tongues projecting from one edge of the sheet, which pass through slits near the opposite edge of the sheet, and are bent backward upon the surface of the inner lap of the tube so formed, substantially as herein described and set forth.

168,101. GRAIN-DRIERS. Adolphe Mack, Logansport, Ind. [Filed Aug. 10, 1875.]

Brief.—The air, which is introduced through a pipe, either passing through the connected chambers which surround the chimney, is discharged, in a heated condition, into the drying-chamber through a conical pipe.



1. The combination of the hot and cold air chambers with the smoke-stack and exterior shell of a chimney, whereby the cold air becomes moderately heated previous to being drawn into the drying-frame, substantially as and for the purpose described.

2. In a drying apparatus, the combination of the condensing-tubes *f f*, fan-blower B, the hot and cold spaces, and smoke-stack of a chimney, all substantially as and for the purpose described.

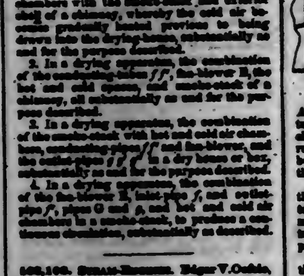
3. In a drying apparatus, the combination of the smoke-stack with hot and cold air chambers, condensing-pipes *f f* and fan-blower, and the outlet-pipes *f' f'* in a dry house or box, substantially as and for the purpose described.

4. In a drying apparatus, the combination of the fan-blower B, inlet-pipe *f*, and outlet-pipe *f'*, pipes G and *g*, and hot and cold air chambers in a smoke-stack, to produce a continuous circulation, substantially as described.

168,102. STEAM-ENGINES. Edgar V. Cobbin, Mannheim, Germany. [Filed Sept. 7, 1875.]

Brief.—The induction-valves at opposite ends of the cylinder are connected by a rod. The exhaust-valves are connected in the same way, so that when the induction-valve is opened and the exhaust-valve closed by the piston striking them, the corresponding valves at the opposite end of the cylinder will be closed and opened.

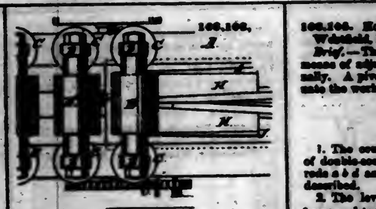
The combination of the reciprocating piston B, having the rods C D and the shoulders or collars *f g* on said rods, respectively, with the cylinder A, having the inlet-pipes E F, inlet-valves E' F', and the outlet-valves H I, that are connected with each other by the rod J, all substantially as specified, so that the valves shall all be moved by direct contact with the body of the piston, substantially in the manner described.



168,103.

168,104. MILK-COOLERS. Leroy C. Palmer, Charlotte, Vt. [Filed Mar. 18, 1875.]

Brief.—A vertically-adjustable and laterally-compressed regulator of the height of water in the cooling-pan. A double-shouldered pipe between the pans, receiving a dependent and sloped tube attached to the milk-pan.



168,104.

1. In combination with the pan A' and tank A, the double-shouldered pipe G, being a fixture in the bottom of water-tank A, reaching close to bottom of milk-pan A', and having a rubber packing or gasket on its upper end, all being arranged and to operate substantially in the manner set forth.

2. In combination with the milk-pan A' and the double-shouldered fixed pipe G, the short tube V, being a fixture in the bottom of the milk-pan A', having one side of its lower end truncated, substantially as and for the purpose set forth.

3. In combination with the water-pan A and the milk-pan A' the water-regulator R, composed of a suitable shell of one or more pieces, having at its upper part the inlet O, over which inlet slides an adjustable gate, F, properly packed, kept in position laterally by means of guides E R, controlled in height by screw S and wheel T, and made water-tight by screw-pressure bar U and wheel F, the lower part of the regulator having an outlet to which may be connected a pipe or drain, operating in the manner and for the purpose as set forth.

168,105. SCHOOL-ROOM FURNITURE. James M. Reddy, Milwaukee, Wis. [Filed Mar. 17, 1875.]

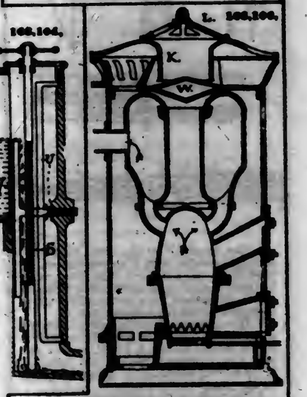
Brief.—The bottom of the pan is made double to obviate excessive heating from the first impact of the hot air.

1. The combination, with spring-bent F, of double-contacted stocks F', adjustable by rods *a b d* and slide-pieces *f' f*, as shown and described.

2. The lever B, pivoted in front to the frame and tongue, and adjustable at the rear in slotted guides *b b*, as and for the purpose specified.

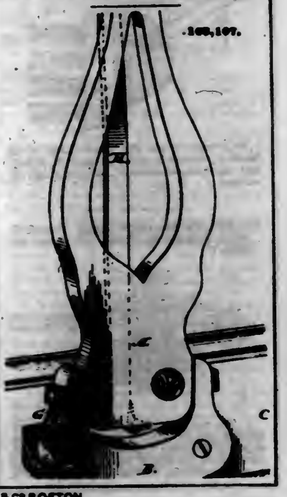
168,106. SCHOOL-ROOM FURNITURE. James M. Reddy, Milwaukee, Wis. [Filed Mar. 17, 1875.]

Brief.—The form of standards and their means of adjustment laterally and longitudinally. A pivoted lever or gage-bar to graduate the working depth.



168,106.

168,107.

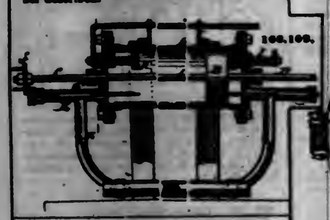


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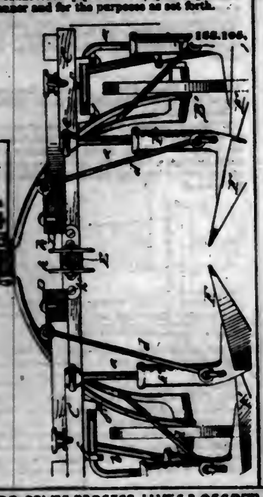
168,108. MACHINES FOR WELDING RAILWAY-FROGS. Arthur J. O'Leary and Jno. Turner, Chicago, Ill. [Filed July 12, 1875.]

Brief.—Dies pivoted upon a plate adapted to slide between pulleys and under rolls, by which the welding operation is performed.

The combination of the pivoted dies H, the sliding bed-plate F, and the pressure-rollers E, wheels C, and frame A, as described.



168,108.



168,108.

168,107. BOOT-JACKS. Milo A. Richardson, Bridgeport, Conn., assignor to R. Bixby, Sherman, N. Y. [Filed June 17, 1875.]

The spring C, in combination with the footboard A, provided with the slot E, the bracket B, provided with the slot G, and the bolt D, substantially as and for the purposes herein set forth.

168,109. COMPOUNDS RESEMBLING LINSEED-OIL. Albert Bleiler, Allegheny City, Pa. [Filed July 29, 1875.]

1. A compound oil resembling linseed-oil, composed of linseed oil, crude petroleum oils, tropical as described, litharge, and gum-shellac, together with bichromate of potash and rosin for giving the proper color and gravity to the oil.

2. The method herein described of disguising or removing the petroleum odor, consisting in secreting fixatives in the oil or its admixtures.

168,110. LUBRICATIVE DEVICES. George A. Sawyer, Augusta, Me. [Filed July 6, 1875.]



1. A lubricating device having the metallic plate or rod C, with one or more vertical or one or more spiral grooves, B, formed upon or within it, substantially as described.

2. In a lubricating device, the combination of the stopper A with the metallic plate or rod C, having formed upon or within it one or more longitudinal or spiral grooves, B, substantially in the manner and for the purpose herein set forth.

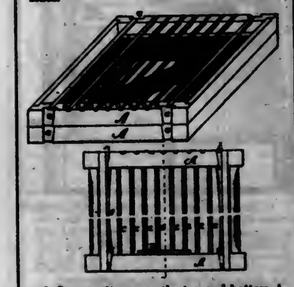
168,111. RAISED-STOOLS. Edwd. I. Savoy, Rossville, N. H. [Filed Apr. 20, 1875.]



The seat A, provided with the pins D, having in it a tapering center, *c*, in combination with the screw B, provided not only with the tapering projection or head *b* to closely fit the said center, but with the transverse notch *c*, arranged with the head, as and for the purpose as represented.

168,112. POULTRY-COOPS. James Shepard, Bristol, Conn. [Filed Mar. 11, 1875.]

Brief.—A coop with removable posts and cloth sides inside of the posts, the framed top and bottom determining the form of the cloth sides.



1. In a poultry-coop, the top and bottom A A, in combination with the removable posts and flexible cloth sides, all operating together so as to expand or collapse the coop, substantially as described.

2. In a poultry-coop, the combination of the top and bottom A A, having dovetailed recesses *a a a a*, with the removable and reversed posts *b b b b* and wedges *b' b' b' b'*, all substantially as and for the purposes described.

3. In a poultry-coop, the two framed sides, in combination with the removable posts placed at the outer edges of said framed sides, and three or more cloth sides placed inside of said posts, the form of the cloth walls being imparted by means of the two framed sides, all substantially as described, and for the purpose set forth.

168,113. LOCKS FOR CIGAR-BOXES. Henry Silberman, New York, N. Y. [Filed Sept. 13, 1875.]

Brief.—The front of the box carries a right angle or hook, which takes into a recess in a plate secured to the lid. The hook can only be freed by pushing in the front of the box. The recessed plate is of sheet metal, and carries prongs, by which it is secured to the wood.



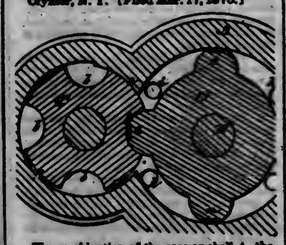
In combination with the cigar-box front *a* and hook *b*, projecting therefrom, the perforated plate *c*, having the prongs *d*, and the box-cover B, having the recess *e*, all arranged so that the box can only be unlocked by springing the front *a* inward, substantially as described.

168,114. PICTURE-HANGERS. C. M. Smith, Boston, Mass. [Filed Aug. 10, 1875.]



A picture-hanger composed of the depicted-hooked screw C and a T-headed screw, D, all constructed substantially in the manner and for the use as specified.

168,115. ROTARY ENGINES. John C. Titus, Marion, Ohio, assignor to William Haven, Clymer, N. Y. [Filed Mar. 27, 1875.]



The combination of the case or shell A, the wheels or cylinders C and C' C', with their respective lugs *a* and recesses *b*, steam-spaces *f*, bearings *e*, inlets *h h*, and outlets *i i*, all constructed substantially as and for the purpose herein set forth.

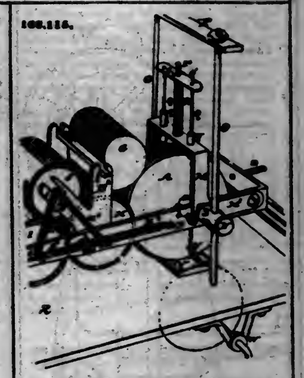
168,116. ORNAMENTING AND MARKING WHEELS. Frank Tuckhorter, Cincinnati, Ohio. [Filed June 30, 1875.]

Brief.—The wheel is adjustable on its standards, and can be held to register by a spring-pawl, which falls through a hole in a pin projecting from the wheel. The wheel may be taken from its frame and used with a handle.

168,117. PORTABLE ENGINES. John Ulr, Erie, Pa. [Filed June 28, 1875.]

In a road-locomotive, the frictions *a* and *d*, in combination with wheels *c*, axle B, rod *g*, lever G, crank-shaft D, and engines O, all constructed substantially as described, and for the purpose set forth.

168,118.



1. In a head ornamenting-press, the combination of roller A, with device for taking it, arranged substantially as described, roller V, plate 2, and registering apparatus Q, for the purposes set forth.

2. In a head ornamenting-press, the combination of roller A, with device for taking it, arranged substantially as described, roller V, plate 2, and adjustable uprights O, as and for the purposes set forth.

3. In a head ornamenting-press, the combination of roller A, with device for taking it, arranged substantially as described, roller V, plate 2, registering apparatus Q, and uprights O, for the purposes specified.

168,119. GOLD WASHERS AND SEPARATORS. Bryan Tyree, Washington, D. C. [Filed June 7, 1875.]

Brief.—The slats of the grate are made tapering on one side to allow the ready passage of gravel, dirt, &c. The box washing-table has openings, nearly square, protected on each side by projecting plates, by which construction the sand is prevented settling around and clogging the openings. The grate-bars are removable and adjustable.



1. The bars A', constructed as shown in Fig. 3, wide at the top and narrow at the bottom, with a straight perpendicular rear edge, *c*, front, inwardly-inclined edge *b*, extending about two-thirds of the height of the bar, and straight, perpendicular lower front edge *a*, substantially as and for the purposes described.

2. The grating A, composed of separate removable and adjustable bars A', intermediate plates A², and binding-rods E, all substantially as and for the purposes described.

3. In combination with grating A and box B, the partitioned box C D and perforated tank E, arranged in relation to each other, and the tank perforated in its bottom, so that the jets of water therefrom will strike just in front of each partition in the box C, as and for the purposes described.

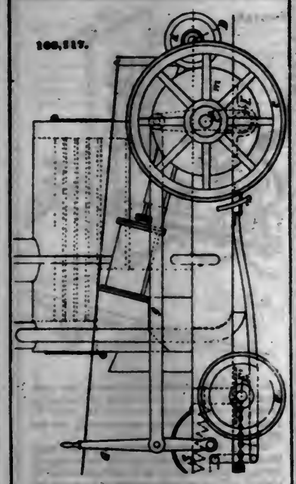
4. The platform F, perforated or pierced with nearly square or slightly-pyramidal shaped holes, provided on each side with deflecting-plates *f*, as and for the purposes described.

5. The gold precipitator and concentrator, consisting of grating A, box B, partitioned box C D, tank E, perforated platform F, and partitioned box G *g*, all constructed, arranged, and adapted to operate as and for the purposes described.

168,120. PORTABLE ENGINES. John Ulr, Erie, Pa. [Filed June 28, 1875.]

In a road-locomotive, the frictions *a* and *d*, in combination with wheels *c*, axle B, rod *g*, lever G, crank-shaft D, and engines O, all constructed substantially as described, and for the purpose set forth.

168,117.



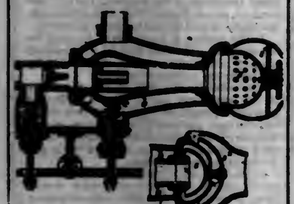
168,118. SAFE-DOORS. Elias E. Walton and Michael Hamler, Cincinnati, Ohio. [Filed Apr. 20, 1875.]



The sliding cap for the inside of safe-doors, in connection with the grooves on the inside edges of door for the cap to slide in.

168,119. EJECTOR ATTACHMENTS FOR VACUUM-BRAKES. Geo. Westinghouse, Jr., Pittsburg, Pa. [Filed Dec. 24, 1874.]

Brief.—Upon the discharge-nozzle of an ejector is arranged a case containing one or more discharges placed transversely to the outgoing column of steam and air, and other perforated or affording annular spaces for the escape of said column, all being to prevent the noise occasioned by said column discharging directly into the air.



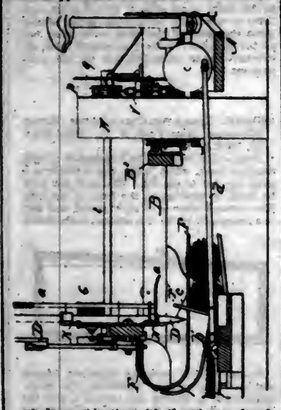
1. A box or case, arranged on the discharge end of an ejector, and containing one or more diaphragms, with perforated or annular escape-parts, or both, the same being arranged across the direction of the escape of steam from the ejector, substantially as set forth.

2. In combination with an air-ejector, otherwise arranged to discharge freely into the open air, one or more perforated diaphragms, arranged in or across the discharge, substantially as and for the purposes set forth.

3. A dome-shaped discharge, *c*, arranged with reference to the discharge-opening of the ejector-head, and in combination therewith, substantially as set forth.

168,120. GRAIN-BINDERS. John H. Whitney, St. Louis, Mo., assignor to Seymour & Whitney Manufacturing Company, same place. [Filed Nov. 24, 1874.]

Brief.—The cut grain is delivered at the stubble-side of the platform, where it is bound and dropped from the machine.



1. In combination with the pitman *d* and the sickle-bar *b* the elongated wrist *o'*, having a bearing on *o* in a guide-plate, *w*, at its front end, substantially as shown and described.

2. The curved rods E, having their inner ends *r'* turned upward, said rods being arranged in relation to the rake and binding mechanism, substantially as described, for the purpose of forming the bundle, as set forth.

3. The combination of the wheel L, curved slotted lever I, and needle D, arranged to operate substantially as described, for imparting to the needle the required intermittent motions, as set forth.

4. In combination with the wire-carrying needle D and its reciprocating lever, the grooved cam-wheel L, pivoted lever H, and connecting-rod T, all constructed and arranged to operate substantially as described, whereby the intermittent movements are imparted to the wire carrier and twister at the required intervals, as set forth.

5. The clutch *j*, provided with its arm *n*, in combination with the rock-shaft S, provided with the arm *m*, having the inclined face and shoulder *n'* thereon, for automatically throwing the binding mechanism out of gear with the driving mechanism, substantially as described.

6. In combination with the automatic disconnecting-clutch and driving mechanism, the lever *q*, connected to the rock-shaft S, all constructed to operate substantially as described, for putting the binding devices in operation at will, as set forth.

7. The plate M, having its upper surface rounded or inclined in the line of the movement of the grain to assist in separating the grain for the passage of the needle, substantially as described.

8. The plate M provided with the enlarged opening for the passage of the needle, and the bearing-points *r* to prevent lateral displacement of the needle, constructed to operate as and for the purpose set forth.

9. The plate M provided with the slot *o'* and incline *t*, in combination with the needle D provided with the finger *u*, said parts being constructed to operate substantially as described, for the purpose of delivering the wire properly to the twister, as set forth.

10. The needle D provided with the lever *s* and rigid projections or guards *x* and finger *u*, all constructed to operate substantially as described.

11. The combination of friction-pulley *h*, spring *f'*, and the needle provided with the shoulder *g'*, arranged to operate as set forth, for the purpose of giving increased tension to the wire while the bundle is being formed, as set forth.

12. The lever I provided with the adjustable fulcrum *h'*, in combination with the needle D and wheel L, whereby the movements of the needle can be regulated to suit its adjustment on its supporting-bar B', as set forth.

13. The needle D provided with the finger *u*, and having its lower bearing N arranged substantially as described, whereby the needle is drawn up so as to bring the finger *v* within said bearing to insure its being cleared within the needle, as set forth.

14. The combination of the spring-rods F and the bent rods E, arranged to operate in connection with a grain-binding mechanism, substantially as described.

168,121. TRAPS AND BENDS. Frederick Adee and James Foley, Brooklyn, N. Y. [Filed Sept. 2, 1875.]

Brief.—The trap is made with a plain cylindrical thimble, which is fitted with a rubber plug that can be expanded to make a tight fit, thus dispensing with screw-threads in the thimble and the screw-plug commonly used.



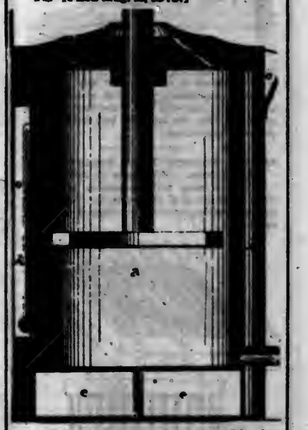
The trap or bend made with the plain cylindrical thimble *b*, in combination with the rubber plug *d*, follower *c*, screw *f*, and head *f*, substantially as set forth.

168,122. EYEGLASSES. James T. L. Anderson, Brooklyn, E. D., N. Y. [Filed Aug. 28, 1875.]



A pair of spring-connected eyeglasses, provided with clamps or nose-rests O O', movable on studs *o'* out of the plane of the glasses, as and for the purpose specified.

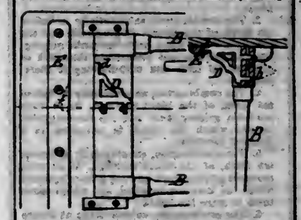
168,123. CHURNS. James C. Baker, Corry, Pa. [Filed Aug. 11, 1875.]



1. The chamber *a*, made wholly within the water-chamber *b*, and provided with the slide *g*, in combination with the thermometer *h* and dividing-strips of wood *i*, whereby the thermometer is protected both from the heat of the water in the chamber *b* and the outside air, substantially as shown and described.

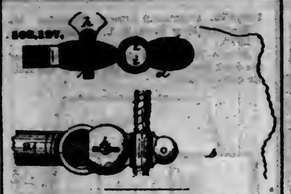
2. The brace or supports *c*, placed radially under the bottom of the churn, and having spaces between them for the water to flow freely between, as set forth.

168,124. FOLDING TABLES. Hiram Baldwin, Nashua, N. H. [Filed Feb. 20, 1875.]



In a folding table, the brackets D, having a lip, *d*, and legs *e*, in combination with the rails *a b* of folding legs B B', and the recessed strips E, substantially as specified.

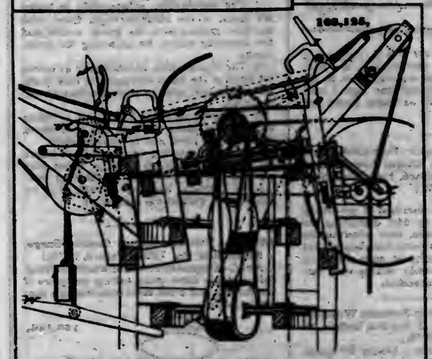
168,125. WHEELS-SPANNER. Wm. Brown, Milan, Ohio. [Filed June 17, 1875.]



The combination of the through-brace J, cross-bar I, side spar H, side spring G, attached to the cross-spring C, substantially in the manner as herein described, and for the purpose set forth.

168,126. MACHINES FOR JOINTING STAVES. Benjamin Barker, Ellsworth, Me. [Filed July 8, 1875.]

Brief.—The stave-carriage is carried upon a curved track, the curvature of which is proportioned to the bilge of the stave, the latter being held in position upon the carriage by automatically-operating dogs.



1. The feeding-strap J, adjustable and stationary feed-pulleys K K, and the foot-lever W and its connections, with the movable pulley, combined and arranged substantially as specified.

2. The feed-strap and the reversing-cord, connected to the dogs I in such manner that their tension holds the dogs in the staves, substantially as specified.

3. In combination with two adjustable inclined saws, the sliding carriage, automatically-acting dogs, and the inflexible vertically-curved rail, having its radius of curvature all on one side, as shown and described.

168,127. MEANS FOR ATTACHING MAST-HOOPS TO SAILS. Chas. S. Barnard, West Meriden, Conn. [Filed Aug. 26, 1875.]

A clamp for fastening the hoop to the sail, consisting of the three parts *d a o* and screw A, as set forth.

168,128. PILLOWS. Gardner T. Barlow, Pittsfield, Mass. [Filed June 12, 1875.]



As an improved article of manufacture, the improved pillow for camp-beds having one permanently-closed pocket, A, stuffed with fine soft material, and another pocket, B, for the reception of coarse material, substantially as specified.

168,129. BUSTLES. Robert Haring, New York, N. Y. [Filed May 3, 1875.]

1. The bustle A, provided with a waistband, C, and wings D D, arranged to be drawn over the hips, when constructed substantially in the manner shown.

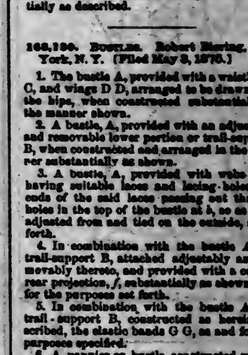
2. A bustle, A, provided with an adjustable and removable lower portion or trail-support, B, when constructed and arranged in the manner substantially as shown.

3. A bustle, A, provided with webs E E, having suitable laces and lacing-holes, the ends of the said laces passing out through holes in the top of the bustle at *b*, so as to be adjusted from and tied on the outside, as set forth.

4. In combination with the bustle A, the trail-support B, attached adjustably and removably thereto, and provided with a curved rear projection, *f*, substantially as shown, and for the purposes set forth.

5. In combination with the bustle A and trail-support B, constructed as herein described, the elastic bands G G, as and for the purposes specified.

6. A pannier or bustle constructed with a series of concealed pockets, *j j*, having openings *h h*, in combination with springs *a a* detachably inserted in the pockets *j j*, substantially as and for the purpose set forth.

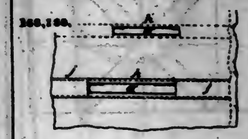


168,130. REPARATING RUBBER FROM WASTE. Marc W. Boyttey, Tenafly, N. J. [Filed Mar. 19, 1875.]

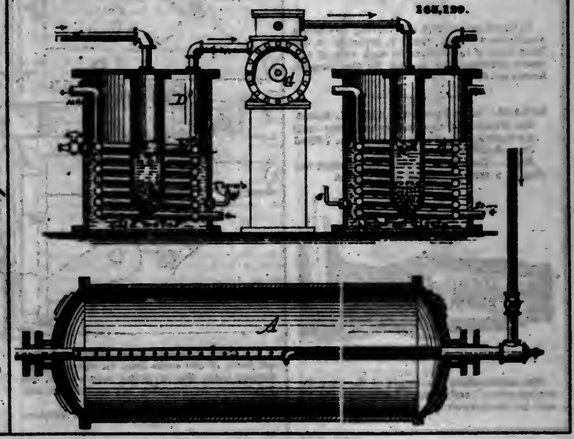
Brief.—Separates fiber by a centrifugal machine; dissolves waste by naphtha; creates a vacuum in the solidifier by action of the pump; admits the solution by air-pressure; closes the inlet; revolves the solidifier; operates the air-pump, whereupon air is forced through the heater and into solidifier, whence, with vapors, it is drawn into the condenser, whence the liquid rubber is drawn off. The air is taken onward, reheated, and sent repeatedly through the circuit. Sheet of rubber deposited on inside of solidifier is removed by withdrawing one of its heads. Water in the condenser. Liquid evaporable at a low temperature in the heater. May pass steam and air through the circuit. Mixes sticky rubber with sulphide of lime, or with hemp-bleach before treatment as above. May use a crushing-roller in solidifier. If fabric be valuable, it may be saved by soaking waste in crude turpentine, or gum and lard-oil and naphtha, heated to 250° Fahrenheit. Wash off rubber by steam of naphtha. Naphtha recovered from the wash by distillation.

1. The process of solidifying rubber solutions by surface evaporation, through the agency of a current of air which is made to circulate continuously and repeatedly over the surface of said solution, through a condenser to deposit the volatile solvent, and through a heater back to the vessel containing the solution, substantially as specified.

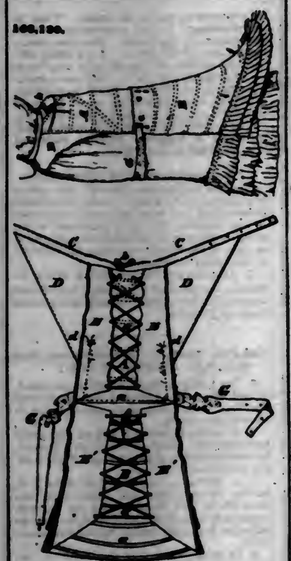
2. An apparatus for solidifying rubber solutions, composed of a solidifier, a condenser, and a calorifier, combined to operate substantially as described.



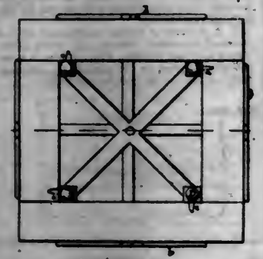
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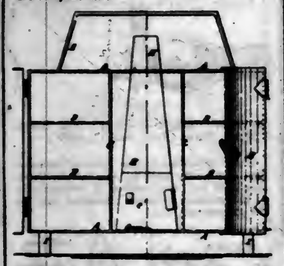
166,121. REVOLVING DRY-GOODS STANDS. Jos. J. Hoel, Lewisburg, Pa. [Filed Apr. 29, 1875.]



In combination with a revolving dry-goods stand, the wires or rods b b, attached to the front edge of the shelves on each side of the stand, substantially as and for the purpose herein set forth.

166,122. PORTABLE LOUNGE-HEATERS. M. Bradley, New York, N. Y. [Filed Sept. 4, 1875.]

Brief.—The lamp is placed in the bottom of the draft-flue, which is in the rear of the middle compartment.



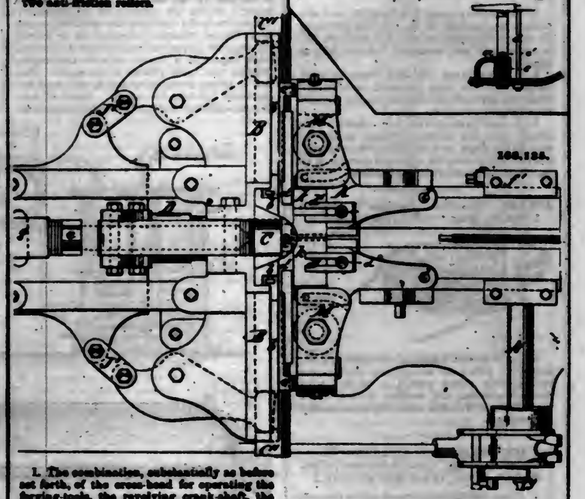
The combination of the box A, the door or doors B, the vertical partitions C, the horizontal partitions D, the tapering tube E, the lamp F, the handle H, and the legs I with each other, substantially as herein shown and described.

166,124. PROCESSES OF PREPARING CARMINE PRINTING-INK. Caspar Joseph Friedbach and Carl Friedbach, New York, N. Y. [Filed Mar. 26, 1875.]

The process herein described of producing carmine printing-ink by first dissolving the carmine in aqua ammonia, then allowing the mixture to stand for twenty-four hours, next adding half the quantity of aqua ammonia originally used, and finally mixing with varnish, substantially as specified.

166,125. MACHINERY FOR FORMING WIRE-BAR HEADS. Orrin C. Burdict, Buffalo, N. Y. [Filed July 6, 1875.]

Brief.—This comprises a header for upsetting the end of the bar, and two pairs of dies or hammers moving laterally, for reducing the upset portion to the proper form. A feed-carriage operated automatically, and held by toggles, and gripping-dies attached to the outward ends of two swinging arms pivoted to the carriage, that grips the metal by the binding of that produced by threader; the arms between two anti-friction rollers.



1. The combination, substantially as before set forth, of the cross-head for operating the forging-tools, the revolving crank-shaft, the toggle-bar, the movable box for its butt, and the toggle-pivot.

2. The blank-carriage, constructed substantially as before set forth, with movable gripping-jaws, and an abutment for the butt of the blank.

3. The combination, substantially as before set forth, of the lateral forging-tools and the blank-carriage, fitted with movable gripping-jaws for griping and presenting the blank to said lateral tools and withdrawing it therefrom.

4. The combination, substantially as before set forth, of the blank-carriage, fitted with movable griping-jaws, and the heading-tool, toward which the blank is advanced in a grasped condition.

5. The combination, substantially as before set forth, of the blank-carriage, fitted with movable griping-jaws, and the guides between which the jaws are impelled, and which open them to gripe the blank.

6. The combination, substantially as before set forth, of the blank-carriage, fitted with movable griping-jaws, the jaw-pins, and the cam-grooves for opening said jaws when the carriage is drawn back.

7. The combination, substantially as before set forth, of the blank-carriage, fitted with movable griping-jaws, the guide, stocks, and the adjusting-screws for adjusting the guide-stocks.

8. The combination, substantially as before set forth, of the blank-carriage, the rock-shaft, the toggle-link, and the eccentric-twisted toggle-pivot.

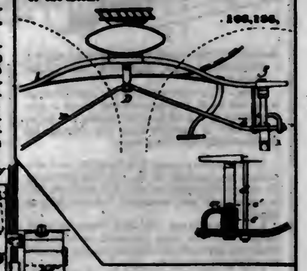
9. The combination, substantially as before set forth, of blank-carriage, the rock-shaft, the vibrating pawl, and the driving-shaft.

10. The combination, substantially as before set forth, of the blank-carriage, fitted with movable griping-jaws, the rock-shaft for moving the carriage, and the movable dog for limiting the withdrawal movement.

166,126. BUTTERED-CRACKER. Gottlieb Burger, Ellenville, Pa. [Filed June 9, 1875.]

Brief.—Dispenses with fish-wheel and ring-bolt, a single fixed plate taking the place of the former, and a pin solid with the pole that of the latter.

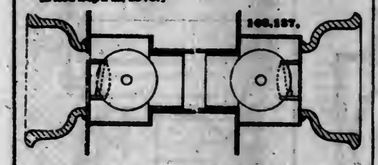
166,126.



166,124.

166,127. STRAINING-TUBES. Daniel B. Campbell and Jas. B. Creighton, Boston, Mass. [Filed Sept. 11, 1875.]

166,127.



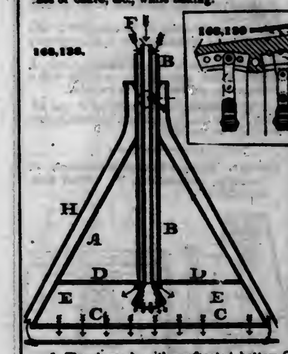
1. The method of mounting and operating the whistle or other signal of a speaking-tube, substantially as herein shown, whereby the whistle is permitted to remain open until air is forced into the tube from the opposite end, when the whistle is closed and sounded, essentially as and for purposes stated.

2. The whistle or signal working on an axis or pivot placed obliquely to opposite vertical planes of the mouth-piece and whistle-chamber, whereby the whistle remains open until closed by air entering the tube from the opposite terminus, essentially as and for purposes stated.

166,128. STEAM-WASHERS FOR CAKES AND BISCUITS. David Carrick, Philadelphia, Pa. [Filed July 24, 1875.]

Brief.—To be used in moistening the surface of cakes, &c., while baking.

166,128.



1. The dome A, with perforated bottom C and steam-pipe B, combined and operating substantially as and for the purpose set forth.

2. The dome A, with perforated bottom C and steam-pipe B, in combination with the partition D to the dome, above said bottom, substantially as and for the purpose set forth.

3. The chamber E, in combination with the steam-pipe B and inclosed water-pipe F, substantially as and for the purpose set forth.

4. The steam-dome A, with perforated bottom C, in combination with the inclosing bonnet H, substantially as and for the purpose set forth.

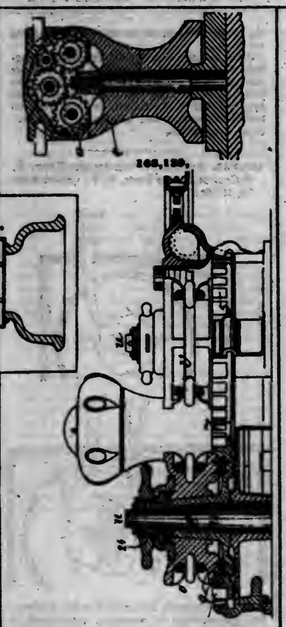
166,129. WINDLASSES AND CAPSTANS. D. M. B. Coffin, Jr., Newton, Mass. [Filed Apr. 28, 1874.]

1. The combination of the internal worm-gear or nut-wheel a with the screw or screws b and barrel c of the capstan.

2. The combination of the two screws b, the two gears, and shaft f with the head of the capstan.

3. The pawl-holder h, hinged to the capstan, substantially as and for the purpose set forth.

166,129.



4. The combination of short lever-socket g', its cam hinged to the screw-rod q, made to turn in the deck, and nut r, attached to the friction-brake or strap of a windlass, substantially as shown and described.

5. The arrangement and combination of two sets of elastic cushions between and with the driving and driven parts of the nut-casing or impelling mechanism of a windlass, substantially as shown and described.

6. The center-bearing constructed with step and bars u for upright shaft, and the rest or bearing for the horizontal shaft, substantially as shown.

7. The combination of the two fixed non-rotating spindles s s with the chain-wheels or windlass-barrels v, the capstan, and suitable connecting-gears, substantially as shown.

8. The combination of the two fixed non-rotating spindles s s, the chain-wheels or windlass-barrels v, and the messenger-wheel 46 with suitable connecting-gears, substantially as shown.

9. The combination of the capstan x and the messenger-wheel 46 with suitable connecting-gear, substantially as shown.

10. The sleeve 8, in combination with its friction-grooved plate, the chain-wheel, and the friction-grooved plate connected thereto, and the nut-wheel 24, substantially as described.

11. Friction-rings or sections of rings 9, (see Fig. 12,) in combination with the grooved friction-plates.

12. In a windlass, the arrangement of an anchor-chain to engage with the chain-wheel at its lower forward side, extend around aft and upward, leaving the periphery on the upper forward side for the hawse-pipe and anchor, in combination with a turn around the forward side of the bit as it passes from the deck-pipe to the windlass.

13. The upright roller 26, in combination with the windlass-bit and the arrangement of the cable or anchor-chain, as shown and claimed above.

14. The combination of the pawl 30, located forward of the windlass, with the chain-wheel and its pawl-wheel or drum 43, substantially as shown.

15. The separate friction-wheel 38, in combination with the separate chain-wheel, when the two are automatically locked to each other, substantially as described.

16. The combination of the sliding lock-bolt 40, friction-wheel 38, and a ratchet-wheel and shaft, 36 and 46, substantially as described.

17. The construction of a windlass-beam with the T-section-shaped connection to the links, substantially as described.

18. The construction of a windlass-beam with through-open sockets for levers arranged obliquely to each other, substantially as described.

19. The internal ratchet-wheel 36, in combination with the pawl lever or wheel 34, 35 and the windlass-shaft, substantially as shown.

20. The double series or reversed pawls of wheel 34, in combination with the ratchet-wheel 36, substantially as shown.

21. The construction of the chain-guard and chain-guide in one article for the double use, substantially as described.

22. The chain-wheel or barrel 20 and pawl-wheel 43, constructed separately, and automatically clutched together by projections and recesses or shoulders, substantially as and for the purpose set forth.

166,140. ARTIFICIAL LEGS. Cornelius Collins and James H. McCalla, East Melrose, Iowa. [Filed July 17, 1875.]

Brief.—The iron side braces extend to the ankle, where they are curved and slotted, to serve, in connection with a pin on the foot, as a guide to the movement of the ankle.

1. The combination of steel bars D with the sockets A B, ankle F, and the foot E, substantially as specified.

2. The heel connected to the steel bars by the pins H and curved slots G, in combination with the ankle-joint I K L, substantially as specified.

168,141. RUFFLING ATTACHMENTS FOR SEWING-MACHINES. Wilber Henry Conyers, New Orleans, La., assignor to Harry C. Goodrich, Chicago, Ill. [Filed Aug. 13, 1875.]

Brief.—The ruffling-plate is attached to a bar, which is hinged at the rear end to a second bar that slides in a socket. A pin projects from the sliding bar through a slot in the socket-plate. This pin engages in a slot in the actuating-lever. The extent of motion of the sliding bar is controlled by adjusting-screws, against whose ends the said pin strikes. The hinged bar is kept in contact with the material by a spring acting upon a projection of said bar at its hinge.



1. In a ruffler, the hinged bar *m*, provided with the plate *o*, in combination with the sliding bar *c* and spring *e*, substantially as described.

2. The combination of the socket *c*, sliding bar *c*, hinged bar *m*, operating-lever *g*, and presser-foot *a b*, substantially as and for the purpose specified.

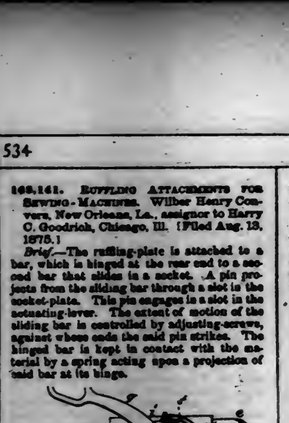
3. In a ruffler, the lever *g h*, screws *i i'*, socket *c*, sliding plate *o*, and pin *f*, all constructed and operating substantially as specified.

168,142. ROOFING COMPOUNDS. James A. Craig, Philadelphia, Pa. [Filed Aug. 26, 1875.]

Brief.—The roof-boards are covered with one or more layers of hot pitch, over which is spread a layer of broken or granulated soapstone in lieu of gravel, as ordinarily practiced.

A roofing compound consisting of comminuted soap-stone and hot pitch, applied substantially as and for the purpose specified.

168,143. AUTOMATIC TELEGRAPH-KEYS. L. S. Crandall, New York, N. Y. [Filed Aug. 21, 1875.]

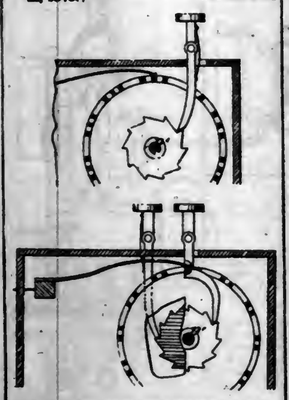


1. An automatic telegraph-key composed of a series of pivoted spring keys or levers, provided with cam or contact pieces of varying shape corresponding to the Morse character of their letters, in combination with projecting arms of a common transmitting-shaft, spring-pawl, ratchet-wheel, and insulated metal tongue, the keys, shaft, and ratchet being connected to one pole, the tongue to the other pole, of the battery, to transmit messages by mechanical means, substantially in the manner and for the purpose set forth.

2. The shaft provided with a series of cam-operated arms, D, and a single pawl-arm, having a spring-retractor, as and for the purpose set forth.

3. In automatic telegraph-keys, the spring-keys or finger-levers, provided with cam or contact pieces having step-shaped projections and intermediate extensions, for producing the required feed of the ratchet and the dwell at points of contact and non-contact, substantially as specified.

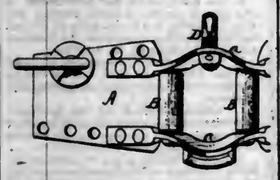
168,144. AUTOMATIC TELEGRAPH-KEYS. L. S. Crandall, New York, N. Y. [Filed Aug. 21, 1875.]



1. An automatic telegraph-key for mechanical transmission of messages, constructed of a series of sliding spring-keys, representing the letters of the alphabet, and connected, by spring-pawls and ratchet-wheels, with a corresponding number of revolving wheels, with partially-insulated circumferences, and with spring tongues or riders in contact therewith, said wheels being connected to one pole, while the tongue is connected to the other pole, substantially as and for the purpose specified.

2. The combination of two sliding spring-keys, having spring-pawls, with one transmitting-wheel, provided with ratchet-wheels placed in opposite direction to each other, for the purpose of coupling here having letters with reversed Morse characters, substantially as shown and described.

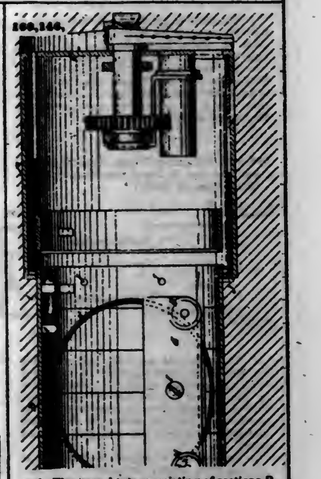
168,145. SADDLE-TREES. H. Gruhnhank, Coalton, Md. [Filed July 1, 1875.]



The metallic harness or jockey saddle tree composed of back-plates A A, sharply curved or arched bars a a, to which are secured the crupper-loop C, and cheek-hook D, and large friction-rollers B, all constructed and united as described, whereby a simple, strong, and durable ventilated tree is secured.

168,146. TUNNELS. Olney B. Dowd, New York, N. Y. [Filed Aug. 6, 1875.]

Brief.—The tunnel-tube consists of elliptical sections, with lugs and fastenings on their interior, to convey the sections through a completed portion of the tube. The shield is enlarged to introduce the sections and secure them against the completed section. Stop-pins pass through the sections to prevent the shield from being pressed back on the tunnel. Packing and a follower are arranged between the tunnel and shield to prevent leakage.



1. The tunnel-tube consisting of sections B, having an elliptical form and smooth exterior surface, and lugs and fastenings or connecting devices on the inner surface, as shown and described, whereby a section may be conveyed through a completed portion of the tube without impediment, as set forth.

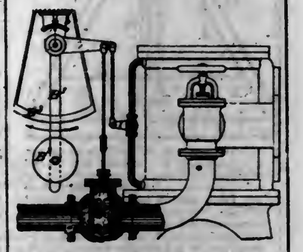
2. The combination of the tunnel-sections B, of elliptical form, and the enlarged cam A, as shown and described, whereby the sections may be introduced through the portion of tunnel previously made, and fitted together in the case.

3. The combination of the stop-pins J with tunnel B and tunneling-case A, substantially as specified.

4. The trucks G H and clamping-bolt I, combined and arranged for coupling with a tube-section, substantially as specified.

5. The combination of packing D and follower E with the tunnel B and the case A, substantially as specified.

168,147. MARINE-ENGINE GOVERNORS. J. Everding, Philadelphia, Pa. [Filed Aug. 30, 1875.]



1. The combination, in a marine-engine governor, of a rock-shaft, a weighted arm attached thereto, and rock-arms, respectively, operating a regulating-valve in the steam supply-pipe, and an atmospheric cock or valve communicating with both ends of the engine-cylinder, substantially as set forth.

2. The combination, with a marine-engine governor, of a device for destroying the vacuum upon one side of the piston of the engine, and allowing the escape of steam from the other, substantially as set forth.

168,148. SPRING ROCKING-CHAIRS. S. Fallon, Brooklyn, N. Y. [Filed Nov. 14, 1874.]

Brief.—The tension of the spring is adjusted by the adjustment of the nuts on the screw-rods.

168,148.

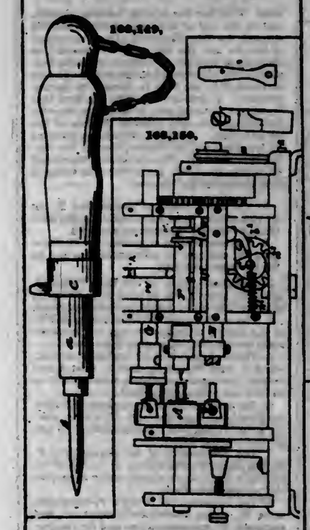


The combination of cross-bar *c'*, the arm or bolt D, the pivoted or hinged bar or rod E and the hand-nuts F with the pedestal A, the cast-iron E, and the coiled springs C, substantially as herein shown and described.

168,149. IMPLEMENTS FOR MOLDING AND PERFORATING FAUCET-HOLES IN GLASS BOTTLES, &c. John Neil Fort, Philadelphia, Pa., assignor to Dempsey Wicker-Covered Glassware Company. [Filed July 13, 1875.]

Brief.—A tube projecting from and inside of a handle is lessened in diameter at its front end, to form a shoulder. A pointed loose rod lies within it, with a handle to protrude it to the necessary distance.

The implement consisting of the tubular mold *c*, gage *e*, and rod or plunger *a*, constructed and operating in the manner and for the purpose substantially as set forth.



168,150. MACHINERY FOR MAKING METAL SCREWS. Albert W. Gilbert, Worcester, Mass. [Filed Sept. 9, 1875.]

1. The rotary head A, provided with sets of jaws, as described, in combination with a series of two or more screws, B F G, arranged to operate with such head, and furnished with tools, as described, to effect simultaneously the operations of milling or shanking a screw-blank, and pointing or cutting a thread on another, while an attendant may be in the act of removing a finished screw from one set of the jaws of the head and substituting a blank for such screw, the said screws being provided with mechanism for operating them, as specified.

2. The combination of the latch *b'* and the escapement *F*, as constructed and arranged in manner substantially as specified.

3. The combination of the latch *b'* and escapement *F*, as described, with the lever and the feeding mechanism, as described, of the arbor E, such feeding mechanism consisting of the pulleys *w y*, band *n*, shafts *s s'*, screw *s''*, worm-gear *b'*, gear *S*, and rack *r'*, all being arranged as shown and explained.

4. The combination of the sleeve *m'* and the studs *p q r s* with the two pulleys *n o*, and the threading-arbor G, all being applied and to operate as specified.

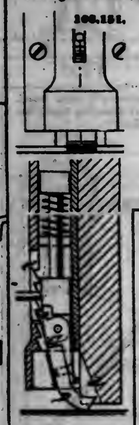
168,151. DOOR-CHECKS. Edwin S. Granel, Dayton, Ohio. [Filed Sept. 11, 1875.]

Brief.—A suitable case carries a sliding spring-acted plunger, which terminates in a hinged head-piece having curved rubber extension, that is thrown by a projecting pin into contact with the floor, and retained by the ends of the head-piece locking into notched teeth upon inside of the case, the reverse movement of closing the door automatically detaching and withdrawing the rubber back again into the casing.

1. A door-check for holding the door open at any point, composed of a casing with front slot and interior ratchet-teeth, and of a sliding and spring-acted plunger with hinged head-piece, having end projections, and rubber extension-block, for retaining the rubber firmly in contact with the floor, substantially in the manner and for the purpose set forth.

2. The plunger-guiding casing and door, provided with recesses at the lower part for giving play to the carving of the rubber when sliding on the floor, substantially as specified.

168,151.



168,152. COOKING-RANGES. Thrustavus Greene, Guelph, Canada. [Filed Nov. 12, 1874.]

Brief.—The independent front grate-bars are removable. The smoke-dispenser or hood is adjustable.

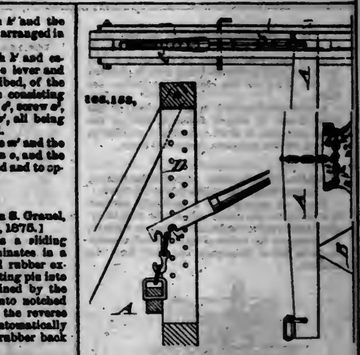
1. The grate-bars I, in combination with the grate-bar holders I' and I'', provided with slots *i* and holes *i'*, arranged substantially as described, and for the purpose specified.

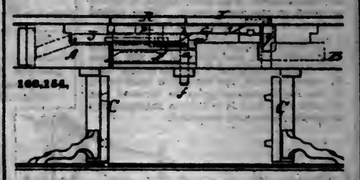
2. In combination with the vertical rear portion or wall of the range, the sliding smoke-dispenser H, with sliding door *h* and rack *h'*, substantially as described, for the purpose set forth.

168,153. PORTABLE LEVER-POWERS. Wm. P. Hale, Florence, N. Y. [Filed July 31, 1875.]

The combination of lever A, working on a fulcrum, B, and a lever, C, fulcrumed at right angles thereto, the said levers being flexibly connected, as and for the purpose specified.

168,154.



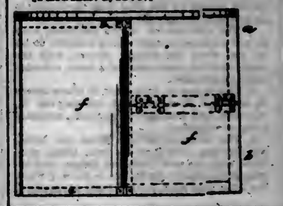


1. In an extension-table for automatically storing away and raising the intermediate leaves, the combination of the self-raising platform G, having the inclined steps *g h*, and bearing on inclined legs *i*, that are attached to the slides *d* of the end frame A, with the downwardly-projecting pins *f*, that extend through the middle frame F, and with the end frame B of the table, all arranged so that the platform G will be raised by the act of extending and lowered by the act of contracting the table, substantially as specified.

2. In combination with the middle frame F of an extension-table, having self-storing leaves, the lock composed of the forked lever *j*, and of the lever I and bolt *m*, said lock being applied to the rail *e* of the frame F, substantially as and for the purpose specified.

3. The combination of the end frames A B of a self-storing extension-table with the intermediate leaf H, having the lugs *p*, that join it to the link J of the frame A, and with the intermediate leaf I, having cams *q*, that connect it with the frame B, substantially as herein shown and described.

168,155. SOFA-BEDS. Joseph B. Harlow, Portland, Me., assignor of one-half his right to William A. Jackman, same place. [Filed Mar. 3, 1875.]



1. In a sole-bed, constructed substantially as herein described, the convex or cutting-*f*, with its head-rest formed by the arms *e* and bar *g*, the said head-rest being held in position by the draw of the convex, as herein set forth.

2. The combination, in a sole-bed, of the fixed frame *a*, hinged frame *b*, having the rigid arm-rest *d*, arms *e*, convex *f*, and bar *g*, as and for the purposes herein set forth.

168,166.—NUT-LOCKS. Alfred Hills Harris, London, England. [Filed May 10, 1875.]

Brief.—A spring-pawl is centrally pivoted in a cavity in the under side of the nut, to engage with ratchet-teeth on the bar or washer, and released for removal by means of a screw made to tilt or disengage the pawl from the ratchet.



The nut-screw or pin B, in combination with the spring-pawl C, nut A, and ratchet-teeth G, substantially as and for the purposes set forth.

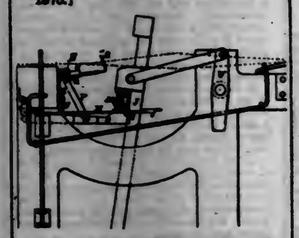
168,167.—REVERSIBLE PLOWS. Myron B. Hatfield, Walcott, Va. [Filed Aug. 31, 1875.]

Brief.—The turning of the mold-board automatically turns the shovs from side to side. The draft-rod extends under the entire beam, having a hooked rod secured to its rear end at right angles. The latter slides in a tube attached to the mold-board. When turned the hook drops into place and locks it.

The combination of the draft-rod G, running lengthwise with, and swiveled to, the beam A, with the hooked rod F and the slotted tube E, connected with the reversible mold-board D, the rod G connecting at its forward end with the draft-hook H or a clevis, substantially as herein shown and described.



168,168.—WEFT-STOP MECHANISM. Thos. Isherwood, Westerly, R. I. [Filed Mar. 6, 1875.]



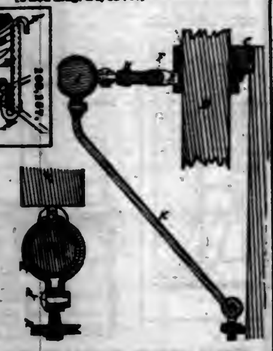
1. In combination with the stopping mechanism of a loom, the feeler C, arranged upon a rock-shaft upon the breast-beam, and adapted to be presented to the weft-thread and withdrawn during the back movement of the lathe, and to be actuated by the tension of the weft-thread caused by the drag from the shuttle in its passage through the shed.

2. The combination of the secondary stop E, and a retracting contrivance adapted to be left free when the shipper thrown, with the crank and the crank-shaft of a loom, substantially as specified.

3. The fulcrum A, rock-shaft B, elbow-lever E, hand rod F, and hooked tripping-rod H, combined and arranged in the loom, substantially as specified.

4. The sliding roller-cam M on the lathe, and the cam-lever O on the front beam, combined with the rock-shaft and fulcrum, and arranged to present the feeler to the weft when the lathe goes back, substantially as specified.

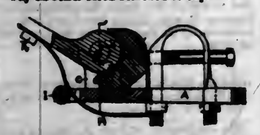
168,169.—TENONING FOR SHIPS' YARDS. Saml. S. Jordan and John C. Stevens, Bath, Me. [Filed Aug. 24, 1875.]



The combination of the clasp C and its cylindrical bearing-tube D with the shaft E, arranged to rotate on said tube, the swivel G, truss H, brace K, and yard J, for joint operation, as shown and set forth.

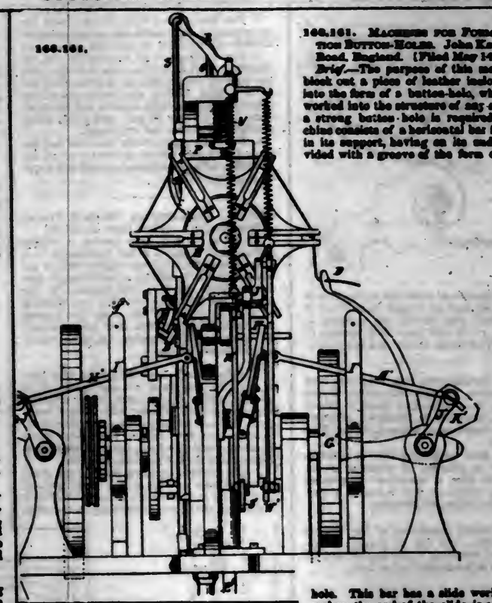
168,170.—THILL-COUPLERS. Walter Kelton, North Attleborough, Mass. [Filed Apr. 6, 1875.]

Brief.—Spring-support for thill resting midway on roller-block attached to clip.



The spring-bar H, in combination with the block I, plate A G, and thill-plate D, substantially as and for the purposes set forth.

168,161.



168,161.—MACHINES FOR FORMING BUTTON-HOLES. John Kenny, Dover Road, England. [Filed May 14, 1875.]

Brief.—The purpose of this machine is to block out a piece of leather bordering a card into the form of a button-hole, which may be worked into the structure of any article when a strong button-hole is required. The machine consists of a horizontal bar free to move in its support, having on its end a die provided with a groove of the form of a button-hole. This bar has a slide working therein, and on the end of the slide is a core passing through the die. The outer edge or periphery of the die and the bed-plate are beveled, so that when brought in contact with the bed-plate a groove is formed by the bevels. The die and bed-plate are held in contact by spring-pressure. A feed-lever holding the card lays it onto the material, and, by its action, draws it into the groove, and between the face of the die and plate. A cam or crank-lever, pressing on the other end of the bar, stamps the button-hole into form. The operation is completed by cutting the card; the button-hole frame is then automatically removed.

1. The combination of presser-foot B, bar S', elbow-lever K, and the cam L on the main shaft, as and for the purpose set forth.

2. The combination of presser-foot B, elbow-lever M, and cam N, substantially as and for the purpose described.

3. The combination of the knife O, bar Q, spring Q, lever R, rod S, lever T, and cam U, substantially as and for the purpose described.

4. The combination, with feed card-wheel E, of the double clamping-springs *a a*, substantially as and for the purpose described.

5. The combination of card-wheel E, ratchet-wheel V, pawl W, sliding shaft X, lever X, and disk A', having a cam-groove, substantially as and for the purpose described.

6. The combination of the card-wheel E, having double springs, the knife P, sliding shaft O', lever P', and cam L, substantially as and for the purpose described.

7. The combination of the gripping-jaws F, sliding shaft F', elbow-lever F'', and disk G', having a cam-groove, substantially as and for the purpose described.

8. The combination of jaws F, horizontal cross H', spring guide-bars I', crank J', and segment K', substantially as and for the purpose described.

9. The combination of bed-plate G, die B, sliding shaft L', spring M', elbow-lever N', slide P, spring Q', and cam U', substantially as and for the purpose described.

10. The combination of the bed-plate G and the picker-bar I, forming the eye of the button-hole, substantially as and for the purpose described.

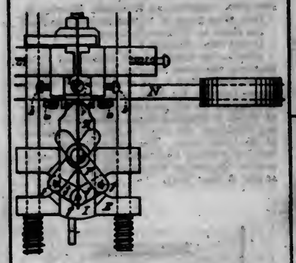
11. The combination of picker-bar I, bar S', lever T', spring U', and cam X', substantially as and for the purpose described.

12. The combination of the picker-bar I and the forked lift J, for the purpose described.

13. The combination of the lift J, spring Y', bar V', lever W', and cam X', substantially as and for the purpose set forth.

168,160.—SAW GUMMING AND SETTING MACHINES. Hiram A. Kimball, Philadelphia, Pa. [Filed Sept. 9, 1875.]

Brief.—The pivoted lever, carrying the gumming-tool and the cam-plate, is oscillated by hand or otherwise. The saw is fed forward by the clamp, which is moved and clamped by the cams, and thrown back on the saw loosely, to take a new hold, by the springs.

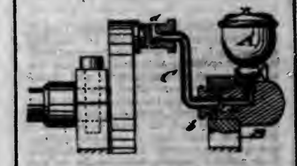


1. The single male cutting-die M, having two cutting-edges at opposite sides to each other, in combination with duplicate dies B B, having each two cutting-edges and cutting-bevel b through which the single die passes in an oscillating or other alternating movement, substantially as set forth.

2. The oscillating cutter-head E, provided with the adjustable plate O, having double cams *f g*, substantially as and for the purpose set forth.

3. The reciprocating slide H, in combination with the double cross-clamps F F, plate I, having a tongue, *r*, and vibrating plate O, having double cams *f g*, substantially as and for the purpose set forth.

168,162.—OILERS FOR CRANK-WRISTS. C. Kurth, Chattanooga, Tenn. [Filed Aug. 28, 1875.]



The combination of oiler A, bed-plate B, having channel *a*, the journal *b*, the bent pipe C, the wrist-pin having angle-hole *d*, as and for the purpose specified.

168,164.—PROCESSES OF TREATING OLEAGINOUS SEEDS. Alfred B. Lowther, Chicago, Ill. [Filed Mar. 6, 1875.]

Brief.—The seeds are fed under pressure to suitable rollers; the cake is then steamed and the oil expressed.

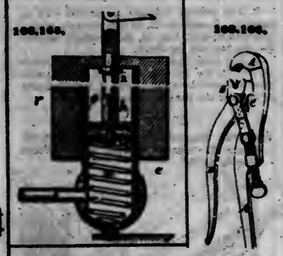
The process of crushing oleaginous seeds and extracting the oil therefrom, consisting of the following successive steps, viz: the crushing of the seeds under pressure, the maintenance of the seeds by direct subjection to steam, and, finally, the expression of the oil from the seed by suitable pressure, as and for the purpose set forth.

168,165.—GOVERNORS FOR ENGINES. James W. Mathieson, Brooklyn, N. Y., assignor to Sarah Hardick, executrix, and John Styer and Abraham H. Van Nesson, executors of Charles B. Hardick, deceased. [Filed Aug. 30, 1875.]

Brief.—The piston is operated by the water-pressure from the pump, to regulate the opening of the throttle-valve.

The hollow weight C, resting upon a collar upon the piston-rod *f*, in combination with the piston A, cylinder *e*, throttle-valve *d*, pump *b*, and steam-engine *c*, for regulating the speed of the engine according to the pressure in the pump, substantially as set forth.

168,163. 168,166.



168,166.—FIRE-TONGS. Alex. McDonald, Kaltfax, Canada. [Filed Aug. 28, 1875.]

Brief.—The bars are connected together by a pivoted link, one end of which is adjusted in a slot by means of a screw.

1. The combination of the pivoted bars A with the hooked lever B and the notched lever C, substantially as herein shown and described.

2. The combination of the set-screw D with the bars A, the hooked lever B, and the notched lever C, substantially as herein shown and described.

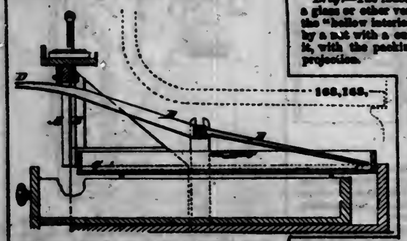
168,167.—WRISTLETS. Patrick McGlew, Des Moines, Iowa. [Filed July 31, 1875.]

Brief.—The loop yields sufficient, to allow the vines to be attached without violent twisting.



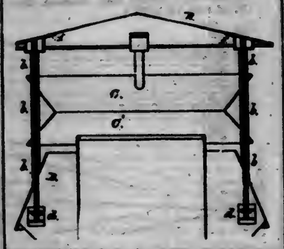
The loop D and elastic strap C, in combination with the whiffletree A, as and for the purpose specified.

168,163.—AXE-PAINS. James M. McHaim, Carlisle, Ky. [Filed May 26, 1875.]



The combination, with slotted front of a pan, D, having a fingered cross-bar pivoted in open bearings between ash-pan sheet and supported grate, as shown and described, to make said pans readily detachable.

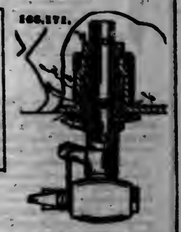
168,169.—VENTILATORS FOR CESSPOOLS. F. Milan, Cumberlandport, Mass. [Filed July 3, 1875.]



168,171.—DEVICES FOR ATTACHING FAUCETS. Jas. S. Morton, Philadelphia, Pa., assignor to Dempsey Wicker-Covered Glassware Company. [Filed July 12, 1875.]

Brief.—The faucet is attached to the side of a glass or other vessel by being inserted into the "hollow interior projection," and secured by a nut with a cup attachment, which binds it, with the packing beneath, to the interior projection.

168,171.



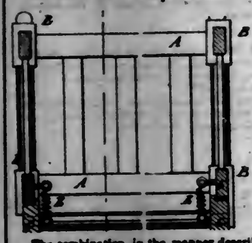
The combination of the hollow interior projection *b*, the tube *c*, provided with exterior screw-threads, the nut *d*, with its cup *e*, and the base *f*, forming means for securely attaching faucets to glass vessels, such as bottles and demijohns, substantially as set forth.

168,172.—CAR-STARTERS. Thomas Murgatroyd, St. Joseph, Mo., assignor to himself and Ferdinand Schoen, same place. [Filed Aug. 31, 1875.]



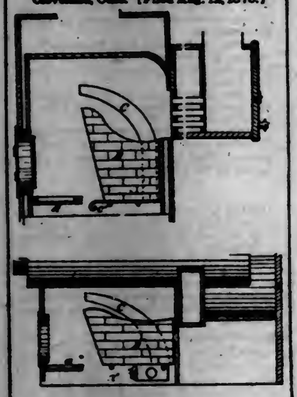
The combination of the pair of pivoted levers A B, provided, respectively, with a hooked end and a claw, D, as and for the purpose set forth.

168,175. CRADLES. Jos. B. Neibach, Utica, N. Y. [Filed Mar. 7, 1874.]



The combination, in the manner described, of side frames A A, end frames B B, having recesses *b' b'*, and the flanged head-frames C C, with the springs D D, all arranged as described, to form a rocking spring-held cradle.

168,176. FURNACES. Nathan L. Newcomb, Cleveland, Ohio. [Filed Aug. 12, 1875.]



1. The combination, with a furnace, of one or more fans, C, adapted to receive air from under the grate, and to discharge it within the furnace above the grate-bars, substantially as and for the purpose shown.

2. The combination, with the furnace of the fire-wall B, placed immediately behind the grate-bars, and extending well up into said furnace, and one or more fans, C, receiving air from below, and discharging it at the upper portion of said fire-wall and over the grate-bars, substantially as and for the purpose described.

168,177. HAT-FORMING ROLLS. Jos. Watt, Danbury, Conn. [Filed Sept. 9, 1875.]

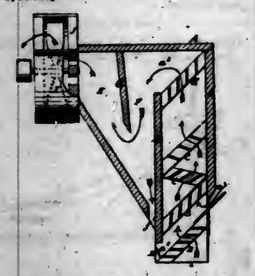
Brief.—The free or lateral edges of the forming cloth or paper are folded into the longitudinal opening, and are of sufficient length to enter the V-shaped groove. When the spindle is turned in either direction, the forming material is wedged between it and its seat. The spindle is held in its seat by a spring secured to the lower end of the roll.



1. The combination, with the frame H, die B, slotted wedge A, oscillating lever *a*, sliding bar C, vertical levers D, E, and punch F, the several parts being constructed, arranged, and combined to operate substantially as and for the purpose set forth and described.

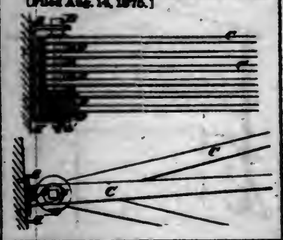
2. The combination and arrangement of the die B in three parts, substantially as shown and described, with the punch F, oscillating lever *a*, bar C, and lever D, the whole constructed and arranged to operate substantially as herein before specified.

168,177. MIDDLINGS-PURIFIERS. Alvin F. Ordway, Beaver Dam, Wis. [Filed July 3, 1876.]



An improved middlings-purifier, formed by the combination, with each other, of the air-trunk A, provided with the openings *a' a' a'*, the lower inclined rest B, the series of zigzag reeks C, the upper inclined rest E, the air-chambers F H, separated in their upper parts by the partition G, and provided with the opening *f*, and the fan-blower I J, substantially as herein shown and described.

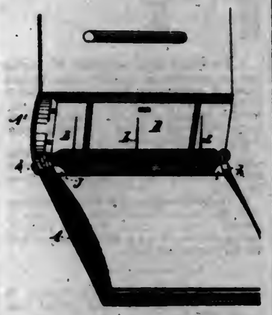
168,178. CLOTHES-DRYERS. Harrison V. Osborne and Robert Hay, Trenton, Mo. [Filed Aug. 14, 1875.]



The combination of the breakst A, made with a square hole in its upper end, and a longitudinal groove or slot in its body, the bolt B, made with a long square head, the pivoted arms C, the washers D, provided with pins F, and the washer E, with each other, substantially as herein shown and described.

168,179. TEMPORARY BINDERS. Newton S. Otis, New York, N. Y., assignor of one-half his right to William B. Gray, same place. [Filed Sept. 6, 1875.]

Brief.—The binding-bond is held at right angles to the lower cover or base A by means of the hook clasp K, the short arm of which passes beneath the base, while the long arm is being forced into sockets *g* and *i*, the former of which is attached to the base of the binding-bond, and the latter to the upper surface of the lower cover. The binding-bar is channeled or grooved longitudinally to receive the ends of the needles when struck down at right angles to their body.

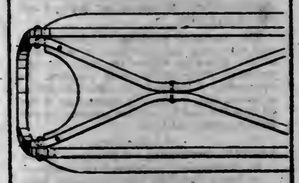


1. In combination with the covers O and O' and binding-strip K, to which are attached the needles L, the grooved or channeled binding-bar R operating to permanently bind letters or papers, substantially as and in the manner herein shown and set forth.

2. In combination, the sockets *g* and *i*, attached, respectively, to the base of the binding-machine B and the lower cover A, and the sliding metal clasp K, arranged, applied, and operating to retain the binding-machine in an upright position, substantially as and for the purposes as herein shown and set forth.

168,180. SLEIGHS. Robt. B. Parks, Princeton, Ill., assignor to himself and John R. Parks, same place. [Filed Aug. 26, 1875.]

Brief.—Both runners are made of one continuous piece.

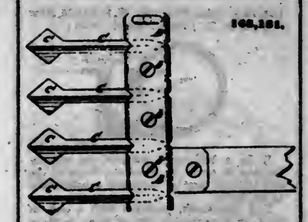


An improved sled, composed of a seat with supporting-frame attached thereto, and made of curved front part, side runners, and curved bottom braces, bent of one piece, substantially as specified.

168,181. COMBINED CULTIVATORS AND HARROWS. Isaac P. Fleharty, Table Grove, Ill. [Filed Aug. 14, 1875.]

Brief.—The two-part beam is recessed to receive either the harrow or cultivator ends of the reversible teeth.

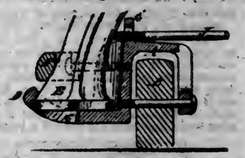
168,181.



The combination of the head B, made in two parts or halves bolted together, and provided with V-grooves and with recesses in their inner surfaces, and the reversible square teeth C, made pointed at one end, and provided with shoulders *g'* at their other ends, with each other, substantially as herein shown and described.

168,182. SEWING-MACHINE CASTERS. B. P. Pratt, Chicago, Ill. [Filed May 26, 1875.]

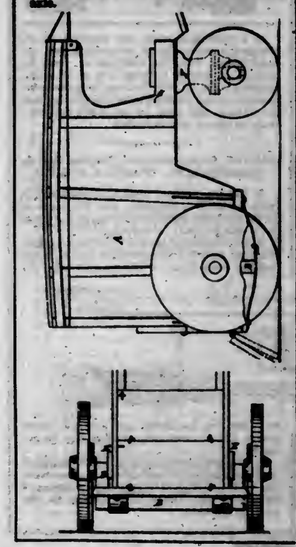
Brief.—A tension-rod, screw-threaded right and left at either end, passes through suitable leg-nuts on top of the caster-frame. A foot or shoe piece of ordinary construction is held in place by a suitable clamp, and the right and left action of the end-threaded tension-rod serves to draw the shoe-pieces tightly onto the legs or feet of the sewing-machine stand, and secure them in position.



The combination of the end-threaded tension-rod J, the caster-frame, having leg-nut G' and foot C D, the leg E, having toe or point *e*, and the clamp F, all constructed and arranged substantially as and for the purpose specified.

168,183. ICE-WAGONS. Charles Rauch, Cleveland, Ohio. [Filed July 6, 1875.]

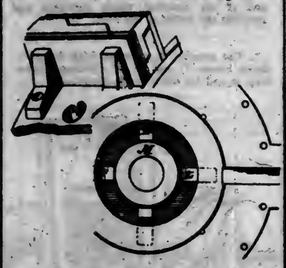
Brief.—Blocks on body limit its movement by striking against vertical portion of cranked axle.



The combination of body A, having limiting-blocks E, high forward part, and low rear part with the pivotal standard, the cranked axle B, and springs D, all substantially as and for the purpose set forth.

168,184. ROTARY ENGINES. Henry Reily, Petrolia, and Phineas C. Walsh, Tidioute, Pa. [Filed Aug. 6, 1874.]

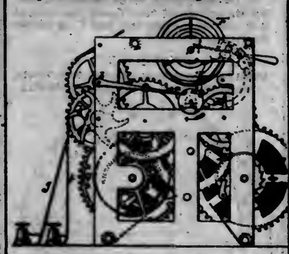
Brief.—A revolving crank-pin engages in the cam-grooves of two plates, which are connected to the slide-abutments, to operate them. Each abutment is held down by a rim on a revolving disk while the other is being raised.



The combination, with the valves F G, of the arms C C, plates E E, with grooves *e*, sliding rollers *g*, and springs h, the flanged disk S, and arm T, with revolving wrist *d*, all substantially as and for the purposes herein set forth.

168,185. ELECTRIC CIRCUIT-BREAKING CLOCK-WORK. David Rossman, New York, N. Y., assignor, by mesne assignments, to Wm. F. Smith and S. Samuels, same place. [Filed Aug. 12, 1875.]

Brief.—The circuit-breaking train of wheels acts only at the time when in the course of the revolution of a pin-wheel in the time-keeping train, the pins have advanced sufficiently to allow the escape of an arm projecting from a spindle of the circuit-breaking train.



1. The arm *a*, combined with the rotary wheel *d* and intermittently-rotating wheel h, to constitute a circuit-breaker, substantially as herein shown and described.

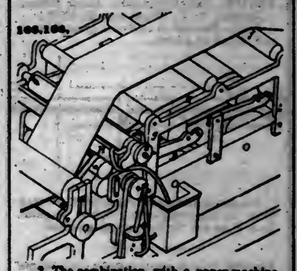
2. The combination of the mainspring B, which rotates the wheel *d*, with the mainspring C, arm *a*, and circuit-breaking wheel h, substantially as herein shown and described.

168,186. MANUFACTURE OF PASTEBOARD. Geo. W. Russell, Lawrence, Mass. [Filed Feb. 28, 1875.]

Brief.—The web from one cylinder is pasted while soft, and united with that from another cylinder before reaching the press-rolls.

1. The described improvement in the manufacture of thick paper from two or more webs of pulp, which consists in the application of paste to said webs at the time and in the manner set forth—that is to say, while said webs are yet in a plastic, semi-pulpy, and incomplete condition, and in transit to the press-rolls, by which the several pasted webs are united and joined in a single homogeneous sheet, as described.

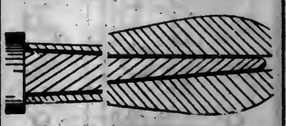
168,188.



2. The combination, with a paper-machine, of a trough for receiving a limited quantity of paste, a roll wallowing in such paste, and transmitting the latter to one or more webs of pulp, and finally of a cistern for containing a considerable quantity of paste, and a pump connected with such cistern, for delivering such paste to the trough, an overflow-pipe extending from the trough to the cistern, and the whole being substantially as and for the purposes stated.

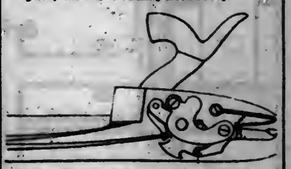
168,187. PAINT-BRUSH HANDLES. George W. Schermerhorn, East Livingston, Me. [Filed Aug. 6, 1875.]

Brief.—A convenient supplemental handle is placed upon the ordinary brush-handle, whereby the brush can be used with greater ease.



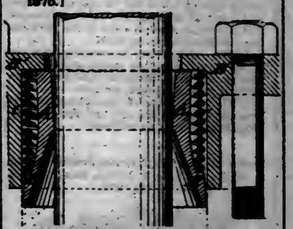
In combination with an ordinary paint-brush having the tapering stock or handle b, the perforated removable handle *a*, applied as and for the purposes set forth.

168,189. GUN-LOCKS. John O. Scott, Wenpace, Wis. [Filed May 26, 1875.]



In a gun-lock, the combination of a cear, provided with a friction-roller, a tumbler, provided with notches, such as shown, and a sear-lever, the combination being and operating substantially as shown and described.

168,190. PISTON-ROD STUFFING-BOXES. J. M. Searle, Stanhope, N. J. [Filed July 31, 1875.]



The arrangement of the spring-controlled cup A, with its conical recessed end toward the cylinder-head, whereby it is adapted to set on the interposed packing, as shown and described.

168,190. CAR-COUPLERS. Lewis Sibley, Ramapo, N. Y. [Filed Aug. 31, 1875.]

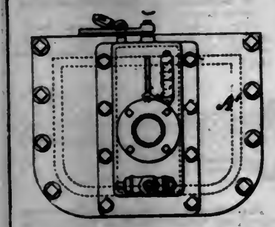
Brief.—The link is held on a pivoted block and moved by a lever.

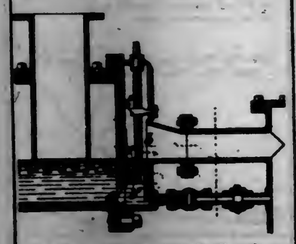


The combination of curved link C, pivoted block D, supporting-spring E, and weighted lever F, as and for the purpose specified.

168,191. TAR-GATES FOR HYDRAULIC MAINS OR GAS-WORKS. John M. Shaney, Camden, N. J., assignor to James W. Starr and James W. Starr, Jr., same place. [Filed Sept. 9, 1875.]

Brief.—To the end of the hydraulic main is affixed a valve-chest, with a tar-outlet on a level with the mouth of the dip-pipes. Outlets governed by vertically-sliding gate. Outside indicator and scale show height of gate. Wrench on gate-screw is locked against a stop to prevent meddling. A direct-supplying outlet from main to tar-pipe.





1. The combination of a hydraulic main, an end plate closing the same, and having an opening in its bottom, a valve-casing on the end plate having an opening in its face at the level of the bottoms of the dip-pipes, and a vertically-moving valve closing the opening in the casing and operated from the outside thereof, substantially as set forth.

2. The combination, in a tar-gate, of a vertically-moving valve and its operating-screw and a pointer connected to a nut on said screw and projecting through a slot in the valve-casing, substantially as set forth.

3. The combination, in a tar-gate, of a vertically-moving valve, an operating-screw journaled in the valve-casing, and a locking-wrench or lever, substantially as set forth.

4. The combination of the valve-casing, the draw-off pipe, the tar-pipe, and the cleaning-plug, substantially as set forth.

168,192. AIR-VALVES FOR PUMPS. Simon Smith and Isaac B. Collins, Mount Ohnit, Pa. [Filed Aug. 31, 1875.]

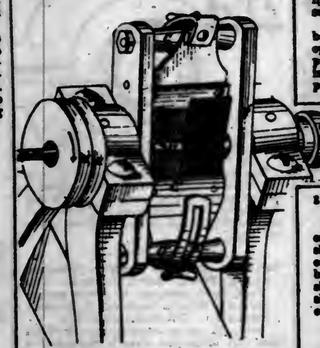


The combination, with steam-grooved valve O o' o', seated in a perforated plug, B, of the plug A, having longitudinal perforation larger at o', diminished at o', further contracted at o', and made still smaller at o', as and for the purpose specified.

168,193. PAPER-TUBE MACHINES. L. Smith, Lowell, Mass. [Filed Sept. 14, 1874.]

Brief.—The paper is wound upon the mandrel, the flocks revolving around it to press the layers together. It is then passed between the finishing-brushes, after which the tube is drawn over the enlarged head on the end of the mandrel, which stretches and smooths the inside of the tube.

1. The mandrel A, provided with the cylindrical bosses U and W, of differing diameters, as and for the purposes described.

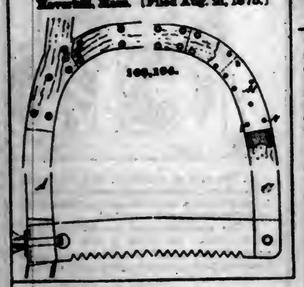


168,193.

2. The combination of one or more flocks, O O', with the mandrel A, having the boss U, as and for the purposes described.

3. The combination of the mandrel A, having the cylindrical boss V, and the brushes Q Q', revolving about said boss V, as and for the purposes described.

168,194. BOOT-SAW FRAMES. P. B. Towle, Haverhill, Mass. [Filed Aug. 21, 1875.]



168,194.

168,195. BELL-PUNCHES. H. B. Towle, New York, N. Y. [Filed June 10, 1875.]



1. In a ball-punch machine, an adjustable stop or screw, by which the throw of the ball-hammer may be regulated substantially as set forth.

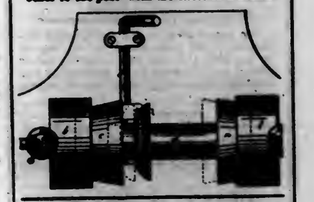
2. A ball-punch, provided with a pair of jaws, or a projecting pin or bars, to serve as a wrench or lever, in the manner and for the purpose substantially as set forth.

3. In a ticket-punch, a thumb-piece placed eccentrically to the axis of the sliding rod, to cause the engaging part thereof to escape from the lever, which it actuates with freedom, substantially as described and set forth.

4. As a new article of manufacture, a toy ball-punch, comprising a ball and hammer, operated by an actuating-piece to receive pressure direct from the operator without the intervention of a lever, and a perforator or punch, substantially as set forth.

168,196. HOISTING APPARATUS. W. Turner, Millerstown, Pa. [Filed Mar. 19, 1875.]

Brief.—A winding-drum, with a fixed conical clutch-piece at each end, is loose on a shaft, revolving in bits, on one of which a counter clutch-piece is stiached, a similar one being affixed to the shaft. The drum, when slid in one direction, locks clutched to the shaft, for the purpose of winding, and in the other to the post with the effect of a brake.

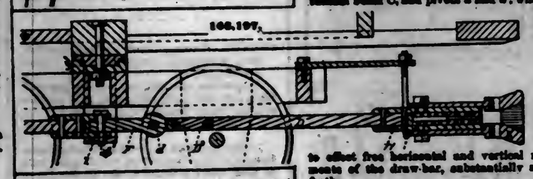


In a hoisting-machine the combination of the shaft a and pulley b attached thereto, in combination with the windlass or drum d, having the conical clutches c e on its ends, recessed block I rigidly fastened to a frame or upright, o, and shifting-lever f for moving the drum back and forth on the shaft, substantially as shown and described.

168,197. CAR-COUPLINGS. Stephen Uzlick, Philadelphia, Pa. [Filed Dec. 4, 1874.]

1. The longitudinal beam C, in combination with the studs b, hangers x, and the frame A of the car-body, for the connection of the draw-bars, substantially as described.

2. The combination of a draw-bar of a railroad-car with link F, bifurcated iron B, longitudinal beam C, and pivots d and d', whereby



168,197.

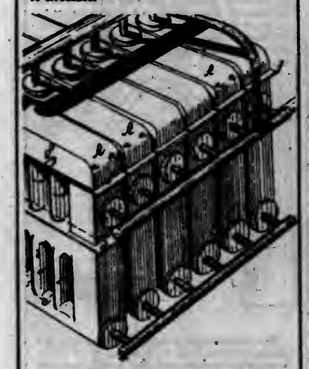
to offset fore horizontal and vertical movements of the draw-bar, substantially as set forth.

3. The combination of the middle section D and end sections D' and D² of the draw-bars, the sections being held together by means of bolts or rivets, substantially as and for the purpose set forth.

The combination of the wood pieces A, B, and C, and the metal corner-pieces M, when the wood pieces are slotted and notched, and the metal corner-pieces fitted in the slits, and the wood and metal pieces rivited, substantially as specified.

168,198. SECTIONAL STEAM-GENERATORS. Geo. W. Walker, Malden, and Miles Pratt, Watertown, Mass. [Filed Aug. 14, 1875.]

Brief.—The sections are connected near the water-level, so as to allow the hottest water to circulate.

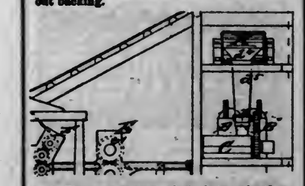


1. The combination, with two or more sections of a steam-generator with tubes, of an inlet-pipe or water-receiving way and a water-circulating or connecting pipe or way, connected with the sections between the inlet-openings and the water-level, and below the steam-space, whereby the water in the sections circulates freely through the sections, substantially as described.

2. A steam-generator of two or more sections, in combination with an inlet-pipe or water-receiving way, a circulating pipe or way connected with the sections below the steam-space and water-level, and with a steam-pipe connecting the steam-spaces of the sections, all substantially as described.

168,199. MACHINES FOR MAKING PLASTIC FLOOR-CLOTH. Profit Walton, Staines, Great Britain, assignor to the American Linoleum Manufacturing Company, New York, N. Y. [Filed Aug. 21, 1875.]

Brief.—A plastic compound is forced into the mixer, which receives cork-dust or other similar material through a mixer. The whole is incorporated and forced out upon an endless belt, on which it is spread by rollers. It may then receive a canvas back, or be dried without backing.



1. The arrangement relatively to each other, substantially as before set forth, of the cement-pan, the receiver, and the mixer, whereby the cement is compounded and delivered to the mixer in regulated quantities.

2. The arrangement relatively to each other, substantially as before set forth, of the powder-meter, the receiver, and the mixer, whereby the cement and powder are mixed in definite proportions.

3. The arrangement relatively to each other, substantially as before set forth, of two receivers and one mixer, whereby a continuous supply of cement is fed and mixed.

4. The arrangement relatively to each other, substantially as before set forth, of two cement-pans, two receivers, and one mixer, whereby a continuous supply of cement can be compounded and fed to the mixer.

5. The arrangement relatively to each other, substantially as before set forth, of the receiver, the powder-meter, the mixer, and the calender, whereby the materials are mixed in definite proportions and delivered in a thin sheet.

6. The arrangement relatively to each other, substantially as before set forth, of the cement-pan, the receiver, the powder-meter, the mixer, and the breaker, whereby the materials of the composition are compounded, mixed in definite proportions, and formed into a slab.

7. The arrangement relatively to each other, substantially as before set forth, of the cement-pan, the receiver, the mixer, the powder-meter, the breaker, and the calender, whereby the materials are mixed in definite proportions, and the composition thereby produced is delivered in a thin sheet.

168,200. COMBINED BURGLAR-ALARMS AND DOOR-FASTENERS. William S. Watkins, St. Louis, Mo. [Filed Sept. 20, 1875.]

1. The combination of the screw a and head b, provided with the nipples c, substantially as shown, whereby a burglar-alarm and door-fastener is formed, as described.

2. The combination of the screw a, head b, nipples c, and casing d, whereby a combined burglar-alarm and door fastener is formed, substantially as described.

168,200.



168,201.



168,201. DRAFT-TUBES FOR SODA-WATER. John C. Wharton, Nashville, Tenn. [Filed July 12, 1875.]

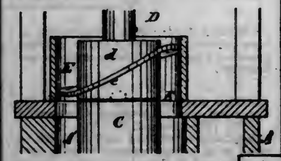
Brief.—The nozzle is provided with a shield, by sliding which up and down on the tube the gaseous liquid may be caused to foam or be prevented from foaming, as may be desired

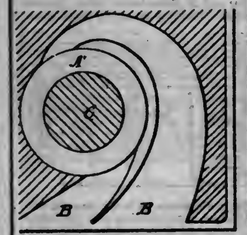
1. In combination with the shield B, with or without projections d, the pipe A and nozzle E, forming a shoulder, the nozzle also having radial or tangential holes, substantially as and for the purpose set forth.

2. The movable shield B, with projections d d, &c., as and for the purposes described.

168,202. WATER-WHEELS. Robt. Wilson, McLeansville, N. C. [Filed July 26, 1875.]

Brief.—The water-chest receives and feeds the water to the bottom of the wheel through wedge-shaped channels. The water passes up through the wheel, and is discharged at the top.

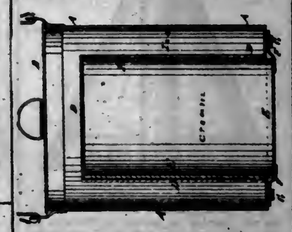




1. The water-chest A, provided with central circular opening A', solid head-block C, and wide mouth, gradually-converging curved channels B B', discharging into the space A' at opposite sides thereof, as and for the purposes described.

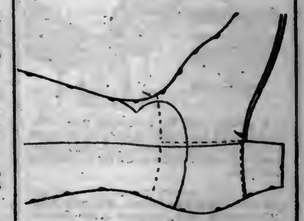
2. In combination with the chest A, constructed with the central circular opening A', solid head-block C, and wide-mouthed, gradually-curved, converging or wedge-shaped channels B B', the top-discharge inclosed wheel D d e, substantially as and for the purposes described.

168,203. ICE-CREAM CANNISTERS. Henry W. Wyman, New York, N. Y. [Filed Sept. 11, 1875.]



The combination of the vessel A, provided with a cover, B, and bail C, the inner vessel D, made with an open bottom and a closed top, the detachable vessel E, and the legs and open keepers F G, with each other, substantially as herein shown and described.

168,204. STONE. David D. Young, Indianapolis, Ind. [Filed June 14, 1875.]

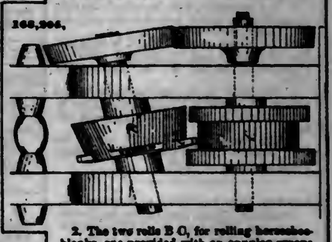


A sign boot or shoe consisting of two or more pieces of sheet metal, stamped or swaged into shape and soldered together, substantially as and in the manner specified, for the purpose set forth.

168,205. MACHINES FOR ROLLING HORSESHOE-BLANKS. William D. Young, Pittsburg, Pa., assignor to Shoenberger & Co., same place. [Filed Mar. 20, 1875.]

1. The rolls B C, for rolling horseshoe-blanks, one provided with an annular groove, and the other provided with crescors, the axes of the rolls crossing each other while the faces of the rolls are parallel.

168,205.



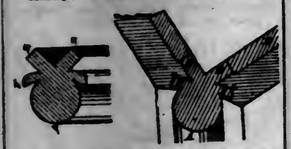
2. The two rolls B C, for rolling horseshoe-blanks, one provided with an annular groove and the other provided with crescors, said crescors being placed at right angles to the axis of the roll, the axes of the rolls crossing each other substantially as and for the purpose specified.

168,906. CLOTHES-POUNDERS. S. M. Allen, Dillsburg, Pa. [Filed July 17, 1875.]



In a clothes-pounder, the combination of the air-chamber A, having perforations B, with the concentric downward-projecting flanges or beaters D, substantially as and for the purpose herein before set forth.

168,907. CORNER-BEADS FOR PLASTERING. Galen P. Atherton, Worcester, Mass., assignor of one-half his right to S. Fletcher, same place. [Filed Jan. 19, 1875.]



A corner-bead for plastering, when constructed with the projecting side ribs or flanges F, combined with the main body A and angle-flanges B, substantially as and for the purpose described.

168,908. VEHICLE-AXLES. Ephraim Ball, Clarksville, Tenn., assignor to the Clarksville Iron Wagon Manufacturing Company, same place. [Filed Mar. 6, 1875.]



1. The axle A, formed with top and bottom flanges *a b*, and having its ends hammered down in tapering form, with the top flange *a* rounding to spindle shape, substantially as set forth.

2. In combination with the axle A, the end plate B, welded to the end of the axle and drawn out to form the screw *d*, substantially as set forth.

3. In combination with the axle A, the side pieces D D, riveted or bolted to the axle, for the purposes set forth.

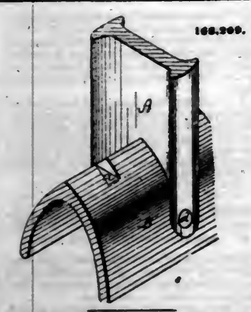
4. The bottom pieces C and E, in combination with axle A and the pieces B and D D, substantially as and for the purposes set forth.

5. The band G, in combination with the axle A, side pieces D D, and bottom piece E, substantially as and for the purposes set forth.

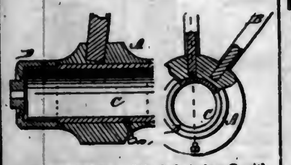
6. The reversed ring-bolt H, having its head fastened by rivets or bolts to the axle, substantially as set forth.

168,909. VEHICLE-WHEELS. Ephraim Ball, Clarksville, Tenn., assignor to the Clarksville Iron Wagon Manufacturing Company, same place. [Filed Mar. 6, 1875.]

The combination of the L-shaped metallic spoke A, with forked end and square part *b*, and the metallic felly B, having notches *c*, the parts being united by the rivets *d*, all substantially as set forth.

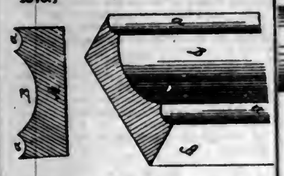


168,910. VEHICLE-HUBS. Ephraim Ball, Clarksville, Tenn., assignor to the Clarksville Iron Wagon Manufacturing Company, same place. [Filed Mar. 6, 1875.]



The combination of the hub A, box C, with wrought-iron bands D D, and the metallic spokes B, cast solid in the hub, substantially as set forth.

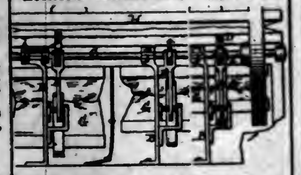
168,911. VEHICLE-WHEEL TIRES. Ephraim Ball, Clarksville, Tenn., assignor to the Clarksville Iron Wagon Manufacturing Company, same place. [Filed Mar. 6, 1875.]



The tire A, having an outer flat surface, an inner hollowed-out center, B, and longitudinal grooves *a a* each side thereof, as shown and described.

168,912. APPARATUS FOR OPERATING ORGAN-BELLOWS. Giles Beach, Gloversville, N. Y. [Filed June 11, 1875.]

Brief.—To a revolving shaft cams are secured, so as to have consecutive action upon the rocker ends of elbow-levers which operate the feeders. Intended mainly for pipe-organs.

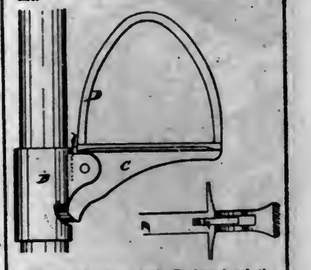


1. The combination, with the reservoir and feeders of an organ-bellows, and the levers for operating said feeders, of the shaft and a series of cams, substantially as shown and described.

2. The elbow levers B, provided with friction-rollers *c*, and arc-faced fillers *f*, in combination with the cams D and feeders G, substantially as shown and described.

168,913. STILTS. Franklin Beaumont, Jr., Dallas, Tex., assignor to himself and Wm. H. Beaumont, same place. [Filed July 26, 1875.]

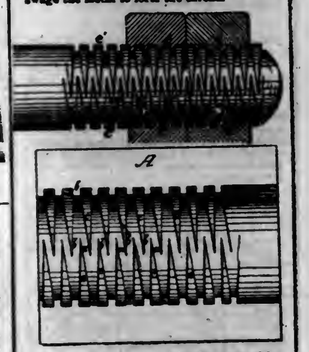
Brief.—The foot-plate is hinged to the sleeve which slides upon the staff, for adjustment to any desired point at which a spring serves to press the foot-lever. The lever engages with the wood of the staff, the weight of the walker also preventing disengagement while it is in use.



The combination of tube B, slotted at *b*, the thereto pivoted lever C, attached to or made in one with the foot-plate, and having serrated end *c*, and the stirrup D, all constructed and arranged substantially as and for the purpose specified.

168,914. DIES FOR SWAGING RIGHT-AND-LEFT INTERSECTING SCREW-THREADS. T. Beddow and A. T. Jackson, New Albany, Ind., assignors to T. Beddow, same place. [Filed Sept. 11, 1875.]

Brief.—The dies are counterparts of a right-and-left-screw-threaded bolt, the grooves or depressions corresponding with the threads, and the ridges with the base of the thread on the bolt. The dies are used in a press, and swage the metal to form the thread.

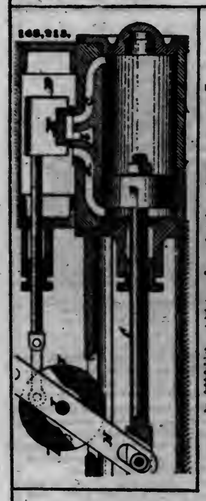


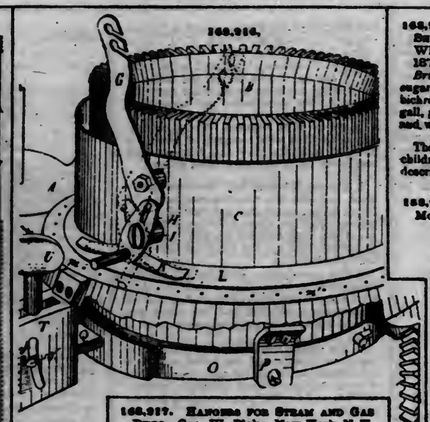
Dies A A, having semicircular concavities in them, which present right-and-left intersecting threads *a b* and intermediate double V-shaped spaces *c'*, as and for the purposes set forth.

168,915. VALVE-GEARS. Henry J. Behrens, New York, N. Y. [Filed June 16, 1875.]

1. The combination, with the steam cylinder and piston in communication with the valve-chest, of an independent plunger, exposed on one side to the pressure of the propelling fluid from the valve-chest, and actuated by the engine-piston against said pressure, but released or tripped at the end of the piston's stroke to reverse the valve, substantially as described, and for the object herein set forth.

2. The combination, with the engine-piston B, its valve E, and the resistance-plunger F, of the following devices, constituting a trip mechanism having lost motion—namely, the lever H, the rock-shaft I, the crank K, and the disks J M, substantially as and for the purposes herein set forth.





168,916. KNITTING-MACHINES. D. Bickford, New York, N. Y. [Filed Dec. 10, 1874.]

Brief.—The cams which raise the needles are arranged relatively to each other, so that a single switch, operated from the outside of the cam-cylinder, serves to deflect the needles downward in whichever direction the machine is revolved, and this switch is connected to a swinging thread-carrier in such a manner that, upon a reversal of the machine, these devices change in unison. The needle-cylinder is provided on its opposite sides with journals, which have bearings in a lever that is fulcrumed to the bed of the machine, so that by operating a screw connected with the long arm of the said lever, the needle-cylinder is raised or lowered, as may be desired.

1. In combination with a knitting-machine cam-cylinder or cam-plate, provided with devices for raising and depressing the needles, a swing-lever adapted to operate as described, whereby it serves to deflect the needles downward in whichever direction the machine may be revolved.

2. In combination with the cam-cylinder of a knitting-machine, the automatic swing-lever F, swing yarn-carrier G, and connecting mechanism, as described, whereby both the lever and carrier shall be shifted in unison, substantially as and for the purpose set forth.

3. In a rotary reversible knitting-machine, the combination, with the bed and with the cam-cylinder, of a pivoted yarn-carrier, mounted on the cam-cylinder, located, with reference to the cams, or cams and switch, substantially as described, and connecting mechanism, whereby said yarn-carrier is automatically operated as the machine is reversed, substantially as set forth.

4. The combination, with the stationary needle-cylinder and with a revolving cam-cylinder, of the pivoted thread-carrier and lever H, both mounted on the cylinder and pin m, substantially as shown and described.

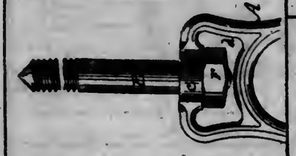
5. The combination, with the cam-cylinder, of a pivoted yarn-carrier, G, pivoted arm H, provided with projection m, and frictional piece or spring K, substantially as and for the purpose set forth.

6. The combination, with the needle-cylinder and with the bed of the machine, of an adjusting yoke-lever hung from and fulcrumed on the bed and pivoted to the needle-cylinder, and an adjusting device, substantially as and for the purpose described.

7. The combination, with the needle-cylinder, provided with journals and with the bed of the machine, of an adjustable lever, whereby the cylinder may be at will raised and lowered, substantially as described.

8. The combination of the yoke O, hangers F, arm Q, bar T, and adjusting-screw U, substantially as and for the purpose set forth.

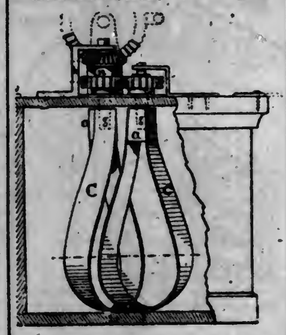
168,917. HANGERS FOR STEAM AND GAS PIPES. Geo. W. Blake, New York, N. Y. [Filed June 11, 1875.]



1. The stirrup A, in combination with the screw or bolt E, and nut F, substantially as herein set forth.

2. The combination, with a stirrup, A, screw or bolt B, thread *f*, and nut F, of the extension-piece G and coupling H, substantially as and for the purpose herein described.

168,918. CHURNS. Francis H. Boggs, Montgomery Township, Woodford County, Ill. [Filed June 20, 1875.]



The elliptical dasher-blades O O, attached to rhomboidal blocks *a*, the ends of the blades being secured to the parallel faces of the blocks, the edges of the blades coinciding with the vertical edges of the blocks, causing the blades to take a twisted form, in combination with a rotating shaft, substantially as specified.

168,919. DISINFECTING, DEODORIZING, AND ANTISEPTIC COMPOSITIONS. G. H. Bowen, Washington, D. C. [Filed Aug. 24, 1875.]

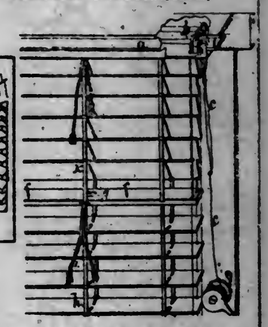
A new composition of matter for disinfecting and deodorizing purposes, consisting of permanganate of potash, boracic acid, and thymol or thymic acid, as herein described.

168,920. COMPOSITION DRESSING FOR SHOES, &c. John H. Brown and Joel G. Whiteside, St. Louis, Mo. [Filed July 12, 1875.]

Brief.—Composition composed of glue, soap, sugar, sal-soda, nut-galls, prussiate of potash, bichromate of potash, borax, gum-shellac, oxgall, gum-copal, extract of logwood, glycerine, and water.

The composition for dressing ladies' and children's shoes, compounded substantially as described, in about the proportions specified.

168,921. INSIDE BLINDS. John Bryan, Des Moines, Iowa. [Filed Oct. 1, 1874.]



In a window-blind, the suspended division-board *f f*, independent slat-operating tapes *h* and *k*, and double set of elevating-cords *e e*, substantially as and for the purposes shown and described.

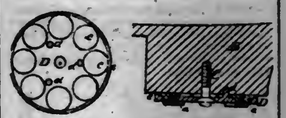
168,922. ANTI-INCRUSTATING COMPOUNDS. Hugh Burgess, Boyer's Ford, Pa. [Filed Sept. 1, 1875.]

An anti-incrustating composition consisting of pinate or sylvate of soda, as set forth.

168,923. BLEACHING-SOAP. Peter Burns, San Francisco, Cal. [Filed Dec. 10, 1874.]

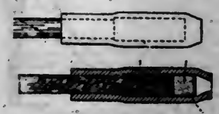
A soap compound consisting of the ingredients tallow, cocoa-nut oil, rosin, caustic soda, alcohol, borax, benzole, and ammonia, in about the proportions specified.

168,924. HEEL-PROTECTORS FOR BOOTS AND SHOES. Levi W. Buxton, Nashua, N. H. [Filed June 19, 1875.]



The adjustable heel-plate D, having the raised rim *e* and spurs *d*, in combination with the flanged rubber-studs *b*, substantially as and for the purpose set forth.

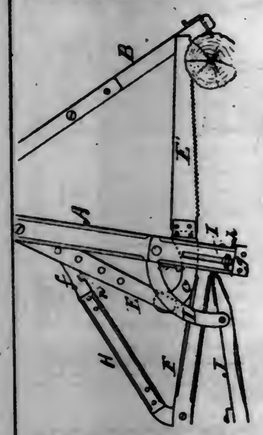
168,925. PROTECTORS FOR EXPLOSIVE CAPS. Frederick A. Caudell, Dover, N. J. [Filed July 2, 1875.]



An exploder for miners, arranged with an elastic inclosing covering, *d*, for the purpose of embracing and holding firmly the entering fuse, substantially as described.

166,226. SAWING-MACHINE. F. M. Carnahan, Adrian, Mich. [Filed Aug. 21, 1875.]

Brief.—A curvilinear reciprocating movement is given the saw by means of a vertically-vibrating operating-lever and a connecting-rod, one end of which is pivoted in a slot in the lever, and the other end is adjustably attached to a pendent rod vibrating between the main beams of the frame, and provided with a thwarted lever end, in which the curved shank of the saw is pivoted. The frame can be adjusted to the inequalities of soil by means of equalizing-blocks, and held in position by flat-headed blocks, adapted to be driven into the ground.



1. The gin A B, vibrating supporting-rod E, connecting-rod H, and vertically-vibrating operating-lever F, in combination with a crescent-saw, E', substantially as specified.

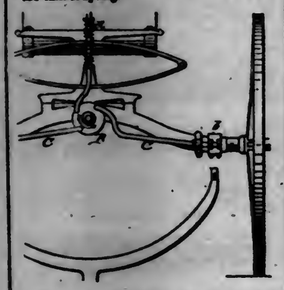
2. The combination, with the saw E' and operating-lever F, of the connecting-rod H, having notched prolongation f, and the slotted supporting-rod E, having upward rods 4, substantially as specified.

3. The vibrating and adjustable treadle J, having notched vibrating arms I, in combination with the saw-supporting frame A, substantially as specified.

4. The frame A and equalizing-blocks I, in combination with the holding-bolts h, adapted to be driven into the ground, substantially as specified.

166,227. DEVICES FOR DETACHING HORSES. James Carpenter, Sheridan, Mich., assignor of one-fourth his right to Jos. W. Marsh. [Filed Aug. 14, 1875.]

Brief.—Pressing on the upright rod releases the thill-coupling.



The combination, in a vehicle, of the pivoted wheel B, horizontal rods C C, thill-clips b b, perpendicular rod D, and spring 4, substantially as and for the purposes set forth.

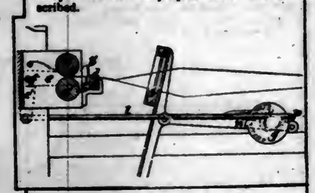
166,228. TAKE-UP MECHANISMS FOR LOOMS. Hugo Carstaedt, New York, N. Y. [Filed Apr. 2, 1875.]

Brief.—The take-up is adapted to the weaving of cornets, and to insure the action of the holding needle-bar, a lifter-bar and a depressor-bar are so arranged and operated as to press the fabric upon the needles, and lift it above them, as required. The operating-cam is provided with a segmental guard, by means of which the lifter and depressor bars are thrown out of operation when desired.

1. The combination, with the take-up of a loom, and with the retaining-needles d, of a lifting device, constructed substantially in the manner described, whereby the fabric is raised out of the needles during the time the filling-thread is beaten up, and while the take-up is acting on it.

2. The combination, with the take-up of a loom, with the retaining-needles d and lifter b, of a depresser, b', both the lifter and depresser being actuated by a cam which acts independently of the reed, substantially as set forth.

3. The combination of the cam-disk g and segmental guard r with the forked rod f, bell-crank levers e e', blades b b', and take-up rollers a a', all constructed and operating substantially as and for the purpose shown and described.



166,229. TOY BUILDING-BLOCKS. George H. Chinnock, Brooklyn, N. Y. [Filed Mar. 6, 1875.]







1. A cubical or other shaped block, provided with grooves c on one or more of its faces, in combination with the ornamenting paper or material, the edges of which are turned down into and confined by the grooves, substantially as described.

2. As a new article of manufacture, a toy block, constructed of a cubical piece of wood or other material, having two lettered faces opposite each other, and having its four remaining sides or faces provided with a continuous slot or depression, in which the ornamenting material is secured, substantially as described, and for the purposes specified.

166,230. ARTICULATED TOY FIGURES. Geo. H. Chinnock, Brooklyn, N. Y. [Filed Sept. 2, 1875.]

166,230.



1. An articulated or jointed toy figure, the adjoining members or portions of which are made, respectively, concave and convex, and united by a metallic link swiveled to one part, and loosely attached and secured to the other by means of a slot in said link, arranged to engage a pin secured to the other part, for the purpose of allowing freedom of motion to the members, and the ready disengagement of said parts, substantially as described.

2. The metallic slotted link, pivoted to one member of an articulated toy figure, and adapted to be secured to the adjoining portion of the adjacent member, for the purpose of connecting said parts, substantially as described.

166,231. EAVES-TROUGH. C. A. Codding, Dowagiac, Mich. [Filed Sept. 7, 1875.]

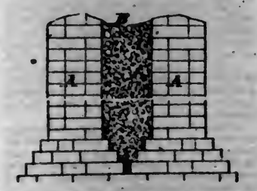
Brief.—A strip of metal is soldered on the outside of the trough at the lap-seams, one end being fastened at the head, and the other end bent over the edge of the trough. A brace-bar is also bent over the head at one end, and over the edge of the trough at the other end. In each instance the strip and brace-bar are securely soldered to impart stiffness to the trough.

1. The combination, with the sections of metal forming the trough, of the bands D, soldered upon the lap-seams and fastened at one end beneath the tube or head, and bent at the other over the side of the trough, as and for the purpose described.

2. The combination, with the sides of the trough, of the brace C, bent over and soldered to the side of the trough at one end, and bent around and soldered to the tube or head at the other, for the purpose described.

166,232. CONSTRUCTION OF FENCES. Jas. B. Cook and James W. Heath, Memphis, Tenn. [Filed Apr. 28, 1875.]

Brief.—The escape of prisoners is prevented by a loose or mobile filling of sand or similar material between hollow walls or linings. The hollow or double walls are supported by doubly-flanged pillars, and a supply-receptacle is provided on top to replenish the material.



1. The method of preventing the puncturing of walls by the employment of a loose or mobile filling of sand, gravel, or other material within or between hollow walls or wall-linings or floors or ceilings.

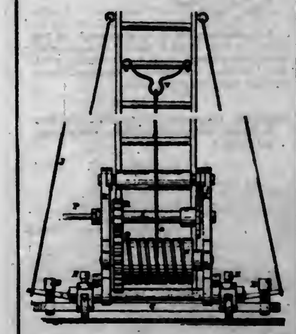
2. The combination of a hollow or double wall or wall-lining or floor or ceiling, a mobile filling, and a supply-receptacle above, from which the space may be kept constantly filled.

3. The combination of the doubly flanged or grooved pillars, the double plates of the hollow wall or wall-lining, and a suitable mobile material filling the space between them, substantially as set forth.

4. The construction of the frame-standards of the hollow walls or wall-linings, with latticed or other openings, substantially as and for the purpose set forth.

166,233. FIREMEN'S LADDERS. M. Cronin, Washington, D. C. [Filed Sept. 16, 1875.]

Brief.—A rectangular platform or frame-work, for raising and supporting ladders, is provided with adjustable caster-wheels and screws, to adjust the platform to uneven surfaces; or, on icy or smooth streets pins are used instead of the screws for securing the platform in position. To the front of the platform is pivoted a folding and adjustable derrick, provided with a drum, on which the hoisting-rope is wound. Folding arms are secured to the sides of the platform, to which guy-ropes are attached for holding the ladder steady when elevated. A stop-rope is secured at one end to the rear end of the platform, and at the other end to one of the ladder-rounds, which prevents the ladder from being raised too far.



1. A portable platform for supporting ladders, with adjustable caster-wheels and screw-bolts, or iron pins, substantially as herein set forth, and for the purpose specified.

2. In combination with the portable ladder-platform B, the folding and adjustable derrick K, substantially as set forth, and for the purpose specified.

3. The combination of the portable platform B, derrick K, drum N, crank P, rope O, double hook V, folding arms I, and guy-rod J with the ladder A, all substantially as shown, and for the purpose set forth.

4. The combination of the portable platform B, derrick K, drum N, crank P, rubber-wheel T, pawl U, rope O, double hook V, folding arm I, guy-rod J, stop-rope W, adjustable caster-wheels F, and adjusting screws or pins D with the ladder A, all substantially as shown and described, and for the purpose set forth.

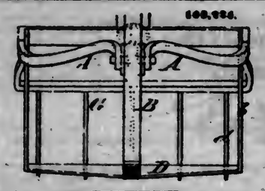
5. The combination of the caster-wheels F and pivoted supporting-bar G with the adjusting-screws E, substantially as shown and described, and for the purpose set forth.

166,234. GARDEN IMPLEMENTS. Jno. Christy, Clyde, Ohio, assignor of one-half his right to Milo Hunter and Byron C. Brigham, same place. [Filed July 10, 1875.]

Brief.—A horizontal cutter is mounted upon a single wheel, like a wheelbarrow. Immediately in front of the blade is pivoted a rake-head, whose teeth extend a little distance below the cutting-blade. When the machine is pushed with the wheel forward, the teeth drag loosely upon the ground, but when drawn forward the teeth penetrate the soil.

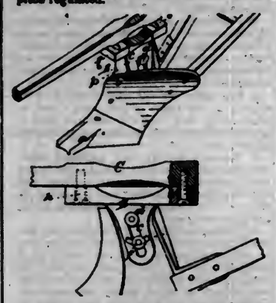
In combination, with the double-edged hoe D, secured rigidly to the frame A, the pivoted rake G, the tines of which are extended below the horizontal portion of the hoe, substantially in the manner and for the purpose described.

166,235.



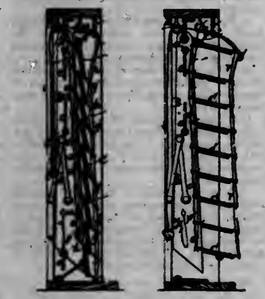
166,235. PLOWS. Wm. H. Daniels, Montpelier, Ohio. [Filed Feb. 2, 1875.]

Brief.—A standard in two parts, to allow the beam to be elevated, moved laterally, or its pitch regulated.



The T-shaped stand or bar B, with the vertical and curvilinear slots s s and transverse slots p p, in combination with the plow with the set-screws d f, and the plow-beam with the set-screws h h, substantially as and for the purpose set forth.

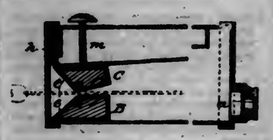
166,236. BLIND-AWNINGS. Jacob David, Brooklyn, N. Y. [Filed Aug. 26, 1875.]



In a blind-awning, the combination of the swinging side pieces, double-jointed braces, ventilating front slats, and folding side slats, substantially as shown and described.

166,237. KNIFE-POLISHERS. A. M. De Hart, Reading, Pa. [Filed Aug. 12, 1875.]

Brief.—The rear edges of the rubbing-pads open at intervals by means of springs, for the purpose of admitting polishing material between them.



1. The combination of the upper tilting jaw C, plate D, spring 4, and knob D', with stem s, all constructed substantially as and for the purposes herein set forth.

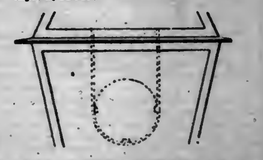
2. The combination of the box A, stationary jaw B, tilting jaw C, plate D, spring 4, and knob D', with stem s, all constructed and arranged to operate substantially as and for the purposes herein set forth.

166,238. BUCKLES. William C. Downs, Bristol, R. I. [Filed Sept. 16, 1875.]



A buckle composed of malleable cast-iron, having a solid frame with a full pintle-eye at each end and a pintle-tongue, substantially as described.

166,239. STREET-LAMP SIGNALS FOR LOCATING FIRE-PLUGS. Geo. H. Dougherty, Jersey City, N. J., assignor of one-half his right to O. F. Marquard, same place. [Filed Apr. 3, 1875.]



In combination with a street-lamp, signals of different colors arranged therein in relation to each other and to the adjacent fire-plug, so as to indicate upon which side of the lamp said fire-plug is located, substantially as set forth.

166,240. MANUFACTURE OF PILLS. Jacob Dunton, Philadelphia, Pa. [Filed Sept. 4, 1875.]

In manufacturing pills by compression, the herein-described method of drying the powders, before compression, at a temperature of about 90° Fahrenheit, with 20° absolute dryness, (Mason's hygrometer,) to prevent reaction upon the mold, and insure stability of cohesion, and lubricating the mold to prevent adhesion, and insure the removal of the pill integrally and perfect.

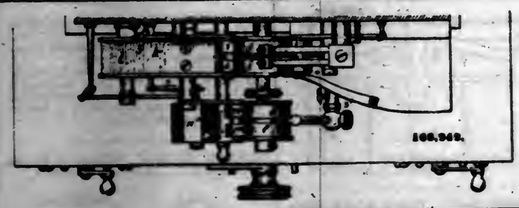
166,241. WINKER-STRAPS FOR BRIDLE-BLINDS. Edgar Beaton and James Scott, Jacksonville, Ill. [Filed Aug. 16, 1875.]



The bifurcated or forked winker-strap A for bridle-blinds, re-enforced with wire B, having the plate b, substantially as and for the purpose set forth.

166,242. TRANSMITTERS AND RECEIVERS FOR AUTOMATIC TELEGRAPHS. Thomas A. Edison, Newark, N. J., assignor to himself and Geo. Harrington, Washington, D. C. [Filed Jan. 26, 1875.]

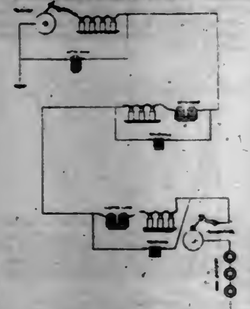
1. The transmitting-drum f and receiving-drum e upon the same shaft, in combination with the receiving and transmitting styles or rollers a a and a cloth, b', for connecting either one drum or the other to the shaft h, as set forth.



2. The two contact-rollers *i* and *i'*, applied to the transmitting-drum, one at each side of the roller *a* or styles, in combination with the wire *d*, to guide the advancing end of the strip of paper, as set forth.

3. The roller *a'*, removable from the shaft *a*, and received by friction, and containing points, in combination with the receiving drum *a* and yielding roller *a'*, substantially as set forth.

168,943. AUTOMATIC TELEGRAPH. Thomas A. Edison, Newark, N. J., assignor to himself and George Harrington, Washington, D. C. [Filed Jan. 26, 1876.]



1. The secondary battery, with poles of similar materials, applied in the main circuit, containing the receiving-instrument, in combination with a shunt around the receiving-instrument, containing a resistance or electro-magnet, for the purposes set forth.

2. The combination, with the signaling electro magnet, placed in the line, of a secondary battery, also in the line, and a shunt around such instrument, containing a resistance, substantially as set forth.

168,944. AUTOMATIC TELEGRAPH. Thomas A. Edison, Newark, N. J., assignor to himself and George Harrington, Washington, D. C. [Filed Jan. 26, 1876.]

1. The secondary battery, with poles of similar materials, applied in the main circuit, containing the receiving-instrument, in combination with a shunt around the receiving-instrument, containing a resistance or electro-magnet, for the purposes set forth.

2. The combination, with the signaling electro magnet, placed in the line, of a secondary battery, also in the line, and a shunt around such instrument, containing a resistance, substantially as set forth.

168,945. NUT-SCRAPER. Thomas A. Edison, Newark, N. J., assignor to himself and George Harrington, Washington, D. C. [Filed Jan. 26, 1876.]

Brief.—Two direct-acting horizontally-moving dies, to forge the sides of the blank, and a vertically-moving flat-faced anvil, upon which the nut is drawn out by a roller attached to a carriage reciprocating in the ways of a yoke-piece (which is given a vertical movement at the proper intervals by cams upon a rock-shaft) after the completion of the side dies. A bracket, upon which the devices for feeding the heated rod are arranged, can be swung around horizontally on its vertical pivot, when it is desirable to expose the faces of the dies. A griping-slide is reciprocated in ways of the bracket by a rock-shaft and lever, to feed the rod forward, and is retracted by a spring, the bite of the plunger that forces the rod against the griping-jaws being automatically released during the backward movement of the slide. The rod is fed against a gage. Two cutters—one for severing the nut from the rod, and the other for shearing the superfluous metal from the point—are carried by the swinging bracket.

1. The combination of a roller, 32, a flat or nearly flat opposing die or anvil, 17, and a pair of side dies or hammers, 18, retracted during the effective movements of the roller, substantially as herein described.

2. The combination of carriage 34, sliding in bearing-ways 33, and yoke-arm 36 40, for guiding and reciprocating the roller 32, in the manner set forth.

3. The sliding carriage 34, carrying roller 32, side dies 18 18, and bottom die or anvil 17, and cranks or their equivalent, in combination with the shaft 2, having cams 10 39, for operating the shaping mechanism, in the manner set forth.

4. The main driving-shaft 2, mounted in arms 4 4, fulcrumed to the main frame, in combination with cranks 6, eccentric shaft 7, and treadle 8, for opening and closing the dies, as set forth.

5. The main driving shaft, arranged below the side dies or hammers, and about on a line with the end dies, substantially as shown and described, in combination with the roller 32, dies 18 18 17, set-screws 20, bell-cranks 22, and connecting-rods 24.

6. The combination in a horseshoe-nail machine, of continuously actuated moving dies or hammers, and a roller, a driving shaft adapted to rise and fall, to open and close the dies, and a feed mechanism, actuated by hand, substantially as herein shown and described, to provide for subjecting the nail to any required number of blows, and for withdrawing the same at any time, as set forth.

7. The supplemental frame, supporting the feed, gage, and cutting mechanism, and attached to the main frame by a vertical pivot, so as to swing laterally to expose the die-ways, as set forth.

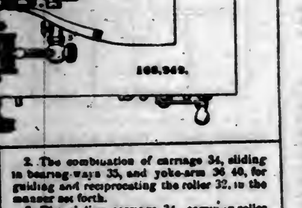
8. The sliding feed-table, projected by a rock-shaft and lever, and retracted by a spring, in combination with the adjustable stops 66 69, substantially as described, for the purpose specified.

9. The grooved arm 68, and toggle 72, combined and operating, substantially as described, for locking and unlocking the griping mechanism, in the manner set forth.

10. The combination of the tripping-cam 79, pawl 80, lever 81, and lifting-spring, for operating the cutting arm or slide, in the manner set forth.

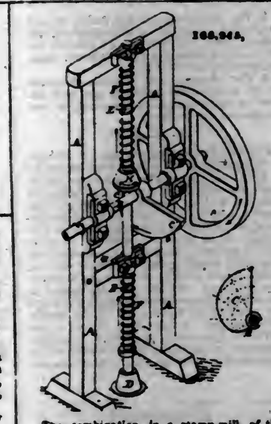
11. The sliding gage 86, adjustable longitudinally, and projected and retracted laterally by the cam 92, or its mechanical equivalent, in combination with rock-shaft 61, and hand-lever 93, in the manner specified, for the purpose set forth.

12. The combination of the hand lever 93, rock-shaft 61, crank-lever 62, grooved cams 92, and tripping-cam 79, with their appurtenances, substantially as shown and described, for operating the feeding-slide, griping-jaw, sliding gage, and cutting arm or slide, in unison, by hand, in the manner set forth.



168,946. ORE-STAMPS. Wm. C. Ferguson and John S. Jones, St. Louis, Mo., assignors of one-third their right to John L. Ferguson, same place. [Filed Apr. 28, 1875.]

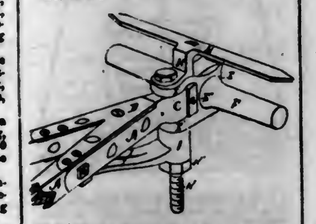
Brief.—The stamp-shaft is lifted by means of a cam which has a descending pitch, in order that, as the force required to compress the springs increases, the amount of compression is proportionately diminished, and the power required to revolve the cam remains constant.



168,946.

The combination, in a stamp-mill, of the stamp D, with shaft E, spring or springs F, with lifting-cam C, having a decreasing pitch from its point *c* to point *c'*, substantially as and for the purpose set forth.

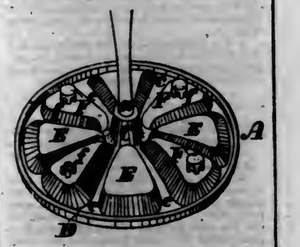
168,946. CARRIAGE-COUPLINGS. Stephen B. Foster, Minneapolis, Minn. [Filed Aug. 20, 1875.]



1. The combination, with the reach A, of a coupler E, and bolt K, of the double brace I I, and rubber pad G, substantially as and for the purpose set forth.

2. The combination, with a bowed axle F, having a coupler E, welded thereon, of the reach A, pad G, rubber pad G, plate D, double brace I I, and bolt K, constructed to operate substantially as shown and described.

168,947. CLOTHES-POUNCERS. Andrew French and John S. Lash, Philadelphia, Pa. [Filed Aug. 24, 1875.]

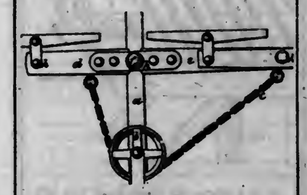


1. The metallic disk A, cast in one piece, having a central depressed hub, C, from which proceed radial ribs *e e*, flaring upwardly toward the rim D, the space between said ribs being cast to form chambers E, substantially as shown and described.

2. In combination with the conical disk, having chambers E, the arbors F, and globes *f*, substantially as set forth and shown.

168,948. DRAFT-EQUALIZERS. Ezra Graham, Manchester, Iowa, assignor to himself and Enos Hamblin, same place. [Filed Aug. 23, 1875.]

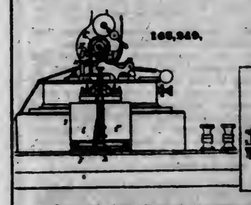
Brief.—The unequal levers are pivoted upon the same bolt.



The combination, with pole *a*, of unequal levers *d e*, jointed on the same pole-pin, and connected by a chain, *c*, passing over a rear pole-pulley, *b*, to turn the three-horse equalizer specified.

168,949. PRINTING-TELEGRAPHS. Elisha Gray, Chicago, Ill. [Filed June 1, 1874.]

Brief.—Improvements on Gray's former Patent No. 152,907.



168,949.

1. In a printing-telegraph instrument, the separable and yielding points *h* and *h'*, one in constant electrical connection with the press-magnets and one pole of the battery, and the other in like connection with the other pole and the type-wheel magnets, in combination with a yielding separator or circuit-breaker, controlled substantially as specified, for the purposes set forth.

2. The combination of the polarized relay I, having its helices in the main circuit, the points *w* and *w'* on opposite sides of corresponding points on the polarized armature, the Morse armature l', and its lever, provided with the points or pin *h*, and actuated by the relay-magnet, and the points *l* and *n* on opposite sides of the pin *h*, the several parts being arranged in the circuit of the local battery, substantially as and for the purposes specified.

3. In combination, substantially as described, the separable points *h* and *h'*, arranged in the circuit of the type-wheel magnets, an automatic circuit-breaker operating in connection with the said points, the separable points *h* and *n* arranged in the circuit of the printing-magnets, and controlled by the main current, all operating together in a printing-telegraph instrument for the purpose of leaving the local circuits broken when the instrument is at rest.

4. The main-battery circuit or wire carried to the diagonal insulated points of the pole-changer, in combination with the insulated tongues attached to the type-wheel lever, one of the said tongues being electrically connected to the sendlever of the primary instrument, and the other to the sendlever of the secondary instrument, substantially as specified, and for the purposes set forth.

5. The pole-changer A, consisting of the insulated points *d' e'*, *e*, and *d*, in combination with the type-wheel lever provided with the insulated springs *c* and *c'*, all arranged substantially as specified, with relation to each other and the circuits, for the purposes set forth.

6. The sliding, yielding, and vibrating arm H, provided with a wedge-shaped insulation-block on one end, and engaging at the other end a screw or worm on the type-wheel shaft, in combination with the yielding points *h* and *h'*, arranged in the type-wheel circuit, and with a releasing-arm carried by the printing mechanism, substantially as and for the purposes set forth.

7. The combination of the polarized relay and the Morse armature, in connection with the points *l* and *n* arranged in the local circuit, substantially as and for the purposes specified.

168,950. COFFINS. Francis B. Haden, Chelsea, Great Britain. [Filed Sept. 13, 1875.]

Brief.—A composition of glue and other matter is used for constructing coffins, the material rapidly decomposing, and allowing the body to come in contact with the earth, for more speedy dissolution.

As a new article of manufacture, a perishable coffin composed wholly or in part of the materials herein described, or of the substantial equivalent thereof, being of such a nature that, by the action upon it of the moisture of the earth in which the coffin is buried, it shall be disintegrated and decomposed before the dead body which it has inclosed becomes decomposed, so as to leave said body exposed to the resolvent action of the earth.

168,951. VALVES FOR PUMPING-ENGINES. Wm. H. Harrison, Bethlehem, Pa. [Filed Nov. 3, 1876.]

Brief.—The valve which admits steam to the chest to operate the main valve also controls the quantity of steam, and the time when it is to be admitted to the cylinder.

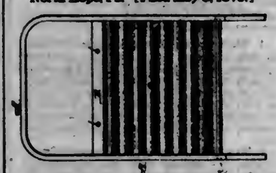


168,951.

1. The combination, in a direct-action pumping-engine, of the regulating-valve K, operated by and moving simultaneously and in unison with the engine, the main valve operated by the pressure of steam, the partition in the chest of the main valve, and a partition having ports adapted to the regulating-valve, substantially as described, so that the admission of steam to the chest of the main valve shall be graduated by the regulating-valve, in the manner set forth, as the piston is concluding and commencing each stroke, for the purpose specified.

2. The combination of the small cylinder *h*, its piston *f*, connected to the two parts of the main valve, and the cones *e e*, adapted to openings in the cylinder-heads, all as set forth.

168,952. WASH-BOARDS. Edwin S. Heath, North Hope, Pa. [Filed May 8, 1876.]



The screw-rod C and corrugated zinc plates, connected therewith by a lap-joint, as specified, in combination with the grooved flexible frame-piece A and cross-bars B B, as and for the purpose specified.

168,953. ATTACHMENTS TO COFFEE-POTS. Samuel S. Hoover, Aldersons, W. Va., assignor to Andrew J. Jones, same place. [Filed Aug. 27, 1875.]



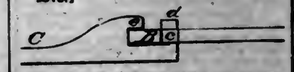
1. In a condensing attachment for coffee-pots, the combination of a vessel adapted to hold water, having an open top, sides tapering downwardly and inwardly in a straight line, and a top flanged rim, the said vessel being adapted to fit coffee-pots of various sizes, with a coil of pipe whose upper open end is secured near the top of said vessel, substantially as described and shown.

2. In a condensing attachment for coffee-pots, the combination of a vessel adapted to hold water, having an open top, sides tapering downwardly and inwardly in a straight line, and a top-flanged rim, with a cone composing the entire bottom of the vessel, and a coil of pipe whose upper open end is secured near the top of said vessel, substantially as described and shown.

3. In a condensing attachment for coffee-pots, the combination of a vessel having an open top, tapering sides A, and top-flanged rim *a* with the coil of pipe D, pipe C, cone B cap *c'*, and handle E, substantially as described and shown.

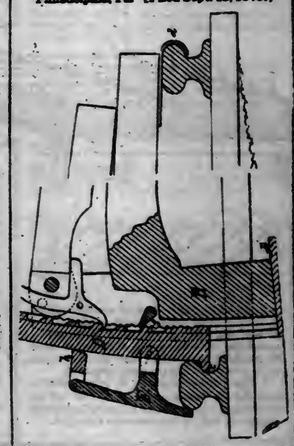
4. The condensing attachment for coffee-pots described, consisting of a vessel having tapering sides A, top rim *a*, and handle E, the cone B, having the cap *c'*, the pipe C, having the cap *d*, and the coil of pipe D, all constructed and arranged substantially as described and shown.

168,954. PITMAN-CONNECTIONS. Sylvester B. Howard, Gilman, Ill. [Filed July 31, 1876.]



The sickle-bar A, having the segment B, notch *c*, and stop *a*, in combination with the pitman C, provided with the recessed head, pintle *d*, and hook *e*, substantially as described, and for the purpose set forth.

168,955. TRACK-LIFTERS. Geo. W. Hunter, Philadelphia, Pa. [Filed Sept. 13, 1876.]



1. In a lifting jack, a standard whose front face is made on the arc of a circle, having combined therewith a hook adapted to move in the curve of such arc, substantially as described.

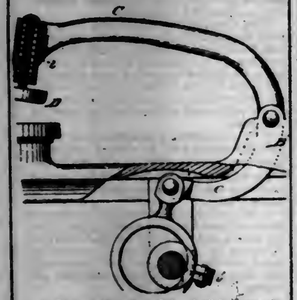
2. In a lifting-jack, the combination of an upright, an extending lateral arm and a hook or means of connection with the rail farthest from the pedestal, substantially as described.

3. In a lifting-jack, the combination, with the movable hook or elevating device, of an adjustable clamp or stay, substantially as and for the purposes set forth.

4. In a lifting jack, a clamp or stay consisting of the combination of the lever F and movable strut A, substantially as shown.

166,866. MACHINES FOR BEATING LEATHER. John H. Hussey, Baltimore, Md., assignor to Abraham S. Adler, Lewis P. Uriel, Jas. Clement, and John H. Hussey, same place. [Filed Sept. 11, 1875.]

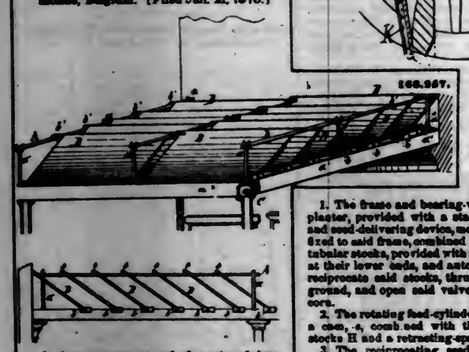
Brief.—A power-hammer is attached to a rocking lever adapted to give a yielding blow in hammering leather seams.



1. The combination of the shaft A, eccentric d, sleeve b, rocking lever C, working in a slotted boss, yielding hammer D, and anvil H, all constructed and arranged substantially as and for the purpose described.

2. In a machine for hammering leather, the combination of the rocking lever C, provided with a vertical tube extending through its front, with the spring i, yielding hammer D, and anvil H, all constructed substantially as and for the purpose specified.

166,867. AWNINGS. Alphonse Ingbels Termonde, Belgium. [Filed Jan. 21, 1875.]



1. An awning composed of a series of slats, B, having their lower rods b^1 pivoted as described, and their upper rods b supported by transverse rods A, so that the slats B lie at an angle to and overlap each other, substantially as and for the purposes specified.

2. The frames or wings B, in combination with the gutters or spouts a^1 a^2 b^2 c^2, and the hollow supporting-columns C, substantially as described, and for the purposes specified.

3. The frames or wings B, in combination with the rods A, gutters or spouts a^1 a^2 b^2 c^2, the vertical rods or standards a, the supporting-columns C, and a water spout or conduit, substantially as set forth, and for the purposes described

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166,868. KEY-RINGS. George W. Jopson, Waterbury, Conn. [Filed Sept. 9, 1875.]

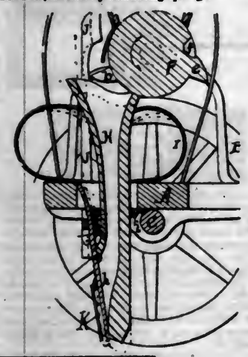


The combination of the divided ring a and collar c, the two ends of the ring constructed to receive and hold the said collar, and allow the collar to rotate thereon, the said collar constructed with an opening, f, substantially as and for the purpose specified

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166,869. SEED-PLANTERS. A. M. Kaboose, Sun Prairie, Wis. [Filed Aug 12, 1875.]

Brief.—Mounted in bearings, to revolve in the bottom of the hopper, is a cylinder having seed-cells, beneath which are secured adjustable stocks for receiving the seed and depositing it in the earth. Upon the cylinder are cams, the central one of which strikes, in its revolution, rollers upon arms that secure the stocks together, and thus force them down into the earth. While thus depressed the two outside cams come into action, and strike the vertically pivoted arms, the lower ends of which are attached to a cross-bar, that presses against the upper ends of pivoted valves, to discharge the seed. The cams having acted, the stocks and valves are restored to their normal position by retracting-springs.



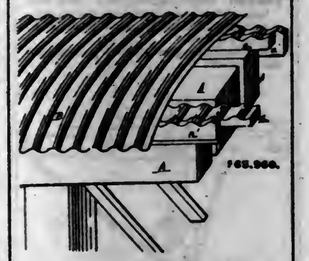
1. The frame and bearing-wheels of a corn-planter, provided with a stationary seed-box and seed-delivering device, moving in bearings fixed to said frame, combined with one or more tubular stocks, provided with automatic valves at their lower ends, and automatic devices to reciprocate said stocks, thrust them into the ground, and open said valves to deposit the corn.

2. The rotating feed-cylinder, provided with a cam, e, combined with the reciprocating stocks H and a retracting-spring, as set forth.

3. The reciprocating seed-stocks H and valves h, which are automatically closed by springs S, combined with the tripper-levers J and rotating tappets or cams h.

4. Combined with the reciprocating seed-stocks H, the covering-hoes K connected therewith, as set forth.

166,870. COVERS FOR THE UPPER ORIFICE OF BEEHIVES. Moritz Lassig, Chicago, Ill. [Filed Oct. 19, 1874.]



1. In a bridge, the combination, with the top chord A, of a corrugated sheet-metal covering, B, projecting on each side of said chord, arched and secured at an elevation above the timbers composing said chord, so as to leave a free open space between said covering and chord, substantially as described and shown.

2. In a bridge, the combination, with the top chord A, of the corrugated arched covering B and the strips a a', all constructed and arranged substantially as described and shown.

166,871. BEE-HIVES. David Latchaw, Barleyville, Pa. [Filed Mar. 24, 1875.]

Brief.—An improvement on Patent No. 141,443, August 5, 1873, to same inventor. A moth-trap is fixed in the lower part of one of the frames, which frame may take any place in the series. The several frames are tongued and grooved, so as to present a close exterior, however they may be arranged together. Each end has an inner rank, an outer shutter, a space between, and, laterally, tongues to join in one with the frames.



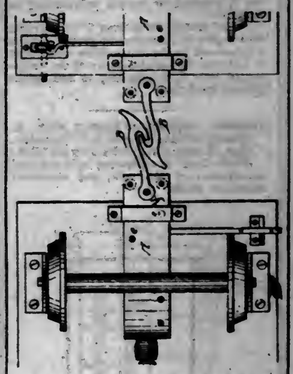
1. The wire trap D, the frame C, provided with the wire tubes g g', constructed and arranged as and for the purpose specified.

2. The comb-frames, tongued and grooved, as shown and described, so that the frames of themselves form a perfectly close hive, as and for the purpose herein set forth.

3. The rank H provided with the grooves, as shown, and the glass I, in connection with the end board G and frames C, substantially as and for the purpose described.

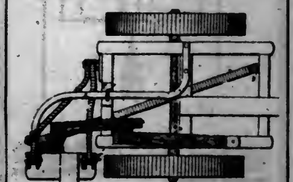
4. The case A, combined with the detachable bars B B and frames C, so arranged as to provide a summer and winter hive, substantially as and for the purpose herein described.

166,872. CAR-COUPLINGS. Charles Mace, Danville, Pa. [Filed July 24, 1876.]



In combination with the draw-heads A A, provided with springs D, and stops, as described, the coupling-latches B B provided with ears e e, and levers C, and detachably connected to the draw-heads by the bolts Y, substantially as and for the purposes described.

166,873. HARVESTERS. R. H. McCormick, Chicago, Ill. [Filed Apr. 6, 1874.]

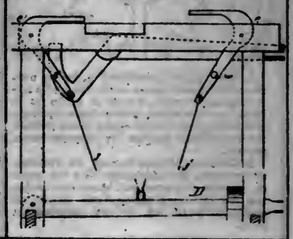


1. The suspension-bar, constructed substantially as hereinbefore set forth, secured centrally upon the main frame, and having its rear end carved inward, so as to form a point of support for the rear coupling-arm, and afford room for the rake-post.

2. The combination of the shoe, the independent coupling-arms pivoted thereto, and to a common stud on the main frame, and the drag-bar pivoted to the main frame near its outer front corner, extending diagonally backward between the wheels and pivoted to the rear coupling-arm, these members being constructed and operating in combination substantially as set forth.

166,874. MACHINES FOR STRETCHING HAT-BODIES. John G. Meeker, Danbury, Conn., assignor of one-half his right to D. W. Meeker, same place. [Filed July 21, 1875.]

Brief.—Flattens a cone-shaped hat-body, and places it upon a segment-shaped table-top, provided with compound lever-arms, carrying clamps. These clamps hold the body upon the lever-arms, while the latter are caused to diverge from the edges of the table by the interposition of a wedge-shaped lever.



166,875. VALVE-GEARING. Llewellyn F. Law, Chicago, Ill. [Filed Aug. 24, 1875.]

Brief.—The hollowed clamp, with arms and rods, adjusted by thumb-screws, together with a screw having a center-point, has a clamping-screw on one arm, and attaching-bolt with extension-blocks on the other.

1. The clamp A, having the clamping-screw e, adjustable arm C, rods D and E, adapted to be placed and secured as described, and screw f, having a center point, all combined substantially as and for the purpose specified.

2. In combination with the clamp A, one or more extension-blocks, B, and attaching-bolt b, substantially as and for the purpose named.

166,876. MANUFACTURE OF IRON. Albert G. Lewis, Brooklyn, N. Y. [Filed May 27, 1876.]

Brief.—Uses a mixture of infusorial earth, found in Nevada, wolfram, and manganese, as a "physic" in puddling.

The method herein specified of removing foreign substances from iron by a mixture composed of the above-described silica, wolfram, and manganese introduced into the melted metal, substantially as and for the purposes set forth.

166,877. TRUSSES. Leon T. Lubin, Boston, Mass. [Filed Aug. 24, 1875.]

Brief.—A small pad passes through an opening in a large abdominal plate, and is given a yielding rocking motion by means of a straight steel bar, which is attached to it upon its outer side, and by an elastic cord, which loops over alternate hooks placed upon the plate and pad.



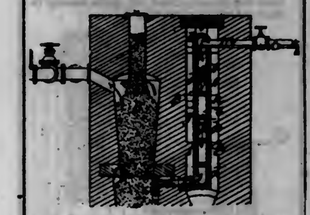
1. The hernia-pad A and holder-pad or plate B, the two applied and connected together by an elastic cord, b, substantially as described, for the purpose specified.

2. The hernia-pad A, arranged to move in and out of its holder-pad or plate B, the spring-band G, and the elastic straps D D, and a non-elastic band, E, all connected together and arranged substantially as herein described, and for the inward movement or pressure of the hernia-pad A in the outward movement of the holder-pad B, substantially as specified.

3. The non-elastic band E, with its loops b^1, in combination with the elastic strap or straps D, substantially as and for the purpose described.

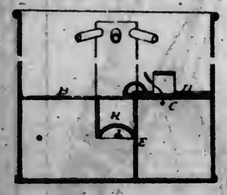
166,878. GAS-APPARATUS. Philip W. Mechanic, Elsewelville, N. Y. [Filed Nov. 7, 1874.]

Brief.—Air to incite combustion is admitted at the top of the steam-superheater. Subsequently shows all air-inlets, and supports combustion by the oxygen of the steam. Gas-retort has side grate. Steam enters it through an annular space between coal and coke at the gratebars bottom.



1. The sectionally-constructed retort A, encompassed by a flue, f, and composed of compartments d, mounted one upon the other, in combination with the contracted apertures e, connecting said compartments, a steam-inlet, h, in communication with the upper one of said compartments, and a steam-outlet, c, below, connecting said retort with the decomposing-chamber of the apparatus, substantially as and for the purposes herein set forth.

166,879. WASH-BOILERS. Frank Mackil, Richmond, Tex. [Filed May 22, 1876.]



The wash-boiler, having the rigid horizontal partition B, with slide-closed opening C, the vertical supporting partition E, having the end passages a in the water-chamber, and the horizontal arched steam-tube H, having the central entrance d and the upright end chutes communicating therewith, constructed and arranged as shown and described.

166,880. TAG-FASTENERS. T. F. Marston, New York, N. Y., assignor to Philip Hake, Hoboken, N. J. [Filed June 2, 1875.]



The fastener for tags herein shown and described, made from a piece of wire, constructed with the circular loop A to receive and seat the tag, and with the inwardly-bent sides C C for stiffening the fastener, and with the point F and the loop-guard E, as and for the purpose described, the outer end of said loop-guard being turned up to form a guide for passing the material onto the piercing-pin.

166,881. MANUFACTURE OF BEER AND ALE. John Matthews, New York, N. Y. [Filed Aug. 6, 1875.]

Brief.—Makes beer and ale by using malt extract, hop extract, grape-sugar, and pure alcohol, in accordance with certain specified formulæ.

1. The improved material herein described for producing beer and ale, called beer extract, and consisting of malt extract, hop extract, sugar, and alcohol, with or without flavoring and coloring materials such as named, the whole combined and put up for use substantially as specified.

2. The improved beverage herein described, consisting of beer extract, as described, water and carbonic-acid gas, substantially as set forth.

166,882. AERATED SEA-WATER. John Matthews, New York, N. Y. [Filed Aug. 6, 1875.]

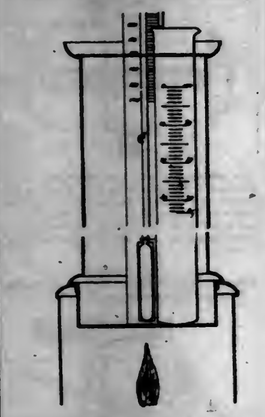
The new manufacture herein described—sea-water charged with carbonic-acid gas and inclosed in bottles or other air-tight vessels, substantially as specified.

1. The pivoted lever-arms C C', with fingers f f', in combination with the wedge-shaped lever F, arranged to operate substantially as specified.

2. The pivoted lever-arms C C', provided with fingers f f', carrying the pivoted clamps e e', operated by the intermediate connections j j, and lever D, in combination with the wedge-shaped lever E, substantially as and for the purpose set forth.

166,275. MEASURE OF TESTING MILK. A. Mouzed, Clifton, assignor to G. Tagliabue, East Chester, N. Y. [Filed July 28, 1875.]

Brief.—Tests by separating solid and fluid constituents of the milk, and measuring amount of solids.



1. The above-described process of testing milk, by mixing the same with any suitable alkaline and cold solutions and subjecting the mixture to heat.

2. The compounds or their equivalents, called in this specification solutions Nos. 1 and 2, substantially as and for the purpose described.

3. The test-tube F, marked off, as described, into three equal divisions, the upper division being being marked off into thirty-three and one-third parts, substantially as described.

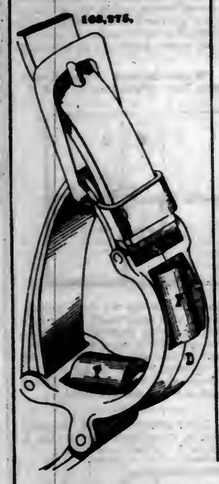
166,276. GAME APPARATUS. Andrew Miller, Guntersville, Ala. [Filed Aug. 5, 1875.]



1. The rotating game-board A, having a series of numbered spaces on its face, and a corresponding number of pins or hooks on its back, in combination with a frame having a projecting arm, C, with spring d and index i, substantially as and for the purposes herein set forth.

2. The cards D, each having six numbers, as described, in combination with the board A, provided with numbered spaces and hooks, and frame C, having spring d and index i, all substantially as and for the purposes set forth.

166,275.



166,277.

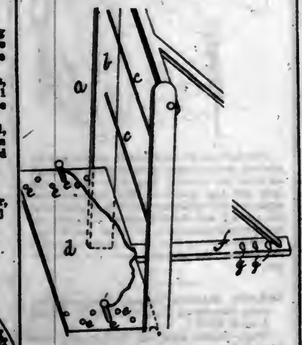


166,275. SHAFT-TUGS. Albert F. Morse, Sharon, Mass. [Filed Apr. 2, 1875.]

1. A shaft-tug provided with removable friction-rolls, substantially as described.

2. The friction-rolls F F' and pins s, in combination with the metallic shaft-tug D, having recess b, substantially as described.

166,276. BOOK-HOLDERS. L. A. Moulton, Old Town, Me. [Filed Aug. 23, 1875.]



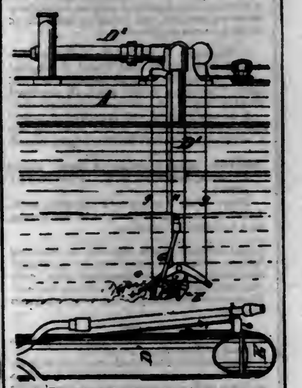
In a book-rest, the combination of the frame a, shelf and arm d f, and cross-bar and arm h i, said shelf and cross-bar being pivoted at opposite edges of the uprights b b, substantially as and for the described purposes.

166,277. FIRE-PROOF ROOFS. A. B. Mullett, Washington, D. C. [Filed Apr. 2, 1875.]

1. A coating or layer of fire and water proof cement, having hooks or cleats embedded therein, and secured by the setting or hardening of the cement, for attaching or anchoring a sheathing of sheet metal, and forming a supplemental protection, in the manner herein set forth.

2. The combination of a foundation, A, of concrete, a coating or layer, B, of cement, anchoring hooks or cleats h, embedded in the cement, and supported thereby, and copper or other sheet-metal sheathing, C, attached to the hooks or cleats, substantially as herein specified, to constitute an improved wind-proof and fire and water proof roof.

166,278. DREDGING APPARATUS. William H. Newton, Madison, Wis. [Filed Sept. 4, 1875.]



1. The pivoted adjustable head or mouth-piece E, combined with the swinging pipe D', substantially as described.

2. The adjustable nozzles G G, combined with the adjustable hood E and swinging pipe D', substantially as described.

166,279. STEAMER IRON-BOTTOMS. Josiah Orthwalt, S. M. P. Hasbrouck, and Eli M. Sweet, Minneapolis, Minn. [Filed June 1, 1875.]

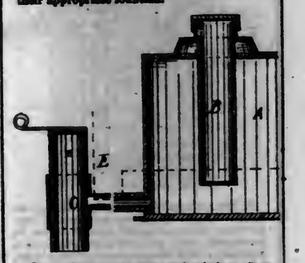


1. The combination, in a bed-bottom, with the slats B E, head-rail D, and foot-rail D', of the stays O O, secured to the head-rail, and sliding under the foot-rail, and the springs G G and G', arranged substantially as herein set forth.

2. In a bed-bottom, the slats B E, fastened to the head-rail and sliding on the foot-rail, except the outer slat on each side, which is fastened to the foot-rail, substantially as herein set forth.

166,280. SODA-FOUNTAINS WITH DOUBLE FAUCETS. Frederick T. Paine, Ishua, Miss. [Filed July 23, 1875.]

Brief.—Each of the two receptacles shown has a cooler depending from the neck. The necessary ingredients mix as the fluid flows from the faucet joining the pipes leading to their appropriate fountains.



In a soda-water apparatus, two independent vessels, A A', provided with covers a a', having separate cooling vessels, and both vessels provided with pipes C C', having a mixing faucet, E, substantially as herein specified.

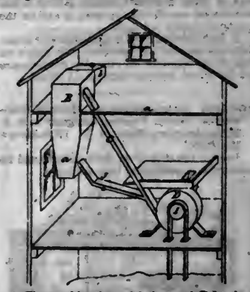
166,281. SPIKE AND NAIL EXTRACTORS. J. Pascoe, Georgetown, D. C. [Filed Aug. 28, 1875.]



The combination of the lever-shoe B, provided with the notches b b, with the shackle-bar C, adapted to be adjusted in said notches, and the spring D, as shown and described.

166,282. COTTON-CLEANERS. A. C. Pearce, Milan, Tenn. [Filed July 8, 1875.]

Brief.—The cotton to be cleaned is placed on a table, from which it is delivered into an inclined chute, and blown by a rotary fan upwardly against a screen in one side of a trunk. As the cotton falls out of the trunk, it is subjected to a milder blast from a secondary air-tube provided with a regulating-valve.



1. The combination, with the trunk B, having discharge-chute a, of the primary blast-pipe C and secondary pipe J, the latter provided with regulating-valve V, substantially as specified.

2. The combination, with a receiving-trunk, B, a primary blast-pipe, C, a secondary air-conduit, J, and screen d, of a regulating-valve, V, and a blowing-fan, F, substantially as specified.

3. The combination, with a primary blast-pipe, C, and a secondary conduit, J, of the reticulated screen d and valve v, substantially as specified.

166,283. BEE-HIVES. John Peter Peaker, Booneville, Miss. [Filed July 31, 1875.]

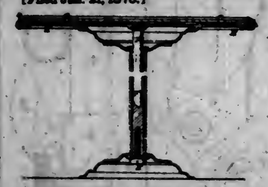
Brief.—A supplementary bottom is attached, which carries a drawer with a feed-cup, also moth-decoys.



1. The combination, with a bee-hive having in its bottom sliding communicating doors b', of a supplementary detachable bottom, B, supporting a feed-cup, J, and dripping-pan r, substantially as and for the purpose set forth.

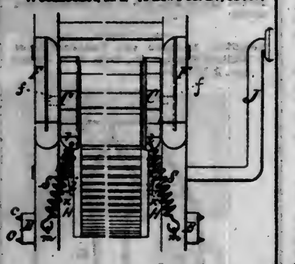
2. The combination, with a bee-hive having a lighted bottom, of the supplementary bottom B having moth feed-pan m, the drawer I having moth-decoy cup g, and the moth-openings f and m, substantially as described.

166,284. ADVERTISING-TABLES. Johann Maximilian Flemmer, London, England. [Filed Jan. 21, 1875.]



As a new article of manufacture, a table having a suitable transparent top, with spaces for the display of advertisements, photographs, or other similar devices, and a base, E, having recesses formed therein to contain said advertisements, photographs, or other similar devices, arranged with capability of being rotated by means of the tubular portion G, and so constructed that the top piece may be removed with facility for changing the advertisements, &c., substantially as shown and described.

166,285. WASHING-MACHINES. D. B. Pond, Woonsocket, R. I. [Filed Feb. 27, 1875.]



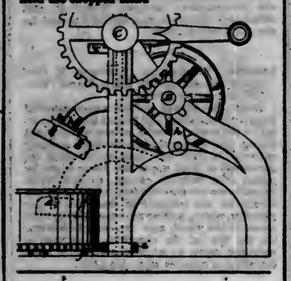
1. The cylinder G, composed of detachable spaced cylindrical rods g, socketed into metallic end disks H, in combination with rubber or rubber-covered rollers D' and intermediate wooden rollers D, detachably secured to segmental end plates C, substantially as specified.

2. The locking-pin j, in combination with continuous shaft I, end disks H, having a diametrically-notched flange, i, and detachable cylindrical rods g, substantially as specified.

3. The open-ended vertically-arranged guide-plates F, in combination with the journals f of end plates C of the yielding and detachable pressure-rollers D D', substantially as specified.

166,286. CHOPPING-BLOCKS FOR MEAT-CUTTERS. Hugh P. Rankin, Allegheny, Pa. [Filed Jan. 29, 1875.]

Brief.—Consisting of sections held together by a clamping-band, which extends above the top surface of the sections, forming a guard to hold the chopped meat.



The combination, with sectional block, of the band F, passed around and extending above the edge of block, as shown and described, to serve both as a clamp for sections, and guard against the escape of chopped meat.

166,287. MACHINES FOR PURIFYING CREAM OF TARTAR. Anton Reinert, New York, N. Y. [Filed Aug. 6, 1875.]

Brief.—The cream of tartar is ground between crushing-rollers, and falls to an inclined cylinder, through which it is driven by a perforated spiral conveyer against a stream of water.

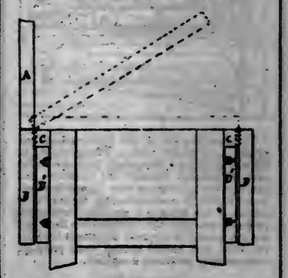


1. In a machine for purifying cream of tartar, the combination, with an inclined revolving cylinder having interior spiral perforated conveyers, of a suitable feeder of water, arranged for directing the water against the upper side of the interior of the cylinder.

2. The hollow perforated shaft, in combination with the cylinder having spiral perforated conveyers.

3. The combination, with cylinder and spiral perforated conveyers and a water-feeder, of a suitable crusher having a channel leading to the cylinder, for crushing and cleansing the cream of tartar at one continuous operation.

166,288. KITCHEN-TABLES. J. C. Nichols, Denver, Colo. [Filed July 9, 1875.]

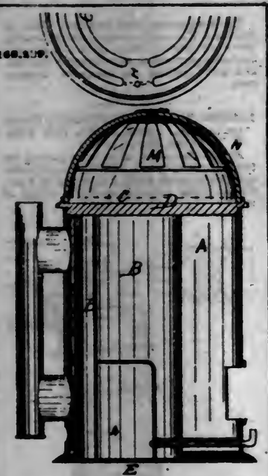


The combination of the blocks C, arranged longitudinally beneath the top, and rigidly attached to the sides of the table, the levers D, hinged to the blocks C, the hinged brackets D', and the cover A, hinged to the blocks C, as and for the purposes described.

166,289. HEATING-STOVES. Malcom Roberts, North Madison, Ohio. [Filed Mar. 10, 1875.]

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

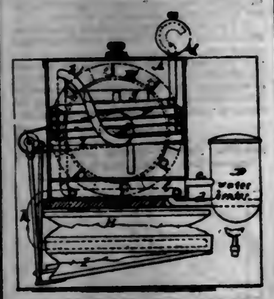
168,889.



The combination of the following elements, when relatively arranged, as and for the purposes described: The casing A, curvilinear passages B, top plate D, provided with elongated curvilinear openings C, bottom plate, provided with curvilinear openings E, damper H, opening K, dome M, provided with a damper, and spans N.

168,890. HYDROCARBON-GAS APPARATUS. Carl F. Schneider, Hamburg, Germany. [Filed Aug. 2, 1875.]

Brief.—A foot-wheel provided with buckets raises the hydrocarbon fluid, and empties it into the upper part of a coil of pipe, through which it descends, while a blast of warm air is forced through the pipe in the opposite direction. A water-heater and a blast apparatus are connected with the carburetor.

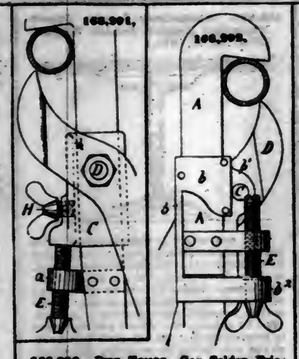


The combination of the hydrocarbon-reservoir A, provided with a lifting-wheel, B, for elevating the hydrocarbon fluid, the coiled tube F passing through the reservoir and through the heating-chamber G, and the feed-water heater D communicating therewith by means of the pipes c d, and the blast apparatus H, whereby the hydrocarbon fluid and air are passed in opposite directions through the tube, and heated during their passage, substantially as herein described.

168,891. PIPE-TONGS. Geo. Seldon, Erie, Pa. [Filed July 24, 1875.]

The combination, in the pipe-wrench herein described, of the hooked jaw lever A, lug c, and thumb-screw E with the sleeve C, fulcrum-pin D, and lever B, all constructed substantially as described, and for the purpose set forth.

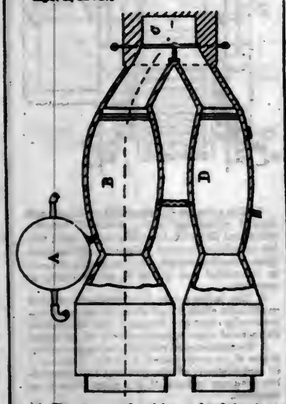
168,892.



168,892. PIPE-TONGS. Geo. Seldon, Erie, Pa. [Filed July 24, 1875.]

In pipe-wrenches the lever B, provided with sleeve b, lugs b^1 b^2, fulcrum-pin C, and thumb-screw E, in combination with the adjustable hooked jaw A and jaw D, as described and shown.

168,893. MELTING AND TREATING IRON. William Sletcher, Jr., Troy, N. Y. [Filed Apr. 2, 1875.]



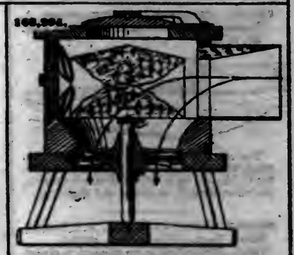
1. The process of melting and refining iron by adding to the cupola a fuel of about two-thirds coke and about one-third charcoal, and running the molten metal from the cupola to a reverberatory furnace, and also from said furnace to a second independent reverberatory furnace, from which the metal is ultimately tapped for foundry uses, substantially as herein specified.

2. The cupola A, first and second independent reverberatory furnaces B and D, and chimney C, combined substantially as and for the purposes set forth.

168,894. WINDMILL. Lawrence B. Stephens and Samuel F. Shay, Terrell, Tex. [Filed Aug. 14, 1875.]

Brief.—A series of inclined vanes mounted upon a vertical shaft, and set in a circular opening in the lower side of a square or polygonal casing, provided with sliding doors opening outward on each side, one of which are connected at their upper and lower edges by means of a strip of canvas, so that when opened outward they will form a funnel-shaped mouth for the entrance of the wind to the chamber, which, leading to escape through the vanes of the wheel, puts the same in motion. On the top of the chamber is secured a weighted valve, by which the pressure upon the wheel is relieved when too great.

168,895.



1. The windmill, consisting of a wheel composed of inclined vanes mounted on a vertical shaft and set in an opening in the lower part of a square or polygonal chamber provided with sliding doors opening outward, and having their lower edges connected by canvas, or other flexible material, to form a funnel-shaped mouth when opened, as and for the purposes herein set forth.

2. In combination with the wheel and chamber, constructed as described, the valve on top of the chamber for relieving the pressure on the wheel, substantially as set forth.

168,896. LAMP-BURNER. Gustav Siebenmann, Berlin, Prussia, assignor to B. B. Schneider, New York, N. Y. [Filed Sept. 15, 1875.]

Brief.—The drip from both outside and inside taken is conducted into the lamp.



1. The ring or collar H, arranged below and independent of the chimney-holder, in combination with the wick-raising wheels G, substantially as herein described and shown.

2. The combination, with the wick-tube C, air-tube D, and inlet B, of the external concentric chamber B, the internal chamber L, and openings f l m, substantially as shown and described.

168,897.



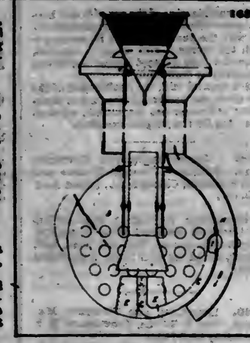
168,898. CULTIVATOR. J. A. Thompson, Bennington, N. J. [Filed Aug. 20, 1875.]

Brief.—Devices for securing and adjusting the plow-beams upon the runners, and for adjustably holding the shovel-standards.

1. The combination, with the runner-frame A B C, having the slotted wings H, of the adjustable plow-beams G G, provided with the spring-straps a a and the bolts b b, all substantially as and for the purposes herein set forth.

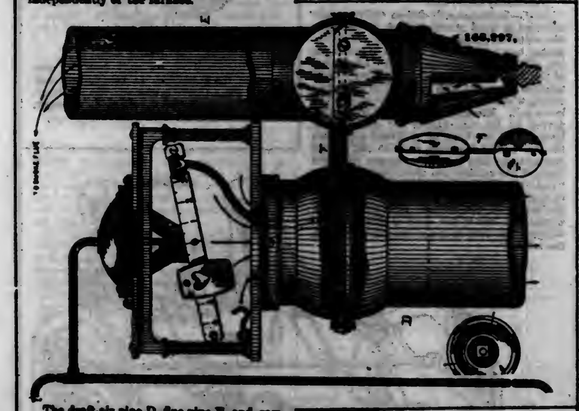
2. In combination with a plow, I, having a round shank, A, the slotted beam G, slotted plate a, with parallel flanges a a, set-screw f, and break-pin i, all constructed substantially as and for the purposes herein set forth.

168,899.



168,897. HEAT-REGULATORS FOR HOT-AIR FURNACES. Alfd. H. Tingley, Providence, R. I. [Filed May 13, 1875.]

Brief.—The compound damper is operated by expansion and contraction of the diaphragm. When the draft-pipe of the furnace is closed, the flue-pipe is opened to allow draft independently of the furnace.

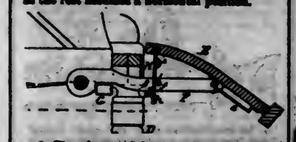


168,897.

The draft-air pipe D, flue-pipe E, and compound damper F, operating in combination with the hot and cold air vessels A B, and communicating pipes, diaphragm, and lever, substantially as and for the purposes set forth.

168,898. FOOT-REST FOR CHAIRS. Joseph H. Travis, Boston, Mass. [Filed Oct. 30, 1874.]

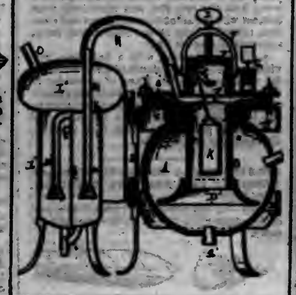
Brief.—The elongated loops give the foot-rest a more extended outward movement on the carrying-frame, and thereby permit the weight of the outer end to automatically swing the inner end up into its proper position. The hooks catch on the staples and limit the upward movement of the inner end, and the stems of the hooks and the staples guide it as the rest assumes a horizontal position.



1. The elongated loops e, in combination with the leg-rest E and its carrying-frame F, substantially as and for the purpose described.

2. The hooks f and staples g, in combination with the leg-rest E and its carrying-frame F, all arranged together upon a chair, for operation as described, for the purposes specified.

168,899. SPARK-ARRESTERS FOR LOCOMOTIVES. William G. Van Rensselaer, Fishkill Landing, N. Y., assignor of one-half his right to Charles L. Kimball, same place. [Filed Apr. 30, 1875.]



1. A locomotive smoke-stack in which the sparks and cinders are arrested and removed through the influence of a counter-current or downward draft created therein by means of a pipe terminating at or near the mouth of the exhaust-pipe, and connected with a discharge-pipe leading from the bottom or the smoke-stack, substantially as shown and described.

2. The construction and arrangement of the pipe G with the exhaust-tubes D E and pipe H, in combination with the smoke-stack A and smoke-box B of a locomotive, substantially as and for the purpose shown and described.

168,900. APPARATUS FOR GENERATING AND WARMING CARBONIC-ACID GAS. Hermann Voigt, Milwaukee, Wis. [Filed Feb. 20, 1875.]

Brief.—The gas-generator has an air-tight joint formed by the rubber washers between the flanged ring and the cover. The perforated vessel in the cylinder is raised and lowered by the crank-shaft of the cover, the position being maintained by the pin entering perforations in the cranknut. The superfluous gas is prevented from rising through the acid by the bell mouth. The washer is provided with partitions and pipes, as set forth.

1. The construction of the rubber washers C E, flanged ring F, and cover F' with the generating vessel A and cylinder D, for forming a gas-tight joint between them, substantially as described.

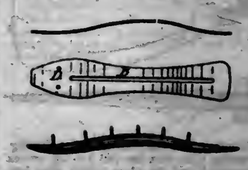
2. The bell-mouth D' at the lower end of the cylinder D, as and for the purpose set forth.

3. The combination of the crank-shaft c, chain f, and perforated vessel K with the chamber F', whereby the said vessel may be raised and lowered in the cylinder D, substantially as described.

4. The combined gas-washing and gas-holding vessel, consisting of the vessel L L', provided with the partitions h h' and pipes M M', substantially as shown and set forth.

168,901. BOOT-SHANK STIFFENER. Thomas C. Walker, Morristown, Ohio. [Filed Mar. 23, 1875.]

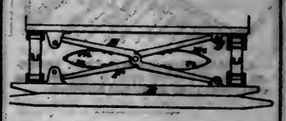
Brief.—The central longitudinal slot is intended to admit a line of pegs or stitches, uniting the portions of the sole and holding the spring in place.



As a new article of manufacture, a sheet-metal boot-shank stiffener, having holes D D, and a slot or opening, B, with parallel sides formed through the same, and extending from front to rear in the center of the said shank, in the manner and for the purpose shown and described.

168,902. VEHICLE-SPRINGS. Robt. Walker, Oakland, assignor of one-half his right to George W. Henshaw, Gridley, Cal. [Filed Apr. 27, 1875.]

Brief.—Owing to the equalizing-bars the bed descends parallel to the bolster.



The levers E and F, united at their center, in combination with the springs n n of a vehicle, for the purpose of equalizing the pressure, all substantially as set forth.

168,903. TRUSS-COUPLINGS. R. C. Walter, Kirkwood, Mo. [Filed Aug. 28, 1875.]

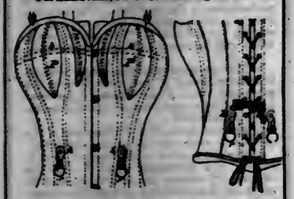
Brief.—Bolt has spring provided with locking-leg, which engages with slot in clip-arm.



HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON.

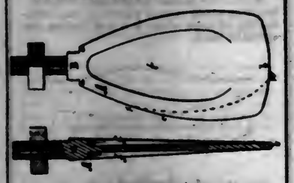
The combination of ear D, having a slot, *d*, and pin E, provided with spring *e* and lug *e*, substantially as and for the purposes set forth.

168,864. CORSETS. Ira De Ver Warner, Cortlandville, N. Y. [Filed Aug. 27, 1875.]



As a new article of manufacture, a corset provided with the bones-forms P P, expanded by the cross-stays *b b*, the shoulder-straps S S', and the pivoted hooks *h h* in front and rear, the whole being combined and arranged substantially as and for the purposes set forth.

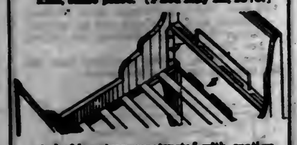
168,865. THIMBLES FOR THRASHING-MACHINES. Jonathan W. Waberman, Oregon, Wis. [Filed July 16, 1875.]



The thrashing and hulling teeth A, having tapering sides from the pall *a* to the convex bit-edge *b*, and the edges of said sides between convex and tapering back again to said pall, and furthermore provided with the double concaves or re-entrant planes *f*, all substantially as and for the purposes specified.

In testimony that I claim the above I have

168,866. REE-BOX TRAPS. R. G. Watkins, Georgetown, Col., assignor to J. R. Watkins, same place. [Filed May 22, 1875.]



A bed-bag loop constructed with contiguous coils B F G and hitch H, and having a slide-cover, D, as shown and described.

168,867. CUTTER-HEAD. Rudolphus L. Webb, New Britain, Conn., assignor to Landers, Frary & Clarke, same place. [Filed July 6, 1875.]

Brief.—The cutters having notches of different depths, by turning it either way, one of these notches is made to set upon the projection upon the saddle, thus effecting the desired adjustment.



1. A box-nail cam, consisting of the bar A, the cover B, and the hopper C, the bar constructed with the headed bars *a*, and the cover with corresponding slots, whereby the two parts are secured together, substantially as set forth.

2. The combination of the cover B and hopper C, constructed with the intermediate recess *f*, with the runner-cylinder H, constructed with the flange *h*, and so as to interlock between and with the said hopper and cover, substantially as described.

3. In a vertical mill, the combination of the runner-shaft, the notched sleeve L, and corresponding projection *l* on the saddle, substantially as and for the purpose specified.

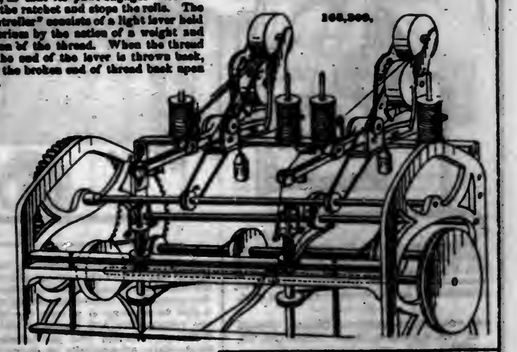
168,868. COMPOSITIONS FOR COVERING STEAM-BOILERS. Thomas Webber and Chas. Stedman, Chicago, Ill. [Filed Aug. 23, 1875.]

The composition for coating steam-boilers herein described, composed of soot-ashes, rye-flour, hydraulic cement, flax-seed meal, hair, and water, mixed together in the proportions set forth.

168,869. DOUBLING AND TWISTING MACHINES. Jos. F. Wicks, Providence, R. I. [Filed July 12, 1875.]

Brief.—Independently-driven delivery-rolls mounted in fixed standards not in combination with a stopping mechanism. A vertically-sliding bar is free to rise and fall in guides on one of the fixed standards. The upper end of the bar is bent over, so as to form a pawl adapted to engage with the teeth of a ratchet-wheel, which is mounted upon the axis of the lower roll. The lower end of the bar is supported by the rear end of the stop-motion lever. The breaking of a thread depresses the rear end of the lever, and the sliding bar descends, so that its pawl engages with the teeth of the ratchet and stops the rolls. The "end-controller" consists of a light lever held in equilibrium by the action of a weight and the tension of the thread. When the thread breaks, the end of the lever is thrown back, carrying the broken end of thread back upon the rolls.

168,869.



1. In a doubling and twisting machine, the combination, with each spindle, of independently-driven delivery-rolls, mounted in stationary standards, and a stopping mechanism, substantially as described, whereby, on the breakage of the yarns of any spindle, its delivery-rolls will be prevented from revolving, substantially as set forth.

2. The combination, with each spindle in a doubling and twisting machine, of a stop-motion lever and an end-controller, substantially as described, whereby, on the breakage of the yarn, the broken end will be carried backward away from the spindle, and prevented from contact with adjacent running yarns and spindles, independently of the stop-motion lever, substantially as set forth.

3. The combination, with a bed-plate, provided with stationary standards, and arranged for attachment to the frame of a doubler, of delivery-rolls, mounted on the stationary standards, and a stopping mechanism, mounted on the bed-plate, connected with the rolls, and arranged to permit or prevent their rotation, substantially as described.

168,870. CIGARS. Stephen S. Wilson and Charles F. Carr, Adel, Iowa. [Filed Mar. 16, 1875.]

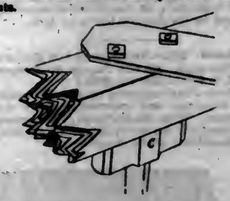
Brief.—A cap permanently placed as a part of the cigar upon its end by adhesive attachment.



As a new article of manufacture, a cigar, B, provided at its small end with an inclosing permanently-attached mouth-piece, A *a c*, substantially as and for the purpose specified.

168,871. HARROWS. John C. Williams, Olin, Iowa. [Filed Aug. 30, 1875.]

Brief.—A block of iron, called a head-block, has a square hole in its center, a little larger on the upper side, into which the tooth accurately fits. A thin plate covers the head of the tooth, and both are secured to the under side of the harrow-beam by two bolts and nuts.

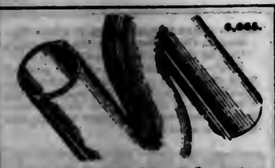


The improved harrow-tooth fastener, composed of the head-block C, having the mortise C', plate D, and retaining-bolts E, all constructed and arranged substantially as shown and for the purpose described.

168,872. GRAIN-BINDERS. Jacob C. Dewey, Fairfield, Iowa. [Filed Aug. 30, 1875.]

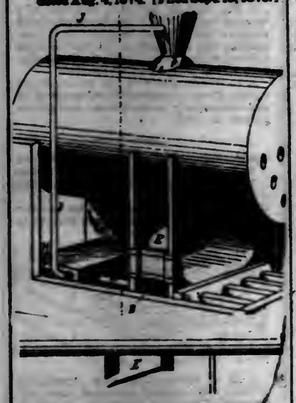
Brief.—The arm *a* is pivoted to the frame, and has a pawl, *b*, which engages with the ratchet-wheel *c*, which is secured to the shaft *d*, which has a pinion, *e*, which meshes with the gear-wheel *f*, which is secured to the shaft *g*, which has a pinion, *h*, which meshes with the gear-wheel *i*, which is secured to the shaft *j*, which has a pinion, *k*, which meshes with the gear-wheel *l*, which is secured to the shaft *m*, which has a pinion, *n*, which meshes with the gear-wheel *o*, which is secured to the shaft *p*, which has a pinion, *q*, which meshes with the gear-wheel *r*, which is secured to the shaft *s*, which has a pinion, *t*, which meshes with the gear-wheel *u*, which is secured to the shaft *v*, which has a pinion, *w*, which meshes with the gear-wheel *x*, which is secured to the shaft *y*, which has a pinion, *z*, which meshes with the gear-wheel *a'*, which is secured to the shaft *b'*, which has a pinion, *c'*, which meshes with the gear-wheel *d'*, which is secured to the shaft *e'*, which has a pinion, *f'*, which meshes with the gear-wheel *g'*, which is secured to the shaft *h'*, which has a pinion, *i'*, which meshes with the gear-wheel *j'*, which is secured to the shaft *k'*, which has a pinion, *l'*, which meshes with the gear-wheel *m'*, which is secured to the shaft *n'*, which has a pinion, *o'*, which meshes with the gear-wheel *p'*, which is secured to the shaft *q'*, which has a pinion, *r'*, which meshes with the gear-wheel *s'*, which is secured to the shaft *t'*, which has a pinion, *u'*, which meshes with the gear-wheel *v'*, which is secured to the shaft *w'*, which has a pinion, *x'*, which meshes with the gear-wheel *y'*, which is secured to the shaft *z'*, which has a pinion, *a''*, which meshes with the gear-wheel *b''*, which is secured to the shaft *c''*, which has a pinion, *d''*, which meshes with the gear-wheel *e''*, which is secured to the shaft *f''*, which has a pinion, *g''*, which meshes with the 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*g''''''''''''''''''''''''''*, which meshes with the gear-whe

6,668.



A water-trap made of two similar portions or longitudinal half-trap sections of sheet metal, with corresponding external flanges running lengthwise of the trap, and which are united by soldering or burning them together, substantially as specified.

6,669. SMOKE-BURNING FURNACES. Saml. A. Ford, Chicago, Ill. Patent No. 149,004, dated Sept. 22, 1873; reissue No. 5,909, dated Aug. 4, 1874. [Filed Sept. 15, 1875.]



1. The combination of the primary air-heating chamber or reservoir H and air-distributing chamber D with connecting-pipes, substantially as shown and described.

2. The combination of the air-chambers H and D with connecting-pipes, and the steam-pipe J, substantially as shown and described.

3. The combination of the air-chambers H and D, their connecting-pipes, and the upper air-chamber H, substantially as shown and described.

4. The combination of the air-chambers H and D, their connecting-pipes, the air-chamber H, and the steam-pipe J, substantially as shown and described.

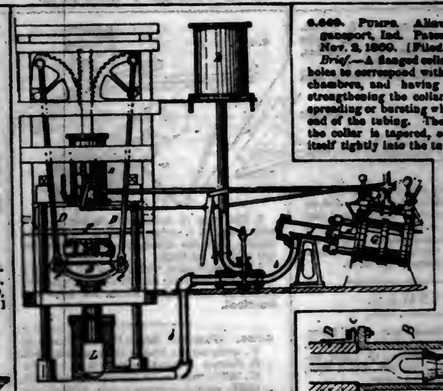
5. The tapering air-chamber H, forming a flaring-shaped passage, the lower and back wall of said chamber being perforated, in combination with a furnace, constructed substantially as described, and in the manner specified.

6,670. HYDRAULIC ATTACHMENTS FOR COTTON-PRESSES. Saml. Hughes, Charleston, S. C., assignor to himself and Michl. Kelly, same place. Patent No. 150,044, dated Apr. 21, 1874. [Filed Aug. 26, 1875.]

Brief.—A steam-cylinder actuating progressive levers, and by them the movable platen, is combined with a hydraulic-pressure apparatus, the former to furnish the first and the latter the finishing pressure.

1. The combination, in a lever power-press, of a steam-actuated piston, for giving a part of the pressure to the platen, and a hydraulic-actuated piston or plunger, for giving a part of the pressure to the platen, substantially as and for the purpose described.

2. The combination, in a progressive-lever power-press, wherein the compression is partly effected by the direct pressure of steam, of an independent hydraulic-pressure apparatus with the platen of the press, the said hydraulic apparatus arranged relatively to the platen, substantially as described, whereby, as the pressure is released from the platen, the liquid will be returned to the primary forcing apparatus.



3. In a progressive-lever power-press, the combination, with the piston and steam-cylinder A, of the auxiliary hydraulic cylinder or chamber L and ram M, arranged in relation with the piston E, substantially as and for the purpose described.

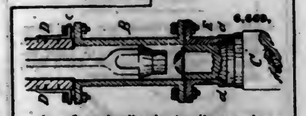
4. In a progressive-lever power-press, the rods D D, provided with elongated eyes *c c*, in combination with the piston E and hydraulic jack or ram M, substantially as and for the purpose described.

5. In a progressive-lever power-press, the combination of the steam-piston G' and its cylinder with the plunger I, the cylinder J, the cylinder or chamber L of the ram M, the pipe *b b'*, the piston E, and the steam-cylinder A and its mechanical connections, substantially as and for the purpose described.

6. In a progressive-lever power-press, the reservoir N and pipe *b'*, in combination with the check-valve K and pipes *b b'*, connecting the hydraulic cylinder J with the chamber L of the ram, all arranged for operation in relation with each other, substantially as and for the purpose described.

6,666. PUMPS. Alleus M Parthurst, Logansport, Ind. Patent No. 96,476, dated Nov. 2, 1869. [Filed Aug. 10, 1875.]

Brief.—A flanged collar provided with bolt-holes to correspond with those in the flange of chamber, and having an enlargement for strengthening the collar, so as to prevent its spreading or bursting when it is driven on the end of the tubing. The lower inner edge of the collar is tapered, so that it will wedge itself tightly into the tubing.



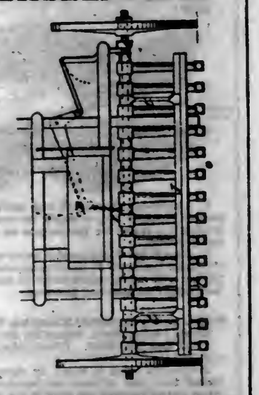
6,666.

1. A flanged collar, having its inner lower end tapered or rounded off, and its outer side strengthened by an enlargement, in combination with the tubing and piston-chamber of the pump, substantially as and for the purpose set forth.

2. The combination of clamps D, provided with claws *b* and jaws *c c*, stock A, chamber B, flanged collar E, having an annulet, *d*, and its inner lower edge tapered, and tubing C, constructed substantially as described.

6,670. HORSE-RAKES. John J. Squire, St. Louis, Mo., assignor to Adam E. Rosa. Patent No. 16,816, dated Dec. 23, 1856; reissue No. 2,903, dated Feb. 16, 1869; extended seven years. [Filed Apr. 24, 1875.]

Brief.—The driver, in his seat, causes a sliding clutch to engage with a second clutch on one of the wheels, when the rake is raised by the traction of the machine. The disengagement of the clutches is automatically effected by an arm on the axle.



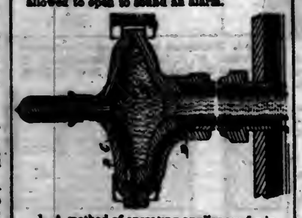
1. In combination with a clutch mechanism adapting the rake-teeth to be raised by the traction of the machine, a lever arranged within reach of the driver in his seat on the machine, for throwing said clutch mechanism into gear.

2. In a two-wheel rake, in which the teeth are raised by the traction of the machine, a clutch mechanism, controlled by the driver in his seat on the machine, for causing the teeth to be raised, in combination with an arm on the rake-head, for automatically releasing the rake-teeth after the load has been discharged.

3. A sliding clutch on the head that supports the rake-teeth, in combination with the clutch face or pins on the carrying or driving wheel, for the purpose set forth.

6,667. HIGH AND LOW WATER INDICATORS. Frank Millward, Cincinnati, Ohio, assignor, by mesne assignments, to R. Boyd, trustee, same place. Patent No. 110,501, dated May 30, 1871. [Filed May 11, 1874.]

Brief.—The steam-pressure is greatest above the diaphragm, for the reason that the weight of the column of water is supported by the steam-pressure on the lower side. When the level falls below the end of the pipe the water in it flows out, the pressure is equalized on both sides of the diaphragm, and the valve allowed to open to sound an alarm.



1. A method of operating appliances for indicating a water-level, by combining a flexible diaphragm with two compartments separated by the diaphragm, both of which communicate openly with the same pressure apparatus, the pressure in one of them being varied by the intermittent support of a hydrostatic column in the tube leading thereto.

2. In combination with the separate compartments C E, inclosing the flexible diaphragm B, operated by the intermittent action of a hydrostatic column, the pipes D and F, arranged one within the other, substantially as and for the purpose specified.

3. In combination with the compartments C and E, communicating separately with a pressure apparatus, in the manner stated, a compressing diaphragm, B, made of metal, substantially as and for the purpose specified.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 14. TUESDAY, OCTOBER 5, 1875. PRICE { $5,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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OFFICIAL NOTICE.

Commissioner J. M. THACHER having resigned his official position, Judge R. H. DUELL, of New York, has been appointed Commissioner of Patents.

NOTICE TO MANUFACTURERS AND OTHERS.

UNITED STATES PATENT OFFICE,
Washington, D. C., October 5, 1875.

The COMMISSIONER OF PATENTS respectfully requests manufacturers of and dealers in engines, machines, apparatus, tools, and appliances of whatever kind, to send to this Office duplicate copies of all catalogues and circulars which they have issued or may issue from time to time.

R. H. DUELL, *Commissioner.*

COMMISSIONER'S DECISIONS.

MASSEY *vs.* SAWYER.—*Interference; appeal.*

[*Appeal from the Examiner of Interferences in the matter of the application of Orren W. Massey and the patent of Peter O. Sawyer, for* "IMPROVEMENT IN COTTON-GINS."—*Decided September* 7, 1875.]

Abandonment of an invention by sale for more than two years prior to the filing of an application for a patent not established by inferences or presumptions arising on the testimony in the absence of clear and explicit proof as to dates.

SPEAR, *Acting Commissioner:*

On the recommendation of the Examiner of Interferences, and in accordance with official rule No. 59, this case was remanded to the Principal Examiner for his action on the question of sale, by the applicant of the device in dispute, for more than two years prior to the filing of his application.

A review of the action of the Principal Examiner is now asked by the patentee, against whom the Examiner of Interferences had awarded priority.

Although the question of abandonment by the first and original inventor is an *ex parte* one, and, therefore, no appeal lies by a party opposing his application, yet under the general power to superintend and perform all duties connected with the issuing of patents, I have consented to the request of the opposing party in this case to review the action of the Principal Examiner, inasmuch as it is opposed to the views expressed by the Examiner of Interferences in his decision on the question of priority.

The Principal Examiner states that he has looked in vain in the testimony for positive proof of public use, exhibition on sale, or other statutory bar to the allowance of a patent to the applicant.

Massey's application was filed June 21, 1873. In order, therefore, to defeat his application on the ground that his invention was on sale for more than two years prior to his application, it should be established beyond doubt that the placing of the invention on sale actually took place prior to June 21, 1871. On this point the Examiner of Interferences says:

It seems that the gin, in a complete and salable condition, was put with the other gins on hand the first part of 1871, or in December, 1870, and was kept there in stock; it was sold and went out as other stock, (M. X 22.)

The cross-question and answer here referred to are as follows, commencing with question 21:

Question. Was this gin of which you speak in December, 1870, the roll-box of which, as shown in Exhibit A in section, placed upon public sale and publicly sold?

Answer. I was selling what I called the "Griswold Gin." This gin was not known to the public, and when sold was sent out just as all stock in my shop was sold.

Q. 22. Then it was publicly sold, was it?

A. I do not know whether you call it public or private; it was sold and went out as my other stock.

No date is given in these answers, or in any others, by this or the other witnesses, when the device in question was sold, or when it was put with other stock to be sold; nor is it stated definitely whether it was put with other stock at all. Further, Massey was not questioned directly on any of these points. It is true that he was asked what he did with the gin he completed in December, 1870, (the device in dispute,) and to this he replied simply that he sold it. He was then asked to whom he sold, and answered that he kept no record and could not say; but he was not asked *when* or about what time he sold it, nor *when* or about when he put it with his other stock. He says the gin was up stairs where his gin and lint room was, but there is

nothing to show when it was put there or whether other gins were there.

There is no question that he completed the invention in December, 1870, and that in that and the following month it was used in ginning cotton; but these trials were the first ones made, and were entirely experimental.

Two months afterward he says he added his "patent rib" to the machine, and tried it in that way; found it a perfect success, and determined to patent it. This would bring the date down to April, 1870. There is absolute silence in the testimony as to dates after the one last mentioned, affecting the disposition of the particular device in question. I cannot agree, therefore, that the testimony justifies the inference placed upon it by the Examiner of Interferences.

The report of the Principal Examiner is affirmed, and the case is now ready for further disposition, if required, of the question of priority.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

H. D. STOVER AND J. A. FAY & CO. *vs.* E. S. HALSTED AND G. W. MERRITT.

[*In equity.—Before* SHIPMAN, *J.—Decided August*, 1875.]

The third claim of the patent of H. D. Stover—Improvement in Planing-Machines, July 23, 1861—viz, "The arrangement of matching-cutters to be adjusted both laterally with each other and vertically upon the bed-piece, essentially as described, in combination with the platen, so that the planing and matching of the piece may both proceed at the same time, or either the planing or matching may be done separately, whether the platen be made movable with the piece secured thereupon or the platen be fixed and the piece be made to move thereon," held valid.

The claim, though not expressed with accuracy, should be construed *ut res magis valeat quam pereat*.

The inventor intended to claim a surfacing and matching machine, in which the matching-cutters were adjusted laterally and vertically, in combination with the platen, and were so adjustable vertically that the matching mechanism could be mechanically dropped below the platen when surfacing alone was to be done.

The movable or fixed character of the platen is not a necessary part of the improvement to which the third claim relates, and might have been omitted therefrom.

The term "matching-cutters" in the claim signifies "matching mechanism;" and the claim is infringed by the Merriam machine in which the matching-*spindles* alone are dropped below the bed, the heads with the cutting-blades having been first removed.

The corporate character of a corporation complainant being averred under oath in the bill of complaint, and the same not being denied in the answer, but simply proof thereof being called for: *Held*, that the fact of incorporation was in effect admitted by the pleadings.

[*S. A. Duncan* and *George Gifford*, for complainants.
W. J. A. Fuller, for defendants.]

SHIPMAN, *J.*:

This is a bill in equity praying for an injunction and an account, and is founded upon letters patent of the United States for an Improvement in Planing-Machines, which patent was issued to Henry D. Stover, one of the complainants, on July 23, 1861. The other complainants, J. A. Fay & Co., are a corporation and the assignees and owners of an undivided half interest in so much of the patent and of the invention covered thereby as is embodied in the third claim of said patent. The assignment was executed September 14, 1868.

The answer admits that said patent was issued to said Stover, and puts the complainants to proof of their present title thereto, and alleges that the patent is void for want of novelty. The defendants deny that they have infringed by averring that the only machines which they use or have used for planing or matching lumber are machines made under letters patent which were granted to Rufus N. Merriam on November 5, 1867, and which patent is alleged to have been for a "different invention from that claimed by said Stover in his patent." The answer also avers that the complainants are equitably estopped by their own acts from any recovery in this suit.

The fact that J. A. Fay & Co. are a corporation is in effect admitted by the pleadings.

The machines to which the alleged improvements in each of the patents relate is a machine for planing and matching lumber. Machines for planing the surface of boards, and at the same time for planing or grooving and matching the edges of boards, have been long in use, and were well known prior to the date of the Stover patent. In these machines the boards were planed by means of a cylinder which occupied a horizontal and transverse position above the bed or platen upon which the boards were placed, and the edges of the boards were at the same time grooved and matched by means of matching-cutters. These cutters were attached to spindles which were supported in a vertical position, so as to project through and above the bed, and thus enable the knives to operate upon the edges of the lumber as it passed between the knives after leaving the planing-cylinder. The machines were also provided with mechanism, by means of which the space between the matching-cutters could be increased laterally, so that stuff of different widths could be matched upon the same machine.

Although in the machines which were in use prior to the Stover patent there were devices which caused a slight vertical adjustment of the matching-cutters upon their spindles, so that lumber of different thickness could be matched, yet there was no machine in which the matching apparatus could be entirely removed, by mechanical means, below the surface of the platen when the surfacing of wide boards only was desired. Oftentimes there was a necessity for planing without matching boards of greater width than would pass between the matcher-heads, and in such case it was necessary to detach and remove by hand the spindles from the machines. It was thus impossible to surface wide boards upon a machine of ordinary dimensions without incurring the labor and delay which were incident to a removal of the matching mechanism by hand. One object of the machines of Stover and of Merriam was to obviate this difficulty, and each patentee adopted the same general mode of accomplishing the desired result. The matching-spindles are so attached to each machine that they can, at the pleasure of the operator, be simultaneously dropped below the surface of the platen.

In the Stover machine the platen is movable or stationary. When boards are to be both planed and matched the platen is stationary, and the lumber is passed under the cutting-cylinder, by feed-rolls, to be planed, and thence through the matching-cutters to be matched. When boards are to be planed without being matched, they can be placed and secured upon a movable platen, which, with the lumber upon it, is passed under the cutting-cylinder. But the platen cannot be moved without previously removing the matching-spindles, which, if not removed, prevent the progress of the platen.

The object of the Merriam machine is described by the patentee in his specification as follows:

In that variety of planing-machines designed not only for planing the surface of lumber, but also for matching the edges thereof, much inconvenience has resulted from the necessity of lowering that portion of the bed of the machine which supports the upper ends of the vertical shafts, which carry the matching-cutters whenever it is required to adjust the said cutters for matching lumber of different thicknesses, or to move the said shaft out of the way in using the planer for surface-planing only. The object of the invention is to remedy this defect.

One result which was intended to be accomplished by each machine was the lowering of the shafts beneath the surface of the bed, when it was desired to use the machine for surfacing and not matching.

The defendants place their defense upon three grounds: first, that the third claim of the Stover patent, which claim alone the defendants are charged with infringing, describes a mechanical impossibility, and a machine destitute of utility; second, that the Stover patent is void for want of novelty; third, that the Merriam machine is not an infringement of the Stover patent.

1. Is the third claim of the plaintiffs' patent valid? The claim is as follows:

I also claim the arrangement of matching-cutters to be adjusted both laterally with each other and vertically upon the bed-piece, essentially as described, in combination with the platen, so that the planing and matching of the piece may both proceed at the same time, or either the planing or matching may be done separately, whether the platen be made movable with the piece secured thereupon, or the platen be fixed and the piece be made to move thereon.

The defendants contend that the patentee is confined by this language to a mechanism whereby the lumber may be both planed and matched at the same time, or planing and matching may be done separately either upon a movable or a fixed platen. It is obvious that the lumber cannot be matched upon a movable platen by the Stover machine, because the matching-spindles project through apertures in the platen, and the spindles, when in a position for matching, would prevent a forward movement of the platen; and it is also obvious, from the description of the machine, that no such mechanical impossibility was contemplated.

The specification reads as follows:

To the platen A′ is secured a guide, D′, which may be removed at pleasure. This correctly guides the board in connection with the spring E^1, to be matched by cutters which may be raised up through holes V^2 and W^2, formed through the platen for that purpose, and adjusted at the desired elevation, they being driven by pulley S from pulley Q′ on a drive-shaft, L′. The platen may thus be used stationary, and over which the boards may be moved by feed-rolls, to be both planed and matched on both edges at the same time, or either may in the same manner be done separately; or the platen may be moved by any means, (not necessary to be shown,) and the lumber secured thereupon while lying perfectly natural by jaws F^1 operated by right and left hand screws G′ to pinch and hold the piece by turning the lever H′, * * * * In order to dress dimension lumber the platen is moved in bed along with the piece secured upon it to be dressed; and, when boards are to be dressed by passing them under the cutting-cylinder, requires that a set of feed-rolls shall be combined with the other portions of my machine to feed the boards or piece over the platen A′ and under the cutters to be dressed, the platen being fixed during such operation.

The intention of the patentee was to state in the third claim the improvements which he had described, and which consisted in part of devices for the removal by mechanical means of the matching apparatus when "dimension" lumber was to be dressed—that is, planed and not matched. The third claim is not expressed with accuracy, but should be construed "*ut res magis valeat quam pereat*," and in connection with the specification, so that "the inventor shall have the benefit of what he has actually invented." (*Woodman* vs. *Stimpson*, 3 Fish., 98.)

If the court can clearly see what is the nature and extent of the claim, by a reasonable use of the means of interpretation of the language used, then the plaintiff is entitled to the benefit of it, however imperfectly and inartificially he may have expressed himself. (*Ames* vs. *Howard*, 1 Sumn., 485.)

The inventor intended to claim a surfacing and matching machine in which the matching-cutters were adjusted laterally and vertically, in combination with the platen, and were so adjustable vertically that the matching mechanism could be mechanically dropped below the platen when surfacing alone was to be done. By such a machine the matching and planing could be done at the same time, or the planing could be done separately with the matcher-cutters removed, or the matching could be done separately when the cutters were raised above the surface of the platen. He had previously claimed the movable platen which he supposed to be an improvement upon other planing-machines. The movable or fixed character of the platen is not a necessary part of the improvement to which the third claim relates, and might have been omitted from the statement of that claim. A construction which should compel the patentee to the declaration that his machine could either match or plane boards when placed upon a fixed [*movable?*] platen, the matching-cutters being upon stationary arbors projecting through the platen, would be a construction of the utmost rigor, and in violation of the liberal rules in regard to the interpretation of patents which have prevailed in the courts of this country. It is a just and reasonable construction to hold that the concluding clauses of the claim were introduced parenthetically, and related to the platen which the patentee had previously claimed, and had no reference to the planing or matching which are mentioned in the clause which immediately precedes those now under discussion. Thus construed the claim would read as follows: I also claim the arrangement of matching-cutters, to be adjusted both laterally with each other and vertically upon the bed-piece, essentially as described in combination with the platen, (whether the platen be made movable with the piece secured thereupon or the platen be fixed and the piece be made to move thereon,) so that the planing and matching of the piece may both proceed at the same time, or either the planing or matching may be done separately.

2. Does the Merriam machine infringe the complainants' patent?

The object of the Merriam machine has already been given in the language of the patentee. One object was to "move the shafts out of the way in using the planer for surface-planing only." He also states that "by this arrangement they" (i. e., the vertical spindles) "can be lowered beneath the surface of the bed, for surface-planing only, without removing any portion of the bed, and in a moment of time."

In the Stover patent the device by which the matching-cutters are dropped below the surface of the platen is thus described:

The matching-cutters and bar X^2 are made vertically movable and adjustable by sliding in grooves N, which are formed in central portion of bed-piece A, by means of screw O′, threaded and fitted to stand P′ on bar X^2, and turned by wheel N′.

By this single screw the two spindles are simultaneously moved above and below the surface of the platen.

The same simultaneous movement is effected by double racks instead of a single screw in the model which was used upon the trial. The same movement is effected in the Merriam machine by racks, pinions, and a weighted lever. The mechanism is thus described by one of the defendants' witnesses:

This is accomplished by two separate sliding steps having their motion vertically, each step being provided with a rack in which mesh two pinions connected together by a longitudinal shaft. By rotating this shaft it gives to the sliding steps, which carry the matcher-spindles, a vertical motion sufficient to raise them to their places when performing their work, or depress them entirely out of the way.

The elevation and depression of the matcher-spindles in the two machines are performed by substantially the same means and in substantially the same way. It is true that the Merriam machine is probably an improvement upon the Stover machine, but the principle and essential elements of the two machines are the same.

It is claimed that the Merriam machine does not infringe the plaintiffs' patent, because the specification of the Stover patent describes no method by which a lateral movement of the matcher-spindles can be produced. A lateral movement of the matching mechanism was well known prior to the date of the Stover patent, which was not granted for an improved lateral adjustment. The third claim was for the arrangement of matching-cutters to be adjusted both laterally and vertically, as described, in combination with the platen. The method of vertical adjustment is described and claimed: any appropriate and customary method of lateral adjustment could be used, and one method was indicated in the drawings; but as the patentee claimed no improvement in mechanism by which lateral motion was obtained, it was not important to give a description of any particular method of accomplishing this result when the methods already in use were well understood.

The third claim of the Stover patent is for "an arrangement of matching-cutters." In the Merriam machine the cutting-blades are placed upon "heads" of larger diameter than that of the spindles to which the heads are attached. The heads are removed from the spindles by hand, and the spindles are then dropped below the surface of the platen. In the machine which was shown in the Stover patent, the cutting-blades are inserted in slots in the ends of the spindles, and are raised and depressed with the spindles. It is contended that the Stover patent is limited to an arrangement of cutters or knives, which must be lowered by mechanical means, and that the patent is not infringed by reason of the fact that in the Merriam machine the matching-spindles only are carried below the platen. The object of the Stover invention was to enable wide surfacing to be done upon a planing and matching machine of ordinary width. To accomplish this object the entire matching apparatus must be removed below the surface of the platen. In the Stover machine, as shown in the drawings, the spindles and cutters are simultaneously dropped. The cutters cannot be lowered unless the spindles are lowered also, and unless the spindles are lowered the machine cannot plane wide boards. The invention was for an arrangement of the cutting mechanism; and it would have been a more accurate use of language had the word "mechanism" or an equivalent term been used instead of the word "cutters;" but, by a common form of expression, in the language which was employed a part of the mechanism was substituted for the whole.

But in case a limited signification is given to the word "cutters," the conclusion for which the defendants contend is not reached. The cutters or knives must be placed upon spindles, and the "arrangement of matching-cutters" is an arrangement upon spindles which are so vertically adjusted that the whole can be dropped below the surface of the platen. The matching-spindles of the Merriam machine are so vertically adjusted that they can be lowered below the surface of the bed, and in the mechanism by which the dropping of the spindles is effected the Stover patent is infringed. The Merriam machine "incorporates in its structure and operation the substance" of the Stover invention. (*Carter vs. Baker*, 4 Fish., 404.)

3. The novelty of the Stover machine.

It has already been remarked that machines which were in use prior to the Stover patent contained devices for a slight vertical adjustment of the matcher-cutters, so that boards of different thicknesses could be accurately matched. This vertical adjustment was sometimes effected by a thread at the upper end of the spindles, and sometimes by loosening a set-screw, which secured the cutter-head to the spindle. These machines did not contain any device by which the spindles could be simultaneously dropped below the surface of the platen at the will of the operator, so that boards could be planed which were wide enough to pass over the top of the spindles thus lowered. Upon the entire proofs, it does not appear that any machine existed prior to the date of the Stover patent which had the principle of the Stover machine.

4. As to equitable estoppel.

The testimony in regard to Stover's propositions to a witness and one of the manufacturers of the Merriam machine, is, if true, not sufficient to justify a court in dismissing the bill.

Let a decree be passed for an injunction and account.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date October 5, 1875.]

8,673.—Lamp Shade and Chimney.—THOMAS B. ATTERBURY, Pittsburg, Pa., assignor to himself and JAMES S. ATTERBURY, same place. Application filed September 20, 1875. Term of patent 14 years.

8,674.—Floor Oil-Cloths.—JOSEPH BARRETT, New York, N. Y., assignor to RICHARD H. REEVE and BENJAMIN C. REEVE, Camden, N. J. Application filed September 22, 1875. Term of patent 3½ years.

8,675 and 8,676.—Fancy Cassimeres.—FREDERICK S. BOSWORTH, Providence, R. I., assignor to THE WEYBOSSET MILLS, same place. Applications filed September 18, 1875. Term of patents 7 years.

8,677 to 8,679, inclusive.—Carpets.—OTTO HEINICKE, New Utrecht, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Applications filed September 24, 1875. Term of patents 3½ years.

8,680 to 8,684, inclusive.—Carpets.—HENRY HORAN East Orange, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Applications filed September 24, 1875. Term of patents 3½ years.

8,685.—Cooking-Stoves.—WILLIAM J. KEEP, Troy, N. Y. Application filed September 20, 1873. Term of patent 7 years.

8,686.—Dress-Trimming.—SALLIE MCLAUGHLIN, Philadelphia, Pa., assignor to EDWARD H. GODSHALK, same place. Application filed September 13, 1875. Term of patent 3½ years.

8,687.—Carpets.—ELEMIR J. NEY, Dracut, Mass., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 24, 1875. Term of patent 3½ years.

8,688.—Bust, (Shakespeare.)—WILLIAM PAGE, New York, N. Y. Application filed September 6, 1875. Term of patent 7 years.

8,689.—Floor Oil-Cloth.—FRANK. H. RANDALL, Camden, N. J., assignor to RICHARD H. REEVE and BENJAMIN C. REEVE, same place. Application filed September 22, 1875. Term of patent 3½ years.

8,690.—Coffin-Screws.—CEPHAS B. ROGERS, West Meriden, Conn., assignor to C. ROGERS & BROTHERS, same place. Application filed September 21, 1875. Term of patent 7 years.

8,691.—Carpets.—THOMAS J. STEARNS, Boston, Mass., assignor to ROXBURY CARPET COMPANY, same place. Application filed September 23, 1875. Term of patent 3½ years.

8,692.—Fancy Cassimeres.—WILLIAM A. WALTON, of Providence, R. I., assignor to THE WEYBOSSET MILLS, same place. Application filed September 18, 1875. Term of patent 7 years.

8,693.—Border of a Pictorial Card.—MAHLON BOLTON, Jr., Philadelphia, Pa., assignor to WILLIAM H. LEHMAN and MAHLON BOLTON, Jr., same place. Application filed August 24, 1875. Term of patent 3½ years.

8,694 and 8,695.—Bracket.—CHRISTIAN HERTER, New York, N. Y. Applications filed August 27, 1875. Term of patents 3½ years.

8,696 to 8,698, inclusive.—Gasalier.—CHRISTIAN HERTER, New York, N. Y. Applications filed August 27, 1875. Term of patents 3½ years.

8,699.—Chandelier.—CHRISTIAN HERTER, New York, N. Y. Application filed August 27, 1875. Term of patent 3½ years.

8,700.—Newell Light.—CHRISTIAN HERTER, New York, N. Y. Application filed September 27, 1875. Term of patent 3½ years.

8,701.—Lamp.—CHRISTIAN HERTER, New York, N. Y. Application filed August 27, 1875. Term of patent 3½ years.

8,702.—Wall-Pockets.—JENNIE C. LAMM, Hopedale, Ill. Application filed September 9, 1875. Term of patent 3½ years.

8,703.—Advertising-Desk.—JOSEPH S. MORGAN, Brooklyn, N. Y. Application filed September 4, 1875. Term of patent 7 years.

8,704.—Provision-Safe.—FRANK NORTHRUP, Detroit, Mich., assignor to himself and ROBERT A. LITTLE, same place. Application filed June 3, 1875. Term of patent 7 years.

8,705.—Embroidery-Patterns.—EMIL CRISAND, New Haven, Conn., assignor to HENRY ST. JOHN, same place.—Case II. Application filed September 21, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK,

[Each certificate bearing date October 5, 1875.]

2,998.—Steam-Pumps and other Steam and Hydraulic Apparatus.—AQUOMETER STEAM-PUMP COMPANY, Philadelphia, Pa. Application filed July 3, 1875.
"word 'AQUOMETER.'"

2,999.—Leather-Board.—EDWIN F. BAILEY, Ashland, N. H. Application filed August 25, 1875.
"letters 'A L B.'"

3,000.—Castor-Oil.—ROBERT B. BROWN, St. Louis, Mo. Application filed August 28, 1875.
"words 'BRILLIANT CASTOR-OIL.'"

3,001.—Medicine.—JOHN CARNRICK, Bayonne, N. J. Application filed August 25, 1875.
"word 'MALTINE.'"

3,002.—Metallic Alloys and Articles of Use or Ornament made therefrom.—CHARLES J. A. DICK, Philadelphia, Pa. Application filed August 7, 1875.
"representation of the figure of an elephant."

3,003.—Medical Preparation.—LEWIS M. GREEN, Woodbury, N. J. Application filed September 18, 1875.
"words 'AUGUST FLOWER.'"

3,004.—Medical Preparations.—LEWIS M. GREEN, Woodbury, N. J. Application filed September 18, 1875.
"words 'GERMAN SYRUP.'"

3,005.—Coolers and Refrigerators.—EDWARD K. HOWES, San Francisco, Cal. Application filed August 21, 1875.
"words 'EUREKA REFRIGERATOR.'"

3,006.—Coffee and Tea making Utensils.—N. S. MCFARLAND, New York, N. Y. Application filed August 12, 1875.
"word 'CENTENNIAL.'"

3,007.—Tobacco and Cigars.—THE CONSOLIDATED TOBACCO COMPANY, San Francisco and Gilroy, Cal. Application filed July 3, 1875.
"words and letters 'Pride of Alameda,' C. T. C. Gilroy."

3,008.—Tobacco and Cigars.—THE CONSOLIDATED TOBACCO COMPANY, San Francisco and Gilroy, Cal. Application filed July 3, 1875.
"words and figures 'Bouquet of California,' with a bouquet of flowers placed after the word 'Bouquet,' between it and the words 'of California.'"

3,009.—Champagne Wine.—ANDREW J. COHEN, Philadelphia, Pa. Application filed August 19, 1875.
"a symbol representing the obverse and reverse of the Centennial medal issued by authority of the Government of the United States, having printed across its face the words 'Vin Centennial.'"

3,010.—Overcoats.—DEVLIN & Co., New York, N. Y. Application filed September 25, 1875.
"word 'CREEDMOOR.'"

3,011.—Overcoats.—DEVLIN & Co., New York, N. Y. Application filed September 25, 1875.
"word 'DOLLYMOUNT.'"

3,012.—Overcoats.—DEVLIN & Co., New York, N. Y. Application filed September 25, 1875.
"word 'WIMBLEDON.'"

3,013.—Wines and Spirits.—FRANK, BOEHM & Co., New York, N. Y. Application filed March 23, 1875.
"word 'CENTENNIAL.'"

3,014.—Butter.—WILLIAM JEX & Co., New York, N. Y. Application filed September 8, 1875.
"Gilt-Edge."

3,015.—Table-Sauce.—JAMES MEEHAN, Washington, D. C. Application filed September 23, 1875.
"words 'CENTENNIAL SAUCE.'"

3,016.—Watches.—J. H. MCMILLAN & Co., Chicago, Ill. Application filed September 29, 1875.
"the device or representation of a watch-balance of peculiar configuration."

3,017.—Fine Shirtings.—WILLIAM S. SLATER, North Smithfield, R. I. Application filed June 24, 1875.
"the head of an Indian warrior printed in colors."

3,018.—Dry-Goods.—WECHSLER, ABRAHAM & Co., Brooklyn, N. Y. Application filed March 13, 1875.
"a Maltese cross, with the letters 'W., A. & Co.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date October 5, 1875.]

333.—Title: **"Dr. A. Boschee's German Syrup of Tar, Wild Cherry, &c."**—LEWIS M. GREEN, Woodbury, N. J. Application filed September 18, 1875.

334.—Title: **"Barber's Indian Vegetable Jaundice Bitters."**—OLIVER JOHNSON & Co., Providence, R. I. Application filed September 25, 1875.

335.—Title: **"Hurd's Magical Mixture for Washing Clothes."**—MARSH, HURD & Co., New York, N. Y. Application filed September 24, 1875.

336.—Title: **"Geo. A. Magee, Manufacturer of Awnings, Banners, Tents, and Flags."**—GEO. A. MAGEE, Paterson, N. J. Application filed September 24, 1875.

337.—Title: **"Mansfield Iron Paints."**—JOHN H. PUTNAM, Mansfield, Pa. Application filed September 23, 1875.

338.—Title: **"Fahnestock, Haslett & Schwartz."**—JAMES E. SCHWARTZ, Pittsburg, Pa. Application filed September 23, 1875.

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Harris, E., Page indicator for books	168,395
Hartness, J., Car or boat attachment for balloons	168,486
Hartwell, C. S., Chuck for turning whip stocks	168,487
Harwood, N., Machine for notching and flanging boot and shoe counter blanks	168,329
Hawker, E., Confectionery	168,488
Haynes, W. H., Mechanism for unloading hay	168,330
Heath and Cook	168,455
Heaton, D., Metallic fastening for attaching buttons to wearing apparel	168,331
Henderson, C., Nut lock	168,489
Herckelrath, H., assignee	168,492
Hern, D. W., and P. Richards, Wagon seat	168,490
Hill and Gaither	168,474
Hill, H. C., Clothes pin	168,332
Hill, S. L., Thill coupling	168,491
Hockert, S. L., Truss	168,492
Hodges, A. J., assignee	168,326
Hodgson, A., Corn planter	168,396
Hoffman, W. H., and B. St. J. Hoyt, Copying press	168,494
Hoffmann, J. and G., Machine for grinding and fitting pearl veneers	168,493
Holden, C. W., assignee	168,446
Holliday and Butterfield	168,448
Hollister, G., Candle burner	168,333
Holt, G., Kitchen cabinet	168,397
Heskin, J., Tube rolling machines	168,495
Howland, R., Combined pencil case and calendar	168,496
Howson, H., Machinery for graining, pebbling, and softening leather	168,497
Hoyt and Hoffman	168,494
Hunt, A., Snatch block	168,498
Huntington, J. D., assignee	168,461
Hutton, J. M., Construction of caskets and coffins	168,499
Irwin, D., Earth scraper	168,334
Janin, A. C., assignee	168,500
Jas, A., Ice machine	168,500
Jas, A., Condenser for ice machines	168,501
Jenkins, W. H., Feed water apparatus for steam boilers	168,398
Jewett, H. W., assignee, (reissue)	6,675
Jincks, M., Fish spear	168,335
Johnson, J. H., Car coupling	168,399
Kaselowsky, E., Steam boiler furnace	168,502
Kauffman, A., Invalid bedstead	168,503
Kellie, W. M., Stencil plate	168,400
Kendrick and Ogborn	168,342
Kennedy, D. W., assignee	168,421
King, N., and W. Scott, Rolling mill	168,504
King, T. P., assignee	168,540
Kitzmiller, E. A., assignee, (reissue)	6,673
Klinkerfües, W., Psychrometer	168,505
Krüger, H., Jr., Window scaffold	168,401
Kuhns, B., assignee, (reissue)	6,672
Lampton, W. K., Rotary churn	168,506
Larmon, Y. W., Combined water wheel gate	168,507
Laumonier, C., Combined traveling bag or chair	168,402
Leckrone, E. K., assignee	168,533
Leland, W., Apparatus for canning meats, &c	168,508
Lewis, J., Machine for rounding leather	168,403
Lewis, W. W., Horseshoe machine	168,336
Long, N. H., Automatic gate	168,509
Lozé, M., Egg beater	168,510
MacDonald, J. C., and J. Calverley, printing press	168,511
Martin, C., Wool spinning machinery	168,512
Martinez, D. M., Sight for fire arms	168,404
Maxcy, S. N., assignee, (reissue)	6,675
McCloskey, J., Mechanical movement	168,337
McKenna, W. S., Annealing furnace	168,513
McVicar, M., Terrestrial globe	168,514
Meacom, G., Catamenial sack	168,515
Miller, D., Drag	168,516
Miller, W., assignee	168,476
Miller, W. P., Saw	168,338
Miner, R. H., Paper hanging machine	168,339
Moore, J. F., Package for ethylene	168,340
Moore, S. P., assignee	168,345
Morgan, G., and J. R. Foster, Machine for making wedges, (reissue)	6,682
Morrell, J. H., Water trap supply and connection	168,405
Morrell, J. H., Floodway for warehouses	168,517
Murkland and Rice	168,529
Murphy, T. H., Bale tie	168,518
Musgrove, T. C., Boot and shoe heel	168,341
Nash, H. H., Life preserving stool	168,519
Nativel, T. C., Chimney stack	168,520
New, T., Tank for asphaltic cement, (reissue)	6,683
New, T., Tank for asphaltic cement, (reissue)	6,684
Nichols, J. M., Wax thread sewing machine	168,521
Nye, S. R., Horse rake, (reissue)	6,678
Nye, S. R., Horse rake, (reissue)	6,679
Ober, F. S., Ratchet wrench	168,406
Ogborn, H., and T. T. Kendrick, Bedstead	168,342
O'Kane, J., Marking implement	168,407
Olsen, E., Clip for rope tramways	168,522
Onions, C. H., Annealing box	168,408
Oppenheimer, S., Child's carriage	168,523
Parker, T., Sluice gate	168,524
Parkerson and Fuller	168,387
Parsons, G. W., Diking attachment for dredgers	168,409
Peck, G. S., assignee	168,467
Pennie, J., Jr., Crozing stave	168,410
Perry, E. L., Pump for raising heavy liquids	168,411
Peterman, J., Gate latch	168,525
Pratt and Whitney Company, assignee	168,412
Pratt, F. A., Crane	168,412
Rapp, C. F., Hydrant	168,413
Rawley, E., Means for roofing and furling sails	168,414
Ray, M., Harvester rake	168,526
Rea, A., Harvester pitman connection	168,415
Reed, G. P., Watch key	168,527
Regan, B., Seed drill, (reissue)	6,672
Reily, C. W., Ore separator	168,416
Reynolds, I. N., Tobacco bucket lid	168,417
Rhodes, W. P., and J. H. Schwartz, Water meter	168,528
Rice, D. H., and J. W. Murkland, Planing machine	168,529
Richards and Hern	168,490
Richards and Trant	168,431
Richards, A. W., Carriage jack	168,530
Richardson, O. W., Pattern multiplier	168,343
Robjohn, T., Band ruffle, (reissue)	6,686
Roljohn, T., Machine for making band ruffles, (reissue)	6,687
Rooney, J., Butter worker	168,418
Roger, J. W., Cracker machine	168,531
Sage, P., Metallic packing for stuffing boxes	168,344
Samuels, S., assignee	168,477
Sanford, E. L., Car coupling	168,345
Schultz, E., Breech loading ordnance	168,346
Scott and King	168,504
Seameans, J. C., Wagon gearing	168,347
See, J., Millstone staff	168,419
Sellers, P., Millstone staff	168,348
Seymour, J. M., Machine for boring blind stiles	168,532
Sheffield, G. V., Uniting the soles and uppers of boots and shoes	168,420
Shelton, E. D. F., Paper box, (reissue)	6,680
Shepard, L., Crescent saw handle	168,421
Sherman, J. C., Screw cutting die	168,349
Sigwalt, J., Jr., Mechanism for transmitting motion from a treadle to a revolving shaft	168,350
Slaymaker, W. A., Opera chair	168,351
Sloan, T. J., Apparatus for thawing frozen water pipes	168,352
Sloan, T. J., Implement for thawing frozen water pipes	168,353
Smeaton, R., Anti-freezing hydrant	168,422
Smith, E., Heating stove	168,534
Smith, I. E., Churn	168,533
Smith, O. C., Car coupling	168,423
Snow, G. K., Binding books	168,535
Snow, G. K., Paper fastener and card suspender	168,536
Spain, J., Sulky cultivator	168,537
Stark, M. J., assignee	168,476
Stearns, J. B., Jr., Sewing case	168,538
Steckel, E. M., Hay tedder	168,424
Stein, W., assignee	168,439
Stellwagen, P., assignee	168,476
Stephens, H., Manufacture of mail bags	168,425
Story, J., Apparatus for warming and ventilating railroad cars	168,426
Sarmon, H. J., Gas apparatus	168,539
Swaney, J. S., Seedling puller	168,427
Swartz and Rhodes	168,528
Swasey, A., Water meter	168,354
Talbott, T., Jr., Shingling bracket	168,355
Taylor, D. C., assignee	168,528
Teets, C. E., Hair brush	168,428
Teske, C., Watch regulator	168,429
Thomas, C., Carriage	168,430
Todd, W., Wash board, (reissue)	6,673
Tompkins, H. B., assignee	168,477
Traut, J. A., and H. Richards, Bench plane	168,431
Trenchard, S. D., Ship's log	168,432
Turner, C. R., Smoked beef shaver	168,433
Turner, L. W., Pot lid	168,356
Uster, J., Screw for boot and shoe heels and soles	168,357
Valentine, W. P., Shingle machine	168,541
Van Devort, C., and C. Van Fleet, Distilling olls	168,542
Van Fleet and Van Devort	168,542
Van Nonhuys, I., Heel trimming machine	165,540
Van Patten and Clapp	168,319, 168,320, 168,321, 168,322
Velle, H. C., Horse rake	168,543
Vogler, H., Trunk	168,544
Walton Brothers, assignees	168,400, 168,432
Walton, W. M. and J. J., Signal head light for vessels	168,434
Warner, W. R., assignee	168,354
Warner, W. Y., assignee	168,497
Wattles, J. W., Composition for sizing yarn	168,435
Watterson, A. R., Mortising chisel	168,358
Webber, T., Dumping attachment for offal presses	168,545
Weedermann, E. J., Ice breaking vessel	168,436
Wells, D. A., Cheese protector	168,437
Wells, H. L., Automatic cistern cut off	168,361
Westcott, J., Using carbonic acid gas as a motive power	168,546
Westinghouse, G., Jr., Air valve for power brakes	168,359
White, S., assignee	168,323
White, S. S., assignee, (reissue)	6,677
White, T. F., Dead cart	168,438
Wiard, E., Wrench	168,360
Wickersham, J. B., Iron fence, (reissue)	6,685
Wilson, L. B., Bottling apparatus	168,547
Wilson, S. D., Steam hammer	168,439
Wolcott, C. C., Electrical marine engine governor	168,548
Woodhouse, J. V., Furnace for smelting lead	168,440
Woolfolk, L. B., Refrigerator	168,441
Wooster, G. H., assignee, (reissue)	6,686, 6,687
Worrell, S. E., Marking wheel	168,362
Worth and Caswell	168,372
Worthen, W. E., and R. S. Gillespie, Electroplated figures, &c	168,442

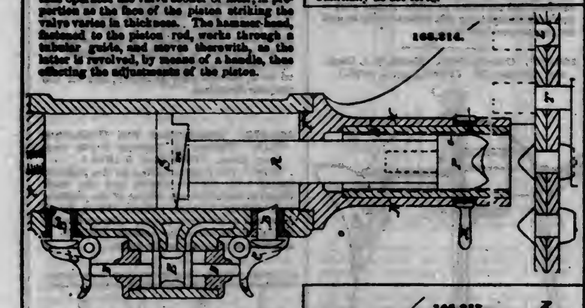
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED OCT. 5, 1875.

168,214. RIVETING-MACHINE. J. F. Allen, New York, N. Y. [Filed Feb. 17, 1875.]

Brief.—The piston, at each end of its stroke, operates the valve by striking against the inclined face of plugs or bolts projecting, one near each end, through the sides and into the cylinder. The length of the stroke can be varied, so as to gradually reduce the end of the rivet, and form the head thereon, by turning the piston around, the under side of the piston being provided with an inclined face, that operates the valve sooner or later, in proportion as the face of the piston striking the valve varies in thickness. The hammer head, fastened to the piston-rod, works through a tubular guide, and moves therewith, as the latter is revolved, by means of a handle, thus effecting the adjustments of the piston.

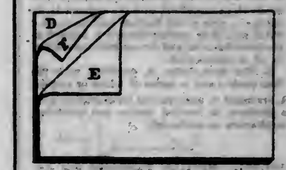


1. An improved riveting machine, consisting of a cylinder, A, with suitable valves, in combination with the piston B, rod R, hammer P, guide-tube N, projecting guide-tube H, bracket J, steady-pin L, head bolt T, and the holding-bar W, the whole being arranged and operating together substantially as described.

2. The combination of the cylinder A, plugs B B', lugs or horns C C', valve E, piston B, provided with an inclined surface, m, rod R, hammer P, and tube N, with projection or handle M, substantially in the manner and for the purpose set forth.

3. The piston B, with an inclined surface, m, on its under side, in combination with the plug B, piston-valve E, tube N, and projection or handle M, arranged and operating in the manner and for the purpose specified.

168,215. LAP-ROBE. Fredk. L. Blakely, Clinton, Iowa. [Filed Mar. 3, 1875.]



As a new article of manufacture, an improved lap-robe consisting of the coverings D E, of any suitable cloth, and the middle piece F, of oil-silk, or other fabrics impervious to air and water, all stitched together, and constructed substantially as described.

168,216. ARTISTS' SHADING-STUMPS. L. F. Bruce, Springfield, Mass. [Filed July 16, 1875.]

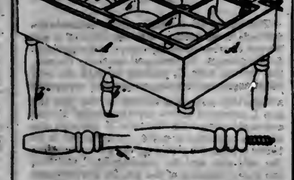


As a new article of manufacture, an artist's shading-stump, consisting of a thread of flexible material, a, made first in a strip, then rolled and firmly incased in a rigid covering, d, substantially as described.

168,217. TOY TABLES. George H. Burke, Springfield, Vt. [Filed July 16, 1875.]

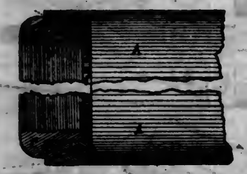
Brief.—The body has compartments in which the removable legs, and others for the tablecut and cloth, all being covered by the hinged top or table.

1. A portable toy table, consisting of the box A, provided with the cover B, the pockets for packing the legs, and the legs b', arranged to be screwed into the bottom of the box, substantially as set forth.



2. The combination of the box A, provided with the cover B and pockets c, the removable tray b, and the legs b', arranged to be screwed into the bottom of the box, substantially as and for the purpose described.

168,218. SABOTS FOR PROFESSORS. John G. Butler, New York, N. Y. [Filed Sept. 20, 1875.]



1. The combination of a projectile having a double tapped ring, B, fitting over a polygonal or rounded shoulder, with a tongued and grooved auxiliary band, C, substantially as and for the purpose hereinbefore set forth.

2. The tongued and grooved band C, substantially as and for the purpose hereinbefore set forth.

168,219. TOP-PROPS FOR CARRIAGES. E. D. Clapp and Frederick Van Patten, Auburn, N. Y. [Filed Sept. 15, 1875.]



1. The combination of a hollow screw-threaded sleeve with a bolt and a prop-joint or prop-joints, substantially as described, and for the purposes set forth.

2. The combination of a hollow screw-threaded sleeve, a bolt, a prop-joint or prop-joints, and a cap, substantially as and for the purpose specified.

3. As a new article of manufacture, a top-prop for carriages, consisting of a bolt, B, having wings or pintles D, a cap, E, a hollow screw-threaded sleeve, F, and a prop-joint or prop-joints, G, substantially as shown and described.

168,220. AXLE-CLIP TIES AND LOOPS. E. D. Clapp and Frederick Van Patten, Auburn, N. Y. [Filed Sept. 15, 1875.]



As a new article of manufacture, an axle-clip tie and safety-loop, made of a single piece of metal, and having a recess, C, substantially as shown and described, and for the purpose set forth.

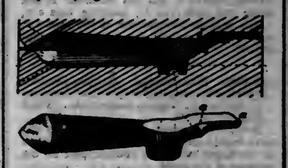
168,221. AXLE-CLIP TIES FOR CARRIAGES. E. D. Clapp and Frederick Van Patten, Auburn, N. Y. [Filed Sept. 15, 1875.]



As a new article of manufacture, an axle-clip tie for carriages provided with a recess, E, and shank D G, substantially as shown and described.

168,222. DIES FOR MAKING BODY-LOOP BLANKS FOR CARRIAGES. E. D. Clapp and Fredk. Van Patten, Auburn, N. Y. [Filed Sept. 15, 1875.]

Brief.—The new feature of the dies is the shape of b, Fig. 1.



1. The dies having the depressions and recesses of the form substantially as shown and described, and for the purpose set forth.

2. The body-loop-blank, made with a lip, c, of the form substantially as shown and described, and for the purpose set forth.

168,223. CROQUET APPARATUS. James A. Crundall, Brooklyn, N. Y., assignor to himself and Sylvanus White, same place. [Filed Sept. 4, 1875.]

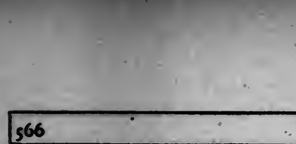
Brief.—A device embodying a rest, arch, and mallet, all in one.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON.

1. The compound mallet A, pivoted by a pin, a, to the post B, substantially as herein shown and described.

2. The post or handle B, combined with the brace or lunette C that project from its lower end, and constitutes the fork or yoke of the piano apparatus, substantially as herein shown and described.

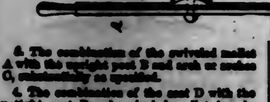
160,893. GRAIN. Jos. H. Orr, Allentown, Pa. [Filed June 30, 1875.]



The combination of the grain-bars A A', having slots a b, and the guide-bar B and guide and rack-rod C, carrying lugs c c, which engage the pins d d on the jaws e e, substantially as and for the purposes described.

160,894. HASTENERS. Charles Deaton, Peoria, Ill., assignor of one-half his right to Andrew J. Rodgers, same place. [Filed Mar. 31, 1875.]

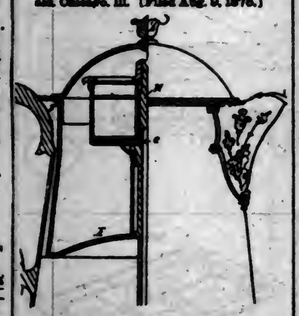
Brief.—By attaching the fingers to the convexedly-projecting rib the upper surface of the finger-bar is left unobstructed for the passage of the grain.



1. The finger-bar having an undercapped plane surface, and provided at right angles with a downward-projecting rib for supporting and attaching the fingers thereto, substantially as set forth.

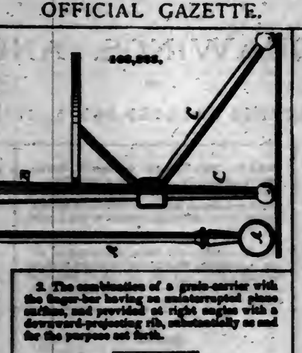
2. The combination of a grain-carrier with the finger-bar having an uninterrupted plane surface, and provided at right angles with a downward-projecting rib, substantially as and for the purposes set forth.

160,895. COFFEE-POT. Matthew J. Dowald, Chicago, Ill. [Filed Aug. 9, 1875.]



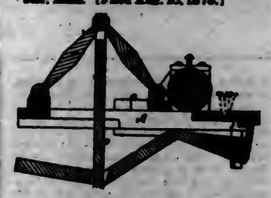
The combination, substantially as herein described, in connection with the body of a coffee-pot or other steeping-vessel, of the horizontal diaphragm B, arranged centrally therein, the vertical tube H, passing through the said diaphragm, and having an open end supported a little way above the bottom of the pot, the cup I, arranged above the diaphragm B, and communicating with the tube H through one or more openings or ports, c c, arranged to lie below a filter for retaining the grounds within the said cup, and the pouring-lip C, entering the upper chamber of the pot, for the purposes specified.

160,896. BURNER-LOADING FIRE-ARM. Wm. W. Greener, Birmingham, England. [Filed June 3, 1874.]



The combination of the lever D and shaft G, having arms E E, with the bolts O J, as described.

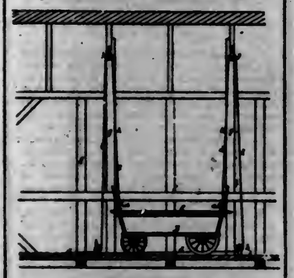
160,897. MACHINE FOR HOOPING AND FLANGING COOPERS'-BLANKS FOR BOGGS AND BINDS. Nelson Harwood, Leominster, Mass. [Filed Aug. 10, 1875.]



In a machine for hooping and forming coopers-stiffeners for boxes and chests, the combination of a carriage, G, and roller E with reciprocating jaws B C, provided with gages d d e, retaining-dies c f, and die-carrier E, all attached to a suitable bed-plate, A, and operated by toggles, pitmen, and weight-of lever, substantially as shown, and for the purposes described.

160,898. MECHANISM FOR UNLOADING HAY. Warren E. Haynes, North Sudbury, Mass. [Filed Sept. 9, 1875.]

Brief.—The wagon, having on it a platform loaded with hay, is drawn into the barn. Ropes attached to each corner of the platform load upward through pulleys, thence downward and to the horse-power. The load, when drawn up, is tilted by hooking one side to staples and hooking on the other.



1. The combination of the hooking-chains f e and the branch chains r s, provided with hooks t t, as described, with the capstan D, its studs v, rope q, and the four hoisting-ropes d d d d, and their guide-pulleys f h, applied to the barn-frame A, and the car with a platform, C, all as represented.

2. The barn-frame A, provided with the four posts y and a series of hooks or staples, k, arranged in each, as and for operation with a platform, its hooked chains, and elevating mechanism as explained.

160,899. METALLIC FASTENERS FOR ATTACHING BUTTONS TO WEARING APPAREL. David Heaton, Providence, R. I. [Filed Jan. 28, 1875.]

The fastener having five prongs or spurs, three in front and two at the rear, constructed substantially as described, for the purpose specified.

160,900. CLOTHES-PIN. Homer C. Hill, Clinton, Ill. [Filed Apr. 12, 1875.]

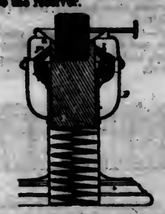


HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON.

A clothes-pin consisting of a piece of elastic metal, provided with an elongated notch or aperture, a, on end, b, having inclined sides, and of such tapering form that it may pass with facility through the said slit, and lap a, forming a part of the outwardly-curved end that resting against the prong d, all combined as described.

160,901. CANDLE-STICKING. Geo. Hollister, Quincy, Mass. [Filed Sept. 9, 1875.]

Brief.—The insulator is made of a non-heat-conducting substance. It guides the melted waste into the receiver.

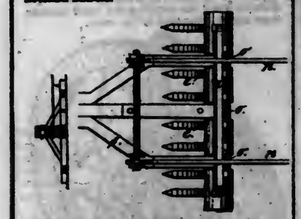


1. In combination with the candle-burner provided with the waste-receiver D, surrounding its candle-tube, the insulator F, constructed to receive the waste of the candle and discharge it into the said receiver.

2. The candle-burner provided with the waste-receiver D, series of clasps E, and the insulator F, all being constructed and arranged substantially as, and to operate as, specified.

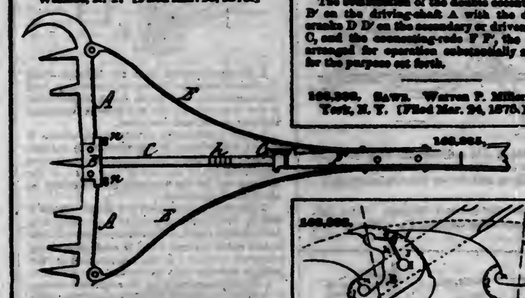
160,902. HARTH-SCRAPERS. David Irvin, Byron Centre, Mich. [Filed Mar. 6, 1875.]

Brief.—A series of hinged teeth arranged on a bar, and the angle regulated by a notched handle.



The above-described slicker and earth-remover, having, in combination with tongue r and head c, the hinged s, teeth q, bend t, and notched handles a, substantially as and for the purposes set forth.

160,903. FIRE-GRATE. Melvin Jinkins, Wallace, N. Y. [Filed Mar. 16, 1875.]



1. The combination, with the spring-jaws A A, of the central shaft C provided with the teeth h, and the spring P provided with the catch i, substantially as and for the purposes specified.

2. The combination, with the spring-catch F and sliding shaft G, of the cam G and pin h, as and for the purposes specified.

3. The combination, with the spring-jaws A A and head B, of the cut-corners a a, for adjusting the angle of the spring-jaws, as described.

160,904. HORSESHOE-MACHINES. William W. Lewis, Cincinnati, Ohio. [Filed May 20, 1875.]

Brief.—Die-plates with faces shaped to produce the required form countersunk in the periphery; grooves at right angles to the inclined faces of the die-plates. The rail carrying the countersunk die-plates is provided with groove around it for the deliverer.



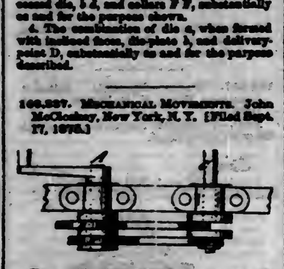
1. The grooves c c, in connection with the inclined faces on the opposite die a, for the purpose of producing an undercut crease, as described.

2. The combination of die a, formed with inclined faces, and countersunk die b d, substantially as and for the purposes specified.

3. The combination of roll A, having a die, a, with inclined faces, roll B, having a recessed die, b d, and cutters F F, substantially as and for the purposes shown.

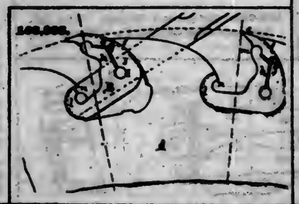
4. The combination of die a, when formed with inclined faces, die-plate b, and delivery-point D, substantially as and for the purposes described.

160,905. MECHANICAL MOVEMENTS. John McCloskey, New York, N. Y. [Filed Sept. 17, 1875.]



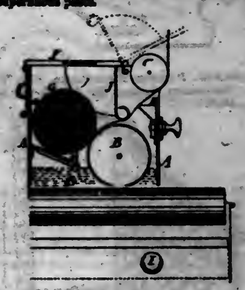
The combination of the double eccentrics B B' on the driving-shaft A with the double cranks D D' on the secondary or driven shaft C, and the connecting-rods F F', the whole arranged for operation substantially as and for the purposes set forth.

160,906. SAWS. Warren P. Miller, New York, N. Y. [Filed Mar. 24, 1875.]



160,907. PAPER-HANGERS' MACHINES. S. H. Miner, Cleveland, Ohio. [Filed Jan. 10, 1875.]

Brief.—A scraper is adjustably attached to the front side of the box, and is made to bear on the under side of the paper for removing superfluous paste.



1. The scraper and paste-regulator H, made with the inwardly-bent edges, in combination with adjusting-set-screws I, constructed and arranged substantially in the manner herein shown and described.

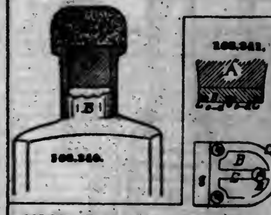
2. In a paper-hanging machine, substantially as described, the combination of the flanges J with the lid, as and for the purposes set forth.

3. A paper-hanging machine composed of the flanged lid F J, rolls B C, paste-receptacle, and adjustable scraper H, substantially as described.

160,908. PACKAGES FOR BOTTLING. James P. Moore, Cleveland, Ohio. [Filed Mar. 8, 1875.]

Brief.—A package or bottle provided with a sponge, which is held in place by a capsule of the neck thereof, on the flange of the neck of the bottle, and of sufficient capacity for holding a sponge above the cork.

In combination with the neck b and cork C of the bottle A, the sponge E and capsule D, as and for the purposes set forth.



160,909. BOOT AND SHOE HEELS. Thos. C. Musgrove, Philadelphia, Pa. [Filed Apr. 12, 1875.]

The combination of the heel A, having an offset or shoulder, β, the recessed rubber B, and the yielding stainless-plate C, substantially as and for the purpose shown and described.

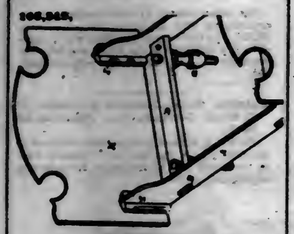
160,910. BEDSTEADS. Harrison Cotton, Richmond, Ind., and Tunis T. Kendrick, New York, N. Y. [Filed June 26, 1875.]

1. The head and foot boards H H, provided with the grooved cleats I I, in combination with the side rails A A, having the dovetailed tenons A A, constructed and operating substantially as and for the purposes set forth.

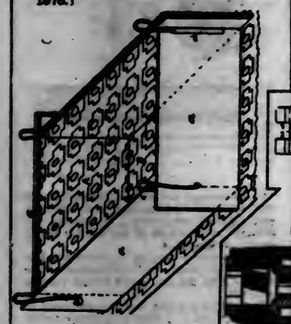
2. The legs c c, provided with tenons G G, in combination with the cross-bars D D, having the holes or mortises M M, substantially as and for the purposes hereinbefore set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON.

168,845.



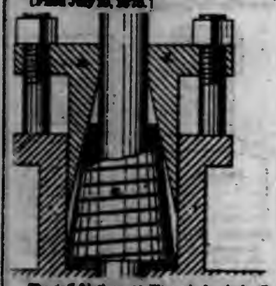
168,845. PATTERN-MEASURE. Otis W. Richardson, Chicago, Ill. [Filed Aug. 19, 1875.]



1. A pattern-multiplier, consisting of three or more mirrors adjustably connected to each other, and having their reflecting-surfaces arranged, substantially as described, to produce, or partly produce, the patterns, for the purposes set forth.

2. The combination of three or more mirrors, *a b c*, with dotted charge or charge, substantially as and for the purposes specified.

168,844. METALLIC PACKING FOR STUFFING-BOXES. Philip Sage, Dubuque, Iowa. [Filed July 28, 1875.]



The self-fitting metallic conical split collar, in combination with the rod *b* and follower, when constructed substantially as and for the purpose herein specified.

168,846. GAS-CONDENSER. Edwin L. Sanford, Pavilion, assignor of one-half his right to Sanford P. Hines, Middlebury, N. Y. [Filed May 19, 1875.]

1. The hooks A A, pivoted within the draw-head B, and having their angular rear ends *b b* passing through the bottom of the draw-head, in combination with the spring *b* arranged between said angular ends of the hooks, as and for the object specified.

2. The uncoupling-key D, formed with the two triangular prongs *m n* and head *o*, and in combination with the draw-bar C, with the corresponding openings *p p* therein, and the beveled catch *p*, all as and for the purpose herein before set forth.

168,847. BREECH-LOADING ORDNANCE. E. Schultze, Paris, France. [Filed July 31, 1874.]

1. The combination, in a piece of ordnance, substantially as described, of the channel D, and piece A, with notch *a*, to receive the end of the wire.



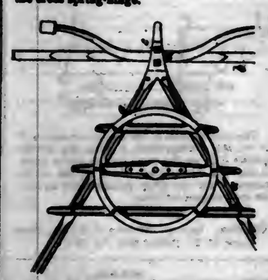
168,848.



2. The combination, in a piece of ordnance, substantially as described, of the cylinder C, ring G, and elastic bodies *p p* and E.

168,849. WAGON-GEARING. Julian C. Simmons, Virgil, N. Y. [Filed Aug. 11, 1875.]

Brief.—The splinter-bars are connected with the cross spring-hinge.



The hinge *c*, in combination with the splinter-bars *a a* and the cross-spring *b*, all substantially as and for the purposes set forth.

168,850. MILLSTONE-STAFFS. Peter Sellers, Lancaster County, Pa. [Filed July 1, 1875.]



168,846.



The circular marble slab A, dressed out of a single piece, with its central opening C and handles D, as and for the purposes specified.

168,847. SCREW-CUTTING DIES. Jireh C. Sherman, New Bedford, Mass. [Filed Aug. 4, 1875.]

Brief.—Chasers fit in radial grooves cut in the case, and are secured in position by clamping-rings, which are made to clamp them by set-screws.



The combination of the die-stock A, provided with the openings *a*, channels *b*, and rings B, and the cutters C, as described.

168,848. MECHANISM FOR TRANSMITTING MOTION FROM A TREADLE TO A REVOLVING SHAFT. John Shewalt, Jr., Chicago, Ill. [Filed Aug. 14, 1875.]

Brief.—A continuous forward motion is imparted to the balance-wheel by means of clutch-wheels arranged on each side of the same, and operated by a treadle and band. Said clutch-wheels are provided with locking-pieces, springs, and washers, the latter riding upon eccentrics on the inner hubs thereof. The balance-wheel is suspended in a frame made adjustable by means of a stud, and having a sheave-wheel for carrying the band passing from one clutch-wheel to the other.



1. In combination with the balance-wheel B, the adjustable frame A, inclosing said balance-wheel, said parts being constructed in the manner and for the purpose substantially as shown and described.

2. The combination of the clutch-wheels C and C, constructed as described, with the balance-wheel B, the former being arranged upon opposite sides of the hub of the latter, in the manner and for the purpose substantially as shown and described.

3. In combination with the clutch-wheels C and C, the eccentrics C' and C', provided with the washers *c* and *c*, the locking-pieces D and D, and spiral springs E and E, substantially being relatively arranged in the manner and for the purpose substantially as shown and described.

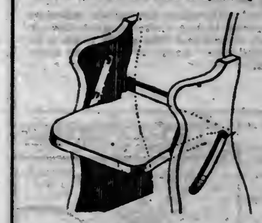
4. In combination with the adjustable hanger A and the balance-wheel B, the center pivotal bearings A' and A', said parts being relatively arranged in the manner and for the purpose substantially as shown and described.

5. In combination with the hanger A, the small sheave-wheel F, said parts being relatively arranged in the manner and for the purpose substantially as shown and described.

168,849.

168,850.

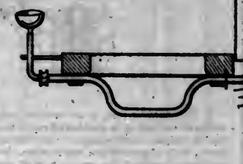
168,851. OPERA-CHAIRS. W. A. Shaymaker, Louisville, Ky. [Filed Dec. 4, 1874.]



The combination of the pivoted seat, side frames, intermediate links or bars, and the guiding pins and slots, substantially as described.

168,852. APPARATUS FOR THAWING FROZEN WATER-PIPES. Thos. J. Sloan, New York, N. Y. [Filed Mar. 17, 1875.]

Brief.—A flexible pipe constructed with a metallic head or nozzle and an external spiral wire or thread, whereby the pipe may be fed into the water-pipe to be thawed by means of a rotary movement from a tubular crank, working in suitable journals in a frame, the opposite end of said crank being connected, by a swiveled joint, with an upright tube, into which hot water may be poured by means of a funnel.



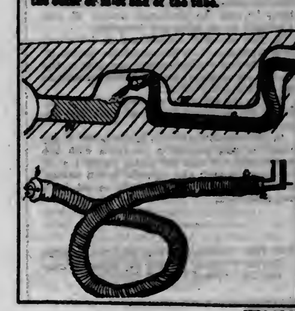
1. As a new article of manufacture, a flexible pipe, constructed with a metallic head or nozzle, and an external spiral wire or thread, whereby the pipe may be fed into the water-pipe to be thawed by means of a rotary movement, substantially as and for the purpose set forth.

2. The combination of a crank with the externally spirally-threaded pipe, made of rubber or other flexible material, substantially as and for the purpose herein set forth.

3. The tubular segmental crank, arranged for adjustment along the length of the flexible externally spirally-threaded pipe, substantially as and for the purpose set forth.

168,853. IMPLEMENT FOR THAWING FROZEN WATER-PIPES. Thos. J. Sloan, New York, N. Y. [Filed Mar. 2, 1875.]

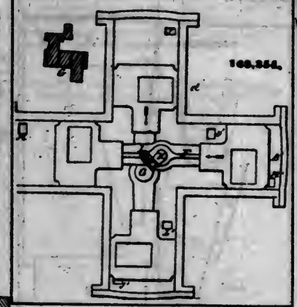
Brief.—A flexible tube of India-rubber or other flexible material, provided externally with a shield of closely-coiled wire, provided with a rounded nozzle, and having an internal draft-wire extending from the said nozzle to the outer or inlet end of the tube.



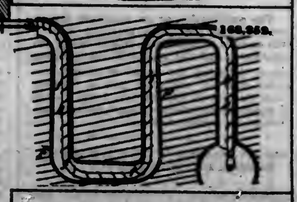
The combination of the flexible tube *a*, the coiled-wire shield *a*, the nozzle *b*, and draft-wire *c*, the whole combined and arranged for operation substantially as and for the purpose set forth.

168,854. WATER-MOTORS. A. Swasey, Hartford, Conn., assignor to W. E. Warner, same place. [Filed Aug. 13, 1875.]

Brief.—In four cylinders opening into each other at the center move four pistons, connected together in pairs by rigid connecting-rods. A connecting-link with pivots fits into sockets in the middle points of the rods. Each piston acts as a valve for the adjacent cylinder. The connection of the link with the piston-rods governs and regulates their motion, and causes them to have always the proper position and stroke.



168,854.

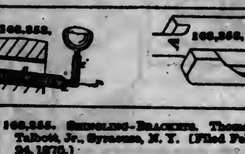


1. The four cylinders, in combination with double pistons, connected and arranged as described, and with entrance and exit pipes communicating between the cylinders, substantially in the manner herein set forth, so that each pair of pistons act as valves for the other pair.

2. The link G, in combination with the two piston-rods, moving at right angles to each other and in straight lines, as a device for regulating and controlling their motion, substantially as described.

3. The combination of the link G, whose ends move in straight lines at right angles to each other with a reciprocating motion, and the crank and spindle I, connected with the middle point of said link, as a new mechanical movement for converting rectilinear into rotary motion, substantially in the manner described.

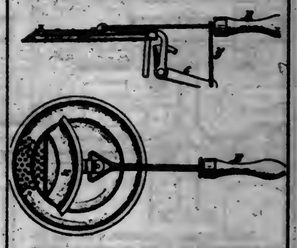
168,855. SHINGLING-BRACKETS. Thomas Talbott, Jr., Syracuse, N. Y. [Filed Feb. 24, 1875.]



A portable sliding bracket formed of a shoe, A, made to slide up over the roof, and suspended by a rope attached to the front end of the shoe, as described, on which is an abutment, *a*, and folding riser B and bar or tread C, constructed and combined as and for the purposes specified.

168,856. POT-LIDS. Lewis W. Turner, Wallingford, Conn. [Filed Aug. 12, 1875.]

Brief.—The pot can be tipped and the lid held in place by means of the handle, hook, and lever.



The pot-lid A, provided with the handle B, hinged to the lid, also provided with the hook *b*, passing through a slot in the edge of the lid, lever *c*, pivoted to the hook *b*, and connected to the handle B by the rod *g*, all the said parts constructed and arranged to operate as and for the purpose described.

168,857. SCREWS FOR HEELS AND SOLES OF BOOTS AND SHOES. John Usher, Brooklyn, E. D., N. Y. [Filed Mar. 20, 1875.]



The screw for boot and shoe soles or heels, made with longitudinal slots or openings the entire length of the cylindrical portion for the reception of the screw-driver, as set forth.

168,858. MORTISING-CHISELS. Arthur B. Watterson, San Francisco, Cal. [Filed May 6, 1875.]

Brief.—The chisel is formed in two parts, united by a scarf-joint, for the purpose of removing the lower part for sharpening, or for substituting a different width of tool without removing the upper part. The main chisel is provided with two side plates having vertical slots, in which is fitted a supplementary chisel, secured in position by a key passing through the side plates, and a transverse slot in the back of the chisel.

The chisel A C, constructed as described, in two parts, with the mitring-joint B, in combination with the vertically-slotted sides D, the transversely-slotted chisel F, and key G, all arranged to operate substantially as and for the purpose set forth.

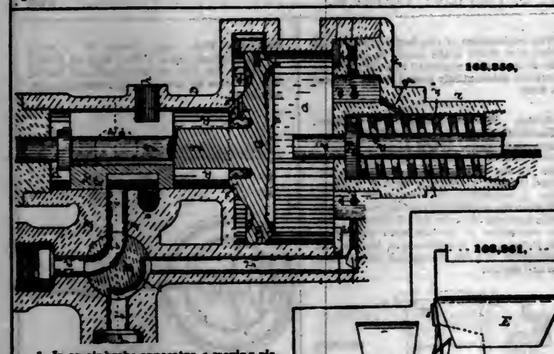
168,859. AIR-VALVES FOR POWER-BRAKES. George Westinghouse, Jr., Pittsburg, Pa. [Filed Aug. 10, 1875.]

Brief.—A slide-valve is attached to a piston, which is actuated by the varying pressure of air. When the piston is raised, air flows over the slide-valve into the port leading to the reservoir, while the slide-valve is in a position to allow air to exhaust from the brake-cylinder. Pressure being reduced, the piston falls and moves the slide-valve to uncover the cylinder-port, and allow air to flow from the reservoir to the cylinder and set the brakes.

168,858.



168,859.



1. In an air-brake apparatus, a moving piston arranged in the line of air communication, operated by air-pressure, and a slide-valve, H, connected therewith, in combination with suitable air ports and passages leading to an auxiliary reservoir and brake-cylinder, whereby such reservoir and cylinder will be charged with compressed air alternately and successively by the throw or motion of the piston and valve, substantially as set forth.

2. The port *a*, in combination with air-chamber *a*, piston G, slide-valve H, and auxiliary reservoir and brake-cylinder parts, arranged substantially as set forth.

3. The slide-valve H, in combination with an air-reservoir and brake-cylinder, arranged and operative substantially as set forth.

4. In combination with the piston G, a suitable line of ports and passages, *a a' b' b'' c'*, for supplying compressed air to the auxiliary reservoir while the piston is on its upper seat, substantially as set forth.

5. In combination with a piston, G, operated by air-pressure, a stem, *d'*, and spring *d''*, substantially as set forth.

6. The port *q* in an apparatus substantially such as described, for draining off the water of condensation from the air chambers or spaces to a drip-cup, *q'*.

7. A reversible four-way cock, in combination with a single line of charging-pipe and supply-port therefrom, a brake-cylinder part, and parts leading to and from suitable automatic devices, substantially as set forth, whereby either of the modes described of operating the brakes may be employed at pleasure without changing the port of supply.

8. An arrangement of parts *l l'* in the seat D', parts *b'* and *c*, communicating with the automatic apparatus, and parts *b''* *c'*, communicating with the brake pipe and cylinder, substantially as set forth.

168,860. Whiffletree. Edwd. Wiard, Louisville, Ky., assignor to Benjamin F. Avery, same place. [Filed Jan. 26, 1875.]

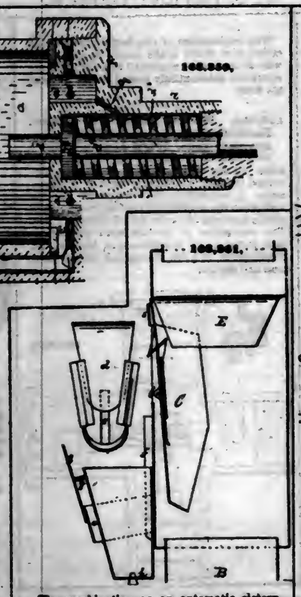
Brief.—The handles are held together by a sliding loop, capable of use when different-sized nuts are to be turned. A slot and projection prevent lateral play at the extremity of the handles



In a wrench with its sections A B and C D constructed and operating as described, the combination of the lug *f*, oblong slot *e*, shoulder *d*, stem *d'*, loop *g*, and sliding ring E, in the manner and for the purpose described.

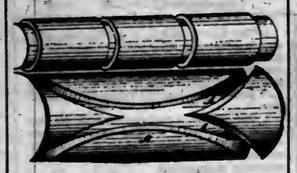
168,862. Automatic Chinese Cut-Off. Harvey L. Wells, Burlington, Iowa. [Filed Aug. 9, 1875.]

Brief.—The chute is held in horizontal position by the leaf-spring outside of the tank. As the water gradually weights the external tank it slides down the ways, and at the same time a projecting pin pulls out the spring, releasing the chute, which, by the weight of the water, removes a vertical position, discharging into the cistern.

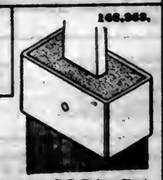


The combination, as an automatic cistern cut-off, of the chamber A, arranged between the sections of leader-pipe B, and having the gateway *a* and the apron E, the swinging chute C, having the slotted opening *c*, provided with the adjustable gate *d*, together with the tank D, with its ways *f*, and the pin *g*, together with the leaf-spring S, as described, and for the purpose specified.

168,863. Marking-Wheels. S. H. Worrell, Hannibal, Mo. [Filed July 6, 1875.]



A marking-wheel having a groove to fit over the chine of a barrel or other similar article, so that the main surface or marking part of the wheel will touch all portions of the head of the barrel or other similar article, as shown.



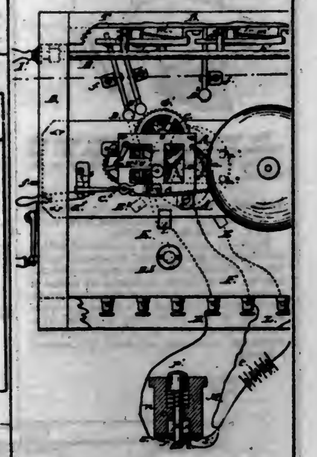
168,865. Paint-Brushes. C. R. Baker, East Cambridge, Mass. [Filed Aug. 18, 1875.]

Brief.—The brush, being of even thickness, holds the same quantity of paint at the edges as at the center, and does not require frequent dipping.

A varnish or paint brush, in which the bottoms of the bristles are disposed in rectangular form within a rectangular socket or ferrule, substantially as and for the purpose described.

168,864. Electric Annunciators. Saml. H. Beckwith, Utica, N. Y. [Filed Apr. 1, 1875.]

Brief.—The alarm and all the indicators controlled by one electro-magnet, through which circuits pass from all the points to be signaled from. Magnet is revolved by clock-work.



1. The combination, in an annunciator, of a series of indicating or numbered cards or signs and a single electro-magnet controlling the same, with intermediate mechanism, for the purpose of causing the proper sign or number to appear on sounding an alarm or call, substantially as set forth and described.

2. The combination of a revolving electro-magnet, an armature-lever, a drag-spring, and a system of keys for the purpose of sounding an alarm or call by the appearance of annunciating-cards indicating the place from whence the alarm or call proceeds, substantially as set forth and described.

3. The revolving electro-magnet provided with the armature-lever O' and drag-spring G, in combination with the cut-off P, the automatic switch M, and the clock-work, whereby the breaking of the circuit at the switch causes the clock-work to move and revolve the magnet, and the circuit is automatically closed to stop the same, substantially as set forth and described.

4. The keys D D', &c., in combination with the armature-lever O', the conducting-plates E E', &c., and the horizontal notched springs A', substantially as set forth and described.

5. The cams L, carrying the annunciating-cards M, in combination with the horizontal springs A', rods I and K, chains or cords *n'*, and keys D D', &c., substantially as set forth and described.

6. The conducting-plates E E', &c., in combination with the drag-spring G, the armature-lever O', and the automatic switch M, substantially as set forth and described.

7. The cut-off P, constructed as described, in combination with the automatic switch M, the revolving electro-magnet, the drag-spring G, and the armature-lever O', substantially as set forth and described.

8. The cut-off P, in combination with the crank P', substantially as set forth and described.

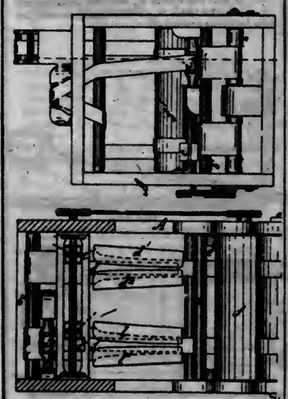
9. The automatic switch M, composed of the sheath *n* and plunger *p*, provided with the metal pins *r r* and the metal plates *s s'*, in combination with two circuits to the annunciating apparatus, substantially as set forth and described.

168,865. Processes for Manufacturing Paper Tubing. Henry M. Boies, Scranton, Pa. [Filed July 10, 1875.]

The process of manufacturing water-proof tubing of paper in one continuous operation, herein described, which consists in forming a tube by pasting and lapping the edges of a strip of paper of the required width, then drying the paste, and finally in coating the tube with a water-proof material, substantially as set forth.

168,866. Paper-Tube Machine. Henry M. Boies, Scranton, Pa. [Filed July 10, 1875.]

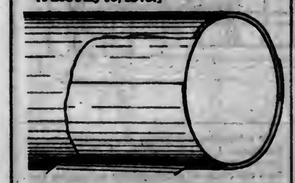
Brief.—A strip of paper is pasted and folded into a tube, which passes over a yielding tension-roller, and under a guide, which directs it into another tube-forming apparatus, where a second strip of paper is pasted and folded over the first, forming a double tube.



1. The combination of two sets of tube-forming apparatus, substantially such as described, with an intermediate roller having its bearings in a yielding bed, for the purpose of administering elastic tension to the tube as it is drawn off from the first set of tube-forming apparatus, and delivered to the second set of tube-forming apparatus, substantially as shown.

2. The combination of tube-forming apparatus, substantially such as described, provided with a reel for containing and delivering a strip of paper in suitable position to be formed into a tube, with a guide for delivering a tube already formed in suitable position to have the said strip of paper pasted and folded into a second tube outside of the tube so delivered, substantially as described.

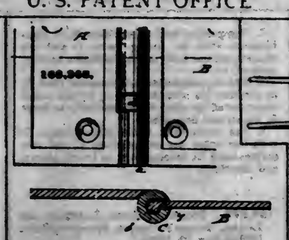
168,867. Compound Flexible Paper Tubing. Henry M. Boies, Scranton, Pa. [Filed July 10, 1875.]



As a new article of manufacture, continuous flexible tubing composed of two or more single tubes of variable diameter, arranged loosely one within the other, each tube being made from a strip of flexible material, substantially as described.

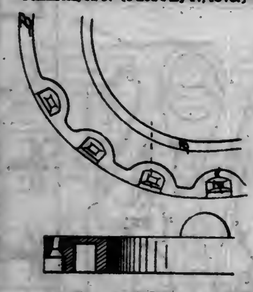
168,868. Hinges. Lewis R. Bolton, Des Moines, Iowa. [Filed June 28, 1875.]

Brief.—The hinge is made reversible by the use of slotted end projections, combined with a detachable collar and a slotted sleeve, which fits upon a suitable rod formed on one of the leaves, the construction giving ready reversibility as a right-and-left hinge.



The within-described reversible right-and-left hinge, formed of the leaf A, having slotted tubular end projections *a a*, the leaf B, having pin *b* and web *y*, the slotted sleeve *c*, and collar *d*, all constructed substantially as and for the purposes herein set forth.

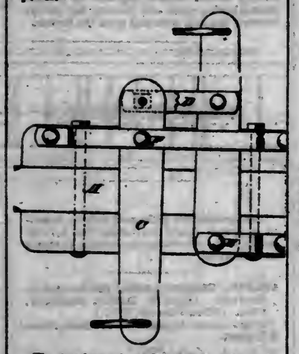
168,869. Horseshoes. Edward L. Brown, Plainfield, N. J. [Filed July 17, 1875.]



A horseshoe constructed with vertical flanges, forming an annular space, to be filled with elastic material, on its under side, and having its outer vertical flange extended to and made the full size of the outer boundary of the shoe, except at the nail-holes, where it is carried inside of, and partly around, said nail-holes, to admit the nails outside of said flange, substantially as hereinbefore set forth.

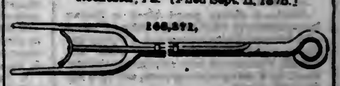
168,870. Draft-Equalizers. J. M. Bushnell, Salem, Mass. [Filed June 10, 1875.]

Brief.—The single-horse lever is coupled to the two-horse lever between the fulcrum and power.



The two-horse lever B, pivoted at its end, so that both horses will stand on the same side of pole, in combination with the one-horse lever C, pivoted at a point intermediate between its two ends, so that the third horse will stand on the other side of pole, and the strap D, connecting the end of the single-horse lever with a point on the two-horse lever intermediate between the fulcrum and power-end, all substantially as set forth.

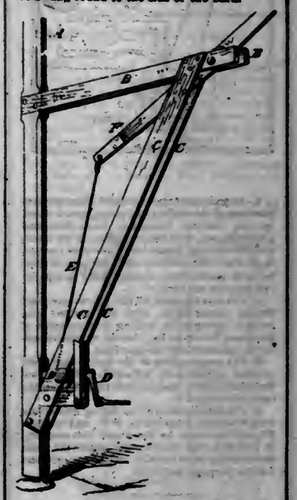
168,871. Glass-Tools. Thomas Carr, Rochester, Pa. [Filed Sept. 11, 1875.]



The combination of a sliding pusher, *a*, with a glass paddle or fork, substantially as specified.

168,872. Cranes. Jesse M. Caswell and Addison R. Worth, De Soto, Wis. [Filed Aug. 6, 1875.]

Brief.—An adjustable boom is centrally pivoted at the intersection of the jib and stay, from the inner end of which a winding-rope passes to the winch, the whole adapted to be swung round to the side of the barn.



The combination of the pivoted post A, the two parallel arms B, the two inclined braces C, the windlass D, the windlass rope or chain E, the pivoted lever F and the weight-rope or chain G, with each other in substantially the manner herein shown and described.

168,873. Carpet-Linings. G. W. Chipman, Boston, Mass. [Filed June 24, 1875.]



In a carpet-lining, the combination of the sheets of paper *a f* and the interior fibrous sheet *d*, with the folded edge-connecting strip pasted at its edges on the same side, and connecting the interior faces of the sheets *a b*, substantially as set forth.

168,874. Carpet-Linings. G. W. Chipman, Boston, Mass. [Filed June 24, 1875.]

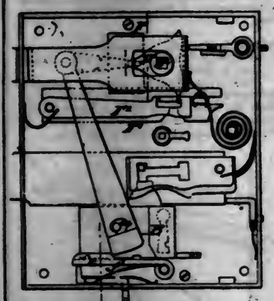


1. In a carpet-lining, the combination of two sheets of paper and an isolated fibrous sheet, with a connecting-strip, *c*, pasted at its edges on opposite sides, and applied to the two sheets, as described, to form an open edge, substantially as set forth.

2. In a carpet-lining, a sheet of paper, *b*, folded along its edge, as at *i*, and pasted or cemented to a sheet, *a*, back from its edge, to form an open edge, as set forth.

168,876. KEY-HOLE GUARDS FOR LOCKS. Henry Cochems, Easton, Pa. [Filed July 31, 1875.]

Brief.—A sliding guard-block is thrown into position to close the key-holes by means of a fulcrumed elbow-lever and a sliding and spring-acted knob-spindle and plate. The spindle is prevented from releasing the guard-block by a safety locking-plate, set by a key from the outside.



1. As an improvement in door-locks the combination of the sliding and spring-acted knob-spindle, having triangular knob-plate and projecting pin, with the fulcrumed elbow-lever, and the sliding guard-block pivoted thereto, to produce the closing and opening of key-holes by guard-block, substantially as and for the purpose set forth.

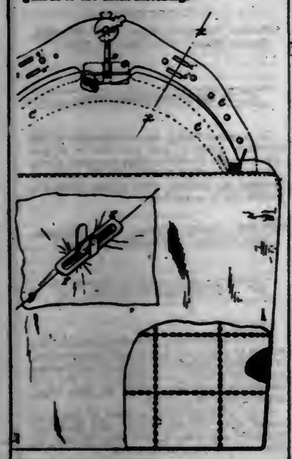
2. The combination of the elbow-lever and sliding guard-block, with the pivoted and flanged spring-pawl locking into recesses of the guard-block, to be released by the elbow-lever, substantially as described.

3. The combination of the guard-block and pivoted spring-pawl, with stop sliding below the same to lock guard-block rigidly from the inside, as set forth.

4. The combination of the sliding knob-plate with a sliding guard-plate, F F', and tumbler F', both operated by the armed knob and key, to lock the said guard-plate positively from the outside, substantially in the manner and for the purpose set forth.

168,876. SAFETY-POCKETS. Joseph Colton, New Orleans, La. [Filed July 10, 1875.]

Brief.—The pocket is attached to the garment by means of the plate, in connection with the slotted clasps. The rubber bloods are guards to the catch-fastening.



1. The pivoted and slotted disk B, in combination with the spring-catch D and the clasp C, substantially as herein shown and described.

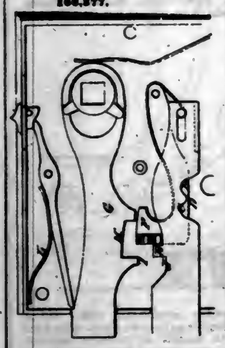
2. The hinged, slotted, and recessed plate F, in combination with the slots *c'*, formed in the outer bar of the clasp C, substantially as herein shown and described.

3. The combination of the rubber blocks G with the outer bar of the clasp C and the spring-catch D, substantially as herein shown and described.

168,877. COMBINED KNOB-LATCHES AND LOCKS. James F. Cooper, Syracuse, Ohio. [Filed Aug. 14, 1875.]

Brief.—A latch-bolt and a key-bolt and tumbler are so constructed and relatively arranged that the key-bolt is fastened by the latch-bolt and tumbler, while the entire withdrawal of the latch-bolt is prevented by the said tumbler.

168,877.

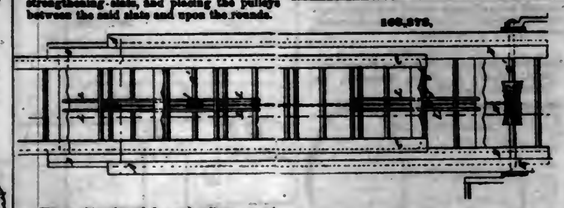


The combination of key-bolt A, having stud H and notch J, tumbler D, having projection F, and latch-bolt G, having notch H, all substantially as specified.

168,878. EXTENSION-LADDERS. William T. Core, Norfolk, Va. [Filed Aug. 6, 1875.]

Brief.—The ordinary method of arranging the elevating-pulleys is improved upon by connecting several rounds together by parallel strengthening-slats, and placing the pulleys between the said slats and upon the rounds.

168,878.



The combination of the cord-pulleys, mounted on rounds *a'*, and the parallel bars L L, extended to the two contiguous rounds, as shown and described.

168,879. CIRCUIT-CLOSERS FOR RAILROAD-SIGNALS. Lloyd B. Dennis, Sandusky, Ohio. [Filed June 26, 1875.]

Brief.—Lever C, operated by train, forces B B apart.

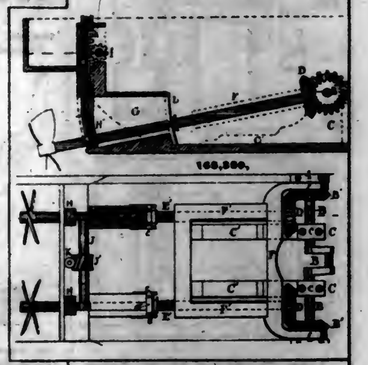


The combination, with spring-clamp B B', holding together the ends of circuit-wires A A, of the lever C, adjacent spring D', rod D, and superposed spring E, all arranged substantially as and for the purpose specified.

168,880. MEANS FOR RAISING AND LOWERING PROPELLERS. Jos. W. Dilks, Washington, D. C. [Filed July 29, 1875.]

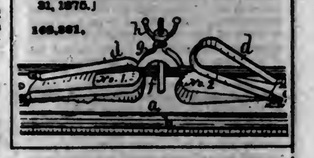
1. The combination of the vertical shaft I, endless screw-gear K J', shaft J, pinions I I, and jointed rack-bars H H', all substantially as described.

2. The combination of the frame E F F, the two propeller-shafts E' E', with their bevel-gear wheels D D pivoted to a line of the axis of striving-shafts B, and the bevel-gears B' B' on the shaft B, substantially as and for the purpose described.



168,881. HARNESS-PAD PRESSES. William Dippert, Des Moines, Iowa. [Filed May 31, 1875.]

168,881.



In a harness-pad press, the combination of the forms 1 and 2, the hinged rims *d d*, and the screw-press *f f* A, adapted to depress and hold the rims, all substantially as and for the purpose described.

168,882. APPARATUS FOR THE MANUFACTURE OF PAPER-PULP. J. W. DEAN, West Manayunk, Pa. [Filed Aug. 26, 1875.]

Brief.—The material to be acted on is placed in a digester, through which the alkaline liquid percolates. After passing through the digester, the liquid is driven by a fan-pump through a chamber placed within a boiler, in which the liquid is heated by steam or hot water. The function of the fan-pump is simply to force the liquid which flows to it, and not to suck from the digester, thus avoiding the clogging of the filter.

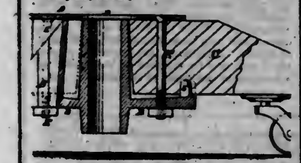
168,883.



1. In combination with the digester A, the chamber B, and a coil or chamber within the same, whereby the alkaline solution, in its passage to the digester through said coil or chamber is heated by means of steam or hot water in said chamber, substantially as described.

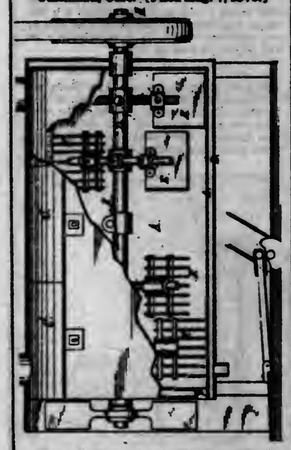
2. The combination of the digester and the heating coil or chamber, with the intermediate fan-pump, whereby the alkaline solution is driven through the said coil or chamber without being sucked from the digester, substantially as described.

168,884. RAISES FOR REVOLVING CHAIRS. Wm. T. Devereux, New York, N. Y. [Filed July 10, 1875.]



The combination of the pivot or screw socket A, having flanged leg-sockets B, radial flanges *b'*, and studs *b'*, with the top plate D, fastening-bolts E, and legs C, substantially as and for the purpose set forth.

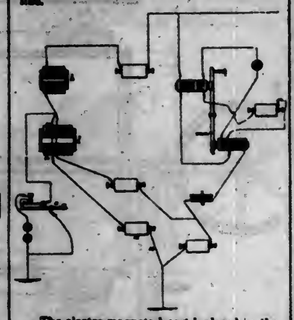
168,885. TOBACCO-DRIERS. Chas. Duval, Cincinnati, Ohio. [Filed Aug. 7, 1875.]



The cylinder A, in combination with the rotating shaft D, provided with the adjustable wings E and fork F, substantially as and for the purpose described.

168,886. DUPLEX TELEGRAPH. Thomas A. Edison, Newark, N. J. [Filed Jan. 26, 1875.]

Brief.—In "bridge system" uses in the artificial line additional helix 14 and resistance 12, to more perfectly balance static discharge of line.



The electro-magnets *h* and *i*, placed in the bridge-circuit between the receiving-instrument and the line and artificial lines, respectively, in combination with the second artificial line 13 13 and the helices 14 around the cores of the electro magnet *i*, for the purposes set forth.

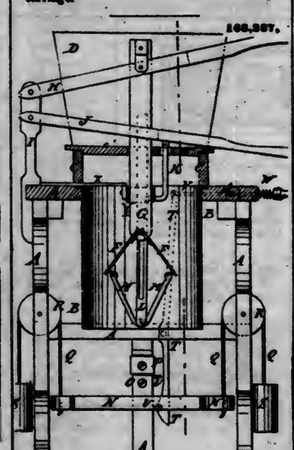
168,887. VEHICLE-SEATS. David Ford, Milwaukee, Wis. [Filed May 15, 1875.]

Brief.—Ends of seat hinged to fold inward, so that entire seat may be turned into body of vehicle.

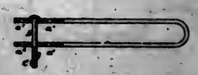


A buggy-seat with hinged ends, latches I I, and pivoted supports K K, bent inward to allow the ends of the seat to swing under sufficiently to tip into the body of the buggy, and forward to permit of persons stepping into the carriage.

168,887.



168,888. HAIR-CRIMPING PINS. M. Gardner, New York, N. Y. [Filed Mar. 20, 1875.]



A hair-crimping pin formed of the U-shaped pin A, having a number of holes, *a'*, formed in its arms, and the fastening-pin B, having a key, C, pivoted in its slotted forward end, substantially as herein shown and described.

168,889. HAND CORN PLANTERS. Orpheus C. Gilmore, Janesville, Wis. [Filed June 17, 1875.]

Brief.—The seed-cylinder is oscillated by arms connected to the vertical plungers.



The connecting-rods E E, in combination with the rods *f f* and cylinder C, for the purpose of operating the cylinder C, substantially as described, and for the purposes set forth.

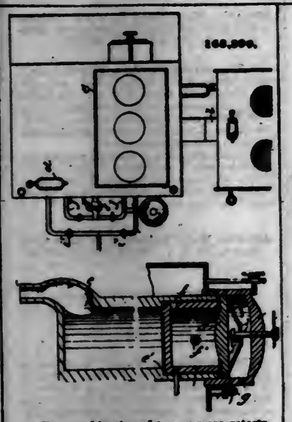
168,890. GAS-MACHINES. Adonis Ginchet, Alexandria, Va. [Filed Sept. 15, 1875.]

Brief.—An ordinary stove heated by waste heat from the gas-generating stove. Under pressure in retort relieved automatically, and the escaping gas burned under retorts. Steam fed into a groove of a follower in the retorts. Double door-regulating valve over inlet of last partition. Removable support for the stove-grate. Gas-holder flexible and covered with metal, and metal with wood.

1. The combination of the main stove, having retorts, as described, with the auxiliary stove, having the flue F, as described.

2. The main stove, provided with its system of steam-pipes discharging into the groove of the retort.

3. The combination of the retort, the relief-pipe, and safety-valve with the fire-chamber, the relief-pipe being adapted to discharge into the fire-chamber when the valve is operated, as described.



168,890.

4. The combination of two or more retorts with independent relief-pipes with a main pipe and single safety-valve, substantially as described.

5. The combination of the retort, provided with a bearing-shoulder, loosened at a distance from the end of the retort, with a cylindrical follower having a solid end, adapted to slide in the mouth of the retort and bear against the shoulder, as described.

6. The combination of the retort, the follower, the cover, and the door, as described.

7. The combination of the cover, provided with the ears f', ring f'', the threaded and dished rod f', and door G, as described.

8. The combination of the cylindrical door, the loose hinges and fastening-keys, as described.

9. The entrance-pipe n of the purifier, cap n', and spring n'', in combination with the guide-rods, as shown.

10. The gasometer, consisting of a flexible bag, an intermediate metal inclosing-case, and an external protecting-case of wood, as described.

11. The threaded rod f', provided with the cross-bar, the square head for receiving a wrench, and square socket for holding a key, as described.

168,891. SUBMARINE-ALARUM. A. Gregory, Newark, N. J. [Filed Sept. 21, 1875.]



168,891.

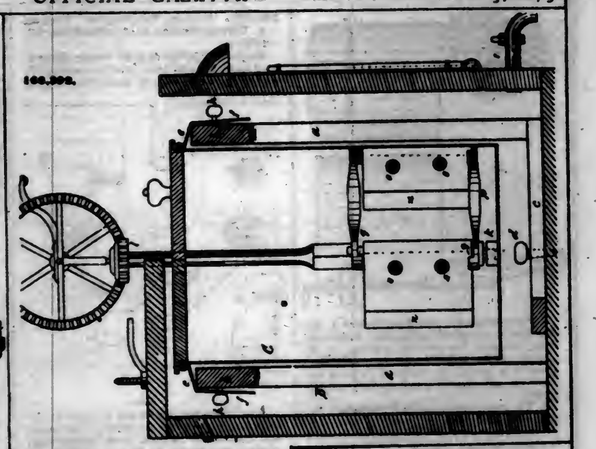
1. A portable door-alarm, in which the following elements are combined, namely, a suspension strap or band by which the instrument may be suspended from, and operated by, the knob-knob of a door, and a bell actuated by said band, substantially as specified.

2. The combination, in a portable door-alarm, of operating mechanism with a suspension strap or band, by which the instrument is carried and operated, and a bell, actuated by said operating mechanism, essentially as described.

3. The combination, in a door-alarm, of a suspension strap or band, a drop-weight, tripped by said strap or band, and a bell, substantially as and for the purposes herein set forth.

168,892. CHURNS. Asahel D. Green, Tilton, Ky. [Filed Aug. 24, 1875.]

1. The combination, with the cover casing A, of the removable choking-frame B, for supporting the box C by means of the plates c and hangers f, with shoes g, and the thumb-screws h, to admit of the ready removal of the box C, substantially as and for the purpose set forth.



168,892.

2. The damper consisting of the wings E, of unequal widths, and the arms p and shaft f, constructed to operate substantially as and for the purpose set forth.

3. The damper consisting of the wings E, and the arms p, with slots q, the upper series of arms being adjustable upon the cleats f, for the removal of the wings E, substantially as and for the purpose specified.

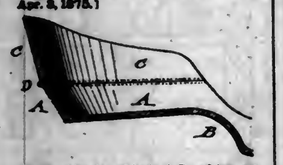
168,893. SKIDS FOR OIL-BARRELS. D. M. Haight, Oswego, Ill. [Filed May 15, 1875.]



168,893.

The oil-cask skid B, provided with a sheet-metal lining or pan, C, and a sheet-metal facing, D, upon the concaved and inclined upper edges of its end pieces, substantially as herein shown and described.

168,894. CHILDREN'S CARRIAGES. Leonard B. Harrington, Jr., Boston, Mass. [Filed Apr. 3, 1875.]

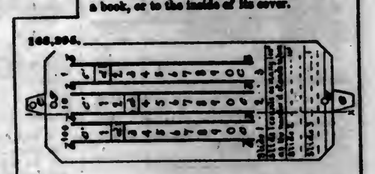


168,894.

The combination of body A B and top section C, the two secured together on their contiguous edges by an outside rib, D, as and for the purpose specified.

168,895. FARE-INDICATORS FOR ROOMS. Elbridge Harris, Boston, Mass. [Filed June 28, 1875.]

Brief.—The "number of the page" at which the reader left off is indicated by the slides in each of the three columns, by covering the numbers corresponding to those making up the page number. Thus page 231 is represented to the people at which the reader commenced. When the device is not in use, these slides may be moved above the columns of figures. By means of the projecting pieces, the device may be attached to the fly-leaf of a book, or to the inside of its cover.

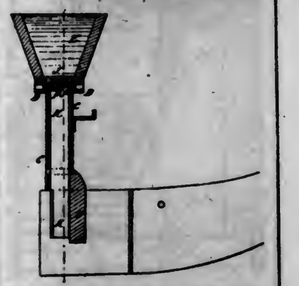


168,895.

In combination with the base a, provided with lining f and projecting pieces o o, the strips c, formed by means of parallel cuts b, and provided with slides d, substantially as and for the purpose set forth.

168,896. CORE-PLASTERS. Abia Hodgson, Humboldt, Kans. [Filed July 24, 1875.]

Brief.—The adjustable portions of the end-slide are made oval, with their ends next to the dropping-holes concaved and inclined. Over these fits a concave cut-off.



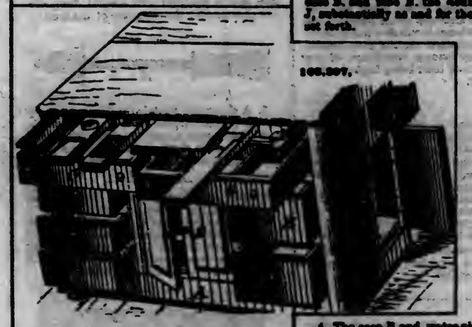
168,896.

1. The cut-off plate J, having its lower side concaved to fit upon the half-round or oval projections I of the slides F G, substantially as herein shown and described.

2. The half-round or oval projections I formed upon the upper side of the overlapping parts of the slides F G, and having their ends next the dropping-holes concaved, and their outer ends inclined, substantially as herein shown and described.

3. The four-ported valve-seat C, constructed substantially as described, in combination with the steam-outlet pipe D, inlet-pipe I, pipes H and F, and chamber S, with valve and lever O G, as and for the purposes specified.

4. In combination with the valve-seat C, case S, and pipe F, the double-seated valve J, substantially as and for the purpose herein set forth.



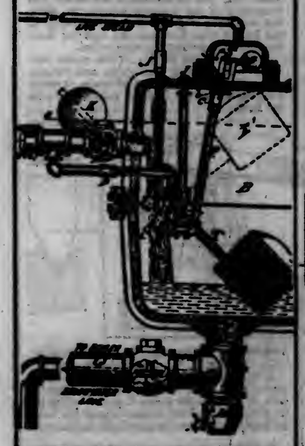
168,897.

168,897. KITCHEN-CABINETS. George Hoit, Minneapolis, Minn. [Filed Aug. 31, 1875.]

A combination kitchen-cabinet, constructed with a central cupboard, side and top drawers, sliding implements below the top or table, with supporting-pieces for an ironing-board, and longitudinal chambers and drawers back of the front shelves and drawers, all arranged substantially in the manner and for the purpose set forth.

168,898. FEED-WATER APPARATUS FOR STEAM-BOILERS. Wm. H. Jenkins, Philadelphia, Pa. [Filed Aug. 28, 1875.]

Brief.—When the cans is filled with steam, communication between it and the supply-pipe is opened, when the steam will be condensed in the latter and form a vacuum in both, which will raise water, open the check-valve, and fill the cans. The heat will then open the valve and admit live steam, until an equilibrium of pressure is established between the boiler and the cans. The pressure in the cans will close the check-valve in the supply-pipe, and the weight of the column of water will open the check-valve in the discharge-pipe, and the water by its own gravity flow into the boiler.



1. The combination, with the cans of the counterbalance-valve O and four-ported valve-seat C, of the pipe F, substantially as and for the purpose set forth.

2. The four-ported valve-seat C, constructed substantially as described, in combination with the steam-outlet pipe D, inlet-pipe I, pipes H and F, and chamber S, with valve and lever O G, as and for the purpose specified.

3. In combination with the valve-seat C, case S, and pipe F, the double-seated valve J, substantially as and for the purpose herein set forth.

4. The cans S and water-pipe Q, in combination with the valve I, pocket M, and valve R, constructed and arranged as and for the purpose set forth.

5. The counterbalance-valve O and ball Q, arranged on the upper part of the cans, in combination with pipe F and H, substantially as herein specified.

6. The four-port valve-seat C, the pipes D, F, I, H, P, check-valve A, and cans S, all combined and arranged as and for the purpose set forth.

168,899. GAS-GOVERNORS. J. H. Johnson, Brooklyn, Mich. [Filed Aug. 28, 1875.]

Brief.—The fulcrumed lever works the draw-head, and is fulcrumed by the post.

The combination, with the vertically-sweeping draw-head, of a fulcrumed slide lever actuated thereby, and hooked by a weighted post, the lever set and retained at any height for coupling, substantially as shown and specified.

168,900. SHINGLE-PLATES. Wm. M. Kelly, Nashville, Tenn. [Filed July 31, 1875.]

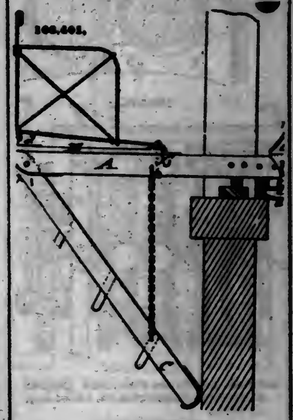


1. An adjustable shingle-plate, made of shingle lengths or dimensions, jointed by mixed overlapping edge-grooves, and held together by lengthwise covering-sleeve, lining sheets, substantially as described and shown, for the purpose set forth.

2. The locking spring-clasp, bent V shape, with turned-up end of lower part and beveled end of upper part, as and for the purpose described.

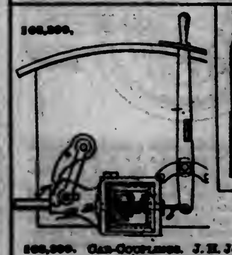
168,901. WINDOW-SCAFFOLDS. Rudolph Krueger, Jr., New York, N. Y. [Filed July 12, 1875.]

The shoe B, having bracket a and angular recess a', applied to window-frames in connection with supports A, as shown and described, to allow a lateral plane to be inserted across the window, as set forth.

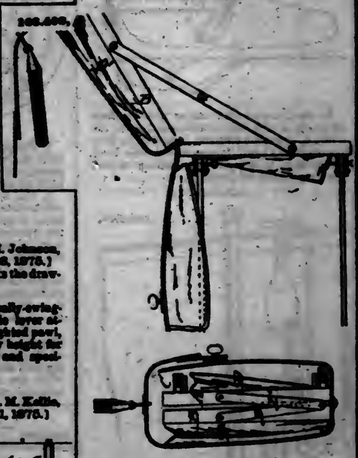


168,901.

168,902. CLOTHES-TRAVELING-RACKS AND CHAINS. Celine Lemonnier, New York, N. Y. [Filed Aug. 28, 1875.]



168,902.



168,902.

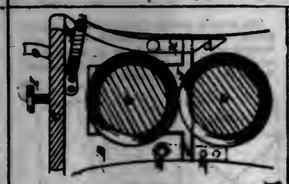
1. The hook and cord of a folding chair, being provided with a folding loop for closing same, substantially as specified.

2. The hinged hook combined with the locking-loop attached thereto for covering the folded up chair and carrying the device, substantially as specified.

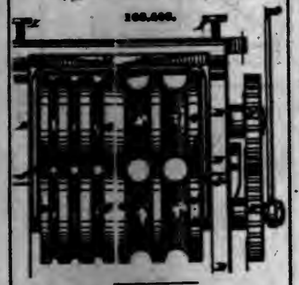
168,903. MACHINES FOR BOTTOMING LEATHER. Jos. Lewis, Prattsville, N. Y. [Filed July 31, 1875.]

1. The combination of the fingers P P, the heel stock-rod K, the eyelet-pins L, and the screws S with their heads out with the parts of the standard I to which the grooved rollers G are pivoted, substantially as herein shown and described.

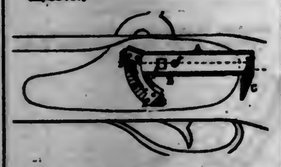
2. The combination of the bars J with the lever ends of the upper parts of the standards I, and with the bearings F of the upper rollers G, substantially as herein shown and described.



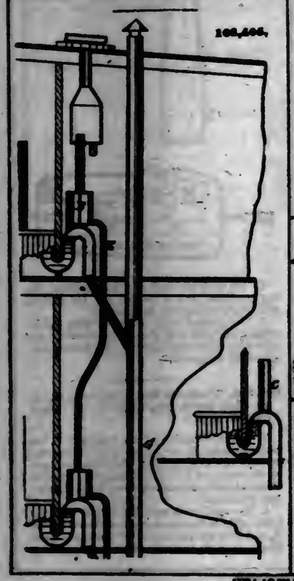
168,404.



168,404. Shuttle for Fire-Arms. Dimitrio M. Mortimer, Philadelphia, Pa. [Filed Aug. 12, 1875.]



In combination with side or vertical plane of the stock of a rifle or other small arms, the plate A, provided with the ledge D, bifurcated sights B C, and the graduated scale R, all constructed to operate substantially as and for the purpose set forth.



168,405.

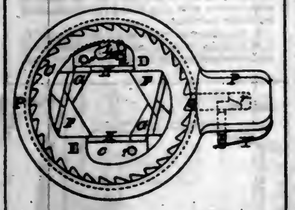
168,406. Water-Trap Supplies and Connections. John H. Morrell, New York, N. Y. [Filed Sept. 22, 1875.]

Brief.—A reservoir divided by a partition, and connected by a pipe with the eave-trough or roof of the building, is located on the rise of each trap. A part of the water will flow directly into the first trap and a part into the reservoir, from whence it will flow into a reservoir similarly arranged on the trap below. The arrangement insures ventilation of the traps, and admits of their being kept charged with fresh water.

1. The combination, with the water-trap and a pipe receiving water from the roof, of a reservoir or chamber, having a partition, B, an opening, D, for the trap-supply, and a pipe, F, communicating with the lower traps, as and for the purposes described.

2. The combination, with a water-trap, of a pipe receiving water from the roof, and attached to the upper bend or rise of the trap in the middle, so as to deliver part of its water into the trap, and part into the outlet-pipe, and yet preserve a perfect ventilation, substantially as described.

168,406. Ratchet-Wrenches. Franklin S. Otey, Washington, D. C., assignor to Mussell and Walton Brothers, New York city. [Filed Aug. 4, 1875.]



1. The guiding-plates A and B, constructed with the projections *a b c d*, the parallel grooves *e e e e*, and the holes *n*, substantially as and for the purpose described.

2. The sliding jaws F and G, constructed substantially as described, and having dovetailed projections thereon, which engage with the dovetailed grooves formed in the projections of the guiding-plates, substantially as and for the purpose set forth.

3. The check-pawl I, constructed and arranged as described, in combination with the ratchet-wheel C, provided with teeth on a portion of its inner edge, substantially as and for the purpose described.

4. The readjusting-bars H and K, in combination with the floating-lugs D and E, and sliding jaws G G and F F, whereby the sliding jaws are restored to their normal positions when the movement of the ratchet-wheel is reversed, substantially as described.



168,406.



168,410.

5. In combination with the ratchet-wheel C, the pawl G, having a jog at its rear end, and the spring-catch X, substantially in the manner and for the purpose set forth.

6. The combination of the holder F, guiding-plates A and B, having the projections *a b c d*, ratchet-wheel C, having the floating-lugs D and E, and interior teeth, sliding jaws F F and G G, readjusting-bars H K, check-pawl I, operating-pawl G, and spring-stop X, the several parts being constructed and arranged substantially as described, and for the purpose set forth.

168,407. Marking Implements. J. O'Kane, New York, N. Y. [Filed July 26, 1875.]

Brief.—To the handle is attached a shank of iron or other metal, which is connected by a socket to the tip, which is of a flexible nature, and is provided with several deep, narrow channels for the reception of the fluid.



1. A channeled flexible tip, C, substantially as and for the purpose set forth.

2. The handle A, with its shank B, in combination with a channeled flexible tip, C, substantially as and for the purpose set forth.

168,408. Annealing-Boxes. G. H. Cuisine, Pittsburg, Pa. [Filed Jan. 13, 1875.]

Brief.—Longed rings of wrought metal embedded in the cast bottoms of the box, in order to strengthen the box against expansion and contraction under heat, and yet to permit it to be readily broken up for removing.



In annealing-boxes, the combination of the wrought-iron rings D D D with the cast bottom A, whereby the longitudinal and lateral strength of the bottom is materially increased and its vertical strength diminished, substantially as and for the purposes herein before set forth.

168,409. Dredge Attachments for Dredgers. George W. Parsons, Salisbury, Md. [Filed Aug. 21, 1875.]

Brief.—A dipping attachment consisting of an adjustable chute supported on cross-pieces having pivot-pins and rounded ends, with screw-bolts passing through guide-standards, to allow the chute to conform to the cutting of the lighter's upon which it is supported. The hopper is provided with a main water-pipe and branch-pipes, for discharging jets of water through perforations in the bottom, to facilitate the movement of the dredged mass.

1. The combination of the chute-supporting cross-pieces, having pivot-pins and rounded ends, with the adjustable screw-bolts and cross-pins of the guide-standards, to allow the oscillation of the chute on the setting of the lighter when dumping the material from the dipper, substantially as specified.

2. The inclined hopper of the chute, provided with a main water-pipe and branch pipes, for discharging jets of water through perforations of the bottom, substantially as set forth.

168,409.

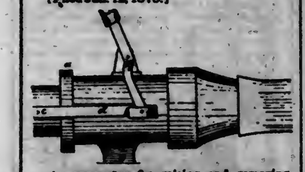
168,410.

168,410. Chimney Stays. John Franck, Jr., Albany, N. Y. [Filed Mar. 2, 1875.]

Brief.—The cross-head of a barrel has two or more steps, channels, or grooves cut in each of its sides, for giving a greater width at its mouth, to receive a thicker edge of the barrel-head, and render the joint tight and strong.

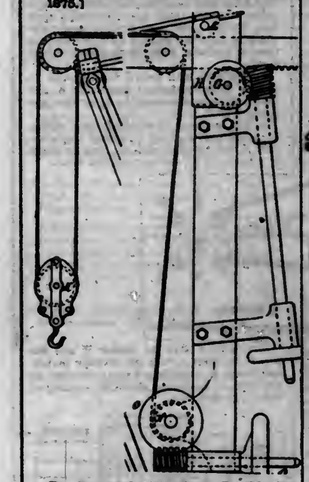
In a barrel, the cross-headed B, having two or more steps, channels, or grooves, *a a*, or *c c*, and *c*, cut in each of its sides substantially as and for the purpose set forth.

168,411. Pumps for Raising Heavy Liquids. Edward L. Petty, Ridgewood, N. J. [Filed Jan. 12, 1875.]

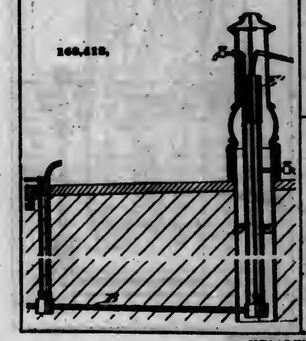


An apparatus for raising and removing heavy liquids, consisting of the pump constructed substantially as shown and described, and provided at its end with the externally-tapering supplemental cylinder H, for attaching the elastic tube L, and the charging-chamber J, having inlet-opening h, flange k, and inwardly-opening valve *j*, and outlet-opening *i*, the whole constructed to operate as specified.

168,412. Cranes. Francis A. Pratt, Hartford, Conn., assignor to the Pratt & Whitney Company, same place. [Filed Mar. 10, 1875.]



The horizontal sliding beam F, with the roller-bearings D and E, and a rack and pinion mechanism for moving it outward and inward beyond the fixed frame, in combination with the standing and fixed parts of a crane, substantially as herein described.



168,412.

168,413. Hydrants. Christian F. Rapp, Cincinnati, Ohio. [Filed Aug. 28, 1875.]

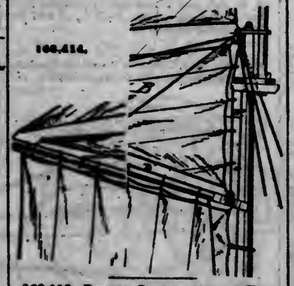
Brief.—Combines a service-pipe and washpave pipe, and three-way cock at the junction of the same, and the same service-pipe extended, and two hydrant-pipes and three-way cock at the junction of the latter three, and a pump connected with one of the hydrant-pipes, in such a manner that by properly manipulating the cocks the standing water in the discharge-pipes may be forced out by the pump.

As an improvement in hydrants for preventing the freezing up in winter, the combination of supply-pipe B with a three-way cock, C, and exit-pipe B', and with a second three-way cock, D, and leasing-pipe B', pump connecting-pipe E, and pump E', the whole arranged to admit of the forcing out of the water from the pipes exposed to freezing, substantially as and for the purpose set forth.

168,414. Means for Reefing and Furling Sails. Edward Rawley, North Union, Me. [Filed Aug. 21, 1875.]

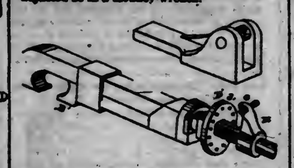
The combination of rope E with mainsail-gaff D and triangular sail B, all arranged as shown and described, whereby it performs the function of a halyard and stay, as set forth.

168,414.



168,415. Pitman-Connections for Harvesting. Amor Rea, Bart Township, Lancaster County, Pa. [Filed June 10, 1875.]

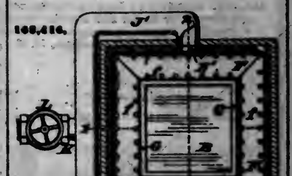
Brief.—The bearing in which the shaft of the connecting-pitman is in work is formed of the semicircularly-recessed jaws of two bars, adjusted as in a monkey-wrench.



1. The combination of the hooked pitman A, provided with a grooved screw-thread, I, tapers *c*, and sliding jaw or counterpart B, flanged and grooved feed-nut D, and working device E, the whole constructed and operated substantially as and for the purpose specified.

2. In combination with said pitman A and nut D, with its perforated flange *d*, the sliding nut-lock E, with its slotted projecting pin *e*, the whole substantially as and for the purpose described.

168,416.



168,416. Ore-Separator. C. W. Reilly, Cincinnati, Ohio. [Filed July 24, 1875.]

Brief.—Ore is fed into a receptacle through which flows an upward current of water. In the bottom of the receptacle is placed a movable screen provided with handles. When the charge of ore is sufficiently washed, it is removed by lifting out the screen with its superincumbent load.

168,417. Tobacco-Bucket Lids. Isaac M. Reynolds, Cincinnati, Ohio. [Filed Mar. 17, 1875.]

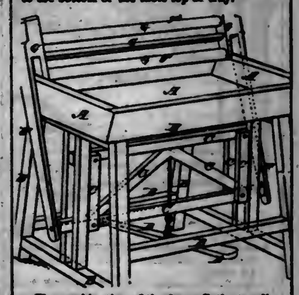
Brief.—The lid is made of tin, and is concave upon its under side, and even with its flanges is a removable screen for holding a wet sponge in the lid.



As a new article of manufacture, a bucket-lid having in its under side a chamber, B, situated above the plane of flange or lip *a*, and provided with the removable flat reticulated screen C, substantially as and for the purpose set forth.

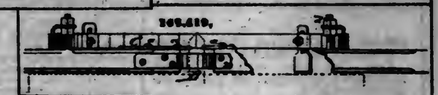
168,418. Butter-Workers. P. Rooney, Fairfield, Vt. [Filed June 10, 1875.]

Brief.—A table with upward flanges. A traversing transverse bar to press the surface butter, carried by arms pivoted centrally to the ends of a sliding frame, moved downward by a treadle, and resting by a spring attached to the bottom of the table-top or tray.



The combination of the frame C, the treadle D, the spring E, the pivoted bars F, and the frame G with the tray A and frame B, substantially as herein shown and described.

168,419.



168,419. Millstone-Seats. James Orr, St. Louis, Mo. [Filed July 31, 1875.]

The iron hoop provided with four adjustable cutting-points, arranged as shown and described, to support the traversing level when marking high places on surface of burr.

168,480. Method of Uniting the Soles and Uppers of Boots and Shoes. Geo. V. Sheffield, New York, assignor to himself and Martin Bennett, Brooklyn, N. Y. [Filed June 8, 1875.]

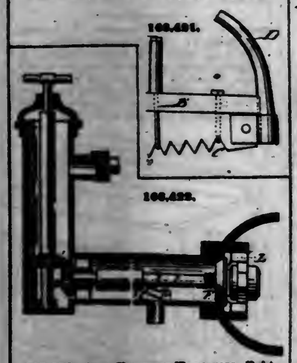


The improvement in the art of uniting the soles and uppers of boots and shoes, consisting in passing a doubled wire through the seam, inserting a thread through the loop of the wire on the under side of the sole, and drawing the thread through the leather by means of said wire, substantially as hereinbefore set forth.

168,481. Crosscut-Saw Handles. Lewis Shepard, Mace, Ind., assignor to himself and D. W. Kennedy, same place. [Filed July 24, 1875.]

Brief.—The saw is attached to a main handle, curved forwardly over it, and it is provided with a slotted stiffening back piece, secured to the blade by hooked rods and screw-nuts, and having an auxiliary handle in front of the main handle.

The combination, with crosscut-saw A, of back piece B C, and handles D E, arranged substantially as and for the purpose specified.



168,482. Anti-Friction Eyebolts. Robt. Smeaton, Milwaukee, Wis. [Filed July 15, 1875.]

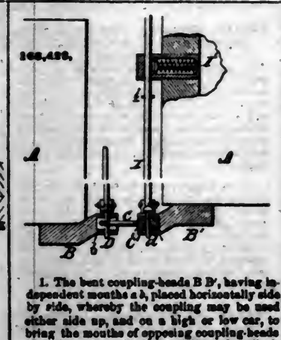
Brief.—The waste-valve is operated by a chain attached to the shaft of the main valve.

Valve H, operated by chain I, in combination with valve-shaft E and valve F, provided with stops L and caps G.

168,483. Car-Couplings. Oliver C. Smith, Rumsey, Ill. [Filed July 1, 1875.]

Brief.—The friction-rod guides the bolt which fastens the shanked link riding in the crushed draw-head.



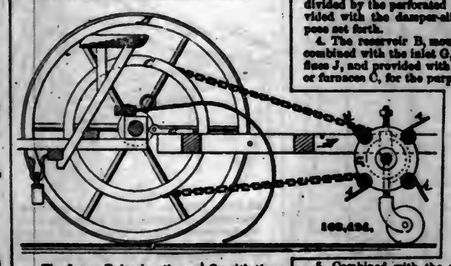


1. The bent coupling-heads B B', having independent mouths *a b*, placed horizontally side by side, whereby the coupling may be used either side up, and on a high or low car, to bring the mouths of opposing coupling-heads on the same line, all substantially as described.

2. The car-coupler composed of bent heads B B', *a b*, shanked links O O', and four pins, D D' *d d*, all substantially as and for the purposes set forth.

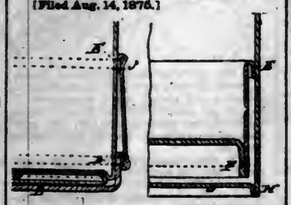
3. In combination with the coupling-heads B B' and pins D, the rod I, provided with the stops *f* and friction-guide F, as and for the purposes described.

168,484. Hat-Tenders. Edwd. M. Stockal, Uniontown, Pa. [Filed Oct. 8, 1874.]



The frame E, having the rod G, with tines *h*, operated as described, said frame being made attachable at its forward end to the side of a horse-rake or other truck by means of the plates *e*, pivot-bolts *d*, and pin *o'*, so as to move freely in a vertical direction, and be readily detachable, substantially as set forth.

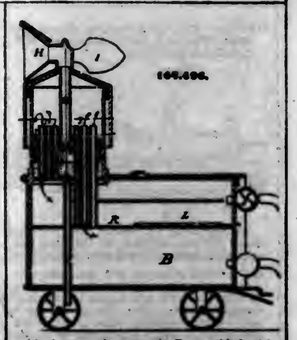
168,485. Manufacture of Mail-Bags. Henry Stephens, Brooklyn, E. D., N. Y. [Filed Aug. 14, 1876.]



The method of bottoming mail-bags, consisting in first sewing the shield C to the outside with a seam, E, next turning the bag inside out and folding the shield down, then sewing in the leather bottom with seam F, and finally sewing in the canvas bottom by a seam, H, as and for the purpose described.

168,486. Apparatus for Warming and Ventilating Railroad-Cars. Jas. Story, Washington, D. C. [Filed Sept. 17, 1875.]

Brief.—Air is admitted to the heating-chamber through the spray or washing chamber. It can be delivered to the cars from either or both of the compartments of the furnace-car. Each car is warmed or ventilated by independent pipes.



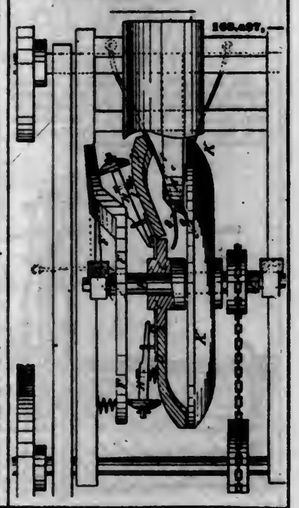
1. A warm-air reservoir, B, provided with several outlets, combined with the carriages of a railway-train, each provided with separate pipes for its own supply, and to convey air to the carriages in the rear.

2. Combined with the separate delivery-flues a warm-air reservoir, B, divided by a partition, in which there are controllable openings, for the purpose of simultaneously discharging air of the same or different temperatures or qualities from the separate compartments.

3. Combined with flues J the reservoir B, divided by the perforated diaphragm K, provided with the damper-slide L, for the purpose set forth.

4. The reservoir B, mounted upon wheels, combined with the inlet G, washer F, diving-flues J, and provided with the heating-stoves or furnaces C, for the purposes set forth.

5. Combined with the washer F and the pipe G the plate *g*, with its drooping peripheral flange to constitute a spray-chamber, as set forth, to insure the thorough washing of the air, as described.



168,487. Seedlings-Pulleys. John S. Gramley, Marengo, Iowa. [Filed July 17, 1875.]

Brief.—A fixed wheel upon a revolving shaft forms a counterpart to a series of jaws, which are caused to open and close by cam-wheels, to seize and hold the seedlings, raise them from the earth, and deposit them in a receptacle.

The fixed wheel E, in combination with the shaft B, the polygonal hub C, and the hinged jaws D, substantially as herein shown and described.

168,488. Hair-Brushes. Chas. B. Tuttle, New York, N. Y. [Filed Aug. 24, 1875.]

Brief.—The back of the brush is hollow, and has a suitable cover; the handle is also hollow, and has at its end a removable cap. The brush is capable of holding a shaving set or other toilet article.

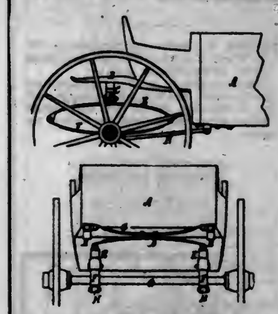


As a new article of manufacture, a hair-brush the back of which is constructed with the chambered recess B, provided with a detachable lid, A', and the mirror *a*, and with the hollow handle B, provided with a cap, *b*, as and for the purpose specified.

168,489. Watch-Regulators. Charles Tuska, Saratoga Springs, N. Y. [Filed Aug. 30, 1875.]

In combination with the regulator-arm and bended lever turning in fixed bearings, the traversing-cam C, connected with the latter by the elastic collar-shaped sleeve C', substantially as set forth.

168,490. Carriages. Chauncey Thomas, Boston, Mass. [Filed May 11, 1875.]

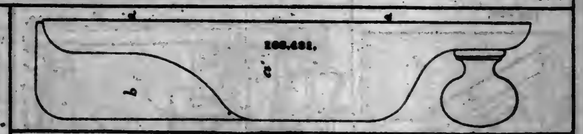


1. The combination of the springs C D, arranged as described, with the hangers B B, applied to the carriage-body A, and also with the main springs E E F F, arranged together and with the axle, all substantially as specified.

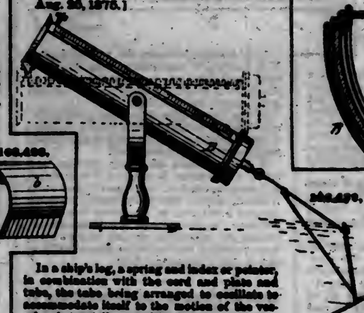
2. The connection-rods H H, pivoted to the body A, in combination therewith and with the axle C, and the longitudinal and transverse springs E E, F F, and D, applied to it, and the hangers, all substantially as specified.

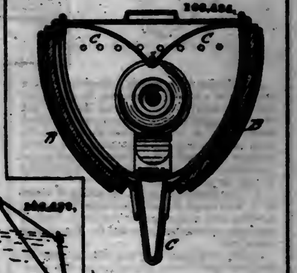
168,491. Bench-Planes. Justus A. Trent and Henry Blakeslee, New Britain, Conn. [Filed June 15, 1876.]

The combination of the wrought-metal stock or shell *a*, having two broad and strong sides, *a' a'*, with a suitable filling, *b*, substantially in the manner and for the purposes set forth.



168,492. Sheep's Logs. Stephen D. Trenchard, New York, N. Y., assignor to himself and Walton Brothers, same place. [Filed Aug. 30, 1875.]

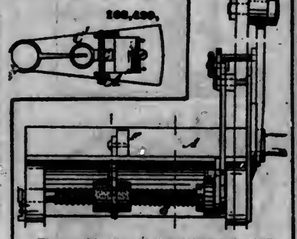




In a ship's log, a spring and index or pointer, in combination with the cord and plate and tube, the tube being arranged to oscillate to accommodate itself to the motion of the vessel, substantially as and for the purpose herein specified.

168,493. Shaving-Brush Shavers. Caleb B. Turner, Brooklyn, N. Y. [Filed Aug. 28, 1875.]





The combination of the swinging knife B, bar A, pusher F, feed-cover G, and the cam L and pawl mechanism for working the screw, substantially in the manner described.

168,494. Spiral Head-Linings for Vessels. Wm. M. Walton and J. J. Walton, New York, N. Y. [Filed Aug. 25, 1875.]

Brief.—A vessel approaching directly toward the point from which it is seen shows both lights; but when running in a direction to pass on either side, only one of the lights is visible, the other being hid by the projecting guard. Two colors are employed to indicate on which side the vessel will pass.



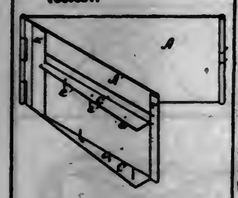
1. In a signal head-light for vessels, the combination of two differently-colored lenses, with a single lamp or light, and a central guard projecting from between the two lenses, substantially as and for the purposes herein set forth.

2. In a head-light for vessels, the double concave reflector C, forming a center point, *c*, in combination, with the two differently-colored lenses D E, for the purposes herein set forth.

An ice-breaking vessel having a sharp cutting-prow, B, some distance back of the stem-post, and a front bow portion, having sharp upwardly-inclined bow D, as and for the purpose described.

168,497. Camera-Phototypes. D. A. Wells, Medina, Ohio, assignor to J. A. Bradley, same place. [Filed Mar. 15, 1875.]

No. 168,427.



1. A device for protecting the cut or broken surfaces of a cheese, consisting in an implement constructed to be inserted into the cut or broken opening of the cheese, and provided with wings A A', of a form to exclude air from said exposed cut or broken surfaces, and adapted to be held and retained in proper juxtaposition to said exposed surfaces, substantially as and for the purposes shown.

2. The cheese-protector, consisting of wings A A' and hinge B, and a suitable device for holding said wings against the cut or broken surfaces, substantially as and for the purpose described.

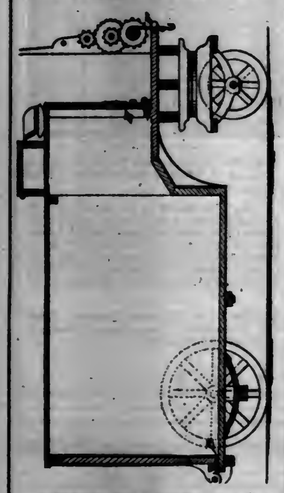
3. The combination of the wing A', having the fixed jaw C with points c, and the movable jaw C' with points c', the last-named jaw sliding in the ways d' formed on the wing A', substantially as and for the purpose described.

4. The combination, with the wing A', of the jaw C and points c, substantially as and for the purpose described.

5. The combination, with the wing A', of the jaw C and adjustable jaw C', substantially as and for the purpose described.

6. The combination, with the movable wing A, of a catch, e, whereby the said wing can be readily adjusted to a fresh cut surface, or readily detached to admit of cutting away more of the cheese, substantially as and for the purpose described.

No. 168,428. Dead-Cart. Thomas F. White, New York, N. Y. [Filed June 12, 1875.]

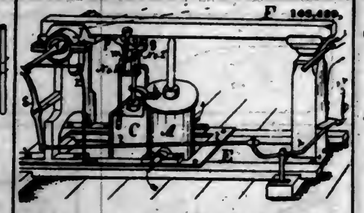


A dead-cart whose air-tight body is provided with front an wall an back door, as and for the purpose specified.

No. 168,429. Sugar-Harvester. Stephen D. Wilson, Des Moines, Iowa, assignor of one-half his right to William Seaks, same place. [Filed Mar. 6, 1875.]

Brief.—The throw of the valve is adjusted by a wedge, which is connected by rods through the hollow trunnion with the treadle.

No. 168,429.



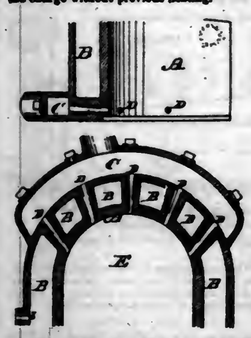
1. In a steam-hammer, the pivoted L-shes Nos. 1 and 2, in combination with the valve-stem c and the hook m and cam g carried by the beam F, substantially as and for the purposes shown and described.

2. The combination of the cam g, rod p, pivoted lever n, spring r, crank-lever s, pitman t t, and treadle x x, substantially as and for the purposes shown and described.

3. The combined oscillating cylinder and crank A C, having cross-ports Nos. 1 and 2, and carrying-latches Nos. 1' and 2', and valve D having slotted stem c, the beam F carrying the cam g and hook m, the hollow trunnions j inclosing the pivoted lever n, and the cam-adjusting and governing devices m p n o r t s, when arranged and combined substantially as and for the purposes set forth.

No. 168,430. Furnaces for Smelting Lead. J. V. Woodhouse, Bunker Hill, Ill. [Filed June 7, 1875.]

Brief.—The semicircular wall is hollow, to allow air to pass through and cool it. The blast passes from the blast-box, encircling the wall through tuyeres, the latter directly into the charge without previous heating.



1. The semicircular wall A, provided with the air-chamber B, the chamber C, tuyeres D D D D D, arranged as described, and hearth E, substantially as described.

2. The hearth E, provided with the semicircular wall A, as and for the purpose set forth.

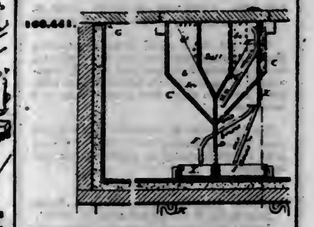
3. The hearth E, provided with the semicircular wall and the tuyeres D D D D D, arranged as described, as and for the purpose set forth.

No. 168,431. Refrigerators. L. B. Woolfolk, Lexington, Ky. [Filed July 10, 1875.]

Brief.—Ice fed down through the recesses in the sides of the salt-holder. Partition at bottom of salt-holder keeps ice from passing from one side to the other, that the food-chambers may be kept at differing temperatures. Brine overflows through the air-inlet tubes. Air which has entered, on being warmed, rises and passes through outlets near the tops of the food-chambers. Doors shown on the top; they may be in the sides.

1. The combination of the refrigerator-box A, compartments 1 and 2, refrigerating-vessel C, salt-compartment a, ice-compartment b, recesses b', partition c, air-tube E, air-tubes F F', air-outlets G G, partition D, waste-pipe H, water-boxes I I', and escape-pipes K K', substantially as described.

No. 168,431.



2. The combination, with the refrigerator-box A, of the refrigerating vessel C, (containing salt-compartment a and ice-compartment b,) and having partition-flange D, and extending across the refrigerator-box at or near the center, for the purpose of dividing it into two compartments, 1 and 2, substantially as and for the purposes described.

3. The combination, with the refrigerating-vessel C, of the salt-compartment a, longitudinally in the middle, and extending from end to end of vessel C, for the purpose of exposing the largest refrigerating-surface of the ice-compartment, substantially as set forth.

4. The combination of the salt-compartment a, having recesses b' b', and ice-compartment b, for the purpose of supplying ice to the refrigerating-vessel, substantially as set forth.

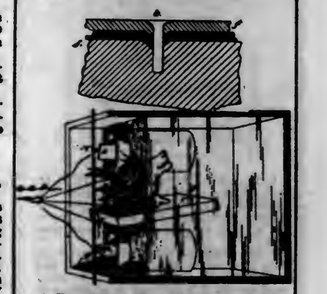
5. The partition c, in combination with the refrigerating-vessel C, having the salt-compartment a and the ice-compartment b, the refrigerator-box A having compartments 1 2, for the purpose of preventing the ice placed on one side of the salt-compartment from passing to the other, and thus securing a different temperature in the compartments 1 2, substantially as set forth.

6. The combination of the air-tube E, air-tubes F F', and air-outlets G G, with the refrigerating-vessel C, having salt-compartment a and ice-compartment b, and the refrigerator-box A, having compartments 1 and 2, in the manner and for the purpose set forth.

7. The combination, with the refrigerator-box A, refrigerating-vessel C, having salt-compartment a and ice-compartment b of the waste-pipe H, tube E, tubes F F', water-boxes I, and waste-pipes K, in the manner and for the purpose set forth.

No. 168,432. Electroplated Figures, &c. W. B. Wortham and R. S. Gillespie, New York, N. Y. [Filed Feb. 19, 1875.]

Brief.—A piece of metal is driven into the figure to be covered with the electrotype-shell, and is afterward cut off close and riveted. Cathode-wires pass through the body of the figure.

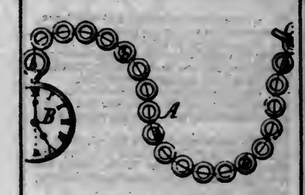


1. The plugs or rivets b b, arrangement to secure an adhesion or soldering of the electroplating to the same, in combination with the electrotype-shell f and body A, as and for purposes specified.

2. The cathode-wires b b, extending through the body A, to both increase the conduction of electricity and strength of the figure, in combination with the electrotype-shell f and said body A, as specified.

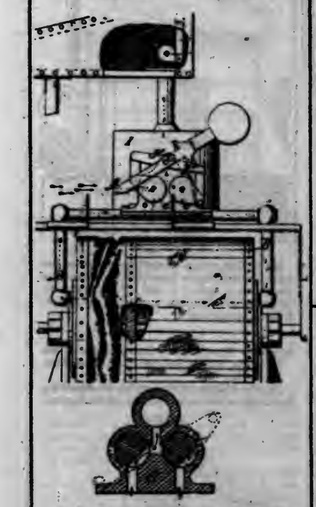
No. 168,433. Manufacture of Sugar Toy Watches and Chains. George Arend, Brooklyn, N. Y. [Filed Sept. 17, 1875.]

Brief.—The parts are produced by means of roller-dies, and the cord or wire is fed in between these dies, together with the sugar, so that all the parts, on passing out of the dies, will be cemented by said cord or wire.



As a new article of manufacture, a sugar-toy composed of a watch, B, a chain, A, and a retaining-bar, C, all the parts being connected by a cord or wire, b, substantially as shown and described.

No. 168,434. Gas-Regulators. Jos. H. Bean, Cincinnati, Ohio. [Filed July 21, 1875.]



1. The combination of a pump, A, and governor, having the elastic top and rotary valve, controlling the inlet-opening, as described.

2. The combination of the pump, the valves, the compression-chamber, and the governor, as described.

3. The combination of the compression-chamber I and the valve J with its connections, adapted to control the movement of the motor, as described.

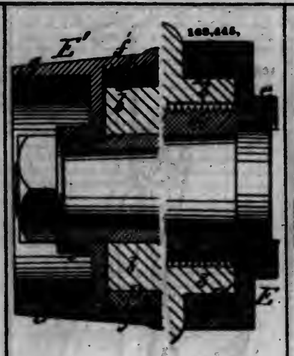
No. 168,435. Hubs. Levi N. Bowley, Corning, N. Y. [Filed July 8, 1875.]

Brief.—There are two screw-threaded necks, one of which is on the head, to which the caps are fastened.

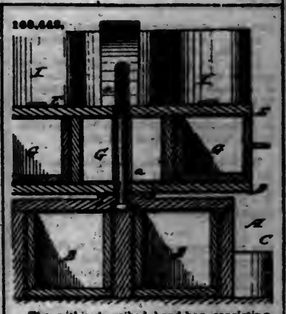
1. The cap E', having screw-threaded necks f f', in combination with the wooden hub C, having screw-threaded band D and the axle-box B, having screw-threaded end e, substantially as and for the purpose set forth.

2. The caps E E', having screw-threaded necks e f f f', the wooden hub C, having screw-threaded bands D D', and the axle-box B, having screw-threaded ends e e, substantially as and for the purpose set forth.

No. 168,435.

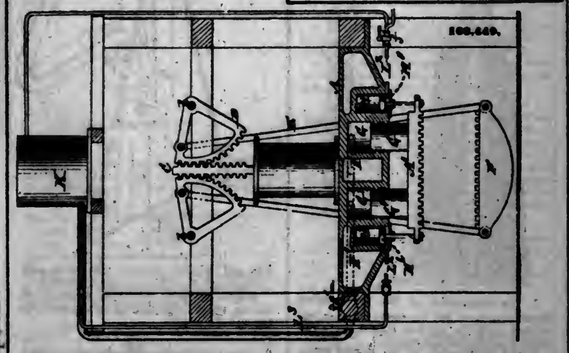


No. 168,436.



The within-described hand-box, consisting of the base A, with drawers B and side receptacles C, and the rotating top D E, with drawers G, corner receptacles H, and top boxes I, all substantially as and for the purposes herein set forth.

No. 168,439.



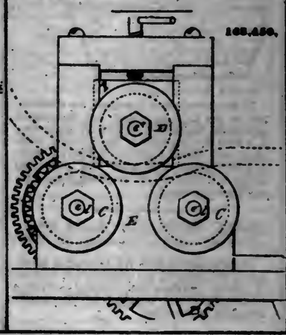
No. 168,439. Lever-Presses. A. Cameron, Charleston, S. C. [Filed July 24, 1875.]

Brief.—In a press in which is used a compound bed or platen made adjustable by hydraulic means, a combination of supplementary cylinders and pistons with the fixed bed-plate of the press, and a movable plate for operation in connection with the follower and working reservoir of the press.

1. The combination of the supplementary cylinders or chambers H H and their pistons H' H' with the fixed bed-plate A and the movable plate A', for operation in relation with the follower F and reservoir K, essentially as described.

2. The combination, with an adjustable pressing-plate, of one or more pistons, H', and cylinders H, for controlling said plate, substantially as specified.

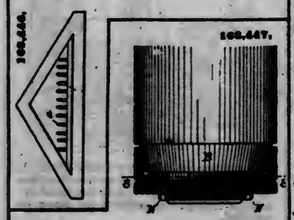
No. 168,439.



No. 168,440. Reed-Guards for Buildings. H. T. Blodgett, Boston, Mass., assignor to himself and C. W. Holden, same place. [Filed July 14, 1875.]

Pins or projections a, located and applied to the façade of a building, all substantially as described, and for the purpose specified.

No. 168,440.



No. 168,447.

No. 168,447. Projectiles for Ordnance. J. G. Butler, New York, N. Y. [Filed Sept. 20, 1875.]

The combination of a projectile having a polygonal shoulder, O, at the base and a screw-thread extension, T, with a sabot, S, which is corresponding to fit the polygonal shoulder O, and retained in position by a nut, M, substantially as and for the purpose hereinbefore set forth.

No. 168,448. Sample-Boxes. Marshal K. Butterfield and Alfred D. Holliday, Redwood Falls, Minn. [Filed Aug. 16, 1875.]

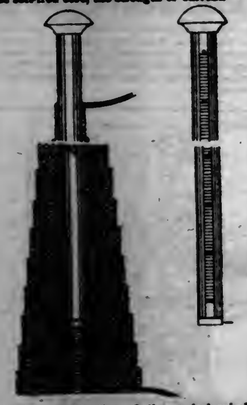
168,450. Machinery for Bending Bars of Metal. Andrew H. Campbell, Philadelphia, Pa. [Filed June 26, 1875.]

Brief.—The rolls are each formed of three eccentric disks, clamped together on the end of the shaft projecting outside the bearings by a nut, the upper one being adjustable vertically; and the system of gearing is such as to communicate a slow movement to the rolls from a rapidly-moving driving-pinion.

In a bending-machine, the combination, with the stationary flanged rolls C C, and the adjustable flanged roll D, of the gear-wheels E F *f f g* and pinions *f e*, constructed and arranged to operate substantially as specified.

168,451. Induction-Coils. J. B. Chidlett, Plymouth, England. [Filed July 14, 1875.]

Brief.—For regulating, in conjunction with the soft-iron core, the strength of current.

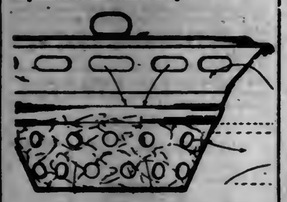


1. The combination of the central spiral electro-magnetic coil D, constructed as described, with the soft-iron core E, substantially as described and shown.

2. The combination of the central spiral electro-magnetic coil D, constructed as described, with the soft-iron core E and the graduated scale, substantially as described and shown.

168,452. Stoves. Rushmore Chubb, Galion, Ohio. [Filed May 3, 1875.]

Brief.—The rib rests upon the top plate of the stove. It prevents injury thereto by the expansion of the central fire-pot.



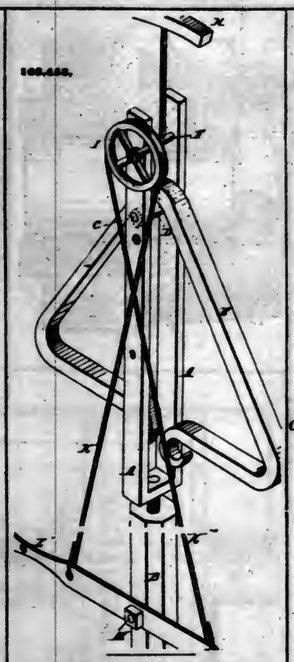
In the stove herein described, the combination of the tapering vessel and the central peripheral flange or shoulder, for supporting it within the pot-hole of an ordinary cook-stove, said vessel being provided with draft-openings above and below said peripheral flange, substantially as described, for the object herein specified.

168,453. Bell-Hangings. Giles H. Collins, Kalamazoo, Mich. [Filed Sept. 20, 1875.]

In combination with the bifurcated stand-ard A and gong B, the rock-shaft F, lever H, pulley I, cords or chains K, and oscillating lever L, the whole arranged to operate substantially as described.

168,454. Earth-Augers. Wm. B. Coman, Oak Park, Ill. [Filed Aug. 26, 1875.]

Brief.—The loose point forms a valve to admit air, which is operated by a rod passing up through the shank.





In combination with the hollow shank A and loose point D, arranged as described, the spring G and adjusting-rod F, the latter extending through the cavity in the shank, as specified.

168,455. Compounding of Fabrics. Jas. B. Cook and James W. Heath, Memphis, Tenn. [Filed Sept. 14, 1875.]

Brief.—The coils are set on hollow columns, which inclose and conceal the gas, water, and drain pipes, and a secure basement for exercise in these offices. A hoisting-gearway supplies the communication with the structure of coils, which can be interrupted at pleasure. The coil-doors project diagonally from the walls, cutting off communication between the prisoners. The jamb also projects diagonally, and is perforated, and is closed at night by an outer door.



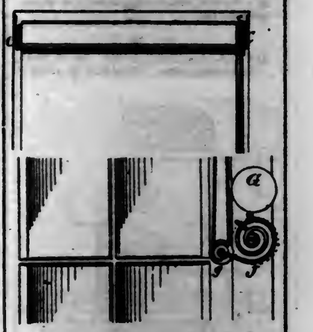
1. A structure of coils set on hollow columns, substantially as and for the purposes set forth.

2. The swinging or hinged gangway 10, employed in combination with an inner structure of coils and an outer main building, substantially as and for the purposes set forth.

3. The construction of coil-doors with perforated jambs projecting from the face of the wall, substantially as and for the purposes set forth.

4. The combination, with the coil-door 15 and projecting perforated jamb 14, of the supplemental door or shutter 12, for closing the openings in the said perforated jamb when required.

168,456. Curtain-Fixtures. G. W. Covey, New York, N. Y. [Filed July 24, 1875.]



As a new article of manufacture, the certain fixture herein described, consisting of the pulley *g*, spring J, and pivoted guard C, provided with a flange on part of its circumference, as specified.

168,457. Photograph-Burnishers. John Ormsbee, Rhinebeck, N. Y. [Filed Aug. 14, 1875.]

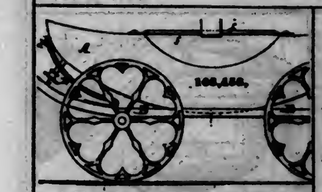
Brief.—Relates to the devices for adjusting the height of the lower roll and the heat-apron.



1. In combination with the lower roll of a photograph-burnisher, the adjustable flanged heat-apron and the adjusting-lever, substantially as specified.

2. A photograph-burnisher having the upper large roughened roll B, the lower adjustable and smaller, polished steel roll F, having, respectively, large and small gears engaged to rotate in the same direction, the flanged heat-apron H, the compressing-lever M, and its screw V, substantially as specified.

168,458. Children's Garments. James A. Grandall, Brooklyn, N. Y. [Filed May 31, 1875.]

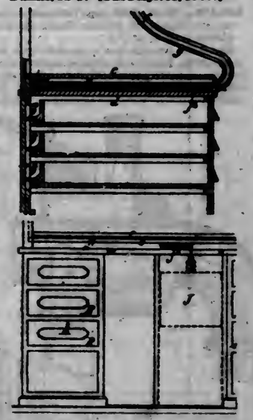


1. The rod springs E E of a carriage-body, made each in form of an inverted letter V, both springs being applied to the supporting-frame, to straddle the carriage-body lengthwise, the arms of each spring converging at their upper ends to constitute lateral bosses, substantially as specified.

2. The combination of the A-shaped rod springs E E, with the pivoted carriage-body A, hanging on pins *f f* that extend from the springs into the carriage-body, and with the locking devices *e*, substantially as specified.

3. The carriage-body A, made with the rails *ff*, in the middle of its sides, to support the sliding carriage-top, substantially as herein shown and described.

168,459. Oyster-Dredge. Fredk. H. Outler, Buffalo, N. Y. [Filed Apr. 12, 1875.]



1. In combination with the transparent sides, back, and top, the flexible cover *e*, adapted to be withdrawn into a compartment, *d'*, under the bed *a*, whereby the top and back are left unobstructed, and a free access of light to the bed is permitted, substantially as and for the purposes described.

2. In combination with the drawers, provided with locks *m*, and the locking-bar *l'*, provided with clevis *n*, and a hooked hasp or eye, *o*, the flexible cover *e*, adapted to slide under the bed, or rest *a*, substantially as and for the purpose described.

3. The combination, with the sliding cover *e* and ways *f f*, of the weight J, cord and guide-pulleys *j j'*, for automatically closing the cover, substantially as hereinbefore set forth.

4. The flexible cover *e*, composed of the cloth or flexible sheet *f*, secured between slats or strips *g g*, substantially as and for the purpose hereinbefore set forth.

168,460. Spool-Holders for Gages. John D. Gates, New York, N. Y. [Filed July 1, 1875.]



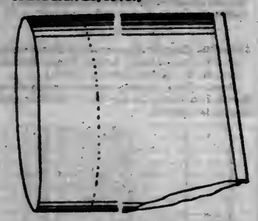
1. In a spool-exhibiting case, the combination of fixed partitions in one direction and removable partitions in a direction transverse to the fixed partitions, substantially as and for the purposes herein described.

2. The combination of the drawer having the parallel fixed channels or recesses *c c*, and the rods F, arranged above and transverse to said channels or recesses.

3. The combination of the drawer having the channels or recesses *c*, the bars B, parallel therewith, and the transverse bars or rods F, the latter serving as transverse partitions, and, with the ribs *b*, forming compartments or pockets for the spools, substantially as shown and described.

4. The combination, with the drawer B, of the piano-convex or plano-prismatic glass-front H, substantially as and for the purpose shown and described.

168,461. Paper Bags. Albert H. Dunshee, Carthage, assignee of one-half his right to John D. Huntington, Watertown, N. Y. [Filed Mar. 26, 1875.]



A paper parcel-bag for tradesmen's use, provided with a metallic re-enforcing strip for the bottom, as and for the purpose described.

168,462. Pumps for Deep Wells. John H. Dunk, Rapin, Ill. [Filed June 4, 1875.]

Brief.—In a short cylinder attached to the upper end of the suction-tube a flat valve with long upwardly-projecting stem works. Said stem passes through a loop in a trip-lever, which holds said stem upright, the cylinder acting also as a guide to the valve.

In combination, the cylinder D and valve S, with its stem S projecting upward through a loop in the trip-lever G, pivoted to said cylinder, whereby the lever acts as a guide for said stem, and the cylinder forms a guide for the valve S, as shown and described.

168,463. Paper-Metal Attachments for Gas-Burners. Michael R. Dyott, Philadelphia, Pa. [Filed Feb. 20, 1874.]

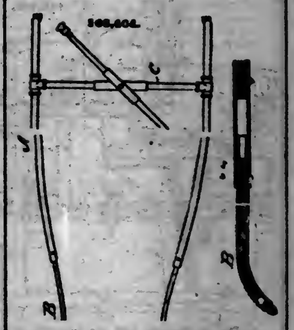




The within-described attachment for gas-burners, having a socket, *a*, formed within and of the same metal as the lower portion of the attachment, and presenting a flaring lower entrance for the admission of the burner, all as set forth.

168,464. Pulse and Shafts for Tympans. George W. Eddy, Waterford, N. Y., assignor to Lyman E. Bliss, Philadelphia, Pa. [Filed Sept. 4, 1875.]

Brief.—The parts are made tubular and adjustable.



1. A carriage pole or thills, made extensible by means of the sliding terminal B, substantially as described.

2. In combination with the tubular thills, the adjustable eye-plate E, substantially as set forth.

3. The cross-bar C, connected to the thills A, by a right and left hand screw on its ends, for adjusting them in width, as set forth.

4. The tubular terminals B, adapted to fit upon the front end of carriage thills or poles, substantially as shown and described.

168,465. Solutions for Chemical Telegraphs. Thos. A. Edison, Newark, N. J., assignor to himself and Geo. Harrington, Washington, D. C. [Filed Jan. 16, 1875.]

Brief.—Treats sulfites solution with nitric acid till nearly colorless. Uses the styline. Oxygen evolved at styline-point forms protoxide of tin, which reduces the sulfites to its original state while the current is passing.

A chemical solution for telegraphic paper, containing sulfites in a colorless, or nearly colorless, condition, substantially as set forth, in order that the mark may be made by electrolysis, as specified.

168,466. Solutions for Chemical Telegraphs. Thos. A. Edison, Newark, N. J., assignor to himself and Geo. Harrington, Washington, D. C. [Filed Jan. 26, 1875.]

In a chemical solution for telegraphic paper, the combination of a paramalt of iron with a vegetable astringent and a condensing salt, substantially as set forth, in order that the mark may be made by electrolysis, as set forth.

168,467. Recording-Papers for Chemical Telegraphs. Thos. A. Edison, Newark, N. J., assignor to himself and George Harrington, Washington, D. C. [Filed Jan. 26, 1875.]

A recording-point formed of metallic ruthinian in a chemical telegraph, substantially as set forth.

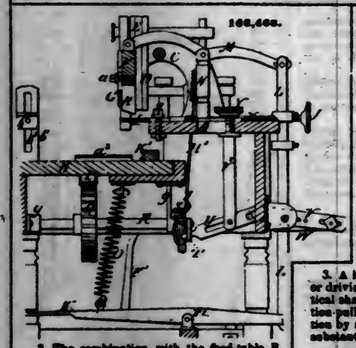
168,468. Machines for Cutting and Pressing Insoles. E. H. Edwards, Grand Rapids, Mich. [Filed July 20, 1875.]

Brief.—The machine has sliding knives, which are adjustable, to cut out portions of the leaves, and a separate pressing device to print the insole between. The leaf is held to an automatically-sliding table by adjustable clamps.

1. In a machine for indenting insoles, the combination of the sliding or reciprocating footstable B, vertically-movable knives G H, horizontal bed-block I, treadle K, vertical connecting-rod L, and lever M, substantially as herein described.

2. The combination, with the movable knives G H and the fixed table B, of the centrally-fulcrumed lever M, treadle-connection K L, arm W, the connected levers T U V, the table-gear connection therewith, and the movable platen-post V, whereby the same movement of the treadle operates the knives and effects the feed of the table for a long or short cut, as regulated by the adjustment of the fulcrum-post, substantially as herein set forth.

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3. The combination, with the feed-table B and the cutting mechanism, of the printing-wheel A', bolt-rail B', separate carrying-rail frame C' D', spring C', and the treadle E', whereby the printing-wheel is adapted to be operated independently of the cutting device, and upon the reverse feed of the table, substantially as herein set forth.

4. The combination of the horizontally-adjustable bracket and cover, holding-guide a', and the vertically-adjustable cover-holder b', with the feed-table and cutting mechanism of a book-lettering machine, as and for the purpose set forth.

5. The separate movable knives G H, adjustable vertically and longitudinally, and combined with the horizontally-adjustable knife I, each adjustment being made in relation to each other, for the purpose set forth.

6. The combination of the slotted guide and movable fulcrum-post V' with the system of levers, and ratchet-and-pawl mechanism and feed-table, substantially as herein set forth, whereby the feed of the table is regulated to make a long or short cut, according to the length of the letter-strip and the spaces required for the lettering.

7. The combination, with adjustable fulcrum-post V' and the devices for sailing it with the table K and the feed-table E, of the clamping-nut Y and the slotted tabl A, whereby the fulcrum-post is secured in position when adjusted.

8. The combination, with the adjustable slotted flanged plate a' b' and the angle-slotted plate b', having the adjustable fretted holder b', of the longitudinally-adjustable gage-bar X', and its slotted and plated lV, whereby the book is secured and clamped upon the table in proper relation to the movable and fixed knives, as described.

9. In a machine for indenting books, the main table A, for supporting the entire cutting, grinding, and operating mechanism, in combination with the book-supporting and feeding-table B, placed in front of and at a lower level than the fixed table, and having a movement to the right and left to cut and print the leaves, as herein set forth.

10. The combination, with the separate knives G H I, of the covers J, a, d, and e, the slides B, and the adjustable pins r s in the grooved arms C D, as the means whereby the said knives are adjusted in relation to each other, as described.

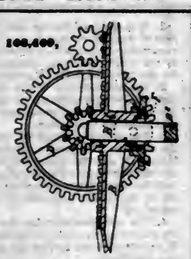
168,469. Horse-Powers. A. B. Forscher, York, Pa. (Filed Sept. 10, 1875.)

Brief.—The sides of the hub, instead of being vertical, are inclined from the center toward the upper and lower edges, to allow lateral play, and thus prevent the breaking of the vertical shaft by reason of the sagging or sinking of the floor on which it is supported.

1. A horse-power constructed with a vertical shaft or king-post, B, the upper end B' of which is squared or feathered, and works loosely in the eye b of a driving-wheel, B, the sides of such eye b being inclined, as curved from the upper and lower edges of the hub toward the center, substantially as and for the purpose described.

2. A horse-power constructed with a main or driving wheel, B, provided with an eye, b, mounted loosely on a vertical shaft or king-post, B', and supported on friction-pulleys F, substantially as shown and described.

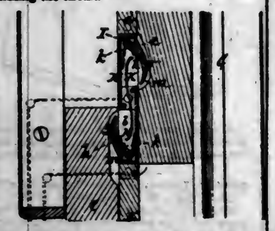
168,470.



3. A horse-power constructed with a main or driving-wheel, B, mounted loosely on a vertical shaft or king-post, B', supported on friction-pulleys F and retained centrally in position by means of its hub b' and a step-box, b', substantially as shown and described.

168,470. Circuit-Closers for Electrical Burglar-Alarms. Lewis Finch, Brooklyn, N. Y. (Filed Nov. 10, 1874.)

Brief.—Two circuit-closers arranged, as shown, in a frame, the movement of either each closing the circuit.



In combination with the pivoted circuit openers and closers I, having the cam-levers g, and wings h, the springs k, and the circuit tongue K, and all arranged within the box-frame H, having openings on opposite sides for the outward movement of the cam-levers, as herein shown and described.

168,471. Coupon-Letters. J. J. Flannery, Pittsburg, Pa. (Filed July 2, 1875.)

Brief.—An adjustable strap is provided with flexible handles, which turn or yield, so as to permit the strap to be withdrawn from under the body after it has been adjusted.

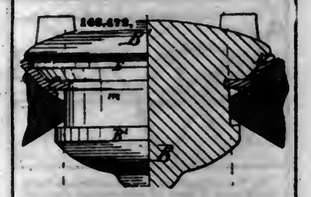


A coupon lifter and adjuster, consisting of adjustable strap A, provided with flexible hinged or yielding handles B, and either with or without adjusters C, substantially as shown and described.

168,472. Vault-Lights. John P. Foley, New York, N. Y. (Filed Aug. 16, 1875.)

Brief.—A vault-light in which the lens is secured in its cent by means of volute curves in its sides, which, when it is placed between projections or inner edges of the opening and turned, cause contact of the curves with the projections on lens-frame thereby holding them in position. The lens is provided with a groove, and also a rib, the latter taking into a yielding packing, and the former allowing the packing to enter, whereby a water-proof joint is formed.

168,473.



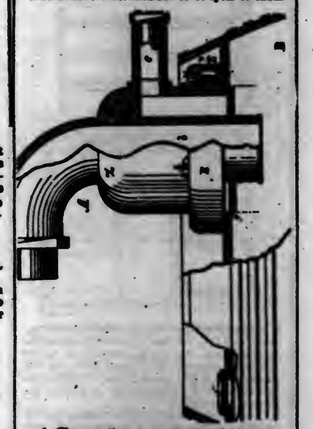
1. A vault-light having an overhanging head, B', and a body, B, having its surface formed with two or more volute curves, m m, as and for the purposes herein specified.

2. The circular groove in the body B, adapted to receive the inner edge of the packing C and hold it centrically, in combination with the overhanging head B', and with the curves m m below, adapted to lock the glass in the iron frame, as herein specified.

3. The glass E E', having a ridge or projection, F, on the under surface of the head, adapted to serve in combination with the said packing C, and with the volute or equivalent locking-curves m m on the body B, as and for the purposes herein specified.

168,474. Night-Soil and Sewage Apparatus. Charles B. Frazier, Baltimore, Md. (Filed Aug. 6, 1875.)

Brief.—A coupler has a central inlet, annular outlet, attached automatic closing-valve, and also a locking-ring with lugs, which slide under projections inside of a collar on the tank-head, for attachment of coupler to tank.



1. The coupling A, provided with the outer shell a, the inserted pipe b, and the extended coupler c, substantially as and for the purposes specified.

2. In said coupling A, the combination of the float-valve f with the outer shell a and the pipe b, substantially as and for the purposes specified.

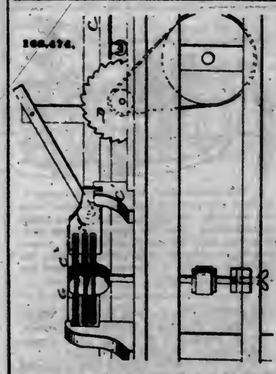
3. The deodorizing-vessel G, provided with the relief-pipe s and the perforated gratings r, in combination with the pump D, substantially as and for the purposes specified.

4. The combination of the coupling A, provided with the outer shell a, the inserted pipe b, the coupler c, the float-valve f, and the locking-collar A, also provided with the inclined lugs x, with the receiver B, provided with the neck B and the lugs v, also with the flexible tubes s and s', the pump D, and the deodorizing-vessel G, substantially as and for the purposes specified.

168,475. Grooved Rods and Lath Machines. John C. Gaither and Jos. T. Hill, Cumberland, Md. (Filed Feb. 20, 1875.)

Brief.—The bolt is first cut by a single saw, then carried forward to a gang of saws, which convert it into lath, while another bolt is being prepared by the bolting-saw.

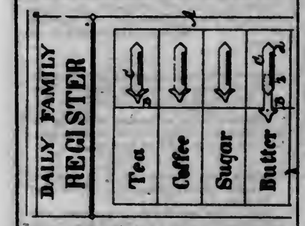
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1. The combination, with the gang of saws G, of the guides C' C', weighted wheel k, rake-spring H, and roller i, substantially as and for the purposes herein set forth.

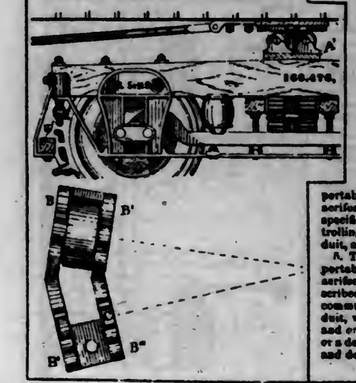
2. The combination of the table B B', carriage I, bolt-saw D, guides C C' C', gang-saws G, wheel k, rake spring H, and roller i, all constructed and arranged to operate substantially as and for the purposes herein set forth.

168,476. Indicators. Wm. L. Gallander, Elizabeth, N. J. (Filed July 24, 1875.)



The combination, with the tablet A, of the indicator B, provided with the leg or finger-piece b, and the hooper C, provided with the guiding-slot d, flanges e', and constructed as herein described, whereby said indicator and hooper are attached to each other and to the tablet without the use of rivets or other fastenings, substantially as set forth.

168,476. Side Bearings for Railroad-Cars. George Galloway, Buffalo, N. Y., assignor of one-half his right to Phillip Stallwagon, Wm. Miller, and M. J. Stark, same place. (Filed Mar. 26, 1875.)



A double shear, A, having its parallel sides B B' and B'' B''' arranged at an obtuse angle with each other, and at right angles with a line through the center of the bearing, and the king-bolt of the truck, and provided with semicircular excisions C, serving as bearings for the pivots of the wheels, all substantially as and for the purpose set forth.

168,477. Night-Soil Apparatus. Richard S Gillespie, New York, N. Y., assignor to Hamilton S. Tompkins and Samuel Samuels, same place. (Filed Apr. 23, 1875.)

Brief.—Vacuum created in tank by an ejection of an aeriform fluid, such as steam or carbonic-acid gas. Vapors deodorized by such ejection, and passage through sprayed water and fire, or by ejection alone, or by other means. Solid sewage loosened by injection of steam or compressed air, or air and water. The injection agent for this purpose may be itself previously disinfected.

1. The method of withdrawing sewage, night-soil, and like matter from its receptacle into a transportable vessel, which consists in connecting such matter by an air-tight conduit with an air-tight transportable vessel, and then exhausting the air in the vessel by a jet of an expansive aeriform fluid, such as steam or carbonic-acid gas, substantially as described.

2. The method of withdrawing sewage, night-soil, and like matter from its receptacle into a transportable vessel, and at the same time deodorizing its fetid vapors and gases, which consists in connecting the matter by an air-tight conduit with an air-tight transportable vessel, and exhausting the air from the vessel outwardly through its extended outlet, or through that outlet and through either a shower of water or burning matter, or through an outlet, the water, and burning matter, substantially as described.

3. The method of loosening sewage, night-soil, and like matter preparatory to its removal, which consists in sucking up a stream of air or water, previously disinfected, or not so, and forcing it into the matter to be loosened by a jet of an expansive aeriform fluid, such as steam, carbonic-acid gas, or compressed air or water, substantially as described.

4. The combination of an air-tight transportable vessel, an ejector operated by an aeriform fluid, such as and in the manner as specified, a suction-conduit, and a valve controlling communication between tank and conduit, as and for the purpose specified.

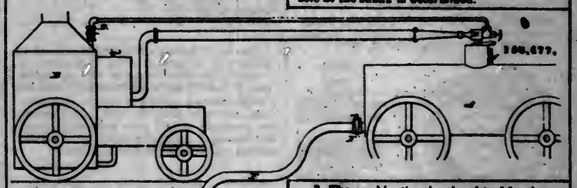
5. The combination of an air-tight transportable vessel, an ejector operated by an aeriform fluid, such as and in the manner described, a suction conduit, a valve controlling communication between such vessel and conduit, with the extended outlet of the vessel, and *or* with an outlet, and either a condenser or a deodorizer, or with such outlet, condenser, and deodorizer, for the purpose set forth.

6. The condenser C, consisting of a water-chamber, vapor and gas chamber, communicating valve, distributing nozzle f, and suitable inlets and outlets, as and for the purpose set forth.

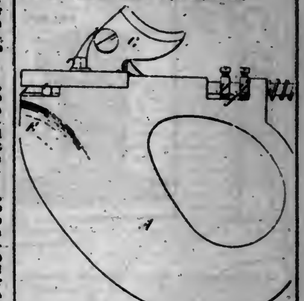
7. The combination of pipe I, within or without the cess pool, injector B, and pipe B', as and for the purpose specified.

8. The combination of suction-pipe F, vessel A, ejector B, fluid-generator F, pipe G, and suitable valves for controlling the ejector fluid and the sewage, as and for the purposes described.

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168,478. Hand-Tools for Channeling Soles. L. Geddes, Boston, Mass., assignor to American Cable-Screw-Wire Company, same place. (Filed Sept. 21, 1875.)



1. The combination, in a hand-tool for channeling the soles of boots and shoes, of an upper bearing-surface guide, E, a self-adjusting presser-plate, I, an edge-bearing for the sole, and a channel-cutter, C, substantially as herein set forth.

2. In a hand-tool for channeling the soles of boots and shoes, by means of a cutter carried thereby, a controllable edge-guide, F, substantially as herein set forth, whereby the distance of the channel from the edge of the sole at the shank is determined.

3. The combination, in a hand-tool for channeling the soles of boots and shoes, of an adjustable toothed edge-guide, F, with a toothed lever, G, and a spring H, substantially as herein set forth, whereby to determine the maximum and minimum movement of the edge-guide, as described.

4. The combination, with the controllable edge-guide F and its operating toothed finger-lever G, and the spring, of means for adjusting and regulating the movement of said edge-guide with respect to the channeling-tool, substantially as and for the purpose herein set forth.

5. A hand channeling-tool, provided with a palm-handle having a curved recess or hollow, m, on its inner surface to receive the edge of the sole as the knife is manipulated along the short curves in the channeling operation, substantially as set forth.

6. A hand-tool for channeling the soles of boots and shoes, consisting of a hollow curved palm-handled channeling-knife holder, A, an upper bearing-surface guide, E, a self-adjusting lower pressure-plate, I, a channel-cutter, C, and a controllable edge-guide, F, substantially as herein set forth.

168,479. Furniture-Casters. W. Gould, Minneapolis, Minn. (Filed Nov. 7, 1874.)

Brief.—The caster-shell, carrying on its inner surface a female screw-thread, to match with a male screw upon the caster-shank, is cast in two parts.

1. The sectional socket-plates D D', having the internal raised spiral threads *c c'*, forming a single continuous thread, substantially as and for the purpose set forth.

2. The sectional socket-plates D D', having the internal raised spiral threads *c c'*, forming a single continuous thread, the chamber *d*, and the contracted bearing-recess *b*, substantially as described.

3. The sectional socket-plates D D', having the single raised spiral threads *c c*, a smooth chamber, *d*, and contracted recess *b*, in combination with the tapering shank B, having a raised spiral thread, *c*, not in engagement with the spiral thread of the socket when inserted home, substantially as described.

166,479.



166,480.

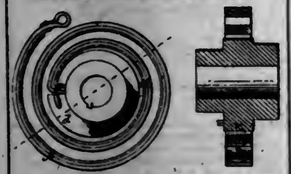


166,480. RAILROAD-RAIL JOINTS. Shipman W. Griffith, Union City, Pa. [Filed Aug. 24, 1875.]

1. The combination of the bolt *d*, having the heads *e f*, with a fish-plate, having the notches or recesses *h*, substantially as set forth.

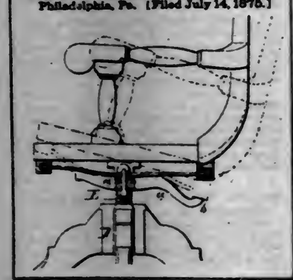
2. The combination of the bolt *d*, having the heads *e f*, spring *c*, fish-plates *a*, having the holes *g*, and recesses *h* and rails *a*, substantially as specified.

166,481. DEVICES FOR PREVENTING BACKLASH OF MACHINERY. John A. Hafner, Pittsburg, Pa. [Filed May 31, 1875.]



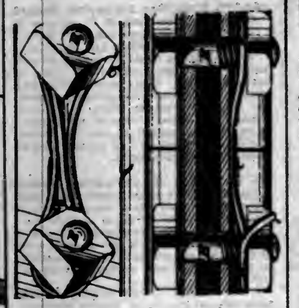
The combination of the hub B, having central flange *d* and notch *x*, and made larger at the bottom than at its top, with the spring A, made of a series of leaves of varying thickness, and having hook *c* and loop *d*, all substantially as and for the purposes set forth.

166,482. TILTING CHAIRS. Henry S. Hale, Philadelphia, Pa. [Filed July 14, 1875.]



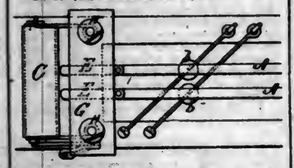
The combination, in a chair with a tilting seat, of a spring-bar, F, attached to the seat and to the support of the same, with the long rear arm *a'* and its stop *b*, and the short front arm *a*, all as set forth.

166,483. NUT-LOCKS. Fred C Hamilton, Brooklyn, assignor to Edward J Brooks, New York, N. Y. [Filed Sept 3 1875.]



A double spring-washer, constructed of wire or rod in the form of a coil, and having loops *a a* to embrace a pair of bolts, and projections *b b* to lock the nuts thereon, substantially as herein shown and described.

166,484. PIANO-FORTE DAMPER ATTACHMENTS. M. Waldo Hanchett, Syracuse, N. Y. [Filed Mar. 6, 1875.]



The bar C, having straight edge, secured to hangers D, pivoted to arms F, attached to stand G, the screw-threaded rods I, thumb-nuts H, lever I, and connecting-rod J, and the damper-levers A, having upon their upper surfaces, and at or near the front ends thereof, the catches E, all said parts being constructed and arranged to operate substantially as described, and for the purpose set forth.

166,485. MANUFACTURE OF ARTIFICIAL LEATHER. John Harrington, Ryde, Isle of Wight, England. [Filed Jan. 20, 1873.]

1. A mold made of shellac, as and for the purpose described.

2. The combined process herein described of manufacturing artificial leather by first taking strong-fibered paper, staining or dying the body thereof, and applying glycerine to render it pliable, then coloring the surface, glazing, and then varnishing or waterproofing, and finally placing this paper on the mold, and transferring the impression thereon by pressure, all substantially as herein specified.

166,486. CAR OR BOAT ATTACHMENTS FOR BALLOONS. Jas. Hartness, Detroit, Mich. [Filed Mar. 6, 1875.]

Brief.—The car or boat is made in two sections, so arranged that they can be bolted together, so as to make a perfect whole, and in providing said car or boat with a suitable pump and connections, so arranged that the gas may be drawn from the balloon, and condensed within the walls of the boat or car, thereby avoiding the necessity of carrying ballast.

1. The boat or car A, made in two sections, *a b*, provided with two water and air tight coverings, so arranged as to leave space between the two for the purposes of inflation, and provided also with cap *d*, substantially as described, and for the purposes set forth.

166,486.



2. The combination, with the boat or car A, made in two sections, *a b*, and provided with two water and air tight coverings, of the pump D, connecting with the space between said coverings, and having the stop-cock *c* and coupling *e*, adapted to be connected with the interior of a balloon, substantially as and for the purpose set forth.

166,487. CHUCKS FOR TURNING WHIP-STOCKS. Charles G. Hartwell, Westfield, Mass., assignor to C. S. Peak and F. Grant, same place. [Filed Jan. 26, 1875.]

Brief.—The spindle enters a hole in the end of the whip-stock, which is firmly compressed against it by the collar.



An improved chuck for turning whip-butts, consisting of the combination of the socket A, the central spindle D, to support the hollow portion of the whip-butt, and the threaded holder B for holding it, substantially as described

166,488. CONFECTIONERY. Edwin Hawker, Lee, assignor to Cornelius Hanbury, London, England. [Filed Sept. 13, 1875.]

Jujubes or other confections of a deliquescent character, coated with an alcoholic solution of a gum, or resin, or pyroxyline.

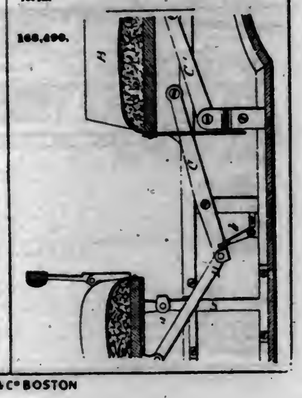
166,489. NUT-LOCKS. Cyrus Henderson, Westmoreland County, Pa. [Filed May 10, 1875.]

Brief.—The screw-bolt is provided with longitudinal grooves. The nut is formed with a slotted extension corresponding to the grooves in the bolt. Keys are inserted in the slots, and covered by a screw-cap.



The cap-nut E, slotted nut B, and keys D, in combination with the bolt A, having grooves *a a*, substantially as herein described and set forth.

166,490.



166,490. WAGON-SEATS. David W. Horn and Paul Richards, Minneapolis, Minn. [Filed July 17, 1875.]

Brief.—A support for the connecting-arm.

The latch *b*, in combination with the arms C D, connecting the seats B and E, for the purpose described.

166,491. TRILL-COUPLINGS. Saml. L. Hill, Brooklyn, N. Y. [Filed Sept. 15, 1875.]



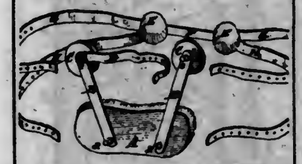
1. The combination of a recessed toe, *a*, on the shaft A, with two elastic cushions, *e f*, on the clip B, substantially in the manner and for the purpose herein shown and described.

2. The combination of a recessed toe, *a*, on the shaft A, with two cushions or bolts, *e f*, inserted at different levels in the clip B, substantially as set forth.

3. The combination of a recessed toe and lip *b* on the shaft A, with two cushions, *e f*, and a step, *g*, on the clip B, substantially in the manner shown and described.

166,492. TRUSSES. Siegfried L. Hockert, Cincinnati, Ohio, assignor of one-half his right to Henry Herckelrath, same place. [Filed Aug. 9, 1875.]

Brief.—A central abdominal pad is connected by pivoted flexible arms to two auxiliary pads placed above it. These latter pads are adjustably connected by straps to each other, and to two small pads in the rear by means of a double waistband.

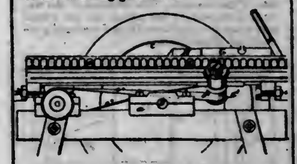


1. An abdominal supporter consisting of the central lever pad A, connected by pivoted arms B B, and the auxiliary pads C C, adjustably connected by straps D, the whole being combined substantially as and for the object specified.

2. In combination with the lower pad A, pivoted spring-arms B, auxiliary pads C, and adjustable straps D, the back-pads E E and straps G connecting the back-pads with the auxiliary pads C, substantially as shown and described.

166,493. MACHINES FOR GRINDING AND FITTING PEARL-WIDDERS. Jacob Hoffmann and Georg Hoffmann, Philadelphia, Pa. [Filed July 20, 1875.]

Brief.—The material is secured upon horizontally-sliding tables, which move upon oscillating frames, thus enabling the operator to bring the material into contact with the side of the revolving grindstone.



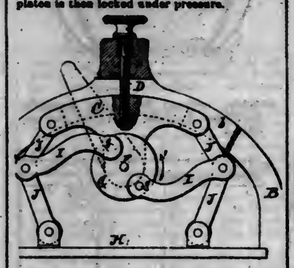
1. The end-beveled gage G, combined with beveled block H and beveled hinged dog I, as and for the purpose specified.

2. The combination, with carriages or plates E, of a vernier-gage and holder G having the recesses *g*, as and for the purpose specified.

3. The combination, with carriage-supporting frames D, of the block-bearings F, movable in slots *c c* of machine-frame, as and for the purpose specified.

166,494. COPING-PRESSES. Wm. H. Hoffman, Passaic, N. J., and Buckingham St. John Hoyt, New York, N. Y. [Filed Sept. 16, 1875.]

Brief.—The plates are raised and lowered by means of a crank-disk, having its bearing in an adjustable cross-head, swinging beneath the arch of the standards. Said plates is connected to the cross-head by toggle-levers, which in turn are attached to the crank-disk by links. When the upper and lower sections of the toggle-levers are in vertical line, the plates is then locked under pressure.

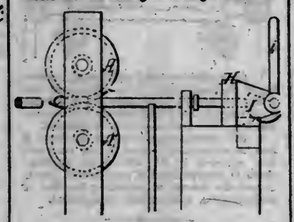


1. The adjustable cross-head C, containing the bearing of the toggle-operating shaft F, in combination with said shaft and the arch B, for the purpose of adjusting the distance between the platen and bed-plate to accommodate books or articles of various thicknesses, substantially as herein described.

2. The combination of the platen H, the adjustable cross-head C, the toggles J, connecting-links I, disk or crank G, rotating shaft F, and arch B, substantially as herein described.

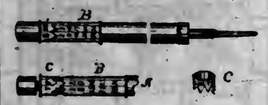
166,495. TUBE-ROLLING MACHINES. John Hoskin, Philadelphia, Pa. [Filed July 16, 1875.]

Brief.—The mandrel abuts against a yielding support, that permits movement thereof within the tube during the rolling of the tube.



The combination, in a tube-rolling machine, of the mandrel C with mechanism whereby motion is imparted to the said mandrel within the tube during the pushing of the latter over the mandrel by the rolls, as set forth.

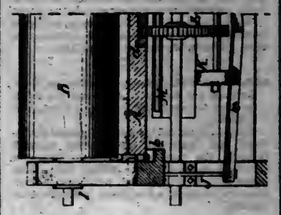
166,496. COMBINED PENCIL-CASES AND CALENDARS. Richard Howland, Folkestone, England. [Filed June 16, 1875.]



1. In a pencil-case or pen-holder, or like pocket articles, the combination of a collar and a tablet, each having letters or figures thereon, and each having a correspondingly regularly serrated end adapted to fit closely together whenever the rotary position of the collar is changed, substantially as set forth.

2. The combination with the pencil-case, or pen and pencil-case, A, of the tablets B, collar C, and screw-cap *c*, substantially as described and shown.

166,497. MACHINERY FOR GRAINING, PEBBLING, AND SOFTENING LEATHER. Henry Howson, Philadelphia, Pa., assignor to W. T. Warner, Wilmington, Del. [Filed Aug. 27, 1875.]



1. In a machine for graining, pebbling, and softening leather, the combination of the bed A with the roller B, the former being caused to traverse in a direction opposite to that in which the roller is caused to revolve for action on the folded leather, in the manner described.

2. The combination of the roller B with the reciprocating bed A, having rollers adapted to inclined ways on the frame-work of the machine, all substantially as specified.

3. The combination of the adjustable roller B, reciprocating table, bar F, and mechanism whereby the said bar is operated, in the manner described.

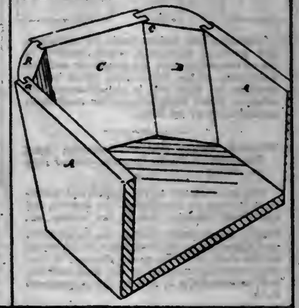
166,498. SNATCH-BLOCKS. Augustus Hunt, Philadelphia, Pa. [Filed Aug. 24, 1875.]



The combination, substantially as described, of the pulley-block and the coupled plate D and D', with the tubular block I of rubber, and the disks h and h', between which the said rubber is confined under pressure.

166,499. CONSTRUCTION OF CASKETS AND COFFINS. James M. Hutton, Richmond, Ind. [Filed Mar. 9, 1875.]

Brief.—The joints of wooden caskets and coffins are strengthened and concealed, and recessed curved corners are formed on the outside and flush joints on the inside of the same, by means of curved corner-pieces, provided at each end with a beveled tongue and beveled lip, in connection with centrally-grooved side and end sections.



As an improvement in the construction of coffins, the curved corner-pieces B, constructed as each edge with a beveled tongue, b, and internal feather or beveled lip c, in combination with the side and end sections A C, centrally grooved, as shown, so as to fit the pieces B, strengthen and conceal the joints, and form recessed curved corners on the outside, and flush joints on the inside, as specified.

168,500. Ice-Machines. Augusto Jas, New Orleans, La., assignor of one-half his right to Alba. C. Jenks, same place. [Filed July 1, 1875.]

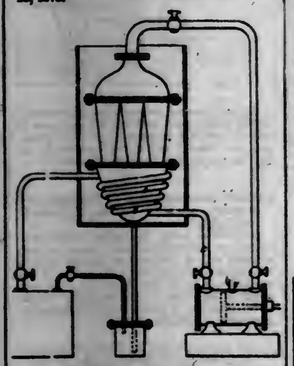
Brief.—Liquid refrigerants are passed downward and vaporous refrigerants upward through the partitioned boxes. Water is frozen in successive superadded films. The upper box is capable of withdrawal away from the lower by a flexible or telescopic connection.



The described freezing apparatus, consisting of two sheets formed each by the union of two parts constructed and put together to constitute a hollow structure with internal serpentine passage, as described, the two sheets being connected by flexible tubing, or its substantial equivalent, as specified, and adapted to operate in connection with a water mold or vessel placed between them, substantially as set forth.

168,501. Condensers for Ice-Machines. Augusto Jas, New Orleans, La. [Filed July 1, 1875.]

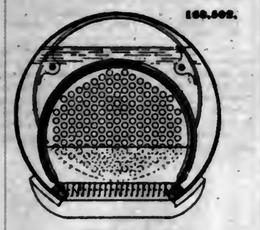
Brief.—Condensation of the refrigerant is assisted, and the cooling of the water to be afterward frozen is effected, by coiling the return-pipe about the lower chamber of the condenser found in Patent No. 161,337, March 23, 1875.



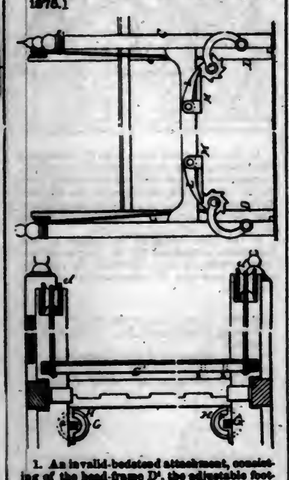
The described improvement on my aforesaid patented apparatus, which consists in the combination, with the condenser and the water-tank, of the return-pipe, which passes through the tank and is coiled around the lower or liquid receptacle of the condenser, substantially as set forth.

168,502. Steam-Boiler Furnaces. Emil Kaselowsky, Berlin, Prussia. [Filed July 10, 1875.]

The combination of the cylindrical boiler-shell having an opening at the bottom, the cylindrical fire-box open at the bottom, arranged concentrically within the boiler-shell, and connected at its lower edges to the edges of the shell, and the grate situated within the existing openings of the shell and fire-box, substantially as and for the purpose set forth.



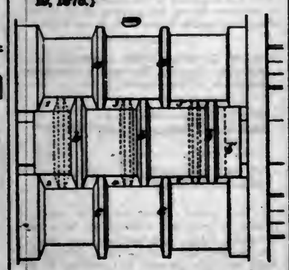
168,503. Invalid-Bedsteads. Abraham Kauffman, Annville, Pa. [Filed July 24, 1875.]



1. An invalid-bedstead attachment, consisting of the head-frame D', the adjustable foot-frame D², and the suspensible stretcher-frame S', having adjusting-perforations Z for the suspending-cords c, substantially as specified.

2. The combination, with the stretcher S and its suspending-cords c, of the head and foot supports D' D², having the winding-shafts G, pulleys H and d, pawl-arms M, pawls L, and the braces F, connecting the feet of said supports, substantially as specified.

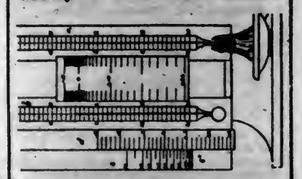
168,504. Rolling-Mills. Norman King and Winfield Scott, Reno, Pa. [Filed Aug. 10, 1875.]



As an improvement in rolling-mills, the combination of two or more rolls, one or more of which is capable of endwise movement, and each presenting two or more plain cylindrical working-surfaces of different diameters, terminated by beveled collars, that alternate those of one roll with those of the next adjacent roll, substantially as described.

168,505. Pitch-Indicators. William Kinkelbur, Gottingen, Prussia. [Filed Aug. 20, 1875.]

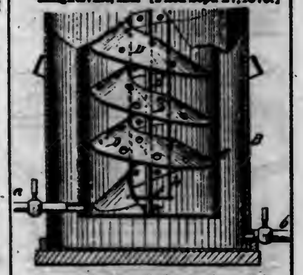
Brief.—A sliding scale, by its varying adjustments with the scales of a moist and a dry thermometer, indicates the thawing-point. An additional scale is operated in combination with the above, to indicate the percentage of humidity.



1. The combination of a movable scale, c, bearing marks, the relative position of which are obtained in the manner herein described, with two scales, a b, one of which serves to indicate the temperature of a moist thermometer, and the other that of a dry thermometer, all as set forth.

2. The combination of the moving scale d with the percentage scale e e', both of these scales being provided with marks, the relative position of which is obtained substantially in the manner herein described.

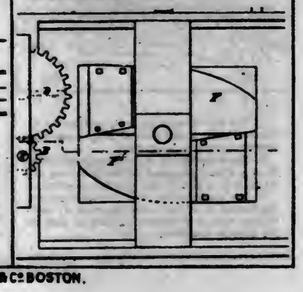
168,506. Rotary Ovens. W. R. Langston, Knightsville, Ind. [Filed Sept. 27, 1875.]



The combination of the exterior and interior cylinders B C, with faucets a b, central shaft D', with frame f h, and spiral perforated conveyer D, all substantially as and for the purposes herein set forth.

168,507. Combined Water-Wheel and Gates. Young W. Lorman, Russellville, Ky., assignor of one-half his right to J. H. Bowden, same place. [Filed July 12, 1875.]

Brief.—This water-wheel has an air-tight case submerged in forebay, and provided with an adjustable gate and chutes, arranged above the wheel. The chutes flare at the mouth, and taper in cross-sectional area until the issue is reached, allowing for the natural waste of water, and making a solid current upon the floats of the buckets. The leverage of the water is increased by the bevels on the wheel-hub extending downwardly and outwardly toward the circumference.



1. The combination, with a turbine water-wheel, of an air-tight case submerged in forebay, and provided with adjustable gate and chutes, arranged above the wheel, as and for the purposes described.

2. A turbine-wheel, provided with overlying chutes and curved continuous buckets, reaching outwardly from top to bottom of wheel, as and for the purposes set forth.

3. The flange F' on the lower bottom-edge chute, as and for the purpose specified.

4. The wheel-belt I, having bevels I extending outwardly toward the periphery of wheel, as and for the purposes described.

168,508. Apparatus for Cabbages Meats, &c. Whether Leland, Chicago, Ill. [Filed Aug. 14, 1875.]



1. The hinged sectional and flanged chopping-case J, constructed and adapted for the purpose stated.

2. The hopper H, having a long neck, c, and a stirring, S, in combination with the plunger D, in a machine for packing meats and other substances in cans, substantially as described.

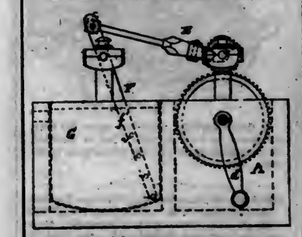
168,509. Automatic Gates. N. H. Long, Muncie, assignor to himself and J. C. Long, Eaton, Ind. [Filed Aug. 6, 1875.]

Brief.—The notch c at the inner end of slot e prevents the pintle c from moving out of place when the gate is closed. The rib y forces the pintle out of the notch, and guides it along in the slot e, in the operation of opening and closing the gate.



The combination of the inclined frame D, having slot e, with notch c, and the pintle C, with rib y, substantially as and for the purpose herein set forth.

168,510. Bee-Hives. Martin Long, Claremont, N. H. [Filed Aug. 19, 1875.]



The combination of the box A, removable pan G, bonzer F, detachable connecting-rod B, and its vibrating mechanism, substantially as and for the purposes specified.

168,511. Pneumatic Furnaces. John C. Macdonald, Weldon, and Joseph Calvert, Surrey County, England. [Filed Dec. 29, 1874.]



1. The clamping-roller, constructed substantially as set forth, of a central perforated cylinder, b, blanket b or other absorbent material, perforated metal cylinder i, and outer covering of blanket a.

2. The combined arrangement for retaining the knife carried by cylinder f of the cutting apparatus, such arrangement consisting of bars or frames r fixed to the ends of the knife-bar p, and carrying rollers to bear upon the two opposite edges of fixed cams s s, substantially as set forth.

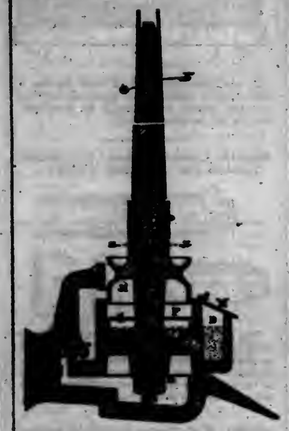
3. The combined arrangement for holding the cutting-knife, consisting of the carrying-bar p, clamp-bar p', and bars q q, for supporting the knife where it passes out from the cylinder f.

4. The combination, with the cylinder f, of the bar t, and adjustable bar t, these members being constructed and operating substantially as set forth.

5. The cylinder f', provided with a narrow-beveled inclined slit or opening, as set forth, against the side of which the knife of the cylinder f works.

168,512. Wool-Burning Machinery. C. Martin, Verviers, Belgium. [Filed June 11, 1875.]

Brief.—When the bobbin is full, and is to be changed, a few rounds of thread are wound on the tube placed on the lower part of the hame-spindle, which thread is not broken when the bobbin is removed to be replaced by another. The spindle is stopped, when desired, by means of a lever, one arm of which, on being depressed, causes the end to press against and stop the whirl.



1. The combination, substantially as hereinbefore described, with the roll J and spindle having the whirl H, of the lever S, provided with a lip, T, resting within the said roll, and counterweighted with the operating end R and Q for stopping the whirl, as set forth.

2. The combination of the tube F, the whirl H, and the loose spindle I, substantially as described, whereby the bobbins can be changed without breaking the thread, as set forth.

168,513. Annealing-Furnaces. William H. McKenna, Pittsburg, Pa., assignor of one-half his right to J. C. Ridgway, same place. [Filed May 14, 1875.]

Brief.—The products of combustion pass between the arches embracing the side retorts and supporting the upper retort, then forming flues, and, passing over the side retorts, descend into the outer of the alternately-connected horizontal flues under the side retorts. From the last of these the hot gases pass off through flues in the front wall, which pass back along the top, and lead to the chimney in the rear.



1. In a furnace for annealing tubes, the combination, with the retorts h e h, one or more, and the arches or walls k, forming flues l, of the closed-in horizontal flues c c, &c., substantially as shown and described.

2. The combination, with the annealing-ovens h e h, one or more, of the diving-flues f and closed flues c c, substantially as described.

3. The flue g, in combination with the horizontal annealing-ovens h h and closed flues c c, substantially as described.

4. In an annealing-furnace for solids, the horizontal annealing-oven of uniform bore, and made in one piece, substantially as specified.

5. The combination, with an annealing-oven of a door or cap at one end, having a correspondent opening, e, and for the purpose set forth.

6. The improved annealing-furnace, consisting of and comprising the internally-arched body a, the ovens h h e, one or more, of uniform bore, the ovens h h being arranged at the sides of, and the oven e above, the fire-place, and against the furnace-arch, the arches k supporting said oven e, and resting on ovens h, forming the lateral flues l, and the closed flues c c passing underneath the ovens h h, all as shown, and for the purpose specified.

168,514. Terrestrial Globes. Malcolm McVicar, Potsdam, N. Y. [Filed Aug. 4, 1875.]

Brief.—The invention relates to globes used for illustration in geography and astronomy, and consists in the special construction and arrangement of the parts claimed for solving the various problems which arise in the study of these interesting sciences.



1. In a globe, the revolving equator B and circle C, suspended on the equator by the two points a a, so that, by its own motion on said points and the motion of the equator, the circle can be made to represent any great circle on the globe, substantially as set forth.

2. The movable three-quarter meridian D, fastened to the circle C, substantially as and for the purposes set forth.

3. A movable meridian, E, attached by a clamp-screw, in combination with the circle C, standing horizontally or at any desired angle to the horizon, and in which the axis of the globe is fastened perpendicular to its face, or at any desired angle, as herein set forth.

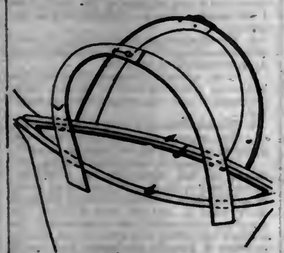
4. The combination of illumination and twilight H and I, fastened to the movable meridian E, substantially as and for the purposes set forth.

5. The semi-prime vertical K, fastened to the movable meridian E, substantially as and for the purposes set forth.

6. The combination, with a globe, A, of the movable equator B, pivoted circle C, meridian D E, combination of illumination and twilight H and I, semi-prime vertical K, pointer L, and the graduated circle M, all constructed and arranged substantially as and for the purposes herein set forth.

7. In a globe, a revolving equator, revolving independently of the globe, but on the axis thereof as a center, substantially as shown and described.

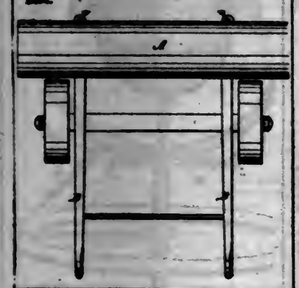
168,515. CATAMENIAL SACKS. G. Mascom, Beverly, Mass. [Filed Sept. 8, 1875.]



As an improvement in that class of catamenial sacks which embody an inner and an outer sack, and a fibrous material upon the edge where they are united, the combination of the outer sack, having a roll at its extreme upper edge, with the inner sack united to the outer sack at a distance below its upper edge, to form a flexible projecting lip, whereby a cast is formed between the lip and the roll to receive the fibrous material which is attached to the lip of the inner sack, substantially as herein shown and described.

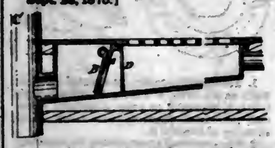
168,516. DRAIN. David Miller, Carrollton, Md. [Filed Sept. 7, 1875.]

Brief.—A log or cylinder of wood is provided upon one side with draft-staples and chain, and upon the opposite side handles are rigidly attached. To the handles, near the log, are secured track-wheels, which form a fulcrum to raise the log from the ground, to clear obstructions and turn at the end of the field.



The combination, with the log A forming the drag, of a pair of rearwardly-projecting handles, having wheels attached thereto, for the purpose of lifting and transporting the drag, substantially as described.

168,517. FLOODWAYS FOR WAREHOUSES. John R. Morrell, New York, N. Y. [Filed Sept. 20, 1875.]



In a floodway for warehouses and other buildings, the combination, with the leader-pipe C and the reclined bottom sink or reservoir opening into the room through gratings, of the setting D, and inclined obliquely-opening valve E, substantially as and for the purpose described.

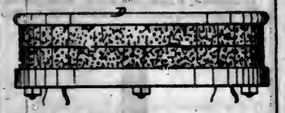
168,518. BALE-TIES. Thomas H. Murphy, New Orleans, La. [Filed July 17, 1875.]

Brief.—The inclined side of the button facilitates its release from the slots.



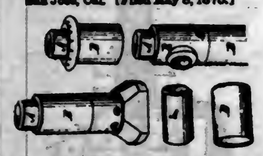
The button c, provided with an obtuse-angled heel, the inclined side of which extends from the point of intersection between the said button and the loop to which it is attached to the inner side of the button, in combination with the loop code, as and for the purpose described.

168,519. LOG-PRESERVING STOCKS. Henry H. Nash, Baltimore, Md. [Filed Sept. 20, 1875.]



A log-preserving stool or chair having a seat made of disks of cork confined between suitable boards, substantially as described, and for the purpose set forth.

168,520. CEMETERY-SEATS. T. C. Nuttrel, San Jose, Cal. [Filed May 6, 1875.]



The inner fan-sections A, beveled at their ends, and provided with vertical ribs, aligned as shown, in combination with the outer fan, formed of sections B, the joints of the sections of the one series alternating with those of the other, as and for the purpose set forth.

168,521. WAX-THREAD SEWING-MACHINES. J. M. Nichols, Madison, N. H. [Filed July 10, 1875.]

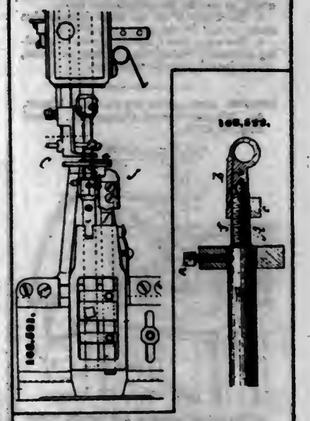
1. In a sewing-machine having two or more needles for parallel stitching, the arrangement and adjustment of said needles diagonally with respect to the line of feed, to determine the distance of the stitching-lines, substantially as herein shown and described.

2. In combination with the diagonally-adjustable needles, the adjustable thread-guides, substantially as shown and described.

3. The combination, with the cast-off fingers J, of adjustable blocks 16 and 17, substantially as and for the purposes set forth.

4. The combination, with the needle-plate O and movable guide-pieces c, of the rib-forming finger 9, substantially as and for the purposes set forth.

5. In combination with two or more needles arranged for parallel stitching, the intermediate rib-forming finger 9, for the purposes set forth.



168,522. CLIPS FOR ROPE TRAMWAYS. H. Olsen, Jacob City, Utah. [Filed July 1, 1875.]

Brief.—A wire-rope-way clip in which the upper outward portion extends boat-toward the basket-shaft, and is provided with a downward-projecting leg, which fits into a slot in the body of the clamp. This leg has internal screw-threads, and acts as a nut for engagement with the screw formed upon the end of the basket-shaft, whereby the clamp can readily be tightened to the rope by turning the shaft. It is held in position by a set-screw.

1. The combination of the clip A, provided with the recess f, and having the nut or threaded leg c on the end of the leg b, and the shaft B, provided with the screw f, substantially as and for the purpose shown and described.

2. The combination, with the shaft B, of the collar g and set-screw h, substantially as shown and described.

168,523. CHILDREN'S CARRIAGES. Solomon Oppenheimer, Newark, N. J. [Filed Oct. 27, 1874.]



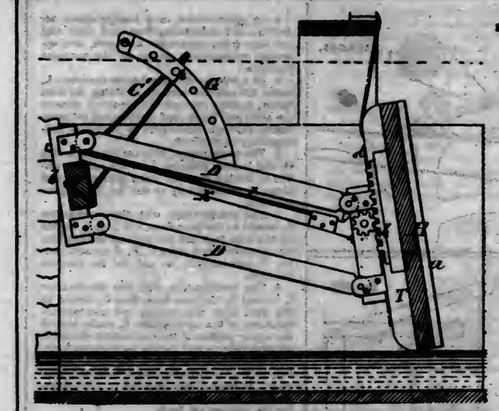
A child's carriage provided upon the rear, outside of its body A, with a box or pannier, D, substantially as and for the purpose specified.

168,524. SLIDE-GATES. Thomas Forbes, Menominee, Wis. [Filed Aug. 28, 1875.]

Brief.—The slide-gate is connected to a rock-shaft by two jointed rods, and held in position by an arm, segment, and pin. The knees of the jointed rods are vertically adjusted by a rock and pinion on the back of the gate, and are secured by a spring-stop.

1. The slide-gate H connected to a rock-shaft, C, by means of jointed rods D in combination with the arm O, segment G, and pin p, substantially in the manner and for the purposes set forth.

168,524.



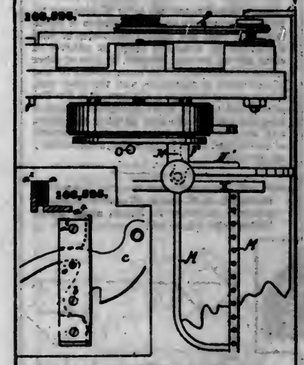
2. The pivoted connecting-rods D combined with hooks c, vertically adjustable on the back of the gate B, substantially as and for the purposes described.

168,525. GATE-LATCHES. Jacob Fetterman, Short Creek, Ohio. [Filed Sept. 7, 1875.]

Brief.—The casing has a flange at right angles to its main body, to allow it to be secured to the post without mortising. Two holes are arranged to receive the pivot for the latch. The latch is reversed for changing from right to left hand, and vice versa, and the fulcrum-pivot changed. An extension of the latch downward forms a lever, against which the gate strikes, and then forces the latch into a locked position.

The combination of the casing c, composed of the plate a, having the flange a', and plate c, having holes b b, and the latch e, constructed as described, and all arranged to be reversible, substantially as set forth.

168,526.



168,526. HARVESTER-RAKES. Moses Bay, Valley Grove, W. Va. [Filed Mar. 20, 1875.]

Brief.—A pivoted adjustable frame carries the pulleys, on which passes an endless belt carrying a cam, which holds rigidly a bolley barrel having internal cam-grooves, through which the weighted rake-standard slips by gravity when said barrel assumes a vertical position by an arm, segment, and pin. The knees of the jointed rods are vertically adjusted by a rack and pinion on the back of the gate, and are secured by a spring-stop.

1. The combination of the casing c, composed of the plate a', having flange a', and plate c, having holes b b, and the latch e, constructed as described, and all arranged to be reversible, substantially as set forth.

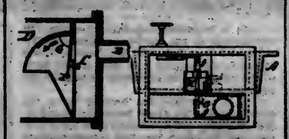
168,527. WATCH-KEYS. George P. Reed, Melrose, Mass. [Filed Sept. 15, 1875.]



The herein-described construction of watch-key, the same consisting of the tubular body A, with the reclined stem B secured to one end, and the swivel at its opposite end, composed of the pierced disk D and wire g, with its eye h, and as bent at its inner end to confine it within the bore of the disk, said disk being properly secured to the end of the body A, and constituting the head of the latter, and the whole being substantially as and for purposes stated.

168,528. WATER-METERS. Wm. P. Rhodes and John H. Bowers, Brooklyn, N. Y., assignors to said Rhodes and De Witt C. Traphagen, same place. [Filed June 12, 1875.]

Brief.—A portion only of the water to be measured passes through the measuring mechanism—a portion always in the same ratio to the measured portion. To maintain this said proportion, two valves upon the same spindle are employed, one actuated by the measured current, and actuating the other valve, which controls the measured portion.



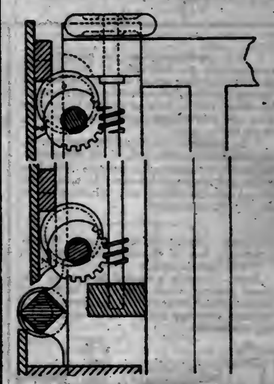
1. In a water-meter, the working and registering part of which receives a portion of the current to be measured, the combination of the valve G, which is controlled by the main current of water that does not enter the working and registering part of the meter, with the valve H, which controls the portion of water entering the meter proper, substantially as herein shown and described.

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2. The combination of the valve G and H, spindle d, and counterpoise or spring f, with the body A of the meter, and with the water-conduit D, all substantially as herein shown and described.

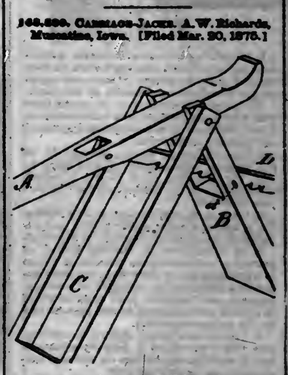
168,529. PLANING-MACHINES. David Hall Bliss and Jno. W. Murkland, Lowell, Mass., said Murkland assignor to said Bliss. [Filed Jan. 13, 1875.]

Brief.—The bed is vertically adjustable, and can be carried forward in a curved path, concentric with and just outside the arc described by the cutter, by means of saddles attached to the under side of the bed, and embracing four concentrics, which support the four corners of the bed at the same level.



The combination of the adjustable table O with the concentrics X X, by means of the saddles S S embracing the concentrics and carrying the table upward and forward toward the cutter in a curved path concentric, or nearly so, with the cut, substantially as described.

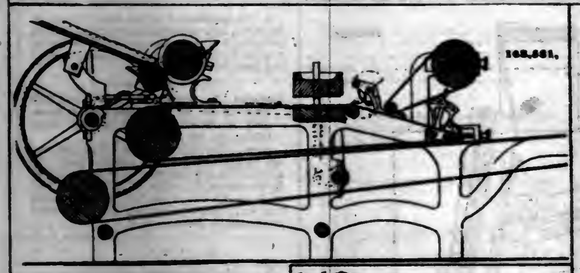
168,530. CARRIAGE-JACKS. A. W. Richards, Muscatine, Iowa. [Filed Mar. 20, 1875.]



The recessed supports B C, hinged together, and adapted to be folded one within the other, in combination with the rack-bar D, bolt d, and lifting-lever A, all constructed and arranged as described.

168,531. CRACKER-MACHINES. J. W. Rogers, Rushville, N. Y. [Filed July 30, 1875.]

Brief.—A leaf of metal is secured to the frame, having one edge brought close to the feed-roll. Flour being placed thereon is spread over the surface of the roll by the revolution of the latter. A slotted plate, having its ends bent up, and pivoted upon the finger-bar, carries lifting-pieces, which may be adjusted laterally in the slot, and that is adapted to raise each alternate finger, or any number of the fingers simultaneously.



168,591.

1. In a cracker-machine, the combination, substantially as described, of the inclined shelves extending across the apparatus, and having their lower edges projecting closely against the dough-rollers, forming troughs for holding flour and distributing the same to the rollers, as set forth.

2. In a cracker-machine, the combination, substantially as described, of the separating-fingers for separating the crackers from the scrap, and the finger-bar carrying adjustable curved arms for raising and throwing down the fingers, as specified.

168,592. Machine for Boring Blind-Stiles. Jas. M. Seymour, Newark, N. J. [Filed Mar. 2, 1875.]

Brief.—The stile is carried forward by frictional gearing, which allows it to be stopped for a sufficient length of time to bore the hole without arresting the movement of the feeding mechanism.



1. The sliding bit-holder H, having a reciprocating as well as a rotating motion, in combination with the shifter S' and cam *o'*, arranged to operate substantially as described.

2. The spacing-carriage E, in combination with stop-rack *j*, pawl G, cam *o*, friction-drum A, and friction-cord *x*, arranged and operated substantially as described.

3. The transverse sliding carriage D, in combination with bed-plate C and stand A, with the connecting parts thereto attached, substantially in the manner and for the purpose described.

4. Gage *s*, in combination with a boring-bit, *p*, having a reciprocating motion, and bit-holder H, operated substantially as described.

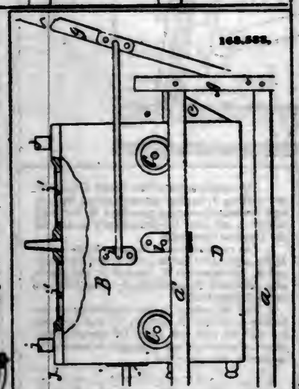
5. In a machine for spacing, boring, or punching, and moving the material by means of friction, as herein described, the combination of a reciprocating boring-bit or punch, *p*, frame G, and stop-rack *j*, all being arranged to operate automatically, in the manner and for the purpose described.

6. The concave friction-drum A, in combination with friction-cord *x*, laterally-adjustable bed D, and spacing-carriage E, operated substantially as herein described.

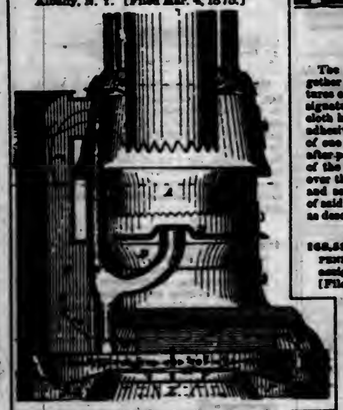
7. The yielding clutch-shifter S', in combination with the reciprocating bit-holder H, and cams *o o*, constructed and operated substantially as and for the purpose herein set forth.

168,593. Churn. Israel M. Smith, York, Pa., assignor of one-half his right to E. K. Lectroon. [Filed Dec. 5, 1874.]

In a churn, the reciprocating perforated cream-tub B, having rollers C, hooks *l*, grooves *c*, and removable perforated partitions D', in combination with the frame A, provided with ways *n'*, and rods F F, having a perforated stationary damper, substantially as described, and for the purpose set forth.



168,593.



168,594.

168,594. Heating-Stoves. Hiles Smith, Albany, N. Y. [Filed Mar. 4, 1875.]

1. In a reversible-flue heating-stove, the combination of the combustion-chamber, two horizontal base-flues, and the flues G G, one of which is connected with each of said horizontal base-flues, substantially as and for the purposes set forth.

2. In a reversible-flue heating-stove, the combination of the direct horizontal base-flue, the ascending flue K, bisected in its lower portion, and the return base-flue, substantially as and for the purposes set forth.

3. The combination, with the base-side flues H H, made in the base proper of the stove, leading the hot gases from the descending flue at the rear forward, and in contact, in part, with the sides of the said base, to the front, of the descending flue I and sub-flues J J, and ascending flue K, substantially as and for the purposes set forth.

4. In combination, in a heating-stove, ascending and descending flues and base and sub-base flues, connected, arranged, and operating substantially as and for the purposes set forth.

5. In a heating-stove, a hot-air chamber, I, below the sub-pan combustion, receiving air from below, heating the same by means of flues in the sides and below, and discharging the same heated through openings in its periphery, substantially as set forth.

6. The combination, with the fire-pot A, flue G, and hot-air chamber I, of the annular air-flue O, having its outer walls perforated, and pipes H, substantially as and for the purposes set forth.

7. The combination, with the air-chamber I, heated by the base-flues, and flues G, heated by the heat from the fire-pot, and the combustion-chamber, and pipes H H', of the air-chamber F, substantially as and for the purposes set forth.

8. The combination, with the air-chamber I, heated by the base-flues, flues G, heated by the heat from the fire-pot and combustion-chamber, of the air-chamber B, made around the upper portion of the combustion-chamber, substantially as and for the purposes set forth.

9. The combination, with the hot-air chamber, located in the base of the stove, and heated by the heat of the base-flue or flues therein, of the air-wheel M, substantially as and for the purposes set forth.

168,595. Method of Binding Books. G. K. Snow, Watertown, Mass., assignor to Mary J. Snow, same place. [Filed Sept. 13, 1874.]

Brief.—Small slits are made in the line of the back of folded signatures. Short gummed strips are passed through these slits. One end of each strip is secured to the inside of the signature, while the other end passes across the back of its own, and is secured to the next signature.



The method herein set forth of securing together two or more newspaper sheets or signatures of a book and the several leaves of said signatures by means of strips or patches of cloth having one end secured, by gum or other adhesive material, to the inner surface or leaf of one sheet or signature, and the other end, after passing through a slit formed in the line of the fold of said sheet or signature, folded over the back of the next sheet or signature, and secured in like manner to the outer leaf of said second sheet or signature, substantially as described.

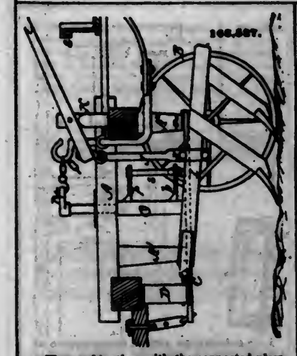
168,596. Paper-Fastening and Card-Suppressing. G. K. Snow, Watertown, Mass., assignor to Mary J. Snow, same place. [Filed Sept. 13, 1874.]



A paper-fastener and card-suppressor having tongue A' cut from its body and turned down, leaving the loop A', all formed from a single piece of cloth, leather, or other flexible material, susceptible of being secured to sheets of paper by means of gum, glue, or other adhesive material, all as and for the purpose described.

168,597. Sulky-Cultivators. Job Spain, North Lewisburg, Ohio. [Filed July 24, 1875.]

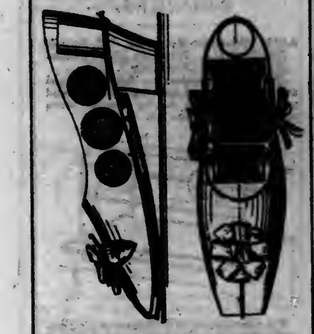
Brief.—Devices for swaying cultivator-beam connected together by an arch suspended from a lifting-lever.



168,597.

The combination, with the connected plow-beams I, of the rock-shaft J, with treadles *i* and handles N, vertical chafts O, with arms *o p*, and adjustable plate *s*, substantially as and for the purposes set forth.

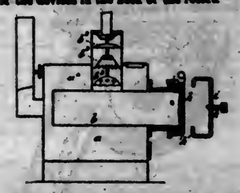
168,598. Grinder-Chair. J. B. Stearns, Jr., New York, N. Y., assignor of one-half his right to S. L. Stearns, same place. [Filed Aug. 30, 1875.]



A sewing-case composed of the spool-holder, needle-book, thimble-case, emery-cushion, and button-box, all combined and arranged as shown and described.

168,599. Gas Apparatus. H. J. Sherman, Belvidere, Maryland. [Filed June 8, 1875.]

Brief.—Pieces iron wire twisted with salammoniac in the final chamber of the wet purifier. Deliquescent gasifies the tar by aid of the devices in the seat of the retort.



1. In combination, the retort *b*, the branch *b'*, and the series of cups or bowls *b''*, constructed and arranged substantially as described.

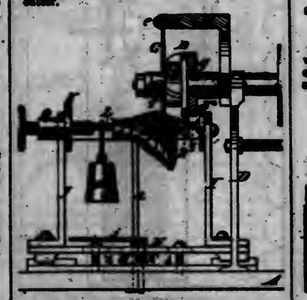
2. The purifier *l*, constructed with compartments or chambers F F F F F, provided with self-acting doors *n*, and with the inner chamber *o*, as herein described, and for the purpose specified.

3. The method or process of purifying gas by the use of iron wire saturated by sal-ammoniac, in the purifier of a gas apparatus, for the purpose specified.

4. The apparatus for manufacturing gas, consisting of the furnace *a*, retort *b*, purifier *l*, and gas-holder, shown disunited, and their fittings and connections, as shown, or the equivalents thereof, constructed, combined, and operating as herein set forth.

168,600. Hose-Tightening Machines. Isaac Van Nostrand, Brooklyn, N. Y., assignor to himself and Thos. P. King, same place. [Filed Aug. 2, 1875.]

Brief.—The shoe or boot is supported upon the ends of two independently oscillating beams, so that the curved portions of the heel may readily be brought to the action of the cutter.



1. The gage-plate G, constructed as herein described, attached to the arm B by a screw, *s*, passing through a slot, *f*, and provided with the slot *g* for the passage of the shaft C, in combination with the rotary cutter-head and shaft, substantially as and for the purpose herein set forth.

2. The work carriage or jack, having its beams K K' arranged to oscillate independently of each other, whereby the work is enabled to automatically adapt itself to the cutters and gage-plate, substantially as herein described.

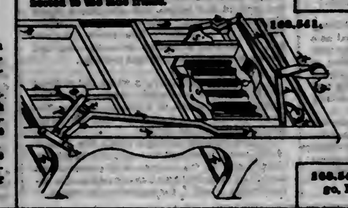
3. In combination with the two beams K K' of the jack the flexibly-connected crossbar L and adjustable weight M, for varying the relative pressure on the two beams, substantially as described.

4. The combination, with the slotted bed-plates H of the carriage or jack, of the eccentric J and handle or lever *j*, substantially as and for the purposes herein described.

5. The combination of the treadle P, rod *n*, cross-bar L, and beams or bars K K' of the jack and weight M, for feeding the work to and from the cutters, substantially as herein described.

168,601. Sewing-Machine. William P. Valentine, San Francisco, Cal. [Filed Dec. 31, 1874.]

Brief.—The thickness and taper of the shingle are regulated by means of a tilting table having an almost universal adjustment, by which the angle of the bolt is changed after each shingle is sawed. The receding movement of the bolt-carriage can be checked or stopped by a spring, which connects the ends of the side frames, and a buffer attached to the rear of the carriage. The dogs which grasp and release the bolt can be operated either by a pivoted lever attached to the carriage by an arm, and to a pair of toggle-levers actuated by a cord and weight, in connection with a pulley in the outer end of a buffer secured across the middle of the end of the main frame, or by a pivoted lever and foot-bar, provided with an angular end, and connected to the side frame.



168,601.

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1. The spring K, for connecting the ends of the side pickers of the frame A, in combination with the carriage B, with its buffer *l*, substantially as and for the purpose above specified.

2. The pivoted bar *m*, with its angular end *o* and spring *p*, and the hand parallel bar *p*, in combination with the carriage B, with its arm *s* and pin *t*, substantially as and for the purpose above described.

3. The carriage B, with its arm *s'*, lever *u*, and toggle-levers *v v*, in combination with the buffer *n*, pulley *x*, cord *y*, and weight *z*, substantially as and for the purposes recited.

168,602. Distilling Oils. Cornelius Van Dorcort and Cornelius Van Fleet, Fishkill, N. Y. [Filed Sept. 9, 1875.]

Brief.—Metallic rim of cover cuts into the wooden tank until stopped by a flange. Cover clamped down onto the rim. Clamp may be swung away from the tank.



1. A cover metallic cover, *b*, provided with the flange *c* and steps *h*, in combination with a wooden tub, *a*, the flange *c* forming a tight joint, substantially as shown.

2. The combination of the rod 1, ratchet 2, lever 3, dog 4, and catch 5, substantially as set forth.

3. The combination of the hooked rod 1, ratchet 2, and a clamping device, the rod and ratchet being jointed together, so that the whole clamp may be laid back on the floor, substantially as set forth.

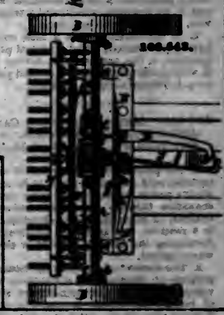
168,603. Horse-Rakes. Henry C. Velie, Poughkeepsie, N. Y., assignor to W. Adriance, same place. [Filed June 30, 1875.]

Brief.—The rake-head is supported upon a collar mounted on the main axle. A clutch secured to main axle interlocks with collar, and by tripping to it the motion of the axle the rake is thrown up and discharges load. The supporting-collar is provided with serrations, into which a lever engages, whereby the rake-head is retained in any position.

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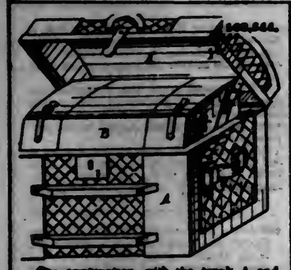
1. In a horse-rake, the clutch C and clutch-lever D, in combination with the collar G and rake-head H, the clutch and the collar being mounted on the axle A, substantially as described.

2. The combination of the collar G, having the serrations *s*, and supporting the rake-head H, with the lever J, substantially as described.



168,603.

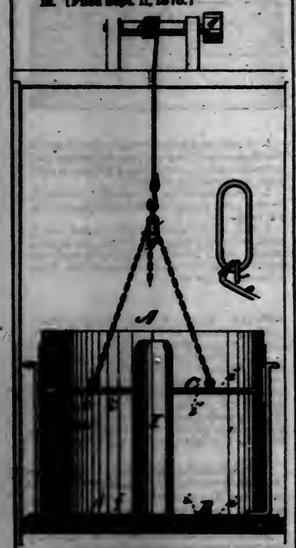
168,604. Trough. Herman Vogler, Chicago, Ill. [Filed July 20, 1875.]



168,644.

The combination, with the trunk A and lid A', of the tray B, hinged to the trunk in advance of and concentric to the said lid, the vertical leaf-spring d, having the notch c on its rear side, and the stud f, the several parts being arranged and operating in the manner described and shown.

168,645. Dentists' Attachments for Oral-Pumps. Thomas Webber, Chicago, Ill. [Filed Sept. 11, 1875.]



1. In a tank-still pump, the combination, with a pump-bar, A, of the detached false bottom C, an elevating-wheel, and a tripping device, substantially as specified.

2. In combination with a false bottom, C, having perforations f and a center perforation, e, the pump-bar A, having bottom E, with perforations d, and a central pneumatic cave, I, substantially as specified.

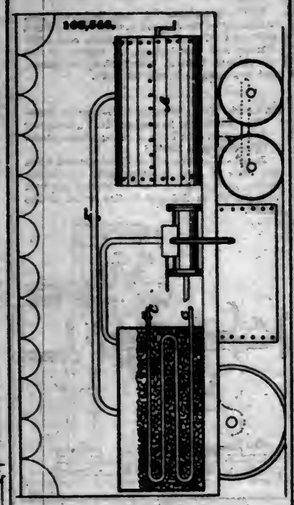
168,646. Method of Using Carbonic-Acid Gas as a Motive Power. J. Westcott, Towd, Pa. [Filed Sept. 10, 1875.]

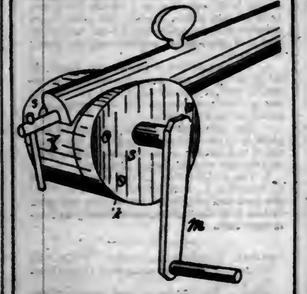
1. The herein-described method of utilizing carbonic-acid and other gases to be used as a motive power, by storing the same up by condensation through the surface attraction of charcoal or other equivalent absorbent placed in a receiver, and afterward discharging and developing the said gas by heat or electricity when desired.

2. The method of applying the heat, for the purpose of effecting the elaboration and development of the gas, by means of a vessel of boiling oil, which is made to circulate through pipes in the receiver, substantially as described.

168,647. Bottling Apparatus. Linton R. Wilson, Caldwell, Ohio. [Filed July 15, 1875.]

Brief.—Connected with the faucet is a chamber, in which revolves a piston to draw the liquid from the spigot and force it through the exit-pipe.





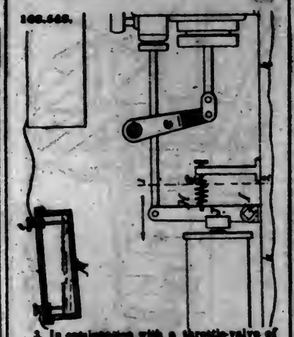
The combination, with the faucet, of the chamber c, ports b and d, cylinder A, crank-handle m, plate a, central piece x, and check-pieces s, as and for the purposes described.

168,648. Electrical-Marine-Engine Governors. Christopher C. Walcutt, Washington, D. C. [Filed Sept. 7, 1875.]

Brief.—Making and breaking an electric current, due to motion of vessel, controls the force operating the throttle-valve of engine. The motion of vessel brings the mercury in the receptacle m in contact with the screw f, thus making circuit, and bringing the armature I in contact with the magnets. The armature draws back the rod G, drawn to admission to the rear of the piston, and the arm e closes throttle to prevent "racing" of engine. Upon receding of the mercury from screw f, the circuit is broken, armature released, and the piston returns to its original position.

1. A marine governor, in which the making and breaking of an electric circuit, due to the motion of the vessel, is made to control the force applied to operate the throttle-valve, substantially as set forth.

2. As a medium through which the motion of the vessel is caused to make and break an electric circuit, the receptacle M, containing a supply of mercury, and having adjustable attachments, e and f, for receiving the wire.



168,649.

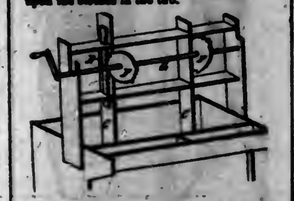
3. In combination with a throttle-valve of a steam-engine a steam, air, or other engine for operating the said valve, and an electro-magnet for operating the valve of the said engine, all substantially as specified.

4. A cut-off motion, in which the making and breaking of electric circuit, due to the engine, is made to control the force applied to operate the cut-off valve, substantially as set forth.

REISSUES.

4,972. Washing-Machines. J. B. Barnes, Blizabeth, N. J. Patent No. 101,854, dated Apr. 12, 1870. [Filed July 7, 1875.]

Brief.—The pounders are formed of wood and metal slats, and are lifted by a cam and segment cog-gearing, making alternate blows upon the clothes in the tub.



The combination, in a clothes-washing machine, of the pounders constructed of slats of wood and metal, with the self-adjusting and self-regulating cog-gearing E and F F, the upright C C, and the shaft G with the bottom of narrow slats, as shown and described.

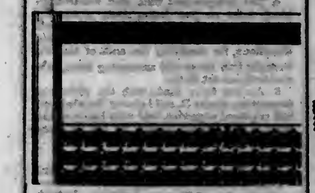
4,973. Sash-Doors. Reed Kehoe, Dayton, Ohio, assignee of Josephine Rogan, John Rogan, Harvey Rogan, Corrie Rogan, and Augusta B. Rogan, heirs of Bernard Rogan, deceased. Patent No. 97,978, dated Nov. 24, 1869. [Filed June 1, 1875.]



1. A distributing device for a force feed grain-drill, consisting, substantially, of a reciprocating or rotary hopper, having an elevated delivery-orifice, and a cam-wheel, having on its periphery a series of helical cavities, supported by a series of spiral ribs or projections for evenly distributing the grain, the parts being arranged substantially as shown and described.

2. The feed-wheel D constructed in sections *c c c*, or with notches *c c* in the spiral projections, substantially as and for the purposes set forth.

4,974. Wash-Boards. Wesley Todd, Ottawa, Ohio, assignor, by mesne assignments, to Silas P. Todd, D. A. Rinehart, and R. P. Doff, Wilkins Township, Allegheny County, Pa. Patent No. 111,668, dated Feb. 7, 1871. [Filed Sept. 7, 1875.]

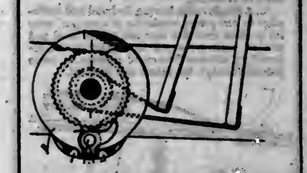


1. A sheet-metal wash-board having a series of raised projections, B, each bounded by longitudinal and transverse grooves or depressions, substantially as set forth.

2. In a sheet-metal wash-board the projections B, each bounded by grooves or depressions, in combination with raised projections C in the bottoms of the lengthwise grooves, substantially as set forth.

3. As a new article of manufacture a sheet-metal wash-board, having corrugations both longitudinally and transversely ribbed or corrugated, substantially as set forth.

4,975. Devices for Converting Motion. William F. Barnes, Rockford, Ill., assignor of one-half interest to John Barnes, entire piece. Patent No. 168,696, dated Jan. 20, 1874. [Filed Aug. 6, 1875.]



1. The driving-wheel, constructed as described, with a smooth-surfaced shoulder for the reception of a pawl-carrier and pawl, and a pinion-wheel, in which the pawl engages, between the wheel and shoulder.

2. The driving mechanism hereinbefore described, consisting of the combination of the shoes, its disk or flange, the pawl-carrier, and the pawl mounted thereon, both operated by the disk, as set forth.

3. The combination, substantially as hereinbefore set forth, of the trunnion, their crank, the driving-screw around which they pass in opposite directions, the disk on the screw, and a pawl-carrier and pawl operated thereby.

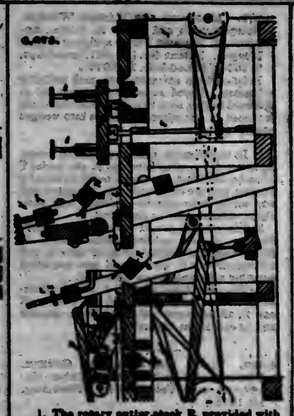
4. The mechanical movement hereinbefore described, consisting of the combination of a shaft, a driven wheel mounted thereon, a driving-disk or flanged shoe, an independent pawl-carrier, and a pawl mounted thereon driven by the disk, and acting upon the driven wheel, substantially as hereinbefore set forth.

5. The combination, as herein before set forth, of the driving-disk, the independent pawl-carrier, and the pawl pivoted thereon.

4,976. Machine for Making Wooden Gutters, &c. Benjamin Allen, K. P. Bullen, Gardiner, Me., assignor of part interest to H. W. Jewett and S. N. Emery, same place. Patent No. 117,660, dated July 25, 1871. [Filed Sept. 28, 1875.]

Brief.—Wooden gutters with closed ends are formed at one operation by means of a series of rotary cutters mounted in adjustable inclined frames, and arranged to cut the groove in the blank, so as to leave a single portion of it uncut at each end, and which does and form the exterior of the gutters in connection with a series of horizontal platforms, upon which the blank is placed, and suitable feeding mechanism.

4,976.



1. The rotary cutter-stock R, provided with its cutters to form the groove of the gutter, in combination with the inclined frame S, to operate as herein described, and for the purposes set forth.

2. The combination of the rotary cutter-stock R, inclined adjustable frame S, the rotary cutter-stock W, with its adjustable frame T, and the platforms *c d*, for the purpose of digging the gutters, as herein described, and making the same at one operation of the machine, as herein specified.

3. The combination of the rotary cutter-stock R, frame S, rotary cutter-stock W, with its adjustable frame T, cutter-heads X Y, arranged as represented, and the rotary cutter-head Z, to plow, mold, and place the gutter, substantially as herein described.

4. The gutter-machine hereinbefore described, the same consisting of the series of platforms *a b c d e*, the guide *f*, the pressure-rollers *g h*, adjustable gage *m*, the feed and pressure rollers I K H, the rotary cutter-stock R, with its adjustable frame S, rotary cutter-stock W, with its adjustable frame T, the cutter-heads X Y, and the cylinder Z, all the cutter heads or cylinders being provided with cutters, and the whole being constructed and combined together and applied to the frame H, substantially in manner and so as to operate as and for the purposes specified.

4,977. Shafts. Oliver Edwards Fiereson, Mass. Patent No. 168,207, dated May 18, 1875. [Filed Sept. 1, 1875.]



1. A spring shaft-runner, formed at its front end into a rearward-inclined riser, A', with a slight re-entering curve, A', and a curved shoeing-support or bar, c, for the footpiece, the same being a combination or continuation of the runner, and of a gradual taper or decreasing vertical thickness, and slightly-increasing width from the point of the riser to the end of the support c, as and for the purposes described.

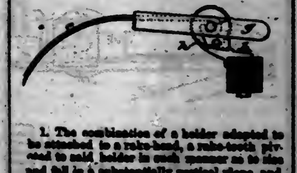
2. The combination of the shoeing heel-plate D', having depression *f'* and stud *h*, clamp-plate D, and screw *d*, with the adjustable bar C, substantially as described.

3. The combination of the shoeing heel-plate D', having depression *f'* and stud *h*, clamp-plate D, and screw *d*, with the adjustable bar C, substantially as described.

4. The adjustable clamp E, with curved to receive the side of the heel, and bent outward at the slot *f* to receive the clamp F, substantially as and for the purposes described.

5. In combination with the adjustable clamp E, curved outward, and then inward, to receive the side of the shoe, and bent outward at the slot *f*, the clamp F C, for securing the front of the shoe to the toe, as described.

4,978. Rakes. Sherman R. Nye, Winchendon, Mass. Patent No. 103,693, dated July 26, 1870. [Filed Aug. 2, 1875.]



1. The combination of a holder adapted to be attached to a rake-head, a rake-tooth pivoted to said holder in such manner as to rise and fall in a substantially vertical plane, and a torsional spiral spring supported entirely by said holder, and exerting a downward-yielding pressure by torsion on the pivoted tooth.

2. The holder *a*, in combination with the tooth *c* and torsional spiral spring *i*, substantially as described, for the purpose specified.

3. The brace or lever *g*, in combination with the holder *a*, tooth *c*, and stops *h d*, substantially as and for the purpose specified.

4,979. Horse-Rakes. Sherman R. Nye, Winchendon, Mass., assignor to himself and A. B. Barnard, same place. Patent No. 98,797, dated Jan. 18, 1870. [Filed Aug. 2, 1875.]

Brief.—The arrangement of the teeth prevents the escape of the hay being raked on the ends of the rake.



1. A hay-rake having its teeth arranged so as to present a concave or dished front at the part where the hay is raked, substantially as and for the purpose specified.

2. The compound lever G H, attached to the support *g* on the rake-axle, and to the framework of the rake in front of the axle, substantially as and for the purpose specified.

6,000. PAPER BOXES. Edwd. De F. Shelton, Birmingham, Conn. Patent No. 169,194, dated Oct. 26, 1874. [Filed Aug. 19, 1876.]

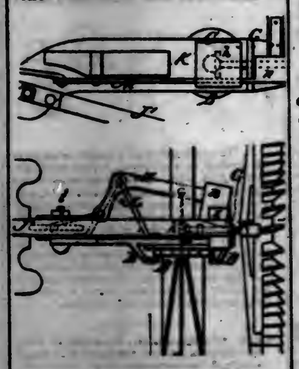


1. In a paper box made from a single piece of paper, the described method of forming its bottom without a tuck or fold exposed to the inside of the box, and each of its angles made secure and tight by drawing upward through the box the strip of which the bottom is an integral part, and upsetting the flaps of said strip, and, by so doing, covering all tucks and adjoining the bottom in plain, and locking them in securely by bending the end of the strip across the top of the box, and forming with it a part of the closing tuck.

2. As an article of manufacture, the box herein described, consisting of a blank cut from a single piece, to form the principal sides B B and A A, and the ends D I, with the auxiliary sides D D, and parts O O, F F, and I, H, folded and secured substantially as specified.

6,001. WHEELBARROW. Jas. Hall, Lafayette, Ind. Patent No. 169,604, dated Oct. 26, 1875. [Filed Aug. 14, 1876.]

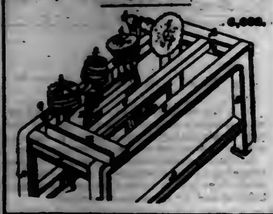
Brief.—The principal vane is pivoted to the end of an extension of the ture-table, so that it allows the vane to swing around at right angles to the plane of the wheel without passing across the center of the turn-table. The arrangement of the parts about the vertical axis of the turn-table balances all the movable parts, whether the mill be running or at rest.



1. In the windmill described, the arm J, pivoted at i to the offset of turn-table extension K, and carrying on one end a vane, J, and on the other a balancing-weight, k, substantially as described.

2. In combination with the turn-table extension K, the vane I, wheel H, and the vane-carrying arm J, pivoted and balanced as described.

3. The pivoted vane-carrying lever J, lever M, connecting-rods m, and weight n, in combination with the wheel H, turn-table O, and vane I, substantially as described.



6,002. MACHINES FOR MAKING WIRE. Gerry Morgan and Jacob B. Foster, Andover, N. H.; said Foster assignor to said Morgan. Patent No. 14 3,227, dated Apr. 7, 1874. [Filed Mar. 15, 1876.]

Brief.—Three saw-mandrels, each carrying a fructum-shaped series of saws, are set at different angles, so as to cut the material which is placed on a reciprocating table into wedges at one operation.

1. In combination with a supporting-frame, A, and reciprocating carriage B, the series 1 of saws, the fructum-shaped inclined series 2 of saws, and the cutting-off saw F, constructed and acting in co-operative relation with each other, substantially as described.

2. The combination of the series of saws 1, fructum-shaped inclined series of saws 2, fructum-shaped inclined series of saws 3, and cutting-off saw F, constructed and operating together substantially as described.

3. The combination of the two fructum-shaped series 2 3 of saws and the cutting-off saw F, all arranged substantially in manner and to operate as described.

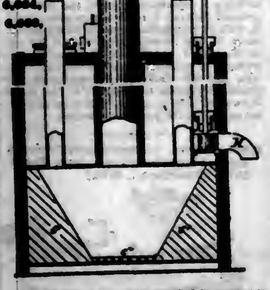
6,003. TAPERS FOR ASPHALTIC CEMENT. Tobias Now, New York, N. Y. Patent No. 147,622, dated Feb. 10, 1874. [Filed Aug. 14, 1876.]

1. A package for liquid asphaltic cement, consisting of an air-tight shell, a lining of some substance that is a non-conductor of heat, and an inside furnace, to enable the cement to be retained as a liquid, in the manner described.

2. The construction, with chamber B, of the subjacent furnace C, having smoke-pipe passing up through chamber, as and for the purpose set forth.

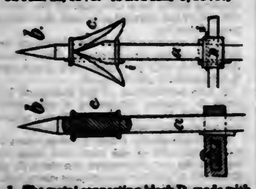
3. The combination, with chamber B, of the tubes *f*, rising from an air-chamber around the fire-pot, as and for the purpose specified.

6,004. TAPERS FOR ASPHALTIC CEMENT. Tobias Now, New York, N. Y. Patent No. 147,623, dated Feb. 10, 1874. [Filed Aug. 14, 1876.]



The process of applying asphaltic cement to pavements, roofs, and analogous uses in a liquid state before the heat of distillation has passed away, substantially as and for the purpose specified.

6,005. IRON FENCES. John B. Wiebenham, Philadelphia, Pa. Patent No. 169,169, dated Jan. 28, 1876. [Filed May 8, 1876.]



1. The metal connecting-block D, made with holes through them for the bars and seats for the verdigris or keys that bind such blocks to the bars, substantially as set forth.

2. The plates of an iron fence made with the upper end of the iron picket projecting through and above the cast metal that forms the ornament contiguous to such upper end of the picket, as set forth.

3. The ornament *f* for an iron fence, containing a key-seat and secured to the iron picket by a wedge or key, substantially as set forth.

4. The independent cast-iron connecting-block D for an iron fence, made separately from and secured to the post *f*, and provided with holes entering such block in opposite directions, for receiving the ends of the two wrought-iron bars *c* and sustaining them, substantially as set forth.

5. An iron fence made with the pickets *c*, connecting-blocks D, rail *l* placed therein and rail *n* placed otherwise, said rails being at the sides of the pickets, as and for the purposes set forth.

6,006. BAND-RUFFLER. Geo. R. Wooster, New York, N. Y., assignor, by mesne assignments, of Thomas Rathbun. Patent No. 69,770, dated Sept. 1, 1868. [Filed Aug. 30, 1876.]

1. As a new article of manufacture, the band-ruffle described and shown, consisting of a strip of plaited muslin or other material, in which the plaits are narrow and regular, and extend across the strip, the strip being made to produce both the ruffle and the band by being stitched through the plaits with two rows of stitching, one of which is also made to secure the edge of the material, which is turned in to give a finish to the band, each plait being secured by a single and separate stitch, and the ruffle-edge being caused to have a corrugated or wavy appearance, substantially as described.

2. A single ruffle having a band formed out of the same strip with the ruffle-edge, said band being hemmed and reinforced still by being formed of narrow and regular plaits, fastened, and secured by two straight and continuous rows of stitching.

3. A single ruffle having its band and ruffle-edge in one piece, consisting of a strip of muslin or other material, hemmed at the band and plaited entirely across in regular plaits, secured by stitches formed of a series of loops passed through the fabric and secured.



6,007. MACHINES FOR MAKING BAND-RUFFLES. Geo. R. Wooster, New York, N. Y., assignor, by mesne assignments, of Thomas Rathbun. Patent No. 69,770, dated Sept. 1, 1868. [Filed Aug. 30, 1876.]

Brief.—A fastened tube has at one end a portion of its upper surface cut away, and one of the edges thus formed is folded upon itself, so as to turn under one edge of the strip of cloth as it passes through the tube. A spring plaiting-plate in line with and over this tube, and operating with its edge upon the cloth just in advance of its issue from the tube, is connected to a ball-crank lever, which is rocked forward by a cam to make a gather in the strip, and is retracted by a spring. The cloth-plate has two openings for the passage of the two needles, one of which stitches the turned-in edge, and the other makes a line of stitches near the middle of the ruffle, whereby a band is formed between the rows of stitches and a ruffle at one side.

1. In a ruffling or plaiting device, the combination, with the ruffling-tube, of a guide, arranged substantially as described, to guide and deliver the strip to be ruffled, and at the same time turn over the edge of such strip to form a hem for the ruffle, substantially as described.

2. The combination of a ruffling-tube and the supporting-plate of a sewing-machine, provided with openings for two needles, with a guide adapted to turn or hem the edge of the ruffle, and arranged to deliver the strip to be ruffled to receive two rows of stitches, and to form a band between the rows of stitches and a ruffle at one side thereof, substantially as described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 15. TUESDAY, OCTOBER 12, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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NOTICE TO MANUFACTURERS AND OTHERS.

UNITED STATES PATENT OFFICE,
Washington, D. C., October 5, 1875.

The COMMISSIONER OF PATENTS respectfully requests manufacturers of and dealers in engines, machines, apparatus, tools, and appliances of whatever kind, to send to this Office duplicate copies of all catalogues and circulars which they have issued or may issue from time to time.

R. H. DUELL, *Commissioner.*

COMMISSIONER'S DECISIONS.

IGNATIUS HAHN.—*Appeal.*

[*Appeal from the Principal Examiner in the matter of the application of Ignatius Hahn for letters patent for* HYDRAULIC UNIVERSAL MACHINE FOR SHEARING, *&c.—Decided September* 3, 1875.]

A functional claim is one that has for its subject the performance of an act merely, and not the means by which that act is executed. It is not for a substantive thing, but for a *result* which that thing accomplishes. Its language is usually in the participial form.

A claim for "The combination of two carriers, each capable of revolution around a central axis and both capable of lateral movement in the main frame, substantially as and for the purpose specified," held not to be functional, but as a claim for a particular arrangement of certain devices; and not for the motions of which they are capable when so arranged, nor for the subordinate means by which such motions are produced.

The rule that it is admissible under proper restrictions for parties to put their claims in different forms to prevent misconstruction of them by the public or the courts, reiterated and approved.

Broad claims give rise to the appearance of indefiniteness, but regard must be had to the specification as to their scope.

SPEAR, *Acting Commissioner:*

Applicant's invention relates to the construction of a hydraulic universal metal-working machine for cutting, straightening, riveting, heading, and testing strength of metals, &c.

His claims are as follows:

1. In combination with the main or supporting frame two tool posts or carriers, one of which is operated by a hydraulic piston, substantially as and for the purpose specified.

2. The combination of two carriers, each capable of revolution around a central axis, and both capable of lateral movement in the main frame, substantially as and for the purpose specified.

3. The combination of two tool-carriers, each capable of revolution around a central axis, and one or both operated by a hydraulic piston secured to the main frame, substantially as and for the purpose specified.

4. The combination of two tool posts or carriers, one or both of which are operated by hydraulic pistons attached to the main frame, the whole being mounted so as to be portable, substantially as and for the purpose specified.

5. The combination of two tool-carriers, each of which is capable of revolution around a central axis, two shear-blades, and suitable mechanism for operating the shears, substantially as and for the purpose specified.

The main objection of the Examiner to these claims is that they are functional. He says:

The first, third, and fourth claims are to the same combination of substantive things, being a frame, two carriers, and a hydraulic piston; but in order that each claim shall appear to be to a distinct invention, different functions are, in the several claims, ascribed to the different elements—functions, it should be understood, not inherent in those elements, but such as are due to, and improved by, other elements than those named. The differences between the three inventions are therefore purely functional differences, from whence it should seem to follow that the inventions themselves are likewise functional. The second claim is even more objectionable in this regard. Here is a single device—*i. e.*, a pair of tool-holders—a very common device, dependent entirely for its novelty or patentability on functions which it does not possess otherwise than as borrowed from other mechanism.

The same objection was made to the present fifth claim.

It is clear from the numerous decisions of the courts and Office on that point, that what is known as a functional claim is one that has for its subject the performance of an act merely, and not the means by which that act is executed. It is not for a substantive thing, but for the *result* which that thing accomplishes. Its language is usually in the participial form, as "producing," "operating," "determining," "so combining," "so constructing," &c. (See case of *Simonds*, C. D., 1870, 23, and that of *Cox*, 3 OFFICIAL GAZETTE, 2.)

An example is also given in the case of *Sickles* vs. *The Falls Company*, (2 Fish., 202.) There the claim of the patentee was as follows:

Imparting a coexisting movement to two reciprocating catch-pieces in the operation of trip-off valves.

On this the court said—

The claim, in terms, is for an effect or function, and therefore not patentable.

In *Renwick* vs. *Pond*, (5 Fish., 579,) the court held that—

claiming the arrangement of a combination, when the arrangement is such as to produce a given mechanical result of the combination, is not a claim to a function. The result is not claimed irrespective of the means of producing it. The means alone are claimed, and claimed only when specially arranged to produce a given result. This is very far from claiming a function.

Guided by these definitions I am unable to see that the claims of the present applicant are for functions. Take, for instance, the second claim, which perhaps covers broader ground than any of the others—

The combination of two carriers, each capable of revolution around a central axis, and both capable of lateral movement in the main frame, substantially as and for the purpose specified.

Clearly here the subject of the claim is a combination of elements—"two carriers;" and the balance of the claim is simply descriptive of the situation of the carriers, and of the mechanical result to be produced when so situated. The claim is not for *revolving* two carriers around a central axis, &c. That would be for the result; and if such a claim should be sustained by the courts, as has sometimes been the case, it would be construed as covering the *means* by which such result was produced—the means having been described in the specification, and referred to in the claim by the phrase "substantially as specified." But it is not the intention of the applicant here to cover by his claim the subordinate means he has described for producing certain motions, but certain devices so arranged as to be capable of those motions without regard to the special mechanism by which such motions are imparted. If two carriers have ever before been so combined that they were capable of being revolved around a central axis, and of moving laterally in a frame, then the applicant is not the first inventor, and should be rejected; but so far as the *form* of his claims is concerned, he has complied with the law by "pointing out and distinctly claiming the combination which he claims as his invention or discovery."

The Examiner himself asserts that "the first, third, and fourth claims are to the same combination of substantive things," but concludes that the differences between "the three inventions are purely functional," • • "the inventions themselves are likewise functional," and that the law does not contemplate that claims "should be predicated on or be interpreted by functions."

It is hard to imagine inventions that are not based upon some function they perform in the arts or sciences, and it is because they perform some "new and useful" function that they receive the protection of the patent laws. A *claim* for an invention, and the function which that invention performs, are very different matters, but the Examiner has apparently confounded them.

As to the first, second, and third claims being for the same thing, some doubt exists. The applicant insists that each claim contains those elements necessary to accomplish a distinct and definable result, and I am inclined to think his position is the correct one. I think, too, that this objection should be overruled, for the reason given by one of my predecessors in answer to a similar one:

It is admissible, under proper restrictions, for parties to put their claims in different forms to prevent misconstructions of them by the public or by the courts. (*Perry and Ley*, C. D., 1869, p. 3.)

The Examiner further objects that the claims are indefinite. They are very broad, and this fact gives rise frequently to the appearance of indefiniteness; but having regard to the scope intended for them by applicant, as described in his specification, I cannot think the objection a valid one in this case.

The decision of the Examiner is reversed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, NORTHERN DISTRICT OF NEW YORK.

GEORGE S. NEWELL *et al. vs.* GEORGE WEST *et al.*

[*In equity.—Before* WALLACE, *J.—Decided August*, 1875.]

The inchoate right of an inventor to an extension of his patent may be the subject of a contract of sale, and such a contract may be enforced by a bill for specific performance.

R. agreed with M. to apply for an extension of his patent, and to assign the same when procured to M. M. sold his interest in this contract to the U. P. B. Mach. Co. R. dying before the extension was had, his wife was appointed executrix of his will, applied for and procured the extension, and assigned the same to the U. P. B. Mach. Co., but in the assignment described herself as "administratrix," &c. The assignment was duly recorded. Subsequently the widow resigned her trust as executrix, and I. was appointed administrator with the will annexed. I. executed an assignment of the extended term of the patent to N., and N. brought suit for infringement: *Held*, that the recorded assignment to the U. P. B. Mach. Co., notwithstanding the erroneous description of the party executing it, was constructive notice to N. of the claim of an adverse title in the patent, the nature of which he should have ascertained by inquiry; and that this alone was sufficient to defeat complainant's title: *Held*, further, that, in fact, the assignment to the U. P. B. Mach. Co. was valid, notwithstanding the erroneous description of the representative character of the executrix.

[This was a suit in equity under a reissue of letters patent originally granted to Benjamin F. Rice, April 28, 1857, for an "Improvement in Machines for Making Paper Bags."

The complainants having filed their bill for a perpetual injunction and for an accounting, alleging the infringement by defendants of the patent in question, in which they professed to own the exclusive right for the State of New York, the defendants pleaded thereto that the Union Paper-Bag Machine Company was the owner of the patent in exclusion of the complainants. Complainants having taken issue by replication to the plea, the cause now comes on to be heard upon the pleadings and proofs.]

[*M. P. Norton*, for complainants.
H. Binney, Jr., 3d, for defendants.]

WALLACE, *J.*:

The material facts extricated from the mass of documentary and oral evidence contained in the proofs, a large portion of which seems utterly unimportant, are few and simple.

The complainants claim title by an assignment from Ingalls as administrator with the will annexed of Benjamin F. Rice, deceased, and the Union Paper-Bag Machine Company claim, by an assignment, prior in point of time, made by Roxana Rice while acting as executrix of the estate of Benjamin F. Rice.

Benjamin F. Rice was the inventor of the improvements for which the patent was obtained. Shortly before the term of the patent expired he entered into a written contract with one Morgan, who was a part owner of the patent, whereby Rice agreed to make application for an extension of the patent, and use all honorable means in his power to obtain it, and when obtained to set the same over to Morgan, and to execute an assignment thereof at any time upon demand. Morgan, in consideration of the agreement on the part of Rice, paid Rice $500, and agreed to pay him $1500 more upon the delivery of the assignment, and such sum in addition as Rice might expend in procuring the extension. Rice died without applying for the extension, the original term not having expired. He left a will, in which his wife Roxana and his daughter were made the sole beneficiaries, and by which he appointed his wife sole executrix. Subsequently the Union Paper-Bag Machine Company became the beneficial party in interest in the agreement in the place of Morgan, the latter having assigned his rights. Thereafter Mrs. Rice as the executrix of the inventor, and acting in the interest of the Union Paper-Bag Machine Company, applied for and obtained the extension of the patent, and thereupon the latter paid her the $1500 which Morgan had agreed to pay her husband, and she executed to the company an assignment of the extended letters patent. This assignment was duly recorded. It recited the obtaining of the original patent by Benjamin F. Rice, his death, the extension of the patent, and her appointment as his administratrix, and purported to convey her interest as administratrix in the patent as extended.

After the assignment was recorded she resigned her trust as executrix, and Ingalls was appointed administrator of the estate with the will annexed, and he as such administrator conveyed to the complainants the title upon which they now rely.

It is insisted on behalf of the complainants that the assignment to the Union Paper-Bag Machine Company by Mrs. Rice as administratrix, when she was in fact executrix of her husband's estate, did not pass her title as executrix. It is also insisted that if it would have passed such title it was not valid, because her daughter as a legatee under the will, did not assent to the transfer, and because the sale was not made upon the order of the probate court. If it should be conceded that the assignment to the Union Paper-Bag Machine Company was wholly invalid it does not follow that complainants acquired any title by the assignment to them.

They cannot be heard to set up their assignment against the Union Paper-Bag Machine Company, because the latter was equitably entitled to a conveyance of the title, and the complainants had notice of such equity when they procured an assignment to themselves. If Rice had lived and obtained the extended letters patent, Morgan, upon tendering performance of the conditions in the agreement on his part, could have enforced specific performance of Rice's covenant to convey. The inchoate right of an inventor to an extension of his patent may be the subject of a contract of sale. (*Clum* vs. *Brewer*, 2 Curtis, C. C., 506;) and a contract to convey such a right will be enforced by a bill for specific performance, (*Nesmith* vs. *Calvert*, 1 Wood and M., 34.) Where an invention is assigned before it is patented the assignor is estopped, upon obtaining the patent, from setting up any adverse title, (*Herbert* vs. *Adams*, 4 Mason, 15,) and the doctrine applies with equal force where he has agreed to assign, because in such case the purchaser, upon tender of the purchase-price, becomes the equitable owner of the patent, (*Hartshorn* et al. vs. *Day*, 19 How., 211.)

If Morgan could have required specific performance of Rice, the Union Paper-Bag Machine Company as the party in interest in the place of Morgan could have required it of Mrs. Rice as executrix. The patent, when obtained by her, devolved upon her as the legal representative of the inventor "on the same terms and conditions as the same might have been claimed or enjoyed by him in his lifetime." (Sec. 34, act of July 8, 1870.) The obvious intent of the law is to vest in the legal representatives of a patentee, upon his death, the same rights he would have enjoyed if he had lived. The executrix had no higher rights than Rice would have had, and when she received the $1500, which was to be paid upon the transfer of the extended letters patent, the Union Paper-Bag Machine Company became the owner in equity of the patent. Its rights are the same as though that had been done which ought to have been done, and no one, except a *bona fide* purchaser, can now assert the contrary in a court of equity.

The recorded assignment was constructive notice to the complainants of the rights of the Union Paper-Bag Machine Company. It was notice that the latter claimed to be the assignees of the patent which had belonged to the estate of the testator. It sufficed to direct the attention of a purchaser to the claim of an adverse title in the patent, and to enable the purchaser, by inquiry, to ascertain the extent of the right. Inquiry at proper sources would have revealed that Mrs. Rice, though not the administratrix, was the legal representative of her husband's estate when she executed the instrument, and that the consideration was received by her in her representative capacity, thus indicating the right of the Union Paper-Bag Machine Company to a reformation of the instrument by correcting the mistaken description of her representative character.

If these views are correct it is immaterial whether the assignment made by Mrs. Rice to the Union Paper-Bag Machine Company was valid to convey the title or not; but in my judgment it was valid to convey the title.

It has been held that an advertisement of an executor styling himself an administrator is a legal advertisement of himself as executor, sufficient to permit him to set up the running of the statute of limitation, (*Finney* vs. *Barnes*, 99 Mass., 401,) and an averment of one as an administrator, who is in fact an executor, does not constitute a variance in a pleading. (*Sheldon* vs. *Smith*, 97 Mass., 34.) The instrument in question clearly indicates the intent of the assignor to convey as the legal representative of a person deceased. It recites the decease of the inventor, and that the patent was extended, and that she "was duly appointed his administratrix." The only effect which can be given to it is that of a transfer in her representative character; and in view of the authorities which hold that as descriptive terms, the words are practically synonymous, I have no hesitation in giving force to the instrument as a transfer of her title as executrix.

The objection that she had no right to dispose of the estate of her husband without the order of the probate

court is based upon a section of the general statutes of Massachusetts, which enacts that on the application of an administrator or executor, or of any person interested in the estate, the probate court may order any part or all of the personal estate to be sold at public auction or at private sale, and in that event the executor or administrator shall account therefor at the price for which it sells. No authority is cited to sustain the position that this section precludes a sale without such order; and in the absence of a statutory limitation, it is to be assumed that executors in Massachusetts possess the same power that they do at common law. The reasonable construction is that the section in question was intended for the protection of executors, and to afford the aid of the probate court to them and to others interested in the estate, when particular circumstances may require it.

I do not understand that it is claimed that the daughter should have joined in the instrument in order to render the assignment valid at law. If the theory is that she was a *cestui que trust*, whose equitable rights have been disregarded, the sufficient answer is that she had none except in the proper application of the money paid, because the Union Paper-Bag Machine Company were the equitable owners of the patent.

For these reasons I am of opinion that the defendants must prevail upon their plea. A decree is ordered dismissing the bill with costs.

U. S. CIRCUIT COURT, DISTRICT OF CALIFORNIA.

NICHOLAS SIEBERT *vs.* WILLIAM T. GARRATT.

[*In equity.—Before* LORENZO SAWYER, *Cir. J.—Decided September* 30, 1875.]

[*A. H. Evans & Co.*, and *McAllister & Bergin*, for complainant. *M. A. Wheaton*, for defendant.]

DECREE.

SAWYER, *J.*:

This cause came on to be heard at the February term A. D. 1875 of this court, and was argued by counsel, and thereupon, upon consideration thereof, it was ordered, adjudged, and decreed as follows, viz:

That defendant, William T. Garratt, was not the first or original inventor or discoverer of the improvement or discovery claimed by him, in and by those certain reissued letters patent of the United States, number five thousand three hundred and twenty-eight, (No. 5,328,) for an alleged new and useful Improvement in Lubricators, issued by said defendant, William T. Garratt, on the 18th day of March, A. D. 1873, and is not entitled to a patent therefor; and that said reissued letters patent number five thousand three hundred and twenty-eight (No. 5,328) are declared void, and the same are hereby vacated and set aside by reason of their interference with those certain letters patent of the United States number one hundred and eleven thousand eight hundred and eighty-one, (No. 111,881,) for a new and useful Improvement in Lubricators, issued to complainant, Nicholas Siebert, on the fourteenth (14th) day of February, A. D. 1871.

It was also further ordered, adjudged, and decreed that complainant do have and recover of and from defendant his costs and expenses to be taxed herein.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date October 11, 1875.]

8,706.—Lantern.—CHRISTIAN HERTER, New York, N. Y. Application filed September 27, 1875. Term of patent 3½ years.

8,707.—Newell-Light.—CHRISTIAN HERTER, New York, N. Y. Application filed September 27, 1875. Term of patent 3½ years.

8,708.—Bottles.—GEORGE JAQUES, Boston, Mass. Application filed September 8, 1875. Term of patent 7 years.

8,709.—Coffin-Handle Tips.—GILBERT ROGERS, West Meriden, Conn., assignor to C. ROGERS & BROTHERS, same place. Application filed September 28, 1875. Term of patent 7 years.

8,710.—Butt-Hinges.—ELBRIDGE J. STEELE, Westville, assignor to THE BLAKE BROTHERS HARDWARE COMPANY, New Haven, Conn.—Case C. Application filed September 28, 1875. Term of patent 7 years.

8,711.—Latch-Handles.—ELBRIDGE J. STEELE, Westville, assignor to THE BLAKE BROTHERS HARDWARE COMPANY, New Haven, Conn.—Case A. Application filed September 28, 1875. Term of patent 7 years.

8,712.—Drawer-Pulls.—ELBRIDGE J. STEELE, Westville, assignor to THE BLAKE BROTHERS HARDWARE COMPANY, New Haven, Conn.—Case B. Application filed September 28, 1875. Term of patent 7 years.

8,713.—Fountain.—WILLIAM TWEEDDALE, Brooklyn, N. Y. Application filed July 24, 1875. Term of patent 14 years.

8,714.—Printing-Types.—JAMES M. CONNOR, Greenville, N. J. Application filed August 25, 1875. Term of patent 7 years.

8,715.—Shirt-Bosom.—CHARLES HENRY HORSFALL, New York, N. Y., assignor to BAXTER & SCRIVEN BROTHERS, same place. Application filed September 28, 1875. Term of patent 7 years.

8,716.—Inkstands.—CHARLES M. JENCKES, New York, N. Y., assignor to BLOOMFIELD BROWER. Application filed September 27, 1875. Term of patent 3½ years.

8,717.—Monuments.—WILLIAM T. PRICE, of Circleville, Ohio, assignor to HARSHA & PRICE, same place. Application filed September 18, 1875. Term of patent 14 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date October 12, 1875.]

3,019.—Fertilizers.—MANUFACTURERS' COMBINATION, New York, N. Y. Application filed September 16, 1875.
"letters and words as follows: 'P. S. G. PALMETTO STATE GRANGE.'"

3,020.—Skins and Leather.—WILLIAM QUIRIN & Co., Boston, Mass. Application filed August 23, 1875.
"word 'Tioga' placed above the monogram 'W. Q. & Co.'"

3,021.—Fish.—FRANKLIN SNOW & Co., Boston, Mass. Application filed June 7, 1875.
"the pictorial representation of a flying-fish, with the name of our firm, 'F. SNOW & Co.' above, and the word 'Trade-Mark' below it."

3,022.—Clocks.—SOUTHERN CALENDAR-CLOCK COMPANY, St. Louis, Mo. Application filed August 20, 1875.
"word or name 'FASHION.'"

3,023.—Medical Preparation.—TARRANT & Co., New York, N. Y. Application filed September 4, 1875.
"words 'SELTZER APERIENT.'"

3,024.—Medical Preparations.—TARRANT & Co., New York, N. Y. Application filed September 4, 1875.
"a representation of the coat-of-arms of the State of New York."

3,025.—Soap.—THE ALLAN HAY COMPANY, New York, N. Y. Application filed September 22, 1875.
"words 'WINDSOR FAMILY SOAP.'"

3,026.—Combs.—THOMSON, LANGDON & Co., New York, N. Y. Application filed June 19, 1875.
"a figure or picture of a crown, together with the phrase 'The Crown Comb, Unbreakable,' accompanied by the word Trade-Mark.'"

3,027.—Schiedam Gin.—GEORGE WHITELEY, Philadelphia, Pa. Application filed July 31, 1875.
"words and letters 'Oak-Leaf Gin, Schiedam, G. W., Triple Flavor,' and a stem, three oak-leaves, an acorn, a pod, and a scroll."

3,028.—Caviar.—MAX AMS, New York, N. Y. Application filed September 25, 1875.
"the representation of a double-headed eagle in connection with the words 'Russian Caviar.'"

3,029.—Soap.—L. I. FISK & Co., Springfield, Mass. Application filed September 1, 1875.
"words 'Japanese Soap,' used in connection with a human figure dressed in Japanese costume and carrying an umbrella."

3,030.—Food for Horses and Cattle.—GERALD GORDON, Philadelphia, Pa. Application filed August 30, 1875.
"words 'Gordon's Food for Horses and Cattle' and the facsimile of my signature."

3,031.—Canned Fruits and Vegetables.—GRIFFITH & DRAKELEY, Baltimore, Md. Application filed September 15, 1875.
"words 'BANNER BRAND.'"

3,032.—Cabinet-Organs.—FREDERICK W. HELMICK, Cincinnati, Ohio. Application filed September 16, 1875.
"words 'CHAMPION ORGAN.'"

3,033.—Fever-and-Ague Pad.—WILLIAM F. KIDDER & Co., New York, N. Y. Application filed July 22, 1875.
"the head and bust of a man with the said Holman's fever-and-ague pad suspended from the neck, and fastened around the chest under the arms, in such a manner as may be most convenient, just below and between the nipples, with the words 'Holman's Fever and Ague Pad' inscribed on the outside or front thereof."

3,034.—Cigars and Tobacco.—J. M. MORA & Co., New York, N. Y. Application filed September 13, 1875.
"words 'LA CUBANA.'"

3,035.—Paper Collars.—RAY & TAYLOR MANUFACTURING COMPANY, Springfield, Mass. Application filed September 1, 1875.
"imprint or picture of a hatchet, together with the words 'Geo. Washington Collar,' the words 'George Washington' being printed upon the handle of the hatchet, and the word 'Collar' printed beneath."

3,036.—Drawing Lead-Pencils.—GUSTAV SCHWANHÄUSSER, Nuremberg, Germany. Application filed September 25, 1875.
"device or representation of an anchor."

3,037.—Plows.—DAVID BUREL SMITH, Eastrop, La. Application filed September 23, 1875.
"word 'FARMER.'"

3,038.—Bevel and Try Squares.—ST. JOHNSBURY TOOL COMPANY, St. Johnsbury, Vt. Application filed September 9, 1875.
"a diamond-shaped figure."

3,039.—Cakes, Crackers, and Biscuits.—WALTER G. WILSON & Co., Philadelphia, Pa. Application filed September 22, 1875.
"words 'NONE SUCH' and a picture of the globe with a man protruding therefrom with extended arms."

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date October 12, 1875.]

339.—Title: **"Dr. Buhl's Rheumatic Wonder for External use."**—GEORGE BUHL, St. Joseph, Mo. Application filed October 2, 1875.

340.—Title: **"Dr. Buhl's Instant Relief for External and Internal use."**—GEORGE BUHL, St. Joseph, Mo. Application filed October 2, 1875.

341.—Title: **"Superlative Wool and Spindle Oil."**—E. H. KELLOGG, New York, N. Y. Application filed October 4, 1875.

342.—Title: **"T. Metcalf & Co., 39 Tremont St., Boston. Sachet Powder."**—THEODORE METCALF & Co., Boston, Mass. Application filed October 2, 1875.

343.—Title: **"Prof. Higgins' Healing Ointment."**—RIPLEY & CAMERON, Flint, Mich. Application filed October 4, 1874.

344.—Title: **"Prof. Higgins' Celebrated Condition Powders."**—RIPLEY & CAMERON, Flint, Mich. Application filed October 4, 1875.

345.—Title: **"Penna. White Lead Works."**—JAMES E. SCHWARTZ, Pittsburg, Pa. Application filed September 23, 1875.

346.—Title: **"Maryland Yeast-Powder."**—WORTHINGTON & TINGES, Baltimore, Md. Application filed August 10, 1875.

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LaJance and Grosjean Manufacturing Company, assignee	168,662
Lamb, W. F., Game board	168,570
Latas, W., Wood splitter	168,649
Lawrence, C. D., and C. E. Ward, Adjusting feed rolls for planing machines	168,650
Leach, W., Gate fastening	168,754
Lemon, H., and J. A. Cameron, Sectional core for use in manufacture of tubing	168,755
Lemon, H., and J. C. Metcalf, Jr., Compound for artificial stone	168,651
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Lidren, C., Harvester	168,653
Linn, H. I., Feather renovator	168,571
Love, T. C., Combined hame and collar	168,756
Lyman, A. S., Apparatus for purifying, drying, and cooling or warming air	168 654
Lyon, L., Sewing machine	158,757
Mackenzie, P. W., Apparatus for the manufacture of illuminating gas	168 758
Mackey, J. C., Lath machine	168,759
Manning, J. C., assignee, (reissue)	6,688
Manrow, W. E., Eaves trough hanger	168,572
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McCloskey, J., Mechanical movement	168,575
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McGann, T. F., Gas shade support	168,761
McGinnis, L. H., Harrow	168,762
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McInnes, J. H., Slotted framing square	168,656
McLaughlin, J., Compression cock	168,657
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McNeil, Wilder, Tyler, and Wilder	168,696
Macay, S. P., Clothes drier	168,658
Merriman, A. H., Punch press	168,763
Metcalf and Lemon	168 651
Mielke, H., Grain separator	168,659
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Miller, J., Piano and organ ottoman	168,661
Milligan, J. C., Pan	168,662
Mooney, G., Gas heater	168,764
Morand, A., Drying and burning bricks, &c	168,765
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Moses, S., Furnace for steam boilers	168,766
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Nash, T. T., Cutter and cutter holder	168,576
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National Tube Works Company, assignee	168,733
Nessle, J. P., Fruit drier	168,769
New Haven Folding Chair Company, assignee	168,725
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Oehrlein, J., Violin, guitar, &c	168,665
Ohmer, J. F., Furniture caster	168,773
Old, J., Grate for furnaces	168,770
Old, J., Grate and stove front	168,771
Oldershaw, J. R., Fire place heater	168,772
Osbourne, A., assignee	168 596
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Palmer, A., Harvester	168,578
Parker and Whipple Company, assignee	168,731
Parker, R. R., Neck tie	168,666
Parsons, F. W., Sleeping car	168,579
Patterson, L., Brick machine	168,667
Pennepacker, J., Burglar alarm	168,777
Perry, J. R., Organ coupler	168,778
Peters, W., Packing for steam and other engines, (reissue)	6,688
Philadelphia Disintegrating Mill and Manufacturing Company, assignee	168,642
Phillips, D., and W. Reid, Manufacture of barrels, (reissue)	6,699
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Popper, J., Sediment collector for steam boilers	168,779
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Potter, W., Machine for jointing and dressing circular saws	168,580
Pratt, Read & Co., assignees	168,696
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Raether, W., Padlock	168,669
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Reed, J. W., Lubricator	168,671
Reed, S. A., Flooring board	168,672
Reid and Phillips, (reissue)	6,699
Rice, E. E., Method and apparatus for burning oils	168,782
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Riley, J. C., Gasoline burner	168,783
Roberts, R. R., Elevator for vehicles	168,784
Robertson, T. J. W., Iron fence	168,785
Robinson and Covell	168,620
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Roys, F., assignee	168,810
Rung, H., Diamond saw for cutting stone	168,786
Russell, E., Radiator tube	168,674
Ryer, J., executor, assignee	168 640
Sage, N., Wagon wheel scraper	168,675
Salisbury, G. P., Roll for rolling metal	168 594
Sawkins, J. N., Car brake	168,585
Scantlin, T., Safety oil reservoir	168,676
Schellkopf, J., Journal box	168,787
Schmidt, F. E., Aerial vessel	168,788
Schmidt, L. C. A., Running gear	168,586
Scotchmer, H. E., assignee	168,753
Sears, J. C., Tool handle	168,789
Shaw, C. A., assignee	168,739
Shepard, J., Cigarette maker	168,790
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Shield, D., Operating street car doors	168,791
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Simpson, J. F., Trunk fastening	168,677
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Sloat, F. D., assignee, (reissue)	6,694, 6,695
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Smith, A. E., Carriage axle, (reissue)	6 695
Smith, A. V. S., Pocket blank book	168,796
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Snow, W. D., Carbureter	168,797
Speer, A., & Sons, assignees	168 689
Speer, W. W., assignee	168 684
Stanton, B. W., Wagon jack	168,798
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Stephenson, J., Street car, (reissue)	6,697
Sterzing, F., Flat iron	168,800
Stevens, H., Apparatus for cutting glue	168,801
Stevens, H., Preparing and drying glue	168,802
Steveneon, G. B., Steam engine	168,803
Stewart, I. W., Diaper pin, (reissue)	6,698
Stillson, D. C., Machine for rounding and sealing the ends of wrought iron tubes	168,588
Stimpson, E. B., Machine for embossing boot and shoe uppers	168 804
Storm, W. M., Air injector for aero steam engines	168,678
Stow, H. M., Brick pavement	168,805
Sullivan, C. P., Jr., Variable measure	168 679
Sutton, L. W., Jr., Dental filling	168,680
Swarthout, W. R., Tire tightener	168,806
Tanner, C. M., Crosscut saw handle	168,590
Tanner, W., Stove leg	168 589
Taylor, G. T., Valve	168,808
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Taylor, J. J. W., Cinder warder for railway cars	168,681
Thompson, D. B., Type setting machine	168,591
Thurston, C. H., Wardrobe and other hooks	168,682
Tickner, A. C., Device for preventing horses from cribbing	168,683
Timby, T. R., Attachment for cooking stoves	169,809
Todd, G. W., Grate bar	168,684
Towle and Ratcliffe	168,670
Tucker, S. D., Feed gage for printing presses	168,685
Tucker, S. D., Feed gage for printing presses	168,686
Tully, Upham, and Garrett	168,687
Tupper, H., Fare box, (reissue)	6,689
Turner, B., Hinge	168,592
Turnbull, A., and F. N. Frost, Lawn mower	168,810
Tyler, Wilder, McNeil, and Wilder	168,696
Union Paper Collar Company, assignee, (reissue)	6,691
Upham, H. H., J. Garrett, and J. Tully, Wire sign and banner	168,687
Vail, J. L., Lifting jack	168,811
Van Horsen, A., executor, assignee	168,640
Voll and McGregor, (reissue)	6 693
Voorhees, P. R., Toy spring gun	168,812
Walt, L. A., Clothes drier	168,688
Walker, G. E., Shell for ordnance	168,813
Walker, W. L., and B. J. Devoe, Clamp	168,593
Wallace, J., Hoisting machine	168,594
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Wanaborough, E., Machine for shaping agricultural implements	168,689
Ward and Lawrence	168 650
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Watson, R. C., Nut fastening	168,690
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White, W. W., Key fastener	168,693
Whitney, G. A., Grindstone frame	168,694
Wiegand, C., Separating gold from other metals	168,695
Wilder, M. G., W. H. McNeil, S. N. Wilder, and H. C. Tyler, Mortising machine	168,696
Wilford, J. B., Sash holder	168,697
Wilford, J. B., Jigger	168 698
Williams, W. L., assignee	168,678
Winsor, S. E., Draft equalizer	168,699
Wolf, D., Mowing machine	168,700
Woodruff, J. W., Device for transmitting power	168,701
Woodward, J. S., assignee	168,807
Woodworth, S. F., Sulky plow	168,595
Zane, G. H., Potato dropper	168,702

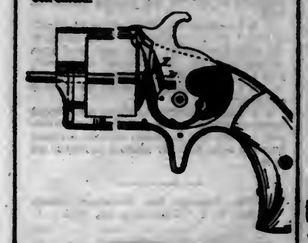
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED OCT. 11, 1875.

168,549. LOCKING-GAUGING FOR REVOLVERS. F. H. Allen, Norwich, Conn. [Filed Sept. 10, 1875.]

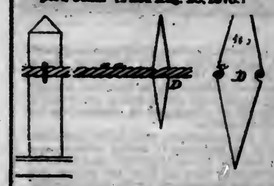
Brief.—When the arm is not in use the hammer is securely locked down by withdrawing the center-pin, to allow the locking-latch to engage with a shoulder on the rear of the recoil-shield.



1. The automatic latch D, hung on the lower part of the hammer, in combination with the recess F, as and for the purpose specified.

2. The latch D, so arranged in line with the center-pin B, that by direct pressure on the center-pin the latch is released, as and for the purpose specified.

168,550. BARBED FENCE-WIRE. Frank Armstrong and George Doolittle, Bridgeport, Conn. [Filed Aug. 20, 1875.]



The barbed fence-wire cable formed of two strands of wire and having sheet or plate metal barbs with two points and notched edges confined between them, with their flat sides in the same longitudinal plane, or nearly so, with the cable, the wires being wound spirally upon the barbs by passing them on the outside and into the notches between the points of the barbs, substantially as and for the purpose described.

168,551. GAS-GOVERNORS. S. D. Baldwin, Chicago, Ill. [Filed Dec. 11, 1874.]

Brief.—The gas-passage is in the wall of the chamber. The latter is made in two sections, which hold between them the diaphragm, which also serves as a packing. The self-sealing cap is to be filled with wax.

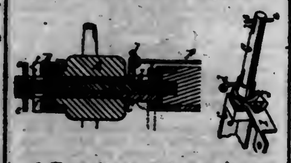


1. The combination of the sections A B and the interior gas-passage a with the diaphragm e, serving as a packing for the sections and gas-passage, all constructed and arranged substantially as specified.

2. The combination of the self-sealing cap opening a g with a gas-governor, substantially as specified.

168,552. HORSE HAY-RAKES. George Barclay and Jas. Kennedy, Oshawa, Canada. [Filed Jan. 19, 1875.]

Brief.—The hollow axle of each carrying-wheel has within it a bar having an arm at its inner end, projecting upwardly through a slot in the axle, and connected through a cord with a foot-lever, and provided at its outer end with a pin, engaging, when the bar is drawn inward, with the grooved face of the hub, causing the teeth to rise and discharge their load. As the wheels continue to revolve, a cam on the collar of the drag-bar breaker strikes the arm and shoots the bar outwardly, (being sustained therein by a retaining spring within the axle,) releasing the wheels and allowing the teeth to regain working position.



1. The combination of the spring shooting-bar D, having pin c, slotted hollow axle C, and collar E, having radial grooves f, with the wheel A, to operate substantially as described, for the purpose set forth.

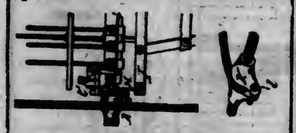
2. The draw-bracket I, depved on the axle, and provided with the cam projection J, in combination with the bar D, provided with the arm d, and arranged within the hollow axle, and operating substantially as described.

3. The pivoted locking-lever M, provided with the spur or shoulder m, and operating in combination with the link-connection between the hand-lever and rake-head, as described, for holding the rake down to its work.

4. The tooth-holder K, bolted to the axle, and formed with a slotted vertical projection, L, and having a slot, k, in the base to hold the teeth in position, substantially as set forth.

168,553. HORSE HAY-RAKES. George Barclay and Jas. Kennedy, Oshawa, Canada. [Filed Jan. 19, 1875.]

Brief.—An elbow-lever, pivoted to an arm journaled on the axle of driving-wheels, is caused, through a foot-lever and cord, to engage with a cog-wheel formed on the hub of the driving-wheel, whereby the rake-teeth are lifted to dump the hay. At the proper point of the rotation, a projection on the detent-arm of the lever strikes a spur on the draw-bar, releasing the lever from the cog-wheel, and permitting the teeth to resume raking position.



1. The cog-wheel B, affixed to the hub A, and the pawl-bracket C, secured to the axle, and having the spring-pawl D arranged to operate as described, in combination with the projecting arm or spur H, secured to the draw-bar, and operating to release the pawl D, as set forth.

2. The thimble K, provided with the central groove and with the lugs g, and pin or bolt f, for securing the rake-teeth, as set forth.

168,554. GAS-BURNERS. Hermann Headman, Brooklyn, N. Y. [Filed July 30, 1875.]

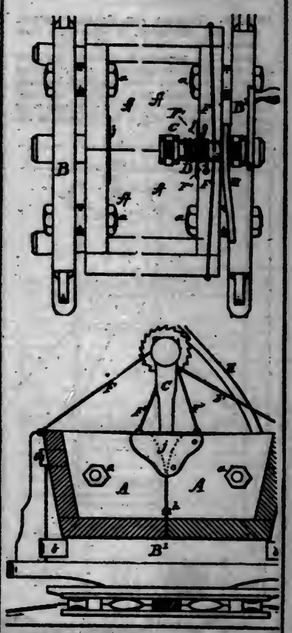
Brief.—The sliding tube governs the flow of gas through perforations in the interior nipple, which extends up into the heating-chamber.

168,555.



The spring-slide or regulator D, in combination with gas-burners, for the purpose of regulating and measuring the quantity of gas passing through graduated openings, substantially as described.

168,556. DUMPING-WAGGON. Jacob Bond, Cleveland, Ohio. [Filed Feb. 24, 1875.]



1. In a dumping-wagon, the halves A A of the box or body, balanced on pivots a a, and to be operated by means of cords F F', extending from the outer and inner ends of the parts A A, and combined with a windlass, D, substantially as shown and described.

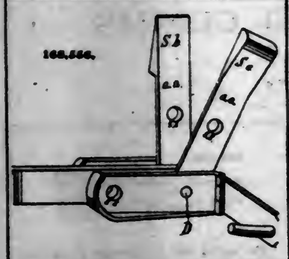
2. In a dumping-wagon, the combination of the centrally-divided box A A, balanced on pivots a a, with the end boards B B', constructed for adaptation to ordinary running-gear, substantially as shown and described.

168,557. DOOR-BRACKETS. George Burt, Denver, Colo. [Filed May 28, 1875.]

Brief.—As an improvement on a similar device heretofore patented, the curved hook is interposed between two reversed wedge-plates, either or both of which can be used when the thickness or space between the edge of the door and the casing requires; the wedge-plates folding in, and secured in like manner with the hook-plate, or, when not needed, can be dropped down out of the way, thus giving the device ready adjustability.

HELIOTYPE RELIEF PROCESS, JAMES R. OSGOOD & Co. BOSTON.

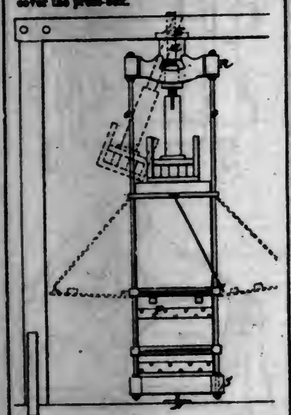
168,556.

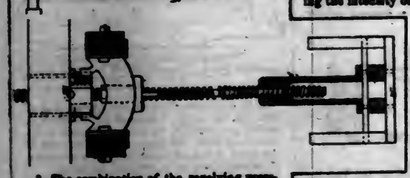


The two plates a c, working upon the rivet D, with the orifices a c, by means of which they may be locked in position, in combination with the reversed wedges S b and S c, attached thereto, respectively, in the position and substantially as described and shown, for the purpose hereinbefore set forth.

168,557. PRESSES FOR BALING COTTON, HAY, &c. Cornelius B. Churchill, New Orleans, La. [Filed Apr. 17, 1875.]

Brief.—The pressure is obtained by means of a vertical screw operating in a revolving press-box, the screw being held from turning, and being provided with right and left hand threads. The screw is capable of being swung laterally, carrying with it the follower, to uncover the press-box.





2. The combination of the revolving press-box, a stationary right-and-left-hand screw, and two revolving nuts, the lower one of which receives the lower end of the screw, and is rigidly attached to the follower, substantially as shown and described.

2. The combination of the revolving press-box and a right-and-left-hand screw, working in two revolving nuts, the upper one of which is made capable of lateral movement in its bearings, substantially as and for the purpose indicated.

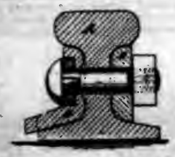
3. In combination with the revolving press-box and nuts, a stationary screw, the upper and lower ends of which are free to move laterally when the follower is raised, so as to swing the follower away from the top of the press-box, substantially as and for the purpose indicated.

4. A follower arranged to swing away from the top of the press-box by the lateral movement of the screw, the center of such movement being above the follower, substantially as set forth.

5. In combination with the nut which receives the lower end of the screw, the lug B", or equivalent device, by means of which the nut and follower are locked in position when raised from the press-box, substantially as and for the purpose set forth.

6. The combination of the revolving press-box and a circular guide for guiding and supporting the same, such guide having an internal diameter sufficient to permit the lateral movement of the screw as the follower is swung away from the top of the press-box, substantially as shown and described.

168,558. RAILROAD-RAIL JOINTS. Casper Dittmar, Lancock, Pa. [Filed Aug. 21, 1875.]



1. Recessed fish-plates, substantially as described, in combination with elastic rings placed within such recesses, and bolts which pass through the rings, with the heads resting upon the elastic rings, so as to avoid all injurious effects of the strain and jar upon the fish-plates, bolts, and nuts.

2. Recessed fish-plates, substantially as described, in combination with elastic rings placed within such recesses, and flanged bolts which pass through the rings and interior oval recesses of the fish-plates, and bind the elastic rings, fish-plates, and the ends of the rails to each other by the aid of the bolt-heads and nuts.

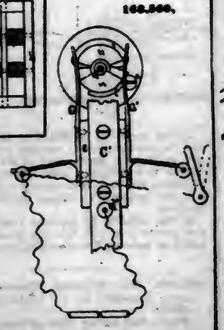
168,559. ARTIFICIAL STONE. Peter B. Doty, Conneaut, Ohio. [Filed Sept. 17, 1875.]

The combination of sand, slaked lime, calcined pulverized plaster, resin, coal-tar, and sulphate of iron for the manufacture of artificial stone, substantially in the manner herein described.

168,560. MAGNETO-ELECTRIC MACHINE. Louis Druecker, New York, N. Y. [Filed Oct. 19, 1874.]

Brief.—Utilizes the secondary or "extra" current produced at the momentary interruptions of the primary induced current. Adjusts the commutator-cams about the axis of the helix, thus altering the position with relation to the poles, the electro-magnet, and varying the intensity of the current.

168,560.



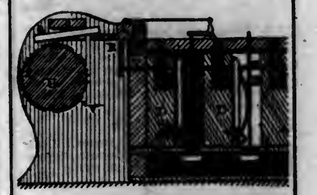
1. Segmental commutator-cams a a, embracing arcs of different degrees, combined with the helix r, tangential insulated springs G G', and electrical conductor C d, of a magneto-electric machine, substantially as and for the purpose herein set forth.

2. In a magneto-electric machine, constructed substantially as herein described, wherein a primary circuit may be established at will between the opposite poles of the helix, through the commutator-cams, their springs, and a conducting-medium between the springs, the combination of electrodes, the one connected directly with one of the cams independently of the springs, and the other with any given point of the aforesaid primary circuit, whereby a second circuit may be established, which shall be automatically closed at each semi-revolution of the helix, at the moment the primary circuit is opened, all substantially as and for the purpose herein set forth.

3. In a magneto-electric machine, constructed with a revolving helix, the combination of the commutator-cams which open and close automatically the circuit induced in the coil, with a collar encircling the shaft or arbor of the helix, substantially as and for the purpose herein set forth.

4. A magneto-electric machine, constructed substantially as herein described, to deliver both primary and secondary electric currents from the same helix, in manner as herein set forth.

168,561. ORGANS, &c. Bernhard Dufner, Buffalo, N. Y. [Filed Aug. 26, 1875.]

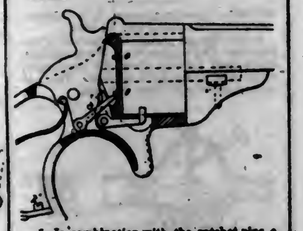


1. The combination, with the auxiliary chests B, each provided with a full set or stop of pipes, of the chest-valves I, arranged to be operated substantially as described, whereby any one or more set or sets of stops may be engaged or disengaged at pleasure, for the object specified.

2. The combination, with the auxiliary chests B, of the partitions D, having wind-passages E, and the vertically-pivoted pipe-valves F, operated by the rods T, in the manner substantially as described, for the object specified.

3. The combination, with the main chest A, of the auxiliary chests B, partitions D, provided with the wind-passages E, valves I and F, all arranged as set forth, and a suitable operating mechanism, substantially as described.

168,562. REVOLVING FIRE-ARMS. William H. Elliot, New York, N. Y. [Filed Sept. 9, 1875.]



1. In combination with the ratchet-plate c, the groove c', when arranged in the breech-plate directly behind the chambers of the cylinder, substantially as and for the purpose specified.

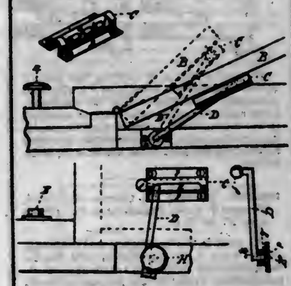
2. The construction and operation of the ratchet-plate, breech-plate, and revolving pawl, whereby the revolving pawl operates upon the ratchet directly in the rear of the chambers, and behind the breech-plate, without coming in contact with the cartridges, substantially as specified.

3. The two extended points of the locking-bolt, whereby that device embraces each one of the chambers as they come around to lock the cylinder, as herein set forth.

4. The S-shaped mainspring k, when immovably fixed upon its rest k', and provided with a fixed partially-rotating bearing in the hammer, whereby it is made to give off a combined parallel and lateral force, substantially in the manner and for the purpose specified.

168,563. SHUTTER-BOWERS AND FASTENERS. Joseph Follows and John Finnegan, Philadelphia, Pa. [Filed Sept. 2, 1875.]

Brief.—A bell-end hook is carried in an elongated case or socket, having a longitudinal slot and a series of cross-slots. The bell-end is interchangeably moved from one cross-slot to another without detaching, thus enabling the hook, by engagement with a stationary socket on the window-sill, to bow the shutters in desired position. The construction also is such that, by changing the position of the bell-end hook in relation to the slotted case, the hooked end passes under a suitable knob, to fasten the shutter in position when thrown back against the wall.



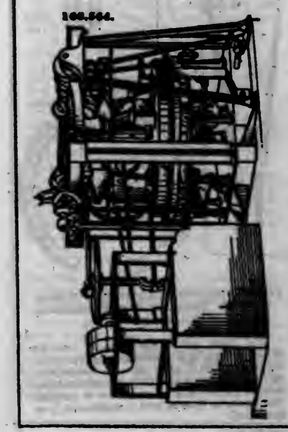
1. The elongated case or socket C, having a longitudinal slot, d, and a series of cross-slots, e, and rod D, having a neck, h, bell f, and hook k, in combination with the shutter B and stationary socket E, for holding the shutter in its closed and bowed positions, substantially as set forth.

2. The combination of the elongated socket E and rod D, constructed as described, with the shutter B and stationary knob H, for holding the shutter in its backward position, substantially as set forth.

3. The socket E, having an enlargement or inside shoulder, g, in combination with the rod D, having a hook, k, provided with the lip p for holding the rod securely in its locked position, substantially as set forth.

168,564. BRICK-MACHINES. WM. L. GREGG, Chicago, Ill. [Filed Aug. 23, 1875.]

Brief.—A horizontal mold-table is intermittently revolved by belting and cog gearing. The clay is pressed by a rolling wheel, successively, into series of molds, which, in their progress, is compacted and ejected.



1. The combination, in a brick-machine, of an intermittently revolving mold-table and its mold-boxes, a pressure-wheel rotating in a fixed box, a cam and toggle-joint levers, which compress the clay in the mold-boxes between a pressure-plate on the upper surface thereof and a plunger beneath said mold-boxes, and cams and toggle-joint levers, which compress the clay between a pressure-plate below the boxes and a pressure-box above them, said pressure-box being provided with downwardly-moving plungers having springs interposed between them and their operating-levers, substantially as and for the purposes set forth.

2. The combination, in a brick-machine, of an intermittently-revolving mold-table and its mold-boxes with a vertically-moving plunger to expel the finished bricks from the mold-boxes, a horizontally-moving plate to remove the bricks from the mold-table, and cams and rocker-shafts which operate the plunger and plate during the intervals of rest of the mold-table, substantially as set forth.

3. The combination, in a brick-machine, of an intermittently-revolving mold-table and its mold-boxes, and a movable pressure-plate, which closes the tops of the mold-boxes during the intervals of rest of the mold-table, and is released therefrom during its motion, substantially as set forth.

4. The combination, in a brick-machine, of an intermittently-rotating mold-table and its mold-boxes, and a movable pressure-box, having separate plungers actuated by cams, each plunger being provided with an independent spring to regulate the pressure applied to the clay, substantially as set forth.

168,565. SEWING-MACHINE TREADLES. W. B. Shapter, San Francisco, Cal. [Filed Mar. 13, 1875.]

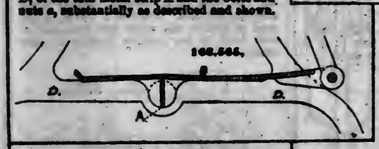
Brief.—An elastic metal blade, carrying the sandal, is rigidly secured to the lower part of the frame, whereby frictional surfaces are avoided.

1. In combination, the sandals B, pivoted at their front end to the pitmen E, the thin metal blade A, set on edge and secured rigidly to the under side of the sandals, substantially as described and shown.

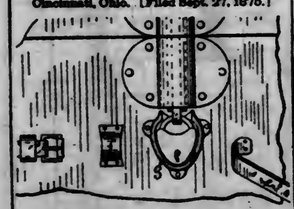
2. In combination, the sandals B, pivoted at their front end to the pitmen E, the thin metal blade A, set on edge and secured rigidly to the under side of the sandals, the said blade A having its ends adjustably secured in the table legs or frame, adapted to have its tension changed at pleasure, substantially as described and shown.

3. The combination, with table legs or frame D, of the thin metal strip A and the bolts and nuts c, substantially as described and shown.

168,565.



168,566. TRUNK-FASTENINGS. Robt. Hilton, Cincinnati, Ohio. [Filed Sept. 27, 1875.]



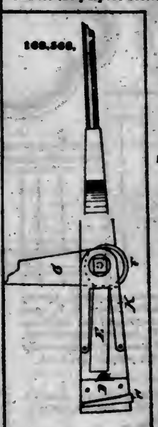
1. The socket g, for the purpose of receiving and protecting the padlock of a trunk-fastening, substantially as described.

2. The combination of socket g and strap s, substantially as and for the purpose set forth.

168,567. RAILWAY-TRACK GAGES. Sylvester Holbrook, Rockport, Mass. [Filed Mar. 16, 1875.]

The combination and arrangement of the square A, having a recess, f, for the beam B when set in use, the projecting arms D D, the beam B, the thumb-screw b, by which the square A is adjusted onto the beam B at height above the rail, said screw also operating as a pivot to the beam B when laid at rest in the recess f, the level C and the forked gage E having a slot therein, and an adjusting thumb-screw, c, by which said gage E is held to the square A, and may be moved backward and forward, substantially as shown, and for the purpose described.

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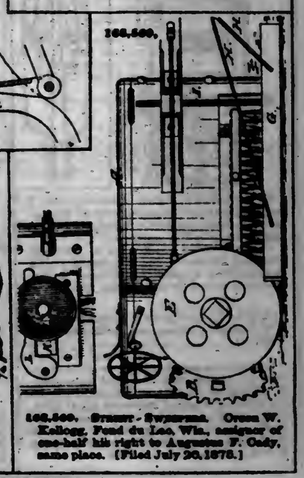


168,568. BOLT AND RIVET CUTTERS. David M. Kelley, Burke, N. Y. [Filed Aug. 6, 1875.]

Brief.—The main bar is provided with an end flange. The removable cutter is adjusted by means of a wedge placed between the end flange and the serrated edge of the cutter. A brace-plate extends from the pivot to the main bar.

The combination, with the bar A, having slots e and support g, serrated removable cutter D, with bolts d, and the wedge C, of the lever G, with shoulder h, and the cutter or chisel K, with eye F, and the brace-plate K, constructed to operate substantially as specified.

168,569.



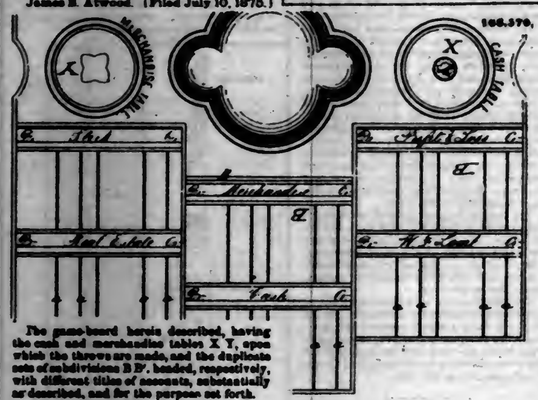
168,569. STREET-SWEEPERS. Orson W. Kellogg, Fond du Lac, Wis., assignor of one-half his right to Augustus F. Cady, same place. [Filed July 30, 1875.]

1. The combination of frame A, pole F, broom-shaft B, and truck-wheels E E, as above arranged and substantially specified.

2. The arrangement of the scraper G, connected to the pole F by draw-rods H H and standard I, substantially as specified.

3. Bearings K, with lugs and eccentric to turn L, and wrenches M, with ratchet and pawl and lever wheel, substantially as specified.

168,570. GAME-BOARDS. Watson F Lamb, Wilbraham, Mass., assignor to himself and James B. Atwood. [Filed July 10, 1875.]



The game-board herein described, having the cash and merchandise tables X Y, upon which the throws are made, and the duplicate sets of subdivisions B B', headed, respectively, with different titles of accounts, substantially as described, and for the purpose set forth.

168,571. FEATHER-RENOVATORS. Henry L. Linn, Gilson, Ill. [Filed Aug. 31, 1875.]







1. The spout I, having stationary sides i, and hinged sides i', combined with the feather-renovator case and stirrer E, substantially as and for the purpose specified.

2. The stirrer E, constructed as described, with hub E' arms e^2 and e^3, combined with the frame-bars e, spout G, and doors K, substantially as and for the purpose specified.

168,572. HAYES-TROUGH HANGERS. Wm. B. Morrow, Goshen, Ind. [Filed July 30, 1874.]

In an eaves-trough hanger made of hoop-iron, the combination of a rigid cross-piece, B, having the head a and downward-projecting shoulder b, with a malleable metal strip, C, the latter so arranged that it projects laterally outward from the cross-piece B, and at right angles to the shoulder b, substantially as and for the purpose specified.

168,573.



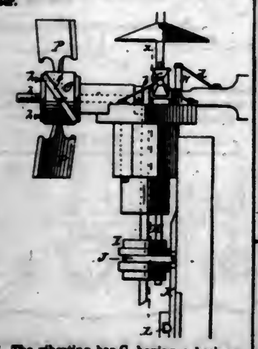
2. The combination of the vibrating bar G with links a b, the vertical bar H, and grooved sleeve I, for moving and controlling a wind-wheel and vane, substantially as herein set forth.

3. The combination of the lever L with weight M, connecting-bar K, with clutch J, grooved sleeve I, vertical bar H, vibrating-bar G, and the links a b, connecting the same with the wind-wheel and vane, all substantially as and for the purposes herein set forth.

4. The combination of the hub O, adjustable sails or wings P, with stems f, and set-screws h, substantially as and for the purposes herein set forth.

168,574. WINDMILLS. John M. May, Cedar Rapids, Iowa. [Filed Feb. 24, 1875.]

Brief.—A solid wheel and a vane pivoted or jointed to a principal casting or part that revolves horizontally at the head of the post that sustains the mill, the face of the wheel and the vane being brought parallel when stopping the mill. There is a vibrating bar used to revolve the wheel and vane, and to hold them in any position relative to each other.

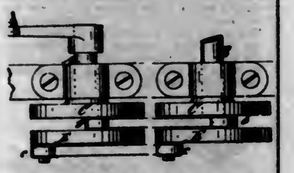


1. The vibrating bar G, having a horizontal, vertical, and spiral motion, and used to revolve a wind-wheel and vane, and to hold them in any desired position relatively to each other, substantially as herein set forth.

168,575. CRANDLESTICKS. Riverius Marsh, Flushing, N. Y. [Filed Feb. 20, 1875.]

In a chandelier constructed, substantially as set forth, so that one portion of the same, together with its arms and burners, will serve as an adjustable weight or balance for elevating or lowering the other portion of the same chandelier, including its arms and burners, the two sections combined substantially as described.

168,576. MECHANICAL MOVEMENTS. John McCloskey, New York, N. Y. [Filed Aug. 20, 1875.]

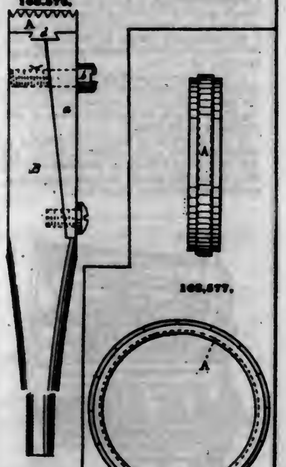


The two shafts A B, carrying the disks C E, provided with the crank-pins b a, which are connected by the pitmen F D, the whole combined and arranged substantially as specified, to cause the pitmen to travel simultaneously, but not alternately and both within the same radius from the axes of the shafts A B, as described.

168,578. CUTTERS AND CUTTER-HOLDERS. Thomas T. Nash, Philadelphia, Pa. [Filed Aug. 27, 1875.]

The stock B, having a cap, c, and confining-screws b and b', in combination with the detachable chaser A, having a male dovetail, d, substantially as and for the purpose set forth.

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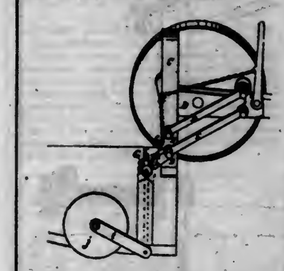
168,577.

168,577. MANUFACTURE OF SCREW-THREAD CUTTERS. Thomas T. Nash, Philadelphia, Pa. [Filed Sept. 20, 1875.]

The mode above described of making chaser-cutters, by first concentring the cylinder A with one or more annular channels, c, on its periphery, and a threaded internal surface, and separating it into pieces of suitable dimensions to form cutters C, substantially as described.

168,579. HARVESTERS. Aaron Palmer, Rochester, N. Y. [Filed Aug. 6, 1874.]

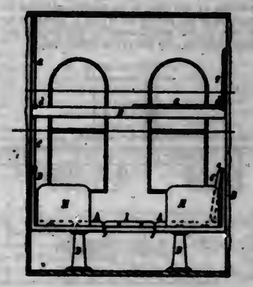
Brief.—The grain-platform and tongue-frame are connected together by parallel bars, so that the platform can be raised or lowered, and maintain a horizontal position.



1. The combination of the broom D and E, casting E and standard C, shaft G, and arm f, substantially as shown and described.

2. The combination of the parallel braces D E, tongue-casting E, and platform-standard C, whereby the horizontal position of the platform on the line of the path of the machine is maintained whether raised or lowered.

168,580. SLEEPING-CARS. Francis W. Parsons, Dedham, Mass. [Filed Feb. 6, 1875.]



1. In a railway-car, the combination of two adjacent pivoted seats, A A, with supports D D, and capable of sliding diagonally on the supports D D, substantially as and for the purpose set forth.

2. The upper berth B, in combination with guide g, sliding bearing h, and pivot i, substantially as and for the purpose set forth.

3. The combination of seat A, plate F, and standard D, substantially as set forth.

4. The combination of the seat A, vertical back E, and inclined back C, the inclined back C being hinged to the top of back E, substantially as and for the purposes set forth.

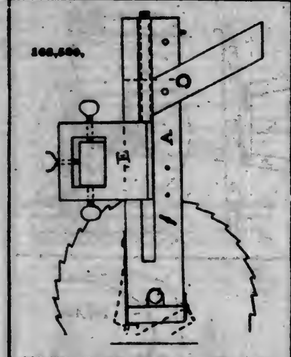
5. The combination of the seat A, removable arm I, and fixed arm H, substantially as described, and the arm I to be removed and used to form part of bed, as set forth, and for the purpose set forth.

6. The combination of plate f, having a socket for pivot-pin i, sliding bearing h, and guide g, substantially as and for the purpose set forth.

7. In a car, the upper berth B, having hits a hinged to the back E for forming partitions, substantially as set forth.

168,581. MACHINES FOR JOINTING AND DRESSING CIRCULAR SAWS. Wm. Potter, Leyden, N. Y. [Filed July 30, 1875.]

In a machine for jointing and dressing circular saws, the slotted frame A, having the two arms provided with clamps and openings, to receive and hold the saw-shaft, in combination with the moving frame B and the saw F, all constructed to operate as set forth.



1. The bellow-bar C, having an independent bearing, a, constructed with the wheel g, and arranged around the axle a of the main wheel B, in combination with the mainspring D and barrel G, substantially as and for the purpose set forth.

2. The main wheel B, having the axle a formed rigidly thereon, and constructed with the pivots a', in combination with the mainspring connecting said wheel, whereby increased stability and steadiness is given to the wheel, and provision is made for leveling the pivots a', substantially as set forth.

3. The combined main wheel and winding device, comprising the bellow-hub C', having an independent bearing, a, and constructed with the wheel g, the main wheel B, having the axle a formed rigidly thereon, and constructed with the pivots a', the mainspring D, and the barrel G, locking with the main wheel by a pawl or click, c^2, the whole arranged for use and operation substantially as and for the purpose set forth.

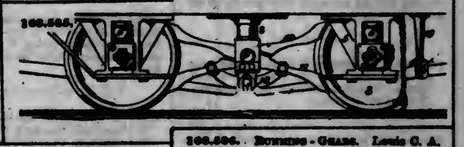
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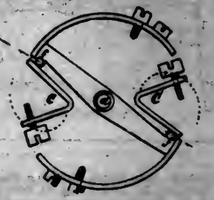
168,582. ESCAPEMENTS FOR WATCHES. Albert H. Potter, Chicago, Ill., assignor of one-half his right to J. H. McMillan, same place. [Filed Aug. 11, 1875.]

Brief.—Arranging the trip-spring in a chronometer-escapement at an acute angle to the lever carrying the locking-pallet, by attaching it to a radial arm on said lever.

The locking-bar A, having at one end the arm b, carrying the trip-spring c at an acute angle to the said bar, and at the other provided with the locking-pallet C, in combination with the trip-pallet I, impulse-pallet K, and escape-wheel L, the whole arranged for operation substantially as and for the purpose specified.

168,584. COMPENSATION-BALANCES FOR WATCHES. Albert H. Potter, Chicago, Ill., assignor of one-half his right to J. H. McMillan, same place. [Filed Aug. 11, 1875.]

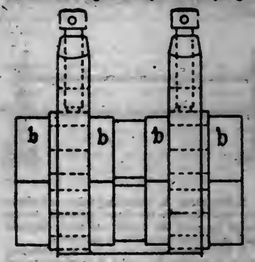
Brief.—Auxiliary bows, having their inner portion brass and outer portion steel, are pivoted to the arms of the balance, to provide additional compensation.



The balance, constructed with the adjustable auxiliary bows C adjustably loaded, as described, substantially as and for the purpose set forth.

168,585. ROLLS FOR ROLLING METAL. Geo. F. Salisbury, New Haven, Conn. [Filed June 2, 1875.]

Brief.—The enlargements give the rolls increased stiffness and strength, so that when screwed close together they will not spring.



Rolls, for rolling metal, extending outside the frame A, and having the enlargements b b b, substantially as and for the purpose specified.

168,586. CAR-BRAKES. Jos. H. Sawtine, Philadelphia, Pa. [Filed June 15, 1875.]

Brief.—By depressing either of the levers, one of the brake-bars is made to engage with both wheels and cramp them tightly.

The combination of two cramp-bars, 10 11, pivoted to the pendant 3, connecting-bar 12, and two adjacent wheels, 2 2', on which said cramp-bars operate, substantially as set forth.

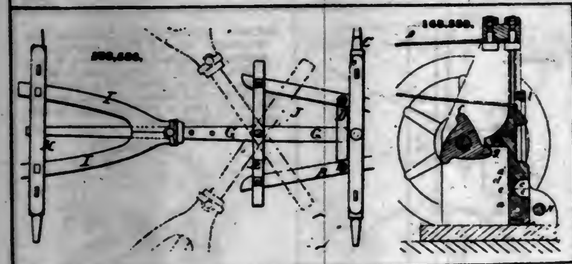
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168,586. RUNNING-GEARS. Lewis C. A. Schmidt, Tiffin, Ohio. [Filed July 30, 1875.]

Brief.—Reach pivoted upon cross-bars at rear of front bounds, front end of reach moving loosely on side-bar.

1. The front bound, constructed with a rear extension, having a cross-bar slide, D, and arching supporting cross-bars E and F in rear of the front axle, substantially as and for the purpose described.

2. The front bounds, constructed with a cross-bar slide, D, and an arching supporting-bar, F, in combination with a reach, passed over the supporting cross-bar F, under the cross-bar slide D, and terminated behind the front axle C, and coupled to the front bound B by a pivot-pin, J, substantially as described.

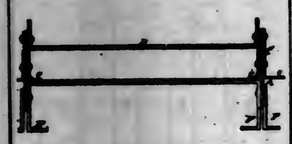


168,688.

168,689.

168,687. Barn Doors. Merrill A. Shepard, Lebanon, Ill. [Filed Aug. 10, 1875.]

Brief.—Rafters of plate-iron extend above and below the roof-plates, the latter being attached about mid-way of the vertical depth of the rafter by bolts. The rafters are secured at foot to the walls by plate-anchors, and are laterally braced by cleats extending across from rafter to rafter near the top and bottom edges thereof. A curved plate protects the ridge, a ventilating-space being left. A flanged cap covers each rafter, and is bolted through cap, rafter, and roof-plate flanges. The roof-plates have steps or offsets, and the caps are notched to fit the steps when ties are used.



1. The rafter A, extending below and above the roof B, with the latter attached to the rafter between the upper and lower edges of said rafter, substantially as set forth.

2. The combination of rafter A, extending above and below the roof B, with flange-cap C c, substantially as set forth.

3. In combination with the rafter A and cap C c, the combined braces and supports D above and below, extending from rafter to rafter, substantially as and for the purpose set forth.

4. The inverted trough E at the peak of the roof, with ventilating-space e e between the trough and the main part of the roof, and forming a flexible connection between the two sides of the roof, substantially as set forth.

5. In combination with a tile roof, the notches or steps f in the lower edges of the cap C, substantially as set forth.

6. In combination with the rafter A, the anchors F F, consisting of duplicate plates, constructed and arranged substantially as set forth.

168,688. Machines for Rounding and Shaping the Rims of Wrought-Iron Tubes. Daniel C. Stillman, Boston, Mass. [Filed Apr. 7, 1870.]

Brief.—The wall of the tube is drawn inward upon itself and welded; the disc a a', for this purpose, presenting, when closed, a horizontal and concentric oval-shaped opening at e, and recesses c c next the end of the tube.

1. In a machine for forming and welding the ends of metallic pipes, the die a a', having each of its faces formed with a semi-globular recess, e, a semi-recess, d, and connecting-groove d, substantially as above and described.

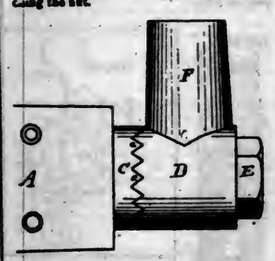
2. The improved machine for forming and welding the ends of metallic tubes, consisting of the die, having stationary and movable parts a a', the tapering retaining-spring D, the series of lifting-arms f, and the rocker catch-bar provided with a lip, l, and mechanism for throwing the same out of action, the whole being constructed and arranged in manner as described.

168,689. Stove-Legs. William Tanner, New Brighton, Pa., assignor of one-half his right to James H. McConnell. [Filed July 17, 1875.]

A stove-leg constructed with a rigid foot, a, and provided with a caster, b, located above the base of said foot, as specified, whereby the caster will rest upon the floor only when the stove is tilted, substantially as and for the purpose set forth.

168,690. Crosscut-Saw Handles. Chas. M. Tanner, Defiance, Ohio. [Filed Aug. 23, 1875.]

Brief.—The saw is attached to the handle by means of two metal plates, each having half of the shank, on which is secured a sleeve-socket having ratchet-teeth, which mesh with like teeth on a collar placed next to the plates. The handle is secured in position by a set screw on the end of the shank, and can be readily adjusted to any desired angle by loosening the set.



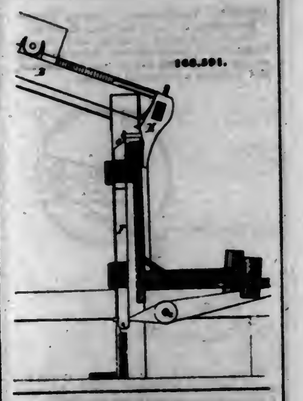
The plates A A, having each the half-shank B, the toothed collar C, the toothed sleeve D, having the handle-socket F, and the nut E, all constructed as and for the purpose herein set forth.

168,691. Type-Setting Machines. David B. Thompson, Hartford, Conn., assignor to the Farnham Type-Setter Manufacturing Company, same place. [Filed May 22, 1875.]

Brief.—The type-carriers receive their letters from inclined ways, and, when moving sideways by meshing the keys, carry one letter at a time into the bites, which conduct them to the galley.

1. The oscillating lever H, with its arm f and lips e and c, in combination with the shoulder a as a retaining mechanism for types retained in a channel, B, and pressed forward toward it, substantially as herein described.

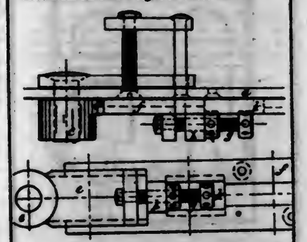
2. The bar F, having the inclined slot e near its top, in combination with the retaining-lever H, for giving it a lateral retaining motion, substantially as herein described.



168,691.

168,692. Hinges. Benjamin Turner, London, England. [Filed Aug. 10, 1875.]

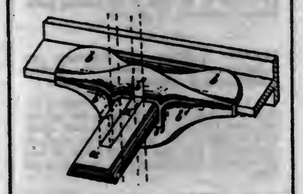
Brief.—A hinge or hinged plate, for heavy swinging doors, is constructed with a double plate, one carrying the socket and partially sliding within the other, and provided with a lateral adjusting-screw and lock-nut, which are reached, for adjustment, through a suitable aperture, without removal from the door; the construction being such as to allow the position of the door to be readily adjusted in relation to the center on which it turns, so as to take up and compensate for any drop of the door from its own weight or other cause.



The plates e and f, sliding in one another, and having the door attached to one of them, and the socket c, upon which the door turns, to the other, the relative position of the two plates being adjusted by the screw g and the lock-nut i, substantially as and for the purpose described.

168,693. Gearing. William L. Walker and Benj. O. Dovee, Kenton, Iowa. [Filed Jan. 6, 1875.]

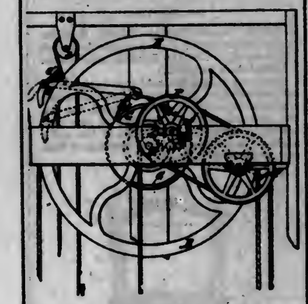
Brief.—The cross-rails of fences are clamped to the posts by means of an upper plate, having a grooved horizontal plate, and a slotted vertical plate provided with a flange, having recesses for the reception of the post, when inserted in a slot in the shank of the lower plate, which is T-shaped, and provided upon the upper face of its horizontal part with projecting studs, which fit in suitable holes in the rail.



A clamping device, formed of two parts, A B, the lower part A having a shank a provided with a slot a', and studs a', in combination with the upper part B, having aperture b', flange b', recesses b', and the groove b', substantially as and for the purpose specified.

168,694. Hoisting-Machines. John Wallace, Chicago, Ill. [Filed Apr. 8, 1875.]

Brief.—Gearing with the shaft of a large overhead pulley, over which passes the hoisting-rope, are two parallel counter-shafts, each having a pulley with two or more peripheral grooves on it, around which a counterbalancing hoisting-rope is wound several times, with the object of keeping each hanging part in an unvarying vertical line. The end of the brake-lever has a pawl pivoted to it.

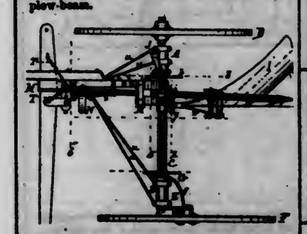


1. The combination, in a hoisting-machine, of the drum-sheaves F F', having two or more peripheral grooves, and the hoisting-rope passed two or more times around them, the ends of said rope being attached, respectively, to the platform and counterbalance-weight, the drum-sheave F being connected by intermediate gearing with the motor-pulley B, substantially as described.

2. The combination of brake-lever L and pivoted pawl c, arranged to be thrown outward from said lever, and a stationary ratchet or catch-block, O, substantially as shown.

168,695. Sulky-Plows. S. F. Woodworth, Rockford, Ill. [Filed Aug. 2, 1875.]

Brief.—Peculiar form of axle, crank, and lever, and of devices for elevating the plow-beam. Devices for pivoting the tongue, and movably attaching to it the front end of the plow-beam.



1. The crank-formed lever axle-arm B, composed of arms a a' a'', brace d, and lever c, in combination with the internally-toothed segment-ratchet G, as and for the purpose set forth.

2. The combination of the angle-lever J, segment-toothed ratchet k, link l, curve-slotting device k, and curved guide-bars H, for the purpose of raising and lowering the plow, and holding it in position, substantially as shown and described.

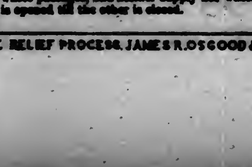
3. The tongue K, hinged to the plow-beam between the axle and the clevis, substantially as described, in combination with the guide-plate Q, secured to the rear end of the tongue, to work in the grooved curved guideway p, secured to the elevating device A, the upper projecting radial arm of clevis L, fitted to slide in loop r on tongue K, all these members being constructed and arranged to operate substantially as described, for the purpose of holding the tongue rigid with the plow-beam laterally, and to permit of a free independent vertical movement, as described and shown.

4. The lever M and link z, in combination with the tongue K and clevis L, for the purpose of tilting the plow on the axle, and holding it in the tilted position, substantially as described.

5. The coiler W, yoke w, clevis y, bars v, tube x, and yoke t, in combination with the axle and plow-beams adjustable thereon, as described.

168,696. Machinery for Shaving Counters for Boots and Shoes. T. Andrews, Boston, Mass., assignor to himself and A. Osbourne, same place. [Filed Sept. 21, 1875.]

Brief.—By means of the sliding die plate, the rotary depresser, and stationary knife, the stiffener-blank is molded into shape, and trimmed at one operation.

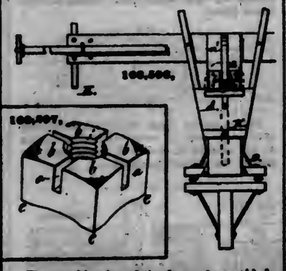


In a machine for shaving counters, the combination of the slide-molds B (i. the knife I, the series of fingers K, and the rotary depresser M, all being arranged and applied together or in a frame, and provided with operative mechanism, all substantially as specified and shown.

168,697. Nut-Locks. James B. Atwood, Wilbraham, Mass. [Filed Sept. 2, 1875.]

An improved nut-lock, having its outer end or face provided with one or more slots or cavities, c, dividing that portion of the nut into two or more divisions. b, in combination with the projecting part c of the bearing, opposite the divisions c, whereby the latter is thrown inward against the threaded portion of the bolt when the nut is turned up to a bearing, substantially as described.

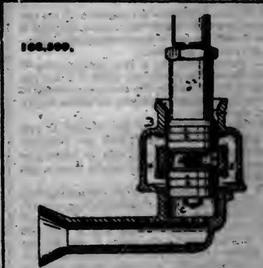
168,698. Land-Markers. J. Angermeyer, Trenton, Ohio. [Filed June 14, 1875.]



The combination of the frame A, provided with the furrowers B E, the auxiliary frame D, provided with the furrower I, and pivoted by the bolt K to turn horizontally on the frame A, and held in the proper position thereon by a catch, c, and the hangers C, attached to the frame D, substantially as and for the purpose herein specified.

168,699. Hydrants. George C. Bailey, Pittsburg, Pa. [Filed Aug. 26, 1875.]

Brief.—Side ports or passages, both ends of which open into the cylinder, are so arranged with reference to pistons, which each carry an arranged with reference to intermediate parts opening into the hollow rod, that the said side ports operate alternately as supply and waste passages, and neither supply nor waste is opened till the other is closed.



168,699.

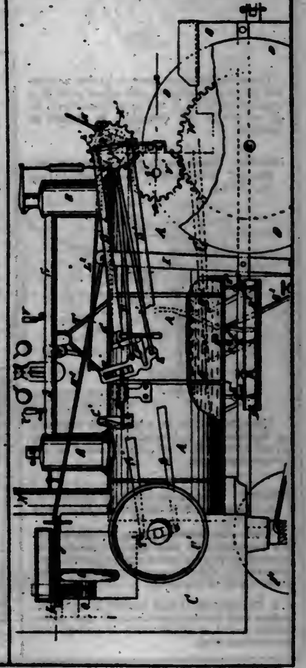
1. In a hydrant valve-case, one or more lateral ports, c, opening at both ends into the valve-chamber, in combination with a suitable arrangement of valves, substantially as set forth, whereby each port or ports are employed alternately as waste and supply ports.

2. The piston-valves b b', having intermediate parts c, communicating with a hollow water-way, in combination with waste and supply port or ports c in the valve-case, relatively arranged and combined substantially as set forth.

3. The piston-valves b b', arranged in the barrel or chamber c relatively to each other and to the upper and lower ends of a port or ports, c, and a waste-passage, c', substantially as set forth, whereby the waste and supply shall each be closed in advance of the opening of the other.

168,700. Road-Engines. John H. Range, Edwardsville, Ill. [Filed Sept. 11, 1875.]

Brief.—The boiler is divided into compartments, to prevent the water from collecting at the lower end when the engine is on an incline. The compartments are connected with the throttle by steam-pipes. Water-tanks are connected by separate pipes to each. By detaching the connecting gear-wheels, the engine may be used as a portable engine.



1. The combination of the partitions Q, the two steam-domes E E, and the connecting-pipes S and T with the boiler A, substantially as herein shown and described.

2. The combination of the throttle-valve W with the middle part of the pipe T T and the pipe S, that connects the two steam-domes E of the boiler A, substantially as herein shown and described.

3. The combination of the receiver D^1 and its pipes F^1 and valves F^2 with the compartments of the boiler A, and with the feed-water pump A^1, substantially as herein shown and described.

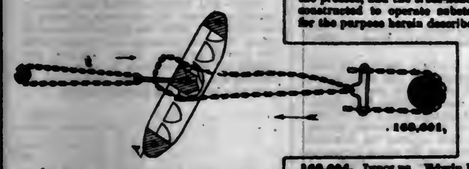
4. The combination of the connecting-rods H, the upright levers I, the connecting-rods H^1, the bent levers J, the chains K, and the shaft gear-wheels and bevel-wheels L M N P with the forward axle G, the boiler A, and the box C, attached to the forward end of the said boiler A, substantially as herein shown and described.

5. The combination of the small gear-wheels L^1, the shaft K^1, the detachable intermediate gear-wheels V^1, and the large gear-wheels W with the axle R of the drive-wheels D, and with the piston-rod P^1 of the cylinder A^1, substantially as herein shown and described.

6. The combination of the gear-wheels L^1, the shaft K^1, the double cranks R^1 T^1, and the two connecting-rods S^1 with the driving-pulley U^1, and with the piston-rod P^1 of the steam-cylinder A^1, substantially as herein shown and described.

160,601. LEVER-TOOTHER. Henry C. Bell, Milan, Mo. [Filed Sept. 4, 1875.]

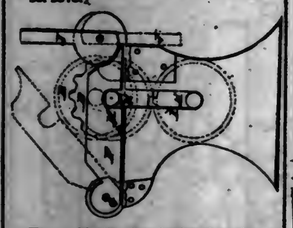
Brief.—On each side of the point of connection of a lever is an oblong opening, with a slotted block on one of its sides, to admit of the chain being drawn through, when alternately slackened in the reciprocation of the lever.



160,601.

The combination of lever A, having a chain-lock, notch or notches on each side of pivot B, a connecting-chain, a, and hoisting-chains C D, all as shown and described, to operate as specified.

160,602. BEAM-STEAM TRIP-HAMMER. T. Hilliard, Weatherford, Tex. [Filed July 10, 1875.]

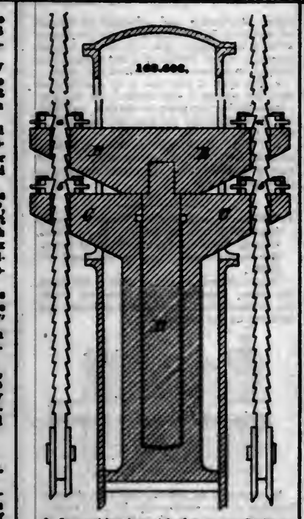


The combination, in a beat-hook tripper, of the rollers A B, hinged arms F, cam-lever J, and springs H, substantially as and for the purpose set forth.

160,603. REVERSIBLE-LIFT DRY-DOCKS. T. A. Hicks, San Francisco, Cal. [Filed July 27, 1875.]

Brief.—The pontoons, having a short stroke, are provided with port-blocks, operating in connection with notched rods supporting the girders, by which means the stroke of the pontoons may be repeated.

1. The girders G and pontoons D, in combination with the notched rods E and port-blocks a a b b, substantially as and for the purposes set forth.



160,602.

2. In combination with the pontoon D, having a stroke shorter than the distance through which the vessel is to be raised, the ratcheted rods E, provided with pawls, the arms C upon the pontoon, and the cross-heads B, the whole constructed to operate substantially as and for the purpose herein described

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160,604. INSOLES. Edwin F. Blossom and Geo. H. Clark, Beverly, Mass. [Filed May 28, 1875.]

Brief.—The insole consists of a shortened or top-sole of water-proof cork, bound with leather on the edges, and having a cloth shank-piece.



The improved insole described, consisting of the cork body D, rubber-cloth shank-piece A, and binding E, combined substantially as and for the purpose specified.

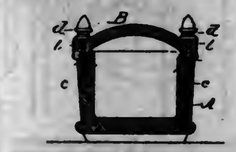
160,605. GLOVERS'-DRYING. A. Bregnier, Middletown, Md. [Filed June 26, 1875.]

Brief.—The bars are held between the wire and the upper shelf, and when not in use the upper ends are held by their loops, which rest on the wire, and the lower ends rest in the notches on the lower shelf.

The clothes-rack herein described, consisting of the connecting bent plate A, shelf B, curved supporting-wire C, secured to the bent plate, and supported directly under the outer edge of the shelf, rack-bars D, depending by elongated loops E from the wire, and held in a horizontal position between the shelf B and wire C, and the lower shelf A, provided with perforations a to receive the free ends of the bars D, and secured to the lower portion of the bent plate, all constructed and arranged as and for the purpose set forth.

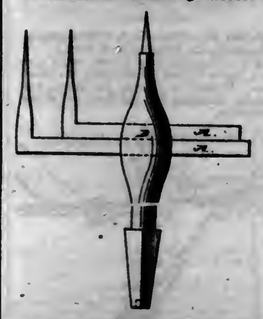
160,606. GLASS BURIAL-CASES. Stephen H. Brooks, Darby, Pa., assignor of one-half his right to Charles Bonsall, same place. [Filed July 14, 1875.]

Brief.—A glass coffin held together by bolts has projections in the cover, to give a strengthened bearing-surface to the bolt-head, and the nut into which the inner end of the bolt screws is embedded in the side of the coffin itself, so as to strengthen the bearings at that end and prevent fracture.



The glass body A, with nuts *a* embedded therein, below the upper edge of the body at the sides thereof, in combination with the glass lid B, formed with projections *b*, and screw-bolts *d*, whereby both the nuts and heads of the bolts have increased bearing-surfaces, substantially as and for the purpose set forth.

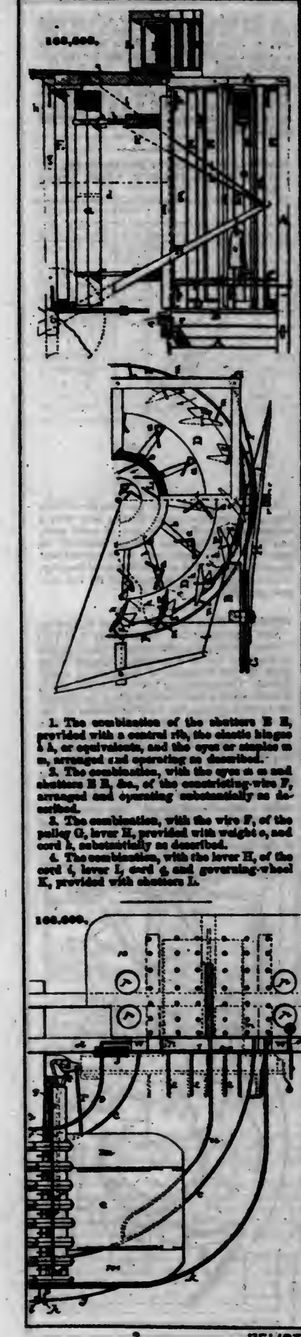
160,607. WASHER-CUTTERS. Henry Brule, Nellsville, Wis. [Filed Aug. 14, 1875.]



An apparatus for cutting leather washers, the cutter-holder constructed of two sections, O D, in combination with the centers A A, adjustably held in a slot of section D by means of a screw-connection, substantially as shown and described.

160,608. HORIZONTAL WIND-WHEELS. F. Buck, Van Wert, Ohio. [Filed Aug. 31, 1875.]

Brief.—The weight of the lever keeps the wire extended or from counteracting the shutters. When the wind is too strong the governor-wheel winds up the cord, which causes the lever to tighten the wire by reeling the pulley, thereby closing the shutters, preventing the action of the wind to the wheel, causing the edges of the shutters to be all brought into a line or circle not to overlap each other. When tank is full an overflow-spout fills the bucket at the end of the cord, and elevates the lever, tightens the wire, and closes the shutters.



160,609.

1. The combination of the shutters E E, provided with a central rib, the elastic hinges I I, or equivalents, and the eyes or staples n, arranged and operating as described.

2. The combination, with the eyes n n and shutters E E, &c., of the counteracting-wire F, arranged and operating substantially as described.

3. The combination, with the wire F, of the pulley G, lever H, provided with weight o, and cord k, substantially as described.

4. The combination, with the lever H, of the cord i, lever I, cord q, and governing-wheel K, provided with shutters L.

160,609. HARVESTERS. John B. Burton, Owatonna, Minn. [Filed Feb. 6, 1875.]

Brief.—The cut grain falls upon a swinging platform, which carries the grain to the binders' table.

1. The combination of the swinging platform and rake *f* hinged thereon, substantially as described.

2. The combination of the rake *f*, platform, rod *h*, ball or catch *i*, rod *j*, and wall *k*, substantially as shown.

3. A movable platform, sliding upon suitable ways, and provided with folding wings, substantially as shown and described.

4. The combination of the platform *e*, rod *i*, wings *m*, lever *n*, and connecting-rods Q *r*, substantially as set forth.

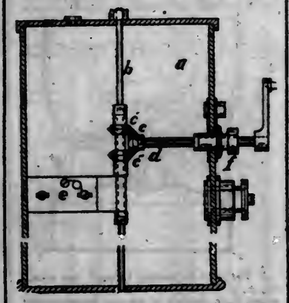
5. The combination of the swinging platform, binders' platform, and rake for sweeping the grain from the swinging platform, substantially as described.

6. The combination of the bent lever V, lever X, rod *p*, bar 1, tooth 2, and spring 3, substantially as shown.

7. The combination of the tubes 5, supports 6, bar 7, bent 8, curved rod 9, and rake *f*, having the hook *p*, substantially as shown and described.

160,610. LARD-TANK STRAINERS. Nathaniel Caldwell, Cincinnati, Ohio. [Filed May 31, 1875.]

Brief.—On the center bolt are placed two gear-wheels. The strainer-blades are fastened to the gear-wheels by means of sleeves, the whole being held in place by set-collars, and operated by means of the turning-crank and wheel.



1. The above-described strainer, consisting of the wheels *c c'* *c''*, shaft *d*, bolt *b*, blades *e e*, and crank *h*, all constructed and arranged substantially as and for the purposes set forth.

2. The combination of the tank *a*, having an outlet, *i*, and the shaft *d*, the bolt *b*, wheels *c c'* *c''*, and blades *e e*, as and for the purposes described.

160,611. LARD-RENDERING TANKS. Nathaniel Caldwell, Cincinnati, Ohio. [Filed Apr. 21, 1875.]

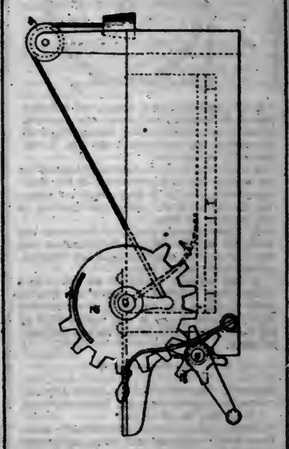
1. The combination of the lower tank-head, having a man-hole, with the plate *j*, chain *k*, arch *p*, and bolt *n*, as and for the purpose specified.

2. Combination of the pipe T *m* (the pipe *m* extending inside the tank, and perforated inside the tank) with the tank *a*, whereby either water or steam may be admitted to the lard-tank as required, substantially as set forth.

3. Combination with the head of a lard-tank of the rod A, the brace or arch *i*, and the man-hole plate *j*, whereby the heads of the lard-tank are braced or supported when the man-hole is in the center, substantially as described.

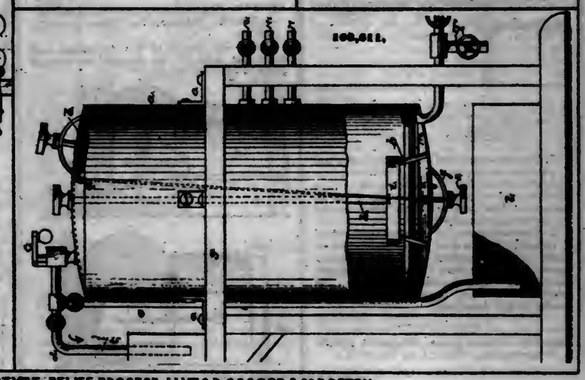
4. The lard-rendering apparatus, consisting of a suitable frame, the tank *a* supported by the legs *o o*, and braced by the rod A, and cross-bar or arch *i*, and having man-hole *k j*, as described, and inlet water or steam pipe T *m*, perforated on the outer side, and outlet-pipes *d a*, and hooks *f* and *i*, substantially as described.

160,612. HOG-LIFTERS. Nathaniel Caldwell, Cincinnati, Ohio. [Filed Apr. 21, 1875.]



The above-described hog-lifter, consisting of the gear-wheel *b*, having a part of the cogs removed, and provided with the step A, the wheel *d*, lever *f*, clutch *j*, the arms *f* attached to the shaft *e*, the counter-balance weight working over the sheave *p*, arranged and combined to operate substantially as set forth.

160,613. BOG-LIFTERS. Nathaniel Caldwell, Cincinnati, Ohio. [Filed Apr. 21, 1875.]

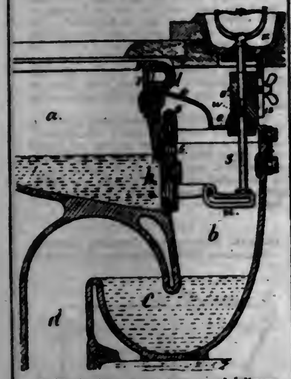


160,613.

The above-described hog-lifter, consisting of the gear-wheel *b*, having a part of the cogs removed, and provided with the step A, the wheel *d*, lever *f*, clutch *j*, the arms *f* attached to the shaft *e*, the counter-balance weight working over the sheave *p*, arranged and combined to operate substantially as set forth.

168,612. Water-Closets. Wm. S. Carr, New York, N. Y. [Filed May 10, 1875.]

Brief.—The bowl and trap are made of porcelain or earthenware, in one piece, the opening between the bowl and trap being circular and tapering in form, to serve as a seat for a valve, constructed to retain the water in the basin, and yet allow an overflow when the water has reached a certain height.



1. The basin *a*, pipe *b*, trap *c*, and delivery-pipe *d*, all made in one piece, with a circular tapering valve-seat around the opening from the side of the basin *a* into the pipe *b*, substantially as set forth.

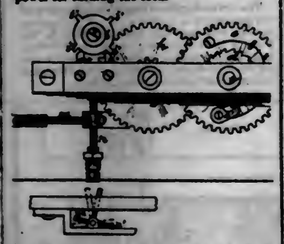
2. The valve *h*, made double, and clamping the elastic ring, and provided with the openings *i* and *k*, so as to form a dam for retaining the water in the basin and allowing an overflow, as set forth.

3. The removable cover *o* to the pipe *b*, carrying the supply-cock *m'*, in combination with the pull and the lever that operates the cock, substantially as set forth.

4. The valve *h*, united to the basin by a hinge joint and bolt, *f*, above the opening from the basin *a* to the pipe *b*, in combination with the cam *s*, arm *u*, and slotted lugs at the back of the valve, as and for the purposes set forth.

168,613. Electro Gas-Lighting Apparatus. Reuben Chamberlin, Hartford, Conn. [Filed May 26, 1875.]

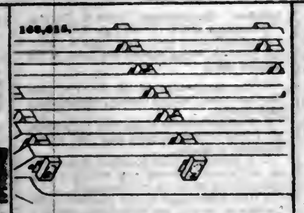
Brief.—Escapement-stops vibrated by armature-lever, releasing and stopping motive power for turning the cock.



1. The combination of the escapement-wheel *i*, provided with the spurs *i'*, with the vibratory escapement-fork *n n' n''* hung on an axis at right angles to the shaft or axis of the escapement-wheel, all operating substantially as shown and described.

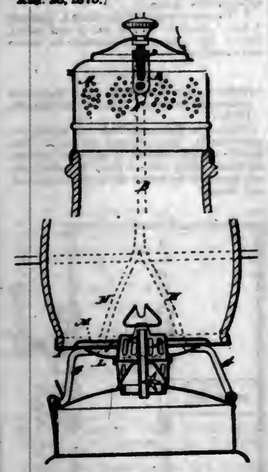
2. The combination of the escapement-wheel *i*, vibratory fork *n n' n''* hung on an axis at right angles to the shaft or axis of the escapement-wheel, ping-shaft *o*, gas-cock *r*, berzer *s*, armature-lever *v*, electro-magnet *k*, and conductors *w w'*, all operating substantially as shown and described.

168,614. Grate-Bars. Walter C. Childs, Pittsburg, Pa. [Filed Aug. 28, 1875.]



A grate-bar, having independent detachable lugs attached to the same, substantially as set forth.

168,615. Lanterns. Patrick J. Clark and Jos. Kiats, West Meriden, Conn. [Filed Aug. 28, 1875.]



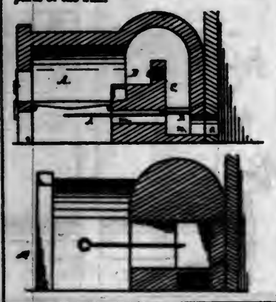
1. The yoke B, passing through the metal cup A, in combination with the nut D and a screw, E, in the top of the cup, substantially as specified.

2. The metal cup, having the yoke passing through slotted holes in its sides, in combination with the globe C, fastening-screw E, and nut D, substantially as specified.

3. The combination, with burner K, cap M, and perforated disk L, of a base-plate, I, having a large central hole, J, and other holes on the outside of disk, as and for the purpose specified.

168,616. Furnaces for Brick-Kilns. W. S. Colwell, Pittsburg, Pa. [Filed Sept. 20, 1875.]

Brief.—By means of the partitions and gates, the heat can be directed to various parts of the kiln.

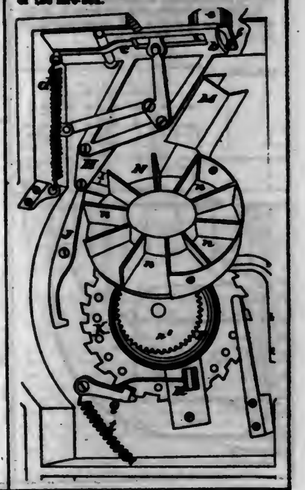


1. The gates D and chamber *c*, in combination with the fire arches or flues *e* of the kiln and the chambers O B A of the furnace, substantially as herein described, and for the purpose set forth.

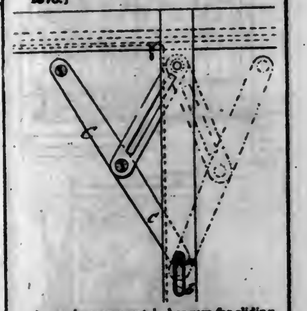
2. The movable partitions *c*, in combination with the gates D, chamber *c*, fire flues or arches *e*, and chambers O B A of the furnace, substantially as herein described, and for the purpose set forth.

168,617. Furnaces for Brick-Kilns. W. S. Colwell, Pittsburg, Pa. [Filed Sept. 20, 1875.]

Brief.—By means of the partitions and gates, the heat can be directed to various parts of the kiln.



168,618. Hangers for Sliding Doors. L. A. Cook, Dansville, N. Y. [Filed July 17, 1875.]



As an improvement in hangers for sliding doors, the combination of sliding door with a swinging lever, sliding in slot of main post, and with a rocker-bar pivoted centrally to lever and to the main post, to be opened and closed by the parallel motion produced thereby, substantially in the manner and for the purpose set forth.

168,619. Face-Boxes. Aaron J. Curtis, San Francisco, Cal. [Filed July 7, 1875.]

Brief.—An open casket or cavity is arranged at the free end of a swinging hinged metal plate, for the reception of the coins or metal tickets. On depressing the metal plate, which is retained at a horizontal position by a suitable tension spring, the coin contained in the cavity is expelled by a sliding false bottom into the discharge-chute, from whence it passes into one of the radial compartments of the intermittingly-revolving wheel. At the same time the alarm-bell is sounded and the depression registered. The depression of the plate effects the intermittent and partial rotation of the radial compartment-wheel. The coins, after exhibition for a half-revolution, pass beyond the guard-plate, and fall into the locked till of the face-box.

1. The plate A, hinged at one end and provided with a pocket, *a*, and sliding false bottom, *f*, in combination with the lever G, substantially as and for the purposes set forth.

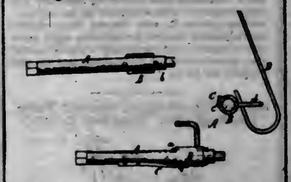
2. The plate A, with its face receiving and depositing socket or cavity *a*, and lever H, with its attached pawl I and detent *J*, in combination with the toothed wheel K, index-fingers *n* and W, gear-wheels *n' n''*, and angularly-rotating wheel N, with its radial compartments, substantially as and for the purpose described.

3. The hinged plate A, with its face receiving and depositing socket *a*, in combination with the spout M and angularly-rotating wheel N, having the radial compartments *n n* and guard-plates O, substantially as and for the purpose described.

4. A combination face-box, alarm, and register, so constructed that the faces shall be received in radial compartments *n n* of a wheel, N, and carried by each wheel during half of its revolution, and then deposited in the drawer of the box, the faces in the compartments of the wheel being open to inspection during the revolution of the wheel N, substantially as and for the purpose described.

168,620. Lockwork Attachments for Clocks. E. C. Covell and M. M. Robinson, Laconia, N. H. [Filed Sept. 21, 1875.]

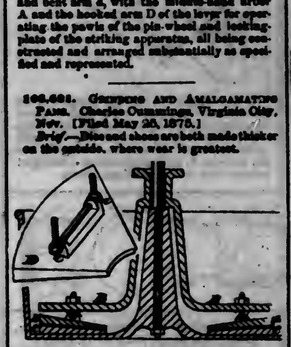
Brief.—Device for permitting the hands to be turned backward without operating the striking mechanism.



In a clock the combination of the locking-spring C and the rotary sleeve B, its stud *c*, and bent arm *d*, with the minute-hand arbor A, and the hooked arm D of the key for operating the pawls of the pin-wheel and locking-plate of the striking apparatus, all being constructed and arranged substantially as specified and represented.

168,621. Grinding and Amalgamating Pans. Charles Cummings, Virginia City, Nev. [Filed May 20, 1875.]

Brief.—Dies and shoes are both made thicker on the outside, where wear is greatest.



In an amalgamating pan, the mullers B, in combination with the dies C and shoes D, having a gradually-increasing thickness of metal toward their outer edges, substantially as shown and described, and for the purposes set forth.

168,622. Hunting-Jackets. H. L. Daigre, Alexandria, La. [Filed July 10, 1875.]

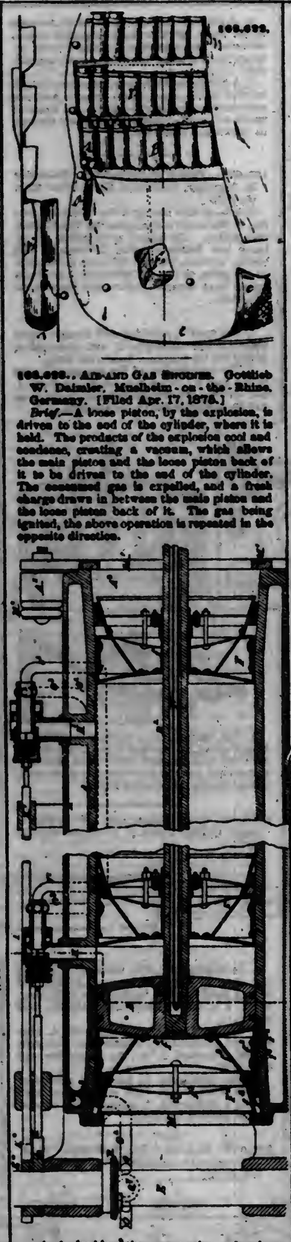
1. A sportsman's coat, provided with game-pockets at the side flaps or skirts, having side gussets and bottom net-work, for the purpose set forth.

2. In a game-pocket, constructed substantially as described, the small front gusset and loop, in connection with fastening-button, to afford convenient opening and closing of upper part of pocket for introduction of game, as specified.

3. The covering-flaps of the game-pockets, having button-holes at lower part, in combination with buttons of the same for looping up flaps for exhibiting the game, substantially as set forth.

168,623. Air-and Gas Engines. Gottlieb W. Daimler, Mualheim-on-the-Rhine, Germany. [Filed Apr. 17, 1875.]

Brief.—A loose piston, by the explosion, is driven to the end of the cylinder, where it is held. The products of the explosion cool and condense, creating a vacuum, which allows the main piston and the loose piston back of it to be driven to the end of the cylinder. The consumed gas is expelled, and a fresh charge drawn in between the main piston and the loose piston back of it. The gas being ignited, the above operation is repeated in the opposite direction.



1. A double-acting gas-engine, wherein a partial vacuum is formed by the expansion and cooling of the products of combustion alternately on each side of the working-piston, the atmospheric pressure on the other side of the piston producing motive power, substantially as herein described.

2. A double-acting gas-engine consisting of a cylinder open at both ends to the atmosphere, and having a working piston, on each side of which is a loose piston, so arranged that at the end of each stroke the one loose piston, by the explosion of a charge, is propelled to the end of the cylinder without doing work, and is held there while the gaseous products of combustion contract, and the working piston, together with the second loose piston, is caused by atmospheric pressure to perform its stroke, substantially as herein described.

3. In a double-acting gas-engine, the cylinder A, with splayed open ends A', operating in combination with the working piston B and two loose pistons, F F', having conical segment rings *f'*, substantially as herein described.

4. In a double-acting gas-engine, the loose pistons F F', and a device for arresting the motion of said pistons to form a space for the explosive gas, operating alternately in combination with the piston B as working piston, substantially as herein described.

5. In a double-acting gas-engine, the method of effecting the simultaneous expulsion of the products of combustion on one side of the working piston, and the drawing in of an explosive charge on the other side of the piston, substantially as herein described.

6. In a double-acting gas-engine, the working piston B with rod G, operating in combination with the loose pistons F F' in such manner that, as the piston B toward the end of its stroke approaches the one loose piston, so as to expel the products of combustion, the drawing in of the next explosive charge is simultaneously effected by arresting the motion of the second loose piston, substantially as herein described.

7. In a gas-engine, a loose piston propelled by the explosion, in combination with devices for wedging said piston, whereby it is held at the end of its stroke by absolute counter-pressure exerted thereon by the cylinder-surface, as distinguished from mere frictional contact, substantially as herein described.

8. The loose piston F with cylindrical part *f'* fitting with packing *f''* against the cylinder, and conical part *f'* with conical segment-ring *f'*, controlled by springs *f'*, and operating, in combination with the conical ends A' of the cylinder A, substantially as herein described.

9. In combination with the loose pistons, a broad ring of leather or other suitable material, held at its middle by a ring, *f*, so that while the piston can move loosely in the cylinder, the pressure acting on the leather ring on the one side or the other of the piston will insure its working air-tight, substantially as herein described.

10. In combination with the loose pistons and the segment-ring for wedging the same in the cylinder, a device or devices for releasing the loose pistons when pushed by the working piston, substantially as described.

11. The yielding annular leather-piston M, operating, in combination with the piston F, for effecting a close contact between them and the working piston, substantially as herein described.

12. The method of regulating the power of gas or petroleum engines by entirely cutting off the supply of combustible gas or vapor when the engine is running above its normal speed, while the working piston remains continuously in motion, substantially as herein described.

13. The combination of a governor, the valve of the gas-supply-pipe, and suitable intermediate mechanism for causing the governor to fully open or close the gas-supply, whereby a uniform quantity of gas for each charge is insured, substantially as herein described.

14. The valve P with stem P' and head P'', operating, in combination with the governor G and projection E', so that the governor only serves to bring parts into motion, whereby the gas-supply is either entirely closed or fully opened, substantially as herein described.

15. In combination with the gas-supply pipe of a gas or vaper engine, the flap-valve R, provided with an adjustable weight, R', substantially as and for the purpose specified.

16. The admission-valve apparatus L, with lumen for both gas and air formed in the valve and valve-stem itself, and so arranged that by the closing of the valve the gas and air supply are simultaneously cut off, substantially as herein described.

17. In admission-valve apparatus to gas or petroleum engines, the gas-jet *l''* burning in the chamber *b'*, with air-holes *l''* and chimney *l'''*, the said gas-jet being made to ignite the

charge in the engine-cylinder by causing a portion of the flame to be conveyed by means of the disk F^5 into the valve-chamber, substantially as herein described.

15. The admission-valve apparatus I, with valve I^2, air and gas passages I^3 I^4 I^5, chamber I^6, apertures I^7, disk I^8, and gas-jet I^9, arranged and operated by means of the rod K and spring I^{10}, as herein described.

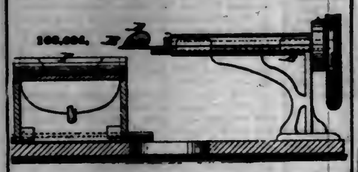
16. An admission-valve for air or gas engines provided with inlet-passages for air and gas, said passages being heated by the flame that ignites the charge, substantially as specified.

20. The hollow pistons B and piston-rod B', supplied with water from the water-jacket of the cylinder by the valve W, receptacle V^1, and pipes V^2 V^3 V^4, substantially as herein described.

21. The double-acting gas or petroleum engine, consisting of the cylinder A, pistons B B', admission-valves I I^1, and regulating-valve I^5, all combined and operating as herein described.

168,624. Cork-Burrers. William A. Dieh, Cleves, Ohio. [Filed June 26, 1875.]

Brief.—A rotating shaft, provided with a bit and point, bores or turns off the cork, and severs the bottle from the ear, which is placed on a sliding table, and pushed in a line with and toward the boring-tool.

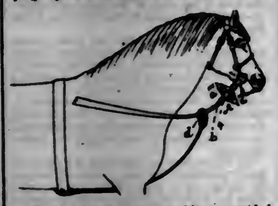


168,624.

The combination of the rotating, boring, and cork-cutting tool D E, and the sliding table F, substantially as and for the purpose set forth.

168,625. Harness. W. H. B. Diehl, Richland Centre, Pa. [Filed July 26, 1875.]

Brief.—The extensions to the frame of the buckle prevent the martingale-ring from slipping beyond it toward the ring of the bit.



The combination of the buckle A, provided with the lateral projections a^{x} a^{xx}, and attached to the ruin, which is connected to the bit, as described, with the ring D of the martingale, substantially in the manner and for the purpose hereinbefore set forth and described.

168,626. Playing-Cards. A. Dougherty, Brooklyn, N. Y. [Filed Oct. 6, 1875.]



1. A playing-card the face of which consists of the usual figure or spots, together with a miniature representation of the card itself, arranged at the upper left-hand corner, as specified.

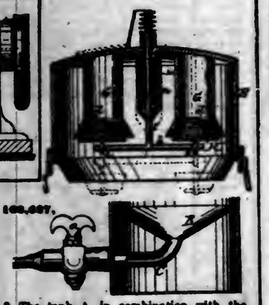
2. A triplicate playing-card the face of which consists of the usual figure or spots and two miniature representations of the said figure or spots, arranged at diagonally opposite corners, as shown and described.

168,627. Fire-Extinguishers. Philander M. Doughty, Louisville, Ky. [Filed Mar. 18, 1875.]

Brief.—A case having in the interior a funnel, at the lower part connecting with the discharge-pipe. The hinged cover has on the interior two bottles opening downward. The bottles contain, the one acid, the other alkaline solution, so that the necessary ingredients are all kept separate before the occasion to mix them.

1. The tank A, provided with funnel-shaped bottom B and outlet-pipe C, with stop-cock a, as and for the purposes herein set forth.

2. The combination of the stoppers H, with eyes c, rods h i, tubes m n, packing p, hook J, and spring s, all constructed substantially as and for the purposes herein set forth.



168,627.

3. The tank A, in combination with the hinged cover E, provided with bottles for the soda and acid, the said cover being arranged to open and uncover the entire top of the tank, as and for the purposes set forth.

168,628. Cane-Umbrellas. W. H. Engelhardt, College Point, N. Y. [Filed Sept. 1, 1875.]



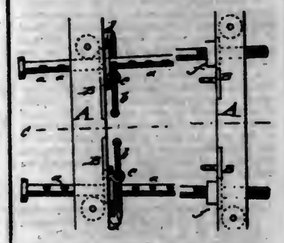
168,628.

1. In combination with the staff A, having the stem F and shoulders A' A', the ribs having short sections between the collapsing-joints b i, substantially as described and shown.

2. In combination with the staff A, constructed, substantially as described, with stem F and shoulders A' A', the removable end ferrule F.

3. The oversleeve E, having a polygonal rim, in combination with a polygonal staff having a depression, I, substantially as and for the purpose set forth.

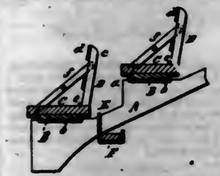
168,629. Hatchway-Braces. J. Fleming, Buffalo, N. Y. [Filed Sept. 17, 1875.]



As an improvement in hatchway-braces for grain elevating and shoveling devices, the combination of sheave-timbers A, having supporting-plates B, with lateral brace-rods C and adjusting devices for securing rigid position of sheave-timbers for any width of hatchway, substantially in the manner and for the purpose set forth.

168,630. Corn-Planters. Alpheus Fox, Rock Falls, Ill. [Filed Feb. 10, 1875.]

Brief.—Within and upon one side of the hopper is pivoted the vertical segmental seed-wheel, having suitable seed-orifices, and limited in its vibration by coming in contact with a bevel-stop. The seed is then delivered into the furrow-opener through orifices in the side of the hopper. Outside of the hopper, and upon a square bolt, is pivoted a connecting-rod, one end of which is attached to the vibrating bar, and the other to the vertical cut-off.



168,630.

1. In combination with the uprights A the movable stirrups E, adapted to receive a plank foot-rest, substantially as described and shown.

2. In combination, the chair C, the uprights A, the planks B, the movable stirrups E, and the foot-rest F, all constructed and arranged substantially as described and shown.

168,631. Circus-Seats. George T. Fisher, Cincinnati, Ohio. [Filed Sept. 11, 1874.]

1. In combination with the uprights A the movable stirrups E, adapted to receive a plank foot-rest, substantially as described and shown.

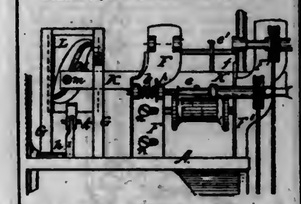
2. In combination, the chair C, the uprights A, the planks B, the movable stirrups E, and the foot-rest F, all constructed and arranged substantially as described and shown.

168,632. Car-Brakes. Henry Goss, Union City, Pa., assignor of one-half his right to E. H. Frisbee, same place. [Filed Aug. 14, 1875.]



The combination of a rake, c, bar or cord e, and slide d with a rod, g, and operating device f, substantially as shown.

168,633. Machines for Filling Sewing-Machine Bobbins. George Gowing, San Francisco, Cal. [Filed June 22, 1875.]



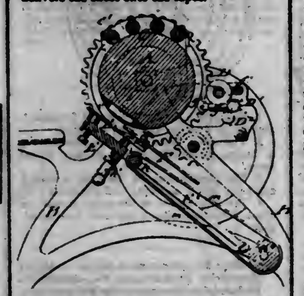
1. In a bobbin-winding machine, the combination, with the reciprocating plate I, of the adjustable cam M and reciprocating bar K, substantially as described and shown.

2. In a bobbin-winding machine, the combination of the standard F', carrying the bobbin holding and driving spindles, with the adjustable standard F, carrying the spring holding-pins, substantially as described and shown.

3. In an automatic bobbin winding machine having the capacity to receive and fill two or more bobbins at the same time, the combination, with the table A, of the standards F F, carrying the spindles d and pins b, arranged as described, the standard G, carrying the reciprocating cam-plate L, and the bar K, reciprocating behind the spindles with an increase of velocity at each end of its movement, all substantially as described and shown.

168,634. Fastening Fabrics. Frederick W Griffith and George P. Byrne, New York, N. Y. [Filed Mar. 1, 1875.]

Brief.—The lubing-rods revolve around the cylinder which holds the cloth, while the pistons oscillate to make the impression, and deliver the sheet onto the tapes.



1. The combination of the roller-frame C, provided with cam-edge g^1, laterally-sliding connecting-roller D^1, and longitudinally-reciprocating changer D, for suspending contact of the latter with the former during the passage of the lubing-rollers against the changer D, constructed and operating substantially in the manner described and specified.

2. The combination, with the pistons E' piston-frame E, and guide-frame F, of the conveying-tapes m, arranged in substantially the same plane with the pistons, substantially as described and specified.

3. The combination of the receiving and driving roller D^2, reciprocating revolving roller D, and intermediate connecting-roller D^1, with the roller-frame C, rollers C', and stationary distributing-cylinder A, constructed and operating substantially in the manner described and specified.

4. The combination, with the stationary cylinder A, having a chase-bed with grooved flanges, which are in a plane at right angles to the axis of the cylinder and terminate in seats for supporting the chase, of the lubing-rollers C' and frame C, which revolve down over the chase, so as to tend to retain and force it into place between said flanges, substantially in the manner described and specified.

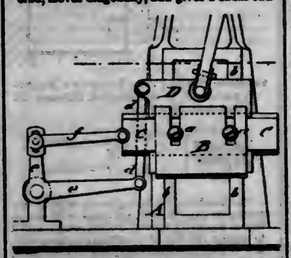
5. The adjustable plates E', combined with guide-frame F and notched guide-rods h, as and for the purposes specified.

6. The arms i and cams l combined with guide-frame, as and for the purposes described.

7. The combination of the roller-frame C, spur-wheel a, bevel A', gear-wheel d, and single intermediate pinion l connecting the shaft and roller-frame, so that said roller-frame will revolve in the reverse direction to the driving-gear wheel, substantially in the manner described and specified.

168,635. Tobacco-Cutting Machines. A. A. Hagen, New York, N. Y. [Filed Aug. 7, 1875.]

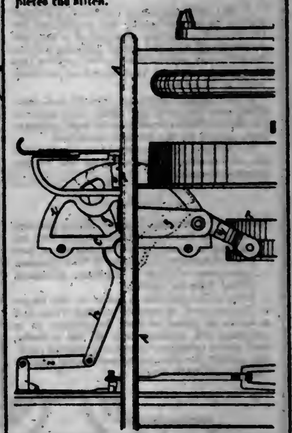
Brief.—The cutter, as it is raised and lowered, moves diagonally, and gives a shear-cut.



The combination, in a tobacco-cutter, of the horizontally-sliding plate C, carrying cutting-knife B, the vertically-movable plate or head D, and the link or levers d e f, substantially as and for the purpose specified.

168,636. Sewing-Machine. John S. Hall, San Francisco, Cal., assignor to J. L. Boone, same place. [Filed Mar. 25, 1875.]

Brief.—An independent needle, operated by pawches formed upon vibrating arms, is arranged in a frame having a reciprocating motion, so that the needle, in its downward stroke, will be carried through the edge of the cloth, and on its return movement pass around the edge of the same, forming thereby the ordinary overseam stitch. An arm, provided with a hook at its outer end, is arranged upon the main driving-shaft in such a position that it passes between the thread and needle at every descent of the same, and carries the thread around a pulley, which movement draws the thread through the cloth and completes the stitch.



1. In an overseaming sewing-machine, the combination of a loose reciprocating needle, with an inclosing-guide to retain it and prevent breaking, substantially as set forth.

2. The independent needle V and pawches n n, in combination with a reciprocating frame, C, substantially as and for the purpose above described.

3. The reciprocating frame C, with its recess O, and having the opposite ways or grooves X, in combination with the arms f f, with their pawches n, and the independent needle V, substantially as and for the purpose above described.

4. The cam-wheel r and pivoted over q, in combination with the reciprocating needle-frame C, substantially as and for the purpose above described.

5. The stationary wheel S and revolving arm t, with its hooked end W bent, as described, in combination with the independent needle V, pawches n n, and reciprocating frame C, substantially as and for the purpose above described.

168,637. Short-Thread Sewing-Machines. John S. Hall, San Francisco, Cal., assignor to J. L. Boone, same place. [Filed Mar. 25, 1875.]

Brief.—An independent needle, operated by pawches formed upon vibrating arms, is arranged in a frame having a reciprocating motion, so that the needle, in its downward stroke, will be carried through the edge of the cloth, and on its return movement pass around the edge of the same, forming thereby the ordinary overseam stitch. An arm, provided with a hook at its outer end, is arranged upon the main driving-shaft in such a position that it passes between the thread and needle at every descent of the same, and carries the thread around a pulley, which movement draws the thread through the cloth and completes the stitch.

1. In an overseaming sewing-machine, the combination of a loose reciprocating needle, with an inclosing-guide to retain it and prevent breaking, substantially as set forth.

2. The independent needle V and pawches n n, in combination with a reciprocating frame, C, substantially as and for the purpose above described.

3. The reciprocating frame C, with its recess O, and having the opposite ways or grooves X, in combination with the arms f f, with their pawches n, and the independent needle V, substantially as and for the purpose above described.

4. The cam-wheel r and pivoted over q, in combination with the reciprocating needle-frame C, substantially as and for the purpose above described.

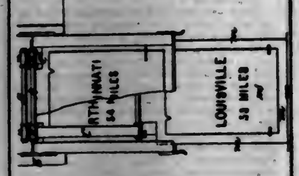
5. The stationary wheel S and revolving arm t, with its hooked end W bent, as described, in combination with the independent needle V, pawches n n, and reciprocating frame C, substantially as and for the purpose above described.

168,638. Button-Fastenings. James H. Harrington, Providence, R. I. [Filed Sept. 17, 1875.]



The combination of the pivoted hook-eye B and the spring C, with the back A, of a button, to adapt it to be secured to the garment by the insertion of the eye of another button or a ring in said hook-eye, substantially as herein shown and described.

166,639. STATION-INDICATORS. Pliny H. Harris, San Antonio, Tex. [Filed Mar. 18, 1875.]



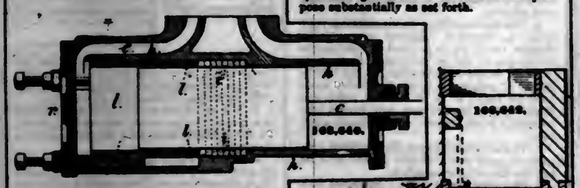
1. In a railroad-station indicator, a series of sliding cards containing the names and distances of the stations arranged in a box, and so combined that the act of drawing out one from the box returns into the box any one that they previously have been drawn out, substantially as described.

2. The sliding carrot or card-frames, combined with the box, the bands C C, and the two series of transverse wires or rods, substantially as and for the purpose described.

3. The springs s, combined with the box and the card-frames, substantially as and for the purpose described.

166,640. PLUNGER-PUMPS. Roger Hartley and John B. Marshall, Pittsburg, Pa., assignors to Sarah Hardick, executrix, and John Ryer and Abraham H. Van Hoesen, executors, of Chas. B. Hardick, deceased. [Filed July 12, 1875.]

Brief.—The cylinder is bored or cast larger at the rear end, to receive packing-rings and a sleeve or gland of such proportions as to complete the uniform bore of the cylinder, said sleeve being set up to compress the packing around the plunger by set-screws passing through the head-head.



1. The screws s passing through the removable head-head r, in combination with the sleeve i, packing-rings i, and cylinder A, as and for the purposes set forth.

2. The sleeve i and lugs i, forming bearings in combination with the screws s and cylinder A, having grooves for such lugs, substantially as specified.

166,641. WATER-WHEELS. Jas. L. Keiser, Rome, N. Y. [Filed July 31, 1875.]

Brief.—Between the curb and the wheel is placed a gate, which has a flange formed around its outer top edge, for lapping over the top of the curb, for the double purpose of forming a water-tight joint and supporting the gate. Dovetailed in the top of the gate is an arm that is bifurcated at its outer end, and has an eye or ring formed in its inner end, for fitting around the extension of the bearing-box. This arm serves to open and close the gate, and also prevents side movement, friction, or play on the gate while moving.





1. The gate A, having the flange f, recess 1, and flange 2 on the wheel, as specified.

2. The hub a, formed as shown, and having a flange, 2, formed around its top, as set forth.

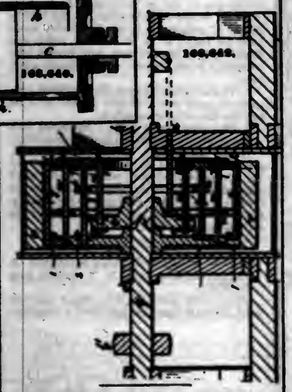
3. The combination of the gate A, arm l, and extension a, as shown and described.

4. The combination of the shaft o, disk or crank 3, friction-roller 4, and arm l, as specified.

166,642. DISINTEGRATING-MILLS. J. Moore Hendricks, Philadelphia, Pa., assignor to Philadelphia Disintegrating-Mill and Manufacturing Company. [Filed June 22, 1875.]

Brief.—A disintegrating-mill having parallel disks or rings carrying annular rows of bars or cages, arranged alternately, and rotated in opposite directions. The disks, which support the inner ends of the interior series of cross-bars, are set back from the free ends of said bars, leaving a clear space between their extremities and opposite disks, to avoid clogging of ground material.

The combination of the rings f and s with the cross-bars f and n, respectively, when said rings are set back from the free ends of the cross-bars, which are shortened sufficiently to leave a clear space between the ends of the bars and the opposite disks or rings of the respective cages in the manner and for the purpose substantially as set forth.



166,643. TOOLS FOR TURNING EMERY-WHEELS. J. D. Huntington, Chicago, Ill. [Filed Aug. 30, 1875.]



The head-tool for facing emery-wheels, consisting of the shank B, provided with the series of wheels D, having the spurs d, adapted to engage the faces of the wheel consecutively, and loosely journaled upon one end the same shaft, as specified.

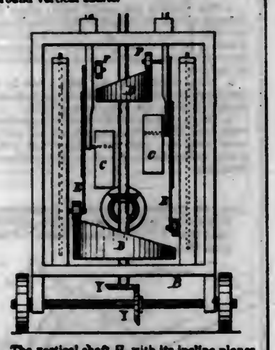
166,644. SPINDLE-BOLSTERS. W. Jenckes, Manchester, N. H. [Filed Sept. 6, 1875.]



A spinning-frame spindle-bolster, A, provided with an elongated open slot, C, extending up within the bolster ring or shoulder B, and connecting with a passage, D, through said ring, all constructed substantially as set forth, for the purpose specified.

166,645. MECHANICAL DEVICES. Joseph P. Kelley, Washington, D. C. [Filed Aug. 16, 1875.]

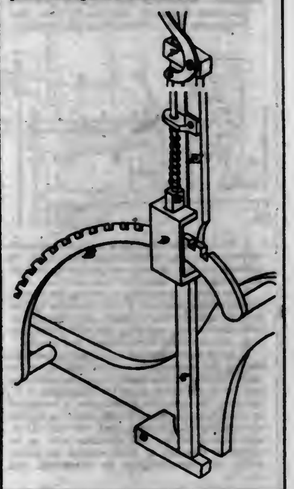
Brief.—Power applied to a vertical shaft, having on it a horizontal fly-wheel, revolves the axle-tree of a street or other carriage by bevel-gearing; motion further regulated by weights and friction-rollers on inclined planes around vertical shafts.



The vertical shaft H, with its inclined planes D D, friction-rollers F F, weights C C, toggle-levers E E, rack J, cog-wheel G, bevel-gearing N, S, T, and Y, and fly-wheel P, all arranged, combined, and operating as herein described, and for the purposes set forth.

166,646. GANG-PLOWS. Daniel Kendig, Napa City, Cal. [Filed July 26, 1875.]

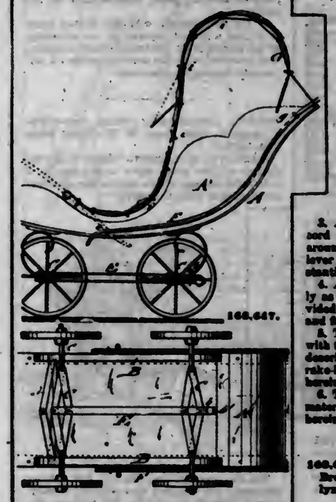
Brief.—An eccentric lever has its pawl and spring upon a sliding frame, and accommodates itself to the curve of the rack, which passes through said frame or box.



The semicircle or rack B, in combination with the lever C, having the sliding boxes D and F, and their connecting-arm E, and the pawl G, rod H, and operating lever I, the whole constructed substantially as and for the purpose herein described.

166,647. CHILDREN'S CARRIAGES. Ernst Krueger, New York, N. Y. [Filed June 19, 1875.]

Brief.—The top is supported by curved guide-rods and the body upon lazy-tongs.

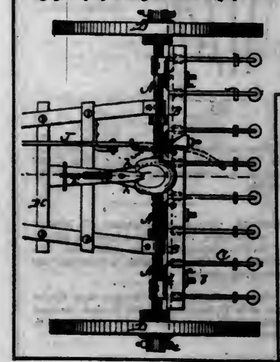


1. The curved guide-rods C C, combined with sides A' A', and a cover, movable relatively to the guide-rods, in the manner described.

2. In combination with the rigid sides and flexible bottom of the carriage-body, the pairs of lazy-tongs C C, one of which has the extension b', and the bars E, and the locking-pin h, as shown and described, for the purpose specified.

166,648. WIRE HAY-RAKES. Charles Le Dow, Ballston, N. Y. [Filed Sept. 2, 1875.]

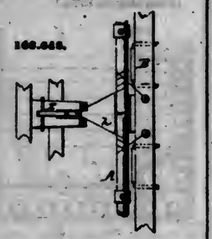
Brief.—The friction-head is double, each part extending around a different section of the axle, so that if one wheel is stationary, as in turning short around, the motion of the other wheel may be made to raise the rake-head. The curved head-lever may be made to engage with one of the teeth to hold the head in its elevated position, and may be disengaged by operating the friction-gripe.



1. The combination of a friction-gripe with the axle and rake-head, for locking them together, for the purposes set forth.

2. The longitudinally-grooved button G, pivoted to the front of the rake-head, in combination with the bent rake-teeth and grooves in the head, whereby the teeth are secured to the head, and a free hinge movement of the same permitted, substantially as herein set forth.

166,649. WOOD-SPLITTERS. Wm. Lotus, Brooklyn, assignor to T. Karuts, Brooklyn, E. D., N. Y. [Filed July 24, 1875.]



3. A friction-gripe consisting of a wire or cord connected to the rake-head, wrapped around the axle, and connected to the foot-lever for locking the axle to the head, substantially as set forth.

4. A friction-gripe, constructed substantially as described, in combination with the divided axle, secured firmly to the wheels, as and for the purposes set forth.

5. The curved lever-handle, in combination with the friction-gripe, substantially as herein described, the axle carrying the wheels, the rake-head, and the rake-teeth, for the purposes herein set forth.

6. The sleeve d, of india-rubber or equivalent material, adjustable upon the rake-teeth C, as herein set forth.

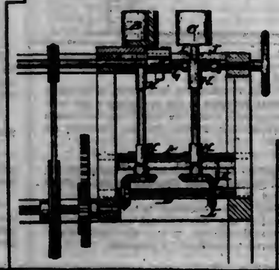
166,650. WOOD-SPLITTER. Wm. Lotus, Brooklyn, assignor to T. Karuts, Brooklyn, E. D., N. Y. [Filed July 24, 1875.]



A wood-splitter for operation by hand, consisting of a bed having head D and guides C C, a knife, E, having racked shank E, and a lever, G, having a toothed arc and, F, all constructed and arranged as shown and described.

166,651. ADJUSTING FEED-ROLLS FOR PLANING-MACHINES. Chas. D. Lawrence and Chas. H. Ward, Fairfield, Me. [Filed July 17, 1875.]

Brief.—The feed-rolls are moved to and from the table on rocks by pistons, whose bearings are supported by feed-screws working through the same.



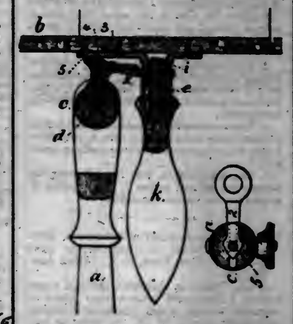
The combination, with feed-roll shaft, rod F, screw-rod G, stationary racks J, and shaft I, having pinion at each end, of a feed screw-nut and sleeve provided with bearings for the feed-roll shaft and the shaft I, as and for the purpose specified.

166,652. COMPOUND FOR ARTIFICIAL STONE. Hans Lassen and James C. Metcalfe, Jr., Memphis, Tenn. [Filed Aug. 28, 1875.]

Brief.—Four parts of clear sand, two parts of cement, and one part of clay (pre-calcined burnt) are mixed dry, and to every bushel of the above are added one quart oxide of iron, one pound sal-ammoniac, and three gallons of water.

A compound for artificial stone made of clear sand, cement, and powdered burnt clay mixed with oxide of iron, the whole subsequently mixed with a solution of sal-ammoniac and water, substantially as above set forth.

166,653. STEREOSCOPES. Wm. H. Lewis, Brooklyn, E. D., N. Y. [Filed Jan. 10, 1876.]

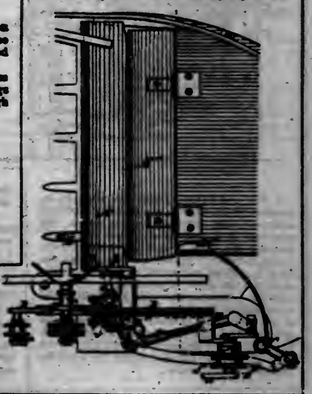


1. The stud 5 upon the joint a, entering the hole 4 in the plate 3 of the nut i, in combination with the arm 2, screw-handle b, column c, and stereoscope k, substantially as set forth.

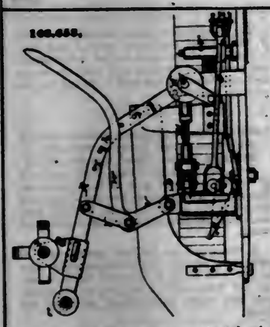
2. The arm 2 upon the joint-plate of the column, having a hole through which the screw c of the handle b passes, in combination with the nut i upon the stereoscope-base, substantially as set forth.

166,654. HARVESTERS. Christopher Lidren, La Fayette, Ind., assignor to himself and R. Jackson, same place. [Filed June 5, 1875.]

Brief.—The rake, after sweeping over the platform, is caused to return beneath it. The rod is adjustable along the lever on which it is mounted, and is also vertically adjustable.



160,653.



1. The combination of arm c, pivoted rake A B, and support C, as and for the purpose described.

2. The combination of arm b on the sleeve E with the cam-groove F on the rake, arranged to turn on its axis at the same time that it swings forward and backward, and the sleeve E swings free or independent of the rake to some extent, substantially as specified.

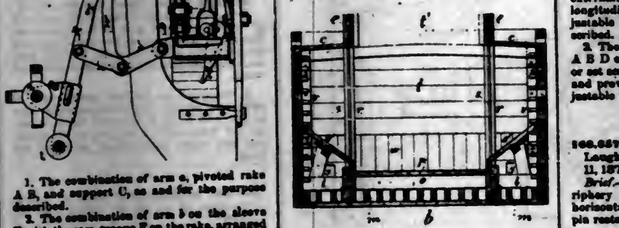
3. The suspended or overhanging platform having a flexible front portion, in combination with a rake arranged to pass over it going back, and under it going forward, substantially as specified.

4. The combination of stationary cam L with the oscillating and swinging rake A, projection b, and the cam-groove F, substantially as specified.

5. The combination, with lever R, carrying adjustable rod and pulley T, of the pulley S, as and for the purpose specified.

160,654. APPARATUS FOR PURIFYING, DRYING, AND COOLING OR WARMING AIR. Abel S. Lyman, New York, N. Y. [Filed Apr. 26, 1875.]

Brief.—Water is sprinkled through a pan having a perforated bottom onto pieces of charcoal, through which passes, or is driven, an upward current of air. In order to cool the air, the water may be cooled by the refrigerator of an ice-machine, or otherwise. In order to warm the air it is passed, after purification, through the air-chambers of a heating apparatus. Some warmth may be gained in very severe weather by use of well-water.

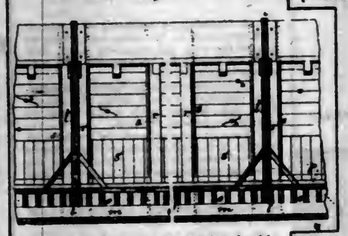


1. The combination, with the room to be purified, of the filter A, composed of pieces of charcoal, coke, or other similar pieces, the sprinkler D S, and air-chambers F and R, whereby the filter is supplied with sprayed water, and the air passed upward through the filter is purified and cooled or warmed, as desired, for the purposes specified.

2. The combination, with the room to be ventilated, of the filter A, composed of pieces of charcoal, coke, or other similar pieces, the sprinkler D S, and air-chambers F and R, with the fan or other arrangements for urging the circulation of the air up through the filter, for the specified purposes.

3. The combination of the filter A, composed of pieces of charcoal, coke, or other similar pieces, the sprinkler D S, and air-chambers F and R, with the boiler or heater G, and the pipes H and I, substantially as and for the purposes set forth.

160,655. COAL-RANGES. George B. Martin and Julius A. Francis, New Haven, Conn. [Filed May 10, 1875.]



1. The bolt-heads f, made with boards with dovetailed ends received between the vertical studs e that are secured to the sides of the boat or barge, in combination with the bolts c passing through the combings and keelsons, as set forth.

2. The boat or barge, made with dovetails or combings 2, that taper and project within the vessel, for the purposes set forth.

3. The longitudinal string-pieces m beneath the beams l, and receiving the planking, in combination with the floor-timbers o and planking p, as and for the purposes set forth.

4. The bolt-heads, constructed as aforesaid, in combination with the inclined partitions r and m, as set forth.

5. The combination, in a barge, of the longitudinal keelsons f, the combings e, the connecting-bolts c, and the transverse bolt-heads f, substantially as and for the purposes set forth.

160,656. SLOTTED FRAMING-SQUARES. J. H. Molineux, San Francisco, Cal. [Filed Nov. 6, 1874.]

Brief.—The scribing-points are screw-threaded, and pass through screw-threaded holes in the clamps, so that the points can be retracted or projected at pleasure.

160,656.



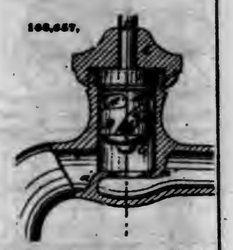
1. The set or adjusting screw, having its externally screw-threaded stem perforated longitudinally, and provided with an adjustable scribing-point, substantially as described.

2. The combination, with the slotted arms A B D of a framing-square, of the adjusting or set screws E E, perforated longitudinally, and provided with the scribing-points f f, adjustable therein, as described.

160,657. COMPRESSION-COCKS. James McLoughlin, New York, N. Y. [Filed Sept. 11, 1875.]

Brief.—The spiral groove formed in the periphery of the plug-valve terminates in a horizontal recess, within which the guiding-pin rests and locks the valve.

160,657.

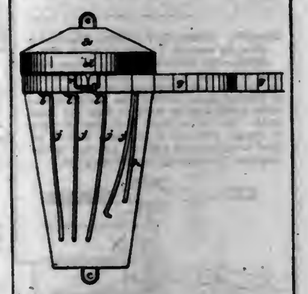


The two opposite plug-grooves, *d d*, almost horizontal near top, and then winding spirally toward bottom, as and for the purpose described.

160,658. CLOTHES-DRIERS. S. P. Mccay, Kilbourne, Ohio. [Filed Sept. 6, 1875.]

Brief.—The arms are pivoted to the vertical board, and, when raised to a horizontal position, bear against the springs until they rest on the shoulders at the upper ends.

160,658.



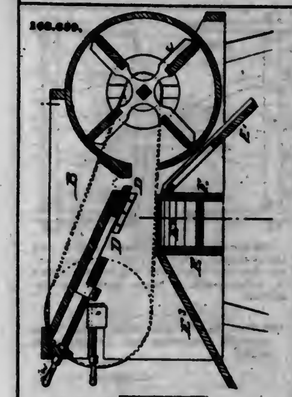
The combination of the board c, semicircular board d, staples e, arms f, wire i, and springs j, substantially as shown and described.

160,659. GRAIN-SEPARATORS. H. Mellen, Watertown, Wis. [Filed May 20, 1875.]

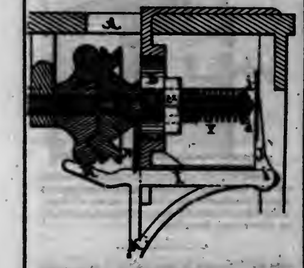
Brief.—Arrangement, in connection, of a hopper with adjustable slide, a blast-fan, and diverging chutes.

The combination, with hopper and fan, of the slide D, partition-walls E, and inclined planes F F F, as and for the purpose specified.

160,660.



160,660. DEVICES FOR DRIVING SEWING-MACHINES. Francis Miller, Albany, assignor of one-half his right to the East New York Boot, Shoe, and Leather Manufacturing Company, New York, N. Y. [Filed Aug. 7, 1874.]



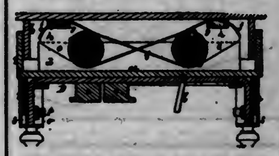
1. The bracket B, having a slotted opening, b, in combination with the adjustable sleeve C and shaft D, substantially as and for the purpose herein specified.

2. The driving-shaft D, carrying the friction-wheel H, and having its sliding movement controlled by the spring F and lever I, in combination with an independent shaft, G, carrying the friction-wheel H, as and for the purpose set forth.

3. The combination of the lever I and brake M with the spring E, substantially as and for the purpose described.

4. The combination of the bracket B, adjustable sleeve C, shafts D and G, friction-wheels H and H, springs F and E, lever I, and brake M, substantially as and for the purposes herein specified.

160,661. PIANO AND ORGAN OTTOMANS. James Miller, Boston, Mass. [Filed July 15, 1875.]



1. The combination of the rocker-shafts *e e*, cams *c c c c*, provided with flanges *f*, the crossed metal belt or band *i*, lever *l*, and legs or cars *g g g g*, the whole being arranged substantially as shown and described.

2. The combination, with the folding legs, of the turning brass-rod D and the bars *o o*, provided with clamp-screws *p p*, as shown and described.

160,662. PAPER. John C. Milligan, South Orange, N. J., assignor to Lalance & Grosjean Manufacturing Company, New York city. [Filed Sept. 23, 1875.]

Brief.—The downwardly-deflected portion of the bottom is slightly raised from the supporting-surface by the legs.



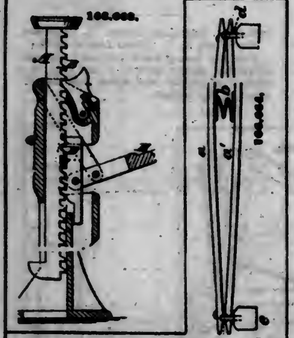
A sheet-metal pan having, in combination with a downwardly-deflected portion of the bottom *a'*, supporting-legs C, attached to the undeflected part *b* of the bottom, substantially as specified.

160,663. LIFTING-JACKS. Saml. R. Mosher, Chillicothe, Ohio. [Filed June 10, 1875.]

Brief.—The teeth on the lifting-bar are interlocked by a short rack pivoted at the end of a lever suspended by a link to the post.

The block D, provided with several teeth, that catch simultaneously in those of bar A, and pivoted to the lever E, as and for the purpose specified.

160,664.

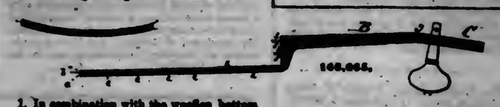


160,664. BED-SLATS. Thos. L. Odell, Iowa Falls, Iowa. [Filed Nov. 22, 1875.]

The combination of the boards *a a'*, secured together at their ends by means of bolts, spiral springs *b*, cross-bars *c*, and staples *d*, as and for the purposes described.

160,665. VIOLINS, GUITARS, &c. J. Cabriate, New York, N. Y. [Filed Sept. 7, 1875.]

Brief.—The neck and scroll is all in one piece, and built up of longitudinal veneers. Between the veneers of which the back is constructed strengthening-wires are laid.



1. In combination with the wooden bottom A of a string instrument, which is composed of a series of veneers, the strands *e e* of wire placed between said veneers, substantially as specified.

2. The neck B and head or scroll C of a string instrument, composed of continuous layers *f f* of veneer, with parallel grain, the whole being bent at the junction *g* of the neck and neck or scroll, substantially as specified.

160,666. NECK-TIES. Reginald B. Parker, Indianapolis, Ind. [Filed Apr. 24, 1875.]

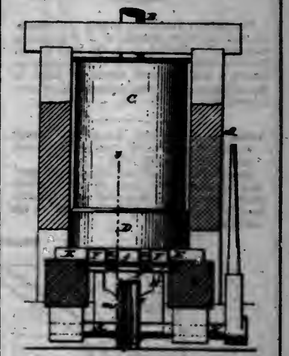


1. The shield A, having an upper convex edge, and arranged within the folds of the scarf, substantially as set forth.

2. The combination, in a neck-tie, of the loop *d* and loop *e*, having the adjusting-hook *f* and eye *a*, substantially as set forth.

160,667. BRICK-MACHINES. Leonard Patterson, Parker City, Pa., assignor of one-half his right to John K. Hunter, same place. [Filed May 10, 1875.]

Brief.—Through the bottom of a vertical hopper the clay is forced by a screw bladed shaft into a horizontal mold-frame, made to reciprocate, for the delivery of its bricks on each side, by means of a rocking segment and chains.



1. In a brick-machine, a hopper, C, having the molds formed in, or as an attachment to, its lower end, substantially as set forth.

2. In a brick-machine, the molds B, forming the discharge from the hopper, whereby the bricks are formed by the act of forcing out the clay, as described.

3. The rack F, having the grooves *c* in which to lay the boards H, to receive the bricks from the molds, as shown.

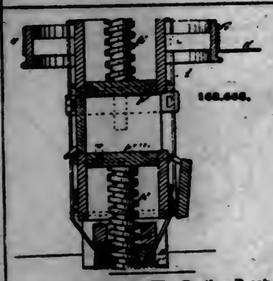
4. The combination of the rack F and boards H with the levers *a a'*, whereby the bricks are raised upward ready for delivery, as specified.

5. In a brick-machine in which the molds form a part of the hopper, the combination of the segment J, chains *i*, and rack F, whereby a charge of bricks is alternately delivered at opposite sides of the hopper, as set forth.

160,668.

160,668. COTTON-PRESSES. Emil. P. Platt, Vienna, La. [Filed Aug. 14, 1875.]

The combination, with screws B, having follower at the end, and working in nuts E, of a press-box, A, rigidly fastened within a rotary wheel, G, as and for the purpose specified.



168,668. PARLOCKS. Wm. Reather, Brooklyn, N. Y. [Filed Aug. 21, 1875.]

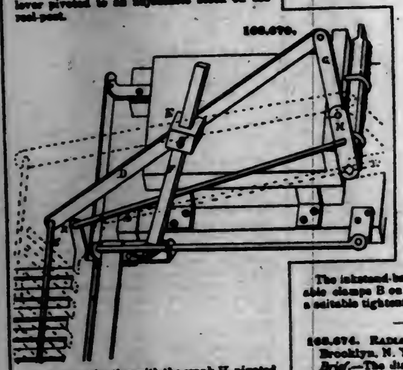


The pallets described, having the tumbler D, with the three notches *d' d² d³* engaging successively with the pin in the bolt, in combination with the bolt B *b' b*, turning on the center A, and traversed across the notch in the casing A by two semi-movements, as herein specified.

168,669. HARVESTER-DROPPERS. Joseph C. Roloff and Jos. W. Tovrie, Richmond, Ind. [Filed Feb. 6, 1875.]

Brief.—The cut-off and dropper are operated simultaneously from the same crank-shaft. The cut-off is carried on a balance-lever pivoted to an adjustable block on the rear-post.

168,670.



1. In combination with the crank H, pivoted bar D, and cut-off finger C, the connecting-bar G, arranged substantially as shown and described, for the purpose specified.

2. In combination with the rear-post F, the sliding adjustable block K, pivoted bar D, cut-off finger C, connecting-bar G, and crank H, for the purpose specified.

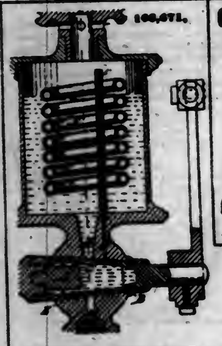
168,671. LUBRICATORS. Joseph W. Reed, Kalamazoo, Mich. [Filed Sept. 4, 1875.]

1. The combination, with bottom plug in lower part of oil-holder, of the pipe F and oil-passages in cap, all arranged as set forth.

2. The valve I, combined with hollow plug of an oil-holder, having vent-passage K, as and for the purpose described.

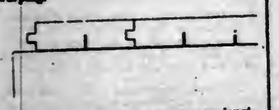
3. The combination of plugs L M, with hollow plug E, as and for the purpose specified.

168,672.



168,672. FLOORING-BOARDS. S. A. Reed, Washington, D. C. [Filed Mar. 22, 1875.]

Brief.—Longitudinal cuts are made in the under side of the flooring-boards, to prevent warping.

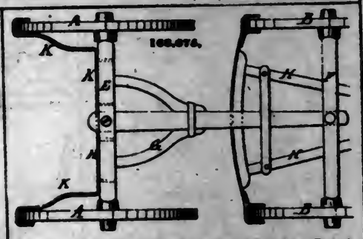


A flooring-board having one or more longitudinal kerfs or slits cut in the under side thereof.

168,673. DRESSING-BASES. L. Rosenfeld, New York, N. Y. [Filed Aug. 6, 1875.]

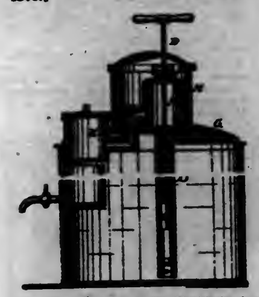
Brief.—A base or tablet to which is attached adjustable clamps, secured to the base by a screw from beneath, and which hold the ink-stand tightly in place.

168,674.



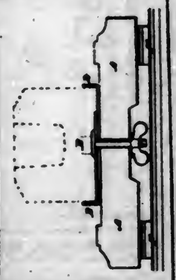
The combination of the bar or bars K, and the U shaped scrapers *b'*, with the rear bolster E or rear axle U, and with the rear wheels A, substantially as herein shown and described.

168,675. SAFETY OIL-RESERVOIRS. Thos. Sanctlin, Evansville, Ind. [Filed May 6, 1875.]



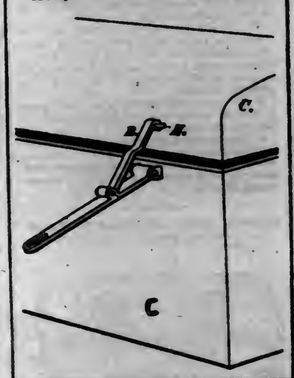
A reservoir for oil and other liquids, having a pump and filling-compartment connected by a pipe, communicating with a series of mooring-vessels inside the reservoir, substantially as shown and described.

168,676. INKSTAND-BASE. A. Rosenfeld, New York, N. Y. [Filed Aug. 6, 1875.]



The inkstand-base A, provided with adjustable clamps B on sliding bars C, secured by a suitable tightening screw or screws.

168,677. THUMB-FASTENINGS. J. Forrester Simpson, Philadelphia, Pa. [Filed Sept. 4, 1875.]



In combination with the body and top of a trunk the lever A and hooked rod E, constructed and operating substantially as described.

168,678. RADIATOR-TUBES. Edm. Russell, Brooklyn, N. Y. [Filed Sept. 27, 1875.]

Brief.—The diaphragm is perforated to facilitate the initiation of circulation.

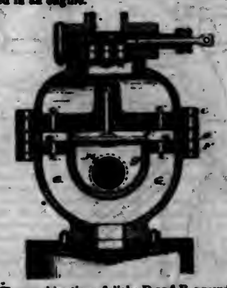
In a straight radiator-tube, closed at one end and open at the other for connection with a steam-chest or base, a central longitudinal diaphragm, terminating a short distance from the closed end of the tube, and having perforations at prescribed intervals, as and for the purpose described.



168,679. WAGON-WHEEL SCRAPERS. N. Sage, Pekin, Ill. [Filed Aug. 6, 1875.]

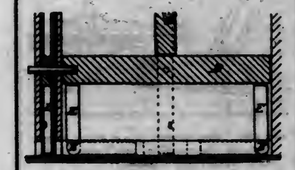
168,680. AIR-INJECTORS FOR AERO-STEAM ENGINES. Wm. Mont Storm, New York, N. Y., assignor to himself and W. L. WILLIAMS, same place. [Filed Apr. 24, 1874.]

Brief.—Air and steam are mingled to be used in an engine.



The combination of disks D and F, provided with coincident orifices C' and *a*, the ring D', which forms the space *s*, and the check-valve, substantially as described.

168,681. VARIABLE MEASURES. Charles P. Sullivan, Jr., Line Creek, S. C. [Filed Aug. 21, 1875.]



1. The combination of box A, movable bottom B, pins C, and turning-sticks D, substantially as specified.

2. The combination of pivoted pieces E with the box A and movable bottom B, substantially as specified.

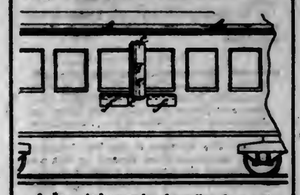
168,682. DENTAL FILLINGS. Lyman W. Sexton, Jr., Jersey City, N. J. [Filed Aug. 14, 1875.]

Brief.—The metallic tin is obtained by being precipitated on a strip of zinc placed in a solution of muriate of tin.

As a new dental filling, crystallized metallic tin, substantially as specified.

168,683. CINDER-WARPERS FOR RAILWAY-CARS. Jas. J. W. Taylor, Bloyes de Grasse, Md. [Filed Sept. 21, 1875.]

Brief.—Troughs are placed over the windows to collect the cinders. To prevent their being drawn into the windows when blown over the edges, employ whirling fans having their rear and sides fastened by fenders arranged at the sides of the windows.



1. In a cinder-warder for railroad-cars, the whirling fan *c*, in combination with its partially-inclosing feeder-case *c*, as and for the purpose described.

2. In a cinder-warder for railroad-cars, the combination of the whirling fan *c*, its case-feeder *c*, and fenders *f f*, as and for the purpose described.

3. The cinder-collecting troughs A over the line of window-whirls, as and for the purpose described.

168,684. WARDROBE AND OTHER HOOKS. Charles E. Thurston, Marlborough, N. H. [Filed Sept. 7, 1875.]

Brief.—A single piece of wire is bent into suitable shape, doubled upon itself to form a loop or head, and ornamentally twisted, the free end being screw-threaded for convenience of attachment as a wardrobe hook, or for analogous uses.



A hook made from a single piece of wire that is doubled upon itself, twisted, and bent into shape, as shown, and provided with a head or loop, *c*, and a screw, *d*, substantially as and for the purpose described.

168,685. DEVICES FOR PREVENTING HORSES FROM CRIBBING. Arvin C. Tickner, Syracuse, N. Y. [Filed Sept. 20, 1875.]



The metallic collar A, provided with means for holding it in place, as set forth, in combination with the spring C, provided with the square D and the strap F, which passes under the neck of the horse, substantially as described.

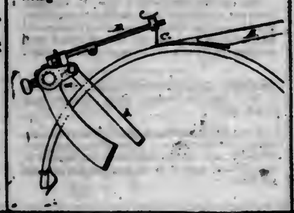
168,686. GRATE-BARS. George W. Todd, Allegheny, assignor of one-half his right to W. W. Speer, Pittsburg, Pa. [Filed Sept. 16, 1875.]



The grate-bar A, constructed with enlarged, curved, rearward-projecting portion B, and air-passage or tube D, extending entirely through the body of the bar from front to rear, up through the enlarged part B, and discharging over the fire-wall of the furnace, substantially as and for the purpose described.

168,687. FEED-GAGES FOR PRINTING-PRESSES. Stephen D. Tucker, New York, N. Y. [Filed June 23, 1875.]

Brief.—The gage recedes slightly before rising.



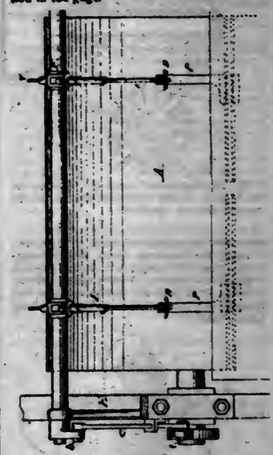
1. A feed-gage whose stock or base forms arms which embrace the actuating rock-shaft, to which it is connected by means of a flexible strap, so as to swing thereon when a horizontal reciprocation is imparted to it, and having a suitable stop, which connects it to the rock-shaft so as to produce its vertical movement, substantially as described.

2. The combination of the arms I J of the gage-arm with the flexible strap K and the rock-shaft L, substantially as described.

3. The combination of the arms I J of the gage-arm with flexible strap or spring K, slotted strap M, and rock shaft L, substantially as described.

168,688. FEED-GAGES FOR PRINTING-PRESSES. Stephen D. Tucker, New York, N. Y. [Filed June 23, 1875.]

Brief.—Gage draws back and then rises by the oscillation of shaft in an elliptical perforation in the gage.



1. A feed-gage having an elliptical opening through its base, in combination with its actuating rock-shaft, to a hub upon which it is so hung that it shall be capable of moving into positions relative thereto, fixedly determined by the periphery of its opening, to produce its horizontal reciprocation, and afford a seat to secure its vertical motion, substantially as set forth.

2. The combination of a feed-gage, whose base is provided with an elliptical opening, with a rock-shaft, to which it is hung by a pivot, whereby both horizontal and vertical reciprocations are imparted to it, substantially as shown and described.

3. In combination with the screw-threaded arm J, the sleeve I, arms O H, and adjusting-nut M, substantially as described.

4. The screw-threaded arm J, sleeve I, adjusting-nut M, and clamping-jaws P', combined substantially as described.

168,689. WIRE SIGNS AND BANNERS. Henry H. Upham, John Garrett, and John Tully, New York, N. Y. [Filed Aug. 23, 1875.]

Brief.—The frame is made of sheet-metal, in the form of a folded strip, and V-shaped, to which is attached, on the inside, rods of metal, for the reception of the ends of the wires, and forms a border to the open-work. Pins are inserted through the folded sheet-metal, to retain the open-work when stretched, and at the top of the frame is a removable head-piece.

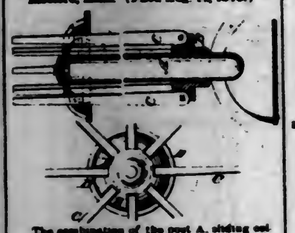
1. The sheet-metal frame made of a folded strip, in combination with the open-work wire sign or banner and its surrounding rod *b*, substantially as set forth.

2. The removable head-piece A and rings *n*, in combination with the sheet-metal frame *d*, wire open work *a*, and rods *b*, as set forth.

3. The pins or screws *c* passing through the folded strips *d* of sheet metal forming the frame, in combination with the wire open-work sign or banner *a*, as and for the purposes set forth.



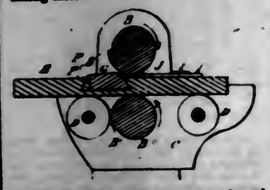
168,687. Clothes-Dryers. Lewis A. Watt, Stamford, Mass. [Filed Aug. 14, 1875.]



The combination of the post A, sliding collar B, arms C, and revolving slotted cap D, substantially as specified.

168,688. Machines for Shaping Agricultural Implements. Benj. Wansbrough, Pittsburg, Pa., assignor to Alex. Speer & Sons, same place. [Filed Sept. 10, 1875.]

Brief.—The rolls are geared together, and press equally upon the bottom and top of the sliding table.



1. In combination with the eccentric-formed rolls B B' B B', the table or platform E sliding between said rolls and adapted to receive pressure therefrom at top and bottom, as and for the purposes described.

2. In combination with the rolls B B' B B' and sliding platform or table E, the die G, formed with curved inclined or beveled mouths G', secured in the face of the table, as and for the purposes described.

3. In combination with the rolls B B' B B' and table E, sliding between said rolls and receiving pressure therefrom the stops H H' for limiting the movement of said table, as described.

4. In combination with the sliding table E and die or former G G', the adjustable removable gages I and set screws I' for holding the metal secured its edges in position beneath the rolls while being pressed, as described.

5. The combination of eccentric rolls B B' B B', sliding table E, die G G', and gages I I', as and for the purposes described.

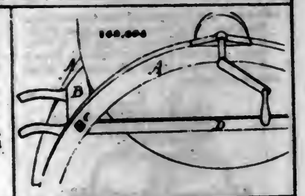
6. The improved machine for beveling or forming the edges of agricultural steels, consisting of eccentric rolls B B' B B', table E, die G G', stops H H', and gages I I', all constructed, arranged, and adapted to operate as and for the purposes described.

168,689. Nut-Fastenings. R. C. Watson, Maysville, Ohio. [Filed Sept. 11, 1875.]



The combination with the bolts B, of locking plates C C, fastened over them by one end, D, as an eye-stud, A, of the fish plate, and overlapped at the center and secured by a stud-pin, K, of the fish-plate, and a locking key, F, substantially as specified.

168,691. Fulcing Cradles. John Worth and John Jeffreys, New York, N. Y. [Filed Apr. 24, 1875.]



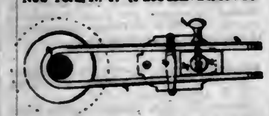
In combination with a folding cradle the pans E, having heads F, and the slotted plates G, as and for the purposes described.

168,692. Egg-Carriers. Wendelin Weis, St. Paul, Minn. [Filed Aug. 21, 1875.]



In egg-carriers the bread lateral partition-strips, provided with bottom extension-strips of less width than the said, and with narrow top extension pieces to form supporting strips for the bottom strips of the adjoining trays above, substantially as and for the purpose set forth.

168,693. Key-Fastenings. W. W. White, New York, N. Y. [Filed Mar. 26, 1874.]

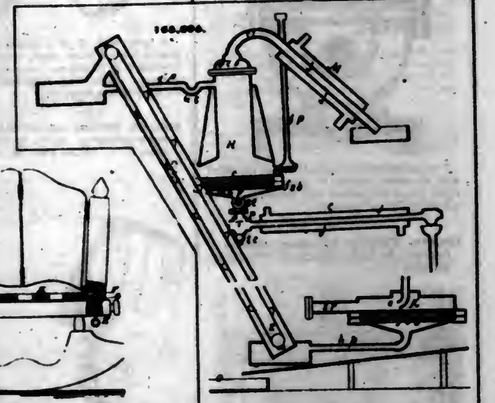


The combination, with a bow, D, hanging from the knob-shaft and passing through the key-loop, of the block B, resting the arms of bow on each side thereof, and provided with a set-screw, F, as and for the purpose specified.

168,694. Grindstone-Frames. George A. Whitney, La Grange, Ohio. [Filed Aug. 28, 1875.]

The grindstone-frame herein described, consisting of the arches A A, bent from one piece of wood, and united with the cross-bars B B, legs C, and rails D D, as and for the purpose set forth.

168,695.



168,696. Separating Gold from other Metals. General Wiegand, Virginia City, Nev. [Filed July 9, 1874.]

1. The process herein described for refining gold, consisting essentially of the following steps: First, the conversion of all amalgamable metals into one amalgamated mass; second, removing the silver therefrom, as hereinbefore specified; third, reducing the remainder, containing the gold, into a highly porous or spongiform mass; fourth, reacting the same with gases of air; fifth, dissolving the base-metal oxides in dilute sulphuric acid; sixth, digesting the residuum in hot strong sulphuric acid, or in dilute nitric acid, or in weak nitro-sulphuric acid; seventh, washing the remaining gold with water: eighth, melting.

2. The heater H, constructed with the strainer, as described, and with suitable supports for the same, substantially as set forth.

3. The collector K, constructed with a discharger, D', composed of the plate b p l, wire-cloth p l, and cloth r, lying contiguous to each other, substantially as and for the purpose set forth.

4. In combination with the silver-separating and lifting apparatus herein before described, the quicksilver-trap consisting of the shedding floor or table S T and tank A, as set forth.

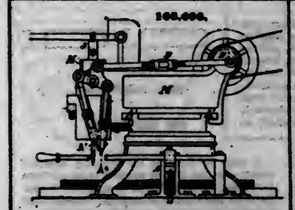
5. In combination with the heater H and the condenser M, the strainer s s s, as herein described.

168,697. Mortising-Machines. Moses G. Wilder, Meriden, Conn., Wm. H. Moffatt, Lancaster, Mass., Solomon H. Wilder, Meriden, and Henry T. Tyler, Deep River, assignors to Pratt, Read & Co., Deep River, Conn. [Filed Apr. 6, 1875.]

Brief.—The mortises in the key-board of musical instruments are formed by this machine through the agency of a pair of reciprocating chisels moving in inclined ways.

1. The chisels F F, reciprocated in inclined paths, in combination with a supporting-table for holding the work, sliding frame H, and lever I, for bringing the chisels gradually into action to sink a V-shaped mortise, as and for the purposes specified.

2. The adjustable stop K, in combination with the reciprocating chisels F F, and frame H and lever I for bringing the same gradually into action, as herein specified.



K The adjusting-set c in the connecting-rod B, in combination with the crank D', and the lever G, adapted to allow the equalization of the descent of the obliquely-traversing cutter-bar M, as herein specified.

4. The traversing-carriage M, and the cutter bar M, and other mechanism mounted thereon, in combination with arms B C for communicating power thereto in every position, adapted to traverse along a fixed key-board, and to mortise at any desired point in its length, as herein specified.

5. The clamping-bar P, bosslugs or guides A', wedge-bar B E' E', springs p, and adjusting-screws T, arranged to serve, relatively to the key-board, as and for the purposes herein specified.

6. The drift-slide N and its operating lever O, in combination with the chisels F F and their operating means, as and for the purposes herein specified.

168,698. Sash-Holders. John R. Wilford, Philadelphia, Pa., assignor to Hezekiah Bradford and Hermon Eisenbrey, same place. [Filed Mar. 9, 1875.]

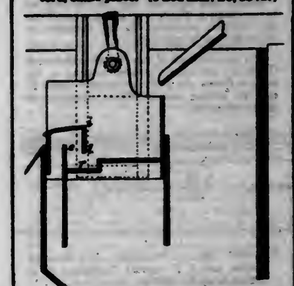
Brief.—The object accomplished being the dispensing with a spring-rod, the double pair of inclines acting to force the pressure-plate, with uniformity, against the window-frame.



1. The sash-holder having the double pairs of inclines 6 7 8 9 upon the pressure-plate and the corresponding double pairs of inclines 2 3 4 5 in the cam a, substantially as set forth.

2. The combination of the lever r, link s, and spring t with the pressure-plate c and cam a, each having the double pairs of inclines, for the purposes and as set forth.

168,699. Jacques. John R. Wilford, Philadelphia, Pa., assignor to Hezekiah Bradford, same place. [Filed Mar. 20, 1875.]



A reciprocating jig having the upper delivery-dam f for the lighter material and the lower delivery-dam e for the heavier material, in combination with the depression r in the perforated bottom of the reciprocating jig, that allows the heavier material to pass freely beneath the lower edge l of the dam f, for the purposes and as set forth.

168,700. Draft-Equalizers. Silo B. Winsor, Peru, Ill. [Filed July 31, 1875.]

Brief.—A frame specially adapted to carry an equalizing device.



The frame A, made, as herein described, with projecting arms B B, carrying the pulleys C C, and with the pipe D, in combination with the pulleys I I, the levers L L, and the rope or chain J, substantially as described.

168,701. Mowing-Machines. David Wolf, Avon, Pa. [Filed Apr. 24, 1875.]



The combination of stay-brace C, curved downwardly as well as outwardly, and having flange *c'*, the shoe D, pivoted at the rear to the forward side of said stay-brace, and the regulating-lever G, pivoted to said flange *c'*, all constructed and arranged substantially as and for the purposes specified.

168,702. Devices for Transmitting Power. John Wesley Woodruff, Jollytown, Pa. [Filed Aug. 28, 1875.]

Brief.—Two wheels in parallel planes, a rod between, attached to the disks at opposite ends of their diameters, working in a ball-joint bearing.

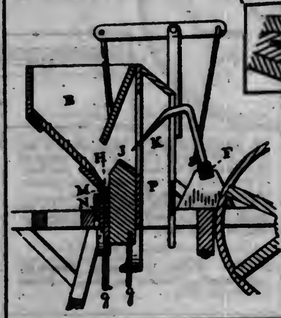


168,703.

The combination, shown and described, of drive-wheel A, crank-rod B, and driven wheel D, the crank-rod being attached to the circumference of each wheel and held intermediately by a ball-joint in a bearing, b, as and for the purpose specified.

168,704. Potato-Droppers. George H. Sims, Shoemakertown, Pa. [Filed Jan. 23, 1875.]

Brief.—Working vertically in the hopper are two wedge-shaped slides—one for carrying potatoes up within reach of a carrying-fork, and the other for cutting off the supply, in connection with springs, to prevent the potatoes from being crushed.



168,705.



1. The slides H J, rocking arms G, rock-shaft F, and rocking arm E, combined and operating substantially as and for the purpose set forth.

2. The springs M N, in combination with the slides H J and hopper B, substantially as and for the purpose set forth.

3. The fork K, in combination with the hopper B, conveyer P, and alternately rising and falling slides H J, substantially as and for the purpose set forth.

168,706. Preparing Clams and Oysters for Food. Chas. Alden, Newburg, N. Y. [Filed Apr. 28, 1875.]

The process of preparing oysters and clams for preservation by separating the meat from the liquor, desiccating and pulverizing the meat and mixing the liquor with alimentary substances, desiccating and pulverizing the mass, and combining it with the desiccated meat, substantially as described.

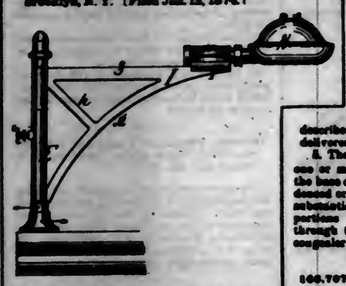
168,707. Railroad-Rail Joints. H. Allen, Titusville, Pa. [Filed Sept. 28, 1875.]

Brief.—The fish-plates are constructed by differential screw-bolts, without heads and threaded throughout, the lower threaded portion being of smaller diameter and of quicker pitch than the upper threaded portion, so that the plates are powerfully drawn together, and by a differential pitch as small as to form an efficient nut-lock. A block is located in the joining of the rails, to surround the bolts and prevent vibration of the same, and also to prevent vertical displacement of the ends of the rails.

1. As a new article of manufacture, the headless clamping-lock-bolt C, provided with square upper end, and screw-threaded from thence to its termination, the diameter of the upper screw-threaded portion being greater than the diameter of the screw-threaded lower end, and the screw-threads of the latter being coarser than the screw-threads on the upper end, substantially as specified.

2. The headless clamping-bolt C, constructed as set forth, in combination with the block D', fitting in a slot in the rail, and provided with perforations of the same diameter as the upper screw-threaded part of the bolt, substantially as described, and for the purpose set forth.

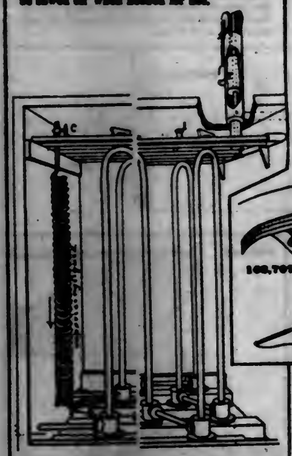
168,706. Lamp-Brackets. Daniel Barcellos, Brooklyn, N. Y. [Filed Jan. 12, 1874.]



The lamp-bracket, made of the standard a B, tube E, arm f, brace g h, in combination with the lamp M, trunnion e, and clamp P, substantially as set forth.

168,707. Ice-Machine. John M. Heath, San Francisco, Cal. [Filed Jan. 14, 1874.]

Brief.—Congealer-cover having water-tight floor and sides, and inclosed in non-conducting material. Refrigerant passes either way through congealer, as directed by a two-way cock. Automatic water-feed regulator. Inclined floor directs course of water through a filter into well beneath pump. Hash sprayer intended to reach specially the vertical pipes which are not cast, but ascend from it. Washes the formed ice by running streams of water. Needs no freezing-tank. Ice-house may be filled, ice remaining on congealers to be moved off when needed for use.



168,707.

1. The improvement in the manufacture of ice which consists in forming the ice on freezing-surfaces, in the case of which the refrigerant is applied, and through which it operates by congealing portions of water applied to and traversing said freezing-surfaces in flowing streams, substantially as described, whereby the surface of the ice is freed from objectionable matter, as specified.

2. The herein-described process of manufacturing ice around cores, through which the freezing agent flows, by showering or throwing the water upon them, so that constant currents or films of water shall flow over the surface of the ice during its formation, substantially as specified.

3. In an ice-making apparatus, whereby ice is formed by the congelation, on vertical freezing-surfaces, of water which traverses the same in flowing streams, an inclined vertical congealer, mounted on a base which not only supports the congealer, but also affords a distinct support for the ice formed thereon, substantially as described, whereby the employment of a freezing-tank is obviated, and the ice, in any desired bulk or quantity, may be formed upon the congealer without liability of cracking or straining the same, as set forth.

4. The combination, with a congealer composed of pipes for containing the refrigerant, of a water-feeding apparatus, substantially as described, whereby the water to be frozen is delivered on all sides of the congealer.

5. The combination, with a base-pipe and one or more vertical congealers, of a trap at the base of each congealer for containing condensed or liquefied portions of the refrigerant, substantially as described, whereby gaseous portions of the refrigerant will be passed through the liquid in the passage from one congealer to another, as specified.

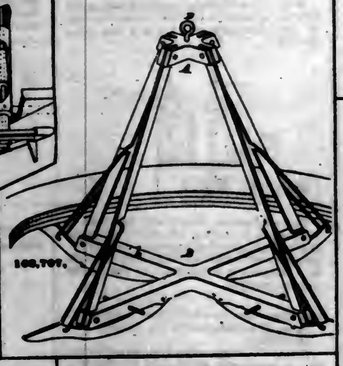
168,708. Apparatus for Walling Wells. Wm. H. Beach and George Marshall, Belleville, Ill. [Filed July 27, 1875.]

Brief.—A hanging frame supports the bearing, upon which the wall of the well is built, and is gradually lowered during the erection of the well-walling thereon. A number of trip-arms sustained by links are tripped by contact with the bottom of the well, so as to relieve the frame from the wall, and allow it to be drawn out of the well.

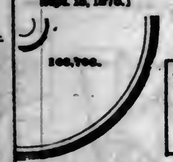
1. The frame A B C E, constructed for support of the well-wall, and for connection to a derrick or equivalent device, so as to operate substantially as and for the purposes set forth.

2. The combination of the frame A B C and drop or trip arms E, substantially as set forth.

3. The combination, with the frame A B C and arms E, of the links D and catch c, substantially as set forth.



168,707.



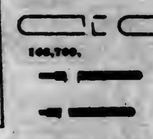
168,708.

1. As a new article of manufacture a metallic pulley, faced with a strip or strips of paper wrapped or bent around the periphery of the pulley, and secured thereto, substantially as and for the object set forth.

2. The combination, with a pulley, f, facing of paper, prepared and applied substantially as herein described.

168,709. Paper-Fastening. James M. Blanchard, Washington, D. C. [Filed Sept. 24, 1875.]

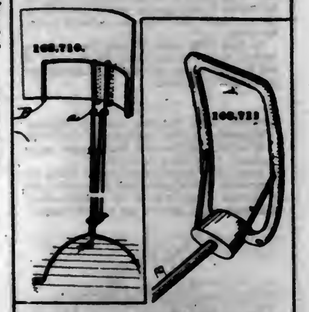
A clasp or fastener for securing together sheets of paper, having upon its inner surfaces protuberances, which are arranged substantially as shown and described, whereby they are made to perforate the paper and to interlock by the act of closing the two limbs of the fastener together.



168,709.

168,710. Adjustable Screen-Holder. Gardner A. Hodget, Elmira, N. Y. [Filed Sept. 1, 1875.]

The standard A, provided with the guide-loops a a, in combination with the adjustable screen holder B, constructed, arranged, and operated substantially in the manner described.



168,710.

168,711.

168,711. Furnaces. Thilo Bruno, Chicago, Ill. [Filed Sept. 10, 1875.]

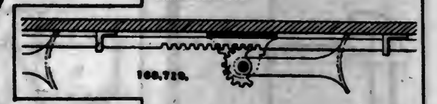
Brief.—A stem which passes into the stirrup is hinged at its enlarged base to an open frame, and held at an angle to it by means of springs.

The combination of the ball or ring A, stem B, and enlarged base C, provided with a suitable spring, substantially as and for the purpose set forth.

168,712. Ventilating-Screens for Car-Windows. Charles F. Bridgman, Brooklyn, N. Y., assignor of two-thirds his right to John H. Hazlenbeck, Norwalk, and F. F. Rice, Danbury, Conn. [Filed Aug. 30, 1875.]

Brief.—The deflector may be reversed, so as to occupy a position at either edge of the car-window, according to the direction in which the car is traveling.

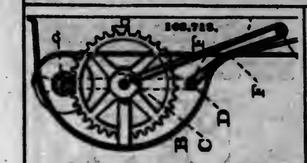
The combination of the swinging deflector C, having its arms d pivoted midway of the window-frame, the pinion or toothed sector E, and the sliding rack-bar G, substantially as herein described.



168,712.

168,713. Shade-Fixtures. J. T. Brooks, Berlin, and J. F. Morell, Tuckahoe, N. J. [Filed Aug. 30, 1875.]

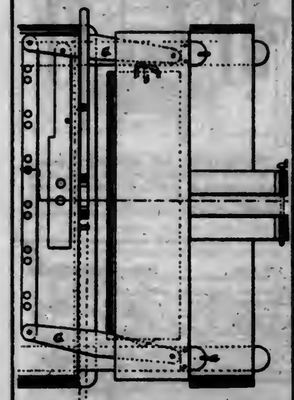
The combination, with the shade-roller bracket B, provided with the projecting pins D E, and the wheel b, provided with the projecting pin C, and gearing with the pinion a, of the cotton rotator band F, all constructed and operated substantially in the manner and for the purpose herein set forth.



168,715.

168,714. Corrugated Drills, Planters, and Rollers. Samuel Brown, Lebanon, Mo. [Filed Nov. 6, 1873.]

Brief.—The frame supporting the hopper and drill-teeth is hinged to the main frame at the rear, and adjusted by the cam-lever. Motion is given to the slide by cams on the roller striking the pivoted levers attached to the seed-slide.



The hinged seed-hopper frame provided with drill-teeth and carrying seed-discharge slides and parallel operating-levers G, and the pivoted cam-lever E, the main frame and roller journaled thereon and provided with end cams b b, all arranged as shown and described, to operate as and for the purpose specified.

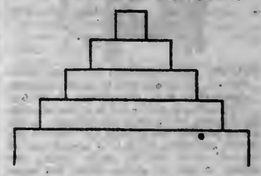
168,715. Knife Sharpeners and Polishers. Edward A. Bushell, Oakland, Cal. [Filed Oct. 10, 1873.]

Brief.—An elastic corrugated surface is covered with a polishing-powder. The coarser particles, lodging in the grooves, are brought into contact with the tool being polished by greater pressure.

The above-described knife-sharpener, having a corrugated elastic surface, and provided with a covering material, in the manner set forth.

168,716. Seed-Planters. W. O. Champion, Stanton, Tenn. [Filed Sept. 11, 1875.]

168,716. Lemon-Squeezer. Frank. O'L. Rook, Clearfield, Pa. [Filed Aug. 30, 1875.]



A ledger or boot rest consisting of a block, A, provided with steps or shoulders a, substantially as and for the purpose herein described.

168,717. Wrenches. Henry A. Rust, Pescadero, N. Y. [Filed Aug. 23, 1875.]

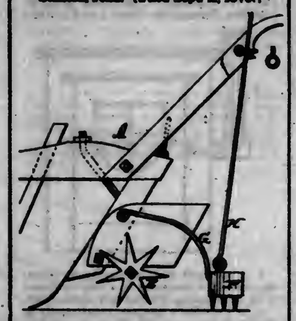
Brief.—The journal-boxes are attached to cylindrical metal rods, which turn in their bearings, and have screw-clamps at their lower ends. A vibrating journal-bearing is pivoted to an extension-arm.

1. In a wrench, the combination of the rotating rods B, having a clamp, K, upon their lower ends, with the bevel-gears C D, and rollers D D', substantially as specified.

2. The combination, with the rollers D D' and rod B, of the vertically-vibrating journal-bearing H, pivoted to extension F and having an oblong perforation, i, receiving the said rod, substantially as specified.



168,716.

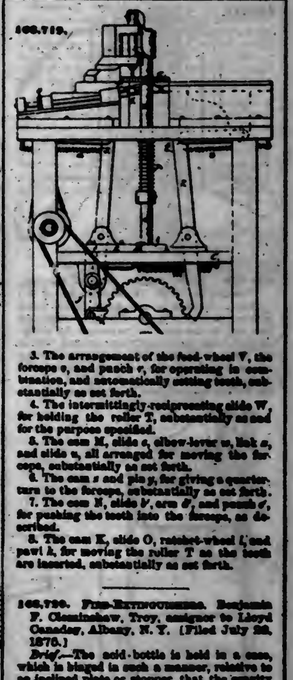


The combination, with the plow A, of the seed-box, the seeding-wheel, and the spoke-wheels B, the drag F, as constructed, and the rods G and H, all as and for the purpose set forth.

168,718. Machines for Setting Teeth-Tenons. H. Chapman, Hopedale, Mass. [Filed Sept. 9, 1875.]

1. The forceps s, for receiving the teeth and carrying them forward for insertion into the roller T, substantially as set forth.

2. The drill S and punch r, mounted upon the slide X, and operating substantially in the manner and for the purposes set forth.



168,719.

3. The arrangement of the feed-wheel V, the forceps s, and punch r, for operating in combination, and automatically setting teeth, substantially as set forth.

4. The intermittingly-reciprocating slide W, for holding the roller T, substantially as and for the purpose specified.

5. The cam M, slide c, elbow-lever u, link x, and slide v, all arranged for moving the forceps, substantially as set forth.

6. The cam r and pin p, for giving a quarter-turn to the forceps, substantially as set forth.

7. The cam M, slide b', arm S, and punch r', for pushing the teeth into the forceps, as described.

8. The cam K, slide O, ratchet-wheel l, and pawl k, for moving the roller T as the teeth are inserted, substantially as set forth.

168,720. Fire-Extinguishers. Benjamin F. Glenister, Troy, assignor to Lloyd Saunders, Albany, N. Y. [Filed July 20, 1875.]

Brief.—The acid-bottle is held in a case, which is hinged in such a manner, relative to an inclined plate or stopper, that the gravity of the bottle will close its mouth hard against the plate. Also, when the device is inverted, the gravity of the bottle will withdraw its mouth from the plate, and so discharge its contents.

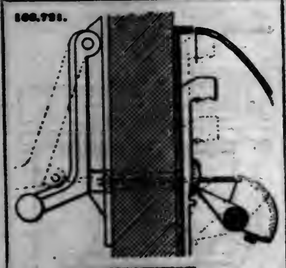


The inclined concavery valve G and the frame H, hinged to the cap E, and containing the acid-bottle K, in combination with the chamber A, all substantially as and for the purpose set forth.

168,721. Door-Bells. Cornelius Coleman, West Meriden, Conn., assignor to Parker & Whipple Company, same place. [Filed Sept. 22, 1875.]

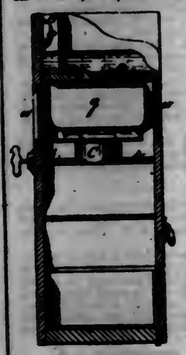
The combination, in a bell mechanism, of a rock-shaft arranged upon and parallel with the plate, and provided with one arm in connection with the pull, and a second arm to actuate the hammer, and a spring to return the said shaft, with the sliding hammer constructed with a shoulder, upon which the said second arm acts, and a spring to throw the said hammer after it escapes from the said arm the construction and arrangement being substantially such as described.

168,721.



168,722. Fare-Boxes. Wm. J. Cowing, Washington, D.C. (Filed Sept. 28, 1875.)

Brief.—The fare is introduced in the usual manner, strikes an incline arranged within the box, and is arrested for inspection by a cup-shaped receptacle centrally pivoted within the walls of the box. By means of a spring attached to the shaft of the cup, the latter is returned to its normal position, after the fare has been inspected, and finally deposited.



The single-compartment fare-box A, provided with the central cup C, the rod *r*, and the spring *s*, arranged with relation to the incline *i*, the opening *o*, and the windows *w w*, substantially as and for the purposes herein set forth.

168,723. Horse-Collars. H. B. Crawford, Sioux City, Iowa. (Filed July 14, 1875.)



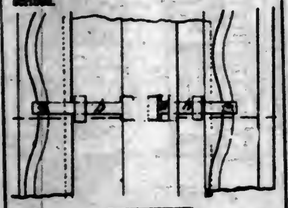
1. In a collar composed of two hinged sections of hard material, the shouldered top, in combination with a suitable fastening, as described.

2. The spring catch or fastening, in combination with the shouldered and tapping sections of a horse-collar, composed of hard material, substantially as described.

168,724. Brick-Machines. John B. Crosa, New York, N. Y. (Filed Jan. 14, 1875.)

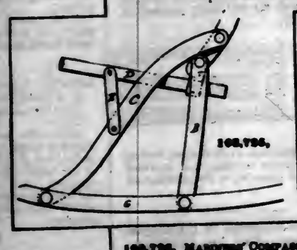
1. In a brick-machine, the molds *a*, located at one side of the center of the mark, whereby the clay is forced through a greater compressing-space, and is consequently more fully and uniformly compressed, substantially as described.

2. In a brick-machine, the combination of the plungers *b d b d* with the mold-curb, said plungers being forced alternately into the molds in said curb from opposite sides, in such manner as to move the clay brick back and forth in said molds, and finally to expel it therefrom, substantially as shown and described.

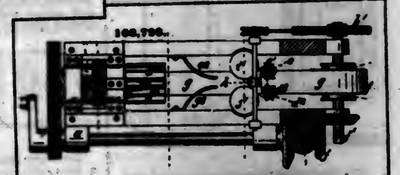


168,725. Folding Chairs. Isaac N Dana, New Haven, Conn., assignor to the New Haven Folding-Chair Company, same place. (Filed July 27, 1875.)

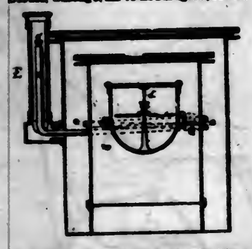
In a folding chair, the combination of the back A, the rear legs B, pivoted thereon, the front legs C, pivoted to the bent above the said rear legs, the seat D, hinged to the said back, and connected to the front legs by the pivoted support E, and the rockers G, pivoted to the lower ends of the legs, substantially as described.



168,726.



168,727. Machinery Companies. Noah H. Dibble, Chicago, Ill. (Filed Aug. 10, 1875.)



1. A mariner's compass having its binnacle inclosed or immersed in a fluid contained in an outer casing, substantially as described.

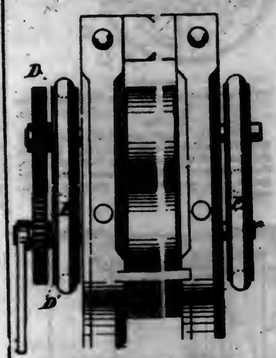
2. In a mariner's compass, substantially as described, the means for filling the binnacle with dry air or gas, consisting of the coiled pipe *c*, having a screw-plug, *p*, substantially as described and shown.

3. In a mariner's compass, substantially as described, the means for filling the binnacle-casing with a fluid, consisting of the bent pipe E, having a screw-cap, F, substantially as described and shown.

4. In a mariner's compass, the step-stud *d*, pendent from the binnacle-glass, as and for the purposes set forth.

168,728. Whetstone. Thos. J. Dickerson, Auburn, N. Y., assignor of one-half his right to C. G. Gibbard, same place. (Filed Sept. 4, 1875.)

Brief.—The rollers are driven by gearing, and adjusted by tension-bands on pulleys on the shafts of the rollers. The pulleys on the upper shaft are loosely applied, and on the under shaft rigidly attached.



The combination, with rollers B B', operated in opposite directions by suitable gears, of the tension bands E, pulleys D, loosely applied upon one of the rollers, and pulleys D', rigidly secured to the other, substantially as specified.

168,729. Machines for Splitting Hard Sugar. O. Dinkel and W. B. Himmelwright, Jersey City, N. J. (Filed Sept. 10, 1875.)

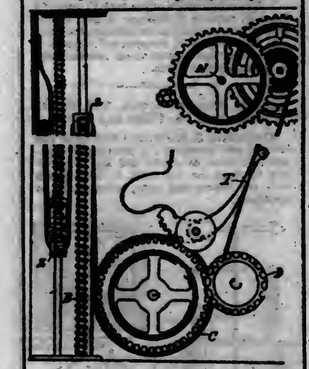
Brief.—Sugar slab is fed to a pair of rotating clippers, which cut it into prisms. A belt moves beneath the clippers and receives the prisms, conveying them to a second pair of clippers, which cut the sugar prisms into cubes. A pair of guides direct the sugar prisms toward the middle of the belt, and a feed-roller holds them in position while being presented to the second pair of clippers.

1. In a machine for splitting hard sugar into cubes, a pair of rotary cutters, substantially such as described, mounted in parallel horizontal bearings, and a carrying apron or belt arranged under such rotary cutters, and moving in a direction parallel to the axis of such rotary cutters, in combination with a pair of rotary cutters arranged in vertical bearings, substantially as and for the purposes set forth.

2. In a machine for splitting hard sugar into cubes, the traveling apron *p*, and the feed-rollers *f* and *f'*, in combination with the vertical rotary cutters *S* and *S'*, substantially as and for the purposes set forth.

3. The combination, with a pair of rotary cutters, substantially such as described, of the traveling apron *p* and the feed-roller *h*, for the purpose of supplying opposite sides of a slab of sugar and delivering it to the rotary cutters, substantially as set forth.

168,730. Separating or Screens. Perrin W. H. Dunbar, Philadelphia, Pa., assignor of one-half his right to O. P. Godley, same place. (Filed Sept. 27, 1875.)



1. The winding-drum B, constructed as described, and operating in conjunction with the frame to equalize spring-power.

2. The combination, with the drum B and frame D, of the barrel C, for winding the spring-connecting cord.

3. The combination, with a spring-power substantially such as described, of a power-equalizing combination, substantially as shown and described.

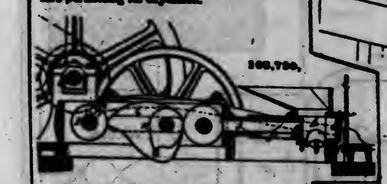
4. The described compact arrangement of the several series or sets of springs in rows parallel with each other, the spring-connecting cord being guided in one direction across one row, and in the opposite direction across the next adjacent row.

5. In combination with the gear-wheel F on the barrel-shaft, the eccentrically-geared bushing-lever T, substantially as and for the purposes set forth.

6. The pulley-disks E, constructed, as described, with curved guide-bearings 2 2, adapted to bear upon the outside of the springs, substantially as shown, and for the purposes set forth.

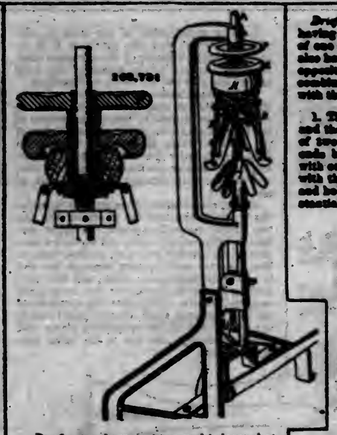
7. The combination of the frame D, drum B, barrel C, parallel rows of springs, intermediate cords, and cords *a* and *a'*, substantially as and for the purposes set forth.

168,731. Machines for Stretching Hat-Bodies. Rudolf Hutmacher, Yonkers, N. Y. (Filed Oct. 30, 1875.)



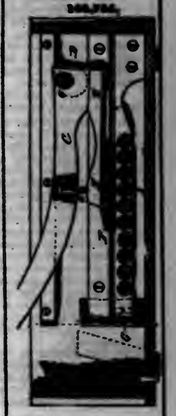
The combination, in a machine for making bodies, of the shrouding-cloths: the mold A, the plates *f*, the double-acting cam *i*, the vertically-sliding dies or bottom *D*, and the stirrup *g*, all arranged and operating substantially as specified.

168,732. Cushioned Desks and Wash-Stands. Elisha H. Everitt, Philadelphia, Pa. (Filed Jan. 12, 1875.)



As a new article of manufacture, the combined desk and wash-stand, constructed with the cabinet-base A, having receptacles B C, &c., and the projecting ledge D, having an internal recess to hold tools, &c., and a hinged lid, forming a desk-leaf, substantially as shown and described.

168,733. Pipe-Couplings. H. K. Flagler and W. R. Dodge, Boston, Mass., assignors to the National Tube-Works Company, same place. (Filed Aug. 18, 1875.)



Brief.—A coupling composed of a socket having its ends beveled, attached to the end of one section of pipe, and an abutment-ring, also having its ends beveled, attached to the opposite section of pipe, both of its ends, in combination with a clamp, adapted to engage with the outer beveled ends of the coupling.

1. The coupling consisting of the socket A and the abutment-ring C, applied to the ends of two sections of tubing, and having their ends beveled, as described, in combination with one or more clamps, adapted to engage with the outer beveled ends of the coupling, and hold the parts A C thereof together, substantially as and for the purpose specified.



2. The packing-ring F, combined with the socket A and abutment-ring C, substantially as described.

3. The clamp D, combined with the socket A and abutment-ring C, substantially as and for the purpose specified.

168,734. Stove-Door Knobs. Miles W. Gardner, Green Island, N. Y. (Filed Aug. 30, 1875.)



As a new article of manufacture, a knob for stove-doors composed of a hollow perforated metal base, a non-conducting wood disk, and central fastening bolt and nut, substantially as and for the purposes set forth.

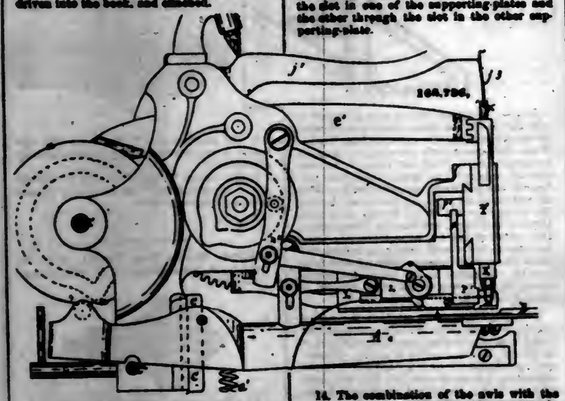
168,735. Washing-Machines. George W. Gilbert, East Prospect, Pa. (Filed Oct. 4, 1875.)

1. The frame C, provided with the friction-rollers, and having the spring-bars E horizontally attached to the end of said frame, and carrying the corrugated rubber F and vertical guide-pins c, in combination with the vessel A, and rollers journaled in the cylinder-bars G, substantially as shown and described.

2. The combination of the hollow rollers I, mounted upon the metallic rods resting in metallic bearings h, centered to each end of the supporting spring-bars G, and capable of rotating therewith, the whole forming the lower rubbing-surface of the apparatus, substantially as described.

160,726. BOOT-SUPPORTING MACHINES. L. Godin, Winchester, Mass., assignor, by mesne assignments, to H. Barnard, New York city. [Filed May 26, 1874.]

Brief.—While the heel is clamped it is penetrated by the awls, and the wire being fed over the mandrel is formed into a staple, driven into the heel, and clinched.



160,726.

1. The combination of the vert-supporting table A with the vertically-adjustable slide G by means of the pivots D, as described.

2. The combination of the vert-supporting table A, pivoted at D and operated by arms c, with the overhanging arm, substantially as described.

3. The combination of the penetrating-awls, the staple-driver, and the staple-clinchers with the clamping-table A and the overhanging arm, substantially as described, for the purpose of compressing the pamphlet between the latter, while the former operate to puncture the material and insert and clinch the staple.

4. The combination of the stock E, carrying a pair of awls for puncturing the material, the stock H, carrying the staple-former G, and the driver J, working within the former G, with the slide F and suitable actuating mechanism, substantially such as described, the whole combination being and operating substantially as specified.

5. The former-bed M, constructed in two parts, n and n', substantially as described.

6. The combination of the former G with the former-bed M, constructed in two parts, n and n', substantially as described.

7. The combination of the driver J, the former G, and the former-bed M, made in two parts, n and n', substantially as described.

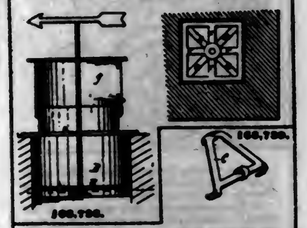
8. The combination of the feed-slide L and the former-bed M, in such relation to each other that the wire-channel in the feed-slide opens upon wire-channel in the former-bed when the slide is advanced, the two channels then forming one continuous channel until the end of the wire has entered the channel in the feed-slide, substantially as described.

9. The combination of the feed-slide L, the former-bed M, having a wire-channel across its face and in line with the wire-channel in the feed-slide, and the former G, substantially as described.

10. The clincher B, having a working surface at an angle with the surface of the material, and which moves on an axis toward the surface of the material in order to clinch the staple-leg, as described.

11. The combination of the table A, the clincher-lever c', and the clincher B E, so that the seating-surface of the clincher shall be moved axially by the action of the lever toward the plane of the table, as described.

12. The combination of the penetrating-awls, the staple-driver, and the clinchers with the slotted supporting-plates, the upper surface of the vibrating table, and the under surface of the overhanging arm, as described, so that the awls shall operate through the slot in one of the supporting-plates, and their penetrating-points shall enter the slot in the other supporting-plate, and so that the staple-drivers and clinchers shall operate, one through the slot in one of the supporting-plates and the other through the slot in the other supporting-plate.

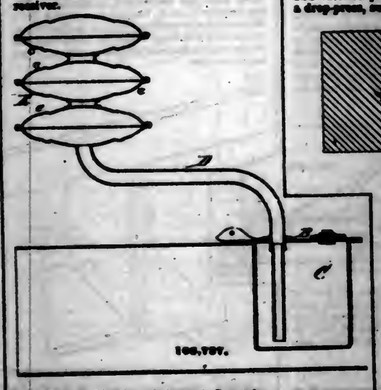


160,726.

160,726.

160,727. AUTOMATIC DAMPERS. S. F. Gold, Rockwood, N. J. [Filed July 12, 1875.]

Brief.—Steam being generated in the tank, water is forced into and through tube into the receiver.



160,727.

1. The combination of the tank C, receiver B, and pipe and lever D, arranged relatively to each other substantially as hereinbefore set forth.

2. The combination of the tank C, pipe and lever D, receiver B, and damper E, substantially as hereinbefore set forth.

3. The combination of the tank C, pipe and lever D, receiver B, damper E, and steam-pipe A, substantially as hereinbefore set forth.

4. The receiver B, constructed in parts a, having openings between them, substantially as hereinbefore set forth.

160,728. CHIMNEY-COWLS. T. K. Griffin, Fayette City, Pa. [Filed Aug. 9, 1875.]

The pedestal B, constructed with upper and lower spurt-arrestors c d, arranged to intersect each other, as shown, and also constructing bearings for the shaft, in combination with the bonnet and vane, substantially as specified.

160,728.

160,729. TRAVELING FOR SPINNING-ROVER. Heiver Halverson, Cambridge, assignor to G. A. Shaw, Boston, Mass. [Filed Feb. 10, 1875.]

1. A spinning-ring traveler having a triangular body, and provided with the heels or legs d d and n, substantially as and for the purpose specified.

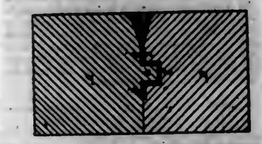
2. In a spinning-ring traveler, constructed substantially as described, the yarn-hook a, arranged as shown and for the purpose specified.

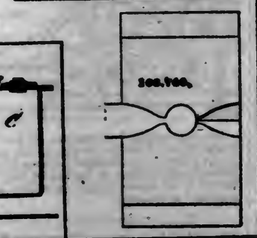
160,730. DIES FOR FORGING CARRIAGE-AXLE NUTS. Henry Hammond, Hartford, Conn. [Filed Oct. 2, 1874.]

Brief.—Compressing faces on the sides of the dies strike out a circular disk from bar, to serve as a blank out of which the nut is to be formed. This blank is then placed between the finishing-dies and brought to the desired form.

1. The circular compressed faces c c, upon and in combination with dies for forming the finished nut, substantially as described.

2. The dies composed of two parts, upper and under, constructed as herein described, and suitable for giving form to the exterior and interior portions of an axle-nut under a drop-press, substantially as set forth.





160,730.

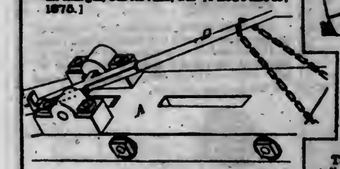
160,731. DRILL-STOCKS. J. Hammond, Belleville, Ind. [Filed June 26, 1875.]



160,742.

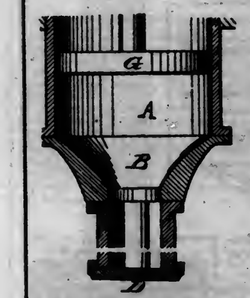
In a drill-stock, the stop-sleeve F, shouldered and screw-threaded at its under end, in combination with the pinion-box D, pinion C, shouldered pinion-shaft E, screw-threaded at its lower end, and removable from the pinion at its upper end, and removable tool-socket G, substantially as described, and for the purpose set forth.

160,743. TRACK-LIFTING LEVERS. William H. Hargis, Cartersville, Ga. [Filed June 10, 1875.]



The combination, substantially as described, of the lever D, having the journal-arms c and hook h, in combination with the fulcrum-blocks B, cage O, and base-plate A, constructed as described.

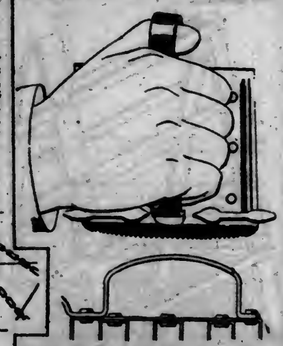
160,744. BRICK PRESSES AND FORMERS. Andrew J. Hawn, Johnstown, Pa. [Filed Aug. 14, 1875.]



The cylinder A, having plunger G, in combination with the cone E, mold O, having lugs c, and removable stopper D, provided with hooks h, the whole constructed, arranged, and operated in the manner and for the purpose set forth.

160,745. OVERT-COMBS. C. A. Hotchkiss, Bridgeport, Conn. [Filed Nov. 20, 1874.]

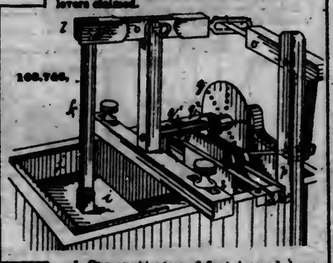
Brief.—The back of the comb is provided with a rigid bail or handle for the fingers to grasp, and the side has a ring for the thumb to enter.



The carry-comb provided with a rigid metallic handle on its back, and a thumb-rest, substantially as specified.

160,746. STUFF-REGULATORS FOR PAPER-MACHINES. John W. Hunsted, Schuylerville, N. Y. [Filed Mar. 15, 1875.]

Brief.—As the floor lifts it shifts the sliding gate to throw the outflow into the machine or back into the stuff-chest. The amount of play of gate is governed by the arrangement of levers claimed.



160,746.

1. The combination of feast f, arm h, lever i, cross-lever o, arm o', lever o², disk q, cogs q' and r, and shifting or sliding plate s, in the manner substantially and for the purpose described and set forth.

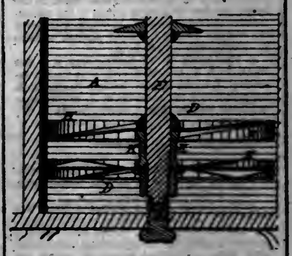
2. The combination of disk or wheel q, shifting-plate s, and lever l, constructed and arranged to operate substantially in manner and for the purpose described and set forth.

160,747. STEAM AND VACUUM PUMPS. O. Jackson, Portland, Me. [Filed Nov. 12, 1874.]

Brief.—Steam is applied in one chamber, while a vacuum is created in the other, and vice versa. The power of said chambers is transmitted to two cams, in which the water is raised alternately from one to the other.

The combination of the chambers I L having the domes M, ports r s, and valves V V with the donkey-pump D, pipes P P' P², having perforated ends, cock T, pipes s n, and pump sections or reservoirs A O F B E H, substantially as described, for the purpose specified.

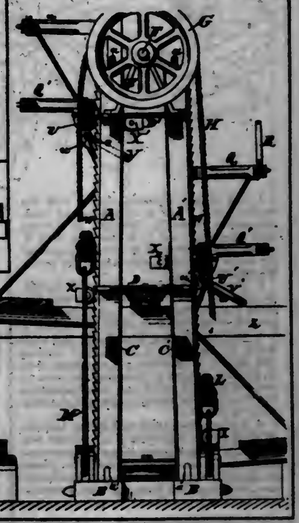
160,748. CHURNS. William P. Jones, Clio, Iowa. [Filed Aug. 21, 1875.]



The combination of the perforated propeller-wheels D, constructed as described, with the central shaft E and adjustable thimbles K, as and for the purpose hereof set forth.

160,749. MACHINES FOR REMOVING BUILDING MATERIALS. George H. Kennedon, Columbus, Ohio. [Filed June 24, 1875.]

Brief.—On a foundation-piece four posts, with attaching horizontal platforms, are each adapted to vertical extension by means and mortises at their sectional ends. Sliding on the outside of each pair of posts, and guided by friction-wheels, is a platform-frame, overbalanced by one on the other posts, both vertically counterpoising by a hoisting-rope over a wheel at top. On each there is a counterbalancing crank-shaft, having pawls working on ratchets along the posts. Each frame has at top a detachable load-carrier.

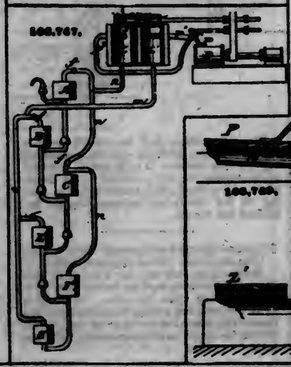


160,750. TRUSSED CHAINS. S. Hoffman, St. Louis, Mo. [Filed June 21, 1875.]



The combination of spider D E F and cast L with the spring consisting of stirrup H, coils I I, and arms K K, having bearings G and M, respectively, upon the arm F, and beneath the cast-frame L, substantially as set forth.

160,751. SAFETY-VALVES. Thomas Jones, Jr., Pittsburgh, Pa. [Filed Aug. 21, 1875.]



160,751.

1. The combination of the valve-seat A, valve B, and the lever C, provided with the weight D, and the pin or projection E, substantially as and for the purpose specified.

2. The combination of the valve-seat A, valve B, lever C, weight D, and the pin or projection E, with the stop-pin F, substantially as and for the purpose specified.

1. The combination of bars E, forming the side support of the elevator, sectional and detachable standards A A' C A' A' C', and detachable platforms D D', supported by the braces C C' of the standards A A A' A', the upper platform D' carrying the upper mechanism, to which the elevator-platforms are attached, substantially as and for the purpose set forth.

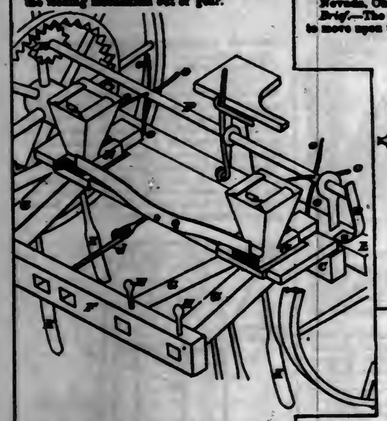
2. The platform I, consisting of vertical bars J J, sliding on the sides b of the standards A A' A', and connected by cross-bars K L, the rollers X X', attached to said bars J J, and adapted to run respectively in front and rear of the standards, in combination with braces O, platform P, and brackets R on the outside of the elevating-frame, as set forth.

3. The supplemental and detachable bed-frame, consisting of uprights Q' Q', supporting-brackets Q Q', and angular arms R, the lever bracket Q' having pulley T for attachment to the cross-bars K, in combination with the vertical bars J J, having obdents or slips S, substantially as set forth.

4. The parts U' U', having legs u u, the crank-shaft V, provided with pins v v for operating the parts, and having bearings in hangers b b of the cross-bars K, in combination with standards A A, having racks W W, as set forth.

168,750. COMBINED PLASTERER AND OUTLOOK-TAPPER. Charles F. Keller, Healdsburg, Cal. [Filed July 26, 1875.]

Brief.—To the axle is hinged a frame provided with adjustable beams, carrying spring and covering teeth. Upon this frame is secured a cross-bar for supporting seat-bars, with slides extending rearward, which are thrust by arms on a revolving shaft and forced forward, but are instantaneously forced back by a retracting-spring. The shaft carrying the arms has an end-wise movement to throw the feeding mechanism out of gear.



1. The hinged adjustable frame, with the mortised bar F and V-shaped ends of teeth supporting beams G, adjustable to or from each other upon rod C, so that the teeth K will serve as cultivators, or to mark the ground for and cover the seed, substantially as herein described.

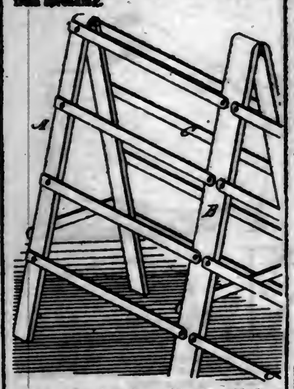
2. The rotating and adjustable shaft P, with its rotating arms O, in combination with the slides M and spring Q of a seed-dropping apparatus, substantially as herein described.

3. The combination, in a planter and cultivator, as described, of the shaft P, having seed section in its bosom, and operating lever T, for the purpose of throwing the arms O and the plates R out of gear simultaneously, together with the returning-spring U, substantially as described.

4. An interchangeable seed-covering and cultivating device, consisting of the hinged and adjustable teeth-bearing frame, in combination with the seed-dropping device M N and the shaft P, with its radial arms O, to determine the spaces for dropping seed, substantially as herein described.

168,751. CLOTHES-DRIER. Saml. R. Kidder, Bantam Falls, Conn. [Filed Aug. 26, 1875.]

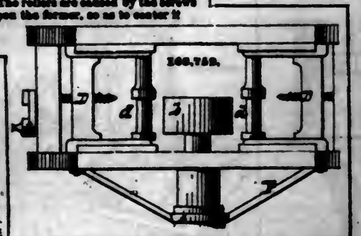
Brief.—The central uprights are longer than the end uprights, which prevents the frame from upsetting.



In a clothes drier the combination, with the hinged end uprights A and the pivoted bars C, of the central uprights B, having their hinged upper ends above those of the two end uprights, substantially as described.

168,752. BOX-MACHINE. John Kiser, Nevada, Ohio. [Filed July 24, 1875.]

Brief.—The rollers are caused by the screws to move upon the former, so as to center it



The sliding frames D, rollers *d d*, and former or cylinder *b*, in combination, substantially as and for the purpose set forth.

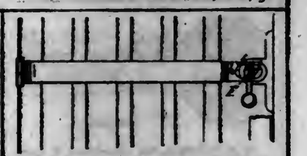
168,753. HORSE-ATTACHMENTS FOR SEWING-MACHINES. Wessel L. Edgerton, Chicago, Ill., assignor of one-half his right to Henry H. Scotchmer, same place. [Filed May 18, 1875.]



The combination, with the needle-bar of a sewing-machine, provided with the removable leg *a*, of the beamer D attached to the foot of the presser-bar, and provided with a shoe-plate and spring-knife, operating by the said leg on the needle-bar, substantially as described and shown.

168,754. GATE-FASTENINGS. Wm. Leach, Omaha, Nebr. [Filed Sept. 13, 1875.]

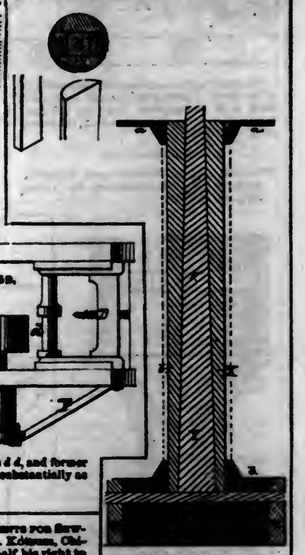
Brief.—A pivoted rod has a weighted handle upon one end, and an arrow head with beveled wings upon the other. This rod is upon the post, and a plate is secured upon the gate. The plate has an angular slot, which strikes the arrow and automatically locks the gate.



The pivoted rod R, having arrow-head with reversely-beveled wings, and in the same plane therewith a right-angled catch-arm, O, in combination with an angle-plate, E, having the slot *b*, as and for the purpose described.

168,755. SECTIONAL CORES TO BE USED IN THE MANUFACTURE OF TUBING. H. Loomis and J. A. Cameron, Memphis, Tenn. [Filed June 9, 1875.]

A core for tubing, consisting of a square tapering center, V, and four tapering side pieces, I, II, III, and X, in combination with the fishing-plates *a* and *b* and the bar-wedge VI, all constructed to operate substantially as and for the purpose set forth.



168,756.

168,757. SEWING-MACHINES. Lorin Lyon, New York, N. Y. [Filed Apr. 12, 1875.]

The combination, with the rock-shaft r, provided at one end with an arm, *i*, for operating the feeding of a sewing-machine, of the adjustable rod *l*, eccentric *k*, shaped crank *p*, adjustable slide *m*, the set-screw *q*, passing through the crank *p*, and slide *m*, for moving the latter back and forth, as and for the purpose described.

168,758. CORNISH FASTENING AND COLLAR. Thomas C. Love, Waldo, Me. [Filed Aug. 10, 1875.]

In a horse-collar, the pads D D, constructed with a flexible web, *d*, intermediate to the attaching-cams, for the purpose of increasing the flexibility and elasticity of the pads, in the manner substantially as herein before shown and described.

168,759. BOX-MACHINES. John Kiser, Nevada, Ohio. [Filed July 24, 1875.]

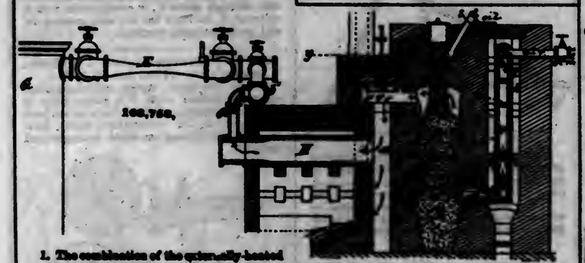
The combination, with the former or cylinder *b*, of the sliding frame D, rollers *d d*, and the pivoted arm E, having a roller, *e*, and the pivoted arm F, having a roller, *f*, substantially as and for the purpose set forth.

168,760.

168,761.

168,760. APPARATUS FOR THE MANUFACTURE OF ILLUMINATING-GAS. Philip W. Mosbach, Hunterdville, N. Y. [Filed Nov. 7, 1874.]

Brief.—The decomposing-chamber is air-tight. Air to steam combustion is admitted by way of the separately-heated steam-decomposer. The proper heat having been attained, air is shut off and steam admitted. Resultant gases are fixed. To his former apparatus adds fixing-retorts. The valve between retort and chamber has a sand-seal.

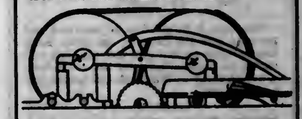


1. The combination of the externally-heated vertical end chambered steam-retort A, having upper steam-inlet *b* and lower superheated steam-outlet *c*, with the gravitous decomposing-chamber B and one or more separately-heated fixing-retorts, H, substantially as specified.

2. The combination of the externally-heated vertical end chambered steam-retort A, having upper steam-inlet *b* and lower superheated steam-outlet *c*, with the gravitous decomposing-chamber B, having an upper hydrocarbon-supply pipe, *e*, and with one or more separately-heated fixing-retorts, H, as and for the purpose described.

168,760. LATH-MACHINES. J. C. Mosher, Chicago, Ill. [Filed Nov. 14, 1874.]

Brief.—The cutting lathe from belts of varying thickness, the saw or saws that cut the laths, and the feed and delivery rollers, are caused to revolve in the same direction by a peculiar arrangement of driving-pulleys and their belts with relation to the saws.



The combination of the saw-arbor *i*, carrying pulley P, belt J, and pulley I on shaft A, with belt K, and pulley F on shaft D, whereby the rollers H and H' are revolved in the same direction as the saws B, substantially as described.

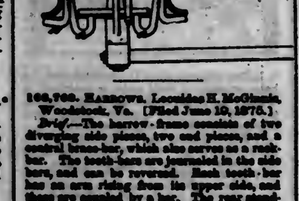
168,761. GAS-BRACKET SUPPORTS. Thomas F. McGann, Boston, Mass. [Filed Sept. 20, 1875.]

A globe-holder, with a bearing-piece, A, having projections, and a series of bent spring-supports, B, the bent spring-supports B being formed at *c'* to support the under side of the globe E, and at *d*, to embrace the inside thereof, the whole being constructed substantially as shown and described.

168,761.

168,762. HARROWS. Lucrédus H. McGinnis, Woodstock, Va. [Filed June 10, 1875.]

Brief.—The harrow-frame consists of two diverging side pieces, two end pieces, and a central brace-bar, which also serves as a rocking-bar. The teeth-bars are journaled in the side bars, and can be reversed. Each teeth-bar has an arm rising from its upper side, and these are coupled by a bar. The rear standard enters a pawl, which works in notches in the upper edge of the brace-bar, thus holding the teeth at any desired angle. The rear end of the harrow-frame is adjusted by means of a rock-bar and wheels, and the forward end is supported by a detachable caster-wheel. Each teeth is supported upon the under side of the beam by a flanged washer.



168,762.

1. The harrow-frame having the end-ranging detachable side pieces D and central beam F, in combination with the reversible teeth-bars C, substantially as described, and for the purpose set forth.

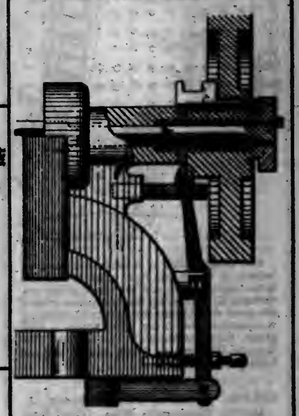
2. The flanged washers I, combined with bars C and teeth G, substantially as described, and for the purpose set forth.

3. The harrow-teeth G, the bows and of which is bread and beveled on both sides, and double-beveled from its vertical axis to its vertical sides, so as to form parallel cutting-edges, substantially as described.

4. In a harrow, the combination, with the pivoted teeth-beams C, of transporting-wheels K K, rocking bar J, lever-arm *a*, shaft *f*, and blocking-cranks *g g'*, whereby the wheels and the teeth-beams may be operated independently or together, substantially as described.

168,763. PUNCH-PRESSES. Alanson H. Morrison, West Meriden, Conn. [Filed Sept. 20, 1875.]

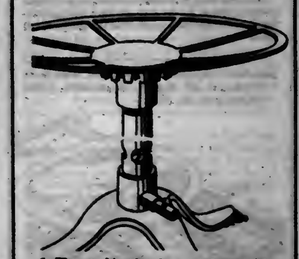
Brief.—The cam-shaft of the plunger is entirely freed from the friction of the balance-wheel when unclutched therefrom.



A stationary bearing upon the horn of a press, substantially as and for the purpose set forth.

168,764. GAS-HEATERS. George Mooney, Providence, R. I., assignor to Providence Gas-Burner Company, same place. [Filed Sept. 16, 1875.]

Brief.—Gas issuing from a narrow slit is more readily mingled with air. The depending notched flange breaks the flame and allows freer access of air.



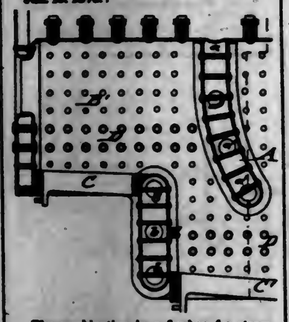
1. The combination, in a gas-heater, of an atmospheric chamber and a gas-slit, which is located within and connected to the chamber adjacent to the air-induction apertures, and is provided with one or more rectangular slots, substantially as described, whereby the gas is delivered into the atmospheric chamber in a thin, attenuated, flattened column, as and for the purposes set forth.

2. The combination, with a gas-jet and an atmospheric chamber, which delivers the mixed gas and air in radial jets from the top of the chamber, of a flame-spreading plate having a downwardly-projected flange provided with openings, substantially as described, and for the purposes set forth.

168,766. MEMBERS OF DRYING AND BURNING BRICKS, &c. Augustus Morand, Germantown, Pa. (Filed Dec. 15, 1873.)

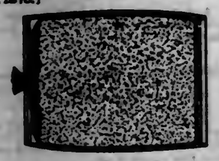
The improvement in the art of drying and burning bricks and other wares and materials, consisting of the introduction of electrized air or of air charged with ozone, into the interior of the kiln, for the purpose of intensifying the combustion therein, and of heightening the color of the brick, substantially as set forth.

168,767. FURNACES FOR STEAM-BOILERS. Sandford Morse, Clinton, Iowa. (Filed Jan. 18, 1875.)



The combination, in a fire-box for steam-boilers, of the upper front grate C and the lower rear grate C', and the intermediate water-leaf E, supporting the contiguous ends of the same, with the depending curved water-leg A, extending below the upper grate C, said grates being arranged to receive the fuel through the door, as herein shown and set forth.

168,768. MODES OF PACKING FLOUR. L. Mowry, Minneapolis, Minn. (Filed Sept. 17, 1875.)



An article of commerce, consisting of flour packed within a barrel lined with fibrous material, substantially as and for the purpose set forth.

168,769. RUNNING-GEARS FOR VEHICLES. Chauncey M. Marsh, Cincinnati, Ohio. (Filed Aug. 18, 1875.)

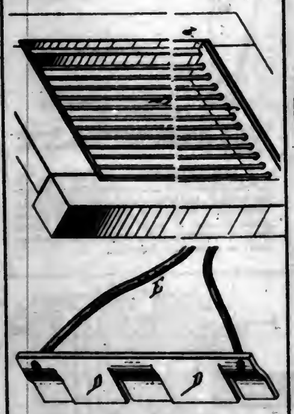


1. In the running-gear of vehicles the frame, composed of the T angle-bars B F F' D, and interposed between the springs and the fifth-wheel, substantially as and for the purpose specified.

2. In combination with the ordinary springs of a vehicle the spring G and bracket F, connected and operating substantially in the manner and for the purpose specified.

168,770. FRUIT-DRIERS. John P. Nessle, Newark, N. J. (Filed Sept. 20, 1875.)

Brief.—The slides can be used to clear the wires of fruit. They also support the wires. The handle is used to push the slides on the wires.



1. The combination of the frame A, having grooves or offsets a a, the parallel wires B B, and slides C C having tongues b b, substantially as and for the purposes herein set forth.

2. The pronged handle D E, in combination with the slides C C and tray A B, substantially as and for the purposes herein set forth.

168,770. GRATES FOR FURNACES. Jas. Old, Allegheny, Pa. (Filed Aug. 23, 1875.)

Brief.—The cranks work in holes formed in the grate-bars.



1. The agitating-bars D, provided with the holes or slots in their ends, as described, to confine the wrists of the cranks, in combination with the wrists a, cranks C, and rock-shafts B B', substantially as set forth.

2. The stationary bars E, provided with the flanges f, arranged between the cranks to fill the spaces between the agitating-bars, and hold them in position on the wrists of the cranks, in combination with the agitating-bars D, crank-wrists a, and rock-shafts B B', substantially as set forth.

3. The projections c, on the shafts B B', in combination with the short bars D and rock-shafts, substantially as described.

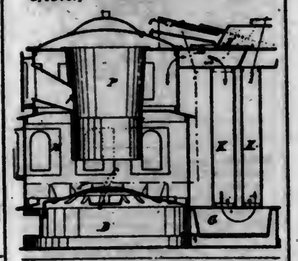
4. The combination of a grate, constructed as described, with the fire-chamber of a furnace-stove or open fire-place, substantially as described.

168,771. GRATE AND STOVE FRONTS. Jas. Old, Allegheny, Pa. (Filed Mar. 18, 1875.)



The grate-front A, having spaces a, constructed as described, in combination with spaces B and flue D, substantially as and for the purpose hereinbefore described and set forth.

168,772. FIRE-PLACE HEATERS. John B. Oldershaw, Baltimore, Md. (Filed Aug. 6, 1875.)

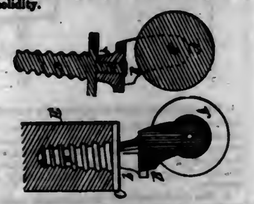


1. The combination of cylinder-section D, box G, extension K, and section L, as and for the purpose described.

2. The magazine P, open at top and at the side through plate O, in combination with a cylinder, R, having a top and side opening, as and for the purpose specified.

168,773. FURNITURE-CASTERS. J. F. Ohmer, Dayton, Ohio. (Filed Apr. 13, 1875.)

Brief.—The screw, flange, and connecting-rivet are formed solid, of a single piece of metal, and riveted or headed down on the horn of the caster, the construction being inexpensive, and giving increased strength and solidity.



The solid screw D, the disk or flange C, and the rivet d, formed of one piece of metal, in combination with caster-horn B, substantially as and for the purposes set forth.

168,774. WATCHES. Eugene J. Pecaud, Schaffhausen, Switzerland, assignor to Florentino A. Jones, same place. (Filed June 30, 1873.)



The screw A, threaded at its inner end, and provided with the flange F, the latter being located between the dial and top plate of a watch, in combination with the elbow-lever g, substantially as described, and for the purpose specified.

168,775. VALVES. William Painter, Baltimore, Md. (Filed Oct. 6, 1875.)



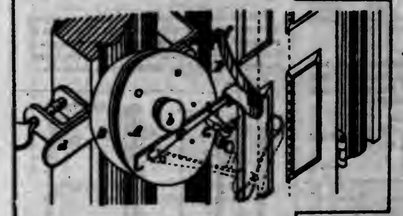
The combination, with a flexible valve cover or covers, provided with longitudinal stiffeners or bosses, of the side plates, substantially as and for the purposes specified.

168,776. VALVES. William Painter, Baltimore, Md. (Filed Oct. 6, 1875.)



A valve provided with the flexible covers, having bosses or stiffeners, and seated one against the other at top and sides, substantially as described.

168,777. BURGLAR-ALARMS. Jno. Pepper, Philadelphia, Pa. (Filed Sept. 9, 1876.)



1. The gong B or cap B thereto formed, with a hollow shaft or threaded post for the reception of the screw S', substantially as shown and described.

2. In combination with the gong B and face-plate A, the tripper C, hinged at c', and provided with a pin, c, for engagement with the escapement S'.

3. An organ-escapier embodying in its construction a series of levers, c d, interposed between the pitmen b, and supported at opposite angles, the one to the other, within a escapier-bar, e, having a double tier or series of gains or channels, e' e', arranged at reverse angles to and one above the other, substantially as shown and described.

4. The combination, with the keys e, of the levers c d, escapier-bar e, gains e' e', hinged platform f, pitmen b, and valves m, all constructed and arranged to operate substantially as shown and described.

168,778. SEDIMENT-COLLECTORS FOR STEAM-BOILERS. Joseph Popper, Vienna, Austria, assignor of one-half his right to David Popper, same place. (Filed June 20, 1876.)

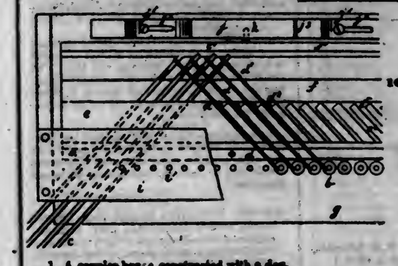
Brief.—The sediment is deposited upon false bottoms or linings, through which the circulation of water is maintained by means of raised or nipple-opening. Said linings are located concentric to the boiler-plates, and held in position by cross-ties.



1. Roller-linings consisting of a series of detached curved metal plates, T, provided with pyramidal tubes or cones S S', constructed as shown and described, and legs or supports s, said series of plates being so arranged as to overlap each other, inducing currents in certain portions of the boiler, leaving places of rest in others, substantially as and for the purposes specified.

2. Roller-linings consisting of a series of metal plates T, arranged above the fire-tubes, and provided with slots o o and oblique flaps f, substantially as described, in combination with the bottom linings U, arranged and operating substantially as shown, and for the purposes specified.

168,779. ORGAN-COUPLERS. Jos. R. Perry, Wilkesbarre, Pa. (Filed Aug. 6, 1875.)



1. A coupler-bar, a, constructed with a double tier or series of gains or channels, d d', arranged at reverse angles to and one above the other, and adapted to receive and support the levers c d, substantially as shown and described.

2. The combination, with a coupler-bar, a, provided with a double tier or series of gains or channels, d d', arranged at reverse angles to and one above the other, of the levers c d and hinged platform f, substantially as shown and described.



3. Roller-linings consisting of a series of removable curved and overlapping metal plates, T, constructed substantially as shown and described, and arranged not parallel to the boiler-plates, but approaching nearer to them toward the water-line, for the purposes set forth, said series of plates being held in position by means of the supports or legs s and T T and the brass-rods s, as shown and specified.

168,780. HOES. Archibald A. Porter, Griffin, Ga. (Filed Aug. 20, 1875.)

Brief.—The blade is clamped between two jaws, that are brought and held together by means of a screw-thread upon the handle operating upon an interior thread in the socket.

The shank C and lip A, socket B and screw F, in combination with the blade A and handle B C, as specified.

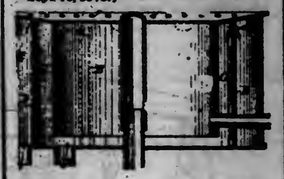


168,780.

168,781. CORNERED PADS AND COLLAR-FASTENINGS. Almo Beckes, Fort Wayne, Ind. (Filed Sept. 20, 1875.)

The combination, with a horse-collar, of a pad, A, metal plate C, slotted posts D D, and key G, all substantially as and for the purposes herein set forth.

168,782. METHODS AND APPARATUS FOR BURNING OILS. Elisha E. Bliss, San Francisco, Cal., assignor of one-fourth his right to G. W. Dyer, Washington, D. C. (Filed Sept. 16, 1875.)



1. The method, substantially as described, of regulating the height of oil burning upon the surface of water, by means of connecting the chamber containing the water which carries the oil, by passages or openings at its bottom, with a water-chamber entirely around the first-named chamber, and with suitable overflow pipes or passages at its top, leading into a third chamber entirely around the second, from which last-named chamber the water has free outlet.

2. The method, substantially as described, of increasing the combustion of oils burning in a thin film upon the surface of water, by introducing vertical jets of air into the center of the fire above the water by a central vertical pipe with a perforated top.

3. The method, substantially as described, of converting the flame of oils burning in a thin film upon the surface of water into a blast, by introducing vertical currents of live steam into the center of the flame by a central vertical pipe with a perforated top.

4. The method, substantially as described, of converting the flame of oils burning in a thin film upon the surface of water into a blast, by introducing vertical central currents of live steam into the flames, and at the same time introducing radial currents of air, entirely around the periphery of the flames.

5. In the apparatus described, the combination of the chamber I, provided with water and oil inlet pipes, and the chamber G, provided with overflow pipes or passages at its top, connected by openings or passages at the bottom with the chamber I, substantially as and for the purposes set forth.

6. In the apparatus described, and in combination with the chamber I, the central steam or air pipe J, with a perforated top, and adapted to be raised a little above the surface of the water and oil contained in said chamber.

7. In the apparatus described, and in combination, the chamber I, connecting by passages at the bottom with the chamber G, the chamber G, having overflow-passages at its top, leading into the chamber C, and the chamber C, having outlet D, all substantially as and for the purposes set forth.

8. In the apparatus described, and in combination, the air-pipe E in the chamber C, the top cover H, having an annular series of openings, h, and a central steam-pipe, J, substantially as and for the purposes described.

9. In the apparatus described, the combination of the tanks M and N, with connecting-pipes g i, and the chamber L, substantially as and for the purposes set forth.

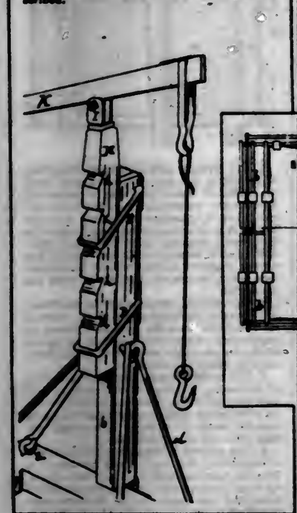
166,786. GASOLINE-BURNERS. J. C. Riley, Cincinnati, Ohio. [Filed Aug. 28, 1875.]



The combination of burner, A B D F, removable cap or nozzle G E I J K L, and regulating-screw M N, substantially as herein described and illustrated.

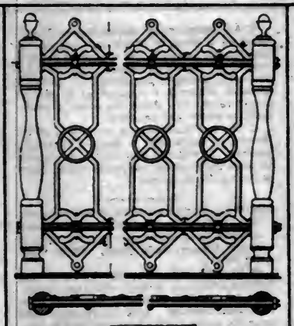
166,784. ELEVATORS FOR VESSELS. Robt. B. Roberts, Vermilion, Ill. [Filed July 6, 1875.]

The portable lifting mechanism described, consisting of the standard b, head c, rods d, staples e, upright bar H, provided with notches h, links p, swivel I, and lever K, all combined and arranged as and for the purposes described.



166,785. BOOT FRAMES. T. J. W. Robertson, New York, N. Y. [Filed June 30, 1860.]

A frame-panel constructed of sections having alternate side depressions, so arranged as to form openings for the reception of the rods, substantially as described.



166,786. DIAMOND SAWS FOR CUTTING STONE. Henry Rung, Chicago, Ill., assignor of one-half his right to R. Baumgarten, same place. [Filed Aug 10, 1875.]

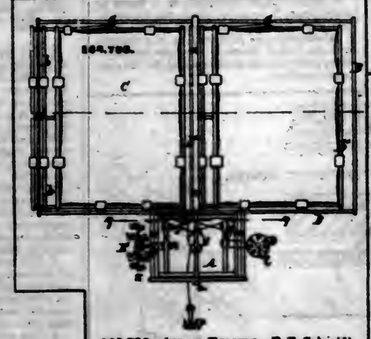


The saw-blade A, built up of two strips, and a series of spacer-blocks, B, as described, and the combination therewith of the gibs C and keys D, as and for the purposes set forth.

166,787. JOURNAL-BOXES. J. Schellhoop, Tidioute, Pa. [Filed Sept. 20, 1875.]



The journal-box A, provided on two diametrically-opposite sides with pivots e, in combination with holders B B, one of which is provided with a depression to receive one of the pivots, and the other with a mortise to receive the other pivot, substantially as and for the purposes specified.



166,788. AERIAL VESSELS. P. S. Schmidt, Hoboken, N. J. [Filed Sept. 2, 1875.]

Brief.—When both propeller-screws are turned in a vertical position by means of a bevel cutting on the swivel-brackets, they serve to raise or depress the aerial vessel. The propeller-screws are set in motion by means of the fly-wheel and the transmitting-pulleys. On the top of the frame-sails is secured a rod with knees, which prevents the sails, when filled with gas, from rising above the frame. There is an anchor with its windlass and rope attached for landing the aerial vessel.

1. The construction of an aerial vessel, as shown in the drawing, Fig. 1, composed of the folding parts, viz.: pool a, frame B, sails C, and frame sail-yards and frame b b' for propelling the aerial vessel by catching the wind, also the wheel or passenger house A, fly wheel d, transmitting-pulleys g h i j n o, propeller-screws D E, swivel-brackets F for raising, lowering, and steering the aerial vessel by turning the fly-wheel, substantially as set forth.

2. The combination of vertical swivel rods and frame b b' with sails C C, as shown in the drawing, Figs. 1, 2, and 4, substantially as described.

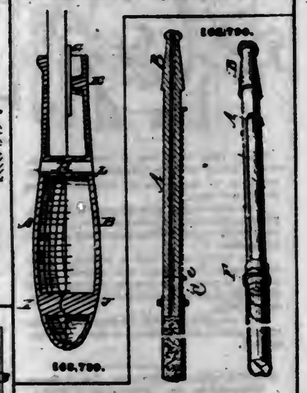
3. The combination of propeller-screws D E, which have their bearings in the swivel-brackets F, as shown in the drawing, Figs. 1 and 3, substantially as described.

4. The combination of a wheel or passenger house A, of buoyant sails C C forming air-tight chambers filled with gas, as shown in the drawing, Figs. 1 and 2, substantially as described.

166,789. TOOL-HANDLES. John O. Sears, St. Louis, Mo. [Filed Aug. 17, 1875.]

Brief.—A tool can be readily attached to the handle without fitting or the use of fastening, by means of a metal handle formed in two parts, and provided with three bearing-points, of which no two are opposite each other.

The herein-described tool handle, consisting of the parts A and B, bearings C, D, and E, arranged as described, and the projections I, K, J, and L, constructed as described, substantially as and for the purposes set forth.



166,790. CIGARETTE-MAKERS. Jacob Shepard, Williamsburg, Brooklyn, N. Y. [Filed July 24, 1875.]

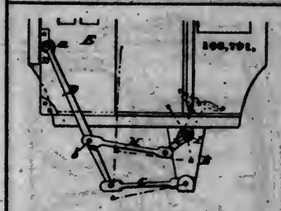
Brief.—The slotted tube is moved outward until its end is supported by the plunger, and is filled with tobacco through the slot. The paper wrapper is then wound around the tube, and the elastic band placed around it, when the tube is drawn backward; the device is then ready for being smoked.

In a cigarette maker and smoker, the combination of the plunger and mouth-piece A B, the open metallic tube or former C, and the elastic ring or band F, substantially as herein described.

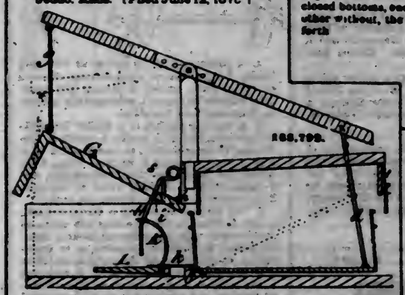
166,791. OPERATIVE STREET-CAR DOORS. David Shield, Cambridge City, Ind., assignor of three-fourths his right to Indiana Car Company, same place. [Filed June 16, 1875.]

1. In combination with a car-door the lever D, lever G, pivoted to a fixed fulcrum, lever E, lever F', and a head or foot lever, substantially as and for the purposes set forth.

2. In combination with car-door, the lever D and lever G, the lever G pivoted to a fixed fulcrum, and the lever D to a moving adjustable fulcrum, and operated by mechanism under the control of the driver or conductor, as may be desired.



166,792. ANIMAL-TRAPS. W. A. Shipley, Jeddo, Kans. [Filed June 12, 1875.]



The vertically-vibrating lid G, having slot a and lip i, in combination with a notched rod, H, rod K, and vibrating detaching-board I, substantially as specified.

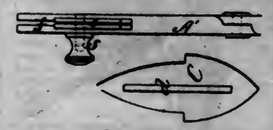
166,793. HAMES. Samuel Shultz, Moscow, Ky. [Filed Mar. 25, 1875.]



The combination of the hame A, plate B, with groove a, hook C, frame D, with prongs d, and spring-catch f, substantially as and for the purposes herein set forth.

166,794. BUTTON-HOLE CUTTERS. John A. Sias, Comstock, Mich. [Filed Aug. 26, 1875.]

Brief.—A four-edged, double-pointed, lozenge-shaped cutter is slotted lengthwise, and detachably inserted in a curved enlargement of one lever of a pair of shears, being held in place by a thumb-screw, and so arranged as to be reversible as well as detachable. The other lever of the shears is formed into an extension-bar, through which is cut a longitudinal slot, of such width as to receive the point of the cutter, the lateral edges of this extension being beveled. A grooved spring-slide, having end-wise movement on the extension-bar, adjusts the button-hole cut, and a guard-frame on the upper lever forms a sheath for the cutter.



1. In a button-hole cutter, the reversible and detachable lozenge-shaped cutter C, having slot d, in combination with shear-lever A', having a curved split enlargement, b', and thumb-screw S, substantially as specified.

2. The guard e on lever A', in combination with a lozenge-shaped four-edged and double-pointed blade, C, substantially as specified.

166,795. POCKET BLANK-BOOKS. Andrew V. S. Smith, Washington, D. C. [Filed June 8, 1875.]

Brief.—A check-book in the cover of a bank-book, and separated from the latter by a flap.

As an article of manufacture, the within-described bank and check book, consisting of the cover B, with flap C, the check-book G, bank-book A, pocket D, and flap E, all substantially as and for the purposes herein set forth.

166,797. CARBURETTERS. William D. Snow, Brooklyn, N. Y. [Filed Oct. 6, 1875.]



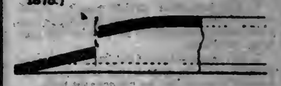
In an apparatus for carbureting air or gas, the combination, with the carbureting-vessel A, of the foraminous or wire-gauze basket E, provided with horizontal foraminous partitions for supporting the packing, and narrowed toward the bottom, so as to leave an annular space for the hydrocarbon liquid, the upper part being of such size as to fill or nearly fill the gas-chamber of the vessel A and prevent the collection of explosive gases, substantially as described.

166,798. WAGON-JACKS. R. W. Stanton, Almena, Mich. [Filed Sept. 11, 1875.]



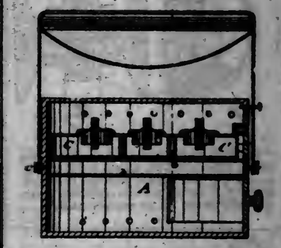
The combination of the slotted standard A, casting B, with hooks b, L-shaped arm C, with pin d, lever D E, and slide h, all constructed substantially as and for the purposes herein set forth.

166,799. VERTICAL BARS FOR GAS-HOLDERS. Jesse W. Starr, Jr., Camden, N. J., assignor to Jesse W. Starr and Jesse W. Starr, Jr., same place. [Filed Sept. 24, 1875.]



As a new article of manufacture, a vertical bar for gas-holders, having its body of trough-section, provided with side flanges, and tapered at one end into a flat head in line therewith, substantially as set forth.

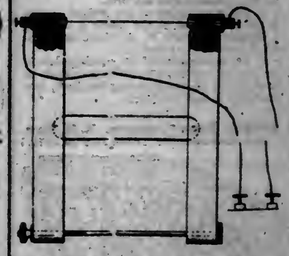
166,800. FLAT-IRONS. Fred Sterning, Austin, Tex. [Filed Sept. 6, 1875.]



The combination of the hollow reversible sad-iron A, having the interior shelf h, with the removable lamp C, having shield D, and burners d, substantially as and for the purposes herein shown and specified.

166,801. APPARATUS FOR CUTTING GLUE. Hezekiah Stevens, Brazoria, Tex. [Filed May 15, 1875.]

Brief.—A platinum wire, made taut in a frame, is connected at each end with conducting-wires attached to a battery. The glue is fused, then being covered by the wire passing through its mass when electrically heated.



The combination of a glue-cutting frame, having cutting-wires applied across it, conducting-wires, and a galvanic battery, substantially as herein described.

166,802. PROCESSES FOR PREPARING AND DRYING GLUE. Hezekiah Stevens, Brazoria, Tex. [Filed May 15, 1875.]

Brief.—Superheated steam is used as a hygroscopic agent in glue-drying. The glue is exposed in shallow pans or trays within a closed vessel, to which the superheated steam is admitted from the generator. A pipe at the top of the chamber draws off the steam previous to its point of saturation, and utilizes its heat in preparing another charge of glue contained in a suitable vessel.



168,896.

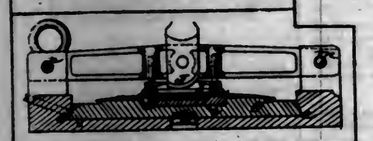
1. The process of drying glue by enveloping it in superheated steam introduced into a chamber, substantially as and for the purpose described.

2. The combination of the superheating apparatus and the glue-drying chamber, substantially as and for the purpose set forth.

168,897. STEAM-ENGINE. Geo. B. Stevenson, Upper Sandusky, Ohio. [Filed Aug. 21, 1875.]



The cross-head J, having the sockets s, the covers sides g with the chamb s, and the set-screws s, in combination with the horizontal cylinder C, having concave slideways h, substantially as and for the purpose set forth.



168,898. MACHINE FOR RECORDING THE UPTIME OF BOOTH AND SHOES. Edwin B. Stimpson, New York, N. Y. (Filed Aug. 2, 1875.)

1. The combination of the male roller-die B with the female reciprocating flat or bed die C, substantially as shown and described, and for the purpose herein set forth.

2. The combination of the toothed sectors E and F, the shaft D, the pinion f, the rack h, the male roller-die B, and the female bed-die C, essentially as specified.

3. The combination of the pressing-plate I, the cam J, and the adjustable cross beam or lever K with the reciprocating bed-die C, substantially as herein set forth.

168,899. BRICK PAVEMENTS. H. H. Stow, San Francisco, Cal. [Filed July 20, 1875.]



1. A pavement composed of hard-burned bricks placed on an earth foundation, with intervening spaces, cells, or recesses for the top dressing to find lodgment, and thereby firmly unite with the latter substructure, and so prevent rising of, as described and represented.

2. In a pavement having a hard-brick foundation laid with intervening spaces, cells, or recesses a concrete top dressing, composed of coal-tar pitch, dried oil or coal-tar, unslaked lime, sulphur, and broken stone, gravel, or sand, prepared and applied substantially as herein described and represented.

168,900. TRAP-TIGHTENERS. William R. Swarthout, Penn Yan, N. Y. [Filed Sept. 22, 1875.]



The prop A, clasp B, and wedge C, made substantially as specified and combined, for the purposes set forth.

168,901. PRESSURE-REGULATORS. John Taylor, Lockport, N. Y., assignor of two-thirds his right to Lewis Harmony and J. S. Woodward, same place. [Filed Apr. 20, 1875.]

Brief.—Fluid flows through a hollow valve-seat, and exerts pressure on the upper side of a diaphragm. The valve passes through a stuffing-box, and may be adjusted to any desired pressure.

In a pressure regulator, the combination of the diaphragm B cylindrical valve-seat C, and vertically-adjustable valve C, whereby the passage d leading to the main is closed by pressure exerted on the top of the diaphragm, substantially as and for the purposes specified.



168,902.

168,903. VALVES. George T. Taylor, Boston, Mass. [Filed July 6, 1875.]

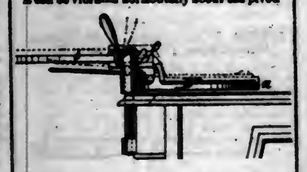
Brief.—Valves are so seated in recessed cages that air entering the disjointed coupling must make two returns to enter the pipe, and in the first it encounters the valve, and by its own pressure closes it.



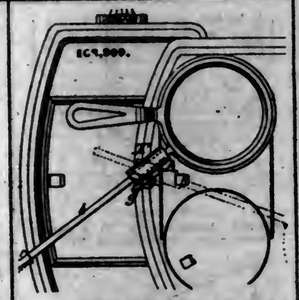
In a vacuum air-brake for railway-cars, the pipes A A', couings B B, valves H H, and rods F F, constructed and arranged to operate substantially as set forth and specified.

168,904. ATTACHMENTS FOR COOKING-STOVES. Theodore R. Timby, Tarrytown, N. Y. (Filed Sept. 18, 1875.)

Brief.—The device can be elevated by means of the lifter. It can be moved horizontally by sliding the handle through the orifice, and it can be vibrated horizontally about the pivot.



168,905. STEAM-COOKERS. Andrew Turnbull and Francis N. Frost, New Britain, assignors to Franklin Roys, East Berlin, Conn. [Filed Jan. 9, 1874.]



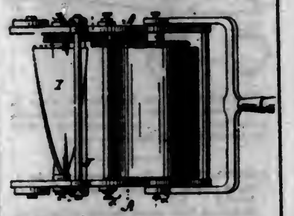
1. A swinging cooking utensil or swinging holder for griddles or other articles of stove or range ware, having a pivotal and vertically-adjustable support, substantially as herein illustrated and described.

2. A cooking utensil, or a holder for cooking utensils, having a handle, h, which is non-circular in cross-section, in combination with a support, T, having a vertical pivot, d, on which the handle can turn horizontally, and a guide-orifice, f, through which it can slide back and forth, for the purpose set forth.

3. The support T, having a movable head, e, and b lifter, c, for elevating the same, in combination with the holder or cooking utensil having a handle, h, non-circular in cross-section, as described, for the purpose specified.

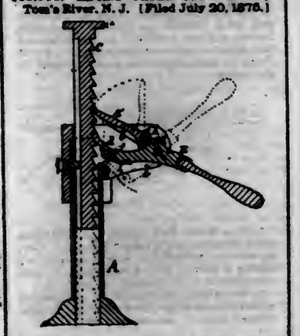
4. The combination of a pivot, d, attached to the stove or range, a rotary hand, e, mounted thereon, and constructed with a horizontal guide-orifice, f, an interposed lifter, g, engaging with the stationary pivot, and a handle, h, which is non-circular in cross-section, substantially as shown in Figs. 1 and 2, for the purpose specified.

168,906. LAWN-MOWERS. Andrew Turnbull and Francis N. Frost, New Britain, assignors to Franklin Roys, East Berlin, Conn. [Filed Jan. 9, 1874.]



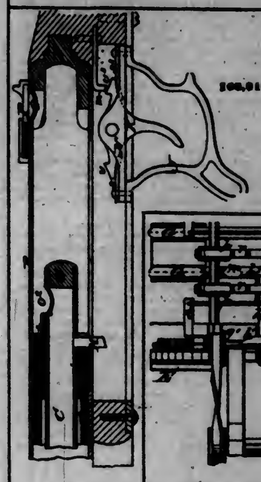
The combination, in a lawn-mower, of the cutter-shaft I and frame A, with the loose collar i, substantially as and for the purposes set forth.

168,907. LIFTING-JACKS. Jacob L. Vail, Tom's River, N. J. [Filed July 20, 1875.]

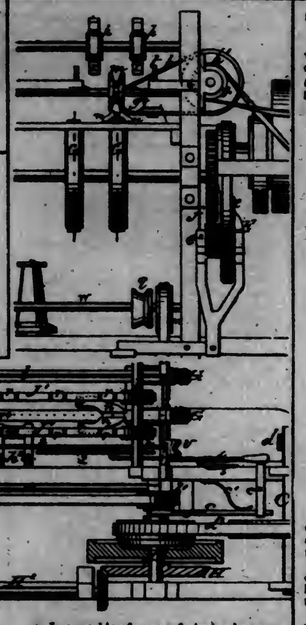


1. The steps g g', attached to the lever-rest E, in combination with the lever E, having the pawls d d', said steps being located on opposite sides of the fulcrums e, substantially as described.

2. In a tilting-jack having the stand A, adjustable rest C, and pawl-lever E, the cam b, having oblique slots b', open at one end, to allow the pivot e to be slid in and out, as shown and described.



168,912.



1. In a machine for manufacturing brooms, the combination of the endless belt F, having the U-shaped holders r, and the holding spring-rods t, supported at their ends only, and situated below and laterally of the belt, substantially as described.

2. The carriers G for the covers, in combination with the hollowed anvil-bed A, armed with spotting-knives b', said belt operating at a right angle with the carriers, for the purpose of spotting or beveling the broom-corn stock while the covers are being carried to the operator.

3. The combination of a grooved presser-roller, a, with the spurred and belt G which carry the covers, for the purpose of pressing the heads of the covers down upon the spurs, substantially as described.

4. In combination with spurred carriers for the covers of the brooms, and with spotting-knives b', stripping device s s, which will partially or completely free the trimmed or spotted heads from the spurs of said carriers, substantially as described.

5. In a machine for making brooms, a laterally-movable pulley-guide, s, for the wrapping-wire pulley w p, and the friction-straps S, in combination with a treadle and a bobbin, substantially as described.

168,913. TOY SPRING-GUNS. P. B. Voorhees, Washington, D. C. [Filed July 21, 1875.]

Brief.—The projectile inserted in the inner barrel is expelled by means of the annular spring situated between the two barrels, which spring is recessed by the sliding trigger and guard, and released by the same trigger.

1. The combination of the outer and inner barrels B C, provided, respectively, with the orifices O O', with an interposed annular spring, all constructed and arranged to operate substantially as described, for the purpose set forth.

2. The vibrating trigger K, provided with the end catches V V', in the manner substantially as described, for the purposes set forth.

3. The combination of the guard J with the sliding block N, provided with springs s s', one or both, the trigger K, provided with catches v v', and the pins or stops H and m, all in the manner substantially as described, for the purposes set forth.

168,914. BROOM-WINDING MACHINES. A. Walrath and E. D. Bronson, Amsterdam, N. Y. (Filed May 26, 1875.)

Brief.—Endless bands are arranged for carrying the broom-corn material to the "winder." The carrying-bands can be thrown in and out of gear at the will of the winder, so that the material can be fed fast or slow, as desired.



168,914.

1. In a machine for manufacturing brooms, the combination of the endless belt F, having the U-shaped holders r, and the holding spring-rods t, supported at their ends only, and situated below and laterally of the belt, substantially as described.

2. The carriers G for the covers, in combination with the hollowed anvil-bed A, armed with spotting-knives b', said belt operating at a right angle with the carriers, for the purpose of spotting or beveling the broom-corn stock while the covers are being carried to the operator.

3. The combination of a grooved presser-roller, a, with the spurred and belt G which carry the covers, for the purpose of pressing the heads of the covers down upon the spurs, substantially as described.

4. In combination with spurred carriers for the covers of the brooms, and with spotting-knives b', stripping device s s, which will partially or completely free the trimmed or spotted heads from the spurs of said carriers, substantially as described.

5. In a machine for making brooms, a laterally-movable pulley-guide, s, for the wrapping-wire pulley w p, and the friction-straps S, in combination with a treadle and a bobbin, substantially as described.

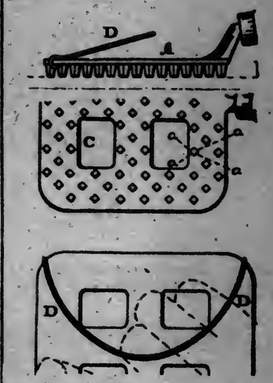
168,915. BROOM-WINDING MACHINES. Josiah J. Weisel, Allegheny Township, Westmoreland County, Pa., assignor of one-half his right to Hiram H. Wray. [Filed July 12, 1875.]

1. The combination, with drill-frame A, of sliding plate B' on cross-bar b', lever C, having pawls, and plate D, having teeth d, all arranged as and for the purpose described.

2. The combination of drill-frame A, the frame G, held in a slot thereof between nut and plate g, and the adjustable brace I, as and for the purpose specified.

168,916. CURRY-COMBS. Robt. F. Walsh, Philadelphia, Pa. [Filed May 14, 1875.]

Brief.—The teeth are bent, with angle sides, which sides are diagonal to the sides and ends of the comb. A boldback on the tar end is grasped by the fingers, while the thumb engages under the tang.



1. The curry-comb provided with teeth, each tooth having a series of scraping-faces, a a, substantially as and for the purpose set forth.

2. The teeth C, having their scraping-faces extend diagonally to the transverse and longitudinal directions of the comb, substantially as and for the purpose set forth.

3. The combination, with the curry-comb, of a boldback, consisting of the loop D attached to the front end thereof, substantially as and for the purpose set forth.

168,917. STOVE-PLATFORMS. S. L. Watson, Chicago, Ill. [Filed Aug. 28, 1875.]



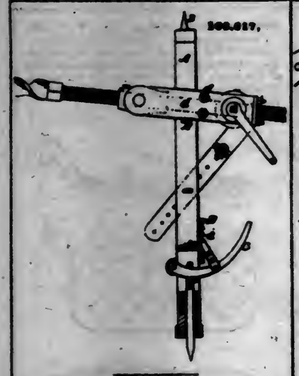
The combination of the metallic shell formed of sheet metal by spinning into shape, in combination with the filling of non-conducting cement and the cross-pieces at the bottom, provided with dovetailed or other shaped projections extending into the shell for the purpose of holding the cement in place, substantially as described.

168,917. MINING-MACHINES. Josiah J. Weisel, Allegheny Township, Westmoreland County, Pa., assignor of one-half his right to Hiram H. Wray. [Filed July 12, 1875.]

1. The combination, with drill-frame A, of sliding plate B' on cross-bar b', lever C, having pawls, and plate D, having teeth d, all arranged as and for the purpose described.

2. The combination of drill-frame A, the frame G, held in a slot thereof between nut and plate g, and the adjustable brace I, as and for the purpose specified.

168,819.



168,819. Shoemakers' Knives. Albert O. Webster, Hammonton, N. J. [Filed Aug. 24, 1875.]



The combination of the slotted handle A, curved blade B, and blade-adjusting screws *c d*, substantially as and for the purpose described.

168,819.

168,820. Toys. Jos. J. White, New Lisbon, N. J., assignor to C. M. Crandall & Co., Montrose, Pa. [Filed Sept. 28, 1875.]



1. As a new article of manufacture, a toy figure of a horse or other animal, having the neck and legs jointed and held in any position by bolts or rivets, with the aid of friction, and provided with holes for receiving other figures (as a jockey) thereon, substantially as shown and described.

2. As a new article of manufacture, a jockey toy figure, constructed with pegs on his boots, arms, and cap, substantially as and for the purpose described.

3. The combination of a jockey toy figure, having pegs on his boots, arms, and cap, with a jointed horse-figure having holes in the back of the same to receive said pegs, substantially in the manner described.

4. In combination with the toy figure of a jointed horse and jockey, a base provided with a series of openings for the reception of the feet of a jointed horse or other animal and jockey, substantially as and for the purpose described.

168,899.



168,899. Violins. Hiram W. White, Anderson, Ind. [Filed Mar. 23, 1875.]



1. The bass-bar B, constructed with a back or lower edge straight, or nearly so, and an upper edge conforming to the curvature of the front plane of the violin, as herein shown and described.

2. The bass-bar B, constructed with a back straight, or nearly so, in combination with the central lateral extensions *d d*, as and for the purpose set forth.

168,921.



168,921. Portable Fire-Places. Ellen White, Joliet, Ill. [Filed Apr. 22, 1875.]

The combination, in a fire-place heater, of the back plate G and rear dust-flue C, opening into the room beneath the ash-pan, and the plate I, of one piece of metal bent forward at an angle to the top front of the fire-place, forming a contracted throat, *a*, and thence bent rearward at an angle, forming a gradually-widening flue, *b*, and extended through the top of the fire-place, substantially as herein set forth.

REISSUES.

6,668. Packing for Steam and other Engines. Joseph C. Manning, trustee, Baltimore, Md., assignee, by mesne assignments, of Wm. Peters, deceased. Patent No. 94,262, dated Jan. 21, 1862. [Filed June 8, 1875.]

1. Asbestus combined with vegetable or animal fibre or other material, as and for the purposes above set forth.

2. Asbestus applied and used around steam, water, and other joints, where it is useful to resist high degrees of heat, pressure, and other destructive agents, as above set forth.

3. Asbestus packing compressed into the required form and dimensions, as and for the purposes above described.

6,669. Farm-Rollers. Horace Tupper, Bay City, Mich., assignor, by mesne assignments, to J. B. Sherman, New York city. Patent No. 31,705, dated Mar. 19, 1861. [Filed Aug. 12, 1875.]

Brief.—The farm falls down the incline into the rotary arrest, where it is inspected, and then deposited in the money-drawer by the driver turning the arrest.

1. A fare-box provided with an opening, C, through which to deposit the fare in the box, with an inclined guide, D, and with an opening, E, for its inspection, in combination with a rotating receiver, constructed and arranged to turn in a vertical plane, so as to present a series of arrests for the separate and temporary detention of the different fares for inspection, substantially as set forth.

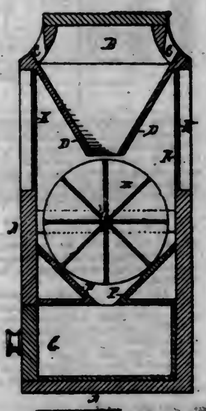
2. A fare-box provided with a rotating arrest turning in a vertical plane, and with an opening, C, and inclined guide, D, substantially as set forth.

3. A fare-box, provided with a rotating arrest turning in a vertical plane, and with inclined slide-guards F F, and a locked money-drawer, G, substantially as and for the purpose set forth.

4. The combination, in a fare-box, of the inclined slides D and F with an arrest, E, rotating in a vertical plane, substantially as set forth.

5. A rotating arrest, E, for a fare-box, provided with glass partitions *e*, substantially as and for the purpose set forth.

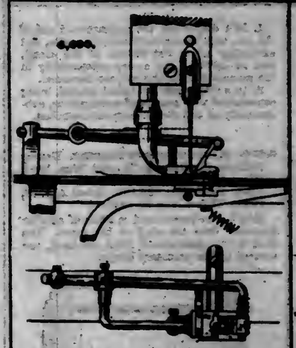
6. A fare-box provided with an opening, C, box or receptacle L, and door J, the whole arranged in the manner and for the purposes set forth.



6,668. Gathering Attachments for Sewing-Machines. Alfd. Everiss, New York, N. Y. Patent No. 99,970, dated Aug. 24, 1869. [Filed Sept. 28, 1875.]

Brief.—To the rear of the presser-foot projects a right-angular heel rod, having upon its rear end a sleeve, which is free to oscillate thereon. Through this sleeve passes a lever, having an adjustable fulcrum centered to its rear end, with its other or free end extending some distance in front of the needle, where it is bent at right angles to its main body, and supports the ruffling-blade, which is held by means of a spring in contact with an inclined surface formed on the top of the presser-foot, over which surface passes the material to be ruffled, the whole device being so arranged that, as the presser-foot is raised and lowered by the action of the feeding mechanism, the free end of the lever, which carries the ruffling-blade, is caused to rise and fall in a similar manner, which motion actuates the edge of the ruffling-blade to travel up and down the inclined surface on the presser-foot, and thereby form the ruffles or plaits. A spring secured upon the top of the presser-foot, and resting against the under side of the said lever, serves to raise the same when the presser is lifted by the foot.

6,666.



1. The combination, with a presser-foot, of a movable ruffle-forming blade, connected to and adapted to rise and fall with the presser-foot.

2. The combination, with a presser-foot, of a movable ruffle-forming blade, adapted to bear against the presser and form folds or gathers in a strip resting between the blade and presser.

3. The combination of the presser with a movable ruffle-forming blade and guide, connected and adapted to rise and fall with the presser, the guide guiding the edge of the strip being ruffled, and acted on by the moving blade, and resting between its edge and the presser.

4. A presser-foot and movable ruffle-forming blade carried by it, in combination with a cloth-support and feed adapted to sustain a fabric to which a ruffled strip is to be secured, fed to and fixed the material with its connected ruffle, substantially as described.

5. A gathering attachment, substantially as described, combined with and operated through the movement of the presser, as and for the purpose set forth.

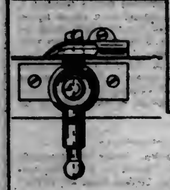
6. The combination, with a projection carried by the presser-foot, of a lever pivoted thereto, and with a movable blade carried by the lever, and adapted to operate against the presser.

6,666. Sash-Locks. George McGregor and George Voll, Cincinnati, Ohio, assignors, by mesne assignments, to the Hopkins & Dickinson Manufacturing Company, New York city. Patent No. 66,316, dated Mar. 30, 1869; reissue No. 5,202, dated Jan. 31, 1873. [Filed Aug. 10, 1875.]



A vibrating lever, provided with a bolt, in combination with a striking plate or hook and with a catch-segment, behind which the bolt can pass, formed upon the plate upon which the lever is pivoted, the whole constituting a catch-fastener, and the parts connected in the chain being and operating substantially as specified.

6,666.



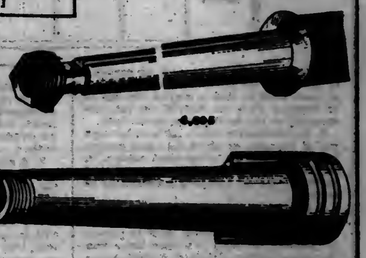
6,666. Carriage-Axles. Alfred E. Smith, Bronxville, N. Y. Patent No. 68,490, dated Dec. 22, 1859; reissue No. 3,091, dated May 24, 1870. [Filed July 9, 1875.]

1. The combination, with the conical follower, of the axle-spindle and the chain or box, the several parts being so united as to form a recess, *c*, between them, substantially as described.

2. The axle-spindle, with or without the groove *d*, having the threaded nib *e*, conical follower B, recess *c*, and nut G, substantially as described.

Brief.—The axle carries upon the screw-threaded end a conical compensating-follower and a D-shaped washer or nut, and upon the other end of the bearing-surface E has a similar conical bearing formed thereon.

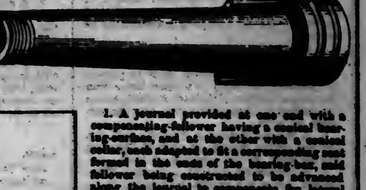
6,666.



1. A journal provided at one end with a compensating-follower having a conical bearing-surface, and at the other with a conical collar, both adapted to fit a corresponding conical bearing in the ends of the bearing-box, said follower being constructed to be advanced along the journal to compensate for lateral wear, substantially as described.

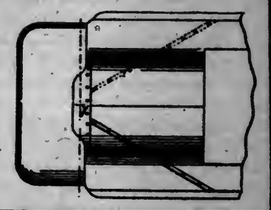
2. A journal having a compensating-follower provided with a conical bearing-surface and an internal polygonal bore, in combination with a screw-threaded nut abutting against said follower, and serving to adjust the latter upon the plygonal-shaped end on the journal, substantially as described.

6,666.



6,666. Gimlet-Cases. John Stephenson, New York, N. Y. Patent No. 61,482, dated Jan. 22, 1867. [Filed July 23, 1875.]

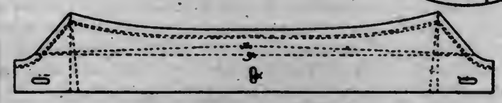




6,691.

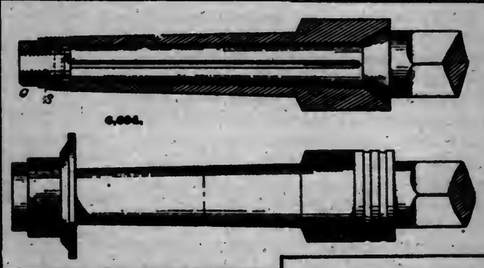


6,691. Paper Collars. Sidney S. Gray, Boston, Mass., assignor, by mesne assignments, to the Union Paper-Collar Company, New York city. Patent No. 32,091, dated June 23, 1859; reissue No. 1,040, dated Mar. 29, 1864. [Filed Sept. 2, 1875.]



The mode described of first making a curved indentation in the collar and then folding the same on the indented curve, as set forth.

6,692.



6,692. Sponge Brushes. Hugh S. Kay, Philadelphia, Pa. Patent No. 125,909, dated May 7, 1872. [Filed Sept. 9, 1875.]

Brief.—A head of sponge held by a loop of wire, the ends of the wire twisted to form a shank or tang.



The brush consisting of the head A, of sponge, in combination with a loop, B, of wire, encircling the head, and continued into a twisted shank, C, substantially as and for the purpose set forth.

6,694.

6,694. Carriage-Axles. Alfred E. Smith, Bronxville, N. Y. Patent No. 68,490, dated Dec. 22, 1859; reissue No. 3,091, dated May 24, 1870. [Filed July 9, 1875.]

1. A strut-car in which the body and roof are made of the same, or, for all practical purposes, of nearly the same, length, substantially as and for the purposes set forth.



2. An independent canopy, D, for covering or protecting the platforms of cars, it being so constructed as that it may be attached to or detached from the body of the car, substantially as and for the purposes set forth.

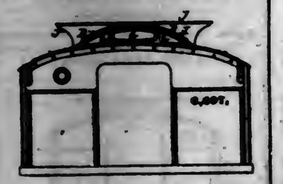
3. In combination with a car-body having a roof of the same, or about the same, general length as itself, an independent canopy, D, capable of being attached thereto or detached therefrom, for the purposes substantially as set forth.

4. In combination with a car-body having a roof of about the same general length as itself, a canopy or bonnet to cover or protect the platforms, arranged in a plane lower than the central portion of the roof A which covers the car-body, substantially as and for the purposes set forth.

5. A frontlet or canopy, F, at the end of a car-roof, whose general length is the same as the car-body, for the purposes set forth.

6. A detachable frontlet or canopy, F, arranged above the vestibule-opening G, in combination with the roof of a street-car whose general length is the same as the car-body, for the purposes set forth.

6,697. STREET-CARS. John Stephenson, New York, N. Y. Patent No. 61,452, dated Jan. 22, 1867. [Filed July 28, 1875.]

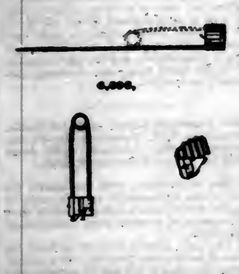


1. A street-car constructed with an arched roof at or near its central part D, and with correspondingly-shaped ends to admit of openings G being formed in the latter, in the manner substantially as and for the purposes set forth.

2. A street-car provided with a frontlet, I, and a canopy, F, arranged in a plane below the general plane of the roof, and with an opening or openings, G, between the two, substantially as set forth.

3. The combination of a car body, provided with an opening or openings, G, in its end or ends, with an elevated dome, J, provided with an opening or openings, a, substantially as set forth.

6,698. DIAPER-PINS. Isaac W. Stewart, New York, N. Y. Patent No. 106,422, dated Aug. 16, 1870. [Filed Aug. 20, 1875.]



1. In a diaper-pin, the sharpened end of the pin, bent at or nearly at right angles, and extending across the bottom of the shield, and re-entering the same, substantially in the manner and for the purpose described.

2. In a diaper-pin, the shield thereof, being constructed with a series of corrugations, substantially as and for the purposes described.

6,699. MANUFACTURE OF BARRELS. Dewey Phillips, Shelbyburg, Va., and Wm. Reid, West Hebron, N. Y., assignors to Wm. Reid. Patent No. 62,850, dated Apr. 16, 1867. [Filed June 10, 1875.]

Brief.—The barrel-head is made of smaller diameter than the shell at the crown. The shell is then compressed upon the head, and secured by the necessary hoops.



The method herein described of putting the heads or bottoms in casks, or other vessels, by making the heads or bottoms of less diameter than the inner diameter of the shell or cylindrical part in the crown, and then compressing the ends of the shells in close contact therewith, and putting on the necessary hoops, substantially as described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 16. TUESDAY, OCTOBER 19, 1875. PRICE { $6.00 per year—single. $5.00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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NOTICE TO MANUFACTURERS AND OTHERS.

UNITED STATES PATENT OFFICE,
Washington, D. C., October 5, 1875.

The COMMISSIONER OF PATENTS respectfully requests manufacturers of and dealers in engines, machines, apparatus, tools, and appliances of whatever kind, to send to this Office duplicate copies of all catalogues and circulars which they have issued or may issue from time to time.

R. H. DUELL, *Commissioner.*

COMMISSIONER'S DECISIONS.

CHARLES L. YOUNG.—*Interlocutory appeal.*

[*Appeal from the Principal Examiner in the matter of the application of Charles L. Young for letters patent for* "IMPROVEMENT IN AXES."—*Decided October* 18, 1875.]

The Board of Examiners-in-Chief is the judge of the sufficiency of the "reasons of appeal."

The Primary Examiner may traverse or controvert, but cannot ignore them.

The "reasons of appeal" must form the basis of subsequent arguments submitted to the board, which will determine as well upon the pertinence as upon the validity of the arguments submitted.

SPEAR, *Acting Commissioner:*

This appeal is taken from the refusal of the Examiner to send forward an application twice rejected and appealed to the Board of Examiners-in-Chief, the refusal being on account of alleged insufficiency of the reasons of appeal.

Rule 42 requires that a party taking an appeal to the Examiners-in-Chief, shall, with the petition, file a statement of the reasons upon which the appeal is taken, which statement shall point out distinctly and specifically the supposed errors of the Examiner's action. This statement shall constitute a brief of the argument upon which the applicant will rely in support of his appeal. The rule further prescribes that, before the appeal is entertained by the Board, this statement shall be submitted to the Primary Examiner, who will make answer in writing touching all the points involved therein.

Nothing more than this is required of the Examiner, and his duties end with this answer. If no adequate reasons are given, or such reasons as, in his judgment, require no answer, nothing more is demanded of him than to point this out and send forward the case to the tribunal to which appeal is taken.

It remains for the Board to decide whether the reasons urged before them at the hearing are the same as those contained in the brief and submitted to the Examiner; and the spirit of the rule would seem to require that, if new reasons are brought before the Board as grounds for reversing the Examiner's action, which reasons were not submitted to the Examiner, and upon which he had not been heard, these reasons, reduced to writing, should be sent to the Examiner for his answer thereto.

The reason of the rule which requires this brief is obvious. The Board of Examiners-in-Chief, not being experts in the particular art, as the Examiner is, need to be informed by him upon many points, which may be urged upon appeal; and if these points which are urged in an appeal are first submitted to the Examiner, the Board may then have the benefit of such answer as he may be able to give. But to give the Examiner the authority to judge of the sufficiency of the reasons of an appeal from his own decision, or to allow him to dictate what sort of a brief the appellant shall make up for presentation to the Board, might, on the one hand, involve great hardship to the appellant; and on the other hand, in case he should appeal from that officer's refusal to act to the Commissioner in person, under rule 44, unnecessarily increase the labor of the Office, by compelling the Commissioner to examine a case in which he could decide nothing. The Examiners-in-Chief must be the judge of the sufficiency of the reasons presented to them on appeal, on which they are

asked to reverse the decision of the Examiner; and, plainly, they are the only proper tribunal to determine whether or not appellant confine his argument to his brief, and urge no reasons not previously submitted to the Examiner. Undoubtedly they will not be imposed upon to the extent of permitting one case to be presented in the brief and answered by the Examiner, and quite another submitted in arguments to influence their judgments in the decision of the case. But of the conduct of cases before them, the Board and not the Examiner must be the guardians.

I therefore direct that the Examiner send this case, the fee having been paid, and other formalities properly complied with, directly to the Board, with such answer to the reasons filed as he may deem proper. If the Board think the reasons insufficient, it is competent for them to remand the case to the Examiner and require more explicit statements of the grounds urged for the reversal of the Examiner's decision, and the answer thereto by the Examiner.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

GEORGE H. WOOSTER *vs.* EDMUND W. TAYLOR, JR., AND MARGARET WOODBURY.

[*In equity.—Before* BLATCHFORD, *J.—December*, 1874.]

W., the assignee of the extended term of the patent, entered into an agreement in writing, under seal, with T. & W., which recited that T. & W. were "desirous of obtaining a license to use the improvement secured by said letters patent, to the extent of the use of binders necessary to their business," and which granted to them for a nominal sum, as a "personal privilege," and "for and in consideration of, and in case of, the due and faithful keeping and performing of each and all of the conditions," &c., the license "to use the said improvement, to the said extent, for and during the space of one year," at their specified place of business, "and not longer, otherwise or elsewhere, without written permission of" W.; said agreement further providing that W. might revoke the license on the failure of T. & W. to perform any of the conditions therein contained, "in which case this license and all rights and privileges hereunder shall forever cease and determine."

After the expiration of the one year, T. & W. continued to use nineteen of the patented machines, claiming that they had them lawfully in use at the end of the first term of the patent, and that by virtue of section 67 of the act of July 8, 1870, they had a right to continue the use of them so long as they remained capable of use. On application for injunction to restrain such use, *Held*, that, whatever rights, in respect to the further use of the patented machines the defendants had when they took the license, they waived and surrendered by taking the license containing the conditions it did; and that, although the term of the license had expired, the defendants were bound and estopped by the recitals and covenants in it.

[*W. D. Shipman* and *F. H. Betts*, for complainant.
L. E. Chittenden, for defendants.]

BLATCHFORD, *J.*:

The plaintiff is the owner of reissued letters patent granted to him December 10, 1872, for an "Improvement in Folding-Guides for Sewing-Machines." The original patent was granted to Alexander Douglas, as inventor, October 5, 1858, and was extended to him for seven years from October 5, 1872. The patent, as extended, was assigned to the plaintiff, and the reissue was granted to him as assignee. The plaintiff now applies for a preliminary injunction to restrain the defendants from using folding-guides or binders for sewing-machines in violation of the patent.

The defendants have nineteen of such guides which embody the invention covered by the patent. They claim the right to continue their use, on the alleged ground that the nineteen guides were lawfully in use when the first term of the patent expired. The lawful use set up is an alleged verbal permission or license given by Douglas, the inventor, during the first term, in pursuance of which it is claimed the nineteen guides were made and put into use. The giving of the permission is denied, and it is further claimed on the part of the plaintiff that, at the time when the permission is alleged to have been first given, and during all the time thereafter until the expiration of the first term, the title to the patent for the first term had passed out of Douglas and was held by one Wheeler, so as to make such permission invalid for want of power in Douglas to grant it. But, in the view I take of the case, it is not necessary to consider any questions arising out of the foregoing matters, for the reason that another aspect of the case is controlling against the defendants.

The right to use set up by the defendants is claimed, as matter of law, under the provision of section 67 of the act of July 8, 1870, (16 U. S. Stat. at Large, 209,) which declares that "the benefit of the extension of a patent shall extend to the assignees and grantees of the right to use the thing patented to the extent of their interest therein." The alleged facts set up as constituting a lawful use of the nineteen guides at the time the first term of the patent expired, were known to the defendants at the time such first term expired. After the extension had been granted, and after the patent, as extended, had been assigned to the plaintiff, an agreement in writing, under seal, was entered into between the plaintiff and the defendants. This instrument, which is dated October 5, 1872, after reciting the granting of the patent and its extension, and its assignment to the plaintiff, sets forth that the defendants "are desirous of obtaining a license to use the improvement secured by said letters patent to the extent of the use of binders necessary to their business," and that the plaintiff, "for and in consideration, and in case of, the due and faithful keeping and performing of each and all of the conditions, agreements, and admissions hereinafter contained to be kept and performed by the" defendants, has granted to the defendants the license "to use the said improvement to said extent, for and during the space of one year from the date hereof, at their place of business, No. 55 Hudson street, in the city of New York, and not longer, otherwise or elsewhere, without written permission of" the plaintiff. The instrument then proceeds to say that the defendants agree to pay to the plaintiff, as a patent fee, the sum of $100, and agree to stamp on each folding-guide used the words—

Patented October 5, 1858; extended September 24, 1872; licensed to Taylor & Woodbury only.

There are agreements by the defendants not to contest the validity of the patent, and not to refuse to pay the license fee, although other parties contest the patent, and then the instrument provides that, on the failure of the defendants to perform any of said conditions and promises, the plaintiff may revoke and annul the license, "in which case this license and all rights and privileges hereunder shall forever cease and determine." The instrument further provides that the license is "to be considered solely as a personal privilege" to the defendants, "and no folding-guide licensed hereunder is to be considered as lawfully made, so as to vest any property for sale of the same in the user, or so as to permit the said guide to be transferred, so as to vest in the purchaser or user other than" the defendants "any right to use the same."

It is contended for the defendants that the taking of this license to use an unlimited number of guides for one year was no waiver of any right which they had, because the license was taken under a mistake of law, they not having at that time been advised that they could set up, in law, the right to use which they now set up, and because the license covered more guides than the nineteen then in use; and that, when the license expired, the defendants were remitted to all rights which they had at the time the license was taken.

These views, it seems to me, are not sound. On the contrary, whatever rights the defendants had when they took the license, in respect of the further use of the guides, they waived and surrendered by taking the license containing the provisions it does contain. The defendants expressly show that they have never used any guides but the identical nineteen. The license sets forth that they are desirous of *obtaining* a license to use the invention patented, to the extent of the use necessary to their business, which includes the further use of the nineteen guides. This is inconsistent with their then *having* a right to use the nineteen without the new license. The license is not limited to guides in excess of the nineteen. Then the license is to use the guides to the necessary extent (and which necessity is shown to have extended to the use of no greater number than the nineteen) for one year "and not longer" or otherwise, without written permission of the plaintiff, and the keeping of the agreements made by the defendants is declared to be the consideration and condition of the granting of the license by the plaintiff. Then each one of the guides used (which includes the nineteen) is to be stamped as "licensed," and the form of stamp given means a license under the extension and a license under such written license. The further provisions of the license, as before recited, confirm this view. No mistake of fact is alleged nor any fraud on the part of the plaintiff. Mistake of law furnishes no ground for escaping the force of the covenants in the license. Although the term of the license has expired, the recitals and covenants in it bind and estop the defendants. One of those covenants is that, in consideration of the license for one year, the guides are to be used for no longer than one year.

It appears by an indorsement on the license, and it is shown to be the fact, that the license was granted for the sum of $100 as a nominal sum, at the special request of Douglas, and that such sum was not to be considered as a sum to govern the price of any other license. The defendants not having set up, when the license was granted, any existing right to use the nineteen guides, and the plaintiff having licensed such nineteen guides for a nominal sum for a special reason, it would be inequitable to allow the defendants to evade the force of the terms of the license, for the plaintiff has allowed them to enjoy for one year, without molestation and for a nominal sum, the use of the nineteen guides when it is manifest that he would not have allowed such use under the claim now set up, without resistance.

The motion for an injunction must be granted.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date October 19, 1875.]

8,718.—Cooking-Stove.—JAMES BROWNBACK, THOMAS J. MARCH, JAMES ROGERS, and MICHAEL TOWERS, JR., Limerick Station, Pa. Application filed October 2, 1875. Term of patent 7 years.

8,719.—Candlesticks.—WILLIAM H. ROBY, East Cambridge, Mass. Application filed September 30, 1875. Term of patent 3½ years.

8,720.—Statuary.—JOHN ROGERS, New York, N. Y. Application filed September 22, 1875. Term of patent 14 years.

8,721 to 8,739, inclusive.—Embroidery-Patterns.—WILLIAM STEINHAUS, New York, N. Y., assignor of one-half his right to OTTO FRICKENHAUS, same place. Applications filed September 20, 1875. Term of patents 3½ years.

8,740.—Calendar.—JAMES E. BLYTHE, St. Louis, Mo. Application filed May 26, 1875. Term of patent 7 years.

8,741.—Book or Secretary Cases.—HUGH S. KERR, Philadelphia, Pa. Application filed October 2, 1875. Term of patent 7 years.

8,742.—Clock-Case.—HERMANN J. MULLER, New York, N. Y. Application filed September 25, 1875. Term of patent 14 years.

8,743 and 8,744.—Hobby-Horse.—ADOLPH SHOENINGER, Chicago, Ill. Applications filed September 16, 1875. Term of patents 3½ years.

8,745.—Knitted Skirts.—SAMUEL WALLIS, Newton, Mass. Application filed September 4, 1875. Term of patent 7 years.

8,746.—Toy Money-Box.—JOHN MURRAY and JOHN A. C. J. SMITH, Philadelphia, Pa. Application filed September 30, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date October 19, 1875.]

3,040.—Lager Beer, White Beer, Ale and Porter.—JOHN E. KUHELY, New York, N. Y. Application filed September 18, 1875.

"letters and the word 'U. S. CENTENNIAL.'"

3,041.—Medicine for Rheumatism.—WILLIAM WELLS BROWN, Boston, Mass. Application filed May 10, 1875.

"An Indian as the center figure. On the right of the Indian are figures of two men and one woman—one man on crutches, and the other man and the woman with canes—all represented to be lame. To the first of these the Indian is handing a package on which is printed the word 'Komoko.' At the left of the Indian are all three of the figures first represented, passing on in a well condition. In the space above the figures is the word 'Komoko,' in large letters, while in the foreground lie heaped together the crutches and canes of the figures as first represented."

3,042.—Silvered Glass.—DOMINIQUE DURAND, New York, N. Y. Application filed September 6, 1875.

"a seven-pointed star, in the center of which are two letters, 'D. D.,' (the initials of my name,) one of the letters being inverted, and in the belt or ring between those letters and the points of the star the words 'Trade-Mark,' and in each of the spaces between the points of the star a small five-pointed star."

3,043.—Tobacco and Cigars.—M. FALK, New York, N. Y. Application filed August 11, 1875.

"the words 'Centennial seal,' and the double seal."

3,044.—Leather Preservative and Water-Proof Polish.—GEORGE W. GRAHAM, Philadelphia, Pa. Application filed August 18, 1875.
"words and letters 'The Comet and Swan.'"

3,045.—Copied Pictures.—PARKER C. HARLEY & Co., Arlington, Mass. Application filed August 12, 1875.
"words 'FERRO CHROMO.'"

3,046.—Hair-Dressing Preparation.—W. N. HEDGES & Co., Springfield, Ohio. Application filed December 24, 1874.
"words and letters 'COCOAKREMOLLA.'"

3,047.—Lubricating and Illuminating Oils.—ELI E. HENDRICK, Carbondale, Pa. Application filed September 22, 1875.
"word 'EMERALD.'"

3,048.—Soap.—JAMES S. KIRK & Co., Chicago, Ill. Application filed August 20, 1875.
"words 'Savon Imperial,' in connection with the design."

3,049.—Cigars.—PETER KUMPF, Detroit, Mich. Application filed August 14, 1875.
"words 'CROWN EAGLE.'"

3,050.—Writing-Paper.—MASSASOIT PAPER MANUFACTURING COMPANY, Springfield, Mass. Application filed September 1, 1875.
"words 'Century Mills,' with a female figure in a sitting posture, representing the Goddess of Liberty, and the figures representing the years '1776' and '1876.'"

3,051.—Scythe-Stones.—J. C. ORNE & Co., Westmore, Vt. Application filed June 26, 1875.
"words 'WILLOUGHBY LAKE.'"

3,052.—Liniment.—CATHERINE SCHAEFFER, New York, N. Y. Application filed June 14, 1875.
"words 'St. Antonius Liniment,' and the engraving of the head of the saint."

3,053.—Spirits produced by the Fermentation and Distillation of Wood and Woody Fiber.—THE BURCEY CHEMICAL COMPANY, Waterbury, Conn. Application filed August 20, 1875.
"word and letters 'METHAL.'"

3,054.—Christmas Candles and Toys.—A. WEIDMANN & Co., New York, N. Y. Application filed July 14, 1875.
"A flying angel with trumpet, holding in its left hand a staff, from which is suspended a star."

3,055.—Sheet-Iron.—J. WOOD & BROTHERS, Philadelphia, Pa. Application filed September 17, 1875.
"words 'Golden City' and the circles."

3,056.—Perfumeries.—C. B. WOODWORTH & SON, Rochester, N. Y. Application filed February 27, 1873.
"word 'CENTENNIAL.'"

3,057.—Shirts.—ALBERT O. BEARD, Philadelphia, Pa. Application filed September 10, 1875.
"words 'Shirter. Fit guaranteed where others fail.'"

3,058.—Washing-Fluid.—BODKIN & MCKINNEY, Hoboken, N. J. Application filed August 2, 1875.
"words 'MAGIC CLEANSER.'"

3,059.—Cigars.—G. H. BOLENIUS & Co., Baltimore, Md. Application filed August 7, 1875.
"monogram formed by our initials and the ornamental border."

3,060.—Linen and Cotton Fabrics.—J. BULLOCKE & J. B. LOCKE, New York, N. Y. Application filed September 11, 1875.
"representation of a number of battle-axes, converging toward a heraldic bar, and being looped by a loose-knotted cord passing around the handles of the axes."

3,061.—Whisky.—JOHN E. CASSIDY, Watertown, Mass.—Case A. Application filed July 31, 1875.
"an outer and inner border, of semicircular shape, above the word 'Bourbon,' the word 'Whiskey' being placed in the space formed by the interior border."

3,062.—Cigars and Tobacco.—A. L'CHTENSTEIN & BROTHER, New York, N. Y.—Case A. Application filed September 16, 1875.
"word 'Onward,' in connection with the representation of an agle and shield."

3,063.—Cigars and Tobacco.—A. LICHTENSTEIN & BROTHER, New York, N. Y.—Case B. Application filed September 16, 1875.
"representation of a female figure, with flowing robe, with a star on the forehead."

3,064.—Medicine.—A. F. MERRELL, Philadelphia, Pa. Application filed September 6, 1875.
"the monogram, as set forth and described, and the words 'Anti-Bilious Prescription' and 'Hepatine.'"

3,065.—Cloth-Faced Paper Collars.—METROPOLITAN COLLAR COMPANY, New York, N. Y. Application filed September 3, 1875.
"words 'American Team,' with the representation of a ride."

3,066.—Plows.—MONITOR PLOW-WORKS, Minneapolis, Minn. Application filed August 23, 1875.
"the name 'S. T. Ferguson' and the word 'Monitor.'"

3,067.—Lard.—EMILIO PING & Co., New York, N. Y. Application filed September 11, 1875.
"words 'Llart Superior de la Llumanera,' coupled with a lamp of antique pattern."

3,068.—Plant-Fly and Grasshopper Exterminator.—GEORGE W. POWELL, Meadville, Va. Application filed August 12, 1875.
"words and letters 'G. W. Powell's Plant-Fly and Grasshopper Exterminator,' and the letters 'P. F. G. H. E.' on the body of a grasshopper."

3,069.—Whisky.—REIS & BECHERER, Philadelphia, Pa. Application filed September 6, 1875.
"words 'OLD LIFE.'"

3,070.—Liquid Tonic.—JOHN F. SARLE, New York, N. Y. Application filed August 26, 1875.
"figure of an ox, with the words 'Liebig's Liquid Extract.'"

3,071.—Medical Preparation.—JOHN H. SLATER, Portsmouth, N. H. Application filed February 5, 1875.
"word 'ASTHMAINE.'"

3,072.—Axle-Grease.—GEORGE B. SWIFT & Co., Chicago, Ill. Application filed September 8, 1874.
"words 'IMPERIAL AXLE-GREASE.'"

3,073.—Billiard-Cue Racks.—THE J. M. BRUNSWICK & BALKE COMPANY, Chicago, Ill., and Cincinnati, Ohio. Application filed September 24, 1875.
"word 'BANNER.'"

3,074.—Whisky.—H. K. THURBER & Co., New York, N. Y. (Re-registration.) Application filed October 1, 1875.
"representation of a sheaf of wheat with the words 'Century White Wheat Bourbon.'"

3,075.—Lubricating-Oil.—H. C. VAN TINE & Co., Pittsburg, Pa. Application filed July 24, 1875.
"words 'PINE TAR.'"

3,076.—Confectionery.—STEPHEN F. WHITMAN & SON, Philadelphia, Pa. Application filed January 26, 1874.
"word 'MALLOW.'"

3,077.—Church and Parlor Reed-Organs.—WHITNEY & CURRIER, Toledo, Ohio. Application filed June 3, 1875.
"word 'PALACE.'"

3,078.—Baking-Powder.—AMAZON BAKING-POWDER COMPANY, Louisville, Ky. Application filed July 15, 1875.
"words 'AMAZON BAKING-POWDER.'"

3,079.—Billiard-Tables.—HUGH W. COLLENDER, Darien, Conn. Application filed September 17, 1875.
"word 'Standard.'"

3,080.—Fancy Knit Woolen Goods.—H. E. DILLINGHAM, New York, N. Y. Application filed June 30, 1875.
"words 'KNICKERBOCKER KNITTING WORKS.'"

3,081.—Medicine.—J. N. HARRIS & Co., Cincinnati, Ohio. (Re-registration.) Application filed July 25, 1871.
"'Lung Balsam.'"

3,082.—Composition for use in Sizing Warps.—JOSEPH W. WATTLES & SON, Canton, Mass. Application filed September 23, 1875.
"word 'DRESSINE.'"

3,083.—Hermetically-Sealed Goods.—JOHN WINSLOW JONES, Portland, Me. Application filed August 13, 1875.
"the representation of an artificial globe, or the map of a hemisphere with meridian and parallel lines thereon."

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date October 19, 1875.]

347.—Title: **"One Pound Centennial Coffee."**—JOHN A. CALDWELL, Newark, N. J. Application filed October 13, 1875.

348.—Title: **"R. Craige's Tasteless Tonic Pills."**—RANDOLPH CRAIGE, Morristown, Pa. Application filed October 9, 1875.

349.—Title: **"Lightning Fluid."**—CRAM & MELCHER, Chicago, Ill. Application filed October 14, 1875.

350.—Title: **"David B. Crockett's Genuine Spar Composition."**—DAVID B. CROCKETT, New Haven, Conn. Application filed October 14, 1875.

351.—Title: **"Davis' Electric Cholera Remedy."**—N. P. DAVIS, East Jackson, Mo. Application filed September 24, 1875.

352.—Title: **"Dr. S. M. Gillis' Pyro-Magic Liniment."** MARY K. GILLIS, Bremen, Ohio. Application filed October 11, 1875.

353.—Title: **"Dr. Golden's Magnetic Ointment."**—OWEN H. GOLDEN, Buffalo, N. Y. Application filed October 5, 1875.

354.—Title: **"Westminster Sauce."**—CATHERINE A. GREAVES and MARTHA D. CHAPMAN, Hartford, Conn. Application filed October 6, 1875.

355.—Title: **"Jelly Glue."**—HENRY HARRISON KELLOGG, Watertown, N. Y. Application filed September 17, 1875.

356.—Title: **"Domestic Glue."**—HENRY HARRISON KELLOGG, Watertown, N. Y. Application filed September 17, 1875.

357.—Title: **"Drink' mich aus und leg' mich nieder; steh' ich auf dann füll mich wieder."**—AUGUST LAEMMRICH, New York, N. Y. Application filed September 30, 1875.

358.—Title: **"Dr. Stewart's Teething Plasters for Children."**—HAMILTON P. STEWART, Franklin, Mass. Application filed October 11, 1875.

COPIES OF SPECIFICATIONS AND DRAWINGS.

Persons desiring copies of all specifications and drawings of any particular class of patents can purchase them at the rate of ten cents each, and have them mailed, free, to their address, as soon as possible after the patents are issued, by leaving a deposit of not less than three dollars with the Commissioner of Patents. The index of classes for subscribers, date of September, 1871, is furnished gratis to any applicant.

In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

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The cheapness of the copies, and the comparatively small number of patents in each of the one hundred and seventy-six classes, render an order by class by no means an onerous undertaking.

The OFFICIAL GAZETTE of the United States Patent Office is published weekly by the Patent Office. It is printed by authority of an act of Congress, which provides for its gratuitous distribution to libraries at the rate of eight for each congressional district.

The GAZETTE contains the decisions of the Commissioner of Patents, and such decisions of the courts in patent causes as are believed to possess general interest to inventors and patentees.

During the past year a complete synopsis of foreign patent laws, prepared by members of the British Legation in foreign countries, has been printed in the GAZETTE. Also an epitome of the proceedings of the Vienna International Patent Congress, with the action of that body to perpetuate itself. Matters of this character will receive further attention in the GAZETTE.

The claims of all patents granted are printed in the GAZETTE, bearing the same date as the issue of the patent, accompanied by a brief synopsis of the invention and a portion of the drawing.

The illustrations are photographic reproductions on a reduced scale of the drawings accompanying the original application, and preserve their fidelity, which was sometimes lost under the old plan of drawing or tracing and engraving.

Application for extension of patents, and the action of the Office in such cases, have their earliest publication in the GAZETTE. Disclaimers filed in the Office are nowhere else published.

Changes in the rules of practice of the Office are announced in the GAZETTE, which affords a much readier mode of communication with parties interested than to await a new edition of the Rules of Practice.

Finally, any matter believed to be of interest to inventors in their official intercourse with the Office, will receive in the GAZETTE the attention the subject warrants.

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TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED OCT. 19, 1875.

168,893. CANDLESTICK. Alva Albertson, Jersey City, N. J. [Filed Mar. 31, 1875.]

Brief.—The spring-wire, loose at its lower end, passes through an aperture in the thumb-piece.



1. The internal longitudinal springs C, constructed with the outwardly-curved or flaring upper ends *c*, in combination with the socket A, whereby the said springs are caused to automatically receive the candle when thrust into the socket, and to hold the same in an upright position, whatever the diameter of the candle, substantially as herein set forth.

2. The combination of the external supplemental springs D with the internal springs C, having their lower portions *b* narrower and more yielding than their upper portions *c*, the whole arranged in relation with the socket A, substantially as and for the purpose set forth.

3. The combination of the elastic guide stem or spring *g*, with the thumb-piece F, of the bottom slide E, whereby provision is made for the arrangement of the springs C within the socket A, without interference with the vertical movement of the slide, substantially as herein set forth.

168,895. IMPLEMENTS FOR FIRE-ARMS. A. B. Barthel, Detroit, Mich. [Filed Mar. 23, 1875.]



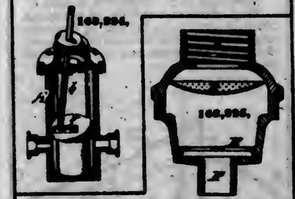
The combined dog-whistle, screw-driver, nipple-wrench, and priming-needle, constructed substantially as represented and described.

168,896. VALVES FOR WATER-MAINS. R. Barton, Philadelphia, Pa., assignor of one-half his right to W. Johnston, same place. [Filed Feb. 24, 1875.]

Brief.—To remove the nut in which the valve-spindle works, the follower of the stuffing-box is withdrawn, and the spindle moved to the point where the nut is free from the V-shaped projections.

The combination of the screw-spindle *b*, nut *d*, and its V-shaped grooves with the recess *f* in the valve, the said recess having edges partly V-shaped and partly straight, all as and for the purpose set forth.

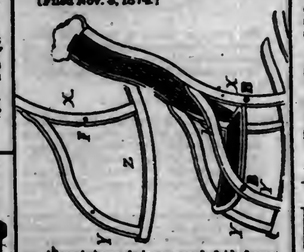
In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.



168,897. WASHING-MACHINES. John A. Bowyer, Huntsburg, assignor of one-half his right to J. R. Quinn, Montville, Ohio. [Filed Mar. 6, 1875.]

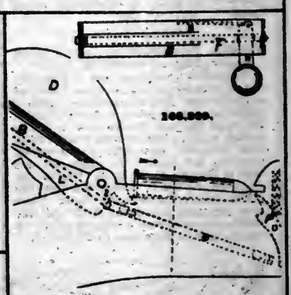
A washing-machine, composed of the body A, having the transverse ribs U and journals *a*, the automatically-adjustable roller D, frame B, having bearings *d* for journals *a*, and the split handle R, constructed, arranged, and operating as shown and described.

168,898. CHAIRS. Alfred E. Brick, Winchendon, Mass., assignor of one-half his right to Francis Brick, Keene, N. H. [Filed Nov. 3, 1874.]



A knock-down chair composed of side frames, each consisting of a high back post, X, front post Y, and connecting-bars V and Z, firmly united, a seat, and a back, said side frames being detachably connected with the seat by screws E and nuts A, the back being supported by the high posts X, substantially as and for the purposes described.

168,899. BREECH-LOADING FIRE-ARMS. A. Burgess, Hartford, Conn. [Filed June 30, 1875.]



168,900. CHUCK. Nicholas Bush, Brooklyn, N. Y. [Filed May 20, 1875.]

The mode or process of manufacturing porcelain door-knobs, substantially as described, by forming or molding the knob and its shank separately, and uniting or cementing them together in the process of enameling by the fusing of the material used for enameling.



168,901. DOOR-KNOBS. Nicholas Bush, Brooklyn, N. Y. [Filed May 20, 1875.]



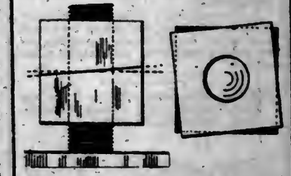
168,902. BREECH-LOADING FIRE-ARMS. A. Burgess, Hartford, Conn. [Filed June 30, 1875.]

1. The breech-block B, pivoted at the rear, and having a circular or eccentric part, D, operating upon and forcing the cartridge into the chamber of the barrel by the act of closing the breech, substantially as described.

2. The breech-block B, pivoted at the rear, and so arranged with and in relation to the hammer that the act of opening the breech cocks it by the rear of the breech-block coming in contact with the face of the hammer and forcing it back, substantially as specified.

3. The locking-lever D, which, by its backward or unlocking motion, engages a shoulder in the firing-pin F, forcing it rearward by direct contact, so that the point of the firing-pin shall be then cleared of the indentation in the head of the cartridge, substantially as described.

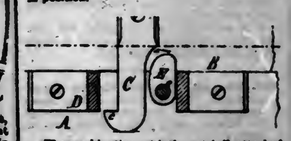
168,903. NUT-LOCKS. Lake Chapman, Collinsville, assignor of two-thirds his right to Wm. J. Wood and Wm. H. Simonds, Hartford, Conn. [Filed Jan. 26, 1875.]



The combination of two nuts, having their opposed or meeting faces composed each of a single inclined plane, substantially as shown and set forth.

168,904. VEHICLE-SEATS. E. A. Cooper, Lancaster, assignor of one-half his right to Josiah Letchworth, Buffalo, N. Y. [Filed Aug. 6, 1875.]

Brief.—Fastening device for retaining seat in position.



The combination, with the catch G, attached to the seat A, of the strap or bearing D, secured to the body of the vehicle, and provided with locking-cam E *e*, thumb-piece *f*, and incline A *h*, substantially as and for the purpose hereinabove set forth.

168,905. KEY-RINGS. Wm. L. Denio and William B. Neer, Rochester, N. Y. [Filed Feb. 1, 1875.]

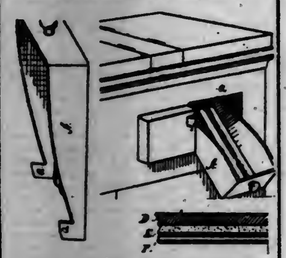
166,822.



A metal key-ring, consisting of the flat annular part A, provided with the overlapping bevel-joint *a*, and adapted to be closed by means of the button *b*, substantially as set forth.

166,823. REFRIGERATORS. Jacob F. Ebert, Dayton, Ohio. [Filed Jan. 23, 1875.]

Brief.—The ice-drawer tilts downwardly, and, hanging by catches, covers the door-space of the ice-box. Two valves close openings in partitions when the lowest door is opened. The upper door and the ice-drawer door each operate valves. Wall consists of outer wood, inner perforated zinc, light porous wooden partition, and between the woods salt, and back of the zinc an air-space. The salt impregnates the inner wooden partition and purifies the air of each compartment. There is an air-space corresponding to and communicating with each cooling-chamber. A ventilating-tube dives through the ice-box.



1. In the sliding tilting ice-drawer A, the catches *a*, arranged and constructed as described, and for the purpose specified.

2. The combination and arrangement of the valves C, connecting-lever *d*, and rod *e*, hinged to the door of a refrigerator near its pivotal axis, in the manner and for the purpose specified.

3. The combination of the outer wall D, partition B, sait filling, and lowest perforated zinc lining F, for the purpose of purifying the air within a refrigerator, substantially as described.

166,824. DETACHABLE PISTOL-GRIPS FOR FIRE-ARMS. Frank W. Freund, Cheyenne, Wyo. [Filed Mar. 19, 1875.]



1. A separate or detachable grip, made in the form of the lower part of the stock of a pistol, and adapted for attachment to the stock of a gun, substantially as described.

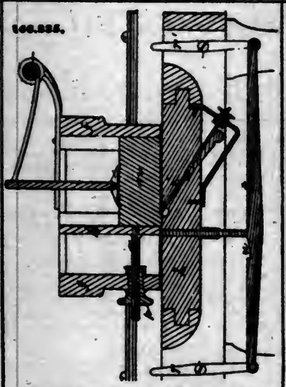
2. A grip made separate from the stock of a gun, and adapted to be applied to the outside of the stock by suitable means of attachment without cutting away the stock, substantially as described.

3. A pistol-grip, trigger-guard, and trigger-plate combined, and made of a single piece, substantially as described.

166,825. MACHINES FOR MAKING CIGAR-LIGHTERS. Nathan. Fuller, Boston, Mass., assignor of one-half his right to George W. Bowker, same place. [Filed June 14, 1875.]

Brief.—Tapering cigar-lighters are formed by means of stationary knives, a reciprocating carriage provided with an adjustable partition for holding blocks of different sizes, and an automatic apparatus for relieving the block during the return stroke. Beneath each knife is attached a guard-plate for delivering the lighters, when cut, with their small ends pointing in one direction.

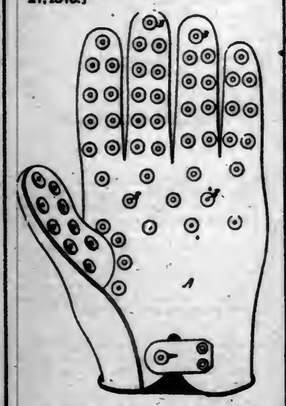
166,826.



1. The combination, with the reciprocating carriage *f* and the stationary planes *h h*, of the levers *r r'*, rod *t*, with its incline *u*, and the vertically-adjustable pin *v*, as and for the purpose set forth and described.

2. The combination, with the reciprocating carriage *f*, and the planes *h h*, of the guard-plates *7 7*, as and for the purpose set forth.

166,826. HUSKING GLOVES AND MITTENS. Henry L. Hall, Chicago, Ill. [Filed Apr. 27, 1875.]



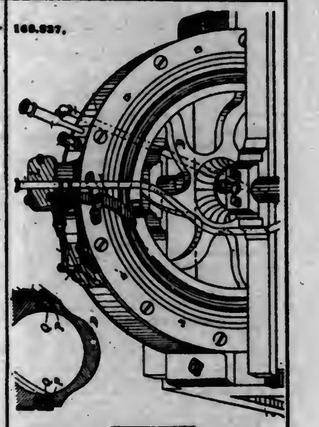
The glove or mitten A, having its palm, fingers, and thumb each armed and protected with several metal plates or disks, B, to adapt it for use without impairing its flexibility, as set forth.

166,827. ROTARY ENGINES. Geo. D. Harwood, Andrew County, Mo., assignor of three-fourths his right to Saml. L. Wilmer, Jessup, Iowa, David C. Stotts and Jas. M. Baker, Savannah, and George H. Sigh and William S. Leach, St. Joseph, Mo. [Filed Mar. 6, 1875.]

1. The combination of an annular stationary cam, having its inner face concave in semicircular form, with a revolving wheel, having its periphery or outer face similarly concave, the two, when placed together with an interposed packing between these two faces, composing an annular hollow steam-cylinder, the inner or wheel half of which is adapted to revolve within the stationary part.

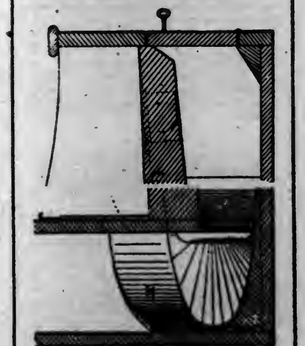
2. In combination with the described stationary wheel-cam B and with the wheel D, the separating-rings Q, provided each with a rib or projection to fit the grooves P in the wheel, and the packing-ring R and its packing, as and for the purpose set forth.

166,827.



166,828. NESTS FOR FOWLS. Samuel S. Jackson, Bloomfield, and Charles E. Jackson, Newark, N. J. [Filed Apr. 30, 1875.]

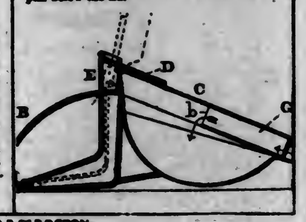
Brief.—The bottom of the nest is inclined, leading to an aperture in the rear of the nest proper, through which the egg passes to a curved incline leading to the receptacle under the nest. A nest-egg is set in the bottom of the nest under a glass plate.



A nest for fowls, consisting of a box provided with an inclined false bottom, leading to an aperture through the partition in the rear portion of the box, and a curved inclined plane leading from the aperture in the partition to the receptacle under the false bottom, substantially as shown and described.

166,829. DUST-PANS. Ephraim Kramm, New York, N. Y. [Filed Feb. 6, 1875.]

Brief.—Connected with the lid is a spring, which is operated by the foot, so as to raise the lid. The lid is constructed with a passage for conducting insects into the space in the pan below the lid.

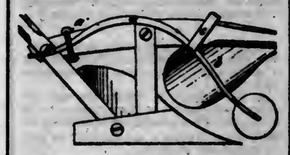


1. The combination, with the dust-pan lid, of the spring E, jointed to the rear of the lid, projecting into the handle B, and formed with a foot-piece, *e*, substantially as and for the purposes set forth.

2. The dust-pan lid C, provided with a trap-channel, G, substantially as and for the purpose set forth.

166,830. COLTERS. Gilbert C. Lyon, Clarinda, Iowa. [Filed June 12, 1875.]

Brief.—A rolling colter with a spring-arm from the rear.



A plow attachment consisting of the combination of the rolling colter *c* and the adjustable spring bar *c*, with oblong guide-loop *e*, clamp *d'*, and plow-beam, substantially as shown and described.

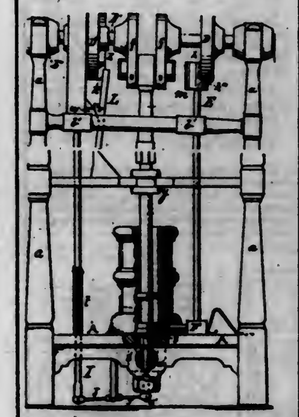
166,831. HALTERS AND BRIDLES. John McKibben, Lima, Ohio. [Filed Dec. 20, 1874.]



A fastening for halters consisting of the side bars A' B', cross-bars *f e*, and end bar *b'*, and having the loop *m* at right angles to the plane of the frame, substantially as shown and described.

166,832. AIR-PUMPS. Charles F. Moll and Jos. H. Althelde, Quincy, Ill. [Filed June 26, 1875.]

Brief.—The valves are operated by mechanical means.



1. In an air-pump, the sliding-wheel D, provided with the ovall A, having the inclines *b''* and *b'''*, for the purpose of operating the lever E, in combination with the admission-valve F, substantially as set forth.

2. The combination of the wheel D', spring-bar L, having stop *n*, frame H, having stop *n'*, rod I, lever J, and cam *r*, substantially as set forth.

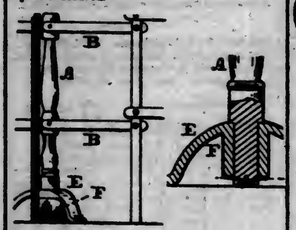
3. The lever J, in combination with the rod I, valve K, part *s*, and plunger N, substantially as set forth.

4. The slot *o'*, in combination with the part N, substantially for the purpose set forth.

5. The wheels D D', having the cranks *b M*, in combination with the cam *r*, lever E, spring-bar L, frame H, rod I, lever J, and valves F and K, substantially as set forth.

166,833. CLOTHES-DRIERS. George Myers, Philadelphia, Pa. [Filed Sept. 20, 1875.]

Brief.—The metallic base has a heavy depending socket or boss, in which the central post is secured.



The frames B, central beam A, and metallic base E, in combination with the boss F, depending or projecting downward from the central portion of the base, substantially as and for the purpose set forth.

166,834. GLOVE-FASTENING. Daniel R. Pratt, New York, N. Y. [Filed Aug. 26, 1875.]

A railway-car spring the external and internal surfaces of which are recessed in globe-shaped form, so that when compressed each globe in the series may rest and impinge upon the other, as and for the purpose herein set forth.

166,835. GAS-STOVES. Daniel R. Pratt, New York, N. Y. [Filed Aug. 26, 1875.]

1. A car-spring, constructed of india-rubber, and of spiral form externally and internally, substantially as and for the purpose set forth.

2. A railway-car spring, constructed of india-rubber, and having the external and internal spirals to conform one with the other its entire length, as set forth.

166,836.



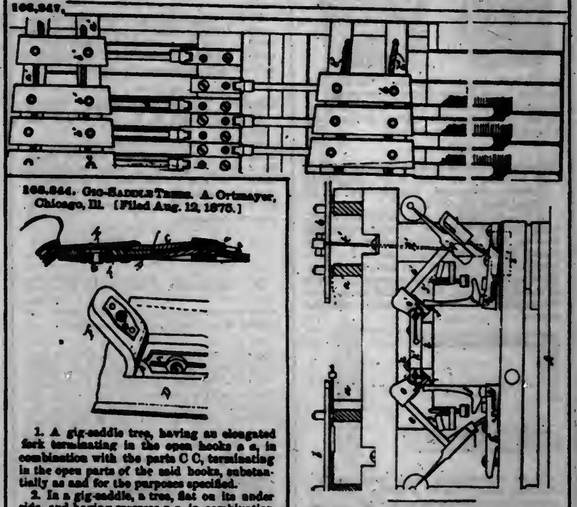
166,837. KEY-BOARD HARMONICONS. Geo. Rimbach, Boston, Mass. [Filed Dec. 28, 1874.]

Brief.—The hammers and their plates are arranged in two opposite series; the second key-plates next adjacent in pitch being alternated from one series to the other, to give space in the key-board.

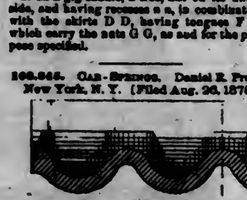
1. The combination of the perforated plates held in position by covered pins *c*, and resting on a non-concussive support, *b''*, with hammers and the softener adapted to be interposed between the hammers and plates, as and for the purpose set forth.

2. The two series of plates, arranged as described, in combination with key-levers *i f*, jacks *f' f''*, hammer-levers *e e'*, and hammers *d d'*, substantially as described.

166,837.



166,844. GIG-SADDLE TREES. A. Ortmayer, Chicago, Ill. [Filed Aug. 12, 1875.]

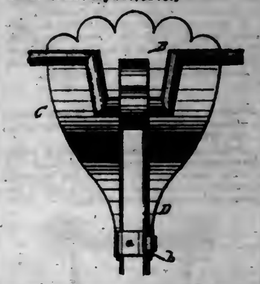


1. A gig-saddle tree, having an elongated fork terminating in the open hooks *a a*, in combination with the parts C C, terminating in the open parts of the said hooks, substantially as and for the purposes specified.

2. In a gig-saddle, a tree, flat on its under side, and having recesses *a a*, in combination with the skirts D D, having tongues F F, which carry the nuts G G, as and for the purpose specified.

166,845. CAR-SPRINGS. Daniel R. Pratt, New York, N. Y. [Filed Aug. 26, 1875.]

166,846. DASH-PROTECTORS FOR SEWING-MACHINES. Elizabeth F. Shaw, Brooklyn, N. Y. [Filed Sept. 17, 1875.]



1. The shield or protector C, adjustably secured to the pitman A, substantially as and for the purpose set forth.

2. The improved fastening, consisting of the part *a*, having perforation *b*, and the part *a'*, in combination with the shaft D and protector C, substantially as and for the purpose herein specified.

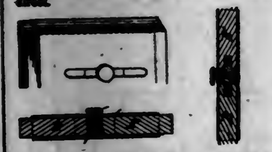
168,849. MUFF-BLOCK FORMER. R. Sirrot, Buffalo, N. Y. [Filed June 26, 1875.]



The muff-former composed of the blocks c, having strips B, the blocks D, screw-rod G, and central handles F F, all constructed, combined, and arranged to operate substantially as and for the purpose set forth.

168,850. BRACKET-TABLET HOLDERS. Daniel M. Sommers, New York, N. Y., assignor to Overton Cleveland, Jersey City, N. J. [Filed Sept. 16, 1875.]

Brief.—The tablets or blocks of creative material may be projected from or withdrawn into the tube or case by means of a reciprocating block, or combined block and tube, to which they are attached. An actuating thumb-piece passes down through a longitudinal slot in the outer tube, to connect with the reciprocating block, or with the creative material direct.



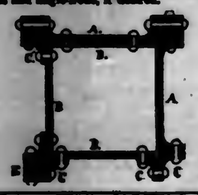
1. An creative-tablet holder consisting of a flat tube provided with a sliding base-block armed with a sleeve, substantially as described.

2. An creative-tablet holder having an interior sliding block, an actuating thumb-piece, and a roughened exterior surface, substantially as and for the purposes described.

3. An creative-tablet holder having an open-ended slot, in which the thumb-piece slides, whereby it is adapted to receive a tablet provided with a permanently-attached actuating thumb-piece, substantially as described.

168,851. WROUGHT-IRON POSTS. Leon Sanderin, Milwaukee, Wis. [Filed Mar. 26, 1875.]

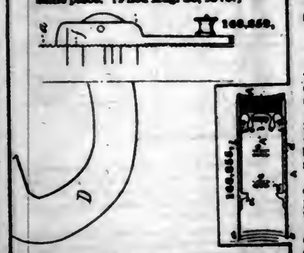
Brief.—A metal column consisting of rolled plates and angle-irons with square metal bars at the outer corners, all riveted together. Channel-bars may be used in place of the plates and angle-irons, if desired.



1. A metal post consisting of plates B, angle-irons C, and metal bars E at the corners, riveted together with rivets D, substantially as set forth.

2. A metal post consisting of channel-irons A and metal bars E, substantially as described.

168,852. PIPE-WRENCHES. W. K. Stevens, Mansfield, Ohio, assignor of two-thirds his right to Jos. A. Niman and John B. Niman, same place. [Filed Aug. 26, 1875.]



The handle A, provided with the toothed surface *f*, biting-plate E, and stud *h*, in combination with the pivoted adjustable hook D, slotted toothed plate B, and clamp-screw *c*, substantially as shown and described.

168,853. RAILROAD-CROSSINGS. Walt J. Stillman, Troy, N. Y. [Filed July 30, 1875.]

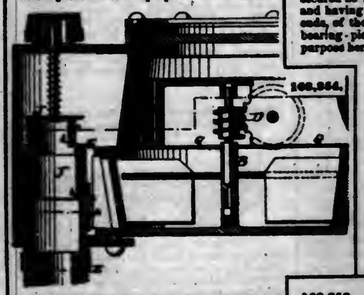
Brief.—A railway-crossing in which the flange-space between rail and crossing-planking is filled by a yielding plate of sufficient rigidity to sustain the weight of ordinary passing vehicles, but which will be depressed by the car-wheel flanges, and allow them to pass unobstructed.



The combination of the feeder B, or its equivalent, with the plank bed of a railroad-crossing and springs or elastic plates, arranged as and for the purpose set forth.

168,854. WATER-METERS. De Witt C. Taylor, Brooklyn, N. Y. [Filed July 19, 1875.]

Brief.—The water is admitted by a double tubular valve, as constructed as to divide the current in a fixed proportion, whatever the pressure, so that a small part of the current registers for the whole. Slotted rings, one inside the valve and one outside its case, enable adjustment of the proportion to be made.



1. In a water-meter, the valve *J*, fitted into the inlet-pipe B, to be affected by the entire stream of water, and to regulate the sizes of two openings, *a d*, one of said openings allowing water to enter the registering part of the meter, while through the other opening water passes through or past the meter without affecting the registering mechanism, substantially as specified.

2. The combination of the regulator *f* with the inlet-pipe B, which has an opening, *a*, into the meter, and with the valve *J*, substantially as herein shown and described.

3. The combination of the regulator *h* with the valve *J*, having the opening *d*, and with the inlet-pipe B of a water-meter, substantially as and for the purpose specified.

4. In combination with a water-meter containing the diaphragm G, the curtain or guard H, substantially as herein shown and described.

5. The tubular vertically-movable valve *J*, constructed with the opening *d*, and combined with the inlet-pipe B, which has the opening *a*, all substantially as specified.

168,855. BRACELETS. John N. Thornton, Providence, R. I. [Filed Nov. 9, 1874.]

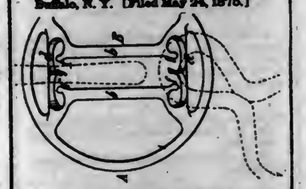
1. A bracelet provided with fastening device, and all made from a single piece or strip of metal, substantially as and for the purpose set forth.

2. The bracelet A, having the ends A' formed with guides *d* and projections or bands *c*, and the end A', having an indentation or head, *b*, and notches *a*, substantially as and for the purpose set forth.

3. The bracelet A, having shoulders or steps *a* and heads or indentions *b'* on one end, and projections or steps *b'* on the other, substantially as and for the purposes set forth.

4. In a bracelet made from one piece or strip of metal, the combination of the guides *d*, indentations or heads *c* and *b*, and notches *a* with the steps *a b'* and heads *b'*, substantially as and for the purposes specified.

168,856. TRACE-CARRIERS. Jas. Thornton, Wellerville, assignor to Josiah Letchworth, Buffalo, N. Y. [Filed May 24, 1875.]



The combination, with the base-ring A, of the elevated frame B, provided with opening *a*, cross-bar *d*, and projecting steps *f f g*, substantially as and for the purpose herein before set forth.

168,857. BUBBLE-EYES. James Thornton, Wellerville, assignor of one-fourth his right to Pratt & Letchworth, Buffalo, N. Y. [Filed May 24, 1875.]

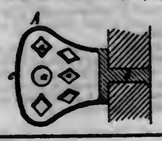
The combination, with the boring-pieces *c*, secured at their upper ends to the headstall, and having the reins attached to their lower ends, of the bit E and arms *a*, pivoted to the bearing-piece *c*, substantially as and for the purpose herein before set forth.

168,854.



168,857.

168,858. STOVE-DOOR KNOBS. Pliny B. Washburne, Buffalo, N. Y., assignor of one-half his right to Charles A. Babcock, same place. [Filed June 15, 1875.]



1. A ventilated metallic knob for doors of stoves, consisting of a hollow perforated head, A, and shank *b*, cast in one piece, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the hollow perforated head A and shank *b*, of the hole *c*, to receive the end of a riveting-tool, substantially as hereinbefore set forth.

168,859. SAD-IRONS. Thomas D. West, Cleveland, Ohio. [Filed Apr. 22, 1875.]

Brief.—The iron has polishing-surfaces of different forms, and a handle held in sockets on the standards.



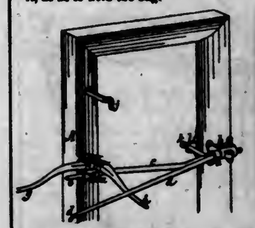
1. A combined end and polishing iron, provided with the ironing-surface D and polishing or burnishing points *a b'* upon its under face, substantially as shown.

2. The combined end and polishing iron herein described, having its bottom face provided both with ironing and polishing surfaces, the ironing-surface D being formed on a plane at an angle to the plane of the burnishing-points *a b'*.

3. The removable handle consisting of the combination of one arm provided with a ring-formation, the other arm flat at the top, and provided with a recess for embracing the handle, and a screw, *b*, with the wooden handle B, all arranged substantially as described.

168,860. MAIL-BAG CATCHERS. Alfred B. Whipple, Auburn, N. Y. [Filed Sept. 27, 1875.]

Brief.—Two arms are rigidly attached at right angles, and pivoted where they join. The bag-strap, entering the catch, strikes against one, bringing the other round behind it, so as to hold the bag.

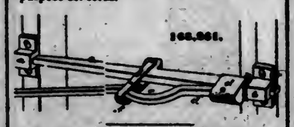


In a mail-bag catcher and holder, the combination of pivoted rods *g d* and arms *g h*, substantially as and for the purpose set forth.

168,861. MAIL-BAG CATCHERS. Alfred B. Whipple, Auburn, N. Y. [Filed Sept. 27, 1875.]

Brief.—The bag slips between the fixed and movable arms, and strikes the sliding link, which operates so as to draw in the movable arm, grasping the bag.

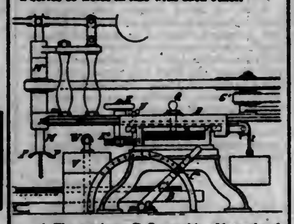
In a mail-bag catcher and holder, the combination of fixed bar *a*, movable bar *d'*, and swinging link *f*, substantially as and for the purpose set forth.



168,861.

168,862. BORING-MACHINES. Moses G. Wilder, Meriden, Conn., Wm. H. McNeil, Lancaster, Mass., and H. C. Tyler, Deep River, assignors to Pratt, Read & Co., Deep River, Conn. [Filed Apr. 6, 1875.]

Brief.—The material is held upon a vertically-adjustable table, while the tool moves longitudinally, enabling the operator to bore a series of holes in line with each other.



1. The carriages D G, capable of lateral and longitudinal movement, boring-arbor M, supporting means O', depressing means O, sleeve M', and train of belt and pulley gearing, for communicating power thereto in all positions, combined and arranged for joint operation, substantially as and for the purposes herein set forth.

2. The guide-pin Q and guide-groove *r*, in combination with the carriages D G, boring-arbor M, weight O', lever Q, sleeve M', and means for communicating power thereto in all positions, combined and arranged for joint operation, as and for the purposes herein set forth.

3. In combination with the carriages D G, capable of moving upon each other, as shown, the boring mechanism M' M' P, the adjustment O O' therefor, and the pulley G', the confining device U, adapted for fixing the carriages D and G rigidly together for the boring of the line of straight holes, as specified.

4. The hinged tilting table B *b*, and adjusting-lever and cam-shaft C C', in combination with the boring-arbor M and means for operating it in its several required positions, as herein specified.

5. The bar V and screw W, in combination with the tilting table B, and boring-tool M, as herein specified.

6. The weight L and connected hook-wire X, in combination with the carriages D G, guide-pin Q, and guiding groove or slot *r*, as and for the purposes herein specified.

168,863. MOLDS FOR PRESSING GLASS LAMP-CHIMNEYS. Thomas B. Atterbury, Pittsburg, Pa., assignor of one-half his right to Jas. S. Atterbury, same place. [Filed Oct. 6, 1875.]

1. The mold for making seamless lamp-chimneys, composed of the bottom section A, bolted and hinged together vertically, so as to open and close the intermediate section B and the top section C, the several sections being separated horizontally, so as to be lifted from off one another vertically, substantially as described.

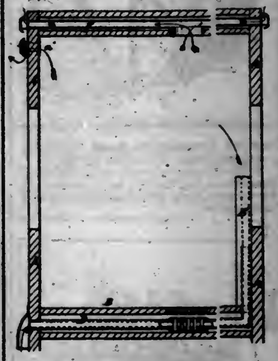
2. The cut-off knife-edge or bead *a* at the upper edge of the reservoir A' in the base-section A, constructed and arranged substantially as and for the purposes described.

3. Mold-base A, having the reservoir A', and supplied with the cut-off *a*, substantially as and for the purposes set forth.

4. As a new article of manufacture, a seamless pressed-glass lamp-chimney, substantially as described.

168,864. VENTILATING APPARATUS. John C. Estes, Cold Spring, N. Y. [Filed June 5, 1875.]

Brief.—The pipe conveying the cold air from the outside passes through a drum, thereby causing the air in the pipe to become heated before entering the room. The air enters the room high enough to prevent any draft upon the occupants. The foul air escapes from the upper part of the room, as shown.



The inlet-pipe D, having a drum, S, pierced with flues, and located between the register and the hot-air flue, in combination with the vertical pipe E, which delivers its air into the room vertically and above the heads of the occupants, substantially as described.

168,865. FOLDING CHAIRS. James H. Bean and Richd. W. Box, Painted, N. Y. [Filed May 1, 1875.]



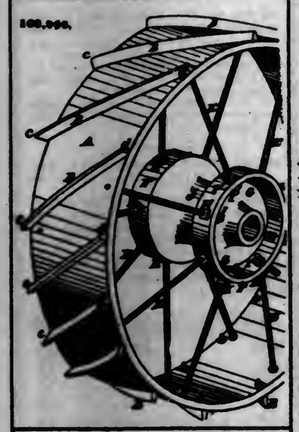
The folding chair composed of the swinging seat A, the front and rear legs B and C, provided, respectively, with the pins or rounds *c* and *b*, for holding the legs locked when intersected, as shown and described.

168,866. TRACTION-WHEELS. William O. M. Berry, San Francisco, Cal. [Filed July 29, 1874.]

Brief.—Spokes provided with contracting nut, and rim obliquely ridged, so that one ridge shall not leave the ground until the next reaches it.

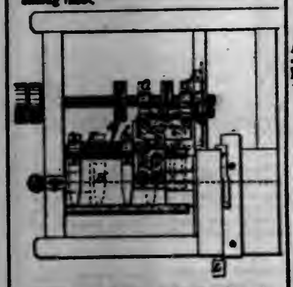
The hub F F, depressed at J, and having the grooves O, in combination with the spokes E, nuts H and I, and the rim A, having ribs B, all substantially as and for the purpose set forth.

168,866.



168,867. Ribbening-Machines. H. F. Bohn, Clinton, Iowa. [Filed Mar. 26, 1875.]

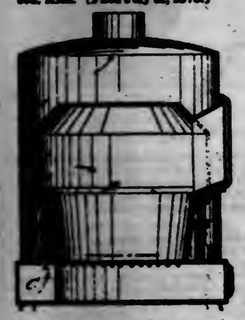
Brief.—The tenon is split by an oscillating circular saw, and the part to be removed cut out by a revolving boring-tool carried upon a sliding table.



1. The combination of the slide H, having the rotating mandrel F, with the oscillating saw-carrying standard G, substantially as and for the purposes set forth.

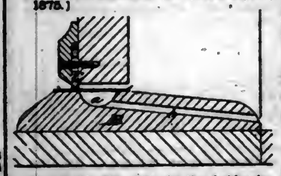
2. The combination of the slide H, gage-plate Q, and oscillating standard G, substantially as and for the purpose set forth.

168,868. Stoves. Robt. S. Bostwick, Jackson, Mich. [Filed July 22, 1875.]



The combination, with ash-pit having air-inlet, bottom grated fire-pot and cooling, of the vertical flange E and the channel C, having inlets b and outlets a, as and for the purpose specified

168,869. Weather-Strips. Francis A. Bradshaw, Lebanon, Mo. [Filed Sept. 4, 1875.]

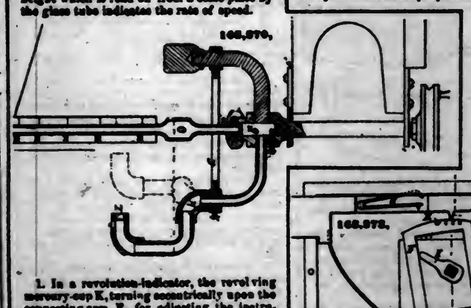


The combination, with the threshold-strip, of a perforated plate, covering draining-groove for preventing the entrance of dirt, substantially as specified.

168,870. Speed-Measures. Edwd. Brown, Philadelphia, Pa. [Filed Apr. 16, 1875.]

Brief.—A speed-measure consisting of a central glass tube, having at its base a bellows-arm extension, which is so arranged that it may be placed eccentrically to the central tube. Both the central tube and bellow-arm extension are partially filled with mercury, the central tube also being filled with a colored liquid. When the device is made to revolve, the mercury in the arm is caused to rise by centrifugal force, and that in the central tube to fall, thus causing the colored liquid also to fall. The height which is read off from a scale-plate by the glass tube indicates the rate of speed.

168,870.



1. In a revolution-indicator, the revolving mercury-cup K, turning eccentrically upon the connecting-arm E, for adjusting the instrument to the scale, substantially as described.

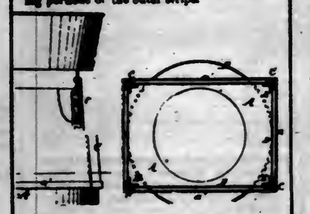
2. In a revolution-indicator, the combination of the revolving mercury-cup K with the turn L, pointing radially to the central glass tube.

3. In a revolution-indicator, the combination of the revolving mercury-cup K, the connecting-arm E, the strap G, and adjusting-screw b', substantially as herein described.

4. In a revolution-indicator, the combination of the revolving mercury-cup K, the connecting-arm E, and the enlargement O of the central glass indicating-tube, substantially as herein described.

168,871. Lamp-Chimneys. G. M. Ball, New Baltimore, N. Y. [Filed Sept. 17, 1875.]

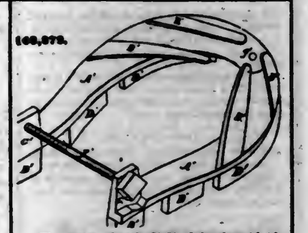
Brief.—The inner strips are rounded at their upper ends, to enter apertures formed by bending portions of the outer strips.



The combination, with flanged plate A and angle-strips C, of the angle-strips E, rounded at the upper ends, as and for the purpose specified.

168,872. Horseshoes. Minha M. Bemgan, Rochester, Mass. [Filed May 11, 1875.]

168,873.

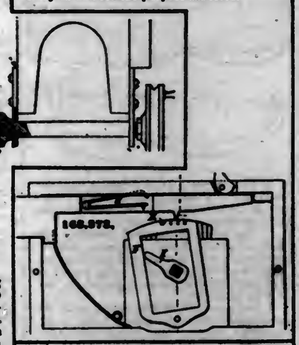


The upturned ends C' C' of the shoe A' A', the holders B' B' B' B', the long-fixed calks D' D', all constructed as set forth, for the purpose specified.

168,872. Combination-Locks. Friend J. Chapman, McLeansborough, Ill., assignor to himself and Jos. R. Beddall, same place. [Filed May 1, 1875.]

In a combination-lock, the pivoted notched tumblers, constructed as described, the notch in the tumbler operated by the longest arm having an incline on one side, in combination with the arms I, of different lengths, working in the hollow spaces in the tumblers, substantially as and for the purpose set forth.

168,872.



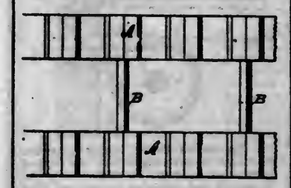
168,874. Opera-Chairs. Irah Chase, New York, and Geo. M. Bell, Green Point, N. Y. [Filed Aug. 14, 1875.]



In combination with the seat B, pivoted at *c*, the telescopic braces having their lower ends curved backward and pivoted to the lower part of the frames A A and to the front of the seat, as shown and described, for the purpose specified.

168,876. Folding Ladders for Firemen. John C. Christinger, Bristol, Conn. [Filed Apr. 8, 1875.]

Brief.—A hinge-jointed folding ladder, wherein the pieces of the joints form also the rounds of the ladder.



The hinge-joint rails A A, having pieces of the joints, extending from rail to rail, to form the rounds B, in the particular manner shown and described, and for the purpose set forth.

168,876. Tool-Handles. Thos J. Close, Philadelphia, Pa. [Filed Jan. 28, 1875.]

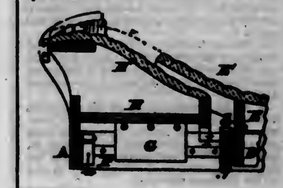
Brief.—The blade is attached to the handle by means of two clamping-plates, one of which is provided with hooks, and the other with eyes. The blade is fastened in place by passing the hooks through suitable openings in the handle and blade, and placing the eyes upon the other plate in line to receive the longitudinal part of the hooks, when, by striking the bottom of the eye-plate with a suitable implement, the plates will be drawn together. The blade can be readily detached by a blow upon the top of said plate.



The tool-handle and blade herein described, secured by clamping-plates having a drawing connection, substantially as and for the purpose set forth.

168,877. Sofa-Bedsteads. Jos. L. Closterman, Cincinnati, Ohio. [Filed Aug. 10, 1875.]

Brief.—The inner part of the sectional head-rest is movable longitudinally, to bring it in line with the other half. It is also provided with a stud, which slides under the pivoted portion of the mattress-frame, and holds it in position.



168,877.



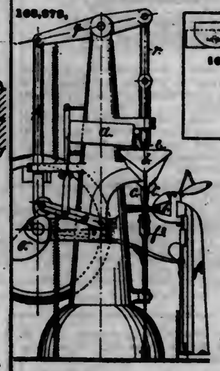
1. In combination with the fixed frame A and folding frames D, *d d'*, and E of a bed-lounge, the longitudinally-shifting head or bolster frame H, substantially as herein described and illustrated.

2. The combination of fixed frame A *f f*, frames D, *d d'*, and E, shiftable bolster-frame H, and stop I, when the latter is so located as to prevent rotation of the inner frame D, as explained.

168,878. Machines for Driving Tacks. John B. Cobb, Mystic River, assignor of one-half his right to L. W. Morse, Jr., Groton, Conn. [Filed Sept. 10, 1875.]

Brief.—The tacks, in bulk, are placed in a hopper or receptacle, out of which they pass singly into an inclined channel, at the lower end of which they are removed by a reciprocating magnet, and deposited in an elastic tube beneath the plunger.

168,878.



1. The combination, with the elastic fingers C C, of the reciprocating magnet *d*, for delivering and supporting the tacks under the plunger, substantially as described.

2. In combination with the reciprocating magnet *d* and elastic fingers C C, the vertically-reciprocating plunger B, arranged to operate together, substantially as and for the purpose set forth.

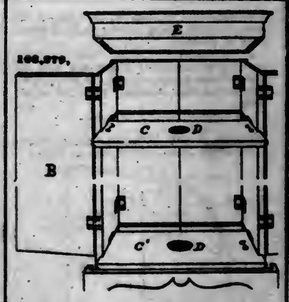
3. The sliding clamp *f*, in combination with the reciprocating spring-pawl h and rest *f'*, constructed to support the article to be tacked, and to automatically feed the same to the driving device, substantially as described.

4. In combination with the driving-wheel *i*, the cam K, arranged to impart reciprocating motion to the magnet *d*, the feeding device, and hopper A, substantially as and for the purpose specified.

5. In a tack-driving machine, the combination of the following elements, viz: a receptacle from which the tacks are automatically delivered to the driving device, a reciprocating magnet by which the tack is placed under the plunger, a plunger for driving the tacks home, and an automatic feeding device, the whole operating in succession, substantially as herein described.

168,879. Folding Washstands. Lewis A. Colbert, Baltimore, Md. [Filed Mar. 29, 1875.]

168,879.

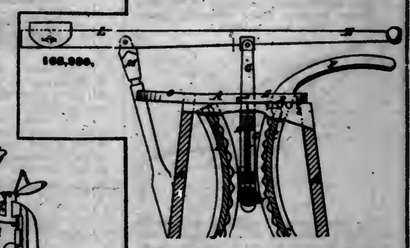


A wardrobe composed of the back pieces A A, end pieces F F, top E, bottom C', shelf C, and doors B B, all constructed, arranged, and operating substantially as described, for the purposes set forth.

168,880. Washing-Machines. John Henry Conaway, Nelsonville, Ohio. [Filed Oct. 2, 1875.]

Brief.—A curved stationary rubber; a curved adjustable pivoted rubber, provided with a lever; and a cash having a rubber roller and a clamping-bar, reciprocated between the curved rubbers by a lever having an adjustable balancing-weight.

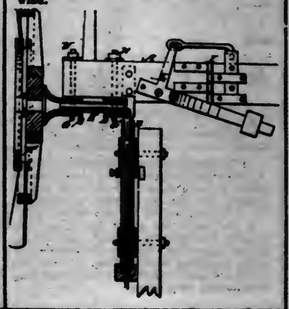
168,880.



The combination of the curved stationary rubber B, the curved adjustable pivoted rubber C, provided with the lever F, the cash G, provided with the rubber roller H and the clamping-bar I, and the lever L, provided with the adjustable weight N, with each other and with the cash-bar A, substantially as herein shown and described.

168,881. Windmills. John Cook, Harlem, Ohio. [Filed Aug. 26, 1875.]

Brief.—The crank-shaft bearing is connected to the horizontal beam which supports the machine in a simple way, by means of stirrups or yokes. There is also a joint in the beam for the tail-vane to swing around out of the wind when it blows too strong, in combination with a weighted lever for keeping the vane in the wind.



1. The shaft-bearings D, secured to the beam A by the straps C and nuts H, substantially as specified.

2. The combination of the weighted elbow-lever I, and connecting arm or link with the pivoted beam A, vane J, and the wheel F, all constructed and relatively arranged as set forth.

168,889. BOOTS. Alfred A. Canning, South Bingham, Mass. [Filed May 11, 1875.]

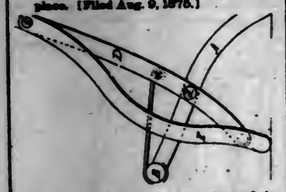


1. As an improved manufacture, a boot-leg provided with pulling-pockets B B, substantially as described.

2. The pocket-piece C, inserted at one end within the side seam, and connected therewith, as set forth.

3. The pocket-piece C, inserted at one end within the side seam, in combination with the welt c, terminating at its upper end at the lower edge of the pocket-piece, all being as represented and described, whereby the part of the pocket-piece within the seam becomes a welt thereto, as well as a connection of the pocket-piece with the boot-leg.

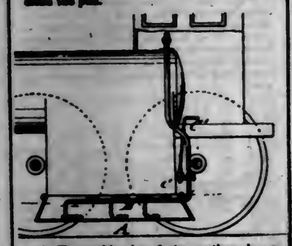
168,890. FOLDING CHAIRS. Isaac N. Dean, New Haven, Conn., assignor to the New Haven Folding-Chair Company, same place. [Filed Aug. 9, 1875.]



The combination, in a folding chair, of the rear leg A, extending up and forward to support the front of the seat C, the back D, extending down and pivoted to the rear leg, and the front leg E, rigidly attached to the back piece below the pivot, and extending up and backward, and rigidly attached to the back above the seat, substantially as described.

168,891. APPARATUS FOR CLEANING LOCOMOTIVE ASH-PANS. Paul K. Dealy, St. John, Canada. [Filed Sept. 17, 1875.]

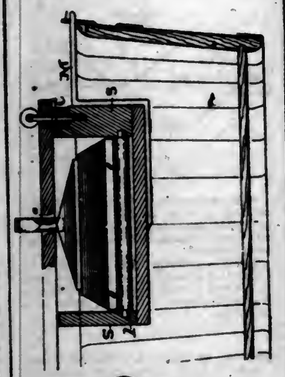
Brief.—Water is allowed to flow on the ashes, after which steam-jets are applied to clean the pan.



1. The combination of a locomotive ash-pan, by water and steam conveying pipes, with the boiler, to throw water or steam on the pan for heating and cleaning the same, substantially in the manner and for the purpose set forth.

2. The water and steam conveying pipes, passing longitudinally through the ash-pan, and being provided with hook-yard-hose branch pipes, extending to the bottom to throw the water and steam on different points of the pan, substantially as specified.

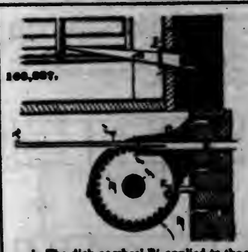
168,892. WASHING-MACHINES. Almon Delamater, Townville, Pa. [Filed July 6, 1875.]



1. The frame S, having ends H and the bar M, in combination with the pivoted staple m and a tub, A, substantially as and for the purpose specified.

2. The frame S, having rollers, as described, in combination with the rubber block F, pivot-bolt E, and lever, all constructed and arranged to operate substantially as and for the purpose specified.

168,893.



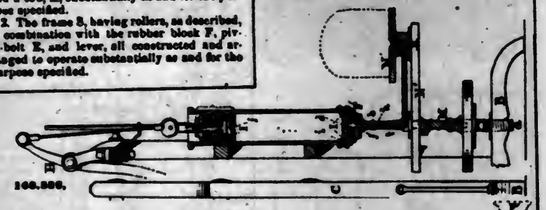
1. The disk or wheel B', applied to the shutter-hinge, in combination with the friction strap or spring b' and the sliding bar or rod H, applied and operating to open and close and fasten the shutter from the inside, as described.

2. The combination with the sliding bar H, operating substantially as described, of the forked lever h, for operating the pivoted slats of the blind, the combination and arrangement operating substantially as shown and described.

3. The combination with the sliding bar H, by means of which the shutter is opened, closed, and fastened, as described, of the sash lock or arm I, having spur i, arranged and operating to lock the window-sash, as specified.

168,894. AIR-PUMPS. John H. Hills, Peoria, Ill. [Filed Mar. 10, 1875.]

Brief.—Valves in piston and barrel are made reversible for purposes of exhausting or compressing. A ball-and-socket connection, adjustable by means of a spindle and screw, makes it easy to attach and detach, to and from the barrel the usual receivers, &c. Common fruit-jars and lamp-chimneys are fitted thereto by means of suitable plugs and packings and hose-connections, for purposes of scientific illustration.



168,895. WIRE-FENCE RAILS. Levi M. Devore, Yellow Creek, Ill. [Filed Aug. 18, 1875.]



A wire-fence barb made from a single piece of wire, bent so as to form loops to embrace the fence-wire and retain the barb thereon, substantially as described.

168,896. COMBINED SHUTTER-WORKING, BLIND-SLAT ADJUSTING, AND SASH-FASTENING. Henry J. Diedrichsen, Appleton, Wis. [Filed Feb. 12, 1875.]

Brief.—A sliding bar or rod, having an operating-knob, and with two or three cogged teeth near the middle, engages with a cogged wheel or disk in a suitable housing, the larger part of the disk being surrounded by a friction band or spring, on which the bar works with a sliding movement, to open, close, and fasten the shutter from inside the room. A bifurcated lever, attached at one end to the sliding rod, and at the other to the blind-slat rod, adjusts and operates the pivoted slats of the blind, while a suitable arm, provided with an inwardly-projecting spur, is likewise attached to the sliding bar, and serves to lock the window-sash in desired position.

168,897. COMBINED SHUTTER-WORKING, BLIND-SLAT ADJUSTING, AND SASH-FASTENING. Henry J. Diedrichsen, Appleton, Wis. [Filed Feb. 12, 1875.]

Brief.—A sliding bar or rod, having an operating-knob, and with two or three cogged teeth near the middle, engages with a cogged wheel or disk in a suitable housing, the larger part of the disk being surrounded by a friction band or spring, on which the bar works with a sliding movement, to open, close, and fasten the shutter from inside the room. A bifurcated lever, attached at one end to the sliding rod, and at the other to the blind-slat rod, adjusts and operates the pivoted slats of the blind, while a suitable arm, provided with an inwardly-projecting spur, is likewise attached to the sliding bar, and serves to lock the window-sash in desired position.

1. In combination with the nozzle F', the reversible valve-box I and the piston G, with its reversible valve-box I, substantially as and for the purposes described.

2. The valve-box I in the nozzle, when provided with a screw-cap or valve-cover, d, and inclosed valve, as constructed so as to be reversible, for exhausting or condensing, in connection with a corresponding valve-box in the piston, substantially as and for the purposes described.

3. The combination, by means of the bulb b of the nozzle F', with the socket h of the pipe f of the pneumatic receiver-plate F', with its table F'', by which the receiver-plate is readily attachable to and detachable from said nozzle F.

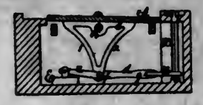
4. The combination, by means of bulb b and socket h, of the nozzle F', the pipe f, the metal disk of the ordinary air-pump, and the rotary table R, substantially as and for the purposes described.

5. As an attachment to an air-pump, the fruit-jar L, of a well-known form—i. e., having a screw-thread around its neck, an outer screw-cap, c, in combination with a cover, a, provided with a screw-socket to receive the cap-neck connection c, substantially as and for the purposes described.

6. The combination, with the nozzle F', of the hose e, pipe f, provided with thread to receive the disk g, cork K, provided with the rubber packing p, glass Q, and disk g.

168,898. STREET-RAILWAY SWITCHES. C. B. Evans, New Orleans, La. [Filed Apr. 23, 1875.]

Brief.—An improvement in that class of street-railway switches in which the rails are shifted by a vibrating platform operated by weight of horse. The cast-iron platform is detached from the working mechanism in the pit, to permit of ready access to the same, being merely placed upon the central rod and retained by saddles. An anchor-block is attached to the lower end of the vibrating arm, which operates by its weight and friction to hold the switch in the position to which it is shifted.



1. The table or platform A, having lugs a a', shaft B, and journals b b', the same being combined and arranged to operate substantially as described.

2. The cross-bar c, with brackets 1 2, shaft B, with journals b b', the trip-lever d, arm C, vertical shaft D, all in combination with the platform A, as and for the purpose specified.

3. The platform A, cross-bar c, having brackets 1 2, shaft B, having journals b b', trip-lever d, arm C, vertical shaft d, lever e, and anchor-block E, the same being combined and arranged to operate substantially as described.

168,899. PICKET-PINS. Jos. D. Field, Nine Rapids, assignor to himself and J. D. Edmond, Leavenworth, Kans. [Filed Aug. 26, 1875.]



A picket or tent pin having the spiral shank A and eye E, as shown and described.

168,900. STREET-RAILWAY SWITCHES. C. B. Evans, New Orleans, La. [Filed Apr. 23, 1875.]

Brief.—An improvement in that class of street-railway switches in which the rails are shifted by a vibrating platform operated by weight of horse. The cast-iron platform is detached from the working mechanism in the pit, to permit of ready access to the same, being merely placed upon the central rod and retained by saddles. An anchor-block is attached to the lower end of the vibrating arm, which operates by its weight and friction to hold the switch in the position to which it is shifted.

1. The table or platform A, having lugs a a', shaft B, and journals b b', the same being combined and arranged to operate substantially as described.

2. The cross-bar c, with brackets 1 2, shaft B, with journals b b', the trip-lever d, arm C, vertical shaft D, all in combination with the platform A, as and for the purpose specified.

3. The platform A, cross-bar c, having brackets 1 2, shaft B, having journals b b', trip-lever d, arm C, vertical shaft d, lever e, and anchor-block E, the same being combined and arranged to operate substantially as described.

168,901. FLUE-SCRAPERS. Albert Fisher, Cleveland, Ohio, assignor to himself and John Faulkner, same place. [Filed Sept. 8, 1875.]



1. The scraping-blade C formed in the segment of a circle, provided with the arm c and slots c', substantially as and for the purpose shown.

2. The combination of segmental scraping-blade C, arm c, and slotted hub B B' b, substantially as and for the purpose shown.

3. The combination of the slotted hub B B' b, segmental scraping-blade C, guides D, lug or tent d, and spring E, substantially as and for the purpose shown.

4. In combination with three or more scraping-blades, C, of a flue-scraper, the spring E, constructed of a single piece of material, and provided with a number of wings or arms corresponding to the number of scraping-blades, substantially as and for the purpose shown.

5. The combination of shaft A, slotted hub B B' b, slotted arm c c', pin or stop F, two or more segmental blades, C, guides D, lugs or tents d, and spring E, substantially as and for the purpose shown.

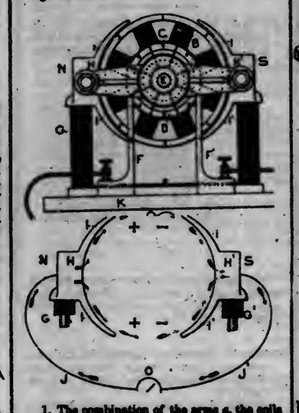
168,902. UMBRELLA-RUNNERS. Henry S. Frost, Watertown, Conn., assignor to A. N. Woolson, same place. [Filed Sept. 17, 1875.]



The runner described, provided with the cap B, arranged upon its end, so as to form the outwardly-flaring ring c, substantially as described, and for the purpose set forth.

168,903. MAGNETO-ELECTRIC MACHINES. Jim Billings Fuller, Brooklyn, N.Y. [Filed July 30, 1875.]

Brief.—The currents induced must and combine at the commutator-spring, pass through the external circuit to the other commutator-spring, and thence back through the intermediate coils. The tapering poles are designed to prevent abrupt falling off of the magnetic force.

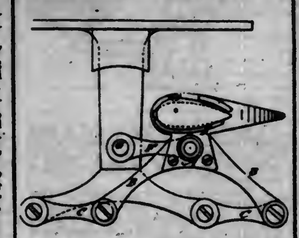


1. The combination of the arms c, the coils A, and the sectional commutator d, when the ends of the wire forming said coils are connected together, and to the commutator, substantially as set forth, said coils being caused to revolve between or near alternately opposite magnetic poles, developing electric waves or currents in said coils, and the currents developed being received and discharged continuously at the points in the wire forming said coils nearest said poles, or where the magnetic force is strongest.

2. The magnetic poles h and h', having points or angles tapering toward the neutral magnetic point, substantially as and for the purpose specified.

168,904. SEWING-MACHINES. Josiah Glines and H. W. Stiles, Fostoville, Iowa. [Filed Aug. 31, 1875.]

Brief.—The shuttle-carrier is combined with mechanism that produces parallel motion, whereby the shuttle is prevented from revolving on its own axis and twisting the thread.



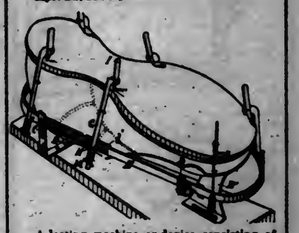
The combination, with a shuttle-carrier, of bar B, cranks C C, and the crank F, and shaft O, as and for the purpose specified.

168,905. DETONATING-CAPS FOR BLASTING, &c. Joseph Goldmark, Brooklyn, N. Y. [Filed July 14, 1875.]

1. The detonating-cap or exploder made with a perforated cover pressed upon the fulminate, for the purposes, and substantially as set forth.

2. The detonating-cap made with a fulminate space and a contracted neck of a size to receive and hold the fuse or exploder in its proper position relatively to the fulminate, substantially as set forth.

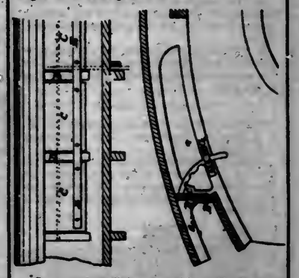
168,906. PIECING-JACK ATTACHMENTS. Frederic Guild, Brockton, Mass. [Filed Apr. 23, 1875.]



A lasting machine or device consisting of the combination of a series of spring-levers, G, supported in guideways or loops H, carried by an adjustable truss, K, and provided with pivoted clamping-hooks I, capable of being automatically disengaged from the sole, substantially as shown, and for the purpose set forth.

168,907. CAR-VENTILATORS. A. Hamm, New York, N. Y. [Filed Jan. 20, 1875.]

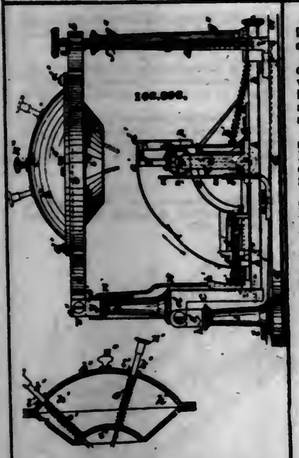
Brief.—The valves are pivoted centrally and horizontally, and are joined rigidly together by a bar secured to their outside lower edges, which bar also, engaging with the projecting roof when they are open, prevents their closing in a reversed position.



In a car-ventilator, the valves C, pivoted centrally on a horizontal axis between the vertical posts D and the strip or bar B, attached to their lower edges, in combination with the car-roof having the construction shown, whereby said strip or bar acts as a stop, and holds the valves horizontal, or nearly so, when open, as shown and described.

168,908. TYPE-WRITING MACHINES. R. M. J. Hansen, Copenhagen, Denmark. [Filed Sept. 17, 1875.]

Brief.—The key-board is pivoted, the free end resting on the pivoted frame supporting the paper-carrying devices, said frame being supported by a spring. Depressing a key makes the impression on the paper over the anvil, and also depresses the paper-carrying frame, while the pawl on the base of the machine operates the ratchet, which drives a spur-wheel gearing with the center, and moves the paper the space of one letter. An indenter is provided, and when the line is full the pawls are released. The paper-carrying center falls by its own weight, and in so doing one of the spokes on the feed-wheel strikes a projecting arm, and feeds the paper the space of one line.



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1. The writing-ball formed of a thin outer shell, b', and inner shell b'', united together, in combination with the keys or type-pistons b' and springs c', as and for the purposes set forth.

2. The plate b, sustained by and swinging upon the centers a, and carrying the type-writing and paper-moving mechanism, in combination with stationary spring-pawls, that operate the paper-moving mechanism.

3. The paper-holders d and centers e', swinging upon the spindle f, in combination with the center e, pinion e', ratchet-wheel e, and spring-pawls g f, as and forth.

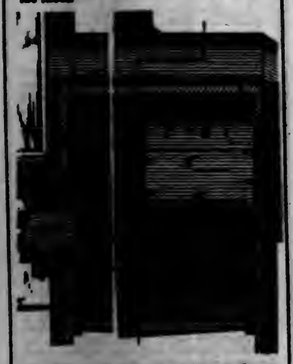
4. The lever i' and pusher i', in combination with the spring-pawls e g and paper-holder, for the purposes set forth.

5. The rollers f' f'' and spokes f', in combination with the paper-holders d and inclined tongue or horn h', for the purposes and as set forth.

6. The index-hand s upon the shaft n, connected with the spindle f, in combination with the paper-holder d, ratchet e, and pawls e f, as set forth.

168,899. Furnaces for Locomotives. H. F. Hayden, Washington, D. C. [Filed Oct. 9, 1875.]

Brief.—Air is supplied to the front of the fire-box by means of funnel-pipes located on the outside of the fire-box. Air is also supplied to a double-walled fire placed in front of the tubes.



1. The combination, with the annular or double-walled door-casing, of the transverse air duct or tube B, arranged inside the fire-pot, and provided with the distributing-branches, substantially as described.

2. The annular or double-walled door-casing, in combination with the supply-tubes D, substantially as and for the purpose described.

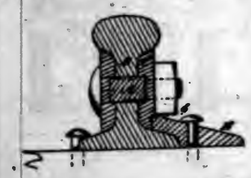
3. The air-supply tubes D, arranged and operating, in connection with the double-walled door-casing, substantially as described, in combination with the valves for regulating and controlling the admission of air, as described.

4. The perforated annular or double-walled air-duct G, forming the combustion-chamber H in advance of and around the mouths of the exit-tubes or openings, substantially as and for the purpose set forth.

5. The annular or double-walled air-duct G, in combination with the supply-pipes F, connecting it with the double-walled door-casing, as described.

6. The double-walled air-duct and combustion-chamber, in combination with the supply-pipes or tubes F and D, arranged and operating substantially as and for the purpose set forth.

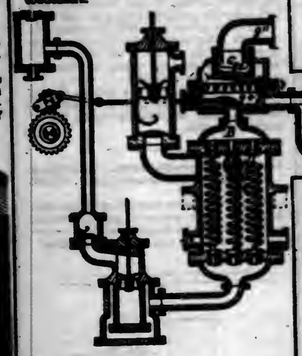
168,900. Railroad-Rail Joints. Jos. G. Holliday, Pittsburg, Pa., assignor to himself and Frank B. Hutchinson, same place. [Filed Sept. 4, 1875.]



The plate E for binding the rails on the ties, arranged under a shoulder, O, of the fish-plate, and contrived to form a lock for the nuts, substantially as specified.

168,901. Compound Condensing Apparatus for Marine Steam-Engines. John Hoyt, Springtown, Pa. [Filed July 29, 1875.]

Brief.—Steam from the engine-cylinder is divided in its passage through the chamber above the primary condenser, part of it passing into said primary condenser, and the remainder to the secondary and tertiary surface-condensers.

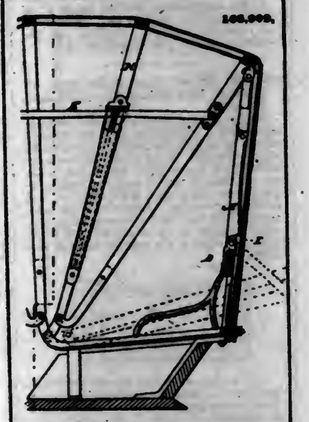


1. The thin spring flap-valve f', of steel, constructed as described, in combination with the valve-seat f' and guard f', substantially as and for the purpose hereinbefore set forth and described.

2. The primary surface-condenser B, in combination with the dividing-valves in the chamber G G and the secondary and tertiary surface-condensers B E and S, substantially as set forth and described.

168,902. Vehicle-Top. Fredrick H. Jury, New York, N. Y. (Filed June 12, 1875.)

168,902.



1. The combination, with seat-hook B and hook bow C, of pivoted standards A, made each in two parts, and connected by the rule-joint, as shown and described, whereby said standards are made self-sustaining when the top is extended or raised, and will fold backward to secure the top when lowered, as set forth.

2. The projected I of standard A, arranged in combination with the seat-hook B to enable the standard to grasp the bows when folded down, substantially as specified.

168,903. Pocket-Lamps. James Kendall, Boston, assignor to Charles E. Ashcroft, Lynn, Mass. [Filed Sept. 21, 1875.]

Brief.—The size of the flame can be regulated by the horizontally-swinging two-part cap.

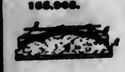


1. The combination of the flame-gage B B', substantially as described, with a lamp, A, essentially as specified.

168,903.



168,903.

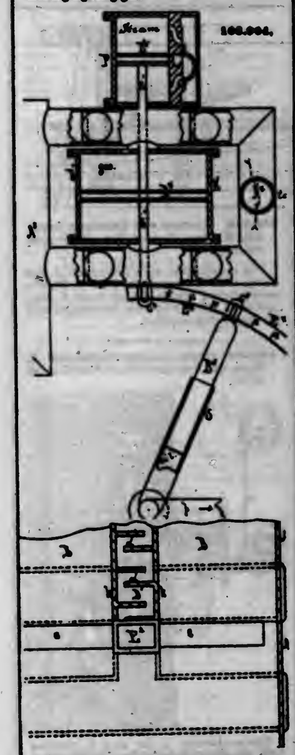


2. The combination of a flame-gage, B B', with an annular cap, C, to fit upon or be applied to a lamp, A, as set forth.

3. The combination of the lamp A, annular cap C, and flame-gage B B', all arranged and constructed substantially as specified.

168,904. Processes and Apparatus for the Manufacture of Illuminating-Gas. Moses W. Kidder, Boston, assignor to himself and Parson Noyes, Lowell, Mass. [Filed May 17, 1875.]

Brief.—Fires coal by aid of air and steam under front grate. Takes coke from front grate onto middle platform, and thence rakes it onto rear grate, in order to reduce quantity of heating-gas in generator, and at same time utilize heat of coke at firing-retorts. May strengthen draft in generator by closing damper of chimney, and using the exhaust to suck air and gases of combustion from rear furnaces into bottom of and upward through generator, and through mixing-chamber and firing-retorts. Pumps into mixing-chamber a quantity of liquid hydrocarbons proportionate to the gas produced by attaching gradatedly the piston-rod of the oil-pump to the piston-rod of the steam-cylinder, which operates the gas-exhaust pump. To stop oil-feed disconnects these piston-rods. Runs coal-stirrer through a ball resting in a concave socket. When stirrer is withdrawn, openings are closed by turning ball sideways in socket. Detachable stand-pipes at the hydraulic main have a ball, which rests in a socket on the main, and at lower ends have caps, which inclose and entirely support the rear ends of firing-retorts. Thus expansion and contraction of the parts is permitted. The outlet from generators has a valve closed by its own weight, and opened from the outside of the furnaces, and also operating automatically to relieve generators from excessive gas-pressure. General operation: Introduces steam and air at bottom of burning coal, passes resultant gases downward through mixing-chamber, where liquid hydrocarbons are admitted, and finally forces in highly-heated retorts. Mixing-chambers are shown between, at rear of, or central to and connected with generators, and may have dividing-partitions, shelves, chains, or incandescent coal. Withdraws heating-gas while making lighting-gas.



No. 168,904.

1. One or more coal-chambers, B, having grates f, and leading to longitudinal apertures e, in combination with one or more gas-mixing chambers D', having shelves d, or gas-diverting obstructions, and bottom parts B' leading to trunks D, and all covered by a trunk, E, provided with coal-feeding hoppers D', substantially as described.

2. The dividing-partitions f, having gas-passages h and externally-squeezed valves i, in combination with the trunk E, coal-chamber B, and gas-mixing chambers D', substantially as described.

3. One or more coal-chambers, B, having grates f, and leading to longitudinal apertures e, in combination with one or more gas-mixing chambers D', provided with shelves d, or gas-diverting obstructions, and bottom parts B', leading to inclined retorts D', and with a trunk, E, provided with coal-feeding hoppers D', substantially as described.

4. The combination, in a gas apparatus, of one or more trunk-covered coal-chambers, B, having grates f and apertures e, and one or more gas-mixing chambers, D', the vertical trunk or trunks D, and longitudinal gas-flue I and flue L, the inclined retorts D', the rear coke-chamber B', having grates f', and a table or bed-plate, A', between the front and rear grates, substantially as described.

5. The combination, in a gas apparatus, of one or more trunk-covered coal-chambers, B, having grates f and apertures e, and one or more gas-mixing chambers, D', the inclined retorts D', the rear coke-chamber B', having grates f', and a table or bed-plate, A', between the front and rear grates, substantially as described.

6. The combination, in a gas apparatus, of one or more trunk-covered coal-chambers, B, having grates f and apertures e, and one or more gas-mixing chambers, D', the rear coke-chamber or furnace B', having grates f' and a table or bed-plate, A', between the front and rear grates, substantially as and for the purpose described.

7. The open-bottom socket c', and the ball-H and bar b', constructed as described, with a hole in the ball for the bar B', in combination with the coal-chamber, and capable of turning to close the aperture e, and to expose the latter to the hole in the ball, and to permit the insertion of the bar to the coal-chamber, substantially as described.

8. The combination, with the stand-pipes B', of the caps or heads P, connecting and supporting the retorts D', and the balls R and sockets c', for adjustably and removably connecting the stand-pipes with the retorts and with the hydraulic main, substantially as described.

9. The combination, in a gas apparatus, of an adjustable hydrocarbon or oil-feeding device, a gas-exhausting device, and a fuel and a single mechanism, operating both the fuel and exhaust, substantially as described.

10. The valve-box B', and its valve f and seat c', in combination with the cock-plug X and Y, and with the trunk E and coal-chamber B, substantially as described.

11. The combination of the hydrocarbon-feeding device and the gas-exhausting device, whereby the feed and exhaust of the retorts are proportionately regulated, substantially as described.

12. The gas-exhausting device and its steam-operating mechanism, in combination with the trunk E, coal-chamber B, gas-mixing chamber D', retorts D', stand-pipes B', and the hydraulic main H, substantially as described.

13. The combination, in a gas apparatus, of a coal-chamber, B, having grates, as set forth, a gas-mixing chamber, provided with shelves or gas-diverting obstructions, as specified, and covered or connected by a trunk, E, having coal-feeding hoppers, all substantially as described.

14. The longitudinal flues e, leading from the coal-chambers B to the rear chamber B', for the passage of coke from the front grates f to the bed-plate A', and to the rear grates f', and also as a passage for gas from the front to the rear chamber, substantially as described.

15. The process of producing illuminating-gas by distilling and vaporizing at a low temperature the oils from bituminous coal, mixing these oil vapors with the gases rising from the resultant hot coke in contact with steam and air, at or near the base of the coal-burning retort, further mixing and heating these mingled vapors, by passing them downward through heated chambers, and finally by fixing the heated mixture in highly-heated retorts, substantially as and for the purpose described.

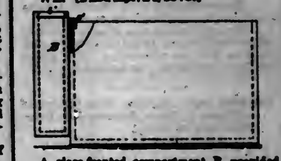
16. The process of producing illuminating-gas by distilling and vaporizing at a low temperature the oils from bituminous coal, mixing these oil vapors with the gases rising from the resultant hot coke in contact with steam and air, at or near the base of the coal-burning retort, adding to these commingled vapors and gases, the vapors of a liquid hydrocarbon, further mixing and heating these mingled vapors by passing them downward through heated chambers, and finally by fixing the heated mixture in highly-heated retorts, substantially as and for the purpose described.

17. The process of producing illuminating-gas by the partial combustion of anthracite coal or coke in contact with steam and air, at or near the base of the coal-burning retort, adding to these, commingled vapors of a liquid hydrocarbon, further mixing and heating these mingled vapors by passing them downward through heated chambers, and finally by fixing the heated mixture in highly-heated retorts, substantially as set forth.

18. A gas apparatus, constructed substantially as described, viz: with trunk-covered coal-chambers B, having grates f, a rear coke-chamber or furnace, B', leading to the chimney, with aperture e leading from one chamber to the other, with gas-mixing chambers D', and retorts D', and steam-pipes B' S, and openings or doors c' c', to supply steam and air to the fire on the grates f, and an operating gas-exhausting device, or this and a hydrocarbon-feeding device, whereby non-illuminating gas and illuminating gas are both produced simultaneously, substantially as described.

19. The process, substantially as herein described, of producing non-illuminating gas and illuminating-gas simultaneously in the same gas apparatus, and of delivering each said kind of gas in a different direction and for different purposes, which consists in producing, first, non-illuminating gas from the partial combustion of anthracite coal or coke in contact with steam and air introduced and combined therewith near the base of a coal-burning retort, and drawing off such gas for consumption in an adjoining furnace, as specified, and which further, and secondly, consists in simultaneously producing illuminating-gas from the remaining portion of the gases resulting from the partial combustion of anthracite coal or coke, and the steam and air drawn upward from the upper stratum of such incandescent coal or coke, and permanently combining such gases with the vapors of hydrocarbons, or producing illuminating-gas from the oily vapors distilled from bituminous coal at a low temperature, and vaporized and exhausted or drawn from an upper stratum of unignited coal, thence passed downward through highly-heated gas-mixing chambers, or through them and highly-heated retorts, all substantially as described.

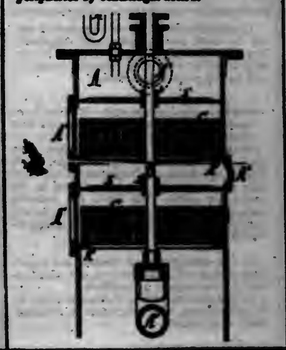
168,905. Cracker Show-Cases. Casper Kroeger and Werner Kroeger, Milwaukee, Wis. [Filed Apr. 24, 1875.]



A glass-fronted compartment, B, provided with rods b', and hooks c', for attachment to a cracker drawer or box, as shown and described.

168,906. Gas-Washing Machinery. Thos. K. Loss, Brooklyn, N. Y. [Filed Sept. 15, 1875.]

Brief.—A revolving vertical shaft, provided with horizontal perforated disks, is mounted centrally within a cylindrical case. Below each disk is a grating of wood. Water enters at the top of the case, and is showered down through it, while the gas passes up from below. The disks are corrugated concentrically, to prevent the water being thrown off at their peripheries by centrifugal action.



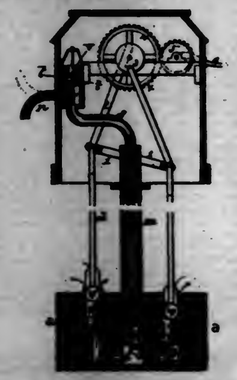
HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

A, the series of perforated disks b', mounted on the shaft B, and revolving within a casing, A', in combination with gas-passages A' A' and water-passages A' A', as and for the purposes herein specified.

2. The gratings G, in combination with the casing A, water-distributing revolving plates b', and with gas-connections A' A' and water-connections A' A', as and for the purposes herein specified.

168,907. Force-Pumps. W. G. Lilbourgood, Bradenville, Pa. [Filed Sept. 13, 1875.]

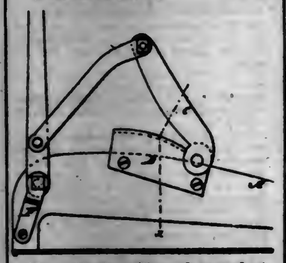
Brief.—Instead of the common air-chamber is used a chamber closed above by a weighted and vertically-reciprocating valve.



1. The combination of the reservoir e, valve f, and weight e, substantially as set forth.

2. The combination of a suitable operating mechanism, pistons, cylinders, block c, and stock a with the reservoir e, valve f, and weight e, substantially as described.

168,908. Metal-Shears. Thos. C. Livesay and Henry H. Black, Montana City, Kans. [Filed June 26, 1875.]



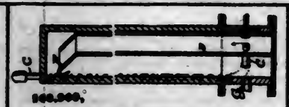
The combination, with an edge-curved cutter B, made fast to and raised diagonally above the bed A, of the lever-cutter C, pivoted to bed at one end of stationary cutter, as and for the purpose described.

168,909. Gas Apparatus. Charles Lord and Bernard J. McCabe, Shelbyville, Ind. [Filed Aug. 26, 1875.]

Brief.—For crude oils, fats, or resins. The gas material is heated in the lead-pipe, which coils in the furnace, is vaporized in the inner iron retort, and the vapors are fixed in the outer clay retort. The liquid gas material cannot touch and penetrate the clay retort, and the iron retort is protected from the severest heat.

1. The combination of heating and vaporizing lead-pipe C, clay retort A, and metal retort B, substantially as specified.

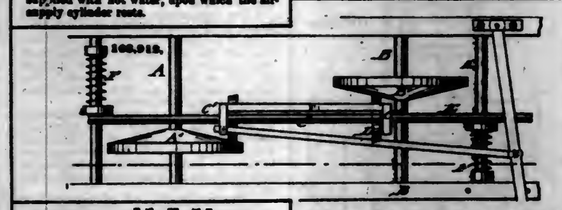
2. The elevated portion F of metal retort B, in combination with clay retort A, substantially as specified.



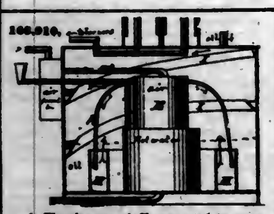
168,909.

168,910. Carburetors. Louis Marks, San Francisco, Cal. [Filed Mar. 11, 1875.]

Brief.—The oil enters by a pipe at the top, and passes down the V-shaped troughs, descending spirally on the sides of the chamber, until the level of the oil is above the perforated air-chamber. The dams in the troughs retain some of the oil. Air enters a central cylindrical air-chamber, from which it passes by pipes to the perforated annular air-chamber below. Some air from the external blast-box passes through a contiguous chamber, in which hydrogen is generated, so as to convey that gas into the carbureting-chamber. The oil is kept heated by a cylinder continually supplied with hot water, upon which the air-supply cylinder rests.



168,910.



1. The air-reservoir B, connected, by means of pipes b b, with the hollow foraminous concentric wall H, substantially as and for the purpose described.

2. In a carbureting-vessel, the descending spiral channel J, with its partitions e e, substantially as and for the purpose described.

168,911. Brick-Machines. Saml. Martin, Rochester, Mo. [Filed Oct. 2, 1875.]

1. In a brick-machine an endless chain composed of molds pivoted together, and each mold having a movable follower, in combination with pressure-rollers arranged in pairs above and below the molds, substantially as and for the purpose set forth.

2. In a brick-machine, having an endless revolving chain of molds, the combination of the force-wheel G, supporting-wheel I, and the compress and counter-compress rollers G' I', constructed and arranged substantially as and for the purposes herein set forth.

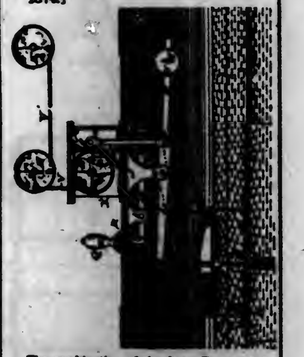
3. The grooved counter-compressing rollers I and I', in combination with the molds C, pressure-rollers G and G', and sections D', D', and D', all constructed and arranged as and for the purpose set forth.

4. The spring wheel or roller P, arranged to operate on the followers in the molds, for the purposes set forth.

168,912. Devices for Changing Speed. Jos. W. Mead, Dupont, Ind. [Filed Aug. 28, 1875.]

The combination, with drive-shaft A and driven shaft B, having cone-disks A' B', of a corresponding double-disked shaft, C, supported in spring-held slide-bearings, as and for the purpose specified.

168,913. Steam-Boiler Deflectors. A. Moon, San Francisco, Cal. [Filed Dec. 20, 1874.]



The combination of the lever B, provided with the adjustable attachment Y, and valve-plug c with the whistle Q and balanced lever L, attached to the float A, and provided with rod b for actuating the spindle a, projecting arm X, connecting-rod V, and weights on the float-lever B, substantially as and for the purposes herein set forth and specified.

168,914. Governors for Steam-Engines. Nathan R. Nash, Westerly, R. I. [Filed Mar. 26, 1875.]

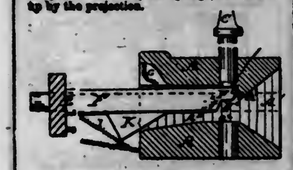
Brief.—The valve-seat is provided with small projections, which keep the valve from sticking.



The combination of the steam-pipe A, valve-chamber B, having a seat, b, provided with the projections c, weighted or spring-valve C and stem D, all constructed and arranged substantially as herein specified.

168,916. Car-Couplings. Daniel A. Mowcom, Hatcher's Station, Ga. [Filed July 27, 1875.]

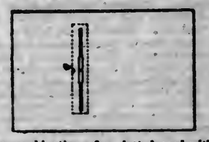
Brief.—The retaining-piece, which supports the pin, is worked by the springs, and thrown up by the projection.



In a car-coupling, the combination, with the bumper A, having the projection A' and guides D, of the springs G H I, and the retaining-piece F, having the projection F', arm-piece E, and inclined projection K, substantially as and for the purpose set forth.

168,918. Calendars. Charles E. O'Neill, Boston, Mass. [Filed July 24, 1875.]

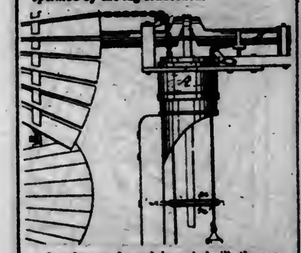
Brief.—The leaves of the calendar-sheets are inserted through suitable slots in the stiff board back, and secured firmly thereto by a bend metal clip.



The combination of a slotted card with a fastener, f, and a series of sheets or slips of paper, substantially as set forth.

168,917. Windmills. John C. Ormiston, Geneseo, and Edmund S. Sager, Erie, Ill. [Filed Feb. 19, 1874.]

Brief.—A balanced revolving windmill, in combination with a crank-axle and a bent having arms, and a double pivot-box held by brasses and bolts, also cross-head and sails, all operated by the lag-connection.

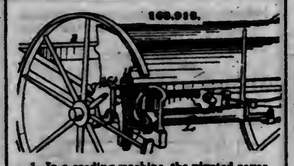


In a balanced revolving windmill, the combination of the crank-axle B with the bent F, having arms f, the yoke R, having its ears pivoted to the double pivot-box s, and held by brasses H and bolts, with the joint cross-head G, having the sails I revolved and operated by the lag d, connection d', and lag on crank E, all operating substantially as herein set forth.

168,919. Grain-Drills. Charles B. Fabris and J. S. Bogle, Springfield, Ohio. [Filed May 18, 1875.]

Brief.—A pivoted cover allows different-sized gears to be interchanged upon the feed-wheel shaft, to increase or diminish the amount of seed sown, and also to cover the gear and keep the dirt out. The traveling rocker-bar, upon which the lever that carries the pinions is adjusted, is supplied with fine teeth, allowing an adjustment for any size of wheel or inequality of make.

168,920. Reaping-Machines. Jas. Appleby, Jr., Chicago, Ill. [Filed Aug. 14, 1875.]



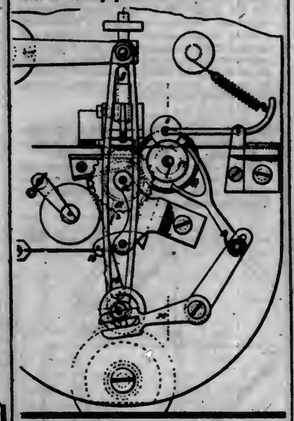
1. In a reaping-machine, the pivoted cover-plate H, in combination with the removable pinion P on the distributer-wheel shaft, for protecting said pinion and holding it in place on its shaft, substantially as described.

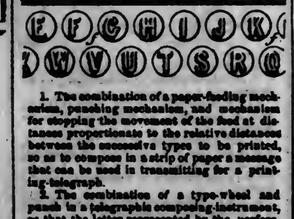
2. The divided cover H H', partly fixed and partly pivoted and movable, for protecting the gearing and permitting the removal of the pinion on the distributer-wheel shaft, as described.

3. The ratchet-bar F, constructed as described, in combination with the shipping-lever E, for permitting the change of pinions and for holding said lever E at any desired point of adjustment, as described.

168,919. Printing-Telegraphs. George M. Phelps, Brooklyn, N. Y. [Filed Mar. 25, 1875.]

Brief.—Type-printer controlled by a perforated slip of paper.





1. The combination of a paper-feeding mechanism, punching mechanism, and mechanism for stopping the movement of the feed at distances proportionate to the relative distances between the successive types to be printed, so as to compose in a strip of paper a message that can be used in transmitting for a printing-telegraph.

2. The combination of a type-wheel and punch in a telegraphic composing-instrument, so that the letter represented by the perforation is printed simultaneously with the perforations, as set forth.

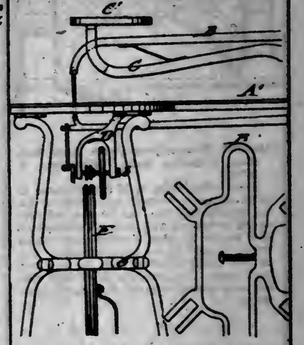
3. The range of pins f, operated by keys, the revolving type-wheel c, shaft c', and arm e, in combination with the paper-feeding mechanism, punch, and punch-actuating devices, brought into operation when the type-wheel is stopped, substantially as set forth.

4. The combination, with a type-wheel and punching, feeding, and stopping mechanism, of an additional paper-feed, actuated independently of the motion of the type-wheel, substantially as and for the purposes set forth.

5. A telegraphic transmitting-strip of paper, perforated with holes at distances apart proportionate to the relative distances of the characters required on a type-wheel, and with additional length between the perforations, to allow for the time during which the type-wheel is detained in printing, substantially as set forth.

168,922. Scroll-Sawing Machines. J. E. Plummer, Bryceldyn, N. Y. [Filed Aug. 14, 1875.]

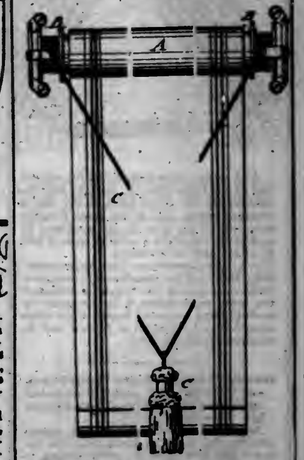
Brief.—The rear table-extension, to which the saw-frame is pivoted, is provided with a curved arm, which supports a shelf for the oilers, wrench, &c., and also with slotted arms, which form a guide above and below the table.



1. A reciprocating saw-frame, B, combined with and pivoted to a table-extension, A', whose slotted arms C D form a guide therefor above and below the table, as and for the purpose set forth.

2. A rear table-extension, A', provided with a curved arm, C, supporting a shelf, C', as and for the purpose specified.

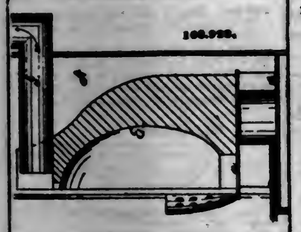
168,921. Curtain-Fixtures. R. J. Pospisil, Chicago, Ill. [Filed Sept. 11, 1875.]



The combination of the curtain-roller, having pulley-shaped roller-ends, with a cord arranged to be wound in opposite direction on the roller-ends, and guided in front hooks of the spring-brackets, for raising or lowering the curtain, substantially in the manner and for the purpose set forth.

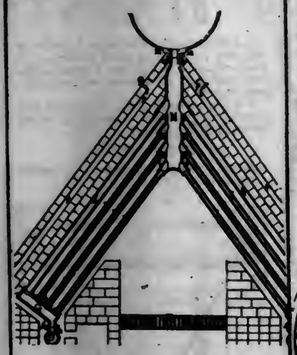
168,923. Heating-Stoves. Louis M. B. Bevenot and Vincent Marty, New Orleans, La. [Filed Feb. 9, 1875.]

In a fire-place stove, the combination of the casing A, fire-clay back B, and a narrow open passage, F, between the back and the front casing, and extending down to the horizontal line of the grate, substantially as and for the purpose specified.



166,926. STEAM-GENERATOR. David Renshaw, Cohasset, Mass. [Filed Mar. 9, 1875.]

Brief.—The boiler is of conical shape in cross-section, a vertical water-chamber being immediately over the furnace, and connected at each end with lower water-chambers by a number of tubes, the aggregate area of which is equal to the water-chamber. Circulation is maintained through the lower and outer tubes. The generator is provided with the usual steam-drum and blowing-off apparatus.

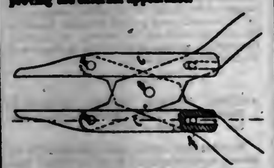


1. A section for a sectional boiler, consisting of an upper pipe, H, opening into the steam-drum, two lower pipes, G, the pipe H arranged above, and at the same distance from, each of the pipes G, and connected to each of the pipes G by a series of pipes, J and K, substantially as described.

2. A boiler, consisting of an upper water-body, H H, and the steam-drum I, the upper water-body opening into the steam-drum, and two lower water-bodies, G G, the upper water-body being connected to each of the lower water-bodies by a series of pipes, J and K, substantially as described.

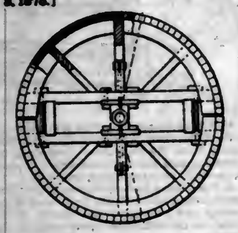
166,946. PARALLEL PLIERS. Henry B. Russell, Woodbury, N. J., assignor of one-half his right to Isaac S. Russell, New Market, Md. [Filed Sept. 4, 1875.]

Brief.—The slots in the jaws, that engage with the pins upon the levers, extend to the end of said levers, and but partly through, to facilitate the assembling of the parts, and improving the external appearance.



Pliers having pins D F equally distant from fulcrum B and jaws C, pivoted on the pins D, and provided with open-slotted rear ends, as and for the purpose specified.

166,966. BULL-WHEELS FOR OIL-WELLS. John Schollhopf, Titusville, Pa. [Filed Apr. 8, 1875.]



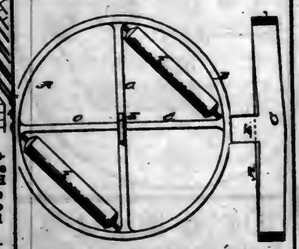
The wheel made of sections attachable and detachable from each other and the hub or shaft by means of fastening-bolts, as shown and described.

166,986. VERMIN-EXTERMINATORS. Valentine Schmidt, San Francisco, Cal. [Filed Aug. 31, 1875.]

The process herein described of coating grain with a poisonous mixture, consisting of mixing the poison to be used with pulverized sugar and washing the grain in water, then pouring the dry mixture on the wet grain and stirring until the grains are coated with the poisonous mixture, and then coating the poison on each grain with flour, and, lastly, drying by natural evaporation or artificial means, substantially as set forth.

166,967. REMEDY FOR HARDENING AND TEMPERING CIRCULAR SAWS. Anthy. Schmitz, St. Louis, Mo. [Filed July 6, 1875.]

Brief.—The saw is placed on the frame and run into the furnace. The frame or support turns upon its pivot, and the saw is equally heated above and below.



1. The combination of the rim B, arms C C C C, post E, and pivot D, substantially as described.

2. The combination of the arms C C C C, post E, and pivot D, substantially as described.

3. The combination of the arms C C C C, rim B, and post E, substantially as described.

4. The combination of the arms C C C C, pivot D, and rollers F F, substantially as described.

5. The combination of the rim B and rollers F F, substantially as described.

6. The combination of the arms C C C C and rollers F F, substantially as described.

7. The combination of the rim B, arms C C C C, rollers F F, pivot D, and post E, substantially as described.

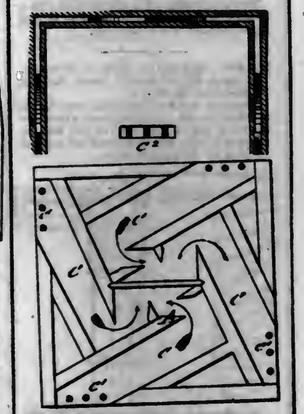
166,968. LATHES FOR TURNING OVALS. L. K. Scotford, Burlingame, Kans. [Filed Sept. 28, 1875.]

Brief.—The movements of the sliding templates can be varied, for producing ovals of different forms, by means of an adjustable stud projecting from a stationary center through a longitudinal slot in the face-plate, in connection with the rotating cone-pulleys, by which it is turned upon the stationary center.

The combination of the adjustable stud F with the stationary center E, rotating cone-pulleys A A, and sliding plate C, substantially in the manner described.

166,969. COMBUSTION OF JAMS. John A. Seaber and James C. Croxton, Rockwell, Tex. [Filed June 12, 1875.]

Brief.—The jail is constructed with double floors and walls. The air entering at the bottom is carried by the channels shown to the center, and passes upward and out by ventilating flues, then ventilating the building and the space between walls. As constructed, no communication is possible with the outside; the escape of prisoners is prevented.

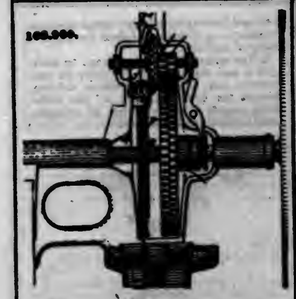


The combination, with ventilating double walls, of double floors having channels O running from walls to center of building, and grated openings O' O', as and for the purpose specified.

166,970. HARVESTER-GEARING. John F. Silberling, Akron, Ohio. [Filed Apr. 7, 1875.]

The combination of the spur-wheel, with its two sets of teeth alternately and intermittently arranged on its periphery with respect each to the other, the correspondingly-constructed spur-pinion, the bevel-wheel on the same shaft, and turning with the pinion, and the bevel-wheel on the crank-shaft, crossing the line of the main axle, these several members being arranged, as described, within the inclosing case, and operating in combination, substantially as set forth, to drive harvester-cutters.

166,969.



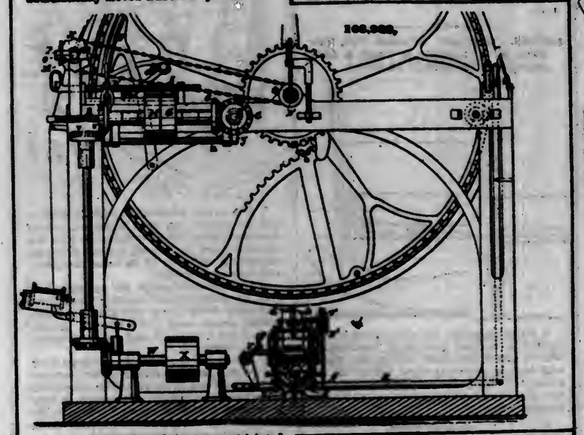
166,981. WASHING-MACHINE. Irvin A. Shaw, Grand Meadow, Minn., assignor to himself and John H. Jordyn, same place. [Filed Aug. 6, 1875.]



The combination of the rollers C C D, the springs E, and the endless aprons G, provided with stretchers f' and hooks f^2, with the semi-cylindrical side-box A, substantially as herein shown and described.

166,982. YARN-FEEDING MACHINES. Jos. Short, New Brunswick, N. J. [Filed Mar. 18, 1875.]

Brief.—The yarn is wound upon the drum, when the car carrying the printing-wheel is automatically moved transversely to it.



1. The combination of the two-part jointed rod O P, connected with the pulley X, and rod L M, the hole of the pulley being adapted to slide the rod in and out of it, substantially as specified.

2. The counter-shaft W, pulley X, belts a a, pulleys f f^1, shipper s, arm t, rod u, arms r, and the curved bars p on the car, in combination with the car-driving pulley f^2, substantially as specified.

3. The rails e and cross-tie e', formed together in one piece, and combined with the supporting-cleats f', fastening-screws g, and adjusting-screws g', substantially as specified.

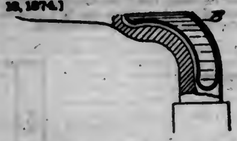
4. The bearings f^3, for the driving-pulley shaft i, arranged in vertical slots i', and its adjusting-screws f^4, in combination with the vertically adjustable rails, substantially as specified.

5. The jointed and hinged supporting-bar A^1, and the fastening-bar a^2, in combination with the cylinder A, substantially as specified.

6. The hand-lever F, link F', and hook G', combined with the extension D' of the cylinder-shaft, substantially as specified.

7. The weighted vibrating lever f^5, the cylinder-brake f^6, belt-shipper l, and its sliding rod, all combined, as shown and described, to operate as specified.

166,983. HANDLES FOR BORING-TOOLS. H. Stanley, St. Johnsbury, Vt. [Filed Apr. 29, 1874.]



The combination, with handle A, of the arc-shaped spirit-level B, having a graduated scale thereon, and located within a correspondingly-curved part of the handle, as and for the purpose specified.

166,984. HAY-TROUGH. O. W. Stearns Johnson, Vt. [Filed Sept. 11, 1875.]



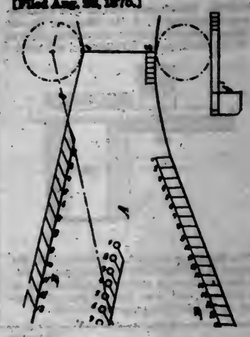
The curve-trough formed of the semi-cylindrical sections A, made with half-ring tenons upon their end or ends, and the semi-cylindrical couplings B, made with half-ring sockets in their edges, and provided with spikes C, substantially as herein shown and described.

166,985.

166,986. PROCESSES OF MAKING PERMANENT COMPOSITIONS FOR DESTROYING GOPHERS, SQUIRRELS, &c. Jas. G. Steele, San Francisco, Cal. [Filed Aug. 6, 1875.]

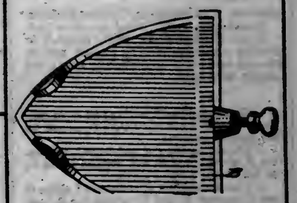
The process, without soaking, of partially softening the wheat in a hot-water bath, apparatus, by means of a limited quantity of water and heat, as that, without bursting or destroying the grain, the germinating principle within it is destroyed, and at the same time the grain does not become soaked but rendered slightly absorbent of the solutions to be presented to it; and then charging or saturating the wheat so prepared and while warm with solutions of sulphate of strychnine and corrosive sublimate, and then incorporating with it and covering it by the aid of heat, with a mixture of granulated sugar and flour, all substantially as described.

166,986. TAILORS' DRAFTING APPARATUS. Matthew C. Van Eyck, St. Paul, Minn. [Filed Aug. 28, 1875.]



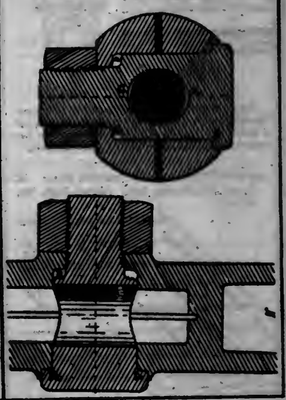
The confronter and transfer or scarf A, constructed as described, provided with the scales B C D, arranged in the manner shown, substantially as herein shown and specified.

166,987. MAD-IRON STOVE. V. C. Thebaud, Buffalo, N. Y. [Filed Sept. 28, 1875.]



A shoe for mad-irons, made with external flange, having curved side extensions at the front and a fastening-screw at the rear part to be readily applied to the iron, substantially as and for the purpose set forth.

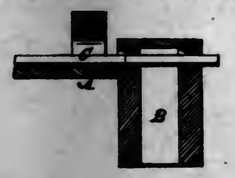
166,988. CRUSHER FOR ROCK-DRILLS. Hugh Thomas, New York, N. Y. [Filed Oct. 7, 1875.]



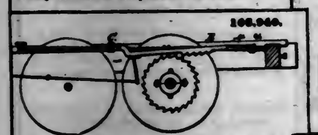
1. The chuck-bolt B D, with an oval or elongated hole embracing the drill-chuck, and securing the same with one nut, substantially as set forth and described.

2. The combination of the chuck A and the chuck-bolt B D, substantially as and for the purpose described.

168,939. Separator-Shoes for Threshing-Machines. A. D. Thomas, Mount Ulna, Iowa, assignor of one-half his right to W. D. Thompson. (Filed Mar. 27, 1875.)



The discharge-spout A, delivering into the elevator B, and provided with a screen or riddle passing through and beyond the casing of the elevator, and over the elevator, substantially as and for the purpose set forth.



168,940. Car-Starters. Morten Toulmin, Washington, D. C. (Filed Apr. 8, 1875.)

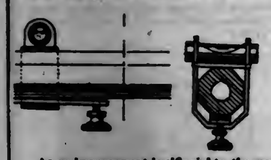
Brief.—Notched-wheel rigidly attached to running-wheel operated by ratchet-bar, ordinarily held out of connection by spring, but drawn in by draft.

1. The ratchet-bar B, having arm B', in combination with bar H and spring D, as and for the purpose set forth.

2. The combination of slide-bars I, ratchet-bar B, slides C and G, and springs A and D, as and for the purpose set forth.

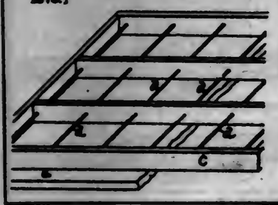
3. The combination of slide-bars I, slides G and C, springs A' and D, ratchet-bar E, having arm B', and bar H, as and for the purpose set forth.

168,941. Gun-Sights. Wm. M. Treadway, Port Henry, N. Y. (Filed Oct. 2, 1875.)



As an improvement in rifle-sights, the combination, with the barrel of a rifle or gun, of a spirit or other level, adjustable thereon between the sights, substantially as specified.

168,942. Devices for Turning Eggs. R. Tyler, Ellsworth, Me. (Filed Sept. 13, 1875.)

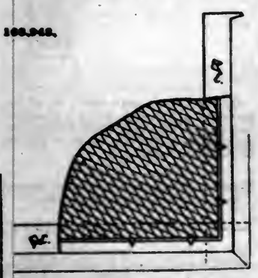


The device for turning eggs herein described, consisting of a horizontal frame, *c*, provided with cross-wires *d*, operating to turn or roll the eggs when the frame is moved horizontally, in combination with a flat surface, *a*, upon which both frame and eggs rest, substantially as set forth.

168,943. Bridging for Oil-Cloth and Matting. Alex. Underwood and Eddy A. Underwood, Newark, N. J. (Filed Nov. 27, 1874.)

Brief.—The lower part of the folded strip is the wider, and is provided with points to engage with the oil-cloth.

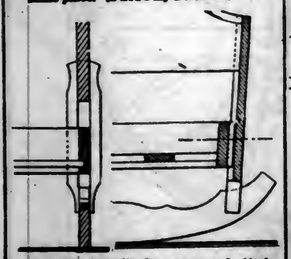
The strips for an oil-cloth binding, folded with the lower fold C the broadest, and the points E struck up from this fold, substantially as and for the purposes specified.



168,944. Mosses or Curing Moss. Peter Unsworth, Algiers, La. (Filed July 17, 1875.)

The process of curing moss by immersing and boiling the same in a solution of caustic soda to which stannah, fustic, japonica, burnt amber, and copperas have been added, as set forth.

168,945. Cradles. Fredrick Voth, New York, N. Y., assignor to Faust & Rice, same place. (Filed July 24, 1875.)



A bedstead, cradle, &c., constructed of bed-posts with inclined grooves, in combination with a connecting-frame having end pieces with inclined projecting edges, fitting into the posts, to be firmly retained by the wedge action of the same, substantially as and for the purpose set forth.

168,946. Ashand Bushings. Alex. Voltaire, New York, N. Y., and Chas. H. Ball, Philadelphia, assignors to James W. Queen, Philadelphia, Pa. (Filed Sept. 28, 1875.)

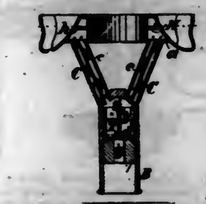
1. The shell A, bent or struck to make the flange *a*, ring *a'*, lip *a''*, and skirt A', containing the chamber A², substantially as shown and described.

2. A burner and chimney-holder formed in one piece, substantially as set forth.

3. The flutter-wheel B, or chuck and distributer, arranged in the tube B, above the cover C, substantially as shown and described.

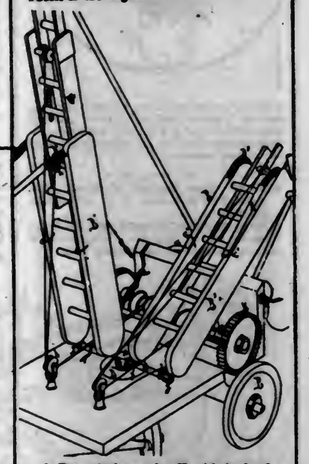
4. The spiral blades *c*, located in the arms C C, and forming in each two spiral channels or passages to divide and deflect the gas-currents, as set forth.

5. The collar E, having openings or passages *b*, and employed to distribute the gas-currents and provide a uniform delivery through the burner-openings *c'*, said collar being located in the chamber A², substantially as shown and described.



168,947. Firemen's Ladders. C. Ward, Boston, Mass. (Filed June 8, 1875.)

Brief.—The ladders are pivoted at their lower ends to a swiveled cross-bar, and are elevated by means of ropes on differential drums, said drums being operated by cog-wheels which mesh into cog-wheels on the wheels of the wagon.



1. The swivel cross-bar F, with its head *e*, and its spindle and stop D, constructed as shown and described, in combination with the end eyes *g* and the ladder, and carrying and supporting the latter by its lower ends, substantially as described.

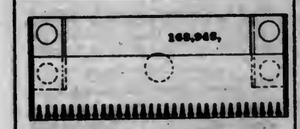
2. In combination with the extension-ladders, the elevating and hoisting mechanism, consisting of the larger and smaller proportionate drums *a* and *b*, the gears K and H, cords *d* and *f*, wheels *h*, and rolls *n*, substantially as described.

3. Hoisting-drums *a* and *b*, and their shaft and gears K and movable end-rive to connect with the driving-gears H, and to disconnect therefrom, substantially as described, in combination with the rear wheels B, and with the extension-ladders, by cords *d* and *f*, and wheels *h* and *n*, or connecting mechanisms.

4. The spring-connected strain K, in combination with the section B' of the ladder, substantially as described.

168,948. Male-Kiln Floors. Paul Wehrig, Hazen, Prussia, assignor to Frederick W. Wolf, Chicago, Ill. (Filed July 17, 1875.)

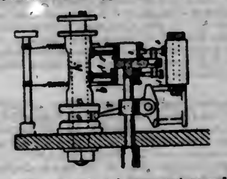




A malt-kiln floor constructed in sections and consisting of the frame A, cross-ties a a, and blade-shaped rods or wires *b b* secured by swaging down upon them the metal of the cross-ties, substantially as and for the purpose set forth.

168,949. Printing-Telegraphs. Charles J. Wiley, New York, N. Y. (Filed Apr. 6, 1875.)

Brief.—For shifting the printing from one to the other of the type-wheels, and vice versa.



1. The type-wheel *d*, connected to and revolving upon a circular bearing upon the lever *b*, and the second type-wheel *a*, similarly connected to the lever *a*, in combination with the shifting-cam *k*, that acts upon the levers, and the means for raising the type-wheel that is not in action off the paper, as set forth.

2. The two type-wheels independent of the shaft by which they receive a step-by-step movement, and sustained by levers, in combination with the mechanism for printing and for moving the levers by the motion of the printing-lever, substantially as set forth.

168,950. Windmills. Abner Wilcox, Cascade, Minn. (Filed Jan. 26, 1875.)

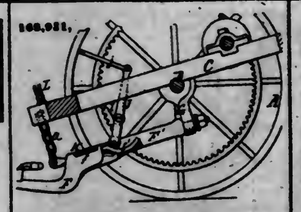
Brief.—The trough for holding the water is provided with suitable journals, applied to the pedestals or blocks on the base. The journals of the trough are located at such distance from the center that the preponderance of weight of the trough is at its front end. There is a box or receptacle, with a weight or counterpoise, combined with the trough.



The combination, with the trough or water-reservoir, having the rod F for connecting it with the windmill, of the adjustable bearings G and H, for regulating the pitch of the reservoir, substantially as and for the object specified.

168,951. Mowing-Machines. Walter A. Wood, Robert Bowhay, and John M. Rosebrooks, Hoosick Falls, N. Y., assignors to Walter A. Wood Mowing and Reaping Machine Company, same place. (Filed June 12, 1875.)

Brief.—The hand-lever which raises the frame, and with it the inner end of the finger-bar, is connected to a lever pivoted on the frame, and acting through a friction-roll on its lower end upon a concave eccentric-head, lug on the inner side of the rolling shoe, so as to raise the outer end of the finger-bar simultaneously with the inner.

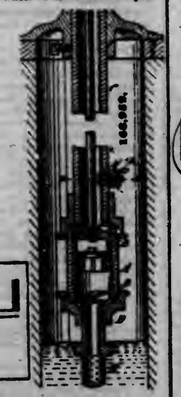


1. The pivoted shoe F, provided with the heel, spur, or projection *f'*, having the curved eccentric surface, in combination with the lever J, arranged and operating substantially as and for the purpose described.

2. The combination of the lifting-segment K for raising the inner end of the cutting apparatus with the lever J connected therewith, and the heel projection *f'* on the pivoted shoe for raising the outer end of the cutting apparatus, the combination being and operating substantially as described.

168,952. Pumps. William Young, Easton, Pa. (Filed Aug. 9, 1875.)

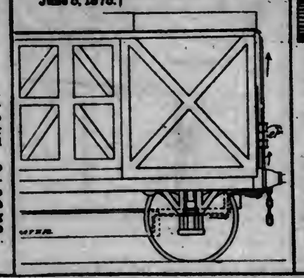
Brief.—The base is made adjustable upon the connecting-pipe by collar projecting downward and set-screw. A waste-valve is employed, which is actuated by a spring of such tension that when the pump is forcing the valve will close, but under the pressure only of the column of water in the tube will open.



1. The base-plate I, connected to the tube O, and made adjustable by the socket J and set-screw K, and the said socket being projected below the plate, substantially as specified.

2. The waste-valve N, case-piece O, perforated nut R, and spring P, combined with the tube O, substantially as specified.

168,953. Refrigerator-Cars. John Pratt Ashdown, Cheltenham, England. (Filed June 5, 1875.)



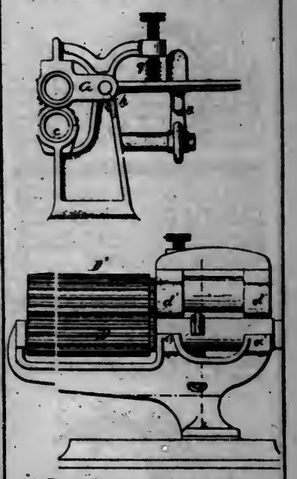
1. The carriage-body constructed, substantially as hereinbefore set forth, with layers of felt secured between inner and outer trellis-work extending around its sides and ends.

2. The combination, substantially as hereinbefore set forth, with the frame of the carriage-body, of the inner and outer trellis-work, a layer of felt secured between the trellis-work, and the perforated water-pipe to moisten the center layer of felt.

3. The combination, substantially as hereinbefore set forth, of the carriage-body frame, the trellis-work, the layers of felt, the perforated water-pipe, the pump, and the water-tank.

4. The combination, as hereinbefore set forth, of the carriage-body surrounded by layers of felt, and the roof, having an opening between it and the top of the body of the carriage, for the purpose specified.

168,954. Fleshing-Machines. H. Albrecht, Philadelphia, Pa. (Filed Sept. 7, 1875.)

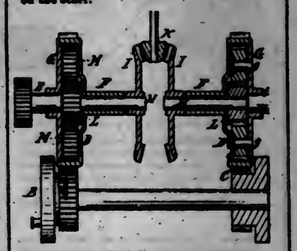


1. The combination in a fleshing-machine, of a lower fleshing-roller, supported at both ends by bearings, with an upper fleshing-roller, having bearings at one end only.

2. The combination of the upper fleshing-roller D', with the pivoted frame G, and its two bearings, *d' d'*, adapted to the journal of the said roller, as set forth.

168,955. Differential Gears for Traction-Engines. Jas. B. Annin, Rochester, N. Y. (Filed Dec. 10, 1872.)

Brief.—Decrease of speed on one side, in turning corners for instance, accelerates speed on the other.

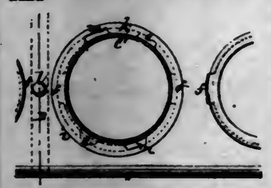


1. In combination with two sets of gearing, connected by an intermediate pinion, the two sets of cog and pinion gears L M M and L M M, in order that the retarding of one of said gears L may accelerate the corresponding gear L on the other side, substantially as and for the purpose specified.

2. In combination with the wheels C C, which impart an equal motion to both sets of gearing, the box-gears D D, which engage therewith, and the heads or disks G G, which rest within the box-gears, when said box-gear and heads are so arranged as to run free of each other, and are connected by internal gears, which impart a motion from one to the other, as herein shown and described, for the purpose specified.

168,956. DEVICES FOR SECURING AND ADJUSTING SPRINGS-RINGS. J. B. Atwood, Mansfield, and H. Atwood, Willimantic, Conn. [Filed Jan. 12, 1875.]

Brief.—The ears on the rings are passed through the openings in the rail, and the ring is then turned so that as the ears pass along beneath the rail the rings will be clamped to place; the eccentric washers, which rest in recesses on top of the rail and against the neck of the ring, serving to adjust the ring into concentricity with the spindle of the frame.



The combination, with the rings constructed with the ears *a*, and the ring-rail having the openings *f*, the concentric recesses or seats *i* and the inclines *h* of the eccentric washers *k*, having openings or notches *m*, substantially as and for the purpose described.

168,957. TRUSSES. Samuel Ayres, Richmond, Va. [Filed Nov. 28, 1874.]

Brief.—An open metallic securing-loop has a projecting annular center, through which it is secured upon a bearing-plate, with corresponding depression. A screw secures these two parts to the pad proper.



The combination, with a trap-pad, of a loop, K, having an annular projection, *b*, a bearing, *l*, plate L, and screw *m*, all constructed and operating substantially as described.

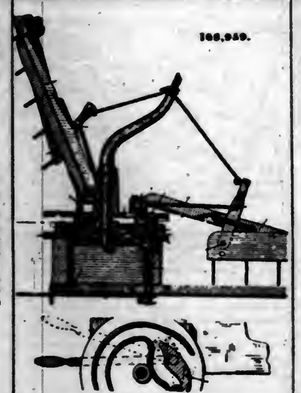
168,958. LOCK-NUTS. Samuel O. Barber, Scranton, and Abel Barber, Wyoming, Pa.; said Samuel O. Barber assignor to said Abel Barber. [Filed Aug. 4, 1875.]



In combination with a bolt, B, and nut, *b*, the washer A, provided within its outer face with the right-angled grooves *a'* and *a''*, and the key C, having a right-angled form longitudinally, and arranged to fit into said grooves substantially as and for the purpose specified.

168,959. HARVESTER-RAKES. John Barnes, Rockford, Ill., assignor of one-half his right to Ralph Emerson and William A. Talcott, same place. [Filed July 10, 1875.]

Brief.—A rest of rubber is carried upon a vertical rake-post, and actuated, by means of a switch and spring, to rest alternately or successively.



168,959.

1. The combination, substantially as herein before set forth, of the fixed cam-plate, the rake-post, the crown-plate revolving around the rake-post, a rake-arm pivoted on the crown-plate, the swinging arm pivoted on the crown-plate, a swiveling pitman-head and friction-rollers carried thereby, the link-connection between the swiveling head, the rake-head, and the rake-post, and the switch, for the purposes specified.

2. The combination, substantially as herein before set forth, of the cam-plate, the switch pivoted thereon, the revolving crown-plate, and friction-rollers mounted on swinging arms carried thereby, whereby the switch is automatically reset in alternately opposite positions by the passage of the rollers.

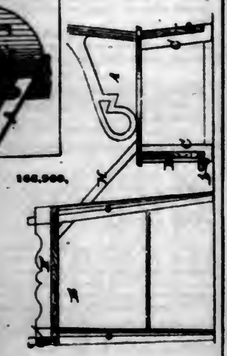
3. The combination, substantially as herein before set forth, of the cam-plate, the switch pivoted thereon, the revolving crown-plate, friction-rollers mounted on swinging arms carried thereby, the switch-lever, and the spring thereon, whereby the switch, although alternately moved in opposite directions by the passage of the rollers, is immediately reset by the spring into proper position.

4. The combination, substantially as herein before set forth, of the cam-plate, switch, rake-post, crown-plate, rake-arms, swinging arms carrying the friction-rollers and swiveling pitman-heads, and the detachable link-connections between the pitman-head and rake-head, whereby the latter may be thrown out of operation as rakes when desired.

168,960. NURSERY-CHAIRS. A. H. Barnes, New York, N. Y. [Filed Sept. 28, 1875.]

A child's high chair constructed of the seat A, stand E, links H, and locking device *a b*, all combined and operating substantially as described.

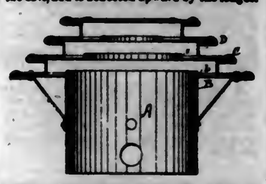
168,960.



168,960.

168,961. VENTILATING-CAPS. Lewis F. Botts, Chicago, Ill. [Filed Sept. 28, 1875.]

Brief.—The wind passes horizontally over the exit, and is deflected upward by the ledges.



1. The combination of a series of flat parallel annular flanges, B C D E, provided with ledges *e e* and disposed perpendicularly to the axis of the pipe A, for the purpose specified.

2. The combination of a series of flat parallel annular flanges, B C D E, constructed according to the formula of relative proportions herein specified, to form a ventilating-cap.

3. In combination with the annular plates B C D E, the strips F, fashioned as set forth, and secured as described.

168,962. BARN-BURNING STOVES. Lewis F. Botts, Chicago, Ill. [Filed Sept. 28, 1875.]

Brief.—Air is supplied to the combustion-chamber through the tubular bars composing the fire-pot, and the draft is downward. A direct or indirect draft in the base is effected by means of the gate.



1. A fire-pot composed of tubular bars C, open at each end, and at the upper end communicating with the outer atmosphere through orifices *e*, substantially as shown.

2. The fire-pot composed of bars converging downward toward the center, combined with a close plate, E, supported at a little distance below said fire-pot, and draft-inlets above said fire-pot, as and for the purposes set forth.

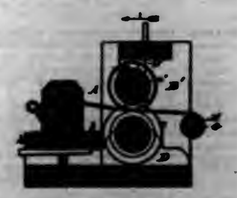
3. The conical fire-basket, composed of bars converging downward toward the center, with draft-inlets above and conical below said fire-basket, and with its close bottom plate E, combined with the funnel-plate G, open at its center and below said close plate, as set forth.

4. The box H, with the outlet-flue I at its back, combined with the gate J, arranged as described, to close direct draft and cause the same to circulate, as set forth.

5. The funnel G, box H, and gate J, combined with the cinder-shell *i*, for the purpose set forth.

6. In a single stove, the combination of a magazine, with draft-inlets at or near its base, a conical fire-pot or basket open at the center, a close plate below said opening to support the fuel, a funnel-plate below, with an opening at its center, to concentrate the products of combustion as they pass to the base of the stove.

168,963. PAPER-TENSIONING MACHINES. D. T. Broughton, Parkersburg, W. Va. [Filed Mar. 27, 1875.]



1. In a paper-trimming machine, the frame A, consisting of the base A^1, the top A^2, and the standards B B', with cleat D and pendent arm D^1, in combination with the feeding and guiding rolls O O', journaled and supported in the manner described.

2. The roll O', in combination with the pendent bracket D^1 and the adjustable spring-brace E, substantially as and for the purpose set forth.

3. The square receiving-shaft G, provided with a metallic cap or half-sleeve, H, substantially as and for the purpose set forth.

4. The parallel rails *k k* forming a raised track for the carriage *h* of the paper roll, the latter provided with longitudinal recess *i*, adapted to slide in groove *l* in the inside faces of the rails *k*, said carriage *h* being provided with standards h^1 h^2, substantially as described.

168,964. HAIR-DRESSING MACHINES. O. M. Brown and W. R. Vaughan, Council Bluffs, Iowa. [Filed July 22, 1875.]

Brief.—The device is clamped to a barber-top or other convenient place, and hair-switches, curls, frizettes, &c., secured to the upright in different ways while being combed and dressed.

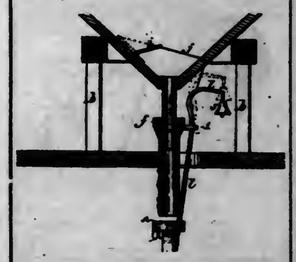


1. The combination of the clamp A and the detachable piece C, having strap D and screw-tenon *y*, substantially as set forth.

2. The combination of the clamp C, having groove *f*, and the piece C, having groove E, strap D, and hooks *d d d*, all substantially as set forth.

168,965. GRAIN-ALARMS. Noah Brenner, Mechanicsburg, Pa. [Filed July 10, 1875.]

Brief.—As grain runs low in hopper, the pressure is lightened from yielding plate, and weight of falling rod draws plate forward, and is itself lowered till it strikes against projection in eye of shoe, and bell is rung.

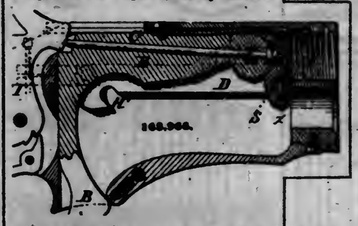


1. The combination of the hopper *c*, hinged plate *i*, cord *j*, falling rod *l*, and bell *k* with the lever *f*, perforated arm 1, and set-screw *s*, whereby both the feed from the hopper and the distance the rod *l* shall fall are regulated, substantially as shown.

2. The combination of the lever *f*, adjustable supporting-arm 1, and rod *l*, substantially as set forth.

168,966. MAGAZINE FIRE-ARMS. A. Iverson, Owego, N. Y. [Filed Oct. 15, 1875.]

1. The combination, in a magazine fire-arm, of a cartridge-carrier, a breech-block, and a receiver, the parts being constructed and combined substantially as described, whereby the carrier is caused to remain up parallel with the bore of the barrel when the breech is closed, and is operated downward by the last part of the movement of opening the breech, when its upper surface fails to receive a cartridge from the magazine, and by the first part of the movement of closing, the breech is raised to a position to allow the cartridge to be inserted into the barrel by the closing breech.



168,966.

2. In a magazine-gun, a cartridge-carrier bifurcated and pivoted at the rear end, in combination with a breech-block whose forward end moves in a horizontal plane, and whose rear end passes down between the two arms of the carrier in the act of opening the breech, substantially as described.

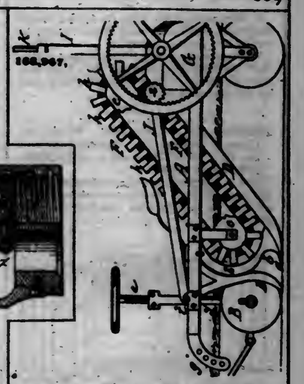
3. The cartridge-stop S, constructed substantially as described, when carried by and sliding in the breech-block B', and stopped by the rear of the opening in the receiver, as set forth.

4. The stop T, in combination with the carrier-block, so arranged that when in engagement with the latter it will prevent its backward movement and allow it to be operated by the breech-block, but when out of engagement the carrier is allowed longitudinal movement, by which it is thrown out of operative relation with the magazine.

5. In a magazine fire-arm, the combination of the sliding cover O', the rearwardly-extending lip on the upper side of the barrel, and the vibrating carrier D, to prevent the cartridge from being thrown out of the receiver by the sudden movement of the carrier, as set forth.

168,967. DITCHING-MACHINES. Martin B. Durham, Season Falls, N. Y. [Filed Mar. 26, 1875.]

Brief.—The endless belt is provided with lugs, cross-bars, fenders, and lifters, and is combined with an inclined scoop under the bottom. The main frame, with draft-bars and the driving-wheels, is combined with an axle-frame sliding upon the standard, for allowing vertical adjustment of the ditcher. The rear supporting-wheel runs in the ditch, and is adjustable by an arm, brace, and bearing sliding on an upright way, to stay the wheel. The front wheel is divided and adjustable by a screw and horizontal bearing and swivel. Two self-adjusting coupling-shafts, provided with ratchets and pawls, are connected to the driving-gearing on opposite sides of the machine, in compensate for different inclines.



168,967.

1. The endless belt F, constructed with the lugs *d d*, cross-bars *g g*, fenders *h h*, and lifters *i i*, in combination with the inclined scoop D, as and for the purpose specified.

2. The combination, with the main frame A and driving-wheels C C', of the draft-bars J J, connecting the driving-wheel with the front end of the frame, and the axle-frame I I' sliding upon the standard K, for the purpose of allowing the vertical adjustment of the ditcher, as shown and described.

3. The combination, with the axle-frame I I' and rear ditcher-wheel B', of the central standard and way K K', extending from the axle of the ditcher-wheel loosely up through the frame, for the purpose of retaining said parts in proper parallel position at different inclines, and preventing undue strain, as herein shown and described.

4. The combination, with the driving-wheel C' and rear supporting-wheel B', of the arm *r*, brace *s*, and bearing *q*, resting upon the way K', for the purpose of forming a connection between said wheels to stay the supporting-wheel, as herein described.

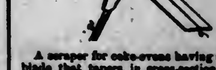
5. The combination, with the outside frame and ditcher, of the two self-adjusting coupling-shafts H H, provided with the ratchets *m* and pawls *n*, and connecting the driving-gearing with the endless-belt pulley on opposite sides of the machine, the whole arranged to operate in the manner and for the purpose set forth.

6. The combination, with the divided supporting-wheel B, of the axle-frame I, provided with the vertical standard *y*, for connecting with the elevating-screw and the horizontal bearing *f'*, for the attachment of the tongue H and scraper *v*, as shown and described.

7. The combination of standard *y* and screw *a*, provided with the heads *d' d'*, fastened by the swivel *a*, for allowing independent movements of said parts, as described.

168,968. SCRAPERS FOR COKE-OVENS. P. M. Reitzenstein, Connellsville, Pa. [Filed July 31, 1875.]

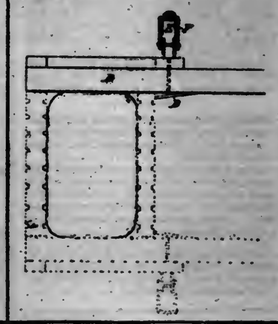
Brief.—The scraper, while in use, lies on one of its parallel edges, and is built to resist strain while in that position.



A scraper for coke-ovens having a cast-iron blade that tapers, in cross-section, from the heel *c* to the point *g*, and that has a flange, *e*, on the rear side of the blade, that tapers from the center to the edges, in combination with the wrought-iron rod *a*, roughened or made crooked on its end, as shown and described.

168,969. BALING-PRESSES. Christopher C. Campbell, East Chatham, N. Y. [Filed Sept. 20, 1875.]

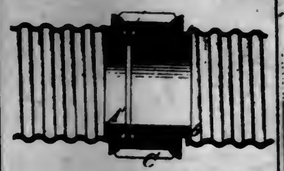
Brief.—The follower is held in the rear of the compressed bale, ready for tying, by means of the hinged leaf projecting inwardly, and operated by springs upon the outside of the press-box.



1. The combination, with the sides of a cotton-press, of hinged spring-arched leaves, as and for the purpose described.
2. The combination, with the hinged leaves D, of the springs E, carrying bolt b, pivoted links F, and adjusting-cycloids G G, as and for the purpose described.

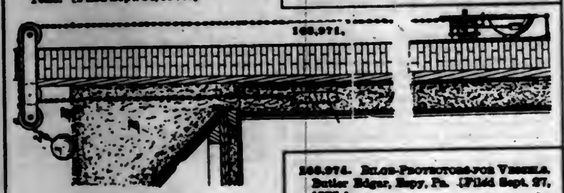
168,970. Hose-Couplings. William A. Caswell, Chicago, Ill., assignor of one-half his right to R. B. Preston, same place. [Filed Aug. 6, 1875.]

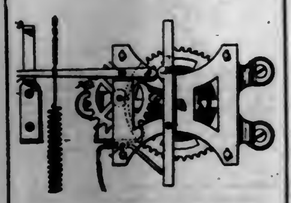
Brief.—Secured upon the contracted end of the male tail-piece is a screw-threaded sleeve, adapted to engage with the screw of the swivel.



The male part of a hose-coupling, composed of a tail-piece or its equivalent, and a screw-threaded sleeve, secured upon a contracted end of the tail-piece, substantially as for the purpose specified.

168,971. Alarms for Fences, &c. James B. Cook and James W. Heath, Memphis, Tenn. [Filed Sept. 14, 1875.]





1. An alarm or tell-tale apparatus for prisons or other structures, having one or more weights, which control the alarm mechanism, supported upon or within sand or similar gravitating mobile substance, said substance filling the hollow walls or wall-lining of said structure, and so arranged that when the wall or lining is penetrated the gravitating substance moves downward, the weight follows, and the alarm is started.
2. The combination, with the weight 1 and chain or wire 2, of the trigger 5, lever 10, and alarm mechanism, substantially as set forth.

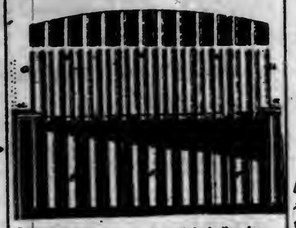
168,972. Pocket Disinfecting and Inhaling Apparatus. Henry G. Dayton, Maysville, Ky., assignor to R. P. Gleason, same place. [Filed July 24, 1875.]

Brief.—The metal case which carries the medicament is perforated, and has a hollow stem to its suspending-ring. This stem serves as an inhaler. The carbolic acid or other material used is poured upon an inclosed disk of porous substance.

The sectional inhaling and disinfecting apparatus, consisting of the perforated case A A', inhaling-stem B, ring C, and porous disks D, substantially as specified.

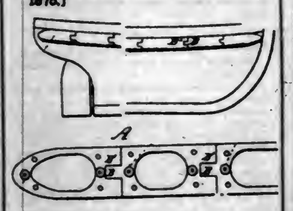


168,973. Boilers for Steam Fire-Engines. John N. Dennisson, Newark, N. J. [Filed Dec. 10, 1874.]



The combination, in an upright boiler, having tubes D, of the offset a and the drop-tubes F, whereby the water is displaced above the drop-tubes, thereby increasing the fire-surface in relation to the quantity of water in the boiler, as set forth.

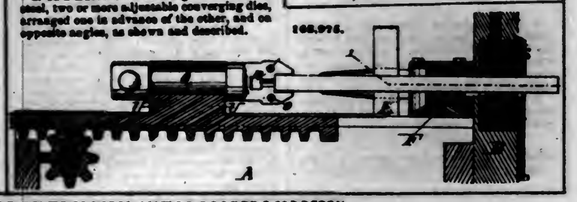
168,974. Bilge-Protectors for Vessels. Butler Edgar, Bayy, Pa. [Filed Sept. 27, 1875.]



The metallic bilge-protector A, Fig. 1, substantially as constructed, as and for the purpose specified.

168,975. Machines for Drawing and Polishing Rabs. David J. Farmer, Penn Yan, N. Y. [Filed May 7, 1875.]

1. In a machine for drawing iron and steel bars, the divided converging dies, the parts of which are capable of being brought together by means of screws, as and for the purpose set forth.
2. In a machine for drawing bars of iron or steel, two or more adjustable converging dies, arranged one in advance of the other, and on opposite sides, as shown and described.



3. In a machine for drawing iron and steel bars, the combination of base-frame A, die-blocks B, griping-jaws M, and intermediate die-blocks E, as and for the purpose set forth.
4. In a machine for drawing iron and steel bars, the combination of die-blocks E, operating-arm I, and vertically-adjustable stock K, carrying spring-catch J, as and for the purpose set forth.
5. In a machine for drawing iron and steel bars, the box U, jaws M N, having journal Q and collars q q', in combination with adjustable rotating and longitudinally-adjusting mechanism, as and for the purposes set forth.

168,976. Reciprocating Churns. Edwin A. Firby, Jr., Norwalk, Ohio. [Filed Mar. 13, 1875.]

Brief.—Slide-bars are placed between and firmly fixed to the semi-cylindrical dashers, to prevent them from interlocking while in motion.

In a churn, the slide-bars J, rigidly secured to the contiguous edges of the semicircular dashers, as and for the purpose herein set forth.



168,977. Stereotype-Blocks. Joseph L. Firm, New York, N. Y., assignor of one-half his right to C. B. Cottrell and N. Babcock, Westerly, R. I. [Filed Sept. 7, 1875.]

Brief.—The block is adjustable on the retaining-screws by means of its slots or notches.

A block, B, designed to carry a curved printing-plate, provided with slots b and notches d along its opposite marginal portions or edges, substantially as and for the purpose herein set forth.

168,978. Machine for Damping Paper. Joseph L. Firm, New York, N. Y., assignor of one-half his right to C. B. Cottrell and N. Babcock, Westerly, R. I. [Filed Aug. 12, 1875.]



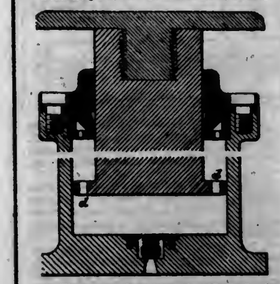
1. The combination of a sprinkler, C, with the damping-roll B, arranged to rest on the paper as it is being rolled, substantially as and for the purposes herein set forth.
2. The combination of the hinged or rocking frame A with the damping-roll B and its sprinkler C, essentially as described.
3. The combination of the spout G with the rocking frame A, the damping-roll B, and sprinkler C, substantially as and for the purpose specified.

168,979. Spinning Mules or Jacks. M. A. Furbush, Philadelphia, Pa., assignor to himself and C. A. Furbush, same place. [Filed May 22, 1874.]



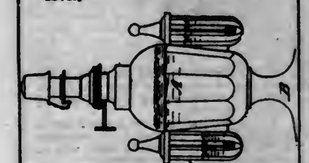
The combination of the thin slotted projection m of the frame A and the long self-adjusting bearing-block n, adapted to the said projection and to the journal p, common to two sections of the tin cylinder, as set forth.

168,980. Air-Springs for Cars. P. Giffard, Paris, France, assignor to C. J. A. Dick, Philadelphia, Pa. [Filed June 9, 1875.]



1. The recessed packing-ring H, confined to the vessel A, between the head B and center perforated plate E, and adapted to the plunger, all substantially as set forth.
2. The combination of the plunger D and its perforated guiding-flange d with the vessel A and its packing.
3. The combination of the vessel A, plunger D, and opening a in the latter, for the purpose specified.

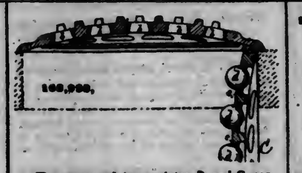
168,981. Glass Cigar-Lighters. William A. Gerby, Bellaire, Ohio. [Filed Sept. 21, 1875.]



The glass cigar-lighter, consisting of the lamp-body A, its foot B, and the side dips-suppressor C, integral with said body A, as set forth.

168,982. Vault-Covers. G. H. Gordon, Brooklyn, N. Y. [Filed Sept. 28, 1875.]

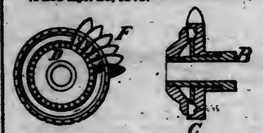
Brief.—A vault-cover composed of upper and lower perforated plates hinged together, the lower plate carrying the lenses, and arranged to drop down at pleasure, leaving the perforations in the upper plate open for ventilation.



168,983.

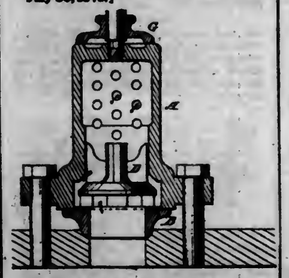
The upper and lower plates B and C, constructed with a series of perforations, b and c, substantially as described, in combination with the lenses d fixed within the recesses e of the lower plate, substantially as and for the purpose described.

168,984. Landing-Wheels for Knitting-Machines. Robt. W. Gormly, Troy, N. Y. [Filed Apr. 28, 1875.]



The combination of the bushing B and blades F with the slotted detachable plates C and D and cap-piece, constructed substantially as and for the purpose set forth.

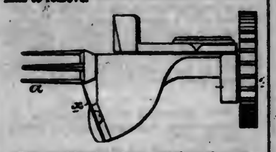
168,985. Lubricators. Amos Gould and W. M. Hayden, Rochester, N. Y. [Filed July 30, 1875.]



1. The combination of the perforated oil-cup A, conical ring B, and valve D, constructed and operating substantially as and for the purposes herein set forth.
2. The combination of the oil-cup A, having inlet-hole b, the guide-rod F, and removable cap C, substantially as and for the purposes herein set forth.

168,986. Apple-Paring Machines. Wm. M. Grierson, Reading, Pa., assignor to himself, Mathan Harbster, and Wm. Harbster, same place. [Filed June 16, 1875.]

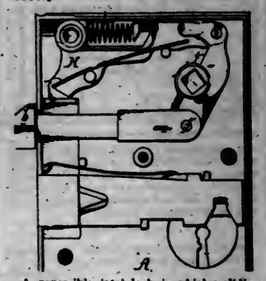
Brief.—A supplementary fixed blade is combined with the frame and pronged spindle of the machine in such a manner that the said blade will remove from the apple that portion of the skin which the ordinary paring-blade fails to remove.



The combination, in an apple-paring machine, of a blade, a, attached to the frame, with the pronged spindle A, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

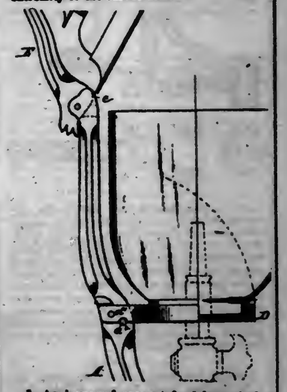
168,987. Reversible Latches. Wm. M. Griscom, Reading, Pa. [Filed July 27, 1875.]



A reversible latch-lock, in which a sliding spring-plate E, carrying a spring, b, and having a tubular projection, m, arranged as described, in respect to the screw-openings in the lock-case, is combined with a lever, F, and a swiveled latch-spindle, all substantially as and for the purpose set forth.

168,988. Street-Lamps. Jas. S. Hagerty, Baltimore, Md. [Filed Oct. 11, 1875.]

Brief.—The cap can be swung back to permit removal of globe. Its backward movement is limited by the projection on the lower extremity of the curved arm.

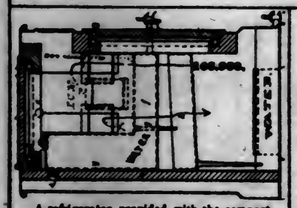


1. An improved support for a lamp shade or globe, consisting of a curved arm or standard, the annular seat D, and the cap or cover F, secured to the bent arm E, hinged or pivoted to the upper end of the standard A, and adapted to set over and secure the globe or shade to its seat, substantially as described.
2. In combination with the standard A, the hinged or pivoted arm E, which carries the cap or cover, provided with a flat horizontal bearing-surface at its lower end, adapted to set against a similar bearing-surface at the bottom of the slot in the standard A, with a projection extending to the rear of said arm A, to limit the motion of said arm E, and hold it in proper position, substantially as described.

168,989. Refrigerators and Water-Coolers. William Hammel, Baltimore, Md. [Filed Sept. 8, 1875.]

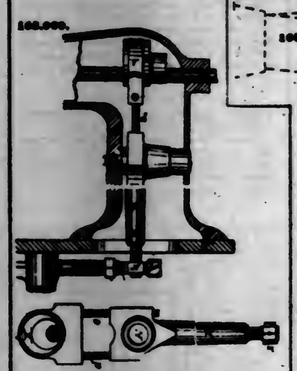
Brief.—Ice rests on inclined slats, some higher than others. Openings between slats communicate with an inferior feed-chamber; also, vertical openings in ice-box connect air of ice-chamber with a lateral feed-chamber. Against one side of ice-box rests upright part of water-cooler; its lower part, triangular in cross-section, passes under ice-box. Drip-tube from ice passes in a pipe through water-cooler into a trough, (which also collects condensation from ice-chamber,) and thence into water-chamber under the lateral feed-chamber.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.



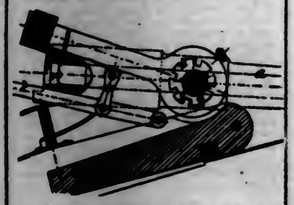
A refrigerator provided with the compartments *c* and *f*, inclined ice-tray D, thimble *g*, trough *h*, pipe *i*, and a water-bottom having a cock, *k*, the said parts being constructed and combined and operating as substantially as and for the purposes specified.

168,989. Sewing-Machines. G. Hancock, Providence, R. I. (Filed June 10, 1874.)



In a sewing-machine, the combination and arrangement of the universal joint, consisting of the pivot L, clasping-socket N, having a V-shaped bearing which grasps the said pivot, and adjustable thereto through the medium of the set-screw I, pivot a adapted to be adjusted in the sleeve m on the end of the horizontal lever H, said sleeve m being split and provided with a nut, *b*, the several parts being constructed and arranged to operate in connection with each other, substantially in the manner as and for the purpose specified.

168,990. Breech-Loading Ordnance. G. P. Harding, Paris, France. (Filed Aug. 27, 1875.)



1. The described method of mounting the trunnions of cannon, consisting in making them of two diameters, and inserting the larger diameter in a bush in the eye of the breech, and resting the smaller diameter on its bearing on the carriage.

2. The described mode of adjusting the breech-piece by means of the eccentric bushes *g*, constructed, applied, and operated as described.

3. The combination, with the breech-piece, of the lever *h*, pivoted at its forward end to the carriage at *n*, and connected, by a rigid link, *o*, to the under part of the breech-piece, as and for the purpose set forth.

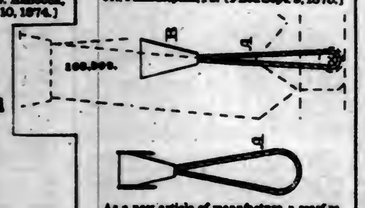
168,991. Dyeing and Calico-Printing. James Harley, Lowell, Mass. (Filed Sept. 30, 1875.)

1. The improved process herein described for dyeing in madder and indigo styles, in combination with sallies greens, consisting in first fixing the green upon the cloth with the mordants, and then passing the cloth through the dye-bath, whereby it is then dyed up in madder and indigo styles, substantially as specified.

2. The new fabric herein described, having as sallies green, substantially such as described, in combination with one or more madder or alizarine colors.

3. The combination of sallies greens upon fabrics with mordants suitable for dyeing, with garancine, alizarine, and similar dye-stuffs, substantially as set forth.

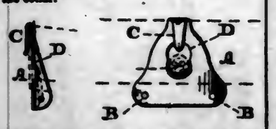
168,992. Scarf-Retainers. W. H. Hart, Jr., Philadelphia, Pa. (Filed Sept. 9, 1875.)



As a new article of manufacture, a scarf-retainer, the same consisting of the elastic cord A and the pin or pins B, combined and arranged to operate substantially as and for the purpose set forth.

168,993. Neck-Tie Retainers. W. H. Hart, Jr., Philadelphia, Pa. (Filed Sept. 9, 1875.)

Brief.—The elastic cord keeps the collar-button within the countersunk bearing, and the hook prevents the neck-tie riding up over the collar.



1. The retaining-plate A, with downwardly-projecting hook or pin C at the upper end, an attaching elastic cord, B, at the lower end, and a button-bearing, D, all combined substantially as and for the purpose set forth.

2. The plate A, with countersunk bearing D, in combination with the hook or pin C and elastic cord B, substantially as and for the purpose set forth.

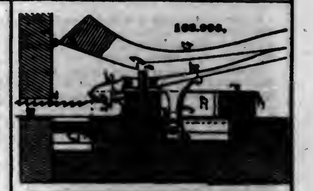
168,994. Shutting-Instruments for Attaching Buttons to Wearing Apparel, &c. D. Heaton, Providence, R. I. (Filed Sept. 20, 1875.)



In a cutting-instrument for attaching buttons to wearing apparel, the upper jaw A, constructed with a slotted recess, E, having an inclined or wedge-shaped bottom, and the lower jaw B, provided with the dies *b* and *b'*, when combined, arranged, and operating in relation to each other, substantially in the manner as and for the purpose described.

168,995. Scroll-Sawing Machines. R. Herring, Jersey City Heights, N. J. (Filed Sept. 9, 1875.)

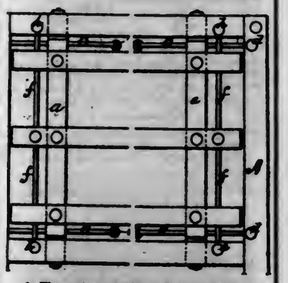
Brief.—The lower end of the saw can be instantaneously disconnected from the reciprocating holder, and automatically raised by means of a self-acting clamp applied to the reciprocating slide of the holder, in connection with a reciprocating spring-lever attached to the slide, and a stationary lever pivoted to the under side of the table.



The combination of the jaws D D and toggle-joint F F with the reciprocating spring-lever E, sliding block *i*, projecting pin I, and stationary lever G, provided with the stop *j*, constructed as shown and described.

168,996. Platform-Scales. A. W. Hall, Chicago, Ill. (Filed Feb. 20, 1875.)

Brief.—Check-rods prevent lateral movement of platform.

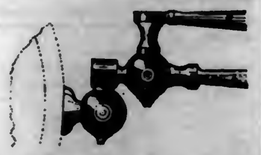


1. The weigh-platform C, in combination with the check-rods *e e* and beams A, whereby longitudinal movement of the weigh-platform is prevented, substantially as described.

2. The weigh-platform C, provided with the slots *c c'*, in combination with the check-rods *f f* and side beams A, whereby lateral movement of the weigh-platform is prevented, substantially as described.

3. The weigh-platform C and stationary frame A A', both constructed as set forth, in combination with the check-rods *e e f f*, substantially as described, and for the purpose set forth.

168,997. Faucets. James M. Hopkins, Louisville, Ky. (Filed Aug. 21, 1875.)

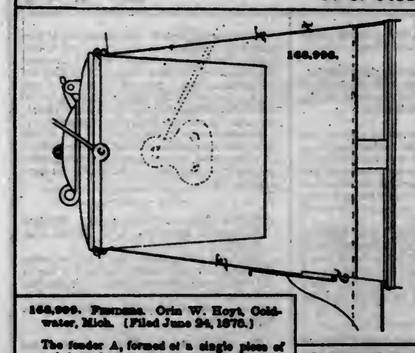


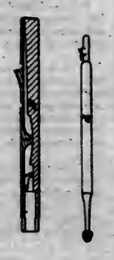
1. The combination, with the handle of the main plug of a device for filling liquid-packages, of an auxiliary plug or cock, substantially as described.

2. The combination of two separate and independent cocks, one of which will sweep vertically through a portion of a circle, with an air-vent, substantially as set forth.

168,998. Glue-Pot Furnaces. Thomas C. Howes, Osborn, assignor to himself and Graham & Holmes, New York, N.Y. (Filed Aug. 6, 1875.)

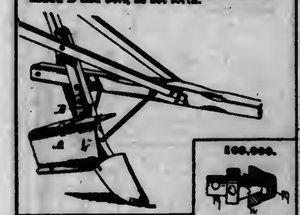
In a glue-pot furnace having a grate, draft-openings, and ash-pan, substantially as shown, the combination of the frusto-conic shell, provided with recesses on opposite sides of its upper edge, with the glue-pot, provided with lugs adapted to fit into said recesses, as and for the purposes set forth.





168,999. Fenders. Orin W. Hoyt, Goldwater, Mich. (Filed June 24, 1875.)

The fender A, formed of a single piece of metal, bent into three angles, *a*, *b*, and *c*, as shown and described, and adjustably connected to the plow-standard by the angular sheet B and bolt, as set forth.



169,000. Hand-Pieces for Dental Engines. William A. Johnston, New York, N.Y., assignor to Johnston Brothers, same place. (Filed Apr. 6, 1875.)

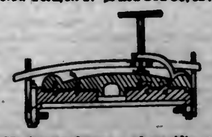
In the hand-piece of a dental engine, the combination, with a rotating tool-holder and an inclosing sheath or sleeve capable of longitudinal movement with respect to one another, as described, of a vibratory spring lock or catch on the holder, and a rib or projection on the interior of the sleeve, for joint operation, substantially as shown and set forth.

169,001. Bottle-Stoppers. R. H. Hunt, Warren, Ohio. (Filed June 26, 1875.)

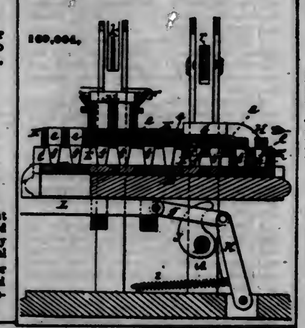
Brief.—The lower portion of the inverted conical body of the stopper is enveloped by a rubber nipple, held in place as shown.

The combination of the inverted cone A, with knob B at its lower end, and the flange C and stem D at its upper end, and the rubber nipple G, enveloping the cone and button, substantially as and for the purposes herein set forth.

169,002. Processes of Forming a Tight Joint Between the Mouth-Piece and Lid of Gas-Retorts. Nicolaus Jamin, New York, N. Y. (Filed Oct. 30, 1874.)



The improved process of providing a tight joint between the mouth of a gas-retort and the lid thereof, by means of lead liquefied by the heat generated during or by the normal use of the retort, and confined in grooves or receptacles provided between the mouth and lid aforesaid, substantially in the manner described.



169,003.

1. The combination of the molds or mold-frames E with the plunger-frames D or their plungers *f* and the platen G, whereby the molds and platen descend in concert for the purpose of compressing the sugar, and said molds afterward farther descend, without the platen, to effect the discharge of the sugar, substantially as specified.

2. The combination of the intermittently-traveling mold-frames E and plunger-frames D with the bed B, rails C C, and a filling-box or hopper, F, essentially as described.

3. The combination of the intermittently-operating slide or driver L with the series of mold-frames E and plunger-frames D, the surface or bed B, on which the plunger-frames travel, and the rails C, on which the mold-frames slide, substantially as specified.

4. The mold-frame E, constructed or provided with ears or lateral projections, b b, in combination with the rails C C having steps *c d* in them, essentially as described.

5. The combination of the platen G with the rising and falling mold-frame E, the rails C having a step, *c*, in them, and the plunger-frames D, substantially as specified.

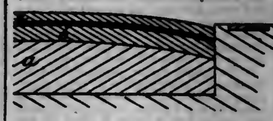
6. The combination of the discharger H with the mold-frame E, the rails C having a step, *d*, in them, and the plunger-frame D, essentially as described.

7. The platen G, having the discharger H attached to it for simultaneous operation on successive or adjacent mold-frames E in a like direction, and in opposition to the plunger-frames D, as herein set forth.

8. The combination of the filler M, the filling-hopper F, the platen G, the discharger H, the mold-frame E, the plunger-frame D, the bed B, the stepped rails C C, and the intermittent slide or driver L, substantially as specified.

169,004. Pavements. William H. Jones, Rochester, N. Y. (Filed May 26, 1875.)

Brief.—The road-bed is excavated to the depth of eighteen inches. A ten-inch layer of broken stone is then put down, with a layer of smaller stone to fill the interstices, and properly rolled. Another layer of coarse macadam or small broken stone to the depth of five inches is then applied. A layer of stone-dust or sand to the depth of one inch is next put on, which forms a dam or cut-off, to prevent the coal-tar from passing down to the lower stratum. Another layer of macadam or broken stone is next put on top of the sand, and the whole thoroughly rolled. Over all is spread a thin coat of coal-tar, with twenty-five per cent. of its volatile elements driven off.



1. A cement covering for a street-pavement, consisting of the residuum of coal-tar distilled in a close vessel till twenty-five per cent., or approximately that amount, of its bulk is removed, as herein described.

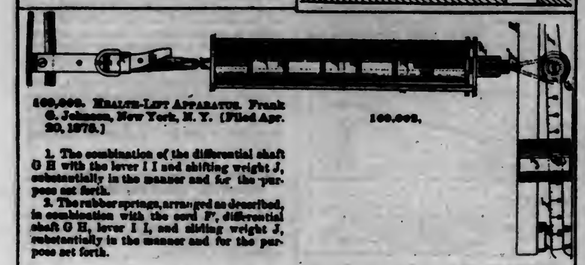
2. A street-pavement, consisting of a foundation-layer of small stone or coarse stone chips, a body-layer of coarse macadam, a dam or cut-off layer of sand or fine stone-dust, a surface-layer of fine macadam, and a cement covering of coal-tar with twenty-five per cent. of its bulk removed by distilling in a closed vessel, the whole combined, as described, so that the cement in a thin body permeates the upper layer, but is prevented from passing through to the substructure by the dam or cut-off layer of sand, as set forth.

169,005. Boots and Shoes. R. S. Jeath, Washington, D. C. (Filed Sept. 24, 1875.)

Brief.—The bottom of the sole of the shoe is channeled or grooved, to receive the flanged edge of the plate, which is made of sheet-metal.

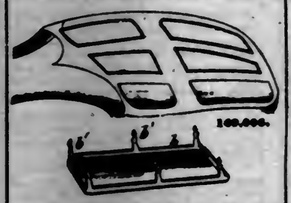
1. As a new article of manufacture for sewing the soles of boots and shoes, a sheet-metal plate having a raised rib, *b*, around the edges, and holding-prongs *b'*, substantially as specified.

169,006. Hemlock-Left Apparatus. Frank C. Johnson, New York, N.Y. (Filed Apr. 20, 1875.)



1. The combination of the differential shaft G H with the lever I I and shifting weight J, substantially in the manner and for the purpose set forth.

2. The rubber springs, arranged as described, in combination with the cord F', differential shaft G H, lever I I, and shifting weight J, substantially in the manner and for the purpose set forth.

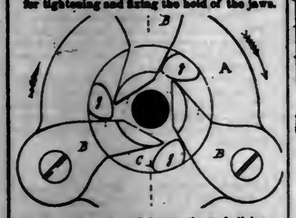


160,006.

2. The lower surface of soles of boots and shoes provided with thin sheet-metal plates having an inwardly-raised rib, *b*, around the edges, entering corresponding channels *a* in the sole, and barbed prongs *b'*, in the manner and for the purpose herein described.

160,007. CRUSHER. Hiram A. Kimball, Philadelphia, Pa. [Filed June 1, 1875.]

Brief.—Clamping-levers pivoted on carrier-plate, to be opened or closed by cams upon the stock. The carrier is also provided with forcing-screw, to engage the rock upon the stock, for tightening and fixing the hold of the jaws.

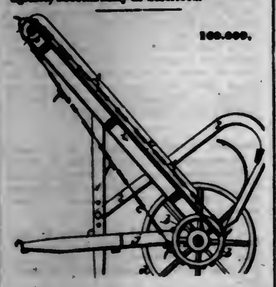


The combination of the stock-stock C, having lugs *g* and rock E, with the carrier-plate A, having clamping-levers B and the forcing-screw D, substantially as and for the purpose set forth.

160,008. PROCESSES FOR PURIFYING AND PRESERVING ANIMAL FATS. J. P. Kinney, Brooklyn, N. Y. [Filed Sept. 24, 1875.]

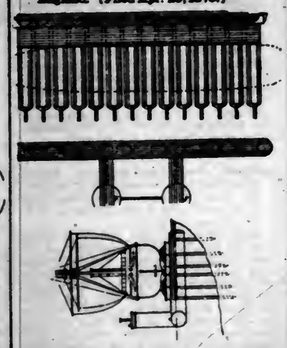
1. The process herein described for purifying and preserving animal fats, which consists in first purifying the fat by subjecting it to a heated solution of soda-ash and common salt in water, in about the proportions specified; then drawing the oil off and filtering it into cold water, and then subjecting the oil to a second solution, consisting of bicarbonate of potash and common salt in water; then boiling the mass, and finally filtering the oil off into cold water, substantially as described.

2. The process herein described for manufacturing a suitable product for culinary purposes, consisting in first purifying the fat by subjecting it to a heated solution of soda-ash and common salt in water, in about the proportions specified; then drawing the oil off and filtering it into cold water; then subjecting the oil to a second solution, consisting of bicarbonate of potash and common salt in water, heating the mass, and finally filtering the oil off into cold water, agitating said oil in a churn until it assumes an entire foamy mass, to which add cream and continue to agitate, substantially as described.



160,009.

160,010. FLOATING DOCKS. Josiah Latimer Clark and John Standfield, Westminster, England. [Filed Apr. 29, 1876.]



1. The floating dock and ponton constructed, substantially as herein before described, with open-ended slots or comb-shaped openings in the bottom, for the purpose of raising vessels and depositing them on corresponding stages.

2. The stage constructed, as herein before described, of a series of rows of piles, each row connected at top by a longitudinal timber, and having spaces between them, for the purpose specified.

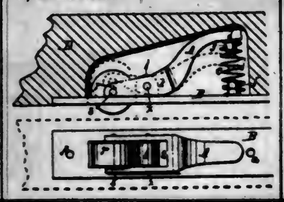
3. The combination of the dock or ponton having slots or comb-shaped openings in its bottom, and the fixed stage of piles having corresponding openings, whereby the vessel may be lowered upon or raised from the stage, as set forth.

4. The floating dock constructed, substantially as herein before set forth, of separate portions, and with one or both of its sides removable.

5. The herein before-described method of depositing vessels high and dry upon fixed stages, and removing them therefrom, by means of the comb-shaped dock or ponton and the correspondingly-shaped stage, both constructed substantially as set forth.

160,011. SASH-HOLDERS. Sylvester Lewis, Rochester, N. Y. [Filed Aug. 27, 1875.]

Brief.—A friction-roller journaled in the forked end of a rocking lever is adjustably held against, or engages in suitable notches of, the sash-frame.



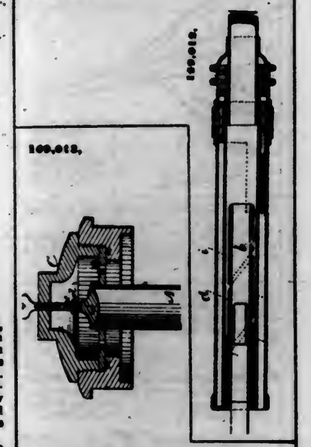
An improved sash-holder, consisting of the slotted face-plate B, having lugs *l* and *l'*, the bent and bifurcated rocking lever A, having the projecting end *d* and leg *g*, and rocking on the pivot or axle *e*, passing through the leg *l* of the face-plate, the roller *r*, rotating on its axle *s*, and journaled in the forked end of the lever, and the coil-spring C, kept in position by lugs *g* and *l'*—one on the projecting end of the lever, the other on the inside of the face-plate—all constructed, arranged, and operating substantially as described and shown, for the purpose set forth.

160,012. PEN AND PENCIL CASES. William A. Ludden, Brooklyn, N. Y. [Filed Aug. 6, 1875.]

Brief.—A tube within the case, inclosing the screw-tube, and extending to the top of the case, terminating as a collar, by which the inclosing-tube and screw-tube are revolved to project or retract the pencil, regardless of the extension-tube.

The tube *i*, connected at one end to the screw-tube *d*, and at the other end to the collar *l*, by which it and the screw-tube *d* are revolved, in combination with the pencil *a* and the case inclosing the pen-slide, substantially as set forth.

160,013.



160,014. PIPE-EXTINGUISHERS. Edmund A. Magimness, New Albany, Ind. [Filed July 19, 1875.]

Brief.—The said-bottle is supported by a perforated diaphragm, resting in a seat in the mouth of the tank, and secured by the screw-cap. The cover of the said-bottle is made conical, so that a slight turn of the binding-screw will freely release it. A flange on said screw, with packing, makes tight the joint of the screw with the cover, when the screw is turned sufficiently for back.

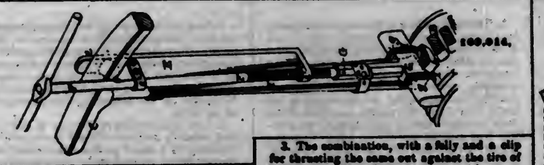
1. The perforated diaphragm D, attached to the bottle A, and suspended on the shoulder *a* in the top B of the tank, substantially as herein set forth.

2. In a fire-extinguisher, the combination of the said-bottle A and the hinged valve G, made in conical shape, or raised in the center, and screw *h*, for holding the valve down, substantially as and for the purposes herein set forth.

3. The combination of the top B, with shoulder *a*, perforated diaphragm D, said-bottle *e*, valve G, cover C, and screw *h*, with flange *d* and packing *c*, all constructed substantially as and for the purposes herein set forth.

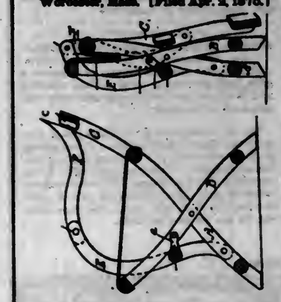
160,015. TIME-TELEPHONES. J. W. Marks, Sumner, Ill. [Filed May 10, 1875.]

The combination, with jack B, screw F, and socket G, of the rope-ring I, for keeping around the spoke and cross-feet *g* of the socket, substantially as set forth.



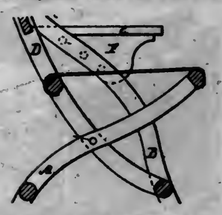
160,014.

160,016. FOLDING CHAIRS. Geo. McAleer, Worcester, Mass. [Filed Apr. 2, 1875.]



A folding chair, composed of the cross-legs A B, back-frame C, pivoted to the front legs A, arm-rests E and F, jointed together, and pivoted to the lower ends of the front legs, and to the back C, all substantially as shown and described.

160,016. FOLDING CHAIRS. Geo. McAleer, Worcester, Mass. [Filed Mar. 26, 1875.]



1. The combination, with the front and rear leg sections of a folding chair, of a back-frame attached to the front-leg section at or near its upper end, and extending to and connected with the lower portion of said front-leg section, substantially as described.

2. The combination, with the back-legs A and back-frame D, extending to and connected with the lower portion of the front-leg section B, of the arm-rests F, constructed of brackets *b* attached to the portion of the front-leg sections which project above the seat, and the whole being otherwise constructed substantially as and for the object specified.

160,017. TIME-TELEPHONES. Stanford W. McOmber, North Manchester, Ind., assignor of one-half his right to O. H. Winton, same place. [Filed July 31, 1875.]



1. The H-shaped clip having lateral flanges *e*, and the annular flange *f* embracing the felly and rod D, substantially as shown and described.

2. The H-shaped clip having the flanges *e f*, the rubbered rod D, the ferrule C with screw-threaded portion *c*, the washer *w*, and packing *r*, all constructed and combined substantially as shown and described.

3. The combination, with a felly and a clip for thrusting the same out against the tire of an elastic rubber plate, *p*, interposed between the clip and felly, substantially as specified.

160,018. CENTRIFUGAL WATER-WHEELS. Jas. H. Meacham, Petersburg, Va. [Filed Aug. 10, 1875.]

Brief.—A conical water-wheel, preferably so made that the incline shall be at an angle to the base, while only a sufficient space is left on top from which to start the grooves, that begin on each radius of two crossing diameters, and are gradually curved around, so as to issue at corresponding points of the base. The wheel is inclosed by a case, that forms part of the wheel, and has inner or discharge-holes, one for each of the grooves, and also a tube or neck, that couples in a corresponding tube of the water-reservoir.

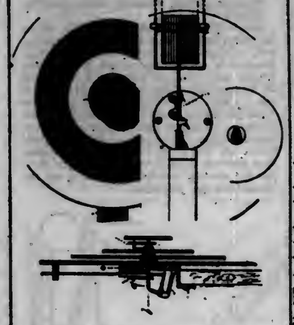


1. A water-wheel having a conical form, and curved grooves D running from apex to periphery of base, as and for the purpose described.

2. The combination of wheel-case and water-reservoir, the former having a tube, *c*, that revolves in a tube, *f*, of the latter, as and for the purpose specified.

160,019. TARGETS. Theodore H. Mead, New York, N. Y. [Filed Sept. 10, 1875.]

Brief.—The tens of each disk, being peculiar, serves to indicate the distance of the bullet's impact from the center of the target.



1. A target composed of a series of isolated concrete plates, each of a different pitch or tone, combined with a suitable support, substantially as herein described.

2. In combination with the reciprocating bull's-eye bolt, the hollow supporting-mandrel, and a bell at the rear thereof, substantially as described.

3. The combination of the reciprocating bull's-eye bolt, lever *h*, and gravitating-signal F, substantially as described.

4. A target provided with a signal arranged to be projected and displayed by means actuated from a reciprocating bull's-eye bolt, which signal gravitates into its operative or normal position, substantially as shown and described.

5. In a target composed of sounding plates or disks, a supporting-mandrel, provided with a bearing for said plates at a single point or angular edge of said mandrel, substantially as shown and described.

160,020. TOYS. Joseph Porter Michaels, New York, N. Y. [Filed Aug. 16, 1875.]



1. The combination, with a screw-wheel, or vanes, or other devices adapted to be rotated on its axis by currents of air, of a suitable stand, to hold said screw-wheel centrally over a lamp or gas-burner, and a hanging gallery for supporting figures, the whole arranged to operate substantially as described.

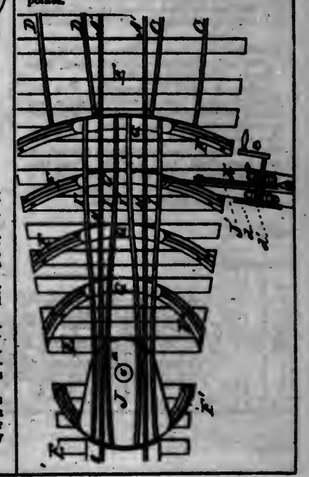
2. In combination with a screw-wheel or vanes, adapted to be rotated by currents of air, and a means for properly supporting said screw-wheel over a lamp or gas-burner, the series of pendent wires *c'*, for separately supporting the figures or pictures to be caused to travel around the light.

3. In combination with the wheel A and a gallery, *d*, the flexible connections *c*, the whole arranged and operating in the manner and for the purposes set forth.

4. A rotary wheel, A', with points *f*, adapted to the attachment of hanging wires *c'*, substantially as shown and described.

160,021. RAILROAD-SWITCHES. Leonard Middleton and Jas. B. Gary, Victor, Iowa. [Filed Sept. 25, 1874.]

Brief.—The rails of the main track and the rails of the right and left hand side tracks are secured at one end to a strong metallic plate, pivoted in the manner of a turn-table. The rails are secured at their free ends to curved plates, which are supported and slide on segmental rails secured to the cross-ties. The switch is operated by a rack-and-pinion gearing, and a notched bar locks it at the desired points.



1. In a raised switch the combination, with the rails A, A', C, and D of the switch-rails H I F, segmental guide-rails F F', turn-table J, and slides G, substantially as specified.

2. The combination, with the rails H I F, of the guide-rails F, and plates G, substantially as specified.

3. The combination, with the pivoted switch H I F, rock-bar F', and their operating mechanism, of a lock-bar, K, pivoted to the said rock-bar, substantially as specified.

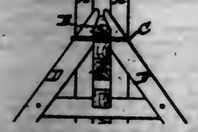
169,003. Button-Gaiters. William H. Miller, New York, N. Y., assignor of part of his right to Kenny & McFarland and Joseph B. Miller, same place. [Filed Oct. 7, 1875.]



1. As a new article of manufacture, the herein-described button-gaiter, having the inside quarter, vamp, button-piece from toe to ankle-joint, and facing of outside quarter formed in one piece, and the outside quarter formed from another piece, and having a piece attached to the button-piece at the ankle-joint to complete the same, substantially as set forth.

2. The pattern or piece forming the inside quarter, vamp, facing of outside quarter, and part of the button-piece of a button-gaiter, substantially as described.

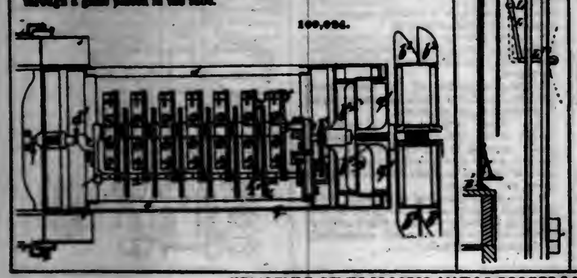
169,005. Farm-Fences. John P. Mennett, Bunyan, Ohio. [Filed Mar. 9, 1875.]



The combination, substantially as shown and described, of the posts A A, rings C C, braces D D, and rider E, wedged between the upper ends of the braces, thereby firmly locking the rings in place around the said braces and posts, as and for the purpose set forth.

169,004. Stove-Lock. Benjamin T. Moore, Elm Lodge, Spring Grove, Isleworth, England. [Filed Feb. 20, 1875.]

Brief.—A stove-lug consisting of an oblique cylindrical tube of suitable length, and having propelling-blades attached. The tube is suspended from eastern pinned in a frame. The rotation of the tube communicates motion to a shaft running centrally through it, and upon which is set a screw. From this shaft is hung a pendulous frame carrying a train of counting-wheels, which can be seen through a glass placed in the tube.



169,006.

1. The combination of the removable pendulous frame, the train of counting-wheels and dials, all carried by said frame, the water-tight case, in which the frame is suspended, and the blades for rotating the base and setting the wheels in motion, these members being constructed and operating substantially as set forth, whereby all the wheels and dials of the train remain, while in operation, in a correspondingly close of equilibrium relatively to the revolving case, and may readily be removed from, or placed in, the case without disturbing their relative positions in the frame.

2. The combination, substantially as hereinbefore set forth, of the non-rotating frame or case, the revolving water-tight case, the counting-wheels, and their supporting-frame, suspended within the revolving case.

3. The combination, substantially as hereinbefore set forth, of the water-tight revolving case, the suspended counting-wheels, the non-rotating frame as outer case, and the balancing suspending-support, for the purpose specified.

169,006. Hatchway-Guards. Wm. Muir, Montreal, Canada. [Filed Mar. 10, 1875.]

Brief.—A double-inclined cam is attached to the car, which impinges against a lever-arm on a rock-shaft. A long lever on said rock-shaft is attached to the doors. Said doors travel on inclined ways, and are forced back by the nearest of the car, and close after the car has passed by their own weight.



169,006.

1. In combination with any hoistway provided with sliding doors, the rock-shaft C, carrying lever E, engaging with stops K, and arm F, with or without roller G, acted upon by inclined planes I, substantially as and for the purposes set forth.

2. The combination of the rock-shaft C with arm F and lever E, acted upon by the traveling platform H, and imparting motion to the doors A of the hoistway, as and for the purpose specified.

169,006. Self-Closing Hatchways. Wm. Muir, Montreal, Canada. [Filed Mar. 19, 1875.]

Brief.—The doors are raised by the car in its ascent by a projection on the car engaging with a hinged catch on the door, and when the door is raised to its proper position the hinged catch is forced down by a projection on the hoistway, which disengages it from the car. A stop for holding the door in an elevated position is operated by a cam-groove on the car. As the car descends, projections on the car engage with projections on the weights, which are connected to the doors by ropes, then drawing them down to the proper position for opening the door, when they are released by a cam projection.

169,006.

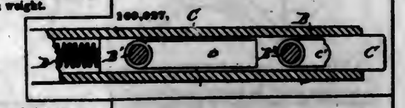
1. In combination with the rising doors of a hoistway, hinged stops C, acted upon by projections formed on the traveling platform in its upward movement, and yielding to the same as it descends, the stops being disengaged from the platform, as it rises, by the projection F, formed on the hoistway, all substantially as set forth.

2. The combination of the rest K and pivoted levers L with arms L', for the purpose of retaining in a raised position the doors (sliding upward) of any hoistway, and the inclined planes M, secured to the traveling platform H, to reverse this action and allow the doors to fall, substantially as described.

169,007. Journal-Clamps. Gustav A. Nordmann, St. Louis, Mo. [Filed Sept. 6, 1875.]

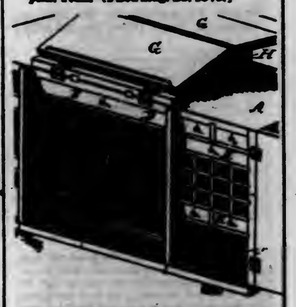
Brief.—The movable hollow jaw carries a slide, adjusted by a spiral spring, allowing said jaw to be positioned instantaneously with reference to the fixed jaw.

The combination of the movable jaw B, carrying the slide C, having slots *c c'*, the spring D, the hand-screws B' F', having bearing-surfaces of threads reversed, all said parts being constructed and arranged to operate with relation to each other and a fixed jaw, A, substantially as in herein shown and described, and for the purpose set forth.



169,007.

169,008. Corrugated Dishes and Baggage-Check Boxes. George R. Nichols, Memphis, Tenn. [Filed Aug. 28, 1875.]



The case A, provided with the sectional door G, hinged at the top, so that it can be thrown back and rest on the supports E E, and form a desk-top, substantially as shown and described.

169,009. Needle-Cases. Otto Kamm, New York, N. Y. [Filed Apr. 17, 1875.]

Brief.—The spring holds the cap down so that its protuberances rest in the ends of the eyes. The cap can be rotated so as to bring the recess over any one eye for withdrawing the needles, the protuberances springing from one eye to another.



1. The needle-case, having a series of eyes, B, in combination with the pins C, spring J, and perforated cap O, having flanges overlapping the body of the needle-case, and constructed with one or more rounded or inclined protuberances, E, substantially as described, for the object specified.

2. The combination, with the needle-case, having a series of eyes, B, and a perforated cap, having one or more protuberances, E, of the ring H, pin G passing through the cap and ring, and having an enlarged bottom head, and the spring J' applied to said pin between the lower end of the same and the ring, substantially as described.

169,010. Gas-Fastenings. Geo. G. Nodle, New Berlin, Ohio. [Filed Sept. 15, 1875.]

Brief.—A weighted lever serves to throw the bolt, and the tumbler to operate it has its face end slotted, so that it may be retained in position by friction. The heel end of the weighted lever is so shaped that in turning in the side of the case no opening is left for dirt to fall into the working parts of the lock.



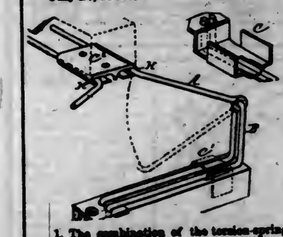
1. The combination of the weighted lever A A', the bolt B, and the tumbler C, having its face end slotted, whereby it is retained in position by friction, substantially as set forth.

2. The combination of the heel end of the weighted lever A A', formed in the arc of a circle, with the side *b'* of the shell and the spur *d* of the thumb-piece D, substantially as set forth.

169,011. Anti-Friction Compounds. Carl G. P. Otto, Syracuse, N. Y., assignor of one-half his right to R. D. Monon, same place. [Filed Sept. 20, 1875.]

A compound consisting of bone and glycerine, plumbago, asbestos, manila-pulp, soapstone, glue, and condensed linseed-oil, treated in the manner described.

169,012. Torsional Springs for Vehicles. Daniel B. Paris, Troy, N. Y. [Filed July 27, 1875.]

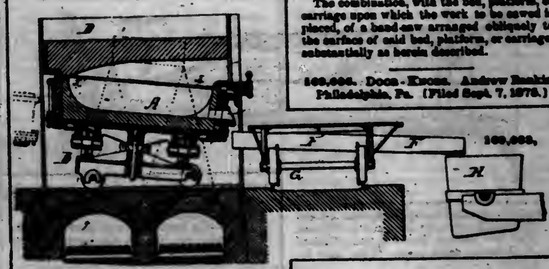


1. The combination of the torsion-springs A A, secured to the wagon body or seat at their ends by means of a clamp, C, and at their sides by the clamp C', and the double flexible springs B B, secured to the trunk of the carriage at their ends by bending and inserting the same therein, and at their sides by a clamp, C', the whole adapted to operate together, substantially as described.

2. In combination with the springs A A, secured rigidly to the carriage body or seat, the clamps C' for securing them loosely at the sides, and the friction-rollers H H, to facilitate their operation, substantially as described.

169,013. Inclined Revolving Puddling-Furnaces. Charles Pernot, St. Chamond, France. [Filed June 29, 1874.]

Brief.—The inclined revolving hearth is run into the Siemens furnace on rails, and, by revolving, mechanically puddles the iron. The joint is kept open, the internal pressure of the gases, caused by their expansion in the regenerators, and additional expansion or burning into flame in the hearth, being sufficient to exclude the air.



169,013.

The combination, with the bed, platform, or carriage upon which the work to be carved is placed, of a hand-saw arranged obliquely to the surface of said bed, platform, or carriage, substantially as herein described.

169,014. Door-Knobs. Andrew Rankin, Philadelphia, Pa. [Filed Sept. 7, 1875.]

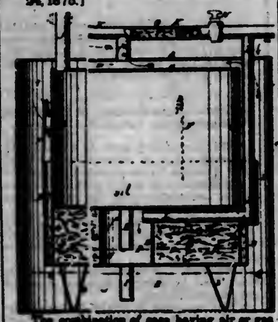
169,014.

The within-described cast-metal handle, consisting of the concave-convex head *a* and stem *b* cast in one piece, as set forth.



169,014.

169,015. Furnaces. James M. Pollard, New Orleans, La., assignor to himself and W. W. Barton, Galveston, Tex. [Filed July 24, 1875.]



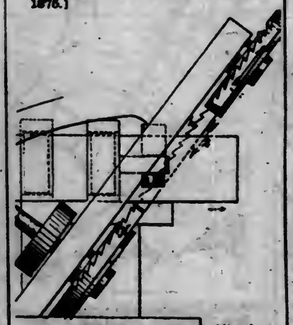
1. A furnace in which are combined an inclined rotating and removable hearth, arranged to leave an open joint, *a*, between the hearth and the body of the furnace, and a regenerator from which heated gases are passed to the furnace under a pressure greater than that of the external atmosphere, for the purpose specified.

2. The combination of the furnace D, inclined rotary hearth A, series of ladles E, and spout F, mounted on a truck, G, to conduct the molten metal to any one of the ladles, as set forth.

169,016. Carburetters. James M. Pollard, New Orleans, La., assignor to himself and W. W. Barton, Galveston, Tex. [Filed July 24, 1875.]

The combination of cans having air or gas induction pipes K L and ejection-pipe M, the vessel B *b'*, having overflow-pipe I, and the gasoline-holder C, having flanges D E, oil-feed pipe H, and gasoline-pipe J, as and for the purposes specified.

169,017. Band Sawing-Machines. Paul Frydill, New York, N. Y. [Filed Sept. 15, 1875.]

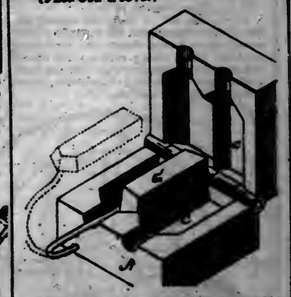


Brief.—The saw is arranged obliquely to the surface of the bed or carriage upon which the work is placed, at an angle of from thirty to sixty degrees with relation to the bed or carriage, for the purpose of cutting against the grain of the material being operated upon.

169,017. Manufacture of Gas for Burning and Lighting. Thomas B. Redwood, Fairlawn Finchley, England. [Filed Apr. 24, 1875.]

The herein-before-described improvement in the manufacture of permanent gas rich in carbon, which consists in bringing hydrocarbon vapor, together with water-gas, into contact with a largely-extended and highly-heated surface of copper or an alloy of copper.

169,018. Moulds for Manufacturing Bottles. Peter W. Reid, Pittsburg, Pa., assignor to McKee & Brothers, same place. [Filed Oct. 4, 1875.]

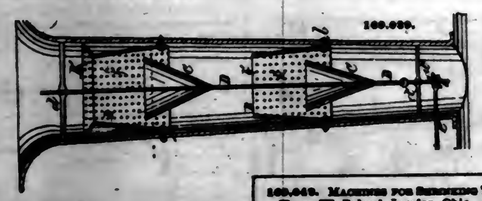


The desk A B, formed with the two moulds C D, having an aperture, *a*, between them, and a swinging partition, G, to close or open said aperture, substantially as and for the purpose herein set forth.

169,019. Locomotive Smoke-Stacks. P. Reilly, Burlington, Iowa. [Filed Aug. 31, 1875.]

Brief.—The unconsumed products of combustion, in their ascent, are deflected outward by the cones, and the sparks driven through perforations in the plates to the annular spaces between them and the stack, where they are retarded and brought in contact with steam emitted to extinguish them.

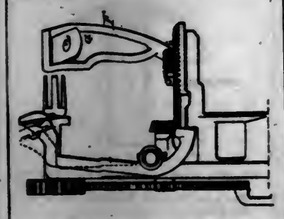
The perforated plates E E, secured within the smoke-stack so as to leave annular openings or passages *a b*, and operating in combination with the cones C C, the latter being secured to the rod D and adjustable vertically, substantially as and for the purpose specified.



160,039.

160,040. APPLE-PARING MACHINE. Adolph Bippian, Reading, Pa., assignor to William Harbster, Mathias Harbster, and William M. Grimson, same place. [Filed May 31, 1875.]

Brief.—A supplementary knife is combined with the knocking-off lever of an apple-paring machine, in such a manner that the portion of the skin which remains on the fruit, after being subjected to the ordinary machine, will be pared off.

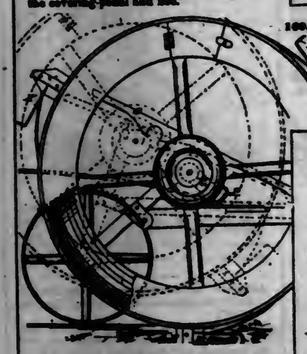


1. The combination, in an apple-paring machine, of a supplementary blade, I, with the knocking-off lever, substantially as and for the purpose herein set forth.

2. The combination of the knocking-off lever of an apple-paring machine and its supplementary knife, the rib *n*, and projection *o* on the wheel F.

160,041. CORN-PLANTER. Thos. L. Ellmakerer and J. Vance Lewis, Washington, D. C. [Filed Sept. 9, 1875.]

Brief.—The folly of the wheel is made hollow for holding seed, and has "planting-bills," one of which is fixed thereto, the other being provided with a spring seed-cup and cut-off, and is forced inward by contact with the earth, and outward by a spring, which also depresses the covering-pedal and hoe.



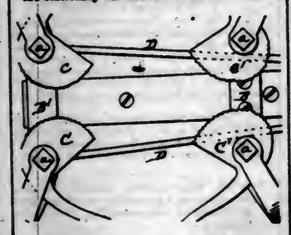
1. The wheel A, having spokes and a hollow folly, in combination with the planting-bills, substantially as set forth.

2. The spring seed-carrying cup I, in the sliding bill F, in combination with the stationary bill H, and cup H, substantially as set forth.

3. The bar L, and pedal K, in combination with the sliding bill F, substantially as set forth.

160,042. MACHINES FOR SHEARING TIRES. Henry W. Roland, London, Ohio. [Filed Sept. 13, 1875.]

Brief.—The head-lever, with its rods, brings the movable bar, with its cam-levers, toward the stationary bar and its levers.



The bars B B', the one movable and the other stationary, their ends turned over to embrace and hold the cam-levers C C', in combination with the rods D D and the divided lever E, as for the purpose set forth.

160,043. GRAIN-BINDERS. F. P. Roebuck, Springfield, Mo. [Filed Sept. 14, 1875.]

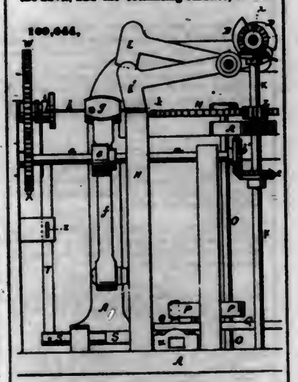
1. The compressor-arms A A', pinion Q, stationary rack R, in combination with cam-wheel T, as and for the purpose set forth.

2. The knot-tying hook C, provided with the slot, in combination with the nippers D, as and for the purpose described.

3. The arm A, having tightener F and knife E, and the arm A', having nippers D, in combination with the knot-tier C, substantially as described.

4. The fork G, in combination with the stationary cam for operating the same, as and for the purpose set forth.

5. The separator B, pivoted on the vibrating arm A, as and for the purpose described.



160,044.

160,045. CORN-PLANTER. Thos. L. Ellmakerer and J. Vance Lewis, Washington, D. C. [Filed Sept. 9, 1875.]

Brief.—The folly of the wheel is made hollow for holding seed, and has "planting-bills," one of which is fixed thereto, the other being provided with a spring seed-cup and cut-off, and is forced inward by contact with the earth, and outward by a spring, which also depresses the covering-pedal and hoe.

1. The wheel A, having spokes and a hollow folly, in combination with the planting-bills, substantially as set forth.

2. The spring seed-carrying cup I, in the sliding bill F, in combination with the stationary bill H, and cup H, substantially as set forth.

3. The bar L, and pedal K, in combination with the sliding bill F, substantially as set forth.

160,046. HORSESHOE-NAIL MACHINES. Jos. Roy, Chicago, Ill. [Filed Apr. 9, 1875.]

Brief.—Two hammers operate alternately to forge the nail. The rod is coiled on a reel carried in a revolving frame, and passes between two straightening-rolls, out through one of the arms of the frame. A head provided with two pivoted jaws is fitted to the axis of the revolving frame and turns therewith, and is intermittently reciprocated by means of a lever, to feed the rod forward. The rod passes through a laterally-oscillating furnace, that presents it alternately to the two hammers as the rod is turned a quarter around. A cutter, fixed to a wheel or a vertical shaft, acts in conjunction with a stationary knife, to sever the finished nail from the rod, the hammer being held up by a catch.

1. In a nail-machine, the combination of the rod V, spool U, and rollers *x y* with mechanism for feeding the nail-rod to the furnace and hammers, for the purpose of securing an uninterrupted feed, as specified.

2. The combination of the furnace or forge *g*, the lever *f*, and mechanism for imparting to it a lateral oscillating movement, with the hammers E E' and anvil H, as and for the purpose set forth.

3. The apparatus for feeding the nail-rod to the hammers, consisting of the lever T, with its fulcrum *z*, rod S, slide R, lever Q, cam P, with its stud, and the revolving cloth *i*, all constructed and operating as described.

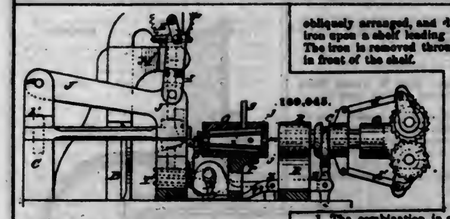
4. The combination, with the hammers E E', anvil H, and laterally-oscillating furnace *g*, of the stationary cutter *n* and revolving cutter *l*, substantially as and for the purpose set forth.

5. The combination, with the two hammers, the anvil, and the oscillating furnace, of the continuously-revolving and longitudinally-reciprocating cloth *i*, for turning and feeding forward the rod, as and for the purpose described.

6. The combination, substantially as described, of the sliding step *c*, hammer E, arm S, and cam *n*, as and for the purpose described.

160,047. MACHINES FOR FORMING NAILS. Joseph Roy, Philadelphia, Pa. [Filed Apr. 20, 1870.]

Brief.—A pair of lateral hammers; a vertical hammer actuated by cranks that are indirectly connected to their heads; feed-rolls rotated by pawls that are actuated through the medium of levers, grooved collar, and shifting device, by a tappet, X, on a transverse shaft; a gas-furnace through which the nail-rod passes; and a device for cutting off the nails—viz., a cutter attached to the vertical hammer, and another attached to the anvil.



160,048.

1. The feeding device, consisting of the combination of the worm F, pinion U, shaft V, cam X, rod W, slide R, lever *a*, collar O', arms *d d'*, pawls *g g'*, ratchets *e e*, feed-rollers *f f*, and guide Q, all constructed and operating substantially in the manner described.

2. The combination and arrangement of the male crank-shaft E, gears F F G G', crank-shafts H H', pitmen I K K', and hammers J L L', hung to standard O', all constructed and operating substantially in the manner and for the purpose specified.

3. The nail-severing device, consisting of the combination of the cutter *k*, attached to the side of the hammer J, and a lip placed below it and projecting from the side of the anvil, as and for the purpose stated.

4. The gas-furnace O, constructed and located as described, having the end openings *m n*, and provided with inner chamber *i*, air-jacket *j*, gas-pipe *h h*, and air-tube *p*, all as and for the purpose set forth.

160,049. TIN VESSELS. Theodore Schmitz, New York, N. Y. [Filed Sept. 9, 1875.]



As a new article of manufacture, a measuring-cup for malt, spirituous, or other liquors, consisting of a body, A, bottom D, foot-flange C, and lip B, formed of a single piece of block-tin, or britannia metal, and having a handle, E, of the same metal attached thereto, substantially as described.

160,050. PUDDLING-FURNACES. Christopher J. Schofield, Clayton, near Manchester, Great Britain. [Filed Apr. 17, 1875.]

Brief.—The annular chamber contains water, in which the annular hearth revolves on friction-rollers, &c. Flame and products of combustion enter the annular chamber from the fire at one side, and, dividing into two streams, find exit at the other, impinging on the metal in the revolving annular hearth. A mechanical tool puddles the iron, and a slide let down through the top of the chamber dips into the revolving hearth, across which it is obliquely arranged, and diverts the puddled iron upon a shelf leading out of the furnace. The iron is removed through a door opening in front of the shelf.

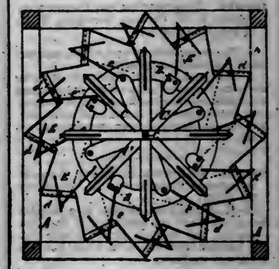
160,048.

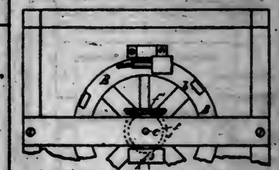
1. The combination, in a puddling-furnace, having a rotating annular bed, of an opening, *c'*, in the side of the furnace, with a vertically-adjustable and tangentially-arranged deflector, *c*, as set forth, for the purpose specified.

2. The combination of the chamber *i*, containing water, and having an inlet and outlet for the same, with the rotating annular bed *a a'*, substantially as shown and described.

160,051. WINDMILL-POWER. W. H. Short, Talbot, Ill. [Filed July 26, 1875.]

Brief.—When the wind is very high the shutters close, and in doing so turn the turn-table partially to one side from its original position. This movement of the turn-table raises a weight, which is suspended from below, passing over a pulley, and, reacting on the platform, restores it to its original position, and also returns the shutters again to position to freely admit the wind.





1. The gearing *f f'*, holes *f''*, in combination with wind-wheel C, to operate as and for the purpose set forth.

2. The gearing *f f' f''*, in combination with wind-wheel C, to operate as and for the purpose set forth.

3. The combination of the fixed shutters D, movable shutters E, connected to turn-table B, carrying weight F, the wind-wheel C, its shaft *c*, gearing *f f' f''*, all constructed and arranged to operate in the manner and for the purpose herein shown and described.

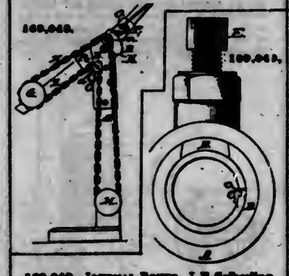
160,052. HARVESTER-RIBBER. J. P. Sherman, Akron, Ohio. [Filed Apr. 14, 1876.]

1. The hinge-piece B, with the ratchet D cast thereon, in combination with the hinge-piece F, pivot K, and pawl O, substantially as set forth.

2. The hinge-piece B, with the cut-off support O upon the front edge thereof, in the manner and for the purpose set forth.

3. The hinge-piece B, having the fixed pulley-supports *a* and *a'*, one above the pivot K and the other below said pivot, in combination with the chain N, and pulleys H and *i*, and swinging arm E, substantially as and for the purpose set forth.

160,053. JOURNAL-BOXES. J. P. Sellentine, Akron, Ohio. [Filed Apr. 14, 1876.]

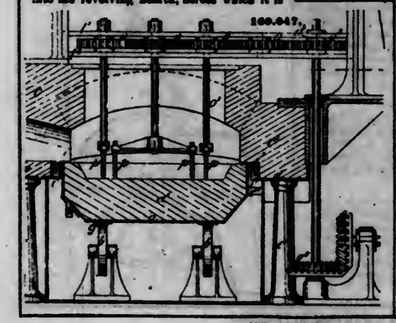


160,053.

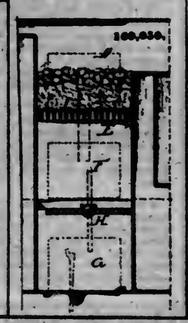
The combination of the split sleeve or thimble C, the frame A, the plate D, screw E, and fusible-metal filling B, substantially as set forth.

160,054. STOVES. Isaac A. Sheppard, Philadelphia, Pa. [Filed Sept. 17, 1875.]

Brief.—The ashes and cinders can be dumped onto a sifting-grate, and being sifted, the ashes can be deposited below by means of the tilting door, and the cinders removed from the tilting sifting-grate.

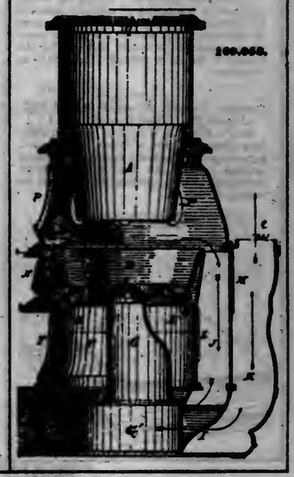


160,047.



160,054.

The combination, in a cooking-stove, of the fire-piece D, its grate E, the compartments F and G, the tilting-sifter between the compartments, and the tilting-door *a* in the bottom of the said compartment G, all substantially as set forth.



160,053.

169,049. STOVES AND FURNACES. Hiles Smith, Albany, N. Y., assignor to Samuel E. Rasmus, trustee, same place. [Filed Mar. 20, 1876.]

In a central-fire heating-stove, the combination of the following elements, viz: a central flue extending through the base and ash-pit constructed and adapted to deliver currents of heated air to the center of the grate; a shallow fire-pot and convex grate, contained in a flaring illuminated fire-pot section: an unobstructed flaring illuminated combustion-chamber entirely above the fire-pot section, and an open-top rear descending flue entering directly into the bottom of the combustion-chamber, on a line with the top of the fire-pot, all substantially as described and shown.

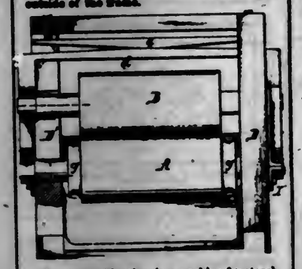
169,050. COMPOSITIONS FOR ORNAMENTS. Johann G. W. Steffens, Brooklyn, N. Y. [Filed Oct. 6, 1876.]

1. The composition of curd, alkali, and resinous substances, as described.

2. The process herein described, of fixing the composition of curd, alkali, and resinous substances specified, by subjecting it in whey or milk before pressing, and in cold water containing oil of vitriol after pressure, as set forth.

169,051. STARCHING-MACHINES. Leopold Sternberger, Philadelphia, Pa. [Filed July 10, 1876.]

Brief.—Two rollers revolve in a suitable frame, the lower one being longer than the upper one, and having a groove at each end. The journals of the rollers have their bearings outside of the frame.



1. The combination, in a machine for starching fabrics, of two pressure-rollers, A and B, arranged one above the other, the lower roll being provided at the ends with grooved collars *f*, as and for the purpose herein set forth.

2. The bearing-blocks I I, adapted for attachment to the outside of the side frames D D' of the machine, and provided with arms for the vertical guidance of the journal-box J of the upper roll, and with bearings for the journal of the lower roll, all substantially as described.

169,052. PLANES. Wesley H. Strong, Philadelphia, Pa. [Filed Apr. 15, 1876.]

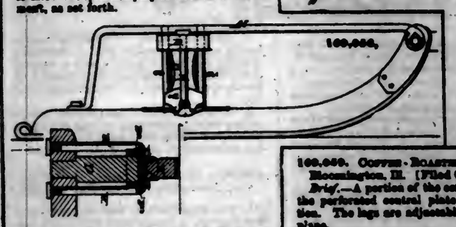
Brief.—The flask is inclosed within a bookform cover, one part of which is connected with one side of the flask; the other has leaves inserted between the flask and the cover, the object being to protect the flask and for writing directions.



A flask consisting of the part *a*, and cover *b*, and leaves *c*, combined together as and for the purpose described.

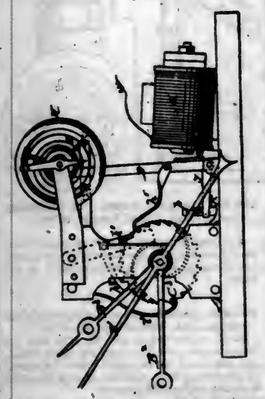
169,053. SLEIGH. Benj. F. Sweet, Fond du Lac, Wis. [Filed Apr. 13, 1876.]

The combination, with the wooden knee C, gutter or clip E, beam D, the runner, and upright a *a*, of the metallic socket, having lugs or projections on its sides and under surface, and loosely fitted to the runner and upright, to allow the specified play or freedom of movement, as set forth.



169,054. ELECTRIC CLOCKS. D. F. Sweet, Hastings, Mich., assignor of one-half his right to Homer Mosl and J. Lee Reed, same place. [Filed Sept. 14, 1876.]

Brief.—Circuit is closed to the electro-magnet through an elbow-lever swung into contact with a set-screw by means of a pin projecting from the balance-wheel, which pin, in the motion of the armature, toward the magnet, takes against a spring attached to elbow-lever. As the armature nears the magnet, the pin escapes from the spring and the circuit is broken. The tension given to the spring of the balance-wheel in the forward motion of the armature carries the armature back to the other limit of its swing.



In an electric clock, the combination of the toothed wheels C', C², and C³, cams *f*, *f'*, bands B' B² B³, armature-lever D, arms I I' and pawls I' I² I³, balance-wheel H, having spring *l*, pin *m*, springs *o*, arm J, and set-screw *p*, all constructed and arranged substantially as and for the purposes herein set forth.

169,055. WEED-TURNERS. John B. Thornton, George H. McDonel, and Allen Hale, Fostoria, Ohio. [Filed Sept. 10, 1876.]

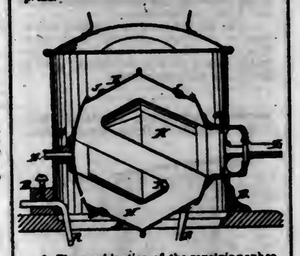
Brief.—The attachment is both pivoted and swiveled to the plow-beam, allowing two motions.

A weed-turner extending at a right angle beneath the plow-beam, to which it is both pivoted and swiveled, with its shorter arm operating a spiral spring in a plane parallel to the vertical of the plow-beam, while it is laterally adjustable by the clamp-washer G, all constructed and operating substantially as shown.



169,056. COFFEE-ROASTERS. F. Thomas, Bloomington, Ill. [Filed Oct. 1, 1875.]

Brief.—A portion of the coffee falls through the perforated central plate at each revolution. The legs are adjustable in a horizontal plane.



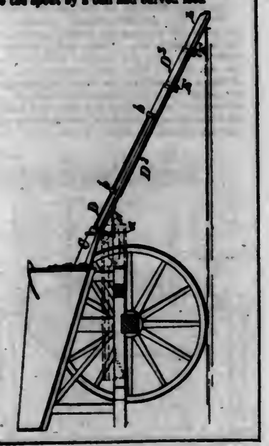
1. The combination of the revolving spheroid E and the partition-plate H, made with openings K, as specified and shown.

2. The combination of the revolving spheroid E, the partition-plate H, with openings K, the vent N, and hollow journal G, the opening K in the partition H being opposite the journal and vent, as specified and shown.

3. The combination of the ring B and adjustable legs B, in the coffee-roaster, as and for the purpose specified.

169,057. DUMPING-WAGONS. William M. Thompson, Carlisle, Pa. [Filed Sept. 9, 1876.]

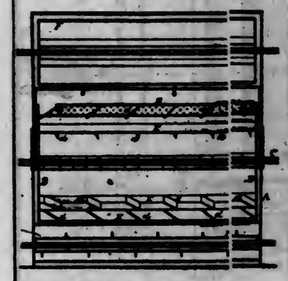
Brief.—The sheets is formed in sections, sliding together on flanges, the whole connected to the apron by a bail and curved feet.



The combination of the apron C, with ball *a*, sliding-chute section: D¹ D², the section D² having curved feet *d*, and the flanged pieces *b b*, on the sections D¹ D², and the hinged sections D² D³, with hinges E E, all constructed substantially as and for the purposes herein set forth.

169,058. MIDDLINGS-PURIFIERS. Albert P. Tuckhorn, Montezuma, assignor of one-half his right to Joseph Hayward, Cleveland, Ohio. [Filed July 28, 1876.]

Brief.—A middlings-purifier provided with agitating-reel underneath a bolting-reel and directly over conveyor, whereby middlings are first purified by sifting through bolting-cloth, and then beaten and stirred up in agitating-reel, through which currents of air pass, thereby further purifying the middlings.



The agitating-reel herein described, consisting of the shaft C, centers D, plain or perforated bars B secured thereto, and provided with fights *d*, in combination with the sheet A and arranged in relation to the bolting-reel F and carrier H, to co-operate therewith, substantially as described, and for the purpose specified.

169,059. SOLE-FASTENINGS. F. O. Tobey, Boston, Mass. [Filed May 16, 1876.]



A shoe-nail, substantially as described, composed of a series of connected conic frustums of varying diameter, forming a tapering nail and with an elongated point-forming apex, substantially as set forth.

169,060. COMPOSITIONS FOR STUFFINGS AND DRESSINGS STRAW HATS. R. Turletin, Paris, France. [Filed Sept. 14, 1876.]

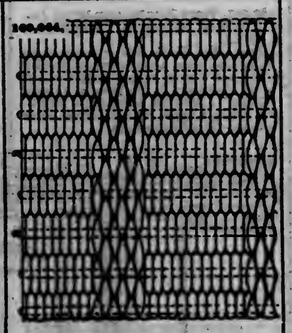
Brief.—Consists of gelatine, dextrine, glycerine, sulphate of magnesia, and sulphate of zinc.

The described new product or composition of matter, which I denominate "parmentine," consisting of the before-mentioned ingredients, taken in the proportions substantially as herein set forth.

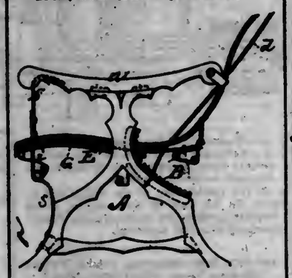
169,061. CHAIR-BOTTOMS. Thomas Tuttevin, Council Bluffs, Iowa. [Filed Sept. 11, 1876.]



169,062. CHAIRS. Thos. Tuttevin, Council Bluffs, Iowa. [Filed Sept. 11, 1876.]



As a new and improved article of manufacture, a fabric for chair-seats and other purposes, composed of a spring-wire warp, *a*, and fibrous weft, woven together as described.



1. The combination, with a seat-frame, of a back-supporting frame, having elastic side pieces *d d*, substantially as described.

2. The combination, with a seat-frame and a spring-back frame attached thereto, of a spring-sectional suspended seat-bottom, substantially as specified.

3. The combination, with a seat-frame, of the vertically-adjustable suspended seat B', substantially as specified.

4. The combination, with the suspended seat B' and a flexible back covering said seat, and attached thereto at the lower edge, of an adjusting-roller, D, adapted to be locked against backward rotation, substantially as specified.

5. The combination, with the flexible and adjustable seat-back B, of the end vice-movable sectional springs F, substantially as specified.

6. The combination, with the suspended swaying seat B', of a stay, G, for holding it stationary, substantially as specified.

7. The combination, with the suspended seat-bottom B and flexible seat-back B', of the springs *i* and angular rear supporting-springs F, substantially as specified.

8. The combination, with a flexible seat-bottom and back, of the springs F', connecting the same, substantially as specified.

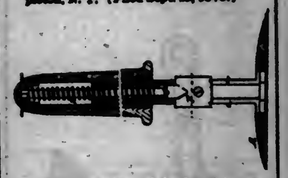
9. The combination, with a flexible vertically-adjustable seat-bottom, B, of the concave central brace *e'* between uprights A, substantially as specified.

10. The central suspension-spring S, consisting of a locked section, S', and a bent and perforated section, K, the latter being arranged in a recess in the chair-arm, and secured in position by the stop-bolt J, substantially as described and shown, and for the purpose specified.

11. The combination, with the seat-frame, of the back-support, having elastic side pieces, the flexible web constituting said back, and connected with the seat B', said seat being suspended by springs from the arm-pieces.

12. A chair-seat suspended within the seat-frame by springs, and by a flexible webbing, the latter forming the back-support, as specified, by means of which universal horizontal motion is secured, substantially as described.

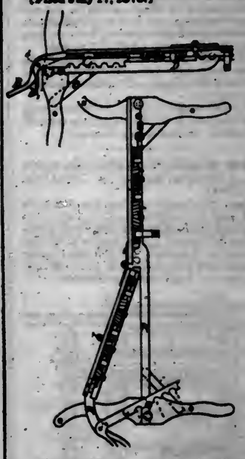
169,063. IMPLEMENTS FOR NOTCHING PARTITIONS FOR GARMENTS. Alida Worth, Stapleton, N. Y. [Filed Sept. 10, 1876.]



1. The combination of the foot-plate, supporting a hollow slotted standard, with a plunger vertically reciprocating within the standard, provided with a knife projecting beyond and through the slotted standard, all substantially as above, for the purpose described.

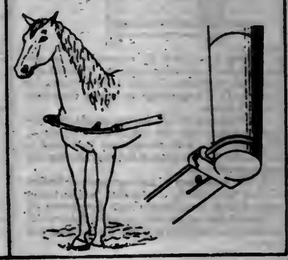
2. The combination of an index with the handle of the plunger that carries the knife, and with the slotted standard and foot-plate, all constructed and operating substantially as shown and described.

169,064. INVALID-BEDSTEADS. Thos. Watson and Robert Kalee, Philadelphia, Pa. [Filed July 17, 1876.]



The combination, with the handles B, of adjustable section b, of the vertically-vibrating and gravitating supports C, having handles *i*, substantially as specified.

169,065. GUARD-STRAPS FOR SHAFTS AND STRAP-COUPLINGS. James Weatherhead, San Jose, Cal. [Filed Feb. 12, 1876.]



The leather strap B, having the slot *o* enlarged at one end into a circular opening, and provided with the slide *p* for application to the thills, substantially as and for the purpose set forth.

169,069. ANCHORS. Thomas J. Whitesar, Philadelphia, Pa. [Filed Sept. 18, 1875.]



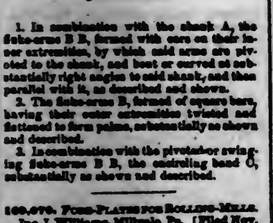
1. In combination with the shank A, the fishe-arms B B, formed with cars on their inner extremities, by which said arms are pivoted to the shank, and bent or curved at substantially right angles to said shank, and then parallel with it, as described and shown.

2. The fishe-arms B, formed of square bars, having their outer extremities twisted and flattened to form palms, substantially as shown and described.

3. In combination with the pivoted or swinging fishe-arms B B, the encircling band C, substantially as shown and described.

169,070. PUMP-PLATES FOR ROLLING-MILLS. Jno. I. Williams, Millvale, Pa. [Filed Nov. 10, 1874.]

Brief.—The fire-plate B has attached to its under side three cylinders, C, C, and J, the two former steam-cylinders, into which steam is admitted through hollow pistons D, to raise or lower the fire-plate, and the latter acting in conjunction with piston K as an air-cushion. The rods *e e f f* are simply guide-rods.



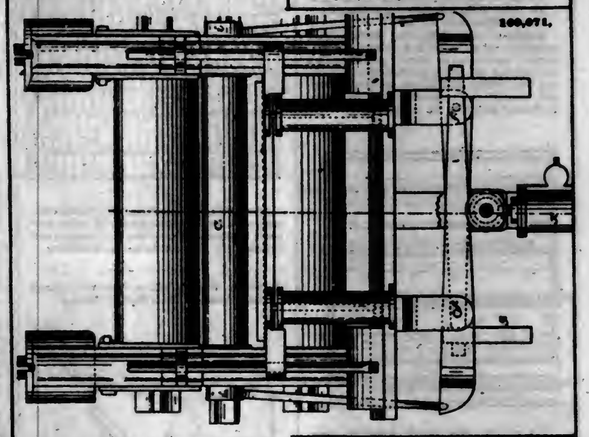
1. The fire-plate B, constructed as described, in combination with its attached cylinder or cylinders C, and hollow piston or pistons D, substantially as herein described and set forth.

2. The fire-plate B, the under side of it being provided with the cylinders C, C, and J, in combination with the pistons D, D, and K, substantially as herein described, and for the purpose set forth.

3. The fire-plate B, having steam-cylinders C and air-cylinder J attached to the under side of it, in combination with the pistons D, D, and K, and stops and guides, substantially as herein described, and for the purpose set forth.

169,071. TUBE-MILL ROLLING-MILLS. Jno. I. Williams, Millvale, Pa. [Filed Nov. 10, 1874.]

Brief.—The middle roll is balanced by weights and levers, to the last-named of which is attached a cross-head, connected to and raised and lowered by the piston of a steam-cylinder. Attached to the bearing of the middle roll is a small fire-plate, which moves with the roll and its bearings.



169,071.

1. The rolls C, balanced through the medium of weights and levers, and elevated and depressed through the agency of steam, substantially as herein described.

2. The combination of the middle roll C, with the fire-plate or rest attached to its bearings, guide *g*, and steam-cylinder J, substantially as herein described.

169,072. STEAM-DECOPPERS. John T. Wright, Columbia, Tenn. [Filed July 1, 1875.]

Brief.—Adjustably secured in brackets at the front end of the beam is a bearing-wheel having a removable tire, by which the circumference of the wheel and the corresponding width of row can be increased or diminished. A reciprocating movement is imparted to the sand-slide by a pitman extending forward to the bearing-wheel. The slide being provided with two sets of holes, the sand is dropped into the sheets at each vibration of the slide.



The combination, with the beam A, of the adjustable brace D, wheel C provided with the removable tire or rim E, the pitman *f*, slide J, and tubes I I, constructed and arranged to operate substantially as and for the purpose set forth.

169,073. GOVERNORS FOR WATER-WHEELS. Edward Wright, Worcester, Mass. [Filed May 12, 1875.]



169,073.

1. The combination of the ratchet-wheel G, shaft C, screw-sleeve H and its head *a*, transverse-rod R and its radial pin *q*, rod P, and their respective steps *s*, *t*, *u*, and *v*, with arm *o* of lever S, rod U, and slide-collar F of the governor, as and for the purposes substantially as set forth.

2. The combination of rod U, lever S, and its arm *n*, with screw H and its head C, transverse-rod R and its radial pin *q*, rod P, and their respective steps *s*, *t*, *u*, and *v*, main shaft C, and ratchet-gear G, sleeve H', ratchet-shield H, rod I, forked piece J, and slide-collar F of the governor, the whole being arranged, constructed, and operated in the manner and for the purposes substantially as set forth.

REISSUES.

6,700. CHAIN-PUMPS. Wm. Cooper, Ypsilanti, Mich. Patent No. 127,576, dated June 4, 1872. [Filed Aug. 14, 1876.]

Brief.—The bucket is provided with a notch at its side to allow the water above the bucket to pass off, and thus prevent its flooding around the edges of the bucket. When the rubber wears so that it does not fill the tube, a piece of leather is inserted between the metal disk and the rubber.



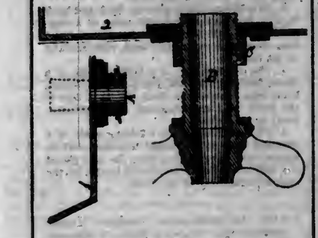
1. In a chain-pump bucket, the rubber collar B, provided with a notch, *a*, in the edge, for the purposes herein set forth.

2. The head A, having groove *c*, flanges *b b'*, and wire C, and provided between the flanges with the rubber collar B, having notch *a*, substantially as herein set forth.

3. In combination with the head A and rubber B, the leather or other material *f* inserted between the rubber and head, substantially as and for the purposes herein set forth.

6,701. FAUCETS. Chas. A. Douglas, Franklin, N. Y. Patent No. 109,191, dated Nov. 15, 1870. [Filed Oct. 1, 1875.]

Brief.—Faucet adapted to empty an inner and outer vessel.



1. The tube A, connecting with the bottom of the inner vessel 1, and the tube B, connecting by a screw-thread with said tube A, and terminating below the lower vessel 2, when combined to operate substantially in the manner set forth.

2. The tubes A and B, connecting with each other by screw-threads, with tube A fixed to the bottom of the inner vessel 1, and the tube C attached to the bottom of the lower vessel 2, with the tube B bearing against the lower end of said tube C, when combined to operate substantially as and for the purposes set forth.

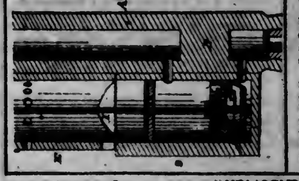
6,702. SHUTTLE-MOTIONS FOR LOOMS. C. I. Kase, Milford, Conn. Patent No. 167,170, dated Aug. 31, 1875. [Filed Sept. 28, 1875.]

1. The raceway composed of or provided, both on its front and back edges, with flanged or grooved guide-rollers, in combination with a shuttle having its bearing-edges constructed to correspond, whereby said shuttle is not only directed but supported by the rollers, substantially as specified.

2. The combination, with the shuttle operating in a circular or curved raceway, of the oscillating and longitudinally-sliding shuttle-driving fingers *D D*, occupying an inclined position relative to the plane of the raceway, the driver or carrier E oscillating about an axis perpendicular to the plane of the raceway, and the stationary conical cam G, substantially as described.

6,703. PUMPS. John Sass, Hudson, Mich. Patent No. 60,804, dated Feb. 9, 1860. [Filed Sept. 2, 1875.]

Brief.—Two buckets—a lift and a force, operating in the same cylinder, the latter above the former, the discharge being between the two—are connected by separate rods to the lever, on the same side of the fulcrum, at different distances therefrom, therefore giving one bucket longer stroke than the other, and discharging water at both strokes.



1. In a pump, the two rods I I', when attached to the handle or lever of the pump on the same side of its fulcrum, one operating as a suction-rod and the other as a force-rod, in combination with buckets or plungers, operating in one and the same cylinder, substantially as set forth.

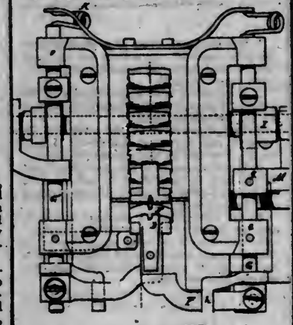
2. The perforated ventilating-cap E, in combination with the pump-cylinder D and stock A, for the purposes herein set forth.

3. The combination of the pump stock A with side cylinder D, having a ventilating-cap, E, rods I I', and buckets H and L, constructed and operating substantially in the manner and for the purpose herein set forth.

4. In a pump, the combination of two plungers, working within one cylinder in the same direction, but at different rates of speed, for the purposes herein set forth.

6,704. PLAITING DEVICES. Wm. Walker, Brooklyn, N. Y., assignor to George H. Wooster. Patent No. 108,655, dated Nov. 1, 1870. [Filed Aug. 30, 1876.]

Brief.—Box-plaiting is produced by two independent plaiting-knives, arranged to work one against the other, combined with operating mechanism. The knives, placed one over the other, are attached to arms which are at right angles to the direction of the feed. These arms are secured to carriers on opposite sides of the table, and are provided with toes, against which cams mounted on a secondary shaft act, producing alternate reciprocating motion. The reverse motion of the carriers is caused by the action of springs. The cams are so shaped that the knives at first act alternately, but toward the finish move simultaneously, thereby carrying the plaited material under the presser-foot, and into contact with the feed. The knives are pressed toward each other during their forward movement by springs, which act upon secondary arms pivoted to the carriers, one extremity of each arm bearing upon the adjacent knife-arm, and the other resting upon a cam. The cam relieves the knives of the spring-pressure upon their back stroke.



1. In a plaiting device, the combination of two independently-acting blades, one adapted to close and operate on one, and the other on the opposite side of, and to move the fabric to be plaited.

2. The combination of two independent blades, adapted to operate on opposite sides of the fabric to be plaited, with mechanism adapted to operate the blades alternately, substantially as described.

3. The combination, with two blades arranged to grasp opposite sides of the fabric, of mechanism adapted to close or shut one blade toward the other, to move the blades forward simultaneously, and carry with them the material, and to release from pressure one blade from the other on returning, substantially as described.

4. The combination of a blade, arranged on one side of the fabric to be folded, with a blade arranged in opposition to it on the other side, one blade being adapted to engage the fabric resting against and to move it over the surface of the other blade, substantially as described.

5. The combination, with two independent reciprocating blades, arranged one below the other, and adapted to grasp and release the fabric, of a feeding mechanism to move the folded material, substantially as described.

6. The combination of two independent acting blades, adapted to operate against opposite sides of the fabric, with a presser or holder, substantially as described.

7. The combination of two independent acting blades arranged on opposite sides of the fabric to be folded, with a sewing mechanism to secure the folds by stitches, substantially as described.

8. The combination of two independently-acting blades, arranged to engage the material between them substantially as described, with sewing mechanism, adapted to form two or more stitches to each fold or plait, essentially as set forth.

9. The combination, with two independent blades, adapted to engage the upper and under side of the material to be folded, with mechanism adapted to operate the blades, as follows, viz: to move toward and grasp the material to carry the material forward, to release the blades from pressure on the material, and to move backward over the material for a new fold or gather.

10. The combination of the rocking frame M, the carrier G, the cams I and N, the springs K and L, and the arm P, of the plaiter D, substantially as specified.

11. The blades D D', combined with the carriers G G', arranged and reciprocating at opposite sides of the line of stitching, substantially as described.

12. In a plaiting mechanism two independent blades arranged on opposite sides of the fabric, and adapted to alternately engage and move the fabric resting against a surface opposed to the acting blade, to form plaits.

13. In a plaiting mechanism two independently-acting blades, one acting on an opposing surface above its acting edge, and the other acting on an opposing surface below its acting edge, in combination with a feeding mechanism.

14. The combination, with two independent blades attached to a sewing-machine, of a secondary shaft, operated by the main shaft of the machine, and made to run at a slower velocity than said secondary shaft, essentially as and for the purpose set forth.

6,705. TRIPODS FOR ROCK-DRILLING MACHINES. Jno. B. Wering, New York, N. Y., assignor to the Wering Rock-Drill Company, same place. Patent No. 152,712, dated June 30, 1874. [Filed July 6, 1875.]



1. A tripod in which an adjustable shell, D, is combined with three legs, all hinged to the said shell, substantially in the manner described.

2. A drill-supporting tripod, two legs of which are connected to the tripod-frame by ball-and-socket joints, and the third by an ordinary joint, as herein set forth.

3. The combination of the undercut recess or socket *p* on the under side of a shell or frame, D, for supporting the drilling-machine with the clamps O, the beveled projections *g*, and the cylindrical portion *e* of the frame E.

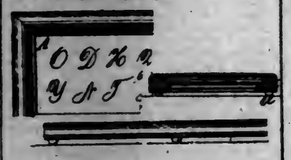
4. The top E of the tripod, having arms *f*, for connection to the legs A and A' by ball-and-socket joints, and a cylindrical portion, *e*, adapted to the forked end of the leg B, all substantially as set forth.

5. The combination, with the adjustable rods *d*, of the legs with spurs I, as and for the purpose specified.

6. The weight M, having a recess and groove adapted to the leg *t* of the tripod, and to a hook, *c*, on the leg, as described, for the purpose specified.

6,706. COPY-SLIPS FOR TEACHING PENMANSHIP. Campbell Allen, Albany, N. Y. Patent No. 161,102, dated Mar. 23, 1875. [Filed Sept. 7, 1875.]

Brief.—The copy is painted or depicted upon a transparent material, and framed to raise it slightly. It is used to place over the imitation copy of the pupil, for comparison with the original copy-slip.



1. The improvement in devices for teaching penmanship, consisting of a transparent copy-slip, having the copy to be imitated delineated upon it, and constructed and arranged to operate substantially as specified.

2. A transparent copy-slip, composed of sheet-gelatine, with the copy to be imitated printed or delineated upon it, and varnished, essentially as and for the purpose herein described.

3. A transparent copy-slip, combined with a raised frame or holder, substantially as herein described.

6,707. ARTIFICIAL CAOUTCHOUC. A. G. Day, New York, N. Y. Patent No. 86,615, dated Oct. 9, 1866; antedated Sept. 29, 1866. [Filed Sept. 6, 1875.]

1. The herein-described new product, formed by a combination of vegetable or mineral oils, gum-resins, or other resinous bodies, and sulphur.

2. The herein-described new product, formed by a combination of vegetable or mineral oils, gum-resins, or other resinous bodies, and sulphur, with india-rubber or gutta-percha, substantially as specified.

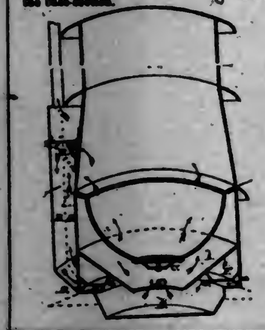
6,708. PROCESSES OF FORMING ARTIFICIAL CAOUTCHOUC. A. G. Day, New York, N. Y. Patent No. 86,615, dated Oct. 9, 1866; antedated Sept. 29, 1866. [Filed Sept. 6, 1875.]

1. The herein-described process of forming a new product adapted to be used as a substitute for india-rubber, the same consisting in mixing and treating by means of heat, vegetable, or mineral oils, gum resins, or other resinous bodies, and sulphur, substantially as set forth.

2. The herein-described process of combining vegetable or mineral oils, gum resins, or other resinous bodies, and sulphur, with india-rubber or gutta-percha, substantially in the manner and for the purpose described.

6,709. COAL-STOVES. Solomon Hunt, Hudson, N. Y., assignor, by mesne assignments, to Perry & Co. Patent No. 80,073, dated Sept. 19, 1865. [Filed Oct. 11, 1875.]

Brief.—The descending flue connects with an annular flue in the base. The vertical flues placed together in the rear of the stove do not obstruct the light from the windows in the base-section.



1. The adjoining ascending and descending flues D and D' at the rear of the stove, in combination with the flue or chamber F in the base-section, all being constructed substantially in the manner and for the purpose described.

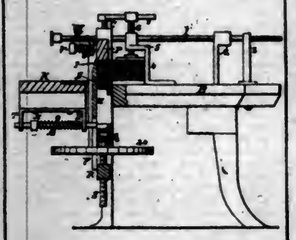
2. The bridge-flue H, in combination with the circular flue G, substantially as specified.

3. The adjoining flues D and D', situated at the rear of the stove, and having walls built on the casing of the same, in combination with the illuminating doors or windows in the draft-chamber base-section.

4. A heating-stove constructed with ascending and descending flues, placed on the rear side thereof, in combination with illuminating doors and windows in the draft-chamber base-section.

6,710. PAPER-CUTTING MACHINES. Betsey C. Soule, Brooklyn, N. Y., administratrix of Saml. W. Soule, deceased. Patent No. 140,690, dated Apr. 14, 1874. [Filed Aug. 24, 1875.]

Brief.—Paper is clamped on the table and cut by rising knife, the trimmings falling on a table, which accommodates itself to the position of the knife.



1. The table and clamp of a paper-cutting machine combined with a knife and knife-bar beneath said table, and operating with an upward cut, as set forth.

2. The yielding table K, combined with the knife of a paper-cutter, substantially as and for the purpose set forth.

3. The combination of the knife-bar H, roller F, rack J, shaft C, and pinion D, substantially as and for the purpose set forth.

4. The combination of the cross-bars P and R, side rods Q, hand-wheel 24, and screw S, knife I, and yielding plate U, substantially as and for the purpose set forth.

5. The combination of the gage *a*, rod Y, and set-screw *b*, the rod sliding longitudinally and capable of being partly rotated, so that the gage may be moved along the table, and turned off and away from the table, for the purposes set forth.

6,711. FOLDING CHAIRS. A. D. Whitmore, Mountsole, Mass., assignor to E. W. Vaill. Patent No. 40,526, dated Nov. 3, 1863. [Filed Apr. 14, 1875.]

1. The folding chair made with the back and back legs forming one frame, in combination with a seat-frame that passes in between the back legs, and is pivoted directly to such legs, substantially as set forth.

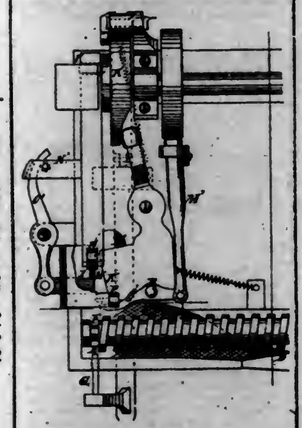
2. In a folding chair with the back and back legs in one frame, the combination of a diagonal brace, rigid seat or seat-frame, and front legs connected with such seat, substantially as set forth.

3. The combination, in a folding chair, of a frame forming the back and back legs, a seat, front legs, connections from the back legs to the front legs, and diagonal braces, substantially as set forth.

4. The combination, in a folding chair, of a seat and back frame hinged together, and diagonal braces, extending from the side pieces *a a*, and connected with slotted guides at the seat, substantially as set forth.

6,712. MACHINES FOR FINISHING HORSESHOE-NAILS. Harry A. Wills, Vergennes, Vt., assignor to Julia A. Wills and Lucy S. Kingsland. Patent No. 122,876, dated Jan. 16, 1872; reissue No. 5,240, dated Jan. 21, 1873. [Filed Aug. 11, 1874.]

Brief.—The nail is fed along by means of a screw, and is turned to a horizontal position by passing over a curved plate. A pusher feeds the nail horizontally into a pair of dies, where it rests, while a roll runs over its upper surface from the head toward the point, to give the finished shape.



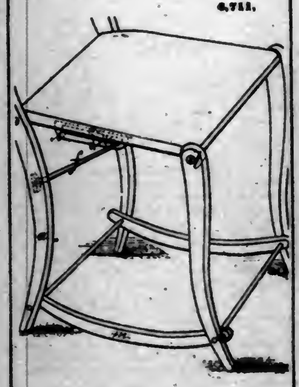
1. The combination, as herein described and shown, of the scroll-shaped guide B C and feed-screw, substantially as specified.

2. The combination of the pusher C with the roller and bed-dies, the said pusher and roller-die and the operating devices therefor being arranged in such relation that the nail will be pushed forward when the roller-die is over the bed-die, substantially in the manner herein described.

3. The combination of the head-holder with the bed-die and roller-die, substantially as specified.

6,713. ART OF FINISHING HORSESHOE-NAILS. Harry A. Wills, Vergennes, Vt., assignor to Julia A. Wills and Lucy S. Kingsland. Patent No. 122,876, dated Jan. 16, 1872; reissue No. 5,240, dated Jan. 21, 1873. [Filed Aug. 11, 1874.]

6,711.



The improvement in the art of finishing horseshoe-nails, which consists in rolling one surface of the nail while cold, the opposite surface being supported its entire length upon an anvil.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 17. TUESDAY, OCTOBER 26, 1875. PRICE { $5,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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NOTICE TO MANUFACTURERS AND OTHERS.

UNITED STATES PATENT OFFICE,
Washington, D. C., October 5, 1875.

The COMMISSIONER OF PATENTS respectfully requests manufacturers of and dealers in engines, machines, apparatus, tools, and appliances of whatever kind, to send to this Office duplicate copies of all catalogues and circulars which they have issued or may issue from time to time.

R. H. DUELL, *Commissioner.*

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, EASTERN DISTRICT OF MICHIGAN.

CHARLES L. HAWES *vs.* WILLIAM W. ANTISDEL.

[*In equity.—Before* LONGYEAR, *J.—February*, 1875.]

In order to defeat a patent on the ground of want of novelty, the proof of prior use or previous knowledge must be such as to establish the fact clearly and satisfactorily, and beyond a reasonable doubt.

Where the proofs are contradictory, *mere* preponderance is not sufficient to sustain the allegation. The preponderance in such case must be such as to remove all reasonable doubt. * * *

To doubt in such a case is to solve the question in the negative.

Letters Patent No. 63,889, for a new and useful "Hotel Register," granted to Charles L. Hawes, April 16, 1867, sustained.

[*J. J. Allen, W. W. Taylor,* and *E. C. Walker,* for complainant. *Moore* and *Griffin,* for defendant.]

LONGYEAR, *J.:*

The patent carries with it a presumption of novelty of the thing patented, and the burden of rebutting that presumption is upon the defendant. In order to defeat the patent on the ground of want of novelty, the proof of prior use or previous knowledge must be such as to establish the fact clearly and satisfactorily, and beyond a reasonable doubt. Where the proofs are contradictory, *mere* preponderance is not sufficient to sustain the allegation. The preponderance in such case must be such as to remove all reasonable doubt.

In *Wood* vs. *Cleveland Rolling Mills Company,* (4 Fish. Pat. Cases, 550, 560,) Mr. Justice Swayne said:

When the defense is made out it is the duty of courts and juries to give it effect. But such testimony should be weighed with care, and the defense allowed to prevail only when the evidence is such as to leave no room for a reasonable doubt upon the subject.

In *Perham* vs. *American Button Hole Company, &c.,* (4 Fish. Pat. Cas., 468, 482,) heard before Mr. Justice Strong and Circuit Judge McKennan, the latter, in delivering the opinion of the court, said:

The evidence must establish clearly the priority of a completed and useful machine over that of the patentee, or it is unavailing. To doubt upon this point is to resolve it in the negative.

In *Sayles* vs. *Chicago and Northwestern Railroad Company,* (4 Fish. Pat. Cases, 584, 590,) Drummond J., in a case nicely balanced on the evidence, sustained the patent. In *Crouch* vs. *Speer,* (6 OFFICIAL GAZETTE of the Patent Office, 187,) Nixon, J., held that the defendant not only assumed the burden of proof of his allegation of want of novelty, but that his undertaking was to show affirmatively prior knowledge and use under such circumstances as to give the public the right of a continued use as against the patentee, and that he fails to do this when his evidence is frequently contradicted, and is inconsistent with itself. These doctrines I believe to be well grounded in principle, as well as established by repeated and uniform adjudications.

The invention in question is what is commonly known as the "advertising hotel-register," the book being constructed so as to have inserted advertisements at the top and bottom and on the margin of each page, with a blank space for the registering of names of guests, or on each alternate page, leaving the opposite page blank for registering of such names, or on both pages of each alternate leaf, such leaf being sometimes made of bibulous or blotting paper.

The proofs showed that the complainant perfected his invention and put it into practical use as early as in May, 1866, and it was to that date the proofs as to prior use and previous knowledge related.

No advertising hotel-register book purporting to antedate complainant's invention was put in evidence. Such a book, duly verified, would be the best evidence possible. Each page would be an intelligent speaking unimpeachable witness to its own chronology, and the book itself the best evidence of the date of its use. The case is left to stand exclusively upon the recollections of witnesses, and at a distance in time from eight to twenty years, and unaided in any single instance by

any cotemporaneous memorandum or writing whatever. I shall recur to this peculiar aspect of the case in another part of this opinion.

The places where and the persons by whom such prior use and previous knowledge are alleged to have taken place, and as to which proofs have been made, will be taken up in the order in which they were alleged in the amended answer.

1. Prior use in the Exchange Hotel at Sturgis, in the State of Michigan, by E. W. Pendleton.

Pendleton, with five others, testify to the use of an advertising-register in the hotel named prior to May, 1866, viz., in 1864 and 1865, and nine witnesses testify to the contrary. That registers of some kind were used in that hotel during the years 1864 and 1865, and that advertising-registers were used in it after May, 1866, the testimony on both sides is entirely agreed. The vital question is whether the registers used in 1864 and 1865 were advertising-registers, or, what is the same thing, whether the conceded use of advertising-registers commenced in that hotel before May, 1866. As to this question the testimony is in direct and irreconcilable conflict. The testimony was taken at a distance of time of from eight to ten years. The witnesses on both sides testify from memory alone, unaided by any memorandum or writing whatever of the fact itself, or of concurrent facts. The uncertainty of memory as to dates under such circumstances is well understood; and where, as in this case, the event in question was one not calculated to fix itself in the memory of the persons called to testify, except Pendleton, on account of any interest it was to them, and those persons have equal means of knowledge, are of equal credibility and apparently of equally sound memory, and they positively disagree, it may well be said in a case like the present, that prior use is not made out in that clear and satisfactory manner requisite, as we have seen, in such cases.

Again, Pendleton was subpœnaed by complainant to produce all the hotel-registers used in that hotel during the period in question. In response he produced a plain register commencing in April, 1861, and ending April 1, 1864, and also a portion of another, which he testified commenced, according to his best impression, December, 20, 1866, and ended in July, 1867; but for the period between April, 1864, and December, 1866, he produced no register of any kind; and of the register which he says he thinks, it is his impression, commenced December 20, 1866, there is, according to his judgment, about one-third missing. Now these are certainly very suspicious circumstances, especially in view of the fact, as appears by his testimony, that he was a defendant in one of the numerous suits then pending, in behalf of this same complainant, for an infringement of the patent here in question. It is true, he attempts to explain the absence of the register which he says he used (and which he says was an advertising-register) during the period between the first register produced and the mutilated one, April 1, 1864, to December 20, 1866; but his explanations appear to the court to be mere guess-work, and are far from satisfactory. He speaks of its having been given to a boy, or, perhaps, used up in the house to clean lamps with, but nothing with that degree of certainty requisite in such cases. And as to the missing portion of the register ending July, 1867, he is still more indefinite and unsatisfactory, and, in fact, offers no explanation whatever which can be considered as such in a case like the present. The importance of requiring strict proof that there was used in that hotel a register between the two produced becomes the more apparent when we consider that the hiatus from April 1, 1864, the close of the register he does produce, to December 20, 1866, when he thinks the one produced (the mutilated one) commenced, is only two years and a little over seven months, and the length of time the latter register continued after the latter date is only about six months, making in all just about three years, which is just the length of time the first register produced lasted, and he says they were just about of equal size, thus affording a strong presumption that if the missing portion of the mutilated register had been produced it would have covered the entire time it is pretended an advertising-register was used. It is true, he says he thinks the last named register was not entirely filled up; but the first and last leaves from which Pendleton says he took his dates are both missing, and his statement as to the book not being filled up to any considerable extent, especially in view of his interest in the controversy, must be taken with many grains of allowance. The time an advertising-register was pretended to have been used (1864 and 1865) may be further accounted for by the use between the first register produced and the mutilated one, of one of those small registers of one to three quires of paper, he says he sometimes used between regular register-books, probably while waiting for a new one.

Considering all the circumstances, the proofs fall far short of convincing my mind that there was a use of an advertising hotel-register at the Exchange Hotel in Sturgis, in the State of Michigan, as alleged prior to the complainant's invention.

2. Prior use in the Michigan House, at Tecumseh, in the State of Michigan, by Mrs. W. H. Hoeg.

Four witnesses testify to the use of an advertising-register at the place named in 1855, and five, including the then clerk or manager for the proprietor, George R. Southworth, testify to the contrary. Southworth certainly had better means of knowledge and would be more likely to remember what the fact was than any of the witnesses testifying to such use at the date mentioned, except perhaps the witness Spafford, who testified that he, being a binder, procured the printing done and himself bound the book and put it into use there while he was in charge of the hotel during a temporary absence of Southworth. But Southworth was absent only two or three months, and Spafford testifies that the register so put there by him continued to be used there after Southworth's return. So that if there ever was such a register at the time specified it was there when Southworth returned and resumed the management of the hotel; and he testifies positively that there was no such thing there. He describes what he says was the only book used in the office to his knowledge, and that was not an advertising-register, or, in fact, a register at all as commonly understood. He describes it as simply a book in which the names of guests were entered by the clerk and a minute kept of what they had at the hotel. The other four of complainant's witnesses corroborate Southworth both as to the fact that no advertising-register was used there during the time mentioned by Spafford and as to the description of the book that was used.

In such a conflict of testimony perhaps nothing more need be said than that the case is such that there is such a want of clear and satisfactory proof of prior use and, to say the least, that it is involved in so much doubt that under the rules laid down it must be held that the allegation of prior use at Tecumseh is not made out. But perhaps the testimony of defendant's witness Spafford, and that of the others tending to corroborate him ought to receive particular notice, because Spafford testifies that he got up and bound the book, and it is therefore not a mere matter of memory with him so far as the fact of such a book having been used there at some time is concerned; and for the further reason that if Spafford is to be believed in preference to Southworth and the witnesses tending to corroborate him, then it must be conceded that the allegation of prior use at Tecumseh is made out.

Spafford was first examined as a witness at Grand Rapids in a suit pending there involving the same issue, and subsequently at Detroit in this suit. His testimony at Grand Rapids was stipulated into this suit; and on a comparison of the two, and, in fact, of certain portions of each with other portions of the same, especially that taken at Detroit, I find his testimony in many respects inconsistent with itself, exceedingly uncertain, and in many instances palpably erroneous in respect to dates and events, so much so that the impression has been produced upon my mind, amounting almost to a conviction, that his testimony is wholly unreliable; and I am of the opinion that even if it had not been contradicted, it would, to say the least, have constituted a very unsatisfactory basis upon which to take away the complainant's property in his invention. Were it not for extending this opinion to unpardonable length I would detail some of the most glaring of these inconsistencies, uncertainties, and errors; but what has been already said must suffice.

When we add to the infirmities inherent in Spafford's testimony the direct contradiction of Southworth, who had full means of knowledge as to the main fact, and a greater interest than Spafford in the existence of that fact at the time, if it existed, Spafford's testimony becomes in my estimation utterly worthless. Spafford says Southworth paid him for getting up the book, and that the tailor and liveryman whose advertisements were inserted paid Southworth for the same. He thereby shows that if the fact existed at all Southworth was an actor in it equally with himself, and with a greater interest. In view of this, and of the additional fact already alluded to, that if used there it must have been under Southworth's immediate notice and supervision, and also that he describes the book that was used, Southworth's testimony is, to say the least, of as high a character and entitled to as much weight as that of Spafford. These two witnesses also stand before the court on an equality as to character and credibility. The character or reputation for truth and veracity of neither was impugned, and if the old adage that "a man may be known by the company he keeps" be true in this instance, they stand on a perfect equality as to general character by Spafford's own testimony, because he says they have been intimate friends and associates from schoolboys up.

As to the witnesses introduced by defendant to corroborate Spafford, Mrs. Hoeg, now Mrs. Stinson, who kept the house, was seldom in the office, and her recollection of such a book having been used there at any time during the few months she kept the house is, as it might be supposed to be, quite dim, shadowy, and uncertain; and it may be problematical, at least, whether her present interest in defeating complainant's alleged invention (her present husband having been sued for infringement) has not had something to do in quickening the slight recollection to which she testified. And Gonzolus, who kept the house after Mrs. Hoeg, says in his testimony that at first his recollection of the fact was faint, but his memory was afterward revived—by what means he does not state. The testimony of the remaining witness for defendant is of a similarly uncertain and unsatisfactory character.

The proofs showed that the hotel building in question was consumed by fire in 1858 with its contents. The absence of the register or book used there at the time specified (1855) is therefore satisfactorily accounted for, and has no influence in the conclusion arrived at any further than hereafter noticed.

It results that the allegation of prior use in the Michigan House at Tecumseh, in the State of Michigan, is not sustained.

3. Prior use in the Bentley House, at Dexter, in the State of Michigan, by Nelson J. Alport.

Alport, with eight others, testify to the use of advertising hotel-registers in the place named prior to 1866, viz., in 1863, 1864, and 1865, and eight witnesses testify to the contrary. As in the instance of the alleged use at Tecumseh, so here, the hotel was destroyed by fire after the alleged prior use, and the two register-books claimed to have been so used there are represented to have been destroyed with the hotel. So that here, as in both the preceding instances, the case is left to stand exclusively upon the recollections of witnesses as to both the fact and the dates, and in this instance at ten and eleven years distance of time.

Alport kept the Bentley House first as tenant and then as purchaser under one Hayes, the former owner and occupant, from the summer or fall of 1863 to January, 1866, when he sold out to one Porter, who kept the house for a time, and it was finally destroyed by fire on Christmas night, 1866. Alport testified that when he went into the house in 1863 he found an advertising-register there about half filled up, and that he used it for the purpose of a register till in 1864 or in 1865, when a man left another advertising-register at the house, and that he used that one till he sold out to Porter in January, 1866, and left it in the house, there then being only about forty pages filled. Alport testified that Hayes, of whom he took and purchased the house, was dead, but it does not appear but that Porter, Alport's successor, was still living and within reach. Porter's testimony was not taken; but one Fenn, a person who was in the employ of Hayes at the hotel up to the time Alport took possession, and also of Bentley before Hayes, was called by complainant and testified that no such register was in use there by Hayes or Bentley, and he describes the register which was used as a plain register. It is true, Alport had the better means of knowledge as to his finding a register there and its character; but both these witnesses are about equally corroborated by others, and it must be borne in mind that Alport was directly interested to defeat complainant in this suit, for the reason that there was another suit pending against him for a like infringement. To say the most that can be said in its favor, the evidence of the existence of this supposed register of 1863 is still so contradictory and unsatisfactory that it seems to me an exceedingly unsafe basis upon which to defeat complainant's patent.

The evidence of the existence of the pretended second register used by Alport in the Bentley House is, if possible, still more contradictory and unsatisfactory. When Alport sold out to Porter, he or his wife bought a lot near the Bentley House on the same street, and in the summer of 1866 built a new hotel, called at first the Grant House, and afterward the Dexter Exchange. In 1867 or 1868 a man left an advertising-register with Alport, and it was used by him at that new house, and another one was so left in 1870 or 1871. Both Alport and his wife describe the advertisements and the advertisers in the register of 1867 as almost identical with those described by Alport as contained in the pretended register of 1864. As to the existence of the register of 1867 there is an entire agreement in the testimony; and it must be regarded as established. There is much room for speculation, to say the least, as to whether the fact of the existence of the register of 1867 has not been made use of in connection with the uncertainty of the recollections of witnesses at so distant a period of time, and in regard to a matter in which most of them had no particular interest to impress their memories, to make out the existence of an advertising-register in the Bentley House in 1864 and in 1865, and thus make the register of 1867 do double duty.

Alport testified that the man who left the register of 1864 said he lived in Tecumseh, and that the man who left the register of 1867 said he lived in Adrian. In a subsequent part of his testimony he seems to testify that the man who left the 1864 register said he lived in Adrian instead of Tecumseh. He also testified to a conversation with one Soulier about the man who got up and left the register of 1864, Soulier being somewhat acquainted with him; and Soulier when put upon the stand testifies that the man Alport talked with him about was the man who got up and left the register in 1867, and that he lived in Adrian. The man himself was not called.

Alport testified that one Lutz and Harning, butchers, advertised in both registers of 1864 and 1867. But Lutz testified and other proofs corroborate him, that he did not come to Dexter, and was not in business there until the latter part of 1866, and of course could not have advertised in the register of 1864 as testified by Alport.

On his cross examination Alport described the register of 1867, and the advertisements in it, giving the same descriptions he had in both respects of the register of 1864, and then, seeming to have noticed the identity of description, said it was the latter he supposed he was describing; and in a subsequent part of his testimony he attempted to give a different description of the register of 1867 and its contents, but in this he is not corroborated, he is, in fact, contradicted by other testimony in the case. These facts, when considered in connection with the circumstances next stated, tend to cast suspicion on his testimony. Alport having testified that he kept the Grant House and Dexter Exchange in the name of his wife, Mrs. Sarah B. Alport, the latter was served with a subpœna *duces tecum*, on behalf of complainant, to bring with her all the hotel-registers in her possession. She appeared in obedience to the subpœna, and was sworn and examined as a witness, but produced no reg-

isters, giving as a reason that *Mr. Alport would not allow her to bring them.* It is true, she testified that the register of 1867, the one particularly desired, was not then in existence; but whether it was destroyed before or after Mr. Alport had given his testimony and it had come out that it would be important and material to have the register of 1867 in court for the purpose of comparison with the description given by him of the one alleged to have existed in 1864, does not appear. All Mrs. Alport can say is that it was put in the kitchen "long ago" to be used for kindling.

The witnesses produced by defendant to corroborate Alport as to the existence of those alleged prior advertising-registers all testify from recollection, without any memoranda or writing whatever to aid their memory. Those called by complainant to prove the contrary, it is true, testify equally from memory alone, and are equally liable to be mistaken; but that does not help the defendant's case, because the burden was on him to make out his defense by clear and satisfactory evidence, and beyond a reasonable doubt; and, as we shall presently show, the testimony tending to prove the non-existence of those alleged registers is entitled to equal weight with that tending to prove their existence.

It must therefore be held that the allegation of the answer of prior use of the alleged invention in the Bentley House at Dexter by N. J. Alport is not sustained.

4. Previous knowledge of the alleged invention by Spafford at Tecumseh, and Stiles at Jackson, both in the State of Michigan. Spafford's testimony as to alleged prior knowledge has been already considered and disposed of in connection with the alleged prior use at Tecumseh. Previous knowledge of Stiles remains to be considered, and this rests on Stiles' testimony alone.

This person, when on the witness-stand, manifested, especially on his cross-examination, a degree of recklessness and want of appreciation of his duty as a witness, and of the obligation of the oath he had taken, frequently expressed in exhibitions of contumely and of contempt for the party against whom he was called to testify such as is seldom witnessed in a court of justice, and as destroys, in my estimation, all confidence in his honesty and truth as a witness. At all events, when these infirmities in his testimony are considered in connection with his acknowledged exceedingly bad memory as to dates, where dates alone were important, and the absence of memoranda which he said he had and could produce, showing the correct dates, I should feel far from justified in allowing the unsupported testimony of this man to outweigh the evidence of the patent of the novelty of the invention.

5. In addition to what has been already said, there are considerations of a general character which would have a tendency to force upon the mind, almost irresistibly, serious doubts of the truth of the defense set up, even if the evidence in support were uncontradicted and of a stronger character.

In the first place the defense was predicated upon an alleged prior public and common use of the thing patented, and six different hotels and places were specified, while testimony was adduced as to only three hotels and places, and those were the register or registers in use at the times specified, of whatever description, had been destroyed or could not be found.

In the next place, defendant's testimony tends to show as strongly as it shows anything, that if these registers were in use at all prior to complainant's invention they must have been in quite common use in this and other States, having been ordered by a single person a dozen at a time, and not less than a hundred having been manufactured by one person, and put afloat prior to the date of complainant's invention. And yet not a book used or manufactured before that date was produced; and, considering the efforts made by this defendant to procure one, and the interest hotel-keepers generally, or at least the large number of them against whom suits were pending for infringements, had to aid him in those efforts, it must be presumed that none could be found. The door was opened wide for the introduction of such a book in evidence if one could be found, and it was expressly left open by complainant's counsel at the hearing, and has remained open during the several months the case has been held under advisement by the court. This defendant and those in the same interest with him—and their number and influence were not small—have not been wanting in their efforts to meet the challenge. They sent circulars and made inquiries far and wide, and offered a handsome reward for the production of a single advertising hotel-register used or manufactured prior to the date of complainant's invention, and still no such book has been forthcoming. Plenty of old plain registers covering such prior dates could be found, but no advertising-register; and plenty of advertising-registers covering subsequent dates could be found, but none prior. The bare statement of these facts suggests to my mind a doubt, to say the least, whether there could have been a prior use or prior knowledge of the invention in question as is alleged. To doubt in such a case, as has been well said, is to solve the question in the negative.

Another consideration, and to which allusion has already been made, is that a mere matter of dates is left to rest wholly upon the unaided memory of witnesses, who, for the most part, had no interest or motive in regard to the fact to impress their memory at a distance of time of from eight to twenty years, and involving in most instances a difference of only one, two, or three years, whether it was before or after the date in question. A remark by Mr. Justice Swayne in his opinion in the case of *Wood* vs. *Cleveland Rolling Mills Company* (4 Fish. Pat. Cases, 559) is quite applicable here. In speaking of the proof required to sustain the defense of want of novelty, and which he speaks of as a defense usually set up in patent cases, he says—

> The confidence of the attacking witnesses is often in proportion to the distance of time that one is removed from the other. Their imaginations are wrought upon by the influences to which their minds are subjected, and beguiles their memory.

When we add to this the fact that in every instance defendant's testimony as to prior use, as weak as it is when standing alone, was contradicted by testimony entitled to equal consideration in every respect, there is really nothing left to sustain the defense.

The rule of presumptions, that ordinarily a witness who testifies to an affirmation is to be preferred to one who testifies to a negative, recognized by the Supreme Court in *Stitt* vs. *Huidekopers*, (17 Wall., 384,) insisted on by defendant's counsel, is, of course, recognized by this court as binding upon it in cases to which it applies; but in this case I think it has no application. This is quite apparent when we look at the reason for the rule as stated by the Supreme Court in the case last cited, (page 391,) which is as follows:

> Because he who testifies to a negative may have forgotten. It is possible to forget a thing that did happen. It is not possible to remember a thing that never existed.

The conflict of testimony is not whether there was or was not a register or book of some kind used at each of the hotels in question during the periods of time covered by defendant's testimony, for the witnesses on both sides are all agreed that there was; neither is it as to some of the places, as at Sturgis and Dexter, that there was or was not an advertising register used at some time by the person named in a hotel kept by him, for as to this the witnesses are also all agreed that there was. The conflict is simply as to the description or kind of register so in use at such prior periods of time, and in respect to Sturgis and Dexter, as to the time when they saw an advertising register in use there in a hotel kept by the persons named—whether in 1867 or from one to three years earlier. One set of witnesses testify in the one case that the register so used was an advertising-register, and in the other case that it was at the earlier date the advertising-register was used; and the other set describes the former as a plain register, and that the latter was used at the later date. Each set testify to an affirmative equally with the other, and neither has any advantage over the other under the rule laid down in *Stitt* vs. *Huidekopers*.

Upon the whole consideration it results that there must be a decree for the complainant according to the prayer of his bill.

Decree accordingly.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date October 26, 1875.]

8,747.—Carpets.—JOSEPH BARRETT, New York, N. Y., assignor to THE ROXBURY CARPET COMPANY, Boston, Mass. Application filed October 12, 1875. Term of patent 3½ years.

8,748.—Gasaliers.—CHRISTIAN HERTER, New York, N. Y. Application filed September 27, 1875. Term of patent 3½ years.

8,749 to 8,753, inclusive.—Embroidery Patterns.—WILLIAM STEINHAUS, New York, N. Y., assignor of one-half his right to OTTO FRICKENHAUS, same place. Applications filed September 20, 1875. Term of patents 3½ years.

8,753 and 8,754.—Crochet Patterns.—WILLIAM STEINHAUS, New York, N. Y., assignor of one-half his right to OTTO FRICKENHAUS, same place. Applications filed September 20, 1875. Term of patents 3½ years.

8,755.—Inkstands.—SAMUEL J. VAN STAVOREN, Philadelphia, Pa. Application filed July 14, 1875. Term of patent 3½ years.

8,756 to 8,758, inclusive.—Shirt-Studs.—LEONARD S. BEALS, Astoria, N. Y.—Cases A, B, and C. Applications filed September 15, 1875. Term of patents 3½ years.

8,759.—Door-Plate.—JACOB CAPRON, New York, N. Y. Application filed September 14, 1875. Term of patent 7 years.

8,760.—Boot and Shoe Webbing.—JAMES A. GREENE, North Kingstown, R. I. Application filed August 2, 1875. Term of patent 7 years.

8,761.—Shoe-Upper Fronts.—CHARLES MERRITT, South Weymouth, Mass. Application filed July 27, 1875. Term of patent 7 years.

8,762.—Shelf-Brackets.—EDBRIDGE J. STEELE, Westville, assignor to THE BLAKE BROTHERS HARDWARE COMPANY, New Haven, Conn. Application filed September 28, 1875. Term of patent 7 years.

8,763.—Cover of Autograph-Album.—WILLY WALLACH, New York, N. Y. Application filed August 5, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date October 26, 1875.]

3,084.—Fertilizers.—ATLANTIC AND VIRGINIA FERTILIZING COMPANY, New York, N. Y.—Case B. Application filed June 12, 1875.

"word 'Eureka.'"

3,085.—Manufactured Tobacco and Cigars.—CONSOLIDATED TOBACCO COMPANY, San Francisco and Gilroy, Cal. Application filed October 2, 1875.

"words 'Bohemian Club,' and the letters 'C. T. Co.,' and the figure of a horned owl having a cigar in its beak.'"

3,086.—Cigars.—FREDERICK GLAHN, Green Bay, Wis. Application filed September 10, 1875.

"words and letters 'Fred'k Glahn, Bay City Light Guards,' 'B. C. L. G.'"

3,087.—Lead-Pencils.—GEORGE HAAS, New York, N. Y. Application filed September 25, 1875.

"In the center of the design is a circle, within which is a star. Upon the opposite sides of, and at a little distance from, the central star, are two stars, which side stars are placed between the points of two pairs of acute-angled pointers, which radiate from the said central star. In connection with this design is used the word 'Polar.'"

3,088.—Boots and Shoes.—CHARLES H. HOWARD, Randolph, Mass. Application filed October 5, 1875.

"word 'GOSSAMER.'"

3,089.—Finger-Rings.—H. MUHR'S SONS, Philadelphia, Pa. Case A. Application filed September 22, 1875.

"representation of a crown and a lion."

3,090.—Lubricating-Oil.—LESTER OIL COMPANY, New York, N. Y. Application filed September 18, 1875.

"word 'SYNOVIAL.'"

3,091.—Writing and Copying Inks.—LOCKWOOD, BROOKS & Co., Boston, Mass. Application filed September 9, 1875.

"word 'Irving,' and the cut or representation of Washington Irving."

3,092.—Stove-Polish.—SIMON S. MYERS, Philadelphia, Pa. Application filed September 24, 1875.

"word 'Anchor,' and the representations of an anchor."

3,093.—Medical Composition.—BENJAMIN F. NUNNS, New York, N. Y. Application filed September 16, 1875.

"words 'Wang-a-dang,' in connection with the words 'Nunns' Pulmonic Syrup.'"

3,094.—Teas.—LEE PING & PON JIR, San Francisco, Cal. Application filed September 29, 1875.

"letters 'X X,' arranged in the diamond-shaped figure."

3,095.—Sewing-Machines.—E. REMINGTON & SONS, Ilion, N. Y. Application filed September 20, 1875.

"letter 'R' and the words 'The Remington Sewing-Machine.'"

3,096.—Combs, Druggists' Articles, &c., made of Hard Rubber.—THE INDIA-RUBBER COMB COMPANY, New York and College Point, N. Y. Application filed September 28, 1875.

"letters and characters 'I. R. C. Co.'"

3,097.—Spectacles, Eyeglasses, and other Optical Instruments made of Hard Rubber.—VULCANITE OPTICAL INSTRUMENT COMPANY, New York and College Point, N. Y. Application filed September 28, 1875.

"letters and characters 'V. O. I. Co.'"

3,098.—Plows, Agricultural Implements, and Castings for the same.—WATT & CALL, Richmond, Va. Application filed September 25, 1875.

"a crescent, with the horns pointing upward, said crescent being of the proportion or shape of a quarter-moon."

3,099.—Buttons.—A. & E. WALLACH, New York, N. Y. Application filed September 10, 1875.

"a picture illustrative of one or more of the buildings of the Philadelphia Centennial Exhibition, coupled with the sign or symbol '1876.'"

3,100.—Fruit Butters.—J. O. SCHIMMEL & Co., Philadelphia, Pa. Application filed October 8, 1875.

"a representation of fruits, consisting of peaches, apples, pears, cherries, quinces, strawberries, plums, currants, and raspberries, interspersed with rose-buds, or other flowers and leaves in natural colors."

3,101.—Cottonades and other Heavy Cotton and Cotton-and-Wool Goods.—ALFRED B. TAYLOR, New York, N. Y. Application filed October 8, 1875.

"words 'MECHANICS AND PLANTERS.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date October 26, 1875.]

359.—Title: **"Teinture Francaise or French Dye and Finish."**—ARTHUR K. BROWN & Co., Boston, Mass. Application filed October 19, 1875.

360.—Title: **"Dr. J. Blackman's Genuine Healing-Balsam."**—M. L. FILKINS BRO., Albany, N. Y. Application filed October 14, 1875.

361.—Title: **"Hollon's Headache Remedy."**—HENRY W. HOLLON, Skaneateles, N. Y. Application filed October 19, 1875.

362.—Title: **"Stainless Wool and Spindle Oil."**—E. H. KELLOGG, New York, N. Y. Application filed October 20, 1875.

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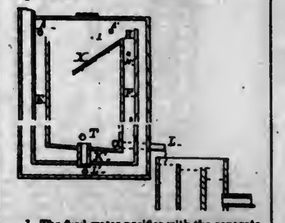
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED OCT 26, 1875.

169,076. FEED-WATER HEATING FOR STEAM-GENERATORS. William Andrus and Samuel J. Wallace, Keokuk, Iowa. [Filed Mar. 23, 1875.]

Brief.—A series of chambers are located one within the other. While the steam is circulating within one chamber, the water is circulating in the opposite direction in an adjoining chamber, thus heating the water and condensing the steam without mixture. If desired, the water and steam may be commingled in an inner chamber filled with filtering material.



1. The feed-water purifier with the separate steam and water-passages E V, separated by thin walls, in combination with the inner chamber I, arranged to pass the steam and water through each other, substantially as set forth.

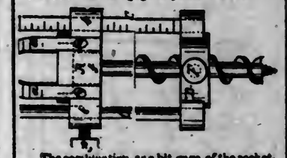
2. The combination, with chamber I, of the passage V with its separate outlet L', arranged substantially as set forth.

3. The combination, with chamber I, of the passages E V and outlets L L', arranged substantially as set forth.

4. The combination, with chamber I, of the passages E V, inlets T A A', and outlets H' L L', substantially as set forth.

169,077. RIVET-GAGES. Alonzo B. Batson, Newcastle, Ind. [Filed Sept. 27, 1875.]

Brief.—The gage is provided with a set of springs, which clasp the end of a bit-brace, and thus hold the gage in position for use.



The combination, as a bit-gage, of the socket-head A, with its opening *f* and spring-clasps *a*, the legs *b*, and set-screws *c*, the side bars C, and the foot-piece D, as described.

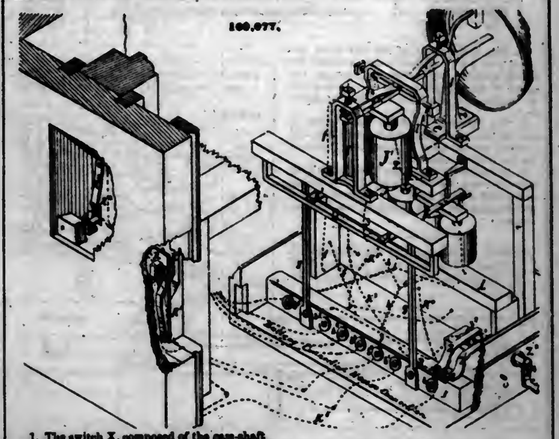
169,078. METHODS OF PREPARING ANIMAL HAIR. Ernst Bauer, Williamsburg, N. Y. [Filed Aug. 9, 1875.]

1. The process herein described of tanning animal hair by steeping it in a mixture of alum, sumac, catechu, gum kino, nut-galls, willow bark, and water, substantially as specified.

2. The animal hair hardened and rendered smooth and impervious, substantially as specified.

169,077. BLOCKING BURGLAR-ALARMS AND ANNUNCIATORS. Joseph T. Bedford, New York, N. Y. [Filed July 9, 1875.]

Brief.—Breaking of circuit at door or window releases an armature, which allows a swinging plate, covering an indicator, to fall. Circuit to alarm completed through a spring, which is held out of contact with the armature-lever, through which current passes by the swinging covering-plate when in its normal position. The armature-lever of the alarm and the circuit-breaker are also novel features.



1. The switch X, composed of the cam-shaft Z^1, the cam Z^2, the spring-plate Z, and the wires *x y z*, connected, respectively, with the wires K^1 K^2, and the negative wire of the operating-battery C, constructed and operated as and for the purpose set forth.

2. The combination of the distributing and returning wires of battery C, and the connecting wires of battery C', the binding-screws, the armature-magnet J^1, and the spring I^1, substantially as and for the purpose described.

3. The double-acting spring I^1, in combination with the lever of the alarm-bell, and with the screws *i i'*, constructed and operated substantially as and for the purpose specified.

4. The combination of the cover F^1, having tail-piece *b* and hook *p*, the spring E, the rod E^1, and bar *e'*, constructed and operated substantially as and for the purpose specified.

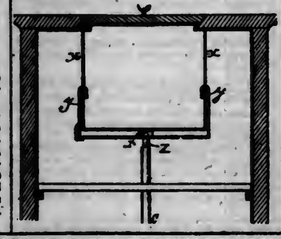
5. The circuit-breaker, consisting of the plate E^1, the spring E^2, and the plate E^3, substantially as described.

6. The spring E^2 fastened to the plate E^3 which covers it, and bent as shown, so as to avoid much cutting away of the cash, in combination with the plate E^3, substantially as herein described.

7. The combination of the springs N and Q and indicator-covers P, whereby a simultaneous operation of the said indicator-covers and a closing of the circuit for the alarm-magnet is effected, substantially as herein before specified.

169,078. REFRIGERATORS. Eli S. Bitner, Lock Haven, Pa. [Filed Mar. 12, 1875.]

Brief.—The drip-pan is detachably hooked onto the ice-box. A sponge between them and the drip-outlet prevents sediment from choking the drip-pipe and air from entering through the drip-pipe. The drip-pipe is removable.



The combination of the ice-box having openings *m*, the drip-pan having hooks *y* and outlet *z*, and the sponge D, and the drip-pipe C, all these parts save the ice-box being separable from each other and from the refrigerator, as and for the purposes set forth.

169,079. SHUTTLE CARRIERS OR DRIVERS FOR SEWING-MACHINES. James Bolton, Chicago, Ill., assignor to Singer Manufacturing Company, New York, N. Y. [Filed Sept. 11, 1875.]

Brief.—The shuttle-carrier is provided with a latch, pivoted to its forward end. At the rear portion of the latch is formed a guard for preventing the heel of the shuttle from being lifted by the thread, and opposite the guard is formed a finger to facilitate the removal of the shuttle from the carrier. The guard and finger partially inclose the shuttle, and when the latch is swung on its pivot the shuttle is carried with it. A bole in the latch slips over a pin on the carrier, which serves to lock it.



1. The combination, with a shuttle carrier or driver, of a latch, provided with a lifting-finger, whereby the shuttle may be lifted from the carrier, substantially as described.

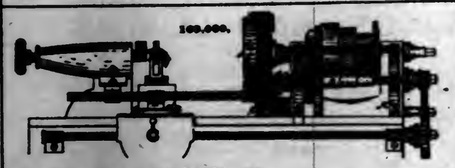
2. The combination, with the shuttle-carrier and shuttle, of a pivoted latch, provided with a guard and lifter to hold the shuttle down when sewing, and to lift it from the carrier when desired, substantially as described.

169,080. MACHINES FOR CUTTING SCREW-TAPS. Henry R. Boyd, McKeesport, Pa. [Filed July 21, 1875.]

Brief.—To the face-plate of the lathe may be attached a ring by which to hold the work, and the face-plate is revolved slowly through the medium of the spur-gears, or rapidly through the medium of the cone-pulley. The revolving milling-tool is on a slide moved longitudinally by a screw, and reciprocated transversely by a rod, which is journaled eccentrically, and is oscillated by a tappet on the face-plate.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

160,080.



1. The combination of the face-plate, provided with a ring or holder for securing the blank, rotatable mechanism for changing the speed of the face-plate, and the cutting-tool for cutting the blank, substantially as specified.

2. The combination of the loose pulley O, and friction-blocks with the hollow shaft, and tapered central spindle, substantially as and for the purposes specified.

3. The combination of the loose pulley P, or pinion having its hub provided with spring-pawls, the hollow shaft and tapered central spindle, and the loose pulley O, and friction-blocks.

160,081. Wire-Feeding Mechanism. R. L. Brewer, Milford, Conn., assignor to H. G. Thompson, same place. [Filed Aug. 16, 1875.]



1. In combination with the slide D two spring cams or jaws, A, arranged as herein specified, for holding the wire during the forward feed movement and releasing the same on the back movement.

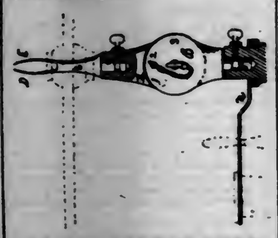
2. In a wire-feeding mechanism, the combination of the slide E, having two spring cams or jaws, *b' b'*, with the pitman C and crank-shaft A, substantially as shown and described.

3. The combination of two reciprocating slides, D and E, operating in opposite directions, and provided upon their adjoining faces with spring cams or jaws, arranged substantially as and for the purpose herein set forth.

4. The combination of the crank-shaft A, pitmen B C, slide D with perforated studs *b*, cams A, and springs *i*, and the grooved slide E with cams *b'* and springs *i'*, all substantially as and for the purposes herein set forth.

160,082. Carriage-Painters' Jacks. G. A. Brice, Townville, Pa. [Filed July 3, 1875.]

Brief.—Consists essentially in the special construction of parts.

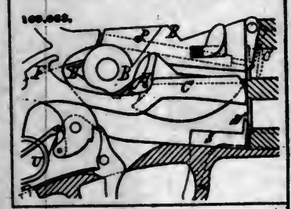


1. In a carriage-painter's jack or easel, the adjustable arm S, having spring-fingers D E, substantially as described.

2. In combination with the stand A of a painter's jack, having the adjustable bend B, the adjustable arm S, having spring-fingers D E, all constructed and arranged to operate as described.

3. The standards A X, bend B, arms S and a, when combined and arranged substantially as and for the purposes described.

160,083. Magazine Fire-Arms. A. Burgess, Owego, N. Y. [Filed Oct. 18, 1875.]



1. The carrier C, pivoted at its rear, and operated downward by the shoulder B' rotating upon it by the opening movement of the breech-block, as described.

2. The stud P on the breech-block, in combination with the lug F on the carrier, which, engaging together, raise the carrier by the forward or closing motion of the breech-block, substantially as specified.

3. The combination of the pulling extractor-rod O, provided with a shoulder, D', with a pivoted breech-block, provided with a lug, D, whereby the backward movement of the breech-block serves to operate the rod O, as described.

4. The extractor bar O, having a shoulder to pass forward of and pull back the extractor, and so arranged as to first start the extractor back by contact at a point remote from the pivot, and by its continued backward movement to engage the extractor near its pivot, and produce an accelerated motion, as specified.

5. The hand H, pivoted transversely in the receiver, in combination with the carrier, whereby the hand is thrown forward to start the cartridge into the barrel, as described.

6. The hand H, pivoted transversely in the receiver, in combination with the extension B'', whereby said hand is thrown backward to form an inclined guide for the extracted shell, to throw the latter out of the receiver, as set forth.

7. The combination of the breech-block B with the carrier C, spring U, and hand H, the parts being arranged and operating together as described.

8. The L-shaped magazine-stop, provided with the bevelled projection B'', and pivoted to the frame of the gun in front of the mouth of the magazine, and adapted to be held in and out of operative relation with the magazine by the stop S on the guard, all as set forth.

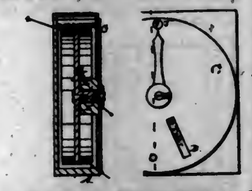
160,084. Umbrella-Runners. John M. Burkett, Savannah, Ga. [Filed Aug. 26, 1875.]

1. The runner B, having bayonet-slots *d e* and stop *g*, and provided with the revolving crown-piece *f*, having a rabbet, h, all combined and arranged substantially as and for the purpose set forth.

2. The described runner-tube, having its upper bayonet-notch re-enforced by a strip or wire brazed or secured to its outer surface, such strip or wire having one of its ends extending downward, as above and described.

160,085. Revolving Game Apparatus. Jos. W. Omerod, New York, N. Y. [Filed Aug. 19, 1875.]

Brief.—A revolving plate having a slot works over a fixed disk provided with a series of radially-arranged answers. Upon the edge of drum or wheel, attached to and revolving with said plate, are also a series of answers to questions, which answers show serially through a magnifying-glass in the edge of the box or frame.



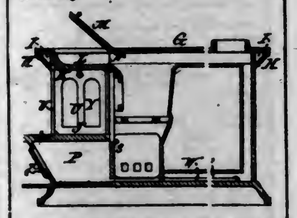
1. The dial-plate C, having the opening J and radiating slot D, in combination with the outer face of the box A, having thereon the circle B, with any required series of numbers numerically indicated, and series of radiating name-spaces, substantially as and for the purposes set forth.

2. The combination of the detachable endless belt or band H, having thereon answers to the series of numbered interrogations with the wheel G and dial-plate C, substantially as and for the purposes set forth.

3. The longitudinal magnifying eye-piece, in combination with the top of the box or frame A, detachable belt or band H, and wheel G, substantially as and for the purposes set forth.

160,086. Reservoir Cooking-Stoves. E. Card, Pawtucket, R. I. [Filed Nov. 29, 1874.]

Brief.—The molding contains an air-chamber. The foul-gases can be used for toasting or broiling.



1. The molding H, cast around the top plate G, as described, forming, with the sides and ends, an air-space, I, for the purpose set forth.

2. The combination of the top plate G, constructed with the ordinary kettle-openings, with the plate K, opening N, and hinged cover M.

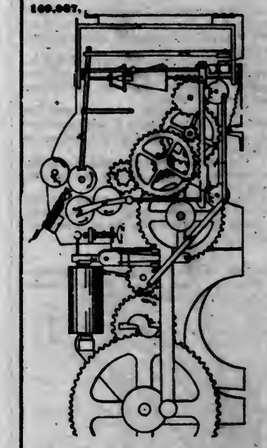
3. The combination of the water-tank P with the circulating-pipe W and pipe S, for exhausting the steam under the grate, substantially as described.

4. The open fire-grate, forming one side of an oven or hot-closet, in combination with the folding doors U U V V, forming the other three sides.

160,087. Fire-Alarm Telegraph. S. Chester, Elizabeth, N. J. [Filed May 6, 1875.]

Brief.—For use at central station. Each electric impulse from fire-alarm box, through an electro-magnet, releases a clock-work, which gives one rotation to cylinders, causing a circuit to smaller alarm-bells. This clock-work also operates a paper-punching device, from which the paper is fed under transmitting-styles to closing-circuits to other larger alarm-bells, by means of another clock-work, also released by electro-magnet. At the conclusion of every complete signal, a third clock-work is released, by means of which momentary flash of increased battery-current is introduced into signal-box circuit.

160,087.



1. The combination of a prime motor and train, an electro-magnet controlling the same, a revolving cylinder or cylinders causing on rotation a change or changes in the connections of one or more electric circuits, a perforator, and a train of wheels, giving uniform motion to the strip to be perforated, substantially as and for the purposes set forth.

2. The combination of a perforator, two or more sets of stylets for removing the perforated strip therefrom, and moving at different rates of speed, and two or more electric circuits controlled by the operation thereof, whereby the signals upon one circuit are repeated over other electric circuits at different rates of speed for different circuits, substantially as and for the purposes set forth.

3. The combination, with a prime motor and train, and an electro-magnet controlling the same, of electric circuits, and two or more insulators or circuit-closers rotated by a prime motor, and throwing into circuit at one period during rotation an extra amount of battery, whereby the electro-motive force in the circuits is increased, substantially as and for the purposes set forth.

4. The combination, with any instruments carrying several sets of motors designed to cause paper or other material whereon impressions have been made to repeat electric impulses over several circuits, at various rates of speed, of a device connected with any other part of a running gear of said instrument, to momentarily render those several motors inoperative, by removing the pressure of the frictional roller or equivalent at specific periods in such manner that the paper or equivalent will cease to be moved thereby, as soon as the impressed portion has been carried past a fixed point, but that it shall continue to be carried by the succeeding sectors, substantially in the manner and for the purpose hereinbefore described.

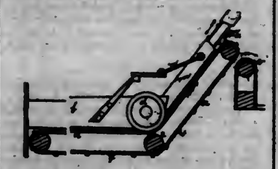
5. The combination of a rack and pinion, with the supporting-wheels W' W', having a portion of their periphery cut down to a smaller diameter, and provided with arms for moving the rack in one direction, a connecting-lever and pitman connected to one wheel and train, and imparting a rocking movement to the wheels, whereby, upon their movement in one direction, the rack is allowed to drop away from the pinion, but is held in engagement therewith on their movement in the other direction, substantially as and for the purposes set forth.

6. The combination, with the two independent motive trains, one of which is controlled by an electro-magnet, or a rack and pinion, connected with the trains, and controlling one thereof, whereby the motion of the first causes the release of the second, substantially as and for the purposes set forth.

7. The combination, with two independent motive trains, a rack and pinion connected therewith, and acting to release the second upon the movement of the first, of an extra magnet, and devices operating to allow the continuance of motion of the second train, after the motion of the first train has ceased, substantially as set forth.

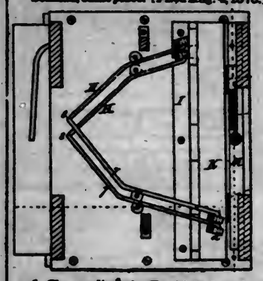
8. The combination, with two or more batteries, or divisions or series of batteries, of the automatic circuit closer or breaker, to change the connections of the batteries, and thereby vary the electro-motive force of the circuits, or any of them, substantially as and for the purposes set forth.

160,088. Harvesters. James M. Chritton, Marengo, Iowa, assignor to himself and J. S. Swaney. [Filed Jan. 15, 1876.]



The combination of the endless apron a, auxiliary apron m, wheel d, back-board b, bracket c, universal-jointed shaft e, toothed roller r, and main frame A D I, constructed, operating, and arranged as and for the purposes set forth.

160,089. Coupve-Couplers for Organs, &c. Samuel J. Crockett, Boston, Mass., assignor to Geo. T. McLaughlin and T. F. Sessions, same place. [Filed Aug. 4, 1875.]



1. The coupling-wire H, with its branches f f bent so as to extend out from each and between the valve-rods, and provided at its outer or middle portion with a vertical offset, S, all constructed and arranged substantially as and for the purposes described.

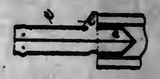
2. In combination with the coupling-wire H, formed as described, and pivoted at one end to a stationary support, I, the movable bar K, having attached thereto the opposite end of the coupling-wire, and arranged to operate substantially in the manner and for the purpose set forth.

160,090. Curbing-Fixtures. Henry L. De Zeng, Geneva, N. Y. [Filed Feb. 12, 1876.]

The hollow slotted tube a, supported by the compound brackets containing the pulleys e e, in combination with the traveler b within the tube, and connected, through the slot, to the curtain, and the cords for actuating said traveler, substantially as set forth.

160,091. Lamp-Trimmers. Henry L. De Zeng, Geneva, N. Y. [Filed Apr. 10, 1875.]

Brief.—A cap for insertion in the air-tube of an Argand burner, with blades for guiding the burnt wick into the same.



The lamp-trimmer made of the stationary blade or scrapers a above the cap a and below the handle c, by which the instrument is manipulated, for the purposes and as specified.

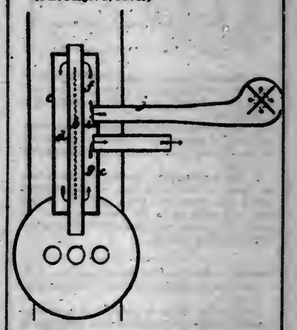
160,092. Pump-Boxes. Jas. Dillon, Lynn, Mass. [Filed Aug. 10, 1875.]

Brief.—Below the opening of the box is fitted a conical strainer of fine wire-cloth. An auxiliary strainer of similar form and coarser material is fitted below it, with large openings at the top, which is designed to retain the matter arrested by the fine strainer.



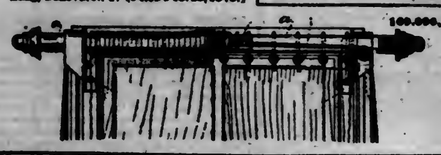
In combination with a pump-box, A, and a main strainer, B, extended across the inlet of said box, an auxiliary strainer, C, provided with one or more openings, b, all being substantially as represented.

160,093. Smoke-Stack Heating Apparatus. Thomas B. Field, Corning, N. Y., assignor to Mary B. C. Field, same place. [Filed Apr. 5, 1876.]



The smoke-stack or chimney-heating drum c, provided with one or more longitudinal pipes, d, and constructed with longitudinal fans d' f, and longitudinal and transverse partitions h i, to form three or more compartments between the inner and outer heating-walls of the drum, and communicating with induction and eduction pipes, as and for purposes set forth.

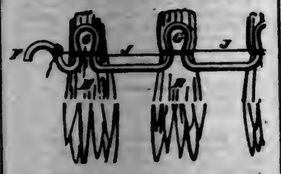
160,094.



169,094. Antiseptic Compositions. W. G. Dean, Washington, D. C., administrator of H. Gehe, deceased, assignor to C. G. Am Ende, Hoboken, N. J. [Filed Oct. 14, 1874.]

The composition of boracic acid and tannin derived from clover, as described.

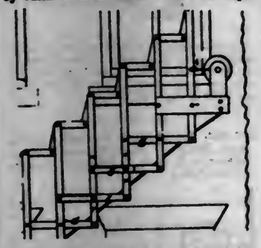
169,095. Tobacco-Hangers. T. B. Carr, Louisville, Ky. [Filed May 14, 1875.]



A bifurcate hanger composed of a looped wire, F G, and binding-cord J, substantially as and for the purpose described.

169,096. Folding Stairs for Fire-Escapes. Thos. Garrick, Providence, R. I., assignee of two-thirds his right to Wm. H. Reynolds, same place, and M. T. McMahon, New York, N. Y. [Filed Sept. 2, 1875.]

Brief.—The stairs are composed of a series of lazy-tongs, provided with folding links at their upper ends, which constitute a hand-rail. A rope is secured to the lower end of the stairs, and extends up to a drum on the upper end, and by which the ladder is raised and folded up.



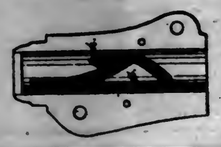
1. The combination, substantially as before set forth, of the steps, the series of levers, and the series of links, the whole constituting a folding stairs.

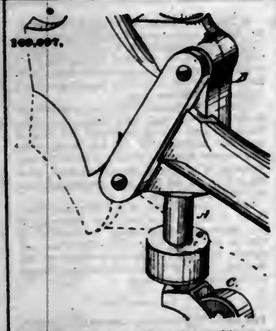
2. The combination, substantially as before set forth, of the steps, the series of levers, the series of links, the windlass, and the connecting-ropes.

3. The combination, substantially as before set forth, of the steps, the levers extended above the steps, the links, and the folding hand-rail connecting the upper arms of the levers, the whole constituting a folding stairs with a folding railing.

169,097. Sewing-Machine Carriers. T. B. Garretson, Cohoes, Iowa. [Filed Apr. 7, 1875.]

Brief.—The shaft or spindle of a sewing-machine carrier, arranged to slide vertically in a cylindrical casket, is shouldered at one end, and has a laterally-projecting pin near the other end. The casket is formed with an interior between groove or channel, and there is likewise a suitable lock catch; the construction being such that, by engagement of the pin with the groove, the weight of the machine may be readily carried upon the casket, or as readily disconnected and rested upon the foot, only the casket itself always remaining on the foot.

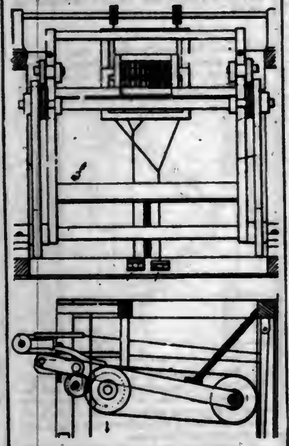




The combination, to a sewing-machine carrier, of the post or shaft A, bearing the roller C, and provided with pin a and the socket B, having upon its inner wall the tortuous groove or channel *g*, and the lock-catch *h*, as described and shown, for the purpose set forth.

169,098. Hand-Looms. James R. Gillespie, Boston, Mass., assignor to Theo. A. Dodge, trustee, same place. [Filed June 24, 1875.]

Brief.—To assist the operator in beating up the lay, a fixed cord, extending from the front to the back of the loom, is carried between two friction-rollers on the lay—one constantly rotated, the other mounted on the hand-rail, which is pivoted to allow of a slight forward and back movement. When the two rollers are brought together, so as to bind the cord, the lay is thrown forward quickly and forcibly.

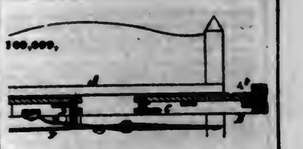


1. The combination of the lay, its movable friction-pulley, and driven pulley with a band, cord, or rod, whereby the lay may be thrown forward, substantially as described.

2. The combination of the lay, its pivoted hand-rail, and friction-pulley with a stop to meet the hand-rail and disengage the friction-pulley from the band or cord at the forward position of the lay, substantially as described.

169,099. Invalid-Bedsteads. Ansbel J. Goodwin, Brooklyn, Mass. [Filed July 27, 1875.]

Brief.—The bedstead supports two independent mattress-frames, one of which may be moved laterally by means of a toggle-lever, and a sliding commode be placed in grooves in the inner rails of the frames. The outer rail of the movable frame is bevelled interiorly, and the ends of the slats are shaped to fit the bevel, to allow slight lateral movement of the latter when the frames are pushed together.



1. The combination of the slide-frame or bed-supporter B with the bedstead A, provided with means of supporting an additional bed, as stated.

2. The combination of the toggles E E' E E', lever F, and their connections G' G' with the bedstead A and the slide-frame B, all being applied as set forth.

3. The combination of the arm G with the bedstead A, its slide-frame B, and their rails C D, arranged and provided with ledges, as specified.

4. The movable bed-vessel seat H with the bedstead A, the arm G, and the movable frame B.

5. The frame B, bevoled as shown at *g*, for use with the slats, bevoled at their outer ends, as shown at *h*, all being for the purpose specified.

169,100. Rubber Tires for Vehicle-Wheels. John Ashton Greene, Brooklyn, N. Y. [Filed Oct. 9, 1875.]

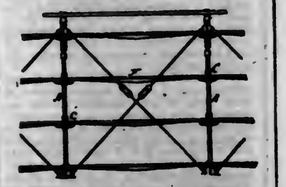


1. The combination, with a rubber tire, of a metallic core, substantially as shown and described.

2. The combination, with a rubber tire and its metallic core, of a flanged tire, substantially as shown and described.

169,101. Metallic Frames for Buildings. Emil Gruwe, Hoboken, N. J., assignor to Schwatzer & Gruwe, New York, N. Y. [Filed Sept. 2, 1875.]

Brief.—The cast-iron blocks, which connect the tubes of the frame-work, are provided with projecting flanges, which support the connecting-beams.



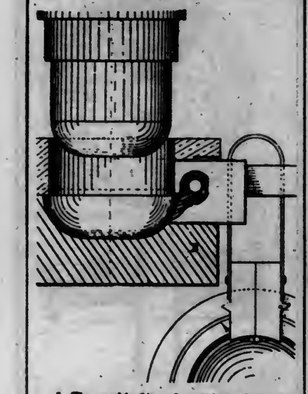
The combination of the tubes A B, with the connecting-blocks C C, which have projecting flanges formed on them for receiving and supporting the connecting-beams F F, substantially as herein shown and described.

169,102. Processes of Dressing Skins. Richard Hart, Gloversville, N. Y., assignor of one-half his right to James Gillespie, same place. [Filed July 24, 1875.]

Brief.—Immerses first in a solution of clam, flour or oatmeal, oil, and water; then in a solution of urine, soap, soda, salt, whiting, flour or oatmeal, and water.

The improved process for dressing skins, consisting in the application to the skins of the two solutions composed of the ingredients named, in about the proportions stated, substantially in the manner and in the order specified.

169,103. Manufacture of Glassware. John H. Hobbs, Wheeling, W. Va. [Filed Sept. 20, 1875.]

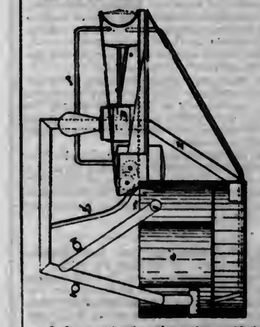


1. The combination of an unjointed or solid bowl-mold and a jointed handle-mold, substantially as described, whereby a pressed handle and a pressed bowl free from the usual line or mold-marks shall be produced at one operation.

2. A two-part or jointed mold united by a metallic spring-bow, substantially as set forth.

169,104. Steam-Washers. Manley Howe, Boston, Mass. [Filed Feb. 6, 1875.]

Brief.—A steam-generator and pump is connected with a tank by means of pipes, for forcing steam and hot water in and upon the clothes in the tank.



1. In combination, the tank provided with bottom *a*, the feeding-rollers *b*, and the steam-pump and its connected pipes C E, all operating as and for the purpose described.

2. The combination, with the ribbed tank A *b'* and its central partition-*c'*, of the perforated and ribbed bottom inclined with relation to the bottom of the tank, substantially as described.

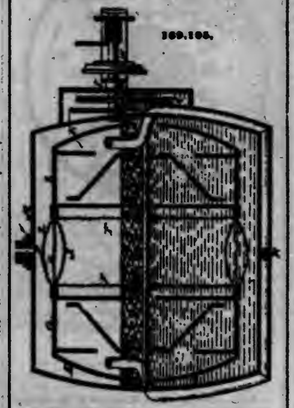
3. The combination, with the steam-pump and tank, of the perforated or slotted discharge-pipe and sleeve *a*, substantially as described.

4. The combination, with the tank and the cylinder *f'*, of the perforated discharge-pipe and the exhaust-pipe *e*, arranged to introduce the water in the tank and heat the water, substantially as described.

5. The combination, with the tank, of the supply-pipe C, the generator, and the steam-pipe *g* leading into the supply-pipe, substantially as described.

169,105. Carburetters. Hyam J. Hyams, Pittsburg, Pa., assignor of one-half his right to F. L. Bannen. [Filed Jan. 25, 1875.]

Brief.—The blowers and evaporating-surfaces revolve together in the carbureting fluid. The feed-box, supplying hydrocarbon fluid, is secured to the side of the outside cylinder of the blowers.



1. The hollow revolving drums *a b*, each having a diaphragm, F, of porous material, stretched over its inner end, in combination with the intermediate surrounding cloth bands J K and wire-gauze L, attached to said drums, and revolving therewith around the same axial line, as and for the purposes set forth.

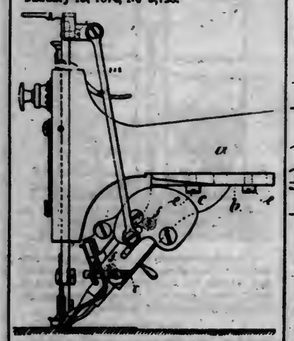
2. The hollow revolving drums *a b*, diaphragms F, intermediate surrounding cloth bands J K, and wire-gauze L, in combination with the concave hoods E, as and for the purposes set forth.

3. The hollow revolving drums *a b*, diaphragms F, intermediate surrounding cloth bands J K, wire-gauze L, and concave hoods E, in combination with the outer case A, air-pipes B, and vapor-pipe H, as and for the purposes set forth.

4. The hollow revolving drums *a b*, diaphragms F, intermediate cloth bands J K, wire-gauze L, and concave hoods E, in combination with the outside case A and elevated reservoir R, as shown and set forth.

169,106. Button-Hole Attachments for Sewing-Machines. John Thomas Jones, Lisbon, N. Y. [Filed Sept. 2, 1875.]

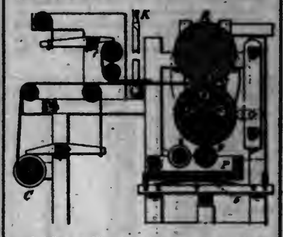
Brief.—The invention is an improvement upon the devices shown in Letters Patent No. 103,745, granted May 31, 1870, and reissued January 13, 1874, No. 5,733.



1. The bracket *b a*, provided with holes and slots for the screws *p c*, and adapted to be held by such screws removably to the under side of the arm *a*, in combination with the button-hole attachment and the screws *f f*, for holding and adjusting the same upon the bracket, as set forth.

169,107. Paper-Tube Machines. N. Keely, Lovering ton, Pa. [Filed Oct. 1, 1874.]

Brief.—The paper is wound upon the mandrel, which is made in sections under the pressure-roll, the edges being trimmed as the tube is formed. The paste-box is automatically moved away before the completion of the last layer. The strips to form the bosps are wound in a similar manner, receiving paste from the sectional paste-roll in the spring-supported paste-box.



1. The combination of the co-acting rolls E E', the latter constructed in sections and encircled with series of intaglio threads, as and for the purposes described.

2. In combination with paper-supply rollers C and I, and rolls E E', the cut-off knife K, and adjustable trimmers k.

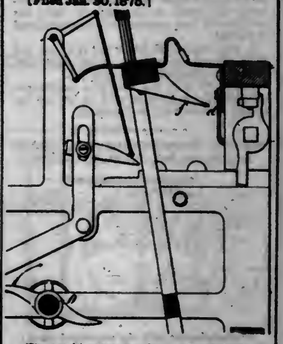
3. The combination of cam J, lever O, pawls *p p'*, ratchet-rack P, and sliding bar W, provided with piece Z, terminating in catch *b*, playing into slot *r* in upright U, all combining to operate box P, substantially as described.

4. Box P, provided with paste-distributing rollers S T, and springs S.

5. The double dovetail keys *c' d c'*, in combination with the respective sections of roll E', substantially as represented, and for the purposes described.

6. Directed hanger G, composed of separable parts *a n'*, lug *w*, and pin *t*, substantially as represented and described.

169,108. Stop-Motions for Looms. Henry T. Kent and Henry Moore, Clifton, Pa. [Filed Jan. 30, 1875.]



The combination, in a loom, of a projection, *f*, on the lathe, and a stop, *d*, arranged upon the frame, connected to the belt-shifting mechanism, and operated by the latter, whereby the stop *d* is brought into line with the projection *f*, and prevents the movement of the lathe when the belt is shifted, all substantially as set forth.

169,109. Oil-Cans. Edward Kussmaul and Theodore Breter, Cincinnati, Ohio. [Filed May 10, 1875.]

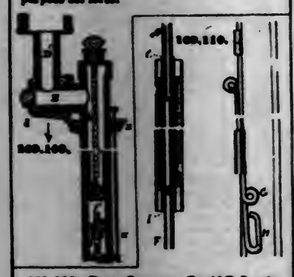
Brief.—The discharge-head of the pump is swiveled on a horizontal pipe connecting it with the pump-barrel, so that it is turned

down by the closing of the flat cover hinged to the can. A rod on the outside of the pump-barrel connects with a pivoted lifter, which, resting on a stem extending downward from the lower valve, lifts it, a stem extending upward from said valve lifting the valve in the piston, by which means the pump-barrel is emptied. A kind of bayonet-joint, locked by a spring-rod, connects the pump to the shelf in the can.

1. In the oil-can A the adjustable pump-head D, D', and *d*, fitted to turn on cylinder E, substantially as specified.

2. In a pump for oil-cans, the combination, substantially as described, of check-valve *r*, having stems *l* and *f*, valve-lifter *s*, and link *n'*.

3. The combination of plug L, secured to cylinder G, and having lugs *o o'*, and socket *f*, secured to shelf F, and having hooks *p p'*, and springs *q*, substantially as and for the purposes set forth.



109,110. Dough-Strainer. David B. Lowrie, Minneapolis, Minn. (Filed May 11, 1875.)

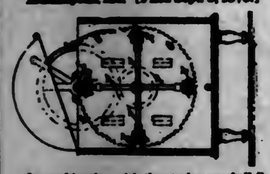
Brief.—A short tubular spring bale-hook to or interposed between the two end pieces of an ordinary tension-spring, the object being to counterbalance tension and torsion, and lessen the tendency of the rods to twist out of line. The lower end of this compound rod is formed into a lengthened oblong eye-piece, which traverses its attaching-screw, and gives vertical adjustability, and there is another eye for inserting a pin or key, to wind or key up the intermediate portion of the spring.

1. The rods A and F, in combination with the eye-pieces C and I, and the intermediate spring J, blunted or fastened to the opposite ends of the rods, to balance tension and torsion, and lessen the tendency to twist the rods out of line, substantially as shown and described.

2. The lengthened eye or slot H in the rod F, to allow it to traverse on the screw that fastens it, substantially as specified.

3. The eye G on the rod F, for inserting a suitable pin or lever to wind or key up the spring, substantially as described.

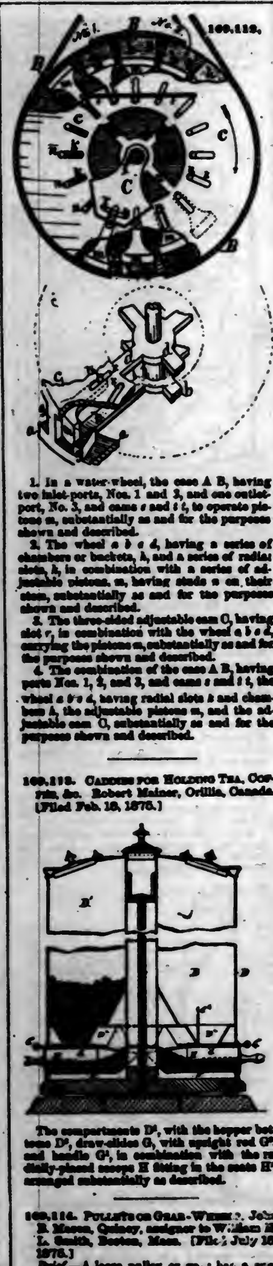
109,111. Washing-Machine. P. Lieber, Indianapolis, Ind. (Filed Sept. 9, 1875.)



In combination with the stationary shell C, formed of corrugated sections, as set forth, the rotating brushes B, fixed on yielding or adjustable arms F, and the hose tube or covering K on shaft G, all arranged and operating substantially as set forth.

109,112. Reversible Water-Wheels. Alfred W. Lindley, Des Moines, Iowa. (Filed Apr. 20, 1875.)

Brief.—This wheel may be used either in a vertical or horizontal position, making it either a breast or turbine, at pleasure. It has buckets in its periphery, and an adjustable bottom or plates in each chamber, in combination with an adjustable cam and stationary cam, having two kind cams and two inlet and one outlet port.



1. In a water-wheel, the case A B, having two inlet-ports, Nos. 1 and 3, and one outlet-port, No. 3, and cams *r* and *t t*, to operate pistons *m*, substantially as and for the purposes shown and described.

2. The wheel *a b c d*, having a series of chambers or buckets, h, and a series of radial slots, *k*, in combination with a series of adjustable pistons, *m*, having studs *n* on their stems, substantially as and for the purposes shown and described.

3. The three-sided adjustable cam C, having slot *r*, in combination with the wheel *a b c d*, carrying the pistons *m*, substantially as and for the purposes shown and described.

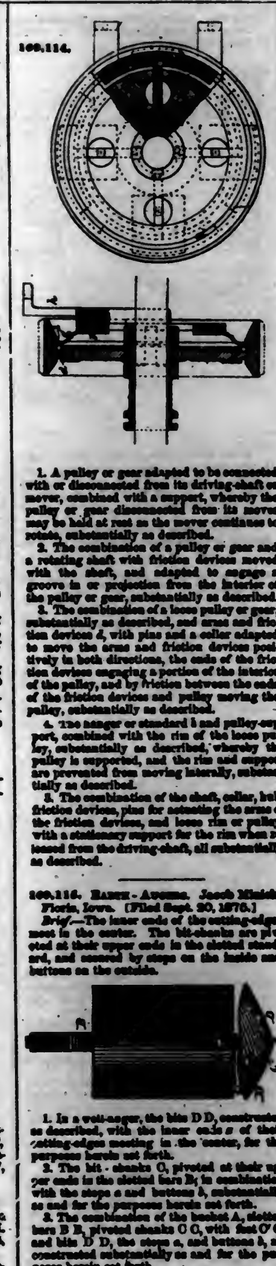
4. The combination of the case A B, having ports Nos. 1, 2, and 3, and cams *r* and *t t*, the wheel *a b c d*, having radial slots *k* and chambers h, the adjustable pistons *m*, and the adjustable cam C, substantially as and for the purposes shown and described.

109,113. Caddies for Holding Tea, Coffee, &c. Robert Meiner, Orillia, Canada. (Filed Feb. 18, 1875.)

The compartments D', with the hopper bottoms D², draw-slides G, with upright rod G', and handle G², in combination with the radially-placed scoops H fitting in the seats H', arranged substantially as described.

109,114. Pulleys or Gear-Wheels. John B. Mason, Quincy, assignor to William H. L. Smith, Boston, Mass. (Filed July 16, 1875.)

Brief.—A loose pulley or gear has a support disconnected from the shaft, about which the pulley or gear moves, and is adapted to sustain the pulley or gear when disconnected from the shaft, and it is desired to have the pulley or gear cease its movement.



1. A pulley or gear adapted to be connected with or disconnected from its driving-shaft or mover, combined with a support, whereby the pulley or gear disconnected from its mover may be held at rest as the mover continues to rotate, substantially as described.

2. The combination of a pulley or gear and a rotating shaft with friction devices moved with the shaft, and adapted to engage a groove in or projection from the interior of the pulley or gear, substantially as described.

3. The combination of a loose pulley or gear, substantially as described, and arms and friction devices *A*, with pins and a collar adapted to move the arms and friction devices positively in both directions, the ends of the friction devices engaging a portion of the interior of the pulley, and by friction between the ends of the friction devices and pulley moving the pulley, substantially as described.

4. The hanger or standard I and pulley-support, combined with the rim of the loose pulley, substantially as described, whereby the pulley is supported, and the rim and support are prevented from moving laterally, substantially as described.

5. The combination of the shaft, collar, hub, friction devices, pins for actuating the arms of the friction devices, and loose rim or pulley, with a stationary support for the rim when released from the driving-shaft, all substantially as described.

109,115. Rabbet-Augers. Jacob Minich, Florin, Iowa. (Filed Sept. 20, 1875.)

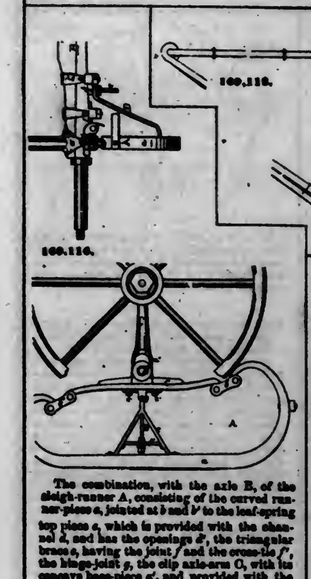
Brief.—The inner ends of the cutting-edges meet in the center. The bit-shanks are pivoted at their upper ends in the slotted shank-rod, and secured by stops on the handle and buttons on the outside.

1. In a bell-auger, the bits D D, constructed as described, with the inner ends *x* of their cutting-edges meeting in the center, for the purposes herein set forth.

2. The bit-shanks C, pivoted at their upper ends in the slotted bars B, in combination with the stops *a* and buttons *b*, substantially as and for the purposes herein set forth.

3. The combination of the basket A, slotted bars B B, pivoted shanks C C, with feet O O and bits D D, the stops *a*, and buttons *b*, all constructed substantially as and for the purposes herein set forth.

109,116. Attachable Vehicle-Bottoms. Isaac Pettis and Wm. G. Pettis, Putnam, Conn. (Filed Mar. 22, 1875.)

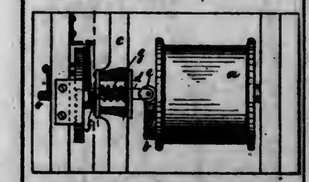




The combination, with the axle B, of the sleigh-runner A, consisting of the curved runner-piece *a*, jointed at *b* and *b'* to the leaf-spring top piece *c*, which is provided with the channel *d*, and has the openings *d'*, the triangular brace *e*, having the joint *f* and the cross-tie *f'*, the hinge-joint *g*, the clip axle-arm C, with its concave base-piece *c'*, and provided with the bolts *c'*, the brace-rod D, and the bolt *c'*, as described.

109,117. Revolution-Indicators. Chas. H. Phinney, Boston, Mass. (Filed Nov. 17, 1874.)

Brief.—A revolving body having a cam projection upon its surface, which engages with a rod having a roller at one end, and the other end beveled off. This beveled end acts upon a lever at right angles to it, and carrying a pawl, which engages with a ratcheted wheel, then moving a hand or indicator a certain distance every time it is moved.



1. The ratchet-wheel *n*, pawl *m*, and its lever *k*, pivoted on the shaft of the wheel, and provided with incline or leg *f*, in combination with and actuated by rod *d*, provided with an incline, all arranged as shown, so that the rod *d* given motion to the lever and pawl in a direction at right angles to itself, substantially as described.

2. The combination, with a revolving body, *a*, having at its end a cam, *b*, of the horizontal rod *d*, provided with the reacting spring *g* and roller *c*, on which the cam operates, and an inclined plane, *f*, and the pawl-carrying lever *k*, having incline *f* and pawl *m*, to actuate the ratchet-wheel *n*, the said lever *k* being provided with a reacting spring, all as herein shown and described.

109,118. Wire Stove-Brackets. John H. Randall and Dexter P. Newton, Clyde, Ohio. (Filed Feb. 23, 1875.)

Brief.—In combination with a wire stove-pipe bracket, the fastening device consisting of the pawl provided with a square link and a triangular loop.

In combination with a wire stove-pipe bracket, the fastening device consisting of the head L, provided with a square link, O, and the corrugated head K, provided with a triangular loop, *n*, as and for the purposes described

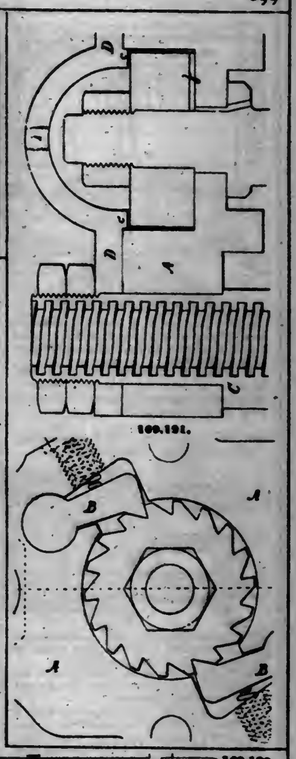
109,119. Cigar Mouth-Pieces. Charles Reinisch, Newark, N. J. (Filed July 23, 1875.)

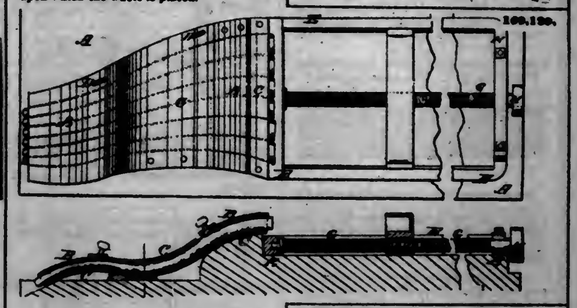
Brief.—The part that fits onto the cigar is made of paper coiled into cone shape, and in the smaller end is glued a goose-quill for the mouth piece.

As a new article of manufacture, a cigar mouth-piece consisting of a conical paper tube, A, and a goose-quill, B, fastened together by a suitable gutinous material, substantially as described.

109,120. Machines for Bending Scythe-Snaths. John H. Russell and Geo. Birner, Milwaukee, Wis. (Filed Feb. 20, 1875.)

Brief.—Scythe-snaths and similar articles can be bent to the desired form by means of a former composed of two parts—one stationary and the other detachable—each part provided with a longitudinal side bar of the shape of the article to be bent, and cross plates which alternate with each other, and form a continuous socket when the plates are put together; and a recessed cross-bar or pusher, into which the butts of the snaths are placed, and which operates between guides by a swiveled screw-rod, to force the blanks into the former, in connection with a suitable bed, upon which the whole is placed.





The snath-bender herein described, consisting of bed A, separable multiple socket B C, and frame E, provided with hollow cross-bar or pusher moved by a swiveled screw, O, as shown and specified.

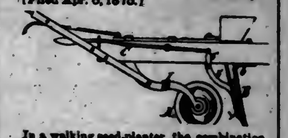
109,121. Rock-Drills. George B. Seddon and William McFaul, New York, N. Y. (Filed Sept. 15, 1875.)

1. The cover D D, provided with an oiling-aperture, I, and a projecting rim, *c c*, substantially as and for the purpose specified.

2. The nut C, having a flat on one side, and covered to the upper head and cover by means of nuts, substantially as shown and described.

3. The combination of the head A A, the gavels B B, the feed-nut C, and the cover D D, constructed and arranged substantially as and for the purpose specified.

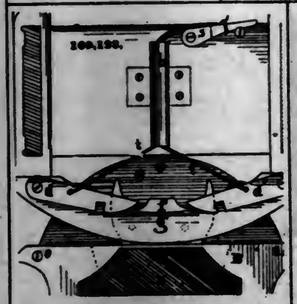
109,122. Seed-Planters. J. W. Simpson, Dry Ridge, Ky., assignor of one-half his right to Morgan J. Simpson, same place. (Filed Apr. 6, 1875.)



In a walking seed-planter, the combination of hinged standard B, brace *b'*, link *b''*, and lever C, pivoted to and extending rearward along one side of beam A to a point within reach of the operator, substantially as described.

109,123. Cradles. Jacob Sprengard, Cincinnati, Ohio. (Filed Aug. 14, 1875.)

160,125.



1. The combination of foot E, mortised at h, and having upright piece c, with the rocker f, pronged plate f', and pins r and s, substantially as specified.

2. In a child's cradle, the combination, substantially as described, of notched latches k and k', cords i i, pins o o, cylinder b, and arm a, for the purpose specified.

160,126. Lubricators. W. P. Stephenson, Waverly, Iowa. [Filed Feb. 1, 1875.]



1. The auxiliary reservoir C, in combination with the reservoir A, substantially as and for the purposes shown and described.

2. The plate a a, in combination with the reservoir C, substantially as and for the purposes shown and described.

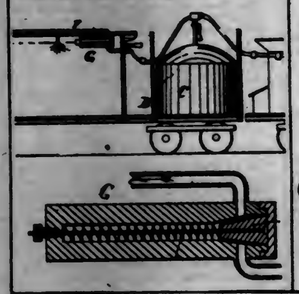
3. The reservoir A, having drain-tube B and frame D, the auxiliary reservoir C, having plate a a, the transparent tubes Nos. 1 and 2, and the receiving and distributing tubes E E, when combined to form a lubricating apparatus, substantially as shown and described.

160,127. Postage-Stamps. Chas. F. Steel, New York, N. Y. [Filed Mar. 15, 1875.]



A postage or revenue stamp formed wholly of water-leaf or other soft and absorbent paper, provided on the back with a filling coating of starch or analogous material, and a superposed coating of the ordinary gum, substantially as and for the purposes set forth.

160,128. Apparatus for Lighting Railway-Cars. Jos. Story, Washington, D. C. [Filed Oct. 1, 1875.]



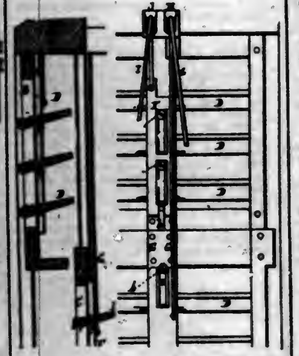
1. The reservoir C, combined with its chamber or seat B and the several cars of a railway-train, each being provided with suitable service-pipes F, as and for the purpose set forth.

2. Combined with the reservoir C and service-pipes F, the cut-off valve G, provided with a cord, g, extending through the train, as set forth.

3. Combined with a rigid gas-holder, a pump, I, for the purpose of forcing water into said holder to restore the pressure, substantially as described.

160,129. Blind-Slat Operators. William Stronk, Montgomery, Mich. [Filed Sept. 18, 1875.]

Brief.—A pair of sliding blinds, fitted in a window-frame, carries on each blind, secured to the upright bar, a suitable slotted slide, having laterally projecting pins. To the slide of the lower blind is attached one end of a cord, which extends up and over a channeled guide projecting outwardly from the top of the window-casing, the pulling of the cord actuating the slats, while a rubber or other retracting-spring at the bottom of the slide tends to keep it normally in closed position. The upper blind is fitted with substantially the same devices, and, when necessary to draw up or raise the lower half, a continuous pull on the cord attached thereto, beside opening the slats, will draw up that portion of the blinds to the desired height or position.



The slides F, pins e, springs A, cords G I, and guides J H in combination with the slats D of the window-blinds B C, in the manner substantially as described, and for the purpose set forth.

160,130. Plastering Safety-Plates. G. A. Thurston, Cambridge, Mass. [Filed Sept. 21, 1875.]

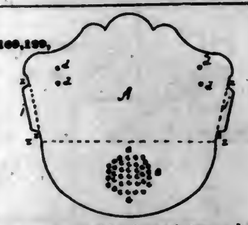


The plastering-guard, substantially as described, consisting of the holed or slotted plate A, and the flanged tubular collar B, arranged essentially in manner and for use as specified.

160,130. Match-Safes. E. H. Whitney, Cambridge, assignor to Dover Stamping Company, Boston, Mass. [Filed Oct. 6, 1875.]



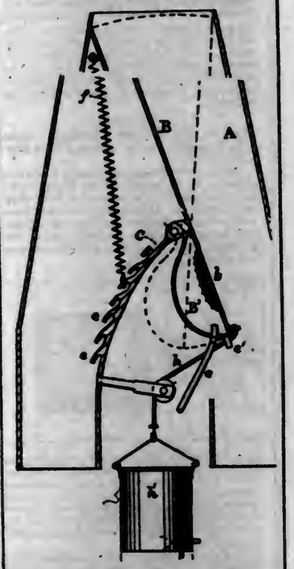
160,129.



As a new article of manufacture, a box whose sides, back, bottom, and top are composed of the pieces A B F, arranged and combined together by slots g g and ears h i, substantially as and for the purpose described.

160,130. Cistern-Filters and Water-Separators. Wm. B. Wilson, Jefferson County, Ky. [Filed Aug. 2, 1875.]

Brief.—A portion of the water passing to the waste-pipe is caught in cup-shaped receptacle formed at the lower end of a plate adapted to be moved across the casing. The water passes from the receptacle into a bucket attached to the plate, and when the bucket is filled its weight overcomes the action of a spring attached to the top of the plate, and a rack on a partition of the casing, and causes the plate to be moved across the condenser, and direct the water into the cistern.



1. The casing A, divided by the partition C and leading to the waste-pipe and cistern, as specified, the pivoted plate B, and grate-covered cup D', having the pipes e f, combined with the suspended automatically-emptying receiver D' and reactionary spring f, substantially as and for the purpose set forth.

2. In the casing A, the combination of the pivoted plate B, partition C, having the hooks c, and spring f, substantially as described, and for the purpose specified.

160,131. Corsets. John W. Ashis, Melrose, Mass. [Filed Sept. 7, 1875.]

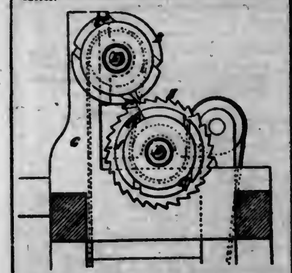
The skirt-supporter herein described, consisting of the rings f h, band or strap m, and supporting-band k, in combination with the corset, provided with slots o, substantially as and for the purpose specified.

160,131.



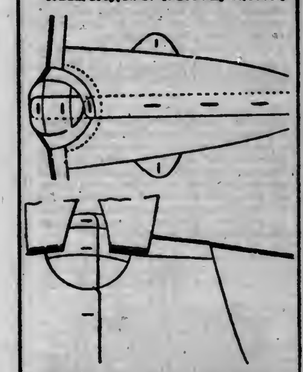
160,132. Dovetailing-Machines. Loring Atwood, Rutland, Vt., assignor of one-half his right to Henry A. Hale, Brooklyn, N. Y. [Filed Aug. 7, 1875.]

Brief.—Cuts dovetail tenon and groove, trims the former with a saw, and planes the latter.



The knives C C', arranged on the shafts D and E, and having their cutting-edges inclined outwardly toward those of the other set to cut two diverging sides, in combination with the chucks A and B and the rotary saw H, arranged on the shaft D between the chuck A and knife C, so that its outer edge works near the inner edges of the knives, and cuts the face of the tenon simultaneously with the cutting of the sides thereof, substantially as described.

160,133. Sewers. Clinton M. Ball and John C. Ball, Troy, N. Y. [Filed July 31, 1875.]

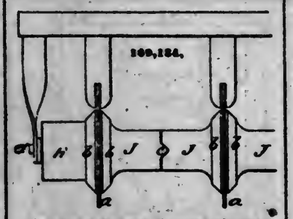


A shirt, having neck-band attached to body only at back of neck-opening, and the bosom attached at upper edge only to front of neck-band and shirt-body, as and for the purpose specified.

160,134. Corn-Stalk Cutters. Samuel Bunn, Clinton Valley, Ohio. [Filed Mar. 27, 1875.]

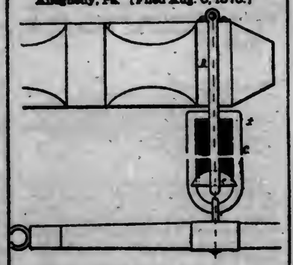
Brief.—A rectangular bar has depending from each end hangers, which support a shaft. Upon this shaft is secured at each end a hub, to which is attached a circular disk, and the intermediate space upon the shaft is provided with a series of sleeves, the ends of which are screwed and provided with shoulders, to cause rotating with the shaft; each sleeve being provided with a cutting-disk.

160,134.



In a corn-stalk cutter, the series of serrated and flanged sleeves J, and the flanged hubs H, applied on each end of the axle O, in combination with circular cutters a, secured substantially as described, and for the purpose set forth.

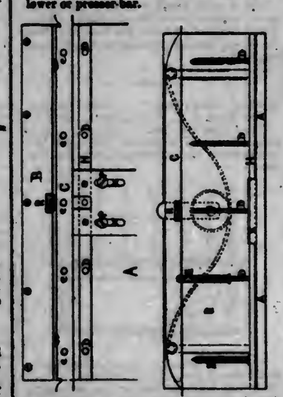
160,135. Double-Tree Clips. W. Beckert, Allegheny, Pa. [Filed Aug. 6, 1875.]



The swinging clip B, passing at one end around the spring D, and having its ends b b pivoted to the double tree at i, as shown, in combination with the abutments e f and link C, also passing around said spring, all constructed and arranged substantially as shown, and for the purpose set forth.

160,136. Temporary Binders. William H. Bennett, New York, N. Y. [Filed Apr. 14, 1875.]

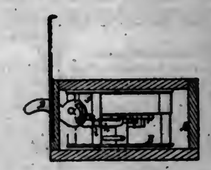
Brief.—Tubes are placed upon the impaling pins, to receive the matter to be filed or bound. When they and the matter thus bound are ready to be withdrawn from off the pins, the latter, together with their holding-bar and slide, are moved from under the spring-follower or presser-bar.



In combination with the bed A, head B and spring-clamp C, the bar H, needles D, slide K, and binding-tubes E, as constructed, to allow for the removal of papers and tubes E combined therewith, substantially in the manner described, as and for the purpose set forth.

160,137. Burglar-Alarms. Clinton Bohanon and John Bohanon, Brookline, N. H. [Filed Sept. 9, 1875.]

Brief.—The trigger is mounted on a rotatable shaft, and may be turned down, so as to be entirely within the case when not in use.



The sliding trigger D and its supporting-shaft, in combination with the alarm mechanism B and the case A thereof, all being arranged, and the cock of the alarm being provided with a stud, g, to engage with the said trigger, as set forth.

160,138. Folding Lounges. Nicholas E. Borgfeldt, New York, N. Y. [Filed July 14, 1875.]

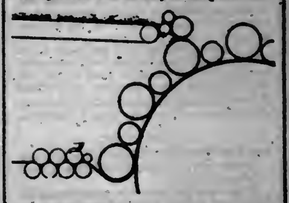


1. In a lounge, the combination of a frame, composed of supports A A and feet B B, with a flexible web, C, inclosing the supports A A, substantially as described.

2. A folding lounge constructed of supports A A, feet B B, and a web, C, the supports being made to swivel in the feet, substantially as shown and described.

160,139. Methods of Manufacturing Tufted Yarns. Henry Bottomley, Camden, N. J. [Filed Sept. 4, 1875.]

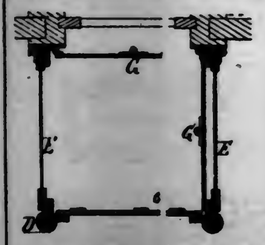
Brief.—The card-drum lays the tufts of yarn upon the roping, and causes them to adhere tenaciously to the said roping without being incorporated into the body of the yarn.



The docks or process heads described of producing the within-described yarn—that is, by causing a card-drum to lay the tufts on, and cause them to adhere to the top of the main card-cylinder of a carding-engine, and subsequently opening the roping, as set forth.

160,140. Railroad-Car Windows. Alex. Brandon, New York, N. Y. (Filed July 14, 1875.)

Brief.—A device for forcing or exhausting the air, at the same time excluding dust, cinders, &c.



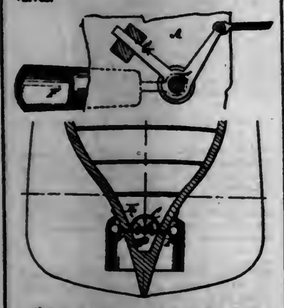
1. In combination with a window, C, held outward from the plane of the side of the car by a framing, D, the transverse screens E, adapted for excluding cinders, as herein specified.

2. The hinged screens G, in combination with the framing D and projected window C, as herein specified.

3. The car-body A, inside blind B, projecting framing D, window C, transverse screens E, and tight screens G, combined and arranged for joint operation as and for the purposes herein specified.

160,141. Marine-Engine Governors. R. W. Briggs and Aaron V. De Pew, New York, N. Y. (Filed May 26, 1874.)

Brief.—When the stern of the vessel is thrown upward by rough sea, the floats are forced downward by the resistance of the water, which motion is communicated to the throttle or cut-off valve, and shuts off the supply of steam to the engine. When the stern is again submerged, the float rises, which communicates the reverse motion to the valves.



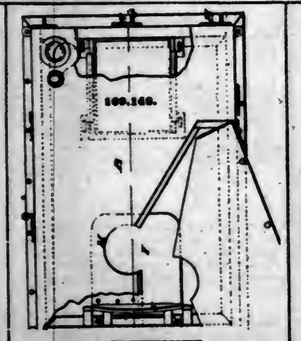
1. The combination, substantially as herein described, with the stern-propeller D and its shaft B, of the transverse shaft E, arranged above the propeller-shaft, and carrying the rotating air-vessels or floats F, the whole constructed to operate as and for the purpose specified.

2. The combination, with the shaft E, arranged above the propeller-shaft, and carrying the radial air-vessels or floats F, with the counterbalance-lever G, attached to the shaft E, for regulating the movement of the floats, substantially as herein shown and described.

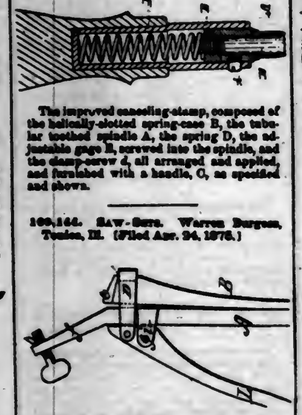
160,142. Portable Vapor-Baths. George Washington Bratton, Gallatin, Mo. (Filed Aug. 14, 1875.)

Brief.—A vapor-bath box, consisting of the frame and flexible covering, shown and described.

The combination of the bottom board A, top board B, and the frame and cloth sides C D, when constituting a vapor-bath box, and being detachably connected together by hooks and eyes, all substantially as specified.



160,143.



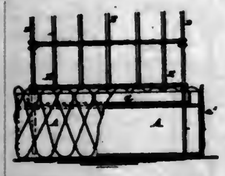
The improved annealing-stamp, composed of the helically-slotted spring-case B, the tubular toothed spindle A, the spring D, the adjustable gage E, screwed into the spindle, and the clamp-screw d, all arranged and applied, and furnished with a handle, C, as specified and shown.

160,144. Saw-Sets. Warren Burgess, Tonica, Ill. (Filed Apr. 24, 1875.)

The saw-set herein described, having the obtuse-angled jaw A, the detachable spring-jaw B, notched at *a*, and the lever L, having the stirrup D for engagement with said notch, as specified.

160,145. Bird-Cages. Dorinda F. Burns, New York, N. Y. (Filed July 17, 1875.)

Brief.—The bar-base is provided with a hinged side, and is adapted to receive the wire sections when separated for transportation.



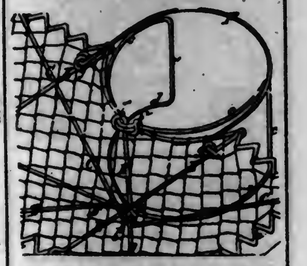
A bird-cage formed by the combination with each other of the hollow or box base A, provided with a hinged side, *a'*, the detachable rods D, the detachable sides E, and the detachable top F, substantially as herein shown and described.

160,146. Weiboed Attachments to Wash-Tubs. A. W. Caldwell, Gainesville, Ga. (Filed Oct. 2, 1875.)



A wash-tub or other article provided with an interior loop and projecting pins at the top rim and outer side, in combination with a wringing-strap having slotted and perforated ends to be applied in manner shown to the clothes to be wrung, and securely fastened to the pins for holding them the article for thorough wringing, substantially as specified.

160,147. Stove-Pipe Shelves. John Christy, Clyde, Ohio, assignor to himself, Milo Hunter, and Byron G. Brigham, same place. (Filed Apr. 28, 1875.)



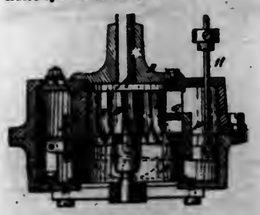
1. The wire stove-pipe shelf or bracket, made with a crimped edge, in combination with the filling-wires woven between the ridges of the crimped edge, substantially as described.

2. The wire shelf-frame, clasp, and diagonal brace, formed of a single piece of wire, in combination with the suspended brass wire rod C, and the strut B, and brass D', substantially as and for the purpose described.

3. The double eye or tie D' D' of the upright strut B, in combination with the wire forming the spring-clasp, substantially as described.

160,148. Tubbing-Wheels. T. H. Clark, Holmes, Mont. (Filed May 20, 1875.)

Brief.—The gate is a cylinder enveloping the wheel, and with an inwardly-projecting flange and segments on its upper end, which segments are fitted to the form of the chutes, and rise and fall in them, forming the bottom of them. The gate is supported in an inclining ring-lever, fulcrumed on one side, and operated by a rod on the other.

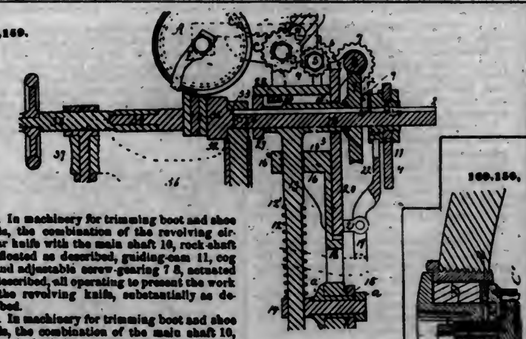


In a water-wheel, the combination with a vertically-adjustable gate, F G, the pivoted ring-lever J, and rod M, substantially as shown and described.

160,149. Hub-Tenoning Machines. Lovell G. Cook, Boston, Mass. (Filed Aug. 20, 1875.)

Brief.—The head is automatically presented to the cutting-action of a rotary upwardly knife, gradually and continuously, until reduced to the shape of the pattern-plate.

160,149.



1. In machinery for trimming boot and shoe heels, the combination of the revolving circular knife with the main shaft 10, rock-shaft 13, fluted as described, guiding-cam 11, cog 9, and adjustable screw-gearing 7 8, actuated as described, all operating to present the work to the revolving knife, substantially as described.

2. In machinery for trimming boot and shoe heels, the combination of the main shaft 10, rock-shaft 13, bearing the same, and fluted upon spring 12, rest-bolt 14, bearing-bars 19' 19', slotted sliding bearing-plate 20, cam 11, clutch 23, and pins 9', with the guide 41, and actuating mechanism, as described, all operating substantially as described, for the purpose set forth.

3. The combination of the rock-shaft 13, with its shoulder 13', and rest-bolt 14, with the spring 12 resting on the head of the rock-bolt, surrounding the rock-shaft and abutting against the shoulder of the rock-shaft, which is fluted thereon, substantially as described, for the purpose set forth.

4. The combination of the rock-bolt 14 furnishing a bearing for the rock-shaft 13, and a support for the spring 12, and its sleeve *a'* with the slot 19' in the frame of the machine, for the purpose of adjustment, substantially as described.

5. The combination of the main shaft with the heel-shaped cam 27, guided on the under surface of plate 28, substantially as described.

6. The combination of the main shaft 10, actuated as described, with the jack 31 36 37 38 39 40, holding the work against the heel-shaped rest projecting from the end of the shaft, and fitted to arm 31, substantially as described.

7. In a machine for trimming the heels of boots and shoes, the combination of the screw-gear 7 and 8, and slotted sliding bearing-plate 20, with the operating mechanism and cog-wheel 9, substantially as described, for the purpose set forth.

8. The combination of lever 29, rock-bar 30, and work-shaft 10, substantially as described, for the purpose set forth.

9. In a machine for trimming boot and shoe heels, the arrangement and combination of the lever 17, passing through the hole 18 in the frame of the machine, actuating the shipper 19 22, pivoted to an arm projecting from the sliding bearing-plate 20, with the clutch 23 carrying the cam 11 and pins 9', and having a horizontal movement on the main shaft, substantially as described, for the purpose set forth.

10. The combination of the main shaft, provided with the horizontal keyway 26, with the clutch 23, having a horizontal movement thereon, and carrying the cam 11, and engaging-pin, substantially as described, for the purpose specified.

11. The combination of the slotted hanger *m*, and cog-wheel with the set-screw *n*, substantially as specified.

12. The combination of the bracket *c*, slotted as shown, with the set-screws *c'* and *c''*, to secure a vertical adjustment of the revolving knife, substantially as described.

13. The combination of the sliding arm E, slotted as shown, with the set-screws *b' b''*, and bracket C, to secure a horizontal adjustment of the revolving knife in relation to the work, substantially as described.

14. The guard E arranged to conform to the inner surface of the blade, to free the same from the shavings, and bolted to the knife-shaft, substantially as described.

15. The combination of the rock-shaft 13, with the weight 43 suspended over the friction-pulley 45 by cord 4, for the purpose of drawing the main shaft into position for removing the work upon unshipping the cam, substantially as described.

16. In a machine for trimming the heels of boots and shoes, the knife A beveled on its outer edge at A', substantially as described.

160,150.

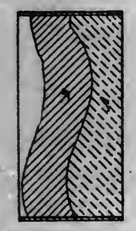


160,150. Bungs and Vents. H. B. Cornish, River Falls, Wis. (Filed Aug. 14, 1875.)

Brief.—The vent is established through means of a groove in the screw-bolt and a vent-hole in the bottom plate, and openings in a washer and metallic ring-plate the latter being provided with guide-pins, which project through slots in the bottom plate, so that by turning the same in one direction the vent-holes of bottom plate, washer, and ring communicate and admit air. By a short turn of the screw-bolt in the opposite direction, the bottom plate is carried back as far as the guide-pins will allow, thus interrupting the connection of the vent-holes.

The combination of grooved screw-bolt C, placed in the middle of bung, with recessed ring-plate A, having subjacent fins, the washer *f* and the bottom plate C', all having holes separated from or made to communicate with each other, by turning the bottom plate as set forth.

160,151. Making Patterns for Castings. Wm. B. Craig, Indianapolis, Ind. (Filed Aug. 20, 1875.)



160,151.



The method of making slab-rate ornamental castings by first modeling the form of the article to be produced in clay, as at A, taking a plaster mold, B, therefrom, applying to said mold a thin sheet of clay, C, forming thereon the back mold F, casting the composition pattern G in said plaster molds, and forming said molds I J from the composition pattern and plaster molds, all substantially as herein described.

160,152. Inkstands. Saml. Darling, Providence, R. I. (Filed June 17, 1876.)

Brief.—A shallow tray, containing water or wet sponge, is arranged in the upper part of the ink-reservoir. The surrounding air, becoming saturated with moisture by evaporation, exerts but little vaporizing influence upon the contained ink, so that the latter remains limpid and free from sediment.



The combination, in an inkstand, of an ink-reservoir, a vessel in the upper part thereof to contain water or a wet sponge, and a removable top, substantially as described, and for the purpose set forth.

160,153. Dumping-Wagons. D. B. Davies, Dundaff, Pa. (Filed Sept. 11, 1875.)

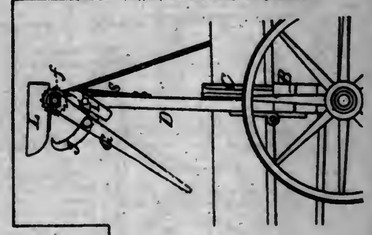
Brief.—The spring which supports the seat presses upon the windlass, operating as a brake to prevent too rapid descent of the box.

1. In combination with a derrick or bridge crane, a windlass, and a vertically-vibrating hinged wagon-box, the ratchet-wheel *f*, vibrating lever G, having pivoted hook *g*, pawl I, and spring S, substantially as specified.

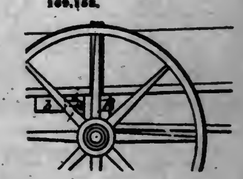
2. The combination of the bridge-crane D E, the mechanism for raising a wagon body or box, and the driver's seat L, substantially as specified.

3. The combination of a brake-spring, J, with a driver's seat, L, and the winding-drum F of bridge-crane D E, substantially as specified.

4. In combination with the running-gear of a wagon, the removable bridge-crane D E, supporting the hoisting mechanism of a dumping-wagon, substantially as specified.

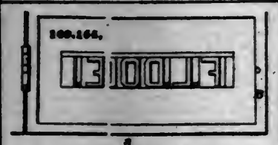


160,153.



160,154. Molds for Casting Door-Plates. Frank L. Dodge and Charles E. Smith, Grand Rapids, Mich. (Filed Sept. 24, 1875.)

160,162.



The above-described molds for door and other plates, having faces A, with sunken bed a, removable border b, opening h, and holes i, in combination with letters, figures, or characters D, substantially as and for the purpose set forth

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160,163. Pump-Buckets. E. J. Dunbar, Rosendale, Mich. [Filed Sept. 11, 1875.]

Brief.—A bucket of rubber with bell-shaped cavity, to which is fitted a conical valve, the latter rigidly secured to the rod, and, with the rod, having a short reciprocating stroke through and below the bucket.

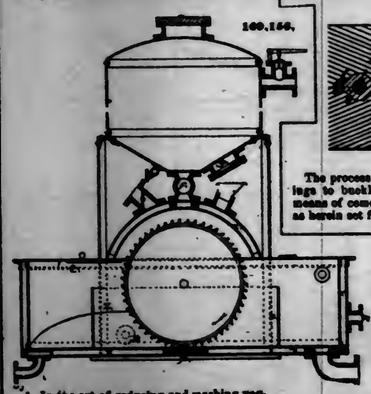


The bucket A, made of india-rubber, in cylindrical form, with a bell-shaped cavity, a^2, in its lower end, and with longitudinal holes a^1 through it, the iron valve B, made in the shape of the frustum of a cone, and the iron rod C, provided with a nut or collar, c^1, in combination with each other, substantially as herein shown and described.

160,164. Processes and Apparatus for Making and Cooling. G. Hinsberger, Bidenkopf, Prussia. [Filed June 14, 1875.]

Brief.—The vegetable is treated to the action of steam in a closed vessel, then ground to a fine pulp, in a steam-jacketed vessel, and, when partially cured, the malt necessary to prepare the same for the fermenting-vat is added. The mash then treated is then artificially cooled.

160,164.



1. In the art of reducing and mashing vegetable substances, and preparing the same for fermentation, the process herein described, which consists in first subjecting said substances to steam under pressure, afterward grinding the same, while hot, in a steam-jacketed vessel to a fine pulpy mass, and when said mass is partially cooled adding the requisite malt and sugar, which is followed by artificial cooling and the addition of yeast, substantially as described, and for the purpose set forth.

2. In the art of reducing and mashing vegetable substances, and preparing the same for fermentation, the process herein described, which consists in reducing steam-treated vegetable substances to a finely-divided pulpy mass, while subjected to the action of steam-heat from an inclosing jacket, substantially as described and set forth.

3. In the art of reducing and mashing vegetable substances, and preparing the same for fermentation, the process herein described, which consists in incorporating a preparation of malt with the mash while in a finely-divided pulpy mass, and while subjected to the action of steam-heat from an inclosing jacket, substantially as described, and for the purpose set forth.

4. The combination of a closed steam-vat for heating under pressure, with a steam-jacketed vessel for completing the mashing process, substantially as herein described.

5. A mashing-vat composed of two shells, an outer and an inner one, with steam-space between, in combination with a revolving drum and wildfeather, substantially as described.

160,167. Trammers for Millstone-Spindles. Abraham Bahelman, Harleyville, Pa. [Filed May 7, 1875.]



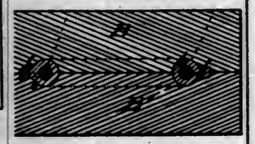
1. In a trammer for millstone-spindles, the bar or arm C, and the adjustable slide D thereon, having the bead e and fork f, substantially as and for the purposes herein set forth.

2. The combination of the bar C, with pin b, adjustable slide D, with bead e and fork f, curved arm E, and set-screw G, all constructed substantially as and for the purposes herein set forth.

160,168. Processes of Covering Harness-Mountings with Leather. Joseph Feder, Newark, N. J. [Filed Sept. 4, 1875.]

160,168.





The process of applying the leather coverings to beetles and harness-trimmings by means of cement and pressure, substantially as herein set forth.

160,169. Corsets. Sherwood B. Ferris, Brooklyn, N. Y. [Filed Sept. 2, 1875.]

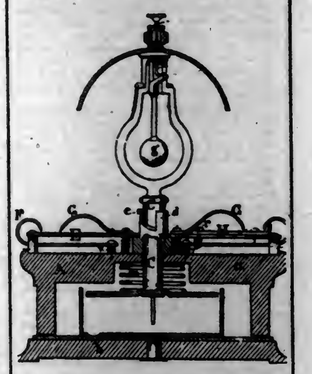
160,169.



1. The corset having a series of buttons, e e, in a line parallel with its upper edge, in combination with the triangular flaps b b, of which each has a single button-hole, d, near its free corner, substantially as set forth.

2. The adjustable corset, slit at the upper and lower edges, and combined with the triangular flaps b b and f f, and their adjustable fasteners c c d and g g, substantially as specified.

160,170. Game-Counters. David Fay and R. Hermann Pein, Peoria, Ill. [Filed Sept. 2, 1875.]



1. The circular box A, provided with block or sleeve B d, fingers F, and index-plate E, substantially as and for the purposes described.

2. The circular index-plate E, provided with fingers G, &c., sliding fingers H, &c., in combination with the box A and its movable fingers F, substantially as and for the purposes described.

3. The combination, with block or sleeve B d, of the shaft C, provided at its middle with pin a, lengthened above to adapt it for the reception of a call-bell, and extended below the index to adapt it to receive the spring and pressing-plate of a card-press, substantially as and for the purposes described.

4. The construction and arrangement of the index-plate E, fingers G H F, with their fastening-screws, as described.

160,171. Lamp-Burners. John H. Fouch, Sauk Centre, Minn. [Filed July 31, 1875.]



The combination of the inner tube B, having the gas-jet holes b' and the inclosing-tube B, having corresponding slots a', one larger or wider than the other, to operate as and for the purpose specified.

160,172. Mowing-Machines. D. H. Gage, Dover, N. H. [Filed May 10, 1875.]

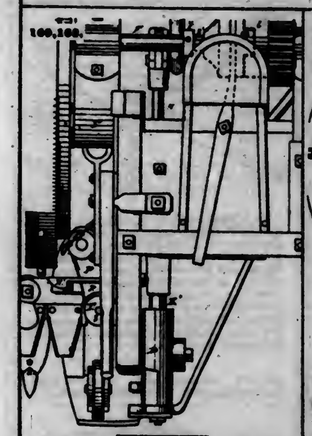
1. The combination of the pitman F with the shoe w, having the pushing-block x pivoted thereto, and connected with the bell-crank P by the post y, substantially as set forth.

2. The combination of the shoe w, block x, post y, and crank P with the vertical axle z, accompanied by the friction-wheel T, substantially as expressed.

3. The forked rod F, pivoted at its rear ends to the flanges y y in front and forming an axle for the sleeve D', in combination with the beam-rod F', substantially as set forth.

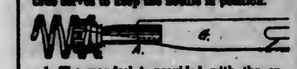
In testimony that I claim the foregoing improvements in mowing-machines, as above described, I have hereunto set my hand and seal this 30th day of April, 1875.

160,166.



160,166. Sewing-Machine for Sewing Rags, &c. Howard P. Garland, San Francisco, Cal. [Filed May 17, 1875.]

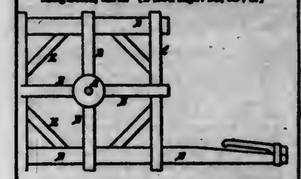
Brief.—A helical needle, into which is inserted a mandrel pivoted to a slotted strap, and having an enlarged slotted head. The end of the last spiral at the heel of the needle, being bent inwardly, prevents the enlarged head of the mandrel from passing it, and thus serves to keep the needle in position.



1. The mandrel A, provided with the enlarged head B, slot C, and slotted strap G, as and for the purpose specified, constructed substantially as set forth.

2. The combination, with the mandrel A, provided with an enlarged head and slotted strap, of the spiral needle E, having the point of its last spiral bent in, substantially as and for the purpose specified.

160,165. Knee-Fowers. Wm. T. Grant, Magnolia, Ark. [Filed Apr. 19, 1874.]



The combination of the radial arms B, arranged at right angles, the sweeps D D, their parallel connecting-bars C, and the diagonal braces E, with the king-post, all arranged as shown and described.

160,166. Water-Wheels. A. W. Haag, Fleetwood, Pa. [Filed Sept. 11, 1875.]

Brief.—The gates are pivoted to the upper and lower rings, which are turned by the shaft and gears. Behind the pivots the gates have a spring, which throws out the points of the gates into the notches in the guides when they close, to shut them tightly. The lower ring has cams, which ride up the cends when the gate closes, and press the beveled side of the ring tight against the cam, making tight joints when closed. On the bottom of the cams is a V-shaped rib, which is designed to press into the floor of the pen-stock, to make tight and prevent leakage of water.

1. The combination of a spring, F, with a gate, A, pivoted at B, and arranged to shut in a notch, G, in the guide, substantially as specified.

2. The combination of cams H with the gate-rings and gates, constructed to close the rings and buckets tightly, substantially in the manner described.

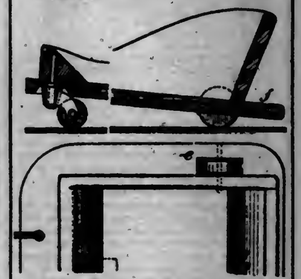
160,167.



1. The combination, with the fan G, pipe J, and heating-chamber L, of the water-boiler M, connected with the service-pipe, substantially as and for the purpose described.

2. The combined heater and boiler consisting of the pipes E, boiler M, wheel D, and shaft C, in combination with the fan G, the pipe J, heating-chamber L, and burners P, substantially as and for the purposes described.

160,168. Infants' Parlor-Wagons. Benj. J. Harrison, New York, N. Y. [Filed Mar. 20, 1875.]



The infants' wagon made with the fenders e e and f, at the bottom of the body, projecting beyond the wheels, substantially as and for the purposes specified.

160,169. Car-Couplings. Joseph Harris, Paola, Kans. [Filed Feb. 6, 1875.]

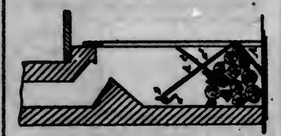


160,166.

3. The V-ring K, combined with the gate-case, substantially as specified.

4. The bearing for the shaft, constructed in two parts, E, and provided with a ring, T, to hold them together.

160,168. Fire-Door. Dreton S. Hale, Bellfville, Va. [Filed July 10, 1875.]

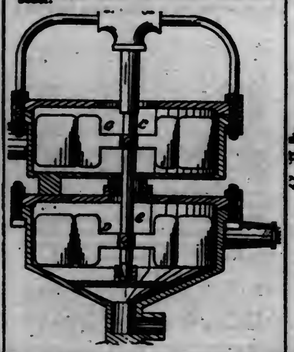


1. The fire-dogs A A, having hooks a', and bent inward at their lower ends, and the stay-plate B, secured to the opposite walls of the fire-place, all combined as shown and described, for the purpose specified.

2. The combination of the racks C with the dogs A a' a', substantially as herein shown and described.

160,167. Combined Air-Heaters and Boilers. Thos. M. Herrington, Pittsburg, Pa. [Filed Sept. 6, 1875.]

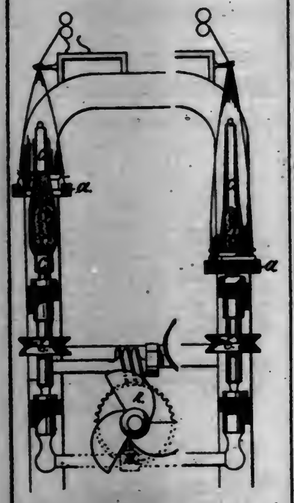
Brief.—It is designed that the flow of water in the service-pipe shall drive the wheel and fan, and that the water shall be kept from freezing in the pipe by passing through the boiler.



The rotating draw-bars A A', having journals *b*, and coupling-arms B B', with angular barbed heads *f*, convex on one side and concave on the other, in combination with lever F, rod G, box C, sliding block D, and spring S, substantially as and for the purposes set forth.

169,170. Spinning-Machine. James P. Hilliard, Fall River, Mass. [Filed July 8, 1875.]

Brief.—To obviate the strain upon the yarn and the liability to breakage which occurs when the building-yarn is laid on at the downward traverse of the ring-rail.

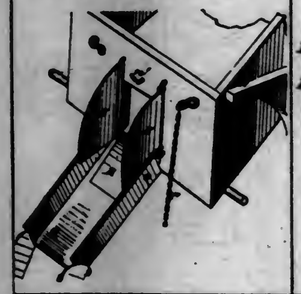


1. The combination with the ring-rail of a spinning-frame, of the weights *h h*, and intermediate mechanism, whereby the rail is lifted and the open spiral binding-yarn caused to be wound in an upward direction on a cop or bobbin, substantially as described.

2. In combination with the reciprocating ring-rail of a spinning-frame, the arm *a*, cam *b*, and weight *h*, adapted to operate together, substantially as and for the purpose specified.

3. In a ring spinning-frame, the combination with the reciprocating ring-rail *a*, of means substantially as described, whereby a slow downward and rapid upward motion is imparted to the same, for the purpose of winding the yarn or thread on the cop or bobbin in close spirals on its downward traverse, and binding the same on its upward traverse by an open spiral binding-thread, as described.

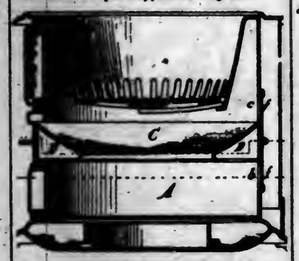
169,171. Dumping-Wagon. A. A. Hoch, Reading, Pa. [Filed May 20, 1875.]



In combination with the dumping wagon-body, having a discharge-opening in its rear end-board, and the sectional chute Q, hinged as specified, the flap E and laterally-swinging guards S, all as shown and described.

169,172. Heating-Stove. Zebulon Hunt, Hudson, N. Y. [Filed July 31, 1875.]

Brief.—Air for draft is taken into the fire located below the grate, and issues in a heated condition at a point opposite its ingress.

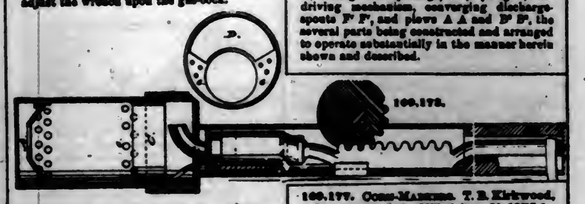


1. In a heating-stove, the closed annular air-heating flue, arranged around the wall of the stove beneath the grate, and provided with diametrically-opposite air-induction openings and air-eduction opening, substantially as specified.

2. The combination and arrangement of the dust-openings *b b'* and *a a'* with chambers A and C, respectively, and in relation to flue D D, substantially in the manner and for the purpose herein described.

169,173. Lard-Lighting Apparatus. H. Idau, New York, N. Y. [Filed Mar. 27, 1875.]

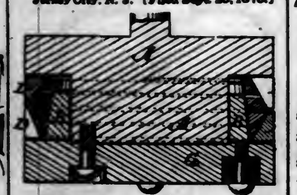
Brief.—The transparent plate in the bottom of the flame-chamber enables the operator to adjust the wrench upon the gas-cock.



1. The deflector A and illuminated base D, combined substantially as described, and for the purpose set forth.

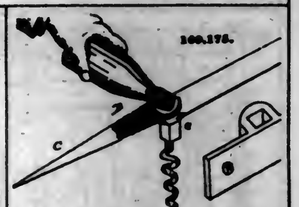
2. The combination of the deflector A, illuminated base D, oblique holes *c c*, and movable cylinder C, substantially as described and shown, and for the purpose set forth.

169,174. Piston-Packings. C. B. James, Jersey City, N. J. [Filed Sept. 25, 1875.]



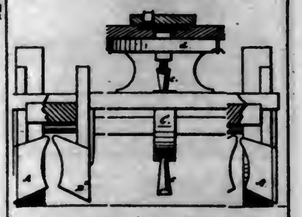
The combination, with the packing-rings, of the double conical expanding-spring, having conical inner surface, and the wedge-shaped ring B, as and for the purpose specified.

169,175. Combined Bottle-Opening, Knives, Ice-Picks, Graters, and Corkscrews. Geo. A. Kiehl and E. H. Kohler, Lancaster, Pa. [Filed Aug. 26, 1875.]



As a new article of manufacture, the described T shaped implement, made centrally concave at D, and provided with a projection, *a*, for removing cork-fragments, and having one arm formed into a knife, A, the other arm into an ice-pick, C, roughened at B to serve as a nutmeg-grater, and a square supporting-collar, *c*, adapted to fit within a contorted bracket, said collar terminating in a corkscrew, E, substantially as shown, and for the purpose specified.

169,176. Corn-Planters. Benjamin King, Jonesburg, Mo. [Filed Mar. 11, 1875.]

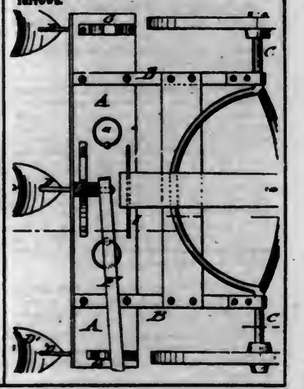


The combination, in a corn-planter, of the hopper or seed-box K, receiving feed-slide E, having two openings, *e e*, spring *d*, and driving mechanism, converging discharge-spouts F' F', and plows A A and B' B', the several parts being constructed and arranged to operate substantially in the manner herein shown and described.

169,178.

169,177. Corn-Marking. T. B. Elstwood, Bentonville, Ind. [Filed Aug. 21, 1875.]

Brief.—To a pivoted frame are connected bracketed cutters, turned up at their rear ends to form standards for slotted furrowing-plows. To the rear-standard is pivoted one end of a hinged pole, provided on its outer end with a head having markers for making additional furrows.



1. The branched cutters D, turned up, as shown, to form standards, in combination with slotted shovels D' and board A, as and for the purpose set forth.

2. The combination, with pivoted frame A B, having cutters D, of the upright E, the pivoted pole F, the guide-brace G, and the boards F', having cutters F, as and for the purpose specified.

169,179. Key-Hole Guards. John Le Blanc and Xavier St. Pierre, Ophir City, Utah. [Filed Aug. 14, 1875.]



The combination of a slide, A, cranked knob-spindle G, connecting-rod, and a stop-pin, L, with a lock, in the manner described, for covering the key-hole.

169,180. Molds for Concrete Articles. Richard B. Lanum, Mount Sterling, Ohio. [Filed Sept. 11, 1875.]

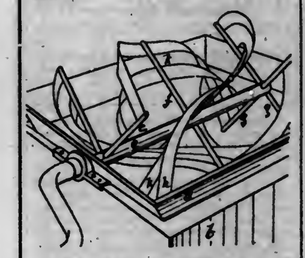


Loose or open jointed metal linings, in combination with molds for concrete articles, substantially as specified

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169,180. Lard-Coolers. James G. C. Lee, New York, N. Y. [Filed July 19, 1875.]

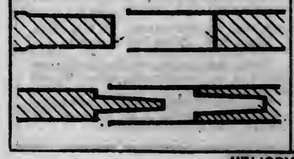
Brief.—Ice is placed in the chamber formed by the tank *a* and casing *b*, for cooling the lard.



In combination with the shaft *c*, the series of spokes *e*, *f*, and *g*, provided with series of ribbons *h* and *h*, arranged to form spirals running lengthwise, one end thereof being connected to the end spoke next forward of the center line, and the other end connected to the opposite end spoke next behind their center line, and all arranged to operate substantially in manner and for the purpose described.

169,181. Fishing-Rods. Hiram L. Leonard, Bangor, Me. [Filed Aug. 30, 1875.]

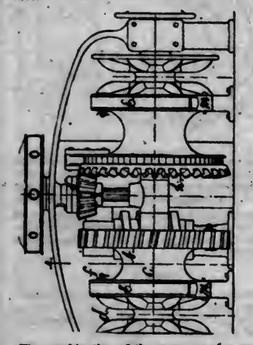
Brief.—To render access of water to the end of the wood of the rod-joints impossible in the case of reel and glued rods—an especial desideratum.



A joint for bamboo or other fishing-rods, consisting essentially of an imperforate cap-ferrule, in combination with a correspondingly-shaped and imperforate socket-ferrule, substantially as and for the purposes set forth.

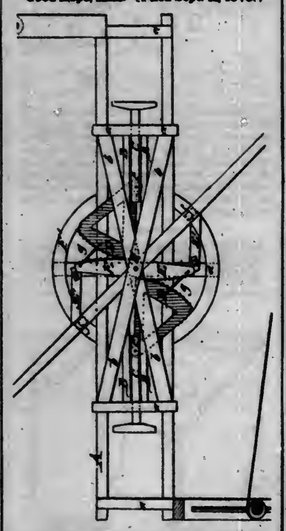
169,182. Windlasses. Joseph P. Manton, Providence, R. I. [Filed Oct. 26, 1874.]

Brief.—The windlass can be worked through bevel-gearing on it, by a pinion on the capstan-shaft, or by hand or steam power, through worm-gearing, the capstan-pinion then being loose.



The combination of the worm *a* and worm-gear *b*, substantially as herein described, as an auxiliary appliance to a windlass consisting of the barrel *c*, the wild-cat *d*, and brake *e*, driven by the bevel-gear *b* and pinion *h*, substantially as described.

169,183. Cotton-Presses. D. S. McBryde, Good Hope, Miss. [Filed Sept. 11, 1875.]



1. A cotton-press composed of longitudinal supporting-sills or frame, with braced guide-pieces and sliding follower-rods, operated by pivoted sectors and eccentric segments of a centrally-fulcrumed main lever, substantially in the manner and for the purpose set forth.

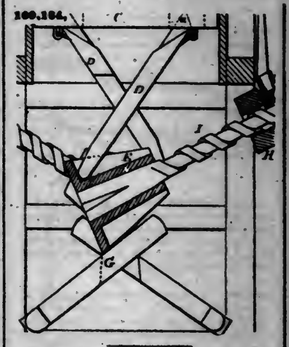
2. The combination of the swinging sectors, by chains or ropes, with the outer ends of the eccentric segments, for returning the followers on the backward motion of the operating-lever, as set forth.

169,184. Cotton-Presses. Thomas G. W. McMeekin and William W. Hunt, Cedartown, Ga. [Filed July 17, 1875.]

Brief.—The recessed wedges, carrying the levers that lift the follower, travel up separate inclines, being operated by nuts provided with spokes.

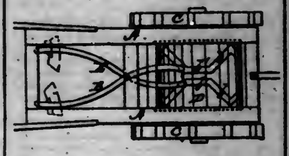
1. The combination of the follower C, levers D D, recessed wedges E E, and inclined planes G G, substantially as and for the purpose set forth.

2. The combination, with the levers D, wedges E, and inclined planes G, of the screws I, cross-bars H, and nuts J, with spokes *k*, all substantially as and for the purpose set forth.



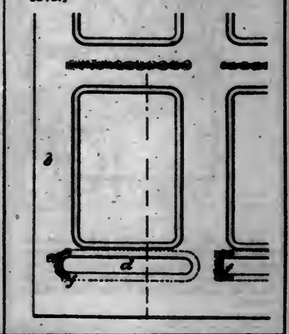
169,185. Cotton-Openers. Thomas G. W. McMeekin and Wm. W. Hunt, Cedartown, Ga. [Filed July 24, 1875.]

Brief.—A cylinder with two angular cam-grooves, which impart an intermittent motion to two crossed levers. The hose attached are drawn upon the row, except as thrown out at regular intervals.



The combination of the cylinder D, having zigzag cam-grooves *h*, with straight parts *i* at the inner angles, and the pivoted levers E working in said cam-grooves, and having the hoe-blades attached to their rear ends, substantially as set forth.

169,186. Photograph-Albums. Charles D. Mosher, Chicago, Ill. [Filed Sept. 16, 1875.]



1. An album-leaf having one or more openings for photographs, and beneath each opening a long narrow opening, *d*, and a cut or slit, *e*, near the one end of each opening *d*, to receive a piece of card, *f*, substantially as and for the purposes set forth.

2. An album-leaf, composed of three or more pieces, the outer pieces *b c* made of thick card-board, provided with one or more openings for photographs, so that in use the pictures will be materially protected from injury.

3. An album-leaf, composed of two or more pieces, the outer pieces *b c*, having one or more openings for photographs, and beneath each opening a long beveled cut or slit, *g*, adapted to be closed up by paste, and practically concealed by means of an ornamental stamp over the same, substantially as and for the purposes set forth.

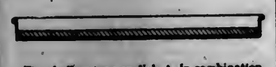
169,187. OILER. Stephen S. Newton, Binghamton, N. Y. [Filed Sept. 30, 1875.]



1. In lubricating-vessels, a compressible neck between the reservoir and the jet pipe or nozzle, substantially as specified.

2. The combination of a reservoir with the tube A, having openings B, and an elastic tube, C, substantially as described.

169,188. TRAYS FOR BEER-GLASSES, &c. J. Movinsky, Chicago, Ill., assignor of one-half his right to Mathias Swahla, same place. [Filed Apr. 24, 1875.]

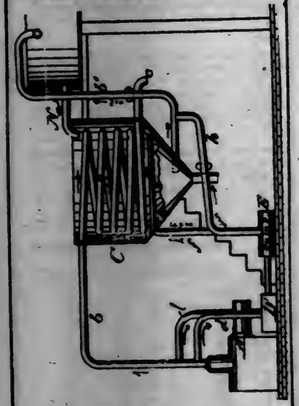


The shallow tray or dish A, in combination with the removable absorbent mat B, arranged in the bottom of the tray, substantially as and for the purposes specified

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169,189. APPARATUS FOR REDUCING CRUDE OIL. Wm. C. Parker, Franklin, Pa. [Filed Sept. 11, 1875.]

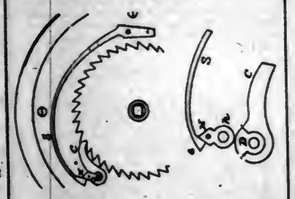
Brief.—The steam heats crude oil by coil in receiver, also works pumps, which severally force air through that oil, and force the same oil up, and spray it into a higher tank, whence it returns to the receiver.



An apparatus for making lubricating-oil without distillation, consisting of the steam-generator A, air-pumps E E', coil B, and jet-pipe *f'* in receiver C, and pipes *h b' g* N and reservoir G, all combined substantially as described.

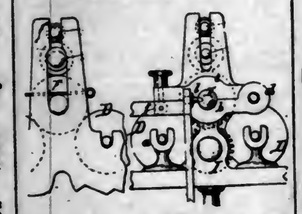
169,190. CLICKS FOR RATCHET-WHEELS. Edwin H. Perry, Lancaster, Pa. [Filed July 7, 1875.]

Brief.—On the pawl there is a recess formed by a circle around the pivot and the space between two radii. On this pivot, and within the recess, there loosely works, to press against one radius or the other, a stop-piece, pressure by a spring on one side or the other of which holds the pawl in or out of gear.



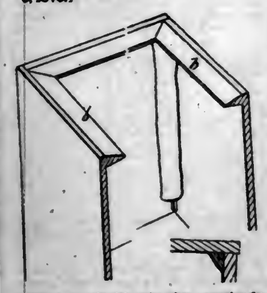
In combination with a click or pawl and ratchet-wheel as independent plate, h, provided with a projecting head, H, and pin for giving it a slight rotary motion on the pivot that holds the pawl C, so as to shift the beard of the spring S from one side of said head H to the other, arranged as shown, for the purpose specified.

169,191. BEARINGS FOR DISTRIBUTING-ROLLERS OF PRINTING-PRESSES. Charles Potter, Jr., and Jas. F. Hubbard, Plainfield, N. J. [Filed Feb. 23, 1875.]



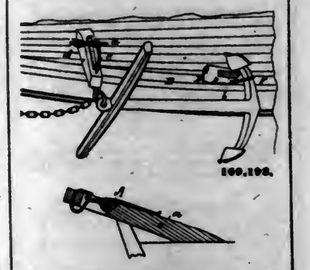
In combination with the inking-rolls D D and distributing-roll F, with one or more rolls mounted above and pressing upon the latter, the hinged housing or jaw *c d*, and its confining means *e*, serving both as a loose guide and support for the upper roller or rollers, and a firm and readily-releasable box for the journal of the distributing-roll F, substantially as herein specified.

169,192. SOLDERING PROCESSES. Milo A. Richardson, Bridgeport, Conn. [Filed Mar. 6, 1876.]



The process of uniting zinc plates, previously treated with an acid, by means of a strip or film of solder placed in the joint of the said plates, and melted by pouring melted zinc upon it, substantially as specified.

169,193. ANCHOR-TRIPPERS. E. Robbins, Cotuit Port, Mass. [Filed Sept. 21, 1875.]

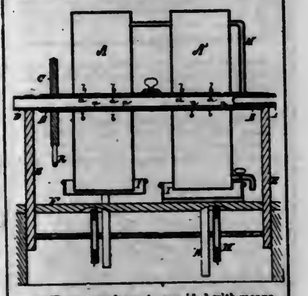


1. The fluke-supporter and tripper D, substantially as described, curved upward at its front, and provided with the ledge *b*, arranged on it as represented.

2. The looped rope C, lever A, and belaying-pin *c*, arranged with and applied to the cat-head, as described, each being for use with the fluke-supporter and tripper D, as set forth.

169,194. DRYING APPARATUS. J. S. Rogers, Gloucester, Mass. [Filed Oct. 5, 1875.]

Brief.—The drums are heated by steam admitted through the perforated pipes. The pans are alternately raised and lowered, for the purpose of immersing the surface of the drum in the substances to be dried, which is thereby deposited thereon in a thin stratum.



1. The rotary drum A, provided with means of heating it, as described, in combination with the liquor pan or reservoir I, arranged with such drum, to operate therewith as explained.

2. The rotary drum A, provided with mechanism for revolving it, and with pipes or means of heating it by steam, as described, in combination with the liquor-pan I, and its mechanism for successively moving it, as set forth, relatively to the drum, while the latter may be in revolution.

3. The pipes D E H G, having the perforations *a b c d*, as described, in combination, and arranged with the drum A, substantially as explained.

169,195. COLORED COPYING-PENCILS. Gustav Schwanhausser, Nuremburg, Bavaria. [Filed Apr. 5, 1875.]

Brief.—A colored pencil possessing some of the properties of copying-ink.

1. As a measure or vehicle for copying-pencils, the compound of nitrate of oxide of chromium and fine clay, united by a little gum, substantially as specified.

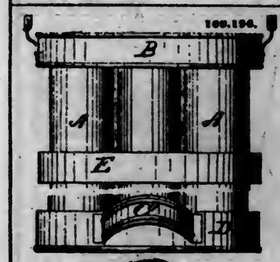
2. Copying-pencils, made of the compound of nitrate of oxide of chromium with a suitable vegetable coloring agent and fine clay, united by a little gum, substantially as described.

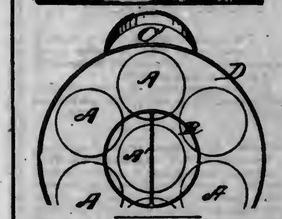
169,196. MILK-COOLERS. W. B. Scofield, Miery, N. Y. [Filed Feb. 8, 1875.]

1. The combination, with the tubular vessels A, of the strengthening-rings D E, substantially as specified.

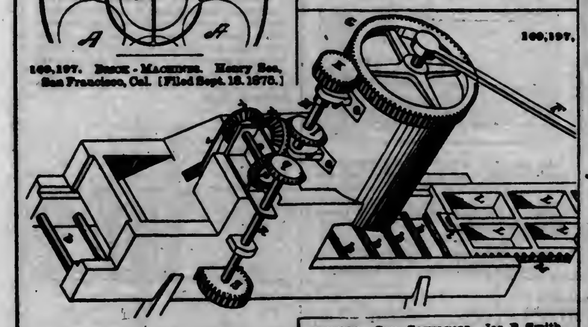
2. The combination, with the vessels A and strengthening-rings D E, of the ring R and brace *r*, substantially as specified.

169,196.





169,197. BRICK-MACHINES. Henry See, San Francisco, Cal. [Filed Sept. 18, 1875.]



1. A brick-making machine consisting of the frame A, with its track *b b b*, box C, with its inclined partition or striker D, hinged pressing-plates T T', and peg-mill E, in combination with the trays or molds L, with their hooks *r*, eye-plates *t*, and racks M, when the same power which operates the peg-mill is employed to propel the trays or molds through the machine and operate the presser-plates, all combined and arranged to operate substantially as above described.

2. The trays or brick-molds L, having a hook, *r*, at one end, and an eye-plate, *t*, at their opposite end, so that they can be hooked together, each of said molds having the rack M secured to one side, in combination with a track, *b b b*, and horizontal spur-wheel S, substantially as and for the purpose described.

3. In combination with a brick-making machine having the peg-mill E mounted above it, so as to feed the mud or clay into a chamber of the machine, the hinged presser-plates T T', mounted and operated substantially as and for the purpose described.

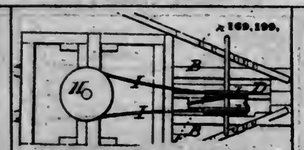
169,198. TREATING QUICKSILVER ORE. J. P. Stevenicky, Altona, Prussia. [Filed Mar. 11, 1876.]

The process of extracting free sulphur from quicksilver-ores by subjecting the ore to a preliminary process, substantially as above described, viz., treating the crushed ore with bisulphide of carbon in a closed vessel at a temperature of about 130° Fahrenheit, for the purpose of removing the sulphur in a marketable condition, before heating the ore to vaporize the quicksilver.

169,199. SEED AND GUANO DISTRIBUTORS. Alonzo H. Simms, Marburg, Ala. [Filed Aug. 21, 1876.]

Brief.—The tension of the opposing-rods regulated by pullers adjustable upon the handles.

169,199.



In a seed-distributer, the handles L L', having the perforated block V and the notched block V', in combination with the shaft K, having cylindrical spindle *e*, adapted to be received into block V, and anti-friction pulleys J J', substantially as specified.

169,200. HARNESS-BUCKLES. J. C. Smither, Nicholasville, Ky. [Filed May 22, 1876.]

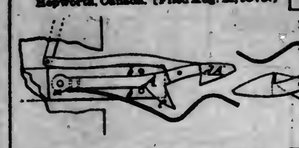


A tongued harness-buckle, having upon the forward end of its frame A the tube *a'*, tapered to an edge at its upper end, and provided at the lower edge of outer part with recess *a²*, as and for the purpose specified.

169,197.

169,201. CAR-COUPLINGS. Jas. B. Smith, Hopworth, Canada. [Filed Aug. 21, 1876.]

169,201.



An automatic car-coupling, composed of a laterally-swinging draw-bar, with hook end and side spur, a curved guard-spring, extending forward over the spur, and an uncoupling-lever mechanism, substantially in the manner and for the purpose set forth.

169,202. CAR-OPENERS. Robert Smith, Paterson, N. J., assignor to himself and Chas. Littlefield, same place. [Filed Sept. 27, 1875.]

Brief.—The pointed rod being thrust into the car, the rotating knife is guided and controlled by the disk at the end of the handle.

169,202.

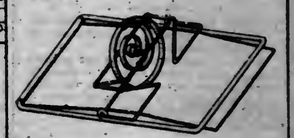


The rolling knife *e*, confined to the handle by the ferrule *d*, in combination with gage *i* and pointed rod *f*, as and for the purpose set forth.

169,203. CAR-AXLE BOXES. John D. Start, Brooklyn, N. Y. [Filed Nov. 6, 1874.]

Brief.—Spiral spring (for lubricating wheel) mounted on frame that folds flat, for insertion and removal.

169,203.



1. A lubricating-wheel for axle-boxes, consisting of a flexible rim, in combination with a coiled spring and a hub, on which it is mounted, substantially as and for the purpose set forth.

2. The combination of the tilting standard, the wheel, and the base, on which it doubles down to be put into the box, substantially as and for the purpose set forth.

169,204. CUTTER-BITS. Anton Streit, Cincinnati, Ohio, assignor to J. A. Fay & Co., same place. [Filed July 7, 1876.]

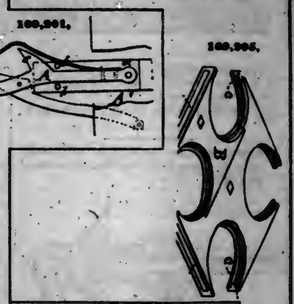
Brief.—The bit is provided at one end with a straight cutting-edge, and with a tonguing or grooving edge upon the other.



A cutter-bit, plain at one end, with a straight cutting-edge for earthing, and grooved longitudinally on one side from the center to the other end, to form a matching-edge, either for grooving or tonguing, substantially as specified.

169,205. STOVES. Henry Hite Spurrier, Florence, Iowa. [Filed Oct. 1, 1876.]

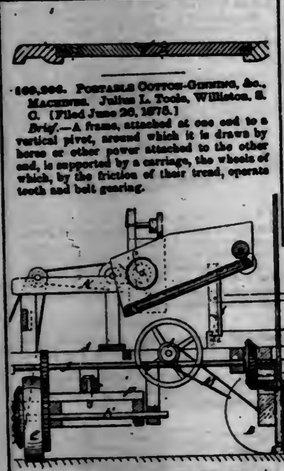
169,205.



1. Reversible stove centers or cross-pieces, having both sides constructed alike, substantially as and for the purposes described.

2. The combination of the stove centers or cross-pieces B C, connected by a tongue-and-groove joint, substantially as described.

3. The bellowed bearing-edges of the stove centers or cross-pieces, substantially as described.



160,906. Portable Cotton-Ginning, &c., Machine. Julius L. Toole, Williston, S. C. [Filed June 26, 1875.]

Brief.—A frame, attached at one end to a vertical pivot, around which it is drawn by horse or other power attached to the other end, is supported by a carriage, the wheels of which, by the friction of their tread, operate teeth and belt gearing.

1. The portable power apparatus, comprising the truck A, wheels B, pivot l, tractive-wheels C D, and transmitting-gears, combined and arranged substantially as specified.

2. The portable cotton cleaning and pressing apparatus, comprising the power mechanism, gin, condenser, and the press, combined and arranged substantially as specified.

160,907. Chair-Molds. Heinrich Voits, Cincinnati, Ohio. [Filed June 12, 1875.]

Brief.—The lower sections of the mold are divided longitudinally, and can yield laterally and again assume their normal position, as a spring at one side permits the same.



160,907. B E A

The combination, with flanged guide-frames A B, of the sliding grooved fish-molds C D, the former attached to strip b, and provided with spring E, as and for the purpose specified.

160,908. Socket-Couplings. Andrew S. Wolfleigh, San Francisco, Cal. [Filed Jan. 29, 1875.]



The perforated elastic disk A, constructed to form a cone-shaped packing in the chamber B when pressed up by the tube of a burner, substantially as and for the purpose specified.

160,909. Supports for Riding-Saddles. John C. Woodruff, New York, N. Y., assignor of one-fourth his right to D. Smith, same place. [Filed Sept. 28, 1875.]

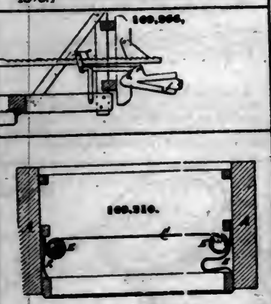




160,909.

In combination with the arch of the continuous stirrup-iron hoop A, the detent-spring G, recess E, detent-notches or shoulder F, shank C, and swivelly-adjusted stirrup-leather loop D, as and for the purpose described.

160,910. Window-Screens. Henry E. Waldridge, Brooklyn, N. Y. [Filed Sept. 11, 1875.]



160,910.

An improved adjustable window-screen, formed by the combination of the wire-netting G, the rollers D, and the spring-hook clamps E with each other to adapt it to be applied to a window, substantially as herein shown and described.

160,911. Padlocks. Bodo Wallmann, San Francisco, Cal. [Filed Aug. 31, 1875.]

160,911.



1. The spiral spring S, connecting the dog D by its arm *c*, and pin *b* to the bolt B by the shank-pin *p*, arranged so as to actuate the bolt B longitudinally between the guides I, G, and *k*, fixed to the casing C, and to turn the dog D on the rest A, in the manner and for the purpose herein set forth.

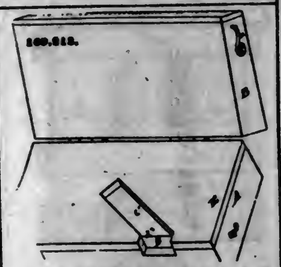
2. The spiral spring S and pivoted dog D, provided with stop *c*, arm *c*, and pin *b*, in combination with the bolt B, fitted within the guides I, G, and *k*, and provided with pin *p* and grooved curved flange *m* F, substantially as and for the purpose specified.

160,912. Compositions for Cement. Richard Warwick, Williamsburg, N. Y. [Filed Apr. 22, 1875.]

The composition of the herein-mentioned ingredients, to wit, lime, alum, borax, tartaric acid or cream-of-tartar, (ground,) or calcined gypsum, and suitable colors, as an article of commerce, substantially as described, for the herein-mentioned purposes set forth.

160,913. Dies for Upsetting the Irons of Plowshares and Blanks Therefor. William Medd Watson, Tonica, Ill. [Filed Oct. 13, 1875.]

Brief.—The die-plate, having a recess, is separable from the section A, so that die-plates having different-sized recesses may be employed for the kind of share intended to be produced.



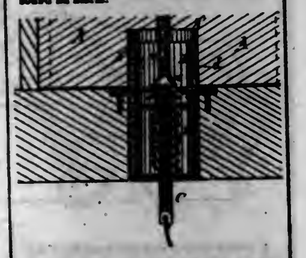
160,913.

1. The separable plate E, having the die C D, in combination with the section A and hinged section B, substantially as described, and for the purpose set forth.

2. A pierceable blank, E', when constructed substantially as and for the purpose set forth.

160,914. Burglar-Alarms. J. A. Wood, Binghamton, N. Y. [Filed July 12, 1875.]

Brief.—When the sash is down the stud in the sill is depressed by the stud on the sash. When the sash is raised the stud in the sill, with which the alarm mechanism is connected by means of a wire, is thrust upward by means of a spring connected therewith, thus releasing the alarm mechanism, and allowing it to sound an alarm.



In a burglar-alarm, a sliding pin, C, arranged within a socket, in combination with a stud, *a*, attached to the sash, and which enters the socket surrounding the pin or sliding bar to depress said pin, substantially as set forth.

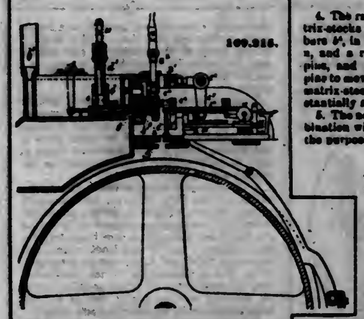
160,915. Type Casting and Setting Machine. Charles S. Westcott, Elizabeth, N. J., assignor to the Westcott's Type-Setting Company, New York, N. Y. [Filed Aug. 11, 1875.]

Brief.—By touching appropriate keys, one for each letter, a matrix-frame is shifted so that the matrix for a letter is thrown into the path of a matrix-carrier. The carrier lifts the matrix and carries it forward to complete the mold, adjusting the side of the mold at the same time, to give the letter a proper body. The bottom of the mold is closed by a shield on the end of the casting-nipple, and shield bearing a rib, which forms the bottom nick of the type. The force-pump throws a jet of hot metal into the mold, and a valve immediately closes the aperture, so that there is no sprue. The matrix is then withdrawn, and the type delivered to dressing-knives, finished, and set up.

1. The frame A, containing four spaces for the matrix-stocks *a*, and a central opening, *b*', through which the matrix-stock from the other frames is carried, in combination with each matrix-stocks and the reciprocating carrier, substantially as set forth.

2. The matrix-stock, provided with pins on its sides, in combination with the frame A, having notched sockets, in which the matrix-stock rests by said pins, and the matrix-carrier that lifts said stock and carries it forward and returns it by the reverse movement, substantially as set forth.

3. The carrier B, provided with inclines *b*' to lift the matrix-stock, in combination with the spring-catches *t*, substantially as set forth



160,916.

4. The range of frames *a*, carrying the matrix-stocks *c*, and sliding endwise between the bars *b*', in combination with the bars *l*, pins *n*, and a range of finger-keys moving each pins, and mechanism for acting upon each pins to move the frames and bring the selected matrix-stock into the path of the carrier, substantially as set forth.

5. The notched stationary grating *k*, in combination with the slide-bars *l* and pins *n*, for the purposes set forth.

6. The casting-nipple *c*, made as a segment of a globe, taking a globular seam, *c*, upon the pot, in combination with the valve *b* that closes the hole in the nipple *c* after the type is cast, substantially as set forth.

8. The combination, in a type-casting machine, of the mold, yielding injecting plunger, nipple *m* the bottom of the type-mold itself, and a valve in the nipple, withdrawn by mechanism, so that when the valve is closed there is no sprue opening into the mold, and the metal, under a pressure, is projected directly into the matrix to form a perfect-faced type, substantially as set forth

9. In a type-casting machine, the combination of the mold with the nozzle or nipple, ribbed and having its jet orifice located as described, so as to cast a type with both ends complete, to avoid the channeling or nicking of the feet of the type heretofore necessary.

7. In a type-casting machine, a rib upon the nose or shield of the bath and grooves upon the back surfaces of the molds, to fit each rib, for the purposes set forth.

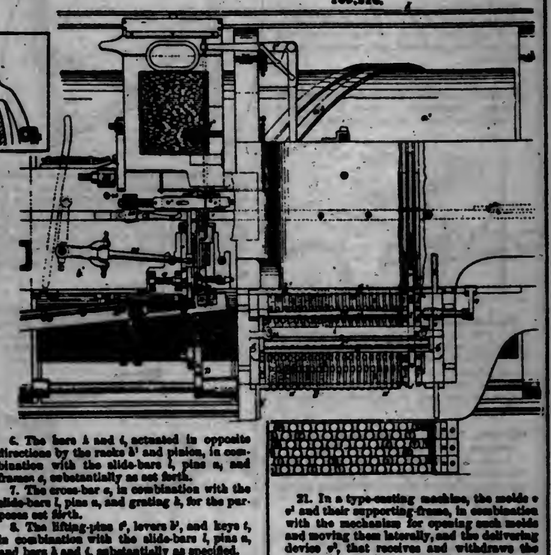
160,916. Type Casting and Setting Machine. Charles S. Westcott, Elizabeth, N. J., assignor to the Westcott's Type-Setting Company, New York, N. Y. [Filed Aug. 11, 1875.]

Brief.—The machine has a key and a matrix for each letter. On touching the proper keys, one of the frames, carrying matrices, is shifted into the path of the matrix-carrier. The key is locked as soon as it has moved far enough to start the frame, and all subsequent movement is automatic. No other key can move until the cylinder has made one revolution, which completes a type. If no key is touched, the machine casts and sets up a space for each revolution of the cylinder. As the matrix-frame is shifted, the matrix-carrier comes forward in its groove, takes a matrix, and carries it forward to complete the mold. A shifting plate in the mold is forced back by a projection on the side of the matrix, and the mold thus opened to the proper distance for casting a proper body for the letter presented. The mold, matrix, and injection nozzle are then firmly clamped, and a jet of metal thrown from the foot of the mold through it into the matrix, so that the face of the type is first cast. The matrix is then drawn sideways from the mold until it clears the letter, when it is taken back and hung up in its frame by the carrier. A hook then enters the mold, which opens for the purpose, and draws the type out, also forward, upon a way or track, along which it is propelled by a pusher between pieces, which draws it up, and it is finally deposited on a galley, also forward. A follower presses the letters sideways along the galley, and a ball on the end stop is struck by a tapped when the line is complete.

1. The matrix-stock *c* and matrix *f*, connected together by the screws *g*, which also form jaws for retaining the matrix and stock in the frame *a*, substantially as set forth.

3. The carrier B, having grippers *d*, sliding block *f*, and swinging block *h*, in combination with the pins and slots 6, 7, and 8, substantially as set forth.

4. The frame *a*, carrying the matrix-stocks *c*, and sliding in grooves between the bar *b*', in combination with the transversely-grooved bar *c*, and mechanism for raising and lowering the same, as set forth.



160,916.

6. The bars *h* and *i*, actuated in opposite directions by the racks *h*' and pinion, in combination with the slide-bars *l*, pins *n*, and frames *a*, substantially as set forth.

7. The cross-bar *o*, in combination with the slide-bars *l*, pins *n*, and grating *k*, for the purposes set forth.

8. The lifting-pins *f*', levers *b*', and keys *i*, in combination with the slide-bars *l*, pins *n*, and bars *h* and *i*, substantially as specified.

9. The claw *r*' and frame *r*, in combination with the range of finger-key levers *i*' and the slide-bar *l*, for the purposes and substantially as set forth.

10. The bar *s*' and lifter *s*', in combination with the range of finger-keys *i*', and mechanism actuated by such keys, substantially as set forth.

11. The bath of type-metal, provided with a casting-nipple, in combination with attaching supporting-screws, that are in line, or nearly so, with such nipple, so that the nipple is not displaced by expansion, substantially as set forth.

12. The segment of a globe at the back of the nipple 31, entering a similar recess at the end of the nose upon the bath, in combination with the device *s*', for holding the nipple to place, but allowing such nipple to accommodate itself to the type-molds, as set forth.

13. In combination with the bath of melted metal and the conduit 30, a plunger, *p*', actuated by yielding mechanism, and the valve and rod *t*', that are removable from the rear without disturbing any of the parts of the bath, substantially as set forth.

14. The mold-frame *o*', suspended from the centers 36, in combination with the removable plate *a* and the type-molds, substantially as set forth.

15. The two-part type-mold *o o*', in combination with the regulating-plate *o*', that is adjustable to vary the width of type, substantially as set forth.

16. The combination, with the molds *o o*' and regulating-plate, of the matrix-stock and a connection, 50, between the matrix-stock and the plate *o*', for varying the thickness of type according to the letter to be cast, as set forth.

17. The plunger 49 and lever 52, in combination with the molds *o o*', for pressing such molds together previous to casting, substantially as set forth.

18. The bar 44, hook 51, and means for actuating the same, substantially as specified, in combination with the mold and the matrix and its carrier, substantially as and for the purpose set forth.

19. The combination, with the molds *o o*' and regulating-plate *o*', of the delivery-hook *o*' and mechanism, substantially as specified, for giving the motions to the respective parts, as set forth.

20. The combination, with the molds *o o*', of the regulating-plate *o*', and mechanism for moving said regulating-plate between the successive casting operations, for the purposes set forth.

160,916.

21. In a type-casting machine, the molds *o o*' and their supporting-frame, in combination with the mechanism for opening such molds and moving them laterally, and the delivering device *o*', that receives and withdraws the type, substantially as set forth.

22. The trough 57, spring and hook *o*', in combination with the type-molds and mechanism for moving the same, substantially as specified.

23. The grippers 58 and 59, constructed and operating substantially as set forth, in combination with the pusher 60, and cutters to dress the type, as set forth.

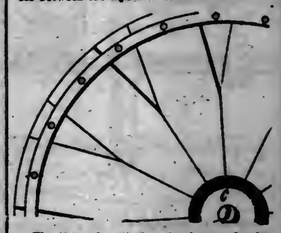
24. The cutters 63 64 65, applied to and combined with the movable block 66 and pusher 60, substantially as set forth.

25. The composing-table 77 and pusher 78, in combination with the trough 79 upon the slide 71, as set forth.

26. The bell 80, attached to the quad that moves with the types upon the composing-table, in combination with the adjustable tappets 81, as and for the purposes set forth.

160,917. Basket-Bottoms. Shepherd H. Wheeler, Peru, Ind. [Filed Sept. 9, 1875.]

Brief.—A basket-bottom having a center rib between the layers of staves.



The above-described basket-bottom, having the rib B at the center, between the layers of staves A A, and secured by means of the caps C C, rivet D, and hoops E E, substantially as and for the purposes herein before set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

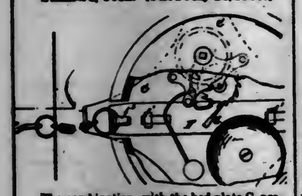
169,918. Composition for Artificial Stone. William H. Whittemore, Chelsea, Mass. [Filed Aug. 6, 1875.]

A composition for building purposes, &c., formed of alum, lime, gypsum, coke, and cement, substantially as described.

169,919. Compound for Removing Boiler-Incrustations. James M. Wishart, Boone, Iowa. [Filed Sept. 7, 1875.]

The described process, consisting, essentially, in the employment of chlorine, carbonate of magnesia, spirits of rock-salt, and vinegar, in connection with heat, substantially as described.

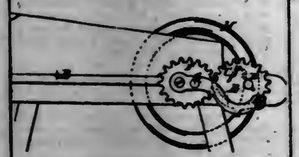
169,920. Combined Burglar-Alarm and Door-Fastening. James J. Woolsey, Stamford, Conn. [Filed July 24, 1875.]



The combination, with the bed-plate C, provided with studs *f' f'*, the alarm mechanism D, and chain-fastening E, of the sliding bar F, provided with oblong slots and rigid pawl G, all constructed to operate in the manner described, and to serve the double purpose of a door-fastener and a burglar-alarm, as set forth.

169,921. Feed-Cutter. Robert J. Wylie, Marion, Ill. [Filed Mar. 29, 1875.]

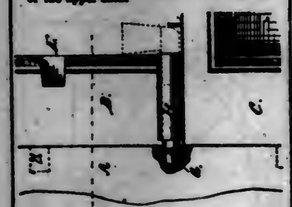
Brief.—By means of the two eccentric gear-wheels an increased power is applied to the rotary knife at the time of its coming in contact with the straw or hay.



The combination, in a feed-cutter, of the two eccentric gear-wheels E F with each other, and with the shaft D, that carries the knife C, the shaft G, that carries the fly-wheel H, and the crank I, substantially as herein shown and described.

169,922. Sash-Fastener. Chas. L. Alexander, Washington, D. C. [Filed Sept. 28 1875.]

Brief.—A bolt secured upon meeting-rail of lower sash locks into a series of holes in the jamb, while the head of the bolt, made at right angles to it, locks into mortises in the frame of the upper sash.



The above-described bolt D, attached to the lower sash C by means of the plate F and bolt-nuts H, and working into the series of holes G in the window-frame A, while the head of the bolt locks into the series of notches E in the upper sash, substantially in the manner and for the purposes set forth.

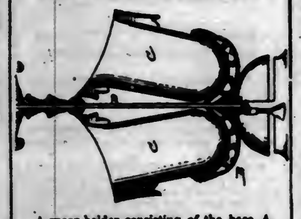
169,923. Sugar Cooling and Draining Apparatus. Jno. G. Angel, New Orleans, La. [Filed Apr. 17, 1875.]

Brief.—An oblong trough-shaped box is provided with circular ends, to which, exteriorly, are attached gudgeons, which are fastened to standards, thus making the apparatus easy to revolve. The bottom of the box is partly covered by a perforated shield, beneath which is situated a perforated draining-tube.



An improved sugar cooling and draining apparatus, composed of a dumping box or receptacle, with converging sides, laterally inclined bottom, and perforated inclined guard-plate, and of a perforated draining-tube at the lowermost corner of the box, and passing to the outside of the same, to be operated substantially in the manner and for the purpose specified.

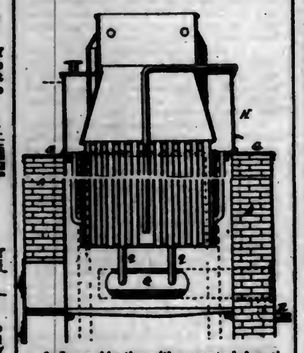
169,924. Spoon-Holders. S. Wm. Babbitt and Henry B. Beach, West Meriden, Conn., assignors to the Wilcox Silver-Plate Company, same place. [Filed Aug. 6, 1875.]



A spoon-holder consisting of the base A, supporting the bracket B, to which are attached the receptacles or cups C, united at their tops with the handle of the utensil, substantially as described.

169,925. Tubular Boilers. Isaac Burton, Williamsport, Pa. [Filed Apr. 19, 1875.]

Brief.—A plate is located upon a brick casing, upon which the boiler is suspended within the combustion-chamber. Iron columns are located within the brick-work, by which the brick casing may be removed without disturbing the setting of the boiler.



1. In combination with a suspended vertical tubular boiler, composed of two cylinders having the same axis, the lower pierced by tubes for the passage of the heated gases, and the upper, of larger diameter, containing the combustion chamber, and serving as a steam-drum, a blow-out pipe leading from near the bottom above or of the boiler-pot, and pierced near the water-line with holes, to serve as a surface-blow, substantially as described and shown.

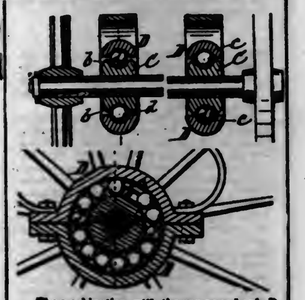
2. In combination with a vertical tubular boiler, two flues, Q, placed below it on each side of the fire-place, and connected with the water-space in said boiler by small pipes q, and further provided with hand-hole plates *f'*, pipe R, and valves *r r*, substantially as described and shown.

3. In a vertical tubular boiler, the combination of two flues, Q Q, set into the brick casing, one on each side below the pot of the boiler, and connected to said pot by the pipes *q q*, said flues having one end projecting beyond the outer part of said brick casing, and connected by a pipe, R, the pipe R being provided with a connection, *r'*, for connecting with the feed-water pipe, and suitable valves for shutting off the supply to one or both flues, substantially as described and shown.

4. In a vertical tubular boiler, the combination of the following elements, viz: a tubular brick casing, a tubular boiler wholly contained, and suspended within the same, a grate below said boiler, and between the bottom of the same and the bottom of the tubular casing, a drum resting upon the top of said casing, and a free, open space between the sides of the boiler, and the inner wall of the casing, substantially as described and shown.

5. A vertical tubular boiler, suspended by its upper part H on a plate, G, said plate resting upon a series of iron columns, which extend down through, and are entirely isolated in, a cylindrical brick casing A, so that said brick casing may be taken down without disturbing the position of the boiler on said plate G, substantially as described and shown.

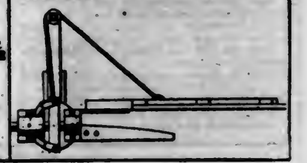
169,926. Vehicle-Axles. George Beck, Charlotte, N. Y. [Filed July 9, 1875.]

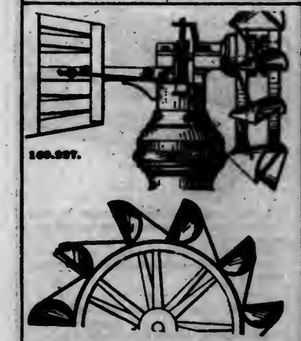


The combination, with the compound axle B B', of the collars O O' and bands D D', formed with grooves *b b*, which are concentric to each other and deepest at the bottom to receive the balls *d d*, and of larger diameter in cross-section than the balls, the whole arranged so that the balls receive friction at the top of the axle, thereby preventing crowding and grinding of the balls in the grooves, as herein shown and described.

169,927. Wind-Wheels. Abner J. Beckley, Battle Creek, Mich., assignor to Walter Gregory and Braxton H. Gregory, same place. [Filed Sept. 2, 1875.]

Brief.—The wheel is constructed with two hubs, two fellies, and two sets of spokes, in combination with stationary buckets or sails, which are concave-convex in form and shape. The shaft upon which the wheel is secured lies in a horizontal position, and has bearings in the frame.



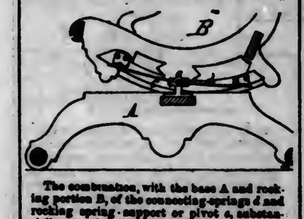


169,927.

1. A wind-wheel constructed substantially as herein set forth, having two hubs, two fellies, and two sets of spokes, in combination with the stationary air buckets or sails, as is herein fully set forth, and for the purpose specified.

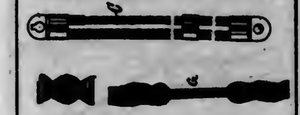
2. A series of sails or buckets made stationary upon a wind-wheel, said sails or buckets being concave-convex in form, and in shape the one-half of a hollow cone, as is herein fully set forth.

169,928. Rocking-Chairs. Albert Best, Buffalo, N. Y. [Filed Sept. 2, 1875.]



The combination, with the base A and rocking portion B, of the connecting-springs *d* and rocking spring-support or pivot *e*, substantially as and for the purpose hereinbefore set forth.

169,929. Gaiters. Gilbert H. Mahaday and Julius Wright, Bristol, Conn. [Filed Feb. 11, 1875.]



1. The combination, in a garter, of a spring wound in oval shape, and twisted by its recoil in torturous form, and a covering braided over said spring, all substantially as set forth.

2. The combination of the springs C and braided connections or end pieces G with a braid covering, which conforms to the size of said spring and end pieces, substantially as described, and for the purposes set forth.

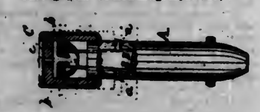
169,930. Drying-Kilns. David Bunnell, St. Joseph, Mich. [Filed Mar. 29, 1875.]

Brief.—The exhaust-pipes near the bottom extend into the drying-room.



The drying-chamber C, having the induction-tubes B B, introduced at a point above midway of its height, and provided at the bottom with the exhaust-pipes E E, in communication with the fan F, as and for the purposes hereinbefore set forth.

169,931. Seal-Locks. Alonzo T. Rose, Chicago, Ill. [Filed Aug. 11, 1875.]



1. The combination of a hollow bolt, having double spring-arms B B, provided with tumblers *b b* and catches *a a*, and cap C, provided with key-hole, substantially as and for the purpose set forth.

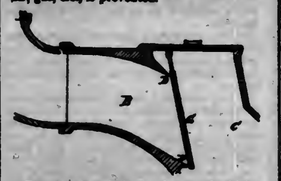
2. The combination of a hollow bolt, having double spring-arms, provided with tumblers *b b* and catches *a a*, cap C, and socket D, substantially as and for the purposes set forth.

3. The combination of a seal-holder with a hollow bolt, A, having a locking mechanism on the inside, and socket D, for securing the seal-holder, substantially as and for the purpose set forth.

4. The key F, provided with shoulders *f f*, in combination with slot *c* of cap C of the bolt A, substantially as set forth.

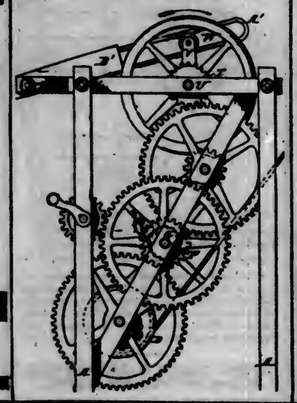
169,932. Dry Steam-Trap. John H. Bouchen, New York, N. Y. [Filed Sept. 9, 1875.]

Brief.—The supply-chamber of the trap is formed with a knife-edged seat for a gravitating-valve swung in bearings formed in the discharge-chamber, whereby the escape of foul air, gas, &c., is prevented.

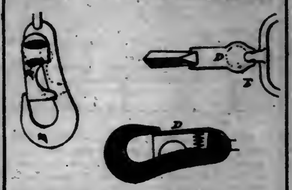


The chambers B C, the former of which is constructed with an inclined knife-edge valve-seat, D, projecting into the latter, in combination with the valve G hung in the chamber C, and adapted to set against said valve-seat, substantially as described.

169,933. Motive Power. Enoch Brothell and James Lindsey, Evansburg, assignors to G. B. Slater and J. N. Dunham, of Freedom, and Amos Palmer, Pine Grove, Pa. [Filed Oct. 6, 1875.]



169,934. Snap-Hooks. Charles B. Bristol, New Haven, Conn. [Filed Aug. 9, 1875.]

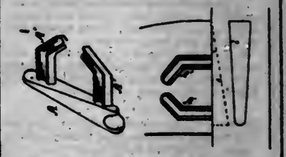


1. In a snap-hook, the tongue D constructed in ℸ-form in transverse section, its rear end pivoted to the shank, its forward end beneath the point of the hook, and the two sides at the said forward end extending down to overlap, and form a support against, each side of the body of the hook, combined with a spring within the said tongue, substantially as described.

2. In a snap-hook, the tongue D constructed in ℸ-form in transverse section and provided with the internal projections *a*, and the shank of the hook with corresponding depressions, the said projections closed into the said depressions to form the pivot for the hook, and combined with a spring within the tongue, substantially as specified.

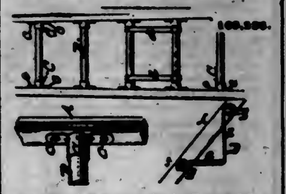
3. In a snap-hook, the tongue D constructed in ℸ-form in transverse section, its rear end pivoted to the shank, and constructed with the spring-chamber E to receive and retain the spring, substantially as set forth.

169,935. Bedstead-Fastener. Stephen D. Butler, Chicago, Ill. [Filed Sept. 20, 1874.]



The herein-described bedstead-fastener, consisting of the locking-head A, provided with the projecting flanges A', the whole being cast solid in one piece, and constructed to operate substantially as and for the purpose set forth.

169,936. Ladders. Wheeler Case and Jas. H. Read, Jr., Utica, N. Y. [Filed July 20, 1875.]

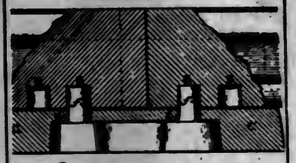


Brief.—The rounds are secured in iron sockets provided with flanges, by which they are secured to the side pieces or stiles, thus obviating the boring of holes in said stiles, which tends to weaken them. A movable step, composed of L-irons, is provided with hooks for engaging the rounds.

1. The rounds A A, secured to the sockets C C, having the flanges *c c* fastened to the sides or stiles B B, substantially as shown and described, and for the purpose set forth.

2. The ladder-step, as constructed and adapted for use, consisting of the L-shaped bars *d d*, having the hooks *f f* and foot-rest or board *e*, substantially as and for the purpose set forth.

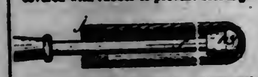
169,837. RAILROAD-RAIL-JOINT FASTENING. Libbeus Oldham, Woonsocket, R. I., assignor of one-third his right to Heath Arnold, same place. [Filed July 21, 1875.]



The combination of the rails provided with holes *b* at each end, chair C with side supports C', constructed and fitting to the sides of the rails, said chair being recessed in its under side, and the coupling-link F, for holding the rails in place, substantially as and for the purpose set forth.

169,839. SYRINGES. Wm. P. Clotworthy, Baltimore, Md. [Filed Oct. 8, 1875.]

Brief.—The glass barrel and piston-rod are covered with rubber to prevent breakage.



1. The combination, with a glass syringe-barrel, of a rubber jacket therefor, having an end conforming to the shape of the barrel end and openings therein coincident with the barrel-openings, substantially as and for the purpose herein set forth.

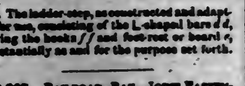
2. In combination with the barrel and piston-rod of a syringe, the rubber tube or covering *f* for said piston-rod, substantially as and for the purpose herein set forth.

3. In combination with the barrel and piston-rod of a syringe, the solid-rubber piston *g*, having tapering sides and the packing-base line, as and for the purpose specified.

4. In combination with the piston-rod *e*, covered with a rubber tube, *f*, and the syringe-barrel *a*, the rubber cap, in the manner and for the purpose herein set forth.

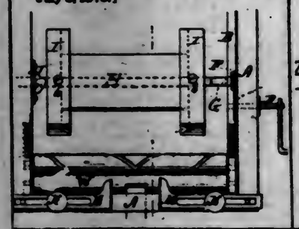
5. The rubber cap of a syringe-barrel, having the interior hollow neck *i* and the flange *j*, whereby it is adapted as a packing-cap for different-sized barrels, as described.

169,840. RAILROAD-RAIL JOINTS. George E. Doring, Lockleys, near Welwyn, England. [Filed Oct. 8, 1874.]



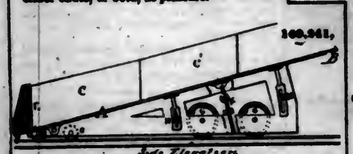
The improved joint for double headed and flanged rails, as described, consisting of a clip embracing the lower heads or flanges of the rails at their ends, and of fish-plates bearing at top against the lower part of the heads of the rails and at bottom upon the clip.

169,842. CLOTH-WINDING MACHINES. S. C. Dickinson, Washington, D. C. [Filed July 6, 1876.]



169,843. SNOW-PLOWS. John Doman, Bay City, Mich. [Filed Apr. 12, 1876.]

Brief.—Vertically adjusted by screw and slot, and pin-guide. Snow discharged through either chute, or both, at pleasure.



Side Elevation.

1. The inclined plane A, with sides C C, in combination with the slotted guides H H and lifting-screws K K, as and for the purposes set forth.

2. In a snow-plow, the combination of the inclined plane A, diverging rear-discharging chutes B B, guards C C *c' c'*, and shifting-tongue D, substantially as and for the purpose set forth.

3. In a snow-plow, the combination of an inclined plane, A, diverging chutes B B, hinged vertically reversible tongue D, and inner guards *c' c'*, whereby the tongue may be put out of the way for discharging the snow from both chutes, substantially as set forth.

4. In a snow-plow, the combination of an inclined plane, A, diverging chutes B B, and tongue D, hinged for both lateral and vertical movement, to close either chute or open both, substantially as and for the purpose set forth.

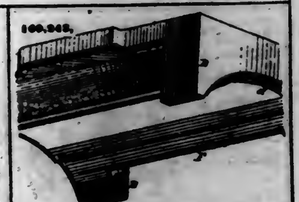
5. The combination of tongue D, double hinge-joint *a b*, and swiveling-leg *c*, as and for the purpose set forth.

169,844. WASHING-MACHINES. Fleiseman A. Downer, Canton, assignor to Lewis Cornell and Enos Shannon, Chicago, Ill. [Filed Oct. 6, 1875.]



The catch *g*, bent right-angularly, and attached to the hinged frame *a b*, in combination with the plate *f*, having lugs *f'* and recess *e*, whereby both vertical and lateral displacement of the roller-frame is prevented, substantially as described.

169,845. JOURNAL BOXES. Peter Dupuy, St. Louis, Mo. [Filed Aug. 18, 1875.]

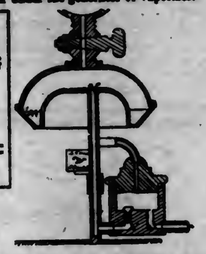


1. The journal-box having recess E, with inclined sides F, substantially as and for the purpose set forth.

2. The downwardly-projecting corner B, in combination with inclined sides E, substantially as set forth.

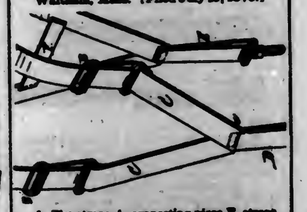
169,846. APPARATUS FOR PRODUCING CARBURETTED LIGHT. Nathan H. Edgerton, Philadelphia, Pa. [Filed Apr. 29, 1875.]

Brief.—Oil passing slowly from the reservoir into the heated generator is vaporized and conducted to the mixing-chamber, where it is mingled with oxygen, and passes to the burner under the generator or vaporizer.



In an apparatus for producing an oxhydrocarbon light from the resultant vapors of hydrocarbon fluids mixed with oxygen and barned in contact with calcium, the combination, with the fluid-reservoir, vaporizing chamber or retort, oxyhydrocarbon-mixing chamber, and illuminating and vaporizing burner, of a tube for the supply of pure oxygen, a stop-cock to regulate the supply of hydrocarbon vapor, and a lime-cap, substantially as described and shown.

169,848. SUSPENDERS. Stephen K. Ellis, Waltham, Mass. [Filed July 19, 1875.]



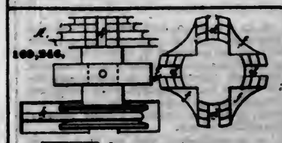
1. The straps A, connecting-piece F, straps D, E, and C, constructed and arranged substantially as shown, for the purpose set forth.

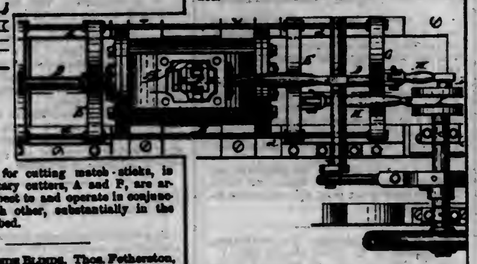
2. In combination with the subject-matter of the above, a pin or other fastening device, for the purpose described.

169,849. MACHINES FOR CUTTING MATCH-STICKS. John S. Fegley, Philadelphia, Pa., assignor to himself and Ephraim K. Smith, same place. [Filed Mar. 20, 1873.]

Brief.—A number of round or nearly round match-sticks can be simultaneously cut from a block of wood by means of two conical grooved cutters rotating in planes at right angles to each other. The rows of match-sticks are severed from the block by passing the block over the cutters, when the rounded edges of the first cutter penetrate the wood in one direction, while those of the second cutter form a series of transverse cuts, crossing the first at right angles.

169,846.





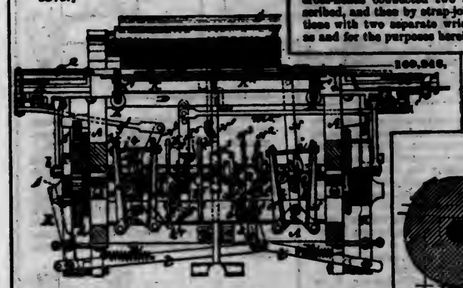
A machine for cutting match-sticks, in which two rotary cutters, A and F, are arranged in respect to and operate in conjunction with each other, substantially in the manner described.

169,847. INSIDE BLINDS. Thos. Fotherston, Fitzroy Township, County of Carleton, Canada, assignor to Arthur A. Spoor, same place. [Filed Sept. 25, 1874.]



The combination of the slats A, staples C, having eyes at their ends to engage with the eyes of the buttons D, extending through the center of the slat and laid parallel therewith, and staples *c*, all as herein set forth and specified.

169,848. SWIVEL-SHUTTLE LOOMS. Joseph Fish, New York, N. Y. [Filed July 13, 1875.]



1. The combination, with the rack I, for driving the supplementary shuttles, of the cam M on the loom-shaft, and an interposed lever, N, connected with the rack, substantially as shown, and adapted to be controlled by the jacquard-machine, or other pattern-controlling device or mechanism, substantially as described.

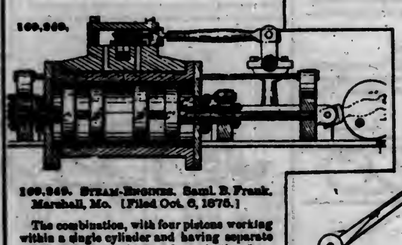
2. The stirrup Q and bell-crank P, adapted to be controlled by the jacquard-machine or other pattern devices, in combination with the lever N' and cam M', for operating the bar or slide K, essentially as described.

3. The combination, with the movable stop pieces or levers E E on the shuttle-operating cranks S S and crank-pins *s s*, of the cams M' M' and the operating levers P' P', adapted to be controlled by the jacquard-machine or other pattern device, essentially as described.

4. The combination, with the slide or bar K, which carries the supplementary shuttles, of the cam M' on the loom-shaft, an interposed lever, P', adapted to be controlled by the pattern mechanism and a suitable connecting device, all operating to move the slide longitudinally for the purpose of producing the skip or mock motion, substantially as specified.

5. The combination, with the rack I, by which the swivel or supplementary shuttles are driven, of the slide K, the lifter *o'*, the cam M', the interposed lever N', adapted to be controlled by the jacquard-machine or pattern mechanism, and suitable connecting devices, essentially as described, and whereby the rack is disengaged when the skip or mock motion is being made, substantially as specified.

169,849. STEAM-ENGINES. Saml. B. Frank, Marshall, Mo. [Filed Oct. 6, 1875.]



The combination, with four pistons working within a single cylinder and having separate and independent piston-rods projecting from opposite ends of the cylinder, of the four cross-heads connected two and two, as described, and then by strap-joints and connections with two separate wrists, substantially as and for the purposes herein set forth.

169,850.



1. The combination, with the rack I, for driving the supplementary shuttles, of the cam M on the loom-shaft, and an interposed lever, N, connected with the rack, substantially as shown, and adapted to be controlled by the jacquard-machine, or other pattern-controlling device or mechanism, substantially as described.

2. The stirrup Q and bell-crank P, adapted to be controlled by the jacquard-machine or other pattern devices, in combination with the lever N' and cam M', for operating the bar or slide K, essentially as described.

3. The combination, with the movable stop pieces or levers E E on the shuttle-operating cranks S S and crank-pins *s s*, of the cams M' M' and the operating levers P' P', adapted to be controlled by the jacquard-machine or other pattern device, essentially as described.

4. The combination, with the slide or bar K, which carries the supplementary shuttles, of the cam M' on the loom-shaft, an interposed lever, P', adapted to be controlled by the pattern mechanism and a suitable connecting device, all operating to move the slide longitudinally for the purpose of producing the skip or mock motion, substantially as specified.

169,851. GRAIN-BINDERS. Joshua Gerrard, Cincinnati, Ohio. [Filed Aug. 7, 1875.]



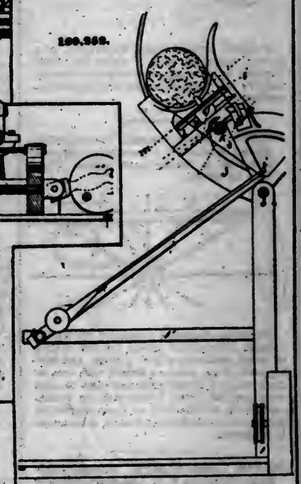
A twister constructed with radial arms, and with a prominence converging at the point or end, rigidly connected, and projecting beyond the plane of said radial arms.

169,852. GRAIN-BINDERS. Joshua Gerrard, Cincinnati, Ohio. [Filed Sept. 11, 1875.]

Brief.—The twister, which has a projecting point beyond the face of the twisting-arms, is located in a revolving cradle.

1. The combination of a sleeve, *h*, and a twister, constructed and operating substantially as herein set forth, to hold the loose ends of the wire bound by snubbing them while the twister is in operation, and to permit their free escape when the twist is completed.

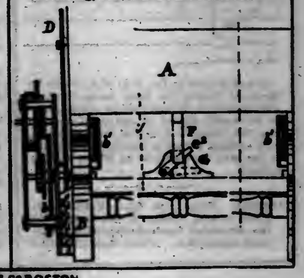
169,852.



2. The combination of the former H, the carrying-arms J Z, the sleeve *h*, the arms *l*, the twister-arms *m*, and the spindle *i*, in conjunction, substantially as herein described, to press the bundle into approximately cylindrical shape, and then release it while the wire is drawn tightly about it, and locked by twisting, as set forth.

3. In combination with a cradle or grain-support, which leaves the bundle free to round itself during the twisting of the wire, a twister having a fixed relation to said cradle, and constructed substantially as set forth, with a prominence projecting beyond the plane of the twisting-arms, and through the cradle or surface on which the grain rests.

169,853. CRADLES. Ebenezer F. Gannon, Pittsburg, Pa. [Filed June 24, 1875.]



1. The combination of lever D, pivoted on the shaft *c*, and having slot *c'* in the upper part and slot *d* in the lower part of the lever, and pin *c'* on the end of the cradle A, adjusted on the frame B, and plane wheel E, having pin *d'*, attached to the check-cords O, substantially as and for the purposes described.

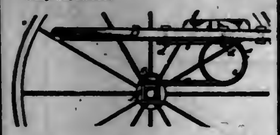
2. The brace F, attached to the cradle A, and having notches *e'*, in combination with block G and pivoted stops *f'*, substantially as and for the purposes described.

169,864. Vehicle-Springs. Sebastian Gilsinger, Rondout, N. Y., assignor to himself and Abel A. Crosby, same place. [Filed Sept. 17, 1875.]



A coiled vehicle-spring constructed of a piece of metal, the ends of which are joined together by welding or otherwise, substantially in the manner and for the purpose described.

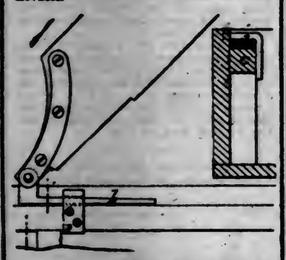
169,865. Vehicle-Springs. Sebastian Gilsinger, Rondout, N. Y., assignor to himself and Abel A. Crosby, same place. [Filed July 12, 1875.]



The herein-described compound spring for vehicles, composed of a piece, bar, rod, or strip of metal, bent into a U or V shape, and having each of its arms *a a* formed with two or more coils, *c c*, in line with, and close to, each other, and the ends *b b* bent back for attachment to the vehicle-body or body-support, in combination with the clips *d* and *e*, substantially as shown.

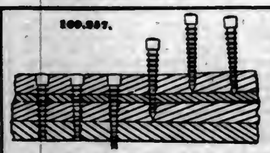
169,866. Carriage-Seats. Sebastian Gilsinger, Rondout, N. Y., assignor to himself and Abel A. Crosby, same place. [Filed Sept. 6, 1875.]

Brief.—Seat provided with hinges, whose lower leaves are held by staples and easily removable.



A seat secured to the body of a vehicle by means of hinges, the lower leaves of which are confined to the seat-rails by staples, so as to be readily slipped to and out of said staples, the hinges and staples being combined with recesses formed in the edges of the plates of the seat, substantially as shown and described.

169,867. Nails for Sole-Fastenings. Louis Goddu, Boston, Mass., assignor to the American Cable-Sewer-Wire Company, same place. [Filed Sept. 20, 1875.]



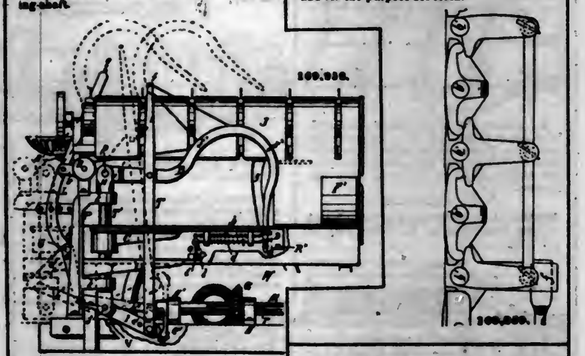
1. A shoe-nail consisting of a cylindrical head, conical shank, and a series of horizontal parallel grooves or corrugations, extending from the base of the head to the point of the nail.

2. In a boot or shoe nail, the combination of a cylindrical head, having a spherical surface, a conical shank, terminating at a point in line with the center of the head, and horizontal parallel grooves or corrugations, with a clinching-point of indefinite length symmetrical with the conical body.

3. In a boot or shoe nail, the grooves or corrugations, diminishing in depth and width from the head to the point of a cylindrical tapering body.

169,868. Grain-Binders. Jas. F. Gordon, Rochester, N. Y. [Filed May 15, 1875.]

Brief.—The cut grain is delivered by the elevator to the receiver, where it is bound by the vertical reciprocating binding-arm, which also has a lateral axial motion on its supporting-shaft.



1. The vertically-reciprocating binder-arm B, hinged to a vertical axial shaft, T, or its equivalent, in combination with a movable twisting mechanism, substantially as shown and described, whereby the arm is given a horizontal oscillation laterally across the grain, in combination with its vertical reciprocation, for the purposes set forth.

2. In combination with the vertical axial shaft T, or its equivalent, binder-arm B, and twisting mechanism, having a reciprocating motion, the oscillating arm I, substantially as and for the purposes described.

3. In combination with a binder-arm, B, reciprocating binding mechanism, shaft T, or its equivalent, and arm I, the connecting-rod T and crank C, or its equivalent, substantially as and for the purposes described.

4. In combination with the reciprocating binder-arm B and vertical axial shaft T, the swinging arm C, substantially as shown and described.

5. In combination with the stationary shield or sheathing, the sliding or extensible shield E of the movable binding mechanism, substantially as and for the purposes described.

6. In combination with the movable seat and movable binding mechanism, the rock-shaft U, hand-lever L, and arm C, substantially as and for the purposes described.

7. The combination, in a grain binding and harvesting machine, of a movable binding mechanism and a movable driver's seat, or equivalent, connected in such manner that their simultaneous adjustment in opposite directions is effected, substantially as and for the purpose described.

8. In combination with the traversing roller *i*, operating the wire-clamping jaw or jaws, the stationary track *i*, provided with the pivoted switch tongue or tongues, substantially as shown and described.

9. In combination with the main frame of a harvesting-machine, a driver's seat, movable forward and backward in relation to the axis of said frame, and a hand-lever connected with said seat, substantially as shown and described, so that the driver, while occupying the seat, can shift the same by means of the lever, as may be required, without affecting the cutting devices.

10. In combination with the fixed box F and fixed driving-gear G, the movable binding mechanism, having its driving-shaft M arranged to slide through the gear G, as shown and described.

11. The connecting-rod or pitman T, extended beyond the point at which it is pivoted to the binding-arm, for the purpose of forming a take-up for the wire.

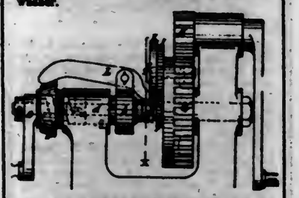
12. In combination with the moving binding devices, the detent F' at the outer corner of the shield or sheathing, substantially as shown and described, for the purpose of detaining the butts of the grain.

169,869. Furnace-Grates. H. W. Granger, Detroit, Mich. [Filed June 29, 1875.]

In a sectional oscillating furnace-grate, substantially as described, the carrying and intermediate grate-sections, the latter provided with the bearing-jacks, and the former with the carriers and arms, all of which are connected by a single bar, substantially as shown, and for the purpose set forth.

169,870. Machines for Making Spring-Washers. John William Grover, Westminster, England. [Filed Sept. 7, 1875.]

Brief.—A bar of steel, cut with beveled ends, is clamped between two sleeves, which form on a mandrel a spiral groove, and is forced into said spiral groove by a roller, which, in addition to rotating on its own axis, is revolved around the mandrel. The sleeves are separated and the mandrel drawn into one of them, when it is desired to release the washer.



In apparatus for manufacturing the spring-washers A, the combination of the two helical faces *a* and *c*, the sliding mandrel M and its lever L, acted on by the adjustable cone D, with the revolving disk K, whereby a piece of straight steel rod is clamped and bent into the form of the spring-washer, substantially as herein described.

169,871. Manufacture of Castings from Wrought and Cast Iron. Wm. Holmsworth, Pittsburg, Pa., assignor to the Pittsburg Steel-Casting Company, same place. [Filed Sept. 20, 1875.]

The process of making homogeneous refined castings from wrought and cast iron, by first mixing and melting wrought and cast iron in about the proportions specified; second, running the molten mixture off into pigs; third, breaking up and remelting the pigs; and, fourth, running the remelted product off into molds, substantially as set forth.

169,872. Ratchet-Drills. Geo. Hayden, Newark, N. J. [Filed Apr. 6, 1875.]

Brief.—An outer slotted sleeve, carrying a center-pin, with its conical end (which fits in a correspondingly-shaped recess in the top of the feeding-sleeve) downward, is arranged so that it will remain stationary, and thereby obviate the necessity of stopping the drill when the feed is being adjusted

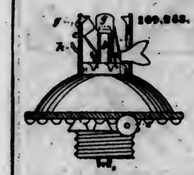


In a ratchet-drill, the outer slotted sleeve A, the stationary inverted center-pin B, the pin *c*, the adjusting thumb-screw *b*, the set-screw *c*, and the annular groove *c*, all constructed and arranged to operate substantially as and for the purposes herein set forth and shown

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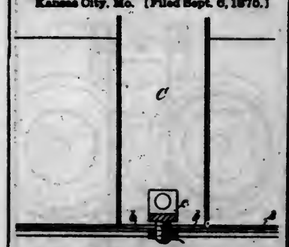
169,873. Automatic Lamp-Extinguishers. John G. Hehr, South Bend, Ind., assignor of one-half his right to J. G. Rilling, same place. [Filed Oct. 21, 1875.]

Brief.—When the lamp is tipped in two directions, the weight of the extinguishers causes them to act in the other direction; they are actuated by the weights.



In a lamp-extinguisher, the pivoted or swinging hoods *g*, in combination with the horizontally-swinging levers *h*, carrying weights *i*, the same operating independently of the hoods, substantially as and for the purpose specified.

169,874. Cake-Pans. Franklin G. High, Kansas City, Mo. [Filed Sept. 6, 1875.]

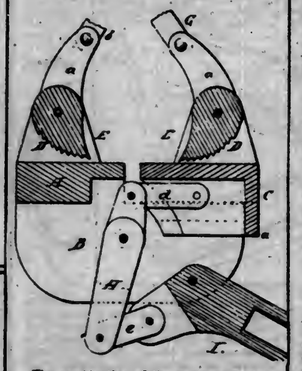


1. An improved cake-pan, in which the body part A, bottom B, and center column C are made detachable, as and for the purpose set forth.

2. The center column C, combined with the bottom B by means of the fastenings *c c' b b'*, as and for the purpose set forth.

3. The body A, having flange *a*, the bottom B, its cross-bar *b'*, and the center column C, having screw *c*, all combined as herein shown and described, and for the purpose set forth.

169,875. Tire-Upsetting Machines. W. Holdsworth, Chester, Pa. [Filed Sept. 16 1875.]



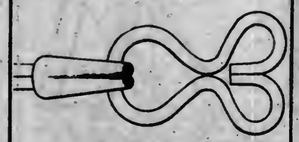
The combination of the stationary bed A, movable bed C, provided with standards E E, the pivoted cams D D, having arms *a a*, lever G, and connecting-bar *b*, and the elbow-lever I, lever H, and connecting-bars *d e*, all constructed substantially as and for the purposes set forth.

169,876. Railroad-Rail Joints. William H. Horsum, New York, N. Y. [Filed Oct. 4, 1875.]



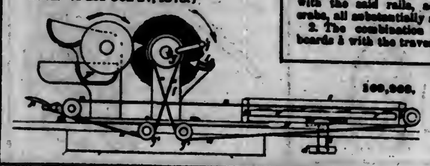
The flat supporting-plate B, provided with a transverse depression, *c*, in combination with rails A A, having raised rims *b*, with recesses *c*, and with U-shaped jaws C C, the lower branches of which are bifurcated and made to straddle the depression in the supporting-plate, while their upper branches lie in the recesses *c c* of the rims *b*, substantially as and for the purpose shown and described.

169,877. Hooks and Eyes for Wearing Apparel. Joseph O. Howells, New York, N. Y. [Filed Nov. 22, 1873.]



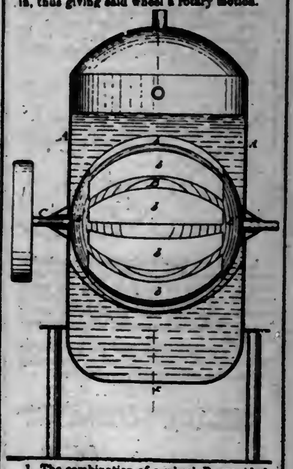
A hook or an eye formed of wire, having its portions in close proximity or contact at the neck, and from thence to form loops bulging outward, and returned upon themselves, so as to bring the ends within the circumference of the body, substantially as described.

169,878. Mechanisms for Ornamenting Buttons. Robert E. Isbell, New Milford, Conn. [Filed Oct. 27, 1875.]



169,879. Rotary Steam-Engines. James C. Johnson, Boston, Mass. [Filed Oct. 12, 1875.]

Brief.—Steam is generated at the bottom of the boiler, and is deflected by a partition into the buckets of a spherical wheel placed therein, thus giving said wheel a rotary motion.



1. The combination of a wheel, B, provided with buckets *b b*, with the boiler A, arranged substantially as and for the purpose specified.

2. The combination of a spherical wheel, B, having deep concave buckets *b b* and segmental ends *b' b'*, with the boiler A, constructed and arranged substantially as shown and described.

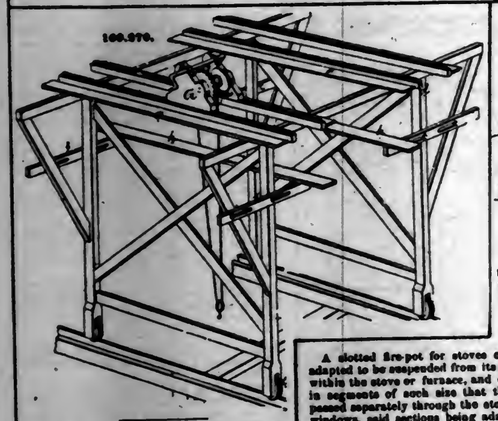
3. The combination of *b* partition, G, with the wheel B and boiler A, when arranged substantially as and for the purpose set forth.

169,880. Traversing Scaffolds. Daniel B. Kelly, Philadelphia, Pa., assignor to Clarke, Reeves & Co., same place. [Filed Oct. 2, 1874.]

1. The within-described traversing scaffold, consisting of frames arranged and braced as described, so that there shall be a clear space between them for the truss-frames of a bridge, in combination with wheels adapted to rails on the false work, and with tracks parallel with the said rails, adapted to traversing cranes, all substantially as set forth.

2. The combination of adjustable foot-boards *h* with the traversing scaffold.

169,270.



169,271. Manufacture of Button-Gaiters. Arthur Kenny, New York, N. Y., assignor of one-half his right to W. H. Miller and J. B. Miller, same place. [Filed Oct. 16, 1875.]



1. As a new article of manufacture, the improved gaiter, having both quarters, vamp, and button-flap in one piece, and the upper part of button-flap and the button-piece of separate pieces, attached to the lower part of the button-flap and quarters, substantially as specified.

2. The pattern for a button-gaiter having both quarters, vamp, and part of button-flap in one piece, substantially as described.

169,272. Carriage-Wheels. Ira Kenter, Wayland, N. Y. [Filed May 24, 1875.]



The combination, with a wooden hub C, and two sets of bracing spokes, B B', of the ring or rings D, shrunk upon the hub, and provided with two sets of screw-holes for the connection of the screw ends of the spokes, the wheels arranged as herein described, and operating in the manner and for the purpose specified.

169,273. Stoves and Furnaces. Philip Klotz, Baltimore, Md., assignor to B. C. Bibb, same place. [Filed Aug. 11, 1875.]



A slotted fire-pot for stoves or furnaces, adapted to be suspended from its upper edge within the stove or furnace, and constructed in segments of such size that they can be passed separately through the stove doors or windows, said sections being adapted to be set and fastened together when inside the stove, substantially as described, for the purposes specified.

169,274. Railroad-Switches. William L. Lamborn, Harrisburg, Pa., assignor to J. S. Williams, Riverton, N. J. [Filed Sept. 9, 1875.]

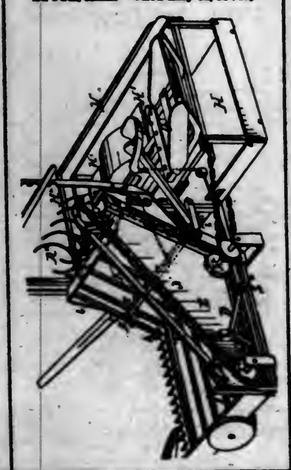
Brief.—Three rails are arranged upon one plate, which shifts at both ends, and is returned to place by springs. The use of frogs is thus done away with, and the main track is always closed.



1. An unpivoted switch-rail, sliding at both ends, and alternately moved by the action of the wheels and springs, substantially as set forth.

2. The three adjustable rails F, G, and F, in combination with the springs H and plate E, for the purpose of keeping the main track complete and temporarily swinging the rails to complete the side track, substantially as set forth.

169,275. Harvesters. C. W. Loveless, St. Paul, Minn. [Filed May 31, 1875.]



1. The folding and tilting grain receptacle and clamp A", operating to receive the grain from the elevator, and to compress the gavel and discharge the bound bundle, substantially as described.

2. The folding and pivoted grain receptacle and clamp connected with and actuated by the elevating rake or mechanism, substantially as described, whereby the movement of said receptacle and clamp, for receiving, clamping, and discharging the grain, are controlled by and timed to the movements of the rake, as set forth.

3. The triangular guard or fender B, arranged in the described relation to the platform and elevator, and operating as a rear guard or fender thereto, while at the same time protecting the endless rake-chain, as described.

169,275.

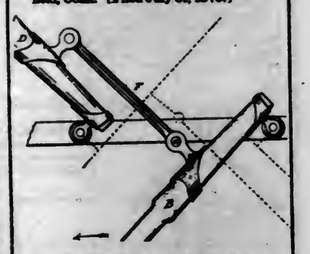


169,276. Feather Dusters. J. L. Little, Muncie, Ind. [Filed Jan. 16, 1875.]



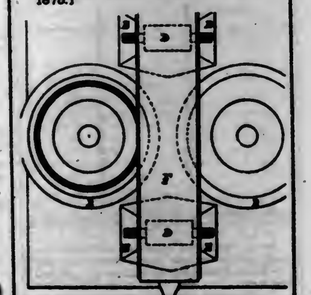
As a new article of manufacture, a brush made of feathers, whose stems have been crushed for the purpose of rendering them elastic.

169,277. Oars. William Lyman, Middlefield, Conn. [Filed July 31, 1875.]



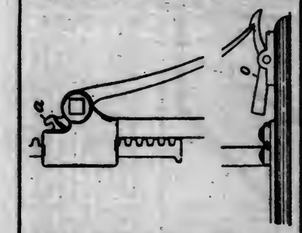
The combination of the two parts B D, the part B hung to the gunwale by a ball-joint at its outer end, the part D hung to the gunwale by a ball-joint at its inner end, and the connecting-rod F jointed to the part B inside the gunwale, and to the part D outside the gunwale, all substantially as specified.

169,278. Machines for Ornamenting Cushioned and Similar Articles. C. M. Lyon, Newark, N. J. [Filed June 19, 1875.]



The apparatus for ornamenting cushions and other circular-shaped articles, consisting essentially of the rotating ring-bearing or holders B, rollers D, and tool F, all constructed and arranged to operate substantially as described, for the purpose set forth.

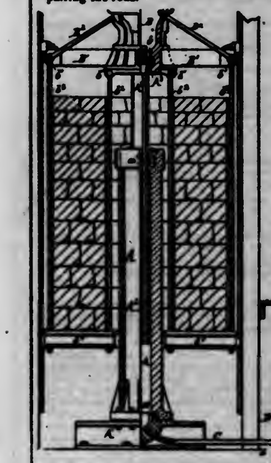
169,279. Carriage-Jacks. Z. McDonald, Washington, D. C. [Filed Oct. 16, 1875.]



In the carriage-jack consisting of the standard A, sliding rack D, and lever L, the weighted catch c, arranged to operate as shown and described.

169,280. Hydraulic Compressors. Edwd. D. Meier, St. Louis, Mo. [Filed Apr. 19, 1875.]

Brief.—A press actuated by an accumulator. The plunger-head of the latter is secured to a crown-piece, from which the weight is suspended by a lock-ring and key, in such a manner that, when the weight is down and at rest, the plunger can be removed for any purpose up through the crown-piece. The washers and collars on the press-rods are rounded on the sides that bear upon the foundation and strain plate, that a little lateral play may be allowed to the parts without bending or impairing the rods.



1. The combination of the accumulator, constructed as shown and described, pipe C, having check-valve C', pipe c, its three-valve D, branch pipes d d', and runs E E' of a hydraulic press, the pipe c being further connected by a T-joint, c', to a pipe, c², having enhanced-valve H, and the pipes b b' leading to tank I, all said parts being arranged with relation to each other, and to operate in the manner and for the purpose set forth.

2. The combination of the crown-piece B, plunger A', having enlarged head A², the locking l, all constructed as described and shown, so that the plunger can be removed without raising the weights hanging to it, then forcing the removal of the packing a'.

3. The improved features, viz., elastic rods B B', rounded collars U, and washers W, top and bottom plates M K, follower G, having bearings g g', plungers F F', having bearings ff', in combination with runs or cylinders E E', as herein shown and described, to operate as and for the purpose set forth.

169,281. Billiard and other Table Legs. Anton J. Michel, St. Louis, Mo. [Filed June 8, 1875.]

Brief.—The leg is in two portions, connected by a central core, upon the upper end of which is a screw traveling in a fixed nut. The core, being smooth, does not catch dust upon separation of the parts, as the (concealed) screw-threads would if exposed.

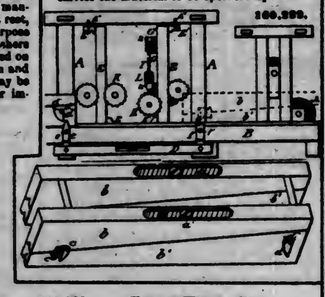


The combination, with a table-leg made in two parts, B B', bored out as described, of the nut a, concealed within the part B, and the bolt consisting of the cylindrical part C and screw d, also concealed within the part B, substantially as and for the purposes herein set forth.

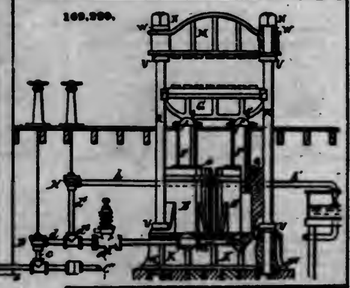
169,282. Sawing-Machines. N. M. Miller, Evansville, Ind. [Filed Sept. 9, 1875.]

Brief.—The saws are arranged in sets or pairs in two horizontally-sliding frames, which are automatically moved back and brought forward by the reciprocating carriage, which carries the material to be operated upon.

169,282.



169,283.



1. The improved carriage herein described, consisting of two parts, having wedge-shaped slides b b', that slide upon each other, and so covered to each other by set-screws a', affixed to the under part b', and projecting up through slots a in the upper part b, substantially as and for the purpose herein before set forth.

2. The combination of the carriage C, having laterally-projecting hooks or catches e d, with the levers e and f and connecting-beam D, substantially as and for the purpose herein before set forth.

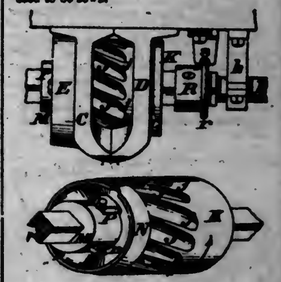
3. The combination of the beam D, branched lever D', pins e, and saw-frames E E', substantially as and for the purpose herein before set forth.

4. The combination of the grooved uprights E with the sliding plates G, having bolts or set-screws h, substantially as and for the purpose herein before set forth.

5. The combination of the sets of saws K K and K' K', having adjustable arbors I, with the sliding frames E E', lever D', beam D, levers e f, and carriage C, all arranged and operating substantially in the manner and for the purpose herein before set forth.

169,283. Feeding Mechanism for Grain-Drills. Edmond Morgan, Dublin, Ind., assignor to himself and Wayne Agricultural Company, same place. [Filed May 25, 1874.]

Brief.—The cylindrical feed wheel is spirally grooved for one-half its length, the other half being smooth. The whole is keyed to a shaft for lateral adjustment, to vary the amount of seed to be sown.



1. The cylindrical feed wheel having one-half spirally grooved, as and for the purpose set forth.

2. The feed-wheel or wallower J, constructed with a smooth periphery, K, and spiral corrugations J, in combination with the shaft H, flange r, clutch s, adjusting-lever S, and clamp U V, as and for the purposes specified.

3. The combination of the hub M, disk N n, pin O, legs P P, and shaft H, as specified, for the purpose set forth.

169,284. Faucets. Wm. C. North, Cleveland, Ohio. [Filed July 13, 1875.]

Brief.—The pump is applied to the faucet by means of a detachable coupling having an adjustable valve located therein.

The valve-chamber E, valve-seat C', constructed with cheeks a a, and india-rubber band b, fastened as described, in combination with tube D and air-pump F, all as and for the purpose described.

169,284.



169,285.



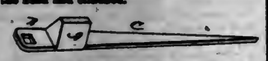
169,285. Clasps for Wearing Apparel. Enoch Osgood, Boston, Mass. [Filed Oct. 2, 1875.]

1. A clasp consisting of a body made with one or more faces and edges slightly tapered or wedge-shaped, with a slide adapted thereto to give the gripe when adjusted, and which will open when drawn back, substantially as and for the purposes herein set forth.

2. A clasp consisting of a body-plate made double, with each end tapering or wedge-shaped on one or more faces and edges, in combination with two slides, adapted to open when pushed back, one slide having an opening through it sufficient to permit the passage of a strap or an elastic when open, substantially as herein set forth.

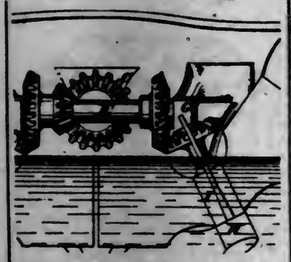
160,906. Ice-Nails for Horseshoes. E. M. Patterson, Monterey, Va. [Filed May 31, 1875.]

Brief.—The nail is driven in between the shoe and hoof, and then bent so as to bring the calk on the under side of the shoe. The pointed end is then passed through the slot in the head and clinched.



The within-described ice-nail, consisting of the head or calk A, perforated ear B, and strap C, substantially as and for the purposes herein set forth.

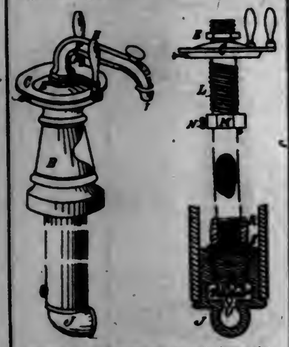
160,907. Propeller-Wheels. Newton A. Patterson, Johnson, Tenn. [Filed Apr. 23, 1875.]



The twin-paddle propeller herein described, consisting of two wheels, with blades mounted obliquely on oblique shafts, converging upward, so as to adapt the wheels to operate in conjunction at the stern or stem of the vessel, as herein set forth.

160,908. Hydrants. Joel D. Pease and Robert Campbell, Oxbow, N. Y. [Filed May 17, 1875.]

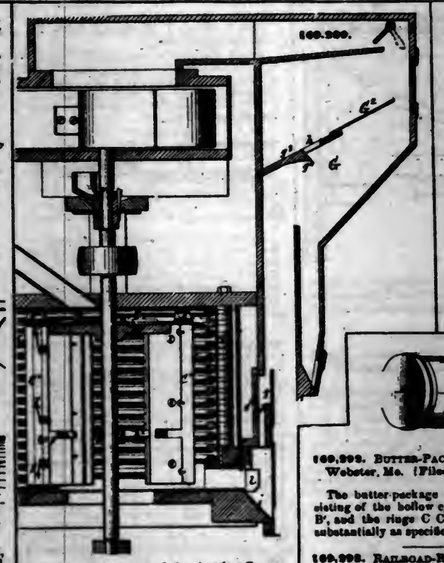
Brief.—The torsion of the spring turns the pipe and screws the plug-valve to its seat. The nozzle plays between two guide-pins at the top of the hydrant.



The improved hydrant described, consisting of the pipe P, provided with the nozzle F, spring I, and collet M, the hollow plug-valve S, provided with the openings Y, the plug J, provided with the conduit U and chamber *s*, and the casing A, body B, and cap C, provided with the stops H H, constructed and arranged to operate substantially as and for the purpose specified.

160,909. Shut-Machines. Dan Pease, Floyd, N. Y. [Filed June 11, 1875.]

Brief.—Elastic wings or fans are attached to edges of buttons to yield in striking the grain. The suction-chamber is provided with screen of wire-cloth, inclined boards, and opening, to prevent the chaff from being carried up by the blast.



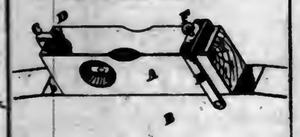
160,909.

1. In a coal-gas apparatus, a dry-scrubber, O, divided into compartments, filled with rye-straw cut in bunches and set on end, substantially as herein set forth.

2. The combination of the chamber G, provided with a slot or opening, *h*, the screen G^2, and the inclined boards g' g', substantially as and for the purpose shown and described.

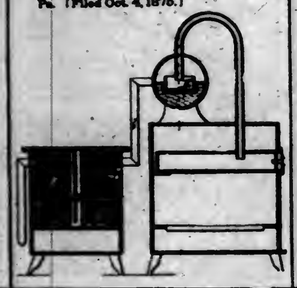
3. The combination, with the spreader and separator-flue, of the suction-flue F^2, substantially as and for the purpose shown and described.

160,910. Connecting Spirit-Levels and Straight-Edges. Jas. G. Ralph, Aurora, Ill. [Filed Aug. 21, 1875.]



In combination with the spirit-level A and straight-edge B, the stud C, strap E, and set-screws D and F, substantially as and for the purpose specified.

160,911. Portable and Stationary Gas Apparatus. Robt. H. Ramsey, Pottsville, Pa. [Filed Oct. 4, 1875.]



160,912. Butter-Packages. A. Robinson, Webster, Mo. [Filed Aug. 16, 1875.]

The butter-package herein described, consisting of the hollow cylinder A, the caps B B', and the rings C C', combined and used substantially as specified.

160,913. Railroad-Rail Joints. William H. Robinson, Yates City, Ill. [Filed Oct. 4, 1875.]



The base-plate D, provided with raised projections A and center piece B, in combination with the rails G G, having notches *s s*, the fish-bars C C, and bolt *b*, all substantially as and for the purposes herein set forth.

160,914. Manufacture of Artificial Marble. Wm. Charles Arthur Rootsaer, Brussels, Belgium. [Filed Mar. 4, 1875.]

1. The improvement in the art of manufacturing artificial marble hereinbefore set forth, which consists in preparing powder from blocks of Iceland spar or calc-spar, or their equivalents, by burning them in kilns, cooling them, placing them in a bath composed of soluble silicates, sulphates, or acids, drying them in the air, reburning, and reducing them to powder.

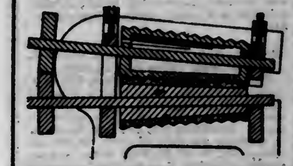
2. The improvement in the art of manufacturing artificial marble hereinbefore set forth, which consists in mixing the prepared powder with water to the consistency of cream, adding the colors in a moist state, spreading the compound on a suitable surface, covering the mixture with a cloth, applying cement or other absorbent material to take up the moisture from the compound to dry the composition, and then removing the cloth and absorbent material to make room for the subsequent application of the backing material.

3. The improvement in the art of manufacturing artificial marble, hereinbefore set forth, which consists in mixing the prepared powder with water to the consistency of cream, adding the colors in a moist state, spreading the compound on a suitable surface, covering the mixture with a cloth, applying cement or other absorbent material to take up the moisture from the compound to dry the composition, then removing the cloth and absorbent material, applying a backing of coarser cement, strengthened by a layer of canvas saturated in a solution of a silicate or sulphate to preserve it from rot and prevent it from shrinking.

4. The improvement in the art of manufacturing artificial marble, hereinbefore set forth, which consists in preparing the object in the manner described, filling any holes in its surface with the same mixture of powder and colors, drying it thoroughly, polishing with stone, and rubbing with oil.

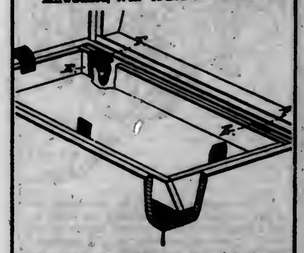
5. The improvement in the art of manufacturing artificial stone, hereinbefore set forth, which consists in cleansing the surface, polished as hereinbefore described, by treating it with hydrochloride-acid, drying the surface and polishing it with a mixture consisting of silicate of soda or potash, olive oil and soft water put on a soft rag, and rubbed in with tin ashes or emery powder.

160,915. Embossing-Machines. Samuel Rogerson, New York, N. Y., assignor to Louis Dryfoos, same place. [Filed Sept. 4, 1875.]



The described combination for the production of imitation quilting of the two conical embossing-rolls, the one an engraved metal roll, arranged to be heated, the other having an exterior of paper, or its equivalent for the purpose, impressed with the reverse of the pattern on the metallic roll, the two being constructed, supported, adjustably held together, and arranged to be revolved positively in unison, as and for the purposes herein shown and set forth.

160,916. Trunks. Anthony V. Romadka, Milwaukee, Wis. [Filed Oct. 21, 1875.]



In combination with a trunk and its inner tray the socket-headed legs F and ear-loops H, when constructed and arranged substantially as herein described, and for the purpose set forth.

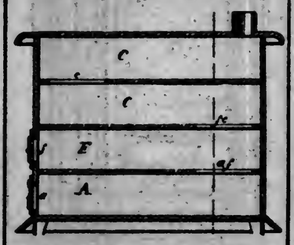
160,917. Wooden Boxes. Christian Boeborg and Anton Kawan, New York, N. Y. [Filed Aug. 28, 1875.]

Brief.—The sides and bottom of the box are formed of two or more layers of veneers glued together, the outer layers being of rose or similar wood, while the inner are of white or any other cheap wood. The top is of concave-convex form, and made from a solid block of rose or other expensive wood.



The combination, in a wooden box, of the sides b and the bottom c, each composed of two or more layers of veneers, having their ends beveled, as at *e*, with the solid top *d*, having an inner concave and an outer convex surface, all constructed and united together substantially as herein shown and described.

160,918. Heating-Stoves. Wm. F. Rose, Davenport, Iowa. [Filed Aug. 21, 1875.]



1. The fuel-chamber F, having a bottom imperforate except at the rear opening *e f*, leading to the ash-pit, and a draft-damper above the same, substantially as and for the purposes set forth.

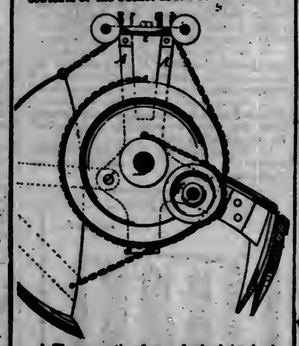
2. The combination of the fuel-chamber F, having aperture *e f* at its rear, with the ash-pit A beneath, whereby a heated air-draft can be led upon the products of combustion escaping from said fire-chamber upwardly from its open rear, substantially as and for the purposes set forth.

3. The combination, with the sliding doors *f f*, C C, of the fuel-chamber F and register-doors *a a'*, chamber A, and openings *e f*, substantially as and for the purposes set forth.

4. In combination with the close fuel-chamber F, having imperforate bottom, and having an escape and discharge opening at its rear, as described, and the door *f f'* in front; the opening *e f*, and ash-chamber A, having registered doors *a a'*, substantially as and for the purposes set forth.

160,919. Dredging-Buckets. Charles J. Sands, Brooklyn, N. Y., assignee of one-half his right to John B. Wood, same place. [Filed Sept. 22, 1875.]

Brief.—The bucket is in one piece, and closes by chains and pulleys against a toothed anchor rigidly attached to the bucket-frame. The anchor has an apron to prevent spilling the contents of the bucket as it closes.



1. The supporting-frame of a dredging-bucket, constructed to anchor or hold said frame to the ground, substantially in the manner and for the purpose described.

2. The combination of a dredging-bucket with a holding or anchoring device removed to the supporting-frame, substantially in the manner and for the purpose described.

3. In a dredging-bucket, the holding or anchoring device thereof, constructed with a series of projecting teeth, substantially as and for the purpose described.

4. In a dredging-bucket, the combination of a central pulley-wheel with two or more pulley-wheels affixed to the arms of the anchoring device, substantially as shown and described.

5. In a dredging-bucket, the combination of an anchoring device with an apron, substantially as and for the purpose described.

6. A dredging-bucket constructed of a single undivided receptacle, with closed and unadjustable bottom, and mounted to a supporting-frame by, and turning on, pivotal bolts, substantially in the manner and for the purpose described.

160,920. Ventilating Buildings. Le Roy Satterlee, Rochester, N. Y. [Filed June 17, 1875.]

Brief.—On the windward side the journaled valves are closed, while the impulse of the air in the apartment opens those to the leeward, thus acting automatically. The trunk extends nearly to the bottom of the room, facilitating the removal of carbonic-acid gas.



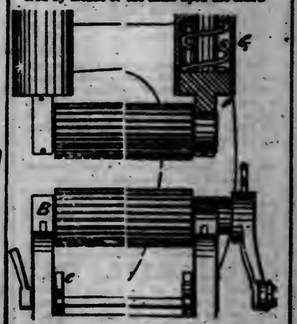
1. In a building or other structure requiring ventilation, two or more outwardly-opening and self-closing valves, *g g*, made close fitting to their seats, to prevent the entrance of cold air to the room, and hung by journals or bearings to be opened automatically by the pressure or impulse of the air within the room, to allow the discharge of said air outward, as herein shown and described, and for the purpose specified.

2. In a building or other structure requiring ventilation, the trunk C, extending to near the bottom of the room, and constructed with the plate *d* and self-acting valve *g*, for the purpose of conveying off and discharging the vitiated air from the bottom of the room, as herein shown and described.

3. In a building or other structure requiring ventilation, one or more self-closing ventilators, *g*, set in the attic or upper story, and one or more tubes, G, extending from the attic or upper story downward into or through the rooms below, and having apertures communicating with said rooms, whereby the vitiated air will be drawn upward through said tube or tubes and be discharged through the ventilators, the whole combined and arranged to operate as described.

160,921. Fluting-Machines. C. Schneider, Newark, N. J. [Filed Mar. 13, 1875.]

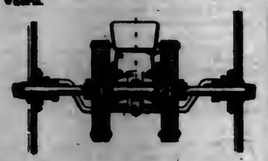
Brief.—The lower roller is raised and lowered by means of the cams upon the shaft.



A fluting-machine consisting of the fluted roller A, pinion or bearings B, cams C, upper fluted roller F, arms F, having the shafts *a*, and notched arms G, provided with the springs *s*, the several parts being constructed, combined, and arranged to operate substantially as and for the purpose set forth.

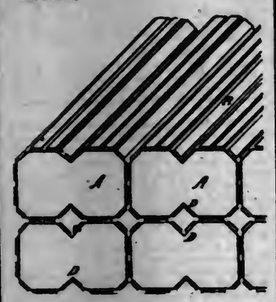
160,802. Velocipede. F. S. Seagrove, Detroit, Mich. [Filed Apr. 27, 1875.]

Brief.—Movement of feet, in depressing pedals, winds springs which actuate driving-wheels.



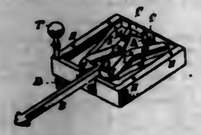
The combination of the pedals, the cord, the frictional clutches, drums, and the friction-wedges, with the spring-cases and their coiled springs, for rotating the axle or wheel shaft, all substantially as and for the purposes set forth.

160,803. Packing Boxes and Crates. H. M. Simons, Charleston, S. C. [Filed July 29, 1875.]



The vegetable-crate composed of cut-away, beveled, or octagonal-shaped bands A C, slats B, and with or without the central V-groove D, as described, whereby, when the boxes are piled one upon another and in rows, there shall be spaces for the circulation of air between the boxes, as and for the purposes specified.

160,804. Car-Couplings. F. L. Small, Houlton, Me. [Filed July 14, 1875.]



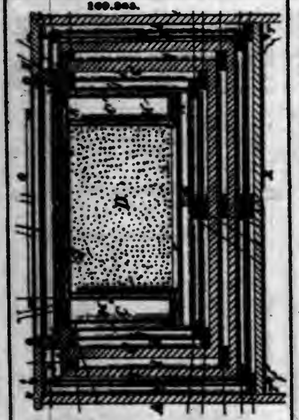
The levers J J, once provided with a central inward bend, with hooks at their forward ends, and with outward-extending arms a a at their rear ends, in combination with the chains U U, coupler A, springs S, chain D, and brake-shaft T for connecting and releasing the bend-link B, as set forth.

160,805. Refrigerators. Edgar B. Smith, Albany, N. Y. [Filed Feb. 27, 1875.]

Brief.—A paper refrigerator, made up of a nest of boxes having a thick and a thin wall, separated by paper spacing-strips. The parts are fastened together by an adhesive water-proof compound.—Pasteboard and red wood-covers have wooden frames covered with paper, and have one or more air-spaces, all formed by metal rods and bolts. Ice-boxes and food-chamber are of metal. Ice-boxes have perforated shields for water of condensation, and are set about the sides of the food-chamber, and in a drip-pan set on the floor of the food-chamber.

1. A refrigerator having its walls composed of a nest of paper cases, contained within an exterior cabinet, and provided with dead-air spaces between them, substantially as described, for the purpose specified.

160,805.



2. The paper cases B C, each composed of a thick and a thin wall of paper, having a dead-air space between them, substantially as described.

3. The paper cases B C, constructed in several parts, as described, which are secured together by thin paper and an adhesive water-proof compound, for the purposes specified.

4. The several spacing-strips of the cases, constructed from paper or paper-pulp, and coated with an adhesive water-proof compound, substantially as described, for the purposes specified.

5. The combination of the rectangular frame S with the paper cases B C, substantially as described, for the purpose specified.

6. The method of forming dead-air spaces under the cover of the refrigerator by carrying the paper extensions g of the cases B O over and in contact with the frame S, substantially as described.

7. The rectangular frame S, composed of paper or paper-pulp, and coated with an adhesive water-proof compound, substantially as described.

8. The cover of the refrigerator, composed of a wooden frame, closed at the top by a frame of wood, and at the bottom by a sheet of paper, so as to produce the interior air-spaces *r*, substantially as described, for the purpose specified.

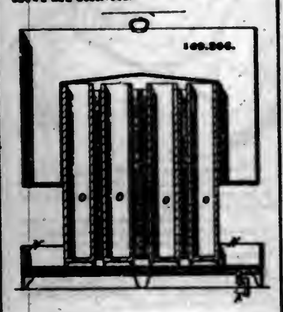
9. The cover of the ice-chest, constructed of paper frames V W, a series of paper partitions, and a bottom of sheet metal, all arranged to form the dead-air spaces *p*, substantially as described, for the purpose specified.

10. The improvement in the construction of refrigerators, consisting of the coating of the paper parts, as specified, with the water-proof adhesive compound, for the purposes set forth.

11. The upright ice-receptacles, constructed with perforated bottoms and perforated shields upon their faces, substantially as described, for the purpose specified.

12. The arrangement of the ice-receptacles within the dripping-pan, substantially as shown and described.

160,806.



160,806. Refrigerators. Edgar B. Smith, Albany, N. Y. [Filed Mar. 16, 1875.]

Brief.—Constructed of paper coated with an adhesive and water-proof substance. Ice-box is a cover for the group of food-boxes. Has a detachable metallic protecting-case.

1. In combination with the paper-walled refrigerator, the upright provision-receptacles O O and the ice-chest P, placed over and upon them, substantially as described, for the purpose specified.

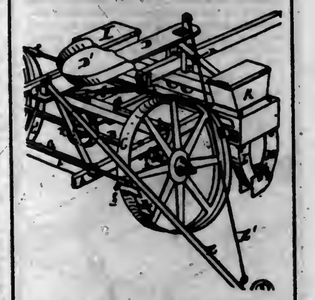
2. The ice-chest P, constructed with a raised bottom, to inclose the tops of the upright provision-receptacles O O, and form a cover for the same, substantially as described.

3. The combination of the drip-pan and the superposed group of food-boxes, provided with means for keeping them apart, as and for the purpose specified.

4. The removable sheet-metal inclosing-case M', provided with the cover N', and fitted over the refrigerator for its protection, substantially as described, for the purpose specified.

160,807. Corn-Planters. A. M. Southard, Hilers, Iowa. [Filed Apr. 27, 1875.]

Brief.—The two dropping-plates, with varying-sized holes, are attached to a T-shaped frame, and are adjustable. The runners or furrow-openers are removably attached to the spoots. Extending each way from the center of the frame are arms, on which are secured brakes, that fit the concavity of the bearing-wheels for blocking them, to allow the machine to gain ground by sliding. To the rear of the raised seat-frame is journaled a bar, on the outer end of which revolves a marking-wheel. This bar is strengthened by a rope passing from the bar to the front of the seat-frame.



1. The combination, with the seed-boxes K, of the dropper-plates F, having the holes *a*, and adjustably secured by their shanks F' to the T-shaped reciprocating bar Q Q', substantially as described and shown.

2. The combination, with the seed-boxes, of the seed-spouts I, having the rib *d*, and a hole above and below said rib, adapted to receive a furrow-opener or a plow-shovel, substantially as described and shown.

3. In a seeding-machine, the combination, with the frame A and traction-wheels C, of the brakes H, secured to the ends of separate rock-shafts I I, journaled in the frame in front of said wheels, each rock-shaft extending from the front of one of the wheel-rims to the center of the frame, and provided with a foot-treadle, J, the said foot-treadles being arranged side by side, so that one or both of them can be depressed by one foot, substantially as shown.

4. The combination, with the elevated seat-frame D, of the bar H, wheel F, swivel *f*, and guy-rope E', arranged as described, so that the said bar and wheel may be changed to the opposite side of the machine, without unlooping the guy-rope, by a half axial rotation, substantially as specified and shown.

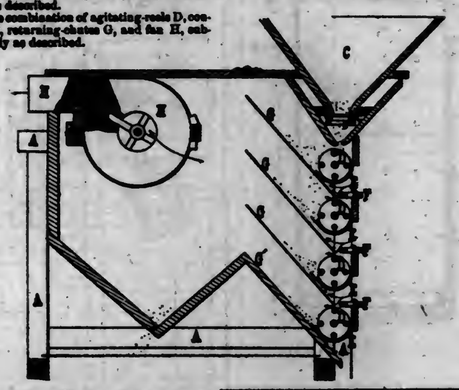
160,808. Middlings-Purifiers. Morris Sower, Princeton, Ill., assignor to the Sower Brothers, same place. [Filed June 4, 1875.]

Brief.—Arrangement in connection with suction-current and intermittent feed of a vertical series of agitator-rods, conevers, return-chutes, and independently-adjustable air-openings.

1. In a middlings-purifier, the combination of a suction-fan and a series of returning-chutes with a like series of agitating-rods, substantially as described.

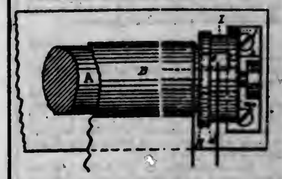
2. The combination of agitating-rods D, conevers E, returning-chutes G, and fan H, substantially as described.

160,809.



3. The suction-fan H, air-chamber I, and slides F, in combination with rods D, conevers E, and chutes G, substantially as described.

160,809. Curtain-Fixtures. William H. Sparks, Camden, N. J., assignor of one-half his right to Thomas D. Coulston, Philadelphia, Pa. [Filed Sept. 20, 1875.]



1. The combination of the flange *a* of the pivot D with the rabbet *g* of the case I, whereby the case is held longitudinally in place, substantially as set forth.

2. The combination of the disk H with the case I, the disk having a flange or lip, *d*, for guiding the case laterally, substantially as set forth.

3. The case I, having an opening, *e'*, opposite to the cord-opening *e*, for the purpose of threading the pivot D with the cord F, substantially as set forth.

4. The bracket C, having its pivot-bearing constructed opposite to its stop K, to assist in hooking the roller, substantially as set forth.

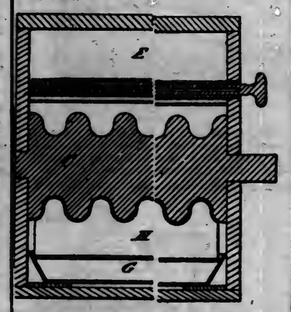
160,810. Extension-Tables for Sewing-Machines. Roswell H. St. John, Bellefontaine, Ohio. [Filed Sept. 14, 1875.]



The sewing-machine-table cover, constructed with a reversible or swinging side, D, and suitable fastenings to secure said side in either position, so that it may constitute one side of the cover or the top of the table-extension when the cover is inverted and attached to the side of the table, substantially as described.

160,811. Machinery for Desiccating Eggs. William O. Stoddard, New York, N. Y. [Filed July 2, 1875.]

Brief.—The eggs are desiccated on a revolving cylinder by forcible blasts of air, and afterward received in a tank below. The desiccating-cylinder is fed from a tank above, and the supply regulated by means of a suitable valve.



1. In an apparatus for desiccating eggs through the agency of forcible drying-blasts applied to the batter, while the latter is spread upon a rapidly-moving surface, a rotary cylinder to receive and hold said batter during the process of desiccation, and in contact with the air-blasts, substantially as described.

2. The rotary desiccating-cylinder, in combination with the blast-conduits *a*, substantially as specified, for condensing the blast to and against the periphery of said cylinder, substantially as shown and described.

3. The combination, with a revolving cylinder for the reception and desiccation of batter of eggs, of a supply-tank, provided with a faucet or valve to regulate the flow of the batter, substantially as described.

4. The cylinder of an egg-desiccating apparatus, having its shell formed of detachable plates or sections, substantially as specified.

5. The combination of the supply-tank B, faucet or valve b, rotary desiccating-cylinder C, scraper E, and receiver G, substantially as shown and described.

160,812. Tortoise-Shell Handles for Fire-Arms. August Trenkmann, Brooklyn, E. D., N. Y. [Filed July 9, 1875.]

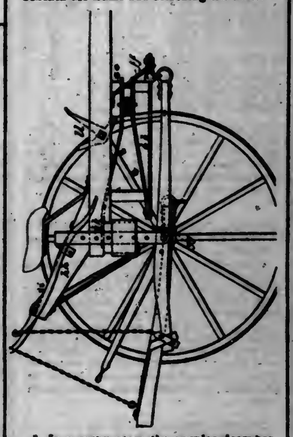
Brief.—The shell is applied, as claimed, to supporting-pieces of metal, which are then fastened to the handle; or the shell may be fixed directly onto the handle.



The mode, substantially as herein described, of combining tortoise-shells with the metal supporting-pieces forming the handles of fire-arms, the same consisting in bending the metal supporting-pieces, and then applying and compressing thereon the tortoise-shell, which, on being partially fused, unites itself to the surface, and partakes of the form of the supporting-pieces, and adheres thereto, as herein shown and described.

160,813. Plow Attachments. G. M. Todd, Waterloo, Iowa. [Filed Oct. 1, 1874.]

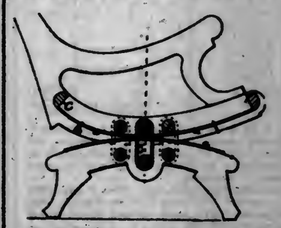
Brief.—Devices for suspending the plows beneath the frame and attaching the draft.



1. In a sulky-plow, the angular draw-bar *b b*, suspended below the frame by the long bolts and sleeves *c c*, and braces *f f* and *e e*, as set forth.

2. The combination of the draw-bar *b b* and braces *e e* with the sulky-frame, and with the plow-beams *c c*, and the adjustable connecting-bars *g g*, substantially as shown and described.

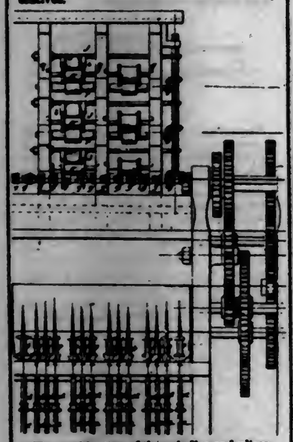
160,814. Rocking-Chairs. Jos. H. Travis, Boston, Mass. [Filed July 14, 1875.]



The combination of the rocker-frame A, provided with one or more rounds, and the bed provided with one or more rounds, of one or more endless rubber bands, constructed to be passed around the round or rounds, substantially as described.

169,816. DOUBLING-MACHINE. Thomas Unsworth, Preston, England. (Filed May 10, 1874.)

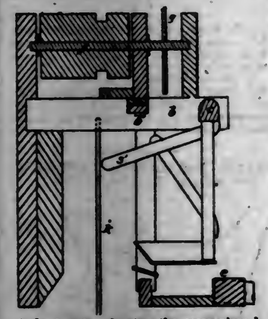
Brief.—The take-up bobbins are arranged in tiers, to economize space and enable the yarns to be always kept in sight of the operatives.



The combination of the spindles and pliers, arranged in double rows to twist and double the threads, with the take-up bobbins a, friction-rollers r, and forked levers f, arranged in tiers on each side of the frame, substantially as and for the purposes herein set forth.

169,817. WATER-ELEVATORS. John F. Van Dyck, Lawtonville, Va. (Filed Oct. 6, 1875.)

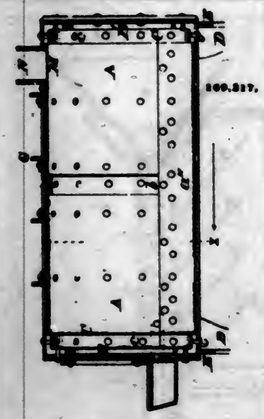
Brief.—The outer frame of this elevator, to which the several operating parts are connected, is pivoted to chute upon the inner sides of the frame, and to a center-piece are bars, to which are rigidly connected frames carrying at their lower ends suitable spoons, which are swung out at the proper time during the ascent of the buckets. There is a cross-piece, which has pivoted to its ends other pieces, which act as bumers for keeping the guide-rods in position at the bottom of the well.



1. In a water-elevator, the cross-piece l, having pivoted to its ends brace-pieces m, for the purpose of securing the guide-rods b in position at the bottom of the well, substantially as set forth.

2. The buckets B, with valve p and lever q, and the guide-rods b, in combination with the swinging frames d, carrying spoons D and arms r, and the blocks b', substantially as and for the purpose specified.

169,818. HEATING-STOVES. John Van. Cincinnati, Ohio. (Filed Sept. 9, 1875.)

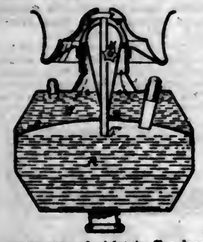


169,819.

As a new article of manufacture, the portable heating-stove herein described, constructed of wrought-iron, and having fire-chamber A, ovate in transverse section, heads B B', extended to form legs D', bracket E, angle-irons C F, and ribs G, all substantially as set forth.

169,820. LAMPS. George W. Vernon, Bensack'n, Va. (Filed Sept. 7, 1875.)

Brief.—The channels conduct water to the flame when the lamp is overturned.

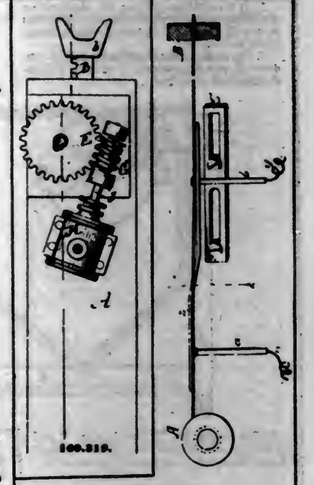


The combination of wick-tube T, enlarged toward its upper end, and the neck E, divided, as shown and described, to form a channel discharging at the top of wick-tube.

169,821. JACKS FOR PRESSES, STOVING, &c. Maurice J. Walsh, New York, N. Y. (Filed Oct. 6, 1875.)

1. The combination, with a rack-jack, of an engine mounted directly thereon and geared with its rack-bar, substantially as herein described.

2. The combination, with the body A and rack-bar B, of the pinion D, pinion-shaft C, worm-wheel E, and worm G, operated by the engine-shaft, substantially as herein described.



169,822.

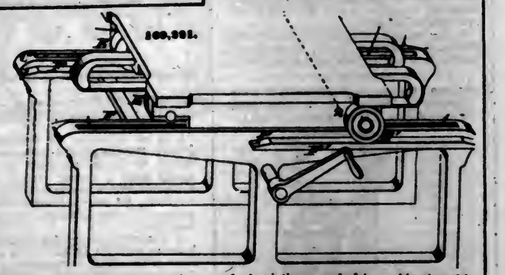
1. The process of tempering or softening wire or other strips of metal, by subjecting the same to the influences of an electric or galvanic current, as set forth.

2. The mode of heating continuous wires or strips of metal, by traversing the same in contact with bars a b, from one to the other of which an electric current is passed through the said wire or strip, and between which the latter is heated, as set forth.

3. The combination, in wire-drawing, of the elastic bars a and b, connected to a battery, with the rod R.

169,823. PRINTING-PRESSES. Chas. Wells, Cincinnati, Ohio. (Filed Aug. 28, 1875.)

Brief.—The bed is on wheels, which run on a track. The track is cut away at both ends, so that the bed rests on a way or table, and not on the wheels at each end of its travel.



169,823.

1. A printing-press bed, in combination with a permanent way or bearing, on which it rests during impression, and with wheels or rollers to convey it to or from the bearing, substantially as set forth.

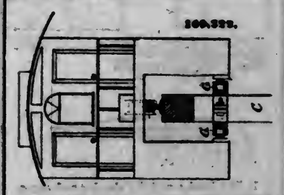
2. A printing-press bed, in combination with a permanent way or bearing, on which it rests during feed, and with wheels or rollers to convey it to or from the bearing, substantially as set forth.

169,824. ELEVATED RAILWAYS. Jno. Westcott, Troxel, Fla. (Filed Sept. 10, 1875.)

169,825. ANNEALING METALS. Joseph H. Warrington, Camden, N. J., assignor of one-half his right to William J. Flanagin, same place. (Filed Apr. 9, 1875.)

Brief.—Wire is annealed, while being drawn, by the heating incident upon its being made the vehicle for a current of electricity.

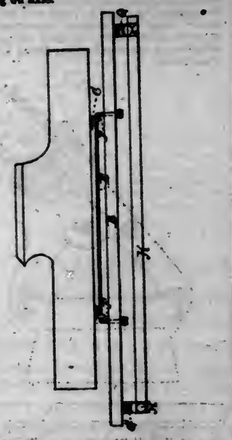
169,826.



In a single-rail railway the combination, with the car having pendent baggage-receptacles, faced upon the inside with iron rails, of the single beam B, surmounted by the main rail, and the supporting-piles C, having the flat-faced friction-rollers G attached to each side of the same, below the main rail and near the level of the bottom of the pendent extension, substantially as and for the purpose described.

169,827. WAGON-SPRINGS. Wm. F. Whitney, Poughkeepsie, N. Y., assignor of one-half his right to Edward Storms, same place. (Filed July 24, 1875.)

Brief.—Torsional side springs support body on bars, which are supported by leaf-springs resting on axle.



The combination, substantially as described, of the torsional springs F, secured at one end to the body of the carriage, the rectangular frame E, to which they are secured at the other ends, the flexile springs G', secured to said frame, and the axles H, the wheels forming a combined torsional and flexile spring, substantially as herein set forth.

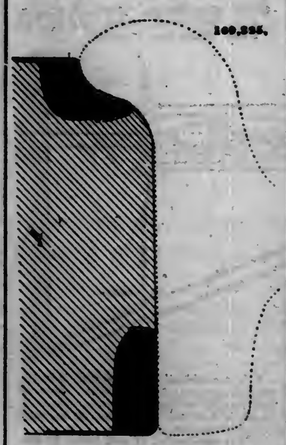
169,828. HARROW-TEETH. Henry M. Williams, Coldwater, Mich., assignor to himself and C. A. Layton, Wapakoneta, Ohio. (Filed June 2, 1875.)

Brief.—The shank of the tooth is composed of tubular iron. The point of the tooth is made of steel, and by means of a screw-thread cut upon its upper end, and a corresponding thread cut in the lower end of the shank, the two are screwed together, the object being to replace the points when worn out.



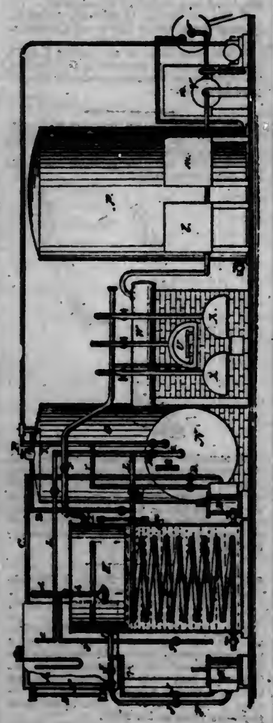
A harrow tooth composed of a tubular threaded shank, A a, and the solid point B, having the threaded shank B' b, substantially as described and shown.

169,829. GAS-WORKS, CELLS. William Wilmington, Toledo, Ohio. (Filed Sept. 20, 1875.)



A chill for casting car-wheels constructed with one or more air-chambers near its interior surface, as and for the purpose specified.

169,830. MANUFACTURE OF ILLUMINATING-GAS. Jos. W. Bentley, Brooklyn, N. Y., assignor to E. W. Rutherford and Jos. W. Bentley, trustees. (Filed Oct. 20, 1875.)



1. As an improvement in the process of manufacturing gas from liquid hydrocarbons, the production of a mingled hydrocarbon vapor and superheated steam, by bringing superheated steam into contact with the surface of a liquid hydrocarbon, being kept free from all agitation, and at a temperature below that of the steam, said temperature being proportioned to the density of the liquid employed, and said vapors decomposed into a fixed commercial illuminating-gas by the means used, and as herein described, and for the purpose set forth.

2. The process of manufacturing an illuminating-gas from a mixture of gas produced from bituminous coals and gas manufactured from liquid hydrocarbons, (the production of a mingled hydrocarbon vapor and superheated steam by bringing superheated steam into contact with the surface of a liquid hydrocarbon, being kept free from all agitation and at a temperature below that of the steam,) by simultaneously passing both gases, while in a heated state, from their respective retorts directly into the hydraulic main, thence through the condenser, washer, and purifiers, in the manner and for the purpose herein set forth.

3. In an apparatus for the manufacture of illuminating-gas, the combination of the cone and ring connected with the nozzle of the superheated steam-pipe, located in the top of the still, in relation to the exit vapor-pipe and the internal coil, as herein described, and for the purpose set forth.

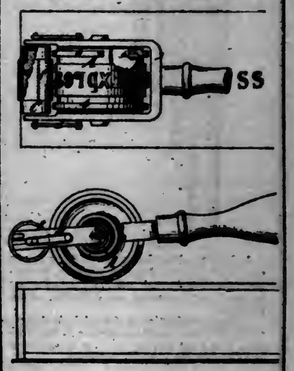
4. In an apparatus for the manufacture of gas from liquid hydrocarbons, a coil steam-pipe connected directly with the steam-boiler, the pipe being located within the still at such distance from the outer shell of the still, and of such diameter of coil, as shall produce a uniform heat throughout the hydrocarbon liquid without causing agitation or convective currents, the said coil rising to about the height specified in the still below the entrance of the liquid-supply pipe, as herein described, and for the purpose set forth.

5. In an apparatus for the manufacture of illuminating-gas, a still of the proportions substantially as described, having an internal coil arranged to uniformly heat without disturbing the liquid hydrocarbons, having its upper coil below the supply-pipe, and the nozzle of the pipe that admits the superheated steam arranged at the specified distance above the upper coil of the heating-pipe and below the opening of the egress vapor-pipe, as herein described and set forth.

6. The combination of the still H, superheater M, superheated steam-pipes S I b, steam-pipe Z, nozzle h, with cone-head and ring attached, coil K, liquid-supply pipe I, vapor-escape pipe T, gas-retorts U, coal-gas retorts X, hydraulic main W, condenser l, washer n, exhauster V, and purifier n, constructed and arranged in the manner herein described, and for the purpose set forth.

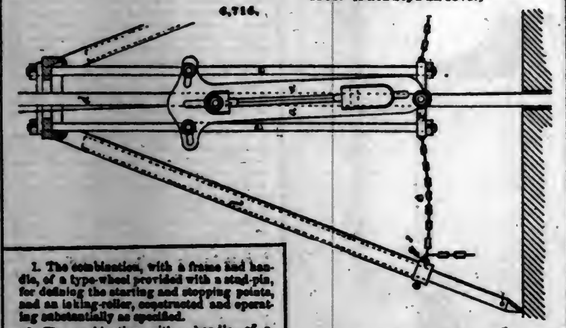
REISSUES.

6,716. MARKING-WHEELS. Horace Holt, Brooklyn, N. Y. Patent No. 52,169, dated Jan. 23, 1866. (Filed Mar. 26, 1875.)



6,714. ROCK-DRILLS. William R. King, U. S. A. Patent No. 53,305, dated Mar. 20, 1866. [Filed Sept. 21, 1876.]

6,714.



1. The combination, with a frame and handle, of a type-wheel provided with a stud-pin, for denoting the starting and stopping points, and an inking-roller, constructed and operating substantially as specified.

2. The combination, with a handle, of a type-wheel provided with flanges, for keeping the plane of the type parallel with the surface of the article to be marked.

3. A type-wheel provided with yielding flanges, constructed and operating substantially as and for the purpose described.

4. A spring, in combination with a type-wheel and stop-pin, or its equivalent, for retracting the type-wheel to its starting-point, substantially as and for the purpose set forth.

5. The combination of a type-wheel with a combined inking-roller and ink-reservoir, constructed substantially as and for the purpose described.

6. The combination of a handle and type-wheel with a spring, for retracting the type-wheel to its starting-point, substantially as described.

7. In combination with an inking-roller and its usual bearings, secondary bearings so arranged that the roller may revolve independently of the wheel, substantially as set forth.

6,715. SAFETY-CATCHES FOR REVOLVERS. Charles W. Hopkins, Norwich, Conn., assignor of one-half interest to Marwin, Hulbert & Co. Patent No. 165,068, dated June 29, 1875. [Filed Sept. 14, 1875.]



1. In a revolver fire-arm, a locking device connected with the hammer, whereby, in combination with the axial pin of the cylinder, the hammer may be locked and unlocked, as described.

2. The combination of the axial pin A, provided with the annular notches *e e'*, the stop-lever *d*, and the locking-pin C, on the hammer H, as and for the purpose described.

1. The combination of telescopic legs, the same hinged at the tops and capable of lateral and vertical adjustment with a tripod-head, to which is secured mechanism for carrying and centering the drill-bar.

2. The combination of mechanism for centering and guiding a reciprocating drill-bar, with a tripod having telescopic legs hinged at the top, whereby such legs may be moved on their hinges outward from the axis of the drill-bar, and an adjustable device applied to the legs below their bearings, for limiting the outward movement of the legs in prescribed degrees, for the purpose of supporting the centering and guiding mechanism in variable positions.

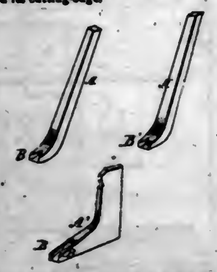
3. The hooks *g' g' g'* attached to the telescopic leg of a tripod, for a rock-drill.

4. The combination of the collar *f* with the guide-plates *a*, slide *b* and *c*, and spring *s*, as and for the purpose described.

5. The combination of the springs K and *l*, Fig. 4, with the guide-plates *a*, slide *b* and *c*, and spring *s*, substantially as and for the purpose described.

6,717. CUTTER-HEADS. Simon P. Randolph, Tehama, Cal. Patent No. 165,063, dated July 20, 1875. [Filed Sept. 24, 1875.]

Brief.—The cutter is provided with side lips on its cutting-edge.

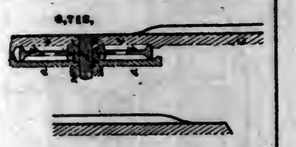


A saw-plate or cutter-head, provided with teeth or cutters A, A^1, or A^2, each of which has a planing lip or flange, B, formed on one or both sides of its cutting-edge, so that the edges of said planing lips or flanges are in the same plane with the cutting-edge of the tooth or cutter, substantially as and for the purpose described.

6,718. DOOR-HINGES. Elijah U. Scoville and Washington L. Scoville, Manlius, N. Y. Patent No. 165,023, dated Oct. 6, 1874. [Filed Oct. 1, 1875.]

Brief.—The shank and one-half of roller-case are cast together, and the case has a perforated conical bearing for the single flat-faced wheel, and also projections upon its rim. The other half of case has corresponding perforated conical wheel-bearing and depression in periphery. The sides of the cased guide the wheel on the track.

6,716.

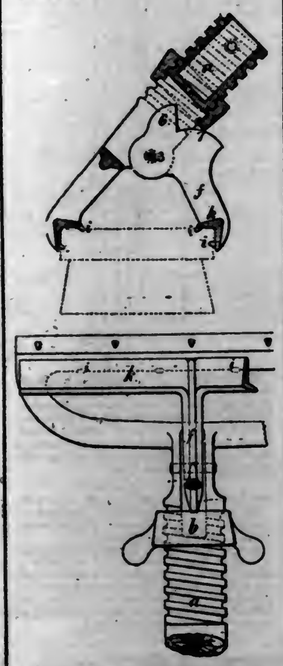


1. The head *c*, with its shank *s* and cap *c*, having notched and projecting rims made to fit each other, and perforated center bearings, arranged and combined as and for the purpose herein specified.

2. The combination of a plain-faced wheel, *b*, pivoted at its center with the cap *c*, head *c*, and shank *c*, as and for the purposes specified.

6,719. MOP AND BRUSH HOLDERS. Albert F. Seymour, New Britain, Conn. Patent No. 165,469, dated Sept. 20, 1875. [Filed Oct. 4, 1875.]

Brief.—A handle-socket is continuous with one shear-arm, the other arm moving on a pivot, and carrying on its rear extremity two cams, which abut against a screw-ring on the socket, accordingly as said ring is set for such antagonism, to grasp a brush or a mop, the beaks being like troughs transversely, to grasp the brush-block at its sides when widely extended, or the mop between broad surfaces when closed.



1. A mop or brush holder, made with a stationary jaw and screw-socket, a movable jaw and its arm swinging upon a pivot, and a screw-ring that acts against the swinging arm at one place when holding the brush, and at another place when holding the mop, substantially as set forth.

2. The mop-holder, made of two metal trough-shaped jaws, a screw-socket, ring-nut, and swinging arm *f*, against which the ring-nut acts, substantially as set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 18. TUESDAY, NOVEMBER 2, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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NOTICE TO MANUFACTURERS AND OTHERS.

UNITED STATES PATENT OFFICE,
Washington, D. C., October 5, 1875.

The COMMISSIONER OF PATENTS respectfully requests manufacturers of and dealers in engines, machines, apparatus, tools, and appliances of whatever kind, to send to this Office duplicate copies of all catalogues and circulars which they have issued or may issue from time to time. R. H. DUELL, *Commissioner.*

COMMISSIONER'S DECISIONS.

EVANS W. SHIPPEN.—*Appeal.*

[*Appeal from the Principal Examiner in the matter of the application of Evans W. Shippen for letters patent for* IMPROVEMENT IN MANUFACTURING WOODEN SHOES, &c.—*Decided October* 29, 1875.]

A claim for "the improvement in the art of manufacturing wooden shoes by machinery, hereinbefore set forth, which consists in cutting, shaping, and boring the blank by submitting it successively to the operation of mechanism, substantially such as set forth," distinguished from a claim for a function, and construed as a certain well-defined order of mechanical operations, all adapted to each other, and, although requiring a peculiar set of instruments for their operation, yet the order of their performance is not inherent in the machinery.

Where the operation of a machine or a series of machines is supplemented by some new and useful method of operation not contemplated in the construction of the machine, and not the inevitable result of its operation, it may amount to a patentable process. Such was the process claimed in the *Voelter* patent sustained by the court, (5 Fish., 340.)

The doctrine of *Perry vs. Lay*, (C. D., 1869, p. 3,) that it is admissible under proper restrictions for parties to put their claims in different forms to prevent misconstruction, again approved.

Each part of this series of machines without the others, or some equivalents of the others, would be absolutely useless, and since the invention lies mainly in the series as a complete set, and not in an improvement upon separate parts of an old set, they ought to be allowed in one application, and in one only.

SPEAR, *Acting Commissioner:*

The Examiner raises objections to the 1st, 4th, 6th, 7th, and 8th clauses of the claim in this application. The objections relate to matters of form, and will be considered in their order.

In his letter of May 27, the Examiner advised applicant that his first claim was "for a process and functional." What objection could be properly made against a claim solely on the ground that it was for a process, I do not well understand. That a claim is purely functional—that is to say, describes and includes nothing more nor less than the inevitable function of a machine—is always a proper objection to it. Such a claim is not, in any true or proper sense, for an invention, for it is only the machine which can be said to be invented and not strictly the invariable use of it. I infer that the word "process" was used by the Examiner inadvertently, since it can be no valid objection in itself to a claim; and it is manifestly what the applicant is intending to claim in the first clause. The simple question is whether or not that clause includes more than the mere function of a machine. The clause is as follows:

The improvement in the art of manufacturing wooden shoes by machinery, hereinbefore set forth, which consists in cutting, shaping, and boring the blank by submitting it successively to the operation of mechanism substantially such as set forth.

What is set forth is a certain well-defined order of mechanical operations. The successive steps are all adapted to each other, and the operation performed on the block at one step fits it to receive the operation to be performed upon it at the next; and although the operation is wholly mechanical, and requires a peculiar set of instruments, yet the order in which the successive operations are performed is not inherent in the machinery.

The function of a machine is that operation which,

when set in motion, it inevitably performs. Thus it is the function of a grinding-mill to comminute whatever is passed through it, of a lathe to give shape to bodies placed in it, or of an auger to bore. But where the operation of the machine, or of a series of machines, is supplemented by some new method of operation not contemplated in the construction of the machine, and not the inevitable result of its operation, and the new method subserves a new and useful purpose, it may amount to a patentable process, even though the operation depend necessarily upon the machinery. Such was the process claimed in the Voelter patent sustained by the court, (5 Fish., p, 340,) in which the mill or stone upon which the wood was to be reduced to fiber was old, and the novelty consisted in placing the wood in such a way that the fiber was torn transversely—the change in which the invention consisted being solely in the method of using the machine, which method was not contemplated originally in making the machine, did not necessarily result from its operation, required evident invention, and produced a new and improved result.

In the present case, the different parts of the set of machinery, taken separately, have a certain fixed and invariable operation; but these parts of the set of machines which are necessary for the whole complete operation, are used, as I have said, in a certain order. If that order be inverted, or changed in any respect—if, for instance, the boring precede the turning, or if it be attempted to bore by the inclined auger before using the vertical auger—the result will be materially different, and worse. Therefore, so far as appears, this applicant has invented something more than an instrument by which the woolen blank is cut—namely, a certain beneficial method of using these, or any equivalent machines, which may be substituted for any one of these. I see, therefore, no reasonable objection to the grant of this claim, so far as relates to the form of it.

The next objection of the Examiner is that the 4th and 8th claims "are so drawn as to render the subject-matter intended to be covered thereby uncertain."

The 4th claim is as follows:

> The combination of a revolving-cutter, H³, and the sliding vibrating holder carrying the blank, these members being constructed and operating substantially as set forth, whereby the shoes are cut away toward the toe on the inside of the instep.

It is explained that the sliding motion of the holder is for the purpose of making the cutter operate upon the shoe from side to side, and that the vibrating motion makes it possible to cut away the wood more upon one side of the shoe. The precise parts are specified: the cutter, the holder, the construction giving the sliding and vibrating motion, and the explanation, all in the claim, of the nature and object of these motions. It is difficult to see how the applicant could have been more explicit without specifying all the parts by letter, and this he has done in the eighth claim, to which the Examiner makes like objections. I cannot see how the applicant could in any way define this invention more precisely than he has done in the claim last named; and, if there be no other objection than this, these claims ought to be allowed.

The rejection of the 6th and 7th claims is based on equally untenable ground. The doctrine laid down in the *ex parte* case of *Perry* vs. *Lay*, (C. D., 1869, p. 3,) and often repeated since, is familiar, and should govern the Office. It is sanctioned by the courts, and is plainly founded in reason—

> It is admissible, under proper restrictions, for parties to put their claims in different forms, to prevent misconstruction of them by the public or by the courts.

In the present instance, however, the claims are plainly not equivalent. The 7th includes the pivot, which the 6th does not, and the frame on which the holder slides is also included, and is not in the 6th. The difference is gross and palpable.

The Examiner, in his answer to the reasons of appeal, raises a new objection, which he ought to have raised, if at all, at the outset, and certainly should have advised applicant of it before appeal, and not surprised him with new and unheard-of objections when he appeared before the Commissioner at the hearing granted upon other points. The objection, however, ought not to have been raised at all. It would be a hard and unnecessary proceeding to require the applicant to make separate applications for each part of this series of machines. Plainly, each part alone without the others or some equivalent of the others, would be absolutely useless; and since, so far as appears, the invention lies in the series mainly, as a series or complete set, and not in an improvement upon separate parts of an old set, they ought to be allowed in one application, and not be allowed in more.

The questions here discussed may seem elementary and familiar, but the fact that they have been raised justifies the discussion.

The decision of the Examiner is reversed, and the case will be examined upon its merits.

ADLER *vs.* VAN WAGENER.—*Interference.*

[*Appeal from the Examiner of Interferences in the matter of the interference of Adler* vs. *Van Wagener for letters patent for* IMPROVEMENT IN TIPS FOR BOOT-SOLES.—*Decided October* 15, 1875.]

> An interference may be dissolved for reasons stated in rule 59, but should not be allowed to terminate by the abandonment of his application by one of the parties to the controversy, when the other party desires a decision upon the merits.

SPEAR, *Acting Commissioner:*

This appeal is taken by counsel for Van Wagener from the decision of the Examiner dissolving the interference. That decision was based on an abandonment of his application by Adler, filed in the course of the proceedings before the Examiner of Interferences. The Examiner, in dissolving the interference, relied for authority upon the decision of the Commissioner in the case of *Eames* vs. *Seeley & McDougall*, (C. D., 1871, p. 206.)

Rule 59 provides for the dissolution of an interference "if no interference in fact exists, or that there has been such irregularity in declaring the same as will preclude the proper determination of the question of right between the parties."

Further provision is made in the rule for such dissolution, in case it be found that neither party is entitled to a patent. The dissolution in this case rested on no such basis. It is not alleged that there is no interference, or that there has been any irregularity in the declaration; nor does it appear from the record that the patentability of the subject-matter in controversy is anywhere denied. I see no reason whatever, so far as the papers in the case are concerned, why the interference should not go on, and judgment be rendered. And it appears to me unwise to place in the hands of one of the parties the right to terminate the proceedings at any point, with the power of renewing them at his pleasure; for this abandonment of the application does not deprive Adler of the right to file a new application at any time; and even if the same testimony were used in that case which was taken in this, still the practice would give one party the right to cause indefinite delay at his pleasure, and without any possible advantage, except to himself, so far as I can discover. It concerns the Office and the public that these questions, once raised, should be settled once for all, and as speedily as possible, while the matters are fresh in the minds of the parties and their witnesses.

The question in this case is not precisely the same as that in the case of *Eames* vs. *Seeley & McDougall*, cited above; but I am constrained, though not without hesitation, to vary from the dictum of my learned predecessor in that case. I see no hardship in requiring a party to an interference either to prosecute the same to judgment or to let the case go by default. If he wishes to have the proceedings stopped he may concede priority of invention to the other party, and the judgment will be based upon that; otherwise the interference must proceed.

The decision of the Examiner is reversed.

LEWIS N. GREEN.—*Appeal.*

[*Appeal from the Examiner of Trade-Marks in the matter of the application of Lewis N. Green for the* REGISTRATION OF A TRADE-MARK.—*Decided September* 27, 1875.]

> The words "German Sirup" held to be a lawful trade-mark.
> As a rule a geographical name cannot be a lawful trade-mark, but may become so when not descriptive, and when arbitrarily chosen and applied for lack of a better term.

SPEAR, *Acting Commissioner:*

This appeal is taken from the decision of the Examiner of Trade-Marks, refusing to register the words "German Sirup." The Examiner says that—

> Although these words (German, American, &c.,) are not, strictly speaking, geographical names, yet, from long usage, they have been accepted as properly designating the people living in well-defined divisions of the earth.

Unquestionably a geographical name, as a rule, cannot be a lawful trade-mark, for the reason that, ordinarily, it is descriptive of the article to which it is applied. Wherever it is descriptive, it cannot be made a lawful trade-mark; but a geographical name, like any other word, may be chosen and arbitrarily applied, and in such instance may be a lawful trade-mark. The Examiner must judge in each particular case whether or not the word be descriptive. In this case I think it cannot be called purely descriptive. If the article were purely a German product, then it would be naturally, and in the ordinary use of the word, designated as German; but, obviously, it is not. It is simply a medicated compound, evidently designated "German" for lack of a better term, and, I think, should be registered as a trade-mark.

The decision of the Examiner is, therefore, reversed.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date November 2, 1875.]

8,764.—Glassware.—HENRY FRANK, Pittsburg, Pa. Application filed October 18, 1875. Term of patent 3½ years.

8,765.—Coffin-Plates.—CEPHAS B. ROGERS, West Meriden, Conn., assignor to C. ROGERS & BROTHERS, same place. Application filed September 21, 1875. Term of patent 7 years.

8,766.—Parlor-Stoves.—GURDON G. WOLFE, NICHOLAS S. VEDDER, and FRANCIS RITCHIE, Troy, N. Y., assignors to HICKS & WOLFE, same place. Application filed October 20, 1875. Term of patent 7 years.

8,767.—Ranges.—GURDON G. WOLFE and FRANCIS RITCHIE, Troy, N. Y., assignors to HICKS & WOLFE, same place. Application filed October 20, 1875. Term of patent 7 years.

8,768.—Cooking-Stoves.—RICHARD A. CULTER and DAVID C. PROCTER, Peoria, Ill. Application filed October 1, 1875. Term of patent 7 years.

8,769.—Cooking-Stoves.—GURDON G. WOLFE, NICHOLAS S. VEDDER, and FRANCIS RITCHIE, Troy, N. Y., assignors to HICKS & WOLFE, same place. Application filed October 20, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date November 2, 1875.]

3,102.—Friction-Matches.—BARBER MATCH COMPANY, Akron, Ohio. Application filed October 5, 1875.
"words 'DRAWING-ROOM MATCHES.'"

3,103.—Shirts.—BLOOMER, KING & Co., New York, N. Y. Application filed October 2, 1875.
"words 'The King of Shirts,' with the monogram of our firm, composed of the letters 'B. K.,' the character '&' just before the monogram, and the abbreviation 'Co.' just after it."

3,104.—Gummy or Resinous Extract of Old Varnish.—BUTLER & NORWOOD, Boston, Mass. Application filed October 18, 1875.
"'VERNISINE.'"

3,105.—Linen Threads.—DUNBAR, MCMASTER & Co., Gilford, Ireland. Application filed September 16, 1875.
"a horse's head and the words 'Vorus ad Finem.'"

3,106.—Smoked and Pickled Meats.—FRANK A. FERRIS, New York, N. Y. Application filed October 8, 1875.
"a plumb-seal of any suitable metal, that is attached to the strings by which the meats are suspended, the words 'F. A. Ferris & Co., Trade-Mark, N. Y.,' being stamped on the seals in embossed letters."

3,107.—Books.—FRALICK & MEEKE, St. Paul, Minn. Application filed October 2, 1875.
"word 'Centennial.'"

3,108.—Cigars and Tobacco.—HENRY GAULLIEUR, New York, N. Y. Application filed October 11, 1875.
"words 'RIO HONDO.'"

3,109.—Pop-Beer.—CHARLES C. HALEY & Co., New York, N. Y. Application filed October 2, 1875.
"words 'CALIFORNIA POP-BEER.'"

3,110.—Gloves.—PATRICK HEALY, New York, N. Y. Application filed October 8, 1875.
"words Diamond Cut.'"

3,111.—Lamps.—CHARLES F. A. HENRICHS, Brooklyn, N. Y. Application filed October 16, 1875.
"words SAINT GERMAIN.'"

3,112.—Canned Lobsters.—KIMBALL & JEWETT, Shediac, Canada. Application filed October 8, 1875.
"the figure of crossed flags, and the figure of a lobster."

3,113.—Cigars.—KREMER BROTHERS & Co., Detroit, Mich. Application filed September 17, 1875.
"word 'Fortune,' together with a mining scene."

3,114.—Whiskies.—BENJAMIN LIEBER, New York, N. Y. Application filed October 18, 1875.
"a pictorial representation of a log cabin, in connection with the words 'Old Log Cabin.'"

3,115.—Pianos.—F. C. LIGHTE & Co., New York, N. Y. Application filed October 2, 1875.
"word 'EUTERPIA.'"

3,116.—Medicine.—ORRIN B. MANSELL, Lynn, Mass. Application filed October 18, 1875.
"word 'PAINOLINE.'"

3,117.—Gin.—AUGUSTUS E. MASTERS, Jr., Brooklyn, N. Y. Application filed October 19, 1875.
"the royal arms of Holland, and above are the words 'Royal Signet.'"

3,118.—Cigars and Tobacco.—WILLIAM C. NICHOLSON, New York, N. Y.—Case A. Application filed October 12, 1875.
"words 'LADIES' FINGERS.'"

3,119.—Cigars and Tobacco.—WILLIAM C. NICHOLSON, New York, N. Y.—Case B. Application filed October 12, 1875.
"an ornamental border having a circular center and rectangular ends. The circular center is embellished with a series of dots or balls, arranged around the same at equal distances apart, and with scrolls arranged at both sides of the border. The rectangular ends of the said border are likewise embellished with scrolls at their ends."

3,120.—Scotch Oatmeal.—ROBERT SHOEMAKER & Co., Philadelphia, Pa. Application filed October 2, 1875.
"the name 'Robert Shoemaker & Co., Philadelphia, U. S. A.,' and the pictorial representation of a stag's head."

3,121.—Medical Preparation or Compound.—SNYDER & GUE, Decatur, Ill. Application filed October 12, 1875.
"word 'MALARION.'"

3,122.—Carpets.—A. T. STEWART & Co., New York, N. Y. Application filed October 13, 1875.
"the pictorial representation of an eagle with uplifted wings, printed over a sun-burst, with a bundle of arrows in one of his talons, and a branch in the other, and the motto 'Forward' on a ribbon underneath, with the words 'E pluribus unum' on a narrow ribbon in his beak."

3,123.—Trace-Buckles.—H. S. WOODRUFF & Co., Janesville, Wis. Application filed September 13, 1875.
"the name 'Champion,' and the representation of the buckle itself as it appears in the cut."

3,124.—Medical Compound.—DR. HEATH & Co., Washington, D. C. Application filed September 25, 1875.
"the arbitrary word-symbol 'OXYGENIZED AIR.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date November 2, 1875.]

363.—Title: "Ribbons and Dress Goods as they appear when Photographed."—DAVID T. BURRELL, Brockton, Mass. Application filed October 23, 1875.

364.—Title: "Carell's Aromatic Wine-Bitters."—S. F. CARELL, New York, N. Y. Application filed October 21, 1875.

365.—Title: "Glycerine-Camphor Cream."—RUTGER L. DRAKE, Troy, N. Y. Application filed October 25, 1875.

366.—Title: "The Triumphant Gas, or Domestic Compound for Illuminating Purposes."—S. B. FARRAR & Co., Chicago, Ill. Application filed October 15, 1875.

367.—Title: "John H. Gause & Co.—Neptune Brand Spices."—JOHN H. GAUSE, Cleveland, Ohio. Application filed January 12, 1875.

368.—Title: "Anti-Frothing Oil."—E. H. KELLOGG, New York, N. Y. Application filed October 25, 1875.

369.—Title: "The Celebrated Florentine Flake Candy."—CHAS. F. KING, P. B. HOWLAND, and SAMUEL PARKER, Chicago, Ill. Application filed October 29, 1875.

370.—Title: "Sachet Powders—T. Metcalf & Co., Boston."—THEODORE METCALF & Co., Boston, Mass. Application filed October 29, 1875.

371.—Title: "William V. Noe, Manufacturer of The Phosphatic Lead-Paint."—WM. V. NOE, New York, N. Y. Application filed October 22, 1875.

372.—Title: "List of Goods Shipped."—EDMUND D. REYNOLDS & OLIVER B. REYNOLDS, Brockton, Mass. Application filed October 23, 1875.

373.—Title: "Centenary Tooth-Powder."—DR. E. C. WADSWORTH, Brooklyn, N. Y. Application filed October 28, 1875.

374.—Title: "H. Lockard's Horse Ointment."—S. E. WOODHULL & SON, Newark, N. J. Application filed October 20, 1875.

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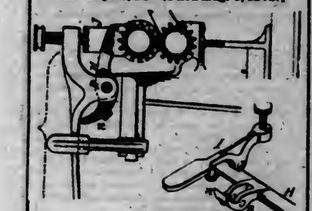
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TITLES, DRAWINGS, AND CLAIMS

OF

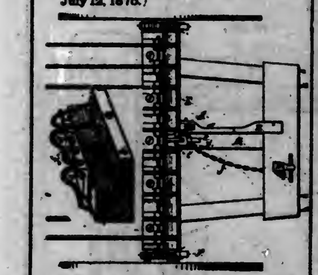
PATENTS GRANTED NOV. 2, 1875.

169,337. FLUTING-MACHINE. H. Albrecht, Philadelphia, Pa. (Filed Aug. 6, 1875.)



In a fluting-machine, the combination of the upper fluting-roller and its frame H, and the arm a of the latter, with the adjustable spring, J, lever I, and a device for retaining and releasing the said lever, all substantially as set forth.

169,338. HORSE HAY-RAKES. W. Aldrich, Dayton, Ohio, assignor of one-half his right to H. C. Hershelrode, same place. (Filed July 12, 1875.)



1. The improved tooth-holder D, composed of a plate and bearings, *d d*, in combination with the end of a rake tooth, bent in the shape shown, and pivoted by means of the rod *f*, substantially as described.

2. The beam *a*, provided upon its forward face with circular openings, in which the spiral springs are placed, as described, in combination with the slotted beam *b*, the tooth-holder D, and the ends of the rake-teeth, when the respective parts are arranged as and for the purpose specified.

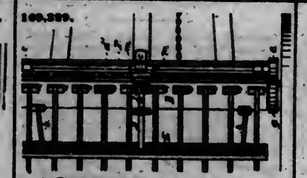
3. The torsion-rod B, provided with the dogs F, for engaging with the ratchets G, and having the slotted arm H, connected to the treadle *m* by the chain *j*, in combination with the gravitating latch K, when arranged to operate in the manner and for the purpose specified.

4. The holding-down lever B, arranged as described, and provided with the gravitating arm S, substantially as and for the purpose specified.

169,339. HORSE-RAKES. W. Aldrich, Dayton, Ohio, assignor of one-half his right to H. C. Hershelrode, same place. (Filed July 12, 1875.)

Brief.—A horse-rake having adjustable beam hinged to lower edge of main axle, and connected with foot-treadle. Attached to top face of beam are two shafts, placed end to end in the middle bearing, and revolving independently of each other, and having at outside pinions, which mesh with gear on hubs of main wheels. By pressure upon treadle, the pinions on shaft attached to adjustable beam engage with gears on main wheels, and the shafts wind upon themselves a chain attached to lever connected with lifting-bar of rake, causing rake to rise and discharge hay.

169,340.



1. The shafts *d d*, arranged as described, and provided with the pinions *e e*, in combination with the adjustable beam *b*, as and for the purpose specified.

2. The lifting-lever H, attached as the separate shafts, *d d*, by means of a chain, *n*, arranged as described.

3. The combination of the lifting-bar E, lever H, spool *l*, chain *n*, shafts *d d*, beam F, arm A, chain *j*, and treadle *i*, when the respective parts are arranged in the manner and for the purpose specified.

169,341. MANDRELS FOR BROOM-MACHINES. Henry Anderson, Vallejo, Cal. (Filed Sept. 11, 1874.)

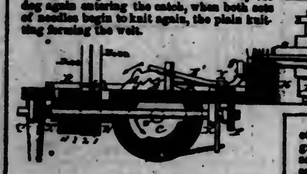
Brief.—The screw-threaded part receives the threaded socket of the broom-head, and the corn that is bound thereon is cut off against the ring of soft material. The parts are held together by a screw on the threaded portion.



The mandrel G L M, consisting of the threaded socket-holder G, provided with the screw-shank *l*, ring for the trimming of broom-corn ends, as described, L, spindle M, and pin *p*, for the adjustment of the device to the holder H of the broom-machine A A, substantially as and for the purposes herein set forth and specified.

169,342. KNITTING-MACHINES. Charles J. Appleton, Philadelphia, Pa. (Filed June 10, 1875.)

Brief.—Yarn of different colors is placed upon two sections of the needles in the cylinder and dial, which yarn changes sections at determined revolutions of the cam-ring, which is given an oscillating, and at times a stunting, motion, so that each section of needles knits first one color and then the other, constructing fabric similar to "hand-loom work." Welts are produced on each fabric automatically, at pleasure, by means of the welt-cam, moved by the ratchet, which depresses the inner end (by lifting the other end) of the spring welt-lever, which strikes a dog and catch, detaching the dial-ring from the cam-ring, so that the dial-needles cease to work, and plain knitting is done (by the needles operated by the cam-ring) until the dial-needles are again thrown into action by the dog again entering the catch, when both sets of needles begin to knit again, the plain knitting forming the welt.

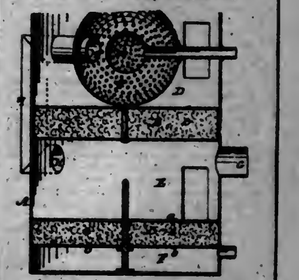


1. The combination, with the needle-cylinder K and dial O, of the cam-ring J and dial-ring H, constructed substantially as described, so that ribbed or plain work may be produced automatically, at pleasure, as set forth.

2. The combination of a cam-ring, J, slide R, pulleys 1 2 3 4, and pattern-cam O, adapted to operate together, substantially as described.

3. Four sliding pulleys, alternately tight and loose, applied to a chart, D, and combined with shifting mechanism, as described, whereby circular and semicircular movements may be imparted to the cam-ring J, at pleasure, substantially as specified.

169,343. FEED-WATER HEATERS FOR STEAM-BOILERS. William J. Austin, Hortonsville, Wis. (Filed Dec. 7, 1874.)



The combination of the cylinder A, filtering-diaphragms B C, with steam space or chamber B between them, steam-inlet G, and steam-conveying pipe H, leading from said chamber to the water and steam distributing heads *e f*, one within the other, so that the partially-boiled feed-water from the heads, after passing through the first diaphragm B, shall drip through a volume of more highly heated steam in the chamber E, all as and for the purpose described and represented.

169,344. MACHINES FOR BENDING CHAIN-LINKS. Jas. Baird, Allegheny, Pa. (Filed Sept. 30, 1875.)

Brief.—A pair of feed-rolls for feeding the rod through a cut-off block, and against a shoulder formed by the cut-away portion of a spiral sleeve attached to the rotating head-block, through which the bending-mandrel passes. End of rod, before striking the shoulder, passes underneath a cam shaped griping-dog, swinging in a slot in the head-block, which gripes it tightly against the bending-mandrel. Next blank is severed from the rod, and, the bending-mandrel retreating, is discharged from the machine.

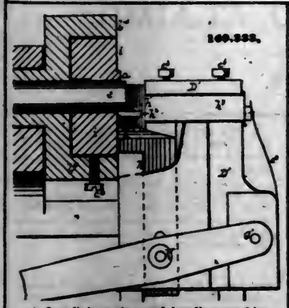
1. In a link cutting and bending machine, the combination of a bending-mandrel, *e f*, adjustable bridge P P', griping-dog *p*, head-block *i*, with spiral sleeve *a*, shear *b b*, and feeding-rolls *r r'*, operated substantially in the manner and for the purpose set forth.



2. In combination with the bending-mandrel of a link cutting and bending machine, the griping-dog *p*, guide-bar *s*, feeding-rolls *r r'*, and spiral sleeve *a*, operated and arranged substantially as set forth.

3. In combination with the bending-mandrel of a link cutting and bending machine, the automatically-adjustable bridge P P', lever B, yoke *y*, and cam or segment *x x'*, arranged and operated substantially as set forth, whereby the bridge P P', by an upward and downward motion, follows the elliptical form of the bending-mandrel.

160,825.



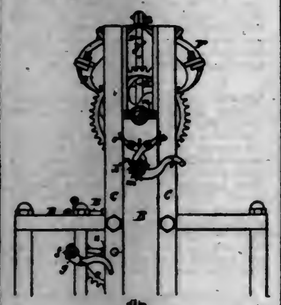
4. In a link cutting and bending machine, the horizontally-adjustable angular plate N N' and vertically-adjustable plate D', carrying thereon the cutting and feeding devices, and in combination therewith, whereby the cutting and feeding devices are adjustable to mandrels of different sizes, substantially as set forth.

5. In combination with the shears *h h'*, the adjustable tappet *o*, with a lever connection to the shears, for effecting the cut at the end of a variable feed, and the adjustable tappet *p'*, and inclined-faced projection *q*, with pawl-and-ratchet connection to the feed-rollers, for imparting to the rod a feed variable in length at pleasure, substantially as set forth.

6. In a link cutting and bending machine, the combination of a bending-mandrel, *o o'*, with the spiral sleeve *o*, stop *o'*, and gripping-dog *p*, substantially as set forth.

7. In a link cutting and bending machine, the combination of a bending-mandrel, *o o'*, head-block *i*, and hollow shaft *b b'*, having an enlarged hollow cylindrical head, *b'*, operated and arranged substantially as set forth.

160,826. Machines for Framing Boats. Chas. Bartlett, Newburyport, Mass. [Filed Oct. 5, 1875.]



1. The combination of the series of ribs, cam, or outwater and stern-supporters F G G' H H', substantially as described, with a rotary shaft, A, such supporters being applied to the said shaft, essentially as set forth.

2. In combination with said shaft A and its series of outwater, rib, and other supporters, the mechanisms for raising, lowering, and revolving said shaft, and holding it in position, each consisting of the slides B B, racks *b b*, pinions *c c*, shaft *d*, gears *e e*, pinions *f f*, shaft *g*, bolts E E, gear *i*, pinion *k*, shaft *h'*, ratchet-wheels *m m*, and the pawls *o p*, all arranged and to operate essentially as explained.

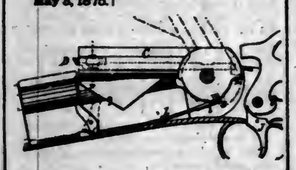
160,827. Safe and Vault Doors. Martin Briggs, Rochester, N. Y. [Filed Sept. 6, 1875.]

1. The combination, with the swinging frame C, of the door B, constructed with the threads *a b*, the outer thread being of the greatest diameter, and engaging with the frame, thereby having the face of the door free for the passage of the spindle or key, and forming a firm support for the door, to prevent sagging, as shown and described.

2. In a burglar-proof safe, the combination, with the plating A and screw-door B, of the independent ring attached on the inside of the safe, and provided with a thread for the reception of the screw *a*, as shown and described, and for the purpose specified.

3. The combination, with the screw-door B and swinging frame C, of the arm *i* and stops *h h'*, projecting unequally from the frame, the lower stop constructed of right-angled form, in the manner and for the purpose specified.

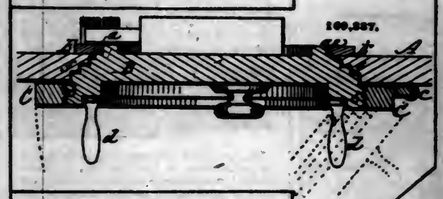
160,828. Bridges - Loading Fire - Arms. Chas. B. Billings, Hartford, Conn. [Filed May 3, 1875.]



1. The combination of the locking-bolt D with the firing-pin F, by means of the connecting-pin *d* and shoulder *b*, so that the firing-pin is retracted whenever the breech is opened or closed, but is free to move forward sufficiently to fire the charge when the breech is locked, substantially as herein described.

2. The combination of the lever K and the spring-bar L with the projections *n* and *n* on the rear of the breech-block to form an extracting mechanism operated by the movement of the breech-block, substantially as herein described.

160,827.



160,829.

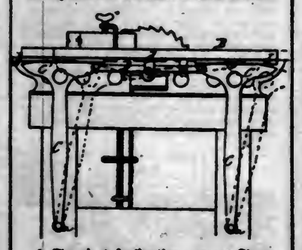


3. The cutter-arms F, hinged to the rings L L', in combination with the adjusting-rods *g*, arranged and operating substantially as described.

4. The cutter-heads, constructed substantially as described—that is to say, having the saws M M and the intermediate sleeve and adjustable cutters, arranged and operating substantially as described.

160,830. Threshing-Machines. H. Brand, St. Paul, Minn. [Filed Mar. 24, 1875.]

Brief.—The labor of operating the carriage of a tenoning-machine is diminished, and the friction consequent upon the movement of the carriage upon the ordinary guideways is greatly relieved, by means of pivoted vibrating segments or parallel links, which support one end of the carriage, and have their swinging ends formed in arcs of circles, the pivots upon which the arms swing being the centers, so that the carriage resting on the segments will move in right lines. The cutter is formed of two sections, each consisting of a circular saw and an overlapping hinged cutter adjustable upon the exterior of a ring located upon a sleeve on the saw-arbor. The sections are adjustable to cut different-sized tenons.



1. The pivoted vibrating segment C', constructed and applied to the reciprocating carriage B, substantially as described, whereby said carriage is supported by and adapted to be moved in right lines upon said segments, for the purpose and substantially as set forth.

2. The cutter-head sleeve K, provided with the right and left hand screws, as described, in combination with the rings L L', to which the cutters are attached, substantially as described.

160,831. Furnaces. Joseph K. Caldwell, Philadelphia, Pa., assignor to himself and John L. Kates, same place. [Filed Sept. 4, 1874.]

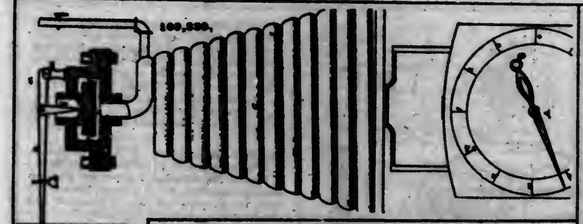
Brief.—Compressed air is forced through the upper pipe, into which is fed coal-dust from the hopper. Petroleum is injected through the lower pipe by a steam-jet. Both pipes are heated by the furnace and the petroleum converted into gas.

The pipes B and D communicating with the nozzle *d*, the hopper H communicating into the pipe B, the oil-pipe *b* communicating with the pipe D, and nozzle *a* arranged opposite the open end of the pipe D, all combined with each other and with a furnace substantially as and for the purposes set forth.

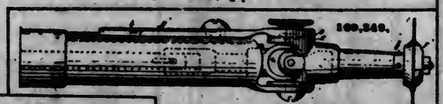
160,832. Instruments for Regulating Temperature. Augustus Campbell, Westbridge Township, Middlesex County, N. J. [Filed Mar. 26, 1875.]

The combination of the balance A with the coil or vessel C, regulator B E E, and damper F, as and for the purposes specified.

160,833.



160,840.

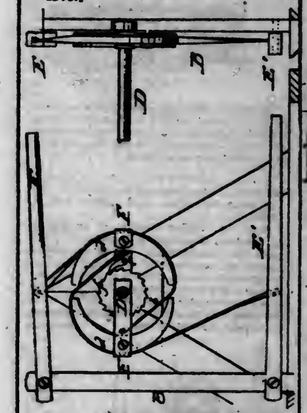


160,834. Fruit-Jars. Charles R. Carter, Zanesville, Ohio. [Filed Mar. 15, 1875.]



The combination, with a fruit-jar having a flat top and provided with two or more annular wedge-shaped recesses thereon, of a cover provided with a corresponding flat bottom, and having two or more annular wedge-shaped projections opposite the said recesses on the jar, and a gasket interposed between the two, with suitable mechanism for forcing the jar and cover together, substantially as and for the purposes set forth.

160,841. Mechanical Movements. Orlando Child, Claremont, N. H. [Filed Apr. 8, 1875.]



The combination and arrangement of the vertical standards B, levers E E, treadles E' E', diametrical frames F F, having pawls, the connecting-rods *a a*, and the shaft D, having ratchet-wheels *f f*, substantially as and for the purpose specified.

160,842. Hand-Pieces for Dental Engines. George H. Cushing, Chicago, Ill., assignor to Saml. S. White, Philadelphia, Pa. [Filed Sept. 28, 1875.]

Brief.—The hand-piece is made up of two tubular sections pivoted together, and adjustable at any angle by a serrated clamping-arm. Through both the sections is passed the rotating shaft, from a dental engine. The shaft is coupled by a universal-joint.

1. The hand-piece constructed, substantially as described, with a tubular main section, a movable clamping-arm mounted thereon, and a movable tubular section pivoted on the main section and clamping-arm, for the purposes specified.

2. The combination, substantially as hereinbefore set forth, of the tubular main section, its clamping-arm, the movable tubular section carrying the tool-holder, the driving-shaft, and the universal joint connecting the driving-shaft and tool-holder in the line of the joint of the hand-piece, for the purposes specified.

160,843. Saw-Bucks. Henry Dawson, Philadelphia, Pa. [Filed Oct. 22, 1874.]

Brief.—The legs of a saw-buck, where they cross each other, are provided with recesses, one having a convex and the other a concave recess, and the connecting-bar is threaded at each end where it passes through the outer leg, for packing in a small compass for transportation.



The combination, in a saw-buck, of recessed legs A A', and a connecting-bar, D, having at each end a shoulder, *x*, and a cylindrical projection plain at *a*, where it passes through the inner leg, and threaded at *b*, where it passes through the outer leg, all as and for the purpose specified.

160,844. Stands or Holders for Hose-Pipe Nozzles. Oliver Edwards, Florence, Mass., assignor to Florence Sewing-Machine Company, same place. [Filed June 30, 1875.]

Brief.—The support is forced into the ground to give security to the nozzle, which is placed in hooks and clamped thereto by turning the button or cam hard onto the nozzle; then the nozzle is given its direction, and the thumb-nut is turned down and holds the nozzle in its position.



160,845.



1. The stand or support A of a hose-pipe nozzle, bent or offset at *x*, as and for the purpose substantially as described.

2. The combination of the bent support A and forming part A', with the holder B, having hooks *b*, and the screw *b'* and thumb-nut *b''*, substantially as described.

3. The combination of the holder B and cam or button B' with the nozzle C, substantially as described.

4. The support or stand A, bent at *x*, and nozzle-holder B, constructed as above described, as a new article of manufacture.

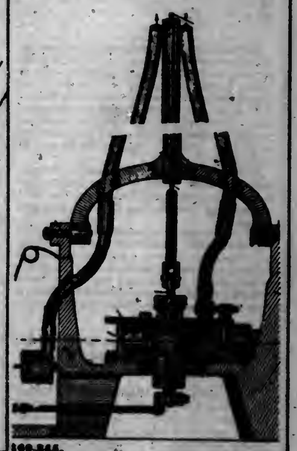
160,846. Dental Engines. Stephen D. Hogle, Hazleton, assignor to Saml. S. White, Philadelphia, Pa. [Filed July 6, 1875.]

Brief.—The driven shaft is mounted in bearings in a rocking frame pivoted to the engine-frame, and connecting said shaft and that of the motor by a flexible joint. Connected with the motor and operating-tool is an exhaust apparatus, for removing dust or moisture from the point at which the tool is operating; also, a pump for applying a jet of air or liquid at or near the point upon which the tool is operating. There is also an arrangement to regulate the temperature of the fluid ejected, by combining with the motor a coil of pipe and a lamp. The shaft is mounted in bearings of rubber in a tube supported upon the rocking frame of the engine, to prevent the trembling of the driven shaft.

1. The combination of the frame, the water-wheel mounted therein, the rocking ball pivoted on the frame, the tubular shaft-supporting frame mounted on the ball, the driven shaft mounted in bearings in said tubular frame, and a flexible shaft connecting the water-wheel and driven shafts, these members being constructed and operating in combination substantially as hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the water-motor, the driven shaft by which the tool is operated, and the exhaust apparatus for removing moisture, filings, &c., from the point of operation.

3. The combination, substantially as hereinbefore set forth, of the water-motor, the shaft for operating the tool, and the pump for discharging air or fluid at the point of operation.



4. The dental engine hereinbefore set forth, consisting of the combination of the water-motor, the operating-shaft, the ejector-pump, and the exhaust apparatus.

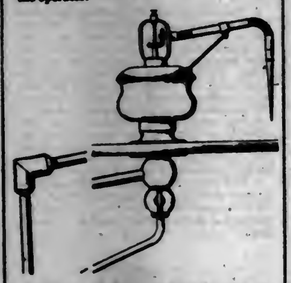
5. The combination, substantially as hereinbefore set forth, with the pump, of the apparatus for varying the temperature of the fluid ejected by it.

6. The combination, substantially as hereinbefore set forth, of the tube, the bearings of elastic material arranged at short intervals therein, and the driven shaft.

7. In a dental engine, the combination of the frame, the casing, the percussion-wheel, the tapering injection-pipe, and the discharge-pipe, both arranged tangentially to the wheel, as and for the purposes set forth.

160,846. Dental Engines. W. W. Evans, Georgetown, D. C., assignor to Saml. S. White, Philadelphia, Pa. (Filed June 26, 1874.)

Brief.—A small water-wheel rests upon the swinging operating-table, and has its supply of water and its waste carried off through a hollow support. To the shaft of the water-wheel is connected by gearing the ordinary flexible shaft of a dental engine. The valve to control supply of water is directly beneath the operating-table, and swings with the bracket, so as to be always within reach of the operator.



1. The combination, substantially as herein-before set forth, in a dental engine, of flexible shafting, and a water-motor mounted upon a hollow bracket or support, through which the supply and waste water for the motor flows.

2. A dental engine constructed substantially as herein-before set forth, and mounted upon a swinging bracket or support, whereby its position relatively to the operator may be varied.

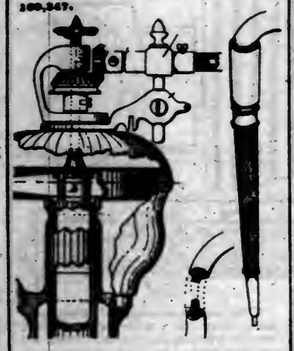
3. The combination, substantially as herein-before set forth, of the tube, the bearings of elastic material arranged at short intervals therein, and the driven shaft.

4. The combination, substantially as herein-before set forth, in a dental engine, of the frame, the casing, the percussion-wheel, the tapering injection-pipe, and the discharge-pipe, both arranged tangentially to the wheel, as and for the purposes set forth.

160,847. Dental Engines. W. W. Evans, Georgetown, D. C., assignor to Saml. S. White, Philadelphia, Pa. (Filed July 16, 1875.)

Brief.—This is an improvement on United States Patent No. 151,463, June 2, 1874. The motor is a water-wheel adapted to be mounted on the operator's table, and capable of being readily controlled by the operator, and connected therewith to a tool having great freedom of movement.





1. The combination, substantially as herein-before set forth, of the casing, the supply-pipe, the wheel revolving on the supply-pipe, the chuten, and the battery for the purposes specified.

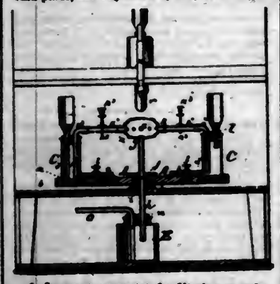
2. The combination, substantially as herein-before set forth, of the casing, the supply-pipe, the wheel, its spindle, the post on the casing, the flexible sheath, and the flexible shaft.

3. The combination, substantially as herein-before set forth, in a dental engine, of the casing; the water-wheel revolving therein, and a dental tool driven by a flexible shaft mounted on a frame swinging around the water-wheel shaft, and driven by a gearing from said shaft, whereby great freedom of movement is imparted to the tool.

4. The dental engine, herein-before set forth, consisting of the combination of the casing, the supply-pipe, a wheel mounted thereon, the annular waste-pipe, and a dental tool driven by a flexible shaft connected directly with the water-wheel shaft, whereby the parts are adapted to be mounted directly upon the operator's table or other suitable support.

160,848. Chemists' Test Apparatus. C. Fahlberg, New York, N. Y. (Filed Apr. 7, 1875.)

Brief.—A chemist's test apparatus, consisting of a series of bottles placed on a rotating table, the said bottles connected by pipes to a central pipe, which discharges in a receiver. The filtering process is hastened by an air-pump, which is connected to these bottles by said pipes, and regulated by stop-cocks.



1. In a test apparatus for filtering or refining sugar or other substances, the combination of the table A, carrying a series of test-bottles, C C, with the stationary receiver B, which connects with all said test-bottles, as set forth.

2. A test apparatus containing a series of test-bottles, C C, each of which carries a separate filtering-funnel, all of said bottles being connected with and operated by a single air-pump, as specified.

3. In combination with the stationary tube h, the rotary tube g on the turn-table A, and the radial tubes b b, extending from the rotary tube g, substantially as and for the purpose herein shown and described.

4. The turn-table A, carrying the upwardly-projecting central tube g and the downwardly-extending cup f, combined with the stationary hollow cone i, and with the tube h projecting therefrom, substantially as specified.

5. The turn-table A, made with a series of cavities, a a, and locking-plates c c, for securing a series of test-bottles, C C, substantially as herein shown and described.

160,849. Pipe-Stems. J. W. Fleischmann, Williamsburg, N. Y. (Filed Apr. 21, 1875.)

Brief.—The stem has a removable mouth-piece attached, which receives the nicotine from the tobacco, and can be taken off and cleaned when necessary.



The stem A and shell C attached by screw-thread, in combination with the detachable glass receptacle B having perforation c, all as and for the purpose herein set forth.

160,850. Heads for Barrels and Kegs. Edward Foote, North Somerville, Mass. (Filed Sept. 21, 1875.)

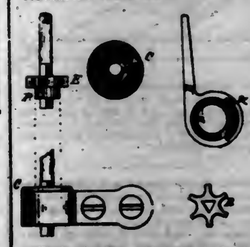
Brief.—For removing the contents of barrels without disturbing the hoops, and preventing the evaporation of fluids or access of insects, the head is formed in two parts—one a main head provided with a central opening, graduated to the size of the vessel and having beveled edges, the other a removable head, which has its edge also beveled, and acts as a stopper for closing the opening in the main head. A strap is passed over the removable portion, and fastened to the main head, as additional security in transportation.



The barrel-head herein described, constructed in two parts, A and B, with beveled edges, relatively arranged as shown, the removable portion B being secured by the strap C, all as and for the purpose set forth.

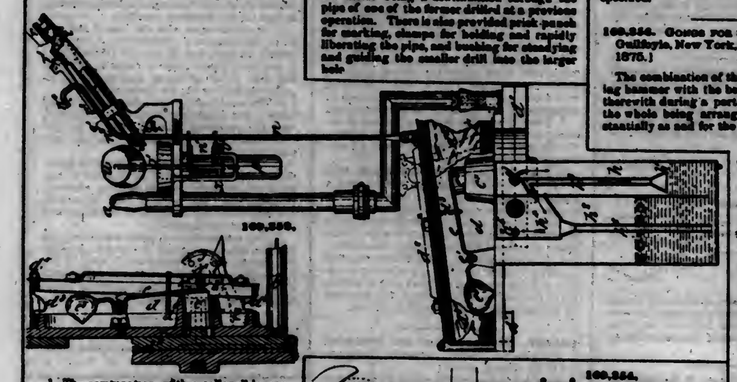
160,851. Door-Spring Attachments. W. M. Gray, Brooklyn, N. Y. (Filed Aug. 6, 1875.)

Brief.—A bracket attachment for keeping up a torsion door-spring is made in three parts—the intermediate diaphragm being pierced with a triangular hole for the end of the spring to run in, the bracket suitably recessed, and the cap-piece provided with two or more corresponding detents; the main object being to avoid machine-work and cheapen the details of construction.



The bracket B, provided with the diaphragm D and recesses E, the cap C, provided with the detents d d, and the plug P, provided with the projection B, in combination with S door spring, and operating in the manner set forth.

160,852. Apparatus for Lighting and Extinguishing Gas. Henry Green, Preston, and John Barrow, Clayton, Great Britain. (Filed Sept. 17, 1875.)



1. The combination, with a collapsible vessel, an inlet for gas, an outlet to a burner, and a valve for closing or regulating the communication between said inlet and outlet, of a governing weight or body for proportioning the expansion of the collapsible vessel until a predetermined pressure of gas exceeding the ordinary maximum working pressure, and sufficient to displace said governing weight or body, shall have been put on, and a cam arrangement for retaining the collapsible vessel in a partially-expanded state, to permit the continued flow of gas to the burner, notwithstanding such variations as may occur in the gas pressure within its predetermined ordinary working limits.

2. The combination, with a gas-burner, of a mixing-chamber for containing a liquid chemical agent, a receptacle or reservoir for containing pills or balls composed of suitable chemical ingredients, a valve, cam, spring, and other mechanism, operating as hereinbefore described, for regulating the delivery of said pills or balls, one at a time, into the mixing-chamber, as required, to produce the necessary flame for igniting gas issuing from the burner.

3. The combination, with the collapsible vessel *d*, valve *e*, and orifices communicating, respectively, with the gas-supply and with the burner, of the hydraulic trap, for governing the admission of gas into the collapsible vessel *d*, and the cam device *f m*, for retaining the collapsible vessel *d* in a partially-expanded state, said device being arranged to allow the vessel *d* to collapse or close as required, all substantially as hereinbefore described and illustrated.

4. The combination of the collapsible vessel *d*, operated and regulated as described, the rod *n*, the lever *o o'*, and cap *r*, the covering and governing cap *m*, the rod *p*, and the lever *q q'* and arm *s*, for regulating the delivery of pills or balls into the mixing-chamber, as above set forth, for the purpose specified.

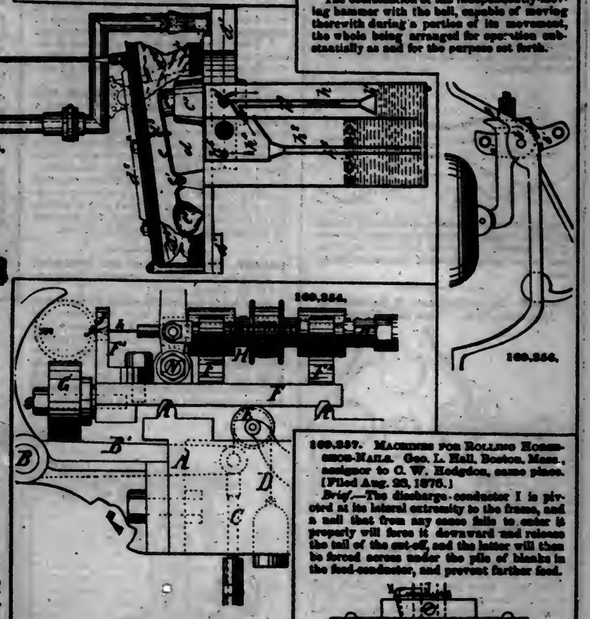
160,853. Methods of Drilling Holes in Pipes for Sprinkling Water. Frederick Grinnell, Providence, R. I. (Filed June 10, 1875.)



The within-described method of drilling sprinkling-pipe, by first producing a large hole partially through from the outside, then inserting a projection, *j*, therein, and, third, continuing the hole through to the interior of a smaller diameter, as herein specified.

160,854. Pipe-Drilling Machines. Fredk. Grinnell, Providence, R. I. (Filed June 10, 1875.)

Brief.—The machine drills a large hole through something more than half the thickness of the pipe at one point, at the same time that a smaller hole is drilled at another point, the latter being a continuation through the pipe of one of the former drilled at a previous operation. There is also provided print-punch for marking, clamps for holding and rapidly liberating the pipe, and bushing for steadying and guiding the smaller drill into the larger hole.



1. In combination with means F for holding and releasing the pipe *a*, the small drill I, and the larger drill J, connected as shown, and operated at a single motion, substantially in the manner herein specified.

2. The bushing J *j*, adapted to enter the partially drilled hole and determine the position of the pipe, and having a concentric aperture adapted to receive the drill I, as herein specified.

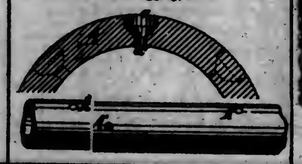
3. The print-punch P, mounted as shown, in combination with the drills I and J, and their impelling and operating means, substantially as and for the purpose herein specified.

4. The fly-wheel L, in combination with the drill I, and adapted to serve both as a means of steadying the drill in operation, and of confining and releasing it, as herein specified.

5. The combination of the supporting-rollers C, clutching-arms D, lateral support F, and drills I J, and their driving means, the several portions serving relatively to each other as and for the purposes herein specified.

160,855. Sprinkling-Pipes. Frederick Grinnell, Providence, R. I. (Filed June 10, 1875.)

Brief.—The sprinkling-pipes used for fire-extinguishing purposes have the perforations shown, to prevent clogging, &c.

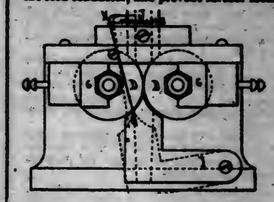


160,856. Discharge-Conductor. Wm. Guilfoyle, New York, N. Y. (Filed June 1, 1875.)

The combination of the independently-moving hammer with the bell, capable of moving therewith during a portion of its movement, the whole being arranged for operation substantially as and for the purpose set forth.

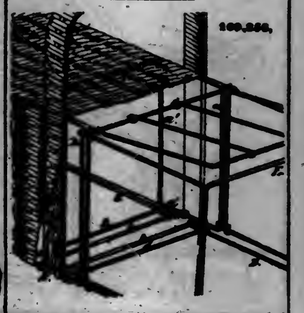
160,857. Machines for Rolling Horseshoe-Nails. Geo. L. Hall, Boston, Mass., assignor to C. W. Hodgdon, same place. (Filed Aug. 23, 1875.)

Brief.—The discharge-conductor I is pivoted at its lateral extremity to the frame, and a nail that from any cause fails to enter it properly will force it downward and release the tail of the cut-off, and the latter will then be forced across under the pile of blanks in the feed-conductor, and prevent further feed.



The combination of the discharge-conductor I, frame A, dies D D, cut-off H, spring J, and the feed-conductor F, substantially as herein described and set forth.

160,858.



160,869. FOLDING SAWHORSE. G. Hammersley, Pittsburg, Pa. [Filed June 8, 1875.]

The stationary central foundation A, in combination with the top, bottom, and sides hinged thereto, and the end E hinged to the bottom B, so that the several parts are capable of being folded within the central foundation, substantially as described.

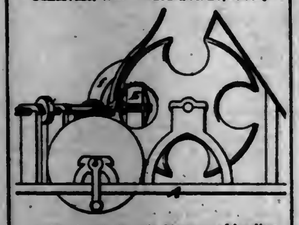
160,870. PURPOSE IMPLEMENTS. George H. Rexford and Wm. C. Ward, Middletown, Ohio. [Filed Nov. 27, 1875.]

Brief.—The pole which operates the shears by an upward thrust has a cross-head grooved at each side for guiding the two shanks of the shear-blades.



In a pruning implement, in which the blades are closed upon the limb by an upward thrust of the handle, the guide, follower, or cross-head in which the shanks of the shear-blades work.

160,900. GRAIN-SPREADER. S. S. Jackman, Janesville, Wis. [Filed Dec. 26, 1873.]



1. The herein-described process of binding grain by clamping the gavel and rotating it against the butts, which separates a portion of the heads from the gavel at intervals, and twisting the straw around the bundle to a point past the beginning, and severing the end in a cleft.

2. In a grain-binder, the combination of the rotating clamping-lugs with the rotating twister C, having its lateral spiral slot for the purpose of forming a band around and attached to grain-bundles, substantially as described.

3. Twister C, standard X, clamp or lugs R, grooved wheel or eccentric *f*, in combination, substantially as and for the purposes hereinbefore set forth.

160,901. CHECK-ROW PLANTERS. Joseph Kier and Monty S. Dixon, Shelbyville, Ill. [Filed Aug. 12, 1875.]

1. In a corn-planter, the wheel F, operated by a check row cord or rope and mounted on an axis, plate, or wheel, I, index-arm K, and a valve-operating crank or device, M, in combination with bars S, provided with scales, substantially as and for the purpose described.

2. The combination, in a corn-planter, of an adjustable valve actuating device, wheel F, check-row cord, and rods or bars S, provided with scales, as described, with the T-square U, substantially as and for the purpose described.

3. The combination, in a corn-planter, of the check-row cord reel r^1, provided with pulleys r^2 with supporting and driving-wheel A^1, substantially as described.

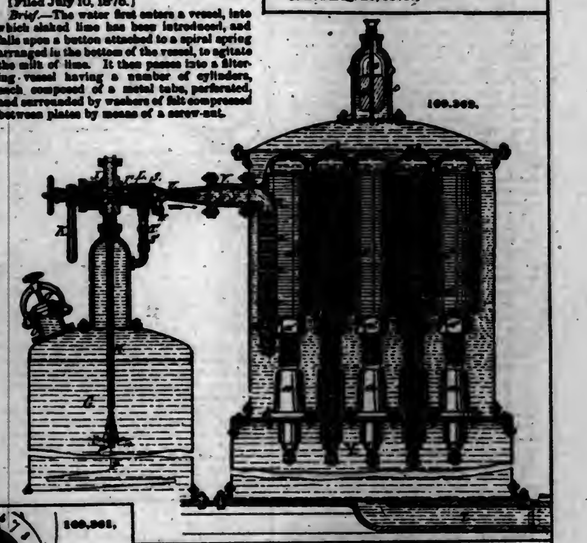
4. In a corn-planter, the combination, with the pulley F, axis F', plate or wheel I, and a stationary index-dial, L, of a valve-operating arm or cam surface provided with index-hands or pointers, and capable of being connected to and disconnected from the plate or wheel I, substantially as and for the purpose described.

5. In a corn-planter, the combination, with a pulley, F, plate or wheel I, stationary index-dial L, index-arm K, and crank arm or surface M, of the sliding bar O, lever *p*, and slide-bar Q, substantially as shown and described.

160,902. WATER FILTERS AND PURIFIERS. Adolphe Le Tellier, Brussels, Belgium. [Filed July 10, 1875.]

Brief.—The water first enters a vessel, into which slaked lime has been introduced, and falls upon a button attached to a spiral spring arranged in the bottom of the vessel, to agitate the milk of lime. It then passes into a filtering-vessel having a number of cylinders, each composed of a metal tube, perforated, and surrounded by washers of felt compressed between plates by means of a screw-nut.

160,903.



1. The combination, to apparatus for filtering water, of a vessel, G, fed by a pipe, N, provided with means for regulating the supply, the said pipe being arranged in conjunction with a rod, P, provided with a button or projection, P', and forming an agitating-spring, as and for the purposes specified.

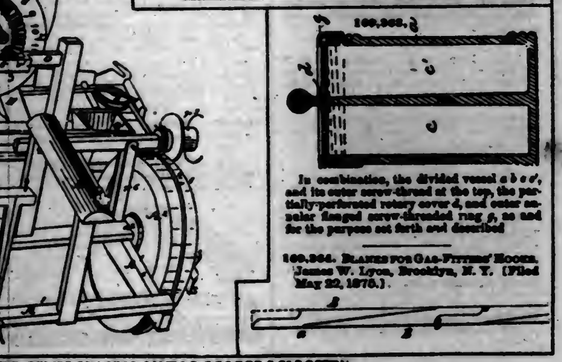
2. In combination with the tube N and vessel G, the chamber J', hollow plug J, threaded spindle m, obturator M, pipe or nozzle L, pipe or nozzle b, pipe S', tap or valve T, and conical pipe U, all arranged and operating together as and for the purposes specified.

3. The combination of the filter I, perforated tubes *a*, and filtering-washers *d'*, as described, with the purifying-vessel G, tube N, and the connections S *b* T U V, as and for the purposes specified.

4. The compound filter composed of perforated tubes *a*, surrounded by washers or layers of felt, or other suitable filtering material, *d'*, compressed and held in place by screws, the whole inclosed in a proper casing, as and for the purposes specified.

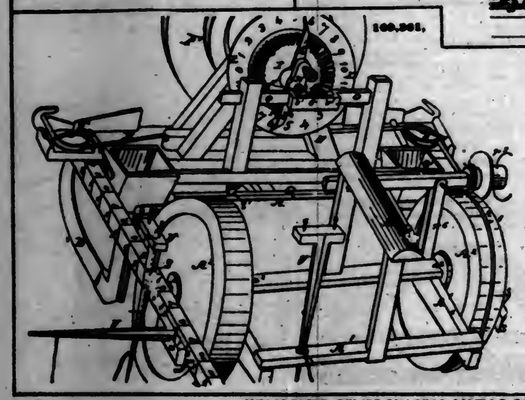
5. The combination of parts comprising the vessel I, tubes *a*, washers *d'*, plates *a'*, handles *a²*, screwed nuts *a³*, basement Y, tube Z, tap *h*, tube X, bars *z*, tube *c*, valve *d*, rod *q*, guide *f*, and foot *g*, forming the improved multi-tubular filter shown in the drawings.

160,904. COMBINED SALT AND PEPPER BOXES. Geo. H. Lesser, Somerville, Mass. [Filed Aug. 20, 1875.]



In combination, the divided vessel *a b c d*, and its outer screw-thread at the top, the partially-perforated rotary cover *d*, and outer annular flanged screw-threaded ring *g*, as and for the purpose set forth and described

160,905. BLANKS FOR GAS-FITTERS' HOOKS. James W. Lyon, Brooklyn, N. Y. [Filed May 22, 1875.]



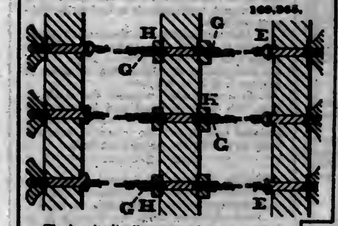
160,906.



The within-described improved hook-blank B, produced by the cuts *a* to *a'* and *b* to *b'*, substantially as herein specified.

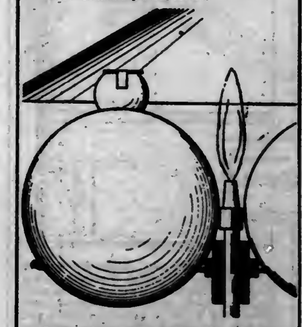
160,907. WIRE FENCING. Jas. M. McClellan, Philadelphia, Pa. [Filed July 24, 1875.]

160,908.



The longitudinally-arranged screw-bolts E, with perforated heads, the longitudinally-arranged screw-bolts G, with perforated ends, the nuts F E, and wires D, combined and operating substantially as and for the purpose set forth.

160,909. LEVEL ATTACHMENTS TO GAS-BURNERS, &c. M. C. Meigs, Washington, D.C. [Filed Apr. 22, 1875.]



1. The combination of two hollow glass lens-shaped bottles, adapted to be filled with transparent liquid, a support therefor attached to and located upon a gas-pipe, with its jet between the compound glass and liquid lenses, these members arranged, constructed, and operating substantially as and for the purpose set forth.

2. The combination of two hollow glass lens-shaped bottles, adapted to be filled with transparent liquid, a support therefor on different sides of an illuminating-flame, a reflector, and an illuminating-flame, these members arranged, constructed, and operating substantially as and for the purpose set forth.

160,910. TOOL-HANDLES. Geo. W. Miller, Meriden, Conn. [Filed June 26, 1875.]

Brief.—Two holes are formed in the end of the handle, at such an angle that they will intersect each other between their outer and inner ends. The tang of the wire implement is bent back by forcing it in the holes.

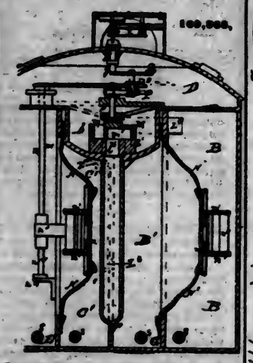


The method of securing implements in handles, substantially as herein described—that is to say, by making two holes, *c*, in the end of the handle, in such relative position and inclination to each other that the said holes shall intersect at some point between their inner and outer ends, and forcing the implement therein, as set forth.

160,911. WATER-METERS. Wm. B. Mountenay, Chicago, Ill. [Filed Sept. 1, 1875.]

Brief.—The water under pressure is alternately conducted to and allowed to flow from opposite sides of a pair of diaphragms, in such manner that both diaphragms shall be caused to move alternately back ward and forward, and by means of connecting-arms, links, &c., revolve a valve and the index-gearing. The valve at each revolution causes the chambers to be alternately filled and emptied.

160,912.

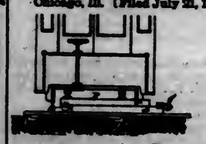


1. In a meter for measuring liquids, the combination, with the chambers B B' O O' and diaphragms N N', of the chamber D, provided with a well, L, and valve-seat L', having apertures P P P P, controlled by a revolving valve, M, formed with passages *n n'*, substantially as shown and described.

2. The combination, with the chambers B B', O O', and D, and well L² of the seat L', apertures P P P P, valve M, passages L, L', L², and R, all constructed substantially as described.

3. In a water-meter provided with chambers B B' O O', the inlets and outlets to which are controlled by a revolving valve, M, the combination, with the diaphragms N N', of the plates *n*, arms *n²*, shafts or rods *n³*, links *o o'*, crank-arm P, slotted arm Q, shaft *q*, and index-gears *t*, substantially as shown and described.

160,913. CARRYING-JACKS. A. K. Norris, Chicago, Ill. [Filed July 21, 1875.]

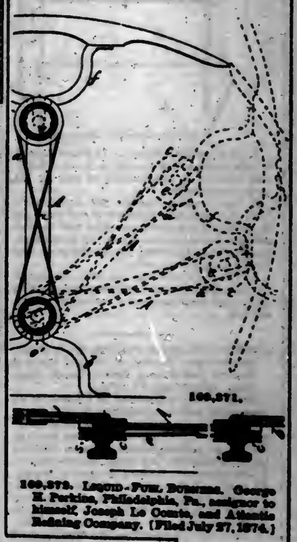


160,914. COMBINED CARRIAGE-TOP. R. F. Painter, Greenfield, Mass. [Filed Sept. 8, 1875.]

Brief.—The cord and pulleys regulate the position of the top.

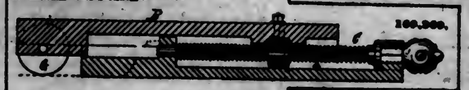
The combination of the bar A, the bearing *m* attached to the carriage, and the bearing *m'* attached to the canopy, the pulleys *r* and *r'*, the cord or chain *a*, and clamping devices to clamp said pulleys, substantially as herein described.





160,915. LIQUID-FUEL BURNERS. George H. Perkins, Philadelphia, Pa., assignor to himself, Joseph Le Conte, and Atlantic Refining Company. [Filed July 27, 1874.]

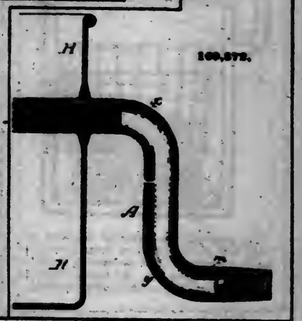
160,916.



In combination with the grooved bed A and movable platform B, adapted to move in the groove *a* of the bed, and provided with the auxiliary wheel G, the screw C, and nut F, all arranged substantially as and for the purpose specified.

160,917. GAS-WHEELS. William H. Paige, Springfield, Mass. [Filed Apr. 10, 1875.]

160,918.



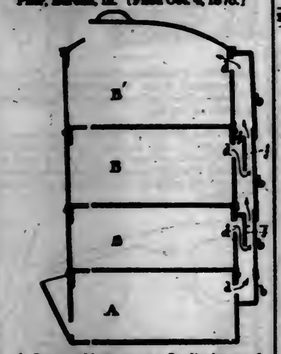
1. An improved railway-car wheel, having the side plates A and C made of wrought metal, each fitted into an annular channel in the tire, which is also made of wrought metal, and secured thereto by turning the metal of the tire over upon the edge of the plate, substantially as set forth.

2. In a railway-car wheel, the wrought-metal side plates, having the pieces *c* formed up from the center of the plate, and turned back against it, to furnish a solid bearing for the bolt *f* and washer *e*, substantially as described.

1. The within-described burner, consisting of a jointless tube, *A*, plugged and welded at the end, having an outlet-aperture, *a*, near said plugged end, and bent at two points, *c c*, so that the flame at the aperture will rest on the bent portion of said endless tube, all as set forth.

2. The combination of the burner supply-pipe, its regulating-cock *g*, and the vessel *H*, through which the said pipe extends, and to which it is cushioned at opposite sides of the cock, as set forth.

160,272. COOKING-STEAMER. Michael Filer, Bowden, Ill. [Filed Oct. 4, 1875.]



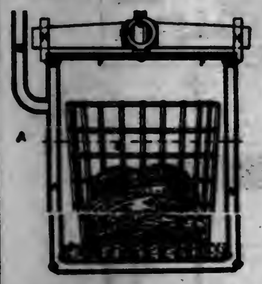
1. In a cooking-steamer, the diaphragm *f*, in combination with the pipe *h*, the opening *d*, and steamer B, substantially as and for the purposes described.

2. In a cooking-steamer, the combination with the respective steamers B and passage *d*, of the outside pipe *h*, provided with the diaphragm *f* over the passage *d*, constructed, arranged, and operating substantially as and for the purposes described.

3. The combination of the boiler A, steamers B, and upper steamer B', sectional outside pipe, and diaphragms *f f*, arranged as described.

160,273. MACHINERY FOR FINISHING YARN, THREAD, &c. Samuel G. Rhodes, Michael Sidlow, and John I. Speed, Leeds, England. [Filed Aug. 27, 1875.]

Brief.—Yarn in hanks or on bobbins, in an open-work basket or receiver, is placed in a metal cylinder of greater diameter, composed of an inner and outer wall, and provided with an air-tight cover. An inlet-pipe admits steam into the space between the two walls, whereby the air in the cistern surrounding the yarn is heated. By means of a pipe, connected at one end with the outer wall and at the other with the inner wall, steam may be admitted into the interior in order to moisten the air, or a small quantity of water may be placed in the lower part of the cistern.



The described apparatus for finishing, setting, and giving lustre to yarn, thread, or braid, consisting of the jacketed cylinder A and its steam-inlet pipe, the open receiver or basket E, and close cover F, all as set forth.

160,274. DENTAL ENGINE. R. P. Ryder, Brooklyn, N. Y., assignor to S. S. White, Philadelphia, Pa. [Filed May 20, 1874.]

Brief.—Air-engines are combined with the hand-piece of a dental engine.

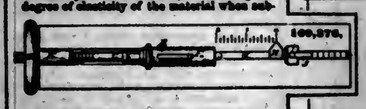


The dental air-engine herein before described, consisting of the combination of the air-chamber, the oscillating cylinders, the pistons, the crank-shaft, the gearing, the tool-holding spindle, and the frame constituting both a hand-piece and a support for the engine, these members being constructed and operating in combination, substantially as set forth.

160,275. TESTING-MACHINE. W. J. Scott, Albany, N. Y., assignor to F. A. Scott, same place. [Filed Aug. 27, 1875.]

Brief.—A machine for testing leather, &c., consisting of a movable scale bar indicating the amount of power applied to break the material. Attached to the shell of the movable scale is a piece which slides in a groove, and has a pointer and rack formed upon it. The pointer on this piece moves over a graduated scale, and is for indicating the elasticity of the material tested. A pawl engages with the rack, and prevents its movement when the breaking of the material occurs, and allows the reading of the scales to be taken off.

1. A testing-machine constructed substantially as herein shown and described, and consisting of a scale for determining the amount of power applied, and an indicator, fixed to a movable part of said scale, for showing the degree of elasticity of the material when subjected to the power indicated, in the manner and for the purposes herein specified.



2. The combination of the spring-scale B with the sliding rack G and spring-pawl J, as and for the purposes specified.

160,277. PROCESSES FOR TESTING THE PURITY OF DYE IN BLACK SILK THREAD OR FABRICS. Wm. H. Seaman, New York, N. Y. [Filed Aug. 4, 1875.]

Brief.—The silk to be tested is immersed in a liquid consisting of a saturated solution of muriatic acid, to which a portion of hydrochloric acid and camphor may be added. The dye is discharged from the fabric or thread in a degree proportionate to its purity, leaving the material paler in color. The depth of color in liquid and the color of material after immersion are indicative of the purity of the dye.

The process of treating black silk thread and fabrics by immersion in a chemical liquid of which muriatic acid is the base, as herein described, for the purpose of ascertaining the purity of the dye, as set forth.

160,278. WATCHMEN'S REGISTERS. David Shive, Philadelphia, Pa., assignor to the Shive Governor Company. [Filed Oct. 10, 1875.]



160,279.



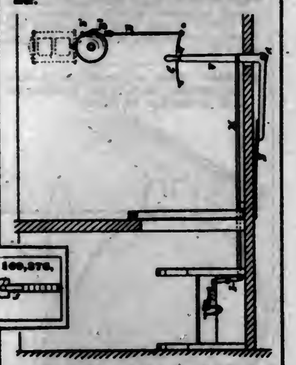
1. In a watchman's time-register, wherein marking mechanism is operated by the direct action of the clock, the cylinder *G* and cylinder H, in combination with the sleeve D of the pinion A, substantially as and for the purpose set forth.

2. The combination, with the pinions V, of the cylinder C, formed with the bent-spaces F, the single space G, and the grouped spaces G' G'', and the cylinder H, formed with the series of grooves L M N, as set forth.

3. In a watchman's register, the combination, with the cylinders C and H, and their marking-studs *f*, of the continuous circumferential band J, and the groove K, substantially as and for the purpose set forth.

160,280. GONG ATTACHMENTS FOR BELL-AND-HAMMER HOISTING-HOUSES. C. Sibert, Indianapolis, Ind. [Filed Mar. 31, 1874.]

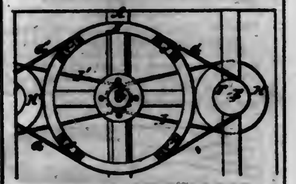
Brief.—Relieves the horses through an arrangement of levers tripped by the gong-hammer.



1. The combination of the rod B, the arms B' B'', and the spring-catch C with the gong-hammer of a fire-alarm apparatus, in the manner substantially as described, whereby said spring-catch is held in a state of tension, and the arm B' retained on its center until released therefrom by the blow from the gong-hammer, for the purposes set forth.

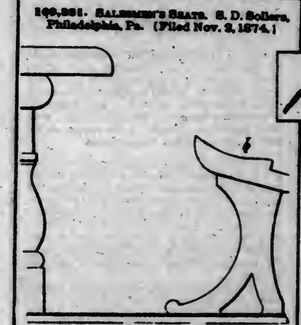
2. The combination of the bent lever F, the spring S, the connecting-rod H, lever I, and bell J with the spring-catch C, whereby the bells J is either held stationary or reciprocated, in the manner substantially as described, for the purposes set forth.

160,281. HOISTING-POWERS. Jno. Smith, Burlington, assignor of one-half his right to P. B. Merrihew, Fond du Lac, Wis. [Filed Mar. 29, 1875.]



The revolving master-pulley B, constructed for receiving two belts, in combination with the pulleys F F', H H', and D, belts G G' and I I', and the shafts E, E', and C, for transmitting power from two belts, which are run upon the master-wheel, to a shaft, C, and therefrom to the shaft to be driven, substantially in the manner shown and described.

160,282. SALESMEN'S SEATS. S. D. Sellers, Philadelphia, Pa. [Filed Nov. 2, 1874.]



As an article of manufacture, a salesman's seat, consisting of a base, *A*, supporting a stool, *a*, and a foot-rest, *b*, placed opposite to and inclined downward from the stool, all as set forth.

160,283. ADJUSTABLE BRACKETS. Eli T. Starr, Philadelphia, Pa., assignor to S. S. White, same place. [Filed Mar. 6, 1875.]



1. The hereinbefore-described adjustable bracket, consisting of the combination of the horizontally-swinging crane, the parallel radius-bars pivoted thereto, the horizontal frame, to which the radius-bars are also pivoted, the ratcheted locking-bar pivoted to the horizontal frame, the loop secured on the upper radius-bar, and through which the locking-bar slides, and the holding-spring, these members being constructed and operating in combination substantially as hereinbefore set forth.

2. The combination of the crane, the radius-bars, the horizontal frame, the locking-bar, and the swinging table, pivoted by one corner to said frame, these members being constructed and operating substantially as hereinbefore set forth.

160,284. BALL-AND-SOCKET JOINTS. Eli T. Starr, Philadelphia, Pa., assignor to S. S. White, same place. [Filed June 24, 1875.]



The ball-and-socket pivot-joint hereinbefore described, consisting of the combination of a socket, a perforated slotted ball rocking therein, a supporting-rod turning and moving in said ball, and a clamp-screw, these members being constructed and operating in combination, substantially as set forth, whereby the rod may be adjusted and clamped in the ball.

160,285. SHIELD ATTACHMENTS FOR BULB-SYRINGES. ATTACHMENT, &c. Eli T. Starr, Philadelphia, Pa., assignor to S. S. White, same place. [Filed June 10, 1875.]

Brief.—The detachable shield adapted to the shape of the palm of the hand, to clasp the neck of the bulb, so that the compressive force is applied on the side of the bulb opposite that against which the shield rests.



1. As an attachment for bulb-syringes, the shield constructed, substantially as hereinbefore set forth, with a concave-convex body, adapted to conform to the body of the syringe, and with a collar adapted to clasp its neck and the discharge-tube, for the purpose specified.

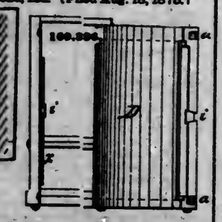
2. The combination, substantially as hereinbefore set forth, of the elastic bulb, its rigid nozzle, and the shield constructed, as described, with a collar to clasp the neck and nozzle.

160,286. ROOFING COMPOSITIONS. Lorenzo P. Teed, Erie, Pa. [Filed Apr. 3, 1875.]

Brief.—A roofing composition consisting of two parts slaked lime, one part sifted sand, five pounds lamp-black, one hundred pounds cement, five pounds plumbago, and sufficient coal-tar (with the volatile elements removed) to mix to a mortar.

The manufacture or preparation of a compound roofing-cement in the proportions and mode of compounding described, for the purpose set forth.

160,287. UPRIGHT PIANOS. Geo. Trayser, Richmond, Ind. [Filed Aug. 18, 1875.]



1. The back D of an upright piano-forte, consisting essentially of the string-frame, wrest-plank, and sound-board, hinged to the framing or case A, substantially as and for the purposes described.

2. In combination with the subject-matter of the preceding clause of claim, the fastening devices *a a'*, *b b'*, and *c*, substantially as set forth.

160,288. APPARATUS FOR LIGHTING LAMPS BY ELECTRICITY. J. A. Volain and P. Drouhin, Paris, France. [Filed May 1, 1874.]

Brief.—The sheath or case carries the conducting-wires leading from the battery to the platinum coil and lamp to be lighted.



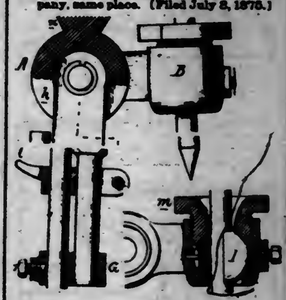
The combination, in an apparatus for producing a flame or light by means of electricity, of the sheath or case *f*, provided with an insulating or resistance substance, wires *d d'*, tubes *b b'*, and the platinum wire or strip *a*, all as shown and set forth.

160,289. TABLE-LEAF SUPPORTS. Joseph Wagner, Syracuse, N. Y., assignor of one-third his right to Brant Hurst, same place. [Filed July 21, 1875.]



The metallic box *b*, provided with straight groove *c* in its top, and enlargements *c c* on its sides, attached to the under side of the table by screws through said enlargements, and fitted into a recess in the side rail *a*, and the straight metallic bar *a*, provided with aperture at the inner end, and ring *r* at the outer end, and fitted to slide in groove *c*, constructed and combined with a drop-leaf table, substantially in the manner described, for the purpose specified.

160,290. TRIPOD FOR ROCK-DRILLING MACHINES. John B. Waring, New York, N. Y., assignor to Waring Rock-Drill Company, same place. [Filed July 8, 1875.]



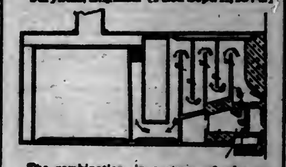
1. The within-described tripod-head, composed of a central portion, *A*, with its slot *h*, and the leg-carrying arms B and B', combined with the bolt D and upper end of the leg E, all substantially as set forth.

2. The slotted clamp, consisting of two parts, *a a'*, connected together, and having a slot, *h*, and beveled projection *n*, all substantially as set forth.

3. The central portion A, having conical recesses, the arms B and B', having conical projections, combined with the cone-shaped projection *f* of the leg E, and with a bolt, D, all substantially as set forth.

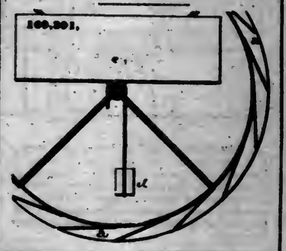
4. The combination of each arm B and B', the socket *i* and leg H, with the severed sphere I, follower *m*, and set-screw *n*.

160,291. STOVES. Charles Warren, Shoeburyness, England. [Filed Sept. 11, 1874.]



The combination, in a stove, of a box or hopper, cast or framed with front and back gratings near its bottom, through which a continuous feed and a horizontal draft are obtained, and air-supply pipe in rear of said box or hopper, and deflecting-plates arranged behind the box or hopper, on opposite sides of the flue, one overlapping another, so as to drive the products of combustion from side to side in a zigzag course, thus greatly retarding them, substantially as described, for the purpose specified.

160,292.

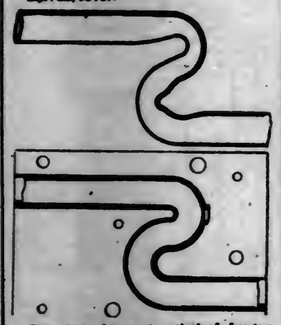


169,891. Horse and Water Power Apparatus. William S. Watkins, St. Louis, Mo. [Filed Oct. 19, 1875.]

1. A water-wheel, having its interior surface so formed that it is adapted to receive horses or other animals, for the purpose of operating it, whereby a convertible horse or water power is formed, as described.

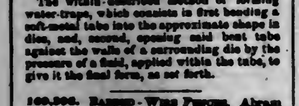
2. The wheel *a*, shaft *c*, weight *d*, and frame *e*, the parts being combined for operation, as shown.

169,892. Manufacture of Water-Traps. Geo. W. Wicks, New York, N. Y. [Filed Apr. 22, 1875.]



The within-described method of forming water-traps, which consists in first bending a soft-metal tube into the approximate shape in dies, and, secured, opening said bent tube against the walls of a surrounding die by the pressure of a fluid, applied within the tube, to give it the final form, as set forth.

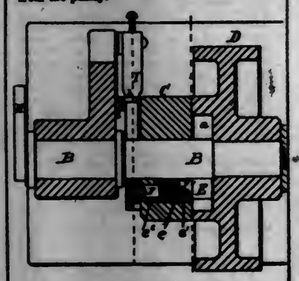
169,893. Barbed-Wire Fences. Abram V. Wormley, Corydon, Ill. [Filed Sept. 17, 1874.]



The metallic barb *a*, having its points *b c d* interwoven with two or more separate strands of wire twisted together to form a single-barbed strand, *e*, with the barbs fastened between and standing out from the folds of the strand, substantially as herein described.

169,894. Clothespin. Benjamin F. Young, Boston, Mass. [Filed Oct. 12, 1875.]

Brief.—When the movable abutment is thrown in the path of the revolution of the dog, the shaft to which the latter is attached is partially rotated, and the pawl released from the pulley.



1. The shaft F, pawl E, dog G, and spring *e*, in combination with the shaft B, collar C thereon, and the driving-pulley D, or other wheel, having the annular recess *a* and curved enlargement *a'* thereof, formed in the end of one of its hubs, all constructed, arranged, and adapted as operate as and for the purpose described.

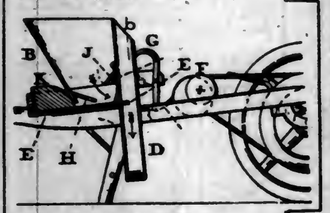
2. The combination of the shaft B, provided with the collar C, a driving-pulley or other wheel, D, provided with an annular recess, *a*, having upon one side thereof the curved enlargement *a'*, the pawl E, shaft F, dog G, spring *e*, and the lever I, provided with a shoulder or abutment to engage with the dog G, and adapted to be withdrawn from the path of said dog, as and for the purposes described.

3. The lever I, provided with the movable abutment I', and the spring J, in combination with the pawl E, shaft F, spring *e*, and dog G, arranged and adapted to operate as and for the purposes set forth, as a means of causing an engagement or disengagement between the driving-wheel and its shaft, substantially as described.

4. The hardened steel pin *b*, set in the end of the hub of the driving-wheel D, and forming a portion of the curved enlargement *a'* of the annular recess *a*, as and for the purposes described.

169,895. Potato-Droppers. Geo. H. Zane, Shoemakertown, and Saml. A. Kennedy, Philadelphia, Pa. [Filed Sept. 14, 1875.]

Brief.—A slide carries the potatoes forward beneath a division-board to a pivoted tooth, by which a single potato is taken up and carried backward until the hook passes through a vertical slot, when the potato is forced off, and is discharged into a spout, and thence to the ground.



1. The rising and falling door J, in combination with the conveying-slide E, substantially as and for the purpose set forth.

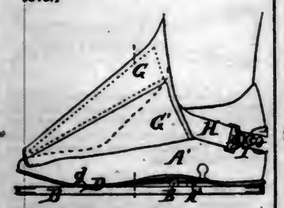
2. The projecting arm H, in combination with the conveying-slide E and door J, substantially as and for the purpose set forth.

3. The vertical plate K, in combination with the conveying-slide E, substantially as and for the purpose set forth.

4. The vertical plate K and projecting arm H, in combination with the conveying-slide E and door J, substantially as and for the purpose set forth.

5. The partitioned hopper B, rising and falling door J, and projecting arm H, in combination with the conveying-slide E, plate K, and tooth O, substantially as and for the purpose set forth.

169,896. Swimming-Shoes. Oscar G. Ahlstrom, New York, N. Y. [Filed Sept. 20, 1875.]



1. A swimming-shoe having the sole A, hinged leaves B, catches D, and cut-water G G', all constructed substantially as and for the purpose described.

2. The catches D and keepers E, in combination with the falling leaves B and cross-bars A', as and for the purposes specified.

3. The cut-water G and wings G', in combination with the upper A', sole A, and falling leaves B, as and for the purposes herein specified.

169,897. Washing-Machine. Timothy Allen, Fort Madison, Iowa. [Filed Oct. 2, 1875.]

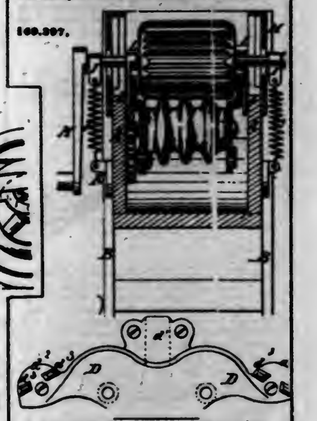
Brief.—Two ring-grooved rollers are moved by the friction of a corrugated roller above them, the latter being adjusted in sliding spring-journals. The lower rollers move in the same direction by means of a set of gearing placed under flanged plates, in which they have their bearings. Guards to the rollers are attached by lugs to the flange-plates.

1. The combination of the ring-grooved rollers C, the flanged plates D, provided with the lugs *b' d'*, and the gear-wheels E E F, with the longitudinally-grooved roller G and the box A, substantially as herein shown and described.

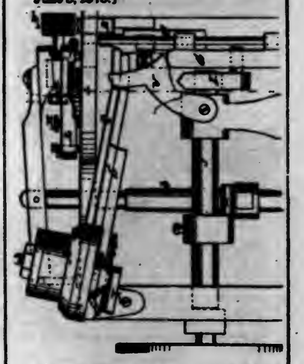
2. The combination of the sliding guards L with the journals of the upper roller G, and with the recessed legs *b'* of the flanged plates D, substantially as herein shown and described.

3. The combination of the tongues *d'*, formed upon the end legs *b'* of the flanged plates D, and the guard and guide bars N, having grooves formed in their ends, with the said plates D, and with the lower rollers C, substantially as herein shown and described.

169,897.



169,898. Stitching-Machine. John J. Allred, Charlotte, N. C., assignor to himself and A. G. Jordan, same place. [Filed June 5, 1875.]

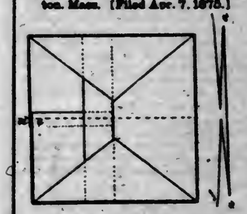


1. The combination of the feed-slide B, lever E, spring F, and the slide G of the inserting-tool, substantially as specified.

2. The combination, with sheets Q, spring T, lever U, and the slide G, of the inserting-tool, substantially as specified.

3. The combination of roller H, ratchet O, and pawl P with the reciprocating sliding feed S, substantially as specified.

169,899. Paper Bags. C. Amazeen, Boston, Mass. [Filed Apr. 7, 1875.]



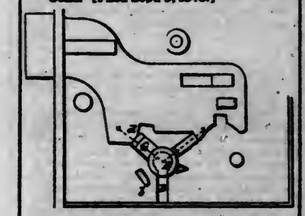
As a new article of manufacture, a paper bag having its pasted portion to form the bottom turned within the bag, and made of a strip of paper folded at *a b*, then folded on itself, as at *c*, to form the bottom, then folded at *f* to complete the bag and the bottom, as shown and described.

169,900. Curtain-Fixtures. Fredrick Backofen, Williamsburg, Brooklyn, E. D., N. Y., assignor to himself and I. H. Williams, same place. [Filed Mar. 1, 1875.]



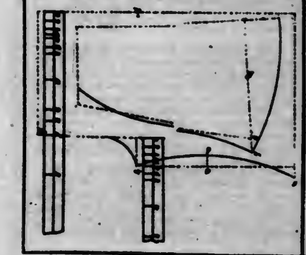
A case, B, having spindle C and collar G, combined with coil-spring A, attached at one end to case, and at the other to spindle, as shown and described, to avoid all necessity for the use of gearing.

169,901. Door-Locks. Charles L. Bates, Bridgefield Township, Bergen County, N. J., assignor to Thos. Kennedy, Branford, Conn. [Filed Sept. 9, 1875.]

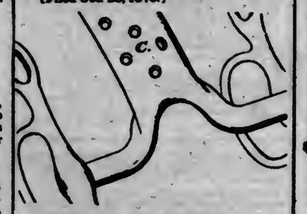


The combination, in a door-lock, of the following elements: the case, constructed with a key-hole on each side, in substantially the same horizontal line, but in different axial planes; a case, G, the axis of which is the axis of one of the key-holes, and constructed for the insertion of the key, so that the bit of the key will enter at an angle to the said case; a bolt, constructed to be thrown by the key in one key-hole, and by the cam through the other, and with a shoulder, against which the cam bears when the bolt is thrown, the key retaining it in that position, substantially as set forth.

169,902. Tailors' Apparatus for Drafting Patterns. John Bellamy, New York, N. Y. [Filed July 10, 1875.]



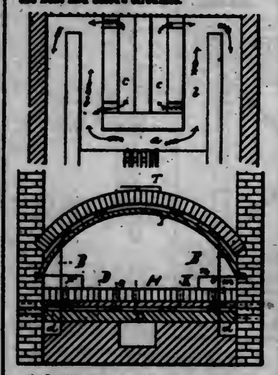
169,903. Bridle-Bits for Horses. James R. Bellinger, Lazarus M. Boller, and Wm. J. Fryer, Jr., New York, N. Y.; said Bellinger assignor to C. L. Fryer, same place. [Filed Oct. 26, 1875.]



A bridle-bit having its mouth-bar made straight at its point of intersection with the cheek-bar, and arched and concaved in the center, to accommodate itself to the tongue of the horse, in combination with a perforated roof-plate, C, made concave to correspond to the shape of the tongue, and convex to bear against the roof of the horse's mouth, substantially as and for the purposes set forth.

169,904. Ranges' Ovens. Jacob Bieler, Ashtabula, Ohio. [Filed Aug. 26, 1875.]

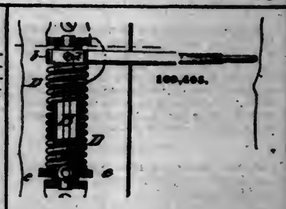
Brief.—The top and bottom of the oven are each made of double walls, through which the heat and smoke circulate.



1. In a baker's oven, the combination of the lower horizontal flues *a b c d* with the vertical flues D and upper horizontal flues E, formed in the manner for the purposes specified.

2. The combination of the several separate plates D E, hearth H, and smoke-arch I, removed at their corresponding corners, for the purposes shown and set forth.

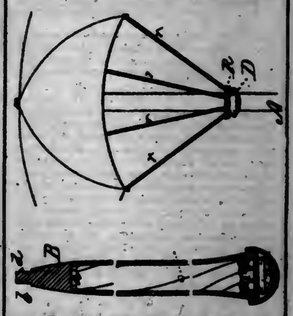
169,905. Door-Springs. James M. Hood, Denver, Colo. [Filed Sept. 17, 1875.]



As the improvement herein before described, the journaled roller or barrel B, having the series of fixed radially-projecting pins *c*, and the curved adjustable arm A, and clamp-curve *d*, and the spiral spring D, all combined and arranged as set forth and shown, for the purpose specified.

169,906. Canes and Umbrellas Combined. John Boyd, East Boston, Mass., assignor of one-half his right to Charles Smith and William McKinnon, same place. [Filed July 8, 1875.]

Brief.—The frame is detached from the stick by unlocking the annulus from the end ring, and may be inclosed in the hollow stick.

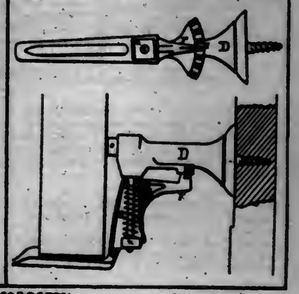


1. The combination of a spring-bail, D, with a runner, M, and a perforated sheath or case, A, substantially as specified.

2. The sheath A, having the rabbet *b*, and lug 4, at its upper end, in combination with the annulus *a*, having the groove *s* and notch *n*, the rib *r*, runner R, and cover, substantially as described.

169,907. Door-Checks. Conrad W. Breidenbach and Edward H. Breidenbach, Dayton, Ohio. [Filed Aug. 14, 1875.]

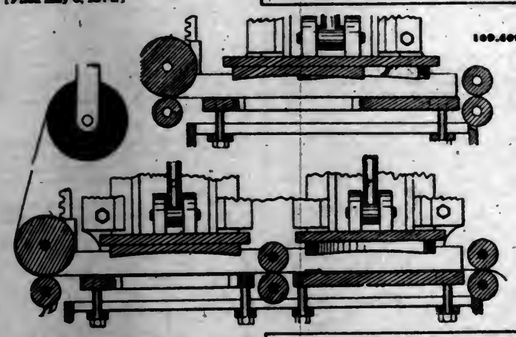
Brief.—A metal door, with rubber ring or cushion, has upon its under side a segmental ratchet, and carries, by suitable rod attachment, a rotating catch for holding the door at any desired angle. This catch, which has a suitable pawl, is yieldingly attached to the step by means of the spring-controlled rod, and the pawl and ratchet enable it to be placed in various positions, or to be swung entirely aside, leaving the device a door-stop or buffer only.



1. In a door stop and catch, the combination, with a stud, D, having segmental rack g, of a rotating catch or hook, K, having rigid pawl F, substantially as specified.

2. The combination, with stud D, having segmental rack g, and downwardly-projecting rod I, of the rotating catch or hook K, having pawl F, and a spring, S, applied upon rod I and nut a, substantially as specified.

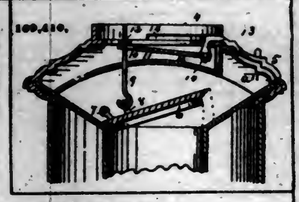
169,409. Machines for Cutting Paper Collars. Charles A. Brown, Troy, N. Y. [Filed May 6, 1874.]



169,409

A series of simultaneously-operating male dies of the shape of the blanks to be cut, having a reciprocating movement transmitted to them through the medium of a common revolving shaft, a series of female dies corresponding to said male dies, to receive the same, the several male and female dies of said series occupying a reversed position with reference to the blanks to be cut, and an intermittent feed united to the distances apart of the said cutting devices, and designed to feed the stock to and remove the same from the dies, all combined, arranged, and operating substantially as hereinbefore described, and for the purposes specified.

169,410. Coal-Planters. John Bryer, Wagram, Ohio. [Filed Aug. 6, 1875.]

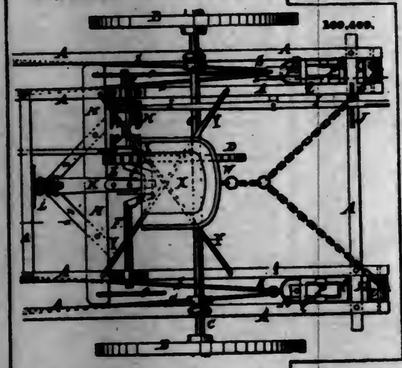


169,410

The combination of the coupling devices, whereby the opening and closing motions of the cover 5 of the fuel feed-opening in a magazine-stove, are caused to open and close the cover 6 of the magazine without exposing the opened mouth of the magazine to the open air above the stove, as described, the said coupling devices consisting of the vertical rod 9, the rod 11, the inclined plate 15, and the eccentric-convex plate e'', constructed and arranged to operate together substantially as set forth.

169,411. Grater. Joseph A. Bankwalter, Boyer's Ford, Pa. [Filed Oct. 4, 1875.]

Brief.—The inner ring rests and rotates upon the stationary ring. The draw-bar supports the drop-plate.



169,409

The combination of the centrally-pivoted vertical lever I, horizontal reciprocating bar M, and linkage with the pinion K, crank-axle F, shank and gearing D E H, connecting-rods C, and reed-dropping slides P, as and for the purpose set forth.

169,412. Magazine-Stoves. Joseph A. Bankwalter, Boyer's Ford, Pa. [Filed Oct. 4, 1875.]

Brief.—The sliding of the feed-door operates the magazine-cover by means of the rods and inclined plane.



169,411

1. The swinging drop-plate C and the draw-bar A of the handle B, in combination with an oscillatory grate provided with the open central space d, substantially as set forth, for the purpose described.

2. The combination, substantially as described, of the inner ring c'' of the grate A with the stationary ring B, the said parts being constructed and arranged to operate as and for the purposes set forth.

169,413. Producing or Decorating Glass. James Budd, New York, N. Y. [Filed May 10, 1875.]

1. The within-described method of decorating glass, consisting essentially of first treating it with a layer of coloring matter in a solution of gelatine in dilute acetic acid, then coating it with a transparent varnish, then applying a second layer of coloring matter ground in a solution of gelatine in dilute acetic acid, and finally protecting it with a layer of tracing or analogous insoluble coating, as and for the purposes specified.

2. The glass plate herein described, adapted to be mounted on tables, walls, and the like, having one or more coats of coloring matter in a solution of gelatine and acetic acid, and a protecting coat of water-proof varnish, as specified.

169,414. Breech-Loading Fire-Arms. Henry C. Ball, New York, N. Y. [Filed Jan. 18, 1875.]

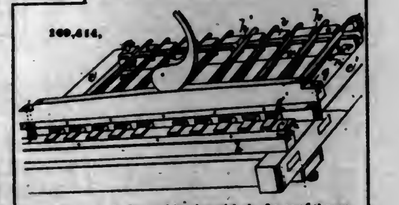
Brief.—The trigger serves the double purpose of locking the breech-block and disengaging the cock from the tumbler.



The combination of the breech-block, notched as at b', hammer D, cock F, and trigger G g, all connected and operating substantially as and for the purpose specified.

169,414. Grain-Threshing Machines. H. B. Clemmer, Shippensburg, Pa. [Filed Sept. 28, 1874.]

Brief.—Any desired number of spokes, of varying thickness, are securely clamped, while tenons of uniform size, partially true, and either straight or tapering, are being formed upon them, by means of an adjustable bed, a notched guide-bar for holding the large ends of the spokes, a vertically-adjustable notched bar, in which rest the smaller ends, and a laterally-adjustable notched slide-bar for tightening all the spokes at once, the whole secured in position by a clamping cross-bar, provided with a series of elastic pads, and operated by a central tightening cam-lever. The spokes are released by suitable springs placed between the frame and cross-bar.



169,414

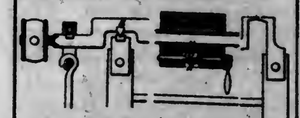
1. In combination with the frame of the machine, the clamping cross-bar p, provided with the series of elastic pads, the central tightening-lever s, and the releasing-springs, substantially as and for the purpose set forth.

2. In combination with the frame, the vertically-adjustable notched bar t, extending across the frame, and operating to adjust all the spokes by one adjustment, as and for the purpose set forth.

3. In combination with the frame A, the vertically-adjustable notched bar t, extending across the frame, and operating to adjust all the spokes by one adjustment, and the laterally-adjustable notched slide-bar u, operating to tighten all the spokes by one adjustment.

169,415. Scale-Beams. E. A. Chemeroy, Paris, France. [Filed Sept. 28, 1875.]

Brief.—The counterpoise has a cam rotated by a crank, which presses against the lower side of the beam, upon which are projecting graduation figures. The card or paper is inserted between the cam-plate and the figures upon the beam, and an impression of the ascertained weight is obtained.



A counterpoise for weighing-scales combined with a compressing device, between which and the graduations of the beam a card or material may be inserted to receive by compression the indication of weight, substantially as described.

169,416. Belt-Fastenings. William M. Chapman, Bevenna, Ohio. [Filed Aug. 28, 1875.]



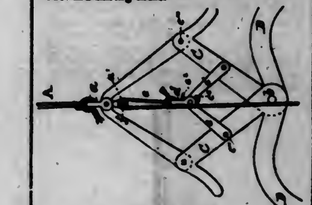
1. In a belt-fastener, the combination, with the curved link-rods B, having slots a, of the latch-rods C, having shouldered enlargement c, substantially as specified.

2. The latch-rod C, having an enlargement, c, at each end, adapted for use substantially as specified.

3. The combination, with the belt-ends A A', having slots a, of the curved slotted link-rods B and latch-rods C, substantially as specified.

169,417. Hay-Forks. Moses M. Cherry, New Plymouth, Ohio, assignee of one-half his right to Samuel Cherry. [Filed Aug. 10, 1875.]

Brief.—The tines are held firmly together, until it is desired to discharge the fork, by means of a hook fitting over a pin near the knuckle-joint on the rod, connecting the two outward-flaring arms.

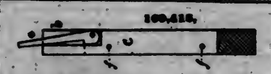


The tines D, pivoted at A, and having the outward-flaring arms a, the knuckle-joints a' provided with the shackle d and hook and pin d' d', and rods B, having the shackle a and pulley f, all combined with the ropes A and c, substantially as and for the purposes specified.

169,418. Gate-Latches. Samuel Cherry, New Plymouth, Ohio, assignor of one-half his right to Moses M. Cherry, same place. [Filed July 12, 1875.]

Brief.—A lever pivoted in a mortise in the gate-post serves as a latch, and also as a lever, to raise the gate over obstructions. The lever carries a cam-face upon its inner end.

169,418.



The hinged gate B, pin d, rabbeted latch-post C, stops f, and latch-lever e, provided with the eccentric or cam end and shoulder c, all combined and operating substantially as and for the purposes herein specified.

169,419. Ball-Metal Toy Balls. J. C. Clark, Middle Haddam, Conn. [Filed Sept. 4, 1875.]



1. A toy ball made of a hollow shell of ball-metal, and provided with a cleft or other opening and a small ball in its interior to produce the sounds, substantially as herein shown and described.

2. The combination of the ball B with the hollow perforated ball-metal ball A, substantially as herein shown and described.

3. The combination of a cord, C, with the ball-metal ball A herein described, whether a ball be used or not, substantially as herein shown and described.

169,420. Weather-Strips. James Clegg, Cleveland, Ohio. [Filed Sept. 8, 1875.]



1. In combination with a door, the weather-strip B, operated by the spring G, and a horizontal latch, D, working against a catch, O, the latter placed on a sill, substantially as shown, so that its outer extremity is in the rear of that of the door, substantially as and for the purpose described.

2. The combination of the weather-strip B and catch-piece D, the latter extending from the lower inner edge of the door and engaging with the catch O, whereby, when the door is closed, the inner extremities of both catch and latch may snugly overlap one another, substantially as and for the purpose described.

169,421. Attaching Knobs to Spindles. Cornelius Coleman, West Meriden, Conn., assignor to Parker & Whipple Company, same place. [Filed Sept. 28, 1875.]

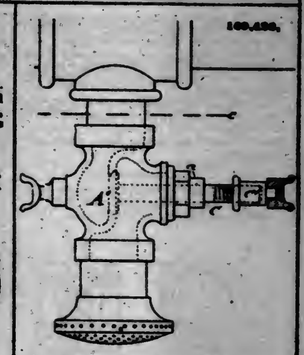


The combination of the spindle A, the spring D attached to the spindle, its free end at the end of the spindle, and constructed with several notches, a knob, the neck of which is constructed to pass onto the spindle over the free end of the said spring, and with a shoulder, c, to engage either of the said notches on the spring, and with the perforation f through the neck onto the spring, substantially as described.

169,422. Automatic Speed-Regulating for Reciprocating Pumps. Hezekiah Conant, Pawtucket, R. I. [Filed Aug. 21, 1875.]

Brief.—The valve-stem is adjustable, and retained by a chain of cotton wound tightly over a grooved T-bearing of the valve-stem, and a stationary T-bearing in opposite direction to the former. In case of fire the chain is burned, and the valve forced open by the pressure of the water. The operation may be tested at any time by simply cutting the chain.

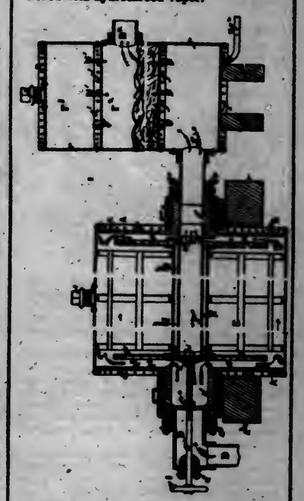
169,420.



The combination of discharge-pipe A', having stationary arm O, with the T-bearing D', and the end-threaded sliding valve-rod having T-bearing D, as well as nut O, with the flexible connection E, as and for the purpose specified.

169,423. Processes and Apparatus for Burning Gas or Air with a Definite and Regulated Percentage of Hydrocarbon Vapor. B. Hall Cowl, New York, N. Y. [Filed June 7, 1875.]

Brief.—The air or gas to be carbureted enters through the hollow journal of the carbureting-cylinder, and is deflected by a disk to pass under the perforated diaphragm through the shower of gasoline. A pipe on the line of the hollow journal extends centrally through the cylinder, and is provided with a valve at the induction end, whereby a regulated per cent. of the gas or air may be passed directly through the carburetor without being enriched with hydrocarbon vapor.



1. The process of carbureting air or gas, which consists of passing the air or gas through a shower of liquid hydrocarbon, and sustaining the shower and the operation by returning the carburetor, substantially as set forth.

2. The reversible carburetor A, constructed with the diaphragm A^1, passing through its diameter, and hung in the hollow trunnions A^2, so that it may be reversed when the hydrocarbon fluid has passed from the upper to the lower section, bringing the fluid in position to again pass through the diaphragm, substantially as described.

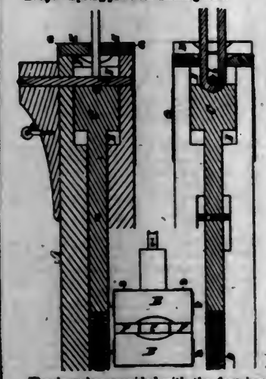
3. The regulating gas-pipe G, arranged concentrically with the carburetor A, substantially as and for the purposes set forth.

4. The combination and arrangement of the carburetor A and the dripping and mixing chambers F F, substantially as and for the purposes set forth.

5. The auxiliary carbonization and mixing apparatus, consisting of the chambers F F, in combination with the rotary carbonizer A, substantially in the manner herein shown and described.

169,494. Gas-Coupling. Amos Orr, Lowell, Mass. [Filed Oct. 12, 1875.]

Brief.—Spring-jaws for holding link.



The draw-bar provided with the four jaws E E F F and the springs G, and with the coupling-slide C and its spring or springs D, all arranged in manner and to operate as specified.

169,495. Pipe-Tongs. Samuel H. Dickerson, Cincinnati, Ohio, assignor to himself, Benj. F. Stanley, and Wm. A. McCallum, same place. [Filed Sept. 18, 1875.]



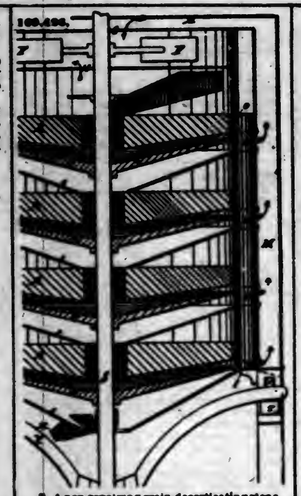
1. As applied to a pair of adjustable pipe-tongs, the herein-before-recited eccentrically-adjusting bearing-pin C, having a base, *a*, adapted to interlock with a recess in the holding-jaw, substantially as and for the purpose specified.

2. As applied to a pair of adjustable pipe-tongs, the combination of bearing-pin C *a*, having any preferred form of teeth *t*, and adapted to engage with similar teeth in the recess *a* of the holding-jaw, retaining-pin E, and pawl F, constructed, connecting, and operating substantially as and for the purpose specified.

3. The combination of bearing-pin C *a*, retaining-pin E, pawl F *f*, and ring G, constructed, connected, and operating substantially as and for the purpose specified.

169,496. Grain-Decorticators. Silas Dodson, Rochester, N. Y. [Filed Apr. 10, 1875.]

1. In a machine for decorticating grain, the combination of a non-revolving stone A and cast-metal annularly-ribbed revolving disk B, relatively arranged substantially as set forth, whereby the grain shall be subjected to a percussive action on the stone, as distinguished from a rubbing action between the stone and disk.



2. A non-revolving grain-decorticating stone, A, dressed on its lower operative face to the form of an inverted frustum of a cone, in combination with the revolving disk B, made with a pitch in its upper face in excess of that of the operative face of the stone, substantially as set forth.

3. In combination with the jackets I and K, air-passages L and M, and the inclosed stones, disks, and hoppers, and the fan F, the openings into the air-passages L and M, with their adjustable covers or dampers P, as shown and described.

169,497. Combined Toy Gun and Horn. L. Duvall, Georgetown, D. C. [Filed Sept. 18, 1875.]

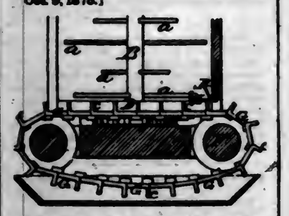
Brief.—When not in use for shooting it serves as a toy horn, the rubber spring forming the reed or vibrator.



1. The combined toy gun and horn, consisting of the cylinder or tube B, having fastening E, the head A, and the hollow piston C, substantially as described.

2. The combined shooter and horn A B, and the hollow cylinder C, substantially as described.

169,498. Brick-Machine. Chas. N. Fisher, Willis Tee., assignor of one-half his right to Joseph Frampton, same place. [Filed Oct. 9, 1875.]



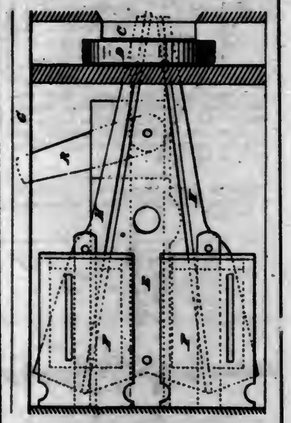
1. An endless chain of molds at the bottom of the pug-mill box A, driven by means of a wheel on shaft B engaging with the studs on link G, substantially as described.

2. The pressure-plate L and cut-off P, combined with the endless chain of brick-molds and their guideways D D, substantially as described.

3. Links G, constructed with pivotal hooks *d*, notched lugs *e*, and plates C, as and for the purposes described.

169,499. Boot and Shoe Nailing Machine. Walter Fitzgerald, Boston, Mass., assignor of two-thirds his right to W. H. Putnam and H. S. Jenkins, same place. [Filed Feb. 1, 1875.]

Brief.—Slotted rotating cylinders are provided for receiving the nails in belt.



1. The combination of the cam I, lever J, feed-bar K, spring Y, and swivel L, in the manner and for the purposes described.

2. The combination of the pawl O, spring Q, and arm P, in the manner and for the purposes described.

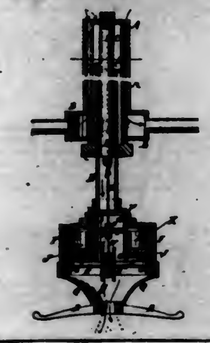
3. The throat V, provided with the opening in its upper rear side for the reception of the nails from the guideways, as described.

4. The combination of the slotted nail-drums F F, for receiving and delivering nails of different lengths, the vibrating double guideways H H, throat V, and driver U, in the manner and for the purposes set forth.

5. The throat V, in combination with the lever K, provided with the slotted end N, as described, for the purpose of bringing the lower end of the throat into contact with the sole of the boot or shoe, so as to give accuracy to the nailing without interfering with the feed, as stated.

169,500. Door-Latch Gearing. J. Fox, New York, N. Y. [Filed Sept. 20, 1875.]

Brief.—The spring-drum is rotated by means of the pinion on the axis that carries the spool, which is revolved by the cord when the sliding tube is lowered.



1. In central drop-chandeliers, the combination of case-tube G, spring-drum K L, spool M, and cord N, as and for the purpose specified.

2. The combination of the four concentric tubes A C E D, the drum-chamber F, the inner tube G, the chest, spool, and gear-wheels H M I J, the drum and spring K L, the cord N, and the cap Q, with each other, substantially as herein shown and described.

169,501. Rake-Holders. John B. Frost and Josiah Merrill, Berwick, Me. [Filed Aug. 14, 1875.]

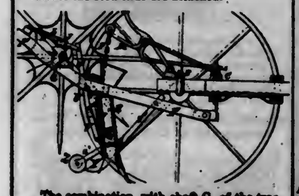
Brief.—A suitable case carries a pair of angular levers, having rubber-faced roller-heads and broadened ends, serving as handles. Interposed between the headed ends, back of the fulcrum-pins, is a triangular piece of rubber, acting as a spring to force the handles apart, and hold the roller-heads in position.



The angular levers C C, having rubber-faced roller-shaped front ends and broadened rear ends, serving as handles, said levers being fulcrumed in a case, D, and provided at the rear with an intermediate elastic wedge, E, as and for the purpose specified.

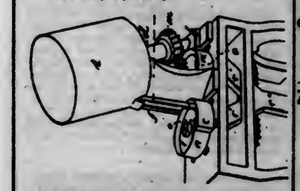
169,502. Corn-Planters. Wilson Gardner and George L. Hays, Pikeston, Ohio. [Filed Aug. 21, 1875.]

Brief.—In journals on the supplemental pivoted frame revolves the axle of rimless wheels, carrying with it a notched wheel, that strikes in its revolution a hinged cross-bar, (held in place by a spring,) to which arms that vibrate the seed-slide are attached.



The combination, with shaft G, of the traction-wheel H, carrying intermediate cam-wheel, the cross-bar J, having pivoted rear arms K, the spring L, resting upon said cross-bar, and the seed-slide rods V, all arranged substantially as and for the purpose specified.

169,503. Button-Fastener Device. Noel Gallaun, Springfield, Mass., assignor to M. Goldthwaite and Frank H. Goldthwaite. [Filed July 16, 1875.]

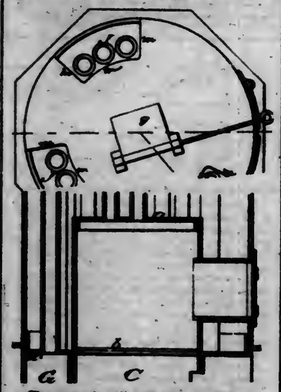


1. In a button-fastening device, the combination of a receptacle or hopper, A, to receive the buttons, a throat, *f*, open at the lower end, and one or more spring-catches, *s*, upon opposite sides of the throat, in connection with vertical guides *a*, against which the button slides, said catches operating to draw said buttons in rapid succession from the lower end of the throat to a chute, *c'*, with the front sides of all in the same relative position, substantially as described.

2. The combination of the receptacle or hopper A, the throat *f*, the spring-catches *s*, vertical guides *a*, the flanges *o* to trip the catches, and the chute *c'* divided at the upper end to receive the buttons from both sides of the throat, substantially as set forth.

169,504. Steam-Boilers. T. W. Godwin, Norfolk, Va. [Filed Oct. 21, 1875.]

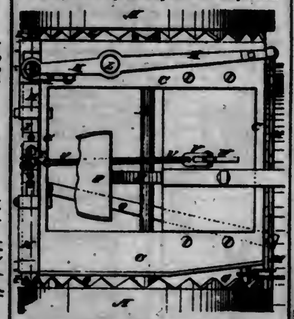
Brief.—The sparks and heavy products of combustion are trapped in a water-chamber surrounding the base of the furnace, the smoke passing through a flanged cap, forming a chamber resting on top of the uppermost tube-sheet.



The recessed cap E, having projecting flanges *n n* and damper *p*, in combination with the tubes D F J, spark-trap G, and chamber C, substantially as described, and for the purpose set forth.

169,505. Mowing-Machine. A. G. Gray, St. John, Canada. [Filed Aug. 6, 1875.]

Brief.—A mowing-machine with cams rigidly attached to its driving-wheels and operating a reciprocating bar, which may be thrown in gear with the driving wheels by means of a joint near its center, and which may be connected with the cutting apparatus by means of a bent lever, which forms a portion of the eye upon the vibrating lever connecting the reciprocating bar and the pitman.



1. The combination of the notched wheels G, the reciprocating bar I, and the lever K with the drive-wheels A, the frame C, and the chain bar pitman M, substantially as herein shown and described.

2. The combination of the bars P, the short shaft Q, the cam R, the connecting-bar S, the crank-arm T, the connecting-bar U, and the lever W with the inner ends of the two parts of the reciprocating bar I, substantially as herein shown and described.

3. The combination of the bent lever X with the open rear end of the lever K and the pin J of the reciprocating bar I, substantially as herein shown and described.

169,506. Metallic Burial-Cases. Henry M. Gray, San Francisco, Cal. [Filed June 26, 1875.]

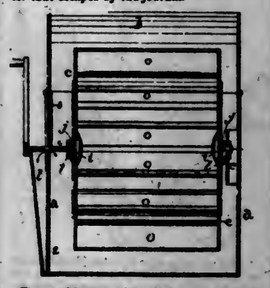
Brief.—The metal ear for the hearse rests underneath a lip in the upper flange of the body of the casket, and thus in a great measure relieves the attaching-screws of the weight of the coffin.



The combination, with coffin-case handle F, of an attaching-plate, E, fitted under a lip, *e'*, of lower case flange C, as shown and described, to relieve the screws of lifting-strain.

169,507. Washing-Machine. Alonzo Hale, Eureka, Ill. [Filed Oct. 4, 1875.]

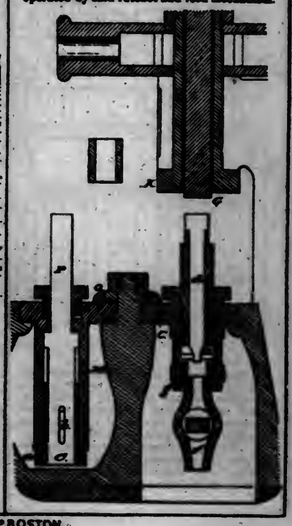
Brief.—A trap at the side receives the water that escapes by the journal.



The combination of the boiler a and trap *i*, there being a hole, 2, in the side of the boiler to allow the water to pass back into the boiler, as described.

169,508. Machine for Tapping Mains. John Hancock, Danville, Pa. [Filed June 17, 1875.]

Brief.—A ratchet and feed mechanism of peculiar construction, under which is consecutively brought a drill, a tap, and a valve or gate inserting device, to be coupled with and operated by said ratchet and feed mechanism.



1. The hollow rounded K and square feed-bar G, in combination with the nut L, swivel R, and ratchet R.

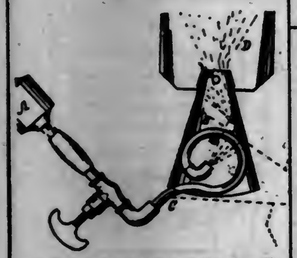
2. The lock H, Fig. 2, and thumb-screw I, in combination with the ratchet wheel and pawls, with which the ratchet is locked to form a backward motion, as and for the purpose above described.

3. The friction-plate c, operated by the bolt d in the curved ratchet-wheels Q, for fastening or loosening rockers f or seat f, in combination with the square feed-bar G, nut L, swivel R, and ratchet R.

4. The device consisting of the bar P, shaft q, opening r for gate, pin and slot b, in combination with the square feed-bar G and feed-wheel F for inserting gates into seams.

169,439. Paint-Burners. John P. Hagen, Philadelphia, Pa. [Filed Sept. 9, 1875.]

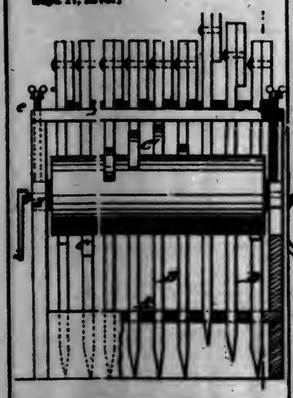
Brief.—By means of the tube and its adjustable attachment to the burner, the flame can be directed at various angles. The reflector is also adjustable around the tube.



1. The vibratile tube B, in combination with the flame-jet pipe C of a paint-burner, the said tube and pipe being constructed and arranged to operate together, substantially in the manner and for the purpose set forth.

2. The protecting or deflecting plate D, in combination with the tube B, substantially in the manner and for the purpose hereinbefore set forth and described.

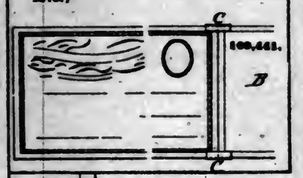
169,440. Melanoid-Dressing Machine. Gustav Engelrich, New Ulm, Minn. [Filed Sept. 17, 1875.]



1. The roller G, having spirally-arranged cams, the adjusting-screws e, and vertically-adjustable vertical shafts B, constructed as shown and described, whereby the roll may be adjusted to set the cams at a height corresponding to the sheets, as set forth.

2. The shafts B, adjustable in length by loop shoulder-plates and clamp-screws, in combination with continuous blades to produce even dressing of seams, substantially as specified.

169,441. Device for Facilitating the Filing of Postal-Cards. F. M. Hinchcock, Cleveland, Ohio. [Filed Apr. 8, 1875.]



1. The combination, with the extra length B, of suitable clips or fastenings C, whereby the said piece B may be readily attached to a postal-card, and the postal-card thereby be made of suitable size for filing, substantially as and for the purpose described.

2. As an article of manufacture, piece B, provided with suitable clips C, whereby it can be readily attached to a postal-card, substantially as and for the purpose described.

169,442. Mattresses and Cushions. W. H. Horton, Chelsea, Mass., assignor to himself, W. Bowers, and M. Nichols, same place. [Filed Mar. 15, 1875.]

Brief.—The balls and cases are perforated, to provide for the ventilation of the mattress.



The combination of a series of perforated hollow elastic balls or bulbs, C, with the cases A and its stuffing B, all being substantially as and for the purpose or objects as set forth.

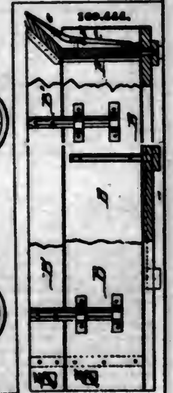
169,443. Handcuffs. George P. Hewston, Washington, D. C., assignor to himself and Wilson Brothers, New York, N. Y. [Filed Oct. 1, 1875.]

A handcuff formed of two pieces of wrought metal, bent as described, forming parts A A and bars B, said parts being hinged at one end and locked at the other, substantially as and for the purpose described.

169,444.



169,444.

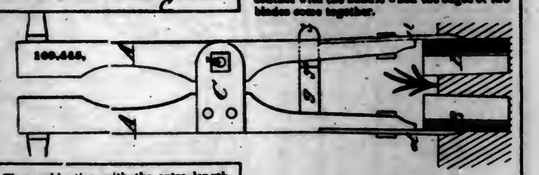


169,444. Wagon-Boxes. T. Jennings, Madison, Iowa. [Filed June 5, 1875.]

The combination of the front end board and dash-board, perforated, bent, and ribbed straps or plates e connecting said boards, the grooved straps D, having bolts b, rods E E, the top box F and body B of the wagon, all as shown and described.

169,445. Transplanters. W. R. Johnson and J. C. Bowman, Pickens Station, Miss. [Filed Apr. 24, 1875.]

Brief.—This invention consists of two semi-circular blades secured upon curved pivoted handles, and below the pivot is an arm secured to one of the handles, and passing through a mortise in the opposite one, the arm being provided with shoulders that form contact with the handle when the edges of the blades come together.



In a transplanter, the semicircular shovels B B, rigidly secured to the short arms of two pivoted levers, A A, having handles a a, in combination with a stop, g, as shown and described.

169,446. Stave Baskets. Horace C. Jones, Dowagiac, Mich. [Filed Sept. 18, 1875.]



A stave-basket having the upwardly-bulged strengthening bottom, which bottom is formed of pieces halved together, held in place by a rivet and washer, and surrounded by a hoop, substantially as described.

169,447. Stave Baskets. Horace C. Jones, Dowagiac, Mich. [Filed Aug. 17, 1875.]



The stave-basket composed of the two series of lining-staves A and the two series of outer staves F, both series tapered from the bottom hoops C C to the central rivet R, and the four ends arranged as described, and strengthened and bound together at the center of the bottom by a riveted washer, H, and at about the circumference of the bottom of the basket by hoops C C and nails and a circular board, I, extending between the bottom of the basket and the outer bottom hoop C, substantially as herein described and shown.

169,448. Stave Baskets. Horace C. Jones, Dowagiac, Mich. [Filed Aug. 17, 1875.]



1. A stove-basket having the rabbeted or shouldered board H extended between the outer bottom hoop and the outer staves, substantially as described.

2. The basket with outer staves placed edge to edge, and the inner series of lining-staves tapered at their lower ends and lapped upon one another at the bottom of the basket, and both the inner and outer series bound together and strengthened at the bottom of the basket by a central rivet and washer, and nails, and inner and outer hoops C C, and sheathered board H, extended between the outer bottom hoop and the bottom of the basket, substantially as described.

3. A basket having a bottom board, which is convex on its top, into which the lower ends of the outer staves are inserted, while a lower portion of said bottom board extends outwardly beyond the point where the staves enter, substantially as and for the purpose described.

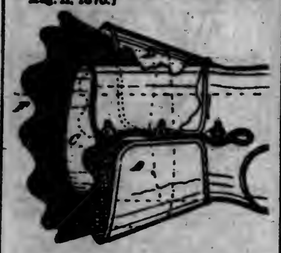
169,450. Gates. John A. Knepper, Delta, Ohio. [Filed Aug. 14, 1875.]



1. A gate constructed of rails or sections, connected by links sliding in staples of one rail, and being attached to the next rail, so that the rails may be folded sidewise of each other to the height of one rail, substantially as specified.

2. A gate, made of separately-sliding and link-connected rails, and of a horizontal top piece, in combination with the base-box set into the ground for storing the folded gate, and locking the same generally for the passage of vehicles, &c., substantially as specified.

169,451. Gauntlet-Gloves. J. W. Letcher and M. B. Dunham, Johnstown, N. Y.; said Letcher assignor to said Dunham. [Filed Aug. 11, 1875.]

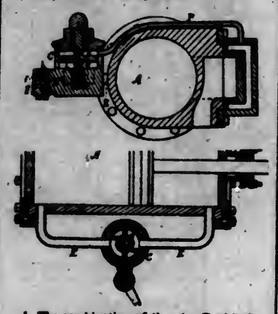


1. In a glove or gantlet, the wrist-extension C and fastenings c c, when arranged with relation to the cuff D, substantially as and for the purposes described.

2. In combination with the cuff D and extension C, as shown and described, the detachable cuff F, as set forth.

169,452. Automatic Air-Valve Attachments for Steam-Cylinders. James N. Lauder, Concord, assignor to himself and N. P. Stevens, Hopkinton, N. H. [Filed Oct. 12, 1875.]

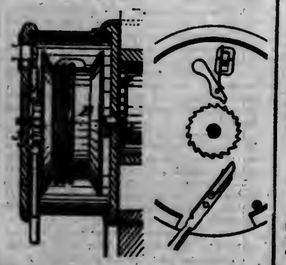
Brief.—Valve is kept closed by pressure of steam from steam-chest. When steam is shut off, the valve is forced from its seat by a spring, and establishes communication between the ends of the cylinder.



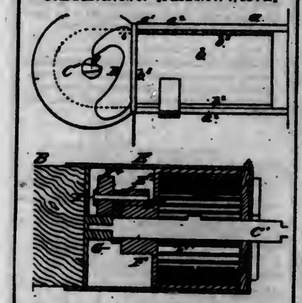
1. The combination of the pipe P with the steam-engine cylinder A, valve-chest B, automatic valve-chest C, its valve D, and the pipes E E, all being arranged and operated substantially as and to operate as specified.

2. The combination of the pipe P, steam-engine cylinder A, valve-chests B and C, valve D, spring d, and pipes E E, all arranged and applied essentially in manner and to operate as explained.

169,453. Cloth-Lint Rolls. Charles L'Hommedieu, Middletown, N. Y. [Filed June 26, 1875.]



169,454. Curtain-Fixtures. Rufe B. Lake, Tom's River, N. J. [Filed Nov. 7, 1874.]



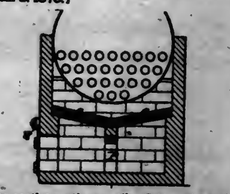
1. The combination, with the stationary shaft C', having a convoluted hub terminating in surface with the shoulder a, and the roller B operating automatically through the agency of a spring, of the brass-pawl D, having its tail-piece and locking arm jointed at substantially an acute angle, the former being weighted so as to control, by gravity, the normal position of the pawl and lock it against the shoulder a by centrifugal force, operationally as shown and described.

2. The adjustable bracket C, composed of the section c, having the flanges c' slot c², and bridge P', and the sliding section b having the notched flange b', in combination with the locking device c, substantially as described and shown.

3. The combination, with the stationary shaft C' and the running barrel B', of the rigid post or frame P' carrying the gearing F' G, engaging, respectively, with the pinion G secured to the roller, and the toothed wheel F attached to the barrel, substantially as shown and described.

4. The roller B having a cylindrical chamber, B, at one end containing a coiled spring, and a ratchet-drum, a pinion attached to the outside-roller, and intermediate multiplying gearing or mechanism, substantially as described.

169,455. Furnaces for Steam-Boilers. James A. Locke, New York, N. Y. [Filed Jan. 8, 1875.]



The earthy continuous tiles C C, perforated at its end in rear of the bridge-wall, forming a continuous downward incline toward the center throughout the entire length of the chamber, supported at the center by the perforated partition P, in combination with the register G and its operating means H, as and for the purposes specified.

169,456. Bottle-Stoppers. A. Lusby, New York, N. Y. [Filed Sept. 28, 1875.]

Brief.—This stopper consists of a curved wire spring-lever, that carries the stopper, and is secured on the bottle by a bail pivoted to the neck-band of the same, binding on a recessed top rest of the stopper-plate.

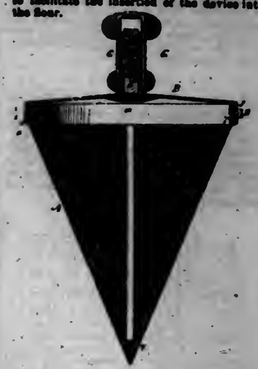
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1. The combination of the slide mechanism and check-pawl, with the fast ratchet of the spring-actuated drum, for checking action of spring at any length of line drawn out, substantially as specified.

2. The combination of the drum, having fast ratchet-wheel, end of the operating cloth and spring mechanism, with a fulcrumed lever, having a pivoted spring-pawl, for readjusting tension of main spring, substantially as shown and described.

169,454. Flour-Sifters. W. T. Lindsay, Marvin B. Weller, and D. S. Kellogg, Fort Plain, N. Y. [Filed Sept. 11, 1875.]

Brief.—The sieve is provided with a removable cover, secured by means of a spring-catch. The handle is provided with a device for jarring the material through the mesh. The apex is provided with a solid metallic tip, to facilitate the insertion of the device into the flour.



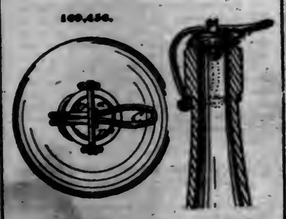
1. The combination of a detachable top, B, having flange f, with projecting hook d, and a spring-catch, D, with the conical sieve A, having rim e, with perforations f f, substantially as specified.

2. The combination, with the sieve A and detachable lid B, of the staple-shaped rod G fixed to the latter, and an endwise-movable handle, E, substantially as specified.

3. In combination with a conical sifter, its top B, a wire staple-shaped rod, G, and an endwise-movable handle, E, the rubber deadener H T, substantially as specified.

4. The combination, with the conical sieve A, of the solid aperial tip T, substantially as specified.

169,456.

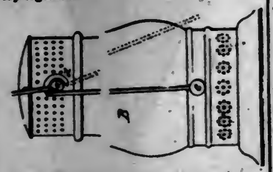


1. A bottle-stopper made of a curved spring-lever, swinging over the mouth of the bottle, and having a suitable stopper attached thereto, in connection with a swinging looking-bail, substantially as and for the purpose set forth.

2. The stopper having a lug lug or rest, with side recess for the looking-bail, substantially as specified.

169,457. Lanterns. Charles H. Lyman, West Meriden, Conn., assignor to the Bradley & Hubbard Manufacturing Company, same place. [Filed Aug. 9, 1875.]

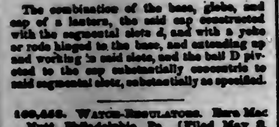
Brief.—In raising the handle to a vertical position, the guard-wires are caused to move in the slots in the globe to such a position as will insure the binding of base, globe, and cap together.



The combination of the base, globe, and cap of a lantern, the said cap constructed with the segmental slots *d*, and with a yoke or rods hinged to the base, and extending up and working in said slots, and the bail D pivoted to the cap substantially eccentric to said segmental slots, substantially as specified.

169,458. Watch-Regulators. Rare Mac Watt, Philadelphia, Pa. [Filed May 6, 1875.]

Brief.—A cut-screw in the nut attached to a balance-wheel watch-regulator, for the purpose of holding the nut in the same position when taken apart for repairs, &c., and an adjustable curb-pin, in combination with a stationary curb-pin, for the purpose of clamping or loosing the hair-spring, as may be required.



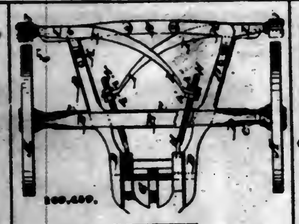
1. The combination of the cut-screw pin L, with the screw-nut on the shaft C, of the watch-regulator described, for the purpose of rigidly fixing the said nut upon the screw C, as occasion may require, as before set forth.

2. The movable curb-pin J, constructed to operate as described, in combination with the groove *g* in the curb or lateral extension F of the regulator-pointer B, and the stationary curb-pin I, for the purposes set forth.

169,459. Wagon-Brakes. H. Martzed, Beloit, Wis. [Filed July 24, 1875.]

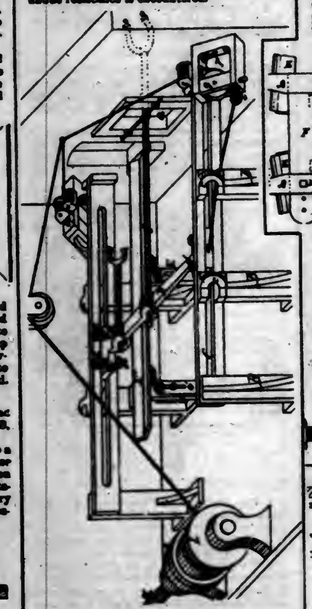
The combination, with brake-shoes, of levers I, bowed and crossed as shown and described, the cross-bar E, the adjustable screw-bolts H, and the sliding tongue F, as and for the purposes specified.

169,460.



169,460. Devices for Pushing Tubes Endwise into and Through Furnaces. Geo. Matheson, McKeesport, Pa. [Filed July 6, 1875.]

Brief.—A cross-head mounted in guide-ways, and carrying a pusher for forcing a tube-skelp through the furnaces to the rolls on the other side, is propelled by means of cords, which are wound on a drum revolved by a friction-clutch, so as to allow a slipping when undue resistance is encountered.



1. The combination, with a pipe-welding furnace, of the pusher, the friction-drum, and intermediate mechanism for guiding the pusher and transmitting the power from the drum to the pusher, substantially as and for the purpose specified.

2. The combination, with a pipe-welding furnace, of the pusher, a cross-head provided with anti-friction and guide rolls, and suitable ways or frame for supporting the cross-head, substantially as and for the purpose specified.

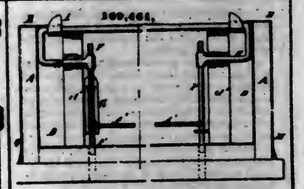
3. The combination, with a pipe-welding furnace, of the guide-trough, the cross-head, and suitable power mechanism for operating the head, substantially as and for the purpose specified.

4. The combination of the pusher, the rope for transmitting power to the pusher, and a set of swivelling-sheaves and guide-rollers, substantially as and for the purpose specified.

5. In combination with the pulley-sheave and pulley, the bell-mouth or funnel-shaped sleeve, substantially as and for the purpose set forth.

169,461. Bird-Gates. Edward G. Martin, Kankakee, Ill. [Filed Oct. 16, 1875.]

169,461.

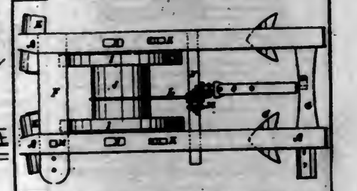


1. The combination of the rod E, the bolts F, the straps H, and the hooks I with the gate D *d* and the side-boards A of a vehicle body, substantially as herein shown and described.

2. The combination of the spring G with the bolts F of the device E F H I, substantially as herein shown and described.

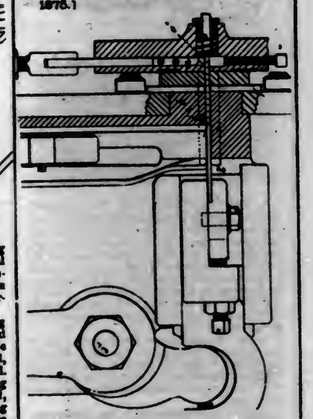
169,462. Cotton Scrapers, Choppers, and Cultivators. Richard L. McClung, La Fayette, Tex. [Filed Apr. 3, 1875.]

Brief.—Enlarged axle of bearing-wheels serves as a drum, from which driving-belt extends to chopper-shaft, after passing over pulleys. Scrapers in front of wheels, and cultivator-teeth in rear of chopper.



The combination of the wheels I, shaft J, head L, guide-pulleys M, cross-bar N, the shaft and arms O P, and hoe or cutter Q, with the frame, and the plow-standards B D, substantially as herein shown and described.

169,463. Machines for Uniting the Uppers and Soles of Boots and Shoes. Gordon McKay, Cambridge, and Hadley P. Fairfield, Boston, Mass. [Filed May 15, 1875.]



1. The combination, with a sailing-machine of mechanism for cutting nails from a strip, mechanism for corrugating the nails cut from the strip, and mechanism for supporting and cutting each nail just prior to its being driven to a length corresponding to the thickness of the sole, substantially as described.

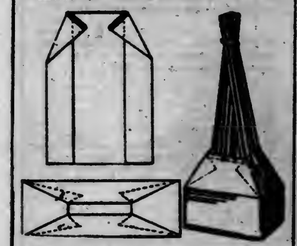
2. The combination of the strip-guiding tube and nail-cutter with the movable rest for the severed nails, substantially as described.

3. The combination of the movable slide and nail-tube, variable in position, according to the thickness of the sole of the boot or shoe, and its head-cutter, with the rest for supporting the nail while being cut, and with the nail-driver, substantially as described.

4. The combination, with the strip-guiding tube, of a cutter adapted to cut a nail from the strip and move it into a nail-guiding passage, substantially in line with the path of the cutter's movement, as and for the purpose set forth.

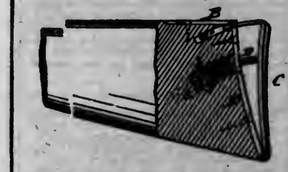
5. The combination of the cutter *i*, adapted to sever the nails from the nail-strip and move them forward in the nail-guiding passage, with the spring-supporting plate *o'*, substantially as described.

169,464. Paper Bags for Brooms. Edwin D. Messenger, Chicago, Ill. [Filed May 17, 1875.]



A broom-bag, for covering a package of brooms, made with both ends open, but one of the openings being contracted by means of gores, substantially as shown and described.

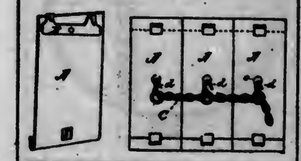
169,465. Breech-Orifices for Gun-Stocks. William D. Miller, Pittsburg, Pa. [Filed Oct. 2, 1875.]



1. A recoil-check for fire-arms, made of a fixed butt-plate, and a hinged, guided, and spring-acted cheek-plate applied to it and of the gun-stock, substantially in the manner and for the purpose set forth.

2. In a recoil-check for gun-stocks, the combination of the solid block B with the curving plate C, curved rod D, spring *f*, and set-screw *s*, substantially as and for the purpose specified.

169,466. Fire-Shields. Thomas P. Moore and David H. Bradley, Chicago, Ill.; said Moore assignor to said Bradley. [Filed Apr. 24, 1875.]



2. The combination, with the strip-guiding tube and nail-cutter, of the movable rest for the severed nails, substantially as described.

3. The combination of the movable slide and nail-tube, variable in position, according to the thickness of the sole of the boot or shoe, and its head-cutter, with the rest for supporting the nail while being cut, and with the nail-driver, substantially as described.

4. The combination, with the strip-guiding tube, of a cutter adapted to cut a nail from the strip and move it into a nail-guiding passage, substantially in line with the path of the cutter's movement, as and for the purpose set forth.

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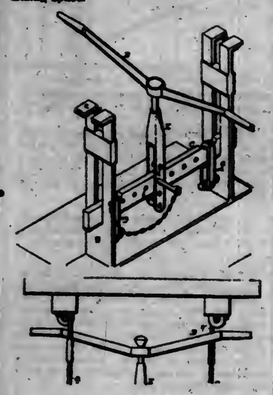
169,466. Fire-Shields. Thomas P. Moore and David H. Bradley, Chicago, Ill.; said Moore assignor to said Bradley. [Filed Apr. 24, 1875.]

1. The oscillating bar B, provided with its hooks *a a*, in combination with the plate A, as specified.

2. In combination with the plates forming the separate sections, the chain or bar Q, secured to the plates by the hooks *d*, as specified.

169,467. Exercising Apparatus. John B. Newbrough, New York, N. Y. [Filed Sept. 17, 1875.]

Brief.—The table-top being removed, an exercising-machine is disclosed, thus economizing space.



1. The combination, in a calisthenic apparatus, of a sliding bar, C, a cross-bar or handle, D, connected thereto, and springs *n n*, applied to the bar near its opposite ends, substantially as set forth.

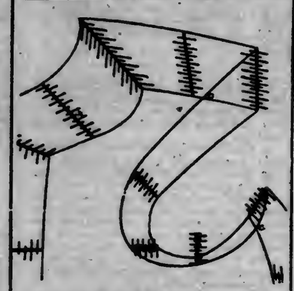
2. The combination of the bar C, handle D, and rod B, adjustable on the bar, as specified.

3. The combination, in a calisthenic apparatus, of the bar C and springs *n n*, applied to the bar near its opposite ends, and removable, as specified.

4. The guiding-standards *a a*, having slots *a'*, for the reception of the handle D, as described.

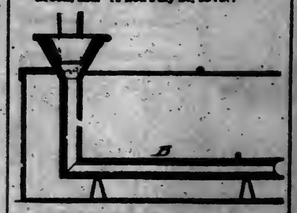
5. In a calisthenic apparatus, the detachable plate B and the frame constructed to support the said plate, and form therewith a table, substantially as set forth.

169,468. Tailors' Patterns. J. H. Nichols, Boston, Mass. [Filed Mar. 27, 1875.]



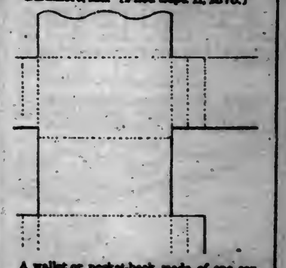
The set of drum and frock coat charts herein described, having independent outlines of the largest and smallest sizes in use, said outlines extending entirely around each pattern, crossing each other at *c* and *c'* in the front and sleeve patterns, spaced further apart, proportionally, in the upper and front portions of the body and lower portions of the sleeves, and connected by transverse slots or series of perforations with scales for marking the intermediate sizes, as shown and described.

169,469. Feed-Rollers. Stark Olmstead, Brook, Ind. [Filed July 21, 1875.]



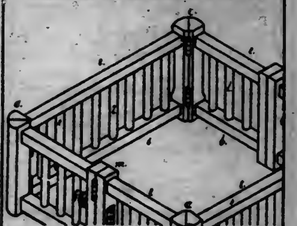
The combination, with box or tank A, of the boot tube B, arranged within the same, and the central beater supported upon the top thereof, as shown and described.

169,470. Pocket-Books. D. K. Osborne, Baltimore, Md. [Filed Sept. 11, 1875.]



A wallet or pocket-book made of one continuous blank, of paper or other cheap material, that has a central part with end flap and side extensions, and symmetrical side pieces folded in gussets and pockets, and connected at the edges to form the wallet, substantially in the manner and for the purpose set forth.

169,471. Inclosures on Flat-Houses for Chickens. Hiram J. Parker, Rochester, assignor of one-half his right to S. N. Gardner, Troy, N. Y. [Filed Mar. 22, 1875.]



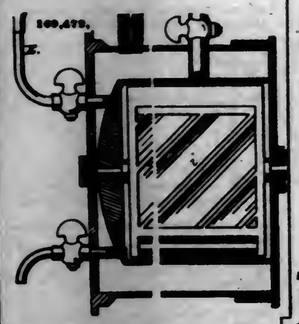
1. A rectangular play-house, having four corner-posts, *a*, divided diagonally and joined by the hinges *h*, two middle posts, *m*, divided at right angles and joined by the hinges *i*, forming, with the sides *l* of the balustrade, an endless frame-work, which may be closed into a fourfold compact block, for the purposes substantially as herein set forth.

2. In combination with the folding play-house *a a' l h*, connected by the hinges *h* and *i*, the cover-bolts *f*, for the purposes substantially as herein set forth.

169,472. Soap-Boiling Apparatus. M. J. Palmer, Detroit, Mich., assignor to himself and Archibald C. Glass, same place. [Filed Oct. 6, 1875.]

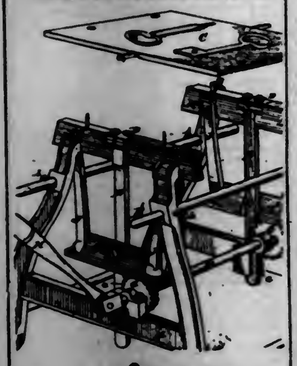
Brief.—The steam generated in the tank passes into the mixing-vessel, whereby it comes in contact with the chemicals contained in said tank, which, by means of the agitator, are thoroughly intermingled. The chemicals are introduced into the mixing-chamber through the inlet.

160,472.



The combination of a horizontal boiler, A, mixing-chamber B, tube b, inlet E, and agitator E, provided with concave floats h and slots i, set diagonally across, substantially as described.

160,473. Machines for Operating Mold-ing Match-Plates. John T. Post, Cincinnati, Ohio. [Filed Mar. 6, 1876.]



1. The combination of frame A B, swinging match-plate C, inclines K, standards E F' D, and supporting-fingers J J, connected and operating substantially as and for the purpose specified.

2. The combination of the adjustable sides A, standards D E D E, swinging match-plate C, bars E D' D'' D'', and set-screws b, substantially as and for the purpose specified.

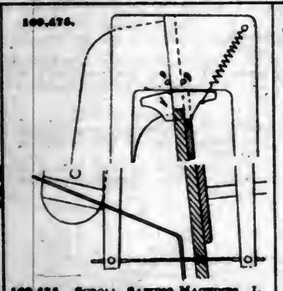
3. The combination of the standards E e, shaft F, pinions G, and jointed lever H, and the bar B, substantially as and for the purpose specified.

4. In combination with the four-holed match-plate C, the hinged and latched flask F F' g g', having diagonally-arranged pins O, and holes O' on opposite corners to the pins, substantially as and for the purpose specified.

160,474. Yeast Compounds. Jacob Pfaff-fer, Brooklyn, N. Y., assignor to himself and Paul Kook, same place. [Filed Sept. 11, 1875.]

A yeast compound consisting of cooked and mashed potatoes, hops, malt, wheaten flour, and corn-starch, in about the proportions specified.

160,475.



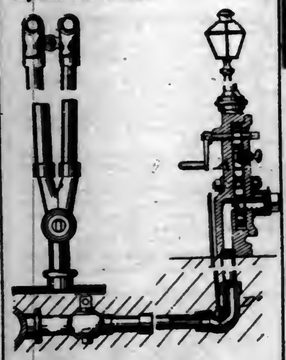
160,475. Scroll-Sawing Machines. L. C. Pratt, New York, N. Y. [Filed Aug. 21, 1875.]

Brief.—The bifurcated saw-carrier works on a reciprocating pivot, which is located either above or below the table, and operated by a cam held against the main frame by a spring, for the purpose of making the saw cut smooth.

The combination, with table A and cam F, of the bifurcated saw-carrier B B, working on pivot D, as and for the purpose specified.

160,476. Fire-Plugs. Christian F. Rapp, Cincinnati, Ohio. [Filed Aug. 26, 1875.]

Brief.—A fire-plug connected by two branch-tubes with two supply-pipes branching out from the main pipe, and controlled by a stop-cock of special construction, so that in the winter the pumping out of the supply-pipes by the engines is secured. A waste-cock at the elbow of the supply-pipes serves to drain any water from the same.



1. The combination of the adjustable disk, having suitable recesses, with a spring-stop device of the front plate, to secure rigid position of disk in open or closed position, as specified.

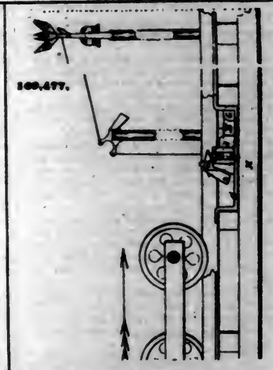
2. The elbows of the water-supplying branch pipes, provided with a joint waste-cock, set from above to drain off leakage, as set forth.

3. The combination of a fire-plug with a water-supply pipe and a second branch vent-pipe, being opened and closed by a common stop-cock or valve, to shut off the water from the main and allow the pumping out of the water from the supply pipe by the fire or other engine, to prevent freezing up of fire-plug in the winter season, substantially as and for the purpose set forth.

4. The combination of the double exit-openings of the casing, disk, and front plate with branch supply-pipes and a regulating stop-cock or valve between the same and the main pipe, that allows the opening of one or both branch pipes, or the communication of the branch pipes by closing the main pipe, substantially as set forth.

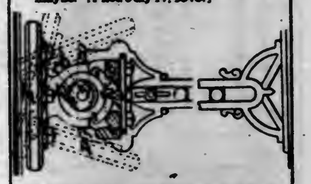
160,477. Railroad-Signals. F. Raymond, Cleveland, Ohio. [Filed Aug. 30, 1875.]

160,477.



The trip F and ball-crank lever E, having a counter-balance, G, in combination with the lever H, in the manner substantially as described, and for the purpose set forth.

160,478. School-Desks. Thos. Redmayne, Sheffield, England, assignor to Wm. Redmayne. [Filed July 17, 1875.]



1. The combination of a desk-board, attached to an adjusting-wheel with central aperture and notches at the circumference, with a recessed support or frame-work of the desk-standard, and with a central tooth or stud of the same, so that the wheel is held firmly at any point of its circumference, and adjusted by being vertically raised from the teeth, substantially as and for the purpose shown and described.

2. The combination of the wheel of the desk-board, swinging in the support of the main standard, and fitting on the teeth or stud, with a locking-device for holding the notched wheel rigidly in contact with the detent or tooth, substantially as and for the purpose shown and described.

160,479. Methods of Blowing Glass Spheres. Frank Rhind, Brooklyn, N. Y., assignor of two-thirds his right to Jesse H. Smith, Cranford, N. J., and Keyes P. Cool, Glen Falls, N. Y. [Filed Sept. 2, 1875.]

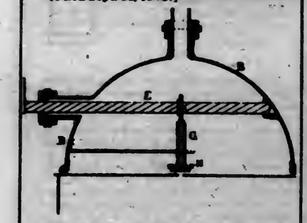
Brief.—A rod is passed through a hole formed in the mold. The melted glass is inserted through the neck of the mold, so as to rest upon the top of the rod until ½ falls on all sides, when the vessel is blown.



1. The method herein described of blowing open tubes through glass vessels, substantially as specified.

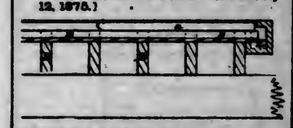
2. A new article of manufacture—a glass vessel having a tube open at each end and connected to the bowl at both top and bottom, the bowl and tube being blown together, substantially as specified.

160,480. Hermetic-Sealing Devices. T. Roberts, Baltimore, Md., assignor of one-half his right to A. S. Dungan, same place. [Filed Sept. 14, 1876.]



The combination of the dome B, crank E, eccentric F, and strap G, with its cap H, substantially as and for the purpose described.

160,481. Floors for Refrigerating-Houses. George Beebevot, Buffalo, and F. Schmidt, New York, N. Y. [Filed July 12, 1875.]



The combination of the planks C, having their sides a chamfered, the longitudinal troughs D, and the cross-troughs E, arranged and constructed substantially in the manner and for the purpose hereinbefore set forth.

160,482. Modes of Uniting the Ends of Belting. Cyprenus Chapin Roe, Hamilton, Canada. [Filed Apr. 5, 1875.]



The method of uniting the ends of machine-belts by means of a metallic buckle, slotted longitudinally and adapted to set over said ends, the width of each slot being exactly the same or slightly less than that of the two ends, so that the ends, when the belt is stretched longitudinally, will impinge against and be held by the edges of the slot without the use of a wedge or key, substantially as described.

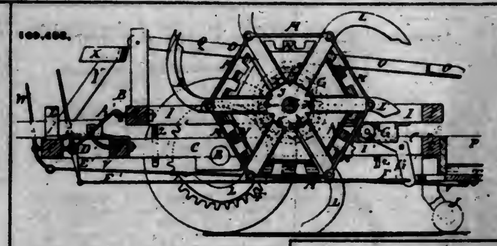
160,483. Potato-Diggers. D. J. Roush, Syracuse, Ohio. [Filed July 17, 1875.]

Brief.—A scoop-wheel, armed with six sets of curved fingers, is mounted upon a pair of wheels, which causes a forced rotation of the digging-wheel. The central portion of this wheel is provided with a slatted drum, highest in the center, so that the potatoes that fall upon the drum are cast off upon either side upon a shaking-screen, by which the potatoes are conveyed to a receptacle at the rear end of the frame.

1. The combination of the screen O and the ratchet-wheels S with the digging-wheel L M N, the shaft H, and the frame I, substantially as herein shown and described.

2. The combination of the levers U W, and the connecting-rod V, with the slide T of the receiving-box P, attached to the frame C, substantially as herein shown and described.

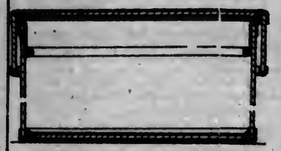
160,484.



3. The combination of the set-screws Z, the hooks A', and the adjustable eye-bolts B', with the carriage-frame C, the digger-frame I, and the gear-wheels F G, by which the digger-wheel L M N is driven, substantially as herein shown and described.

4. The combination of the lever C, the crank-shaft D' E', the connecting-rods F', the forked levers G', the rollers H', and the keepers I', with the carriage-frame C, and the digger-frame I, substantially as herein shown and described.

160,485. Paper Boxes. Felix Salomon, New York, N. Y. [Filed Sept. 11, 1875.]

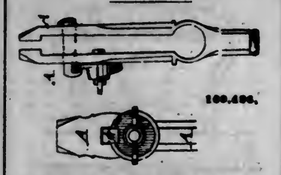


As a new article of manufacture, a paper box, having its top and bottom edges bound with sheet metal, and its bottom also similarly bound and fastened in by solder uniting the bindings, and also having its top strengthened by a wire inclosed in a tube formed in an inner extension of the top binding, substantially as specified.

160,486. Combined Cane and Whip. O. H. Saxton, Washington Court-House, Ohio. [Filed Mar. 20, 1875.]



The improved combined cane and whip composed of the solid flexible whip portion F and the tubular sections E A, said parts being telescopically arranged and correspondingly threaded at G to adapt them to be rigidly connected by a screw-joint when extended or drawn out, all as shown and described.



160,486.

160,486. Vises. Alex. O. H. P. Sahorn, Murfreesborough, Tenn. [Filed Sept. 25, 1875.]

A vise made of spring-jaws A, adjusted by cross-bar connecting with hooked bearing on an inclined circumferential flange or cam of a thumb-nut applied to one of the jaws, constructed and operating substantially as specified.

160,487. Neck-Yokes. Charles Sherman, Red Oak, Iowa. [Filed May 1, 1876.]

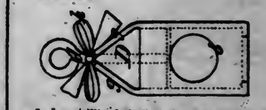


1. The combination of two curved plates, B C, fitting upon each other, having open *b' c'* on the opposite ends of their upper edges, and *b'* tongue-hole in their lower middle parts, substantially as and for the purposes set forth.

2. The flanged hook E *c'*, in combination with the plates B C, having rubbeted tongue-hole D, substantially as set forth.

3. The neck-yoke A, having head *a'* on its center, in combination with the open *b' c'* of the plates B C, substantially as set forth.

160,488. Billiard-Chalk Holders. Joseph Simonton, Clarinda, Iowa. [Filed Sept. 20, 1875.]



1. In a billiard-chalk holder, the combination of plunger D, adjusting-screw *d*, with open casing A, having flaps *g g*, substantially as described.

2. In combination with a billiard-chalk holder, the sand-paper receptacle *b* and leather backing C, substantially as described.

160,489. Stop-Cocks. Robt. G. Sumston, Chicago, Ill. [Filed Sept. 20, 1874.]

Brief.—The weight of the wrench and rod rests upon the shoulder formed on top of the case.



Cock A, with shoulder A', plug B, wrench B', with prongs C resting on shoulder A', in combination with rod D, substantially as and for the purpose specified.

160,490. Ventilation of Connections on Closet-Stools. Robt. D. O. Smith, Washington, D. C. [Filed Oct. 6, 1875.]

Brief.—The essential features are a case or receptacle to receive the excreted matter, a ventilating-outlet located at or near the top of said receptacle, and a hopper, preferably funnel-shaped, extending down into the case below the upper side of the ventilating-outlet, so that there will be at the side of or around the lower end of the hopper a chamber or space, and a ventilating-outlet leading from the same.

169,690.



1. A case or receptacle, A, hopper C, and ventilating-outlet D, combined to constitute a ventilated odorless commode, as set forth.

2. A movable commode combined with a flexible pipe, to connect the same with a proper ventilating-flue, substantially as set forth.

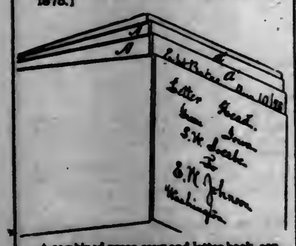
3. In combination, the case A', hopper C, outlet D, and inclosed removable vessel B, substantially as set forth.

4. A case, A', provided with a handle for easy transportation, a removable seat, a, and hopper C, attached thereto, a ventilating-outlet, D, neck H, and an inclosed removable vessel, B, substantially as set forth.

5. A case, A', provided with a handle, d, and ventilating-outlet D, and neck H, provided with a valve or damper, combined with a hopper, C, attached to a removable seat, and an inclosed removable vessel, B.

6. Combined with a case, A', hopper C, and ventilating-pipe, the permanent draft-openings h, to secure a continuous flow of air downwardly through the seat and hopper, and into the ventilating-flue, as set forth.

169,691. Letter-Press Copy-Books. S. W. Scobie, Greene, Iowa. [Filed Aug. 26, 1875.]



A combined press copy and letter book, consisting of alternate leaves of writing and copying paper bound in book form, each sheet of writing-paper being double the width of the copying-leaf, whereby the leaf written upon protects the blank copying-leaf beneath it from moisture, and a white surface is at all times below the press-copy leaf, allowing the writing thereon to be more easily read, substantially as described.

169,692. Boiler-Covering. Francis B. Stevens, Hoboken, N. J. [Filed Aug. 9, 1875.]

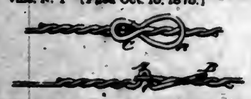
Brief.—Hollow metallic sections provided with inward-projecting flanges, forming an intermediate air-space, are secured around the boiler.



1. The hollow sections of metal formed by the inner sheet of metal A, the outer sheet of metal B, and the side sheets of metal D D.

2. The hollow sections of metal formed by the inner sheet of metal A, the outer sheet of metal B, and the side sheets of metal C C, in combination with the inner projecting flanges E E, as and for the purpose specified.

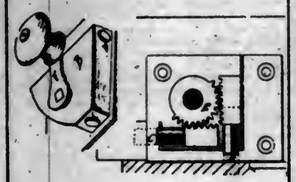
169,693. Bale-Ties. R. Stewart, Barnesville, N. Y. [Filed Oct. 16, 1875.]



The hook A, having a brace, B, which constitutes an eye, which receives and secures the eye C, substantially as specified.

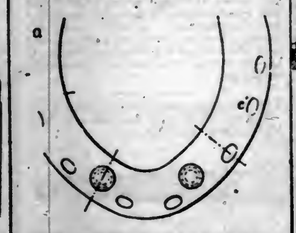
169,694. Fastenings for the Meeting-Rails of Sashes. Isaac H. Stoddard, Ansonia, Conn. [Filed Apr. 20, 1875.]

Brief.—The sector, operated by a crank-handle, engages with rack-teeth to throw the two bolts—one direct, and the other in transverse position.



The herein-described sash-fastener, consisting of the longitudinal and transverse bolts O D, to engage both sashes, and the window-jamb, combined with the pinion E, working in a toothed rack on each of the bolts, as described, to simultaneously operate both bolts.

169,695. Horseshoes. Saml. Stone, North Manchester, Conn., assignor to the Steel-Centered Calk and Set-Screw Company, same place. [Filed Nov. 8, 1873.]



As a new article of manufacture, the horseshoe c, provided with calks b', having a steel center from end to end, and fitted in place by means of a screw-end, substantially as described.

169,696. Sad-Irons. Oliver Swift, Madison, Wis. [Filed Sept. 17, 1875.]

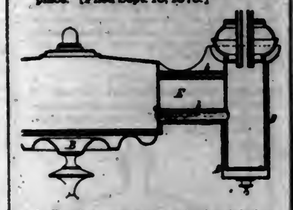
Brief.—The body or smoothing-surface is made of glass, and has a detachable spring-handle.



1. The combination of the notched pins a', the tube B, provided with a wooden handpiece, b', the catches D, the springs E, and the wooden ring F, with each other, and with the body A of a sad-iron, substantially as herein shown and described.

2. An improved sad-iron, in which the body A is made of glass, substantially as herein shown and described

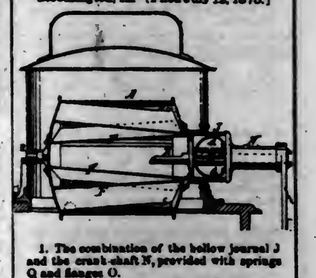
169,697. Lamps. Freeman A. Tabor, Boston, Mass., assignor to Philip S. Page, same place. [Filed Sept. 10, 1875.]



1. The improvement on the herein-before-specified patented improvement in lamps, consisting in the combination, with the oil-fount provided with a wick-receiver connected with the fount by supply-tubes, as described, of the receiving shell or case, provided with an extension which incloses the wick-receiver, and a connecting-thread, which inclosos the supply-tubes, said fount and wick-receiver being removable bodily from the receiver shell or case, and the whole arranged substantially as shown and set forth.

2. The outer receiving shell or case of the lamp, as composed of the cap B and extension D, united by the thread E, substantially as and for purposes stated.

169,698. Coffee-Roasters. F. Thomas, Bloomington, Ill. [Filed July 12, 1875.]

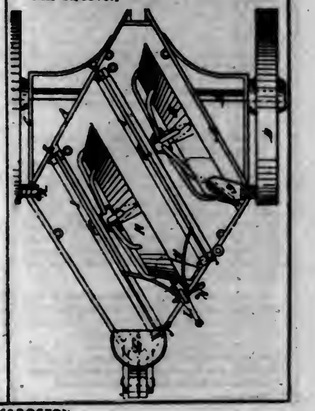


1. The combination of the hollow journal J and the crank-shaft N, provided with springs Q and flanges O.

2. The combination of the hollow crank-shaft N, and tester R, and hollow journal J.

3. The combination of the roasting-cylinder A and the flanges F, attached diagonally to the cylinder and to each other, thus forming a regular zigzag around the inner surface of the former, substantially as and for the purpose specified.

169,699. Rotary Gang-Plows. John K. Underwood, Sauk Centre, Minn. [Filed July 31, 1875.]

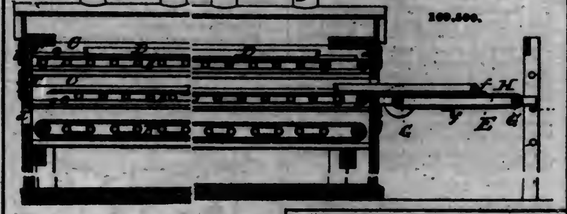


1. The frame A C, having two sets of axles, D E, hook-bolts U, standard M, and keepers K, adapted to receive rotary plows or cultivators, in the manner described.

2. The combination, with rotary plows H, of beams I, pivoted upon the frame at J, and swinging in keepers K, the forked lever L, the bars O, standard M, and pin P, as and for the purpose specified.

169,700. Dieting Apparatus. T. Webber, Chicago, Ill. [Filed Sept. 28, 1875.]

Brief.—The rods distribute the weight of the pans over the pipes. The endless feeding-belt and the transferring-roller carry the pans into the rods.



169,701. Locks-Shuttles. Daniel Wright, Lowell, assignor to Sawyer Spindle Company, Boston, Mass. [Filed May 18, 1875.]



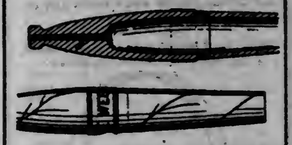
1. The combination, with the spindle and its head, of the detaining-catch constructed with the head of the spindle and bent, substantially as described, with relation to the spindle to enter an internal groove in the base of the bobbin, substantially as set forth.

2. The combination of the truncated bobbin, provided with an internal groove, A, with the spindle, its head, and the hooked detaining-catch, connected with the head, and stop f, all constructed and combined to operate substantially as described.

3. A bobbin having an enlarged opening in the base, and an internal groove to receive the bobbin-catch, combined with the spindle, the shuttle and a bobbin-catch, adapted to project from the outside into and engage a groove in the interior of the bobbin, substantially as described.

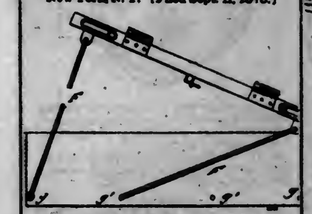
169,702. Cigar-Press. Robert L. Wood, New York, N. Y. [Filed Nov. 7, 1874.]

Brief.—The tube is divided in the center, and the tobacco-cavity decreases gradually therefrom toward each end, whereby the tobacco inserted at the center cannot fall out.



A two-part tobacco-pipe having a middle joint and a cavity decreasing therefrom gradually toward each end, as and for the purpose specified.

169,703. Venetian Shades. C. Widemann, New York, N. Y. [Filed Sept. 11, 1875.]



The rods F, pivoted to bottom of lower slat, and fastening detachably in staples f, as and for the purpose described.

169,704. Ornaments' Punches. George O. Wright and Geo. Bassett, Spencer, Mass. [Filed Aug. 14, 1875.]

169,705.



The compound tool or boring-pincher, herein described, consisting of the stationary jaw A, handle B, rod or lever C, pivoted jaw and claw D E, hammer F, and spring G, as and for the purpose set forth.

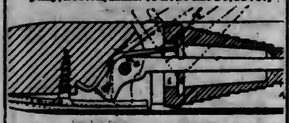
169,706.

1. In a kiln for drying animal matter the combination of the pans D with the steam-coils B B' B'' and the supporting and equalizing rods D', substantially as specified.

2. The combination of the transferring-rollers a with the supporting-rods D' and coils B, substantially as specified.

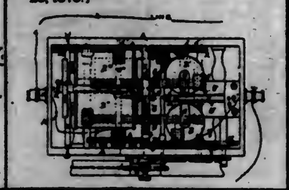
3. The combination of the frame E, having rollers G, and endless belt H with the casing A, having openings d d', and tiers B B' B'', substantially as specified.

169,707. Loom-Shuttles. Daniel Wright, Lowell, assignor to Sawyer Spindle Company, Boston, Mass. [Filed June 26, 1875.]



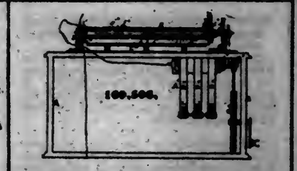
The combination, with a shuttle, of a detached catch, substantially as described, adapted to enter and engage a groove in the base of a bobbin, as set forth.

169,708. Magneto Printing-Telegraphs. George L. Anders, Boston, assignor to E. B. Welch, Cambridge, Mass. [Filed Mar. 26, 1873.]



1. The combination, with two or more spindles on opposite sides of the frame, and two horizontal shafts arranged lengthwise of the frame, of the two pulleys S' S' on said shafts, the endless band H, running on said pulleys S' S' and V k, and the idler-tightening-pulley F, substantially as shown and described.

2. The combination with the idler-pulley F, and its lever f, of the counter-balance weight G, as shown and described, for the purpose specified.

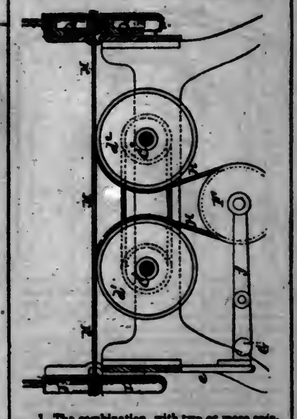


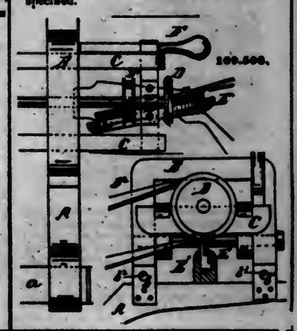
1. The combination, with type-wheel of a printing-telegraph instrument, operated or controlled by currents from a magneto-generator, without the use of a relay or galvanic battery.

2. The combination of a type-wheel and printing mechanism placed in the same circuit, and both operated or controlled by currents from a magneto-generator without the use of a relay or galvanic battery.

169,709. Spinning-Frames. J. B. Atwood, Willimantic, Conn. [Filed Mar. 27, 1875.]

Brief.—A single band passes across the frame, around the whirls of four or more spindles, (two or more on each side of the frame,) and thence over two drums, and is kept tight by an idler-pulley, which is counterbalanced to regulate the tension, and prevent wear of the bearing of the lever which carries it.





169,710.

1. The combination, with two or more spindles on opposite sides of the frame, and two horizontal shafts arranged lengthwise of the frame, of the two pulleys S' S' on said shafts, the endless band H, running on said pulleys S' S' and V k, and the idler-tightening-pulley F, substantially as shown and described.

2. The combination with the idler-pulley F, and its lever f, of the counter-balance weight G, as shown and described, for the purpose specified.

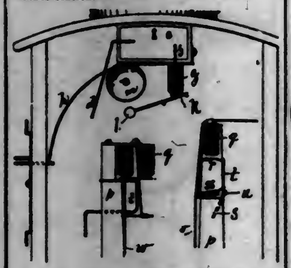
169,506. SAW-GUMMING MACHINE. Henry Bonshomme, Dunn's Gold Mine, S. C. [Filed Apr. 2, 1875.]

Brief.—The main frame is adjustably attached to a platform, and the frame carrying the grinding-wheel is pivoted thereto. A gage-stop attached to the pivoted frame determines the vertical movement of the wheel for the depth of tooth.

The combination of the frame A B, constructed as described, with the pivoted frame C carrying the grinding-wheel D, and adjustable stop F, substantially as and for the purpose set forth.

169,509. ELECTRIC RAILWAY-SIGNALS. E. B. Bean, Boston, Mass. [Filed Jan. 26, 1874.]

Brief.—Battery and signal-instrument on train; one pole of battery to earth through metal of train—other pole to projection *i* on side thereof; posts at each station along track. Each post has magnet, whose circuit extends to a preceding or succeeding post, or both, and through a beat lever, *o t*, mechanically connected to ground. This lever is normally in such position that projection *i* bears against it, closing circuit of signal on train if everything is clear. Projection *i* bears it to such position that the lower end *o* is locked away from where the projection *i* of a succeeding train can touch it, as shown in Fig. 5, until the train has sent back an impulse from another station.

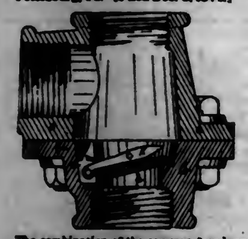


1. In combination, with a battery, its projecting pole *i*, and the operating-levers *o t*, as described, an additional projection, *s*, on the engine or other moving part of a train, for the purpose set forth and described.

2. The stationary posts *p p'*, with their electro-magnets *q q'*, armatures *r r'*, rocking levers *s t o i*, springs *s s*, or their equivalents, and wires *a a*, in combination with a movable battery, as and for the purpose set forth.

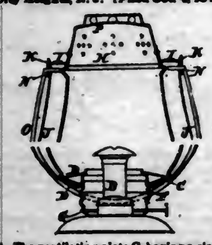
3. The combination, with a switch or other movable part of a railway, of connections 3 7, receptacle 4 6, with their flexible diaphragms, support 10, and connecting-pipe 5, or their equivalents, as and for the purpose set forth and described.

169,510. VALVES. Edwd. H. Bookwith, St. Petersburg, Pa. [Filed Dec. 8, 1874.]



The combination of the one-way flaps *h*, provided with slots *s* and angular receptacle *a*, for the reception of the wedge-shaped piece *d*, the upper plate *c*, resting upon the piece *d*, and holding it in position; the valve *e*, covering the opening *f*, and pivoted to the pointed rod *b*, the pointed rod *b*, hinged to the wedge-shaped piece, and fitting within an upturned slot set therein.

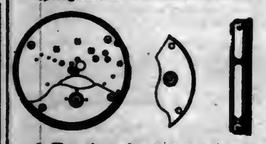
169,511. LANTERNS. Henry Beebe, Jersey City Heights, N. J. [Filed Oct. 4, 1875.]



1. The ventilating-plate G, having a circumferential flange, which forms a support for the globe, and constructed with a depending screw-collar, F, in combination with the concave-convex ferruginous plates D D and the base A, having a screw-collar, G, all substantially as shown and described, for the object specified.

2. The combination of the radial arms I of the cap H of the lantern, having plate K, with the lantern-guards J, both the arms and the guards having apertures N, and with the ball O, substantially as described.

169,512. WATCHES. John K. Bigelow, Springfield, Ill. [Filed Apr. 2, 1874.]



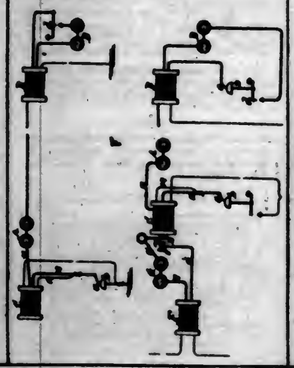
1. The above-described barrel-bridge *c*, with its lower edge coming down flush with the under side of the top plate, and having a beveled outer edge corresponding with the beveled outer edge of said top plate, thus forming a complete annular and bevel bearing for the inside bevel of the dust-ring *e*, substantially as set forth.

2. The combination of a dust-ring, having a bevel inside surface extending from top to bottom, as above described, with a corresponding shoulder on the pillar-plate, substantially as set forth.

3. The dust-ring *e*, provided with an inside bevel for the purpose of forming a close joint or joints, and for easy removal of said ring, substantially as set forth.

4. The convex or catches *s* in combination with the milled recesses on the inside of the dust-ring, for holding said ring in place, substantially as set forth.

169,513. ELECTRIC TELEGRAPHS. Robert E. Boyle, New York, N. Y. [Filed Mar. 30, 1875.]

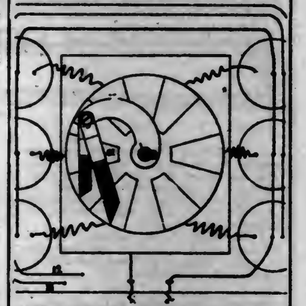


1. In a telegraphic apparatus, the combination of two induction-coils, one in each terminal of the line, with a battery in the line of the telegraph, the current of said battery being closed continually over the line-wire, and being made to act on the pen or stylus of a chemical-writing instrument, while its force is alternately increased and then controlled by the currents induced in the induction-coils, whereby signals are recorded by breaks in the line drawn in the paper moving under the pen or stylus, as shown and described.

2. The combination, in a telegraphic apparatus, of induction-coils B C, line-battery A, circuit-breaking armature H, local battery G, and induction-coil F, substantially as and for the purpose set forth.

169,514. ELECTRICAL INDUCTION APPARATUS. Robert E. Boyle, Brooklyn, N. Y. [Filed Mar. 16, 1875.]

Brief.—In a series of induction-coils, secondary helices connected to one conductor. Primary helices alternately brought into action, so as to give a steady induced current.



The combination of a series of induction-coils with one or more brushes or keys, and with a surface composed of alternating segments of a non-conducting and conducting material, either the keys or the surface being made removable, substantially in the manner and for the purpose herein shown and described.

169,515. ASHPIT-SHIELDS. Ella C. Bruce, Lynn, Mass. [Filed Apr. 20, 1875.]



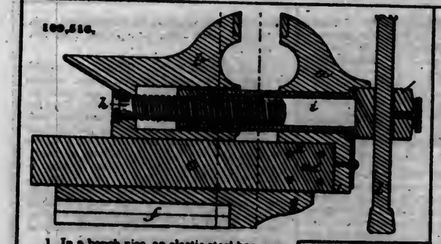
1. An ashpit-shield composed of yielding fabric or material, stiffened or expanded by a marginal frame, substantially as described, for the purpose specified.

2. The combination of the shield A, marginal frame B, and shoulder-strap C, substantially as described.

169,516. VISES. Amos H. Packard, Hyde Park, Mass. [Filed Apr. 1, 1875.]

Brief.—The bearings of the screw by which the moving jaw is operated have slight play, so that the broad thin steel bar, which, fixed to the moving jaw, slides in a slot in the stationary jaw, allows certain self-adjustment of the face of the sliding jaw to the contour of the article held in the vise.

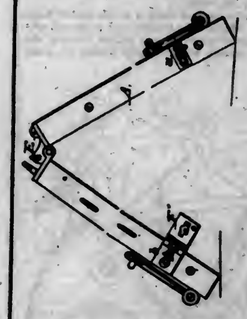
169,518.



1. In a bench-vise, an elastic steel bar, *c*, secured to the front jaw, and movable through a slot in the rear jaw, substantially as herein set forth.

2. In combination, the stationary jaw *b*, and screw-shaft *h*, movable jaw *a*, and its screw-sleeve *i*, and the elastic steel bar *c*, with its corresponding slot, as and for the purpose set forth.

169,517. CLOTHES-DRYERS. G. A. Brooks, Norwich, Conn. [Filed Oct. 26, 1875.]



1. The arrangement, with the frame A B, of the slotted step-hinges E F upon the top, and the side step-hinges F F, all with their respective turn-buttons or keys, as and for the purpose set forth.

2. As a means of connecting the parts of a clothes-drier, the step-hinge with its slot *c*, step *b*, and turn-button or key *d*, all as and for the purposes set forth.

169,518. RAISING BROOM-CUT HAY. Charles Brown, New York, N.Y. [Filed Sept. 28, 1875.]



The combination of the longitudinal and segmental plate O O' with the cross-edge sticks B B B' B', the longitudinal edge sticks A A A' A', applied to opposite sides of the hole, and the binding-bands, cords, ropes, or wires D, substantially as shown and described, and for the purpose herein set forth.

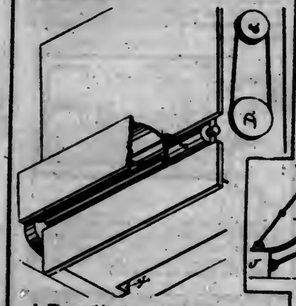
169,519. TRACE-BUCKLES. M. T. Burton, Portsmouth, Ohio. [Filed July 7, 1875.]



A trace or harness buckle consisting of the frame A, having side pieces H, lower cross-bars *a a*, top bar *c*, side flanges E, and projections L, in combination with the sliding wedge B, having rolling sides, cross-bars *f* and *g*, recesses N, and flanges O, and a tongue or stud, *e*, on its front cross bar, substantially as herein specified.

169,520. PRIMING ATTACHMENTS TO PLANING-MACHINES. Benjamin C. Chambers, Shady Plain, Pa. [Filed June 8, 1875.]

Brief.—The planer feeds the lumber directly into the primer.



1. The combination, with a planing, or planing and matching, machine, of a priming apparatus at the delivery end of the former, whereby the planed lumber will be fed directly from and by the planer to the primer, substantially as described.

2. In a lumber-priming machine, the combination, with the supply-trough, of the grooved priming-roller, substantially as described.

3. The adjustable scraper *d* having the converging scraping-ridges, substantially as and for the purposes described

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169,521. BALE-TIES. Charles H. Olsen, New Orleans, La., assignee of one-half his right to Jasper Thayer, same place. [Filed Apr. 26, 1875.]



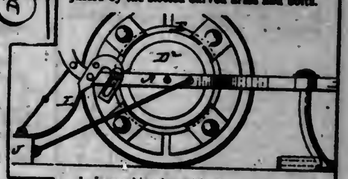
The coil K', with projecting guides or lugs *e* and *f*, elongation B, rounded corners *a a*, rivet *b*, and wedge *S*, all constructed and arranged substantially as described, and for the purpose specified.

169,522. MACHINERY FOR THE MANUFACTURE OF NUTS. J. H. Couvrot, Calais, France. [Filed Feb. 4, 1875.]

The combination, in a nutting-machine, of plunging-bolts B, points D and C, sliding bar K, and chamber H, whereby parallel warp-threads are formed into loops, and a shuttle-thread is carried round the cross-thread of each loop, the whole being adapted to operate together to form a nut, as set forth.

169,523. FERTILIZER-DISTRIBUTERS. Wm. H. Cook, Meridian, Miss. [Filed Aug. 26, 1875.]

Brief.—Between the annular rim and one-half of the drum are interposed adjustable segmental blocks for varying the size of the seed-openings. The covering device is adjusted by the slotted curved arms and bolts.



1. In combination with the annular rim D and half-drums D' D', the segmented blocks E, provided with enlarged bolt-holes for radially adjusting the same to increase or diminish the seed-openings, as set forth.

2. The combination of the coverer J, pivoted spring-arms I I, having their upper front ends curved and slotted, as described, and the bolts *d d* for adjusting the covorer, substantially as herein set forth

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169,524. VEHICLE-SPRINGS. S. J. Corey and Elijah Neff, Rochester, Ind. [Filed Sept. 14, 1875.]

Brief.—As the spring opens the pin catches the lower leaf, and stops the motion upward.

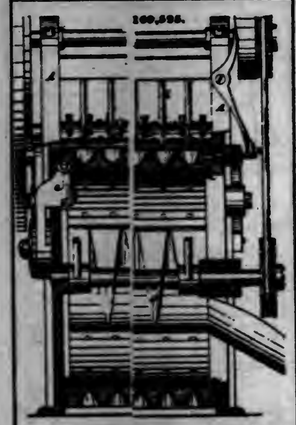


The bar D, with its arms *a* and *c*, the connecting-rod *d*, and arm *e*, in combination with the upper and lower leaves of a spring for vehicles, as and for the purpose set forth.

169,525. CHERRY-STONERS. S. A. Darrach, Orange, N. J. [Filed Aug. 26, 1875.]

Brief.—The cherries are fed down an inclined trough to a cylinder having cells to receive them, with a perforation in the bottom to allow the pit to pass through. The emptied cherries are thrown off the cylinder by a revolving brush. A stoning device is attached to the frame, consisting of a spear-point reciprocating through a perforated plate, entering the cherry as it lies in the cell, and being "stripped" by the perforated plate. The pits drop into a trough, and are carried away by means of a worm-shaft.

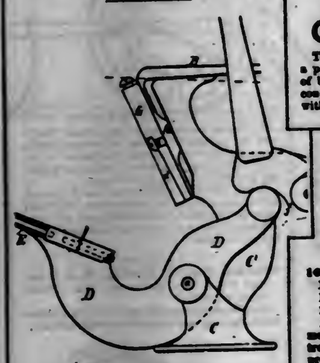
169,595.



1. The pit-receiving trough I and endless screw J, in combination with the cylinder B and plunger G, substantially as set forth.

2. The combination of the rotary cylinder B, having the coils b, with the perforated bar r; barbed clearers f, cam-grooves h, and slides p, for operating the clearers to clear the coils, substantially as described.

3. In combination with the cylinder B, provided with coils b, and containing the pit-receiving trough I and endless screw J, the plunger G, clearing-brushes D, and barbed clearers f, all constructed and arranged to operate substantially as described.



169,596. Oscillating Printing-Presses. John L. De Haff Webers, assignor to Jos. Webers, Everett, Mass. [Filed June 20, 1875.]

Brief.—A toy or amateur press operated by a cam-lever.

1. The lever D, pivoted at or near the middle of its length to the frame C, and carrying upon one end the platen E, cast upon or otherwise secured thereto, and provided at its other end with a bent, trunk, or rounded surface, in combination with the pivoted bend-lever F, having formed upon its under side, near its fulcrum, the reverse-curve cam-surface e f, arranged to operate as and for the purposes described.

2. The chase G, provided with a rabbet, d, formed in the outer corner of each end, the bottom surface of which is at a slight angle to the outer and inner faces of the chase, in combination with the adjustable screw-bolts c c, set in the face of the type-bed, and adapted to engage with said rabbet to hold the chase in position, substantially as described.

169,597. Weather-Board Gages. Robert J. Dodd, Crawfordsville, Ind., assignor to himself, Taylor Burlington, W. S. Cassel, Noah Wilkinson, and D. W. Milholland. [Filed Aug. 14, 1875.]



The within-described weather-board gage, consisting of the staff A, cut out as described, the spring-plate B, attached thereto, extending to the top of the staff, and having a spur, a, formed thereon, the adjustable gage C b d, and the spring-holder D, all constructed as and for the purposes set forth.

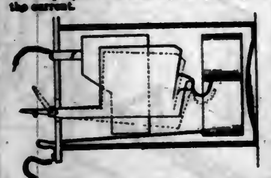
169,598. Materials for Chair-Seats. D. H. Donovan, Bayonne, N. J. [Filed Sept. 27, 1875.]

Brief.—Layers of veneer and leather-board cemented together.

As a new article of manufacture, a material for chair-seats and other purposes, consisting of a veneer or veneers cemented to one or more sheets of leather-board, as set forth.

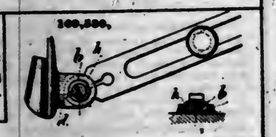
169,599. Galvanic Batteries. C. Dubois, Denver, Colo. [Filed July 9, 1875.]

Brief.—The supplementary electrode is hung on pivots, and by a lever-arm can at pleasure be moved into contact with the positive plate, for the purpose of increasing the quantity of the current.



The application to any galvanic battery of a positive supplementary electrode, capable of being easily and quickly connected or disconnected with the positive plate of a battery within the liquid, as described.

169,600.

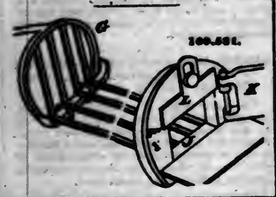


169,600. Clasps for Attaching Hinges, &c., to Sewing-Machines. Jno. Dunn, Philadelphia, Pa. [Filed Aug. 16, 1875.]

Brief.—The slotted bar, designed for attachment to the cloth-plate, is divided at its vertex, and upon each part is a semi-annular projection, forming an expansible nut, over which the eye of a hammer or other attachment may be slipped. A tapering screw, as it is turned into the nut, spreads it apart, thereby firmly securing the attachment at any desired angle with the slotted bar.

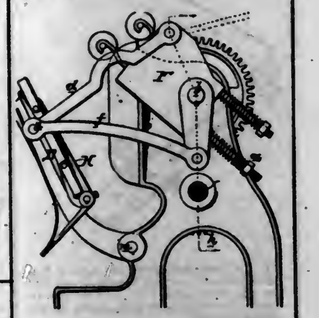
The expansible cylindrical nut b and tapering screw c upon the slotted arm c, in combination with the plate g, having an eye, h, and carrying a hammer or other sewing-machine attachment, as and for the purposes set forth.

169,601.



169,601. Oscillating Printing-Presses. Wm. C. Evans, Philadelphia, Pa. [Filed July 14, 1875.]

Brief.—An arm from a crank on the main shaft vibrates the platen, and a second arm from same pivot on the platen vibrates the roller-frame, which swings loosely on main shaft.



The combination of the shaft A, having cranks c, connected to a pin, a, on the hinged platen D, with the inking-frame F, hung loosely to the shaft d, and connected to the said pin a of the hinged platen, all as set forth.

169,602. Machines for Packing Tobacco in Bags. James R. Farrar, Cary, N. C. [Filed Aug. 23, 1875.]

Brief.—An endless band carries the bag-holders, which, as they pass under an automatic feeder, are supplied with the tobacco, when two different plungers enter each bag and compress the tobacco. The holders are removable at will, to take off a filled bag or put on a new one.

1. In a tobacco-packing machine, an endless belt, E, having cords b thereon, in combination with the bag-holders K and the guides M N, substantially as and for the purposes described.

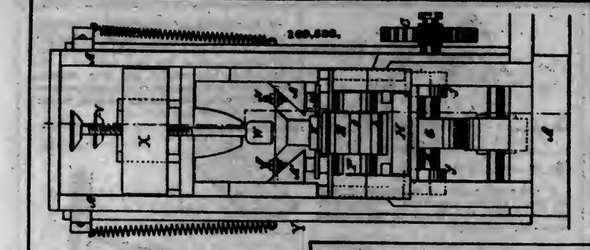
2. The combination, with the endless belt, having catches c, of the pawl I, slide H, cam G, and spring J, substantially as described, for the purpose of operating the belt.

3. The combination, with the endless belt, carrying cords, and the bag-holders K, of the two plungers V W, attached to the same cross-head, and located the same distance apart as the bag-holders in the cords, whereby a single movement is made to effect the packing of one bag and the shaking down or settling of the tobacco in the bag following, substantially as described.

4. The combination, with the endless belt and the bag-holders, of the plungers V W, the cross-head X, slide-bars Y, springs Z, and the cam G, as and for the purposes set forth.

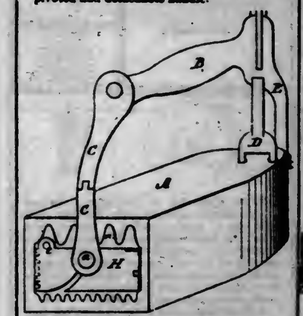
5. The combination, with the bag-holder, of a support, d, as and for the purposes described.

169,603.



169,604. Plotting-Irons. Wm. F. Fisher, Brunswick, and Amos C. Brown, Kenosha, Tex. [Filed Feb. 27, 1875.]

Brief.—A bolting and flatting iron has within it a bolting-iron, in which is placed a heating-iron. The said iron and the flatting-iron may be used together or separately by the pivoted and detachable handle.



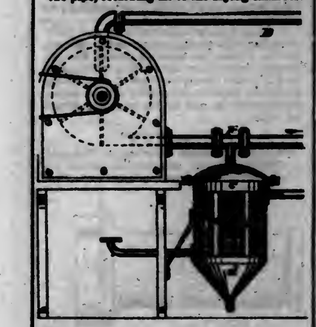
1. The combination of handle B, locking device D, and an iron for smoothing or flatting, said handle being pivoted in the manner shown and described.

2. The hollow irons A and G, having corresponding inner and outer surfaces, respectively, combined as shown and described.

3. The combination of hinged lock-plate b and slide d with the handle B C H and iron A, as shown and described.

169,605. Apparatus for Dryingfanning Air. Levi K. Fuller, Brattleborough, Vt., assignor to J. Estey & Co., same place. [Filed Sept. 28, 1875.]

Brief.—The condenser communicates with the pipe, returning air to the drying-chamber.

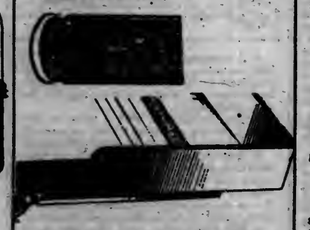


1. In a drying apparatus, a condenser communicating with the pipe from the blower to the chamber by means of a connection-branch, as shown, so that the air-current will not pass directly through the condenser, but be in connection therewith, as described.

2. The combination of a blower or fan, the outlet and inlet pipes D E, and a condenser, G, the latter being connected with the inlet-pipe E by means of a branch, F, in the manner and for the purposes set forth.

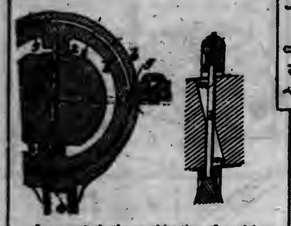
3. In combination with the inlet-pipe E and outlet-pipe D, a condenser, G, provided with a branch, F, and a conical lower head or chamber, d, to deflect the downward blast in the center, and collect the water of condensation, substantially as specified.

169,606. Fire-Proof Coverings for Books. Edwd. W. Glover, Malden, Mass. [Filed Oct. 22, 1875.]



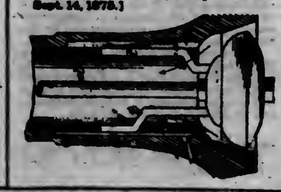
In combination with the binding of a book, a fire-proof protecting-cover, consisting of an open box adapted to fit closely over the leaves and between the covers of the binding, the whole forming a tight inclosing-box around the leaves, substantially as described.

169,607. Rowlocks. F. D. Graves, South Boston, Mass. [Filed July 22, 1875.]



In a rowlock, the combination of ear f, having slot s s, narrowing toward the center of said ear, trunnion-rod k, and ring b', arranged to slip in the pivoted outer ring b, as described.

169,608. Hydrants. W. D. Greenville, New York, N. Y., assignor to J. D. Keegan, Jr., and Reuben J. Greenville, same place. [Filed Sept. 14, 1875.]



Brief.—A plate or bar attached to the valve-rod or valve serves to operate a spring-bar provided with a conical valve, for closing the waste-aperture. A sliding bar and spring, bearing against the inside of the hydrant on the side opposite the spring-bar, keep the latter in proper position.

In combination with the valve-rod or valve of a hydrant a plate or bar attached to the same, and operating a spring-bar, provided with a conical valve for closing the waste-aperture, and a sliding bar and spring bearing against the inside of the hydrant-cylinder on the side opposite the spring-bar and the valve, substantially as described.

169,609. Safety-Matches. E. Hessel, Osbourn, Canada. [Filed Aug. 14, 1875.]

1. The friction-match composition made of potassium chlorate, sulphide of antimony, sesquioxide of iron, binoxide of manganese, chromate of potassium, powdered glass, and mucilage, in the proportions and manner substantially as specified.

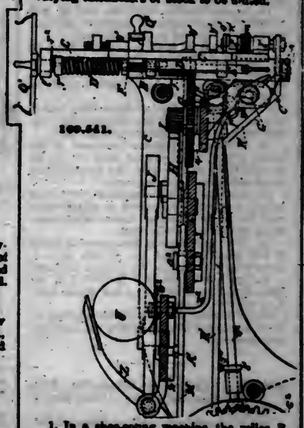
2. The friction-match made of potassium chlorate, sulphide of antimony, sesquioxide of iron, binoxide of manganese, chromate of potassium, powdered glass, and mucilage, in combination with the friction-tablet made of amorphous phosphorus, sulphide of antimony, powdered glass, and mucilage, in the proportions and in the manner substantially as specified and described.

169,610. Medicinal Prescriptions for the Cure of Catarrh. J. W. Harvey, Memphis, Mo. [Filed Oct. 2, 1874.]

The medical compound for the cure of catarrh herein described, consisting of nitrate of potassa, chlorate of potash, golden seal, common salt, and gum-camphor, in about the proportions herein specified.

169,611. Leather-Screw-Pegging Machines. Chas. M. Higgins, Brooklyn, N. Y., assignor to Karen O'Brien, same place. [Filed July 12, 1875.]

Brief.—The drill for perforating the stock, and the hollow spindle for conducting the screw-thread material to the perforation, are carried by a lateral reciprocating sliding frame, which alternately brings the drill and spindle to the same point, between each feed-movement of the last or shoe. A roller, adjustable with fixed relation to the drill, is provided with a flange, which bears against the inner marginal surface of the outsole, for regulating the depth of hole to correspond with the varying thickness of stock to be united.



169,611.

1. In a sliding-seating machine, the roller B, provided with a flange or projection, bearing against the margin of the inner surface of the outsole of a shoe, and adjusted in fixed relative position with the drill or other devices which penetrate the sole, as a means of insuring the accurate and uniform penetration of the sole to the required depth at all points, substantially as herein set forth.

2. In combination with a fixed pressure plate or foot, A, a vertically-moving slide, C, having fixed thereto both the support, or partial support, for the work, and also the drill or other devices for penetrating the work, the former being fastened below and the latter above the pressure-plate, substantially as herein shown and described.

3. The combination of the screw-stem *k*, nut *m*', and retaining-socket P, whereby a vertically-adjustable attachment of the flanged roller B to the slide C is provided, substantially as and for the purpose set forth.

4. In combination with the roller H, the shaft *o*', and dial *o*', as and for the purpose set forth.

5. In a leather-boring machine, a drill, R, the upper body portion of which is a cast-tube, while the lower extremity includes more than a cast-tube, and is provided with an edge-cutting end, substantially as and for the purpose described.

6. The combination of the cam K, sector H, and lever J with the screw-spindles E F.

7. The combination of the screw-spindles E F and sliding frame D, arranged to reciprocate across the face of a driving-wheel, to effect the simultaneous engagement and disengagement of the respective spindles with one movement, substantially as herein set forth.

8. In combination with the shifting screw-spindles E F, the retaining brakes or springs *o o*, substantially as herein set forth.

9. In combination with the screw-spindles E F and sector H, with mechanism for driving it, the fixed stops S S and elastic slot T, substantially as and for the purpose set forth.

10. In combination with the shifting-lever M, the curved slot B' and guide-pin A', and the movable fulcrum *d* P, whereby the lever is prevented from moving out of true position when once adjusted, substantially as shown and described.

11. In combination with the thread-spindle F, the elastic griping-cushion Q, substantially as and for the purpose set forth.

12. In combination with the thread-spindle F and its clutch-collar *g*', the plate X, attached to the fixed frame, and pressed down and kept in definite position by the spring Y, to effect the closing of the clutch at a certain point in the upstroke of the spindle, substantially as herein shown and described.

13. In combination with the thread-spindle F, and its clutch-collar *g*', the arm F' and spring W, arranged to effect the opening of the clutch when the needle reaches the end of its stroke, substantially as shown and described.

14. In combination with the thread-spindle F, an adjustable griping guide-eye, V, adapted to grasp the peg end, substantially as and for the purpose set forth.

15. In combination with the reel Q' and spindle F, the flexible connection D', substantially as and for the purpose set forth.

16. The hook F', arranged to reciprocate in the base of the presser-plate A, with the cutting and separated from contact with the work by means of the thin plate F', substantially as herein set forth.

17. The combination of the rubber ball U and its jet-pipe *s*' with the compressor I, substantially as and for the purpose set forth.

18. The feed mechanism, composed of the rotary cam E' and stand lever O', the lower end being shorter than the crank-throw, substantially as herein set forth.

19. In the jack of a shoe-machine, the tilting handle *g*, having a screw end, in combination with the center-pin *r* and socket *n*, substantially as shown and described.

20. The combination of the retaining-screw *s* and handles *p p* with the pivoted plate *t*, substantially as and for the purpose set forth.

21. In combination with the rod *d* of the jack, the ball and socket *r p* and elastic band *h*, as shown and described.

22. In combination with the shoe-socket *n*, the rubber-faced binding-screws *s s*, as shown and described.

169,542. HAT-BLOCKING APPARATUS. John R. Hill, Bloomfield, Iowa. [Filed June 7, 1875.]

Brief.—A swinging platform hinged at both ends, and adjustable by sliding edges in different heights of hat-stands. The heated platform is swung up by dashtick and rope.

1. The platform D, carried by the bars *c* and hinged posts *b*, substantially as and for the purposes shown and described.

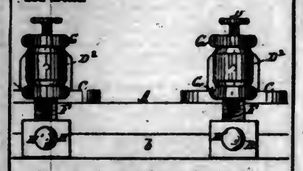


169,543.

2. The combination of the derrick H, having rope A and the adjustable swinging platform D, substantially as and for the purposes shown and described.

169,543. DRAWING-BOARD ATTACHMENTS. Julius O. Hintz, Canton, Ohio. [Filed Aug. 19, 1875.]

Brief.—The invention involves special mechanism for truing the angles of drawing-boards and tables.



1. A squaring attachment for drawing-tables, consisting of the border-rails B, in combination with horizontal and vertical adjusting mechanism, substantially as and for the purpose described.

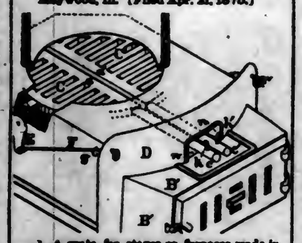
2. The combination, with a table, of bed-plate C, having shoulders C' and support C', substantially as and for the purpose described.

3. The border-rails B and jaws B, provided with shaft F and milled nuts G, whereby the cloth can be adjusted up or down, in combination with a shaft or support, D, and screw E, and the shaft can be adjusted horizontally, substantially as and for the purpose described.

4. The combination, with the table A, of bed-plate C, shaft D, screw E, shaft F, nuts G, and jaws B, substantially as and for the purpose described.

5. The combination, with the table A, of bed-plate C, shaft D, screw E, shaft F, nuts G, and border-rails B and rib *b*, of jaw H and set-screw H', substantially as and for the purpose described.

169,544. STOVE-GRATES. W. B. Hosford, Maywood, Ill. [Filed Apr. 21, 1875.]

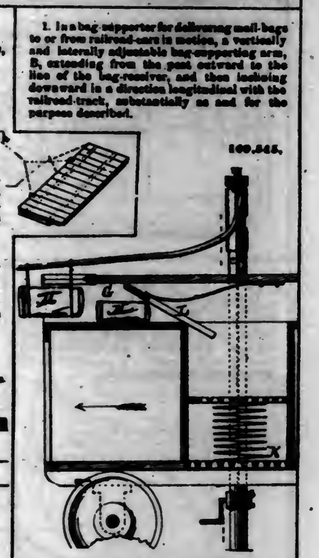


1. A grate for stoves or furnaces made in sections, and provided with journals *b b'* and *c c'* and lugs *d d'*, in combination with the sections *a a'*, cranks B B', and shifting-rods F F', all arranged to operate together in the manner shown, and for the purposes set forth.

2. The combination, in a dumping-grate, of the sectional grates G G', sections *a a'*, cranks B B', and shifting-rods F F' with the pins *h h'* and dumping-lever G, the latter constructed as shown, and all arranged to operate substantially in the manner shown, and for the purposes specified.

3. In combination with the sectional grate G G', having journals *c c'*, provided with pins *h h'*, the dumping-lever G, provided with a hole, *i*, and elongated slot *j*, to engage with the said pins, substantially in the manner shown, and for the purposes herein set forth.

169,545. MAIL-BAG CATCHERS. Edgar P. Hotchkiss, Unadilla Forks, N. Y. [Filed Oct. 18, 1875.]



169,545.

1. In a bag-supporter for delivering mail-bags to or from railroad-cars in motion, a vertically and laterally adjustable bag-supporting arm, B, extending from the post outward to the line of the bag-receiver, and then inclining downward in a direction longitudinal with the railroad-track, substantially as and for the purpose described.

2. An apparatus for delivering bags and other packages to, or receiving them from, railway-cars in motion, having a support from which the bag is suspended by cords, and a cutting-edge operated by the power of the moving car for severing said suspending-cords at the proper moment, and allowing them to drop upon or into the receptacle prepared for them, substantially as described.

3. The combination of the inclined bag-supporting arm B and the floor-roof, having the notch or notches *g*, with edges adapted to sever the cords that support the bag or package, substantially as described.

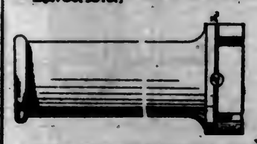
4. In an apparatus for receiving and delivering bags and packages from and to railway-cars in motion, the floor G, combined with a spring-brake, I, substantially as and for the purpose described.

5. In an apparatus for receiving and delivering bags and packages from and to railway-cars in motion, the floor G and receiving-chamber H, having a grated bottom, combined and arranged substantially as described.

6. In an apparatus for receiving and delivering bags and packages from and to railway-cars in motion, the combination of the chamber H, having a grated bottom and a spring false bottom, with the floor G, substantially as described.

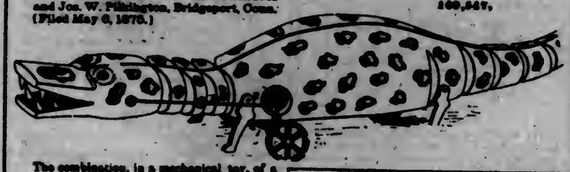
7. In an apparatus for receiving and delivering bags and packages from and to railway-cars in motion, the receiving floor or floors G, having their roof provided with a cutting edge or edges, and having the floor of the passage projecting beyond said cutting edge or edges, substantially as and for the purposes herein set forth.

169,546. SPOOLS. Horace J. Hubbard, Chicopee, Mass., assignor of one-half his right to E. F. McLean, same place. [Filed Apr. 20, 1875.]



The bobbin having its head re-enforced by means of the wire I, which is fitted in the groove *b*, and has its ends twisted together and sunk into the hole *d*, and held therein by means of solder or other similar material, as described.

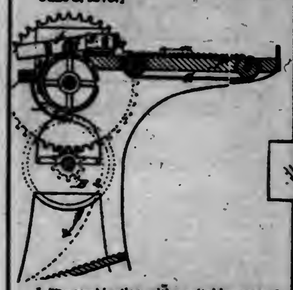
169,547. AUTOMATIC TOYS. Edward R. Ives and Jos. W. Pilkington, Bridgeport, Conn. [Filed May 6, 1875.]



169,547.

The combination, in a mechanical toy, of a body mounted on wheels, and containing a clock mechanism, a sectional flexible tail, and a sectional flexible head or neck, connecting with the clock mechanism by a pitman, all substantially as set forth.

169,548. PAPER-PERFORATING MACHINES. Joseph S. Ives, New York, N. Y. [Filed June 3, 1875.]



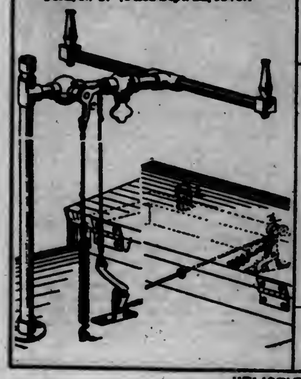
1. The combination, with a suitably-grooved rotatory surface, on which the sheet is supported, of a cutter-wheel driven therefrom, and formed or provided with knife-edge cutters, the whole so constructed and operating that the sheet passed between said two wheels will have a row of clean cuts made in it, as and for the purpose described.

2. The combination, with a grooved driving-wheel, of a cutting-wheel and a means for pressing and holding the cutter-wheel toward the driving-wheel, the whole arranged and operating together as and for the purpose described.

3. In combination with the means for perforating the paper, a receptacle for the finished sheets, arranged immediately under the perforating mechanism.

4. In combination with the perforating mechanism and a suitable receptacle for the finished sheets, arranged beneath said mechanism, a deflector or guide-board, the whole arranged and operating as and for the purposes set forth.

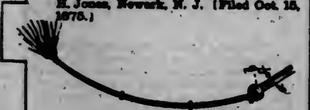
169,549. APPARATUS FOR REGULATING THE FLOW OF GAS TO BURNERS. Charles F. Jacobsen and George M. Murphy, New York, N. Y. [Filed Sept. 23, 1875.]



1. The depressible platform, located at that point on or in the floor where the occupant of the desk stands or sits when at his desk, in combination with the gas-flow-regulating cock of one or more gas-burners, and mechanism intermediate between the cock and the platform, actuated by the movement of said platform to operate the cock, in the manner set forth.

2. The combination, with a gas fixture or burner, of a main cock, adapted to be operated, in the usual way, by hand, to turn on and off the gas, and an auxiliary cock or gas-flow regulator, combined with a depressible platform, and operated to regulate the flow of gas to the burner, (when the main cock is turned on,) at times and in the manner set forth.

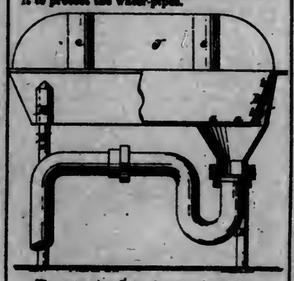
169,550. SNAPPER-LOOPS FOR WHIPS. H. H. Jones, Newark, N. J. [Filed Oct. 15, 1875.]



As a new article of manufacture, the improved flexible and elastic snapper-loop for whips, herein described, consisting of the tube or casket A, shank *a*, and eye A, substantially as and for the purpose herein set forth.

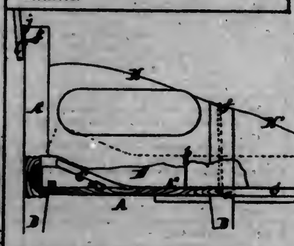
169,551. SINKS. Louis Jones, Jr., New York, N. Y. [Filed May 4, 1875.]

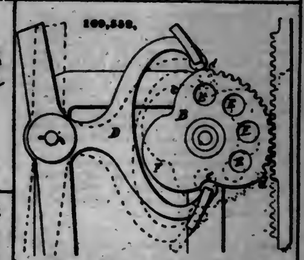
Brief.—The sink-extension has ribs cast in it to protect the water-pipes.



The extension A', having the ribs *b*, in combination with a sink-basin, substantially as described.

169,552. SEEDING MECHANISMS FOR LOOMS. Orrin W. Kenison, Lawrence, Mass. [Filed July 24, 1875.]





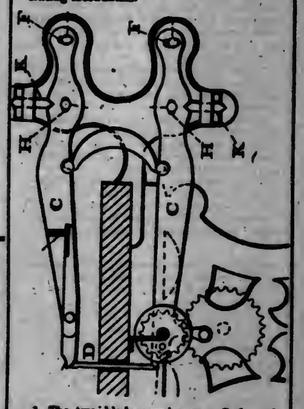
169,553.

1. The combination of the cam E, having two inclines and rests upon the outside thereof, with the two forked arms D, to move and lock the heddle-levers A, substantially as described.

2. The counterpoise F to the cam E, and the jack, in combination with the cam and jacks, substantially as described.

169,553. SCROLL-SAWING MACHINES. W. H. Kimball, Burlington, N. J. [Filed Aug. 2, 1875.]

Brief.—An advancing motion in right lines, or at a right angle to the transverse direction of the table, is imparted to the saw by two blade-carrying arms having sliding axes, by means of pins passing through vertical and horizontal slots in the rear ends of the arms, and steels pointed at each end and fitted between the arms and the adjacent portions of the supporting-frame, in connection with suitable operating mechanism.



1. The two blade-carrying arms C, formed with vertical slots F and horizontal slots H, and operating substantially as and for the purpose set forth.

2. The steels K, in combination with the slotted blade-carrying arms C C, substantially as and for the purpose set forth.

169,554. TABLE-BEDSTEADS. Emerick Kiss, New York, N. Y. [Filed Aug. 18, 1875.]

1. A table-bedstead, in which is combined, substantially as hereinbefore set forth, the stationary head-frame A, a series of independent sections, C C, hinged together and to

169,554.

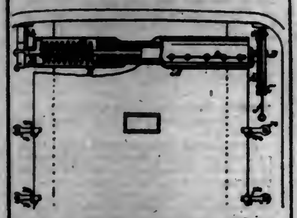
the head-frame, the hinged foot-board D, the sectional hinged rails B B', and the table-leaf I, hinged near the upper end of the head part A' of the head-frame A, substantially as and for the object specified.

2. The combination of the stationary head-frame A, series of hinged sections C C, hinged foot-board D, braces F, having slots e, and the studs d on one of the sections C, all substantially as shown and described, for the object specified.

3. The stationary frame A, in combination with the sectional side rails H H', hinged together and to the head-frame, and the series of hinged sections C C, and hinged foot-board D, all substantially as shown and described, for the object set forth.

4. The combination, with the table-leaf I, and head-frame A, of the hook and staple h i, or their equivalent devices, for retaining the leaf in an elevated position, substantially as described.

169,665. Garment-Curtain Fixtures. D. B. Knight and John M. Hipple, Waynesborough, Pa. [Filed Sept. 4, 1875.]



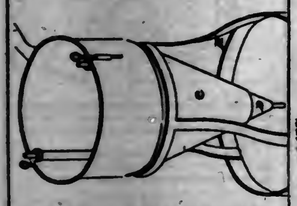
1. The combination, with the central continuous shaft B, rigidly held in supports, of the springs F F, the detachable cylindrical end caps E E, provided with longitudinal offsets, and the revolving sleeves D, provided with corresponding offsets, and rigidly revolving with said end caps, as and for the purpose described.

2. The curtain-roll having deeps d, in combination with the curtain provided with eyelets and a rod, c, as and for the purpose described.

3. The combination, with the curtain-roll provided with holes or cavities, of the rod f, attached to a spring-plate, A, the vertically-sliding cam i, and the rod j, substantially as and for the purpose described.

4. The upwardly-pointing right-angular hooks n, attached to the curtain side so as to project beyond the roll, in combination with the hooks o, pivoted to the sides of the carriage, substantially as described.

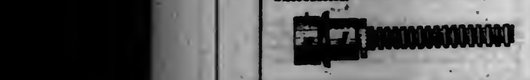
169,666. Batter-Feeders for Oakum-Mixers. Daniel H. Lafferty, San Francisco, Cal. [Filed Apr. 2, 1875.]



A batter-feeder consisting of the vessel A, having the conical end C and stopper D, in combination with the tripod E, having the right solid bottom G', substantially as and for the purpose set forth.

169,667. Wrenches. Andrew B. Lipsey, Jersey City, N. J., assignor of one-half his right to H. A. Sherrill, New York, N. Y. [Filed Aug. 11, 1875.]

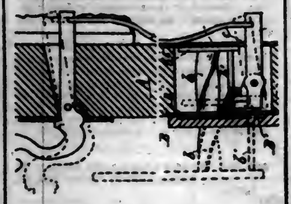
Brief.—A removable sleeve is attached to the movable jaw, through which the screw-rod passes. A pin through the rod inside the sleeve prevents the screw-rod from becoming disconnected.





The nut or stop-collar J, in combination with the sliding jaw and screw of a wrench, substantially in the manner and for the purpose described.

169,668. Combined Letter-Boxes and Door-Bells. John Lovenguth, St. Louis, Mo., assignor to himself and F. R. Hoffman, same place. [Filed Sept. 13, 1875.]



1. The spiral stem b of the door-plate, in combination with the correspondingly-mortised plate B', whereby, when the door-plate is raised to open the letter-port, it is carried away from the door, to permit it to pass projecting fastings or paneling, as set forth.

2. The spiral stem b of the door-plate, stem b', and plate b', in combination with the mortised and slotted plate B' and crank-lever b', whereby when the letter-port is opened the stem b is caused to describe the arc of a circle, during which movement it operates upon one arm of the crank-lever, and depresses it for the purpose of sounding the bell, as set forth.

3. The combination of a door-plate with a bell, by means of the spiral stem b, fixed stem b', casting B', having a journaled stem, b', and arm b', said parts being constructed to operate in the manner and for the purpose set forth.

169,669. Hand-Trucks. Peter Lagenbell, Greensburg, Ind. [Filed Apr. 12, 1875.]

Brief.—By inverting the truck it may be used to convey boxes. By attaching the extra wheel it may be used to roll over gangway-planks or other narrow ways.



1. The combination of the shafts A A, adjustable beams B B', and adjustable clutches F F, substantially as and for the purposes set forth.

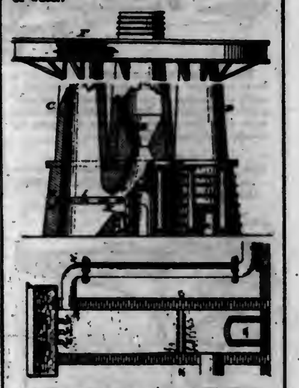
2. The combination of the arms or shafts A A, adjustable beams B B', clutches F, and slotted cross-beam D, substantially as set forth.

3. The combination of the shafts A A, secured together by adjustable cross-beams, the clutches F F, and wheels G G, as and for the purposes specified.

4. The combination of the arms or shafts A A, secured together by means of adjustable cross-beams, clutches F F, and detachable center wheel H, substantially as specified.

169,670. Apparatus for Production of Iron and Steel from the Ore. Wm. A. Lyttle, The Grove Hammersmith, England. [Filed May 7, 1875.]

Brief.—Lateral fuel-chambers are combined with a central cupola, into which the ore mixed with carbonaceous matter is charged. Products of combustion are condensed by a spray of water.

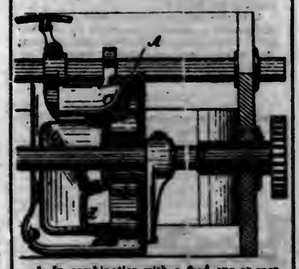


1. The combination of the cupola in which the smelting is effected, chambers c and D made to taper outward toward the base, cover F, ring f, into which the tuyeres of the blast are led, and passage K L, all relatively arranged as and for the purposes described.

2. The combination of the sistern A, from which water issues by nozzles S T V, pipe F, through which the products from the furnace pass, pipe E H E, grating B C, and door D, as and for the purposes described.

169,671. Feeding Mechanism for Grain-Drills. Andrew J. Martin, Springfield, Ohio, assignor to P. P. Mast & Co., same place. [Filed Aug. 10, 1875.]

Brief.—Passing through the case at the side, and into the vertically-revolving seed-wheel, is a laterally-moving cut-off, for controlling the flow of seed, and adapted to discharge one portion of the seed out through the side of the case, while the other portion is permitted to continue its course around within the wheel.



1. In combination with a feed cup or case and a vertical feed wheel or ring, a gate movable laterally in a plane parallel with the axis of the wheel, substantially as shown and described, for the purpose of regulating the rate of feed.

2. In combination with the cup A and the ring B, or its equivalent, the horizontally-sliding gate having the sharp edge and the inclined outer face, substantially as shown and described.

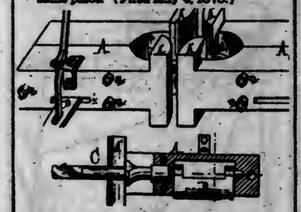
3. In a feeding device for grain-drills, consisting of a cup or case and a vertical wheel or ring, a laterally-moving gate, substantially as shown and described, adapted to direct one portion of the grain out through the side of the cup, while the other portion is permitted to continue its course around within the same.

169,662. Fence-Post Supports. Hugh McKenzie, Oronoco, Minn. [Filed Apr. 23, 1875.]



The within-described fence-post base, consisting of the blade A, rib B, with recess c, and arm C, with rib b, all cast in one piece, substantially as and for the purposes herein set forth.

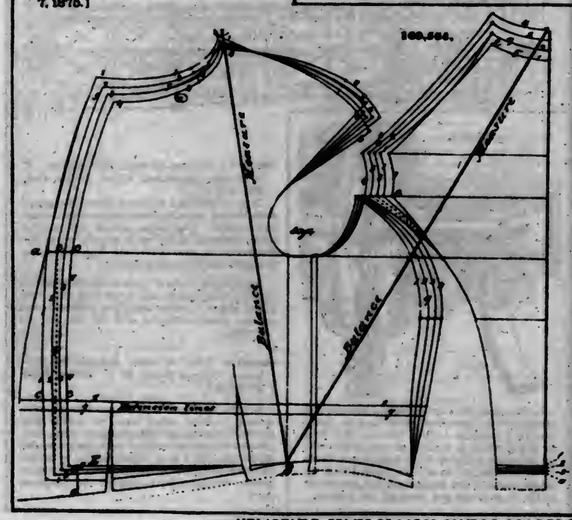
169,663. Car-Couplings. Hugh F. McKervey, Chebogrue, Mich., assignor to himself, Angus McKay, and C. S. Ramsay, same place. [Filed May 4, 1875.]



1. The combination, with the draw-head A, having hooks A' and bearing e, of the end-pivoted transioned counter-weight B, with socket-d, and the harpoon coupling-bar C, provided with shank S, lateral arms h h, and flat head f, all as shown and described, to operate as specified.

2. In combination with the coupling-bar C, constructed as described, and the end-pivoted swinging counter-weight B, arranged within the chamber of the draw-head, the horizontal slotted side D and vertical lever E, for raising and retaining counter-weight and holding it in an elevated position, as shown and described, for the purpose specified.

169,664. Pattern-Charts for Drafting Garments. Michael A. Meleher and I. A. Meleher, Constantine, Mich. [Filed Aug. 7, 1875.]



1. The pattern-chart for drafting garments, herein described, provided with the scales 1 to 9 or more, inclusive, arranged as shown and described, and for the purposes herein set forth.

2. The waist-strap, with its double number and line of holes, arranged as shown and described, adapted for use with the combined patterns, as herein described.

169,665. Farm. Flavel G. Merriam, Akron, Ohio. [Filed Aug. 7, 1875.]



A pipe wholly or partially composed of clay, saturated with the enamel herein described, and baked after the application of the enamel, substantially as and for the purposes set forth.

169,666. Farm. Flavel G. Merriam, Akron, Ohio. [Filed Sept. 7, 1875.]



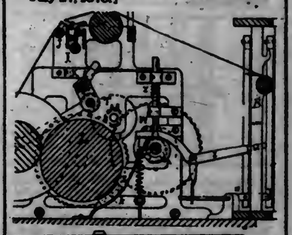
A pipe composed wholly or part of clay of wood, saturated with the enamel herein described, and baked after the application of the enamel, substantially as and for the purposes described.

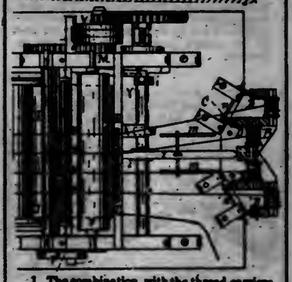
169,667. Burglar-Proof Safes. Enoch R. Morse, Boston, Mass. [Filed Sept. 15, 1875.]



A burglar-proof safe having a door, B, provided with one or more flanges, a, arranged to fit over corresponding flanges b, projecting from the front of the body A of the safe, whereby the line of the joint between them is rendered zig-zag or bent from the front surface of the door, in combination with the casing C, extending in front of or covering the joint c, substantially as and for the purposes described.

169,668. Warpers. Oliver H. Moulton, Lowell, Mass., Laura S. Damon, (administratrix of Alex. M. Damon, deceased,) Albany, Vt., and I. L. G. Rice, Cambridge, Mass.; said Rice assignor to Chas. H. Rice and R. H. Parker, Boston, Mass. [Filed July 27, 1875.]





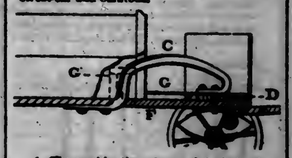
1. The combination, with the thread-carriers and stopping mechanism of a warping-machine, of the spool-cradle and warp-beam-driving cylinder, and friction mechanisms adapted to operate upon the spools and the driving-cylinder, whereby when a thread breaks the warp-beam and the spools are simultaneously stopped, as and for the purposes set forth.

2. In combination with the warp-beam-driving cylinder of a warping-machine and the belt-shipping mechanism controlled by the thread-carrier, the cam-shaft and intermediate mechanism, substantially as shown, for controlling and operating it, which shaft is adapted, through intermediate friction-brake devices, to stop the beam and the spools simultaneously, as and for the purposes set forth.

3. In a warping-machine, the combination of a belt-shipping mechanism, controlled by the thread-carriers, with the friction-brakes adapted to operate upon the spools, and intermediate operating mechanism, substantially as described, whereby the spools are stopped when a thread breaks, as and for the purposes set forth.

169,669. Car-Coaches. Thomas H. Neal, Philadelphia, Pa. [Filed Mar. 20, 1876.]

Brief.—Intended to combine advantages of street-car and omnibus.



1. The combination of a coach-body having a front door with a driver's platform, D, and curved springs C, substantially as and for the purposes set forth.

2. The combination of a coach-body having a front door with the platform D, curved suspension-springs C, the platform F, having axe a and axe b on the body, substantially as and for the purposes set forth.

3. The combination of the suspended platform D, curved springs C, rotary platform F, having axe a, the body of the coach having axe b and overhanging sill G', and the stationary platform G, substantially as and for the purpose set forth.

169,570. Blind-Slat Adjusters. George Michels, Brooklyn, N. Y. (Filed Oct. 14, 1875.)

Brief.—A small piece of rubber is fitted upon one end of the slat, and by its friction against the blind-frame keeps the slat at any required angle.



The automatic blind slat fastener, consisting of a pad or block of rubber or other elastic material, slotted on one side, and adapted to fit over the end of a movable or shifting slat, and bind against the inner side of the blind-frame, in such manner as to automatically adjust itself, and at the same time hold the slats in any desired position, substantially as described.

169,571. Bird-Cage Hooks. George B. Osborn, East Orange, N. J., and Benjamin A. Dempsey, New York, N. Y. (Filed Oct. 28, 1875.)



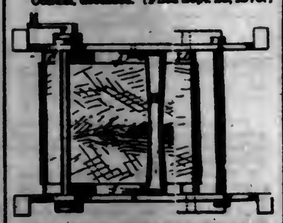
The notched or drilled lug c on the fine-plate A, in combination with the stud or Y-shaped shoulder b on the arm B, operating substantially as and for the purpose shown and specified.

169,572. Hame-Fasteners. A. J. Park, Virginia, Mo. (Filed Sept. 13, 1875.)



In a hame-fastener, consisting of a rod and thimble, united and adjusted by a latch or catch, the combination, with the lever-arm of the latch, of locking-slide D, substantially as described.

169,573. Guide-Rollers for Reeling-engines. Joseph Farr, New York, N. Y., assignee to Lydia A. McCollum, sole executrix and trustee of the estate of John McCollum, deceased. (Filed Sept. 28, 1875.)



The guide-roller B, having a concave longitudinal profile, and journaled at each end to the slotted arms c c, secured to the frame A by means of the bolts f, which allow said arms to be adjusted independently of each other, for the purpose of adjusting the roller to the belt, substantially as described.

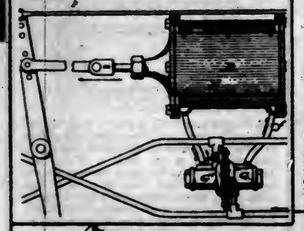
169,574. Ratchet-Movements. Joseph Farr, New York, N. Y., assignee to Lydia Ann McCollum, sole executrix and trustee of the estate of John McCollum, deceased. (Filed Sept. 28, 1875.)



The combination, with a pawl, ratchet, and ratchet-shaft, of an arm, D, having an inclined slot, d, engaging with a projection on the pawl, and provided with a spring, F, for holding it in contact with the ratchet, as herein described, whereby the pawl is held clear of the ratchet during the backward movement, and thrown into gear during the forward movement, substantially as shown and set forth.

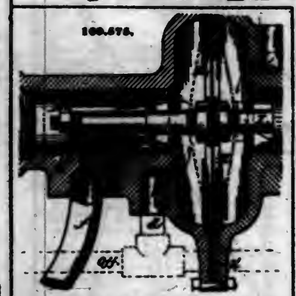
169,575. Double-Acting Air-Brakes. H. Lansing Perrine, Freehold, N. J. (Filed Oct. 21, 1875.)

Brief.—Pressure is maintained in two independent lines of pipes. A diaphragm, centrally secured in a valve-case, has hollow piston-valves secured to its opposite sides. Each valve governs an induction and eduction port, leading to the opposite ends of the brake-cylinder. When the pressure is reduced in one pipe, the pressure in the other pipes forces the diaphragm and valves in a position to allow air to enter the brake cylinder and set the brakes. A reverse operation forces off the brakes.





169,576.



1. The method of operating car-brakes, substantially as described, consisting in maintaining a pressure in two independent lines of pipes, which is equable or variable at will, for actuating a duplex-valve mechanism, whereby air is admitted to and exhausted from opposite ends of the brake-cylinder simultaneously, so as to set and force off the brakes.

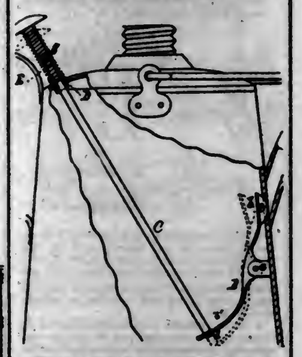
2. In a brake mechanism operated by means of the pressure of air through two lines of pipe equalized and varied at will, the two cocks F F, constructed as described, and arranged one in each line of pipe, substantially as specified.

3. In a pneumatic-brake mechanism, substantially as described, the combination of a duplex-valve mechanism with two lines of pipes, and compound cocks therein, whereby an equalized or variable pressure is maintained in said valve, governable at will to set and release the brakes.

4. The combination of the duplex valve G, constructed substantially as described, with the brake-cylinder B, two lines of pipe, and compound cocks therein.

5. The combination of a movable or flexible diaphragm with two hollow piston-valves and two lines of pipe, substantially as described.

169,576. Oil-Cans. Nicolai Petersen, Chicago, Ill. (Filed Aug. 20, 1874.)



The improved oil-can, having the sleeve D, the actuating-rod C, provided with the notch B and reduced end A, the valve-lever E, provided with the slot b, into which the reduced portion of the rod C is passed, and the spring S, applied upon the upper end of the rod C outside of the can, all constructed and combined as described.

169,577. Water-Supply Apparatus. J. N. Fraps, Cincinnati, Ohio. (Filed Oct. 26, 1875.)

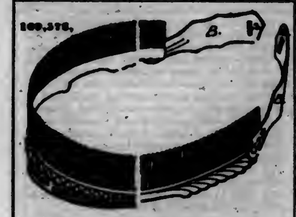
Brief.—One tank is placed above the other, each having suitable frame-support and pipe-connections. The lower tank is supposed to have sufficient elevation to supply water for domestic use, &c., while the upper can be available for fire-extinguishing.

Two water tanks or reservoirs, arranged at different elevations, and combined with each other and with water-supply and distributing mains, substantially as and for the purpose specified.

169,578. Band-Cutters. Adolph Puppenhusen, College Point, N. Y. (Filed June 21, 1875.)

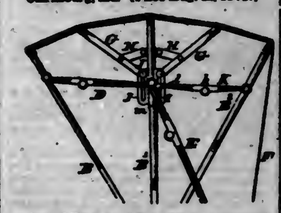
1. The combination and arrangement, with a band-comb, or other comb of similar construction, of the movable pieces or wings B B, pivoted to the ends of the comb, and provided with the slots 3 3, or other device by means of which their outer ends may be connected together, substantially as and for the purposes forth.

169,579.



2. The combination and arrangement, with a band-comb, or other comb of similar construction, of the movable pieces or wings B B, provided with the slots 3 3, substantially as and for the purpose set forth.

169,579. Carriage-Tops. Wm. H. Power, Washington, D. C., and C. T. Anderson, Clarksburg, Md. (Filed Aug. 21, 1875.)



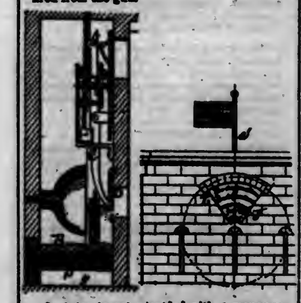
1. A falling top for carriages constructed with one or more supplemental bows, G, connected to one of the main bows by hinged struts or links H, causing the feet of the said supplemental bows to slide up and down on the main bow by the action of the stretchers F, as explained.

2. The combination, with the main bows B B', braces D d, and stretchers F, of the supplemental bows G, (one or more,) connecting links or struts H, and the slotted plates I, for confining the heels of the supplemental bows, as explained.

3. The supplemental jointed props or struts K, formed with shoulders i resting against the upper pivots a of the props E, but disconnected therefrom, so as to be free to leave said pivots when the top is lowered, and connected to said props at m, so as to be thrown up and deflected by the deflection of the said props E, as explained.

169,580. Toy Targets. Joseph Pennenstil, New York, N. Y. (Filed Sept. 15, 1875.)

Brief.—Toy target and money-bank combined. Pennies may be used as missiles and fired from the gun.



1. A toy target provided with a money-receptacle, into which coins can be deposited through the bull's-eye, substantially as described.

2. The combination of the open bull's-eye b, the swinging door D, the locking and releasing lever and catch O c, and the outlining flag-staff c' or c², arranged to operate, as herein shown and described.

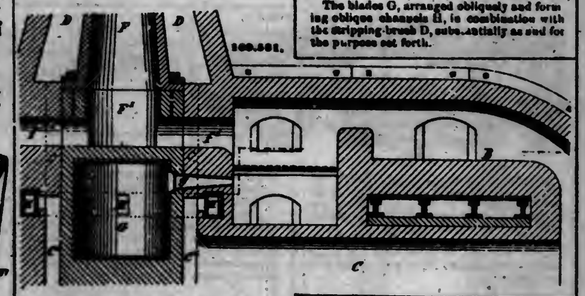
3. The combination, with an open bull's-eye and a movable door, of a rotating disk or tablet, substantially as herein described.

4. The combination, with the bull's-eye and movable door, of inclines or guards forming a money safe or receptacle, substantially as and for the purpose herein described.

169,581. Reverberatory Furnaces. John Price, Sunderland, England. (Filed Aug. 2, 1875.)

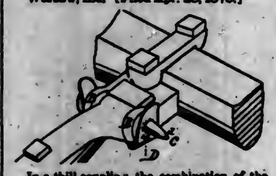
Brief.—The fuel and blast are both heated by the waste gases of the furnace.

169,581.



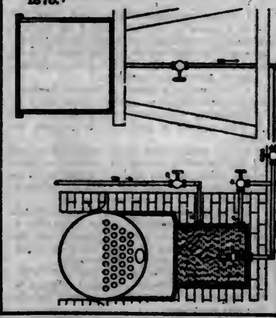
The combination of the combustion-chamber A, the heating-chamber or hearth B, the return-flue C, the retort-heating chamber D, with its contained fuel-retort F, and the hot-air chamber G, for supplying heated air to the combustion-chamber, with which the fuel-retort is also in communication, substantially as shown and described, and for the purposes herein set forth.

169,582. Tells-Couplings. T. J. Quick, Warsaw, Ind. (Filed Apr. 23, 1875.)



In a thill-coupling, the combination of the shackle A, the bolt C, having a pointed end, *f*, and annular flange *d*', and the curvilinear spring D, having two oval-shaped apertures for the reception of the bolt, all constructed as and for the purposes described.

169,583. Hydrocarbon-Furnaces. Peter M. Quist, St. Paul, Minn., assignor of two-thirds his right to Hermann Trott and Cooper Klein, same place. (Filed Sept. 13, 1875.)

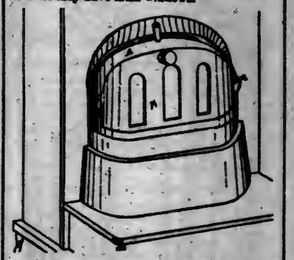


169,584.



169,585. Fire-Blowers. John Reid, New York, N. Y. (Filed Oct. 16, 1875.)

Brief.—The inner blower is mainly of gauze or other finely-perforated surface. The outer blower may have mica windows.

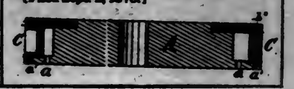


1. In combination with a gauze or perforated blower, A, the tight supplementary blower B, substantially as described, and for the purposes set forth.

2. The gauze or perforated blower A, provided with suitable catches or fastenings, in combination with the lugs or ears on the supplementary blower, substantially as and for the purpose described.

3. A supplementary blower provided with mica windows, substantially as shown, in combination with a gauze or perforated blower, for the purposes set forth.

169,586. Piston-Packings. Geo. H. Reynolds, New York, N. Y., assignor to himself, C. H. Dalmeister, and C. H. Robinson. (Filed Sept. 2, 1875.)



To apparatus for burning oil upon a body of water, substantially as described, the combination, with the water-reservoir and oil-feeding pipe, of a check or poppet-valve, located in the discharging end of the latter, operating to permit ingress of oil from the pipe into the reservoir, and to prevent ingress of water from the reservoir into the pipe, substantially as shown and set forth.

169,588. Cotton-Gins. William S. Reader, St. Louis, Mo., assignor to Kingsland, Ferguson & Co., same place. (Filed Aug. 10, 1875.)

Brief.—The whipping-board is grooved obliquely.

The blades G, arranged obliquely and forming oblique channels H, in combination with the stripping-brush D, substantially as and for the purpose set forth.

If combination with the single-acting piston A and expansible packing C, the series of apertures a, on one face of the piston only, admitting steam to the space within the packing, and the double series of apertures a' b', against the respective edges of the packing, substantially as and for the purpose specified.

169,587. Rock-Drilling Engines. Geo. H. Reynolds, New York, N. Y., assignor to himself, C. H. Delamater, and G. H. Robinson. [Filed Sept. 2, 1875.]

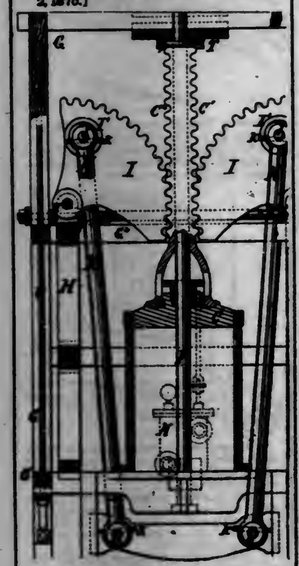
Brief.—The pistons of the engine serve as valves to admit and exhaust the steam. The parts extending around the cylinder permit the steam to exhaust freely.



1. In combination with a solid double piston, E, serving both as piston and valve, the ports or mouths F' F' of the respective steam-passages extended quite around the cylinder, as and for the purposes specified.

2. The crooked steam-passages, having the bend E' arranged as shown relatively to the annular exhaust-port F', as and for the purposes specified.

169,588. Presses. Geo. H. Reynolds, New York, N. Y., assignor to himself, C. H. Delamater, and G. H. Robinson. [Filed Sept. 2, 1875.]



1. The cross-rods E, arranged to not only connect the struts H at points adjacent to the centers of the sectors I, but also to hold the press in position within the gallows-frame, in combination with said frame, as herein specified.

2. The central tie-rod P, extending down from the top of the gallows-frame to the top plates, and serving both as a tie for those parts, and as a guide for the racked bar and its connections, as herein specified.

3. The combination T, in combination with the central tie-rod P, and with the actuating-pinion O and its connections, as and for the purposes herein specified.

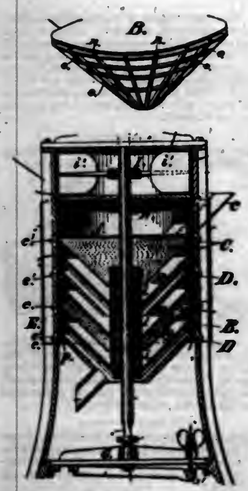
4. In combination with the piston C and its connections, a valve, F, arranged to automatically control the motion when the press has reached the limit of its movement, as and for the purposes herein specified.

5. In combination with the sectors I, receiving motion from the piston C, as shown, the shafts J L, fixed to the rods K, and turning with the changing inclination thereof, as herein specified.

6. In combination with a suspended press, the vertical ties U, connecting the massive iron parts of the press to the top of the wood gallows-frame G, with the vertical struts G' between the said ties U, and serving therewith, as and for the purposes herein specified.

169,589. Machines for Scouring and Decorticating Grain. Wm. Pim Robinson, Buffalo, N. Y. [Filed July 20, 1875.]

Brief.—The horizontal ridges on under side of scouring-wheels delay the grain against the stationary hoppers, and the vertical ridges serve to agitate the grain. The stationary hoppers are vertically adjustable upon upright posts by means of slots and screws.



1. The combination of the post E, provided with a series of vertical slots, e, the button-headed screws e', and the hoppers G G B B B, adapted to hold up the frame and to hold said hoppers in an adjustable manner, substantially as shown and described.

2. The scouring-wheels B, having horizontal ridges or beaters o on their under sides, in combination with stationary hoppers D and C, substantially as and for the purpose described.

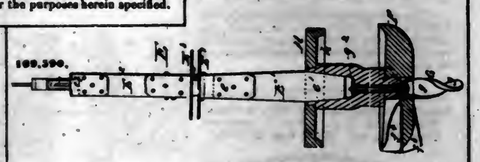
3. The combination of the scouring-wheels B, having radial or vertical ridges n in their under sides, and the series of stationary hoppers D C, constructed and arranged substantially as and for the purpose described.

4. The combination of the scouring-wheels B, having the horizontal ridges or beaters o, and the vertical or radial ridges n, and the series of stationary hoppers D C, substantially as and for the purpose described.

5. The scouring-wheel B, provided with the radial ridges n and the horizontal ridges o on its under side, substantially as and for the purpose described.

169,590. Earth-Boring Apparatus. M. H. Ruth, Claiborne Parish, and W. Crain, Farmerville, La. [Filed June 26, 1875.]

Brief.—The auger consists of a hollow central shaft, with a screw-blade below, having a rim at its upper side, a cutting-blade, and a screw-bit, and a guide above, with flanged rim. The shaft-sections are provided with disks at their adjacent ends, to preserve verticality, and are connected by notched projections, sliding pieces, and slots to secure them. The winch-drum is formed with two parts of different diameters, to lower the auger quickly and raise it slowly, the rope passing over a pulley above secured to the frame.



1. The auger F, constructed with a hollow central shaft, F', screw-blade F', rim f', cutting-blade f', bit G, and plate or extension H, and rim h, substantially as and for the purposes described.

2. The combination, with a well-auger, of a shaft, E, composed of a series of sections provided with plates or disks E' at their adjacent ends, substantially as and for the purpose specified.

3. The combination, with a well-auger, of a shaft, E, composed of a series of sections provided with plates or disks E' at their adjacent ends, and connected together by notched projections E', sliding pieces e', and slots and recesses e', substantially as set forth.

4. The combination, with a well-auger shaft, K, composed of a series of sections provided with plates or disks E' at their adjacent ends, of the swivel-piece K, provided with a notched end, K', and retaining-piece k', and swivel-hook k, substantially as described.

5. The combination, with a derrick, A, provided with a winch-drum, D, formed with parts d d', of different diameters, the rope O, and pulley B, of the sectional shafting E, provided with plates or disks E' and the auger F, substantially as and for the purposes described.

169,591. Processes for Preserving Fruits. Frederick H. L. C. Saco, Neufchatel, Switzerland. [Filed Oct. 20, 1875.]

The method herein described of preserving fruits, by the employment of sugar and alcohol, either alone or in connection with other ingredients, substantially in the manner herein set forth.

169,592. Preservation of Meats. Frederick H. L. C. Saco, Neufchatel, Switzerland. [Filed Oct. 20, 1875.]

The method herein described of preserving butcher's meat, game, fish, molluscs, &c., by the employment of chloride of sodium, alcohol, and water, in combination, either alone or in connection with other ingredients, substantially as herein set forth.

169,593. Car-Brakes. James N. Hawkins, Philadelphia, Pa. [Filed Oct. 2, 1875.]

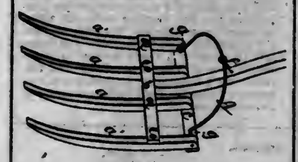


1. The eccentric shoe D and lever E, constructed and intermixed in the manner herein described, so that the bearing-surface d will move in a direction nearly tangential to the wheel on which it acts.

2. The combination of the shoe D, levers E H, pedal J, and the rack L, for graduating the pressure and locking the brake, as explained.

169,594. Barley-Forks. Sylvester Scull, Watertown, N. Y. [Filed Sept. 6, 1875.]

Brief.—The tines and cross-pieces are made of wood, and held together by screws, and the handle is attached by means of screws in the same manner. The cradle-bow to support the grain is inserted into holes in the heel end of the outside tines, and is held in place by the elasticity of the metal.



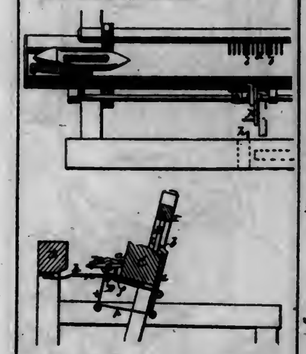
A barley-fork constructed substantially as described, and having the braced cradle-bow or grain-guard A, with its angle ends g g retained in sockets in the inner sides of the outer tines a' a' by the spring force of the bow, as shown, and for the purposes described.

169,595. Bee-Preserving Compounds. E. A. Snyder, Philadelphia, Pa. [Filed Sept. 16, 1875.]

Brief.—Places in the bottom of the barrel a layer of slaked lime, which is covered with a piece of muslin; then place in a few dozen eggs, and cover with the composition claimed, and continue to put in eggs and liquor until the barrel is full.

An egg-preserving composition composed of the following ingredients, to wit: Sal-ammoniac, gum-arabic, niter, borax, and water, substantially as described.

169,596. Weft-Stop Mechanism for Looms. Orsemus M. Stillman, Westerly, R. I. [Filed Apr. 6, 1875.]



1. In combination with a lever, H, pivoted to a stand on the lay of a loom, one or more thin plates, h, projecting between the dents of the reed toward the cloth, and a connecting mechanism, substantially as described, whereby, when the plate or plates are driven back by the filling, the lever will be moved sufficiently to prevent its acting on the belt-shipping lever of the loom, substantially as herein set forth.

2. The combination, with the lay and reed of a loom, of the thin plates h, arms c, plate f, and pivoted lever H, with sustaining-spring s, all substantially as and for the purposes herein set forth.

3. The supporting arm or plate h, attached to the breast-beam B, in combination with the bar or lever H, for sustaining and guiding such latter device against or below the belt-shifting lever, substantially as herein set forth.

4. The combination, with the plates h and arms c, of the protecting-rod D, arm i, loose link p, and the arm c, for removing the plates from the path of the shuttle by the rocking of the protecting-rod, substantially as herein set forth.

169,597. Draftsmen's Ink-Saucers. F. Stith, Washington, D. C. [Filed Apr. 7, 1875.]



1. The india-ink saucer, having a central well encircled by an ink-grinding track, substantially as set forth.

2. The combination of the ink-saucer, having a central well, the removable cover having an orifice in its crown above said well, and a stopple fitting said orifice, and provided with a pen-feeder extending down into the well, substantially as, and for the purposes set forth.

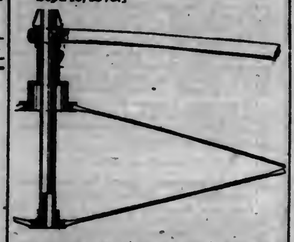
169,598. Drive-Well Packings. V. F. Thomasich, Mobile, Ala. [Filed Aug. 12, 1875.]

Brief.—Introducing beneath the packing a metallic ring-support, concaved on the inside, and bracing the leather on the outer upturned portion, whereby the latter is entirely protected against curling or turning over.



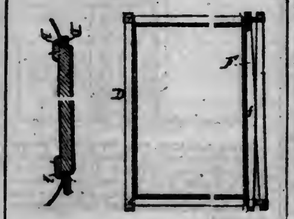
The piston-packing metallic ring-support E, concaved on the inside, and bracing the leather packing, as and for the purpose specified.

169,599. Umbrella-Tops for Carriages. Lewis P. Tibbals, New York, N. Y. [Filed Sept. 13, 1875.]



In an umbrella-top for carriages, adjustable springs in the projecting end of the stem, in combination with the umbrella and standard or support, substantially as shown and described.

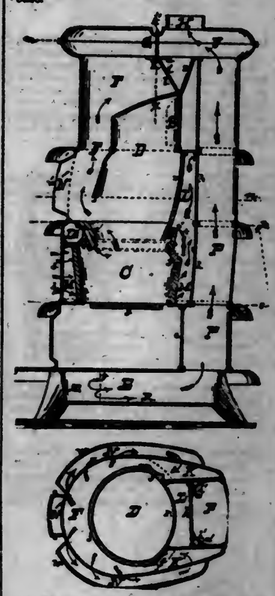
169,600. Ironing-Boards. William M. Tobey, New London, Conn. [Filed Aug. 12, 1875.]



The clamping frame consisting of the pieces C C D and cross-head composed of the rigid bar E, secured to the pieces C C, and spring-bar F, provided with a central projection, f, and having its ends slid up on said side pieces, in combination with the board A, substantially as described.

169,601. Heating-Stoves. William B. Treadwell, Albany, N. Y. [Filed Oct. 15, 1875.]

Brief.—Air is supplied to the burning fuel through the passages. In the indirect draft the products of combustion pass to the rear through the expansion-flues, and dive to the base.



1. Plates b, r, and c', in combination with plates c and y', and with fire-pot a, forming an air-distributing chamber, L, and extended air-passages p and c, and with valve t, substantially as described, and for the purpose set forth.

2. Fire-pot a, rings y and y', in combination with plates c, r', and r, arranged and constructed in the manner and for the purpose herein set forth.

3. Illuminated or expansion chamber or flues N N, in combination with flues F, K, T, E, and P, substantially as herein described and shown.

4. Air-flues c' c', in combination with air-chamber L, valve t, and ash-pit E, all arranged and operating in the manner herein described.

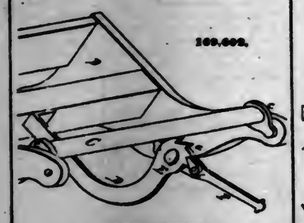
5. Gate O, pivoted and constructed as herein shown, in combination with chamber U, flues F and K, and outlet H, as herein set forth.

6. Open-work jacket b b, fire-pot a, air-valve t, air-chamber L, air-flues c, c, p, and c' c', and magazine D, arranged, combined, and operating as and for the purpose herein described.

169,602. Lifting Devices for Seeders and Cultivators. W. A. Van Brunt, Horicon, Wis. [Filed Sept. 27, 1875.]

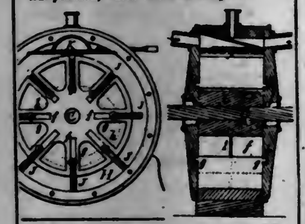
In combination with the eccentrically-journaled lifting-shaft C, the bracket D, extending and bent upwardly below said shaft, and terminating in a ratchet-segment, c, and the lifting-lever F, fulcrumed to said segment, rigidly attached to the shaft C, and provided with a pawl, f, to engage with said ratchet, substantially as shown and described.

160,602.



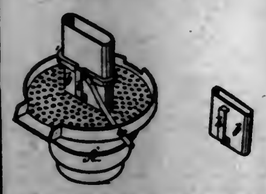
160,603. ROTARY ENGINE. I. Van Kuren, Kalamazoo, Mich. (Filed Jan. 16, 1875.)

Brief.—The engine is reversed by moving the valve, so as to open ports on one side of the other of the diagonal partition, the corresponding exhaust-port on the inside of the partition is opened at the same time. The engine is stopped by moving the valve to its central position, which closes all the ports.



The combination of the diagonal wall M, the valve K, having ports *f f*, the valve-seat and abutment, having ports k, and the cylinder I, having slides J, substantially as set forth.

160,604. LAMP-EXTINGUISHER. Henry J. Warren, Lexington, and Henry P. Packard, Brockton, assignors, by mesne assignments, to Loris A. Proby, Charles Swift, and Jonathan Swift, Boston, Mass. (Filed June 8, 1875.)



The spring-stop *b*, secured to a friction-sleeve, *b'*, or to the burner A, in combination with the sleeve *c*, with its weight *d* attached directly thereto, or formed in one and the same piece therewith, and to be raised by the lever *e*, all constructed to operate substantially as and for the purpose set forth.

160,605. OSCILLATING PRINTING-PRESS. Joseph Watson, Everett, and John L. De Huff, Woburn, Mass.; said De Huff assignor to said Watson. (Filed Aug. 20, 1875.)

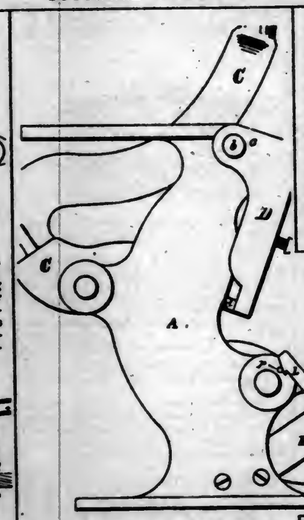
Brief.—Bed swings up to permit easy access to the form. A spring-finger operated by the platen throws off the printed cards.

1. A type-bed of a printing-press, pivoted, at or near its upper edge, to the frame, and adapted to be raised and held in position, with its face-surface upward, substantially as and for the purposes described.

2. The combination of a type-bed, pivoted as set forth, and provided with a lug, 4, with a vibratory platen adapted to engage with said bed, and lug to hold the bed in position, with its face-surface uppermost, substantially as described.

3. The combination of a type-bed, pivoted as set forth, and one or more adjustable bearing or regulating screws, *c c*, arranged to operate substantially as described.

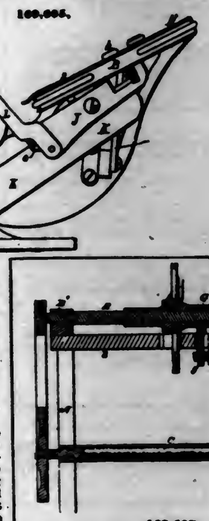
160,606.



160,607. MACHINES FOR MAKING EXCELSIOR. Levi H. Whitney, Lowell, Mass. (Filed Oct. 15, 1875.)

Brief.—Wood for stuffing mattresses and similar purposes can be cut into layers of any desired thickness by a revolving and adjustable disk provided with two rectangular openings, through which pass suitable cutting-blades attached to a cutter-carrying bar journaled on the disk-carrying shaft, and suitable operating mechanism. The disk is laterally adjustable, while the machine is in operation, by means of a sleeve secured in a concentric groove in the hub of the disk, provided with a downwardly-projecting arm, and actuated by a screw-shaft working in the lower end of said arm.

160,605.

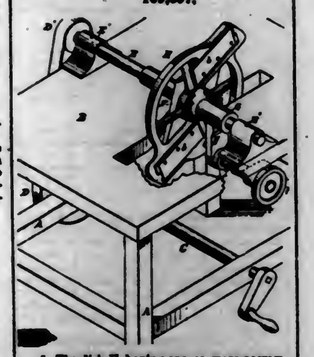


4. The knock-off finger A, rod E, spring F, radius-arm *l*, provided with the toe *m* and cam *k l*, the latch J adapted to engage with the toe *m*, and stationary arm K, for retracting the rod E and spring F, and mechanism, substantially as herein set forth, for tripping the latch J, all constructed, combined, and operated substantially as described.

5. The combination of the finger A, rod E, spring F, radius-arm I, toe *m*, latch J, book-pawl L, pin *p*, and stationary arm K, all constructed, arranged, and operating substantially as described.

6. The knock-off finger A, adapted to be moved in one direction by the spring F, the cam-shaped radius-arm *l*, the latch J, provided with the pawl-hook L, all attached to and moving with a vibrating or swinging platen, in combination with a fixed pin, *p*, and arm K, when said parts are so arranged that the movement of the platen away from the type-form shall release the toe *m* from the latch J, allowing the spring F to operate the finger A, to knock off the card, and then retract the finger A, cause the latch J to again engage with the toe *m*, and retain them in such position till another impression has been made, substantially as described.

160,607.



1. The disk H, having one or more narrow bearing-surfaces, and made relatively adjustable to the cutter-carrying bar F, substantially as and for the purpose specified.

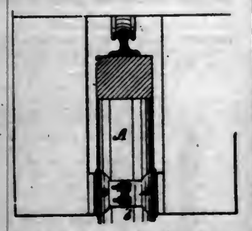
2. The open adjustable disk, provided with rectangular openings *c*, which inclose the cutting-bars, having guiding-faces, as shown.

3. The combination of the disk H, cutter-bar F, knives A, gears G, hand-wheel K, and adjusting-screw I, substantially as and for the purpose set forth.

4. The guiding-tongues *c* upon the disk H, in combination with the cutter-bar F, provided with a recess for their reception, as and for the purpose specified.

160,608. ELEVATED RAILWAYS. Jno. Westcott, Tocoi, Fla. (Filed Oct. 5, 1875.)

Brief.—A fender or guard to protect the supporting-columns of elevated railways from injury from passing cars, consisting of two metallic plates, cushioned underneath, surrounding each pillar at the place where it comes in contact with the car comes.



The combination, with the piles of an elevated railway and the bearing-surfaces of the car, of the fender-plates B B, having cushions C, flanges *b b*, to accommodate screw-bolts for clamping said plates, and lugs *a* upon the inside, to insure rigidity, substantially as described.

160,609. PATTERN-CHAINS FOR LOOMS. J. F. Wicks, Providence, R. I., assignor of part of his right to E. P. Chapin, same place. (Filed Feb. 24, 1875.)

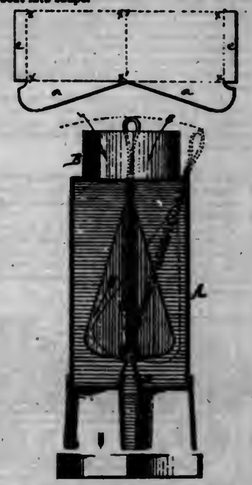
Brief.—The harness-controlling chain is divided into independent longitudinal sections, all operated simultaneously on the same cylinder, which permits the assignment of divisible portions of the pattern to be produced to each of said sections, whereby said portions of the pattern may be consecutively repeated, without repeating in the chain any of the series of bars required for weaving any one of said portions of the pattern.



The combination of a harness-controlling chain, constructed in independent longitudinal sections, with a chain-shaft or cylinder which is provided with engaging surfaces for rotating all the sections simultaneously with the cylinder, and with guides which confine each section to its proper space on the cylinder, substantially as and for the purposes specified.

160,610. RAIN-WATER CUT-OFFS. Horatio Wilkins, Paris, Ky. (Filed Sept. 10, 1875.)

Brief.—The valve is constructed of a single piece of metal, in the form shown, and then bent into shape.



The valve G, constructed of a single piece of metal, the blank being cut in the form shown in Fig. 3, and bent so as to form the wings *a a a a* on opposite sides, with the ends *e e* curved to form the hinge for the same, in combination with the chamber A, partition D, and pipes O C, as herein set forth.

REISSUES.

6,720.



6,720. STOVE-PIPE DRUMS. Edwd. S. Blake, Pittsburg, Pa., assignor, by mesne assignments, to Abner A. Griffing. Patent No. 59,178, dated Oct. 30, 1866. (Filed Oct. 12, 1875.)

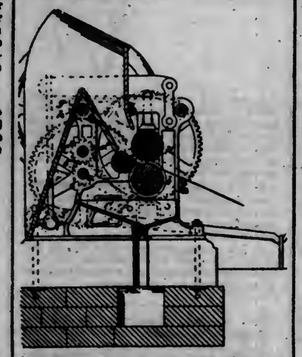
Brief.—The valve controls the direct and indirect drafts. The device admits the ready removal of soot.

1. The radiator made in the form of an elongated ring or loop, leading from the single tubular neck, by which the radiator is attached, the tubular neck being a longitudinal prolongation of the loop.

2. The loop-pipe radiator B, provided with the lateral pipe C and openings *o* and *f*, substantially as and for the purposes described.

3. The gate-valve J, in combination with the legs *l* and *m* of a loop-pipe radiator, substantially as and for the purposes described.

6,721. APPARATUS FOR REFRESHING LIQUIDS. Laurent Breval, Paris, France. Patent No. 135,217, dated Jan. 28, 1873. (Filed Apr. 26, 1875.)



1. The combination, with a pressure-roller arranged to slide vertically and automatically within the frame of the machine, of a delivery-roller having annular flanges, which overlap the ends of the pressure-roller, and act as guides to prevent any lateral displacement of the same, substantially as and for the purpose specified.

2. The delivery-roller having annular flanges, which overlap the ends of the pressure-roller, and formed with grooves upon their periphery, for the purpose of conducting off such portions of the expressed liquid as may be carried up by and dropped from the ends of the grooves upon the face of the pressure-roller, substantially as and for the purpose set forth.

3. The combination, with a delivery-roller and a grooved or fluted pressure-roller, having their axes in the same vertical plane, and a grooved or fluted feed-roller arranged in the front of and with its axis on a line between the axes of the delivery and pressure rollers, of a bar or plate placed above and over the space between the feed and delivery rollers, to sustain the finely-divided particles of material and subject them to a continuous pressure while they are fed along by the grooved surfaces of the feed and pressure rollers, substantially as and for the purpose set forth.

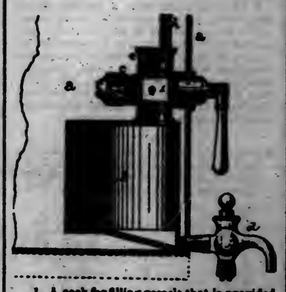
4. The combination, with a feed, a pressure, and a delivery roller, of a pivoted bar or plate, substantially as and for the purpose set forth.

5. The combination, with a delivery-roller, of a pivoted bar or plate formed with corrugations upon its outer edge, to allow the escape of the expressed liquid between it and the face of the delivery-roller, substantially as and for the purpose specified.

6. The combination, with a delivery-roller, of a hinged chute, provided with a means of adjustment, substantially as and for the purpose set forth.

7. The combination, with a flanged delivery-roller and a feed-roller, of a pressure-roller, having its journals in vertically-sliding boxes, and connecting with a system of weighted levers, substantially as and for the purpose described.

6,722. MEASURING-FAUCETS. Francis C. Hoier, Brooklyn, N. Y., assignor to Jos. M. Hopkins, Louisville, Ky. Patent No. 106,813, dated Aug. 30, 1870. (Filed Sept. 2, 1875.)



1. A cock for filling vessels that is provided with a passage for the inflow of liquid, a passage for the outflow of the displaced air that communicates with the air-space of the reservoir, and a passage that communicates with the outside of the reservoir for the introduction of air to the vessel as the liquid is being drawn off.

2. A cock for filling vessels, consisting of the plug *c*, having an opening, 1, in combination with a pipe having the passage *f* for the inflow of liquid, and a pipe, h, that extends up above the highest level of the liquid, substantially as shown.

3. The combination of the reservoir *a*, vessels *b*, cock *c*, faucet *d*, pipe *e*, passages 1 2, tube h, and pipe 3, substantially as set forth.

6,723. STOVES. George W. Herrick, Detroit, Mich., assignor to the Detroit Stove-Works, same place. Patent No. 163,776, dated May 25, 1875. (Filed Oct. 5, 1875.)

Brief.—Heated air from about the upper part of the magazine is supplied to the combustion-chamber by means of a flue formed by the strips extending vertically to the division-plate.



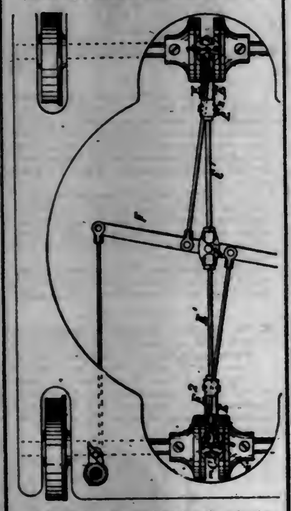
1. The combination, with a magazine-stove, of a combustion-chamber located at the place of the fire-pot and sub-pot, and outside thereof, the said combustion-chamber being provided with a pendent diaphragm and a means for delivering air thereto in front of said diaphragm, substantially as described.

2. The illuminated combustion-chamber D D^1 D^2, and pendent diaphragm M, in combination with a magazine-stove having a throat to pass the gaseous products of combustion into said combustion-chamber, and a flue between the magazine and its casing for delivering air to the gases of combustion as they enter the said chamber, substantially as described.

3. The flanged division-plate *f* and flexible strips *k k*, in combination with the magazine *J J'*, casing K, and perforated cap-chamber L, for supplying a current of heated air to the combustion-chamber D, substantially as set forth.

4. In a magazine-stove, a pendent magazine, flaring at its lower end, in combination with a fire-pot flaring at its top, so that the lower end of the former is of the same size as the top of the latter, and the two flaring ends connected together in the whole circumference, except at the outlet-opening, for the escape of the products of combustion, and with the fuel and the supplementary combustion-chamber, substantially as described.

6,726. CAR-BRAKES. Solon G. Howe, Detroit, Mich., assignor to himself and J. W. Chaney, same place. Patent No. 162,556, dated Apr. 27, 1875. [Filed Oct. 6, 1875.]



1. In a brake, the combination of a pair of reversely-cut conical shells and a pair of reversely-cut cones, suitable mechanism for simultaneously moving the cones apart and toward one another, and an axle, substantially as and for the purpose described.

2. In a brake, the wedged-shaped ball, in combination with the pair of reversely-cut cones, a pair of reversely-cut conical shells, and an axle, substantially as and for the purpose described.

3. The sliding friction-cones, provided with friction-rollers, in combination with a wedge, to act thereon for pressing the cones against the shells, substantially as and for the purpose set forth.

4. The combination, with the car-axle, of the center-pins of the upper friction-rollers of the cones, having oil-channels through them for lubricating the axle, cones, and rollers, substantially as described.

5. The converging spring-braces E E, in combination with the sliding cones and the tapering blocks F', for the purpose of preventing the cones turning, permitting them to slide apart, and for returning them to their original position, substantially as and for the purpose described.

6. The combination of the pair of sliding cones, having an annular groove formed between them, a pair of shells, and the axle, having the stop-pin *a*, or its equivalent, substantially as and for the purposes described.

7. The combination of a pair of friction-cones, a pair of conical shells, and two pair of spring-braces, attached to the cones above and below the car-axle and to the blocks F and F', substantially as and for the purpose set forth.

6,725. OVERSHOES. John I. McKee, Pana, Ill. Patent No. 132,681, dated Oct. 29, 1872. [Filed Aug. 20, 1874.]



6,725.

1. As a new article of manufacture, a combined overshoe and gaiter having the sole C, heel-opening D, and vertically-divided ankle portion B, whereof the front flap *a* overlaps the rear flap *c*, and is united thereto by suitable fastenings, substantially as and for the purpose set forth.

2. The strap *e*, attached to the upper forward portion of the overshoe, to enable the portion A to be easily drawn off or on the corresponding part of the inner shoe, as shown and described.

3. The hook *e'*, arranged upon the free end of the strap *e*, and in relation to an eye or orifice formed in the adjacent portion of the overshoe, substantially as set forth.

6,726. SEWING-MACHINES. W. P. Penn, Belleville, Ill., assignor of one-half interest to H. Bentchler, same place. Patent No. 59,629, dated Nov. 13, 1866. [Filed May 10, 1875.]

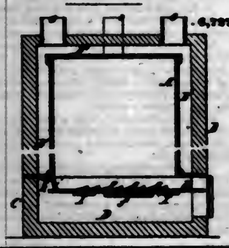
Brief.—Drill-teeth pivoted to a swinging frame hinged to the front of the main frame.



1. The swinging transverse beam P', with the bars N thereto attached, in combination with the frame A and arms I' P, substantially as specified, for the purpose of carrying the forward ends of the bars N, as specified.

2. The combination of the pivoted arms P I', frame A, and swinging transverse beam P', with the bars N pivoted thereto, substantially as specified, for the purpose of allowing the beam to adjust separately, as specified.

3. The combination of the swinging transverse beam P' with the bars N pivoted thereto, beam G, lever, and lifting-chains, substantially as described, for the purpose stated.



6,727.

6,727. HOT-AIR FURNACES. John S. Perry, Albany, N. Y., assignee, by mesne assignments, of Samuel R. Foster. Patent No. 44,836, dated Oct. 26, 1864. [Filed Jan. 27, 1875.]

Brief.—The longitudinal movement of the bars, by reason of their serrations, tends to move the clinkers and refuse resting on them toward the front of the grate, opposite the opening in the wall of the furnace.

1. The grate or fire-bed of a heater composed of a series of toothed or serrated bars adapted to vibrate longitudinally, substantially as shown and described.

2. The combination of a grate or fire-bed composed of a series of toothed or serrated bars adapted to vibrate longitudinally, and the open space between the top surface of the same and the base of the fire pot or chamber on the front, substantially as shown and described.

3. The combination of a grate or fire-bed composed of a series of toothed or serrated bars adapted to vibrate longitudinally and the vertical spaces between the front and rear outer edges of said grate or fire-bed and the walls of the draft-chamber base-section, substantially as shown and described.

4. The combination of a grate or fire-bed composed of a series of toothed or serrated bars, the open space between the top surface of the grate or fire-bed and the base of the fire pot or chamber on the front, the vertical spaces between the front and rear outer edges of the same and the walls of the draft-chamber base-section, said grate or fire-bed being of greater length from front to rear than the corresponding diameter of the fire pot or chamber at its base, substantially as shown and described.

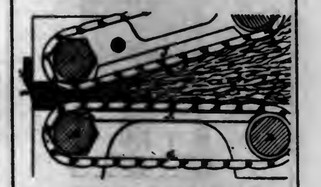
5. The combination of a grate or fire-bed composed of a series of toothed or serrated bars, adapted to vibrate longitudinally with a doorway or opening opposite the same, substantially as shown and described.

6. The combination of a grate or fire-bed composed of a series of toothed or serrated bars, adapted to vibrate longitudinally with a draft-chamber base-section of larger area front and rear than the grate or fire-bed, substantially as shown and described.

7. The combination of a grate or fire-bed composed of a series of toothed or serrated bars, adapted to vibrate longitudinally with the stops *f* on the base of said bars, substantially as shown and described.

6,728. TOBACCO CUTTERS. Webster H. Pease, Edgerton, Wis. Patent No. 30,929, dated Dec. 18, 1860; extended seven years. [Filed Sept. 3, 1875.]

Brief.—The tobacco, as it is fed to the cutters, is compressed by two converging endless chains, which are held against the material by a rigid backing. The shaft that carries the cutters conveys a positive movement to the belts and their rollers.



1. The automatic and continuous feed and press herein described, consisting essentially of endless chains or belts provided with rigid and continuous guides, and supported and operated by rolls, relatively situated to form a converging throat.

2. The endless chains F G, both provided with rigid and continuous guide-surfaces, supported and operated by rolls relatively situated to form a continuous feed and press, combined with a rigid throat, K, through which the compressed matter is delivered.

3. The combination of means for making positive and direct connection between the rotating cutter and converging endless chains, consisting of the combination of the chain-carrying rollers, geared positively together, and they, in turn, geared positively to the shaft that carries the knife.

4. Combined with the chain-carrying rollers C R, the shaft M, bearing the cutter at one end, and provided with the worm P and intermediate positive gearing, whereby motion of said shaft is transmitted to said rollers

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 19. TUESDAY, NOVEMBER 9, 1875. PRICE { $5,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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NOTICE TO MANUFACTURERS AND OTHERS.

UNITED STATES PATENT OFFICE,
Washington, D. C., October 5, 1875.

The COMMISSIONER OF PATENTS respectfully requests manufacturers of and dealers in engines, machines, apparatus, tools, and appliances of whatever kind, to send to this Office duplicate copies of all catalogues and circulars which they have issued or may issue from time to time.

R. H. DUELL, *Commissioner.*

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, DISTRICT OF CONNECTICUT.

THE MAGIC RUFFLE COMPANY *vs.* THE ELM CITY COMPANY.

[*In equity.—Before* SHIPMAN, *J.*]

The plaintiffs file their bill for an account and discovery under an agreement, contract, or license, granted by them to, and made with, the defendants, the latter admitting the validity of the patents owned by plaintiffs: *Held*, that defendants are estopped from denying the truth of their admissions, unless such agreement was obtained by fraud, surprise, or imposition.

In this case it was competent for the complainants to take either one of the two remedies for the alleged injuries growing out of a violation of the agreement or license. They could bring a bill alleging an injury to their exclusive rights, or could bring a proper suit, setting up the breach of contract as the *gravamen* of their action.

Although the suit is upon the contract, the damage to complainants, if any, is the damage sustained from the injury to their patent-rights.

[*Seward* and *Shipman*, for complainants.
Ingersoll and *Stoughton*, for defendants.]

165

SHIPMAN, *J.*:

The parties in the case are corporations. The complainants were created under the laws of the State of New York, and the defendants were incorporated under the laws of the State of Connecticut, and are established at New Haven, in this district. The bill alleges that the complainants are, and have been since September 18, 1860, the owners of Letters Patent No. 28,244, granted to George B. Arnold on May 8, 1860, for a new and useful improvement in ruffles, and were also, in the month of February, 1863, the owners of three other patents, theretofore issued to George B. Arnold and Alfred Arnold, for other improvements in machines for making ruffles, and in ruffles, which improvements were generally known as the "Double-Feed Separator" and "Ruffle without a Band;" that prior to the month of February, 1863, upon a suit of the complainants against Douglas & Sherwood, in the Circuit Court of the United States for the southern district of New York, a verdict was rendered by which Patent No. 28,244 was sustained; that the defendants had at that time been engaged in manufacturing and selling ruffles containing the improvements described in said letters patent, and in order to avoid further litigation, and for peace sake, and for the purpose of harmonizing the business conducted by the two corporations, an agreement, dated February 21, 1863, was entered into, and was thereafter an executed agreement of license, and no legal proceedings against the defendants were commenced. The material portions of this agreement are as follows:

The Magic Ruffle Company hereby agree to license the said Elm City Company under four several patents, granted to George B. Arnold, and George B. and Alfred Arnold, to wit: the double feed, the separator and its combinations, the ruffle with a band, and the ruffle without a band, to manufacture and sell, under said license exclusively, the ruffles now manufactured and sold by the said Elm City Company, at their manufactory, in New Haven, Connecticut, and known as the double ruffle, and to use the machines patented to the said George B. Arnold and George B. and Alfred Arnold, in the manufacture only of the said double ruffle. In consideration of the said license the said Elm City Company do hereby expressly recognize the validity of each of said patents, and hereby agree to receive licenses, as aforesaid, under each of them, and hereby expressly agree that they will manufacture and sell only the said double ruffle, and that the said double ruffle shall not be divided by the said party of the second part.

The Elm City Company also agreed to submit at all times their manufactory to inspection, so that the Magic Ruffle Company should be advised of the kind of ruffles which were being manufactured, and to pay counsel in the suit of Douglas & Sherwood, and to retain and pay counsel thereafter in suits relating to and in support of said patents, and to pay one-half of

the other expenses of sustaining said patent. It was mutually agreed that each party was to assist the other in suits which might be instituted by either party for the purpose of maintaining its rights under either of said patents. The bill also alleges that thereafter the defendants continued to manufacture and sell the double ruffle of the kind referred to in the agreement, and that after February 21, 1863, they made and sold, in violation of said agreement and of said letters patent, many thousand yards of single ruffles, each of which contained the invention described and claimed in the said letters patent, and prays that the defendants may be required to make a disclosure of all their gains and profits, and of the precise number of yards of single ruffle containing the said improvement, which they have made and sold, and to account for and pay over such gains and profits as have arisen to them, and also all damages which the complainants have sustained by reason of the premises.

The answer denies that the defendants have made and sold any ruffles in violation of Letters Patent No. 28,244; alleges that the ruffles which they have made were made by the aid of machinery, which was invented by and patented unto Crosby & Kellogg, and that, at and prior to said agreement, they were manufacturing, by the use of said machinery, as they lawfully might, double ruffles of a peculiar kind, which were afterward divided, so as to form single ruffles of a form and arrangement some of which somewhat resembled the ruffles manufactured by the complainants; and to avoid any possible controversy with said complainants, the said defendants agreed not so to manufacture single ruffles thereafter, but that said agreement was intended only to prevent the manufacture of that particular kind of single ruffles; that the defendants have not, since the date of said agreement, made or sold a gathered ruffle having a single series of stitches, which is the only kind of ruffle claimed in Patent No. 28,244.

The answer denies the novelty of the alleged improvement described in said patent, and alleges that the defendants have, ever since the execution of said agreement, been engaged, to the knowledge of the complainants, in the sale of ruffles which were not claimed by them until about the time of the commencement of this suit, to be in violation of said patent, and that this action is brought upon a stale claim, and one which is unfounded in equity.

The first question in this case is, Are the defendants estopped, by their covenants in the agreement, from denying the validity of the complainants' patent?

The defendants contend that the suit is against them simply as infringers for a violation of the complainants' patent rights, and that the covenant, which is claimed to be an estoppel, being contained in an instrument collateral to the patent, cannot operate as an estoppel in a suit which is not founded upon the agreement, but upon the patent, and that no bill in equity can be sustained upon the agreement, inasmuch as for a breach of that contract the complainants have a full and adequate remedy at law.

The contract is not merely an agreement for a license, but is an executed license. Such was the intention of the parties, as it is to be collected from the whole of the instrument. (*Buell* vs. *Cook*, 4 Conn., 242.) By the agreement the defendants were licensed to manufacture and sell the double ruffle only. If they manufactured and sold any other ruffle, which was protected by either of the patents, they became, as to such ruffle so improperly manufactured, infringers, and the complainants could resort to an action at law or in equity to obtain redress for this violation of their exclusive patent rights. If the licensee "uses the patented invention beyond the limits of the license or grant, or in any way not authorized by the license or grant, then there has been a violation of a right secured to the patentee under a law of the United States, giving to him the exclusive right to use the thing patented, although such licensee perform, according to their terms, all the covenants entered into by him." (*Goodyear* vs. *Union India Rubber Co.*, 4 Blatchf., C. C. R. 65; *Wood* vs. *Wells, Crittenden & Co.*, 6 Fisher's Patent Cases, 382.) And if the licensees have also expressly covenanted in their agreement of license that they will do, or will not do, a particular act, or will not use the invention for a particular purpose, a violation of such covenant is also a breach of contract, not arising under the laws of the United States, but for which remedy may be sought in the Circuit Courts of the United States, provided the citizenship of the parties gives jurisdiction to such court. (*Goodyear* vs. *Union India Rubber Co.*, cited *supra*; *Goodyear* vs. *Congress Rubber Co.*, 3 Blatchf., C. C. R., 455; *Wilson* vs. *Sanford*, 10 Howard, 99.) In this case it was competent for the complainants to take either one of the two remedies for the alleged injury which have been mentioned. They could bring a bill alleging an injury to their exclusive rights under the laws of the United States, or, as the residence of the party gave this court jurisdiction, could bring a proper suit, setting up the breach of the contract as the *gravamen* of their action. The averments of their bill are sufficient to justify a court in holding it necessary that it is a bill for an injury to their patent rights, but it is manifest, from an examination of the stating part of the bill, that the pleader intended to make the alleged breach of agreement the foundation of the action, and that he is seeking to recover damages for an injury to the complainants, arising out of the violation of the contract.

But the defendants insist that a bill in equity, based upon the contract, cannot be sustained, because for a breach of the contract there is complete and adequate remedy at law. There is undoubtedly a remedy at law for the alleged injury. The only question is whether it is complete and adequate. If the complainants were seeking to recover royalties which the defendants had agreed to pay, inasmuch as the account is particularly within the knowledge of the defendants, or if the patent was still in existence, and the prevention remedy by injunction against future injuries could be administered, there would be no question that a bill in equity would be a proper remedy. (*Eureka Co.* vs. *Bailey*, 11 Wall., 488; *Goodyear* vs. *Congress Rubber Co.*, 3 Blatchf., C. C. R., 449; *Rich et al.* vs. *Atwater*, 16 Conn., 409.) In this case the defendants had not agreed to pay royalties, and an injunction cannot be granted, inasmuch as the patent has expired. It is alleged that the defendants have violated the contract of license by manufacturing and selling a ruffle which they were not authorized to make, and which they had agreed not to make. By this violation the complainants say that they have been injured, and the redress which they ultimately seek is the payment of damages. Although the suit is upon the contract, the damage to the complainants, if any, is the damage which they have sustained from the injury to their patent rights. The ascertainment of the facts from which such damages can be estimated is in cases of injury to property in letters patent peculiarly within the province of a court of equity, because the facts from which damages are to be computed can only be ascertained by an account and a discovery of the number and amount of articles which have been sold by the defendants, facts which are exclusively within their knowledge. They alone have the evidence which can enable the complainants to recover either at law or in equity.

It is true that damages are not ordinarily assessed by a court of equity, (*Livingston* vs. *Woodworth*, 15 Howard, 547,) and prior to the act of 1870, authorizing the circuit court, as a court of equity, to decree the payment of damages in patent cases, damages were not recoverable in this class of equity suits. A bill in equity proceeded, prior to that act, upon the theory that the infringer was equitably bound as a trustee to pay to the patentee the profits which had been made by an unlawful use of the invention. (*Cowing* vs. *Rumsey*, 8 Blatchf., C. C. R., 38.) But this bill is a bill for an account and a discovery. It avers that the complainants do not know and cannot set forth the number of yards of ruffles which have been made in violation of the patent and of the agreement, and prays for a disclosure of the quantity which has been made and sold. Whether having jurisdiction of the case the court will proceed to grant further and complete relief, and to exercise a power which courts of equity have in certain cases heretofore exercised, (*Russell* vs. *Clarkes, executor*, 7 Cranch, 69; *Pratt* vs. *Law*, 9 Cranch, 456; *Insurance Co.* vs. *Colt*, 20 Wall., 560;) and what relief will be granted are questions which can be determined more properly after the report of the master shall have been received.

It is well settled that where the suit is upon a license, or upon a contract, which license or contract contains covenants on the part of the defendants by which they admit the validity of the plaintiffs' patent, and agree to maintain it by suits or legal proceedings, and there has been an enjoyment of the license by the defendants, they are estopped from denying the truth of their admission, unless it shall be averred by cross-bill or answer that such agreement was obtained by fraud, surprise, or imposition. (*Eureka Co.* vs. *Bailey*, 11 Wall., 488; *Crossley* vs. *Dickson*, 10 House of Lords Case, 293.) It is coincident from an inspection of this agreement and from the answer, that there had been litigation in regard to the validity of the patents between the plaintiffs and Douglas & Sherwood, and that the parties to the agreement entered into it in order to avoid similar litigation between themselves, and to prevent future violation of the patents by others, "the agreement was manifestly intended to adjust conflicting rights," and it cannot be permitted in the absence of fraud on the part of the plaintiffs, that the defendants should deny the truth of their careful and deliberate admissions, especially since the contract has become executed and they have enjoyed its benefits.

2. Is the ruffle which has been manufactured and sold by the defendants, and which is styled the Princess Ruffle, an infringement of Patent No. 28,244?

The specification of the patent states that the nature of the invention "consists in confining the tucks or gathers in place and securing them to a binding or ungathered piece of cloth by one and the same series of stitches; or, in other words, causing one series of stitches to perform the double duty of confining the plaits and attaching them to the binding or other material."

The claim is for the ruffle—

As a new article of manufacture, the gathered cloth A, [the ruffled strip,] being secured to the binding B [the band] by the single series of stitches C, which perform the double duty of confining the gathers and of securing the gathered cloth to the binding, substantially as herein set forth.

The article is a plaited or gathered piece of cloth, the gathers of which are confined in their places by a row of stitches, which also at the same time secure the gathered cloth to a band, and this band is an unhemmed strip of cloth, which is to be attached by the purchaser to whatever garment the ruffle is to ornament. "The distinguishing features of this article by which it is materially different from all ruffles known before" have been declared to be in the case of the *Magic Ruffle Co.* vs. *Douglas*, (12 Fisher's Patent Cases, 330,) "the single series of stitches and the unvarying regularity of the plaits and gathers, thus dispensing with the gathering-thread, avoiding the injurious process of whipping or scratching the fabric with a sharp needle and the perforations in the ruffle piece, which the needle and thread make in gathering." The defendants' ruffle is a plaited strip combined with a band, a single row of stitches performing the office of securing the gathers and uniting the gathered cloth to the band, but it has, in addition, a second row of stitches in the band not securing the band to the gathered cloth. The ruffle can be cut in two between the two rows of stitches—one part would be a ruffle, and the other a piece of stitched cloth. The magic ruffle of the plaintiffs is an unfinished article to be attached by the band to ladies' or children's undergarments. The Princess ruffle is a finished article, having a band with an even and finished edge, and is designed to be worn as a neck-ruffle. Still the distinguishing character of the Magic ruffle is found in the Princess ruffle, which contains the row of stitches performing the double office of confining the gathers and attaching the ruffled cloth to the band, and although the Princess ruffle has a second series of stitches, and is a completed article, different in appearance, and used for a different purpose from the Magic ruffle, yet in its patentable characteristics it contains the single feature which had been previously patented by the plaintiffs' grantee. It has other and additional features which render it a different article from the Magic ruffle in the eye of the trade and of the purchaser, but those additional features do not vary the one peculiarity in which it resembles the Magic ruffle. If that peculiarity is a patentable one, it follows that the defendants' ruffle is an infringement of the plaintiffs' patent.

An attempt was made to claim that the Princess ruffle was a double ruffle, and so within the license to the defendants; but it is obvious that if the Princess ruffle is divided, the narrow strip which remains after the ruffle proper has been cut off is a useless strip of stitched cloth, and is not, in any proper sense of the word, a ruffle.

The answer further alleges that after the execution of the agreement the defendants discovered the existence of letters patent to Isaac M. Singer, dated on or about March 18, 1856, and that the complainants, believing that this invention substantially contained that described in Patent 28,244, desired to join with the defendant in purchasing the same; that it was purchased by both parties about April 2, 1863, and since that time the complainants have made no attempt to enforce their patent, but have regarded the same as substantially inoperative and worthless, and that, by reason of said Singer patent, the Patent No. 28,244 is void.

Whether the Singer patent does or does not anticipate the patent of the complainants is not material, inasmuch as the validity of the latter patent is not here in issue. This part of the answer is material only upon the question of the laches of the complainants in the vindication of their alleged rights. The only evidence in regard to the reason of the purchase of the Singer patent, or the opinions of the complainants in regard to the effect of the Singer invention upon the validity of their own patent, is contained in the testimony of the defendants' treasurer, who says that the defendants discovered the existence of the Singer patent, and thinking that if left "in the hands of other parties it might possibly be used for purposes of litigation and annoyance, causing expense and trouble, they thought best to secure it, and the Magic Ruffle Company, regarding it an anticipation of their patent, wished to unite with us in securing it, and as that would save one-half of the expense, and, as we thought answer our purpose, we consented to do so, and it was bought jointly by them and the defendants."

This does not maintain the position of the defendants, that the agreement in regard to the manufacture of ruffles other than the double ruffle was substantially abandoned in consequence of the purchase of the Singer patent. This purchase seems to have had no material influence upon the relations of the parties or upon this agreement.

The most important point of the defendants is that they have been manufacturing the Princess ruffle ever since the date of the agreement, with the knowledge and acquiescence of the complainants, and were not notified that such manufacture and sale were regarded by the complainants as a violation of the agreement or of the patent until after it had expired, and about the time of the commencement of this suit, and that this claim, if it ever had any validity, had become stale, and should not be favored by courts of equity by reason of the laches of the complainants in the vindication of their rights and their acquiescence in the operation of adverse rights.

If I was satisfied from the evidence that the defendants had manufactured and sold the Princess ruffle since 1862 in such quantities that the attention of the plaintiffs must have been early called to the infringement, or that they actually knew of the violation of the agreement ever since the year 1862, I should be of opinion that their delay in making known their claim was such as to prevent them from now receiving the aid of a court of equity to the extent of its powers. The testimony of the treasurer of the defendants' corporation upon this part of the case is guarded, as will be seen by the following quotation:

Question. Subsequent to the date of that agreement, and up to the time of the commencement of this suit, have the defendants manufactured and sold ruffles like Exhibit Barney No. 3?
Answer. Yes; more or less.
Q. Has the same been sold in New York? If so, name a few of the houses to whom it has been sold.
A. Yes. Calhoun & Robbins, J. B. Spelman & Son, L. H. Mandlebaum & Co., and a number of others whom I could not positively swear to know by name.
Q. It has been in the market to a considerable extent, has it not; and under what name?
A. It has; under the name of Princess.

The testimony in the case as it now stands does not show that the Princess ruffle has been in market to any large extent, and that the complainants must necessarily have known that the defendants were manufacturing and selling this ruffle, and thus show that the complainants were negligent in the enforcement of their rights, or were wilfully permitting the defendants to continue the manufacture under the supposition that their conduct was not open to criticism.

As I have said, I am not now called upon to decide as to the measure of damages. The only decree which can now be made is to order an accounting and a disclosure and a reference to a master to ascertain the number of yards of Princess ruffles which have been manufactured and sold, and the amount of such sales during each year, and to ascertain the profits which have accrued to the defendants from such manufacture, for the purpose of ascertaining the amount of the complainants' damages. Other questions in regard to damages will be determined upon the hearing after the accounting shall have taken place.

Let a decree be entered for a reference and an account.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date November 9, 1875.]

8,770.—Carpets.—JOSEPH BARRETT, New York, N. Y., assignor to THE ROXBURY CARPET COMPANY, Boston, Mass. Application filed October 19, 1875. Term of patent 3½ years.

8,771.—Sash-Pulleys.—GEORGE A. BLAKE, New Haven, Conn., assignor to BLAKE BROTHERS HARDWARE COMPANY, same place. Application filed October 26, 1875. Term of patent 7 years.

8,772.—Door-Knobs.—BURTON MALLORY, New Haven, Conn., assignor to MALLORY, WHEELER & Co., same place. Application filed October 26, 1875. Term of patent 7 years.

8,773 to 8,775, inclusive.—Oil-Cloth.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Applications filed October 19, 1875. Term of patents 3½ years.

8,776.—Satchel-Handle Tip.—GEORGE O. MONROE, Newark, N. J. Applications filed June 21, 1875. Term of patent 7 years.

8,777.—Tobacco-Pipe.—LEONARD NAX and FRANZ A. KÜHN, Philadelphia, Pa. Application filed October 25, 1875. Term of patent 7 years.

8,778 and 8,779.—Casing of a Soda-Water Apparatus. FRANK H. SHEPHERD, Boston, assignor to JAMES W. TUFTS, Medford, Mass. Cases A and B. Applications filed October 27, 1875. Term of patents 14 years.

8,780.—Carpets.—THOMAS J. STEARNS, Boston, Mass., assignor to THE ROXBURY CARPET COMPANY, same place. Application filed October 30, 1875. Term of patent 3½ years.

8,781.—Crochet-Pattern.—WILLIAM STEINHAUS, New York, assignor of one-half his right to OTTO FRICKENHAUS, Brooklyn, N. Y. Application filed October 20, 1875. Term of patent 3½ years.

8,782.—Metal Frame in Pianos.—CHRISTIAN F. T. STEINWAY, New York, N. Y. Application filed October 29, 1875. Term of patent 14 years.

8,783.—Flower-Stands.—HENRY P. ROBERTS, De Ruyter, N. Y. Application filed October 9, 1875. Term of patent 7 years.

8,784.—Metal Sheets for Covering Trunks.—ANTHONY V. ROMADKA, Milwaukee, Wis. Application filed October 23, 1875. Term of patent 7 years.

8,785.—Watch-Chain Links.—EDWARD E. BARROWS, Attleborough, Mass. Application filed September 15, 1875. Term of patent 3½ years.

8,786.—Chain-Link.—DANIEL A. BEAM, Newark, N. J. Application filed October 23, 1875. Term of patent 3½ years.

8,787.—Show-Case.—WILLIAM H. GROVE, Philadelphia, Pa. Application filed October 29, 1875. Term of patent 7 years.

8,788.—Satchel and Bag Handles.—GEORGE O. MONROE, Newark, N. J. Application filed August 6, 1875. Term of patent 7 years.

8,789.—Clock-Cases.—HERMANN J. MÜLLER, New York, N. Y. Application filed October 29, 1875. Term of patent 7 years.

8,790.—Handle for Stove-Cover Lifter.—JOSIAH M. READ, Everett, Mass. Application filed November 2, 1875. Term of patent 14 years.

8,791.—Coffin-Handle Bases.—WILLIAM M. SMITH, West Meriden, Conn., assignor to THE MERIDEN BRITANNIA COMPANY, same place. Application filed November 2, 1875. Term of patent 7 years.

8,792.—Steam-Radiator Pipes.—GEORGE W. WALKER, Malden, Mass. Application filed October 25, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date November 9, 1875.]

3,125.—Hats, Caps, Furs, and Straw Goods.—BOYDEN, MALLOY & Co., New York, N. Y. Application filed June 7, 1875.

"an upright bear, with a basket on its back filled with an assortment of such goods as we sell, consisting of hats, caps, furs, and straw goods, and holding in its right paw a card, consisting of the words: 'Boyden, Malloy & Co., manufacturers and wholesale dealers in hats, caps, furs, straw goods, umbrellas, &c., 520 and 522 Broadway, N. Y.'"

3,126.—Cigars.—JOHN B. COHEN, Philadelphia, Pa. Application filed August 26, 1875.

"representation of a log cabin."

3,127.—Soap.—EDWARD S. MORRIS & Co., Philadelphia, Pa. Application filed October 19, 1875.

"words 'Pure Palm Soap, made in Liberia, Africa,' in connection with the pictorial representation of a palm-nut, natural size and color."

3,128.—Cigars.—SULLIVAN & BURK, Detroit, Mich. Application filed November 5, 1875.

"name 'Iron Cross,' and the design of the cross."

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date November 9, 1875.]

375.—Title: **"Garden Tomatoes—Benjamin & Yerks, Albany, N. Y."**—BENJAMIN & YERKS, Albany, N. Y. Application filed November 3, 1875.

376.—Title: **"Holt's Champion Copying and Writing Fluid."**—DE LANG & OSTERLIND, Chicago, Ill. Application filed October 22, 1875.

377.—Title: **"Pure Palm Soap, Made in Liberia, Africa."**—EDWARD S. MORRIS & Co., Philadelphia, Pa. Application filed November 3, 1875.

378.—Title: **"Weaver's Florida Water."**—JAMES B. WEAVER, Philadelphia, Pa. Application filed November 5, 1875.

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Partridge, H., assignee, (reissue)	6,734
Paul, C. C., Construction of berry barrels	169 657
Payne, M., Rotary churn	169,835
Perry, H. K. W., Shingling hatchet	169,836
Perry, J. S., assignee, (reissue)	6,732
Peters, C., Reagent for testing the strength of vinegar	169,727
Pickett, A. G., Jr., King bolt	169,728
Pierce, C. L., and H. A. Pinkham, Hot air furnace	169,729
Pierson, J. T., assignee	169,719
Pinkham and Pierce	169,729
Pittsburg Steel Casting Company, assignee	169,716
Porter, R. W., Loom shuttle	169,837
Prosser, T. T., Metallic rod and wire for use in pegging machines, &c	169,838
Prosser, T. T., Shoe peg or nail	169,839
Prosser, T. T., Machine for indenting the surfaces of wire	169,840
Prützmann, D., Fruit box	169,841
Ramsden, J. C., Hydrocarbon furnace	169,842
Rand, A. C., Carbureting apparatus	169 843
Randolph, I. F., Apparatus for lighting railway cars	169,658
Rankin, A. N., Cold packed pipe joint	169 659
Ray, G. P. W., Track clearer	169,844
Renaud, W. H., assignee	169,610
Richards, T. C., Picture nail	169,730
Richardson, C. W., Vehicle axle	169,845
Richie, E. L., assignee	169,672
Rising, G. M., Whip socket	169,846
Robinson and Root	169 847
Robinson, T. C., Ship's log	169,660
Roemer, W., Chain link	169,731
Root, G. B., and W. W. Robinson, Mill spindle	169 847
Roy and Smith	169,737
Rupertus, J., Revolving fire arm	169,848
Ryder, A., Coupling for train telegraph	169,732
Ryer, W. H., Horse hay rake	169,733
Sacc, F. H. L. C., Preserving meat	169 849
Schalck, G., Wad for rifled guns	169,734
Schedler and Muegller	169 830
Schirmer, H., Inkstand	169,735
Scovil, E. G., Box pile	169,850
Segar, C. T., Spring bed bottom	169,851
Sharp, D. P., Horse hay rake	169 853
Sharp, T., Construction of fire proof buildings	169 852
Shaw, F. M., Boot and shoe nailing machine	169,661
Shaw, M., Refrigerator	169,854
Shenfield, A., Suspender button strap	169,855
Simmons, W. W., Carriage axle	169 856
Simonds, G. F., Tempering and forming articles of steel	169 736
Simonds' Manufacturing Company, assignee	169,736
Simonds, N. G., Grain conveyer	169,662
Sinclaire, T. R., Apparatus for filtering liquids	169,857
Smith, A., and J. S. Roy, Washing machine	169 737
Smith, G. T., Millstone staff	169,858
Smith, H. D., & Co., assignees	169,869
Smith, S. M. and C. T., Dyeing apparatus	169,859
Smith, W. T., assignee	169,707
Springer, W. A., Self-adjusting guide for sewing lap seams in sewing machines	169,860
Stacy, J. A., and S. W. Lewis, Hydrant	169 738
Stephan, F., assignee	169,685
Stewart, H. R., Forming blackboards or slates	169,861
Stockton, J. K. and M. L., Sofa bedstead	169 862
Stockton, J. P., Jr., Picture nail	169,739
Strickler, W. C., Oil tank, (reissue)	6 736
Stroop, L. J., assignee	169,743
Sweet and Norris	169,833
Syverson, A., Machine for making pipe elbows	169 863
Taber, O., Horse hay fork	169 740
Talpey, J. A., Time signal for railroads	169,741
Teahl, J. H., Bearing for upright shafting	169 864
Thackrah, B., Cloth napping machine	169,742
Thompson, J., Check rower	169,865
Towsley and Van Kannel 169,745, 169,746,	169,747
Tucker, A. W., Machine for binding grain	169,743
Tupper, M. L., assignee	169,836
Ullrich, F. H., Apparatus for drafting tailors' patterns	169,744
Valil, E. W., assignee	169,748
Vandewater, C. H., assignee	169,713
Van Kannel, T., and L. D. Towsley, Combined pressure gage and heat regulator	169,745
Van Kannel, T., and L. D. Towsley, Automatic check valve for gas machines	169,746
Van Kannel, T., and L. D. Towsley, Gas machine retort	169,747
Voigt, H., and H. Eilmann, Floor for refrigerator buildings	169,866
Wakefield, J. E., Folding chair	169,748
Walker, S. S., Loom temple	169,749
Walker, W. C., Seed planter and drill	169,750
Wallace, P., Machine for making matches	169,867
Wallis, J. N. and T., Monument	169 751
Walsh, T. H., assignee	169,674
Walworth, C. C., assignee	169,711
Want, E., Eyeglass	169 868
Ward, T. H., assignee	169,707
Ward, W. S., Die for forging saddle clips	169 869
Warren, O. F., Potato digger	169 870
Waste, F. H., Convertible chair	169,752
Watson, J., Clay press	169,871
Webster, Bodel, and Masse	169,774
Webster and Clow	169,776
Wells, J. E., Machine for stretching hat bodies	169,663
Werni, P., Carbureting apparatus	169 872
White, P., Compression cock	169 873
White, S., assignee	169,625
White, S. S., Dental polishing tool	169,753
Whiteley, W. N., Harvester	169 874
Whittemore, D., assignee	169,661
Willey, C. J., Printing telegraph	169,875
Williams, G., Car axle box	169,664
Williamson, W. C., Fire place screen	169,876
Wilson, F. C., assignee, (reissue)	6,736
Wilson, J. E., Screw propulsion	169,754
Wolff, A. D. B., Piano attachment	169,877
Wood, S. W., Manufacture of metal tubing	169,878
Woodworth, Z., Apparatus for lighting gas, &c	169,879
Worcester, L., and J. B. Howe, Cot bedstead	169,880
Wormald, W., and E. Dobson, Sewing machine	169,881

TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED NOV. 9, 1875.

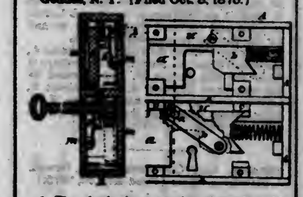
169,610. RAILROAD-SWITCHES. John L. Arms, New Orleans, La., assignor of part of his right to Granville R. Ober and Wm. H. Renaud, same place. [Filed Sept. 14, 1875.]

Brief.—The switch is operated from the locomotive through knee-levers, in place of levers of the usual form.

The arrangement of the knee-levers l l' E E', bell-crank F, connecting-rods O, and links a' b', with the switch-bar D, as described, and for the purpose specified.



169,611. DOOR-LOCKS. David F. Austin, Geddes, N. Y. [Filed Oct. 8, 1875.]



1. The check-pin a, passing through rigid guide s, and provided with screw-threads on its outer end, the spring b, attached to cover m, and arranged to force the said pin inward, and the extra key k having a recess in its end with screw-threads therein, in combination with the spring-bolt e, provided with recesses o o and arranged to be retracted by the general key, all constructed to operate substantially as described, for the purpose specified.

2. The combination of two lock mechanisms, constructed as herein described, with the case A, consisting of four sides and a central longitudinal partition, and provided with the four removable plates m m m m in such a manner as to render the lock operative and applicable at either side of a door, substantially as described and shown.

169,612. PNEUMATIC STEERING APPARATUS FOR SHIPS. Geo. W. Baird, U. S. N., and Jos. C. Lewis, Washington, D. C. [Filed Sept. 29, 1875.]

1. An air-pump, A, operated by the revolutions of a propeller-shaft, for forcing air or gas into a reservoir to give sufficient pressure to move a ship's rudder, through the intervention of an engine, substantially as set forth.

2. The combination of an automatic piston or valve, d, with lever l and rod r, for opening or closing a cock or valve, C, for the supply of the air or gas pump, substantially as set forth.

3. In an air, gas, or steam steering apparatus, the combination of the drum D, provided with the grooved friction-gear F and the pinion F' on the crank-shaft f, operated by the engine, whereby sudden concussions on the rudder are compensated for, substantially as described.

169,613. ADJUSTABLE TABLE-LEGS. John H. Baisley, Dayton, Ohio. [Filed Aug. 27, 1875.]

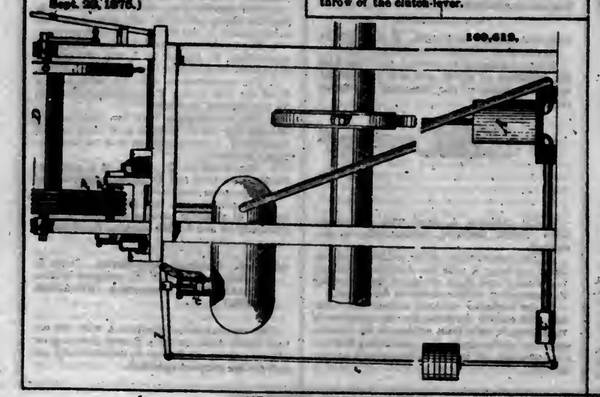


1. The metallic plate A, having a central web, a, flanges b, and projecting flanges f, secured to the rails B, in the manner and for the purpose specified.

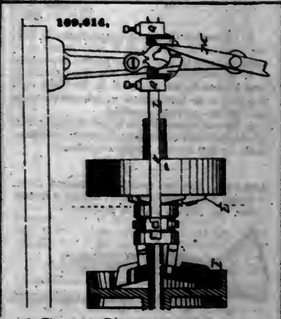
2. The leg D, arranged as shown, and clamped in position to the plate A, which is supported by the rails B by means of the wood-screws h, in the manner and for the purpose specified.

169,614. FRICTION-CLUTCHES. Thomas B. Barrow, Mansfield, Ohio. [Filed Feb. 26, 1875.]

Brief.—The clutch, in general form, is a double-frustum cone, base to base, the cones being prongs reciprocating in recesses on the sides of the slides, which, at their other ends, press and recede from the inner peripheries of the drums; also, a method of adjusting the throw of the clutch-lever.



169,614.



1. The crown B, provided with the prongs D, in combination with the spider E and slides F, substantially as shown and described.

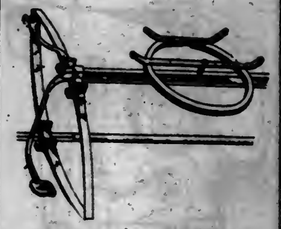
2. The combination of the lever M, arm N, and adjustable plates Q on the shifting-rod L, substantially as described, and for the purpose specified.

169,615. SPRING BED-BOTTOMS. William W. Bartlett, Baltimore, Md. [Filed July 20, 1875.]



In a bed-bottom, the combination, with a series of slats, a, springs b, provided with cross-pieces b', and prongs or clips b' b', adapted to embrace the slats a, and a frame, c, provided with cross-pieces c', of the clips d, having straight portions d', adapted to pass under the cross-pieces c' and hooks d' at each end, for holding the opposite sides of the lower ring of the springs b in position, substantially as shown and described.

169,616. RUNNING-GEARS FOR VEHICLES. Charles Bohlen, Cincinnati, Ohio. [Filed May 1, 1875.]

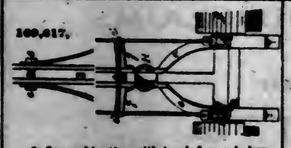


In a vehicle, the supporting-bar of the fifth-wheel, terminating in steps D, forming integral parts thereof, substantially as and for the purpose specified.

169,617. HAND-TRUCKS. John Haggerstaff, Pittsburg, Pa., assignor to himself and T. A. Gillespie, same place. [Filed Apr. 6, 1875.]

1. In combination with the truck-frame A, the guards or shield-plates D D, secured on the inner side to the truck-frame and on the outer side to the axle, substantially as and for the purpose specified.

160,617.



2. In combination with truck-frame A, having tongue B, braces B B and struts g g', substantially as and for the purpose specified.

3. In combination with the truck-frame A and tongue B, the braces B B, provided with the points or projections e', substantially as and for the purpose specified.

4. In combination with a self-loading hand-truck, foot-rest H, attached thereto, substantially as and for the purpose specified.

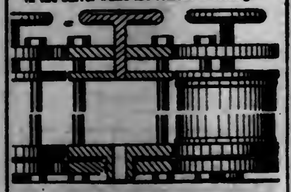
160,618. CHUTES FOR DISCHARGING COAL FROM VESSELS. David P. Bitner, Lancaster, Pa. [Filed Sept. 6, 1875.]



The independent telescopic tubing B C D, with arresting flanges a b, funnel-mouth A, hooks G, scoop-terminus H, and handles F, as and for the purpose shown and specified.

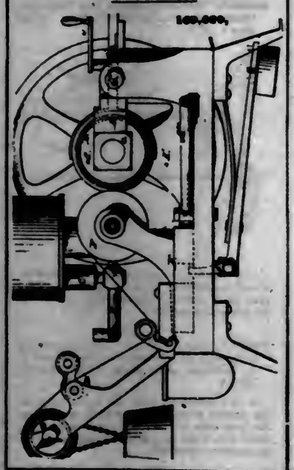
160,619. APPARATUS FOR MAKING PAPER VESSELS. Wm. H. Brock, Hunter's Point, assignor to Jabez A. Bostwick, New York, N. Y. [Filed Jan. 7, 1875.]

Brief.—The heads are held under pressure in the barrel while the cement is setting.



The annular frame carrying the sievers, the platens, head-screws and perforated bone-plates, the whole combined and arranged for operation substantially as and for the purpose specified.

160,620.



160,621. PILOT-WHEEL CORN-PLANTERS. James Campbell, Harrison, Ohio. [Filed Dec. 19, 1874.]

Brief.—The seed-hopper, being pivoted at one side, may be adjusted laterally, to cause the seed-wheel to engage with either of two endless screws, which are run at different rates of speed by gear upon each side of the pilot-wheel. The discharge of seed may thus be varied, while the machine is in motion, by a hand-lever acting upon the hopper and seed-wheel.



1. The two sets of driving-gear, one upon each side of the frame, in combination with the pivoted grain-box C, adapted to shift the speed of the dropping mechanism while the drill is in operation, substantially as herein set forth.

2. In combination with the pivoted hopper, the shifting-lever H, and notched adjusting-bar, substantially as set forth.

160,622. ELECTRIC FUSES. P. A. Caufield, Dover, N. J. [Filed Aug. 20, 1875.]

Brief.—Designed to protect the fuse from the influence of water, and also prevent accidental ignition of the fulminate by concussion.



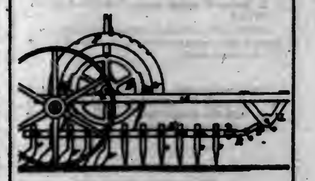
1. The exploder A, lined with rubber or other similar material, substantially as described.

2. The combination of the rubber-lined metallic exploder A with the entering conducting-wires d and d', so arranged as to render it water-proof, substantially as described.

3. An exploder covered within and without with elastic material, for the purpose of rendering it safe from explosion by concussion, and at the same time preventing it from the influence of water, substantially as described.

160,623. WHEEL-HARROWS. Thos. A. Cole, Trafalgar, Ind. [Filed Aug. 6, 1875.]

Brief.—The harrow is suspended from a frame-work that rests upon wheels, by means of chains that pass around a windlass. The side pieces of the harrow are made of thin iron bars, bent so as to form three walls, two of which constitute the top and bottom. Holes are made in these for the teeth, and one adjacent in the side plate for an eyebolt, to hold the teeth in place. The windlass is operated by rack and pinion.

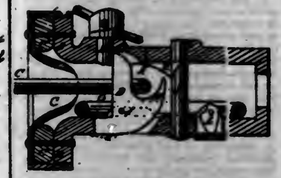


1. The side frames K K of the harrow, constructed as shown, in combination with the teeth V, or cod-cutters V', eyebolt W, and nut a, constructed and operated substantially as and for the purpose hereinbefore set forth.

2. In combination with the harrow-frame K K', the hinged plate R, forked connecting-bars P, shaft O, and hangers or bearings L L, constructed and operated substantially as and for the purpose hereinbefore set forth.

3. In combination with the vehicle-frame A, the shafts C and E, provided with pulleys G G' G'' G''' and guides E', and operated by the rack-wheel D'', lever Z, and quadrant Y, to raise and lower the harrow-frame K K', substantially as and for the purpose hereinbefore set forth.

160,624. CAR-COUPLINGS. E. A. Cowell, Cleveland, Ohio. [Filed Aug. 10, 1875.]



1. The combination, with the draw-bar A, of a cap, C, provided with the lapels c', and intermediate cushion C', substantially as and for the purpose described.

2. The combination, with the draw-bar A, of the tilting or rotating pin D, provided with the hooked end D', and latch or key E, substantially as and for the purpose described.

3. The combination, with the draw-bar A and the tilting pin D, of the guide-block K, substantially as and for the purpose described.

4. The combination, with the draw-bar A, of guide-block K, hinged at h, and the pin J, substantially as and for the purpose described.

5. The combination, with the latch or key E, of the link or dog F, substantially as and for the purpose described.

6. The combination, with the draw-bar, of the rotating pin D, pivoted at d, latch E, and shoulder d', substantially as and for the purpose described.

7. The tilting pin D, pivoted at d, and provided with a hook end, D', substantially as and for the purpose described.

8. The combination in a draw-bar, with the link O, of yielding pivoted shoulder L, substantially as and for the purpose described.

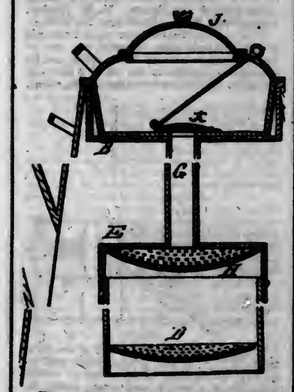
160,625. SEWING APPARATUS. James A. Crandall, Brooklyn, N. Y., assignor to himself and H. White, same place. [Filed Sept. 4, 1875.]

The combination of the bolt A with the rotary crank shaft or wire B and jumping or shipping loop or hasps C, substantially as and for the purpose specified.

160,626.

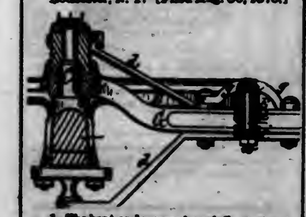


160,626. COFFEE-POTS. Solomon Crowell, Cortland, N. Y. [Filed Apr. 20, 1875.]



The combination of the cover B, hinged lid J, cap I, having valve K, the tube G, coffee-receptacle O B, with perforated bottom D, and the perforated diaphragm H, all constructed as described, and arranged within a coffee-pot, substantially as and for the purposes herein set forth.

160,627. FIFTH-WHEELS. J. Cunningham, Rochester, N. Y. [Filed Aug. 30, 1875.]

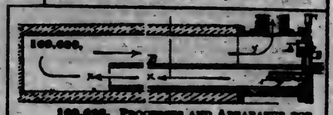


1. The bent or depressed reach G, constructed with the eye a, forming a direct connection of the reach with the king-bolt between the axle and head-block, as shown and described, and for the purposes specified.

2. The lugs g g, formed from the body of the upper half of the fifth-wheel, extending down and behind to the reach without intermediate parts, and inclosing the lower half of the fifth-wheel, and forming a guide therein, as shown and described, and for the purpose specified.

3. The combination, with the bent reach, having the eye a connected with the king-bolt C of the braces d d', extending from the reach to the head-block and axle, as shown and described, and for the purpose specified.

160,628.

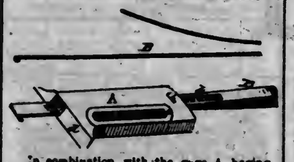


160,628. PROCESSES AND APPARATUS FOR DECARBONIZING GAS-RETORTS. Darius Davison, New York, N. Y. [Filed Nov. 11, 1874.]

1. The lid D, having a stopper, E, and a tube, F, extending into the secondary retort B, in combination with a fluid-conducting pipe, I, the retort B, and the ordinary gas-retort and stand-pipe, the lid D covering the front ends of both retorts by luted gas-tight joints on each, substantially as described, for the purpose herein specified.

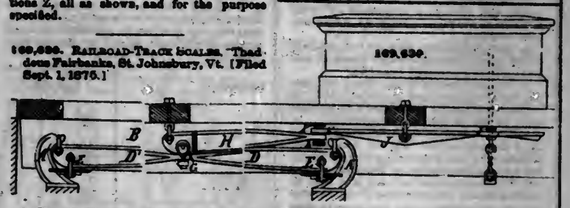
2. The process of periodically decarbonizing gas-retorts while the same and their connections with the gas-holder are all operated substantially gas-tight, whereby the fixed carbon therein is burned out, and the carbonic-oxide and hydrogen gases produced during such operation forced into the gas-holder for use, substantially in the manner and for the purpose herein described.

160,629. TUCK-FOLDING ATTACHMENTS FOR SEWING-MACHINES. George L. Du Laney, New York, N. Y. [Filed June 2, 1875.]



In combination with the gage A, having the aperture d and point e, the flexible graduating guide-piece B, provided with corrugations Z, all as shown, and for the purpose specified.

160,630. RAILROAD-TRACK SCALES. Thaddeus Fairbanks, St. Johnsbury, Vt. [Filed Sept. 1, 1875.]



1. The combination of a pair of first levers, D D, with a corresponding pair, D' D', mounted in a reverse position, and both arranged between the platform-sticks B, and extending longitudinally thereof, as and for purposes set forth.

2. The V-shaped second lever H, in combination with the reversed pairs of longitudinal first levers D D', and with a third lever, J, which reverses the direction of the strain in communicating it to the last lever L, as and for the purposes herein specified.

160,631. WATER-FILTERS. R. S. Faroon, Philadelphia, Pa. [Filed Apr. 26, 1875.]

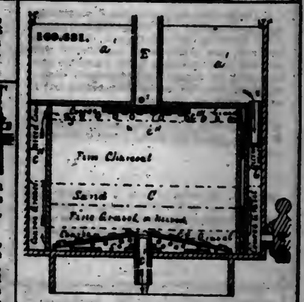
Brief.—A filter with conical slip-cover over the water-receptacle. The chamber is divided by a vertical partition into central and annular surrounding portions, the two communicating by a series of small holes. The bottom of the central chamber has a concavo-convex plate, with perforations punched so as to give upturned edges on the convex side to prevent sticking. The tube has a disk at the bottom, and serves the purpose to maintain a column of water, and to allow escape of air.

1. The combination, in a water-filter, substantially as described, of the water receptacle chamber a' and its tube B, with the channel C, having the series of small holes ?, the annular chamber c'', and central chamber C, packed with filtering materials, and communicating with each other through the series of small holes c''' at their upper ends, the perforated plate c', and the outlet-tube c', the said parts being arranged to operate in the manner and for the purposes hereinbefore set forth.

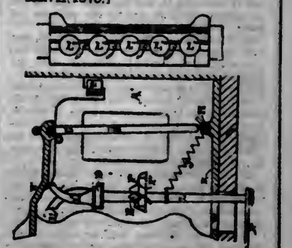
2. The combination, in a water-filter, substantially as described, of the tube E and perforated disk c'', with the opening in the bottom of the chamber a', and the space a' between said bottom and said disk c'', the layer of gravel between the said bottom of a' and the charcoal layer, upon which said gravel layer rests, the perforations c''', the annular chamber c'', packed with gravel, as described, the series of holes ? in the lower part of the channel C, and the outlet-cock D, the said parts being arranged to operate together substantially in the manner and for the purpose hereinbefore set forth and described.

3. The arrangement of the upper surface of the layer of charcoal in chamber C, substantially in the same horizontal plane with the lower edges of the perforations c''', as indicated by the dotted line y in Fig. 1, for the purpose of causing the wash-water coming from the tube E to pass horizontally to and through the said perforations c''' to the annular chamber c'', substantially as and for the purpose hereinbefore described.

160,631.



160,632. TELL-LOCK ALARMS. Samuel G. Frink, Indianapolis, Ind., assignor to himself and E. O. Frink, same place. [Filed Mar. 11, 1875.]



1. The combination of the side frames A A', the bottom K, clamp T, swing C, tumbler-supporting bar F, and cap B, constructed, operated, and held together substantially as specified.

2. The combination of the lever-tumblers L with the tumbler-supporting bar F, cap B, swing C, springs J, and bar H, substantially as specified.

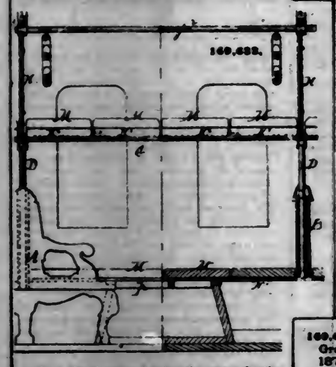
3. The tumbler-supporting bar F, constructed with openings L'', as described, and groove g, for receiving the tumblers L, in combination with the tumblers L, constructed with lateral lugs or bearings E, by which the tumblers may be turned around without removing them from the tumbler-supporting bar F, substantially as specified.

4. The combination of the projecting arm M of the swing C with the spring P and lug N on the side of the frame A, substantially as specified.

169,632. SLEEPING-CARS. J. P. Goodridge, New York, N. Y. (Filed Aug. 9, 1875.)

Brief.—Berths supported by vertical tubes arranged in sections, the lowest of which slides in vacant space between backs of seats.

169,632.



1. A sleeping-car, having the upper berths supported by tubes or rods sliding vertically in guides or bearings in the lower part of the car, independent of any support in the upper part, substantially as herein described.

2. The plates b^{2}, on the rails b^{1}, in combination with the lugs or projections d d^{1} on the tubes D, as shown and described, for the purpose specified.

3. The combination, with the bulk-heads B, of the tubes D and transverse braces E, substantially as shown and described.

4. The combination of the plates b^{2}, having the notches c^{1} and grooves c, with the tubes D, having the projections d d^{1}, substantially as and for the purpose specified.

5. The combination, with the upright tubes D, of the longitudinal tubes or rods G, constituting the side rails for supporting the upper berth, substantially as described.

6. The combination, with the side rails G, of the seat and back cushions E^{1} K^{2} for supporting the bedding of the upper berth, substantially as described.

7. The partition I, provided with the hooks and eyes b c and the hooks or clasps L, constructed as described, in combination with the rod H and tube D, and the side wall of the car, substantially as and for the purpose set forth.

8. The combination, with the rod H, and tube D, and the partition I provided with the pocket b^{1}, of the hooks L, provided with the tongues b f, and the spring or elastic band l^{1}, substantially as and for the purpose described.

9. The combination of the bulk-heads B, the upright tubes D, transverse braces E, rods H, and partitions I, whereby a single berth "section" for night use or a "compartment" for day use may be formed without the side rails G, substantially as described.

10. The combination of the transverse brace E and the groove in the upper edge of the bulk-head B, whereby said brace is provided with a seat when not in use, and forms an ornamental molding, substantially as described.

11. The combination, with the seats A and the floor proper, of the false or additional floor S, whereby the seats are made of a convenient or comfortable height, and ample room is provided beneath them for storing bedding, &c., substantially as described.

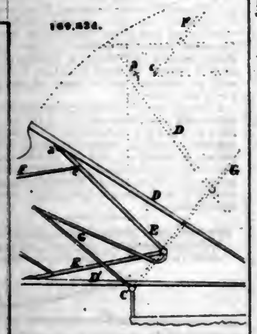
169,634. CARRIAGE-TOPS. John C. Goold, Albany, N. Y. (Filed Sept. 13, 1875.)

1. The combination, with the fall bows D and D^{1}, having no intermediate fall bows between, of the knuckle-jointed bar E, pivoted at its ends to the inner edges of the said bows from the eye-plates a a, substantially as described.

2. The combination, with the knuckle-joint bar E, pivoted between the bows D and D^{1} from their inner edges, of the short bows F F^{1}, pivoted to the said knuckle-joint bar, and substantially and carried by the same, substantially as described.

3. The combination, with the bows D and D^{1}, pivoted from their inner and opposite facing edges of said bows, and the short bows F F^{1}, pivoted to and carried by the said knuckle joint bar of the side lever U, when combined to operate as described.

169,634.

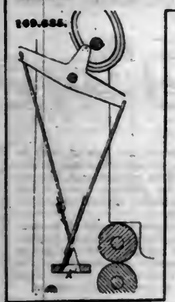


169,635. STAVE-JOINTING MACHINES. E. J. Granger, Brooklyn, N. Y. (Filed Aug. 10, 1875.)

Brief.—Staves are cut from a continuous sheet of veneer, of such width as to form the length of the staves, by means of two reciprocating knives acting alternately.

In a machine for cutting staves from a sheet of wood, the combination of an intermittent feeding device with two curved knives having reciprocating motions in oppositely-inclined planes, substantially as and for the purpose described.

169,635.



169,636.



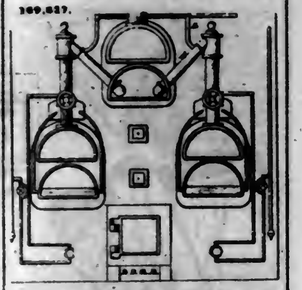
169,636. BLOCKS FOR HOLDING CARTRIDGES. Richard T. Hare, Springfield, Mass. (Filed June 26, 1875.)

An independent or detached block for receiving and carrying cartridges, having a loop for maintaining the same in position adapted for the use herein described, constructed substantially as herein set forth.

169,637. PROCESSES OF MANUFACTURING ILLUMINATING AND HEATING GAS. George W. Harris, Elizabeth, N. J. (Filed Oct. 7, 1875.)

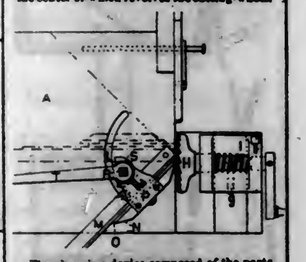
The process of manufacturing gas for heating and illuminating purposes, by decomposing steam in a highly heated retort by means of carbonaceous material, conducting the resultant gases into a retort at a high temperature, containing wood undergoing destructive distillation, and combining the water gas with the wood gas in a nascent state, and conducting the gases into a third retort, combining with the same on their way thereto vapor from liquid hydrocarbon, and finally converting the combined gases and vapors in said retort into a permanent gas, substantially as and for the purposes herein described.

169,637.



169,638. MACHINES FOR MITERING PRINTERS' LEADS AND RULES. H. W. Manley, New York, N. Y. (Filed Sept. 10, 1875.)

Brief.—An eccentric lever clamps the rule or lead between bars of metal, one end of which clamp is pivoted to the table, and its other end adjustable in the arc of a circle, at the center of which revolves the cutting-wheel.



169,639. CARTRIDGE-BELTS. G. C. Hensing, Washington, D. C. (Filed Sept. 4, 1875.)



The combination of a rotating cartridge-belt with a series of supporting-buttons secured at intervals around a vent or other suitable support, substantially as and for the purpose described.

169,640. PROCESSES FOR PRODUCING MULTICOLORED DESIGNS ON WIRE-CLOTH. G. B. Hoffman, Chicago, Ill. (Filed May 7, 1873.)

The process for producing multicolored designs on wire-cloth, consisting essentially of first coating the wire-cloth through a stencil-plate, by means of a roller, with white, which is allowed to dry, and then applying colors upon the whitened surface through successive stencil-plates, each plate being used before the previously-applied color is dry, that portion of the moist color exposed through each succeeding plate being exposed before the new color is used, substantially as and for the purpose herein before set forth.

169,641. BREECH-LOADING FIRE-ARMS. B. B. Hotchkiss, New York, N. Y. (Filed July 29, 1870.)



1. A fire-arm the trigger of which is made to form means for locking the system, substantially as herein specified.

2. The trigger C, formed with a lever, C^{1}, this lever having a notch, c^{1}, to prevent the gun from being accidentally fired.

3. On the lever C^{1}, the notch c^{1}, in combination with the projection c^{2}, entering the bolt, as and for the purposes described.

4. In combination with the trigger C and locking-lever C^{1}, the two springs S^{2} S^{3}, acting respectively on the parts, as and for the purposes herein specified.

5. The notch c^{1} on the lever C^{1}, in combination with the projection c^{2}, arranged to control the holding and withdrawing of the system, as herein specified.

6. The forked extractor I i i^{1}, in combination with the hollow nose-piece H, and adapted to hold therein, as herein set forth.

7. The groove in the nose-piece, beveled at the rear end, in combination with the forked extractor I i i^{1}, to allow a rocking motion of the entire extractor, as and for the purposes herein set forth.

8. The nose-piece H, with a suitably-formed extractor, I, mounted thereon, adapted to operate upon the firing-pin as a wrench.

9. The nose-piece H and bar F, with the stud h^{1} in one part, and the groove f^{1} in the other part, in combination with each other, and with the extractor I, substantially as and for the purposes herein specified.

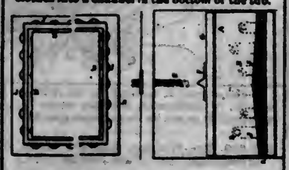
10. A spring-extractor mounted at the side of the place, and pressing laterally against the shell of the cartridge, in combination with a shoe or extension of the barrel, having a side opening or arranged so to eject the shell by swinging it horizontally, as herein specified.

11. The firing-pin G, directly united to the hammer E without a necessity for separate coupling means, in combination with the extractor I, serving as a stop to prevent its rotation, as herein specified.

12. The groove f in the pin G, engaging with the shorter arm f^{1} of the extractor, substantially as and for the purposes specified.

169,642. CLOTHES-WRINGERS. Mary Ann Johnson, Washington, D. C. (Filed Dec. 14, 1874.)

Brief.—A box has vertical channels cut in the sides. An inside lining of zinc has apertures that register with the vertical channels. A follower, operated by a vertical screw in a suitable frame, forces the water from the clothes into a channel in the bottom of the tub.

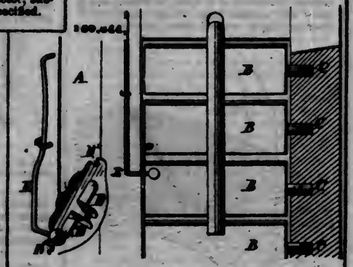


The square tub with double sides, the inside having apertures B B, and the outer sides having vertical channels J J, the lower surrounding gutter K, the discharge-opening C, the frame D, screw E, pressing-board G, constructed and combined substantially as described, and for the purposes set forth.

169,643. BLIND-SLAT ADJUSTERS. James L. A. Johnston and Charles B. Hopkins, Topeka, Kans., assignors of one-half their right to A. G. Hasbrook, same place. (Filed Oct. 30, 1875.)

Brief.—A notched plate or disk, having two deep slots or seats, is secured by attaching-arms to one of the blind-slats, while a handled spring, fastened to the inside surface of the window-frame, plays upon and engages with the notches by an adjustable frictional bobbin, or, entering the seats, serves as a locking device. There are also suitable coil-springs inserted within the frame, against the ends of the blind-slat journals, which coact with the main device.

169,643.

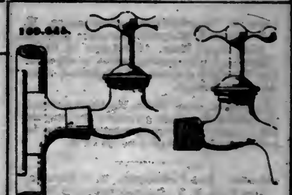


The improved locking and adjusting device, consisting of the notched plate or disk D, having deep slots or seats D^{2} and attaching-arms D^{1}, in combination with the frame A, window-blind slats B, and springs C, together with the handled spring H, attached to the inside of the frame, all substantially as described and shown, for the purposes herein set forth.

169,644. ADJUSTING PLUMBERS' FAUCETS. John H. Lawless, Jersey City, N. J. (Filed Aug. 30, 1875.)

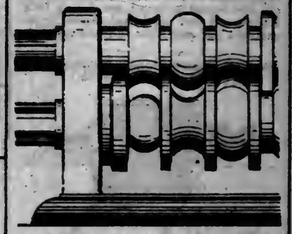
Brief.—To replace an old faucet, cuts through the neck of the faucet about an inch from the solder-joint, and then cuts a thread on the end of the neck, and cuts also a corresponding thread on the inside of a new faucet, and screws the one on the other.

169,644.



The improved mode of renewing, adjusting, and attaching plumbers' faucets to pipes, substantially as described, and for the purpose set forth.

169,645. ROLLS FOR ROLLING BLANKS FOR POLE-CAPS. William J. Lewis, Pittsburg, Pa. (Filed Sept. 11, 1875.)



A pair of metal rolls having a series of grooves for the gradual reduction of a billet from a rectangular to a crescent shape in cross-section, substantially as set forth.

169,647. NUT-LOCKS. Richard Long, Pittsburg, Pa. (Filed Aug. 4, 1875.)

Brief.—The end of the bolt has a cup-shaped projection, which is so beaten down by the punch or die as to form an annular rib, securing the nut.



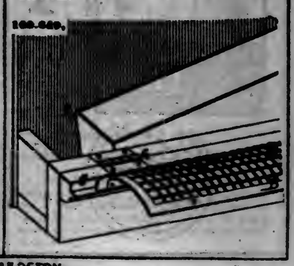
1. The bolt A, having the smooth neck a formed on the end thereof, and the conical recess b, also in the end of the neck, substantially in the manner and for the purpose set forth.

2. The punch E, having the cup-shaped recess e e and the central stem or projection d, substantially in the manner and for the purpose set forth.

169,648. ALLOYS FOR BELL-METAL. Helen L. Mosher, Boston, Mass. (Filed Sept. 6, 1875.)

The herein-described improved alloy, consisting of copper, iron, zinc, and nickel in the proportions specified, as and for the purpose set forth.

169,649.



169,649.



169,649. PLAITING-MACHINES. Elijah L. Howard, Boston, Mass., assignor to himself and John R. S. Graves, same place. (Filed Feb. 23, 1876.)

In a machine for laying plaits, the combination of two endless aprons, geared to move in unison, and consisting each of jointed sections provided on their contiguous surfaces with undercut sloping blades, constructed and arranged for joint operation, as herein shown and described.

169,650.

The improved locking and adjusting device, consisting of the notched plate or disk D, having deep slots or seats D^{2} and attaching-arms D^{1}, in combination with the frame A, window-blind slats B, and springs C, together with the handled spring H, attached to the inside of the frame, all substantially as described and shown, for the purposes herein set forth.

169,650. ADJUSTING PLUMBERS' FAUCETS. John H. Lawless, Jersey City, N. J. (Filed Aug. 30, 1875.)

Brief.—To replace an old faucet, cuts through the neck of the faucet about an inch from the solder-joint, and then cuts a thread on the end of the neck, and cuts also a corresponding thread on the inside of a new faucet, and screws the one on the other.

169,650.

169,649. BLACKBOARD ATTACHMENTS. H. B. Marshall, Kingston, assignor to G. H. Allen, Ayer, Mass. [Filed Apr. 12, 1875.]

Brief.—A wire grating serves to allow the dust from both crayons and blackboard-cleaner to fall through.

In combination with a blackboard-trough the netting B, to form a receiver for crayons and a cleaner for erasers, substantially as described, and for the purposes set forth.

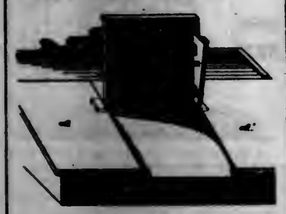
169,650. TAG-FASTENERS. T. P. Marston, New York, N. Y., assignor to Phillip Hahn. [Filed Aug. 10, 1875.]



Brief.—The oil or other liquid is contained in the tank, and the required amount, determined by adjusting the cover, is carried from the recessed chambers by the gear-wheels, and forced through the tube and out of the nozzle into a vessel placed to receive it. A nozzle-stopper is placed upon a yielding arm attached to the side of the tank, for the purpose of closing the mouth of the nozzle.

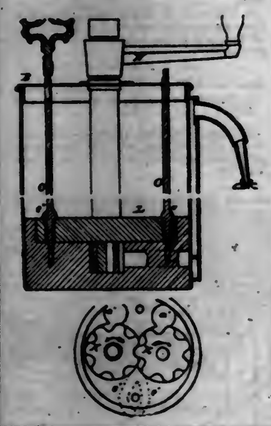
The improved tag-hook described, having an extension or arm, 3, and catch 4 formed on the wire beyond the loop 1, and having both the loop and hook elastic, and adapted to engage and hold each other, as herein specified.

169,651. DESKS. Joseph McClurg, Pittsburg, Pa. [Filed Mar. 20, 1875.]



The leaf B hinged to the slide E and provided with the drops D D, the whole constructed and operating in combination with the desk A A', substantially as described, and for the purpose set forth.

169,652. LOADING-MACHINES. Charles G. Morgan, Bristol Station, Ill. [Filed Aug. 12, 1875.]



1. In an oil tank or measurer, consisting of a force-pump arranged within an outer vessel, the adjustable lid or cover L, constituting a part of the forcing apparatus, whereby a greater or less quantity of oil, after having been drawn from the said vessel into the pump may be returned from the latter into the former before being discharged through the nozzle D, substantially as specified.

2. In combination the tank A, provided with an ejection-tube and nozzle, C D, the recessed block J, the adjustable lid L, the spar-wheels K K, the shaft M, and the screw-rods O O, provided with the collars o^{x} o^{x}, all constructed and arranged for operation together, substantially as and for the purposes specified.

3. The stopper E, mounted on the yielding arm E', in combination with the nozzle D, substantially as and for the purposes specified.

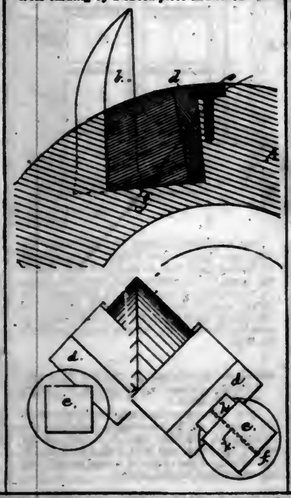
169,653. TOE-WEIGHTS. Lucius W. Moore, Indianapolis, Ind. [Filed June 26, 1875.]



In combination with a band or boot formed of rubber or other elastic material, a toe-weight, all constructed and operated substantially as and for the purpose herein before set forth.

169,654. TOOTHED ROLLERS FOR COAL BREAKERS OR CRACKERS. William Mannan, Scranton, Pa., assignee of one-third his right to S. D. Kingsley, same place. [Filed Sept. 29, 1875.]

Brief.—The breaking-cylinder is cast with sockets, which do not extend through the shell, into which the teeth are locked from the outside by means of a block, a wedge, and a screw with square head, which is prevented from turning by a check-piece and rivet.



1. The described cast-iron roller for a coal-breaking machine, having in its outer surface the sockets or cavities described, and for the purposes set forth.

2. The combination, with the cavity in the roller, of a tooth or tooth, the block c, wedge d, and the fastening-screw e, substantially as and for the purpose set forth.

3. The combination, with the block c, wedge d, and set-screw e, of the check-piece h, as and for the purpose set forth.

169,655. GRATE-BARS. Thomas Murphy, Detroit, Mich. [Filed Apr. 17, 1875.]

169,658.



1. The combination of two sets of alternating and inclined bars, D D', with a supporting-frame, A, and a feathered rock-shaft, C, adapted to vibrate the bars D' of each set, substantially as described

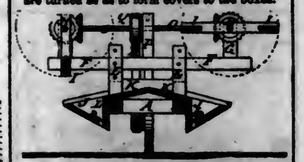
2. The combination of the toothed cylinder B with the frame A and stationary and vibrating bars D D', substantially as described and shown.

3. The combination, with the frames A, of the triangular grate-frames E E', in an alternating series, the said frames E' being susceptible of a lateral vibration from the rock-shaft C, hung in the frames E, substantially as and for the purpose set forth.

4. In a furnace or fire-box, the combination of two sets of transverse grate-bars, inclined from the sides of the fire-box toward each other, and revolving toothed cylinders, substantially as described.

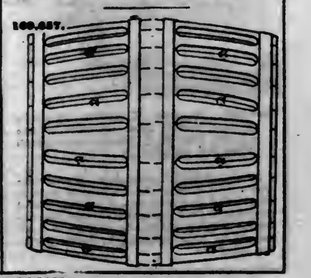
169,656. MACHINES FOR CATCHING COLORADO BUGS. John Noy, Jr., Illico, assignor to himself and Aaron Hoy, Berlin, Canada. [Filed Dec. 12, 1874.]

Brief.—The machine is mounted upon a single wheel, like a wheelbarrow. Revolving wings are placed upon each side, and beneath are two troughs, the covers of which, when turned back, meet in the center, forming an apron between the troughs. When the machine is brought to a state of rest, the aprons are turned so as to form covers to the boxes.



The combination, on a wheeled frame with winged and revolving shafts H I, of the boxes J, having hinged covers K, turning back, meeting on the center, and forming inclined aprons, as and for the purpose specified.

169,657.

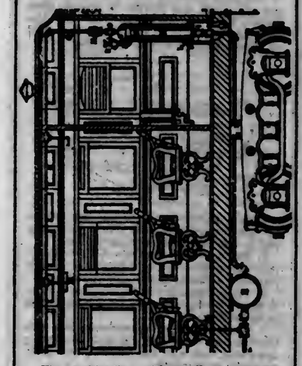


169,657. CONSTRUCTION OF BEEHIVE-RACKS. Charles C. Post, Philadelphia, Pa. [Filed Aug. 10, 1874.]

A barrel having, near the contracted ends, openings a, formed by recesses made in the edges of adjoining staves, as set forth.

169,658. APPARATUS FOR LIGHTING RAILWAY-CARS. Ira F. Randolph, Indianapolis, Ind. [Filed Jan. 20, 1875.]

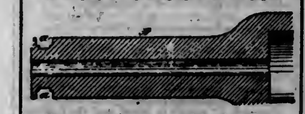
Brief.—The safety-cock is provided with a weighted arm, which operates to cut off the supply of air when the car is upset.



The combination, with an oil-gas generator for a railway-car, of the safety-cock H and reservoir B, for compressed air, substantially as and for the purpose set forth.

169,659. GOLD-PACKED PIPE-JOINTS. A. M. Rankin, New York, N. Y. [Filed Feb. 9, 1875.]

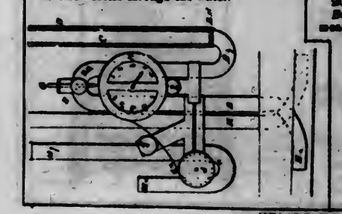
Brief.—Consists in providing the end of the ordinary straight male pipe with the groove, and shrinking the packing thereto, thus securing the packing, and in packing the male end into a straight bored or calibered female end, thus preventing leakage by the longitudinal play and pulling apart of the pipes.



The pipe-joint, constructed in the manner herein described and represented in the drawings, consisting of the pipe A, formed or constructed at its male end with a groove, a, into which a ring of soft-metal packing, B, is shrunk, and an enlarged or straight-bore female end A' into which the male end of an adjacent section of pipe is inserted, as and for the purposes described.

169,660. MEPS' LOOM. Thos. C. Robinson, Boston, Mass. [Filed Jan. 2, 1875.]

Brief.—Combination of the stationary pipe, with the lower end submerged and turned toward the bow of the vessel, open and exposed to the pressure of the water, with the movable tube, and its pencil, cloak-work, and graduated paper, for the purpose of recording the progress of vessels through the water.

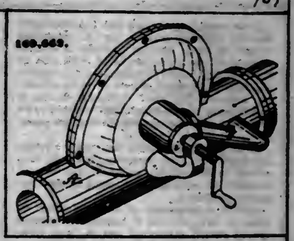


The combination of the pipe B, with the lower end submerged, turned toward the bow of the vessel, open and exposed to the pressure of the water, with the movable connected tube F and its pencil, the clock-work and case H, and the graduated strip of paper H', when fitted for use for the purpose of measuring and recording the progress of vessels through the water, all substantially as shown and described.

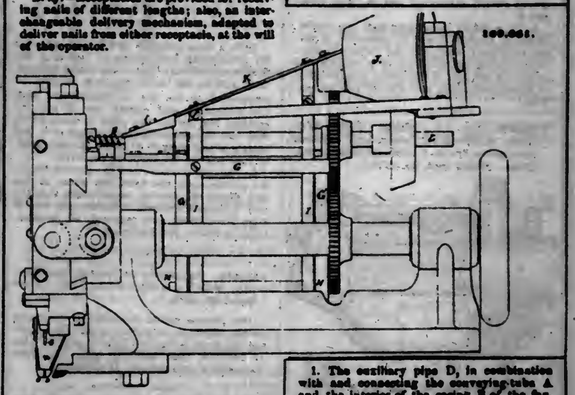
169,661. MACHINES FOR NAILING BOOTS AND SHOES. Francis M. Shaw, Brockton, assignor to David Whittemore, Wollaston, Mass. [Filed Feb. 5, 1875.]

Brief.—Receptacles are provided for receiving nails of different lengths; also, an interchangeable delivery mechanism, adapted to deliver nails from either receptacle, at the will of the operator.

169,662.



169,661.



1. In a machine for nailing boots and shoes, the combination, with the ways K K and K' K', of the reservoirs J J, each provided with one or more shelves and an elastic discharging-head, e, substantially as and for the purpose set forth.

2. In combination with the inclined ways f f, the screw-transferrers g g', for conveying and discharging the nails singly into the nail-tube M or passage r of the toe n, substantially as and for the purpose set forth.

3. The combination, with the frame G', provided with the stationary ways f f of the rocking frame I, having two sets of inclined ways and nail-reservoirs, substantially as and for two purposes set forth.

4. In combination with the reservoirs J J, or either of them, the friction-wheel M, as and for the purpose set forth.

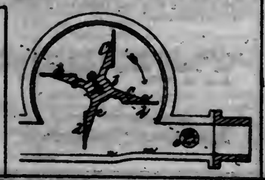
5. In a machine for nailing boots and shoes, the combination, with an inclined way for receiving and guiding the nails, of a rotary nail-reservoir, provided with an elastic discharging-head, as and for the purpose set forth.

6. In a machine for nailing boots and shoes, the screw-transferrers g g', for receiving, conveying, and discharging the nails singly into the nail-tube, substantially as set forth.

7. In combination with suitable receptacles for receiving the nails in bulk, an interchangeable delivering mechanism, adapted to deliver from either receptacle according to the length of nails desired, substantially as specified.

169,662. CONVEYERS FOR GRAIN. Nathaniel G. Simonds, Boston, Mass. [Filed July 20, 1875.]

Brief.—A device for conveying grain by means of a fan-blower and tube-sections.

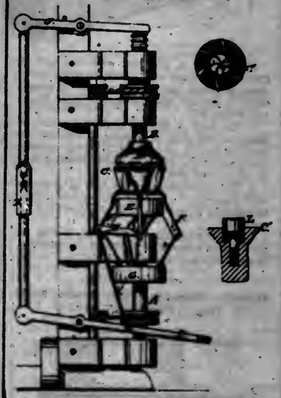


1. The auxiliary pipe D, in combination with and connecting the conveying-tube A and the interior of the casing E of the fan-blower, substantially as described, for the purpose set forth.

2. The conveying-tube A, when its bottom is composed of two horizontal portions, m and n p, connected by a curved portion, o s, substantially as and for the purpose described.

169,663. MACHINES FOR STRETCHING HAT-BODIES. James B. Wells, New Milford, Conn. [Filed Apr. 10, 1875.]

Brief.—The tip of the hat-body is stretched by being placed between the rotary disks, which are provided upon their faces with curved ribs, intersecting at the center of the disks, and having one or more through furrows or channels between the ribs.



1. The rotary hat-stretching disk or disks, having curved ribs X extending across the face or faces thereof, forming a central intersection, and provided with one or more through furrows or grooves, Z, for the purpose described.

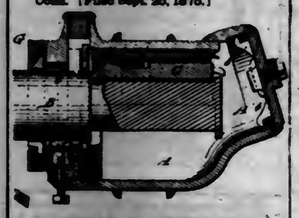
2. In combination with the hat-stretching disk D, having curved ribs X extending across its face, forming thereby a central point of contact, and provided with one or more through furrows or channels, Z, a stretching-disk, constructed of two or more concentric sections, the "tip" or central section of which being spring-seated, and adapted to be flush with the outer section while under pressure.

3. In combination with the rotary stretching-disks D C, the stretching-arms F, connected to the sliding collar E and links *i*, whereby an outward movement in their ascent is produced.

4. The combination of arms F, collar G, links *i*, lever H, rod *t*, treadle I, centional spring-seated connected rod K, and rock-arm *y*.

5. In a rotary stretching-disk, the combination of sections L and C', operating in unison with each other, and the former susceptible of being distended above or compressed flush with the face of the latter, substantially as herein described, and for the purpose set forth.

160,664. Car-Axle Boxes. George Williams, Mystic River, assignor of one-half his right to Fredk. A. Holmes, Stonington, Conn. [Filed Sept. 20, 1875.]



The combination, with the box A and journal B, of the collar G with slotted ears *d d*, interior collar G', square headed screws *f*, and springs *e*, substantially as and for the purpose herein set forth.

160,665. Permanent Letter-Files. John P. Adams, Irvington, N. Y. [Filed Sept. 27, 1875.]



1. The part A, provided with a groove or grooves, C, at one end, in combination with a sheet or sheets having a projection or projections, L, at one end, substantially as shown and described.

2. The part A, having projections and recesses on the ends of its sides, in combination with the part Q, provided with similar recesses and projections upon its sides, substantially as shown and described.

3. The combination of the part Q, provided with a spring, P, with the part A and adjustable sheets K, substantially as shown and described.

4. The combination of the part Q with the part A and adjustable sheets K, substantially as shown and described.

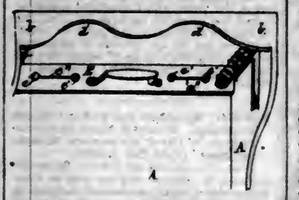
160,666. Shingles. David Altman, Nashville, Tenn. [Filed Oct. 7, 1875.]



A shingle beveled but a part of its length and provided with grooved and tongued edges, substantially as shown, and for the purpose set forth.

160,667. Temporary Binders. W. A. Amberg, Chicago, Ill. [Filed June 19, 1875.]

Brief.—Improvement on Patent No. 92,141.



1. In a temporary file and binder, adapted for puncturing and wiring or fastening the filed papers through the punctures and through their holding-bar before they are released or removed from the file, in combination with the perforated and slotted bar E and its springs, the narrow top piece *b*, constructed with the cut-out portions *d* located over the holes *c' c'* and slots *c' c'* in the bar, all as described and for the purposes set forth.

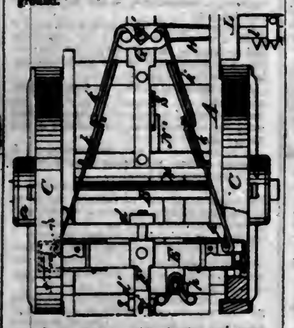
2. The combination, with the pressure-bar E, its springs, and the fixed top piece, of the side pieces A, having, respectively, straight and L-shaped grooves, whereby the bar E may be adjusted and removed, all substantially as shown and described.

160,668. Processes of Preserving Caviar. Max Ams, New York, N. Y. [Filed Sept. 25, 1875.]

The process herein described of preparing caviar, after the admixture of salt, by exposing the same in air-tight cans to gradual heat of not less than 140° nor more than 200° Fahrenheit, substantially as specified.

160,669. Mowing-Machines. Jacob Ashcraft, Pressysburg, Ohio. [Filed July 10, 1875.]

Brief.—A draft-tongue, in combination with a check-pin, connected to a rock-shaft, and designed to actuate a convolute spring, for the purpose of pressing the cutter-bar upon the ground.



1. In a mowing-machine having two transporting-wheels, C C, and two cam-wheels, D D, the vibrating bar E, pivoted to an endwise-adjustable bar, F, in combination with rods *h h'*, vibrating heads G G', and pitman-rods H H, connected to the sickle-bars, substantially as described.

2. The draft-tongue N, secured to a rock-shaft, N', in combination with the arm N', spring S, and with the check-pin *p*, substantially as described.

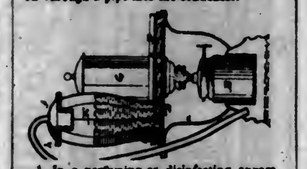
160,670. Anti-Sucking Bits for Calves, &c. John H. Bailey, Toledo, Iowa. [Filed Aug. 26, 1875.]



A tubular section-bit, open at each end, closed in front, and on the inside provided with hole *a'*, as shown and described, to allow the air ingress and egress from each end, and the animal to eat without clogging the tube with food.

160,671. Perfuming and Disinfecting Apparatus. Carl L. C. Bastmann, Hoboken, N. J. [Filed Oct. 16, 1875.]

Brief.—The hollow pan contains water fed from the reservoir, and is situated immediately over the flame of a lamp. The perfuming-powder to be decomposed is spread upon the top of this hollow pan, so that the water in the pan, on which the powder is placed, when heated, will evaporate the essential oils. The steam generated in the reservoir is carried off through a pipe into the condenser.



1. In a perfuming or disinfecting apparatus, the combination of the hollow perfuming-pan D with the reservoir C, as set forth.

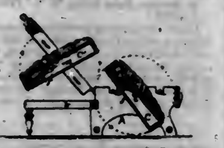
2. The combination of the hollow pan D, reservoir E, pipe *h*, and hollow base A, substantially as herein shown and described.

3. The combination of the support A, lamp B, arms *a a*, ring *b*, and hollow perfuming-pan D, as set forth.

4. The combination of the receptacle G with the frame *a b* of a perfuming and disinfecting apparatus, and with the hollow pan D, substantially as specified.

5. The combined base, condenser, and lamp-support A of a perfuming apparatus, substantially as specified.

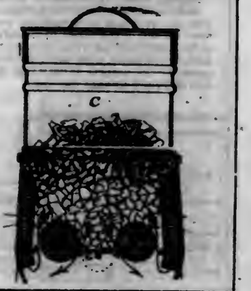
160,672. Sofa-Bedsteads. Simon Bendit, San Francisco, Cal. [Filed July 21, 1875.]



The bed-lounge described, consisting of the seat A and back B, hinged together, the frames C C', pivoted at each end in the seat and back, and capable of an entire revolution therein, the sliding catches *e f*, for holding the frames C C' rigidly in place, and the folding legs *h*, when the several parts are constructed, arranged, and combined substantially as described and shown.

160,673. Tyrrell's Furnaces. L. P. Bonn, Chicago, Ill. [Filed Sept. 20, 1875.]

Brief.—The ovens and the flat bar support the fuel. The ovens can be rotated to expose new surfaces to the direct impact of the products of combustion. The draft is downward through the fuel.



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1. A tinman's furnace, provided with a fuel-magazine, and with draft-inlets at or near its base, but above the fuel on the grate, and a smoke-outlet below the grate to produce a downward draft through the fuel, combined with open-end tubes to receive the soldering-irons and heat the same without contact with the burning fuel.

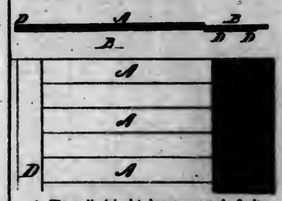
2. A tinman's furnace, A, provided with the tubes or ovens F to receive the soldering-irons, located at the bottom to support the fuel, combined with air-inlets at the top, and compartment D below said tubes and at the sides, substantially as described, so that the flame passes around the exposed surfaces of said ovens, and heats them uniformly, as set forth.

3. A tinman's furnace, A, provided with the tubes or ovens F, at the bottom of the fuel, to support the same, combined with the shaking-plate G, between said tubes, as set forth.

4. The cylindrical tube or oven F, constructed with a flange extending laterally around its open end, and an axial stud at its closed end, substantially as specified, so that it may be readily inserted or removed, securely held in place, and rotated as often as may be required to expose fresh surfaces to the action of the burning fuel.

160,674. Pipes. Richard M. C. Bross, Jersey City, N. J., assignor of three-fourth his right to Jacob Kohlberg and Thaddeus H. Walsh, New York city, and Jno. P. Culver, Jersey City, N. J. [Filed Oct. 20, 1875.]

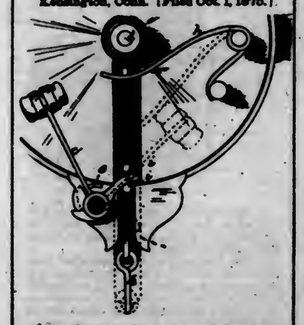
Brief.—The pipe is composed of alternate layers of wood and fabric arranged in spirals. The veneers are treated with asphalt in a fluid state, in order to cement them to the fabric. The inner and outer surfaces of the pipe, by the process described, will be covered with cloth, thus protecting the veneers from soaking, &c.



1. The cylindrical tubes composed of alternating spiral layers of wood and cloth cemented together by asphalt, substantially as specified.

2. The form for tubes consisting of a woven fabric, B, the longitudinal veneers A, and the transverse veneers D, alternately on one side and on the other of the fabric, cemented together by asphaltum, substantially as specified.

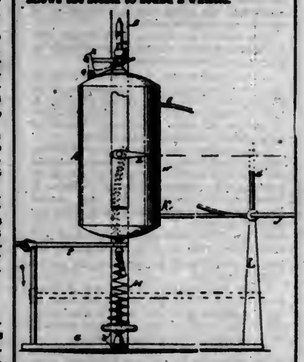
160,675. Door-Bells. John P. Connell, Kensington, Conn. [Filed Oct. 1, 1875.]



In combination, the pivoted hammer *e*, bearing the arm *f*, the reciprocating bar *f'*, bearing the pins *i i'* and the spring *h*, all arranged and operating substantially as shown and described.

160,676. Water-Regulators and Indicators for Steam-Boilers. Dexter Cook, Elmira, Ohio. [Filed Sept. 4, 1875.]

Brief.—When the water gets low in the boiler, the tank rises, trips a spring-valve, and allows the steam to sound a whistle.

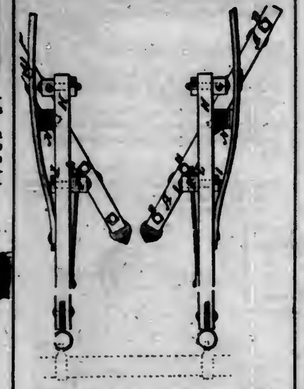


1. The combination, with wrench-lever P, of the spring-supported tank A, connected with steam-space of boiler by piping G G', and with water-space by piping I J, as and for the purpose specified.

2. The valve-lever Q, hook R, spring T, and tripping-rod S, for the purposes described.

160,677. Combined Cultivators and Harrows. Geo. Croll, Tuscogany, Ohio. [Filed Aug. 23, 1875.]

Brief.—Two beams are loosely swiveled to a common draft-bar. Beneath is an oblique bar for each, pointing forward and inward. These bars are attached to the beam by slotted standards and brace for vertical adjustment. Handles are attached in the usual manner. The shovels are secured to the diagonal bars.



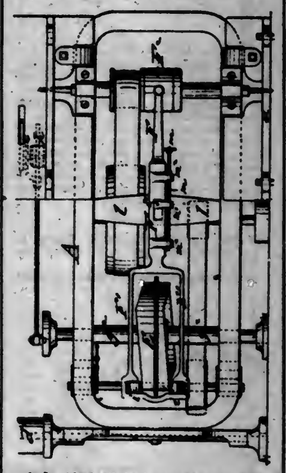
The combination of the beams A, the slotted uprights F and G, the pivoted draft-bars H, and the braces K with each other, in substantially the manner herein shown and described.

160,678. Coulters. Freeman Culver and Jefferson H. Culver, West Oneonta, N. Y. [Filed Sept. 4, 1875.]

Brief.—A coiter with one flat and one convex side, and two cutting-edges, designed to turn and look, so as to present the flat surface to the land-side.

1. In a reversible or hill-side plow, the coiter C, having shank *g* and collar *h*, and adapted to be rotated axially, or vibrated vertically, and to be locked with its curved surfaces toward the mold-board side, substantially as specified.

160,679. Machines for Boring Blind-Stiles. Freeland H. Dan, St. Cloud, Minn. [Filed June 6, 1874.]



1. In a blind-stile-boring machine, the single spindle G carrying a tool at each end and receiving a continuous rotary motion, and an alternate endwise motion in opposite directions, in combination with the stile-feeding bars C receiving an alternate progressive movement, as and for the purpose herein described.

2. The combination of the cam-wheel E, pivoted forked lever F, and loose collar or sleeve F', with the tool-spindle G and the fixed mechanism, as and for the purpose specified.

3. The stile-feeding rack, provided with slotted end and pivoted double catch-piece for fastening into mortise of stiles at either side thereof, substantially as specified.

4. The combination of the fulcrumed lever F, double cam-wheel E for giving reciprocating motion to boring-spindle, fulcrum-block *f'*, and adjusting-screw mechanism *a m' m'* for producing the accurate depth of the holes required, substantially as and for the purpose described.

160,680. Sign-Plates. Hiram T. Dewey, Brooklyn, N. Y. [Filed Sept. 13, 1875.]

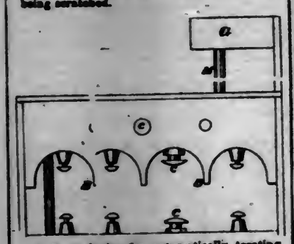
The sign or name plate composed of a sheet of metal, with the letters or numbers cut therein, and a plate of mica, connected together by a surrounding frame of folded sheet metal, as set forth.

169,660.

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169,661. SHEEP-SCRATCH BOXES. Ira B. Dillon, Visalia, Cal. [Filed May 3, 1875.]

Brief.—A part of a tank containing medicaments passes over the back of the sheep, and a part comes up under the belly. Valves project from the tank, so that the sheep, in rubbing, forces the valves in, and allows the liquid to flow upon the diseased parts which are being scratched.

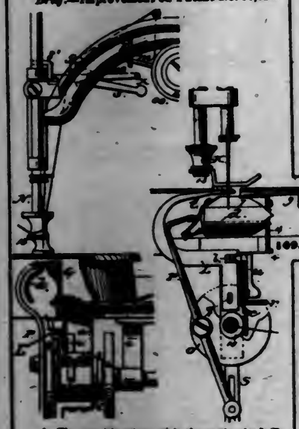


1. In a device for automatically treating sheep, the tank C, elevated as shown, for the purpose of supplying a liquid to the boxes A and E under pressure, substantially as and for the purpose herein described.

2. In combination with the box A, the valves c, having the heads d fitting closely over the openings through which the stems pass, said stems being hollow, and having perforations just beneath the head to admit the liquid to the interior when the valve is raised, substantially as herein described.

169,662. SEWING-MACHINE. George L. Du Laney, New York, N. Y. [Filed June 2, 1875.]

Brief.—Improvement on Patent No. 56,699.



169,663.

1. The combination, with the main shaft E, and with the needle-operating mechanism and a looper, of the disks 1 and 2, provided with radial slots, the crank-a and crank-pins 3 3, the shaft H' above the shaft E, and the shaft H below it, or on the opposite side, as and for the purpose set forth.

2. The spool-case holder G, constructed as described, and provided with the jaw d, having a thread projection, 7, located on its upper edge at a point slightly in advance of the path of the needle, substantially as and for the purpose specified.

3. The shield or guard f, in combination with the jaw d, as shown, and for the purpose set forth.

4. In combination with the hard-rubber spool-case M, the spool-guard 13, constructed with the rearward extension, as shown, and applied to the spool case, and operating as and for the purpose set forth.

5. A sewing-machine needle provided with a shoulder-groove, 21 22, substantially as shown, and for the purpose specified.

6. The combination, for joint operation, of the following devices, viz: the tension-wheel O', ring O O, lever m m, spring m², lifter s, spur e, adjusting-lever 3, graduating-lever 60, and yoke 9', these parts being constructed substantially as shown and set forth.

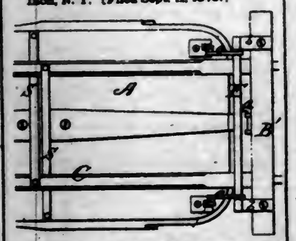
7. In a sewing-machine, the combination, with a thread tension device adapted to feed out automatically the quantity of thread for a stitch, and with the needle, of the disks 8, when used for controlling the slack thread above the eye of the needle, as and for the purpose specified.

8. The adjustable slotted thread-guard 9, in combination with the jaw d, provided with the point 6, substantially as described, and for the purpose set forth.

9. The combination of the wheel O', lever m m', spring m², lifter s, spur e, adjusting-lever 3, graduating-lever 60, yoke 8, and bar X, the several parts being constructed substantially as and for the purpose specified.

10. The combination, with the feed-dog L, of the eccentric 10, the pendent lever e, adjustable fulcrum-slide r, and bracket a, substantially as set forth.

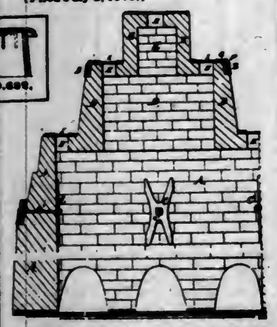
169,664. CARRIAGE-SPRINGS. W. H. Elliot, Ilion, N. Y. [Filed Sept. 11, 1875.]



1. The centrally-arranged reach-spring D, in combination with the equaliser E e d, substantially as specified.

2. In combination with the central reach-spring D, wagon-body A, reaches C, and an equaliser, the straps S, substantially as specified.

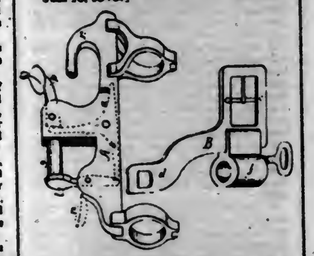
169,665. BRICK-KILNS. Holland B. Evans and Barnett G. Kemper, St. Charles, Mo. [Filed July 3, 1875.]



169,666.

In a brick-kiln, the combination of main and top compartments A D E, the same being graduated in size, and the floor H formed in the ledges or horizontal top portion of each of said compartments, and provided with slides I, as shown and described, for the purpose specified.

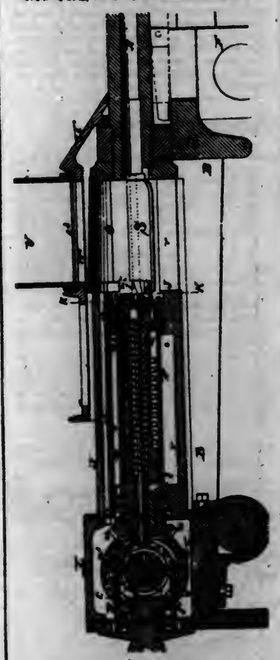
169,666. APPARATUS FOR DETACHING HORSES FROM CARRIAGES. Isaac L. Fallis, Dayton, Ohio, assignor of one-half his right to Ferdinand Stephan, same place. [Filed Jan. 16, 1875.]



1. In apparatus for detaching horses from vehicles, the part A consisting of the collars a b, latch l, trigger p, bent hook r, and stud g.

2. In combination with the tug or part A, as described, the part B, composed of the buckles or rings c, d, and e, and sleeve f, substantially as and for the purpose specified.

169,667. MACHINE-GUNS. W. S. Farwell, New York, N. Y. [Filed May 7, 1875.]



1. The tail-screw G, combined with the pivoted nut b and by ball-and-socket joint with the traversing-nut H, substantially as herein shown and described.

2. The traversing-worm I, combined with the beveled wheels j m and, by gearing, with the transverse operating-shaft M, and provided with a clutch, n, by which its motion can be reversed, substantially as herein shown and described.

3. In combination with the transverse operating shaft M, that gears into the traversing-worm I, the beveled wheels j m, clutch n, and gearings, by which the traverse can be changed from an automatic to a hand traverse, substantially as herein shown and described.

4. The reciprocating breech-closer Q, provided with an external screw-thread to receive its motion from the rotating embracing-tube P having an internal screw-thread, substantially as specified.

5. The combination of the barrel A with the rearwardly-extending breech-chamber J, transverse box L, and with the escapet g, which is applied to said box, substantially as specified.

6. The combination of the firing-pin w, tubular breech-closer Q, embracing tube P, and cylindrical breech-chamber J, all of said parts being concentric and operating substantially as specified.

7. The tubular screw P, connected rigidly with the beveled wheel c and gear-wheel v, and combined with the breech-closer Q and cartridge dipper-shaft f^3, substantially as specified.

8. In combination with two or more barrels, A A, which are placed on the same plane, in a machine-gun, the operating-shaft M, carrying two or more sliding clutches, b^3, and two or more loose wheels, c^3 c^3, all arranged so that each of the barrels A will have its interior mechanism actuated by the same shaft M, but independently from the other barrels through the intervention of the clutches and wheels c^3 c^3, substantially as specified.

9. The sliding clutch b^3, made with a projecting pin, b^5, for the purpose of imparting intermittent rotary motion to the toothed wheel c^3, substantially as described.

10. The rotating-wheel c^3, provided with a cam, c^5, and combined with the claw and lever R, for operating the clutch and effecting the firing-pin of the machine-gun, substantially as specified.

11. The clutch b^3, combined with the lever R, which carries the pin g^5 into a groove of the clutch and with intermediate mechanism, whereby the rotation of the clutch serves to vibrate the lever R and to move the clutch lengthwise, as specified.

12. The cancelled plate q, carrying on its inner face the plate q^1, which serves as a pivot for the lever R, and as support for the wheel c^5, substantially as specified.

13. The firing-pin w, combined with the vibrating claw R, by which it is locked and released, substantially as herein shown and described.

14. In combination with the shank of the claw R, the ring q^2 and rod f^5, said ring carrying two pins on opposite sides of the actuating-wheel c^5 to be affected by the cam c^5, substantially as herein shown and described.

15. The vibrating cartridge-extractor s, pivoted in a slot of the tubular reciprocating breech-closer Q beneath the firing-pin w, and combined with said firing-pin to be locked by the head or enlargement thereof, substantially as herein shown and described.

16. In combination with the front bearing o of the rotating tube P, the spring y, which is interposed between the end of the tube P and the bearings, to operate in conjunction with the reciprocating breech-closer Q, substantially as specified.

17. The vibrating cartridge-dipper O, fitted within a recess of the breech-chamber J, and attached removably to the operating-shaft f^3, substantially as herein shown and described.

18. The gear-wheel v, mounted on the rotary tube P and combined with the toothed segment f^4 on the shaft f^3 of the vibrating dipper, substantially as herein specified.

19. The vibrating jaws S S, arranged in the cartridge-receiving chamber beneath the vibrating dipper O, substantially as and for the purpose specified.

20. In combination with the vibrating jaws S S, the twisted stems F and the sliding yoke m^2 for the purpose of operating said jaws, as specified.

21. The double pawl y^2, combined with the toothed wheel y^3 and with the operating-crank rf on the sleeve r^3, substantially as specified.

22. In combination with the cam-wheel N and reciprocating rod C^2, the pawl y^2, wheel y^3, crank z^2, and operating-pawl w^2, all arranged substantially as specified.

23. The wheel y^3, made with coarse-tooth deeper than the remaining teeth, and combined with the actuating-pawl y^2 and notched crank z^2 to throw said pawl in connection with said crank once only during the rotation of said wheel, as specified.

24. The combination of the spring-rod y^4 and connecting-rod w^2 with the pawl y^2, for the purpose of being acted upon by the magazine, in the manner specified.

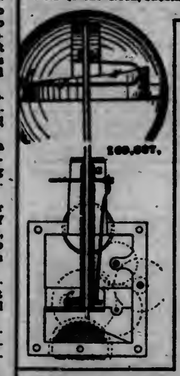
25. The sliding magazine-support T, made with three transverse ribs, which form its surface into two shallow receivers for two magazines, substantially as and for the purpose specified.

26. In combination with a machine-gun having a series of parallel barrels, the laterally-movable magazine s and the longitudinally-movable magazine-support T, substantially as described.

27. The combination of the dipper O with the breech-chambers J and their relative arrangement, whereby the dipper will be enabled to support a cartridge, which will be clear of the charging-magazine, substantially as and for the purpose specified.

169,667. GLOBE ATTACHMENTS TO CLOCKS. Henry Fick, New York, N. Y. [Filed Oct. 23, 1875.]

The globe-shaft B, connected to the shaft geared to the clock by a spring, and a cam, arranged for automatically returning the globe to its true position, relatively to the time-train of the clock, substantially as specified.



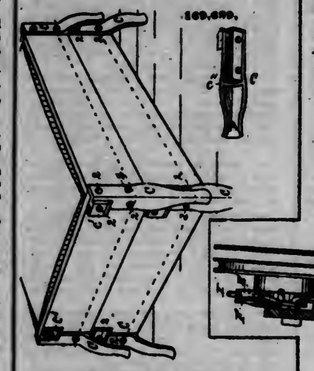
169,668.



169,668. HORSE HAY-FORKS. James H. Fletcher, Wayne Township, Montgomery County, assignor of one-half his right to M. L. Bass, Crawfordsville, Ind. [Filed Feb. 13, 1875.]

The combination, with the pivoted prongs A and staple G, of the locking-bar D, provided with shoulder H, for adjusting and securing the prongs in position, substantially in the manner shown and described.

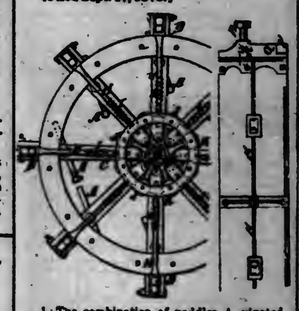
169,669. FOLDING BEDSTEADS. John Flinn, Philadelphia, Pa. [Filed Sept. 9, 1875.]



169,669.

In a cot-bedstead, the leg C, consisting of a plate bent longitudinally to an angle of ninety degrees, or so as correspond with the silent angle of the body of the cot, and provided with the stop-plate c^2, the lower part of the leg being bent outward, as and for the purpose described.

169,670. FEATHERING PADDLE-WHEELS. Peter Gregersen, Wauzeka, Wis., assignor to himself and Phillip Miller, same place. [Filed Sept. 17, 1875.]



1. The combination of paddles A, pivoted above the center, the rods having stops D, the cam G, and the springs I, all arranged substantially as and for the purpose specified.

2. The cam G and slotted disk N^1, combined with the paddle-wheel and the stop-rods, in the manner described, for changing as the wheel turns forward or backward.

3. The combination of adjusting-slide O with the shifting-cam and disk N^1, substantially as specified.

4. The metal heads Q, having pivot B and tension-rod connections, in combination with a paddle, substantially as specified.

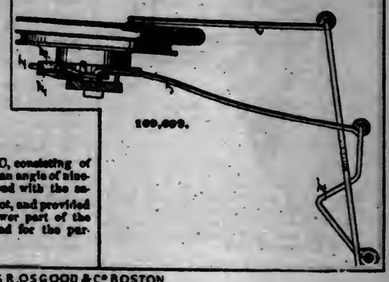
169,671. REGISTERS. Friedrich Grosbeck and Eugen Mullendorff, Detroit, Mich. [Filed June 16, 1875.]



The register having the casing with the handle attached, and the aperture f, as shown, and provided with the rod e, passing down through an aperture in the said handle, and the pawl g attached thereto, in combination with the spring h, ratchet-wheels B and C, and dial D upon the shaft d, and the detent $f f^1$, all being constructed as shown, for the purposes set forth.

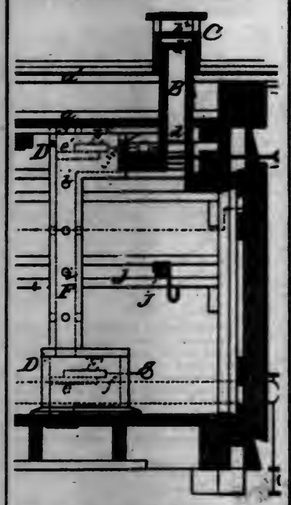
169,672. TREADLES FOR MACHINERY. Andrew N. Haguety, West Alexander, Pa. [Filed May 1, 1875.]

The combination of the auxiliary treadle K, connecting-rod J, pawl-lever F, pawl E, and a spring, I, with the ordinary treadle and connecting-rod of a sewing-machine, substantially as specified.



169,672.

160,695. Smoke-House. Calvin D. Earl, Andover, Ind. (Filed Aug. 14, 1875.)



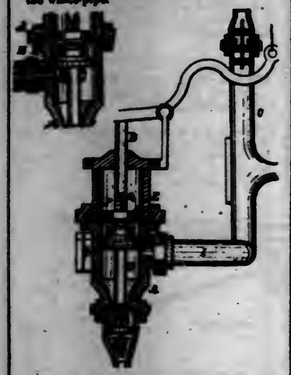
1. The perforated ventilating-tubes F, and boxes D^1 D^2, provided with cut-off valves B B', in combination with a smoke-house having openings d' in its floor, substantially as specified.

2. The combination, with a smoke-house, of the conduits B B', having wire-cloth diaphragm d, and overlapping spaced shelves b^1 b^2, substantially as specified.

3. The combination, with a smoke-house, of the perforated tubes F, valved boxes D^1 D^2, valved conduits B B', having caps C, and diaphragms d, substantially as specified.

160,696. Anti-Freezing Cocks. Samuel T. Harker, Milwaukee, Wis. (Filed Mar. 22, 1875.)

Brief.—When the diaphragm is depressed, the valve which controls the supply is opened, and the waste-pipe closed by its valve. The pipes are filled and the air-valve closed by pressure of water. When the diaphragm is released, the action of the valves is reversed, and the water in the pipes will escape through the waste-pipe.

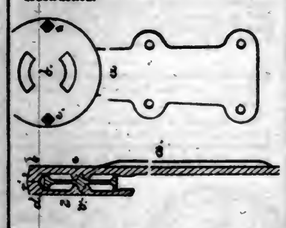


1. Cock-case A, valve C, valve-stem D, diaphragm E, washers I, and valve H, all in combination, substantially as described.

2. The pipe O, valve N, in combination with waste-pipe I and valve H, substantially as and for the purpose set forth.

160,697. Door-Hangers. Thomas Harris, Fayetteville, N.Y., assignor of one-half his right to Beach C. Beard and Huntington Beard, same place. (Filed Jan. 15, 1875.)

Brief.—Sole novelty consists in cooie pivots cast upon the wheel, combined with details of construction.



The improved door-hanger herein described, consisting of the strap or plate a, cast with circular head b, having inside V-shaped ring or hub c, and projecting rim e, the cap-piece d, cast with corresponding rim and V-shaped ring, the wheel b, cast with cooie pivots to serve as journals, and the two connecting-bolts a a passing through the rim, all substantially as described and shown, for the purpose set forth.

160,698. Knife-Heads for Harvesters. Geo. W. Harrison, Lansing, Mich. (Filed Sept. 20, 1875.)



1. In combination with the knife A, the base or heel plate B, secured to the knife by rivets a, and constructed at its top rear edge with undercut varied projections or joints B^1 B^2 B^3, and for the purposes described.

2. In combination with the plate B, constructed with projections and recesses B^1 B^2 B^3, the coupling-head C, constructed with varied recessed and notched base C^1 C^2 C^3 fitting thereto, as and for the purposes described.

3. A coupling-head or pitman-connection for harvesters, made in two separate and distinct parts, whereby the head may be removed from the base-plate, by which it is secured to the heel of the knife and applied to different blades of different harvesters, substantially as and for the purposes described.

4. The coupling-head or pitman-connection for harvesters, composed of separate and removable head C and base plate B, the two united by a joint between the two and bolt B^1, and to the knife by rivets or bolts passing through the knife and plate, substantially as and for the purposes described.

5. The hollow coupling-head C, constructed with varied notched base C^1, and provided at each end with screw-plugs D D, as and for the purposes described.

6. In combination with the hollow coupling-head C, constructed with varied notched base C^1, and screw-plugs D D at each end, the rubber packing E E, and metal bosing F F, placed at each side of the pitman-arm and adapted to be adjusted independently of each other by the screw-heads D D, as and for the purposes described.

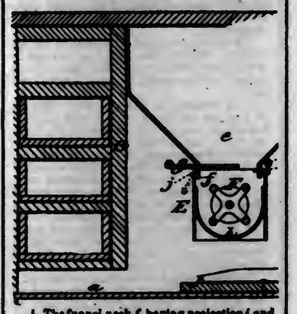
7. In combination with the hollow head C and screw-heads D D, the rubber packing E^2 fitted within the head C and adapted to be adjusted at either end by the plugs D D, as and for the purposes described.

8. In combination with the head C and packing E F, the heel arm H, entering the cylinder through oblong opening D^2, and connected to pitman by screw-coupling H^1, as and for the purposes described.

9. The combination of knife A, cylinder C, base-plate B, made separate therewith, and pitman-arm H, entering the cylinder only at one side, as and for the purpose described.

10. The pitman-connection for harvesters, composed of separate base-plate B and cylinder C, screw-heads D D, rubber packing E E, metal bosing F F, and pitman-arm H, all constructed and united substantially as and for the purposes described.

160,699. Kitchen-Safes. J. B. Harrison, St. Joseph, Mo. (Filed Aug. 14, 1875.)



1. The funnel-rest f, having projection f and eye l, in combination with the detachable sieve-box E, having perforations f^1, hook h, and crank-arm H on the inside of the safe, as described, and for the purpose set forth.

2. The kneading-board J, provided with hinged wing n, adapted to be unfolded for the purpose of extending the said board entirely across the front of the safe, substantially as specified.

160,700. Hominy-Mills. Benjamin Harvey, Sulphur Springs, Ind. (Filed Aug. 14, 1875.)

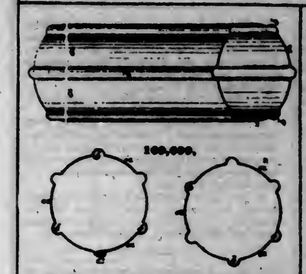
Brief.—Grain is beaten and broken up in cylinder, and passes through perforations in bottom, upon a perforated discharging-screen, which is shaken by a rod in connection with lug on fan-shaft. Grain is subjected to blast of air as it escapes from end of discharging-screen.

1. In combination with the beaters g, the perforated concave B of case A, and the discharging-screen H, the blast-case C, fan J, and spouts h i, substantially as described.

2. In the machine herein described, the shaking-rod j, actuated by shaft d and a spring, a, in combination with the screen H and blast-spouts h i, substantially as described.

160,690. Tubes for Railroad, Posts, &c. Dwight W. Hamilton, Philadelphia, Pa. (Filed Mar. 1, 1875.)

A new article of manufacture suitable for architectural purposes, consisting of a galvanized or coated iron tube provided with ribs or bands and intermediate heads, substantially as set forth.



160,699.



160,700.

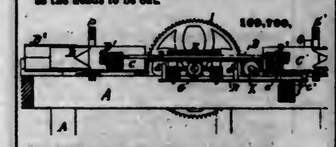
A combined ground-glass and plate holder, provided with grooved insulating bottom holders, top buttons, and side gage or support, and with a fastening spring top plate, for securing either the ground glass or sensitized plate in exact focused position, constructed and arranged substantially as set forth.

160,702. Fluid-Meters. Berthold Huber, Brooklyn, N. Y. (Filed Apr. 24, 1875.)

Brief.—The tube is made flat and the base level, the inlet being introduced under the outlet, and the tube being not allowed to rise for a short distance beyond the inlet. The axis of the roller w connected to the center stud by an eye, and actuates the registering mechanism by engaging with a crank-pin 4 depending from the latter.

160,703. Machines for Making Heads of Wooden Boxes. Edmund Hervey, Hingham, Mass. (Filed Sept. 20, 1875.)

Brief.—A reciprocating bar is provided with plungers at each end, which force the material through hollow cutters of the same shape as the heads to be cut.



160,703.

1. The combination and arrangement of the knives B and B^1, the toothed rack D, having secured to its opposite ends the plungers D^1 and D^2, and the pinion F, arranged to be intermittently rotated in opposite directions, and thereby impart a reciprocating motion to the rack D and plungers D^1 and D^2, as and for the purposes described.

2. The combination of the knives B and B^1, formed as set forth, the plungers D^1 and D^2, rack D, pinion F, gear I, pinion J, sliding shaft K, bevel-wheels L, L^1, and P, and shipper-lever Q, all arranged to operate substantially as described.

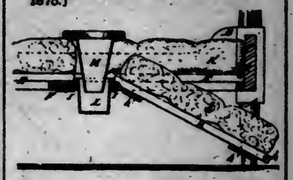
3. The combination of the reciprocating plungers D^1 and D^2, the shipper-lever Q, catch g, the shipper-bar R, provided with the pins a, a^1, d, and d^1, and the pointed lug e, and the double-inclined upper surface of the girt f, arranged to operate substantially as described.

4. In combination with the knives B and B^1, one or both, the safety-guards S or S^1, arranged substantially as described, for the purposes specified.

160,704. Mechanical Movements. John Hughes, New Berne, N. C. (Filed Apr. 10, 1875.)

The combination of the rocking seat H, cogged segment G, pinions a, shafts A, and wheels C C, the said seat being located above said segment and gear-wheels, and the device adapted to be operated by a person sitting on the seat, as set forth.

160,705. Invalid-Bedsteads. William Huntress, Richmond, Va. (Filed Sept. 17, 1875.)



1. The hinged drop-frame I and the drop-plate H, provided with the connecting-plates h^1 and the guard pins h^2, in combination with the long slats E, the cross slat F, and the frame of the bedstead, substantially as herein shown and described.

2. The mattress K, having the middle portion of its foot part cut away, and replaced by a separate piece, k^2, to correspond with the drop-frame I and the drop-slats H of the bed-bottom, substantially as herein shown and described.

3. The combination of the vessel L and the chute M with the hinged drop-frame I and the mattress K, substantially as herein shown and described.

160,706. Covers for Tumbling-Rods. J. B. Hutchinson, Spring Valley, Minn. (Filed Oct. 16, 1875.)

Brief.—The tumbling-shaft is inclosed in tabular sections, having guard-rings applied at the joints.



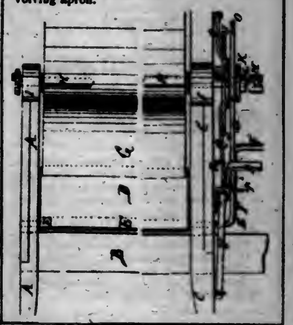
160,706.

1. Tapering covering sections C and joint-guards a, combined with a shaft, A, substantially in the manner and for the purpose described.

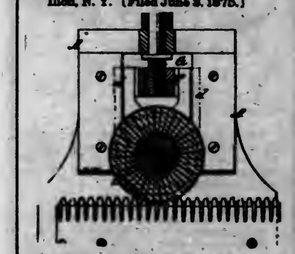
2. The packing b, combined with the covering sections C and tumbling-shaft A, substantially as and for the purpose described.

160,707. Revolving Dropsyrs. J. Johnson, Perry, Ill., assignor to himself, W. T. Smith, and T. H. Ward, same place. (Filed July 10, 1875.)

Brief.—The depression of a crank rigid with the vibrating apron allows the revolving apron to describe a semi-revolution, which apron is revolved by means of a lever, rack-frame, and pinion fixed to the axis of the revolving apron.



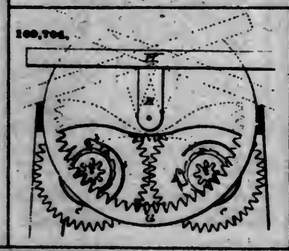
160,701. Type-Machines. A. M. Howard, Ilion, N. Y. (Filed June 3, 1875.)



1. The clamping-wheel for confining single type or monogram-type, in combination with the clamp formed of three plates for confining the gage-feeding rack, and single pieces of metal for writing or monogram type, substantially as and for the purposes described.

2. The combination of a toothed gage and feeding-wheel, a type-clamping wheel, a toothed and vertically-yielding or spring gage and feet-rack, and the clamp for the blank type-metal, and spring and gage feeding rack, substantially as and for the purposes described.

160,708. Photographic-Plate Holders. Frank A. Howson and Wm. S. Howson, Brooklyn, N. Y. (Filed Sept. 20, 1875.)

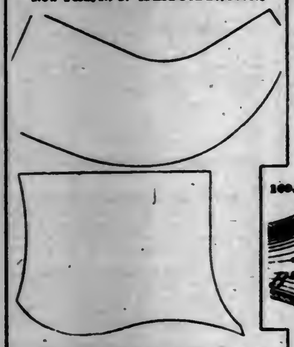


160,708.

1. The combination of the vibrating apron D, the revolving double apron G, and any suitable operating mechanism, substantially as herein shown and described.

2. The combination of the crank F, levers P and Q, rack-bar O, gear-wheel K, clutch L M N, disk J, projections f and f', sliding bar S, and springs T U with each other, and with the vibrating apron D and the revolving double apron G, substantially as herein shown and described.

160,708. Button-Gaiters. Arthur Kenny, New York, N. Y. (Filed Oct. 27, 1875.)



1. As a new article of manufacture, the improved button-gaiter, having the vamp, one quarter, the button-flap, and facing or lower part of the other quarter in one and the same piece, substantially as described.

2. The pattern for a button-gaiter, having the outside quarter, button-flap, vamp, and facing, or lower part of inside quarter in one and the same piece, substantially as described.

160,709. Toy Building-Blocks. Ernest U. Kinney, Passaic N. J. (Filed Oct. 6, 1875.)



The toy building-block, with the grooves a and tongues b placed around a square block at the angles thereof, as as to interlock, substantially as set forth.

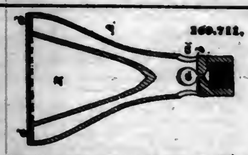
160,710. Locks for Fire-Arms. David Kirkwood and Henry Mortimer, Boston, Mass. (Filed Oct. 21, 1875.)



The lever E, with or without a projection, h, in combination with the mainspring D, tumbler C, and hammer B, operating substantially in the manner and for the purpose set forth.

160,711. Ammo-Gas Burners. John E. Knights, Boston, Mass., assignor to Caleb G. Wadsworth, same place. (Filed Apr. 28, 1875.)

Brief.—The air and gas commingle as they strike against the inverted cone.

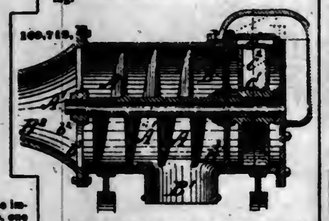


160,712.

The improved aero-gas burner, consisting of the cone A, the inverted cone B, the series of air inlets *a a*, the perforated diaphragm *b*, and series of ejection-orifices *d d*, the whole being constructed, combined, and arranged in manner as shown and described.

160,713. Elevators for Saccharine Liquids. Eugene P. Larve, Philadelphia, Pa., assignor of one-half his right to Raymond Cope, same place. (Filed Oct. 14, 1875.)

Brief.—The screw-conveyer and rotary engine are secured to a hollow shaft. The exhaust steam passes through the hollow shaft, and assists in ejecting the liquid from the casing.



160,713.

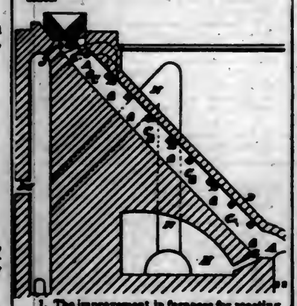
1. The combination of a screw-conveyer, an ejecting-casing, and an ejector, substantially as set forth.

2. The combination of a screw-conveyer and a rotary engine, both secured upon a hollow shaft, which receives the exhaust steam at one end and discharges it from the other, into a casing inclosing the conveyer and engine, substantially as set forth.

3. The combination of the casing, divided into two compartments, the exhaust-passage, and the exhaust-valve, substantially as set forth.

160,715. Ore-Roasting Furnaces. H. G. Livermore, San Francisco, Cal. (Filed Aug. 11, 1875.)

Brief.—Ore passes downward in the longitudinal channels and beneath the transverse partitions. While heaped up against the latter it is struck by escaping products of combustion reverberated from the abutments of the roof. Vapors from the waste-chamber and from the smoke and fire flue pass into a rear chamber in communication with the condenser. Ore previous to insertion is dried in pan on furnace. May be stirring-holes ranged in sides.



1. The improvement in furnaces for roasting ores, consisting of inclined chamber A, having a longitudinally-channeled floor and a roof with abutments B, wherein the ore may move downward by gravitation, and the heat and flame pass upward and be deflected on the ore, substantially as and for the purpose set forth.

2. The shallow furnace-chamber A, with its floor standing at such an angle that the ore will move down by gravitation alone, in combination with the transverse dams or abutments *a*, by which the ore is retained upon the floor-surface in a thin sheet, and is at the same time stirred as it moves downward, substantially as herein described.

3. The angular chamber H, leading from the waste-chamber H, above the inclined ore-chamber, and thence to the condenser, for the purpose of utilizing any heat and fumes which may have passed into the waste-chamber, substantially as described.

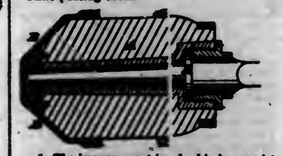
4. The receiving-chamber L, for the fumes, having the openings J and K from the ore-chamber, and the channels N from the waste-chamber, substantially as herein described.

160,714. Compositions for Varnish. S. W. Mayer, L. Loewenstein, and B. Mayer, New York, N. Y. (Filed Sept. 24, 1875.)

An improved varnish, consisting of gum-copal, alcohol, benzine, gum-gamboge, and orange aniline, substantially in the proportions and for the purposes set forth.

160,716. Wheel-Hubs. W. H. Masterman, San Leandro, Cal. (Filed July 13, 1875.)

Brief.—Outer end of hub is made conical, to prevent interlocking with other vehicles while passing them.



1. The improvement in wheel-hubs, consisting in forming the outer or projecting ends of the hub in a circular, conical, or tapering form, substantially as and for the purpose above described.

2. The cap B, constructed to fit the outer or projecting end of the hub A, and having the ring or band C on its inner rim, which also serves as a band for the hub, substantially as and for the purpose described.

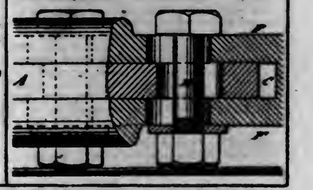
160,716. Plows. Wm. H. McOuat, Pittsburg, Pa., assignor to the Pittsburg Steel-Casting Company, same place. (Filed Sept. 28, 1875.)



A plow share or plate, A, having perforated lug *a'*, with sloping edge *a'*, in combination with frog or standard B, having slot *c*, with sloping edge *c*, substantially as and for the purpose set forth.

160,717. Rail-Joints. George A. Mead, Salem Centre, N. Y. (Filed Sept. 11, 1875.)

Brief.—A rail-joint in which a tension or tongue of one rail fits into a slot made in the thickened end of the adjacent rail, and both secured by bolts.



A rail-joint in which a tenon or tongue of one rail fits in a slot in the other rail, and the tenon and the slotted portion are bolted together, substantially in the manner described.

160,718. Shingle-Bits. Basil Miller, Coshocton, Ohio. (Filed Apr. 20, 1875.)



1. The bit described, having the bars *a a*, lever side pieces *a' a'*, and removable cars *a' a'*, constructed and arranged as described.

2. The combination of the bit-rings, having projecting studs *b*, and rein-plate C, having the transverse openings *c*, for the purpose described.

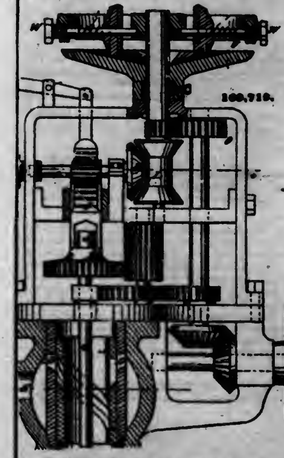
3. The combination of the lever-arms *a'* with the bridle-straps D, the latter being applied by the movement of the arms, substantially as described.

160,719. Governors and Cut-Offs for Steam-Engines. Martin D. Miller, Oswego, Kans., assignor to himself and Jas. T. Pierson, same place. (Filed July 31, 1875.)

Brief.—When the speed of the engine increases the rollers are thrown out on the concave plate, by which the governor-spindle is raised, and the wheel thereon brought in contact with the friction-wheel, which raises the valve and cuts off the supply of steam.

1. The disengaging friction-wheel, in combination with valve and casing, the weight of valve and fittings being balanced by ball and lever, as set forth, to enable the governor to regulate the speed with accuracy.

2. The rotary hollow valve A, having spiral ports, in combination with a case having spiral ports, the said valve having its weight counterbalanced, and being geared with the governor-pinion K by a toothed rack, I, substantially as specified.



160,719.

3. The combination, in a governor, of concave plate Q, rollers R, spindles S, springs U, and adjusting-screws W, substantially in the manner described.

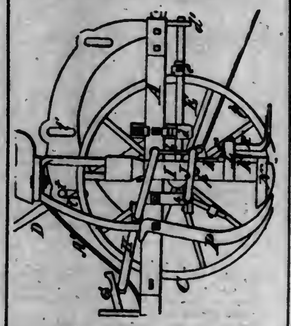
160,720. Car-Couplings. Jas. C. Mitchell, Lancaster, N. H. (Filed Sept. 4, 1875.)



The combination of draw-bar, having shoulders *a'* and detachable top plate *a'*, and a coupling-plate, having the pivots *c'*, as and for the purpose specified.

160,721. Corn-Planters. John G. Mole, Sarpy Centre, Nebr., assignor of one-half his right to Byron Huff, same place. (Filed June 11, 1875.)

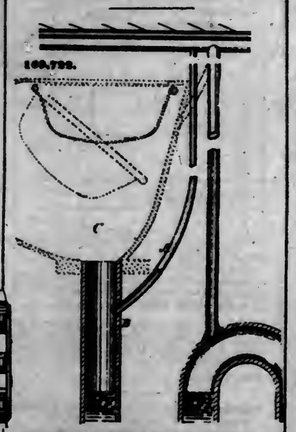
Brief.—The axle of the bearing-wheels is mounted on crank-arms, and adjustable in hangers. The arms carrying the scrapers are attached to the axle, and play in loops depending from the rear cross-bar.



1. The axle C' of connected wheels C C, having its bearing in crank-arms *c*, and an angular lever, *c'*, adjustable in hangers *d*, in combination with levers D D', and the slotted arc F, substantially as described.

2. The arms E E, attached to the axle C', and provided with scrapers *e e*, in combination with the guiding-loops *d'* depending from the rear cross-bar of the frame A, substantially as described, and for the purpose set forth.

160,722.



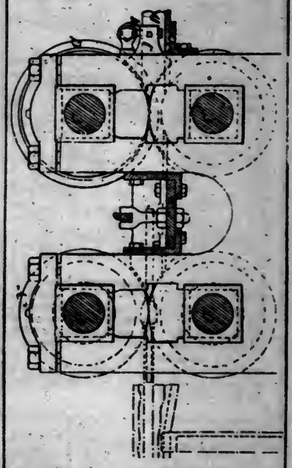
160,722. Water Supplies and Vents for Traps. John E. Morrell, New York, N. Y. (Filed Oct. 1, 1875.)

Brief.—Water is conducted from the roof of a building to the water-closet, or other traps connected with the building, by leading a pipe from the roof, and connecting it at a point below the drop cup or pan of the water-closet, either to the bowl or pipe leading therefrom to the trap.

The pipe A, opening through the roof of a building, and serving the double purpose of conducting off the foul air from the closet, and conducting thereinto from the roof water for supplying the trap, in combination with the bowl C and pipe B, as and for the purpose specified.

160,723. Machines for Making Tubing. George Henri Marc Muntz, Church Hill House, Handsworth, England. (Filed May 22, 1875.)

Brief.—A pair of rolls for beveling the edges and partly bending the strip, and a second pair for finishing the tube, (the pair N placed after and running at a greater surface-speed than the pair G, and having a mandrel between them,) having in front of the first pair guides for introducing the blank, and between the two pair a bending-guide, M, of particular construction.



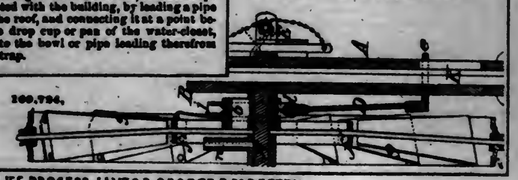
1. The combination of beveling and scarfing rolls G G, bending-guide M, and rolls N, driven at a quicker surface-speed than the rolls G and with a mandrel between them, substantially as herein described.

2. The combination of guides D J, beveling and scarfing rolls G G, bending-guide M, and rolls N driven at a quicker surface-speed than the rolls G and with a mandrel between them, substantially as herein described.

160,724. Windmills. William C. Nelson, Sacramento, Cal. (Filed July 24, 1875.)

Brief.—An upright tubular post, on the upper end of which is a revolving tubular cap, to which is attached a horizontal shaft, that receives the hub of the windmill. On the rear end of the hub an eccentric is keyed, which is embraced by a yoke, to which a pitman is attached by a pivot-joint. The lower end of the pitman-rod has a ring secured to it, which encircles loosely the hollow post, and receives vertical motion when rotated.

1. The hollow rod G, carrying the vane J and wind-blade I, bent as described, in combination with step-pins *h h*, chain *i*, and rod K, the latter passing through hollow cap *e* and hollow shaft A, for the purpose described.

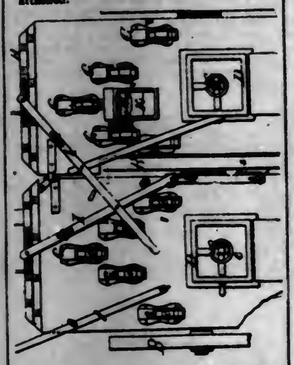


160,724.

2. The pitman-rod D, having a ring, c, which encircles the post A, and pivoted at d to the yoke e of eccentric b, for the purpose set forth.
3. The blades g, riveted to rim f, and secured to ring f' by means of screw-stems f and tightening-nuts, for the purpose set forth.

160,726. Grass-Platforms. William Nevins, Titusville, Pa. [Filed July 8, 1875.]

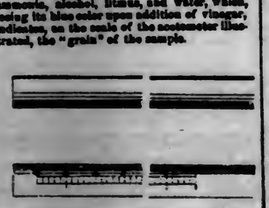
Brief.—The shovel-standards are adjustably pivoted in metal sockets fastened to the upper side of the platform. The standards are all simultaneously adjusted at the front by cross-bends, to which one end of the brace-rods are attached.



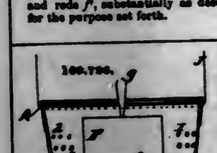
1. The adjustable shovel-standards E, pivoted in sockets G, attached to the platform, in combination with the rods f', bent H, bolts h h, and levers I I, having their fulcra in upright standards on the platform, substantially as described, and for the purpose set forth.
2. The perforated cast-metal socket G, in combination with the perforated standard E and rods f', substantially as described, and for the purpose set forth.

160,727. Reagents for Testing the Strength of Vinegar. Charles Peters, Mechanicsville, Va., assignor to Charles Bonn & Co., New York, N. Y. [Filed Sept. 4, 1875.]

Brief.—A standard liquid consisting of ammonia, alcohol, litmus, and water, which, losing its blue color upon addition of vinegar, indicates, on the scale of the acetometer illustrated, the "grain" of the sample.



160,728.



160,729.

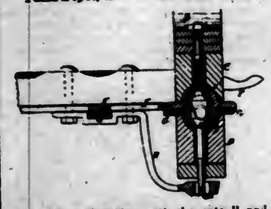


160,730. Fire-Rakes for Horses. Asa Nye, Jr., Boston, Mass. [Filed Apr. 20, 1875.]

The telescopic bag C, with oval hole d, ring e, and cock F, with loops g g, in combination with cock B, ring A, air-holes I, and elastic string J, substantially as described.

The composition of lizzus, concentrated ammonia, alcohol, and water, substantially in the proportions set forth, for the purpose specified.

160,732. King-Bolts. A. G. Pickett, Jr., Yuma Depot, Ariz. [Filed Apr. 3, 1875.]



1. The combination, with the axle B and bolster C, of the king-bolt E, composed of two parts, having U-shaped eyes, forming universal joint, all substantially as and for the purpose set forth.
2. The combination, with the axle B, bolster C, and king-bolt E, of the friction-plates F G, having rounded sockets, all substantially as set forth.

160,733. Hot-Air Furnaces. Charles L. Pierce and Horace A. Pinkham, Boston, Mass., assignors to Geo. F. Pinkham, same place. [Filed June 26, 1875.]

Brief.—The plate supports the fuel in the clinker-cleaning space. It is removable to allow removal and replacement of the grate.

The removable plate c, provided with a loop, f, for supporting the handle of the grate, in combination with the ring b, constructed to form a space, d, between them, through which the clinkers can be withdrawn, substantially as set forth.

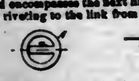
160,734. Picture-Nails. T. C. Richards, New York, N. Y. [Filed Dec. 30, 1874.]

Brief.—A soft-metal body cast upon a screw, and having an ornamental cap connected to it by a sheet-metal band.

The knob for pictures, &c., constructed as herein shown and described, composed of the screw A, soft-metal knob B, ornamental cap C, and sheet-metal band f, as and for the purpose specified.

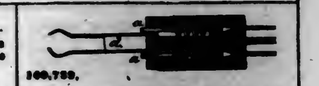
160,735. Chain-Links. William Rosmer, Newark, N. J. [Filed Oct. 16, 1875.]

Brief.—The lip or projection is folded over and encompasses the next link, being fastened by riveting to the link from which it projects.



A chain-link, A, made in one piece with the projecting strip a, which forms the eye for joining the contiguous link, substantially as described.

160,736. Couplings for Train-Telegraphs. Andrew Ryder, Oakland, Cal. [Filed Aug. 30, 1875.]



160,739.



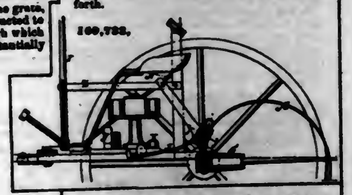
1. An electric coupling for train-telegraphs, consisting of two hollow cones, A, containing two coiled electrodes, a, insulated from the cone and from each other, and each having one coil projecting through the cone, and the other secured to the ends of the conducting-wires, substantially as described.
2. The circuit-closing tap E, having a spring-arm, d, and sleeve c, and adapted to be attached to the last coupling on the train, and provided with a smooth conducting-face, which is brought in contact with the electrodes of the said coupling when the several parts are attached and operated, as and for the purpose set forth.
3. The combination, with the case A and wires b, of the rod f, when the several parts operate as described.

160,738. Horse Hay-Rakes. William H. Eyer, Margaretville, N. Y. [Filed May 18, 1875.]

Brief.—Buffer for tilting-lever connection; brace for the clearer-teeth.

1. The clearer-teeth A, provided with brass O, through the middle of which passes the tooth, and whose ends are then bent over and made fast to axle, one above and the other below, as and for the purpose specified.
2. A bar secured to rake-platform and carrying an elastic block, operating in combination with the lever I, connection Z, and vibratory rake-head B, as and for the purpose set forth.

160,739.

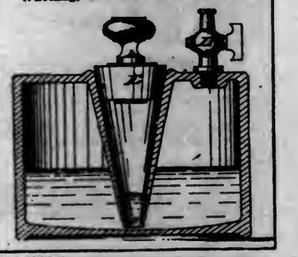


160,740. Water for Rifled Guns. George Schalck, Pottsville, Pa. [Filed Oct. 6, 1875.]



The hollow ball A, provided with ribs a a, in combination with the wad or patch B, constructed of non-expansive material, having projection b projecting into the hole a of the ball, and having projections fitting the ribs in the ball, the said ball being a trifle smaller than the bore, and the patch fitting the bore closely, whereby rotary motion is imparted to the ball by the patch, which also acts as a wiper to the gun, all constructed substantially as and for the purpose set forth.

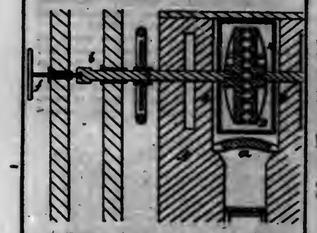
160,741. Implements. Herman Schirmer, Wheeling, W. Va. [Filed Sept. 17, 1875.]



The combination, with an ink-vessel having tapering part open at top and bottom, of an air tube and stop-cock attached to the vessel for introducing or withdrawing the required quantity of air to regulate the height of the ink in the tapering part.

160,736. Tempering and Forming Articles of Steel. Geo. F. Simonds, Fitchburg, Mass., assignor to Simonds Manufacturing Company, same place. [Filed Aug. 26, 1875.]

Brief.—Subjects steel saws to compression in a closed chamber exteriorly heated. May revolve the formers.



1. Formers c c, constructed with a cross-grooved face, substantially as described, and for the purposes set forth.
2. The combination of formers for holding articles to any required position with an air-tight oven, D, substantially as and for the purpose set forth.
3. The combination of formers for holding articles to any required position with an air-tight oven, D, inclosed in a heating-furnace, substantially as and for the purpose set forth.
4. The combination of formers c c and revolving shaft b with oven D inclosed in heating-furnace, substantially as and for the purpose set forth.
5. The combination of formers c c, revolving shafts b V, and screws f f with oven D, inclosed in heating-furnace, substantially as and for the purpose set forth.
6. In combination with a tempering-oven, revolving vertical formers, substantially as and for the purpose set forth.
7. The improved process, herein described, of tempering and straightening saws by means of heat and pressure, and without hammering, the saw being protected from atmospheric currents, substantially as and for the purpose set forth.

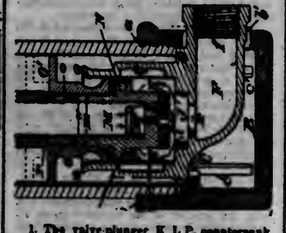
160,737. Washing-Machines. Andrew Smith and John S. Roy, Sheridan, Nev. [Filed Aug. 11, 1875.]

Brief.—Vertical rubbing-boards are operated by pulleys and cams, in connection with a tank and tub.

1. In combination with the vertical rubbing-boards B B, as shown, the cam-yokes I, with their guides J, and the triangular operating-cams K, when constructed to operate substantially as herein described.
2. A washing-machine, consisting of the vertical flaring rubbing-boards B B, guided and adjusted as shown, and operated by the cams K, together with the water-tank O, with its pipe P and the receiving-box Q, the whole arranged to operate substantially as herein described.

160,742. Hydrants. John A. Story and Saml. W. Lewis, Cincinnati, Ohio. [Filed Aug. 26, 1875.]

Brief.—Comprises an arrangement of inlet-valve, countersunk seat, waste-channel, downturned cup-shaped leather plunger, and a containing-chamber, which devices, by their peculiar construction and location with relation to each other, prevent any discharge through the wasteway while the hydrant is open, the elevation of the plunger operating to close said waste before the opening of the hydrant, and the depression of the plunger operating to close the hydrant before opening the wasteway.



1. The valve-plunger K L P, countersunk inlet-seat J, and wasteway Q, so arranged and combined as to insure complete closure of the wasteway before opening of the inlet-passage, and complete closure of the inlet-passage before opening of the wasteway, substantially as set forth.
2. The provision, on the plunger of waterway pipe, of the flanged nut or collar O O', of greater diameter than the mouth of the inlet-valve chamber, to guide the said plunger or pipe into the said chamber, and to keep out sand and other extraneous matters.
3. A coupling tube or pipe having right and left screw-threaded ends, and a middle portion of each relatively reduced diameter so as to break before either the valve-chamber or supply pipe can be injured from the effects of frost-heaving or otherwise, and so as to be easily replaceable without liability to burn the inlet-packing in securing the solder-tail.

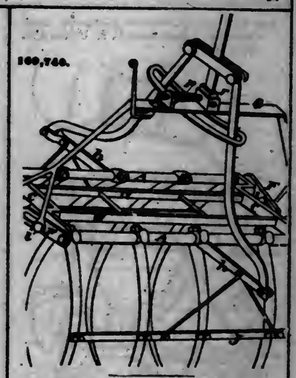
160,739. Picture-Nails. J. P. Stockton, Jr., New York, N. Y. [Filed Aug. 6, 1875.]

An improved picture or cord nail formed by the combination of the nail or spike A, the stationary disk or flange B, and the knob C D, made in two parts, the inner part or neck C being loose, and the outer part D stationary, with each other, substantially as herein shown and described.

160,740. Horse Hay-Forks. Orrin Taber, Santa Clara, Cal. [Filed July 28, 1875.]

1. The fork-heads A A, with their slotted crank-arms F F, in combination with the lifting-bar H, with its bifurcated ends, substantially as and for the purpose described.
2. A horse hay-fork consisting of the rake-heads A, with their fingers b b b, slotted crank-arms F F, and lever L, in combination with the frame c c d d, lifting-bar G, with its slotted guide-pins f and socket e, bars J J, united at the upper ends by the bar M, bar N, and spring-bolt p, operated by the trip-lever q, all combined and arranged to operate substantially as and for the purpose described.

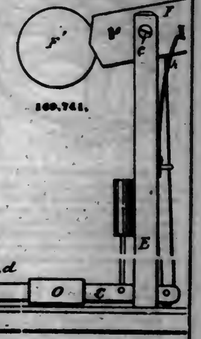
160,743. Time-Signals for Railroads. Joseph A. Talpey, Somerville, assignor of one-half his right to E. Hammond Graves, Boston, Mass. [Filed Oct. 6, 1875.]



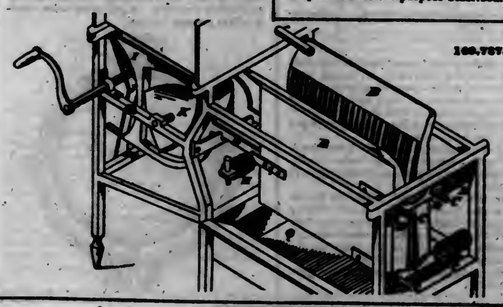
160,739.



160,741.

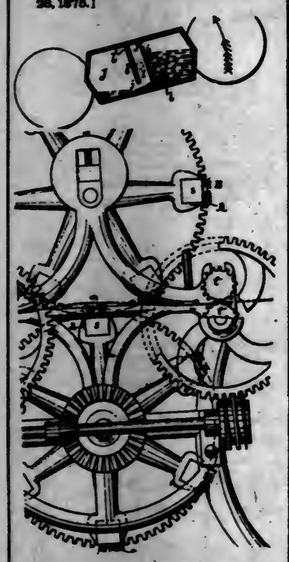


160,737.



1. A pivoted railway signal-arm, having formed therein a chamber or chambers, and containing a quantity of alcohol, quicksilver, or other non-freezing liquid, and adapted to be set in a position slightly inclined from a horizontal line either by hand or automatically by a passing train, and to be automatically tilted to a perpendicular position, at a given and predetermined time after being set, by the flow of the contained liquid from one end of said chamber to the other, or from one chamber into another, substantially as described.
2. The chambered signal-arm F, provided with the abutments or partitions f and f', extending from opposite sides of said arm, as shown, and having the vent-holes f and F, all arranged to operate as and for the purpose described.
3. The pivoted signal-arm F, provided with the projecting pins f f, in combination with the rod D, adapted to be reciprocated vertically, and to engage with one of said pins at each upward movement thereof, to vibrate or oscillate the arm F, substantially as described.
4. The combination of the signal-arm F, pins f f, rod D, and levers B and C, all arranged and adapted to operate as and for the purposes described.
5. The hollow signal-arm F, containing a quantity of non-freezing liquid, and provided with the pins or lugs p p, in combination with the spring-support h, all arranged and adapted to operate as and for the purposes described.
6. In combination with the levers B and C, and rod D, adapted to set a pivoted signal-arm by the action of the drivers of a locomotive upon the lever B, the piston n, connected, by a suitable piston-rod, to one of said levers, and fitted to and adapted to be operated by said lever in the stationary or fixed cylinder I, provided with the orifice m, as and for the purpose described.

160,742. Cloth-Napping Machine. Benj. Theokrah, Amsterdam, N. Y. [Filed Apr. 26, 1875.]

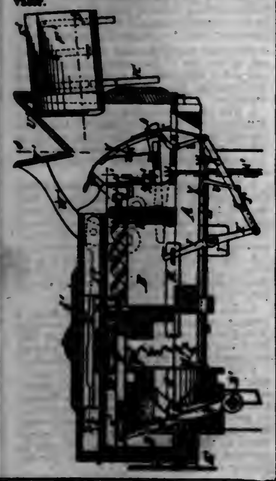


1. A cloth-napping cylinder having bars provided each with a comb, A, and brushes B, as and for the purposes described.

2. The combination of two sectional cylinders provided with bars having combs A and brushes B, arranged as described, whereby the said bars shall intersect each other at equal distances apart, substantially as shown.

160,743. Machine for Reeding Chairs. Argyle W. Tenbyr, Waxahachie, Tex., assignor to himself and L. J. Stroop, same place. [Filed Feb. 12, 1875.]

Brief.—The straw from which the band is made is carried in a receptacle for that purpose, and is drawn therefrom by a reciprocating clamp, in sufficient quantity to bind a gavel which is dropped upon it from the elevator.



1. The band-rods A, in combination with sliding and swinging chest-rods A', jointed by a pivot-clamp, a, for the purposes described.

2. The combination of band-rods A, having sliding hip-indicator b, with the waist-rods C and the fastening-pin d, for securing fixed position of the rods, as set forth.

3. The combination of band-rods A and chest-rods A' with waist-rods B and waist-rods C, having clasp ends *f f*, as and for the purposes described.

4. The waist-rods B and waist-rods C, attached to the front-rods D by double sliding and swinging clasps *f f*, in combination with the back-rods A and swinging chest-rods A', to allow the adjustment of the rods on the pivot-points *e* of the double clasps and of the chest-rods, substantially as and for the purposes set forth.

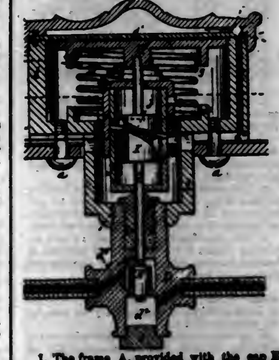
5. The end points of the apparatus, provided with fastening spring-pins *c c*, for securing same in fixed position after adjustment, as specified.

6. A sliding indicator, with pivot-pin, in combination with the perforated construction-rule, for facilitating the drawing of the construction-lines of the patterns, as set forth.

7. The neck-rule B, provided with swinging slide-piece L, for determining neck-points, as set forth.

160,744. Combined Pressure-Gages and Heat-Regulators. Theophilus Van Kannel and Lovica D. Townley, Cincinnati, Ohio; said Van Kannel assignor to said Townley. [Filed Aug. 31, 1875.]

Brief.—The pressure of steam above the diaphragm moves the disk and its stem, and by means of the spiral attached to the stem it rotates the sleeve and the connected indicator-finger. The vertical movement of the stem regulates the flow of gas by means of an attached cut-off provided with a wedge-shaped gas-passage.



1. The frame A, provided with the cap E and the groove *d'*, communicating with the groove *b*, in combination with the diaphragm O', having the perforation *a*, substantially as and for the purpose hereinbefore described and set forth.

2. The combination and arrangement of the disk G', stem G, spiral I, engaging the sleeve J through the pin *f*, the index J', dial K, and spring L, substantially as and for the purpose described.

3. The stem G, with adjustable cut-off B, wedge-shaped notch *a*, in combination with the rest *S*, constituting the regulating device for the supply of gas to the heating-burners, as herein described.

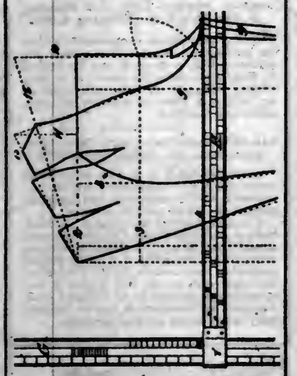
4. The combination of the pressure-gage herein described with the cut-off B, substantially as herein described and set forth.

160,745. Automatic Check-Valves for Gas-Machines. Theophilus Van Kannel and Lovica D. Townley, Cincinnati, Ohio; said Van Kannel assignor to said Townley. [Filed Aug. 31, 1875.]

Brief.—Any liquid rising under the float tends to carry it up and close the valve above, preventing overflow. At all other times there is a free passage for gas.



160,746. Apparatus for Drafting Tailors' Patterns. Friedrich H. Ullrich, New York, N. Y. [Filed Aug. 6, 1875.]



1. The bust-rule A, in combination with sliding and swinging chest-rule A', jointed by a pivot-clamp, *a*, for the purposes described.

2. The combination of bust-rule A, having sliding hip-indicator *b*, with the waist-rule C and the fastening-pin *d*, for securing fixed position of the rules, as set forth.

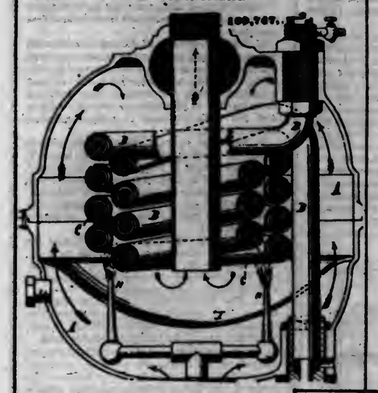
3. The combination of bust-rule A and chest-rule A' with neck-rule B and waist-rule C, having clasp ends *f f*, as and for the purpose described.

4. The neck-rule B and waist-rule C, attached to the front-rule D by double sliding and swinging clasps *f f*, in combination with the bust-rule A and swinging chest-rule A', to allow the adjustment of the rules on the pivot-points *e* of the double clasps and of the chest-rule, substantially as and for the purpose set forth.

A float, D, carrying the valve *d'* to and from the seat *s'*, all being inclosed in the shell A A', for checking a fluid and permitting the same to escape in a gaseous state, as and for the purpose herein set forth.

160,747. Gas-Machine Retorts. T. Van Kannel and L. D. Townley, Cincinnati, Ohio; said Van Kannel assignor to said Townley. [Filed Aug. 31, 1875.]

Brief.—Oil is vaporized in the lower coil of pipe through the medium of water heated in the outer surrounding coil. A pipe having a sliding cylindrical sleeve extends from the top of the case centrally to near a dividing-disk, for the purposes of conducting away the products of combustion from the burners.

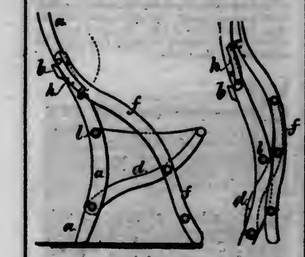


1. In gas-machine retorts, the combination of the coiled pipes B and C with a water-space between, the latter communicating with the oil-reservoir and injecting apparatus, substantially as described.

2. The concave disk I, having perforations to supply pure air to the burners H H, in combination with the jacket A and coils B C, substantially as described.

3. The cylindrical damper-sleeve F, in combination with the disk I, as and for the purpose set forth.

160,748. Folding Chairs. John R. Wakefield, Worcester, Mass., assignor to R. W. Vaill, same place. [Filed Apr. 6, 1875.]

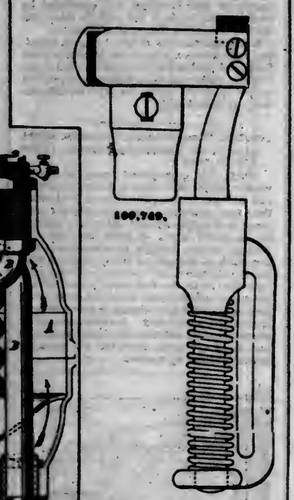


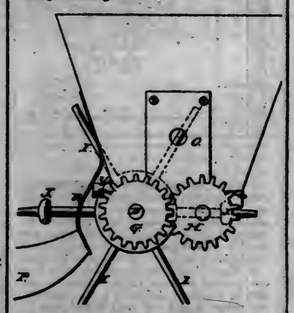
1. The folding chair composed of the back-frame a *b*, swinging seat-braces *d*, front legs *f*, and links A, pivoted to the back and to the upper portions of the front legs *f* that extend up and form the arms, as and for the purposes specified.

2. In combination with a folding chair, the links A, pivoted to the back and to the arm-pieces, and constructed and arranged substantially as set forth, so that the links swing upon both of the pivots, and fold between the back and arm pieces, as specified.

160,749. Seed Planters and Drills. W. C. Walker, Glasgow, Ky. [Filed Apr. 21, 1875.]

Brief.—To the under side of the seed-box, which is attached to the plow-beam, is pivoted a frame, in which the axle of the driving-wheel is journaled. Depending from the rear of the seed box is a spring-arm, in which are journaled cutting-disks, for covering the seed and pulverizing the soil.





1. The adjustable frame C C, constructed to form bearings for the shaft D, in combination with feed-wheel E, gears G H, and wheel I, and operating substantially as and for the purpose set forth.

2. The drag P P, secured to the hopper by a spring-arm, and provided with the cutting-disks Q Q, for covering the seed and pulverizing the soil, substantially as specified.

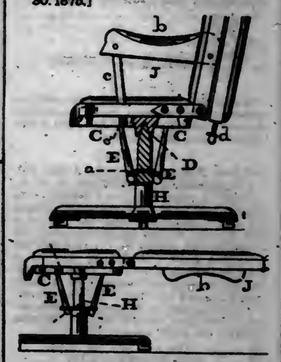
3. The shaft B, operated by the marking and driving wheel I, and carrying the feed-wheel E, said shaft also constituting a bearing for the adjustable frame C, substantially as specified.

160,751. Monument. John N. Wallis, Fleming, and Theodore Wallis, Seipio, assignors to themselves and Jas. A. Moore, Auburn, N. Y. [Filed Sept. 17, 1875.]



A monument consisting of the stone base A B, posts C, glass panels D, connected by cross-pieces E, cap F, glass shaft G, detachable cap H, and ball I, as shown and described.

160,752. Convertible Chairs. Frederick H. Waste, Philadelphia, Pa. [Filed July 30, 1875.]



1. The back B, hinged to the seat A, and a frame, K, hinged to the back, in combination with the arm-rests J, removably connected to the seat, and folding within the back, substantially as and for the purpose set forth.

2. The combination, with the seat A, of the arms or plate C with top step D, lower socket F, the descending rods E, connecting the socket and arms or plate, and the standard H with the pin or collar *a*, substantially as and for the purpose set forth.

3. The combination, with the chair, of the arm-rests J, formed of parts *b c*, folding within each other, and folding within the frame of the back or seat, substantially as and for the purpose set forth.

4. The combination, with the hinged back B, of the frame K, hinged to the upper portion thereof, and having a folding leg, L, substantially as and for the purpose set forth.

160,753. Dental Polishing-Tools. Samuel S. White, Philadelphia, Pa. [Filed July 9, 1875.]

Brief.—A dental tool for polishing is given both a longitudinal and lateral reciprocal motion, through a pitman longitudinally slotted, and attached at one end to a crank, which is rotated by a dental-engine.



In a polishing-tool, the combination, substantially as hereinbefore set forth, of the casing or hand-piece, the crank-shaft, the longitudinally-slotted pitman or tool-holder, and the pin on which the pitman slides and rocks, whereby a compound longitudinal and lateral reciprocation is imparted to the tool.

169,754. Screw-Propulsion. J. B. Wilson, Brazoria, Tex. [Filed Oct. 15, 1875.]



In combination with a screw-propeller having a gradually-enlarged or spread pitch or thread from front to rear, the chamber *a* having increased clearance of water-way from front to rear, as and for the purpose described and represented.

169,755. Pump-Handle Lever. Calvin Adams, Pittsburg, Pa., assignor to Stephn. Jarvis and S. J. Adams, same place. [Filed Sept. 28, 1875.]

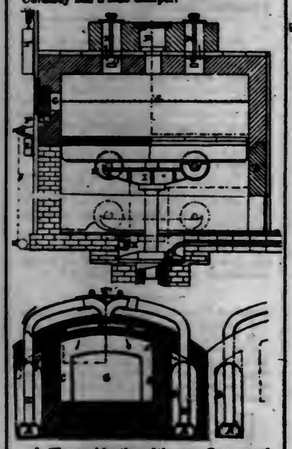
Brief.—The head-piece has the ears formed on either side, to project through and fit into the holes of the side pieces, thus dispensing with the bolt usually cast into the head.



A link for pump-handles, made with an opening, into or through which the connecting-bolt is passed, substantially as and for the purpose shown and described.

169,756. Coke-Ovens. Henry Aitken, Falkirk, North Britain. [Filed Nov. 20, 1874.]

Brief.—A natural or forced current of air enters zigzag tubes in a chamber surrounding the oven, passes thence either into a chamber over the oven, or pipes alongside the oven, and thence through orifices into the oven over the coal. The gases of combustion pass out at the tops of the sides into the chambers holding the air-pipes, and thence to the chimney. Safety-stoppers are hung alongside the oven. The bottom may be lowered to receive successive charges of coal into the coke just made. Chimney has a side damper.



1. The combination of the oven C, surrounding passage B, and heating-pipes, arranged in the passage B and communicating with chambers or tuyeres *x* leading to the oven, all substantially as and for the purpose set forth.

2. The dampers I I', combined with the orifices, as and for the purpose set forth.

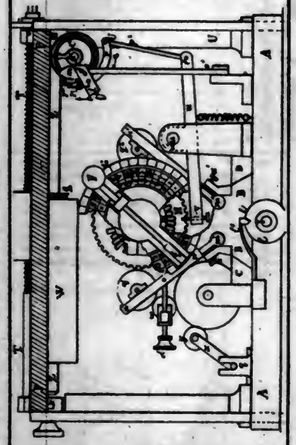
3. The combination of the pipes E, detachable heads *a a*, and removable covers J, as set forth.

4. The combination of the oven, having openings at the sides, and stoppers D, fitted loosely to said openings, and connected by chains to the walls of the oven, or other permanent object, for the purpose set forth.

5. The combination of the oven, its outlet-flue and tuyeres *x*, a movable bottom or platform, and mechanism for lowering the bottom to bring each successive charge to a position within the oven below the tuyeres, substantially as described.

169,757. Type-Writing Machines. Michl. Allenoff, St. Petersburg, Russia. [Filed Apr. 10, 1875.]

Brief.—The type-cylinder, carrying rows of various styles of letters, is moved backward and forward, to bring the desired kind under the paper-cylinder. The type-cylinder is rotated to bring the desired letter into position by the index-lever. A muff provided with pins of varying lengths to correspond with the width of the several letters revolves with the type-cylinder, and operates against a lever connected with the feed-pawl, which rotates the paper-cylinder, and when the latter is depressed to make the impression, the pins regulate the amount of feed. An index and alarm are attached to indicate the completion of the line, when the paper is moved the space between the lines by a crank.



1. The type cylinder or drum H, having a series of grooves formed therein longitudinally of the axis, said cylinder having at both ends slightly-projecting rims h^2, covered with india-rubber or its equivalent, in combination with the flat rings or disks h^3 and the set-screws h^4, substantially as and for the purposes specified.

2. The type-cylinder H and index-dial G, in combination with the sliding frame B, operated by means of the screw J and sleeve K, the index L, and the fixed index-plate L', notched disk *i*, and spring *l*, all constructed to operate substantially as and for the purposes specified.

3. The sliding frame B, index-plate L', index L, type-cylinder H, index-dial G, and index-hand F, in combination with the paper-cylinder W, mounted upon an axis lying in a horizontal plane, and at right angles to the type-cylinder, substantially as and for the purposes set forth.

4. The paper-cylinder W, provided at one end with a spring-hook, and at the other end with a grooved disk, *f*, and mounted upon an axis having a longitudinal groove, *b*, formed therein, for the purposes described, in combination with the endless screw T, carrying a notched disk, D', and a spring disk or catch, *c*, the thread-sleeve V, hook *f*, rod *a*, and sleeve *b*, provided with a spring, *f*, all arranged to operate substantially as described.

5. The rocking frame P, operated as set forth, and provided with the set-screws U U, in combination with the columns U, having projecting studs *s*, for controlling and adjusting the rocking or vibrating motion of said frame, substantially as specified.

6. The type-cylinder H, in combination with the paper-cylinder W, constructed and arranged as described, the endless screw T, sleeves V A, hook *f*, and the rocking or vibrating frame P, all arranged to operate substantially as described, and for the purposes set forth.

7. The muff M, provided with a series of pins, corresponding in number to the number of types in the type-cylinder, the length of said pins varying according to the width of the type, in combination with the adjustable screw *v*, whereby the spaces occupied by said types on the paper are adjusted, substantially as specified.

8. The type-cylinder H, in combination with the muff M and the spacing mechanism, consisting of the axle A, constructed substantially as shown and described, the ratchet-wheel *m*, disk *n*, the arm *p p'*, pawl *r r'*, arm P, index-dial O, connecting-rods *o p'*, lever *u*, and pin *o*, all arranged to operate substantially as set forth.

9. The type-cylinder H, muff M, sliding frame B, paper-cylinder W, endless screw T, rod N, sleeves V A, hook *f*, pinion K, axle A', ratchet-wheel *m*, disk *n*, pawl *r r'*, arms *P p p'*, connecting-rods *o p'*, lever *u*, pin *o*, and rocking frame P, all arranged, constructed, and combined to operate substantially as shown and described.

10. The paper-cylinder W, axis Z, and the pinion K, in combination with the axle A', disk D, tooth D', the signal-bell E', and hammer I, all arranged to operate substantially as and for the purposes specified.

11. The lut-rollers q^1 q^2, mounted upon the frames *v' v''*, the shafts *m'*, and set-screws S^2, in combination with the sliding frame B, substantially as and for the purposes set forth.

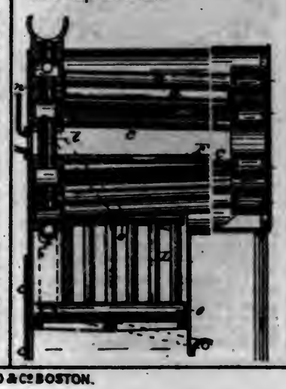
12. In combination with the rollers q^1 q^2, arranged as set forth, the roller *w*, arranged with capability of adjustment by means of the screw *d*, the disk *z*, roller *y*, mounted upon a tilting axle or frame, *x*, and the sliding frame *g*, all arranged and constructed substantially as shown, and for the purposes specified.

13. The equalizing-roller q^3, arranged as described, in combination with the sliding frame B and type-cylinder H, substantially as and for the purposes set forth.

14. The type-cylinder H, constructed substantially as described, in combination with the inking mechanism, arranged as set forth, and the sliding frame B and the milled wheels *e e*, all arranged to operate substantially as specified.

169,758. Sectional Steam-Boilers. V. D. Anderson, Springfield, Ohio. [Filed Oct. 20, 1875.]

Brief.—One boiler is concentrically arranged within the other, the boiler-heads having concentric water-spaces, and connected together with wrought-iron tubes. The feed-water is heated and circulates through side pipes located within the furnace.



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1. A steam-boiler composed of a series of wrought-iron tubes, united at their opposite ends to eccentric cast-iron heads, substantially as shown and described.

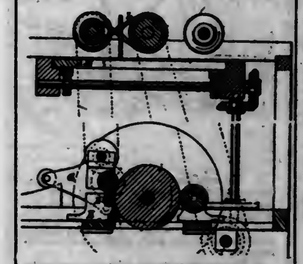
2. In combination with the circularly-arranged series of tubes and their heads, as described, the series of tubes L O, arranged at opposite sides of the fire-chamber, as set forth.

3. The semicircular cast-iron heads T O, united by the tubes I n, for use in steam-boilers, as set forth.

4. The circular and eccentric heads G E, two or more in number, for use in boilers, as described.

169,759. Veneer-Cutting Machines. J. B. Austin and J. A. Nutt, Rochester, assignors to E. J. Granger, Brooklyn, N. Y. [Filed Apr. 17, 1875.]

Brief.—The additional roll, placed in advance of the cutters, is provided with mechanism for regulating its speed to accord with that of the periphery of the log, and also with devices for keeping the line of pressure of the roll in a radial direction to the gradually-diminishing log from which the veneers are cut.



1. In a machine for cutting compressed veneers from a revolving cylinder of wood, the combination, with the cutting-instrument, of a roller having its bearing upon the cylinder of wood in advance of the line of cut, as shown, for the purpose of resisting the thrust of the cutting-instrument, and preventing the splitting of segments of wood from the revolving cylinder during the operation of cutting compressed veneers therefrom.

2. The combination of the roller F, mounted in the frame G, with the cam-guides I, for the purpose of maintaining the engagement of the roller F with the cylinder of wood, as the latter is gradually diminished in diameter by the cutting of the veneer from it.

3. The combination of the cutting-instrument C and the compression-roller D with the driving-roller F, mounted in the rocking frame G, and rotated positively with a regular decrement of speed, as the log is reduced in diameter by the cutting of the veneer.

169,760. Water-Proof Hose. Seth W. Baker, Providence, R. I. [Filed Mar. 24, 1875.]

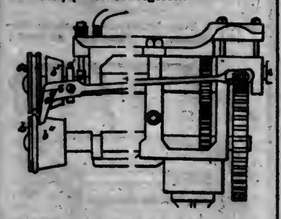


1. In hydraulic hose constructed as hereinbefore described, the improved seam or joint, formed by the union of the edges D D with the elastic rubber packing I, having indented sides, within which said edges D D are forced, and secured thereto, substantially as described and shown.

2. In hydraulic hose, the improved packing I, having indented sides, in which the edges D D are forced, and secured thereto within the parts are subjected to compression by mechanical means, substantially as described.

169,761. Manufacture of Stove-Pipes. Lafayette Bancroft, Springfield, Ohio. [Filed Mar. 16, 1874.]

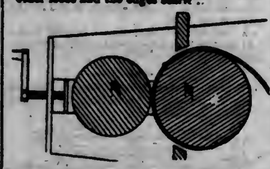
Brief.—Gages or bolding devices are attached to an ordinary beading machine, to secure the pipe-sections together.



In combination with the beading-machine A, with its heads *a b*, the gages *a' a''*, with their jaws *a''' a''*, slots *b*, screws *c* and *c'*, and collar *c''*, arranged and operated in the manner specified, as and for the purpose hereinbefore set forth.

169,762. Mandrels. Andrew B. Barnard, Worcester, Mass. [Filed Sept. 4, 1875.]

Brief.—The upper roll has a hard polished surface, the other a yielding periphery formed of leather—one end attached to the roll, the other loose and the edges scarfed.

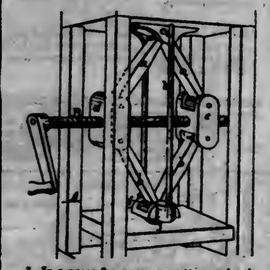


1. A roll for a mangle, having a covering, B', composed of leather or other compressively yielding material, scarfed at its edges, and attached to the roll at one of said scarfed edges only, substantially as and for the purpose described.

2. In a mangle, the combination of two rolls, one having a hard polished periphery, and the other having a yielding periphery, when said yielding periphery has its opposite edges scarfed, and is attached to the roll at one of said scarfed edges only, substantially as and for the purposes specified.

169,763. Cotton-Pressers. L. S. Reeves, Houston, Tex. [Filed Nov. 2, 1875.]

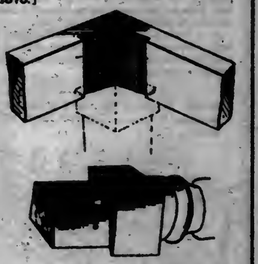
Brief.—The toggle-jointed levers are arranged to admit of a "diamond shape" by their hanging on an upper joint or pivot, and being connected at their lower point therein by a single pivot. The knuckle-piece, to which the lower arms are thus pivoted, has guide-rods attached thereto, and sliding in the upper cross-piece of the frame.



1. In a press for pressing cotton and other substances, the combination, with toggle levers or arms, and a right-and-left screw, arranged together substantially as described, of a platen connected with the toggle-arms by a ball-and-socket or equivalent joint, substantially as and for the purposes set forth.

2. The combination of the toggle levers or arms and right-and-left screw, arranged together as described, the sliding guide rods or bars, and the platen, connected with the toggle-levers by a ball-and-socket or equivalent joint, substantially as set forth.

169,764. Knock-Down Tables. Profit P. Beever, Dayton, Ohio. [Filed Aug. 24, 1875.]



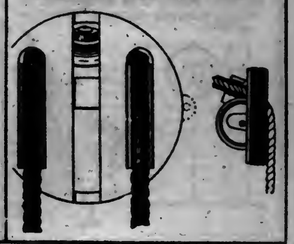
1. The combination, in a knock-down table, of the rails having horizontal dovetailed recesses formed at their adjacent lower edges, and the legs of said table formed with dovetailed shoulders, adapted to fit into the dovetailed recesses and relieve the screws or attaching devices of a portion of the strain, substantially as described.

2. In a knock-down table, the combination, in adjoining rails, of the recesses on the lower sides thereof, and the chest of the table-leg.

169,765. Heating and Ventilating Stoves. Charles S. Bell, Hillsborough, Ohio. [Filed Nov. 26, 1874.]

The air-chamber B, surrounding the fire-pot A, in combination with the inlet-pipe F, register E, opening F, and damper G, all constructed, arranged, and operating substantially in the manner and for the purposes specified.

169,766. Sash-Pulleys. W. H. Bicknell, Boston, Mass. [Filed Sept. 29, 1875.]



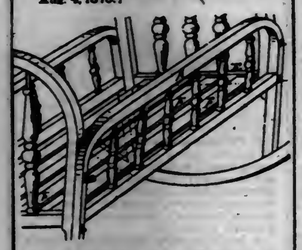
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1. A sash-pulley frame, provided with openings for the passage of a single rope or cord, and with an intermediate opening or groove for the reception of the sash-separating bead, in combination with the two pulleys or guides to control the vertical portions of the same cord, and with a pulley to sustain the bight of the sash-cord, substantially as described.

2. A sash-pulley frame, provided with openings for the passage of a single rope or cord, and with an intermediate opening for the reception of the sash-separating bead.

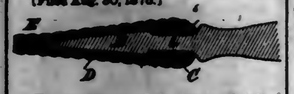
3. A sash-pulley, provided with three pulleys, arranged as shown, a screw-thread, and ears for bearings for the pulleys, all substantially as described.

160,767. CRADLES. Martin V Borgman and William F. Lamson, Detroit, Mich. [Filed Aug. 4, 1875.]



In a cradle, substantially as described, the bent side rails having their ends secured to the rockers, and the combination therewith of the bent end frames, substantially as shown and set forth.

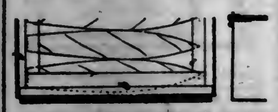
160,768. WHIPS. Thomas J. Bronson and Thomas N. Jewsbury, Jacksonville, Ill. [Filed Aug. 20, 1875.]



The combination of the fastener C, belly-piece D, and lash E, substantially as and for the purpose shown and specified.

160,769. CIGAR-BOXES. Charles S. Brown, Baltimore, Md. [Filed Oct. 7, 1875.]

Brief.—The main box has raised ends, so that the hinged cover can shut down flush with the upper surfaces of the same. The box is of tin and the cover glass, held by a tin frame, whereby the cigars can be inspected without opening the box.



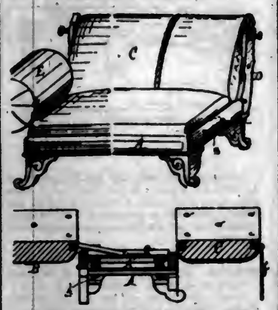
A sheet-metal box provided with raised end bands, in combination with a glass cover contained within a suitable frame, as and for the purpose described.

160,770. FENCE-WIRE STRETCHERS. Nathaniel Burnham, Amboy, Ill. [Filed June 16, 1875.]



A wire tightener or stretcher, consisting of the flanged disk or wheel A, provided with laterally-projecting teeth or ratchets C, and with projection F, the slotted shaft B, and the handle B', substantially as and for the purpose hereinbefore set forth.

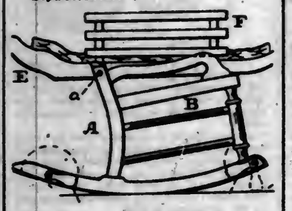
160,771. SOFA-BEDSTEADS. Christian Berzinn, Chicago, Ill. [Filed Sept. 20, 1875.]



1. The combination of the cushions B C, bars *b b*, legs *d f*, straps *e*, and brackets D D, with the frame A, substantially as and for the purpose set forth.

2. The divided pillow E and bracket-hooks *f*, in combination with a sofa-bed, substantially as described.

160,772. CONVERTIBLE CHAIRS. Charles M. Cadwallader, Philadelphia, Pa. [Filed Sept. 16, 1875.]



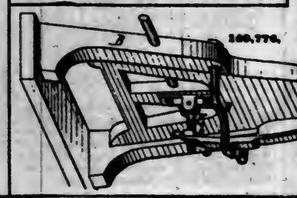
1. The combined rocking-chair and rocking-cradle, the same consisting of a rocking-chair, A, having hinged back L, which has an extension, E, below the axis *a*, and a space or below in its rear face, substantially as and for the purpose set forth.

2. The combination, with the hinged back of a chair, of guards F at the side of said back, substantially as and for the purpose set forth.

3. The springs *c*, in combination with the side guards F, substantially as and for the purpose set forth.

160,773. FIRE-KINDLERS. Friderikha Boolcom, St. Louis, Mo., assignor of one-half her right to Chas. H. Vandewater, same place. [Filed Sept. 20, 1875.]





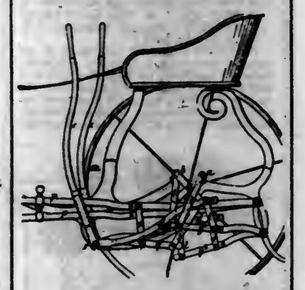
160,774.

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1. As a new article of manufacture, the herein described fire kindler, consisting of the foundation-piece A, shavings B, wrapper C, and faget D D D, substantially as described and shown.

2. The combination of the faget D D D with a bundle or mass of more combustible material, the ends of the faget projecting beyond the base and the whole being dipped in liquid resin or its equivalent, as and for the purpose shown and described.

160,775. VELOCIPEDES. Louis G. Bodel, Jacques Mazas, and Wm. Webster, Paris, France. [Filed July 12, 1875.]



1. The combination of the treadles *g g*, connected through levers *g' g'* and rods *e e*, and *f f* to cranks *b b*, on the axle with the head-levers *c c*, connected through levers *g' g'* and rods *f f* and *i i*, with their respective cranks *a a*, on the axle, substantially as described.

2. The combination of the guiding-wheel n, forked rod *i*, and arm *h* projecting therefrom, the segmental bar *h'*, and spiral springs *f f* thereon, substantially as described.

160,776. CLICKS FOR BRACELETS. John S. Carrow, Philadelphia, Pa. [Filed Aug. 10, 1875.]



1. A bracelet-click, having two spring-prongs terminating in hooks, and formed of one and the same piece of metal, substantially as described.

2. The click C, having the prongs *c c*, hooks *c' c'*, and cross-piece *c''*, substantially as shown and described.

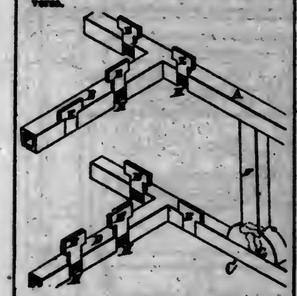
160,778. WAGON-TONGUE SUPPORTS. Geo. B. Clow and Parlee E. Webster, Chicago, Ill. [Filed July 9, 1875.]

Brief.—The tongue rests upon one end of a spring, the other end of which engages a nut upon a bolt projecting below the wagon, the central part of the spring being fastened to a yoke.

The spring C, yoke D, screw E, and nut *b*, in combination with the tongue and bounds of a wagon, substantially as and for the purpose set forth.

160,777. ART OF CURING TOBACCO. James D. Culp, San Felipe, Cal. [Filed Oct. 20, 1875.]

Brief.—Air can be transferred from the upper part of the room to the lower, and vice versa.



1. The combination, in a tobacco-drying apparatus, of a hollow tube, arranged at or near the top of the drying-room, a hollow tube at or near the bottom thereof, a vertical hollow pipe connecting the upper and lower tubes, and a blower interposed between said upper and lower tubes, whereby the temperature of the room may be made uniform, substantially as set forth.

2. The combination of the upper tube A, having orifices E and slides F, the lower tube C, having similar orifices and slides, the vertical pipe F and interposed blower G, all substantially as set forth.

3. The branch pipes B D, having orifices and slides, in combination with the horizontal pipes A C, vertical pipe F, and blower G, all substantially as set forth.

160,779. CIGAR-MOLDS. James D. Culp, Gilroy, Cal. [Filed Aug. 4, 1875.]

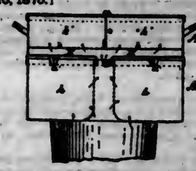
Brief.—The mold forms the bunch into an oval in cross-section, and the many to make crosser in passing on the ultimate wrapper, to loosen the cigar-filler and make the cigar free smoking.



1. The process herein described of making cigar-fillers, under pressure, in a mold that is arrested in its closing before attaining to a perfect circle, and then giving to the cigar a circular tapering form in applying the wrapper, as and for the purpose set forth.

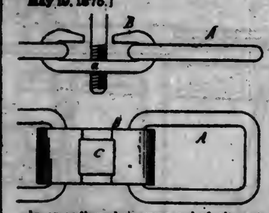
2. The cigar-mold A C and *a b*, limited in closing by the stops B, whereby the vertical is in excess of the horizontal diameter of the cigar-forming space, as and for the purpose described.

160,780. VEGETABLE-STEAMERS. Phebe D. Damon, Fayetteville, N. Y. [Filed Aug. 16, 1875.]



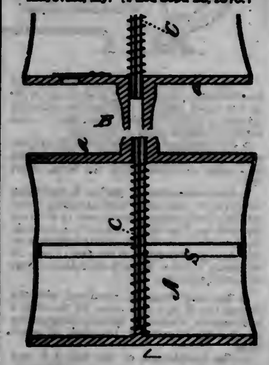
The combination, in a vegetable-steamer, of the pan A, provided with chambers *b b* and passage D, with the vessel A', having its bottom divided to form the central opening *c*, and provided with the false bottom *b*, partition *a*, and lid *d*, substantially as and for the purpose set forth.

160,780. BRIDLE-CHAINS FOR HORSE-POWERS. B. W. Davis, Brasher, N. Y. [Filed May 19, 1875.]



In an endless chain composed of alternate links A and double hook-bars B, the nut *a*, formed in the center of the hook-bar, and the bolt C, screwed through said nut, and projecting far enough between the hooks to hook the links, substantially as herein set forth.

160,781. LIFE-PRESERVERS. H. G. Dayton, Marysville, Ky. [Filed Sept. 20, 1875.]



1. In a life-preserver, the automatically-expanding air-floats A A', in combination with the tubular connecting-bar B, substantially as specified.

2. In combination with the automatically-expanding air-floats A A' and their connecting-rod B, the rods C, working in the hollow of rod B, and secured to the outer head *a* of the floats, substantially as specified.

3. The combination, with the automatically-expanding floats A A' and hollow rod B, of the compression-strap D, substantially as specified.

160,782. VENT-FASTENER. Christian Dahlinger, Buffalo, N. Y., assignor of one-half his right to Frank Dahlinger, same place. [Filed Oct. 18, 1875.]

Brief.—When the spigot is turned to draw it, the hook engages with the cam and opens the vent.



1. In an automatically-venting beer-faucet, the combination, with the plug B, having the downwardly-projecting hook H, of the cam C, substantially as described.

2. The combination, with the faucet A, of the plug B, having the hook H, cam C, having the check C', socket D, and the guide-pulley I, substantially as described, for the use and purpose set forth.

160,783. TEMPERING GLASS AND FURNACES THEREFOR. F. B. A. Royer de la Bastie, Paris, France. [Filed Oct. 6, 1875.]

Brief.—The glass is placed in the auxiliary heating-chamber, upon a metallic apron, and conducted into the adjacent compartment, where it is heated to a malleable state, and transferred into the tempering-bath.



1. In a glass-tempering furnace, substantially such as described, the combination of the principal heating-room A with its endless apron *a*, operating substantially as described, to partially heat and present the plate before the opening B in the principal furnace.

2. In a glass-tempering furnace, substantially such as described, the tempering-receiving-carriage *c'*, substantially as described.

3. In combination, in a glass-tempering furnace, of the reciprocating receiving-carriage *c'*, the oscillating table E, and the receiving-grate in the bath, the said oscillating table arranged and operating to receive the sheet from the carriage and carry it to the bath, substantially as described.

4. The combination of the oscillating or transferring table E, the vertical slide K, and the lever I, in connection with and so as to operate both the table and the slide, substantially as and for the purpose described.

5. The combination, in a glass-tempering bath, of the skimmer B and receiver *i*, substantially as and for the purpose described.

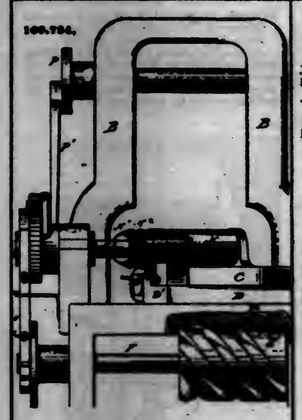
6. The combination of the receiving-grate L, in the bath of a glass-tempering furnace, with the receptacle P, constructed with several independent compartments, and hung at the rear end, and provided with a lever, *s'*, whereby either of the said compartments may be presented to receive the tempered sheets, substantially as described.

7. In combination with the receiving-grate in a glass-tempering bath, the rolls *a*, arranged in a frame hinged to the principal grate, substantially as and for the purpose set forth.

160,784. FEEDING DEVICES FOR FURNISHING-MACHINES. Ferdinand Deming, Waterbury, Conn. [Filed Sept. 28, 1875.]

Brief.—Improvement on Patent No. 162,672, July 27, 1875. The cam is provided with differential spiral grooves, for the purpose of supplementing the adjustable pawls by which its shaft is rotated in making nicer adjustments. The auxiliary slide extends to the right and left of the carriage, to provide best motion, the extent of which is adjustable, so that the carriage may remain still during the forward feed of the metal.

No. 169,704.



1. The combination, in a power-press, of the diagonal carriage C, having a reciprocating movement parallel with the press, the cam E, toothed wheel G, the two pawls *d d'*, with their respective dogs and hooks *h h'* and *e e'* on the said toothed wheel, substantially as specified.

2. The combination, in a power-press, of the diagonal carriage C, having a reciprocating movement parallel with the press, the shaft F, arranged to impart such reciprocating motion to the said carriage C, and with an intermittent rotating feed for said shaft, the shaft F', in connection with the feeding mechanism on the said carriage, the pawl and ratchet F^6 F^7, the slide R, and adjustable studs F^8 F^9 on the shaft F, operating to engage or disengage the pawl F^7 with its ratchet, substantially as specified.

3. The combination, in a power-press, of a diagonal carriage, having a reciprocating movement parallel with the press, a cam with differential spiral grooves for imparting such reciprocating movement to the carriage, and a ratchet-feed to rotate the said cam, substantially as set forth.

4. The combination, in a power-press, of the diagonal carriage, having a reciprocating movement parallel with the press, the auxiliary slide *D'*, with its adjusting-screws *n*, and a cam, in connection with said auxiliary slide, whereby the movement of the said auxiliary slide causes before the said cam will act directly upon the carriage, substantially as set forth.

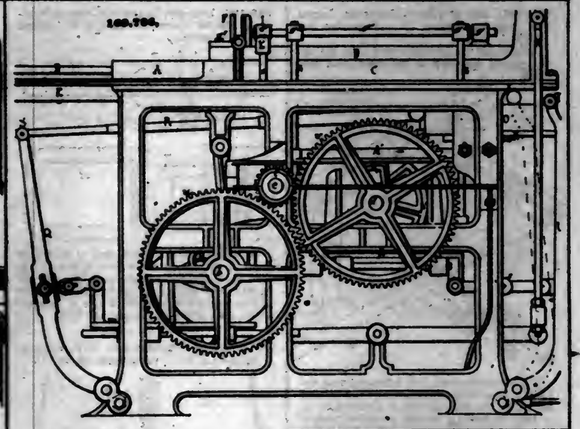
No. 169,705. LAMP-TRIMMERS. H. L. De Zeng, Geneva, N. Y. (Filed Apr. 20, 1875.)

The lamp-trimmer made with the scraping-edge *a* opposite to the receptacle *b*, and nearly parallel with the same, the scraper and receptacle being connected by arms that extend above the wick when in use, substantially as set forth.

No. 169,706. CIGAR-MACHINES. Ferdinand A. H. Demuth and Carl B. F. Jaeger, Dresden, Saxony. (Filed Feb. 12, 1875.)

Brief.—The release to feel forward automatically and intermittingly to a cutter, which, as it cuts off a sufficient quantity for a cigar-branch, feeds it onto an apron beneath, where the wrapper is wound upon it.

No. 169,708.



1. The bar D, reciprocating vertically and longitudinally, and having a series of teeth at the lower side, in combination with the stationary gutter C, sliding feed-trough A, and cutter K, substantially as set forth.

2. The combination of the board O, its operating-lever Q, and the slide *m*, having an adjustable connection with the lever, as set forth.

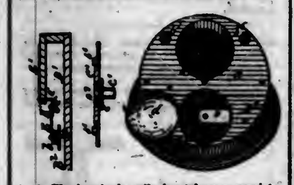
3. The combination of the bar E, feed-block D, levers *f'*, and cam *f*, for imparting a longitudinal reciprocating movement to both the bar and the feed-block, and devices, substantially as described, for imparting a vertical reciprocating movement to the feed-block, all operating together to carry the tobacco to the cutter, as specified.

4. The feed-block D, combined with the sliding bar E, and with cams on the shaft *d* and rods *h h'*, whereby a vertical reciprocating movement is imparted to the block, all as set forth.

5. The combination of the rods *h h'* and bars *g'*, to which a vertical reciprocating movement is imparted by cams on the shaft *d*, and the feed-block D, provided with rods *g'*, sliding in the bars *g'*, as specified.

No. 169,707. WATCH-PLATES. Victor Doriot, Bristol, Penn. (Filed Sept. 16, 1875.)

Brief.—A top plate made in removable sections, with flange rigidly attached thereto, forming the dust-cap, the movement being arranged in recesses formed in the top plate.



1. The herein-described watch-case, consisting of a lower plate, A, and an upper plate, made in sections B B' B^2, each of these sections having a portion of the flange rigidly attached thereto, substantially as set forth.

2. The indicator F^2, above section B^1, and provided with the pivot *e'* and the heel-extension *e* below the plate of section B^2 for operating the regulator, substantially as set forth.

3. The sections B^2, having the arm *b* provided with a bearing for the staff of the balance-wheel, and having the hair-spring attached, and the regulator E arranged upon the upper side, the toothed quadrant F^2 being arranged upon the upper side of the heel-extension F of the indicator, whereby the balance-wheel and regulator can be removed with the section B^2, substantially as set forth.

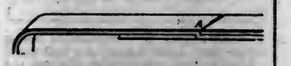
4. The barrel-bridge C, provided with bosses *b'*, in combination with the section B, provided with the recesses *b'*, substantially as set forth.

No. 169,709. BURGLAR-ALARMS. Levi F. Drake, Brooklyn, N. Y., assignor of one-half his right to Saml. Hughan, same place. (Filed Sept. 28, 1875.)



A burglar-alarm consisting of a conical weight having a flat or rounded bottom, to which is attached on the outside, by means of adhesive material, a pellet of fulminate, and provided at its upper end with an eye, by which it may be secured to a string and fastened to a door or window in such position as to drop and fall, with the fulminate down, when the door or window is opened, and discharge the fulminate, substantially as described.

No. 169,710. BALE-TIES. Simeon N. Drake, Galveston, Tex. (Filed July 13, 1875.)



The bale-tie having the shoulder A near each end of the hoop and on a line with the slots C, whereby each face of the slots rests against the corresponding shoulder of the opposite end, the ends being on the inside, forming a double lock and brace, as specified, and for the purpose set forth.

No. 169,711. SOLE-LINING MECHANISMS FOR BOOTS AND SHOES. Robert Dwyer, Weymouth, Mass. (Filed Oct. 26, 1875.)

Brief.—The lining is held upon the end of a stationary heel-post by means of projecting pins, from which it is released at the proper time by a stripper-plate. The toe portion is carried forward by an automatic reciprocating toe-carrier, followed by an expansible roller, for spreading the lining properly over the face of the insole.

1. In a machine for lining boots and shoes, a heel-holder and a movable toe-holder for the lining, adapted to carry the toe of the lining forward into the shoe, substantially as described.

2. A heel-holder and a movable toe-holder for the lining, in combination with a movable presser adapted to lay the lining against the bottom of the insole of the shoe, substantially as described.

3. In a machine for lining shoes or boots, an expansible roller adapted to fit the varying width of the bottom of the shoe, and to be projected along the bottom, and into the toe of the shoe, substantially as described.

4. The post, in combination with the toe and heel holding devices, substantially as described.

5. The combination of the post and holder for the heel of the lining, with a stripping-plate, to operate substantially as described.

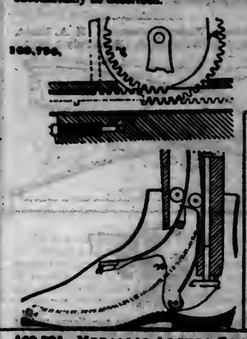
6. The rods *c* and *p*, and toe-holder and presser, in combination with the centers *d h*, and spring or equivalent to operate the bars, substantially as described.

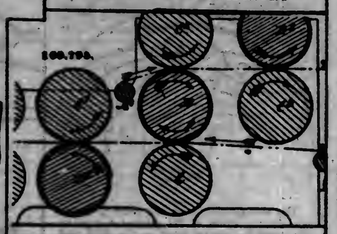
No. 169,704.



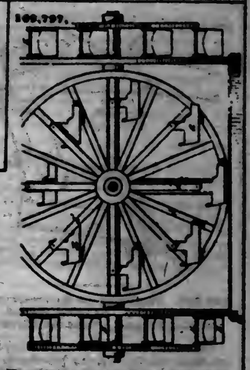
2. In an ice-boat, the combination of the paddle-wheels D and D and cylinders C and C, each provided with radial spurs *c c*, journaled in front of said wheels, and adapted for operation when the boat A is moved forward

No. 169,705.





No. 169,707.



1. The swing-frame herein before described, consisting of the combination of the wheel, the long bar, the short supplementary spokes radiating from the hub parallel with the main spokes, and the rods fitted at their ends to the spokes, as set forth

2. The combination, substantially as herein-before set forth, of the bars, the retaining skeleton-frame, the swing-frame mounted thereon, and bearing upon and running around the bars, and the swings suspended in the frames.

3. The combination, substantially as herein-before set forth, of the bars, the shaft turning in the center thereof, the skeleton-frame turning with the central shaft, the wheels turning on the arms of the skeleton-frame and bearing upon the bars, the supplementary spokes, and the suspended swings.

No. 169,708. HARROWS. Wm. Frank, Mound Station, Ill. (Filed Sept. 28, 1875.)

Brief.—The harrow consists of equilateral-triangular sections, three of which are united by links and blocks, with shifting draft attachment, which can be changed to either angle.

No. 169,721. METALLIC ARCHED TRUSS-BRIDGES. James B. Eads, St. Louis, Mo. (Filed Oct. 21, 1875.)

Brief.—Short recessed extensions are jointed to the half-span arches, and, resting on short columns, form the abutments, thereby reducing the quantity of masonry on which the thrust of the arches is received.



The combination of the arch-extensions A' A' with the columns E E, the joints *a a*, and the half-span arches A A, substantially as and for the purposes set forth.

No. 169,722. CAR-AXLE BOXES. James Boden, Philadelphia, Pa., assignor of one-half his right to Saml. Boden, Jr., Baltimore, Md. (Filed Aug. 10, 1875.)



1. The combination of the bar D, and the springs interposed between the bar and the frame, with the axle-boxes G and the yoke H.

2. The combination of the axle-box and its lugs *n* with the yoke H.

No. 169,723. MANUFACTURE OF SPIEGELEISEN. James H. Etheridge, Chicago, Ill. (Filed Oct. 1, 1875.)

The process of producing spiegeleisen, with a definite per centum of manganese and carbon, by fusion of iron and manganese in the presence of carbon, and in flux in a chamber closed against the admission of atmospheric oxygen, substantially as described.

No. 169,724. ICE-BOATS. William H. Fairbank, Allerton, Md., assignor of one-half his right to H. B. Holton, same place. (Filed Apr. 20, 1875.)

1. In an ice-boat, the combination, with the bow thereof, of the cylinder C, journaled beneath and in front of the same, provided with radial spurs *c* and *c*, and capable of being rotated forward as said boat is advanced, so as to tend to draw the same upon the ice when the latter is too thick to be broken by the downward movement of said spurs, substantially as is specified.

No. 169,725. ROTARY PERFECTING-PRESSES. J. L. Firm, New York, N. Y., assignor of one-half his right to O. B. Cottrell and N. Babcock, Westerly, R. I. (Filed Aug. 12, 1875.)

The combination and arrangement of two pairs of cylinders or rollers, the one pair of which is composed of one form-cylinder, B^1, and an impression-cylinder, O^1, while the other pair is composed of one form-cylinder, B^2, and an impression-cylinder, O^2, and an interposed series of cylinders consisting of two impression-cylinders, OO, and one intermediate form-cylinder, B, for operation on two independent webs fed in opposite directions from the press, substantially as shown and described.

No. 169,726. ROTARY PERFECTING-PRESSES. J. L. Firm, New York, N. Y., assignor of one-half his right to O. B. Cottrell and N. Babcock, Westerly, R. I. (Filed Sept. 7, 1875.)

Brief.—The web has intermitting feed, which permits the type-cylinders to revolve twice, and receive ink between the impressions. The sheets are cut from the web by a knife, which makes a direct cut for most of their width, and perforates the remaining distance.

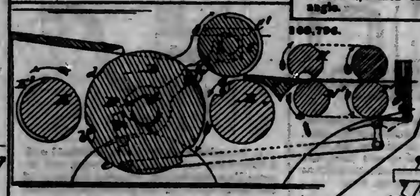
1. The impression-cylinder B and type-cylinder C, either of which is made to rise and fall, as described, in combination with the enlarged impression-cylinder D and its reduced type-cylinder E, whereby the forces of both type-cylinders are doubly inked in or during the printing of the paper on its opposite sides, substantially as described.

2. The combination, with a paper-cutting or printing machine, of the knife O, having the greater portion of its edge straight, but having portions of its edge serrated, substantially as and for the purpose herein described.

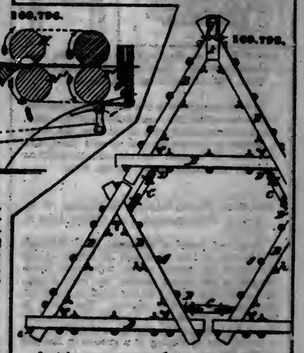
No. 169,727. ROTARY SPRINGS. I. N. Forrester, Baltimore, Md. (Filed Oct. 6, 1875.)

Brief.—Four wheels at the ends of two crossed axles revolve about a fixed center. The wheels are double, carrying between them pendulous cams, the swinger moving in a certain epicloid, and in a circular plane projected at right angles thereto.

No. 169,728.



No. 169,729.



1. A harrow composed of detachable equilateral-triangular sections, which are adapted to be used either singly or collectively, and with either center for the front, as and for the purpose described.

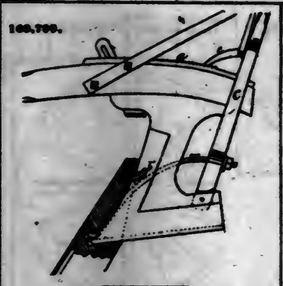
2. The draft attachment consisting of the link *i*, loop *g*, wedge-block *h*, provided with a hole, the divergent ends of the bars B, and the front teeth, combined and arranged as shown and described.

3. The center-couplings consisting of the open links *a*, blocks *b*, and pins *c*, combined and arranged as shown and described.

No. 169,730. PLOWS. Irvin Freeman, Corpus Christi, Tex. (Filed Sept. 11, 1875.)

The combination, with hook-rod K, holding shovel or subsoil plow in skeleton frame, of the lever O, having pawl *e*, working in the beam-rack *c*, as and for the purpose specified.

160,799.



160,800. PROCESSES OF MANUFACTURING CAUSTIC SODA. Holbrook Gaskell, Jr., Widnes, England. [Filed Oct. 20, 1875.]

The process of manufacturing what is known as black ash, in revolving furnaces, by first charging a heated revolving furnace with salt cake, or with salt cake and black or small coal, and when the salt cake has become fluxed, or has softened and shrunk, adding thereto the chalk, lime or limestone, and the remaining portion of black or small coal, if any, substantially as hereinbefore described.

160,801. CORDAGE-FIXTURE. Wm. Gates, New Haven, Conn., assignor to C. Cowles & Co., same place. [Filed Sept. 28, 1875.]

In a cordage-fixture, the combination of the head of the roll, the frictional disk constructed with a screw-threaded shank, a correspondingly-threaded bracket, and means for rotating said disk, whereby the said screw draws the disk from and releases the roll, and a spring the tendency of which is to return and force the disk as a bearing against the roll, substantially as specified.

160,801.



160,802.

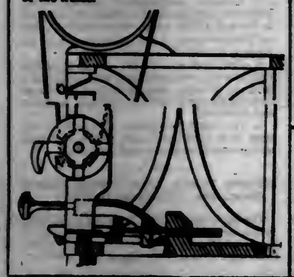


160,802. AIR-BLOWING APPARATUS FOR CARBURETORS. Charles M. Gearing, Pittsburg, Pa. [Filed Aug. 11, 1875.]

In combination with the bent pipe D secured to the outside of the vessel B on top of the same, and communicating with its interior, the valve I, seated in the conical end of said tube, and the stop K secured thereto, substantially as and for the purposes herein set forth.

160,803. PANEL-RAISING MACHINES. F. D Green, Williamsport, Pa. [Filed June 8, 1875.]

Brief.—A panel of the same or of different widths on its two sides can be raised at one operation by means of an adjustable beam hinged to the upper part of the main frame, and provided with a cutter-head at its front end, having suitable cutters. The beam is raised or lowered by a vertical screw-rod or lever, and secured in any desired position by a thumb-nut operating in a groove in the end of the frame.



160,804. ASH-SIFTER. Wm. Gates, New Haven, Conn., assignor to C. Cowles & Co., same place. [Filed Sept. 28, 1875.]

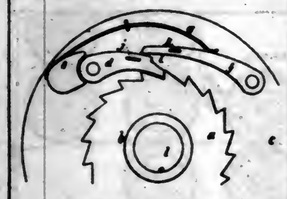
In a combination of a grate, a hopper, and a rotary sifting-cylinder, the combination with the cylinder of a shaft, a screw-thread on the shaft, and a bracket, substantially as described.

160,805. CARTRIDGE-SHELL. Wm. Gates, New Haven, Conn., assignor to C. Cowles & Co., same place. [Filed Sept. 28, 1875.]

In a cartridge-shell, the combination of the head, the frictional disk constructed with a screw-threaded shank, a correspondingly-threaded bracket, and means for rotating said disk, whereby the said screw draws the disk from and releases the roll, and a spring the tendency of which is to return and force the disk as a bearing against the roll, substantially as specified.

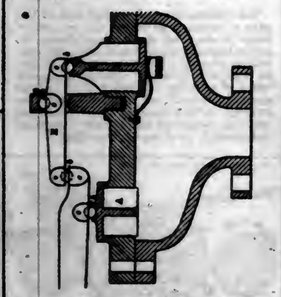
160,806. PAWL-AND-RATCHET MECHANISM. Gideon D. Hamblin, Deering, Me. [Filed Aug. 10, 1875.]

Brief.—The pawl has a notch or shoulder, into which the end of the pawl-holder fits, which is provided with a spring to hold the pawl either in contact with or away from the ratchet.



The combination, with the shaft *b*, having one driving-wheel, of the ratchet *c*, rigid on the shaft, the gear *e*, loose on the shaft, and carrying the pawl *d*, socket *e*, holder *f*, spring *g*, handles *h i*, and shoulder *l*, as described.

160,807. SLIDE-VALVES. Saml. Harrison, Baltimore, Md. [Filed Oct. 15, 1875.]



1. An auxiliary safety-valve, combined with a downward-moving auxiliary valve and intermediate mechanism, whereby the lever of the safety-valve, on being overloaded, tends to depress the said auxiliary valve, and thus relieves the pressure in the generator, substantially as herein specified.

2. The safety-valve chamber C, valve A, and weighted lever D, combined with the fulcrum or auxiliary lever B and valve B, substantially as and for the purposes specified.

3. In a combination of safety-valves with their respective levers, the balls *h*, resting in or entering complemental concavities formed in the opposing surfaces or points of contact in said valves and levers, substantially as and for the purposes herein specified.

160,808. CARTRIDGES. Geo. B. Hart, Newark, N. J. [Filed May 6, 1875.]

A metallic cartridge-shell with a thickened breech-piece, constructed substantially as described, uniting with the inverted flange of the cylinder at its base, substantially in the manner and for the purposes set forth.

160,807.



160,808.

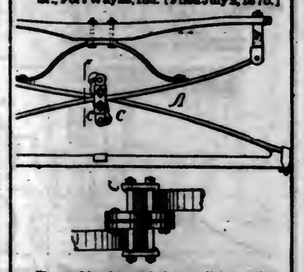


160,807. CARTRIDGES. Geo. B. Hart, Newark, N. J. [Filed May 6, 1875.]

1. A cartridge-shell, provided with a curved flange, substantially as shown and described, and a thickened breech-piece, having a curve-moulding or an open seat, into which the said flange is compressed and held by an inner ring, substantially as and for the purposes described.

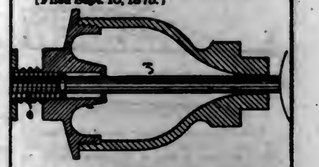
2. A cartridge-shell, provided with a gasket or other non-corrosive metallic anvil, as and for the purposes set forth.

160,809. VEHICLE-SPRINGS. H. A. Hight, Sr., Fort Wayne, Ind. [Filed July 2, 1875.]



The combination, with the equalizing spring bars or plates A A, of the double coupling C C, arranged as described, and the two parts pivoted together, as and for the purposes herein set forth.

160,809. LUBRICATORS. Isaac W. Hoagland, Newark, N. J., assignor to Richard J. Chard and Wm. Howe, New York, N. Y. [Filed Sept. 10, 1875.]

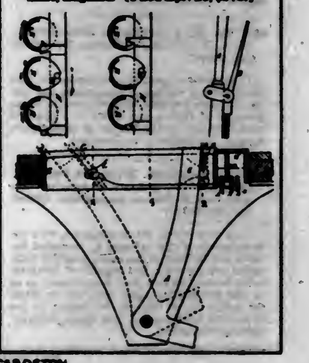


In an automatic lubricator for shafting, the combination, with the oil-cup, of a rod, A, provided with a spring, *a*, and adjustable screw-cap B, said rod extending through and above the screw-cap, substantially in the manner and for the purposes set forth and described.

160,810. ALLOYS FOR PREVENTING INCRUSTATION UPON METALS. Oliver Holden, New York, N. Y. [Filed Mar. 11, 1874.]

An alloy for preventing incrustation upon metals, consisting of zinc and tin, lead, bismuth, and antimony, in the proportions set forth.

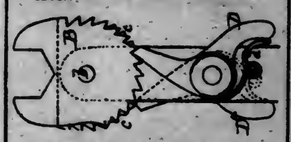
160,811. SWITCH-SIGNALS. John Imray, No. 20 Southampton Buildings, Chancery Lane, England. [Filed Apr. 26, 1875.]



1. The slotted rocking shaft E, with the lateral recesses G G' and E, H' at each end of its slot, by the partial rotation of which shaft a point or signal lever is held or released at either end of its stroke, substantially as herein described.

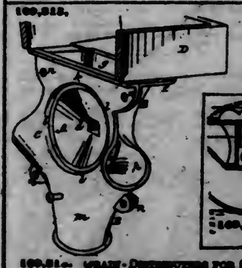
2. The combination of the rocking shafts E with the sliding bars E, provided with stops O F, for the purpose of reciprocally locking and unlocking point and signal levers, substantially as herein described.

160,812. WRENCHES. Robert Jack, Jersey City, N. J., assignor to himself and Thos. Gannon, same place. [Filed Aug. 30, 1875.]



The head B, divided below the jaws to form two branches or arms which are provided with ratchet-teeth *a*, projecting in reverse directions, in combination with the handle A, pivoted between the branching arms of the head and the pawls D' D', pivoted upon opposite sides of the handle, and springs *d*, acting upon said pawls to keep them in mesh with the ratchet-teeth, substantially as and for the purpose described.

160,813.



160,813. CRANK-DISPENSERS FOR SEED-DRILLS. Charles F. Johnson, Jr., Owego, N. Y. [Filed June 17, 1875.]

Brief.—The casing is made in two parts for the reception of a bevel-shaped seed-wheel, having eccentric grooves or lugs on its cover surface, for feeding out the seed.

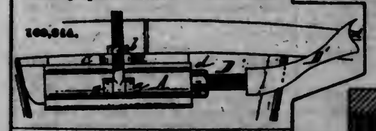
In a seed-distributer for grain-drills, the combination of the seed-distributing wheel A, with its fastenings *a*, and a flange, *c*, extending high up into the auxiliary hopper *g*, with the casings B C, for forming a support for the wheel, and, with said wheel, constituting the auxiliary hopper above, and the curb *f*, and terminating in a seed-conductor below, as and for the purposes described and represented.

160,814. TIRE-TIGHTENERS. Wm. O. Johnson, Alma, Mich. [Filed Aug. 27, 1875.]

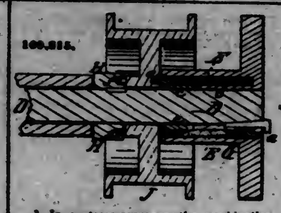
Brief.—The tightener presses apart the fellies by the nut and screw.

The socket A, having the bolts B B hinged to its sides, the clamp-plate C, the nuts *b b*, the screw D, terminating in a fork, D', and provided with the nut *d*, substantially as and for the purpose set forth.

160,814.



160,815.



1. In a steam governor, the combination, with the counter-shaft D and pulley J, of a spring, E, connected at its ends, respectively, with the shaft and pulley, and operating in connection with the governor-balls A A and regulating-valve C, to prevent impulses or jerks on the pulley from being transmitted to the valve, said balls and valve being entirely independent of the spring in their governing action, as herein shown and described.

2. The combination, with the spring E, of the ring or collar *e*, resting within the spring and loosely upon the shaft, as and for the purpose specified.

3. The combination, with a governor, of the pulley J, spring E, shaft D, slot *g*, and pin *f*, constructed and operated substantially as described, for the purpose specified.

160,816. GAS-PROPELLERS. Edward H. Lovekin, Brook Green, Hammersmith, England. [Filed Sept. 20, 1875.]

Brief.—Springs on car wound at regular intervals by stationary engines. Their expansion propels the car.

1. In combination with a carriage provided with, motive-power springs for propelling the same, a series of stationary engines set at given distances apart along the route to be traversed, each engine being coupled with under-

160,816.



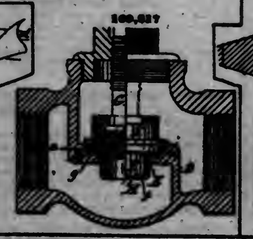
grooved shafting M, fitted with a spur-wheel, G, in gear with a spur-wheel, F, carried by the mitre-wheel C, and fitted with a sliding sleeve for engaging with the second end of the winding-shaft O of the carriage, substantially as and for the purposes described.

2. In combination with a tramway-carriage, the groups of spring-barrels *a a' a² a³*, with their coiled springs 1 2 3 4 5 6, connected at their opposite ends, as described, each group being coupled together by spur-gearing *d* and *d'*, and connected at one end by gearing to the winding-shaft O, and at the opposite end with a friction-strap, all as and for the purpose above described.

3. The arrangement of gearing *e f f' f² f³ f⁴ f⁵ f⁶* and *g'*, with their sliding sockets *f'*, sliding rod *f⁷*, and reversing-lever *g'*, for transmitting motion from the barrel *a'* to the axle G of the running-wheels of the carriage, in the manner above described.

160,817. GLOBE-VALVES. Nathaniel G. Locke, Salem, Mass., assignor to himself and Alpheus G. Locke, same place. [Filed Apr. 6, 1875.]

160,817



1. The prolongation or extension H to valve-stem nut *b*, constructed and formed to closely fit within and to continuously surround the valve-opening M, substantially as described, for the purpose specified.

2. The combination, with the prolongation or extension H of valve-stem nut *b*, constructed to closely fit within and to continuously surround the valve-opening M, of the nut *c*, located relatively to the valve-opening M, all substantially as and for the purpose described.

3. The nut *f* of the prolongation H to valve-stem nut *b*, bevelled as and for the purpose specified.

4. The combination of the nut *c* of the valve-case, constructed with a recess, *g*, with the nut *b* of the valve-stem, all as set to leave the recess *g* open and clear when the nut *b* of the valve-stem is closed against the nut *c*, substantially as described, for the purpose specified.

160,818. EXTRACTS OF BEER OR OTHER FERMENTED BEVERAGES. Philip H. Lockwood, London, England. [Filed July 12, 1875.]

Brief.—Takes beer or any other fermented beverage at any stage of fermentation, but preferably when it is ripe and fit for drinking, and evaporates it until it is reduced to a thick fluid. The thick fluid is put into cans, and the proper proportion of alcohol may be mixed with it. Converted into beer by mixing with water or aerated water.

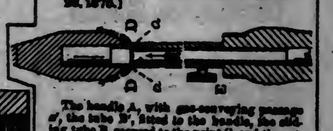
As a new article of manufacture, the within-described condensed extract of fermented beverage.

160,819. ELEVATED RAILWAYS. Alfred B. Lester, New York, N. Y. [Filed Sept. 20, 1875.]



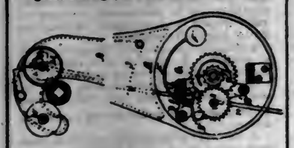
The described elevated-railway structure, consisting of the supporting-columns, surmounted by transverse bed-plates of cast or composite iron resting on the capitals of the columns and supported by bracket-work, in combination with longitudinal spans formed of double wrought-iron beams, between which are clamped the track-rails, and with side bulwarks, and arches, said parts being arranged together as shown and set forth.

160,820. SCRAPERS-HOOLS. William S. Macqueen, Philadelphia, Pa. [Filed Jan. 20, 1875.]



The handle A, with gas-conveying passage *a'*, the tube B', fitted to the handle, the sliding tube B, secured to the point C, and the set-screw E, the tubes B B' fitting each other telescopically and communicating with the passage *a'* of the handle and the outlets *a a''* of the bit or point C, all constructed and combined as set forth, and forming a hand-tool adapted to be heated either by gas or in the fire, as stated.

160,891. SUBSOIL-ALARMS. C. O. Malmgren, Chicago, Ill. [Filed Oct. 11, 1875.]



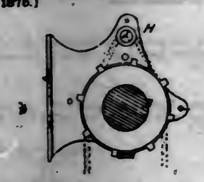
1. In combination with the system of gearing for operating the hammer, the rock shaft O, provided with arms *d* and *d'*, arm *d* adapted to engage step pin *f*, as specified.

2. In combination with rock shaft O, provided with arms *d* and *d'*, the adjusting-rod H, as specified.

3. In combination with the adjusting-rod H, provided with lug L, the clog-wheel M and cam *m*, as specified.

4. The wheels M M', so arranged as the same with relation to each other as to serve as supports in suspending the case A from the spindle of the door, and by which the wheel M is adapted to operate the alarm upon turning said spindle, as set forth.

160,892. CURTAIN-FIXTURES. George O. Mathers, Louisville, Ky. [Filed Aug. 12, 1875.]



As an improvement in curtain-fixtures above described, the combination, with the notched disk and the bracket, provided with a detent, and having the vertical slot, of the cord-wheels H, arranged above said disk, and both mounted on the same axis, as and for the purposes set forth.

160,893. PROCESSES OF REFINING SUGAR. Frank O. Matthiessen, Irvington, N. Y. [Filed Sept. 4, 1875.]

Brief.—The "washings" are deodorized and purified previous to evaporation.

The improved process of refining raw sugar herein described, which consists in washing the raw sugar, and then clarifying its coloring matters, as heretofore practiced, and in then deodorizing and filtering the washing preparatory to introducing the washing into the vacuum-pan for evaporation, and subsequent treatment in the ordinary ways.

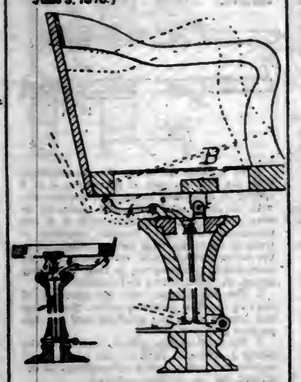
160,894. METALLIC CASES. Geo. W. McKim, Martin's Ferry, Ohio. [Filed May 21, 1875.]

1. The sheet-metal cask above described, having the two terminals of the body of the cask constructed with spiral grooves, so as to be adjustably screwed together, substantially in the manner and for the purposes set forth.

2. The sheet-metal cask having the ends of its body folded over inwardly, and the cover-groove formed in the double thickness of metal, for the purpose of strengthening said groove, as set forth.

3. The fourfold chine, having the edge of the double fold turned over and bearing against the head, substantially as set forth.

160,895. DENTAL AND BARBERS' CHAIRS. Sabring, C. Megill, Chicago, Ill. [Filed June 3, 1875.]



1. In a chair rotating upon a fixed standard, substantially as described, the lever, rod, and pedal, combined with a fulcrum upon the turn-table for tilting the chair, substantially as set forth.

2. In a chair rotating upon a fixed standard, substantially as described, a fulcrum upon the turn-table, the lever, rod, and pedal, combined with a device for locking the chair at various angles of inclination, substantially as set forth.

160,896. SCHOOL-SEATS. S. L. Melhorn, Hanover, Pa. [Filed Oct. 4, 1875.]



The plate B, having at its outer end a central socket and a quadrantal recess open at the top, as described, in combination with the seat-arm having a barrel upon its side to fit the socket of said plate, the two being confined together by a bolt, as is herein set forth.

160,897. ENAMEL FOR TOBACCO-PIPES. P. G. Merriam, Akron, Ohio. [Filed Oct. 16, 1875.]



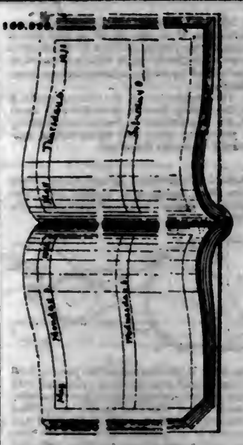
1. A composition enamel for enameling the bowls or stems of pipes composed of clay, earthenware, or other aluminous or vitrifiable material, consisting of linseed-oil, burnt umber, asphaltum, gum-copal, black oxide of manganese, and Prussian blue, combined in about the proportions substantially as set forth.

2. In combination with the body or ground enamel for coating the stems and bodies of pipes composed of earthenware or other aluminous or vitrified materials, the colored enamel compounds, as set forth, applied over said body enamel, substantially as described.

160,898. ACCOUNT-BOOKS. Robert Mott and Charles Carroll, New Orleans, La. [Filed May 21, 1875.]

Brief.—Forms a line of perforations across the lower corner of the leaves, for the purpose of facilitating the removal of said corner on the last writing or entry in the book is filled by writing on each consecutive page in turn, and in which each new entry is placed directly after the preceding writing or entry.

160,899.



As a new article of manufacture, a diary or other book perforated across one corner, or other suitable portion of each leaf, to facilitate the removal of a refuse fragment thereof, without separating any portion of the leaf which is prepared or adapted for use.

160,900. TOOL-GRINDING MACHINES. M. L. Monroe, Dayton, Ohio. [Filed June 28, 1875.]

Brief.—The adjustable slotted angle-plate is provided with a series of teeth, in which one end of the tool is adapted to set.

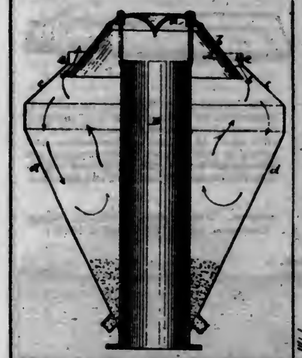
In combination with the frame A and wheel C, the adjustable slotted angle-plate G, and the screw-rod and nut H, said angle-plate being provided with a series of angle-teeth in which one end of the tool is adapted to set in such position as to present its other end to the stone O at any desired angle, substantially as described.

160,901. TREATING HIDES AND OTHER LEATHER. Friedrich C. Mengeling and Robert W. Schaefer, Jersey City Heights, N. J. [Filed Oct. 20, 1875.]

Brief.—Lumps of bicarbonate of soda are dropped into the beer-vat, and being heavier than the liquid, they fall to the bottom. Then the gas generated stays in the beer. With these lumps may be used others, made of tartaric or other suitable acid. The powdered alkali or acid is mixed with cement, such as solution of dextrine, and then compressed to the desired size.

The process of treating beer, and other liquids of a similar nature, with lumps of bicarbonate of soda, or other alkali, either alone or in connection with a suitable acid, the specific gravity of each lump being greater than that of the liquid to be treated, substantially as set forth.

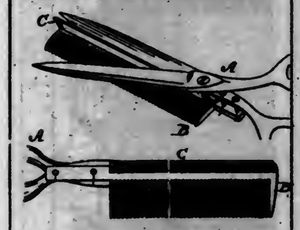
160,902. SPARE-ARRANGEMENT. J. Wellington Nesmith, Golden, Colo. [Filed Oct. 6, 1875.]



The hollow cone A, arranged to project above the lower edge of the upper reduced portion *a* of the cloak-head C, but with its mouth arranged to project within or below said upper reduced portion *a*, leaving a contracted opening, *c*, between it and said head, and with its sides *b* inclining in a reverse direction to the sides or portion *d* of the head, in combination with the flue B, arranged to enter up and open within the mouth of the cone A, substantially as shown and described.

160,903. RAZORS'-EDGE SHEARS. S. Nicholson, Gallatin, Tenn. [Filed June 24, 1875.]

Brief.—A pair of barbers' shears, having a comb secured to the side of one of the blades, is provided with a guard or shield, interposed between the comb and the blade, in such manner, and so shaped, as to govern the length at which the hair is cut, and to present the same properly to the blade of the shears.



The combination of the shears A, comb B, and guard-plate C, substantially as and for the purpose described.

160,904. TROUSERS. Frederick Norris and Clayton B. Green, Wappinger's Falls, N. Y. [Filed Oct. 6, 1875.]

Brief.—The pad is hinged to one of the metal bands, and adjusted at any required angle by a peculiarly-arranged pawl and ratchet, expanded within a hollow in the pad underneath its plate.



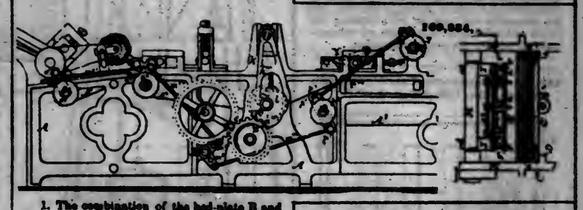
1. The combination of the band or bed plate B, the pad-plate D, the hinge-joints *f f'*, the spring-jewel J, and the ratchet I, all arranged and operating as herein shown and described.

2. The combination, with the pad and pad-plate and the pawl and ratchet, of the releasing-lever M, substantially as herein described.

3. The combination, with the pad E and its plate D, of the band composed of the plates B U and adjustable flexible strap F, the hook U on the plate B, and the slot *g* in the plate U, as herein shown and described.

160,905. CRACKER-MACHINES. Joe Pratt, New York, N. Y., assignor to Lydia Ann McCollum, executrix of the estate of John McCollum, deceased. [Filed July 1, 1875.]

Brief.—The bed-plate rests on rubber strips, and is supported by a sliding cross-head, by which it may be moved or lowered, the under surface of the cross-head being inclined, and resting on side pieces of the frame, on which it may be moved by a screw. The feed-rolls are driven by bevel-gear actuated by shafts receiving motion through a series of shafts and pinions connected with the main shaft. The crimping-roll is set in adjustable bearings between the feeding-rolls and the roll moving the apron. A roller is laid upon the scrap-apron, to prevent the scrap from slipping back, and is connected with the frame by independent links set in open bearings at their lower ends.



1. The combination of the bed-plate B and bed-supporting plate B', provided with the interposed strips *a a*, the inclined pieces C' D, bar C, and screw E, for raising and lowering the bed-plate, substantially as described.

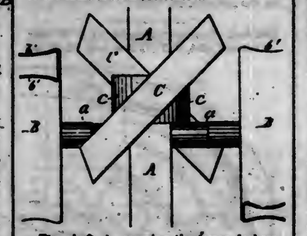
2. The combination of the main shaft I, gearing B' B'' B''', shafts S S', and bevel-gearing *d' d''*, F, and *i*, for driving the rolls T T', the whole arranged as herein shown and described.

3. The arrangement of the crimping-roll W in adjustable bearings between the dough-roller T and apron-roller O', as shown and described, for the purpose specified.

4. The scrap-roll Z, attached to the finger-shaft *y* by independent links or rods *z*, which allow its ends to rise independently of each other, substantially as described.

160,906. ROTARY CUTTERS. Morgan Payne, Cardington, Ohio, assignor to himself and Thomas H. Davis, Collinsville, Ill. [Filed Sept. 6, 1875.]

Brief.—Tapering fluted tubes are attached to the shaft to form the beaters.



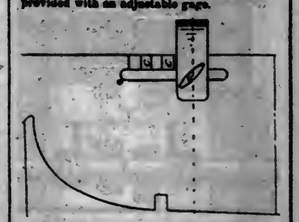
The shaft A, carrying the lower dashers, consisting of tubes B B, having fluted cutters *b*, and, further, made tapering from top to bottom, in combination with the upper dashers C C, similarly constructed to those of B B aforesaid, said parts being arranged to operate with relation to each other in the manner and for the purpose set forth.

160,907. SHUTTLES FOR LOOMS. R. W. Porter, Nashua, N. H. [Filed May 10, 1875.]



160,908. SHINGLING-HATCHETS. Henry K. W. Perry, Braintree, Mass., assignor of one-half his right to Martin L. Tupper, same place. [Filed Feb. 27, 1875.]

Brief.—The blade of a shingling hatchet is provided with an adjustable gage.

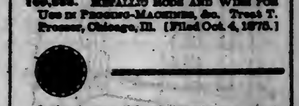


The shingling hatchet provided with a gage, carried by and adjustable upon its blade, substantially as shown and set forth.

160,909. SHUTTLE-BODY AND SPINDLE-HEAD. Trust T. Prosser, Chicago, Ill. [Filed Oct. 4, 1875.]

In combination with the shuttle-body A, the metallic box or shell C and spring D formed from a single piece of metal, as shown in Fig. 3, and the spindle and spindle-head B *b* inserted within the shell and held by the pin *a*, which holds both the spindle and the shell to the shuttle-body, substantially as and for the purposes herein set forth.

160,910. METALLIC RODS AND WIRES FOR USE IN FREEING-MACHINES, &c. Trust T. Prosser, Chicago, Ill. [Filed Oct. 4, 1875.]



1. As a new article of manufacture, metal rods or wire having a honeycombed or cellulated surface, substantially as and for the purpose specified.

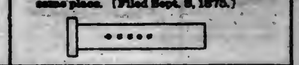
2. Honeycombed or cellulated wire, the cells of which are arranged in parallel (whether straight or spiral) longitudinal rows, divided by continuous longitudinal ribs and connecting transverse ribs, substantially as and for the purpose specified.

160,911. SHOE PEGS OR NAILS. Trust T. Prosser, Chicago, Ill. [Filed Oct. 4, 1875.]

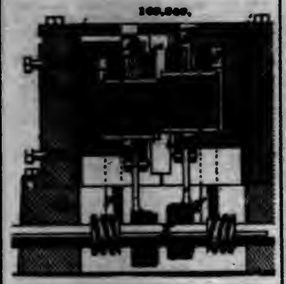


A peg or nail having a slightly-oblique chisel-edge and a notch near the point, transverse to the chisel-edge and across the longest side, substantially as and for the purpose specified.

160,912. MACHINES FOR INDENTING THE SURFACE OF WIRE. Trust T. Prosser, Chicago, Ill., assignor to himself, O. L. Noble, Winslow Bushnell, and Allen C. Calkins, same place. [Filed Sept. 6, 1875.]



169,839.

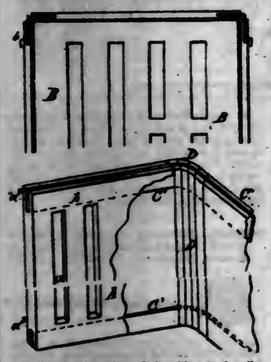


1. The combination, with the both rotating and reciprocating rolls, of guides for confining the wire so as to compel it to pass in a straight line through between the rolls, substantially as specified.

2. The combination, with the rotating rolls, of the boxes supporting them, and eccentrics and rods for reciprocating the boxes and rolls in the manner and for the purpose substantially as specified.

3. The combination, with the driving-shaft, the rolls, and their supporting-boxes, of the worm-wheels for imparting, through intermediate gearing, a rotary motion to the rolls, and the eccentrics and rods for reciprocating the boxes and rolls at the same time, all substantially as and for the purpose specified.

169,841. Piston-Boxes. Daniel Protzmann, Canton, Ohio. [Filed Sept. 9, 1875.]



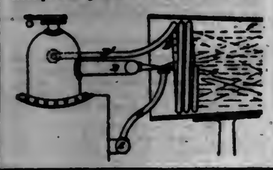
1. The combination of the sides A, the ribs C', seated in grooves c', and the corner-pieces D, substantially as and for the purpose set forth.

2. In a packing-box, the sides A, provided with the slots c, having lateral extensions c', substantially as set forth.

3. The bottom B, having cars b and the curved ribs b', in combination with the sides A, having the slots c c', substantially as set forth.

169,842. Hydrocarbon-Furnaces. John C. Snowdon, Lightcliffe, England. [Filed Apr. 10, 1875.]

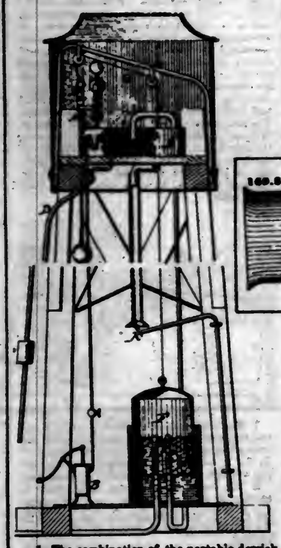
Brief.—Oil is drawn from a reservoir by the vacuum produced by a jet of steam issuing in close proximity to the mouth of the oil-pipe.



The combination of the steam-pipes B and capillary tubes or pipes C with the perforated steam-pipes D and the short straight cylinder F, substantially as and for the purposes specified.

169,843. Carbureting Apparatus. A. C. Reed, Minneapolis, Minn. [Filed Oct. 4, 1875.]

Brief.—The carburetor is located in the top of a portable derrick, and an oil-pump and heater are located in the bottom of it. The gas-holder is counterbalanced by cord and weight playing over a pulley, and as it reaches its upper limits, tappets on the cord tilt a weighted lever, which closes the valve admitting air to the carburetor.

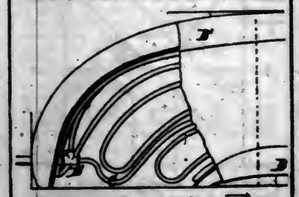


1. The combination of the portable derrick F, provided with a carburetor, A, on its top, the gas-holder F, and pump E on the bottom of the derrick, all constructed and arranged substantially as set forth.

2. In combination with the carburetor A on top of the derrick F, the overflow-pipe D, provided with the enlargement E, and connected with the tank C, whereby the desired quantity of gasoline pumped into the carburetor is indicated, substantially as set forth.

3. The combination of the carburetor A, elevated upon derrick F, pump E, tank C, holder F, pipes c, b, and D', lever G', valve J, air-pipe I, and cord G and weight, all constructed and arranged to operate substantially as and for the purposes set forth.

169,844. Track-Clearers. G. P. W. Bay, College Point, N. Y. [Filed Aug. 26, 1875.]



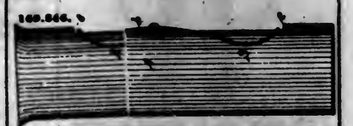
In a snow-plow, the combination of an inclined curved scoop, the mouth of which rests closely to, and extends at right angles across, the track, the rear opening to one side, said scoop being constructed with double walls, and an interposed steam-coil traversing the space between said walls, and being mounted upon a truck, B, substantially as and for the purposes herein described.

169,845. Vehicle-Axles. C. W. Richardson, Flushing, assignor to the Davis Metallic-Wheel-Manufacturing Company, New York, N. Y. [Filed Aug. 20, 1875.]



The journal-pieces B, having the collars b, constructed with the grooves c, in combination with the truss-piece A, consisting of a metallic shell, U shaped in cross-section, and having its ends bent around the shanks of the journals and fitted within the grooves c in the collars b, substantially as shown and described.

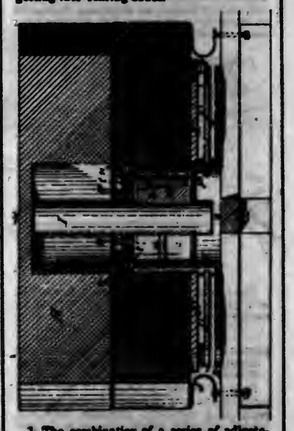
169,846. Whip-Sockets. Geo. M. Rising, Cherokee, Iowa. [Filed Oct. 11, 1875.]



A whip-socket, provided with the angle C and slot c c, as described, in combination with the double spring S, seated and held in place by the bar b, as and for the purposes set forth.

169,847. Mill-Spindles. Gardner B. Root and William W. Robinson, Ripon, Wis. [Filed Sept. 1, 1875.]

Brief.—Adjustable bent springs under outer edge of oscillating bed-stone assist in balancing it. A horizontal rib around the sides of the packing-chamber causes the meal to bear evenly against the spindle in its lateral oscillations. A flexible gasket is fitted between spindle and stone, its outer edge secured by clamping-rings, in order to prevent dirt, &c., getting into bearing-boxes.



1. The combination of a series of adjustable springs with the oscillating bed-stone, for the purpose of leveling and balancing the same without interfering with its oscillations, substantially as described.

2. The adjustable bent springs J J, arranged under the edge of the bed-stone, substantially as described, for the purposes specified.

3. The chambers of the box, formed with a horizontal rib, m, around its sides, substantially as described, for the purposes specified.

4. The combination of the chamber-rim m, convex wedges O, and beveled bearing-boxes I, with the bush and spindle, substantially as described, for the purposes specified.

5. The combination of a flexible gasket with the runner-spindle and oscillating bed-stone, substantially as described, for the purposes specified.

6. The combination of a flexible gasket with the runner-spindle, the oscillating bed-stone, and the banking, for the purpose of holding the center support of the gasket in place around the spindle, substantially as described.

7. The rabbeted disk or bush cover S and the clamping-rings U U, combined with the flexible gasket, for securing it to the bush around the spindle and to the eye of the bed-stone, substantially as described.

8. The dust-packing, consisting of the packing material w, held within a recess of the disk S around the spindle, by means of the cap X, substantially as described, for the purpose specified.

169,848. Revolving Fire-Arms. Jacob Reporter, Philadelphia, Pa. [Filed Aug. 16, 1875.]



1. The combination, in a revolver, of the cylinder E, notched at its rear edge, the cylinder-stop G, and the hammer A, with its projection b, all substantially as herein set forth.

2. The combination of the hammer A, cylinder-stop G, spring H, and projection a on the trigger.

3. The notches a, each of which is adapted to the nose of the hammer and continued on a curve to suit the nose of the stop G, as set forth.

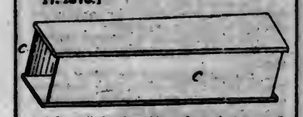
4. In combination with the cylinder of a revolver, a center-pin split throughout the length of the cylinder, and restricted in its expansion by the same, all as set forth.

169,849. Processes of Preserving Meat. Frederick H. L. C. Sisco, Neufchatel, Switzerland. [Filed Oct. 20, 1875.]

Brief.—Places the meat and acetate of soda in alternate layers, in the proportions of one hundred of the former to twenty-five of the latter, for forty-eight hours, and then afterward packed in their own brine, or a brine formed of acetate of soda one part, and water three parts. To prepare the meat for use it is to be soaked in a solution of cal-ammoniac.

The process of preserving butcher's meat, game, fish, molluska, &c., in a fresh or uncooked condition by means of acetate of soda, either alone or in connection with other ingredients, applied in the proportions and in the manner substantially as hereinbefore set forth.

169,850. Box-Pegs. Edward G. Scovil, St. John, New Brunswick. [Filed Sept. 17, 1875.]



A box-pin having sides c formed of one and the same piece of metal, substantially as described.

169,851. Spring Bed-Bottoms. Charles T. Sager, Union, N. Y., assignor of one-half his right to Henry P. Mallory, same place. [Filed July 28, 1875.]



A bed-bottom constructed with a series of top strips, C, connected together at their ends by means of metallic stripe D, and at equal distances apart between each stripe C by means of series of metallic springs E, the said springs E being arranged at their upper ends to connect the stripe C alternately, and at their lower ends to rest upon sill-pieces A, the whole being constructed in the manner and for the purpose substantially as described.

169,852. Construction of Fire-Proof Buildings. Thos. Sharp, U. S. A. [Filed Sept. 20, 1875.]

Brief.—The improved metal compartment-plates form a water-tight separation between the several floors of a building, and prevent damage by water in case of fire.



1. The combination, with the joist, of the series of compartments forming plates C C' C'', the adjacent ends of two of which extend upward along the same joist, and are secured thereto, substantially as and for the purpose set forth.

2. The hose-directing pipe D, projecting through the floor, and operating in the manner and for the purpose set forth.

3. The hatchway consisting of metal plates d d, secured to each other and to the joist, in combination with the compartment-forming metal plates extending upward along the sides of said plates d, substantially as and for the purpose set forth.

4. The compartment-forming plates C, inlet-pipe F, communicating passages G, projecting pipe D, and metallic hatchway E, combined and operating substantially as and for the purpose set forth.

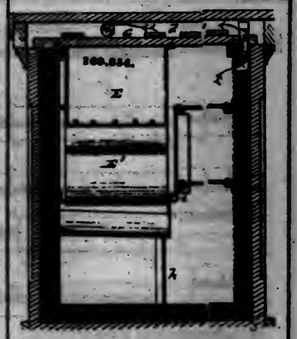
169,853. Horse Hay-Rakes. D. P. Sharp, Ithaca, N. Y. [Filed Apr. 2, 1875.]



The combination of the rake-teeth B, formed at their upper ends with bends a and hooks b, with axle A, grooved as shown, to receive the said bends, rod d, and bar C, arranged to permit the teeth to rise and fall without becoming detached, as and for the purpose set forth.

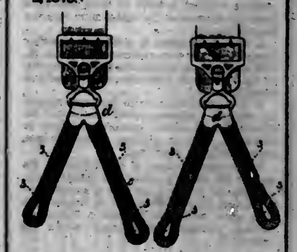
169,854. Refrigerators. Mathew Shaw, St. Louis, Mo. [Filed Sept. 13, 1875.]

Brief.—The condensation follows the inclined bottom of ice-box and side of cooler into trough, while the cool air likewise descends, and drives warm air outside through the hollow cover.



The combination, with refrigerator-body A B C, of the ice-chamber E and water-tank F, with closed bottom, and suspended to form a continuous air-space, a, around the same, and the ventilating-pipes b b in the walls farthest from the ice-chamber and air-exits c, whereby a current of cold air passes downward from the ice-chamber, driving the warm and foul air through the flues b b and out the exits in the lid, all substantially as and for the purposes herein set forth.

169,855. Suspender Button-Straps. A. Shenfield, New York, N. Y. [Filed Aug. 2, 1875.]



The suspender-end made of a flat cord or strip of fibrous material, bent into a loop, laid flatwise, united at the inner edges 3, and connected to the attaching-pieces 2, as set forth.

169,856. Carriage-Axles. Wm. W. Simmons, Derby, Conn. [Filed Sept. 9, 1875.]



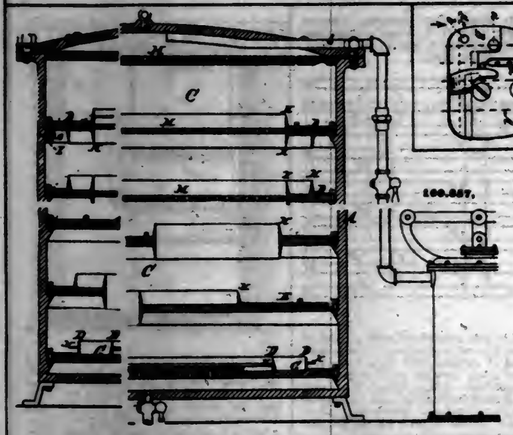
The carriage-axle, constructed with the combined annular and longitudinal grooves, filled with an absorbing material, substantially as and for the purpose described.

169,857. Apparatus for Filtering Liquids. Thos. B. Sinclaire, Brooklyn, N. Y. [Filed Aug. 10, 1875.]

Brief.—To the inner surfaces of the walls of a filter are attached ledges or deflectors, which are pliable, flexible, or adjustable, and which may be provided with counter-ledges. The filter has also diaphragms provided with eccentric passages. The liquid, by above means, is caused to percolate the mass of filtering material.

1. The combination of adjustable, pliable, or flexible ledges D D, one or more, with the interior surfaces of a filtering chamber or vessel, substantially as described.

2. The combination of counter or supplementary ledges H F, one or more, whether the same are adjustable, pliable, flexible, or rigid, with one or more adjustable, pliable, flexible, or rigid ledges or diaphragms, substantially as described.



3. The combination of one or more diaphragms or ledges, E, having eccentric passages, with a filtering chamber or vessel, substantially as described.

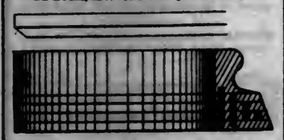
4. The combination, with a filtering-vessel constructed to filter liquid under pressure, of a ledge or shelf projecting from the interior of the vessel at or near the top of the same, with or without a ledge or shelf projecting from the interior of the vessel at or near the bottom thereof.

5. The combination, in a filtering chamber or vessel, of one or more separating-plates, M, with one or more adjustable, pliable, flexible, or rigid ledges or deflectors, substantially as described.

6. The combination, with the tapering side or walls of a filtering-vessel constructed for filtering liquid under pressure, of ledges or deflectors, with or without counter-ledges, substantially as described.

7. The combination of the following elements: the filtering-vessel A B, ledges D, diaphragms or ledges E, counter or supplementary ledges E, movable plates M, diaphragms G H, pipes or orifices F b, and a forcing apparatus, substantially as herein shown and described.

160,856. MELLENTUBE-STAFFS. G. T. Smith, St. Louis, Mo. [Filed Sept. 1, 1875.]



The herein-described method of moving or determining the face of a mellotube by the use, first, of a distance staff, Fig. 1, which is employed to level the object, and, second, of a long staff, Fig. 2, to establish the height or plane of the eye or central part of the stone relative to the object, said staff serving as a guide for the ends of the long staff, substantially as set forth.

160,858. DYEING APPARATUS. Samuel M. Smith and Oliver T. Smith, Bradford, England. [Filed July 23, 1875.]

Brief.—The dye is admitted into a vertical revolving cylinder, wherein it passes, by centrifugal force, through perforations filled with bristles and between green disks, against the material to be opened or covered with said color.

1. In an apparatus for dyeing fabrics, yarns, &c., the hollow perforated cylinder D, in combination with the surrounding wire-cloth D' and a series of bristles, operated substantially as and for the purposes described.

2. The cylinder D, constructed substantially as specified, in combination with a series of fixed and conducting rollers, J K M Q, and the steam or hot-air heated rollers A A' A', all arranged and operating as and for the purposes set forth.

3. The cylinder D, constructed and operating as described, in combination with the cistern or receptacle H and a feed-pipe, when arranged to operate substantially as and for the purposes set forth.

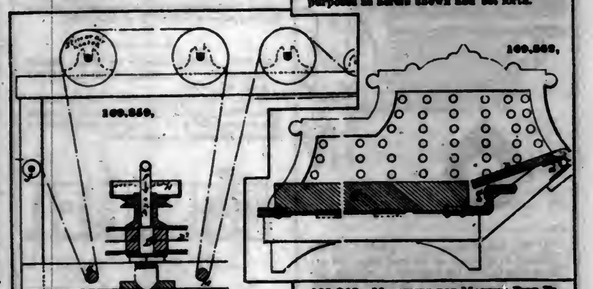
160,859. SELF-ADJUSTING GUIDES FOR SEWING LAP-SEAMS IN SEWING-MACHINES. W. A. Springer, Marlborough, Mass. [Filed July 10, 1875.]

Brief.—The guide consists of an upper and lower plate, the latter being secured rigidly to the rest of the sewing-machine, and the upper plate, being free to move vertically, is provided with two pins, which enter holes in the under plate. In making a lap-seam, one part of the material passes over the movable plate, with its edge against the guide, and the other portion passes under the said plate with its edge against one of the pins, and the two pieces are fed under the needle, and united by a seam near one of the edges. The material is then reversed, and the stitched edge passed along close to the guide upon the upper plate, and another seam formed near the other edge.

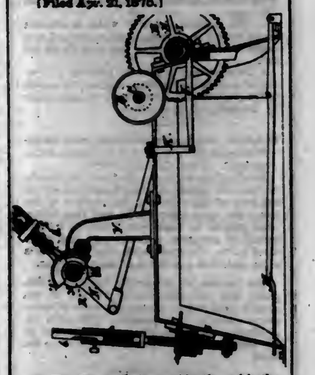
1. The combination, with the stationary part A of the guide, of the movable part B, substantially as and for the purposes set forth.

2. The combination, with the parts A and B, of the guide-pin a, and guide shoulder 4, substantially as and for the purposes set forth.

3. In machinery for sewing a lap-seam in the manufacture of boots and shoes, a guide-plate, having on its upper side a guide for the upper part of the work, and on its under side a guide for the lower part of the work, said guide-piece being open on three sides for the passage of the lower part of the work, and self-adjusting to conform to the inequalities thereof, substantially as set forth.



160,860. MACHINES FOR MAKING PIPE-BENDS. Andrew Syverson, Chicago, Ill. [Filed Apr. 21, 1875.]



1. The former T, in combination with the pressure-die S, for pressing the pipe upon the outer surface, as specified.

2. The combination of the concave disc Y, former T, and pipe-holder 6, for carrying the pipe and bending it, as specified.

3. The vibrating arms F, eccentric shaft P, and pressure-die S, as and for the purposes specified.

4. The combination of the former T and former-carrier U, for adjusting the former relative to the shaft R, upon which the operative parts vibrate, as specified.

5. The sliding lever-rod 3, the cam 4, and pipe-holder 6, and rocking shaft 1, as and for the purposes specified.

160,861. PROCESSES OF FORMING BLACKBOARDS OR SLATES. Hugh B. Stewart, Mercer, Pa. [Filed Oct. 18, 1875.]

The within-described process for forming a blackboard or slate, consisting of first coating a Manilla paper base with alcohol, shellac, dropblack, extract logwood, blue vitriol, emery, pumice, and umber, and then recoating the same after being dried with the same composition excepting the emery, all substantially as set forth.

160,862. SOFA-BEDSTEADS. Jas. K. Stockton and Miss L. Stockton, Brooklyn, N. Y. [Filed June 30, 1875.]

1. In a sofa-bedstead or lounge-bed, having a reversible seat, the automatic head-sections D, arranged and operated substantially as and for the purposes as herein shown and described.

2. The combination, in a bed-lounge, of the seat B, revolving mattress C, crank *p*, and head-mattress D, arranged and operating in combination with each other, as and for the purposes as herein shown and set forth.

160,863. MACHINES FOR MAKING CUT-NAILS. Thomas Perkins, Wheeling, W. Va. [Filed Aug. 30, 1875.]

1. The combination of the feed-rolls E E', the cutting-blade F, and the gripping-jaws G G', substantially as described.

2. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', and the heading-die H, substantially as described.

3. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, and the ejector I, substantially as described.

4. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, and the adjustable gage J, substantially as described.

5. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, and the adjustable nail-guide K, substantially as described.

6. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, and the adjustable nail-guide L, substantially as described.

7. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, and the adjustable nail-guide M, substantially as described.

8. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, and the adjustable nail-guide N, substantially as described.

9. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, and the adjustable nail-guide O, substantially as described.

10. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, and the adjustable nail-guide P, substantially as described.

11. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, and the adjustable nail-guide Q, substantially as described.

12. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, and the adjustable nail-guide R, substantially as described.

13. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, and the adjustable nail-guide S, substantially as described.

14. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, and the adjustable nail-guide T, substantially as described.

15. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, and the adjustable nail-guide U, substantially as described.

16. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, and the adjustable nail-guide V, substantially as described.

17. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, and the adjustable nail-guide W, substantially as described.

18. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, and the adjustable nail-guide X, substantially as described.

19. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, and the adjustable nail-guide Y, substantially as described.

20. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, and the adjustable nail-guide Z, substantially as described.

21. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, and the adjustable nail-guide A', substantially as described.

22. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', and the adjustable nail-guide B', substantially as described.

23. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', and the adjustable nail-guide C', substantially as described.

24. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', and the adjustable nail-guide D', substantially as described.

25. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', and the adjustable nail-guide E', substantially as described.

26. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', and the adjustable nail-guide F', substantially as described.

27. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', and the adjustable nail-guide G', substantially as described.

28. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', and the adjustable nail-guide H', substantially as described.

29. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', and the adjustable nail-guide I', substantially as described.

30. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', and the adjustable nail-guide J', substantially as described.

31. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', the adjustable nail-guide J', and the adjustable nail-guide K', substantially as described.

32. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', the adjustable nail-guide J', the adjustable nail-guide K', and the adjustable nail-guide L', substantially as described.

33. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', the adjustable nail-guide J', the adjustable nail-guide K', the adjustable nail-guide L', and the adjustable nail-guide M', substantially as described.

34. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', the adjustable nail-guide J', the adjustable nail-guide K', the adjustable nail-guide L', the adjustable nail-guide M', and the adjustable nail-guide N', substantially as described.

35. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', the adjustable nail-guide J', the adjustable nail-guide K', the adjustable nail-guide L', the adjustable nail-guide M', the adjustable nail-guide N', and the adjustable nail-guide O', substantially as described.

36. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', the adjustable nail-guide J', the adjustable nail-guide K', the adjustable nail-guide L', the adjustable nail-guide M', the adjustable nail-guide N', the adjustable nail-guide O', and the adjustable nail-guide P', substantially as described.

37. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', the adjustable nail-guide J', the adjustable nail-guide K', the adjustable nail-guide L', the adjustable nail-guide M', the adjustable nail-guide N', the adjustable nail-guide O', the adjustable nail-guide P', and the adjustable nail-guide Q', substantially as described.

38. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', the adjustable nail-guide J', the adjustable nail-guide K', the adjustable nail-guide L', the adjustable nail-guide M', the adjustable nail-guide N', the adjustable nail-guide O', the adjustable nail-guide P', the adjustable nail-guide Q', and the adjustable nail-guide R', substantially as described.

39. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', the adjustable nail-guide J', the adjustable nail-guide K', the adjustable nail-guide L', the adjustable nail-guide M', the adjustable nail-guide N', the adjustable nail-guide O', the adjustable nail-guide P', the adjustable nail-guide Q', the adjustable nail-guide R', and the adjustable nail-guide S', substantially as described.

40. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', the adjustable nail-guide J', the adjustable nail-guide K', the adjustable nail-guide L', the adjustable nail-guide M', the adjustable nail-guide N', the adjustable nail-guide O', the adjustable nail-guide P', the adjustable nail-guide Q', the adjustable nail-guide R', the adjustable nail-guide S', and the adjustable nail-guide T', substantially as described.

41. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', the adjustable nail-guide J', the adjustable nail-guide K', the adjustable nail-guide L', the adjustable nail-guide M', the adjustable nail-guide N', the adjustable nail-guide O', the adjustable nail-guide P', the adjustable nail-guide Q', the adjustable nail-guide R', the adjustable nail-guide S', the adjustable nail-guide T', and the adjustable nail-guide U', substantially as described.

42. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', the adjustable nail-guide J', the adjustable nail-guide K', the adjustable nail-guide L', the adjustable nail-guide M', the adjustable nail-guide N', the adjustable nail-guide O', the adjustable nail-guide P', the adjustable nail-guide Q', the adjustable nail-guide R', the adjustable nail-guide S', the adjustable nail-guide T', the adjustable nail-guide U', and the adjustable nail-guide V', substantially as described.

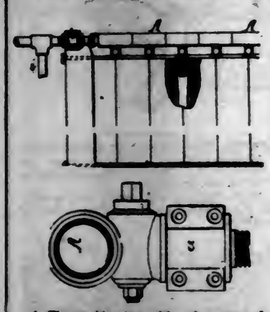
43. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', the adjustable nail-guide J', the adjustable nail-guide K', the adjustable nail-guide L', the adjustable nail-guide M', the adjustable nail-guide N', the adjustable nail-guide O', the adjustable nail-guide P', the adjustable nail-guide Q', the adjustable nail-guide R', the adjustable nail-guide S', the adjustable nail-guide T', the adjustable nail-guide U', the adjustable nail-guide V', and the adjustable nail-guide W', substantially as described.

44. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', the adjustable nail-guide J', the adjustable nail-guide K', the adjustable nail-guide L', the adjustable nail-guide M', the adjustable nail-guide N', the adjustable nail-guide O', the adjustable nail-guide P', the adjustable nail-guide Q', the adjustable nail-guide R', the adjustable nail-guide S', the adjustable nail-guide T', the adjustable nail-guide U', the adjustable nail-guide V', the adjustable nail-guide W', and the adjustable nail-guide X', substantially as described.

45. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail-guide B', the adjustable nail-guide C', the adjustable nail-guide D', the adjustable nail-guide E', the adjustable nail-guide F', the adjustable nail-guide G', the adjustable nail-guide H', the adjustable nail-guide I', the adjustable nail-guide J', the adjustable nail-guide K', the adjustable nail-guide L', the adjustable nail-guide M', the adjustable nail-guide N', the adjustable nail-guide O', the adjustable nail-guide P', the adjustable nail-guide Q', the adjustable nail-guide R', the adjustable nail-guide S', the adjustable nail-guide T', the adjustable nail-guide U', the adjustable nail-guide V', the adjustable nail-guide W', the adjustable nail-guide X', and the adjustable nail-guide Y', substantially as described.

46. The combination of the feed-rolls E E', the cutting-blade F, the gripping-jaws G G', the heading-die H, the ejector I, the adjustable gage J, the adjustable nail-guide K, the adjustable nail-guide L, the adjustable nail-guide M, the adjustable nail-guide N, the adjustable nail-guide O, the adjustable nail-guide P, the adjustable nail-guide Q, the adjustable nail-guide R, the adjustable nail-guide S, the adjustable nail-guide T, the adjustable nail-guide U, the adjustable nail-guide V, the adjustable nail-guide W, the adjustable nail-guide X, the adjustable nail-guide Y, the adjustable nail-guide Z, the adjustable nail-guide A', the adjustable nail

169,971. Clay-Presses. John Watson Trenton, N. J. (Filed Oct. 8, 1875.)

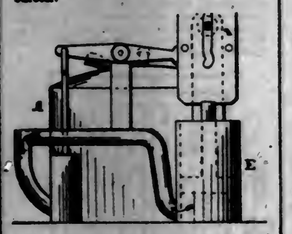


1. The combination, with a clay-press, of a main pipe, A, made in detachable sections, each section having a branch, a, and being constructed for attachment to one of the leaves of the press, all substantially as set forth.

2. The combination of the main pipe A of the press with an escape-pipe, f, as and for the purpose set forth.

169,972. Carburetting Apparatus. Peleg Wersi, Philadelphia, Pa., assignor of one-half his right to H. Lucien Richie, same place. (Filed Apr. 13, 1875.)

Brief.—A small pump, that works with the air-pump, returns oil from the lower chamber, then has filtered through the absorbent of sponge and excelsior, to the top of the carburetor.



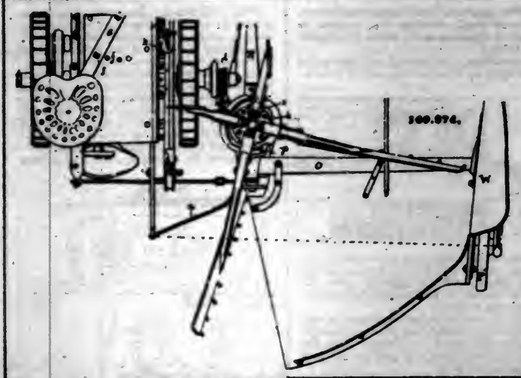
In a gas-machine, the combination of an air-receiving chamber, C, carbureting-chamber D, distributing-chamber, air-forcing pump E, and pump H, the latter provided with a pipe, J, conducting therefrom to the chamber D, substantially as and for the purpose described.

169,973. Compression-Cocks. F. White, St. Louis, Mo. (Filed Sept. 13, 1875.)

Brief.—The thumb-handles are attached to a threaded collar, which is fitted to the valve-case. The valve-stem is secured to the collar, and is actuated by the same.



The center-piece C, having shoulder c^1, upper shoulder c^2, lower necking c^3, upper packing c^4, bushing c^5, the stem E, having shoulder e, journal e^1, top cover F, the cap H, fitted to revolve on the center-piece, all said parts being combined, with relation to a globe, A, to operate in manner and for the purpose set forth.



169,974.

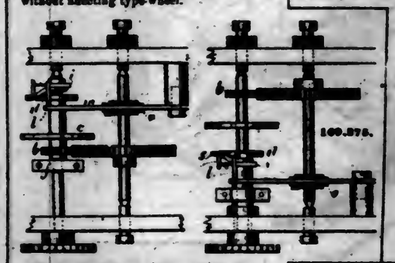
169,974. Harvesters. Wm. N. Whiteley, Springfield, Ohio. (Filed Apr. 3, 1874.)

1. In combination with the bars of the rectangular main frame A, the continuous tubular master-wheel axle-box E, which protects and affords a bearing for the main axle F, and, at the same time, ties the frame together, as set forth.

2. The rock-shaft a, substantially as described, combined with the latch-lever m, and notched segment n, at one end, and the crank and pitman at the other, to actuate and control the front end of the drag-bar R.

169,975. Printing-Telegraphs. Charles J. Wiley, New York, N. Y. (Filed Oct. 12, 1875.)

Brief.—Type-wheel locked to shaft by a stutch, which is released by action of unison-stop, allowing motor to continue revolving without affecting type-wheel.



1. The combination, with the type-wheel and a unison-stop, of a frictional connection to the motive power, and a ratchet-wheel and pawl that connects and disconnects the type-wheel and its motor, substantially as set forth.

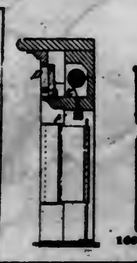
2. The lever w, pin l, and hanging cam o, in combination with the unison-stop t, pawl e, ratchet-wheel d, and type-wheel, substantially as set forth.

3. In a printing telegraph instrument, the combination of a locking mechanism with the type-wheel and escapement for connecting and disconnecting such type-wheel from the escapement.

169,976. Fire-Place Screens. Wm. C. Williamson, Newbern, Tenn. (Filed May 8, 1875.)

Brief.—The extension-piece can be drawn out when the screen is to be rolled up. The bottom piece of the screen closes the aperture through which the screen passes.

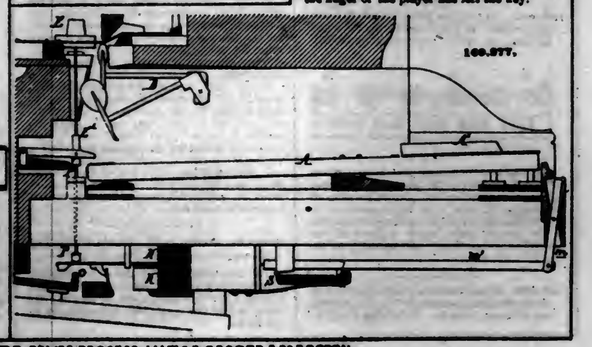
A flexible screen, E, having slotted handle-shaft F and bottom rod F, as and for the purpose specified.



169,976.

169,977. Piano Attachments. Auguste D. R. Wolff, Paris, France. (Filed June 18, 1875.)

Brief.—A device for holding the dampers of any single key and its octaves raised after the finger of the player has left the key.



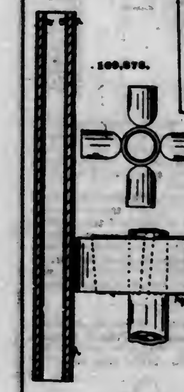
169,977.

1. The combination of the damper-rods B' of a piano with rods P, hinged bar O under the control of a pedal, and pads n' with mechanism for interposing the latter between the said bar O and rods P, as and for the purpose set forth.

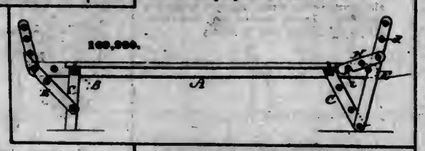
2. The combination of the hinged bar S, having an inclined portion, z, with the rods n and their teeth r, arranged to operate as set forth.

1. The combination of the frame A B, hinged legs O C, arms E E, and foot-rest G, all substantially as and for the purposes herein set forth.

2. The combination of the frame A B, hinged legs O C, extended arms E' E' provided with rounds d, forming the head-rest, and the hooked arms H H, all substantially as and for the purposes herein set forth.



169,978.



169,980.

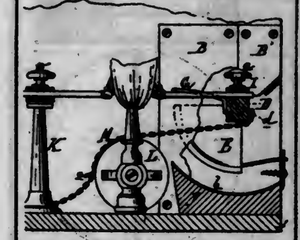
169,978. Manufacture of Metal Tubing. Stephen W. Wood, Cornwall, N. Y. (Filed Oct. 26, 1875.)

1. The method of forming internally-coated tubing or pipe by electro-deposition of the metals composing it, depositing first upon a suitable mandrel or form a coating or lining of one metal, and depositing thereon an exterior covering of a different metal, forming the main body, substantially as herein set forth.

2. The method of fabricating tubing or pipe by electro-depositing metal or metals for the same upon a metal mandrel or form, and rolling or burnishing the same to facilitate its removal, substantially in the manner herein set forth.

S. W. WOOD.

169,979. Apparatus for Lighting Gas, &c. Zachary Woodworth, Springwells, Mich. (Filed Oct. 19, 1875.)



1. The rock-shaft D, quadrant E, spring F, bale G, cord H, clamp I, and rubbing-block J, in combination with the shelf A, bracket-back B, and a gas-burner, lamp, or candle, substantially as and for the purpose set forth.

2. The match-holding post and clamp E K', in combination with the primary match-lighting apparatus, as and for the purpose set forth.

3. The pulley L and chain M, in combination with the rock-shaft and the key of a gas-burner, as and for the purpose set forth.

169,980. Cop-Bobbins. Leonard Worcester, West Brattleborough, and Joshua B. Howe, Readsborough, Vt. (Filed Mar. 17, 1875.)

169,980.

169,981. Sewing-Machines. Wm. Wormald and Edmund Dobson, Leeds, England. (Filed Feb. 13, 1875.)

Brief.—The machine is capable of making the lock, cable, and chain stitches. The spool-case holder is provided with a removable bar-shaped piece of metal, whereby the passage of the thread to the rest of the needle is facilitated, and the lock-stitch produced. In making the cable-stitch, the bar-shaped piece is removed; the upper thread then makes a chain-stitch, through the loops of which the under thread is passed, resulting in the cable-stitch. To make the chain-stitch, the under thread is dispensed with. The spool-case is prevented from leaving the holder by a locking-bolt, which is adjustable for different-sized threads, and is provided with a retaining-screw.

1. The combination of the spool-case holder T and spool-case E with the adjustable bolt 4, all constructed and operating substantially as and for the purposes specified.

2. In a sewing-machine capable of producing the lock-stitch, cable-stitch, and loop or chain stitch, the combination of the spool-case holder T, curved metal plate c, the conical spool-case E, constructed substantially as described, and the adjustable locking-bolt 4, with the removable bar-shaped piece V, all constructed to operate as set forth.

REISSUES.

6,726. Wood-Screws. Allen Cummings, New York, N. Y., assignor to the New York Screw Company, same place. Patent No. 161,200, dated Mar. 30, 1875. [Filed Aug. 4, 1875.]



A screw the head of which, at its center, is provided with an angular cavity in lieu of the usual slot or nick, substantially as and for the purposes as herein shown and described.

6,726. Wood-Screws. Allen Cummings, New York, N. Y., assignor to the New York Screw Company, same place. Patent No. 161,200, dated Mar. 30, 1875. [Filed Aug. 4, 1875.]



A screw the head of which, at its center, is provided with an angular cavity in addition to the usual slot or nick, substantially as and for the purposes as herein shown and described.

6,727. Brush-Holders. Charles B. Clark, Buffalo, N. Y., assignor to Clark & Co., same place. Patent No. 30,468, dated July 28, 1860. [Filed Oct. 20, 1875.]

Brief.—The screw-shank and stationary jaw are integral. In the shank is a mortise, which receives the pivoted jaw, which is operated by the screw-nut on the screw-shank.

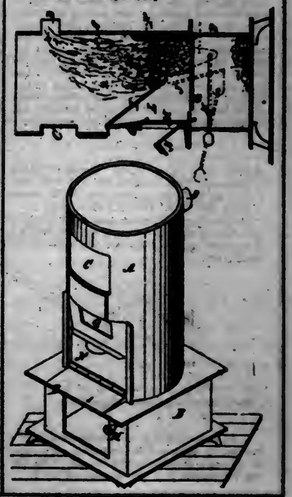


1. The combination of the fixed jaw C, the movable jaw H, swinging in a mortise in the shank of the fixed jaw, and the nut E on the threaded shank of the fixed jaw, substantially as described.

2. The combination of a screw-shank, F, having a slot, I, with a stationary jaw, C, and a vibrating jaw, H, said jaw H having an arm arranged in said slot of the screw-shank, substantially as described.

3. The thumb-nut E and vibrating jaw H, having a slot, K, in combination with the flange G and stationary jaw C.

6,728. Heating-Stoves. George B. Moore, Philadelphia, Pa., assignor, by mesne assignments, to John S. Perry, Albany, N. Y. Patent No. 54,982, dated May 22, 1866. [Filed June 10, 1875.]



1. The combination of a fire pot or chamber, K, which forms, with the outer case A, an expansion-chamber, L, between the two below their point of intersection, the window Q for illumination, placed in the said outer case A opposite said expansion-chamber, the open space J between the base of the front wall of the fire pot or chamber and the top surface of the grate or fire-bed G, and the doorway or opening M in said outer case opposite the said open space, all for the purposes as described and set forth.

2. The combination of a fire pot or chamber, K, the front wall of which forms, with the outer case A, an expansion-chamber, L, between the two below their point of intersection, the window Q for illumination, placed in the said outer case A opposite said expansion-chamber, and the open space J between the base of the front wall of the fire pot or chamber and the top surface of the grate or fire-bed G, all for the purposes as described and set forth.

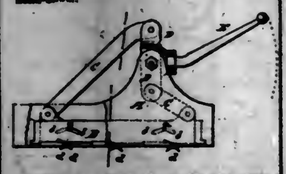
3. The combination of a fire pot or chamber, K, the front wall of which forms, with the outer case A, an expansion-chamber, L, between the two below their point of intersection, the doorway or opening M in said outer case opposite said expansion-chamber, and the open space J between the base of the front wall of the fire pot or chamber and the top surface of the grate or fire-bed G, all for the purposes described and set forth.

4. The combination of a fire pot or chamber, K, which is contracted toward its base, the expansion-chamber L, formed between the front sloping wall I of the said fire pot or chamber and the outer case A, and below the point at which the two intersect, the window Q for illumination in said outer case opposite said expansion-chamber, the open space J between the base of the front wall of the fire pot or chamber and the top surface of the grate or fire-bed G, the doorway or opening M in said outer case, and the grate or fire-bed, the area of which at the front is greater than the area of the inside of the base of the said fire pot or chamber, all for the purposes as described and set forth.

5. The combination of a fire pot or chamber, K, which is contracted toward its base, the expansion-chamber L, formed between the front sloping wall I of the said fire pot or chamber and the outer case A, and below the point at which the two intersect, the window Q for illumination in said outer case opposite said expansion-chamber, the open space J between the base of the front wall of the fire pot or chamber and the top surface of the grate or fire-bed G, the area of which at the front is greater than the area of the inside of the base of the said fire pot or chamber, all for the purposes as described and set forth.

6,730. SAW-MILL DOGS. Henry D. Dana, Oshkosh, Wis. Patent No. 124,068, dated Jan. 7, 1872; reissue No. 6,071, dated Sept. 29, 1874. [Filed Feb. 9, 1876.]

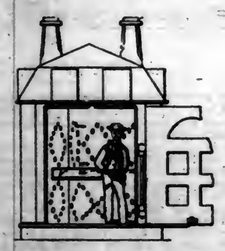
Brief.—The dogs enter the wood in opposite directions, thus drawing up and holding the timber securely against the knee of the head-block.



1. In a saw-mill dog, the combination of the knives *d d*, arranged to move past each other in opposite directions and engage with the log, substantially in the manner set forth.

2. The combination of the box or case A, bars B B, with interlocking knives *d d*, inclined slots *b b*, pins *a a*, connecting-bars C C, cross-head D, and lever E, all constructed and arranged substantially as and for the purposes herein set forth.

6,731. TOY MONEY-BOXES. Chas. C. Johnson, Somerville, Mass., assignor to Horace Partridge. Patent No. 144,103, dated Oct. 28, 1873. [Filed Feb. 8, 1876.]





1. The combination of a toy bank, its outwardly-opening door, and slotted partition, with an image and horizontal plate, connected with the door and operated by the movement thereof to present the image and plate in the open doorway, substantially as for the purpose described.

2. The combination, with a toy bank and slotted partition, of an image and receiving-plate, and a pivoted spring-governed plate on which the image stands, substantially as described.

3. In combination, a toy bank, its slotted partition and hinged door, and a pivoted plate carrying image, a spring, and a link, all operating substantially as described, to move the image by the act of opening and closing the door, to receive and deposit money through the slotted partition, as set forth.

4. The combination, with the movable door and the image, of the wire link, connecting the door and the image, and arranged to move the image as the door is opened or closed, substantially as described.

5. The combination, with the hinged door, and with image controlled by a spring, of the link connecting the door and image, all arranged to operate substantially as and for the purposes set forth.

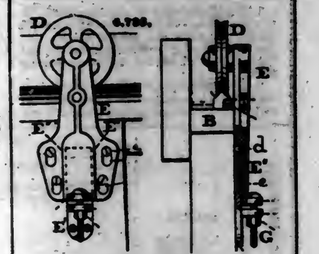
6. The combination, with the toy bank, of the rods *g* and the bottom piece provided with the inclines *h*, substantially as shown and described.

7. In combination with a cast-metal reticulated money-box, provided with a slot and with flanges *e* projecting within the money-receiving apartment, a flanged vibrating money-receiver to receive and deposit the money within the reticulated money-apartment, substantially as described.

8. The combination, with a toy bank and its movable door, of an image mounted on a supporting-plate connected with the floor of the bank, and connected with the door through a link, so as to appear at the open door, or move away from the door as the door is opened or closed, substantially as described.

6,732. DOOR-HANGERS. Joseph Lambert, Wilbraham, Mass. Patent No. 161,610, dated Apr. 6, 1875. [Filed July 21, 1875.]

Brief.—The hanger adjusts both vertically and laterally, and is kept from jumping the rail by a leg.

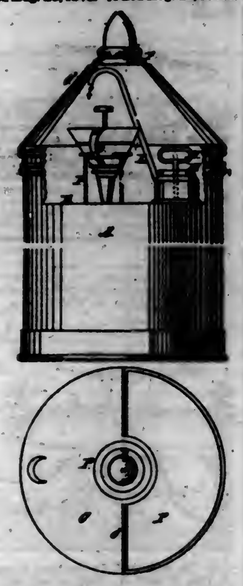


1. The sheave-bracket, consisting of two parts, E' E'', connected by a guiding-tongue, *c*, and groove, *d*, the fastening-screws *e*, and an adjusting screw-bolt, G, thereby giving vertical adjustability, substantially as and for the purpose set forth.

2. The combination, with the sheave D, of the supporting-rail C, made transversely-adjustable by means of slots, and the screws *f*, substantially as and for the purpose set forth.

3. The combination, with the sheave-bracket and rail, of a projection or lug on one part engaging with a shoulder on the other part, substantially as and for the purpose set forth.

6,733. OIL-TANKS. Walter C. Strickler, Chicago, Ill., assignor to John C. Breeden and F. C. Wilcox. Patent No. 130,702, dated Aug. 20, 1872. [Filed Aug. 26, 1876.]



1. The combination of an oil-tank, A, and a hood, F, rigidly attached thereto, the latter projecting above and partly extending over the top of the tank, so as to form a chamber thereon, substantially as and for the purpose set forth.

2. The combination, substantially as described, of an oil-tank, A, fixed or stationary hood F, and movable piece or door O, for the purpose set forth.

3. The combination of an oil-tank, A, the fixed hood F, extending over the top of the oil-tank to form a chamber thereon, and a sliding door or cover, O, which divides said the hood to open the chamber, as specified and shown.

HELIOTYPE RELIEF PROCESS, JAMES R. OSGOOD & Co. BOSTON.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 20. TUESDAY, NOVEMBER 16, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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NOTICE TO MANUFACTURERS AND OTHERS.

UNITED STATES PATENT OFFICE,
Washington, D. C., October 5, 1875.

The COMMISSIONER OF PATENTS respectfully requests manufacturers of and dealers in engines, machines, apparatus, tools, and appliances of whatever kind, to send to this Office duplicate copies of all catalogues and circulars which they have issued or may issue from time to time.

R. H. DUELL, *Commissioner.*

COMMISSIONER'S DECISIONS.

HEIDE AND WIRTZ.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the application of Henry Heide and Charles Wirtz, for Letters Patent for a* "PRESERVE COMPOSITION FOR MACAROONS," *filed January 29, 1875.—Decided November 15, 1875.*]

A preserve compound consisting of old ingredients arranged in a new manner, and possessing the superior qualities of transportability, cheapness, economy, and convenience in use, and imperishability: *Held*, to be patentable.

DUELL, *Commissioner:*

Applicants claim:

The preserve composition for macaroons, composed of almonds, dried white of egg, sugar, and water, in the proportions specified, the proportion of water being less than necessary for baking, substantially as set forth.

The object they had in view in making this preparation was the production of an article that could be put up in suitable packages for transporting, that could be used at all times and places for the making of macaroons when and where fresh eggs or almonds could not be procured, that would be more convenient for use than the separated ingredients, and, finally, that would be more economical than the usual preparation by the substitution of dry albumen for the whites of fresh eggs, thus obviating the necessity of discarding the yolks or using them for other purposes. Again, the usual preparation is a perishable one, and must be used at once, while this is a preserve compound. In short, they present a commodity having the superior qualities of transportability, cheapness, economy and convenience in use, and imperishability. Surely these are objects which often call for the exercise of inventive genius for their accomplishment.

This application was rejected by the Principal Examiner upon reference to the definition of the word macaroon in Webster's Dictionary, and the recipes for the making of that article in one or two cook-books. Webster's definition and the recipes alluded to make no mention of the preserve composition in question. They simply describe a macaroon as it is generally made.

The application under consideration is not for the finished article known as a macaroon, but for a novel arrangement of ingredients from which that article can be produced.

In his answer to the reasons of appeal, the Examiner remarks that "applicant's claim is for the composition, but the sole object of their invention is to put up this composition in small merchantable packages of commerce." He then cites the recent decision of the United States Supreme Court in the *Milligan and Higgins Glue Co.* vs. *Upton*, (6 OFFICIAL GAZETTE, 837,) and the Commissioner's decisions therein adverted to in support of the position that no invention is exercised in the mere putting up of articles in a convenient shape.

If the present combination of ingredients claimed had ever before been used for the purpose mentioned, of course the mere putting it up in any kind of packages would not be invention; but the Examiner adduces no evidence of the former fact. The courts or the Office have never gone to the extent of saying that the production of a new article of commerce, *per se*, is not patentable.

It is distinctly held in the decision mentioned that an article of commerce, an article of manufacture, or a composition of matter, or improvements thereon, are

all patentable if the exercise of invention or discovery is shown in their production, and the result is new and useful.

To comminute flakes of glue, when the same thing had been done before, and when the comminution of various articles for commercial purposes was a common device; to make a hydrant in four sections, when a pump had been constructed in the same way; to merely substitute a sheet-metal face-plate for one of cast-iron; to pack pulverized hops in an air-tight package; to attach an ornamental paper tablet to a clock-front, when similar tablets had been attached to picture-frames in the same way; to etch figures upon sheet-iron plates for stoves when other articles of iron or steel have been etched—all these examples (and they are the principal ones relied upon by the Examiner, involving no invention or discovery whatever, but sought to be maintained by calling the same "new articles of manufacture,") are not analogous to a case like the present one, in which old elements are so combined that the result is an improvement of great practical importance in the particular art to which it relates, and which supplies a want that, so far as the evidence shows, has never before been filled.

Says Judge Story, in *Ryan* vs. *Goodwin*, (3 Sumner, 318:)

> It is certainly not necessary that every ingredient, or, *indeed, that any one ingredient* used by the patentee in his invention, should be new or unused before for the purpose of making matches. *The true question is, whether the combination of materials by the patentee is substantially new.* Each of these ingredients may have been in the most extensive and common use, and some of them may have been used for matches, or combined with other materials for other purposes. But if they have never been combined together in the manner stated in the patent, but the combination is new, then, I take it, the invention of the combination is patentable. So far as the evidence goes, it does not appear to me that any such combination was known or in use before Phillip's invention.

In regard to whether invention has been exercised in the production of this apparently simple combination, the remarks of the same learned judge in the above connection are also appropriate here. He says:

> The combination is apparently very simple; but the simplicity of an invention, so far from being an objection to it, may constitute its great excellence and value. Indeed, to produce a great result by very simple means, before unknown or unthought of, is not unfrequently the peculiar characteristic of the very highest class of minds.

Also in the recent case of *Pennock ex parte*, (1 McArthur, 531, Supreme Court of this District,) it was held:

> Whether the inventive faculty has been exercised is mostly a question of evidence, and is always to be considered in reference to the condition of the art, and the results accomplished, and where the combination is confessedly new and the benefit great, the presumption is strongly in its favor. It is not always safe to consider that there has been no invention because it appears obvious and simple, for simplicity is often the chief merit of a patent. Nor is it material whether Mr. Pennock spent much or little time in elaborating his enterprise. If the thought was original, and can be employed with substantial advantage, it becomes a meritorious invention within the meaning of the patent law.

It was in accordance with these principles that Judge Grier, in the case of the *Pennsylvania Salt Company* vs. *Gugenheim*, (3 Fish., 423,) sustained the patent of George Thompson, who claimed—

> Caustic alkali incased or enveloped in a tight metallic integument or metallic casing.

The state of the art prior to that invention is described as follows:

> Prior to the invention of George Thompson the manufacture of soap was carried on at large establishments, like my own, by purchasing the soda-ash of commerce, making it caustic by boiling with lime, and then treating the solution of caustic soda with fat and making soap of it. Throughout the country the farmers used to keep their wood-ashes and leach them down, and use lime to make caustic potash, and then boil this fat. This was a very troublesome and uncertain operation, and could not be applied where wood-ashes were not used. The great bulk of soap was manufactured at soap-works from soda-ash, as above described. The manufacture of soap from soda-ash was a nice chemical operation, which could not be carried on with success generally in families.

This troublesome and difficult operation was simplified by Thompson's invention, which consisted in wrapping cakes of caustic soda in paper impregnated by a preparation of bees-wax and rosin, by which said paper was rendered impervious, so as to protect the soda from the action of the atmosphere, or in incasing caustic soda in small metallic boxes, and in the process of putting up the alkali in such boxes by pouring it in a melted state into the same.

The court held—

> Caustic alkali was not a new substance, nor was it a new composition of matter, nor its manufacture a new art, yet the fact was clear that the patentee had made a very important improvement in the art, and one of great practical value.

This was among the cases especially distinguished by the court from the matter of comminuted glue in the adjudication heretofore cited. It is the case also that was relied upon by my predecessor in sustaining the application of the Horlicks, (7 OFFICIAL GAZETTE, 828,) for a patent, which consisted in putting a preparation of food for infants, substantially given in a formula of Baron Liebig, in a marketable form, available to the general public.

In view of the principles laid down in the various cases cited, I am of opinion that applicants have made such an invention as entitles them to the protection of the patent law.

The decision of the Board of Examiners-in-Chief is therefore reversed.

WARREN NOYES.—*Interlocutory appeal.*

[*Appeal from the Primary Examiner in the matter of the application of Warren Noyes, for letters patent for a* "DEVICE FOR CHARGING CARTRIDGE-CASES."—*Decided August* 30, 1875.]

Where the subject-matter of an application consisted of a set of devices for charging cartridge-cases, and the first claim was for a cartridge-shell holder, and the second for a canister: *Held*, that as the devices covered by these claims were in their operation especially adapted to each other, belonged to the same class of inventions, and were used in connection to subserve a common end, they formed an exception to the general rule that separate inventions should form the subject of separate applications.

The third claim was for the combination of the shell-holder, the canister, and a ramming device. As these also were especially adapted to each other, all co-operated to produce a certain result, and the use of each was necessary to that result: *Held*, that they constituted a legitimate combination.

SPEAR, *Acting Commissioner:*

The applicant declares his invention to be the production of a convenient set of devices for charging cartridge-cases, consisting of a cartridge-shell holder, a ramming or packing device, and two canisters, one to contain powder and the other shot.

He makes three claims—the first, for the cartridge-shell holder; the second, for the canister, and third is for the combination of the shell-holder, the canister, and the ramming device.

The first and second claims were refused on the ground that the subject-matter thereof involved two separate inventions, which were not so inseparably connected with each other as to entitle them to be claimed in the same application, and the third for the reason that a patentable combination was not there set forth.

The cartridge-shell holder consists of a block of wood with perforations or cells for holding the shells. These cells have shoulders on their inner sides, near the top, of equal thickness with the cartridge-shell, to allow the rammer to be inserted in the shell without pressing upon its rim. The block has a hinged bottom, with sockets corresponding in position to the holes in the block to receive the butt-ends of the shell. The canister is of any ordinary form, with a convenient number of chargers projecting from the top for charging the shells with powder or shot. These chargers are so spaced as to fit the holes in the block. The flask also has the cut off valves and gage device for regulating the amount of the charge generally possessed by powder and shot flasks. The rammer consists of a handle and stock, and, projecting from the latter, four rods, arranged apart to correspond with the distances between the holes in the block.

The method of employing these devices is as follows: The cartridge-shells are placed in the cells in the block, and the hinged bottom is then shut down to keep the shells in place. The nozzles of a canister are then inserted into the mouths of the cells and the shells charged with powder. A wad is applied and the rammer then used. Then follows the charge of shot.

It is thus seen that in their operation these separate devices are especially adapted to each other. They belong to the same class, and are used in connection to subserve a common end. It is such devices that expressly form the exception to the general rule that separate inventions should form the subjects of separate applications. (See Commissioner's Decisions in cases of *Linus Yale*, 1869, p. 110; *L. Lehmann*, 1870, p. 70; and *Abel Combs*, 1871, p. 209.)

In the third claim the three devices, the shell-holder, the ramming device, and the canister, are claimed in combination. As already stated, they are especially adapted to each other, they all co-operate to produce the result, and the use of each device, or its equivalent, is necessary to that result. This certainly constitutes a legitimate combination. (*Birdsell* vs. *McDonald*, 6 OFFICIAL GAZETTE, 682.)

The action of the Examiner on both points is therefore reversed.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date November 16, 1875.]

8,793.—Stoves.—JOHN J. BONNET, Quincy, Ill. Application filed November 5, 1875. Term of patent 3½ years.

8,794.—Buttons.—JOHN R. FARRELL, Boston, Mass. Application filed July 9, 1875. Term of patent 7 years.

8,795.—Embroidery-Patterns.—EMIL CRIBAND, New Haven, Conn., assignor to HENRY ST. JOHN, same place.—JJ. Application filed November 10, 1875. Term of patent 3½ years.

8,796 and **8,797.—The Casing of a Soda-Water Apparatus.**—FRANK H. SHEPHERD, Boston, assignor to JAMES W. TUFTS, Medford, Mass.—Cases D, C. Applications filed November 3, 1875. Term of patents 14 years.

8,798.—Carpets.—THOMAS J. STEARNS, Boston, Mass., assignor to THE ROXBURY CARPET COMPANY, same place. Application filed November 5, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date November 16, 1875.]

3,129.—Pumps.—CHARLES G. BLATCHLEY, Philadelphia, Pa. (Re-registration.) Application filed February 23, 1871.

"The letter 'B' inclosed within a circle."

3,130.—India-Rubber Boots and Shoes.—THE L. CANDEE & CO., New Haven, Conn. Application filed October 19, 1875.

"words 'STANDARD PURE.'"

3,131.—Hats, Caps, and Hatters' Supplies.—FREDERICK DODD, Philadelphia, Pa. Application filed October 30, 1875.

"the figures of three men, standing behind a table or bench."

3,132.—Smoking-Tobacco.—CHARLES DUWEL, Cincinnati, Ohio. Application filed October 23, 1875.

"the representation of a planter on horseback, riding in a field in which a number of tobacco-plants is seen. Under the picture occurs my name, 'Charles Duwel,' as manufacturer. The whole is inclosed within a border, to the left of which are seen my initials 'C. D.,' and to the right a seal bearing my name 'C. Duwel.'"

3,133.—Rubber Erasers.—EBERHARD FABER, Port Richmond, N. Y. Application filed November 4, 1875.

"words 'CRESCENT RUBBER.'"

3,134.—Printing-Presses.—GRIFFITH & BYRNE, New York, N. Y. Application filed October 19, 1875.

"letters 'CAXON' arranged in a horizontal line in the order named, and the letter T considerably larger than any of the others, the shaft of which passes vertically through the center of the X."

3,135.—Medicine.—HOSTETTER & SMITH, Pittsburg, Pa. (Re-registration.) Application filed March 29, 1871.

"a drawing, engraving, or picture representing the mythical battle of St. George and the Dragon, a shield-shaped figure in dark background, the engraving or bust of a venerable appearing man with white flowing beard, and fac-similes of our signature in two places."

3,136.—Canned Goods.—J. G. KRAFT & CO., Baltimore, Md. Application filed September 13, 1875.

"a symbolic 'figure of Justice' and the words 'Justice Brand.'"

3,137.—Door Lock and Latches.—MALLORY, WHEELER & CO., New Haven, Conn. Application filed October 19, 1875.

"word 'Centennial.'"

3,138.—Wagons, Carriages, and other Vehicles.—BENJAMIN F. MOORE, Fond du Lac, Wis. Application filed October 27, 1875.

"words 'LA BELLE.'"

3,139.—Blasting-Powder.—J. R. RAND & CO., New York, N. Y. Application filed October 21, 1875.

"word 'RENDROCK.'"

3,140.—Medical Compound.—WILLIAM SWAIM, Philadelphia, Pa. No. 1. Application filed October 23, 1875.

"a figure bounded by convex curved lines top and bottom, and by concave lines on the ends, bearing white letters on a black or other dark ground, the word 'SWAIM'S,' and the lower part in similar letters, the word 'PANACEA,' and between said parts the word 'CELEBRATED,' in a horizontal line in black, or other dark letters."

3,141.—Medical Compound.—WILLIAM SWAIM, Philadelphia, Pa. No. 2. Application filed October 23, 1875.

"The representation of a bottle, upon which are the words 'SWAIM'S PANACEA' in two places, and a fanciful label, upon which is a portrait and ornamental bank-note work, the whole forming one device."

3,142.—Medical Compound.—WILLIAM SWAIM, Philadelphia, Pa. No. 3. Application filed October 23, 1875.

"The representation of three bottles in a row, the one on the left hand bearing the word 'Swaim's;' that in the middle bearing the word 'Panacea,' and that on the right hand the word 'Philada.' and above the bottles is the word 'SWAIM'S,' and beneath them the word 'PANACEA.'"

3,143.—Medical Compound.—WILLIAM SWAIM, Philadelphia, Pa. No. 4. Application filed October 23, 1875.

"a device engraved on a steel plate in ornamental, engine-turned bank-note work, the form being a parallelogram with a

curved cap-piece. The said parallogram bears at its top the word 'SWAIM'S,' and at the foot the word 'Panacea,' and in its central part is a finely-engraved portrait of William Swaim."

3,144.—Boots and Shoes.—P. WARE, JR., & CO., Boston, Mass. Application filed October 14, 1875.

"words 'WALKING SLOW BOOTS. FOUR MILES AN HOUR.'"

3,145.—Kid Gloves.—R. H. WHITE & CO., Boston, Mass. Application filed October 26, 1875.

"word 'VOGEL.'"

3,146.—Kid Gloves.—R. H. WHITE & CO., Boston, Mass. Application filed October 26, 1875.

"words 'LA REISE.'"

3,147.—Soap.—SCHULTZ & CO., Zanesville, Ohio. Application filed November 10, 1875.

"marks or lines which are made to cross or intersect each other in such a manner as to present a netted or checkered surface."

LABELS REGISTERED DURING THE WEEK.

(Each certificate bearing date November 16, 1875.)

379.—Title: "Conlin's Shooting Gallery, 930 Broadway."—JAMES S. COLLIN, New York, N. Y. Application filed November 3, 1875.

380.—Title: "For Single Box $1.00.—This Irish Salve is warranted to cure," &c.—JOHN L. FITZGERALD, Spencer, Mass. Application filed November 5, 1875.

381.—Title: "Mitchell's Centennial Cologne."—GEORGE E. MITCHELL, Lowell, Mass. Application filed November 10, 1875.

382.—Title: "Mosher's Historical National Photographic Art Gallery."—CHARLES D. MOSHER, Chicago, Ill. Application filed November 11, 1875.

383.—Title: "Wm. Meissner, Proprietor of the Palace Royal Cigars."—WILLIAM MEISSNER, Detroit, Mich. Application filed November 8, 1875.

384.—Title: "Old Crow Distillery Whisky, W. A. Gaines, Distiller, Woodford Co., Ky."—PARIS, ALLEN & Co., New York, N. Y. Application filed October 27, 1875.

385.—Title: "Richardson & Robbins, Extra Yellow Peaches."—RICHARDSON & ROBBINS, Dover, Del. Application filed November 2, 1875.

386.—Title: "Mist, Limonis Comp."—RELIEF MANUFACTURING CO., New York, N. Y. Application filed August 28, 1875.

387.—Title: "Reichardt's Salicylic Horse Cure."—F. ALFRED REICHARDT, New York, N. Y. Application filed October 21, 1875.

388.—Title: "Capitol, Richmond, Va."—M. J. ROSENDORF, Richmond, Va. Application filed September 6, 1875.

389.—Title: "Sawyer's Crystal Blue."—HENRY SAWYER, Chelsea, Mass. Application filed November 4, 1875.

390.—Title: "Sawyer's Crystal Blue."—HENRY SAWYER, Chelsea, Mass. Application filed November 4, 1875.

391.—Title: "The Sorrento Glue-Pot."—S. W. TILTON & Co., Boston, Mass. Application filed November 11, 1875.

392.—Title: "Upham's Malarial, or Fever and Ague Sachet."—SAMUEL C. UPHAM, Philadelphia, Pa. Application filed November 11, 1875.

393.—Title: "H. W. Wallace's National Approved Heave Remedy."—E. W. WALLACE, Saline, Mich. Application filed November 8, 1875.

TO CORRESPONDENTS.

Persons ordering drawings of patents, or making inquiries in regard to patents, must always state the name of the inventor, subject-matter, and date. In making inquiries in regard to applications for patents letters must state the name of the applicant, subject-matter, and date of filing. In ordering drawings by classes, under the subject-matter index of September, 1871, (furnished gratis on application,) it will be understood that the Office cannot take upon itself to make selections of certain lines of inventions, embracing portions only of the patents in the classes as specified. The number of classes has been made as ample as the conduct of the business in this office will readily permit. An order should, therefore, embrace the entirety of a given class or classes. They cannot be subdivided unless ordered specifically by giving the number, name, and date of each patent.

The cheapness of the copies, (ten cents apiece when ordered in quantity or by the whole class,) and the comparatively small number of patents in each of the 176 classes, render an order by class by no means an onerous undertaking.

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The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)	6,500
SEWING-MACHINES and attachments	2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes	4,000
PRINTING; including presses, type, and printers' furniture	2,500
FELTING and HATS; including caps, bonnets, flock, &c	1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs	1,400
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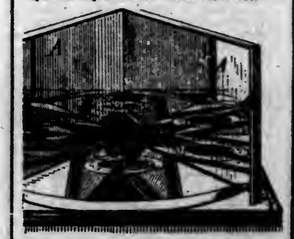
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED NOVEMBER 16, 1875.

169,893. KALEIDOSCOPES. John F. Adams, Irvington, N. Y. [Filed Sept. 27, 1875.]

Brief.—The two mirrors are hinged together at the required angle. Under them is placed a movable disk, containing the objects necessary to form the designs. The apparatus rests upon the top of the box when not in use.



1. The combination, with a pair of mirrors, of an open movable receptacle for the objects forming the design moving beneath the mirrors, substantially as shown and described.

2. The frames holding the mirrors, provided with leaves E, forming a hinge, substantially as shown and described.

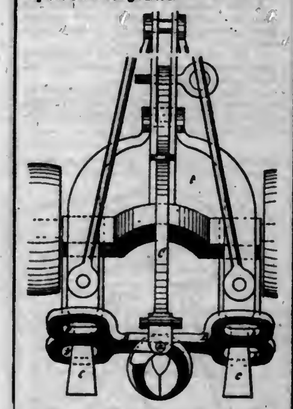
3. In combination with the frames, the supports H, the pin screwed to the box, over which one hinge of the frames rests, and the box D, substantially as shown and described.

4. In combination with the mirrors and disk the box D, constructed to support and receive the same, substantially as shown and described.

5. The frames raised above the disk, in combination with the hinges and the box, substantially as shown and described.

169,894. HAND-TRUCKS. Nathan Adams, Altoona, Pa. [Filed May 3, 1875.]

Brief.—The bar to be transported is caught by the grapples *g g*, and held until released by the bar O being raised.

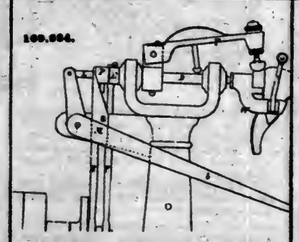


1. The tongs B B, having loop-holes *b*, in combination with the truck, having rests *e e*, substantially as and for the purpose set forth.

2. The combination of the lever C, with the tongue D and tongs B B, for discharging the load, substantially as set forth.

169,895. HEEL-BURNISHING MACHINES. C. J. Addy, Boston, assignor to Tapley Heel-Burnishing-Machine Association, Lynn, Mass. [Filed Nov. 6, 1871.]

169,896.



1. A machine for burnishing the heels of boots and shoes, in which the boot support or jack and the burnisher are combined with mechanism for actuating the same, arranged and operating substantially in the manner herein shown and described, to impart to the two simultaneously-vibrating movements in a curved path, but in opposite directions, for the purposes set forth.

2. The combination, with the boot-jack and the burnishing-tool, of the spindles or shafts for supporting the same, and the mechanism, substantially as herein shown and described, for imparting to said shafts simultaneously vibratory or rocking movement in opposite directions for the purposes stated.

3. The combination of the boot-jack and burnisher with their supporting spindles or shafts when arranged the one within the other, so as to vibrate or rock upon the same axis, substantially as herein shown and set forth.

4. The combination of the boot support or jack, with a rocker-shaft which carries the same, and is capable of sliding longitudinally, substantially as shown and described, for the purpose of moving the jack toward or away from the burnishing-tool.

5. The combination, with the jack and the sliding rocker shaft or spindle which carries the same, of the means, substantially as herein shown and described, for producing the sliding movement of said spindle.

6. The jack herein described, consisting of the boot-supporting yoke, the boot-holding clamp, and the rest for the heel-tread, said parts being arranged to receive and support the boot, substantially in the manner herein shown and set forth.

7. In combination the jack herein explained, the burnishing-tool and its carrier, the arbor D and spindle L', the lever M or its equivalent, the arms P and E, pitmen F and E, crank arms G, and wheel I or its equivalent, the whole operating in manner and for purposes substantially as stated.

169,897. SIDE-BAR WAGONS. John F. Barnecott, Westchester, N. Y. [Filed June 26, 1875.]



The combination of a side bar, composed of the stiff middle portion *a* and spring ends *b b*, each lower spring leaf *b* having a hook *i* formed on its inner end, and a narrow neck, *c*, on its outer end, with the clips *f f*, staples *g g*, and transverse springs C D, all substantially as herein shown and described

169,898. ANIMAL-TRAPS. Thad. Belknap, Austinburg, Ohio. [Filed Feb. 11, 1875.]

Brief.—Relates principally to the method of securing the pivot to the tilting platform, and adjusting its balance.



169,894.

1. The combination, with the platform D, of the pivoted cross-bar H, provided at its ends with recesses *e* and suitable packing, substantially as described, by which arrangement the platform may be withdrawn from said cross-bar or adjusted thereon, for the purpose set forth.

2. The combination of the platform D, pivoted cross-bar H, provided at its ends with recesses *e* and suitable packing, the step *b*, and spring-arm *a*, constructed to operate substantially as and for the purpose specified.

169,897. PAINT COMPOSITIONS. Charles C. Bemis, Brattleborough, Vt. [Filed Sept. 10, 1875.]

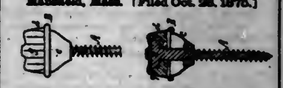
The composition as described, for mixture with an animal or vegetable oil, each composition consisting of lime, sulphur, muriate and carbonate of ammonia, sal-soda, bicarbonate of potash, borate of soda, and water, substantially as specified.

169,899. TRACE-COUPLINGS. H. G. Brown, Collinsville, Conn. [Filed June 28, 1875.]



The hollow socket or stud D passing through the trace-leather, provided at its outer end with the curved catch-spring F and cover *d*, and at its inner end with a screw-plate, E, for securing it in its place and embracing the trace-leather between itself and the box containing the spring F, in combination with a spindle, C, having a groove, *c*, upon the end of a whiffletree, substantially as described.

169,899. COUPLING-SCREWS. F. W. Cabot, Mansfield, Mass. [Filed Oct. 26, 1875.]



1. The screw-shank A, as fastened to the base portions *c*, and extended up therefrom to and against the cap portion *d*, so as to constitute a support thereto.

2. The screw-shank A, secured in the base *c* of the head B, and extended in opposite directions therefrom, and provided with the tenon or head *e*, as described, in combination with the dome-cap *d*, provided with the corresponding mortise or recess *f*, and having the said head *e* arranged in said recess, as and for the purpose or purposes explained.

3. The dome-cap *d*, provided with the handle or device *g*, for aid in effecting rotation of the screw, as described.

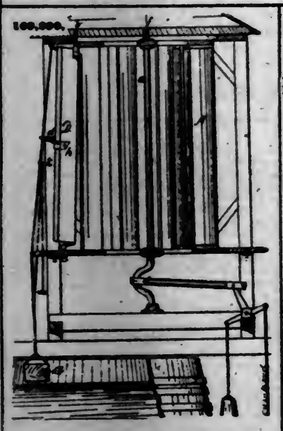
4. The dome-cap *d*, having the handle *g* and mortise or recess *f*, in combination with the base portion *c*, and with the screw-shank A, fastened to the said base portion *c*, and extended in opposite directions therefrom, and provided with the tenon or head *e*, arranged in said mortise or recess *f*, all being as set forth.

169,900. WINDMILLS. Albert O. Campbell, Oakland, Cal. [Filed July 21, 1875.]

Brief.—There are two platforms, between which the wheel and its shutters are placed. The shutters are arranged in a circle about the wheel, and open and close upon pivots, when open taking an inclined position out of a vertical line, therefore falling together and closing one upon the other. The shutters are held open by the weight of the float, which allows the wind to enter and act upon the buckets of the wheel, and they are so held until the level of the water in the tank reaches the float and lifts it, when, the weight being removed from the cord, the shutters fall together and close around the wheel.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

No. 169,890.

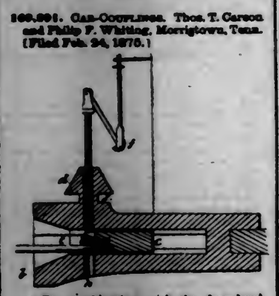


1. In a windmill, having its wind-wheel mounted on a vertical axis, the combination of a series of shutters arranged around said wind-wheel, and mounted in such a position as to close together by their own weight, and a float for opening the said shutters, substantially as described and shown.

2. In a windmill, having its wind-wheel mounted on a vertical axis, the combination of a series of shutters hung upon pivots *b c*, out of a vertical line, as described, and connected together by cords or wires *d* and the angle-irons A, and a float for simultaneously opening the said shutters by its weight, substantially as described and shown.

3. In a windmill, having its wind-wheel mounted on a vertical axis, the combination of a series of shutters, D, adapted to close together by their own weight, a float for opening the said shutters, and a stop for limiting their motion, substantially as described and shown.

No. 169,891. GAS-COUPLINGS. Thos. T. Carson and Philip F. Whiting, Morristown, Tenn. (Filed Feb. 24, 1875.)



1. The combination, with the draw-bead, having an extended opening or mouth, as shown, the movable block *c*, with its beveled face *r*, arms *f i*, and springs *t b*, all substantially as set forth.

2. The pin *e* and sector *f*, in combination with the turret *d* and groove *s*, whereby the pin is locked in position, substantially as herein described.

No. 169,892. KITCHEN-SHELVES. A. A. Carter, Philadelphia, Pa. (Filed Oct. 11, 1875.)



No. 169,892.



1. The shelves A and D, provided with hinges B B, and links E and F, and pins G and H, constructed as and for the purpose set forth.

2. The link E, with a beveled edge, combined with the shelves A and D, as and for the purpose set forth.

3. The reversible shelf D, provided with studs adapted to hold a grater, as set forth and described.

No. 169,893. COPY-HOLDERS. Luther Conant, Geneva, Ill. (Filed Mar. 29, 1875.)

Brief.—The slot in the card leaves a space to be written upon, and serves as a gage for lining truly. The card also shuts out from the pupil his former efforts, and presents the copy with equal clearness to all parts of the page.

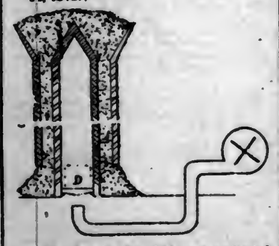


The combination, with the gage or copy-holder A, having the slot C, of the copies B B, as and for the purposes set forth.

No. 169,894. SHOE-SOLE FASTENINGS. Henry S. Cushman, Milford, Mass. (Filed Aug. 26, 1875.)

As an improved manufacture, the metallic tubular nail or sole fastening A, provided with the water proof core B arranged in it, all being substantially as represented and described.

No. 169,895. SAND AND GRAVEL DRIERS. Silas S. Daish, Washington, D. C. (Filed Oct. 14, 1875.)



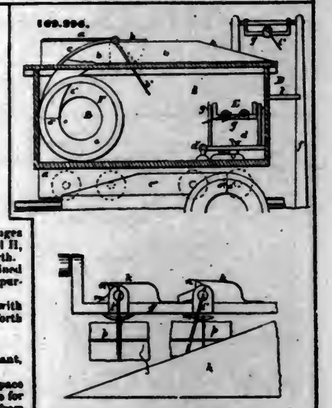
1. The combination of the two perforated cylinders, the furnace, and the blower.

2. The combination, in a sand or gravel drier, of the furnace D and its combustion chamber, the inner perforated cylinder C, the outer perforated cylinder A, and the sand and gravel chamber between the two latter, substantially as and for the purpose set forth.

No. 169,896. APPARATUS FOR TRANSFERRING GOODS TO AND FROM CARS. W. H. Elliot, New York, N. Y. (Filed Oct. 21, 1875.)

Brief.—Inclined plane trips catch, and allows package to fall into trough leading to receptacle in car. A similar method of release transfers package from car to outside receptacle.

No. 169,896.



1. The receiver B, consisting of an entrance-passage, *b*, and a cylindrical chamber, F, substantially as and for the purpose specified.

2. The package-deliverer, consisting of swinging frame *d*, cover *g*, and hooks *m*, whereby the packages are protected from wind and rain while they are held in proper position over the receiver, substantially as set forth.

3. In combination with levers *f* and hooks *m*, the inclined plane A, whereby the packages are gradually released from the suspending-hooks, substantially as specified.

4. The cover *g* and hooks *m*, in combination with the entrance-passage *b*, open at the top, whereby the packages are inclosed in the passage before they are released from the hooks, substantially as specified.

5. The guards *a*, in combination with the train-deliverer E, substantially as and for the purpose specified.

6. The parallel bar *n*, in combination with the upright posts *f*, the swinging frame *d*, and cover *g*, substantially as and for the purpose specified.

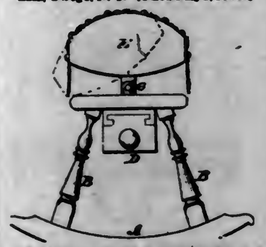
7. In a train-deliverer, E, the swinging frame *d*, latch *o*, and lever *o'*, substantially as and for the purpose set forth.

8. The entrance *b*, when left uncovered or open on the top, and provided with an open floor, substantially as and for the purpose set forth.

9. The valve *b'* and lever *b''*, in combination with entrance-passage *b*, substantially as and for the purpose set forth.

10. The bossing *o'*, in combination with the entrance-passage *b*, provided with a grating, *c*, substantially as and for the purpose set forth.

No. 169,897. FOOT-REST. Frederick A. Farnham, Owego, N. Y. (Filed July 1, 1875.)



The foot-rest consisting of rocking frame A B C and hinged or pivoted cushion E *c*, the frame being provided with a slipper-drawer, D, sliding longitudinally in grooves therein, substantially as and for the purposes described.

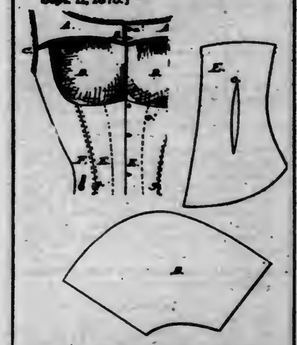
No. 169,898. FLORAL ORNAMENTS FOR TOMBSTONES. Anna French, Bangor, Me. (Filed Nov. 2, 1874.)

No. 169,898.



In combination with a tombstone, fadeless wreaths or flowers made of glass beads or other material not naturally susceptible to injury from atmospheric influences, and arranged upon brass or copper wire, all as shown and set forth.

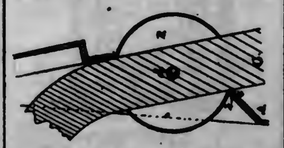
No. 169,899. UMBRA-GARMENTS. George Frost and Geo. H. Phelps, Boston, Mass. (Filed Sept. 11, 1875.)



In a combined under-waist and skirt-supporter, the combination of the yoke A, breast-form D, and the body or lower front parts B E and F F, the whole constructed and combined substantially as herein specified.

No. 169,900. ATTACHING HANDLES TO PUMPS. Oscar B. Parker, Saco, Me. (Filed Oct. 14, 1875.)

Brief.—The opening for the handle in the pump-barrel has a case or cover provided with a revolving drum. Through said drum passes the handle, as shown. The device permits of the easy operation of the pump, at the same time preventing the introduction of injurious substances.

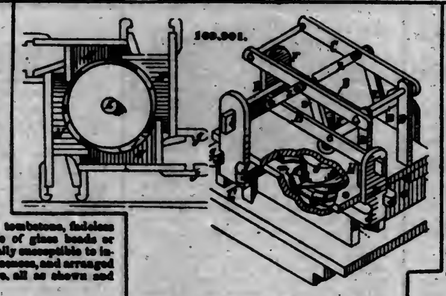


The improved device as described, the same consisting of the hollow metallic case A, provided with an opening, *c*, and the movable drum B, the latter having a handle, C, extending diametrically through its periphery—such drum and handle being pivoted on the rod *d*, the whole being constructed, combined, and arranged in manner as stated, and for application to the body of a pump, as and for the purpose set forth.

No. 169,901. WATER-WHEELS. W. C. Groves, Liberty, Wis. (Filed Sept. 15, 1875.)

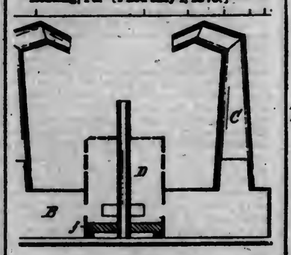
Brief.—There are in this device four vertically-moving gates arranged to work in the ways. These gates are framed together, and are raised and lowered conjointly by the levers pivoted in the uprights, and connected to the frame-work by links.

No. 169,901.



The gates F, frame E, levers C, and links *s*, combined to operate substantially as set forth.

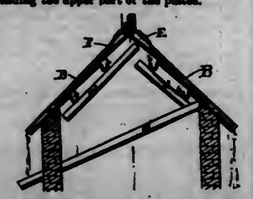
No. 169,902. WASH-BOILERS. C. W. Guenther, Reading, Pa. (Filed May 1, 1875.)



In a steam wash-boiler the base E *a*, provided with the fountain-tubes C C and the cylinder D, the top and sides of which are provided with the perforations *e*, in combination with the disk *f*, rigidly secured to the lower end of the fountain-tube *a*, substantially as and for the purposes set forth.

No. 169,903. LUMBER-DRIERS. Milo Harris, Jamestown, N. Y. (Filed Oct. 9, 1875.)

Brief.—The roof is cooled by water from the pipe sprayed upon the outside. The moisture condensed on its inner surface is caught in the gutters, which are made by bending the upper part of the plates.



1. The plates B, constructed with the gutter-edge *b*, and secured together as set forth to form a condensing roof or wall of a drying-kiln, with gutters to receive and carry away the water of condensation, as set forth.

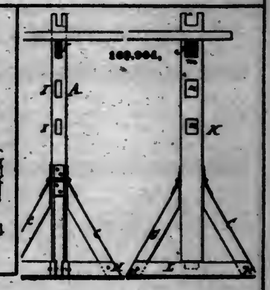
2. The condensing-plates B, gutter *b*, and pipes P, all made, combined, and arranged in manner, and for the purpose set forth.

3. The roof-plates B, with guttered edges, combined with supporting-rafters E placed outside of said roof-support, the same as set forth.

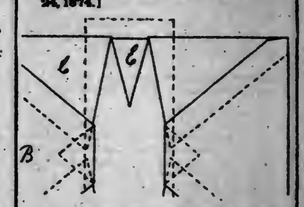
No. 169,904. ADJUSTABLE SCAFFOLDS. Henry Hillmer, St. Louis, Mo., assignee of one-half his right to Wm. C. Warren. (Filed May 1, 1875.)

A scaffold constructed as shown and described, having stands A and K, with a series of rail-mortises, I, and slots P, hinged braces C, and foundations B and L, as set forth.

No. 169,904.



No. 169,905. BOOK-COVER PROTECTORS. Geo. W. Holden, Dayton, Ohio. (Filed Apr. 24, 1874.)



As a new article of manufacture, the book-cover protector, the side lap B of which embraces the top and bottom laps C, as and for the purpose specified.

No. 169,906. PAINT-BRUSHES. George P. Hunt, Boston, Mass. (Filed Sept. 11, 1875.)

Brief.—A socketed holder formed to permit two independent brushes, with handles, to be inserted therein, and to permit the withdrawal of either or both at will.

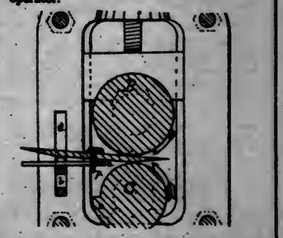


1. The combination of handle B and stock A, provided with two or more tubular sockets, C, adapted each for the insertion of a removable smaller-handled paint-brush of ordinary or suitable construction, substantially as shown and described.

2. The handle B and stock A, provided with two or more tubular sockets, as described, in combination with paint-brushes fitting said tubular sockets, and removable therefrom at pleasure, as shown and set forth.

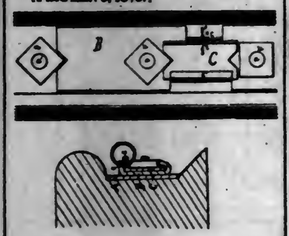
No. 169,907. ROLLING-MILLS. Joseph Jepson, Philadelphia, Pa. (Filed Oct. 20, 1875.)

Brief.—The pin is placed in the central aperture of the plate, which rests upon the screw-bolts, and is pushed between the rolls until the pin strikes the guide. Power applied to the lower roll forces the blank toward the operator.



The combination of a pair of rolls, one or both eccentric, with the adjustable guide or stop *o* and center pin or pins *p*, as shown and described, and for the above purpose.

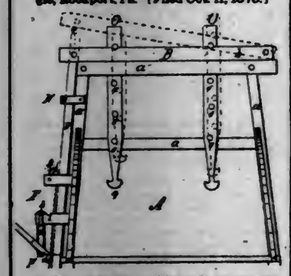
169,908. NUT-LOCKS. Thomas B. Keating and Thomas G. Brister, Mansfield, Ohio. [Filed Mar. 5, 1875.]



1. The locking-plate B, having the lip *c*, pocket *d'*, and notches *m*, in combination with the angle-plate C, substantially as shown and described.

2. The combination of the locking-plate B, angle-plate C, and ring X, substantially as and for the uses and purposes set forth.

169,909. STUMP-EXTRACTORS. W. F. Keagle, Rockport, Pa. [Filed Oct. 11, 1875.]

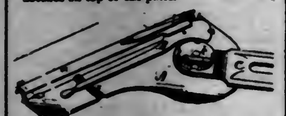


1. The combination of lever B, one or more lifting-bars O O', frame A, beam D, having ratchet-plate F, and lever M, substantially as shown and described.

2. The combination of frame A, lever B, lifting-bars O O', beam D, having ratchet-plate F, pawl *g*, and lever M, substantially as described.

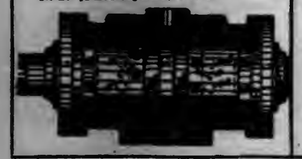
169,910. UMBER-BRAIDERS FOR SEWING-MACHINES. Valentine Lapham, Marion, Ohio. [Filed Mar. 17, 1875.]

Brief.—Improvement on Patent No. 160,039. The cloth passes over the plate on the bed, and the braid through a channel on the bottom of the plate. A spring bears on the top of the braid, and the width of the channel is regulated by a guide attached to one end of a pivoted lever, the other end of which fits into notches on top of the plate.



The combination, with the bed-plate A, provided with the race *a* and notches *x x*, of the pivoted lever B, provided with the braid-guide *c* and tongue *i*, as and for the purposes set forth.

169,911. COMBINED STEAM AND OUT-OUT VALVES. Arthur J. L. Lorain, Brooklyn, N. Y. [Filed Sept. 20, 1875.]



169,911.



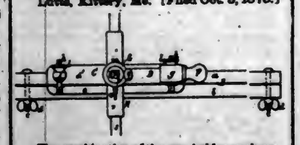
1. The valve C, with grooves D^1 D^2 and connecting-holes C^1 C^2, arranged in the manner described, and having an oscillating or rotative and rectilineal movement, in combination with the valve-chest, provided with apertures N^1 N^2 connecting with jacket M, substantially as and for the purpose herein described.

2. The combination with a valve, C, provided with grooves D^1 D^2 and connecting-holes C^1 C^2, arranged as described, and having an oscillating or rotative and rectilineal movement, the valve-chest, provided with counter-bored ports O^1 O^2, for the purpose herein set forth.

3. The valve C, provided with springs S, arranged and secured as described, in combination with the heads E^1 E^2, provided with an interior projection, as described, and stem D, arranged as specified, for the purpose of cushioning the action of the valve C against the heads E^1 E^2, and also cushioning the action of the stem D against the valve C, each spring performing a double function, as herein, and for the purpose specified.

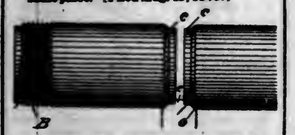
4. In combination with a valve, C, acting as main valve and auxiliary piston, and valve-stem D, arranged and constructed as specified, and acting as an auxiliary valve, when combined with ports and passages in the valve-chest and heads E^1 E^2, as specified, a spring, S, acting to start the main valve and auxiliary piston C, as specified, in addition to the functions of cushioning the action of the valve C against the heads E^1 E^2, and also cushioning the action of the stem D against the valve C, constructed and operating substantially as and for the purpose herein specified.

169,912. SAW-FILING MACHINES. F. W. Lotte, Kittery, Me. [Filed Oct. 5, 1875.]



The combination of the saw holder or clamp A, auxiliary clamp C, standard *g*, rotary arbor D, set-screw E, nut F, sleeve G, set-screw *e*, adjustable gage I, T-piece H, and the file-carrier K, all constructed, arranged, and applied substantially in manner and to operate as set forth.

169,913. BOILER-TUBES. Saml. W. Martin, Springfield, Ohio, assignor to P. P. Mast, same place. [Filed Aug. 19, 1875.]



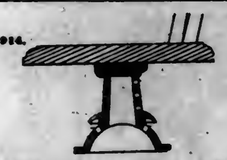
1. A tube for boilers and similar articles, having a right-hand screw-thread cut on one end, with a left-hand screw-thread on its opposite end, and a shoulder, *c*, formed on each end, as herein set forth.

2. The tool B, provided with the cutting-off lip *c*, and the neck-forming lips *c* and *c*, substantially as and for the purpose set forth.

169,914. CHAIRS FOR SCHOOL-HOUSES, &c. Patit. Milton, Cambridgeport, Mass. [Filed Aug. 2, 1875.]

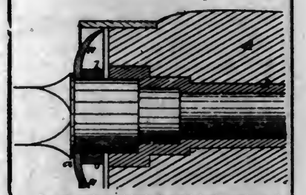
Brief.—The pedestal of the chair is formed with an air-chamber, and with a base of greater area than the air-port in the floor, over which it is to be placed. A number of ducts open laterally out of the chamber, so as to distribute the air equally around a person.

169,914.



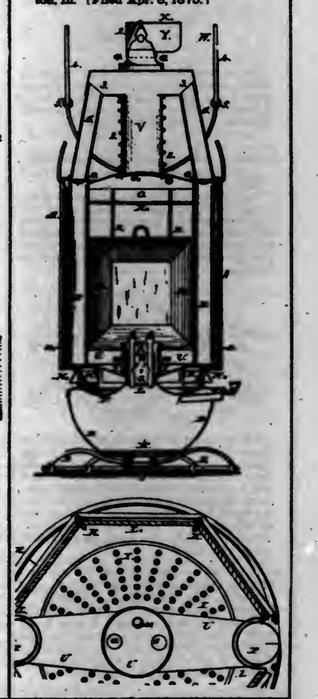
A chair or stool provided with a hollow pedestal, having a series of orifices opening out of the same, substantially as and for the purpose set forth.

169,915. DUST-GUARDS FOR CARRIAGE-WHEELS. Moses C. Nay, East Boston, Mass. [Filed Apr. 23, 1875.]



In an axle and hub in which the axle and its journal are formed in one piece, the axle provided with a shoulder, *a*, in combination with a meniscus-shaped metallic guard, E, and a washer or ring, *b*, the said guard and washer being swaged on the axle, and the guard E extending and fitting in the chamber of the hub-head, in manner as shown and described.

169,916. LANTERNS. Burke Nutting, Wheaton, Ill. [Filed Apr. 8, 1875.]



1. The lantern-pedestal B, in sections, detachably joined together, in combination with the front, substantially as and for the objects described.

2. The detachable brace-chamber H, in combination with a lantern-front and protector-bottom, as described.

3. The automatic dampers H_1, in combination with the brace-chamber H, substantially as described.

4. The perforated concave bottom I, in combination with the perforated chamber H and a burner, substantially as described.

5. The swaged vertical stripe K, in combination with the beaded plate M and the guards K_1, hinged to the studs P, substantially as described and shown.

6. The curved stripe L, in combination with the guards K, and studs P, substantially as described.

7. The beaded plate M, attached to the stripe K and L, in combination with the pannel L_1, and bottom L, substantially as described.

8. The chambers U, in combination with the perforated concave bottom I and a burner, substantially as described.

9. The canopy O, in combination with the studs P and bottom L, substantially as described.

10. The canopy O, attached to the studs P, in combination with the detachable chamber V, blocked by and attached to the square tube 3, as and for the purposes described.

11. The chamber V, in combination with the canopy O and cowl W, substantially as described.

12. The chamber V, in combination with the canopy O and bracket Q.

13. The tube 3, bisecting and attached within the open-top chamber V, as and for the purposes described, in combination with the canopy O, substantially as described.

14. The chamber V, in combination with the bracket Q and cowl W, substantially as described.

15. The pin O_1, in combination with the chamber V and canopy O, for the purposes described.

16. The cowl W, constructed, poised, and combined with a lantern-top, substantially as and for the purposes described.

17. The square tube 3, bisecting and attached within the open-top chamber V, as and for the purposes described, in combination with the passages S, substantially as described.

18. The passages S, detachably combined with the square tube 3, bisecting and attached within the chamber V, and with the canopy O attached to the studs P, substantially as described.

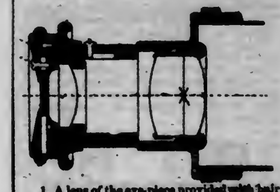
19. A passage for cooling and conducting heated air from above the flame of a lantern or lamp down toward the flame, made of paper, for the purposes described.

20. The vertical spring 2, in combination with the chamber V and detachable handle 4, as and for the purpose described.

21. The vertical spring 3, detachable, in combination with the chamber V and handle 4, substantially as described and shown.

22. The handle 4, adjustable to conform to the contraction and expansion of the spring 2, in combination with the chamber V, substantially as described.

169,917. EYE-PIECES FOR TELESCOPES. J. W. Nystrom, Philadelphia, Pa. [Filed Oct. 19, 1875.]



1. A lens of the eye-piece provided with hair-lines, inclosed therein, substantially as set forth.

2. The eyeglass-cover D, pivoted at one end, and provided with a slot, in combination with a rotating piece having a pin, substantially as set forth.

169,918. GAMES. William B. Park, Philadelphia, Pa. [Filed Sept. 11, 1875.]

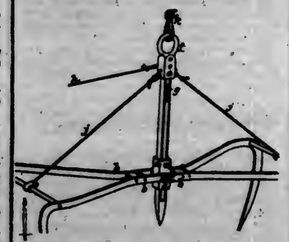
169,918.



The walking-stick A, having the recess *a*, the removable cap B, flag-staff *c*, and spring D, the several parts being combined and arranged substantially as shown and described.

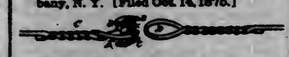
169,919. HORSE HAY-FORKS. E. Baber, Canton, Ohio. [Filed May 18, 1875.]

Brief.—Hinged forks having slotted sliding spear passing through hollow head. When loaded the forks are retained in position by engagement of spring-latch at upper part of spear in opening in head, until disengaged by tripping cord.



In combination with the forks hinged to the head *a*, and the spear sliding through said head, the cords *f* and *h*, and the spring-latch *g*, and opening *i* in the head *a*, whereby the hay-fork may be readily loaded with hay, and as readily freed or discharged of it, substantially as described and represented.

169,920. BALE-TIES. John P. Radley, Albany, N. Y. [Filed Oct. 14, 1875.]



The button F, constructed of malleable metal, with projecting lips *a a* and *c c*, separated by a double or duplex cheek or neck, *a a*, having projections *c c* between the recess of said duplex cheek or neck, in combination with the grasping-loop B, permanently secured to the said button, and the detachable loop D, capable of receiving the lip and *a* of said button at a point remote from the end of said detachable loop, substantially as described.

169,921. SCREW ATTACHMENTS FOR PICTURE-NAILS. Thomas C. Richards, West Winsted, Conn. [Filed Apr. 19, 1875.]



A male or female screw composed of a corrugated disk or plate of metal, having the screw-threads formed upon or in and intersecting its corrugations, substantially as and for the purposes herein described.

169,922. COFFIN-HANDLES. Thomas C. Richards, West Winsted, Conn. [Filed Apr. 26, 1875.]

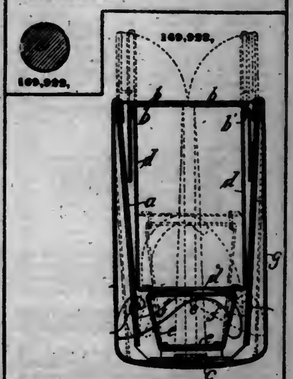
Brief.—A piece of sheet metal is locked at its edges to form a tube, and is then slipped over a wooden core. It is afterward drawn out by machinery, so that it greatly compresses the wood. When sawed off into lengths, the ends of the wood are coated with some water-proof mixture, to prevent the wood from expanding and opening the tube.

1. A coffin-handle having its bar composed of a lock-seamed tube and a wooden core, upon which said tube is drawn in such a manner as to compress the wood, substantially as herein described.

2. The bar composed of a metal tube and wooden core, having the ends of the wood sealed and rendered impervious to moisture by means of a water-proof substance or composition, substantially as and for the purpose herein described.

169,922.

169,922.



169,923. AUTOMATON-BOXES FOR MATCHES, &c. Henry Roman, Brompton, England, assignor to Wilbur Cooe Bryant, Arthur C. Bryant, Frederick C. Bryant, and Theo. H. Bryant. [Filed Oct. 22, 1875.]

1. The combination of the yielding inclosure or flaps *g*, moving tray *d*, and lid or lids *b*, substantially as described.

2. The combination of the framing or body, the levers fulcramed therein, the tray resting upon the long ends of the levers, the retracting spring connecting the tray and framing or body, and the hinged lid, these members being constructed and operating substantially as set forth, whereby the tray is moved and the lid opened by pressure upon the short arms of the levers, and the tray returned to its normal position and the lid closed when the pressure is stopped.

169,924. GRAIN-WHEEL ARMS FOR HARVESTERS. Christian H. Salzman, Quincy, Ill., assignor to himself, Andrew Wickey, and Reuben Bertner, same place. [Filed July 3, 1875.]

Brief.—Adjustment for the "grain-wheel" of a harvesting-machine.



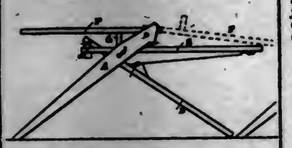
1. The grain-wheel arm B, in combination with the detent H, ratchet F, and stop *d*, substantially as set forth.

2. The grain-wheel arm B, in combination with the pivoted segmental ratchet F and detent H, substantially as shown and described.

160,926. COMPOSITIONS FOR THE DESTRUCTION OF VERMIN. James G. Steele, San Francisco, Cal. [Filed Aug. 6, 1875.]

A composition of matter consisting of wheat, sulphate of strychnine, distilled water, acetic acid, corrosive sublimate, granulated sugar, and wheat-flour, all substantially as described, and for the purposes specified.

160,927. INCLINE-TABLES. Alva H. Swain, Winchester, Ind. [Filed May 6, 1875.]



The combination of the frame A and support D, as described, with the ironing-boards B and F, all hinged together and operated substantially as specified.

160,928. PLUMB-LEVELS. Henry S. Tarr, Philadelphia, Pa. [Filed Sept. 23, 1875.]

Brief.—The plumb-level is provided with two adjustable plates attached to the main top plate, for the purpose of indicating the accuracy, looking from above or below, of the reading of plumb-scale, and a brake to attach to the plumb-wheel during transportation.



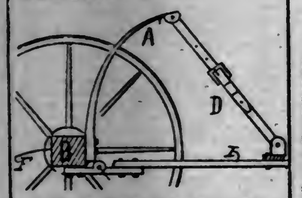
1. The combination, with plate P, of the adjustable plates L and K, for the purpose of facilitating the adjustment of the instrument, and reading its inclinations either from above or below, as described.

2. The combination, with the plumb-sight opening O, of the open adjustable plate E, as and for the purpose set forth.

3. The combination, with the stock A and wheel W, of the brake G H, constructed and operating in the manner and for the purpose stated.

160,929. HORSE-HAY-RAKES. L. A. Taylor, Shanestchen, N. Y. [Filed July 2, 1875.]

Brief.—Means for adjusting height of teeth from the ground.

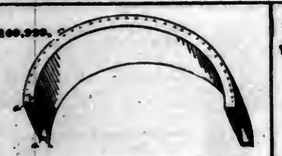


1. The combination of an axle, a spring-bar rigidly attached thereto, and means for connecting the free end of the spring-bar with any portion of the horse-rake pivotally attached to the axle, and being suitably situated as and for the purpose set forth.

2. The combination of an axle, a spring-bar rigidly attached thereto, and an adjustable means for connecting the free end of the spring-bar with any portion of the horse-rake pivotally attached to the axle, and being suitably situated as and for the purpose set forth.

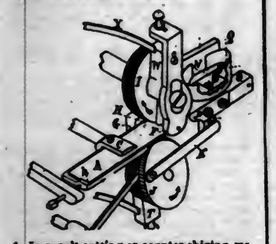
3. The combination of the axle B, carrying teeth F, spring-bar A, adjustable strap D, pivoted shafts I, and cross-bar C, as and for the purpose set forth.

160,930. BRACELETS. John N. Thomson, Providence, R. I. [Filed Mar. 3, 1875.]



The herein described method of uniting the separate parts of a bracelet or other article of jewelry by means of grooves a and turned edges b, substantially as and for the purpose specified.

160,931. WELT-CUTTING AND COUNTER-SKIVING MACHINES. Seth D. Tripp, Lynn, Mass. [Filed Apr. 27, 1875.]



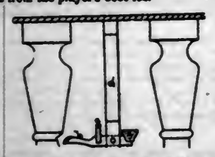
1. In a welt-cutting or counter-skiving machine, the combination of the knife A, pivot D, and adjustable legs F and G, all substantially as and for the purpose specified.

2. In a welt-cutting or counter-skiving machine, substantially such as described, the leg F, provided with the wheel Z, substantially as set forth.

3. The combination of the hopper Q, toothed sliding bar M, pitman K, and wheel J, all substantially as and for the purpose stated.

160,932. PIANO-FORTE PEDALS. Wm. F. Ulman, Boston, Mass. [Filed Feb. 2, 1874.]

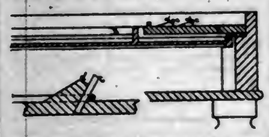
Brief.—The ordinary piano-pedal is provided with a spur on the upper face, to protect the lyre from the player's boot-toe.



The combination, with a centrally-pivoted pedal-foot, b, such as herein described, of a toe-guard, c, rising from the top of the foot a little forward of the pedal d, substantially as shown and described, and for the purpose herein specified.

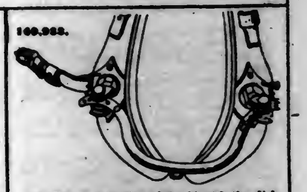
160,933. PIANO-FORTE-STRINGING DEVICES. Wm. F. Ulman, Boston, Mass. [Filed Feb. 2, 1874.]

Brief.—Each hitch-pin has an abutment to support it against the pull of the strings, preferably cast with the plate.



The brace *d*, in combination with the plate B and with the string-connecting pins *c*, for the purpose and in the manner described.

160,934. HORSE-COLLARS. Garrett Van Wagenen, Monroe, Wis., and M. D. Goble, Dubuque, Iowa. [Filed May 14, 1875.]

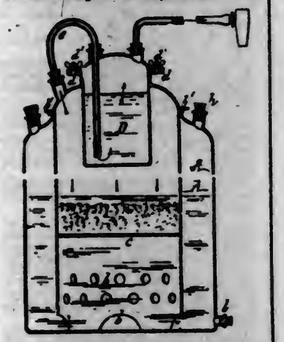


1. The combination of the U with the disk D and plate K, substantially as and for the purpose set forth.

2. The combination of the U, the disk B, the plate K, and the frames A A', with the curved bar O O', substantially as and for the purpose set forth.

160,935. APPARATUS FOR PRESERVING EGGS, &c. Louis Weismar, Buffalo, N. Y. [Filed Oct. 12, 1875.]

Brief.—The essential parts are substantially grouped in one case, composed of three apartments. When generation takes place faster than can be absorbed, the pressure of the gas driven the acid below the marble-dust, thus stopping the generation; but the pressure being removed, the acid returns. The vents in the outer casing are for escape of air.



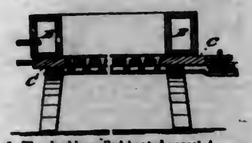
1. The combination, with the open outer acid-vessel A, of the inner removable generating-vessel B and washing-vessel D, connected with the latter, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the open acid-vessel A, of the inner generating-vessel B, provided with perforations b and perforated discharge c, washing-vessel D, and connecting depending pipe e, substantially as and for the purpose hereinbefore set forth.

3. The combination, with the acid-vessel A, generating-vessel B, and washing-vessel D, of the air-admitting vent h and air-escape vent i, arranged in the acid vessel, substantially as and for the purpose hereinbefore set forth.

160,936. MACHINES FOR CASTING CONFECTIONERY. Stephen F. Whitman, Philadelphia, Pa. [Filed Oct. 12, 1875.]

Brief.—Attaching to a box formed with double walls, adapted to heating its contents, a bottom perforated so as to deliver a stream of material into each mold. Underneath each aperture is placed a sliding gate or gates, by which the several streams can be simultaneously cut off.

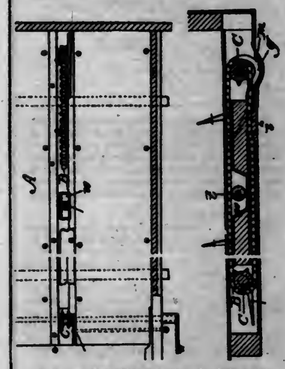


1. The double-walled heated vessel A, combined with the perforated bottom C, provided with a sliding gate or gates at the lower side, as and for the purposes set forth.

2. The double-walled vessel A, provided with detachable perforated bottoms having sliding gates on the lower side, as and for the purpose set forth.

3. The double-walled perforated bottom C, combined with the tank A and gates E, as and for the purpose set forth and shown.

160,938. HARVESTER-RAKES. J. H. Whitney, St. Louis, Mo., assignor to the firm-ner & Whitney Manufacturing Company, same place. [Filed June 7, 1875.]



1. In combination with the wheel C and the chain B, provided with the pivoted fingers, having their ends mounted in the grooves *g*, the shield *m*, arranged as shown, for the purpose of holding the chain against the wheel and insuring the proper motion of the fingers, as shown and described.

2. In combination with the chain, provided with the pivoted fingers engaging in the groove, as shown, the stationary cam or bolster *i* below the chain, as and for the purpose described.

3. In a grain-harvester, the combination of parallel conveyer belts or chains, driven from a common source, and arranged in such manner that the rear one of the series may be thrown out of action at will, while the others remain in action.

4. In combination with the chain *c*, the oil-cup *w*, and roller *t*.

160,939. BURGLAR-PROOF VAULTS. Chas. O. Yale, New York, N. Y. [Filed July 21, 1875.]



1. A burglar-proof vault having the walls, ceiling, and floor of railroad or T rails, interlocked with each other, as described, combined with a frame-work of angle-iron.

2. The combination, with such wall, ceiling, or floor of interlocked railroad or T rails, of inner bracing-strips, inserted between the rails.

3. In a combination of the T-rails and bracing-strips, the arrangement of such braces obliquely from rail to rail.

4. A wall for burglar-proof vaults, composed of interlocked railroad-rails, having the interstices between the rails filled with grouting, such as cement, sand, emery, &c., for the purposes specified.

5. In combination, the interlocked rails, the inside bracing-strips between them, and the angle-iron frame-work.

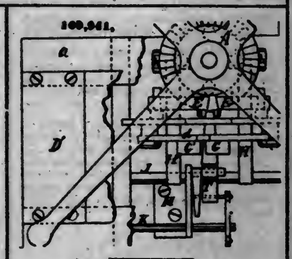
6. In a vault having walls composed wholly or in part of railway T-rails, the vestibule having the walls, ceiling or roof, and the floor, one or either, formed in one with the rails of the vault, substantially as described.

160,940. CLOTHES-DRIERS. Willis Adams, Neelyville, Ill. [Filed Oct. 6, 1875.]

1. The combination of two or more sets of pivoted arms, B, the connecting-bars C and D, the sliding band E, and the jointed wire G, with each other, and with the post A, substantially as herein shown and described.

2. The rectangular band H, having corner flanges or lug-stops, in combination with the standard A and pivoted legs I, as and for the purpose set forth.

160,941.



1. The combination, in a watchman's time-register, of a rotary drum impelled by a clock-movement or equivalent motor, a ribbon of paper or other suitable material traveling therewith, and a series of type-receiving channels, *b*, through which types may be projected against the periphery of the drum, to impress or mark the ribbon intermediate between the periphery of said drum and the inner ends of the type-receiving channels, as and for the purposes shown and set forth.

2. As a means of determining the proper positions of the printed characters upon the strip of paper, an independent scale, substantially as and for purposes stated.

160,942. KNITTING-MACHINE NEEDLES. G. J. Appleton, Philadelphia, Pa. [Filed May 24, 1875.]



A knitting-machine spring-bearded needle, provided with a slide, having a hook located within the beard, and adapted to open it, substantially as described.

160,943. WATCHMEN'S TIME-CHECKS. Liberty Aldridge, Boston, assignor to himself and H. Baker Welch, Cambridge, Mass. [Filed Sept. 16, 1875.]

Brief.—A portable time-check, in which types propelled through a series of channels against a rotating drum mark upon the paper which surrounds the drum the character necessary, and a scale to determine the proper position of the impression of the type upon the paper.



1. The combination, in a watchman's time-register, of a rotary drum impelled by a clock-movement or equivalent motor, a ribbon of paper or other suitable material traveling therewith, and a series of type-receiving channels, *b*, through which types may be projected against the periphery of the drum, to impress or mark the ribbon intermediate between the periphery of said drum and the inner ends of the type-receiving channels, as and for the purposes shown and set forth.

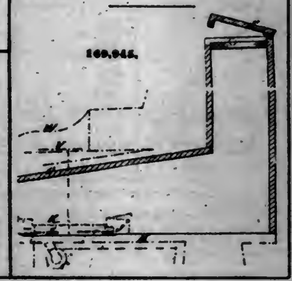
2. As a means of determining the proper positions of the printed characters upon the strip of paper, an independent scale, substantially as and for purposes stated.

160,944. CHAIR-SEATS. Loring Atwood, Rutland, Vt., assignor of one-half his right to Henry A. Hale, Brooklyn, N. Y. [Filed Aug. 7, 1875.]



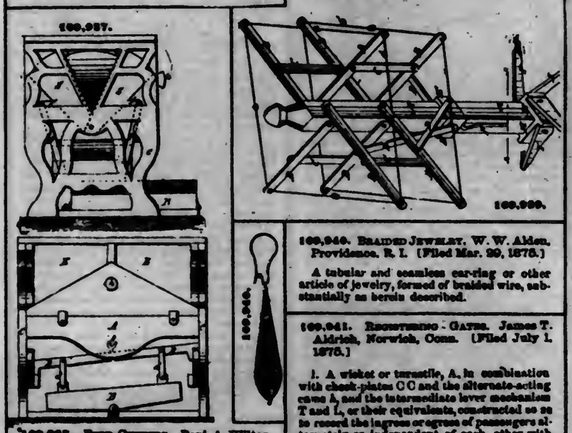
As a new article of manufacture, a chair-bottom composed of alternate strips of differently-colored wood, or different varieties of wood, united at their edges by dovetailed tongues and grooves, substantially as described.

160,945.



160,937. FEED-CUTTERS. Benj. A. Wilton, West New Brighton, N. Y. [Filed Mar. 13, 1875.]

Brief.—The hay or other material is fed down inclines to shear-cutting knives situated at opposite ends of the trough, which cut alternately by means of links connecting with and operated by a double treadle.



160,946. BRAIDED JEWELRY. W. W. Alden, Providence, R. I. [Filed Mar. 20, 1875.]

A tubular and seamless earring or other article of jewelry, formed of braided wire, substantially as herein described.

160,947. REGISTERING-GATES. James T. Aldrich, Norwich, Conn. [Filed July 1, 1875.]

1. A wicket or turnstile, A, in combination with chest-plates C C and the alternate-acting cams *h*, and the intermediate lever mechanism T and *l*, or their equivalents, constructed so as to record the ingress or egress of passengers alternately or independent of each other with any suitable register.

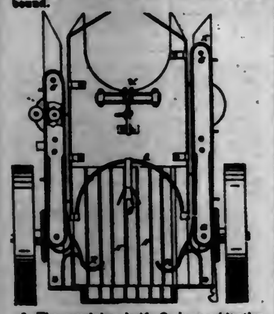
2. In combination with the above, the treadle or treading-pieces D D' and lock or stop levers H H', and dogs or pawls E E', and inclines G G', or their equivalents, so constructed as to alternately lock the turnstile as a passenger passes through the entrance.

169,945. REED-ORGANS. Geo. Hatchford, Mitchell, C. Addn. [Filed Aug. 14, 1875.]

The resonant chamber having inclined and perforated top O, in combination with top-perforated vertical chamber having grated swell S, as and for the purpose specified.

169,946. CORN-HARVESTERS. Edwin J. Blood, Vernon, Wis., and Albt. D. Hager, Chicago, Ill. [Filed July 15, 1875.]

Brief.—When the corn is dropped the slats of the platform are returned to position by the springs. The fork and curved frame sustain the corn in standing position while being bound.



1. The revolving knife C, in combination with stationary knife D, sprocket-wheel V, and revolving chain F, substantially as set forth.
2. Fork S, with frame Q, and platform N, in combination, substantially as described.
3. Spring P, in combination with slats N, substantially as set forth.

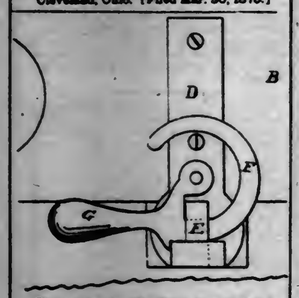
169,947. TUYERES. Frederick Bolender, Cincinnati, Ohio. [Filed Oct. 28, 1875.]

Brief.—The large slot between the bars is divided into small slots by the plate. The inclined plate deflects upward to the fire the currents of air thrown into the tuyere-box.



The bars C C and divisions a, forming slots b, and supported by legs B B, in combination with the deflecting-plate E, substantially as described.

169,948. VEHICLE-SEATS. Jacob Bond, Cleveland, Ohio. [Filed Mar. 30, 1875.]

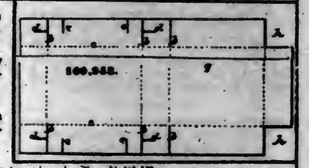


The combination, with the right-angled plate D secured to the seat, of the weighted boot F G and staple E, all substantially as and for the purpose set forth.

169,949. OINTMENTS. Jerome B. Brown and Sarah W. Brown, Willoughby, Ohio. [Filed Sept. 20, 1874.]

A compound of glycerine, arnica, woody nightshade, and nutmeg, in about the proportions and for the purpose specified.

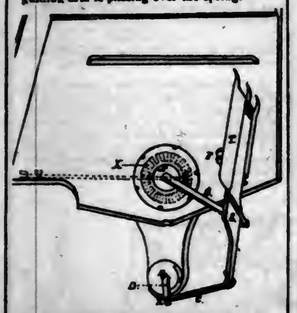
169,950. GEOGRAPHICAL GLOBES FOR SCHOOLS. Newbern N. Browne, Woodstock, Ala. [Filed Oct. 17, 1874.]



1. In combination with an inflatable and collapsible geographical globe, the rigid poles B B, substantially as shown and described, for the purpose set forth.
2. The hole C, opening D, and stop-cock E, in combination with the rigid pole of a collapsible geographical globe, substantially as and for the purposes described.
3. In a geographical and inflatable globe, the collars F F and nuts G G, substantially as and for the purposes described.
4. In combination with the inflatable globe A, the tubular shaft or pole B, through which the globe may be inflated, substantially as described.

169,951. ROTATING SLIDING RAKES FOR HARVESTERS. Robt. Brown, Dayton, and Abel Hoover, Miamisburg, Ohio. [Filed Feb. 19, 1875.]

Brief.—The check-spring cam, which is simply a plate with a spring incline upon it, acts as a restraint upon the rake, causing it to swing around to the front when the radial guiding-arm is passing over the spring.



The rotating sliding rake consisting of a fixed part, E, and a movable part, F, in combination with the radial arm S, actuated by a bevel gear, X, the controlling radial arm D, connecting-arm C, and check-spring cam S, substantially as described.

169,952. COMBINED COMPRESSION AND SWING COCKS. W. L. Brownell, Brooklyn, N. Y. [Filed Oct. 29, 1875.]



The combination of the compression-valve and the swinging faucet, substantially as herein shown and described.

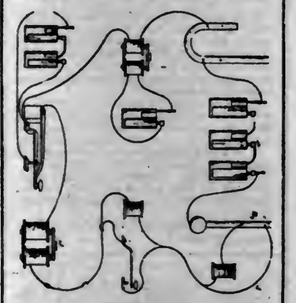
169,953. PAPER BOXES. J. P. Buckingham, Chicopee, Mass. [Filed Sept. 1, 1875.]

Brief.—The blank from which the boxes are formed are cut so that when bent into shape the corners will be of a double thickness, and will be locked together, so as to hold the sides in position.

A blank for folding boxes, having the slits *b* reaching to the line upon which the box is folded, the short slits *c* running parallel with the slits *b*, and slits *d* running at right angles to the slits *b* and *c*, whereby, when the box is bent into shape, the corners may be locked together, substantially as shown and described.

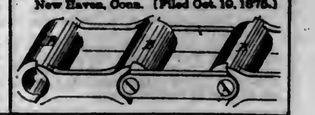
169,954. PRESSURE, ALARM, AND SIGNAL TELEGRAPHS. Chas. H. Buell, New Haven, Conn., assignor of one-half his right to G. C. Buell, West Springfield, Mass. [Filed Aug. 6, 1874.]

Brief.—The "water-barometer" is connected to the water in a dam or reservoir, so that the circuit is broken by a diminution of pressure in the reservoir, due to breakage of dam or any other cause. Includes in same circuit means for giving various alarms and signals.



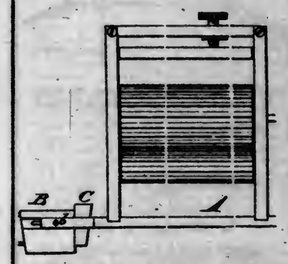
1. The combination, with a confined body of water, of the mercurial electric-circuit controller, described herein as a water-barometer, an electric circuit, and a suitable alarm, substantially as set forth.
2. The combination, with a differential relay or magnet, of a constantly-closed electric circuit through one coil thereof, a normally-closed signaling electric circuit, including the other coil thereof, and means, included in the latter circuit, for signaling by varying the tension or electro-motive force of the current therein, substantially as set forth.
3. The combination, in one main and normally-closed electric circuit, of the water-barometer, thermostat, the differential magnet, and means for signaling, independently of the water barometer, by varying the tension of the closed circuit, substantially as described.
4. The combination, with one main and normally-closed electric circuit, of the water-barometer and the fusible-alloy joints, whereby the circuit may be completely broken open by a variation of the pressure of water, or a dangerous rise of temperature, substantially as set forth.

169,955. CHAIN-BELTS. Henry Bushnell, New Haven, Conn. [Filed Oct. 19, 1875.]



The herein-described chain, consisting of the principal links, composed of two sides connected by parallel tubular bars, and intermediate links, composed of two sides, each with a stud at each end, corresponding to and inserted and secured in the tubular bars, substantially as described, so as to make connections between the principal links, substantially as specified.

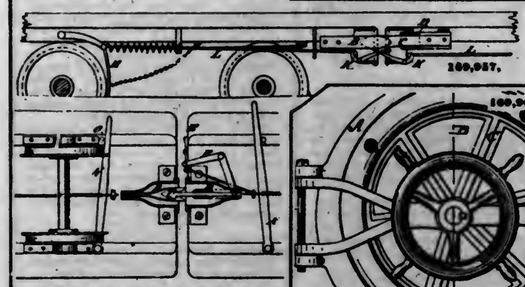
169,956. WASHING-MACHINE CLAMPS. C. B. Camp and Christian Osterhout, White Pigeon, Mich. [Filed Apr. 3, 1875.]



The sill-bar A, armed with spurs *a*, combined with the adjustable piece B, arranged at right angles with each other, pin *b*, and wedge C, set within a slot in the piece A, and bearing its plain edge against the end of the piece B, as and for the purpose set forth.

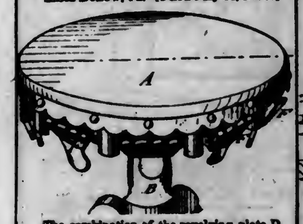
169,957. CAR COUPLINGS AND BRAKES. F. M. Campbell, Crow Wing, Minn. [Filed Sept. 11, 1875.]

Brief.—Brake actuated by spring is released when cars uncouple.



1. The combination of the double spring-coupler B, single dart-headed coupler C, and the slide D, substantially as specified.
2. The combination of the spring-brakes H, rod I, pivoted hook K, and a coupler, B or C, as shown and described.

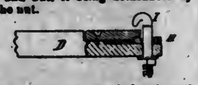
169,958. WORK-TABLES. John Cannon, Lime Hollow, Pa. [Filed July 31, 1875.]



The combination of the revolving plate D, having open pockets or receptacles F attached to its outer edge with the stand A B, as and for the purpose set forth.

169,959. ADJUSTABLE SACK-HOLDERS. H. W. Clark, Red Bluff, Cal. [Filed Oct. 2, 1875.]

Brief.—The semicircular spring, upon which the bag hangs, is held in the corresponding grooves of the plate and bolt by the action of a screw and nut, it being detachable by loosening the nut.



The plate H, made with the bolt-hole and the groove, and the bolt I made with the groove in the rear part of its head, and provided with a nut, in combination with the upper arm D of the sack-holder for securing the semicircular spring F that receives the edge of the sack to said arm detachably, substantially as herein shown and described.

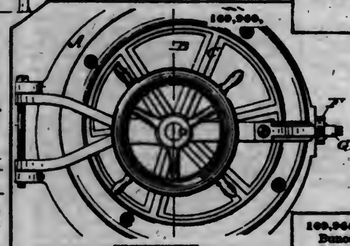
169,960. LIDS FOR GAS-RETORTS. Henry Collinson, Boston, Mass. [Filed Oct. 13, 1875.]

Brief.—The end of the cotter-bar is provided with a spring, over which a latch pivoted to the mouth-piece or seat of the lid catches. A large skeleton eccentric is fitted into the lid, and bears upon it near its circumference. The sliding eccentric motion of the lid upon its seat, produced by turning the screw, is prolonged by the spring on the cotter-bar bearing on the latch first, and gradually yielding till the bar is pressed firm against the latch.

1. The combination, substantially as shown and described, of a seat or bearing, A, and a lid, B, having a spring-pressure against, and a sliding motion upon, the seat while being fastened in place.
2. The combination of the seat A, lid B, eccentric C, screw D, bar E, spring G, and hook F, substantially as shown.
3. In combination with the lid A, constructed and operating as described, the skeleton eccentric C, mounted on the screw or its equivalent, and bearing on the edge of the lid.

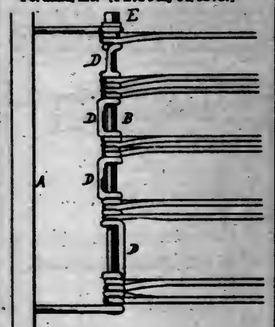
169,961. DUMPING-WAGONS. William H. Cooksey, Washington, D. C. [Filed May 12, 1875.]

Brief.—The box, being raised up by means of the pivoted levers and supported on rollers, slides to the rear and dumps its contents.



1. The pivoted levers L L, provided with the rollers M M, in combination with chains K, rod I, and lever C, substantially as described.
2. The lever B, and curved arm F, in combination with standards H, moving in vertical guides, and having the end gate hinged thereto, substantially as described.
3. The lever A, in combination with the rod T, and hooks A', substantially as described.

169,962. PLATE-RACKS. Wm. R. P. Cross, Portland, Me. [Filed July 14, 1875.]



The combination of the bar A, upright rod B, plate-holders C, separating-pieces D, and nut E, all operating together as described.

169,963. CLOTHES-FOUNDERS. B. Crowell, Belfast, N. Y. [Filed Aug. 28, 1875.]

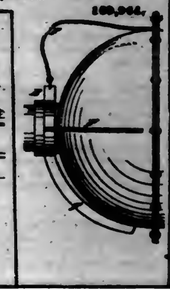
The piston E, made hollow, with an opening in its side and perforations in its lower head, and provided with a movable head, F, having a corresponding opening in its side, to adapt it to operate as an automatic soap-applier when the machine is in use, substantially as herein shown and described.



169,964. SPARK-CONVERTERS. C. K. Cullers, Dunnoston, Mo. [Filed Sept. 25, 1875.]

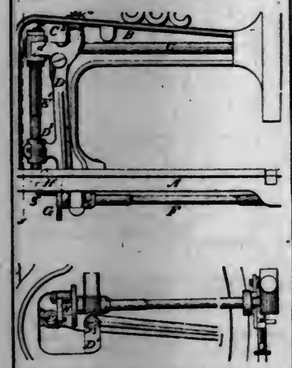
Brief.—The section is held in position by the collar and springs.

The combination of the collar E and springs F with pipe D, cap C, and hollow sphere A, substantially as specified.



169,966. SEWING-MACHINES. Cyrus E. Cushman, Philadelphia, Pa. (Filed June 26, 1875.)

Brief.—A vertical rock-shaft is journaled at the top in the needle-arm, and at the bottom in a projection of said arm extending below the bed-plate. This shaft is provided with an aperture for the passage of the driving-shaft, and with jaws, which embrace the tablet or strap of an eccentric mounted upon said driving-shaft. The sides of the strap or tablet are segments of a cylinder, to which the inner faces of the jaws are shaped. The eccentric rod secured to the tablet passes through a guide on the rock-shaft, by which its vibratory motion is controlled. The shuttle-carrier lever is secured to the rock-shaft. A crank-wheel and link connect the feed-shaft with the eccentric rod. The rotation of the driving shaft operates both the shuttle-carrier and feed device.

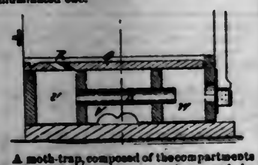


1. The combination of the operating eccentric, the cylindrically-sided strap, and the eccentric rod, with the vibrating rock-shaft, the jaws embracing the strap and the guide for the eccentric rod, substantially as set forth.

2. The combination of a feed-shaft and an eccentric rod, with a vibrating rock-shaft and an eccentric arranged upon the driving-shaft, substantially as and for the purpose set forth.

169,967. MOTH-TRAPS. Benj. F. Daniel, Quincy, Fla. (Filed July 3, 1875.)

Brief.—The trap is formed of two separate compartments, one dark the other illuminated. A tube connects them. The moths enter the dark one, and pass through the tube into the illuminated one.

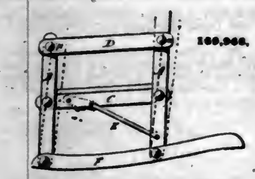


A moth-trap, composed of the compartments U, V, and W, and tube S, as shown and described.

169,967. COMPOSITIONS FOR SOAP. Wm. F. Darnaby, Nashville, Tenn., assignor to himself and E. B. Stahlman, same place. (Filed July 12, 1875.)

The compound of Kirk's double extract, Colgate's soda-soap, sal-soda, water-spirits of ammonia, ether, and oil of sassafras, substantially in the proportions and manner herein described.

169,968. FOLDING CHAIRS. Isaac N. Dana, New Haven, Conn., assignor to the New Haven Folding-Chair Company, same place. (Filed Aug. 9, 1875.)



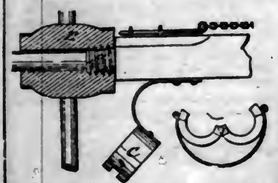
169,968.

1. In a folding chair, the combination of the rear and front posts A B, parallel to each other, the seat-bar C and the arm-bar D above, and parallel to each other, both jointed to the front and rear posts, and with the brace E hinged to the rear post, and through the link c to the seat-bar, the combination and arrangement being substantially as described, whereby the joint between the said brace and link, when the chair is set up, will pass above the line of its two ends, substantially as set forth.

2. In a folding chair, the combination of the rear and front posts A B, parallel to each other, the seat-bar C, and the rocker F, both jointed to the front and rear posts, parallel to each other, and with the jointed brace E hinged to the rear post and the seat-bar, substantially as described, so that the joint in the said brace, when the chair is set up, will pass above the line of its two ends, substantially as set forth.

169,969. WAGON-BRAKES. Henry Decker, Orange, N. J. (Filed Oct. 23, 1875.)

Brief.—As the collar is removed the hub screws up.



1. The combination, with the axle of a vehicle having a threaded section at the junction of the square part and journal end of the same with an interior-threaded wheel-hub for screwing up on the axle when allowed to pass on the threaded portion of the same, substantially in the manner and for the purpose set forth.

2. The combination of a vehicle-axle having a threaded portion of the journal end adjoining the square part of the axle, with a spring-collar secured around the same, and with the hub of the wheel, substantially as and for the purpose set forth.

3. The combination of the spring-collar encircling the threaded portion of the journal end of the axle with a locking device and releasing mechanism for detaching the collar, and producing brake-action of wheel by screwing up of wheel-hub, substantially as shown and described.

169,970. STILLS. Henry Deymann and Edward Melchers, Toledo, Ohio. (Filed Sept. 11, 1875.)

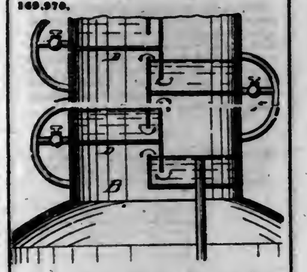
Brief.—The chambers of the refining-column are placed alternately on opposite sides thereof, and communicate with each other at the center of the column. The overflow and draw-off pipes of each chamber are on the outside of the column, the draw-off pipes being provided with stop-cocks.

1. The column of a refining-still constructed of two series of alternating and communicating chambers arranged on opposite sides thereof, substantially in the manner and for the purpose set forth.

2. The alternating chambers of the column, communicating by central spaces formed by alternating horizontal and vertical partition-plates, substantially as specified.

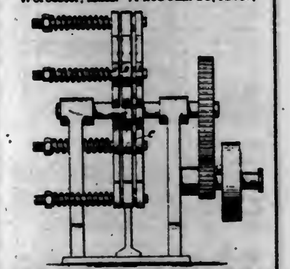
3. The alternating chambers of the column, having overflow and drain pipes arranged at the outside of the column, substantially as set forth.

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169,971. BOOT-CRIMPERS. Wm. H. Eddy, Worcester, Mass. (Filed Jan. 30, 1876.)

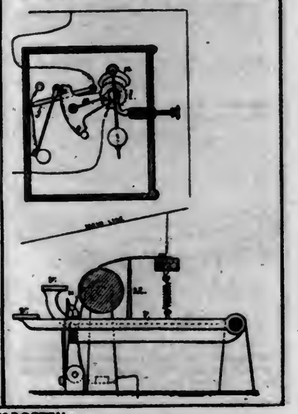


1. The combination, with the carrier or operating shaft D and annular jaws B B, of a former or formers, C, attached to the shaft and arranged to rotate between said jaws, and capable of independent lateral adjustment, substantially as and for the purpose set forth.

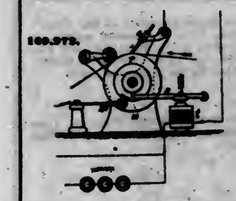
2. In a machine for crimping boots and shoes, the combination, with the jaws B, of a former, C, adjustably attached to a rotating shaft, working with a constant forward action, and a clamping device, I, operated against the edge of said former by the friction of the jaws against said clamp, substantially as and for the purpose set forth.

3. In a boot-crimping machine, annular or curved jaws B B, provided with crescent-shaped grooves b b, in combination with a former or brake, C, mounted upon and operated by a rotating shaft and a clamp or guard mechanism for holding and protecting the leather along the front edge of said former, substantially as herein set forth.

169,972. ELECTRO-SIGNALING INSTRUMENTS. Thos. A. Edison and C. Batchelor, Newark, N. J. (Filed Mar. 23, 1875.)



169,973.



169,973.

1. The combination, with the segmental circuit-closing weight, of the switch *f*, for the purposes set forth.

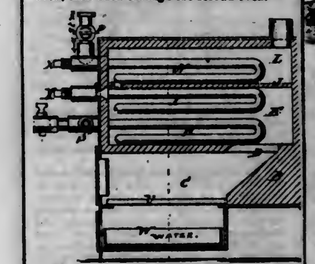
2. The combination, with the circuit-closing segmental weight, of the ratchet-wheel *i*, escapement *n*, pendulum *o*, and spring 16, for the purposes set forth.

3. The receiving-instrument, composed of a drum and stylus for chemical paper, and electro-magnet and armature-lever stop, and a circuit-closer insulated from the drum when the parts are at rest, for the purposes set forth.

4. The combination, with the circuit-closing cylinder *u* and keys *v*, of the springs *x*, held up by the studs 32, and the stop *w*, actuated by the frame *v'*, substantially as set forth.

169,974. GAS APPARATUS. J. H. Hobbein, Brooklyn, N. Y., assignor to himself and H. A. Green, New York city. (Filed Sept. 25, 1875.)

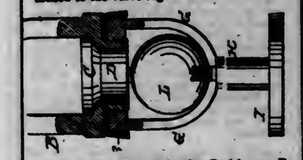
Brief.—The retorts are connected together at their ends, which project outside of the walls of the furnace, and the ends are provided with screw-plugs, which may be removed for cleaning the retorts. A horizontal partition in the heating-chamber divides it into two ovens, and causes the products of combustion to pass forward through the first oven, then back through the second oven.



The combination of furnace C, having passage D, the oven E, having oil-retorts F G and steam-retorts H I, the partition J, having passage K, and the oven L, having oil-retorts M and steam-retorts N, all arranged substantially as and for the purpose specified.

169,975. PUMP-PLUNGERS. Jacob S. Ragle, Palmyra, Pa. (Filed July 24, 1875.)

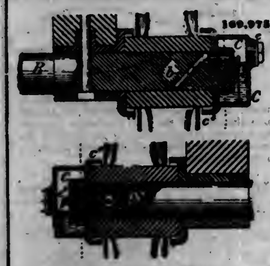
Brief.—A stem and guide foot or disk is attached to the valve-cage.



The combination of the ring C with arms B, stem A, and screw-collar D, the annular ring E with female screw-threads, arms G, stem H, and guide-foot I, the cup-shaped packing J, and ball-valve L, all substantially as set forth.

169,975. CAR-AXLE BOXES. L. B. Faught, Philadelphia, Pa. (Filed Aug. 27, 1875.)

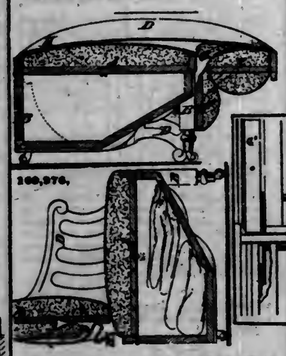
169,975.



169,975.

The combination of the oil-reservoir C in the cap C, the recess in the axle, the tube *c*', the wick, and wire *c*', substantially as herein-before described and set forth.

169,976. SOFA-BEDSTEADS. J. B. M. Fifield, Philadelphia, Pa. (Filed Aug. 10, 1874.)



169,976.

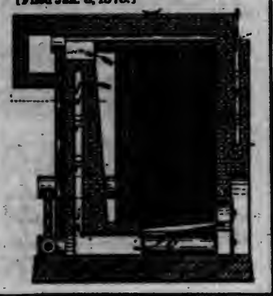
1. The swinging or movable back, composed of the fixed upper section E, upholstered on both sides, and the lower section F hinged to the same, in combination with the seat portion A and base B of a sofa-bedstead, substantially as herein described.

2. The combination of the pivoted ends D, with the seat A, the base B, and the back E F, made in two parts, substantially as herein shown and described.

3. The combination of a loosely-attached protecting-sheet H, with the seat and movable back of a sofa, as and for the purpose specified.

4. The pad or cushion G, combined with the back and seat of a sofa, substantially as described, to fill the cavity between the rear portion of the upper part of the back and the seat.

169,977. SECTIONAL BOILERS. Jos. Firmenich and Flavius P. Stiker, Buffalo, N. Y., assignors to Jos. Firmenich, Geo. Firmenich, and Frank Firmenich, same place. (Filed Jan. 8, 1876.)

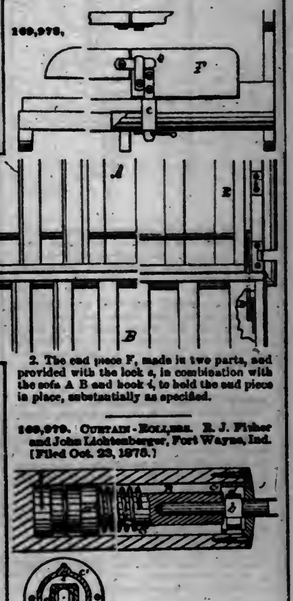


1. In a sectional steam-boiler, a series of steam and water drums, a corresponding series of mud-drums, and rows of upright tubes connecting them, in combination with grate or fuel surfaces, arranged between the tubes above the mud drums, substantially as specified.

2. In a sectional steam-boiler, such as herein-before described, where the mud-drums are below the fire-line, circulating-tubes connecting the steam and water drums with the mud-drums outside of the combustion-chamber, substantially as specified.

169,978. SOFA-BEDSTEADS. Fredk. Fleckbeck, Chicago, Ill. (Filed June 12, 1875.)

169,978.

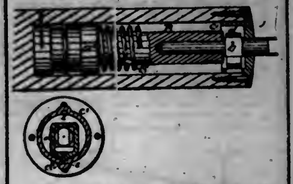


169,978.

1. The frame of the main sofa A, having cross-bars E E', the end pieces G G', rod C, arms D, and shell B, in combination with the plate *a*, provided with pin *b*, substantially as and for the purpose herein set forth.

2. The end piece F, made in two parts, and provided with the lock *a*, in combination with the sofa A B and hook *d*, to hold the end piece in place, substantially as specified.

169,979. CURTAIN-ROLLERS. R. J. Fisher and John Lichtenberger, Fort Wayne, Ind. (Filed Oct. 23, 1875.)



The combination of the roller A, the spindle B, the spring S, the loose collar *d*, with its pawl, and the catch or catches *c*, when the spring, the loose collar and pawl upon the spindle, and the pawl-catch in the rotating roller are all inclosed within said roller, and are all constructed and arranged to operate substantially as described.

169,980. CHECK-ROW ATTACHMENTS FOR CORN-PLANTERS. Geo. C. Flagg, Columbus, Ill. (Filed July 17, 1875.)

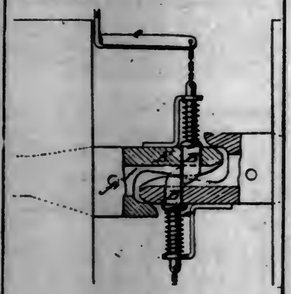


1. The L-shaped arms G, hinged to the ends of cross-bars F, fixed on the axle, and springs H, for holding the same extended horizontally from the wheels, as shown and described.

2. The combination of the parallel disks W W, and rod and lever for adjusting them on the axis, with the friction-wheel M, as shown and described, for the purposes specified.

3. The combination of the sleeve B, the disk I, the swiveled screw J, the gear-wheels K L, the two movable disks W, the screw-wheel N, and the sleeve O with the drive-wheel D, the axis B, and the markers F O H, substantially as herein shown and described.

169,921. CAR-COUPLINGS. Oscar H. Ford, Meridian, Miss., assignor to himself and Milner B. Clinton, Dallas, Tex. [Filed Aug. 26, 1875.]

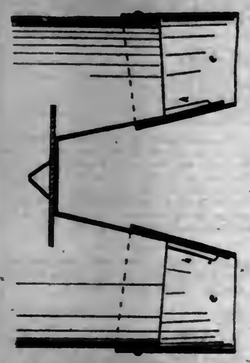


1. An automatic car-coupling composed of draw-heads with projecting side parts forming an L-shaped space, and provided with laterally sliding and interlocking spring-jaws, substantially in the manner and for the purpose set forth.

2. The L-shaped draw-head provided with a recess at the inner side of the forward-extending part, said recess being widest at the rear part, narrowest at the jaw part, and tapering at the front part for guiding and retaining the jaws, substantially as specified.

169,922. FEED-REGULATORS. Francis M. Ford and John F. Hicks, Bristol, Tenn. [Filed Sept. 7, 1875.]

Brief.—The lower sections of feed-regulator project outwardly, and are loosely bolted to the upper section, to render them adjustable to any-sized stone, and are held out against stone by springs between them.



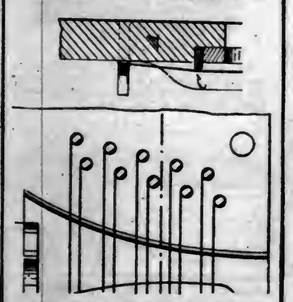
The combination of the casings d, provided with downwardly-projecting flanges h, the lower sections e, loosely bolted to the upper sections, and springs n, which hold the lower sections of the tube against the stone, all relatively arranged as and for the purposes described.

169,923. CLAMPS. George Frost and Geo. H. Phelps, Boston, Mass. [Filed Nov. 1, 1875.]



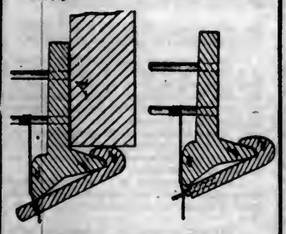
A clasp-hook constructed of one piece of metal, having the spring-hook at the bottom and the clasp at the top, the latter guarded by a spring-tongue, which is struck from the center of the sheet, substantially as herein shown and described.

169,924. UPRIGHT PIANOS. Ernst Gabler, New York, N. Y. [Filed Sept. 11, 1875.]



In upright pianos, the combination, with the wrest-plank and the string-plate, of an interposed isolating agraffe-bar, secured rigidly against the wrest-plank by the compound pressure of the strings on the plate, substantially in the manner and for the purpose specified.

169,925. PIANO-FORTE ACTIONS. Ernst Gabler, New York, N. Y. [Filed Sept. 11, 1875.]



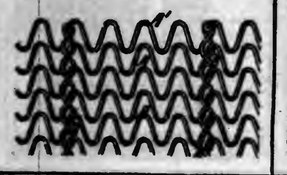
1. The combination of the string-plate, having raised bridge, front concavity, and bottom shoulder or rib, with an agraffe provided with a hook-shaped base part, and held in position by the pressure of the strings on the top part, substantially as specified.

2. The string-plate provided with concave front part, in combination with the agraffe, extending in front of the same, to form an isolating air-chamber, substantially as specified.

3. An agraffe provided with a hook-shaped base part, substantially as specified.

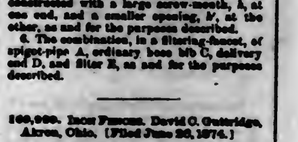
169,926. WIRE FABRICS. Alba C. Garrett, Boston, Mass. [Filed May 26, 1875.]

Brief.—The spiral warp-wires are at intervals confined in loops formed by two transverse-wires bent across each other, and having their ends secured to the selvage-wires of the warp.



A wire fabric consisting of the spirally-coiled warp-wires A, connected together by the bent wires B, interlaced with each other at intervals between said warp-wires, substantially as and for the purpose set forth.

169,927. STEM-WINDING WATCHES. Chas. D. P. Gibson, New York, N. Y. [Filed Mar. 3, 1875.]



In combination with the swinging bridge B b, and with the wheel *D d d'*, the spring-click C, arranged to perform the double function of a hook-pawl for the ratchet A, and of a spring for the bridge B b and its connections, as herein specified.

169,928. FAUCETS. Dexter W. Goodell, Florence, Mass. [Filed Oct. 11, 1875.]



1. A filtering-faucet, wherein the delivery rod or mouth is turned to open the passage to the filter or ordinary delivery-nozzle, or forms the cock or valve to the device, as described.

2. In a filtering-faucet, in combination with the downwardly-bent spigot A, the head B, constructed on one side with an ordinary hose-bib, and at the other with a filtering chamber or end, whereby, by turning the head around in one direction, filtered water may be obtained, or in the other direction the ordinary flow, as and for the purpose described.

3. The filtering-chamber E, constructed slim at both ends, with screw-head and removable screw-head *e'*, and provided in its interior with central filtering material F and wire-gauze screens G at each side of the filtering material, as and for the purposes described.

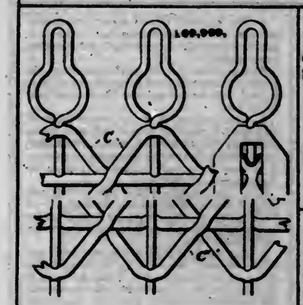
4. The combined filter and faucet constructed with two separate delivery-mouths, adapted to be used separately and independently of each other by operating or bringing the delivery head or end itself around in position to open the passage through the spigot and head, as and for the purposes described.

5. In combination with the ordinary hose-bib C and filtering-chamber E, the cylinder H, constructed with a large screw-mouth, A, at one end, and a smaller opening, *b'*, at the other, as and for the purposes described.

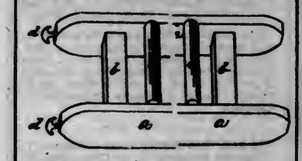
6. The combination, in a filtering-faucet, of spigot-pipe A, ordinary hose bib C, delivery end D, and filter E, as and for the purposes described.

169,929. IRON FENCES. David C. Cuteridge, Akron, Ohio. [Filed June 26, 1874.]

An iron fence, composed of vertical pickets A, top and bottom horizontal runners B B', and ornamental scrolls, looped, continuous top and bottom pairs of stringers C and C', all constructed, arranged, and combined substantially as and for the purposes described.



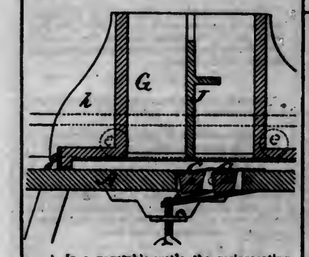
169,930. PORTABLE SKIDS. G. B. Harrington, Salem, Mass. [Filed Oct. 16, 1875.]



In combination with the frame a a, braces b b, and rollers c c, the T-shaped bolts d d, substantially as set forth and described.

169,931. VEGETABLE-CUTTERS. Samuel Hensk, Jr., Lebanon, Pa., assignor of one-half his right to A. B. Hensk, same place. [Filed Sept. 30, 1875.]

Brief.—The holder is divided by a movable partition, is guided by friction-rollers, impinges in its reciprocations against a rubber cushion at the end of the rails, and is provided with rubber scrapers to keep the working parts clean.



1. In a vegetable-cutter, the reciprocating holder G, divided by a movable partition, J, and guided by means of anti-friction rollers e, working in grooved ways B B, substantially as described.

2. The combination of a holder, G, and the elastic wipers *f f*, substantially as described.

3. In combination with the holder G, the sides h, which extend beyond the holder, and impinge against a cushion, p, at each forward stroke, substantially as described.

4. In a vegetable-cutter, the combination of the two cutting-blades O O, adjustable simultaneously by a thumb-screw, D, substantially as specified.

169,932. PAPER BOXES. David L. Hawkins, Elizabeth, N. J. [Filed May 26, 1875.]

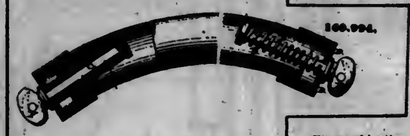
As a new article of manufacture, a pill-box having printed on the periphery of the cover, or on the periphery of the body of the box, twelve numbers, corresponding to twelve hours of a day, which numerals are arranged at regular intervals apart around the box, and a pointer to indicate the hour for taking a dose of medicine, substantially as described.



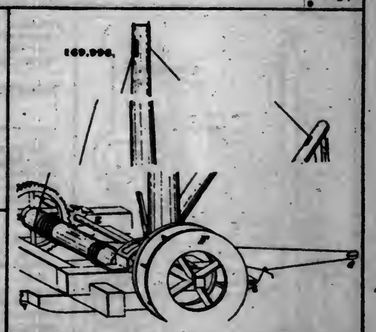
169,933. FENDERS. Jacob Hirner, Philadelphia, Pa., assignor of one-half his right to Clarence A. Hart, same place. [Filed Mar. 10, 1875.]

A fringe consisting of pendants formed wholly of thin sheets of pliable or plastic material, embossed in any ornamental design, substantially as set forth.

169,934. ELASTIC BACK-BANDS FOR HARNESS. John W. Hollis, Cincinnati, Ohio, assignor of two-thirds his right to American Warden, C. C. Campbell, and Edwin C. Bush, same place. [Filed Apr. 1, 1875.]



The combination, with the bent tube of the hook or eye rods and springs, substantially as described, and for the purpose set forth.

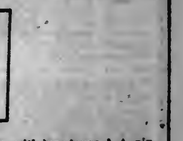


1. The sill A, with beveled or sloped ends, socket W, for pivot of the crane, the crane and windlass, both arranged on the same sill.

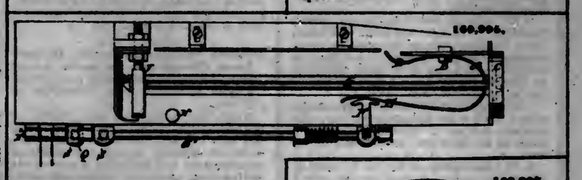
2. The water-wheel F, with friction-surface or widened rim for the brake, the rims extending farther from center of wheel than the paddles T, paddles of smaller shape on both sides, and thin at outer edge, as shown.

3. The brake with the arm M, having two right angles and two oblique faces, as herein shown.

169,937. EXTENSION-TABLES. A. D. Jones and S. L. Jones, Kirksville, Ky. [Filed Oct 8, 1875.]



The combination, with lazy-tongs A A, pivoted to ends C C, of the centrally-placed clamp G and slotted bar F, as and for the purpose specified.



169,935. LOOM-SHUTTLE CHECKS AND BINDERS. Seth T. Hurd, Goshen, N. H., assignor to himself and Thomas Sanderson, Lawrence, Mass. [Filed July 24, 1875.]

1. The combination of the U shaped shuttle checking and binding spring A, formed in one piece, with the head-block C, its arm, and the binding-finger F, all arranged and operating substantially as and for the purpose set forth.

2. The combination of the slotted arms P Q and adjustable stud E with the binder-finger shaft G' and the dagger-shaft N', substantially as specified.

3. The combination of the picker-rod G, adjustable supports O J, head K, and nut H, all constructed and arranged as set forth.

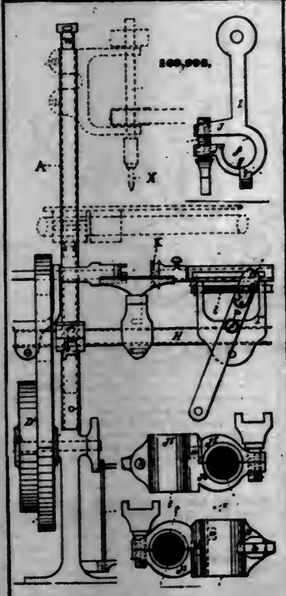
4. The combination of the guard-stud H, adjustable side board M, U-shaped spring A, and head-block C, all arranged as and for the purposes set forth.

169,936. MACHINES FOR OPERATING DEMIJOHNS. Andrew Jackson, Mohawk Valley, Cal. [Filed May 22, 1875.]

Brief.—The nozzle end of the piston-shaft, through which motion is imparted to the windlass, turns upon its end a water-wheel attached, which is operated by a jet from a hydraulic washing-nozzle.

169,938. COMBINED UNIVERSAL LATHES AND BELT-SAWS. Hiram A. Kimball, Philadelphia, Pa. [Filed June 26, 1875.]

Brief.—The machine may be used for boring, turning, or sawing, by slightly changing the arrangement of the different parts.



1. For clamping together tubes or rods at right angles to each other, a double clamp, shown in Figs. 3 and 4, having parts J' and J'', with bearings f f at right angles to each other, the parts J'' having pins a, which fit corresponding holes in the part J', substantially as above set forth.

2. The combination of the tubular shear H, double clamp J J', and standard A, for the purpose set forth.

3. The standing head I, having two curved bearings, f f', at right angles to each other, and a clamping plate or cap with two corresponding bearings, whereby the head may be connected with a tube or rod either parallel or at right angles thereto, substantially as and for the purpose set forth.

4. The pumper-head F, having a single clamp, shown in Fig. 5, in which the cap J'' has a pin, r, at one end, and is confined by means of a screw at the other end, substantially as set forth.

5. The combination of the rod P, clamp Q, and double clamp J J' with the standard A and adjustable shelf O, for holding the latter in its adjusted position, as set forth.

169,999. PUMPS. Wm. S. Lossey, Lithopolis, Ohio. [Filed Sept. 7, 1875.]

Brief.—A double lifting-pump, re-enforced and supplied, in deep wells, by a force-pump applied as a lower point to their suction-tube.



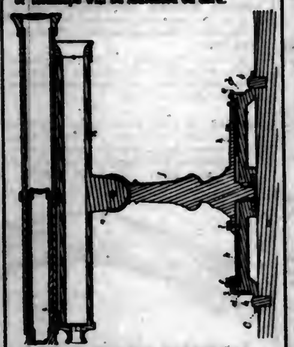
A combined force and lift pump, embodying in its construction a pair of cylinders, a a', formed in a single casting or framing, A, and provided with removable perforated seats d', valves d', and stationary plungers O O, and an external force-pump, L, having removable perforated seats d'', valves d'', piston l, and a re-ciprocating piston-rod, k, the plungers O O and piston l being operated by a revolving crank-axle, F, substantially as shown and described.

170,000. COMPOUNDS FOR LINING FOR MACHINE-BEARINGS. Lebbeus W. Lathrop and Theodore A. Weber, New York, N. Y. [Filed Nov. 2, 1876.]

As an improved article of manufacture, a lining for machinery bearings, consisting of a compound of animal glue and graphite, with or without a backing of cloth, leather, or other equivalent substance, substantially as specified.

170,001. MANUFACTURE BEARING-INDICATORS. Joseph D. Leach, Pinckneyville, Mo. [Filed May 17, 1876.]

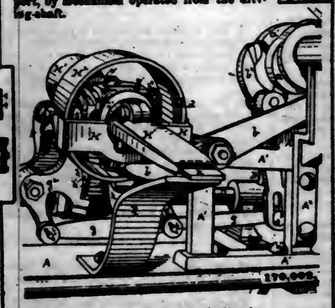
Brief.—Indicator so placed that a line through the pins shall be parallel to central fore-and-aft line of vessel. The index-hand is attached to movable standard, so that the bearing of an object brought into field of view of telescope will be indicated on card.



In a bearing-indicator, the combination of bed d, lubber-mark c, locking-screw f, cam e e, rotating standard j, locking-screw l, pointer m, pivoted sighting-tube n, and cord k, substantially as described and shown.

170,002. NAIL-PLATE FEEDERS. Matthew Leach, Youngstown, assignor to himself and John Smith, same place, and John G. Decker, Coitsville, Ohio. [Filed Oct. 5, 1875.]

Brief.—The intermittent semi-rotation of the feeding-tube is effected by a band-connection with two arc-shaped oscillating levers, which are operated, through the medium of connecting-rod and levers, by a cam on the driving-shaft. A pair of automatically-working feed-rollers advance the plate through the same-piece while the tube is being drawn back and turned over, to clear the moving cutter, and vertically reliant to clear the guide-support, by mechanism operated from the driving-shaft.



1. As a means of rotating the feeding box or tube, a pair of bent levers, g', and band h', in combination with a reciprocating rod, g, substantially as described.

2. The frame P, P', and H, carrying loosely pivoted therein the feeding box or tube, in combination with a rock-shaft, D, substantially as set forth.

3. The levers b' b', in combination with the wiper c', connecting-rod g, bent levers g', band h', and feeding box or tube H', substantially as set forth.

4. The combination of the pivoted frame H, ring or circle plate H', formed with cam-groove d, feeding box or tube H', yoke e, with stud e', pawl r, ratchet-wheel r', fixed-rollers r s, spring r, and bearing-pins r', substantially as and for the purposes set forth.

5. In combination with a pair of feed-rollers o o, arranged within the feeding tube or box, a yoke, e, and cam-groove d, and ratchet and pawl, arranged and operative substantially as set forth.

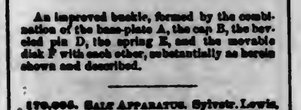
6. The frame P P', made in two parts and bolted together, whereby, by the interposition of a washer, the angle of feed may be varied at pleasure, the combination of these parts with the angularly-arranged feed-tube being substantially as described.

170,003. PRESERVING MILK AGAINST INJURY BY TRANSPORTATION. Jno. H. Lester, New York, N. Y. [Filed Oct. 26, 1875.]

The process herein described for preserving milk against injury by transportation or otherwise, which consists in forcing milk into an air-tight vessel, thereby preventing, as nearly as possible, a body immovable within the receptacle containing the same, substantially as specified.

170,004. REVERSIBLE LOCK-BUCKLES. L. Lawine, Brooklyn, N. Y. [Filed Sept. 20, 1875.]

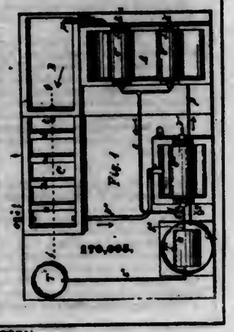
Brief.—A revolving disk carries a beveled pin. When the strap is drawn in the direction of the incline, it forces down a spring which holds the disk, and slips past the pin. When the strap is drawn against the straight side of the pin it is held securely. The disk is operated by a projecting lever to release the strap.



An improved buckle, formed by the combination of the base-plate A, the cap B, the beveled pin D, the spring E, and the movable disk F with each other, substantially as herein shown and described.

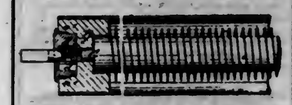
170,005. SALT APPARATUS. Sylvstr. Lewis, Rochester, N. Y. [Filed Mar. 17, 1876.]

1. The platform F upholding the vats A B C, vat B, provided with the induction-pipe c', vat C, having the partitions s and s' by which the chlorides are separated from the brine, pipes p'' and o for drawing off the purified brine, and pipe n for expelling the chloride of calcium, in combination with the cylinders c' c'', all arranged in the manner substantially as shown and set forth.



2. In combination, the vat T, provided with the cylinder c, by which exhaust steam is used for heating crude brine, vat T, by which the same further-exhaust steam is again used for heating water for the steam-boiler, and the cylinders c' and c'', arranged substantially as shown and described.

170,006. CURTAIN-FIXTURES. W. H. Maine, Abington, Mass. [Filed Oct. 16, 1875.]



1. As an improvement in spring curtain-rollers, the improved spindle-locking device, consisting of a curtain-roller with fixed cam-sleeve at the end, in combination with a sliding pin seated in a perforation of the spindle within the sleeve, to arrest the spindle when the roller is detached from the supporting-bracket, substantially as specified.

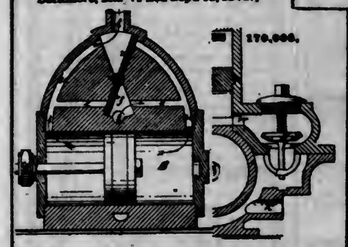
2. The spindle of a spring curtain-roller, provided with a guide-hole for the sliding locking-pin at a point within the cam-sleeve of the roller, the pin-hole being in vertical position when the spindle is seated in the brackets, substantially as specified.

170,007. STOP-MOTION FORKS FOR LOOMS. John McGaffrey, Jr., Lawrence, Mass., assignor of one-third his right to S. M. Steadman, same place. [Filed Aug. 30, 1875.]



The combination of the continuous wire B B and the wire D, having their points of contact with the thimble bent or shaped to conform thereto, with the thimble or arbor-rest A, substantially as and for the purpose herein described and set forth.

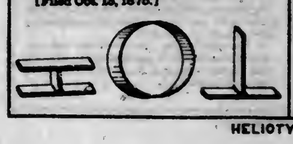
170,008. STEAM-PUMPS. Jas. McCormick, Greenfield, Ohio, and Sylvester B. Kelly, Baltimore, Md. [Filed Sept. 18, 1876.]



1. The pendulum-valve I, constructed with one arm longer than the other, in combination with the inlet and outlet ports w t and passages s s, the whole arranged in connection with the pump-barrel B, substantially as and for the purpose set forth.

2. The check-valve E, arranged in relation with the inlet-port W, pendulum-valve I, and passages s s of the pump-barrel, substantially as and for the purpose set forth.

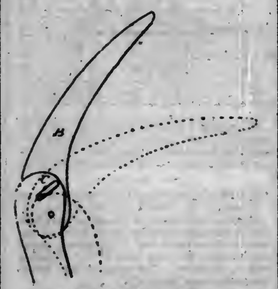
170,009. METALLIC ENDLESS PAPER-FASTENER. John W. McGill, Brooklyn, N. Y. [Filed Oct. 13, 1876.]



As an improved article of manufacture, an endless fastener or binder, constructed out of cylindrical metal or any other suitable material, bent and formed substantially as herein represented, the same to be applied for the purposes herein set forth and described.

170,010. CORN-CUTTERS. P. McI. McLeod, Sun Prairie, Wis. [Filed Aug. 7, 1875.]

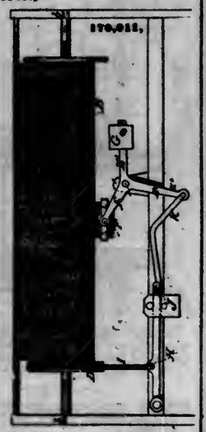
Brief.—The blade is adjustable at different angles to the convex grooved handle, and held in position by a set-screw.



1. A corn-cutter handle having a convex grooved and pivoted adjustable sickle shaped blade, B, substantially as described.

2. The combination of the convex grooved helve A, adjustable blade B, and thumb-screw C, substantially as described and set forth.

170,011. SLEY-OFF MECHANISMS FOR LOOMS. John H. Moore, Fisherville, N. H. [Filed Aug. 11, 1876.]



The combination, with the warp-beam B, of the grooved frictional band D, frictional cord I, lever H, sliding weight J, rod K, triple-armed lever E E' E'', rod F, and weight G, constructed and operating substantially in the manner described and specified.

170,012. DENTISTS' CHAIRS. John B. Newbrough, New York, N. Y., assignor to S. S. White, Philadelphia, Pa. [Filed Apr. 23, 1875.]

1. The combination of the rack, the chair-supporting frame projecting laterally therefrom, and the pinion mounted on the frame, and meshing with and binding in the rack, these members being constructed and operating substantially as set forth, whereby the weight of the frame automatically locks it at any height to which it may be adjusted.



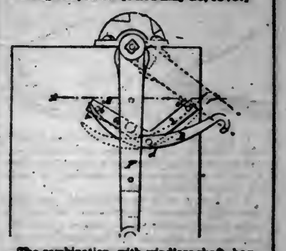
2. The combination of the rack; the supporting-frame projecting laterally therefrom, the adjustable horizontally-turning frame, mounted on the supporting-frame, and the chair pivoted to uprights on said turning-frame, these members being constructed and operating substantially as set forth.

3. The combination of the supporting-frame, the horizontally-turning frame, the chair pivoted near the line of its arms to uprights on said turning-frame, and the adjustable link connecting the chair-back with the turning-frame, these members being constructed and operating substantially as set forth.

4. The combination, in a dentist's chair, of the fixed bottom section of the back, the central guide thereon, the movable back section, its central bar sliding in the guide, and the set-screw for clamping the sliding bar and movable section at any desired elevation, these members being constructed and arranged for joint operation as set forth.

5. The combination, in a dentist's chair, substantially as hereinbefore set forth, of a head-rest mounted on a cross-bar, a loop-bracket, to which said cross-bar turns and moves endwise, which bracket also turns and moves endwise on its supporting-arm, and a set-screw, which clamps the loop-bracket and head-rest firmly upon the supporting-arm in any desired position.

170,013. CRANE-STOPS. Wm. H. Phillips, Bridgeton, N. J. [Filed May 20, 1875.]



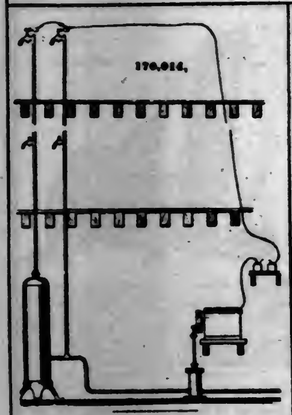
The combination, with windlass-shaft, having contiguous squared and cylindrical portions, of the crank F, slotted sliding-locking piece K, having sided a, and the pivoted bevel catch B, and fixed steps f f, all constructed and arranged as shown and described, to operate as specified.

170,014. ELECTRICAL WATER-RAISING APPARATUS. Elias Pouvert, Jr., New York, N. Y. [Filed Sept. 13, 1875.]

Brief.—Dispenses with the reservoir commonly in use when the head of water is insufficient, and puts the water-raising motor in motion by closing the electric circuit at the faucet where the water is needed.

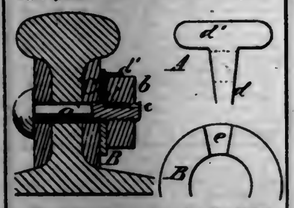
In combination with an electric motor-pump and water-distributing pipes, the wire 3 from the battery, and the circuit-closing mechanism adjacent to the respective faucets, for the purposes and substantially as set forth.

170,014.



170,014. NUT-LOCKS. C. B. Bagar, North Manchester, Ind. [Filed Aug. 21, 1875.]

Brief.—The washer is slotted for the locking T-plate.



The T-shaped pawl A, having the tongue *d* and head *d'*, and the washer B, having the radial groove *c*, arranged between the nut *b* and fish-plate C, in combination with the bolt *a*, having the groove *e* and the nut *b*, all constructed as set forth.

170,015. BOOTS AND SHOES. Wm. B. Rice, Quincy, Mass. [Filed Sept. 27, 1875.]



1. A toe-tip or pugneron having an upper-edge finish, *b*, and thickened and formed in one and the same piece with a sole outside the apron of a boot or shoe, substantially as and for the purpose set forth.

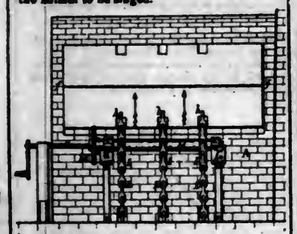
2. A boot or shoe so constructed that the upper-edge finish *b* of its toe-tip, struck up as described, shall form one and the same continuous or unbroken upper edge or surface, *c*, substantially as specified.

170,017. APPLE-SLICERS. I. C. Richards, Farmington, Me. [Filed Sept. 25, 1875.]

In an apple-slicer, the reciprocating slide C, having collar *g*, a guiding-spike, *g'*, and cover B, in combination with spaced concentric cutting-rings E E' E'' E''', substantially as specified.

170,018. SMELTING-FURNACES. Benj. Rose, Cleveland, Ohio. [Filed Aug. 30, 1875.]

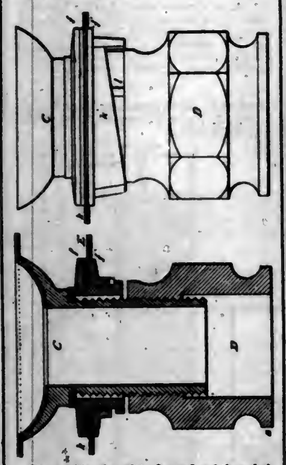
Brief.—An apparatus in which endless chains are carried over guide-wheels passing through the reverberatory chamber carrying the animal to be singed.



The wheels I I', guide-wheels K, chains L, reservoir J, and furnace B, constructed and arranged to operate substantially in the manner as described, and for the purpose set forth.

170,019. COUPLINGS. G. W. Rowell, Mount Upton, N. Y. [Filed July 24, 1875.]

Brief.—The device is designed for discharge-spouts for milk-pans, the latter being in connection with a water-vat. The tube is threaded and flanged, and has flanged nut engaging with it, as shown. The coupling-rings secure the posts to the water-vat.

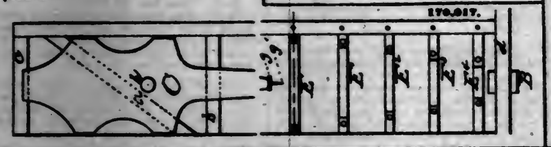


The combination of the flanged and threaded tube C, the nut D, and the coupling-rings *k k'*, having the flanges *f f'*, he engagement-lugs *l*, and the cams *m*, substantially as specified.

170,020. RAIL FOR LAND-SIDE PLANES. Joshua Sandage, Moline, Ill. [Filed Nov. 27, 1874.]



170,017.



170,020.



As a new article of manufacture, rolled bars for plow land-sides, of the form in cross-section shown and described—that is to say, bars plain or flat on one side, and having projecting from the other side two flanges or ribs, one at each edge, said flanges presenting sloping sides, both externally and internally, in relation to the flat surface, and terminating by their convergence in an edge—substantially as and for the purpose shown and specified.

170,021. HARNESS-ROSETTES. Saml. S. Sargeant, Newark, N. J. [Filed June 17, 1874.]

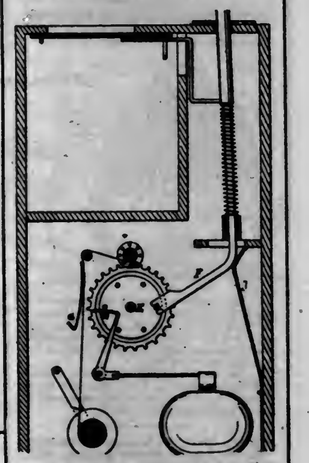




As a new article of manufacture, a harness-rosette composed of a sheet-metal top or front piece, A, ornamented by perforating or shaping a sheet-metal back piece, B, perforated to receive the attaching loop or shank, a filling-disk, C, and a loop or shank, D, inserted through the back plate, and bent over the inner surface thereof, the several parts being united by bending the edge of the top piece around the edge of the back piece, substantially as herein specified.

170,022. RECORDING AND SIGNAL FARE-BOXES. Edward H. Schnell, South Norwalk, Conn. [Filed Mar. 20, 1875.]

Brief.—A recording and signal device for fare-boxes. It is operated by a push pawl, which engages with pins on the face of a rotating disk, the said disk having teeth on the circumference, meshing into a pinion attached to a roll on which the paper is wound. By every downward movement of the push-pawl, the paper is moved a certain distance, and caused to be punctured by a pricker, which is thrown against the paper by the pins on the face of the disk, and at the same time an alarm is sounded by a gong, the tongue of which is attached to the pricker.



1. The puncturing device, formed on or connected with the arm of the signal-hammer, substantially as specified.

2. The combination, with bell-hammer and rotor, of the wheel B, push-pawl F, rest G, point H, and springs *f* K, all substantially as shown and described.

170,023. HORSE-HITCHING DEVICE. Johns Schoonmaker, New York, N. Y. [Filed Oct. 20, 1875.]



The combination of the devices B O D E and the hooks F, with the reins A of a harness, and with the shafts or body of a wagon, substantially as herein shown and described.

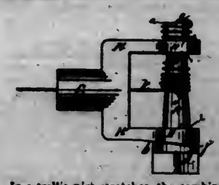
170,024. WIRE FENCES. Thos. S. Sanbury, St. James, N. Y. [Filed Sept. 21, 1875.]

Brief.—Slotted blocks of wood are slipped upon the wire, and socketed into each other, thus admitting the employment of lighter and cheaper wire, and protecting it from rust.



The curves D, with stems *a*, sockets *f*, and longitudinal slot *g*, in combination with the wire C and posts A A, substantially as and for the purpose set forth.

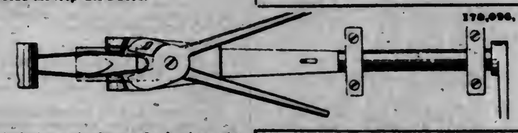
170,025. GRAPE-VINE TRELLISES. Thomas S. Sanbury, St. James, N. Y. [Filed Apr. 28, 1875.]



In a trellis-wire stretcher, the combination, with a forked framing, E, constructed with arms E' E', having bearings *i i* and ratchets *j*, and supported by a hollow stand, G, of the windlass-shaft A, formed with ratchets *a*, square end *d*, and holes *e* and *f*, leading from the periphery of the windlass-shaft A to the extremity thereof, all constructed and operating substantially as and for the purpose described.

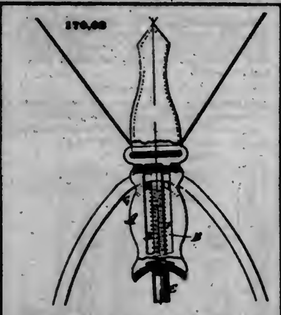
170,026. TOOLS FOR BENDING BALE-HOOPS. Benjamin R. Springsteen, Schodack Landing, N. Y. (Filed Sept. 20, 1875.)

Brief.—A heat wire, with its open ends confined in a stationary vise, is laid over the forming-block of the tool, and its looped end pressed together in pinchers. The tool is then revolved by a crank, twisting together the free ends, whereupon the hinged plate, to which the pinchers are attached, is turned over to bend the loop into a hook.



A device or implement for bending wire into bale hooks, made of rotating stock, with a raised shaping-piece at one end, and a hinged base-plate with clamping-jaws pivoted to said base, for twisting and bending the wire into hooks of the required shape, substantially in the manner and for the purpose set forth.

170,027. SCARFBOARDS. William Stokes, New York, N. Y., assignor to himself and Henry Heath, Brooklyn, N. Y. [Filed July 3, 1875.]



1. The combination, with a door, A, having a groove in its lower end, of the wood-n strip C, rubber tube D, springs *a a*, and guide-pin *b*, working in the slots *a*, substantially as and for the purposes herein set forth.

2. The stub E and revolving wheel G, in combination with the weather-strip C D, substantially as and for the purposes herein set forth

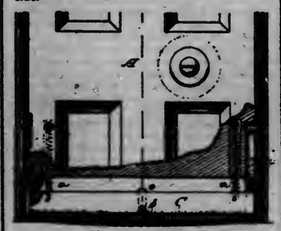
170,028. HEEL-TIPS. Frank L. Straw, Boston, and Benjamin F. Sparrow, Cambridge, Mass.; said Sparrow assignor to H. F. Sparrow, Boston, Mass. [Filed June 28, 1875.]



A heel or shoe tip constructed with penetrating fastening-points, substantially as herein described, as an article of manufacture.

170,029. WEATHER-STRIPS. Wm. Stettins, Waupaca, Wis. [Filed Oct. 22, 1875.]

Brief.—The weather-strip is held up from the threshold by springs when the door is open, and as the door is closed the strip is forced down by a stub attached to one side of the door-jamb, and a wheel or disk at the other side.



170,030.

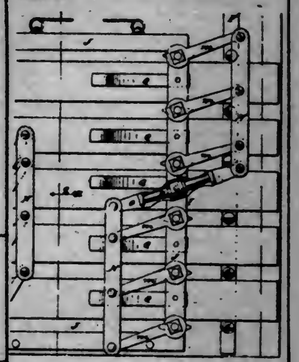
A device or implement for bending wire into bale hooks, made of rotating stock, with a raised shaping-piece at one end, and a hinged base-plate with clamping-jaws pivoted to said base, for twisting and bending the wire into hooks of the required shape, substantially in the manner and for the purpose set forth.

170,030. CIGAR-MACHINES. Charles Talbot-clarke, San Francisco, Cal., assignor of two-thirds his right to William W. Leigh and Amos S. Warner, same place. [Filed May 17, 1875.]

Brief.—The cigar is formed in a space surrounded by double series of rubber-covered rollers, one series journaled at each end, and the other at one end only, the other ends yielding to slight irregularities of substance on pressure, the two classes of rollers revolved at different rates of speed.

170,031. LATHING-MACHINES. Charles B. Trimble, New York, N. Y. [Filed June 13, 1874.]

Brief.—The laths are placed in a gage frame, thus spacing them properly. The machine is then placed upon them, the turn-buttons projecting between and below the laths. The handles which operate the buttons are then turned, forcing the laths up against the retaining springs, where they are securely held until nailed to the wall. The machine is then removed.



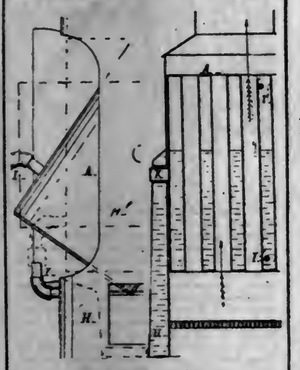
1. The combination, in a lath taking up and clamping apparatus, of the frame J, pivoted headed buttons K, arms m, connecting-bars N, central pivoted bars O, and handles P, the buttons and their connecting-arms being located in double sets at both sides of the end bars of the frame, as and for the purpose described.

2. In combination with the lath taking up and clamping apparatus herein described, the lath-retaining springs Q, arranged as shown, for the object stated.

3. The case A, having hinged bars F and pins G, for separating and arranging the lath in one or more tiers, substantially as shown and described.

170,032. REVERSIBLE STEAM-BOILERS. S. S. Vail, Keokuk, Iowa. [Filed May 1, 1875.]

Brief.—The boiler is suspended within an inclosed frame upon trunnions, by which the ends are reversed. The lower part of said frame forms a feed-water heater. The boiler and heater are connected by means of detachable pipes, which hold the boiler in position when in use.



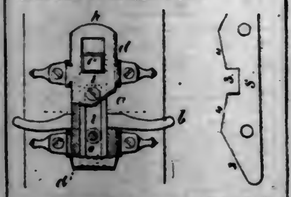
1. The upright boiler with upright flues, hung on bearings to reverse ends, substantially as set forth.

2. The reversible boiler A, hung on trunnions K, and fixed firmly in position to its supporting-frame H' when in use, by detachable connections, substantially as set forth.

3. The combination of the reversible boiler A, hung on trunnions K in frame H', with feed-water heating-chamber B, and detachable pipes I I', substantially as set forth.

170,033. GATE-LATCHES. John Vetterlein, Plainfield, N. J. [Filed Oct. 22, 1875.]

Brief.—A vertically-moving latch and latch-block provided with handles, a slotted case that sustains each latch, a cap to exclude moisture, and rollers around the supporting-screws, upon which the latch moves, are combined. The end of the latch projects through the case, to enter a notch in the double-inclined catch on the opposite post.



1. The vertically-sliding slotted bar *a*, latch-block *c*, and handles *b*, in combination with the slotted latch-case *d*, cap-plate *h*, screws *l*, and rollers *e*, as and for the purposes set forth.

2. The catch-plate *s*, made with the descending inclines 4 4 between the notch 3 and the ascending inclines 2 2, for the purposes set forth.

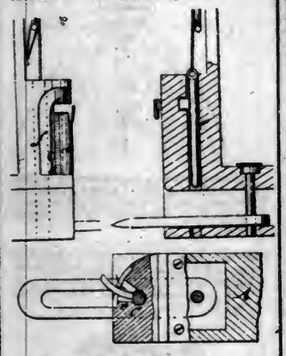
170,034. WINDOW-SCREENS. H. B. Walbridge, Brooklyn, N. Y. [Filed Oct. 29, 1875.]



The combination of the keepers F and the open ring springs E, with the rollers D and the gauze C, to adapt the screen to be applied to a window, substantially as herein shown and described.

170,035. CAR-COUPLINGS. T. A. Watson, Bentonville, Ark. [Filed Oct. 2, 1875.]

Brief.—The concussion of the cars causes the bent arm to turn and drop the pin.

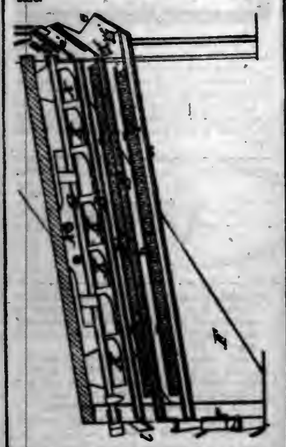


1. In automatic car-couplings, a draw-head having a front recessed and slotted top standard, in combination with a sliding coupling-pin having curved and spring-acted arm for retaining the pin in raised position and dropping it when released from the shoulder, substantially as specified.

2. The top part or guide-standard of the draw-head, being rounded off at one side for the projecting arm, and of square shape at the other side to come in contact with the arm of the coupling-pin and drop the same for coupling, substantially as specified.

170,036. APPARATUS FOR TREATING BLOOD, TANK-OFFAL, &c. Thomas Webber, Chicago, Ill. [Filed Sept. 18, 1875.]

Brief.—The blood, having first been coagulated by steam heat in a tank, is placed on a heated plate, which is armed with spikes. A similar plate, similarly armed, engages with the first, and the blood is thus thoroughly dried and disintegrated. Upon the exit of the material from between these plates, it is carried by suitable elevators to a hopper, from which it passes between another pair of similar plates. It finally passes over a heated plate, upon which it is moved from side to side by a beam having a series of shovels on its under side.

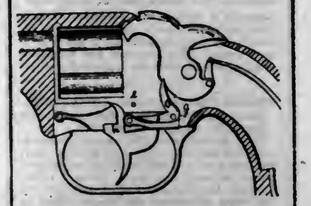


170,037. BUCKLES. Paul Whitney, New York, assignor to Louis Sanders, Brooklyn, N. Y. [Filed Oct. 11, 1875.]



The combination, with the buckle-plate *c*, loop *b*, and pawl *a*, of the hinges *i* and bent arm *r*, the latter connected with the pawl, and having one end passed through a hole in the plate *c*, as and for the purposes set forth.

170,038. LOCKS FOR FIRE-ARMS. George B. Williams, San Francisco, Cal. [Filed Dec. 24, 1874.]

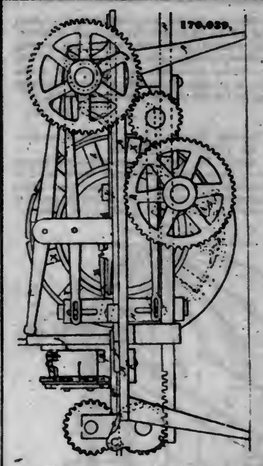


The combination of the trigger *s* and *g* with the pawl *a* and *f*, the spring *h*, and the stop-pin *c*, substantially as and for the uses and purposes hereinbefore described.

170,039. PAPER-BOX MACHINES. John B. Williams, New Haven, Conn., assignor to Hiram Stevens, same place. [Filed Apr. 7, 1875.]

Brief.—Paper from the web passes between the scoring, cutting, and feed rolls, under the paste-box, thence under the reciprocating knife, which severs the blank, when it is seized by the nippers, which draw it over the die. The wheel carrying the formers then rotates, forcing the sheet into the die, when the side and end folders advance and complete the box. The former-wheel then rotates one notch to bring another former into the die, while the end of the completed box is pressed by the segmental plate, and the pressure-fingers hold the sides until the paste is dry. At the proper time the box is delivered by the stripper-fingers.

170,039.



1. The combination, with the formers X X, of the presser-arms M', having the incline or cam M' formed thereon, constructed and operating substantially in the manner described and specified.

2. The combination, with a reciprocating paste-box, of the pasting-tubes *p p*, through which the gum or paste is ejected by a pumping or valve mechanism, operated by the descent of the box, constructed and operating substantially in the manner described and specified.

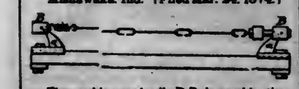
3. The reciprocating nippers E, in combination with the reciprocating paste-box and knife, constructed and operating substantially in the manner described and specified.

4. The combination, in a paper-box machine, of a series of formers, X, a die, H, through which these formers pass, a series of folders, and a system of devices for retaining the boxes in shape on the formers while drying, constructed and operating substantially in the manner described and specified.

5. The combination, in a paper-box machine, of a series of formers, X, a die, H, through which these formers pass, a series of folders, a system of devices for retaining the boxes in shape on the formers while the paste or gum is drying, and a device for stripping the boxes from the formers, constructed and operating substantially in the manner described and specified.

6. The combination of a pair of incising, scoring, and feeding rollers, a reciprocating knife and paste-box, a pair of nippers, a series of formers, a die through which these formers pass, a series of folders, a system of retaining devices, and a stripping device, constructed and operating substantially in the manner described and specified.

170,040. SPRING BED-BOTTOMS. A. Younge, Mishawaka, Ind. [Filed Mar. 24, 1874.]



The rocking rod rails B B, in combination with the hooks *c c*, arranged and operating in the manner described, and for the purpose specified.

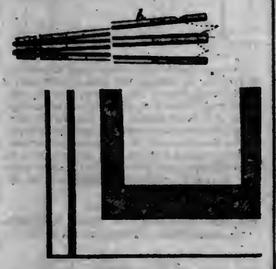
170,041. SCREW-FASTENINGS. Jesper O. Ahlstrom, Williamsburg, N. Y. [Filed Aug. 30, 1875.]

Brief.—Improvement on Patent No. 13,177, July 3, 1855. The expansible side pieces are operated upon at both ends at the same time.



The combination of the supplementary and free double wedge *g* follower *f f* with the double wedge *b*, the expansible side pieces *c c*, and the bolt B, substantially as specified.

170,042. PHOTOGRAPH-ALBUMS. Henry T. Anthony, New York, N. Y., assignor to E. and H. T. Anthony & Co., same place. [Filed Aug. 20, 1875.]



The photograph-album sheets, united together by the sheet of cloth-lined paper, that is folded, and forms both the back hinge and the faces of the adjacent pasteboard bodies, as set forth.

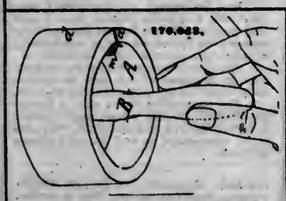
170,043. COMBINED BLOTTERS AND PAPER-WEIGHTS. Wm. H. Babcock, Homer, N. Y. [Filed Sept. 20, 1875.]

Brief.—The blotting-paper is held upon the cylinder by a wedge-shaped key, which enters from the under side of a longitudinal slot formed in the cylinder. The handle is fitted loosely in and extends part way through the cylinder, thus permitting the latter to rotate upon the former, and also serve as a weight when not used for blotting purposes.

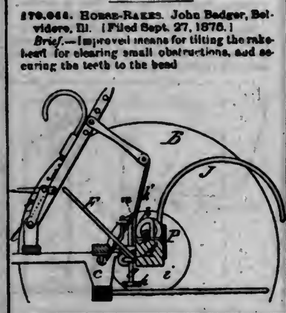
1. The key *m*, adapted to enter the slot *s* from the inside and hold by friction, as described, in combination with the cylinder A, the grooves *s s'*, and the blotting-paper *d*, as specified.

2. As a new article of manufacture, the paper-weight and blotter described, consisting of the cylinder A, carrying the attached blotting-paper *d*, and the loose shaft or handle B, projecting at one end only, as specified.

170,044.



170,045.



170,044. HORSE-RAKES. John Badger, Belvidere, Ill. [Filed Sept. 27, 1875.]

Brief.—Improved means for tilting the rake-head for clearing small obstructions, and securing the teeth to the head.

1. In a horse hay-rake mounted on two transporting-wheels, the thills C C, hinged to the top of the axle, in combination with a compound locking-lever for holding down or raising the lock-teeth at will, to be operated by a tripping-lever, F, for releasing this locking-lever when it is desired to discharge a gathered load, substantially as described.

2. In combination with an axle carrying rake-teeth, and having the draft-thills hinged to its upper side, the lever P, connecting-rods *f f*, levers carrying friction-rollers *h h*, and the plates *i i* on transporting-wheels B B, substantially as described.

3. In combination with the locking-lever *j*, formed with a longitudinal slot where the same is attached to the standard *l*, the double lever T and *i*, to produce a slight lengthening or shortening of said rod *j*, and thus slightly raise or lower the rake-teeth J without throwing the locking-lever out of lock.

4. The spring *m* on the thill-frame, in combination with the arm *h'*, axle, and locking-lever, substantially as described.

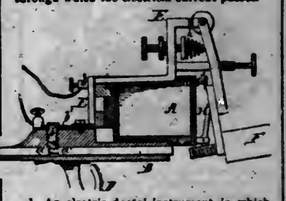
5. The hand-lever P, pivoted to a hinged-piece, *c*, for allowing a forward, backward, and lateral vibration thereof, in combination with the oscillating rake-head A, having thills C pivoted to it, as described.

6. The guard-plate P, rigidly secured to the under face of the rake-head, in combination with the curved teeth J, provided with coils *p* immediately over the guard-plate, substantially as described, and for the purpose set forth.

7. In combination with the spring-coils *p* and hooks *p'* on teeth J, the plates *s'*, slotted and lipped as described, and the removable key-rod N, for holding the teeth in their places, substantially as described.

170,045. ELECTRO-MAGNETIC DENTAL PLUGGERS. Wm. G. A. Bonwill, Philadelphia, Pa. [Filed July 21, 1873.]

Brief.—Frame provided with handle or guard to assist in holding. Pin that holds plugging-tool in instrument attached to an adjustable plate to compensate for wear. The circuit-breaking lever, which is struck by the mallet at every blow, has an adjusting-spring, through which the electrical current passes.



1. An electric dental instrument, in which the insulated coils A A' are arranged close together, with the tool B between and at one side, and the guard D upon the same side, and extending beyond the tool, all as and for the purpose set forth.

2. The combination, with the instrument, of a guard or handle, D, by which the said instrument may be held in a proper position for operation in either the right or left hand, substantially as herein described.

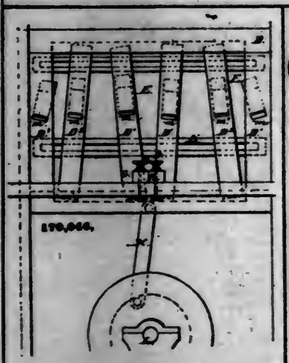
3. The combination of the socket, open at both ends, the tool B fitting the socket, and having shoulders *a a'*, and a spring-retaining pin beveled at one edge, as and for the purposes set forth.

4. The retaining-pin *b*, secured to and rendered adjustable upon the frame, with a plate, *b'*, from and toward the mallet F, substantially as and for the purpose specified.

5. The combination, with the said lever H, of a spring, *s*, the power of which can be increased or diminished as required, and through which the current is caused to pass, as specified.

170,046. BOX-TRIMMING MACHINES. Christ Bopp, Green Point, Brooklyn, N. Y., assignor to himself and Jos. H. Swift, same place. [Filed Oct. 27, 1875.]

Brief.—The overhanging ends of boards used in the construction of boxes can be rapidly trimmed off by means of a series of laterally-adjustable planing-cutters, mounted in a vertically-reciprocating frame, and set in oblique positions to the line of their motion, in connection with suitable feeding and operating mechanism.



1. The slotted bars E and the adjusting-screws d^3 d^3, in combination with the nosh D and adjustable pieces D^1 D^1, as and for the purpose specified.

2. The adjustable pieces D^1 D^1, in inclined positions in the nosh D, with irons m^1 m^1 at right angles in said pieces, as and for the purpose specified.

170,047. FASTENERS FOR THE MEETING-RAILS OF SASHES. Elias K. Brockenridge, West Meriden, Conn. [Filed Oct. 21, 1875.]

Brief.—A beveled-edge locking-bolt placed within, and combined with, the swinging arm, in such manner as to automatically engage with the vertical bar of a suitable striking-plate, together with certain locking-recesses of the base-plate and a peculiar arrangement of the spring to give the bolts longitudinal movement.

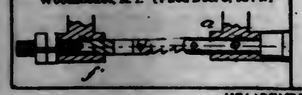


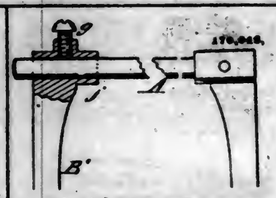
1. In combination with the sweep C *a*, pivoted upon the base-plate A, and engaging with the bar *f* of the striking-plate F, the locking-bolt D d^2, working longitudinally within said sweep, and engaging automatically with said bar *f*, in the manner and for the purpose substantially as specified.

2. In combination with the sweep C *a*, pivoted upon the base-plate A and engaging with the bar *f* of the striking-plate F, the locking-bolt D d^2, working longitudinally within said sweep, engaging with said bar *f*, and provided with a stud, d^{2a}, which engages with the recesses a' and a'' of said base-plate, substantially as and for the purpose shown.

3. In combination with the central portion *d* of the bolt D, and with the stud E, the spring E, encircling said stud, having its ends contained within the transverse notches *s s* of said part *d*, and operating to move said bolt longitudinally, substantially as and for the purpose set forth.

170,048. SCROLL-SAWS. Wm. H. Briggs, Woonsocket, R. I. [Filed Dec. 6, 1874.]





170,046.

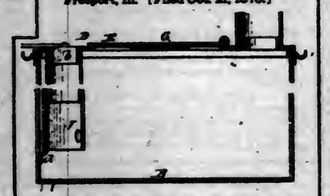
The saw-frame herein described, consisting of the arm B, having the arm A and tube *a* for the reception of the stem *b*, arm B^1, provided with tubes f f^1, stem b^1, and adjusting-screw *g*, in combination with the saw D, having a perforation at one end, and an oblique slot at the other end for the reception of pins, whereby the saw-frame may be adjusted to saws of different lengths, and at the same time may be readily removed, substantially as described.

170,049. COG-WHEELS. Chas. B. Brooks, Marshall, Mich. [Filed Oct. 12, 1875.]



The covering of solo-leather A, or other suitable material for the cogs of gear-wheels, as herein described, and for the purpose set forth.

170,050. FEED-COOKERS. J. S. Brubaker, Freeport, Ill. [Filed Oct. 21, 1875.]



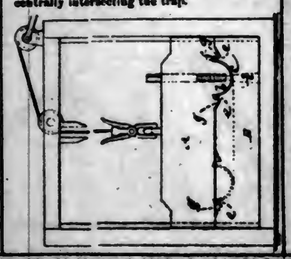
1. In a feed-cooker, the draft-tube I, provided with a cast-iron bottom piece, J, and held removed from the body of the cooker by means of the collar *b* and hook *d*, substantially as and for the purposes herein set forth.

2. The hooked legs or projections A, extending from the sides of the body A, substantially as and for the purposes herein set forth.

3. The combination of the cone A B, having draft-tube I, with bottom piece J, collar *b*, hook *d*, top D, and hinged lid E, with mica G, all substantially as and for the purposes set forth.

170,051. MACHINES FOR MAKING SHEET-METAL TRAPS OR BENDS. Wm. A. Butler, New York, N. Y. [Filed July 24, 1875.]

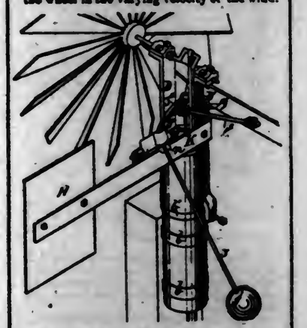
Brief.—For making a trap in two similar portions, with seam extending directly along the trap, and from front to back, in a plane centrally intersecting the trap.



The female die B, having ledges *c* along either edge of its forming chamber or cavity, in combination with the male die A, having cutters *g* correspondingly arranged on its face in relation with the former thereon, for operation in relation with each other, substantially as and for the purposes herein set forth.

170,052. WINDMILLS. M. Carter, Princeton, Ill. [Filed May 11, 1875.]

Brief.—The vane and the wheel are hinged or pivoted relatively to each other, so as to approach and recede to or from each other automatically, and for regulating the speed of the wheel in the varying velocity of the wind.



In combination with the side vane H, located at a point between the vertical axis of the wind-wheel and the tail-vane, the levers J J^1, link *i*, rod K, and stops $n n'$, for regulating the position of the vane G, substantially as set forth.

170,053. MEAT-CUTTERS. George L. Chadborn and John B. Chadborn, Newburg, N. Y. [Filed Sept. 9, 1875.]

Brief.—The revolving cutter is adjusted at the end of the trough by set-screws at each side. A false bottom with claws is automatically moved as a feeder by means of a screw and traveler in line beneath—said screw rotated by a tappet on the periphery of a balance-wheel, which carries the cutters, and held to duty by a spring-cushion at its opposite end.



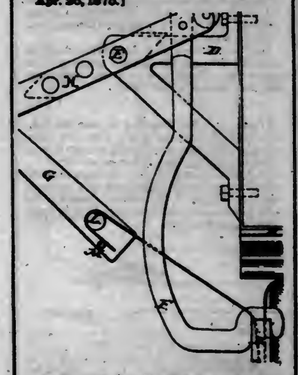
1. In combination with the pivotal bearing-pin C, made longitudinally adjustable within the leg B^1, and with the washer F, surrounding said pin between its shoulder *e* and said leg, the nut e', arranged to draw said bearing-pin inward, and the set-screws G and G_1, arranged to press said washer and pin outward, substantially as and for the purpose shown.

2. The false or movable bottom H, fitted loosely to, and moved longitudinally within, the box A, and provided at its end with the spurs h and h_1, substantially as and for the purpose set forth.

3. In combination with the false or movable bottom H, provided with the downward-extending arm h', the screw I, journaled beneath the box A, and provided with the star-wheel K, and the leg D^1, attached to the balance-wheel, and engaging with said star-wheel, substantially as and for the purpose shown and described.

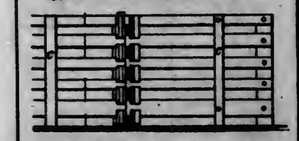
4. In combination with the screw I and its bearing *i*, the spring i', placed within the latter, and bearing against the end of said screw, substantially as and for the purpose specified.

170,054. BALE-BAND-TIGHTENING DEVICE. Chas. H. Chase, New Orleans, La. [Filed Apr. 26, 1875.]



The lever H, bars F and G, in combination with the brackets D and rod E, the whole being constructed and arranged substantially as described, and for the purposes specified.

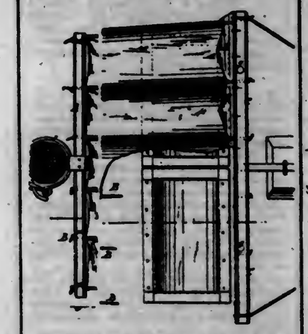
170,055. FENCES. Henry B. Claxton, Ripley, Ohio. [Filed Sept. 20, 1875.]



The combination, in a worm-fence, of the long and short panels, having the ends of their planks notched, as described, to interlock with each other, and braced and supported by the vertical slats C C, which extend to the ground, substantially as and for the purpose set forth.

170,056. FRUIT-GATHERERS. Ira Coe, Quincy, Ill. [Filed May 24, 1875.]

Brief.—The fruit-catcher may be rotated around the tree and fixed at any point.

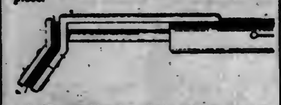


1. In a fruit-gatherer, the combination of the bars A C, of unequal lengths, cords B, and canvas D, arranged over said cords in folds or depressions, increasing in depth toward the discharge-ends, substantially as and for the purpose described.

2. A fruit-gatherer composed of the bars A C, cords B, and canvas D, in combination with the strap *f*, whereby said gatherer is attached to a tree and adapted to be moved into different positions around said tree, substantially as shown and described.

170,057. TOOL-CARRIERS FOR DENTAL RECEIVERS. Thomas Cogswell, Boston, Mass., assignor to Saml. S. White, Philadelphia, Pa. [Filed Nov. 5, 1875.]

Brief.—A tubular support carries a driving-spindle, and has a carrier rigidly united to the hand-piece. Gearing is mounted at such an angle to the shaft as that the tool shall rotate at an angle both to the carrier and the hand-piece.

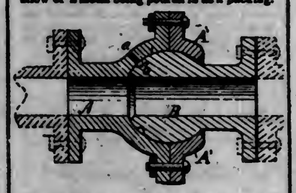


1. The combination of the tubular support or attachment of the hand-piece, the driving-spindle receiving therein, the carrier, rigidly united to the hand-piece attachment and projecting laterally therefrom, the gearing, mounted in the carrier, and the tool-holder, likewise mounted thereon, both at an angle thereto and to the hand-piece attachment, these members being constructed and operating in combination, substantially as set forth.

2. The sectional tool-carrier and gearing-frame, consisting of the combination of the angular arm and the plate detachably secured thereto, substantially as set forth, whereby the gearing is protected and removably secured in position.

170,058. PIPE-COUPLINGS. John A. Cole, Chicago, Ill. [Filed Sept. 22, 1875.]

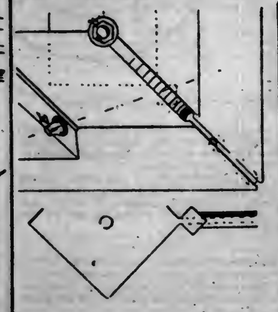
Brief.—The socket-head has a circumferential groove. The vent in the outer case is to allow of a metal being poured in as a packing.



The combination of ball B, having groove *b* with socket A A', constructed as described, and provided with aperture *a*, substantially as and for the purpose described.

170,059. BILLIARD-TABLES. Hugo W. Collander, New York, N. Y. [Filed Sept. 20, 1875.]

Brief.—Metal corner-pieces are used to hold the side and end pieces of the frame and rails securely in place.



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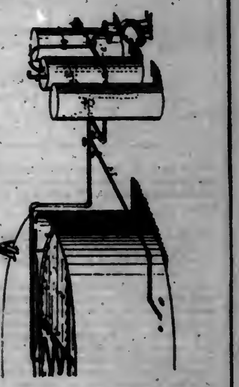
1. In combination with a side and end broad-rail, or with two sides of a wooden-frame table, an intermediate or interposed device or piece adapted to hold the ends of such broad-rails or table-sides in place laterally, substantially as described.

2. In combination with a wooden-frame table, a stand or plate suitably made to give a bearing to and afford means of securement to it of the leg, when such stand or leg-holding device is cast with or rigidly united to the plate or casting, which is interposed and held fast between the sides of the table, as set forth.

3. A corner-plate or intermediate casting, formed or provided with a brad or rib adapted to cover the joint between the wooden broad-rails at the outer corner of their junction, substantially as and for the purposes set forth.

170,060. FIRE-EXTINGUISHING APPARATUS. Jos. H. Connelly, New Brighton, assignor to James L. Hastings and W. H. Hastings, Pittsburg, Pa. [Filed Sept. 4, 1875.]

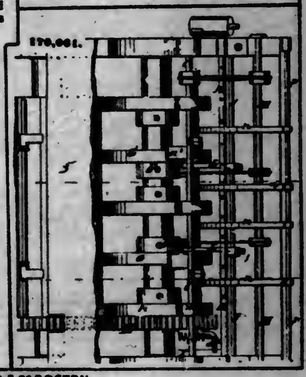
Brief.—A device for introducing a stratum of gas directly onto the surface of the oil, whereby combustion is stopped. The apparatus permits of water and gas commingled being used, or the gas may be used with air or other gas, steam, or vapor under pressure. The jets are kept at the level of the oil by weights and floats.



1. In combination with a tank for containing oil or other hydrocarbon, a series of jet openings or perforations, automatically adjustable to the varying level of the oil, and having a jointed pipe for furnishing a supply of fluid without regard to the adjustment of the jets or perforations, substantially as set forth.

2. The gas and gas-and-water receivers D D^1 D^2, alternately arranged, in combination with a common supply and a common discharge, substantially as and for the uses set forth.

170,061.



170,061. SHEET-DELIVERY MECHANISM FOR PRINTING-PRESSES. C. B. Cottrell, Westerly, R. I. [Filed Sept. 24, 1875.]

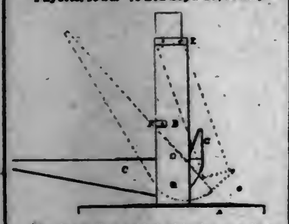
1. A series of griper wheels or disks, G, or their equivalents, adapted to operate substantially in the manner and for the purposes described.

2. The combination, with wheels or disks G, provided with gripers, of delivery-tapes mounted independently of said disks, substantially as and for the purposes described.

3. In combination with a wheel or disk, provided with a griper-finger, substantially as described, a griper-bar, and an intermediate device for operating said griper-finger, substantially as set forth.

4. The combination, with the delivery mechanism of a printing-press, of an air-pump, or its equivalent, for the production of air-jets or currents, substantially as described, to float or balloon away the printed sheets, as set forth.

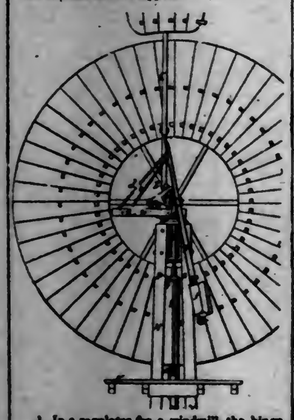
170,062. WAGON-JACKS. J. C. Crawford, Fayette, Iowa. [Filed Sept. 20, 1875.]



The lever C, provided with the seat G, in combination with the two-part frame B B, provided with the stop F and band E, as set forth.

170,063. WINDMILLS. Montgomery Cromman, Marshall, Mich., assignor of one-half his right to Pratt A. Spicer, same place. [Filed Aug. 2, 1875.]

Brief.—This windmill has a regulating-vane with wings set at an angle. The staff of the vane is attached to the bearing of the main shaft by a hinge arranged to revolve the staff and its vane. Below the yoke is a cross-bar and a short arm, having an eye in its lower end for attaching the rope. The upper and lower portions of the pitman-rod are connected together by means of a swivel-joint. When the staff and vane are brought to a horizontal position, the wheel is held firmly with its edge to the wind and is stopped.



1. In a regulator for a windmill, the hinge consisting of the parts *i*, *i*, *p*, and R, when arranged and combined with the regulator and with the windmill, substantially as and for the purpose as shown and specified.

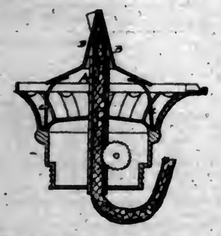
2. In a windmill, the bar *l t*, in combination with the yoke or clutch 7 of the swivel P and with the timbers H of the tower, when arranged and operated substantially as and for the purpose shown and described.

3. In a windmill, the socket J M 17, in combination with the timbers H of the tower and the pivot *g*, when constructed and arranged substantially as and for the purpose shown and specified.

4. In a windmill, the swivel-joint *k*, having a second bearing, *x'*, in combination with the two parts of the pitman-rod, when constructed and arranged substantially as and for the purpose shown and specified.

170,064. LAMP-EXTINGUISHERS. William C. Crow, Boston, Mass. [Filed Mar. 16, 1875.]

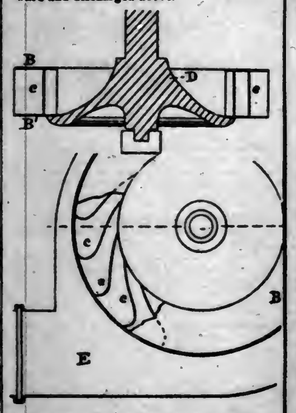
Brief.—The springs press the plates in contact when the wick is lowered.



The plates B B, arranged to have openings between their bases and the wick-tube, in combination with the springs *c c* and wick-tube A, substantially as described.

170,065. WATER-WHEELS. C. H. Darling, Crary's Mills, N. Y. [Filed Oct. 16, 1875.]

Brief.—The lower side of this wheel is closed and the upper side open, and provided with a conical formation about the center of the wheel, rising gradually from the floor of the buckets at their inner extremities, so that the water passing in the wheel is conducted upward and discharged above.



1. The turbine water-wheel, constructed with the central conical formation D, the open top and closed bottom, substantially as shown, for the purpose specified.

2. The combination of the chute E, and wheel provided with the interior conical formation D, buckets *a*, plates B and B', the open top and closed bottom, as and for the purposes described.

170,066. EXPLOSIVE COMPOUNDS. Henry J. Detwiller, Bethlehem, assignor to H. A. Doster and C. W. Roepper, same place, and Wm. J. Taylor, Chester, Pa. [Filed Aug. 26, 1875.]

The detonating compound consisting of ground bark or sawdust, chlorate of potassa, and amorphous phosphorus, substantially in the proportions herein set forth.

170,067. DETONATING RAILWAY-SIGNALS. Henry J. Detwiller, Bethlehem, assignor to H. A. Doster and C. W. Roepper, same place, and Wm. J. Taylor, Chester, Pa. [Filed Aug. 26, 1875.]

Brief.—A film of tin or lead foil and paper is placed between the bottom plate and the detonating composition, so as to completely seal the contents of the cavity.

1. In a detonating-signal or torpedo the combination, with the cavity *d* for the detonating compound, of a sealing-bottom film, *f*, therefor, substantially as herein set forth.

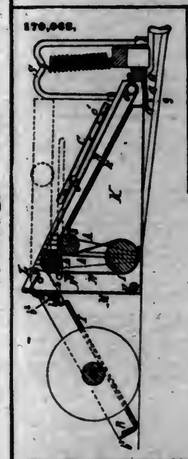
2. The combination, with the base and cap plates *a b* of a railroad-torpedo, of a lining or sealing partition, *f*, interposed between them, and protected in the manner and for the purpose herein set forth.



170,067.



170,068.



170,068. ADDRESSING-MACHINES. Robert Dick, Buffalo, N. Y. [Filed July 1, 1875.]

Brief.—The address-slip is wound on a reel at the back of the machine, and passes over a paste-belt to the knife, which is automatic in its operation. The lower knife is clamped to the frame by a spring.

1. The combination, with the shell M, endless belt N, and rollers 1, 2, and 3, of the guide-bearings A A, constructed and arranged substantially as and for the purpose hereinbefore set forth.

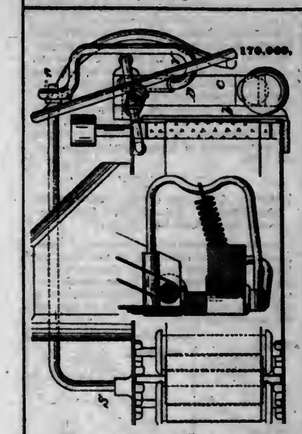
2. The combination, with the shell M, of the reel-frame B, hinged thereto, and provided with stop *b* and catch *b'*, substantially as and for the purpose hereinbefore set forth.

3. The combination, with the shell M, provided with shoulder or strip *g*, and the stationary blade Q, of the plate G, secured to the latter, and provided with flanges G'' G'', substantially as and for the purpose hereinbefore set forth.

4. The combination, with the shell M, supporting-arm(et D, and endless belt N, of the paste-fountain K, provided with inclined plate *i*, constructed and arranged as hereinbefore set forth.

5. The combination, with the shell M, provided with catch *c'*, of the hinged handle C, provided with locking-stop *c''*, substantially as and for the purpose hereinbefore set forth.

170,069. ADDRESSING-MACHINES. Robert Dick, Buffalo, N. Y. [Filed Oct. 15, 1875.]

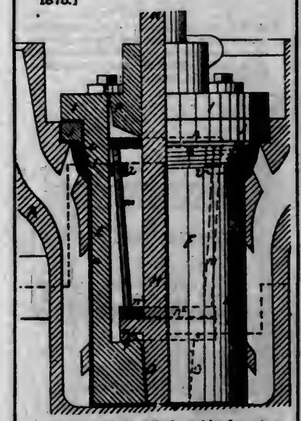


170,070.

1. The combination of a spring-clamp, *d d*, cutter-stamp D, plate of metal *c c*, and strip of metal *a a* with the shell or frame of a mailing-machine, substantially as and for the purposes set forth.

2. The combination, with the shell B, movable blade D, and lever V, of the combined motor-arm and the spring S U, substantially as and for the purposes herein set forth.

170,070. MOLDING APPARATUS. Patrick W. Doherty, Boston, Mass. [Filed May 7, 1875.]



1. The herein-described combined construction of a hollow sectional core, and of an inside pin, for an interlock between the pins and the inside of core-sections, and for a head or end to the core, which practically, and without additional fastening or other device, is solid and rigid, and is without seam or joint, all as and for the purposes specified.

2. A hollow sectional core, constructed with sections of a wedge shape from end to end, and from outside to inside, all substantially as described, for the purpose specified.

3. The combination of a hollow sectional core and an inside pin, constructed and adapted to form a solid head to the core, in combination with a matrix to secure, with the core, the molding of a head or end to the cylindrical part or body molded in the matrix, all substantially as described.

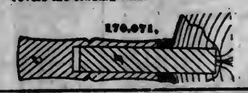
4. A matrix, constructed to cast a ring, and for the ring to close the molding-space between the core and matrix, in combination with core-sections constructed to fit within, and to rest on, said ring, substantially as described, and for the purposes specified.

5. The combination, with a sectional core, of an inside pin, connected by mechanism with more or less of the core-sections for setting them out and in, and adapted to be turned without effect on the said connecting mechanism, substantially as and for the purpose specified.

6. The connection of sections of a hollow sectional core with an inside pin, by means of rods *n* and lugs *l*, substantially as described, and for the purpose and operation on the core-sections specified.

170,071. BROOMS. Robert H. Eastburn, Philadelphia, Pa. [Filed Oct. 7, 1875.]

Brief.—The hollow handle has projecting into it the binding-stick, and between the handle and broom-head is an independent ferrule, that is held in place by the handle, and covers the binding-wire.



170,071.

In a whisk, duster, or broom, the combination of a recessed handle, a binding-stick fitting into said recessed handle, and a separate ferrule between the handle and the body of the whisk, duster, or broom, substantially as described.

170,072. CURTAIN ROLLERS AND BRACKETS. Oliver Ellsworth, Newton, Mass. [Filed May 11, 1875.]



1. The foot H, with the grooves *h* and *h'*, and the spring-bracket with ribs and guides *c'*, all constructed substantially as and for the purpose described.

2. The counterbalanced dog F suspended to the spindle of a main gear-wheel, in combination with the pinion-wheel E.

170,073. BOTTLES. Joseph Ernst, Central City, Colo., assignor of one-half his right to Jos. Kempf, same place. [Filed Sept. 14, 1875.]

Brief.—A bottle made with compartments is provided with a revolving screw-cap, so that the tube in said cap may be placed over either of the compartments.



The combination of a bottle or other vessel having two or more compartments formed by vertical walls or divisions B C with a screw-cap having a rotating top piece, F, and tube H, that may be adjusted over either compartment, substantially for the purpose and in the manner hereinbefore described.

170,074. WAGON-AXLE SKEINS. Henry H. Fette, Richmond, Ind., and S. D. Tuttle, Eaton, Ohio. [Filed Mar. 31, 1875.]

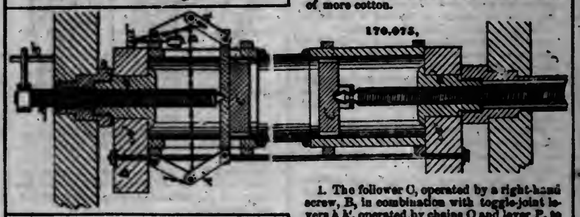
Brief.—A prismatic washer fitting on the end of the skein, and secured by a spring-bow.



The combination of the axle-skein A, provided with head A' *a' a'*, recessed washer B *a*, and spring-bow F, substantially as and for the purpose set forth.

170,075. COTTON-PRESSES. Willis L. Frost, Sherman, Tex. [Filed Apr. 19, 1875.]

Brief.—Press of cylindrical form, revolving on an upper and lower screw, causing the followers to approach or recede. Toggle-joints and chains over the upper follower retain the compression, while permitting the introduction of more cotton.

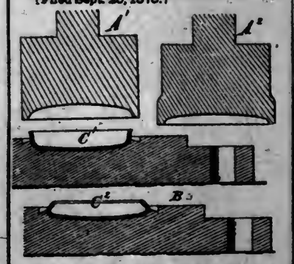


170,075.

1. The follower C, operated by a right-hand screw, B, in combination with toggle-joint levers *h h'*, operated by chains O and lever P, to cause the follower C to follow the bale as the follower C' recedes, for the purpose of preventing the bale from becoming impacked, substantially as described.

2. In combination with the follower C and toggle-levers *h* and *h'*, the weighted chain S, attached to the lever *h*, and passing over pulley T, for the purpose of elevating the follower C, substantially as described.

170,076. DIES FOR MAKING WATCH-CASE CENTERS. Joseph Goldreich, Cincinnati, Ohio, assignor to Geo. Doerr, same place. [Filed Sept. 25, 1875.]



The combination of the series of dies A B, A^1 B^1, and A^2 B^2, for forming the watch-case center, by successive compressions, from a flat plate, substantially as set forth.

170,077. SPRING BED-BOTTOMS. William Goforth, Windsor, Mo. [Filed Sept. 11, 1875.]

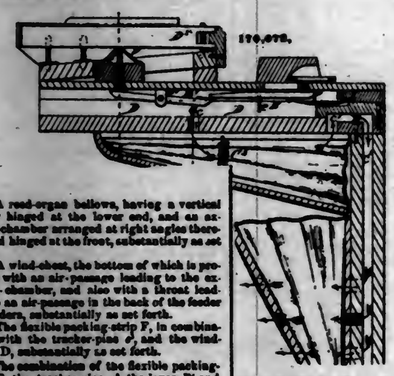


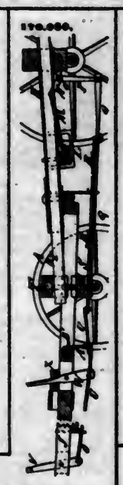
1. The spring bed-bars C C, hung in stirrups F F, in combination with the auxiliary spring-bars B D', cross-pieces G G, and slats E E, constructed and arranged as and for the purpose set forth.

2. The cross-piece G, hinged and bolted to the bar D', substantially as and for the purpose set forth.

170,078. REED-ORGANS. H. N. Goodman, Syracuse, N. Y. [Filed Sept. 6, 1875.]

Brief.—To adapt the reed-organ to a case resembling an upright piano-case.





1. A reed-organ bellows, having a vertical feeder hinged at the lower end, and an exhaust-chamber arranged at right angles thereto, and hinged at the front, substantially as set forth.

2. A wind-chest, the bottom of which is provided with an air-passage leading to the exhaust-chamber, and also with a throat leading to an air-passage in the back of the feeder or feeders, substantially as set forth.

3. The flexible packing-strip F, in combination with the tracker-pins *c'*, and the wind-chest D, substantially as set forth.

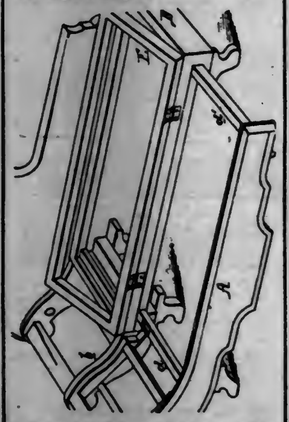
4. The combination of the flexible packing-strip E, the tracker-pins *c'*, the lever E' and fulcrum-valves E, with the wind-chest D, substantially as set forth.

5. The herein-described organ-case, provided with an opening below the key-board to receive the exhaust-chamber of the bellows, substantially as set forth.

6. The herein-described organ-case, consisting of the narrow upright part, and the projecting key-board, having the opening below the same, in combination with the bellows made in two parts, arranged at right angles to each other, the vertical portion being arranged within the case, and the horizontal portion projecting beneath the key-board, substantially as set forth.

170,079. BOW-BEDSTEADS. John E. Gould, Jr., Philadelphia, Pa., assignor to John H. Gould, same place. [Filed Aug. 18, 1875.]

Brief.—The supplementary frame slides out from the main frame, and has a folding head-rest hinged to the side-bar.



The combination in a sofa-bedstead, of the frame D, its arm *b*, and supplementary hinged frame E, with the front A, having a hinged head-frame, F, and bars *d d'* adapted to ways in the frame, all as set forth.

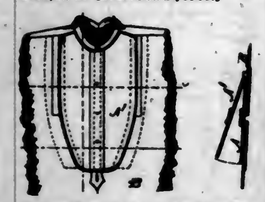
170,080. WAGON-BRAKES. Thos. H. Gourley and Wm. R. Lovelace, Talbott, Tenn. [Filed Nov. 20, 1874.]

Brief.—Operated either by pulling on end of pivoted lever or by draft of horses on whiffletrees.

170,080.

The combination of the link A' and pin or hook N with the tongue J, the lever V, the tongue-rod U, the pivoted hammer-bolt W, the slot or link S, the extension-rod R Q, the armed roller P O N, the connecting-rods M, and the brake-bar K, substantially as herein shown and described.

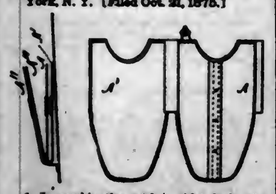
170,081. SHIRTS. Simeon Gutmann, New York, N. Y. [Filed Oct. 21, 1875.]



1. The bosoms A and A', formed and constructed as described and shown, in combination with the shirt-body B, provided with a neck-band, and attached to the said shirt-body at each side, as set forth.

2. The bosoms A and A', formed and constructed as described and shown, in combination with the shirt-body B, provided with a neck-band, and attached to the said shirt-body at each side of the same on the upper part only, and left free and unattached at the bottom, as specified and set forth.

170,082. SHIRTS. Simeon Gutmann, New York, N. Y. [Filed Oct. 21, 1875.]



1. In combination with a shirt-body, the bosom A', formed and constructed as described, and the bosom A, secured to each other on the upper part of the side, and on one side only, the bosom A'' being attached to the outer edge of the bosom A, with its face inward in reverse, so as to fold outward and appear face in front or inward, and be secured by the bosom A, in the manner specified and set forth.

2. In combination with a shirt-body, the bosoms A, A'', A', and A''', the two former attached directly to the shirt-body, on the upper part of one side only, the latter being attached to said bosoms in the same way, and having their outer edges left free and unattached, as shown and described, and all arranged in relation to each other, so that either bosom may be made to appear in front by the operation of folding and unfolding, as set forth.

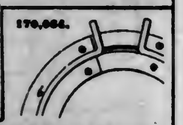
170,083. COMBINED PENCIL-SHARPENERS AND ERASERS. John S. Hall, San Francisco, Cal. [Filed Mar. 17, 1875.]

As a new article of manufacture, a slate-pencil sharpener, consisting of the block A, having the beveled corners c, chamber a, a V-groove, *b*, in its upper face, the cutters D, provided with the angular V-shaped edges *e e*, and cloth eraser *s*, substantially as and for the purpose set forth.

170,083.



170,084.

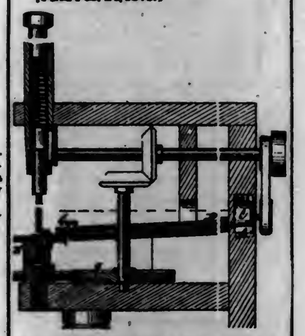


170,084. PACKING-RINGS FOR CAR-AXLE BOXES. Thos. C. Hargrave, Boston, Mass. [Filed Oct. 26, 1875.]

Brief.—Springs secured from injury by the weather or other cause; open ring retaining shape of axle, however worn.

The elastic open packing-ring A, constructed, as described, of two or more pieces of leather, and provided with the metal spring *b*, secured between the thicknesses, substantially as and for the purpose set forth.

170,085. NAIL-DRIVING MACHINES FOR SHOE-MAKING. Samuel Harris, Boston, Mass., assignor to himself, Samuel Shephard, and E. P. Harrington, same place. [Filed Feb. 24, 1875.]



1. A rotary die slotted from its exterior to its center, to form a feeder for conveying the nail to the center of the die, down or in which the nail is deposited for subsequent operation on it by the driver, essentially as specified.

2. The combination of the guide M with the slotted portion or feeder *n* of the rotating die H, substantially as described.

3. The combination, in a machine for presenting or feeding and driving different-sized nails, of a combined rotary die and slotted feeder with one or more pairs of chutes, for conveying the nails to the die, essentially as specified.

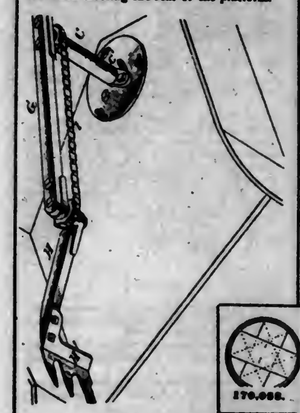
4. The combination, with duplicate chutes D D, of a cut-off, G, adapted to stop the delivery from either or both of the chutes, substantially as specified.

5. A nail-feeding chute, composed of two lower and a single upper rigid and independently-vibrating wires, rods, or bars, substantially as herein described.

6. The combination of one or more hoppers, A, rotary pickers-up C, bridges *b b*, and chutes D D, substantially as herein described.

170,086. HARVESTER-RAKES. P. F. Hodges, Massillon, assignor of one-half his right to Hoover & Co., Miamisburg, Ohio. [Filed May 17, 1875.]

Brief.—The rake has a rotary motion upon its own axis, in addition to that imparted to it by the main arm, and passes under the latter when crossing the rear of the platform.



1. In combination with the oscillating pipe C, the cam-wheel F, bell-crank lever D, and link E, for communicating an irregular oscillation, substantially in the manner and for the purpose set forth.

2. In combination with the oscillating pipe C, the arm G, continuously revolving on its own axis, the sprocket-wheels O B', chain I, and rake H, having also an independent rotation, substantially as set forth.

3. The adjustable slotted plate B and sleeve B', in combination with the oscillating pipe C and the continuously-rotating shaft G', for communicating a constant rotary movement to the rake-arm, and an irregular independent movement to the rake, substantially as set forth.

170,087. PLATFORM-ELEVATORS. George C. Howard, Philadelphia, Pa. [Filed Sept. 20, 1875.]

Brief.—Platform suspended by four ropes, two of which pass directly around overhead drums, which receive also the others, that first pass over pulleys—the winding on the drums regulated by screw-threads thereon, the pulleys following the necessary lateral action by revolving along screw-threaded spindles. The drum-shaft is rotated by a hand-rope and wheel, actuating wheels and pinions by fast or slow motion.

1. In combination with the platform of a hoisting-machine, two sustaining ropes attached to opposite sides thereof, and connected to a take-up drum or drums, and two guide-pulleys, located between the platform and the drum, and mounted upon right and left hand screws, substantially as shown and described.

2. In combination with a sustaining-rope of a hoisting machine, and a take-up drum therefor, a guide-pulley mounted on a screw in such manner as to have a lateral movement for the purpose of laying the rope properly upon the drum.

3. The combination of the platform B and its sustaining-ropes C C', with the right and left hand grooved drums I I, and the guiding-pulleys F mounted on right and left hand screws, substantially as shown.

4. In combination with the drum shaft E, provided with the wheel G, the shaft I, provided with the pinion H and wheel K, and the driving-shaft M, provided with the double sliding pinion N O, as and for the purpose described.

5. The combination of the brake-lever V, having the stud *s* and the spring *f*, arranged as shown.

6. In combination with the toothed guides A, the platform B, and the ropes C C, the catches Y, rock-shafts Z, provided with arms *g*, connecting bar *h*, and spring *m*, as shown.

170,088.

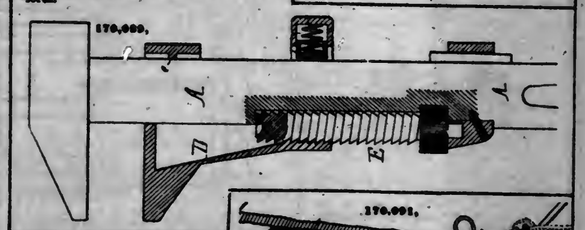
170,088. MANUFACTURE OF PAPER BOXES. John B. Jeffrey, Brooklyn, N. Y. [Filed Mar. 26, 1875.]

The manner described of forming the sides and ends of paper boxes, by cutting the edges of the blanks, reducing the paper to a soft pulpy condition, and then rolling or pressing it into a uniform mass, substantially as specified.

170,089. WRENCHES. Benjamin F. Jocelyn, Worcester, Mass., assignor to R. P. Bruff, New York, N. Y. [Filed Sept. 19, 1874.]

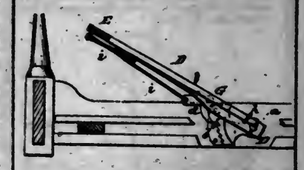
The combination of the stem A, its screw E, tilting jaw D, bearing at *c* against the stem, and a spring secured to the jaw, bearing against the stem, and tending to maintain the jaw in contact with the screw, all as set forth.

170,089.



170,090. INVALID-BEDSTEADS. W. J. Kent, Springfield, Mo. [Filed Apr. 16, 1875.]

Brief.—The spring side bars of the incline are pivoted on the notched segmental plates, and the incline is adjusted by means of the pawl and operating-cord. The slats of the incline are connected at their lower ends by a cord, which is left slack between them, in order to let the slats of the incline fall between the slats of the bed-bottom.



1. The combination of the broad head piece E, spring side bars D D, and slats G G, united at their lower ends by a cord, A, substantially as and for the purposes herein set forth.

2. The pieces C, provided with the pivots *a*, and notched segments *b*, in combination with the incline D E G, pawls *d*, and cord *f*, substantially as and for the purposes herein set forth.

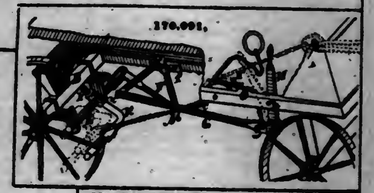
170,091. VEHICLE DEVICES FOR CHECKING HORSES. Jas. Knight, Philadelphia, Pa., assignor of one-half his right to G. Miller, same place. [Filed Oct. 1, 1875.]

1. In combination with the jointed arm K, the sliding shaft E, double crank-arm F, arm G, and pivoted lever H, substantially as shown and described.

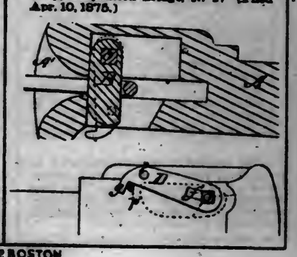
2. In combination with the jointed arm K, attached to the sliding shaft E, the strap or flexible connection M, substantially as shown and described.

3. In combination with the arm K and pivoted lever H, the strap or connection O, for automatically throwing back said lever and withdrawing said arm, as shown and set forth.

170,091.



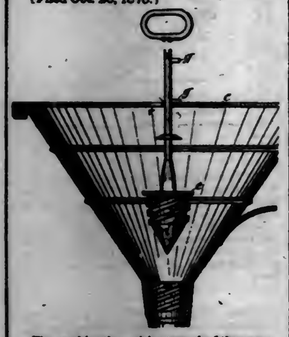
170,092. CAR-COUPLINGS. George Edgar Lacy, Suspension Bridge, N. Y. [Filed Apr. 10, 1875.]



1. In a car-coupling, the endwise-movable and vertically-vibrating lever D, in combination with the bolt C and coupling-arm B, substantially as specified.

2. The lever D, having hook *g* and slot *f*, in combination with a rest or pin, *p*, and a vertically vibrating and gravitating coupling-arm, B, substantially as specified.

170,092. MEASURING-FUNNELS. Reuben A. Lenden, Geddes, assignor of one-half his right to Richard A. Davis, Syracuse, N. Y. [Filed Oct. 26, 1875.]



The combination, with a tunnel, of the screw-threads *a* in the outlet, screw-plug *b*, having the point or guide *i* and collar *c*, the rod *r*, provided with one or more combined gages and supports, *g*, and the detachable cross-bar *e*, provided with aperture *o*, having lateral slot *v*, all constructed to operate substantially as described and shown, for the purpose specified.

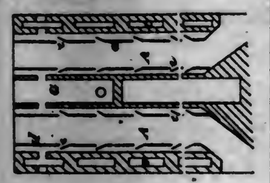
170,093. MILK-CANS. John H. Lester, New York, N. Y. [Filed Oct. 26, 1875.]



The combination of the can A, lid B, provided with the gasket, ball I, screw K, and faucets C and H, forming a vessel for the transportation of milk under pressure, substantially as described.

170,094. ORE-ROASTING FURNACES. Wm. McCall, San Francisco, Cal. [Filed July 12, 1875.]

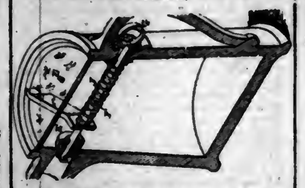
Brief.—Five is built in a central chamber, on two opposite sides of which are the ore-chambers. Flues from the central chamber extend around the ore-chambers, so that the latter are heated on all four sides.



1. The series of narrow ore-chambers A A, in combination with the central heating-chamber B, and the surrounding flues C returning upon themselves in the walls of the furnace, as shown, so as to surround the ore-chambers, substantially as herein described.

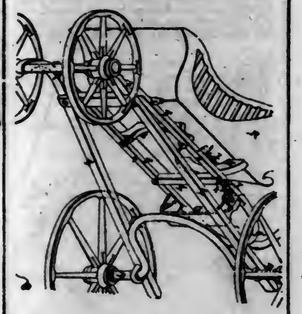
2. In combination with the narrow chambers A, central heating-chambers B, and surrounding flues C, the vertical frame passages *d d*, with their inclined shutter-like openings *e e*, and the collecting-chamber G, substantially as and for the purpose herein described.

170,095. SELF-CLOSING PITCHERS. Wm. H. McGrew and Charles A. Clark, St. Louis, Mo. [Filed Oct. 6, 1875.]



The combination, in the pitcher, of the close top D, tubular spout C, and spring-valve C E F J, substantially as set forth.

170,096. CHILDREN'S CARRIAGES. Martin Medart, Belleville, Ill. [Filed Oct. 4, 1875.]



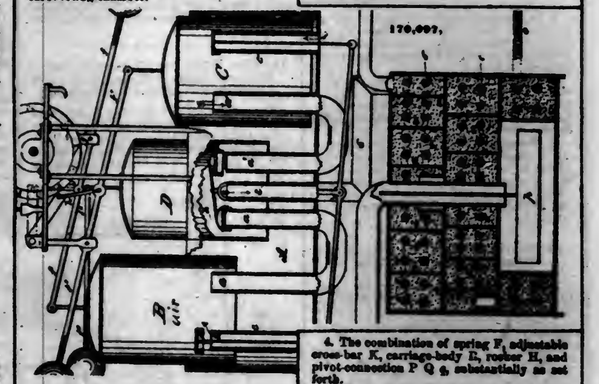
1. The combination, with the reaches E E, of the U-shaped spring F, seat G, and strap *f'*, substantially as set forth.

2. The combination of reaches E E, bowed axle D, and spring F, substantially as set forth.

3. The combination of wagon-body B, spring F, and adjustable cross-bar K, substantially as set forth.

170,097. CARBURETERS. Saml. McKissock, Allegheny, Pa. [Filed July 10, 1875.]

Brief.—Alternately-reciprocating cylinders, having air-tight tops and working in water-seals, and having induction and eduction pipes provided with valves, force air into a central reservoir, from which it passes to the carbureter. Coils of wire form the air-passages through the fibrous absorbent packing in the carbureting-chamber.



1. In combination with the carbureting-chamber G, having the spiral partitions *a* and intermediate corresponding channels, the wires *c c*, arranged at intervals apart, running parallel with said partitions, wrapped in suitable packing, and forming continuous spiral air-passages through the said channels, substantially as specified.

2. In a carbureter, the porous air-pipes formed by the spirally-coiled wires *c*, externally packed, and having open channels through the center of the coils, with lateral access to the packing, substantially as described.

3. In combination with the chambers B C D, the pipes *a a'* and *c c'*, with their respective valves *b b'* and *d d'*, connected and operating alternately, as shown and described.

4. In combination with the chambers B C D and their operating-levers *f f'*, respectively, the adjusting counter-balances W W' W'', as and for the purposes set forth.

5. The alternately-acting pumping-chambers B C, in combination with the intermediate-acting said pressure chamber D, pipes *a a'*, connecting said chambers, valves *b b'*, carbureting-chamber G, and pipe *e*, substantially as described and shown.

6. The combination, with the alternately-acting pumping-chambers B C, weighted levers *f f'*, and ratchet-wheel E, having double row of alternating teeth, of the dogs *i i'* and links *h h'*, substantially as described, and for the purpose set forth.

4. The combination of spring F, adjustable cross-bar K, carriage-body B, rocker H, and pivot-connection P Q *q*, substantially as set forth.

5. The combination of spring F, body B, and adjustable clamping-bars K and S, substantially as set forth.

6. The spring-link connection P L M, between the rocker H and bar K, substantially as set forth.

170,098. BOILER-COVERINGS. I. L. Merrill, San Francisco, Cal. [Filed Sept. 9, 1875.]

1. The improvement in covering boilers and and steam-pipes, the same consisting in first applying a fire-proof coating composed of the materials above mentioned; secondly, applying a second coating which is a non-conductor of heat; and, third, surrounding the whole with a material composed of the ingredients mentioned, viz., stanite, charcoal, magnesia, bittern-water, plaster-of-paris, and clay in the proportions named, which will form a hard impervious shell or casing, substantially as and for the purpose described.

2. The improvement in covering boilers and steam-pipes to prevent radiation of heat, the same consisting in surrounding the boiler covering or felt with a coating of materials consisting of stanite, charcoal, magnesia, bittern-water, plaster-of-paris, and clay in the proportions named, which will form an artificial stone or hard shell, substantially as and for the purpose described.

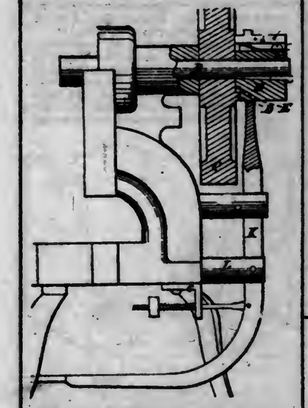
3. Stanite, charcoal, magnesia, bittern-water, plaster-of-paris, and clay, as ingredients for boiler and steam-pipe coverings.

170,100. PROCESSES OF PREPARING AND COLORING HIDES. Hollis W. Merrill and James W. Holtt, Lynn, Mass., assignors to National Boot and Shoe Tip Company. [Filed Aug. 6, 1875.]

The process herein described of preparing and coloring raw hides, consisting in soaking the unhaired and unfleshed hides in the log-wood-liquor, and then in a dyeing-liquor composed of log-wood-liquor, nut-galls, blue vitriol, vinegar, and an iron-salt, or their equivalents, substantially as described.

170,101. POWER-PRESSES. A. H. Merriman, West Meriden, Conn. [Filed Oct. 22, 1875.]

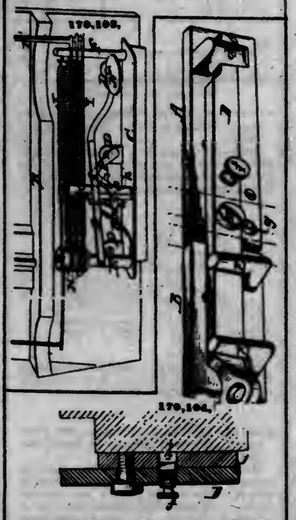
Brief.—The hub, that upon the arbor, has pivoted in a recess in one side a latch, that is normally held projecting out of the groove by a spring, and in this position extends across the path of a stub on the fly-wheel; but the latch may be depressed, when necessary, by moving the concave shoe on the end of lever in line with the stub of the latch, in which case the latch will no longer intercept the stub of the wheel.



The combination and arrangement, in a power-press, of the clutch-collar E, latch H, spring J upon the shaft B, dog D, one or more, in the hub of wheel C, guide P, and lever K, substantially as and for the purpose set forth.

170,102. MUSIC-LEAF TURNERS. William Miller, Boston, assignor to himself and H. M. Wiswall, Watertown, Mass. [Filed Sept. 4, 1875.]

In a music-leaf turner, the combination of the standards E F, guide G, slotted plate or guide M, supporting shelf or bracket C, which is adapted to be attached to a music-rack or other support, as shown, the knife H, arms I, springs J, lever L, having pawl P, toothed detent K, and spring R, all arranged and operating substantially as and for the purpose specified.



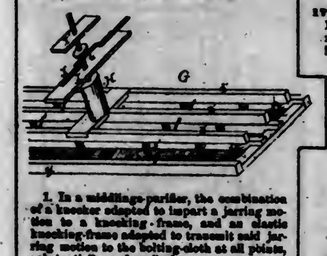
170,103. SHUTTER-BOLTS. John Mitchell, Philadelphia, Pa. [Filed Oct. 2, 1875.]

Brief.—A spring-catch, by which the main pivoted bar is held when swung in vertical position.

1. The plate A, having the hooked projection *d*, and carrying a pivoted bar, D, provided at its outer end with an eye, *b*, in combination with the plate B and its two hooked projections, B B, all substantially as set forth.

2. The bar D and its spring-bolt *f*, in combination with the plate A and its openings *g* and *h*, as and for the purpose specified.

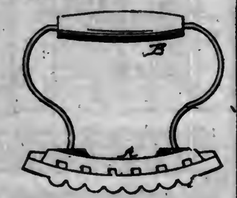
170,104. FLOATING-BROOM. Mary Newton, Eau Claire, Wis., assignor of one-half her right to James Burnett, Oronoco, Minn. [Filed Sept. 11, 1875.]



1. In a middlings-purifier, the combination of a knocker adapted to impart a jarring motion to a knocking-frame, and an elastic knocking-frame adapted to transmit said jarring motion to the bolting-cloth at all points, substantially as described.

2. The knocking-frame G, having the springs *j* and *f*, substantially as and for the purposes set forth.

3. The combination of the knocker H, the shaft J, and the knocking-frame G, substantially as and for the purposes set forth.



A fluting-iron consisting of the corrugated plate A, with beveled ends, and the handle B, in combination with the auxiliary corrugated plate C, provided on its upper surface with a dovetail groove, substantially as and for the purposes set forth.

170,106. TRUSSES. F. G. Otto, Jersey City, N. J., assignor to F. G. Otto & Sons, New York, N. Y. [Filed Oct. 22, 1875.]

Brief.—A bar is attached to the pad, and there is hinged to this bar a plate, upon which a second plate is adjusted by a pivot, circular slot, and set-screw.



The combination of the pad A, the plate C, having the curved slot *g*, the set-screw A, hinged plates or bars B C, and spring E, arranged and operating as herein shown and described.

170,107. END-GATES FOR WAGONS. Jacob P. Outson, Racine, Wis., assignor of one-half his right to Wm. Axby, same place. [Filed Aug. 30, 1875.]

Brief.—Wedge-shaped flange engages with the clasp or hook on wagon-box.



The device for fastening end-gates for wagons herein described, consisting of the lever *a*, disk A, having wedge-shaped flange *d*, and pivoted eccentrically at *c*, in combination with the hooks or catches *e f*, arranged and operating substantially as and for the purpose herein shown and specified.

170,108. COMBINATION TILL-LOCKS. Geo. H. Peacock, Webster, assignor to George Plumb and Susan A. Newman, Fairport, N. Y. [Filed May 24, 1875.]

Brief.—A pivoted lever, having a thumb-knob projecting through an opening in the case, serves to retract a vertically-sliding spring-bolt carrier when the finger-bars are properly adjusted. A hinged guard-plate is arranged at the bottom of the case, so as to cover the finger-bars when it is closed. This guard-plate is provided with a projection, that prevents the withdrawal of the bolt-carrier, except when the said plate is closed.



1. The combination of the bolt-carrier C, thumb-plate Q, cross-plate S, and finger-bars B B B B B and B' B' B' B' B', as herein described.

2. The guard-plate X, in combination with the bolt-carrier D, as herein described.

170,109. BUCKLES. Stephen Porter, Boston, Mass. [Filed May 7, 1875.]

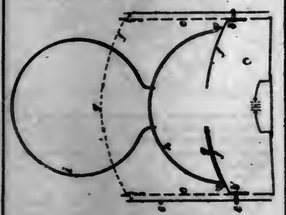
Brief.—A strap is adapted to be used as a shoe-fastener instead of a lace, by means of a buckle at one end and hooks at the other. The strap may be used and a lace dispensed with, and vice versa, or the strap may be removed from one shoe and used on another.

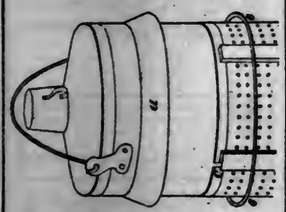


In combination with the buckle A, constructed as described, and the strap B, the hooks b b, for attaching the buckle to the shoe, substantially as described.

170,110. COMBINED LANTERNS AND DINNER-KETTLES. Warren Workman Price, Pottscodiac, Canada. [Filed Mar. 18, 1875.]

Brief.—The vertical slots in which the studs move are provided with notches for the same; the tubes inclosing slots and studs are embraced by hoops, and the cover is provided with folding handles and trencher.



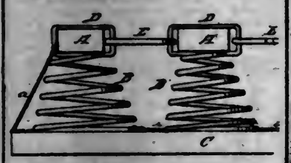


1. The flange c and studs b b, in combination with the tubes d d, provided with notched vertical slots e e, as hereinbefore specified.

2. The combination of the hoops e e with the tubes d' d' and slotted tubes d d, substantially as described.

3. The regulating-cover f, provided with studs b' b', handles h and i, and trencher g, as hereinbefore set forth.

170,111. BED-BOTTOMS. Chas. W. Purcell and Samuel Purcell, Landy's Lane, Pa. [Filed Aug. 11, 1875.]

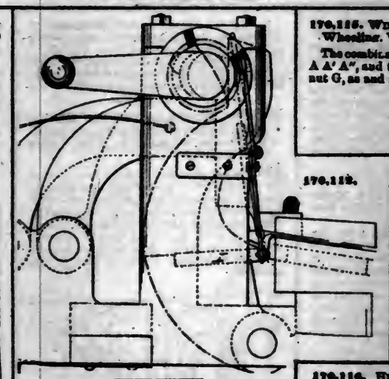


1. The spiral springs B, having the loops D formed on the top, and forming a part thereof, in combination with the slats A and links E, said links M connecting the loops D, and rigidly preventing lateral displacement, as and for the purpose set forth.

2. The springs B, having loops D, slats A, links E, and the cord a, connecting the frame C and end loops D, in combination with the staples b, all constructed and arranged as and for the purpose set forth.

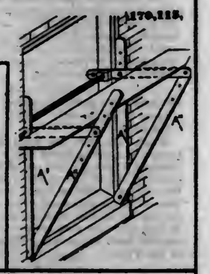
170,112. MACHINES FOR MAKING RIVETS. Byron C. Quisby, Plymouth, Mass. [Filed July 1, 1875.]

In combination with the cutters, heading-tool, gage, punch, and spring-lever of a nail-cutting machine, constructed and operating substantially as described, the griping and swaging dies I J, each of breadth equal to the length of the blank covered by the cutters, minus that portion required to be upset to form the head, and each provided with a semi-cylindrical groove in its edge extending over its entire breadth, in virtue of which the dies, in compressing the blank, shall swage the same to a cylindrical form, as set forth.



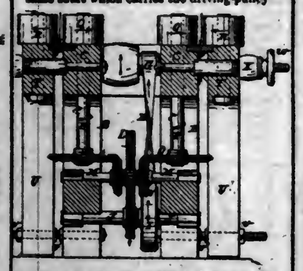
170,113. WINDOW-SCAFFOLDS. C. Roberts, Wheeling, W. Va. [Filed July 2, 1875.]

The combination of the two A-shaped frames A A' A'', and the expansion screw-bar D, and nut G, as and for the purpose described.



170,114. MATCHING-MACHINES FOR BOX-STUFF. George T. Biddle, St. Louis, Mo. [Filed Apr. 6, 1875.]

Brief.—The table is inclined to insure the constant contact of the lower edge of the stuff with it, as the stuff is fed in a horizontal direction. The outer feed-rolls are mounted in laterally-adjustable side frames, the upper parts of which are forced inward by springs, regulated by temper-nuts, on bolts passing through the main and side frames. The distance between the feed-rolls is regulated by screws passing through the side frames, and bearing against the upper part of the main frames. The cutter-heads are mounted on the same shaft which carries the driving-pulley



1. The combination, with the rolls Q and R, main frame A B C, and side frame T U, of the set-nuts v v', temper-nuts and springs w X, and distance-screws Y, all substantially as set forth.

2. The combination of cutter-heads D D', rolls Q and R, springs X, temper-nuts w, set-nuts v v', and frames T U, all substantially as set forth.

3. The combination of the cutter-heads D or D', vertical feed-rolls Q and R, and inclined bed or table C, substantially as and for the purpose set forth.

170,115. HINGE. Lewis H. Rogers, South Avon, N. Y. [Filed Oct. 12, 1875.]

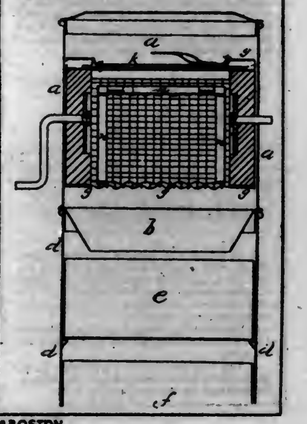
Brief.—A solid flanged knuckle carries two conical pintles, which permit the hinge to be reversed. The flanges are notched to allow them to pass a projection on the other leaf of the hinge, which projection locks the parts together, except when in one position. The socket is shaped to correspond with the conical pintle.



The reversible or right-and-left hinge A A', cast with solid knuckles B B', and constructed with the socket a, conical pintle-points c c, notched flanges d d, and lip g, all combined and arranged to operate as and for the purpose specified.

170,116. SEWER. Augustine Root, Taunton, Mass. [Filed Apr. 15, 1875.]

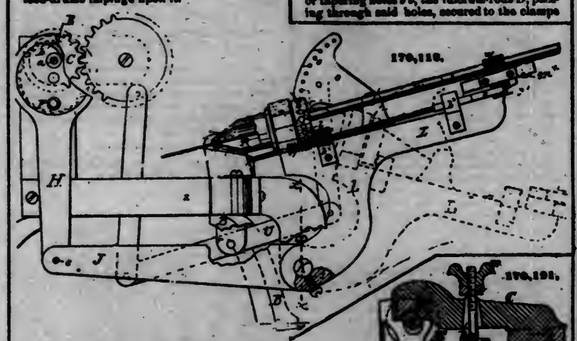
Brief.—A large rectangular sleve is operated by a divided axle and crank, so as to contain a smaller sleve with different-sized meshes.



The sifting device above described, consisting of the box a a', box d, receiver g h, receiver n n', flanges b, and drawers e f, constructed, combined, and arranged substantially as herein described.

170,118. NAIL-PLATE FEEDERS. George H. Ryan, Somerset, Mass., assignor to himself and J. M. Leonard, same place. [Filed June 26, 1875.]

Brief.—The eccentric rocks the shaft through the medium of rod and lever, and the arm which carries the nose-piece is connected to the rock-shaft by a set-screw. The nipper-rod is fed forward by two corrugated drums, one being in advance of the other, to keep the plate close up to a gage on the head side of the cutter, and is assisted in this by a conical roll under the nipper-rod. The nipper-rod is covered with rubber at the point where the feed-drums impinge upon it.



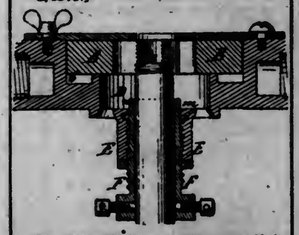
1. The combination of the eccentric E, strap and rod G H, lever J, rock-shaft K, set-screw f, and arm L, substantially as and for the purpose set forth.

2. The combination of the nipper-rod and its elastic covering with the feed-drums w and x, substantially as and for the purpose set forth.

3. The combination of the nipper-rod and the feed-drums w and x, the feed-drum w being larger and set in advance of the feed-drum x, as and for the purpose set forth.

4. The combination of the nipper-rod, the feed-drums w and x, and the conical roller w', as and for the purpose set forth.

170,119. TENSIONING DIE-STOCKS. Andrew Saunders, Yonkers, N. Y., assignor to D. Saunders' Sons, same place. [Filed Sept. 2, 1875.]



The plain cylindric extension m, provided upon the tubular feed-screw F, in combination with the cylindric bearing g, provided at the inner end of the socket E, carrying the said feed-screw, the whole arranged in relation with the essential working parts of the threading die-stock, substantially as and for the purpose set forth.

170,120. MILLSTONES. George T. Smith, St. Louis, Mo. [Filed Sept. 1, 1875.]

Brief.—The sharp edges of the cells of the stone, left by the usual methods of dressing, are ground off, while the stone is newly dressed and "in face."



A millstone, having its grinding-surface reduced to a plane, and the edges of the cells dulled, substantially as set forth.

170,121. WRINGERS. John Smith, Conshohocken, Pa. [Filed Oct. 20, 1875.]

1. In combination with the levers C C', containing the rollers E E', and having beveled or tapering holes b b, the fulcrum-rods D, passing through said holes, secured to the clamps

A, and provided with adjusting-screws d, substantially as shown and described.

2. As an improvement in clothes-wringers, the combination, with the roller-shafts e e and recessed levers or bearings C C', of the rawhide linings F F, substantially as described.

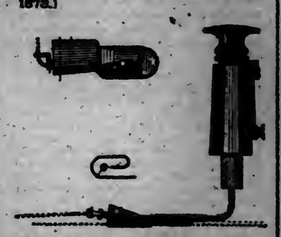
3. In combination with the rollers E E', the levers C C', fulcrumed on rods D, said levers having tapering openings for the passage of said rods, and being provided with shoulders e e', fitting in corresponding cavities, so as to permit said levers to rock and the rollers to yield independently, as shown and described.

170,122. COMPENSATION-JOURNALS FOR SEWING-MACHINE BALANCE-WHEELS. D. Snider, Quincy, Ill. [Filed June 3, 1875.]



In a compensating journal bearing for the balance-wheel of a sewing-machine, the conical bearing at the outer end of the stud, expansible by means of a tapered axial screw, and the conical sleeve combined with the conical bearings in the ends of the axis of the hub of the balance-wheel, substantially as described.

170,123. COIL-SPRINGS. Wm. S. Snyder, Bridgeport, Conn., assignor to himself and W. H. Perry, same place. [Filed Nov. 12, 1873.]



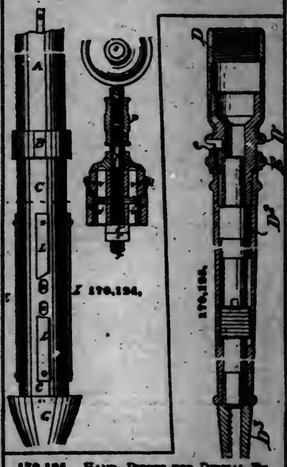
The combination of the threshold scroll-shaped folder, the cord-guide carried by the central fold thereof, the arm carrying the eye through which the cord enters at right angles to the guide, and the grooved stitching-plate, these members being constructed and operating substantially as set forth.

170,124. PUMPS FOR DRIVEN WELLS. Pratt A. Spicer, Marshall, Mich., assignor of one-half his right to Montgomery Ormsbee, same place. [Filed Aug. 16, 1875.]

Brief.—Over each of the rows of holes is laid a strip of sheet metal, close to the surface of the tube, so as to leave a very narrow passage, and thus act as a strainer. The stem of the valve is united to the pump-rod by a screw-coupling, which serves the double purpose of uniting the plunger or valve with the rod, and of forming a stop for the valve.

1. The combination, with the casing C, having vertical rows of holes s, of the metallic strips L, laid close to the casing over the holes therein, and leaving a narrow passage on both sides of each strip for the passage of the water to the holes, substantially as herein shown and described.

2. The combination of the valve d of a pump-plunger with the adjustable screw-coupling F, to form an adjustable stop for the valve, substantially as shown and described.



170,125. HAND-PIECES FOR DENTAL ENGINES. Eli T. Starr, Philadelphia, Pa., assignor to Samuel S. White, same place. [Filed Nov. 5, 1875.]

Brief.—A nose-piece of hardened steel is added to the dental hand-piece, which is itself made of soft metal. A peculiarly-arranged sliding key and collar prevent accidental separation of the two parts of the hand-piece.

1. The hand-piece, constructed as herein before set forth, with a detachable nose or bearing of hardened steel and a softer metal body, for the purpose set forth.

2. The combination of the fixed section D of the hand-piece, the section D' revolving therein, the casing screwed on the section D', and the screw-collar, and its locking-catch, whose members being constructed and operating in combination as set forth, whereby the hand-piece can be turned without disconnecting its contents.

170,196. CHUCK-DASHER. R. Steadman, Covington, Ga. [Filed Oct. 6, 1875.]

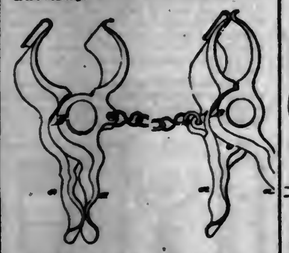
Brief.—The dasher-head is of the class formed of a disk with inclined funnel-shaped perforations, having both upward and downward, and is caused to rotate upon the staff by the reaction of the cream against the sides of the perforations. The cream in the perforations is also compressed and the friction among the particles increased.



A churn-dasher rotatively mounted on its handle and provided with funnel-shaped apertures, substantially as described, whereby, in its passage through the cream, the dasher is rotated and the latter compressed, as set forth.

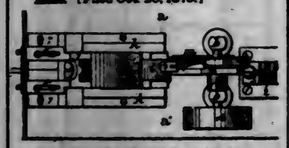
170,197. COW-TAIL HOLDERS. G. Stickney, Philadelphia, Pa. [Filed Apr. 23, 1875.]

Brief.—The jaws of the clamps are extended beak, so as to form handles to open the clamps more readily.



The improved shackles for cows' tails, consisting of the pinchers and connecting-chain, said pinchers having their jaws extended to form handles *c c*, for the purpose of more readily opening said jaws, substantially as described.

170,198. MACHINES FOR MAKING SHOE-TIPS. John A. Stockwell, Lynn, assignor to the Stockwell Shoe-Tip Company, Boston, Mass. [Filed Oct. 20, 1875.]



1. The combination of the mold 4, having a beveled edge, in combination with a clamping-former, *j*, and a smoothing-down former, *i*, the two formers being made to operate substantially as shown and described.

2. The smoothing-former *i*, having projections *m* on its under side for pressing the material toward the center, substantially as specified.

3. A mold, 4, having its front edge beveled away, substantially as described.

4. The combination of the connecting-rod *b*, cam *g*, projection *l*, with a slide, *l*, and spring *3*, substantially as set forth.

5. The combination of the jointed connecting-rod *a*, cam *f*, and the rods *p r*, substantially as specified.

170,199. DENTAL PLUGGERS. Samuel D. Strohm, Philadelphia, Pa., assignor of one-half his right to William H. Wright, same place. [Filed Oct. 2, 1875.]

Brief.—Two spindles are arranged in the case of a dental hand-piece, at right angles to each other, the one carrying a dental tool, and the other arranged for attachment to an ordinary straight plugging-instrument. Motion is communicated from one to the other of the spindles by the intervention of a pivoted lever, with its two faces at right angles to each other.

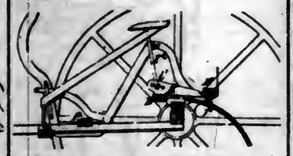


1. The within-described attachment for dental plugging-instruments, consisting of a casing having two spindles at right angles, or thereabout, to each other, one of said spindles carrying the plugging-tool, and the other being arranged for attachment to the operating-spindle of an ordinary straight plugging-instrument, substantially as set forth.

2. The combination of the casing A A', spindle B, lever E, and spindle D, having a dauge, *f*, with the coiled spring *e* and screw-plug *h*, adapted to the end of the arm A' of the casing, as set forth.

170,200. HORSE-RAKES. John H. Thomas, Springfield, Ohio. [Filed June 11, 1874.]

Brief.—The weight of the driver exerts a constant lifting action on the teeth, which are held in working position through the medium of a foot-lever counteracting each lifting action.



1. In a wire tooth-rake, in which the teeth are held down against the resistance of the work by pressure on a foot-lever, in combination with the rake-head and foot-lever made to sustain the strain on the teeth without the intervention of a locking device, a driver's seat resting on the rake-head, so as to exert a constant lifting-action on the teeth when not sustained by the foot-lever, substantially as set forth.

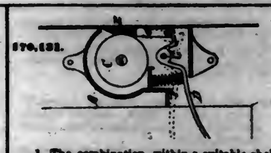
2. The combination, in a wire-toothed rake, in which the rake-head is hinged to a fixed axle, and the driver's seat rests on the rake-head, so as to exert a constant lifting-action on the rake-teeth, of the foot-lever sustaining the weight of the driver and the resistance of the teeth without the intervention of a locking device, and the hand-lever for operating the rake-head and teeth, substantially as set forth.

3. The combination of the axle, overhanging rake-head, and driver's seat, which rests and bears constantly with a tendency to lift the teeth on the rake-head nearly in a line with the pivot of the hinge when the teeth are down, and with an increasing pressure as the teeth are raised, substantially as set forth.

4. In combination with a rake-head hinged to a fixed axle, a driver's seat adjustably attached to the rake-head, and constantly exerting a force to lift the teeth to an extent determined by the adjustment of the parts, substantially as set forth.

170,201. SASH-HOLDERS. Hiram Torrey, Philadelphia, Pa., and Darius Lyman, Washington, D. C. [Filed Oct. 20, 1875.]

Brief.—An elastic roll, pivoted in a suitable case, has interposed between it and the jamb or window-frame a movable and adjustable rubber wedge, which is carried in a pivoted bar, the whole operated from the outside by the projecting handle of a spring-lever.



1. The combination, within a suitable shell or case, A, of a pivoted elastic roll, C, and movable or adjustable rubber wedge, E, for working in contact with, and between, the jamb or window-frame and roll, substantially as set forth.

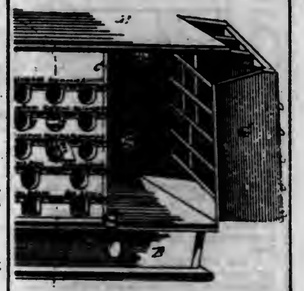
2. The pivoted lever D, the spring F, the pivoted bar *c*, and elastic wedge E, in combination with a rubber or other elastic roll, C, as shown and described, to operate as specified

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170,202. ARTIFICIAL STONE. J. C. Tucker, New York, N. Y. [Filed June 11, 1875.]

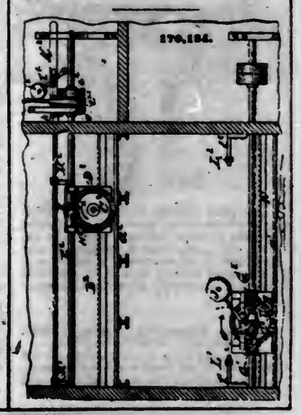
An artificial stone produced by combining clay with asphaltum or other bituminous material while in a heated state, and with an animal, vegetable, or mineral fibrous material, in sheet or block, with or without pressure, substantially as set forth.

170,203. TICKET-CASES. David T. Vine and Theo. J. Schuler, Fort Wayne, Ind. [Filed Oct. 4, 1875.]



1. The hinged cases G G, divided into smaller chambers or compartments, and provided with the apertures *b* and slits *i*, as and for the purpose herein set forth.

2. The combination of the base A, frame C D E, hinged cases G G, divided into smaller compartments, and provided with apertures *b* and slits *i*, the spring-catch *a*, and weights H, substantially as and for the purposes herein set forth.



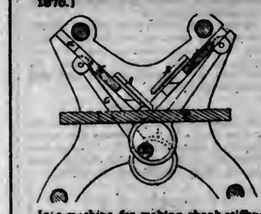
170,204. STIRRING APPARATUS FOR MALT-KILNS. August Von Schlemmer, Hochheim-on-the-Main, Germany. [Filed Sept. 16, 1875.]

Brief.—The revolving stirrers or brushes are composed of split quills. The stirrer-shaft is at right angles with the driving-shaft, and connected with it by means of the bevel-wheels and clutch, the large bevel-wheel being on the end of the stirrer-shaft. The motion of the latter is automatically reversed when the pivoted weighted levers come against the arms or stops.

1. The combination, with the stirrer-shaft G and its gear-wheel D', of the bevel-wheels G' G², the double-coniby clutch G³, the driving-shaft E, the pivoted weighted lever I, and the arms L' L², arranged and operating as herein shown and described.

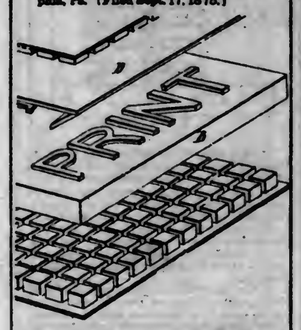
2. The stirrers, composed of split quills *q*, as herein described, for the purpose specified.

170,205. MACHINES FOR CUTTING SHANK-STIFFENERS FOR BOOTS AND SHOES. J. M. Watson, Sharon, Mass. [Filed Oct. 20, 1875.]



In a machine for making shank-stiffeners, the combination of the bed E, the knives A B, and means for operating said knives, substantially as set forth, whereby said knives are alternately reciprocated, each across the pathway of the other, so that the material, after being cut by them, is beveled at opposite edges, as and for the purpose described.

170,206. ELASTIC UNDERLAYS FOR PRINTING ON GLASS. Joseph L. Wells, Philadelphia, Pa. [Filed Sept. 17, 1875.]



1. The combination, with a flat printing-block, B, of a series of elastic pads, *c*, arranged a short distance apart from each other and interposed between the flat bed of a printing-press and the said printing-block, as and for the purposes specified.

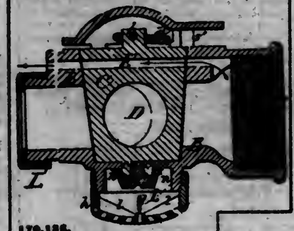
2. The combination of a series of elastic pads, *c*, with a flat printing-block, B, and with the platen of a printing-press, between which and the said block the pads are interposed, as set forth.

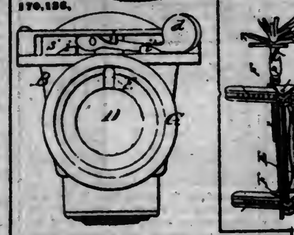
170,207. ANTI-INCRUSTATION COMPOUNDS. Emanuel Wilm. Rade, Switzerland, assignor to Frederick Baxter, Brooklyn, N. Y. [Filed Jan. 8, 1874.]

The composition herein described, consisting of nine-tenths caustic-soda lye and one-tenth solution of catechu.

170,208. HOSE-NOZZLES. C. S. Westland, Providence, R. I., assignor of one-half his right to the Allen Fire Department Supply Company, same place. [Filed Oct. 26, 1875.]

Brief.—Above the plug-valve is a pentagon-cap. By turning the wrench or handle, as described, the valve is made to register with the large or small discharge-orifice, as desired. The lugs shown are to serve as stops or guides for the handle.





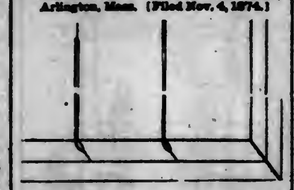
1. In a hose-nozzle, the combination of the large and small water-ways J J' with the plug-valve C, having at right angles to each other orifices D E, adapted to register with large and small ways J J' in the nozzle, and corresponding diameters therewith, substantially as specified.

2. The combination, with the valve-plug C, having hinged operating-arm *d*, of the guard cap or plate F, having slot *s'*, substantially as specified.

3. The combination, with the large water-way J' and the small water-way J in a hose-nozzle, and the valve-plug C, having a large orifice, D, and a small orifice, E, corresponding therewith, of the hinged operating-handle *d* and angular spaced stops *f f' f²* in the slot *s* of a guard.

4. The combination, with the hinged handle *d* on a valve plug, C, of the guard cap or plate F, for protecting the said handle from casual injury, substantially as specified.

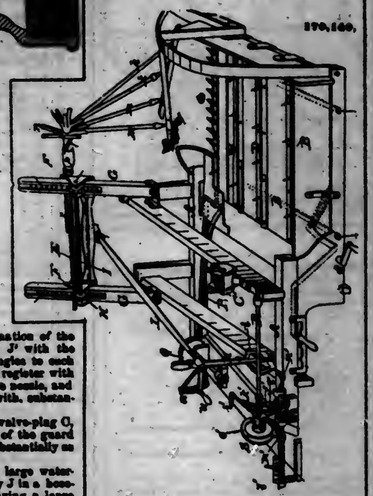
170,209. CALKING VESSELS. J. T. White, Arlington, Mass. [Filed Nov. 4, 1874.]



The combination of the grooved edges and the fibrous packing, when the sides of the groove are cut so as to form an acute angle, or nearly so, with the surfaces of the board or plank, and to meet when the planks are in place, all when constructed and arranged substantially as described.

170,210. HARVESTERS. John H. Whitney, St. Louis, Mo., assignor to the Gunner & Whitney Manufacturing Company, same place. [Filed June 7, 1875.]

Brief.—The finger-bar and cutters are made adjustable forward and backward upon the platform and main frame.



1. The movable shoe *s*, mounted on the front edge of the platform, and provided with the finger-bar, as shown.

2. In combination with the adjustable cutting mechanism, the rods or bars *b* and the obliquely-slotted sliding bar *a*.

3. In combination with the cutter-bar or knife, movable forward and backward, as described, the pitman P, provided with an elongated wrist or journal, *b'*, substantially as shown.

4. In combination with the cutter-bar or knife, movable forward and backward, as described, the pitman, provided with the long wrist *b'*, and guided at its lower end in bearings on the frame, as shown.

5. In combination with the movable shoe or its equivalent, carrying the cutting devices, the rake-chain or conveyor, mounted therein so as to move forward and with the cutter, for the purpose described.

6. The combination of the two pivoted rear standards G, provided with the racks *f*, the sliding shoes F, mounted on the standards, and the pinions H, mounted in the shoes, and connected by the shaft I, as shown, whereby the rear shaft is maintained in a horizontal position, and adjusted at both ends at once.

7. In combination with the shaft H, provided with the fixed head *l* and its rigid arms *k*, and the rotary head *n*, provided with the arms *m*, the blades or beaters, having their ends attached to said arms, as shown.

8. In combination with the shaft H, the rotating spirally-grooved head *n* and the sliding sleeve *p*, provided with a pin entering the groove, and held from turning on the shaft by a spline or its equivalent.

9. In combination with the sliding sleeve *p*, arranged as and for the purpose described, the bar *r*, crank *s*, and rock-shaft I, provided with handle *u*.

10. In combination with the sliding shoe F, provided with the pinion H, the pivoted latch K, arranged to engage with the pinion, as shown.

11. The device for controlling the operation of the binder-shaft, consisting of the loose pulley S, provided with the oblique rib *o'*, the clutch T, provided with the arm or lip *o*, the dog *f'*, provided with the inclined end, shoulder *g'*, and arm *f*, the sliding rack-bar *w'*, provided with the incline *v'*, the dog *r'*, the spring *p'*, for moving the rack-bar backward, and the adjustable stop for limiting the backward movement of the rack, substantially as shown.

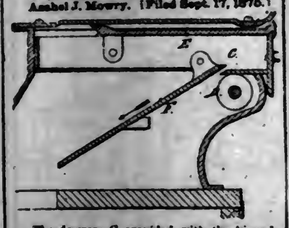
12. A binder-operating mechanism, consisting essentially of a shaft, E, provided with a clutch, T, a loose driving-pulley, S, provided with a spiral rib, *o'*, and a sliding rack-bar, *w'*, operated by the rib *o'*, and arranged to throw the clutch in gear at regular intervals, substantially as shown and described.

13. In combination with the sliding rack-bar e', arranged and operating as described, an adjustable stop for limiting its backward movement, substantially as shown and described.

14. In combination with the rack-bar w', arranged and operating as described, the sliding and rotating rod f', provided with the handle w' and the plate w', for locking the same in place.

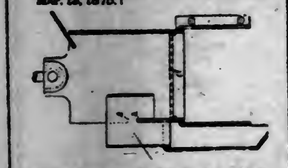
15. The tension device consisting of the cup or case O', provided with the vertical slits through its bottom, the horizontal slit s' and roller r' at its front, and the flanged roll in its interior, as shown and described.

170,141. LETTER-BOXES. David J. Wilcoxson, Milan, Ohio, assignor to himself and Ambel J. Mowry. [Filed Sept. 17, 1875.]



The drawers C, provided with the hinged cover E and hinged bottom F, in combination with the friction-roller D, all operating substantially in the manner and for the purposes set forth.

170,142. COAL AND ORE SEPARATORS. John B. Wilford, Philadelphia, Pa., assignor to Hezekiah Bradford, same place. [Filed Mar. 13, 1875.]



The reciprocating jig-box having delivery-edges 2 and 3 at different heights, and alternating along the side or sides of the jig-box, in combination with a hood contiguous to each of the lower delivery-edges 3, substantially as and for the purposes set forth.

170,143. MILL-BURR FURROW-GAGES. E. Williams and S. F. Leyda, Minerva, Ohio; said Leyda assignor of one-half his right to J. F. Leyda. [Filed Sept. 21, 1875.]



The device for gaging the furrows in burr-stones herein described, consisting of the level A, sliding plate B and F, oscillating plate C, having the jaws D D and graduated segment E pivoted thereto, staff H, and set-screws g f h, all combined and arranged substantially as and for the purpose herein before set forth.

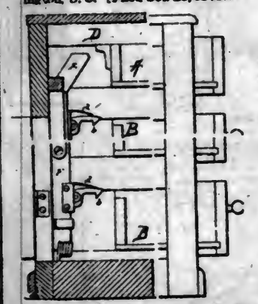
170,144. FASTENINGS FOR BUTTONS, &c. Frank B. Williams, Henry B. Cook, and John A. Kline, New York, N. Y. [Filed Nov. 6, 1875.]

1. In a button, the combination of the plate B, with post D, slotted as described, the pushers a a, with hooks a' a', and the spring A, all substantially as and for the purposes herein set forth.

2. In a button, the plate B, constructed substantially as described, with the lugs d' d', the post C, and the shank-post D, and adapted to receive the spring and pushers after the said plate is secured to the button, for the purposes herein set forth.



170,145. LOCKING DEVICES FOR DESKS. James H. Williams, Washington, D. C. [Filed Oct. 26, 1875.]



1. The lock-bar F, having arm E, which is thrown forward by a spring, combined with the spring-catches acting at the tops of the drawers, all constructed and operating as described.

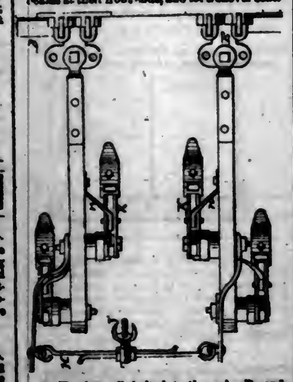
2. In a desk or other case, the combination of the lock-bar F, the spring-catches b, and the strike-plates on the tops of the backs of the drawers, all constructed and operating as and for the purpose described.

3. In a desk or other case, the spring-catch i, in combination with the bar k, balance-lever l, bar k, and lock-bar F, constructed and operating as described.

4. The combination of the slotted and hinged lock-bar F, provided with the spring-catches to hold the drawers, the foot-spring g, the rods h and k, and the lever l, all constructed and operating as and for the purpose set forth.

170,146. DOUBLE PLOWS. S. D. Williamson, Milford, Ind. [Filed Sept. 18, 1875.]

Brief.—Devices for connecting the plow-beams at their front ends, and for a shovel-seat.



1. The bars C, bolted to the axles B, and secured to the frame-pieces A by means of the flanged plate D, and the looped bolts a, all constructed and arranged substantially as and for the purpose set forth.

2. The shoe L provided with side flanges and stops at the top, against which the plow-share rests, in combination with the metallic U-shaped bar K, and connecting-bolt, whereby the shoe carrying the plow can be adjusted up and down on the standard, as set forth.

REISSUES.

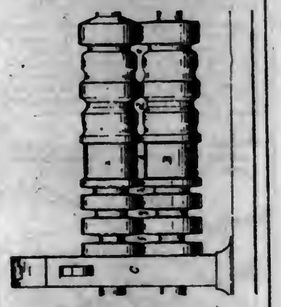
6,737. PROCESSES OF RENDERING ANIMAL FATS. William B. Andrew, New York, N. Y. Patent No. 163,000, dated Aug. 11, 1874. [Filed Nov. 8, 1875.]

1. The process, herein described, for rendering fats, consisting in the application of dry heat or dry hot air to liquefy, and pressure to separate, the oily portion from the membrane, and removing the liquid portions from contact with the membranous portions as fast as separated.

2. The substantially-described process of separating the claine and stearine from the membrane of animal fat, consisting in subjecting the fat to pressure when raised to a sufficient temperature by dry heat to effect the separation, and conveying the oily product away from the heat to a cooler place, as soon as expressed, as and for the purposes specified.

3. In extracting claine from animal fat for food or culinary purposes, the process of separating the claine and stearine from the membrane, by taking the fat while it retains its animal heat, and subjecting it to heat and pressure, as specified.

6,738. ROLLS FOR UTILIZING THE FAG-ENDS OF RAILROAD-RAILS. Henry Chisholm, Cleveland, Ohio. Patent No. 124,116, dated Feb. 27, 1872; reissue No. 6,464, dated June 15, 1876. [Filed Oct. 19, 1876.]



1. The rolls A and B, provided with the series of grooves, constructed substantially as described, to gradually alter the sectional form of a railroad-rail, or fag end, &c., without crimping or lapping its external surface, substantially as and for the purpose described.

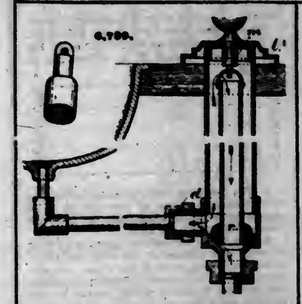
2. The rolls A B, having a series of irregular-shaped and graduated grooves of the form or construction shown at a c d, operating conjointly as and for the purpose substantially as described.

3. The manufacture of bars or rods of steel homogeneous in texture, from old rails, butts, or fag-ends by a process or method substantially such as that herein before described—that is to say, rerolling said old rails, butts, or fag-ends, by means of rollers having grooves so constructed that the body of the rail, butt, or fag end shall, by this operation upon it, be gradually contracted transversely and increasingly extended longitudinally without violent rupture and without pilaction of the surface.

6,739. WASTE-VALVES AND OVERFLOWS. James Foley, Brooklyn, N. Y., assignor of one-half interest to George C. Gunning. Patent No. 158,280, dated July 31, 1874. [Filed Oct. 1, 1875.]

Brief.—The stand-pipe has within it the overflow-pipe and valve, as shown. When the handle of the removable cap is raised and partially turned the valve is held suspended, and for this purpose the rod below the handle is made oval continually, with a circular neck at a proper place to allow of turning.

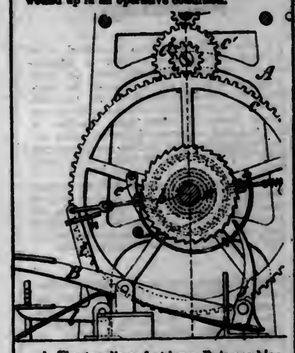
6,739.



The stand-pipe f of the bath or basin overflow passing through the slab or table b, and receiving at its upper end the removable cap i, in combination with the overflow-pipe o, valve r, and means for suspending the valve and overflow-pipe from the cap, substantially as set forth.

6,740. SPRING-MOTORS. Albert C. Hallam and James W. McKee, Brooklyn, N. Y., assignors, by mesne assignments, to Geo. W. Masson, Lewiston, Me. Patent No. 99,669, dated Feb. 8, 1870. [Filed Nov. 5, 1875.]

Brief.—With the ratchet-wheel are combined a treadle and spring-pawl, in such a manner that the pressure of the foot upon the treadle will turn the shaft, whereby the spring is kept wound up in an operative condition.

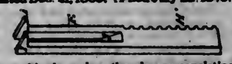


1. The treadle or foot-lever B, in combination with the winding-gear of a spring-power, substantially as and for the purpose described.

2. The lever I and spring k, in combination with the friction-strap j, drum i, and spring-power, substantially as set forth.

3. The pawl f, provided with the stop A, in combination with the spring g, substantially as herein specified.

6,741. CLAMPS FOR SHINGLE-PACKERS. B. B. Taylor, Oconto, Wis. Patent No. 98,123, dated Dec. 21, 1869. [Filed July 22, 1875.]

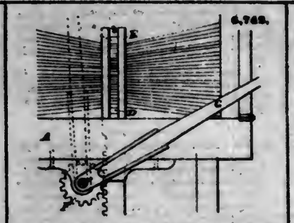


In a shingle-packer, the clamps consisting of the shanks H', prongs E, and dogs or lugs I I, arranged to be operated as and for the purpose set forth.

6,742. SHINGLE-PACKERS. B. B. Taylor, Oconto, Wis. Patent No. 98,123, dated Dec. 21, 1869. [Filed July 22, 1875.]

Brief.—Benches of shingles can be clamped for binding with metal straps by means of a packing-bed, provided with a stationary end guide, and a hinged end guide, and a forked clamp, operated by a lever and pinion, the teeth of which engage with teeth upon the lower edge of the clamp.

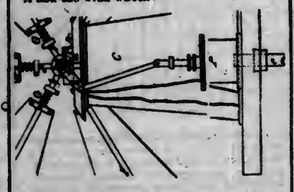
6,743.



The stationary guide B, hinged guide C, bed or table A, clamps E, in combination with lever G, pinions F, and shaft H, as set forth.

6,744. WINDMILLS. Jabez K. Babcock, Phelps, N. Y., assignor to the Hartford Pump Company. Patent No. 30,036, dated Sept. 18, 1860; extended seven years. [Filed Oct. 20, 1875.]

Brief.—Combining with a wind-wheel a receiver, which is a rotary tower made hollow and air-tight. Into this receiver the air is compressed by a suitable air-pump connected with the wind-wheel. The central axis is made hollow for the purpose of drawing off the air which has been compressed within it. The pump is attached to the tower, and turns with it and the wind-wheel.

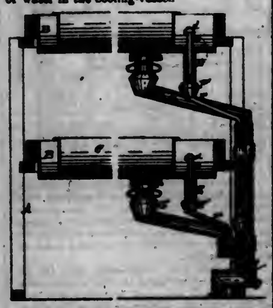


1. The combination of the wind-wheel A, the air-pump P, and the reservoir for compressed air C, substantially as described.

2. The hollow rotary tower C, with its tubular axle c, in combination with the wind-wheel A, substantially as herein described.

6,745. MILK-COOLERS. Charles A. Douglas, Franklin, N. Y. Patent No. 122,512, dated Feb. 20, 1872. [Filed Oct. 1, 1875.]

Brief.—A tube for drawing off water extends from the bottom of the water-vessel, and a smaller tube for drawing off milk extends into it from the bottom of the milk-vessel, and another tube is secured between them, which acts as a stop to the water tube, and which connects with a conduit-tube. An overflow tube is made adjustable to regulate the height of water in the cooling-vessel.

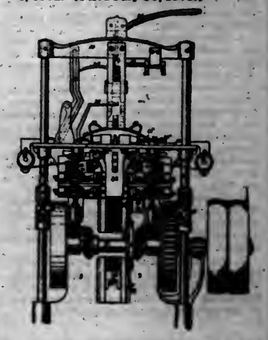


1. The vessels B and C, placed one within the other, with a space between for water, tubes a, c, and c, and the conduct G, combined to operate substantially in the manner set forth.

2. The water-vessel B, milk-vessel C, with space between for running water, governor D, tube E, and conduct F, combined to operate substantially in the manner set forth.

3. A series of water-vessels, B, placed one above the other, each with a milk-vessel, C, supported within, with a water-circulating space between their walls, governors D D, conducts F F, terminating with a common conduct, F', and conducts G G, terminating in a common conduct, G', all combined to operate as set forth.

6,746. PAPER-BOX MACHINES. Henry R. Heyl and August Brehmer, Philadelphia, Pa., assignors to the Novelty Paper-Box Company. Patent No. 122,078, dated Oct. 3, 1872. [Filed July 30, 1875.]



1. The blank-holder 5 6 and graduated counterbalance device 9 9 10 11 12, combined and arranged, substantially as herein described, to elevate the blanks, as required, with a force varied proportionally to the height of the pile of blanks.

2. The detent 13 14, and automatic device for temporarily releasing the same, substantially as set forth.

3. The feeder 21, constructed with one or more cavities in its face, connected with a pipe for exhausting the air, in combination with the valve or valves operated by the descent and ascent of the feeder by mechanism, substantially as herein described.

4. The annular punch or bending-fork 72, constructed with a cutting-face, and with internal longitudinal grooves 73, so as to sever a staple-blank, bend it around a suitable mandrel, and hold and guide it for driving, as hereinbefore explained.

5. The reciprocating punch or bending-fork 72, operating to sever the wire to bend it over a suitable mandrel or former, and to carry the staple forward into position to be driven, substantially as described.

6. The reciprocating punch or bending-fork having a longitudinal central opening, through which a hammer or driving-rod may operate, substantially as described.

7. The punch or bending-fork 72 and mandrel 71, operating in combination, substantially as set forth, to form the staples.

8. The wire-clinchers, sliding in a plane parallel with the material through which the staple is driven, so as to clinch the staple ends flat down on such material, as explained, without subsequent hammering.

9. The combination of a hammer or driving-rod, to force a staple through the material, and bending mechanism, operating, substantially as described, to turn the points of the staple flat against the material while the hammer rests on the head thereof.

6,748. REGISTERING TICKET-PUNCHES. A. D. Hoffman, Chicago, Ill., assignor, by mesne assignments, to the Railway-Register-Manufacturing Company, Buffalo, N. Y. Patent No. 100,096, dated Feb. 22, 1870; reissue No. 4,946, dated Jan. 31, 1871. [Filed Nov. 10, 1875.]



1. The combination, with a ticket-punch, of a bell, connected with the moving parts of the punch, so as to be rung each time the latter is operated, substantially as and for the purpose hereinbefore set forth.

2. The arrangement, in a ticket-punch, of the jaw A, bell F, bell-hammer e, bell-crank f, push-rod H, and jaw B, so as to operate as herein before shown and described.

3. The combination, in a ticket-punch, of the box E, for the cuttings, with a registering device, which shall indicate the number of times the jaws are actuated, substantially as herein before set forth.

4. The combination, in a ticket-punch, of a bell, a registering device, and a box to receive the cuttings, arranged so as to operate as herein before set forth.

5. The combination and arrangement, with the handles A B of a ticket-punch, of the spring-pawl J, ratchet-wheel M, and a registering device, as hereinbefore set forth.

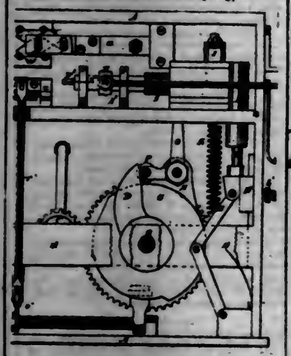
6. The combination, with a registering mechanism and an actuating-lever, of an intermediate spring or motor, placed under tension by the movement of the actuating-lever, imparted by the hand of the operator in one direction, and acting to motion the registering mechanism upon the return movement of the lever in the other direction, substantially as set forth.

7. The combination, in fare or ticket registering machines, of an actuating-spring with a pulling pawl or hook which actuates the registering mechanism, substantially as described.

8. The combination, in fare or ticket registering machines, of a pawl with a spring, which, on its reaction or recoil, actuates the registering mechanism, substantially as and for the purpose hereinbefore set forth.

6,747. MACHINES FOR HEADING BOLTS. T. Hall and M. Thomas, Chicago, Ill. Patent No. 112,949, dated Feb. 28, 1871. [Filed Oct. 3, 1871.]

Brief.—Of the portable gaging die, the lower section W¹ is hinged, and is turned outward to discharge the bolt by means of a cam on shaft B, a rock-shaft, and a rod, T. The bender P is connected to a piston, S, that penetrates a water-chamber, while another piston, O, enters the same chamber from below, and is actuated by a cam, D, through the medium of toggles E. A valve at the top of the chamber is opened automatically, to discharge the water from the chamber into a reservoir after each stroke of the bender, and the latter is retracted by a bow-spring, H².



1. The combination, in a bolt-heading machine, of the hydraulic-press I, safety-valve J, the heading-tool F², and the bolt-heading dies W W², as combined and arranged as to be actuated as one machine, substantially as specified and shown.

2. The combination of the cams D, Q, and D² with the heading-tool and the dies, in the manner and by the means substantially as described.

3. The hinged die-block W², pitman F², lever O², and rock-shaft B², or their equivalents, arranged so as to tilt the die, substantially as specified.

4. The combination of the spring H², crossbead G², bracket C, pitmen 1 2, the collar-arms X, and bender F², when arranged substantially in the manner and for the purpose specified.

5. The combination of the die-holders W W¹, levers V V', pitman T², lever O², and rock-shaft B², all constructed and arranged as described.

6,748. ANTI-FRICTION COMPOUNDS FOR BEARINGS. L. W. Lathrop and Theodore A. Weber, New York, N. Y., assignors, by mesne assignments, to the Lathrop Anti-Frictionate Company. Patent No. 165,340, dated July 6, 1875. [Filed Oct. 16, 1875.]

1. An anti-friction bearing for machinery formed of graphite whose particles have been united by cohesion and solidified by pressure, as set forth.

2. The process of forming solid anti-friction bearings by welding together the particles of graphite with melted sugar and subjecting the resultant to pressure, as described.

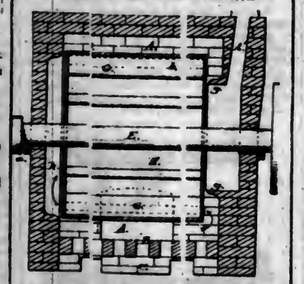
6,749. SHIRTS. James H. Myers, Montreal, Canada, assignor to Oliver H. Keep, New York city. Patent No. 123,721, dated Feb. 13, 1872. [Filed Sept. 14, 1875.]



As a new article of manufacture, a partial shirt, composed of a whole front part, B, a bosom, and a collar-band, the two latter complete in themselves, and fitted at the neck, the several parts being constructed and combined for use, substantially as and for the purpose specified.

6,750. ROTARY STEAM-BOILERS. Charles W. Pierce, New York, N. Y. Patent No. 166,807, dated Aug. 17, 1875. [Filed Oct. 9, 1875.]

Brief.—Water is supplied to all portions of the inner shell of the boiler by means of bucket arranged to encompass the fire-tubes.



1. Two sets of tubes or flues passing through the heads of the boiler and concentric with each other, in combination with the annular flange f and chamber h, whereby the products of combustion are caused to pass through the outer series and return through the inner series, as specified.

2. Buckets h, in combination with the inner surface of the boiler-shell to supply water to the flues G and shell D during that part of the revolution performed above the water-line.

3. The annular flange f and chamber h, in combination with the tubes G and H, substantially as and for the purpose set forth.

4. The combination of the shell D, buckets h, flues G and H, chamber h, flange f, and chimney A', constructed and operating substantially as and for the purpose specified.

6,751. CARDS FOR WRAPPING THREAD. Hugo Sutro, New York, N. Y. Patent No. 120,672, dated Aug. 20, 1872; reissue No. 5,726, dated Jan. 6, 1874. [Filed Aug. 11, 1875.]



1. The device for holding thread consisting of card-board notched at the ends, so as to separate said threads into two or more sections or skeins, as set forth.

2. The device for holding thread consisting of card-board notched at the ends, and perforated lengthwise, so as to be formed into sections, to allow of convenient separation of the sections and skeins of thread, as and for the purpose set forth.

3. The improved method described of putting up thread or any narrow fabric in skeins on card-board notched at the ends, by winding the fabric continuously from one notched section of the card-board to another, as and for the purpose set forth.

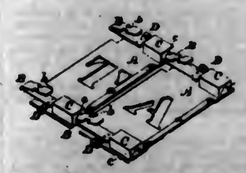
6,752. CAR-COUPLINGS. Jacob Singer, Harrisburg, Pa., assignor of one-half interest to Robert L. Muench, same place. Patent No. 161,734, dated June 9, 1874. [Filed Nov. 6, 1875.]



1. The combination, in a draw-head, of an inclined bearing, and a block or follower adapted thereto, and constructed and operating to fall by its gravity beneath the coupling-pin, bear upon the link, and maintain the same in a horizontal position after the pin drops, resist the thrust upon the link in coupling, and to rise on its bearing under excessive pressure upon the link, and permit the latter to pass beneath, all substantially as set forth.

2. A draw-head provided with an inclined bearing, and with a block or follower adapted thereto, whereby the block bears against and resists the thrust upon the link in coupling, but yields to excessive pressure, allowing the link to pass further inward, as described.

6,753. STENCIL-PLATES. Jerome L. Tarbox and H. L. Tarbox, New York, assignors, by mesne assignments, to J. T. Andrews, 2d, Penn Yan, N. Y. Patent No. 87,727, dated Mar. 9, 1869. [Filed Oct. 21, 1875.]



1. Stencil-letters constructed and adapted to be connected or disconnected at their edges, so as to form a continuous stencil-plate, substantially as and for the purpose specified.

2. Stencil-plates constructed and adapted to be connected at their edges, substantially as and for the purpose shown.

3. Stencil plates or letters, as above described and claimed, capable of being combined, and having their contiguous edges constructed so as to overlap, substantially as and for the purpose set forth.

4. In combination with the letter-plates A and A, the spring-catches B b and the housings C c, substantially as and for the purpose shown and described.

5. In combination with the plates A and A, the loops D and D, covered apex and extending outward from their edges, substantially as and for the purpose specified.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 21. TUESDAY, NOVEMBER 23, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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NOTICE TO MANUFACTURERS AND OTHERS.

UNITED STATES PATENT OFFICE,
Washington, D. C., October 5, 1875.

The COMMISSIONER OF PATENTS respectfully requests manufacturers of and dealers in engines, machines, apparatus, tools, and appliances of whatever kind, to send to this Office duplicate copies of all catalogues and circulars which they have issued or may issue from time to time.

R. H. DUELL, *Commissioner.*

COMMISSIONER'S DECISIONS.

PARIS *vs.* BUSSEY.—*Interlocutory appeal; interference.*

[*Appeal from the Examiner of Interferences in the matter of the interference of Paris* vs. *Bussey* for "IMPROVEMENT IN COOKING-STOVES."—*Decided November* 27, 1875.]

It having been previously judicially determined that an interference cannot be legally declared between an application for reissue and a subsequent patent, (*Mayall ex parte*, Sup. Ct. D. C.:) *Held*, that the same rule applies to an application for the reissue of a prior patent and an application for the reissue of a subsequent patent.

The nature of the case is not affected by the attitude of the subsequent parties, whether simply as patentees or as applicants for reissue.

Case of *Merrill* and *Carleton* Sup. Ct. D. C. commented on.

SPEAR, *Acting Commissioner:*

This appeal is taken from a decision of the Examiner of Interferences overruling a motion made on the part of Bussey to dissolve the interference, on the ground that Bussey, being an applicant for reissue of the prior patent, is entitled to an adjudication of his claims without any interference with any party subsequent in the Office. In *Becker* vs. *Throop*, (8 OFFICIAL GAZETTE, p. 1,) the Commissioner, following the decree of the Supreme Court of the District of Columbia, in the *ex parte* case of *Mayall*, decided that an interference between an application for reissue and a subsequent patent was not properly declared and should be dissolved, and directed thereafter no such interference should be declared.

The only difference that I can discover between the case of *Becker* vs. *Throop* and that now under consideration is that the subsequent patentee in this case is also an applicant for reissue.

In the case of *Mayall* vs. *Murphy* and *Schenck*, the latter parties were patentees only. I find by the record in this case that the late Commissioner had allowed this interference to go on, regarding the difference which I have mentioned as sufficient to relieve the case from the rule which appears to have governed the court in the Mayall case referred to above. I am unable, however, to find any such distinction.

The present case appears to me to be precisely the same as that which was before the court, so far as affects the question of interference It is difficult to conceive of any reason which could exist for dissolving the interference in the case of *Mayall* vs. *Murphy* and *Schenck*, unless it were founded upon the rights of the prior patentee, which rights could not be affected by any attitude which the subsequent party could assume before the Office. If the reissue were simply for the purpose of correcting the original deed and Mayall was entitled to an adjudication upon his claims, subject only to the same conditions and proceedings as, he would have been subjected to had he made the same claims at the time of filing the original application, it is difficult to see how it would make any difference whether Murphy and Schenck appeared in the Office asking an interference simply as patentees, or whether they were applicants for reissue of their subsequent patent. No written decision was promulgated by the court in the case referred to, and only their decree was sent to the Office; but I see no consistent or logical rule which can be deduced from that decree, and which will not include at the same time the case which was before the court and that which is now under consideration.

But I need not depend wholly upon that decree. This question had been before the Supreme Court of the District of Columbia prior to the case above referred to, having been brought by Merrill & Carleton, who were applicants for the reissue of a patent, and whose application for reissue had been put in interference with a subsequent original application for patent. The court, after very full consideration of the case, reversed the decision of the Commissioner of Patents, declared the interference illegal, and ordered that the reissue be granted.

In the decision rendered in that case (on file with the papers in this Office) Judge Fisher says:

But if the Commissioner shall find that the original patent is invalid or inoperative by reason of a defective specification, or by reason of the patentee having claimed in his specification as his own invention more than he had a right to claim as new, and that the error was the offspring of accident, mistake, or inadvertence, and not fraudulent, he has nothing further to do, except to issue the new patent, unless it be to exercise his power of *revision and restriction*—that is to say, *examine the specification as corrected by the applicant*—and upon such revision so to *restrict* that amended specification, if necessary, as to have it cover the same invention which was described or shown in the original description, drawings, and model, and cover nothing more. Having made this revision and restriction, if the applicant for reissue shall accept the restriction, it only remains for the Commissioner to reissue the patent with the specifications so corrected, revised, and restricted. He has no right to review and revise prior decisions of the Office made upon the original application, but only to restrict the specification proposed for reissue, so as to limit it to the original invention.

It would seem from these provisions of the acts of Congress that the duty of the Commissioner of Patents is a plain and simple one. Although the section last alluded to contemplates and provides for a *revision and restriction* of the claim of the person offering the surrender, and asking for a reissue, the same as in case of original applications. Yet it does not mean to place applications for reissued letters patent in all other respects upon the same footing as applications for original patents. It places them upon the same footing only in regard to a *revision and restriction* of the amended specification, so that whenever a party being dissatisfied with his original patent shall make an offer of surrender and ask for a reissue it becomes the duty of the Commissioner simply to examine his amended specifications to determine whether an honest mistake has been made in the issuing of the original patent as contemplated by the law of Congress, and if he finds that the application for reissue is for the same invention or device, and that the mistake made in the original patent was honestly made, it is his duty, having examined the amended specification, to determine whether they are correctly and rightly made out, so as to cover the original invention and no more, as shown by the original description, drawings, and model. If he finds that they cover too much or too little it is his duty to inform the applicant of that fact, and to point out in what particulars the specification should be amended or restricted.

This being done, if the applicant should amend his specifications accordingly, there is no discretion left with the Commissioner in regard to granting the reissued letters patent.

This covers the whole ground beyond all question, and it remains for the Commissioner only to follow the plain decision of the court. The interference in this case should not have been declared, and is accordingly dissolved.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

DAVID BANKS *et al.* vs. JOHN R. McDIVETT *et al.*

[*In equity.—Before* SHIPMAN, *J.—Decided October* 29, 1875.]

MOTION FOR PROVISIONAL INJUNCTION.

The rights and duties of compilers of books which are not original in their character, but are compilations of facts from common and universal sources of information, of which books, directories, maps, guide-books, road-books, statistical tables, &c., are the most familiar examples, are well settled.

No compiler of such a book has a monopoly of the subject of which the book treats. Any other person is permitted to enter that department and make a similar book; but the subsequent investigator must do so for himself from the original sources, which are open to all. He cannot use the labors of a previous compiler, "*animo furandi*," and save his own time by copying the results of the previous compiler's study.

[*E. Ellery Anderson*, for complainants.
Reed and *Drake*, for defendants.]

SHIPMAN, *J.*:

The plaintiffs are the proprietors of a book which was published in 1871, entitled "Rules of Practice of the Supreme Court of the State of New York," &c., and are also proprietors of a book which was published in the year 1874, entitled "General Rules of Practice of the Courts of Record of the State of New York." All the requirements of the Statute of the United States in regard to copyright have been complied with by the plaintiffs in respect to each of these books. The book which was published in 1871 contains the rules of practice which were adopted in general session of the justices and judges of the State of New York on December 20 and 21, 1870, with notes appended to each rule. The notes briefly state the substance of the decisions which had been made by the courts of New York in reference to the rules to which the notes are, respectively, appended, give the number and page of the volume in which the decision is to be found, and in like manner refer to the volume and page of the statutes which relate to the rule.

A convention of justices and judges is required to be held biennially to revise, alter, abolish, and make rules, which shall be binding upon courts of record in the State. The book which was published in 1874 contains the rules of practice which were adopted in the convention of the justices and judges on November 24, 1874, and which took effect on February 1, 1875, and also contains notes and references upon the plan of the book of 1871, but upon a much larger scale, the book of 1871 having seventy pages, while the book of 1874 is of one hundred and twenty pages. The plaintiffs published a similar volume in 1858.

In the year 1875 the defendants published a book entitled "New Rules of the Courts, General and Special, 1875," &c. This volume contains the rules which had been adopted by the judges on November 24, 1874, with notes appended to each rule, which notes refer only to the volume and page of the various statutes and reports of decisions which relate to the rule.

The book also has an index of the general rules, and contains the special rules of the Supreme and other courts of the State.

The plaintiffs brought, in February, 1875, a bill in equity, alleging that the introduction, the notes, and the index of the defendants' book were copied from the plaintiffs' book of 1874, in violation of the rights secured to them by the acts of the United States respecting copyright, and praying for an injunction, and also filed a motion for a provisional injunction. This motion has been heard, and is the only part of the case which is now to be decided. The plaintiffs do not claim that they have acquired any title to the rules, which are admitted to be common property, neither do they assert that there is anything novel in the plan, or system, or arrangement of their compilation, or of their index. The notes are mainly a digest of the decisions of the courts of New York, and of the statutes of the State. The volume which contains the decisions and the statutes are sources of information which are common and open to all, and to which each compiler can resort. But the plaintiffs complain that the defendants have not availed themselves of the original sources of information, but have resorted to the labor saving expedient of copying the citations which the research of the plaintiffs had discovered, and that such a use of the labors of an author or compiler is an unauthorized violation of the rights which are secured by the acts of Congress.

The rights and duties of compilers of books which are not original in their character, but are compilations of facts from common and universal sources of information, of which books, directories, maps, guide-books, road-books, statistical tables and objects are the most familiar examples, are well settled. No compiler of such a book has a monopoly of the subject of which the book treats. Any other person is permitted to enter that department of literature and make a similar book.

But the subsequent investigator must investigate for himself from the original sources, which are open to all. He cannot use the labors of a previous compiler *animo furandi*, and save his own time by copying the results of the previous compiler's study, although the same results would have been obtained by independent labor. The compiler of a digest, a road-book, a directory, or a map can search and survey for himself in the fields which all laborers are permitted to occupy, but cannot adopt as his own the products of another's toil. "He may work in the same original materials, but he cannot exclusively use those already collected and embodied by the skill and industry and expenditures of another." (2 Story's Eq. Jur., sec. 940.) The rights of compilers of this class of works have been recently carefully considered by Sir W. Page Wood, vice chancellor, in the cases of *Jarrold* vs. *Houlston*, (3 Key and J., 708;) *Kelly* vs. *Morris*, (1 Law Rep. Eq. Cases, 697;) and *Scott* vs. *Stanford*, (3 Law Rep. Eq. Cases, 718;) and the rule, which I have stated, has been reaffirmed. In the case of *Kelly* vs. *Morris* the learned Vice Chancellor says:

> In the case of a dictionary, map, guide-book, or directory, where there are certain common objects of information, which must, if described correctly, be described in the same way, a subsequent compiler is bound to set about doing for himself that which the first compiler has done.

The rule is recognized or stated in *Hogg* vs. *Kirby*, (8 Ves. Jr., 215;) *Matthewson* vs. *Stortsdale*, (12 Ves. Jr., 270;) *Longman* vs. *Winchester*, (16 Ves. Jr., 269;) *Wilkens* vs. *Aikin*, (17 Ves Jr., 422;) *Lewis* vs. *Fullarton*, (2 Beav., 6;) *Holten* vs. *Arthur*, (1 H. and *M.*, 603;) *Gray* vs. *Russell*, (Story's R., 11;) *Folson* vs. *Marsh*, (2 Story's R., 100;) *Emerson* vs. *Davies*, (3 Story's R., 768, and Curtis on Copyright, 174–177.) I do not understand that the rule prohibits an examination of previous works by the compiler before he has finished his own book, or the mere obtaining of ideas from such previous works; but it does prohibit a use of any part of the previous book, *animo furandi*, "with an intention to take for the purpose of saving himself labor." (*Jarrold* vs. *Houlston*, 3 Key and J., 708.) A careful inspection of the plaintiffs' books of 1858, 1871, and 1874, and of the defendants' book, and of Lansing's Code and Rules, published by the plaintiffs, to which my attention has been directed by defendants' counsel, has led me to the conviction that the general course which was adopted by the compiler of the defendants' book was to copy the citations in the plaintiffs' book of 1874, and, if necessary, to supplement them with other citations in the book of 1871, and with references which his own research had discovered; but his chief original source of information was the plaintiffs' book of 1874. The conclusion that he copied these citations in the first instance from the plaintiffs' compilation is derived from the fact that in a large majority of the notes the citations are not only the same which are given in the plaintiffs' book of 1874, but are placed in precisely the same order in which they were arranged by the plaintiffs. This peculiarity is manifest throughout the defendants' book. It is noticeable in the notes which are appended to nearly all of the ninety-seven rules, other than those which follow rules 20, 22, 33, 35, 37, 43, 45, 47, 51, 53, 56, 58, 61, 63, 66, 68, 69, 71, 72, 77, 78, 82, 85, 86, 87, 88, 92, 93, 94, 96, and 97. Thus the citations under Rule 7 are Rule 7 of 1871 amended, 2 How., 154; 1 Code R., 119; 3 How., 276; 1 Code R., 42; 5 Paige, 83; 4 Paige, 140. The citations under Rule 8 are 1858 amended; Rule 8 of 1871, amended; Code Sects., 193 to 197; 4 Bosw., 632; 1 Wenv., 35; 2 East., 181; 111 Blk., 76; note at 7 Abb., 73; 15 John., 535; 20 John., 129; 1 Chilt., 713; 2 W. Blk., 799; 2 Strange, 889. These citations are the same as those which are contained in the plaintiffs' book, and are placed in the same order in each compilations. There are in the defendants' book, under the eighteenth rule, sixty-two citations of decisions, all but one of which are the same, and are in the same order as those which are contained in the plaintiffs' book of 1874. It is impossible to suppose that the defendants could, by accident, have placed these references in the exact order in which they are found in the plaintiffs' book. The inference is irresistible that the plaintiffs' book was first resorted to for the purpose of saving the time and labor which must otherwise have been spent in an original examination of the reports.

I presume that the defendants' compiler subsequently examined the reports in order to verify the accuracy of the citations, and to correct the errors which he may have found, and that he did correct errors, and it is apparent that in many instances he added citations which his own investigations discovered; but it is manifest that he was to a large extent, in the first instance, a copyist of the labor of the plaintiffs. He states, indeed, in his affidavit, that his notes and references were principally taken from the plaintiffs' books of 1858 and of 1871, and from Lansing's Code and Rules, published by the plaintiffs in 1872; but that he did not draw materially from the plaintiffs' book of 1874.

The defendants' index of ten pages is almost a reprint of the plaintiffs' index, except that the former refers to the rule instead of the page.

This fact is not denied in the affidavit of the defendants' compiler, and an examination shows that his index was almost exclusively made with the scissors, and not with the pen.

These sentences of the plaintiffs' introduction are also substantially found in the corresponding portions of the defendants' book; but I do not deem this resemblance to be important.

It follows that the principle of law which I have stated has been violated, and that the plaintiffs are entitled to relief, unless they are debarred from any remedy by some other principle, which may be invoked by the defendants. They insist in this part of the case that the provisions of the copyright act, which are now contained in sec. 4,962 of the Revised Statute of 1875, have not been regarded by the plaintiffs. This section provides that no person shall maintain an action for the infringement of his copyright, unless he shall give notice thereof by inserting in the several copies of every edition published on the title-page, or the page immediately following, if it be a book, * * * * the following words: "Entered according to act of Congress, in the year ——, by A. B., in the office of the librarian of Congress, at Washington." The preface page of the book of 1874 contained the entry "Entered, &c., in the year 1874," but did not also contain the announcement that a previous edition had been entered in the year 1871, and it is contended that inasmuch as the book called "Rules of 1874" is another edition of the "Rules of 1871," the non-entry in the book of 1874 of the fact that the book of 1871 was entered, has destroyed the right to any action for an in-

fringement. It is not necessary to consider the consequence of a non-compliance with this section in each edition of a book, for I am of the opinion that a publication of the Rules of 1874, with appropriate notes, is not a subsequent edition of the Rules of 1871. The statute of New York provides that a convention of justices and chief judges shall be held at the capitol, in the city of Albany, on the first Wednesday of August, 1870, and every two years thereafter, and such convention shall revise, alter, abolish, and make rules, which shall be binding upon all courts of records, so far as they may be applicable to the practice thereof." The rules of 1874 were adopted in pursuance of this statute on November 24, 1874, and were ordered to commence and take effect on February 1, 1875, and were a new and revised set of rules; new rules had been added and old rules had been amended.

They were virtually new rules of the courts, which were to take effect on an appointed day, and the publication of the plaintiffs was in no proper sense a new edition of the rules of 1871. An edition is defined to be "a republication, sometimes with revision and correction; any publication of a book before published." (Webster's Dict.) The book entitled "The Rules of 1874" was not a republication or a publication of "The Rules of 1871."

It is also suggested that the plaintiffs are not entitled to protection, because they are also infringers of previous publications of like character. I have not been referred to any book which they have infringed, except the Rules of Practice published by W. C. Little & Co., in 1858, and from my examination of this book I cannot perceive that the plaintiffs have made any unjustifiable use of it.

Where an infringement is palpable, and a provisional injunction will not be attended with serious injury, it is not ordinarily refused as to so much of the work as is a plain infringement of the prior publications.

Let a provisional injunction issue restraining the defendants from the sale of any volumes or books which contain the notes which are appended to the "New or Revised Rules of 1875," other than the notes to Rules 20, 22, 33, 35, 37, 43, 45, 47, 51, 53, 56, 58, 61, 63, 66, 68, 69, 71, 72, 77, 78, 82, 85, 86, 87, 88, 92, 93, 94, 96, and 97, and which contain the index now printed in said book.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date November 23, 1875.]

8,799.—Watch-Keys.—HORACE W. BULLOCK, Springfield, Mass., assignor to himself and ORVIN W. BULLOCK, same place. Application filed November 6, 1875. Term of patent 7 years.

8,800.—Bezes.—JOSEPH H. ENGLAND, Baltimore, Md. Application filed October 13, 1875. Term of patent 7 years.

8,801.—Lawn-Settees.—JOSEPH W. FISKE, New York, N. Y. Application filed July 19, 1875. Term of patent 7 years.

8,802.—Show-Case.—WILLIAM H. GROVE, Philadelphia, Pa. Application filed November 12, 1875. Term of patent 14 years.

8,803.—Hat and Bonnet Holders for Trunks.—JOSEPH HALL, Newark, N. J., assignor of one-half his right to JOSEPH M. L. GARDNER, same place. Application filed November 10, 1875. Term of patent 3½ years.

8,804.—Inkstands.—HOMER LEE, New York, N. Y. Application filed October 19, 1875. Term of patent 7 years.

8,805 to 8,807, inclusive.—Floor Oil-Cloths.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J. Application filed November 10, 1875. Term of patent 3½ years.

8,808.—Paper-Weights.—CHARLES ROWLAND, New York, N. Y. Application filed August 26, 1875. Term of patent 3½ years.

8,809.—Coffin-Hinges.—JOSEPH W. VAUGHN, Peabody, Mass., assignor of one-half his right to ALBERT H. WHIDDEN, same place. Application filed November 1, 1875. Term of patent 14 years.

8,810.—Overshoes.—GEORGE WATKINSON, New Haven, Conn., assignor to L. CANDEE & Co., same place. Application filed November 2, 1875. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date November 23, 1875.]

3,148.—Cured Meats.—CHARLES BALTZ, Chicago, Ill. Application filed October 12, 1875.
"STAR OF THE WEST."

3,149.—Wines.—JOHN BARNETT & SON, London, England, and Reims, France. Application filed October 22, 1875.
"a bull's head."

3,150.—Medicine.—ELIZEBETH E. CHAMBERLAIN, Portland, Me. Application filed October 25, 1875.
"words and letters 'C. O. Chamberlain's 'Greenwood' Asthma Cure.'"

3,151.—Mixed Paints.—FRANK P. CALLAGHAN, Chicago, Ill. Application filed October 4, 1875.
"four kegs, barrels, or casks, the tub or vat placed on the platform, as above described, together with the bucket and measure, and the words 'Mixed Paints,' 'Pure Raw Linseed Oil,' 'Warranted Genuine Pure Boiled Oil,' 'Pure White Lead,' 'French V. M. Zinc.'"

3,152.—Axle-Grease.—SAMUEL CUPPLES & Co., St. Louis, Mo.—Case B. Application filed September 16, 1875.
"'Diamond Axle-Grease,' used in connection with the figure of a star."

3,153.—Medicine.—PERRY DAVIS & SON, Providence, R. I. (Re-registration.) Application filed July 25, 1871.
"Pain-Killer."

3,154.—Lubricating-Oils.—WILLIAM DOWNIE, Boston, Mass. Application filed October 22, 1875.
"words and letters 'HYPER SPERM OIL.'"

3,155.—Cigars.—FARRINGTON & SCHMAHL, Chicago, Ill.—Case A. Application filed July 22, 1875.
"word 'Yo-Semite,' and the manner in which it is lithographed and connected with the cut of the cigars."

3,156.—Cigars.—FARRINGTON & SCHMAHL, Chicago, Ill. Case B. Application filed July 22, 1875.
"words 'THE CORNER CIGARS.'"

3,157.—Cigars.—FREEDMAN, HESSLEIN & Co., Detroit, Mich.—Case A. Application filed August 24, 1875.
"words 'THE CHAMPION,' and two steamers."

3,158.—Cigars.—FREEDMAN, HESSLEIN & Co., Detroit, Mich.—Case B. Application filed August 24, 1875.
"representation of a bell, with the words 'Liberty Bell Cigar.'"

3,159.—Oils and Pastes.—J. GLOVER & Co., New York, N. Y. Application filed November 6, 1875.
"words 'PALMA CHRISTI.'"

3,160.—Flour.—HALLIDAY BROS., Cairo, Ill. Application filed November 8, 1875.
"word 'CLEOPATRA.'"

3,161.—Flour.—HALLIDAY BROS., Cairo, Ill. Application filed November 8, 1875.
"words 'BON-TON.'"

3,162.—Flour.—HALLIDAY BROS., Cairo, Ill. Application filed November 8, 1875.
"word 'SYLPH.'"

3,163.—Boots.—S. R. HEYWOOD & Co., Worcester, Mass. Application filed September 22, 1875.
"a circular figure inclosing a heart-shaped figure."

3,164.—Bitters.—ARNOLD KOCH, Pittsburg, Pa. Application filed October 29, 1875.
'words 'Swiss Stomach Bitters.'"

3,165.—Cigars.—LEWIS BROTHERS, San Francisco, Cal. Application filed September 13, 1875.
"a lithographed printed portrait (surrounded by a wreath of laurel) of W. C. Ralston, with the words, below the portrait, 'W. C. Ralston.'"

3,166.—Flannels and Cottonades.—PORTER & DICKEY, New York, N. Y. Application filed July 10, 1875.
"words 'Gold Miners.'"

3,167.—Pencils and Rubber Erasers.—GUSTAV SCHWANHÄUSSER, Nuremberg, Germany. Application filed September 25, 1875.
"figure or representation of a 'Floating Swan.'"

3,168.—Mechanical Lead-Pencils and Rubber Erasers.—GUSTAV SCHWANHÄUSSER, Nuremberg, Germany. Application filed September 25, 1875.
"device or representation of a 'key.'"

3,169.—Combs, Druggists' Articles, and other Goods Made of Hard Rubber.—THE INDIA-RUBBER COMB COMPANY, New York and College Point, N. Y. Application filed September 28, 1875.
"letters and words 'I. R. Comb Co.'"

3,170.—India-Rubber Combs.—THE INDIA-RUBBER COMB COMPANY, New York, N. Y. Application filed October 26, 1875.
"words 'CENTENNIAL COMB.'"

3,171.—Bathing-Suits.—A. J. TRIPLER, New York, N. Y. Application filed July 9, 1875.
"words 'Tripler's Bathing-Suit,' and the monogram composed of the letters 'T. B. S.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date November 23, 1875.]

394.—Title: **"That Liniment, Good for Man or Beast."** GARDEN & MINOR, Belmont, Wis. Application filed October 20, 1875.

395.—Title: **"Gruman's Genuine English Mustard."** J. B. GRUMAN & Co., Westwood, N. J. Application filed November 15, 1875.

396.—Title: **"Erasine, for Erasing Ink from Paper, and Removing Stains from Cotton, &c."**—ALBERT T. KNOWLSON, Titusville, Pa. Application filed Nov. 15, 1875.

397.—Title: **"Lautenbach's Cod-Liver Oil with Churchill's Hypophosphites and Phosphate of Lime."**—ROBERT LAUTENBACH, Baltimore, Md. Application filed November 5, 1875.

398.—Title: **"Singer & Wheeler, Brilliant White Oil."** SINGER & WHEELER, Peoria, Ill. Application filed November 13, 1875.

INDEX OF INVENTIONS PATENTED NOV. 23, 1875.

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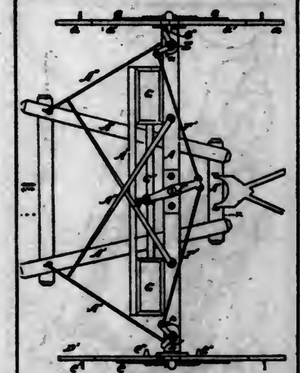
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED NOVEMBER 23, 1875.

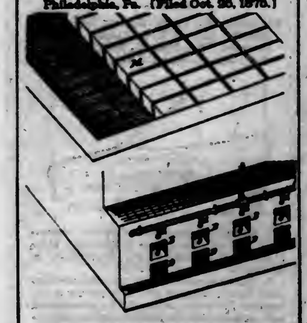
170,167. CORN-PLANTERS. J. R. Abbott, San Jose, Ill. (Filed July 6, 1875.)

Brief.—The seed-slide is operated by rods extending from the pivoted ball-cranks at each end of the drop-beam to a lever centrally pivoted thereon, through which passes a bent rod attached to the seed-slide. A vibratory motion is given, first from one side and then from the other, to the lever by pins on the bearing-wheels striking in their revolution the ends of the ball-cranks.



The combination, in a corn-planter, of the projections or pins c' c', extending inwardly from the wheels D and D', the ball-cranks E and E', pivoted to the cross-bar A, and arranged for contact with the pins c' c' during the rotation of the said wheels, the lever F, pivoted to the said cross-bar, the connecting-pieces F' F', attached to the said levers and ball-cranks, the curved arm E, rigidly attached to the slide-bar G', and engaging the lever F, and the seed-bar G, as set forth, provided with the rest or support I, and hinged to the cross-bar A, all substantially as and for the purposes specified.

170,168. BRICK-KILNS. H. W. Adams, Jr., Philadelphia, Pa. (Filed Oct. 26, 1875.)

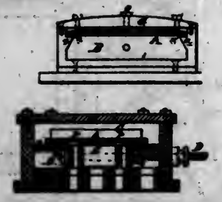


1. The combination of the furnaces B B B B-B, the blast-pipes F and G G G G G, and arches I I I I I, and cover M, substantially in the manner and for the purposes set forth.

2. The combination of the furnaces B B B B B, and blast-pipes F, and G G G G G, and arches I I I I I, and the cut-off wall K, substantially in the manner and for the purposes above set described.

170,169. VALVE-BOXES FOR ENGINES. H. W. Adams, Philadelphia, Pa. (Filed July 27, 1875.)

Brief.—A box, with steam and exhaust ports cast in it, is fitted to the cylinder inside the steam-chest. Said box is provided with means for balancing the valve independently of the steam-chest and cover.



1. The valve-box J, in combination with the valve-face of a cylinder, rigidly secured thereto, whereby the valve may be removed without changing the normal position of the same when balanced, substantially as shown and described.

2. In combination with the valve-box, such as described, the shoulders a a, cast thereon, whereby the balancing-plate is supported and adjusted, substantially in the manner and for the purposes set forth.

3. The combination of the valve-box J, top or lid G, plates A, and valve B, independent of the steam-chest or steam-chest cover, whereby the valve is not affected by the screwing down or unscrewing of the bolts or nuts of the said steam-chest or its cover, substantially in the manner and for the purposes set forth.

4. In combination with the cylinder of a steam-engine, the valve-box J, having shoulders a a, lid or cover A and G, the doubly-ported valve B, provided with hollow casting E, all being arranged within the steam-chest of said engine, whereby the valve is balanced, and the weight of live steam removed from it, all operating in the manner and for the purposes substantially as shown and described.

170,170. PROCESSES OF MANUFACTURING STEEL. Fidel Berkhold, Cleveland, Ohio, assignor to himself, T. F. Berkhold, Saml. Thurman, Alois Siskowiner, C. B. Bernard, and John B. Edwards, same place. (Filed Sept. 27, 1875.)

The process herein described of manufacturing steel, consisting of melting together iron and a mass composed of the following ingredients, to wit: Cyanide of potassium, prussiate of potash, borate of soda, silicate of lead, (white glass), bichromate of soda, charcoal, gum-arabic, and linseed-oil, in the proportions and in the manner, substantially as herein set forth.

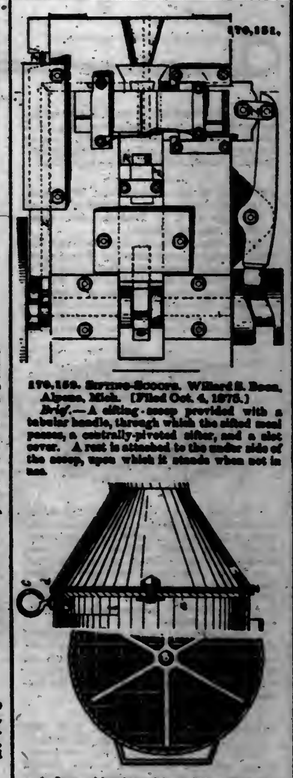
170,171. MACHINES FOR MAKING BOLTS, RIVETS, &c. John B. Richards, Brooklyn, assignor to P. Gerlach and R. P. Gerlach, Cleveland, Ohio. (Filed Oct. 25, 1875.)

Brief.—The improvement consists in a clamping-die so situated as to grasp the rod before it is acted on by the ordinary forming or side dies, in order that the rod, which is cut off by a movement of the forming-die, may be squarely cut, and then pressed as evenly-cut end to the header at the next feeding operation.

The combination of the horizontally-arranged forming and cutting dies, the heading die or dies, and the clamping-die for clamping and holding the bar on their outside of said cutting and forming dies, for the purpose of leaving the end of the bar squarely cut to be presented to the action of the heading-die for the formation of the next pin or bolt, substantially as described.

170,172. SIFTING-SCOOPS. Willard S. Bean, Alpena, Mich. (Filed Oct. 4, 1875.)

Brief.—A sifting-scoop provided with a tubular handle, through which the sifted meal passes, a centrally-pivoted sifter, and a slot cover. A rest is attached to the under side of the scoop, upon which it stands when not in use.



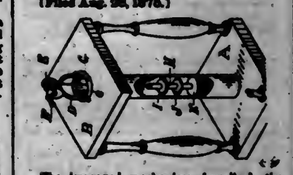
1. In combination with a sifting-scoop, the tubular handle b, for the purpose specified.

2. A combined flour scoop and sifter, provided with a rest, a, substantially as set forth.

3. The agitator a, pivoted at its center, in combination with a scoop having the hollow handle b, substantially as stated.

4. In a sifting-scoop, the combination of the agitator a, handle C, slot-cover f, and hollow handle b, substantially as specified.

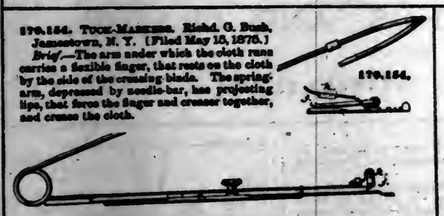
170,173. MACHINERY FOR LIFTING HYDRAULIC DOCKS. Jos. U. Brunes, Boston, Mass. (Filed Aug. 26, 1875.)



The improved mechanism described, the same consisting of the frame A B, rod H, disks I J K, drum R, and cord G, arranged to operate, in casting the pipe C, substantially as and for the purpose set forth and specified.

170,154. TUCK-MARKERS. Richd. G. Bush, Jamestown, N. Y. [Filed May 15, 1875.]

Brief.—The arm under which the cloth runs carries a flexible finger, that rests on the cloth by the side of the creasing blade. The spring-arm, depressed by needle-bar, has projecting lips, that form the finger and creaser together, and crease the cloth.



The combination of the blade *a*, over which the goods pass, with the finger or blade *j* and hook A, arranged to pinch the goods lying on the same, all constructed and operating substantially as and for the purpose described.

170,155. HOSE-COUPLINGS. William A. Caswell, Chicago, Ill., assignor of one-half his right to H. B. Preston. same place. [Filed July 26, 1875.]

Brief.—The hose is confined between a tail-piece having a screw-threaded flange at one end, a circular band at the other, and a partly screw-threaded and smooth surface between them, and a sleeve having a screw-thread and shoulder. The sleeve and swivel are connected by a wire inserted in a channel formed in part in the swivel and in part in the sleeve.



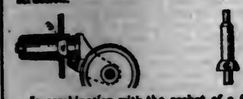
1. The tail-piece of a hose-coupling, having a screw-threaded flange at one end, a circular band at the other, and a partly screw-threaded and partly smooth surface between them, substantially as and for the purpose specified.

2. The combination of the herein-described flanged tail-piece with an encircling sleeve, having a female screw-thread and an inwardly-projecting shoulder, substantially as and for the purpose specified.

3. The sleeve and swivel of a hose-coupling, connected together by a wire inserted in a circular channel formed in part in the swivel and in part in the sleeve, the wire being bayed fast at one end, substantially as and for the purpose specified.

170,156. FURNITURE-CASTERS. L. P. Cort, New York, N. Y. [Filed Apr. 23, 1875.]

Brief.—The conical bearing and recess combining with an additional bearing around the upper end of the spindle, to materially strengthen and improve the details of construction.



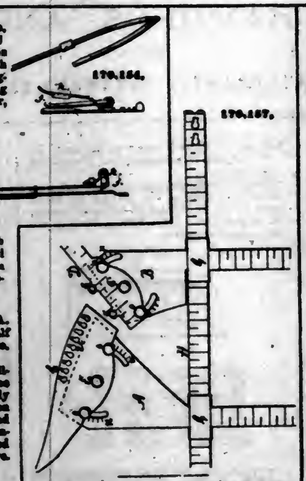
In combination with the socket of a furniture-caster a pivot or spindle, formed with the conical bearing *a* around its base, and fitted into a conical recess, *a'*, of the socket, in addition to the bearing around the upper end of the spindle for the purpose of strengthening the caster, substantially as described.

170,157. TAILORS' COAT-MEASURES. John S. Church, Dayton, Ohio. [Filed Sept. 6, 1875.]

1. The shoulder-plates A and B, having pivotal balance-plates C and D, constructed and arranged to operate substantially as and for the purpose specified.

2. The combination of the shoulder-plates A and B, balance-plates C and D, and breast-measure H, substantially as specified.

3. The combination and arrangement of shoulder-plates A and B, balance-plates C and D, breast-measure H, and the waist-measure K, substantially as described.



4. The combination and arrangement of the bottom A, provided with supports *b b b*, side boards B B, provided with side posts *a a a*, adjustable in the respective sockets of said supports *b*, and with cleats *m m p*, end boards C D, brace-rods *d d*, and socketed cleats *f f f* hinged to the cleats *j j j* of the removable side boards F F, the boards F F, and boards G H, brace-rods *p p*, and adjustable outside braces I I I, operating substantially as and for the purpose described.

170,158. FIRE-KINDLERS. Cyrus F. Cushing, South Braintree, Mass. [Filed Oct. 28, 1875.]

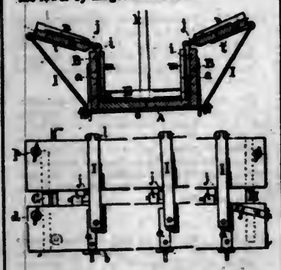
Brief.—The powdered leather serves to prevent the resin cracking and dropping off during handling and transportation.



As a new article of manufacture, the improved fire-kindler described, consisting of the pine core A, prepared by immersion in a solution or compound of kerosene, resin, and leather, substantially as and for the purpose set forth and specified.

170,159. WAGON-BODIES. C. A. Dewalt, Wyoming, Ill. [Filed Oct. 27, 1875.]

Brief.—The upper sections are fastened to the lower by hinges and braces.



1. The box A B C D, provided with cleats *i i*, &c., and with eyes or sockets for the reception of the pins of the cleats *j j j*, &c., of the upper boards F F, and cross-supports or bolsters *b b b*, provided with tongues and sockets at their outer ends for the reception of the braces I I I, substantially as and for the purpose described.

2. The combination, with the box A B C D, by means of the hinged cleats *j j j i i i*, of the removable adjustable upper boards F F, provided with cleats *g g n n*, end boards G H, and braces *p p*, and exterior hinged braces I I I, constructed, arranged, and operating substantially as and for the purposes described.

3. The combination, with the bolsters *b b b*, formed with sockets at ends, of the hinged braces I I I, in the manner and for the purpose described.

170,160. SCREW-CUTTING MACHINES. Geo. Rentz, Cincinnati, Ohio. [Filed Sept. 16, 1875.]

Brief.—The presenting or clamping dies are closed on the bar by means of the wedge O, forced between the friction-rolls *n n'* by lever F. The cutting-dies are mounted in two pivoted plates, I, which are forced together by means of the cone-collar E.



1. In a screw-cutting machine, in combination with the two-part die-plate I I, the two-part counterbored retaining-chuck H H', operating-arms *h h'*, and supporting-plate G, the whole constructed to operate substantially as described.

2. In a screw-cutting machine, the combination of jaws M M', lever N, wedge O, and spring P, all connected and operating substantially as and for the purpose specified.

170,161. WOODEN-SOLED BOOTS AND SHOES. Manuel J. S. Pulsen, Philadelphia, Pa. [Filed Oct. 11, 1875.]

Brief.—Improvement on Patent No. 168,617.



1. The combination, with a jointed wooden-soled boot or shoe, of the India-rubber strip F, having the beaded edge *f*, substantially as and for the purpose described.

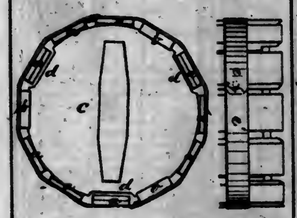
2. The combination, with a jointed wooden-soled boot or shoe, of the India-rubber pushing-box D, having wings D' D', constructed and arranged substantially as and for the purpose set forth.

3. The combination, with a jointed wooden sole for boots and shoes, of the metal strips or plates G G and H, substantially as and for the purposes described.

4. A jointed wooden sole for boots and shoes, having the winged pushing-box D D', the rubber strip F, the tapping strips G, and the plate H, substantially as and for the purpose described.

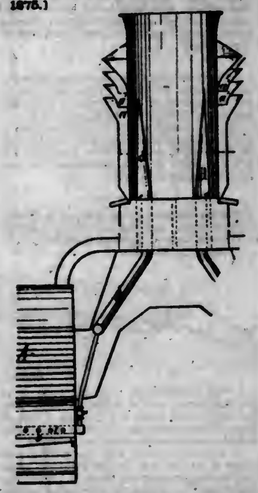
170,162. BARRELS. Luther W. Frye and Charles H. Watson, Boston, Mass., assignors of one-third their right to Edwd. Webb, New Castle, Me. [Filed May 8, 1875.]

Brief.—A barrel for the transportation of fruit, vegetables, and similar products is so constructed that it can be taken apart and packed in a small compass, and is provided with air-spaces all around its circumference, to insure perfect ventilation through its contents. The heads are secured in alternate recesses and shoulders on the inner ends of the staves.



The improved ventilated fruit-barrel, as herein shown and described, consisting of the heads *c c*, with their recesses *d d d*, grooved staves *b b b*, and staves *a a a*, attached to the hoops *e e' e'*, as and for the purpose set forth.

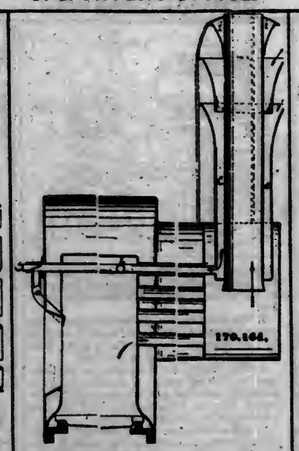
170,163. APPARATUS FOR SUPERHEATING AIR FOR MARINE-BOILER FURNACES. W. C. Ford, Brooklyn, N. Y. [Filed Sept. 20, 1875.]



The arrangement, substantially herein described, of the superheating-pipes and receiving-drum in relation to each other and to the furnace, smoke-connection, steam-chimney, or smoke-pipe, for the purpose of collecting and forcing down the air by the motion of the vessel, and for the purpose of heating the same in its passage to the fire by the waste heat of the furnace, substantially in the manner described.

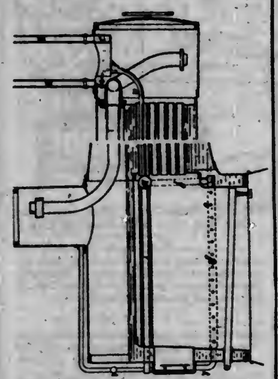
170,164. SUPPLYING HEATED AIR TO BOILER-FURNACES. W. C. Ford, Brooklyn, N. Y. [Filed Sept. 20, 1875.]

In combination with a locomotive or stationary steam-boiler, a superheater, consisting of a flue formed around the smoke-pipe, and connected to a series of pipes arranged in the heating surface and furnace of the boiler, substantially in the manner described, for the purpose specified.



170,165. APPARATUS FOR FEEDING AIR TO THE FURNACES OF STEAM-BOILERS. W. C. Ford, Brooklyn, N. Y. [Filed May 6, 1875.]

Brief.—Air is deflected and forced through a space formed by the stack and an outer casing into a pipe leading to the fire-box. A steam-jet assists in forcing the air to the furnace.



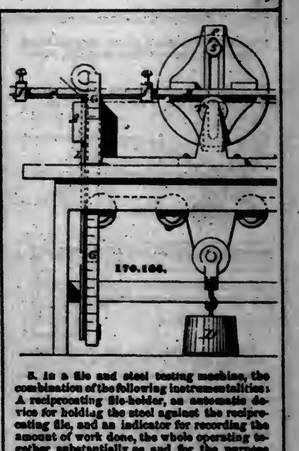
The combination of the smoke-stack and its outer casing, provided with deflectors, with an air-pipe leading to the fire-box, and a steam-pipe, which is inserted in the air-pipe near the stack, substantially as and for the purpose set forth.

170,166. MACHINES FOR TESTING FILES AND STEEL. James Garland, Pawtucket, R. I. [Filed Apr. 7, 1875.]

Brief.—Two files are attached to a horizontally-reciprocating bar, and two bars of steel, passing through holders, are forced up against the files with equal pressure by cords and weights. Graduated bars fall upward by the same means indicate the extent of shortening of the steel bars by the action of the files upon them.

1. The combination of the filing mechanism, in which two files can be operated at a time, and a holder, for holding a piece of metal, with suitable means for pressing or feeding the same equally against each file during the operation, substantially as described.

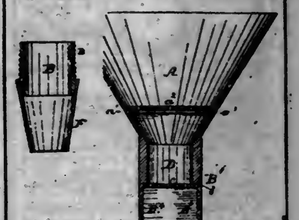
2. The indicator G, in combination with the metal-holders A A and a suitable pressing or feeding device, as described.



5. In a file and steel testing machine, the combination of the following instrumentalities: A reciprocating file-holder, an automatic device for holding the steel against the reciprocating file, and an indicator for recording the amount of work done, the whole operating together substantially as and for the purpose described.

170,167. DRUGGISTS' FILTERS AND FUNNELS. Abram B. Garrison, Newton, Kans. [Filed Sept. 16, 1875.]

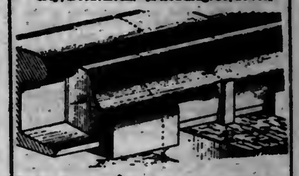
Brief.—Between the removable strainers a chamber is formed for the reception of filtering material.



1. A combined filter and funnel embodying in its construction upper and lower funnel-shaped portions A and F, connected together by a tube, B, having parallel sides, and forming, by means of the removable flat perforated strainers *c'* and C, a chamber, D, for the reception of filtering media E, the whole being constructed as and for the purpose described.

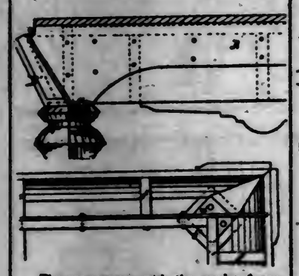
2. A combined filter and funnel embodying in its construction upper and lower funnel-shaped portions A and F, connected together by a divided tube, B, having parallel sides, the halves B^1 B^2 of said tube B being coupled together by screw-threads B^2 B^1, as shown, and holding the lower flat perforated strainer C between their ends, the upper strainer *c'* being supported on a rim, *c*, and forming a chamber, E, for the reception of filtering media E, the whole being constructed as and for the purpose shown and described.

170,168. RAILROAD-RAIL CHAIRS. J. Gogerty, Decatur, Ill. [Filed Aug. 10, 1875.]



A railroad-chair made of one piece of metal, when composed of the bars E B and base-straps F F, substantially as described.

170,169. BILLIARD-TABLES. August Hand, Cleveland, Ohio. [Filed Sept. 27, 1875.]



The construction, with the wooden framework and legs of a billiard-table, of the longitudinal iron sides A and A' as a support for the stone bed C, when constructed and arranged to operate substantially as described.

170,170. GUMMOTORS' PUNCHES, ALARMS, AND REGISTERING DEVICES. George J. Hill and Augustus Roger, Buffalo, N. Y., assignors of part of their right to Jas. W. Roger, same place. [Filed June 26, 1875.]



1. The case A, provided with the slit *g*, in combination with lever C and spring-lock H I, all arranged and operating substantially as and for the purpose specified.

2. The combination, in this device, of drums K K' and drums *p p'*, and printing-wheels *h h' h''*, which operate in connection with a registering paper strip and inking-ribbon, substantially as hereinbefore specified.

3. The combination of the duplicate number-wheels *h h' h''* and *j j' j''*—one series arranged inside, and the other outside, the case A—each corresponding wheel working on the same shaft or sleeve, whereby, by setting the outside series of wheels, the inside ones are correspondingly moved, so as to be in position to print, as hereinbefore fully explained.

4. The combination of the printing-wheels, having duplex numbers arranged on their periphery, so that the opposite numbers shall correspond, and outside setting-wheels or slides, whereby the inside wheels may be set as desired, with the paper-strip-feeding mechanism, all as shown and described.

5. The combination of the ticket-face-printing mechanism, the paper-strip-registering mechanism, and alarm-bell mechanism, all substantially as and for the purpose specified.

6. The combination, with the outside setting-wheels *j j' j''* and frame O, of the spring-stops *v v' v''*, as and for the purpose specified.

7. The spring-hanger J, in combination with the wheel-shaft *i* and center plate I, provided with slot *q*, for the purpose of returning the wheels to their original position after being operated, all arranged and operating substantially as and for the purpose specified.

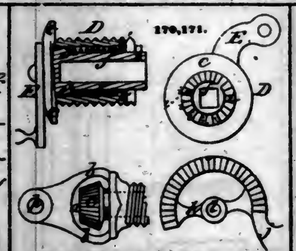
8. In this device, the combination of the pinions *l l' l''*, attached to, or forming part of, the printing-wheels *h h' h''*, the racks *j j' j''*, and the inclined sides *n n' n''*, all arranged and operating as hereinbefore explained.

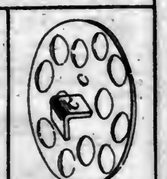
170,171. SHUTTER-WORKERS. H. A. Howes, Bridgeport, Conn. [Filed Apr. 24, 1875.]

Brief.—A shutter-worker automatically adjustable to jambs of varying thickness.

1. In a blind opener and closer the hinge or eye section G, having screw-threaded shank *g*, head A, neck *f*, and sleeve I, in combination with a suitable bracket or plate section, substantially as and for the purpose set forth.

2. The combination of the rod F, having





170,172. FRUIT-JARS. Elizabeth S. Hunt, Cleveland, Ohio. [Filed Sept. 15, 1875.]

In a reservoir for the preservation of fruit or other matter, the combination of the lid or cover thereof and the detachable immersing plate or piece C, connected therein, substantially as and for the purpose described.

170,173. PROCESSES OF CONVERTING CAST-IRON INTO STEEL. Charles L. Jeffords, Jamestown, N. Y. [Filed Aug. 16, 1875.]

The process of converting malleableized cast-iron into steel by heating the iron to a bright-red color, and then immersing it in a compound or preparation consisting of eleven parts animal charcoal, nineteen parts lampblack, seventeen parts sal-soda, seven parts muriate of soda, five parts black oxide of manganese, three parts pulverized limestone, and eleven parts prussiate of potash, and allowing the iron to remain therein until cold, as hereinbefore set forth.

170,174. VENTILATING CHURCHES, HOUSES, &c. William Kingham, New York, N. Y. [Filed June 30, 1875.]

Brief.—The pure air enters at the bottom of the window, a draft being prevented by a deflector. The foul air escapes at the top of the window through the balanced flaps shown on the outside. The device may be applied and removed at will, requiring no cutting away of the parts about the window.

The combination, with the deflecting-plate arranged on the inside of the sash, of the oppositely-balanced flaps arranged on the outside of the sash at the top of the casing, all substantially as shown and described.





170,175. CAR-STARTERS. George S. Knapp, Chicago, Ill., assignor to Thomas B. Bennett and Fred. H. Ley, same place. [Filed July 28, 1875.]

Brief.—Pawl carried by slide drawn by horses, so as to engage with and turn ratchet fast on axle. Protecting-case for slide, pawl, and ratchet; also, inclines for removing pawl out of engagement on reaching the forward and backward limit of its play; also, retracting-spring.

1. In combination with the ratchet-wheel C, secured upon the car-axle, the tight case D and the sliding bar E, mounted in said case and provided with the dog H, as shown.

2. In combination with the ratchet-wheel C and the sliding bar E, provided with the dog H, the case D, provided with the inclines *a* and *b*, or either of them, substantially as and for the purpose set forth.

170,176. HAME-TOPS. Emmit G. Lotts, Friendship, assignor of one-fourth his right to Pratt & Letchworth, Buffalo, N. Y. [Filed Sept. 22, 1875.]

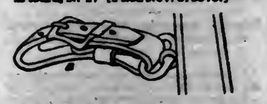


1. The combination, with the body C of the hame-top, cast of malleable metal, with the stop D and studs *d d* forming rivets, of plate C' for covering the open side of the body C, substantially as hereinbefore set forth.

2. The combination, with the plate C' and body C, of the stop D, cast with the latter and having its sides cut away to permit the the sides of the portion C to be closed or contracted, as hereinbefore set forth.

3. In combination with the body A the hollow cast-metal hame-top C, provided with the raised loop or loops B, cast in one piece therewith, substantially as and for the purpose hereinbefore set forth.

170,177. HAMES. George J. Letchworth, Athens, N. Y. [Filed Nov. 6, 1875.]



A loop or other fastening, or any desired form, attached to the inside of a high-top hame, for the purpose of holding the hame to the collar in its proper place, substantially as described and set forth.

170,178. DENTAL POLISHING-TOOLS. I. P. Leeds, Hudson, N. H. [Filed June 22, 1875.]

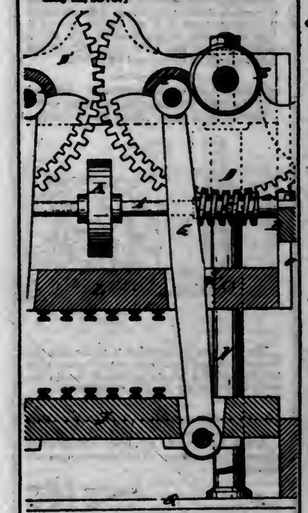
Brief.—The rubber casing or jacket of the tool extends beyond the wooden core, and is covered with sand-paper extending still further. This allows the extreme end of the polishing-tool to readily adapt itself to the small furrows in a dental plate.



1. In the dental polishing-tool described, the conical elastic cushion C, adapted to fit the spindle-head B, and having the cone-shaped projecting beyond the extremity of the spindle B, as and for the purposes described.

2. In a dental polishing-tool, such as described, an elastic conical cushion, C, having its extremity *d* projecting beyond the end of the spindle, and covered by a stand-paper collar, which has a portion, *a*, extending beyond the end of the cushion, substantially as and for the purpose set forth.

170,179. POWER-PRESSES. Benjamin G. Martin, New York, N. Y., assignor to the United Power-Press Company. [Filed May 13, 1875.]



1. The combination, in a press for cotton and other articles, of the worms O O, their shaft A, segments D D D' D', lifting-rods G, and follower J, substantially as described.

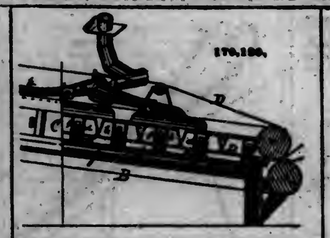
2. The combination of the resisting-block L with the follower J, lifting-rods G, segments D D D' D', shaft A, and worms O O, substantially as described.

170,180. COMBINATION-SATURATORS FOR BAGASSE. Alfred W. J. Mazza, New Orleans, La. [Filed Apr. 22, 1875.]

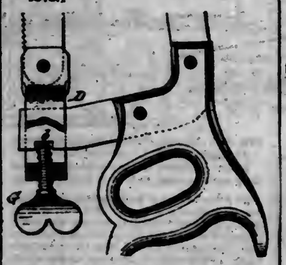
Brief.—An endless belt receives the bagasse, and carries it between pressure-rollers placed in a closed chamber, which receives, by means of pipes, hot water or steam.

1. An inclosed chamber, C, carrier B, in combination with the tubes for supplying the saturating agent, the whole being constructed and arranged to operate substantially and for the purpose specified.

2. The inclosed chamber C, carrier B, belt D, pressure-rollers *d d'*, the whole being combined and arranged to operate substantially as described.



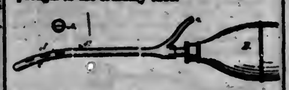
170,181. BUTCHERS' SAWS. William Millspaugh, Middletown, N. Y. [Filed Oct. 1, 1875.]



The combination, with the saw-frame A and blade C, of the loop D, pivoted to the blade, and the thumb-screw G, substantially as and for the purposes herein set forth.

170,182. STRAINERS. William Molesworth, New York, N. Y. [Filed July 12, 1875.]

Brief.—The double connection, to which the syringe-tube is attached, is of flexible metal, and made by inserting a longitudinal diaphragm in the ordinary tube.



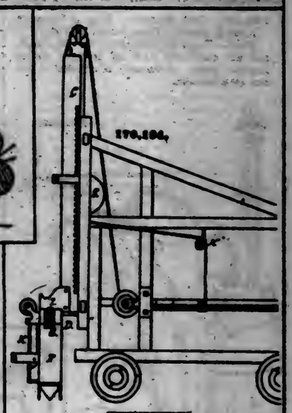
The double connection A, made of flexible and tenacious material as that it may be bent to any required curvature, the same being provided with the longitudinal diaphragm and discharging-holes *e* on one side, and the escape-orifices *d* on the other side, opposite, and the exit *c* near the rubber bulb B, as arranged to operate substantially in the manner as herein shown and described, for the purposes specified.

170,183. DISINFECTANT COMPOSITIONS. John W. Munger, Portland, Me. [Filed July 10, 1874.]

The compound composed of the following-named ingredients, to wit: fused crystallized sulphate of soda, silex, pulverized white castile-soap, arrow-root, borax, rock-salt, water, and sal-soda, in the proportions and for the purposes specified.

170,184. PILL-COATING MACHINES. A. F. W. Neymeier and Wm. F. A. Neymeier, New York, N. Y. [Filed Oct. 9, 1875.]

Brief.—The dipping-needles are bent at the blunt end and secured between two boards, one of which is, of course, perforated to receive the needles. A third board is perforated and passed over the needles, and is used to push off the pills which are upon the needle-points after being dipped in the coating material.

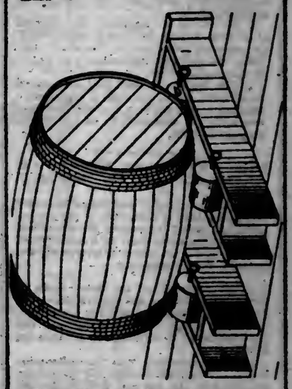




The combination of the needles with boards A B C and heads E for coating pills, substantially as and for the purpose specified.

170,185. HOGSHEAD AND BARREL HOOPS. Joseph M. Parker, Augusta, Mo. [Filed Sept. 9, 1875.]

Brief.—The hoop is made in two parts, with a space between for placing the vessel in opposition with the fastener, which is placed in the side of the vessel instead of the end, as usual.



The combination of the hoop composed of the parts B and B' with the rollers, substantially as described, and for the purposes set forth.

170,187. COW-MILKERS. Wm. H. Pearson, Lowell, Mass. [Filed June 17, 1874.]

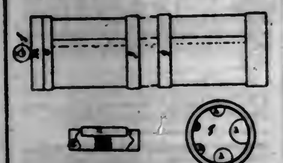
Brief.—Teats are inserted in the cow's teats, and are connected with an air-tight can by flexible tubes. A vacuum is created in the can by a bellows.



170,187.

The combination of the tubes *d d d d*, elastic rubber tubes *e e e e*, and elastic tube E with the elastic stopper B, bellows C, standard H, levers J and K, and can A, all being constructed and arranged to operate substantially in the manner described, as and for the purposes set forth.

170,188. FISHING-ROD CASES. Chas. Perry, Portland, Me. [Filed May 11, 1875.]



1. The fishing-rod case consisting of a tube of wood or other light material, covered and lined as described, having the rings *g*, the caps *c* and *d*, with cover *m* and spring-bottom *n*, constructed, combined, and arranged as herein set forth.

2. The fishing-rod case, lined and covered as set forth, having the rings *g*, caps *c* and *d*, the cover *m*, and device *e*, the whole combined and arranged substantially as and for the purpose set forth.

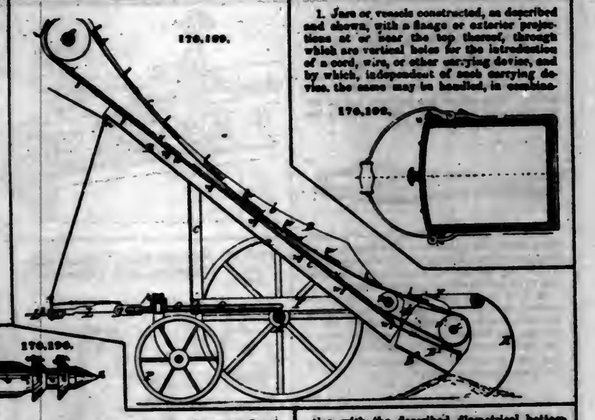
3. The fishing-rod case, lined and covered as set forth, having the rings *g*, caps *c* and *d*, the cover *m*, and device *e*, the whole combined and arranged, substantially as and for the purpose set forth.

170,189. HAY-LOADERS. Eli Perry and A. J. Manley, Fox Lake, Wis. [Filed Apr. 7, 1875.]

Brief.—Lower end of bed hinged to permit it to adjust itself to the surface of the ground, and also to shield the teeth of the carrier-belt. Leader supported in front by a caster-wheel, and attached to the wagon by a vertically and laterally pivoted connection.

1. The section F of the carrier-frame E, having closed bottom, and pivots *h* joining the fixed bed-frame, and forming a combination of the trough thereof, and combined with the sub-carrier C, substantially as herein set forth.

2. The combination, with the leader-coupling I, having the horizontal and vertical pivots *j k* with the hay-rack Rak D, the caster F, and the spring tube-tenth E, all constructed and arranged substantially as and for the purpose herein set forth.



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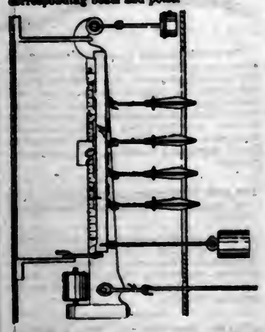
170,190. BUFFER-STEMS. Philip W. Pratt, Abington, Mass. [Filed Oct. 11, 1875.]

Brief.—A rubber buffer-peg having beveled flanges on its stem, to bind it firmly in place.

As a new article of manufacture, the rubber peg or buffer-stem A, provided with one or more projecting flanges, *d*, having the face *e* perpendicular to the axis of the stem, and the face *f* beveled or sloping from the rim of the flange to the body of the stem, as described, and for the purpose specified

170,191. WEIGHING-SCALES. William W. Reynolds, Brandon, Vt. [Filed Oct. 21, 1875.]

Brief.—A multiplex beam having each scale graduated to indicate weight of material to be used, exclusive of tare, and adjustable slides provided with pendent hooks, having attached to them spring-clamps, in which is placed a fragment of material to be weighed. An attendant enable to read can manipulate the scales by simply looking at the clamp holding the iron, coal, or flux, and then using the corresponding beam and poise.



1. The improvement in scales consisting in the arrangement upon the multiplex beam of sample-holders, substantially as and for the purpose set forth.

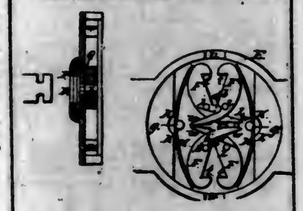
2. The combination of the multiplex beam, furnished with the adjustable slides, carrying the point-holders suspended on knife-edges, the supplemental or tare beam, and the sample-holders, provided to indicate the special use of each scale of the multiplex beam, the whole arranged for joint use in the operation of the apparatus for weighing coal, ore, flux, &c., substantially as and for the purpose set forth.

170,192. BAILED EARTHENWARE. Benj. F. Roberts, Bennington, Vt. [Filed Aug. 10, 1875.]

1. Jars or vessels constructed, as described and shown, with a flange or exterior projections at or near the top thereof, through which are vertical holes for the introduction of a cord, wire, or other carrying device, and by which, independent of such carrying device, the same may be handled, in combination with the described diametrical bottom groove, for the purposes set forth.

2. The described means of protecting and facilitating the handling and transportation of earthen vessels, consisting of the flange C, with perforations M M and bottom groove K K of the vessel, in combination with the reinforce D and bail E, adapted and applied substantially as shown and described.

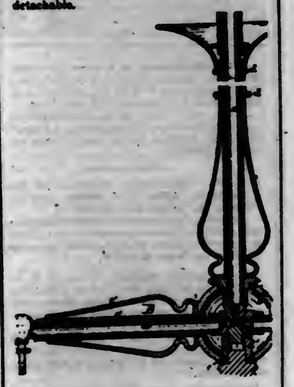
170,193. LOCKS FOR CAR-SEATS. Edward S. Scofield, Chicago, Ill., assignor to W. Dewey, same place. [Filed Mar. 30, 1875.]



The iron arm B, provided with the cams E, the key-plates F and G, in combination with the levers F F F' F', the springs H H, and the catch S, as and for the purpose set forth.

170,194. CHANDELIERS. F. S. Shirley, New Bedford, Mass. [Filed July 24, 1875.]

Brief.—The elastic substance obviates the effects of concussion. The branch pipes are detachable.



1. As a new article of manufacture, a chandelier composed of the interior metal pipe a and the exterior opal casing *c*, having the branch piece B, provided with the part D, detachable in one piece from the stem A, provided with the part C, together with the nipple-piece E, as described.

2. The combination of the elastic fixing or cushion *b'*, with the interior metal pipe a and the exterior opal casing *c*, as described, and for the purpose specified.

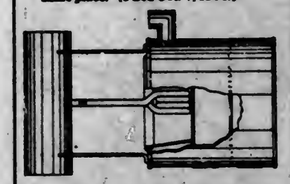
170,195. MAIL-BAG FASTENINGS. Horatio M. Smith, Chicago, Ill., assignor of two-thirds his right to M. W. Lester and F. Lester, same place. [Filed Oct. 26, 1875.]



1. The mail-bag, provided with a flexible continuous welt or enlargement at both sides of the mouth, and a guide or runway at one side of the bag, in combination with the series of clasps D, substantially as specified.

2. The rounded corner E, upon a mail-bag, provided with the welts B B', and series of clasps D, whereby the clasps may be slipped readily down the side of the bag, substantially as specified.

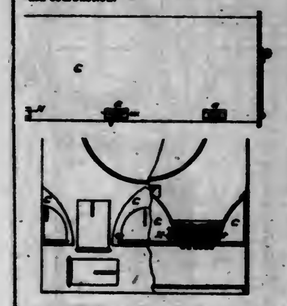
170,196. STEAM-GENERATORS. Horatio M. Smith, Chicago, Ill., assignor of two-thirds his right to M. W. Lester and F. Lester, same place. [Filed Oct. 7, 1874.]



The combination, with a vessel containing an easily fusible metal, of a pipe partly coiled and immersed in the molten metal, the ends of the pipe constituting a water-inlet and a steam-outlet, substantially as and for the purpose specified.

170,197. RETORTS FOR FURNACES. Horatio M. Smith, Chicago, Ill., assignor of two-thirds his right to M. W. Lester and F. Lester, same place. [Filed Nov. 24, 1874.]

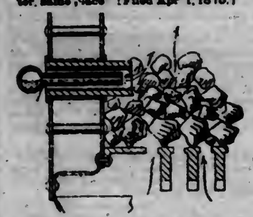
Brief.—The retorts have openings near their bottoms to allow the combustible gases to escape into the fire. Rubber pipes communicating with the air are placed in the retorts close by the openings, and have holes in them to furnish air to the gases as they escape, and so aid combustion.



1. The retorts or ovens G G, having therein the ports a a, opening directly into the burning fuel in the furnace to which the retorts are placed, substantially as shown and described, and for the purposes set forth.

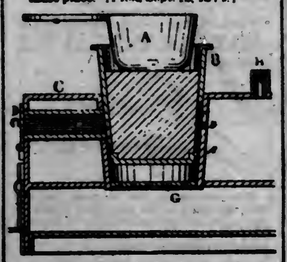
2. The retorts or ovens G G, having therein the ports a a, opening directly into the burning fuel in the furnace in which the retorts are placed, in combination with the perforated pipes or air-flues H H, lying within the retorts and near the ports thereto, and presenting their perforations to the said ports, substantially as shown and described, and for the purposes set forth

170,198. HYDROCARBON-FURNACES. Horatio M. Smith, Chicago, Ill., assignor of two-thirds his right to M. W. Lester and F. Lester, same place. [Filed Apr 1, 1875.]

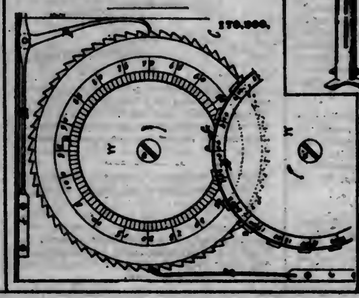


In a furnace, the combination of a detachable thimble, made of refractory material, and arranged in the wall of the furnace above the grate-surface, with an oil-tube of less diameter than the thimble, and arranged concentrically within the same, whereby an annular air-supply chamber is formed around the oil-tube, and a mixing chamber is formed within the thimble in front of the oil-tube, all being arranged substantially as and for the purposes specified.

170,199. COOKING APPARATUS. Horatio M. Smith, Chicago, Ill., assignor of two-thirds his right to M. W. Lester and F. Lester, same place. [Filed Sept. 12, 1874.]



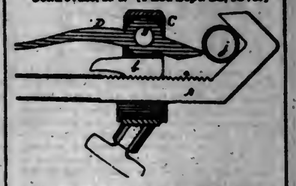
A portable cooking apparatus, consisting of the outside case C, ash-pit, supply-flue O, grate G, part B'', conical support A', and flue H, combined with the melting-receptacle B, as and for the purpose set forth.



170,200. REGISTERS. George F. Spencer, Francesville, Ind., assignor of one-half his right to J. F. Tarnell, same place. [Filed July 2, 1875.]

The combination, as a device for registering the measuring of grain, of a ratchet-wheel, W, bearing the dial D, and provided with the pin O, the spring-bar S, with its handle A, the pawl P, the detent S, the wheel W', with the cogs *c* upon its rim and bearing the dial D', all contained in the case C, having the opening *o*, and the openings E and E', provided with the wire *w*, in the door F, as described.

170,201. PIPE-WRENCHES. D. P. Stanton, Centreville, R. I. [Filed Sept. 23, 1875.]



The combination of the levers D and A, the latter being hooked and provided with the teeth *a*, with the strap C, serrated block *b*, and thumb-screw *d*, substantially as described, and for the purpose set forth.

170,202. TEMPORARY BINDERS. Horace B. Stephenson, Troy, N. Y., assignor to Wm. H. Bennett. [Filed Oct. 18, 1875.]

Brief.—The papers are filed upon split tubes, which surround conical-headed needles, secured to a base plate or bar, having an arch-shaped handle, the ends of which pass through a cross-bar parallel to the base-plate, and are encircled by a spring which forces the said bar over the needles, carrying the papers with it. When the file is full, the needles are detached, withdrawn from the tubes, and papers again supplied with other tubes, and attached to the base-plate for further use.

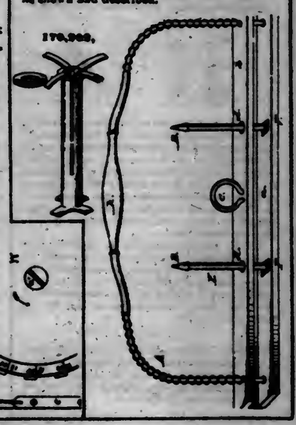
1. The combination of a bar, *a*, slide *b*, pin or pins B, and tube or tubes E, substantially as shown and described.

2. The combination of the cross-bar *a*, pin or pins B, and tube or tubes E, substantially as shown and described.

3. The means of binding papers or letters together, consisting of a tube or tubes, E, open at both ends, having projections, washers, or flanges at one end, and split and adapted to receive like projections, flanges, or washers at the other end, substantially as shown and described.

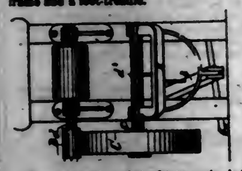
4. The pin or pins B, tube or tubes E, and cross-bar *a*, in combination with the slide *b*, handle A, rods A, and springs S, substantially as shown and described.

170,203.



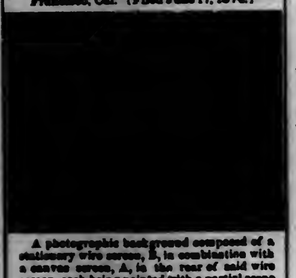
170,902. FRICTION-WINDLASSES FOR BARRELS, KEGS, &c. A. D. Stout, St. Louis, Mo., assignor to himself and D. W. Jaynes, same place. [Filed July 6, 1875.]

Brief.—The friction-windlass, by which the wire-rope is wound around the barrel, and the staves drawn in to the required form, is immediately released from the power-source, the wire-rope quickly unwound, and the barrel instantly discharged by means of a drop gravity-frame and a foot-treadle.



The combination of the friction-wheels C D, the drop-gravity frame B, its connection to a foot-treadle, E', the rods e^6, said parts being constructed and arranged to form a windlass of the character herein shown and described, and by means whereof said rollers can be instantly placed in or out of friction contact, and the gravity of said frame B is utilized to unwind said rope, in the manner and for the purpose set forth.

170,904. PHOTOGRAPHIC BACKGROUNDS. Josiah W. Taber and Thos. H. Boyd, San Francisco, Cal. [Filed June 17, 1874.]



A photographic background composed of a stationary wire screen, B, in combination with a canvas screen, A, in the rear of said wire screen, each being painted with a partial scene or picture, so arranged that the wire screen, or portion of said screen-surface opposite the painted picture on the canvas background, is partially opaque, such incomplete scenes on the two screens being made to register and harmonize, substantially as and for the purpose described.

170,905. CURTAIN ROLLERS AND BRACKETS. Warren E. Taylor and Thomas Donahue Stamford, Conn. [Filed Nov. 10, 1874.]



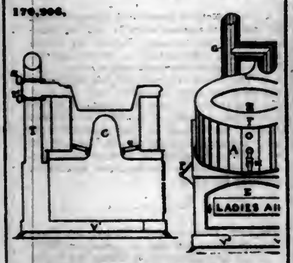
1. A curtain fixture or bracket constructed with an extension, b^1, provided with a slot, b^2, and screw-hole b^3, a base-plate, d, formed at right angles to the extension b^1, and provided with a slot, d^1, and having spurs or projections $e\,e\,e\,e$ formed at the extremity of the adjacent ends of the outward faces of the extension b^1 and plate d, and at right angles to each other, the whole being constructed as and for the purpose described.

2. The combination, with a curtain fixture or bracket constructed with an extension, b^1, slot b^2, screw-hole b^3, loop c^1, base-plate d, slot d^1, and spurs or projections $e\,e\,e\,e$, of the semi-circular rim d^2, provided with ratchet-teeth d^3, the whole being constructed as and for the purpose specified.

170,906. COOKING-STOVES. Robt. Thomas Toronto, Canada. [Filed Sept. 6, 1875.]

Brief.—Smoke passing by indirect draft through the base can expand into vertical flues at the sides of the oven.

170,906.



1. The hot-air chambers V V^1 V^2 V^3 V^4, as shown and described, and for the purposes set forth.

2. The descending pipe T, with dampers u u^1, in combination with the raised flue S and chambers V V^1 V^2 V^3 V^4, as shown and described, and for the purposes set forth.

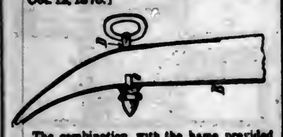
3. The ascending pipe U, leading from the vertical chamber V^3, in combination with the series of chambers V V^1 V^2 V^3 V^4, as shown and described, and for the purposes set forth.

170,907. HALTER-FASTENINGS. Jos. Thornton, Wellsville, assignor of one-fourth his right to Pratt & Letchworth, Buffalo, N. Y. [Filed May 24, 1875.]



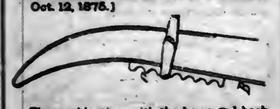
The halter-fastening C, constructed with solid supporting-arms $a\,a\,a$ and loops $c^1\,c^2\,c^3$, bent out of the plane of the arms, and adapted to be secured to the straps by rivet d, all substantially as and for the purposes herein described.

170,908. HAMES. James Thornton, Wellsville, assignor of one-fourth his right to Pratt & Letchworth, Buffalo, N. Y. [Filed Oct. 12, 1875.]



The combination, with the hame provided with the hole *f*, of the ring C, screw-bolt D, and nut E, having ears $e\,e$ bent over the sides of the hame, substantially as and for the purpose herein before set forth.

170,909. HAMES. James Thornton, Wellsville, assignor of one-fourth his right to Pratt & Letchworth, Buffalo, N. Y. [Filed Oct. 12, 1875.]



The combination, with the hame and back-strap B, provided with slot *b*, of the plate C, having its outer edge corrugated, and its inner edge tapering or wedge-shaped, substantially as and for the purpose herein before set forth.

170,910. SHUTTER-FASTENERS. Samuel G. Tuckerman, Cambridge, Mass. [Filed Oct. 16, 1875.]

Brief.—A hasp from lower part of blind-frame passes over a pin set in the window-sill, and furnished with a spring locking-catch. A mortise in sash-frame covers over this fastening, which consequently cannot be unlocked until the window is raised.

1. The slotted locking-pin *a*, constructed, as described, with the pivoted and spring-actuated catch *c*, and rising from the sill E, in combination with and locking the hasp *b*, substantially as described.

2. The pin-covering mortise in the lower edge of the sash-rail H and the notched plate *f*, in combination with the catch-furnished slotted locking-pin *a*, constructed as described, and rising from the window-sill, the mortise and plate covering the pin, and the plate confining the hasp, substantially as described.



170,911.

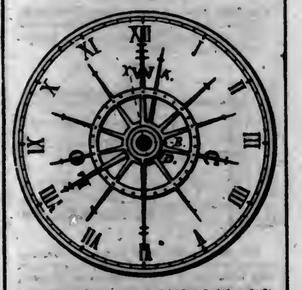


170,911. CHAIN-PUMP BUCKETS. Josiah B. Van Duzer and Riley Johnston, Shebocgan, Pa. [Filed Sept. 21, 1875.]

Brief.—The rubber is expanded by screwing in a tapering screw, which passes centrally through it.

The combination, as a chain-pump bucket, of the rubber bucket A, having the central opening *a*, the tapered screw B, and the link C, as described.

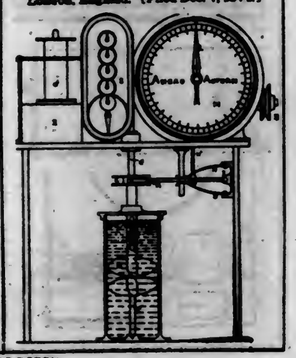
170,912. GEOGRAPHICAL CLOCKS. Samuel J. Wallace, Keokuk, Iowa. [Filed Sept. 20, 1873.]



1. The multiple-pointed index for time-indicators, having one of the points moving together made separate, so that it may be changed and set to show any local time without interfering with the regular indications of the remainder of the points, substantially as set forth.

2. The disks C, with radiating indices and perforated centers, substantially as set forth.

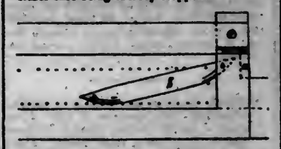
170,913. SPEED-INDICATORS. M. A. Wier, London, England. [Filed Dec. 7, 1874.]



In an apparatus for indicating the speed of machinery, the combination of the cylinder A, fixed revolving shaft C, vertically-movable screw B, collar O, levers H H^1, connected H^2, springs F O, and an indicating or recording mechanism, substantially as herein described, for the purpose set forth.

170,914. SHUTTLES AND SHUTTLE-STOPS FOR LOOMS. James Wolfenden, New Bedford, Mass. [Filed May 24, 1875.]

Brief.—The shuttle is so shaped that an obstruction in the shed will either throw it up and through the upper layer of warp-threads, or cause it to strike against a stop placed in the throat of the shuttle-box, the loom in either case being thereby stopped.



1. The shuttle S, having its points or ends above the longitudinal central line thereof, as described, and for the purpose specified.

2. The combination, with the slay of a loom, of the stops *a*, arranged at the throat of the shuttle-boxes, as and for the purpose set forth.

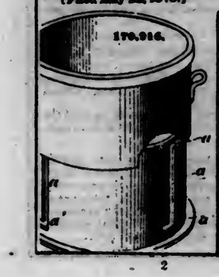
170,916. CORRUGATED WIRE-WORKER AND FANS FOR RAILROAD-CARS. Ambrose W. Woodward, Lancaster, Pa. [Filed Aug. 20, 1875.]

Brief.—Wheel revolves within a case secured by a cross-bar centrally surmounted by a brace forming the upper bearing of the vertical shaft, to which the wind-wheel and the fan are secured. The step rests on a cross-piece that spans the upper draft-chamber. The casing around the wheel has an open space on opposite sides and flared mouth to arrest and direct the currents of air to the wheel. A sleeve is fitted around the shaft, and connected with another short slotted sleeve on a disk under the roof, and is made to rotate by means of two cords.



A wind-wheel having six, eight, or more oblique, wedge-shaped wings, C, within a case, B, which case is made adjustable in its bearings by cords H H^1 and disk E, and is also provided with flared fixed shields *a a*, together with a fixed independent ghost-plate, A, in combination with a fan, F, on a bolt, made adjustable by a set-screw, *f*, on the vertical shaft G of the wind-wheel, the whole arranged and operated as and for the purpose specified.

170,916. ADJUSTABLE GRADUATE MEASURE. Thos. B. Young and Silas A. Davis, Livermore, Ky., assignors of one-third their right to John A. Moore, same place. [Filed May 29, 1875.]



170,917. LIMB-RECEIVERS. H. R. Allen, Indianapolis, Ind. [Filed Feb. 24, 1875.]

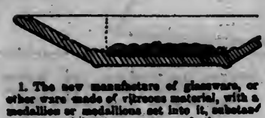
Brief.—The double jacket does not extend over the bottom, and an additional section is used for a more complete adjustment to the limb to be treated.



1. The jacket A, surrounding the vacuum-chamber C, and united therewith at the top and bottom, leaving the bottom of the receiver to project below, as and for the purpose set forth and described.

2. The adjustable section G, provided with a flange, J, constructed and arranged to be used in connection with a receiver or vacuum-chamber, C, for the purpose of extension or adjustment, and made air-tight at the joint between the two sections C and G by the rubber band F, substantially as set forth and described.

170,918. MANUFACTURE OF GLASSWARE. T. B. Atterbury, Pittsburg, Pa., assignor of one-half his right to J. S. Atterbury, same place. [Filed Nov. 6, 1875.]



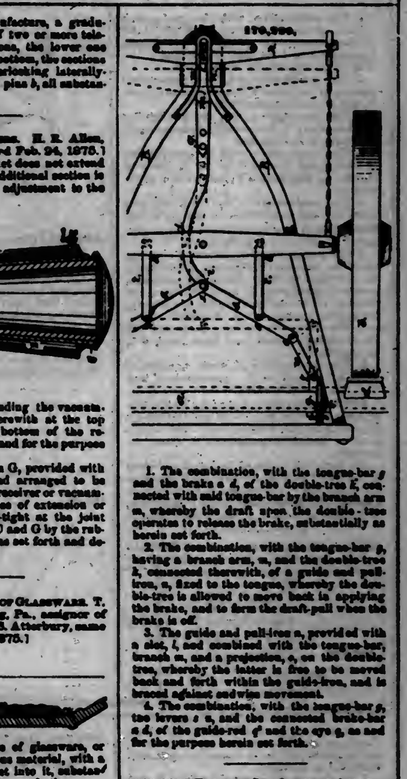
1. The new manufacture of glassware, or other ware made of vitreous material, with a medallion or medallions set into it, substantially as and for the purpose set forth.

2. A medallion set in glass, made and united to the article in which it is set by the one operation of pressing, substantially as described.

170,919. MANUFACTURE OF LAMPS. T. B. Atterbury, Pittsburg, Pa., assignor to himself and J. S. Atterbury, same place. [Filed Sept. 10, 1875.]

As a new article of manufacture a lamp having a pressed-glass base, A, and a hollow blown-glass pedestal, B, substantially as described.

170,920. WAGON-BRAKES. A. La Fayette Bartlett, Brownsville, Ga. [Filed July 15, 1875.]



1. The combination, with the tongue-bar *f* and the brake a *d*, of the double-tree E, connected with said tongue-bar by the branch arm *m*, whereby the draft upon the double-tree operates to release the brake, substantially as herein set forth.

2. The combination, with the tongue-bar *f*, having a branch arm, *m*, and the double-tree E, connected therewith, of a guide and pull-iron, *n*, fixed to the tongue, whereby the double-tree is allowed to move back in applying the brake, and to form the draft-pull when the brake is off.

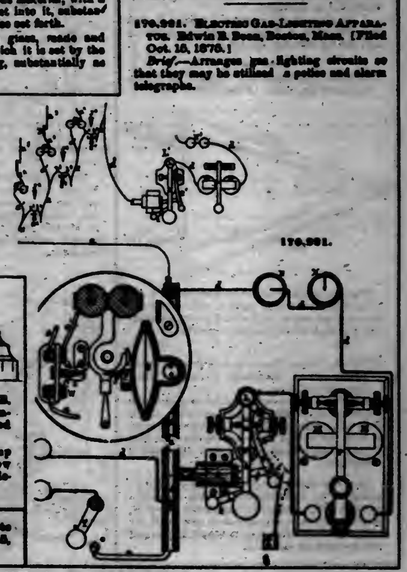
3. The guide and pull-iron *n*, provided with a slot, *l*, and combined with the tongue-bar, branch *m*, and a projection, *q*, on the double-tree, whereby the latter is free to be moved back and forth within the guide-iron, and is braced against end-wise movement.

4. The combination, with the tongue-bar *f*, the levers *o o*, and the connected brake-bar a *d*, of the guide-rod *g*¹ and the eye *g*, as and for the purpose herein set forth.

170,921. ELECTRIC GAS-LIGHTING APPARATUS. Edwin B. Bean, Boston, Mass. [Filed Oct. 16, 1875.]

Brief.—Arranges gas-lighting circuits so that they may be utilized a police and alarm telegraphs.

170,921.



1. The combination, with the gas-lighting wires *a*, of the series of circuit-closers H H' H², &c., whereby the circuit is closed at each lamp as it is past out, and broken just before it is reit, substantially as described.

2. The combination, with the gas-lighting wires *a*, of batteries N, keys *h h*, instruments P, and wires *d*, as described.

3. The combination, with the gas-lighting wires *a*, of key K, batteries N, instruments P, and wires *d*, as described.

4. The combination, with the gas-lighting wires *a a'* and magnets G, of key K, batteries N, keys L, instruments P, and wires *d*, as described.

5. The combination, with the gas-lighting wires *a a'* and magnets G, of the key K, batteries N, keys L, keys *h k*, switches *c*, instruments P, and wires *d*, as described.

6. The method above described for adapting the wires necessary for lighting street-lamps by electricity to other telegraphic purposes, consisting essentially in using with them the series of wires *d*, batteries N, and suitable signal-making instruments, as described.

7. The combination of air-pipe A and pin-tee Q with the switch *s* and lever *h* of key L, as described.

8. The combination of wires *a*, series of wires *d*, keys *h k*, (or K,) instruments P, and batteries N, as described.

9. The combination of the key B and lamp or lamp-post with the circuit *a d*, instrument P, and battery E, whereby each lamp-post is made a transmitting-station, as above described.

10. The combination of the key B and lamp or lamp-post with the circuit *a' a d*, instrument G, instrument P, and battery N, whereby each lamp or lamp-post is made both a transmitting and receiving station, as above described.

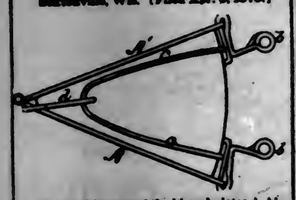
170,903. CHIMNEY-PRESERVER. J. G. Hunt, Sextonville, Wis. [Filed Sept. 20, 1875.]



1. In a chimney-preserver, the section A, subdivided into parts or wings C C', and provided with hook G and spring D, substantially as specified.

2. In a chimney-preserver, the section B, constructed with a recess, H, substantially as and for the purpose specified.

170,904. CHIMNEY-PRESERVER. J. G. Hunt, Sextonville, Wis. [Filed Apr. 2, 1875.]

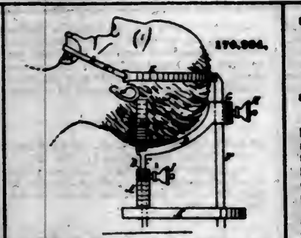


The combination of the hinged plates A A', hook *d*, and an elastic cord, *c*, connecting the free vertical edges of the said plate, substantially as and for the purposes specified.

170,905. HEAD-RESTS FOR CORPSES. Chas. D. Blackford, Hamilton, Canada. [Filed Aug. 10, 1875.]

Brief.—A frame-work which supports the head adjusts vertically upon uprights, and is held in any required position by set-screws. A chin-rest is held by straps to the ends of a curved piece, which passes over the head of the corpse.

The combination of the head-rest A B C, adjusted by thumb-screw I, with the chin-support E F, adjusted by the thumb-screw H, and the chin-straps L, attached to hasp K, for chin-plate M, all arranged substantially as and for the purposes specified.

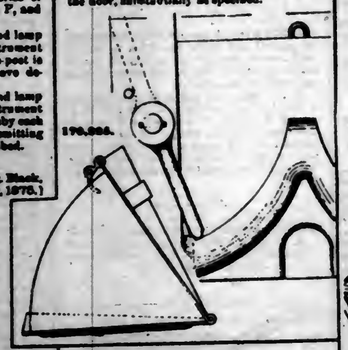


170,906.

170,906. PUDDLING-FURNACE DOORS. Jos. Reyland, Troy, N. Y. [Filed June 8, 1875.]

Brief.—The pins pivoted to the frame swing down the curved surfaces of the ribs on the door, and hold the door when down, and are swung back until stopped by the pins in the frame when it is desired to lift the door.

The combination of one or more swing-stops, A, on the furnace-wall or door-frame, with one or more curved ribs or flanges, B, on the door, substantially as specified.



170,906.

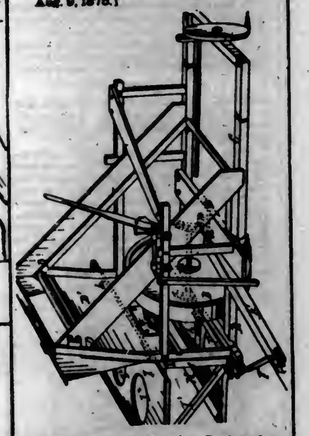
170,907. CAR-COUPLERS. Andrew Brown, Eden Township, (near East P. O.,) Lancaster County, Pa., assignor of one-half his right to J. B. and B. B. Danlinger. [Filed Aug. 26, 1875.]

Brief.—The pin moves with the draw-head, and the link is elevated by the rock-shaft.

1. In combination with the movable draw-head B and the coupling-pin E, the lever G, mounted on the car-body and provided with the hinged arm F, arranged to allow the pin to move forward and backward with the draw-head, substantially as shown and described.

2. In combination with the draw-head B and the coupling-link D, having the lateral eye *d* formed on its rear end, the rock-shaft M, provided at its outer end with the operating-handle N, and at its inner end with the arm *m*, extending loosely through the eye of the link, as and for the purpose described.

170,908. HARVESTERS. James O. Brown, Macallon, Ohio, assignor of part of his right to Edwin Bayliss, Pliny F. Hodges, and F. T. Lomont, same place. [Filed Aug. 9, 1875.]



1. The platform rail or bar F, pivoted to the main frame in line with the tongue-pivot, in combination with the hinged platform H, substantially as and for the purpose set forth.

2. The adjustable brace F', in combination with the pivoted platform-rail F and pivoted tongue H, arranged and operating substantially as and for the purpose described.

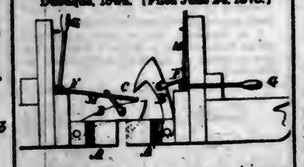
3. The upright frame *f f* on the pivoted platform-rail F, supporting the inner edge of the table I, in combination with the adjusting-bolt *g*, or its equivalent, uniting said frame to the elevator-frame or shield, and permitting the adjustment of the binders' platform, as described.

4. The binders' table I and hinged platform H, connected with the pivoted longitudinal rail F, and the upright frame *f f* mounted thereon, in combination with the slotted or jointed brace F', connecting said rail F with the tongue, substantially as and for the purpose set forth.

170,909. HARVESTERS. James O. Brown, Macallon, Ohio, assignor of part of his right to Edwin Bayliss, Pliny F. Hodges, and F. T. Lomont, same place. [Filed Aug. 9, 1875.]

Brief.—A short apron is used to start the grain up between the elevator and its compressing-cover.

The combination, with the elevator and its stationary cover or compressing device, of the short independently-revolving canvas or apron G, arranged at the lower end of said cover or compressing device, and operating in connection therewith and with the elevator, substantially as and for the purposes set forth.



170,909.

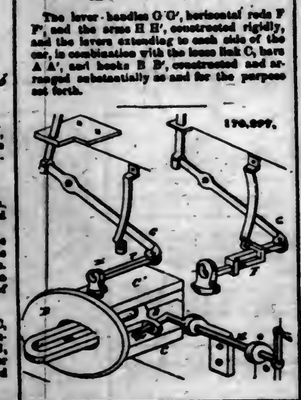
170,910. CAR-COUPLERS. Jacob Brinkerhoff, G. B. Bennett, and La Fayette Selder, Dubuque, Iowa. [Filed June 24, 1875.]

The lever-handles C C', horizontal rods F F', and the arms H H', constructed rigidly, and the levers extending to each side of the car, in combination with the loose link C, bars A A', and hooks B B', constructed and arranged substantially as and for the purpose set forth.

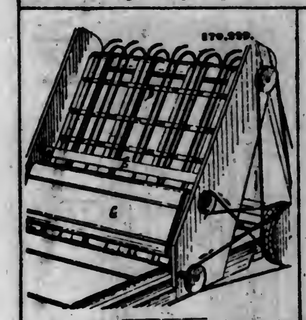
170,911. HARVESTERS. James O. Brown, Macallon, Ohio, assignor of part of his right to Edwin Bayliss, Pliny F. Hodges, and F. T. Lomont, same place. [Filed Aug. 9, 1875.]

Brief.—Arrangement of the parts of the machine by which the relations of the elevator-frame, belts, &c., are preserved.

1. The platform-frame, united to the main frame by means of the braces *b b'*, hinged to the main frame, in line with the crank-shaft, and to the platform in line with the shaft of the lower-platform apron-roller, as described.

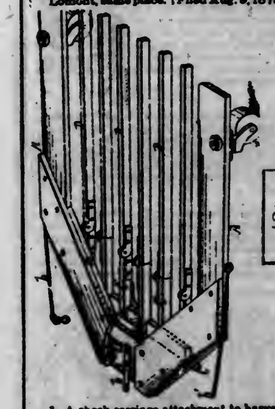


170,910.



170,909.

170,909. SHOCK-CARRIAGE ATTACHMENTS TO HARVESTERS. James O. Brown, Macallon, Ohio, assignor of part of his right to Edwin Bayliss, Pliny F. Hodges, and F. T. Lomont, same place. [Filed Aug. 9, 1875.]



1. A shock-carriage attachment to harvesters, provided with a slatted dropper and a horizontal platform partially surrounding said dropper, and left open at the rear to permit the unobstructed escape of the standing shock, whereby the attendant is enabled to form and discharge the shock without stopping the machine, substantially as described.

2. The dropping slats or bars D, jointed to the vibrating arms C, and operating substantially as described, whereby their parallel relations to the ground is preserved, for the purposes and substantially as specified.

3. The jointed dropping slats or bars C' D, united to the carriage or frame through the medium of the transverse rocking shaft or bar C, substantially as described.

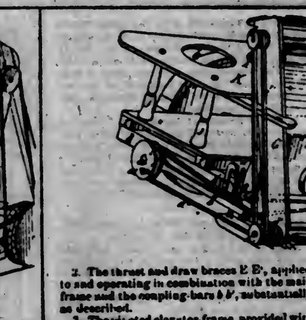
4. The shock-carriage or frame A, supported at its rear by the caster-wheels B B, and at its front by the pivoted bolt or pin *k*, in combination with the jointed draft-rods *b' b'*, permitting said carriage to maintain a parallel relation to the ground, as described.

5. The slatted platform D, pivoted to the platform or frame A, in combination with the lever-arm and latch for controlling said platform, substantially as described.

170,910. HARVESTING-MACHINES. James O. Brown, Macallon, Ohio, assignor of part of his right to Edwin Bayliss, Pliny F. Hodges, and F. T. Lomont, same place. [Filed Aug. 9, 1875.]

Brief.—A short apron is used to start the grain up between the elevator and its compressing-cover.

The combination, with the elevator and its stationary cover or compressing device, of the short independently-revolving canvas or apron G, arranged at the lower end of said cover or compressing device, and operating in connection therewith and with the elevator, substantially as and for the purposes set forth.



170,911.

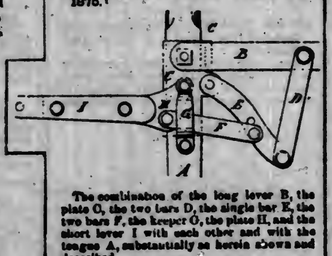
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2. The thrust-and draw-braces E E', applied to and operating in combination with the main frame and the coupling-bars *b b'*, substantially as described.

3. The pivoted elevator-frame, provided with the separating board O', applied and operating in combination with the table K, as described.

4. The platform and elevator frames, hinged to each other on the line of the inner-platform apron-roller, and to the main frame, as described, in combination with the driving-pulleys *a' a²*, arranged upon the centers, coincident with the pivotal centers of said frames, substantially as and for the purpose set forth.

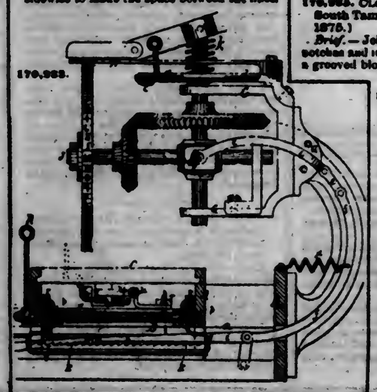
170,912. DRAFT-EQUALIZERS. Hiram Cartwright, Owatonna, Minn. [Filed Oct. 23, 1875.]



The combination of the long lever B, the plate C, the two bars D, the single bar E, the two bars F, the keeper G, the plate H, and the short lever I with each other and with the tongue A, substantially as herein shown and described.

170,913. TYPE-WRITING MACHINES. W. H. Cone, Dansville, N. Y. [Filed Dec. 6, 1874.]

Brief.—The key is turned until the indicator is over the desired character, when it is depressed, carrying with it the type-wheel, which has been rotated by the bevel-gear, making the impression on the paper, which is moved with the table the space of one letter by the upward movement of the key. When the line is completed the dogs are operated, so as to move the table backward to commence another line, and at the same time it is moved sideways to make the space between the lines.



170,913.

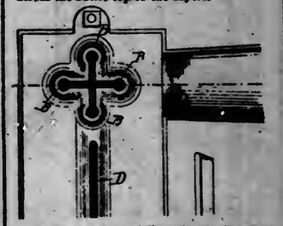
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1. In combination with the sliding table B, the jointed levers *e f*, the dogs or catches *i n*, the rack K, and spring *x*, operated by the key M for moving said table, substantially as described.

2. The combination, with the table B and desk C, the shaft P, provided with an arm, R, at one end, by means of which the same may be partially rotated, and with lugs or pins *p p*, adapted to raise the levers *r r*, and lift the ends of the dogs *n i* out of the racks in through the medium of a bail, S, extending from said levers down under the dogs, in order to allow the desk to be moved, substantially as described.

170,914. TUYERS. Horace J. Chandler, Dummer, assignor of one-half his right to Merrill C. Forist, Berlin, N. H. [Filed May 26, 1875.]

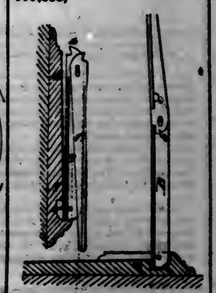
Brief.—The long slot is closed by the damper when a small fire is required, and is left open when it is desirable to have the fire extend across the entire top of the tuyere.



A tuyere, substantially as herein described and shown, formed with the oval-ended slots B B, long slot D, damper C, and slide E, as set forth.

170,915. CLOTHES-DRIERS. Frank M. Clark, South Tamworth, N. H. [Filed Sept. 20, 1875.]

Brief.—Jointed arms, held together by notches and inclined shoulders, are pivoted in a grooved block or standard.

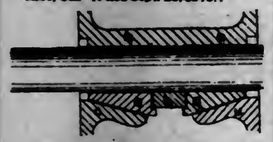


170,915.

1. An improved clothes-drier, formed by the combination of the grooved and mortised block A and the pivoted jointed arms B C with each other, in substantially the manner herein shown and described.

2. The jointed arms B C, having inclined shoulders *b' c'* on their adjacent ends, substantially as and for the purpose set forth.

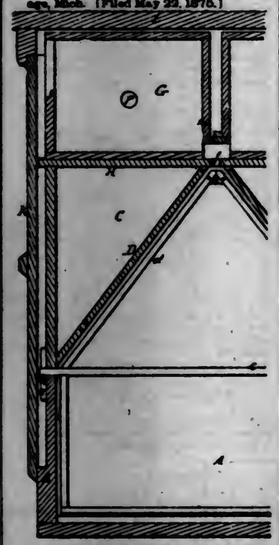
170,926. TAPPET-CLAMPS FOR STAMP-STEMS. Nicholas J. Colman, San Francisco, Cal. [Filed Sept. 23, 1875.]



1. The tappet A, having the boxes B B, with their inclined grooves or chambers, in combination with the corresponding gibs D and the wedge or key F, substantially as and for the purpose above described.

2. An improved tappet-clamp, consisting of the tappet A, provided with two oppositely-inclined chambers, in each of which a tapering wedge or gib, D, is placed, and the two wedges or gibs D are forced in opposite directions, so as to tighten them upon the stem by a wedge or key, F, driven in between them, substantially as above specified.

170,927. BEE-HIVES. Orson Colvin, Vicksburg, assignor, by mesne assignments, of one-half his right to J. L. Hawkins, Portage, Mich. [Filed May 22, 1876.]



1. The combination, with the rabbeted base-section A of a bee-hive, of the inner section C, having projecting top H supported thereon, and the honey-sleeve K, having the corner-stops *i* resting on said projecting top H, substantially as specified.

2. The inner section C, having the angular air-chambers, in combination with the comb-frames, having the bars *d* inclined toward each other in angular form, substantially as specified.

3. The inner section C, having the angular air-chambers bounded on the inside by the perforated inclined walls, the passages through the top of the section between said inclined walls, and the bridge over said passages, substantially as specified.

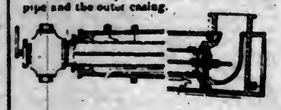
4. The combination, with the bridge above the passages through the top H, of the honey-boxes having the lateral openings, and fitting against said bridge, substantially as specified.

5. The combination, with the lower or base-section A and the inner section C, of the corner guards *a* and the incasing sleeve K, substantially as specified.

6. The two-chamber top section C, having air-chambers bounded by inclined sides, having perforations through their lower portions and at their upper edges, and the air-opening *h* through the vertical wall of said box-chamber in the angular space between said air-chambers, substantially as specified.

170,928. HYDRANTS. John O. Connor, Buffalo, N. Y. [Filed Mar. 15, 1875.]

Brief.—The jacket and outlet pipe are rigidly connected at the bottom, and provided with a stuffing box at the top, so as to form a slip-joint, for the purpose of allowing for the difference of expansion between the outlet-pipe and the outer casing.



The outlet pipe and jacket or outer casing, rigidly connected at the bottom through the valve case, in combination with a stuffing-box encircling the outlet-pipe where it passes through the upper end of the jacket, substantially as and for the purpose set forth.

170,929. TYPE-WRITING MACHINES. L. S. Crandall, New York, N. Y. [Filed Aug. 20, 1875.]

Brief.—The platen is vibrated transversely to the line of printing, to form different printing-points. The key is pushed outward to print one letter, and inward to print another.

1. A type-writer constructed of a vibrating platen, with a series of swinging compound type-bars and oscillating finger-levers, substantially in the manner and for the purpose set forth.

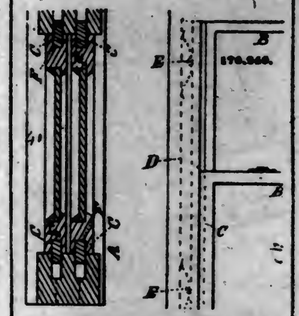
2. In a type-writer, a platen or printing-cylinder vibrated in a direction transverse to the line of printing by means of mechanism substantially as described, for the purpose of creating additional printing points or centers.

3. The combination of the vibrating platen with the swinging compound type-bars, provided with types corresponding to each vibration on printing-point of the platen, substantially as specified.

4. The combination of the swinging type-bar with the oscillating finger-lever, and with mechanism, substantially as described, for imparting a double action to the type-bar, so that the same may be thrown a fixed distance in forward or backward direction, and compel two adjoining types to strike the same printing-point of the platen, substantially as described.

170,930. SASH-BALANCES. Henry Cutting, Buffalo, N. Y., assignor of one-half his right to Harvey A. Cutting, same place. [Filed June 29, 1875.]

Brief.—Playing in grooves extending the whole length of both casing and window-casing, with springs behind them, serve as guides upon which the sash slides up and down, while the construction is such that by simply pressing the strips back into the grooves of the casing, the sash can be readily taken out for cleaning, or like purposes, and as readily replaced in normal position.



The window-casing provided with grooves D, extending its entire length, and the sash B, having corresponding grooves F, in combination with the springs E and the friction-strips C, placed loosely in the grooves in the casing, and pressing against the bottom of the grooves in the sash, for which they also serve as guides, whereby the sash can be removed by pressing back the strips only, all arranged and operating substantially as and for the purpose specified.

170,931. GRAIN-DRILLS. James C. Dunbar, Elk Point, Dak. [Filed Aug. 14, 1875.]

Brief.—The seed is deflected from V-shaped plates to the hopper-bottom, and thence into drill-tubes by inclined plates, one of which receives a vibratory movement from a rock-shaft.

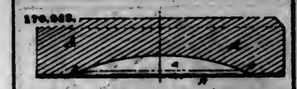
1. The division-blocks E, inclined plates F, and movable plates G, combined with rock-shaft, pawl, and ratchet, as and for the purpose set forth.

2. The inclined plates F G H', combined with hopper, as and for the purpose specified.

170,932. BUTTER-PACKAGES. Andrew J. Dibble, Franklin, assignor to himself and David O. Landon, Delhi, N. Y. [Filed Feb. 6, 1875.]

As a new article of manufacture, a butter-firkin, H, constructed of a single block of wood, having conical cavity, in which the butter is packed, said firkin being adapted to be packed together and transported, to be afterward sold, separately or substantially, as herein set forth and described.

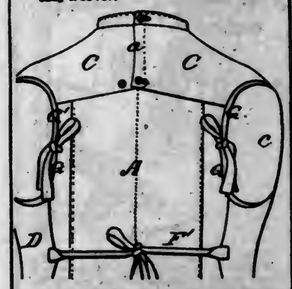
170,933. PAPER-WHEELS. Edward Dressler, Gablonz, Bohemia, Austria, assignor to Alfred J. Cottebrune, Philadelphia, Pa. [Filed Sept. 17, 1875.]



170,934.

A paper-weight formed of a glass block, A, having a rounded concavity, *a'*, in its lower side, a picture, B, attached to said lower side, and a bordering, C, attached to the outer part of the surface of said concavity, substantially as herein shown and described.

170,935. SHIRT-FRONTS. Wm. J. Duke and Mary A. Duke, Booneville, Miss. [Filed May 1, 1875.]



As a new article of manufacture, the shirt-front herein described, consisting of the bosom A, concave side pieces D D, constructed to extend under the arms, and partly around the body of the wearer, cords G F G' F', yokes G G, and collar E, as set forth.

170,936. BOOMERANGS. Alexander Dupbar, Brockville, Canada. [Filed June 22, 1875.]



The improvement in horse-shoeing, the same consisting in nailing the shoe to the heel on each side of the toe and at the heel, so as to leave the sides of the heel free to expand, substantially as specified.

170,937. CARBOYS. Alex. H. Pottinger, New York, N. Y., assignor to himself and J. McFarlane, North Bergen, N. J. [Filed Oct. 29, 1875.]

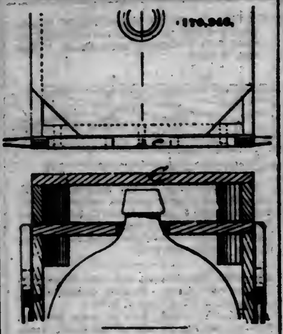
Brief.—The carboy is protected by box and cover. The neck of the carboy passes through a centrally-perforated removable partition. The cover has four downward-projecting pins, passing between the horizontal partition at the corners and the casing. The cover has three cleats on opposite sides, so that the handle may be placed vertically or horizontally.

1. The combination, with a carboy-box having a top part or neck-guard, with guiding corner recesses, of a detachable cover, provided with corresponding corner-pieces for readily securing or taking off the cover, substantially in the manner and for the purpose set forth.

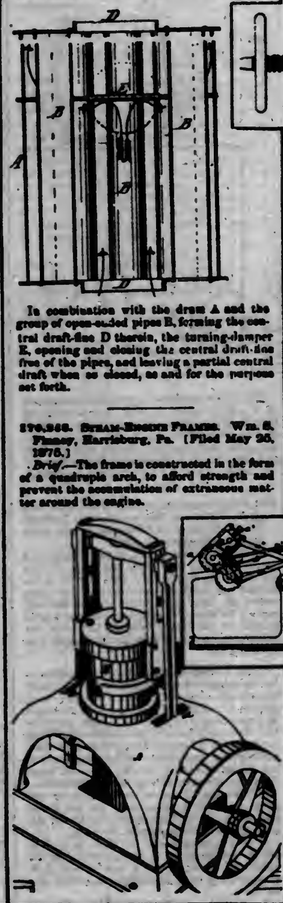
2. The combination of a carboy-box, provided with vertical corner-strips and central horizontal strips at opposite sides, with pivoted handles that may be thrown into vertical or horizontal position, for the purpose set forth.

170,938. BEATING-DRUMS. Thos. B. Field, Corning, N. Y., assignor to Mary E. C. Field, same place. [Filed Sept. 22, 1875.]

Brief.—The turning damper, when in horizontal position, deflects the products of combustion in part outward between the air-pipes



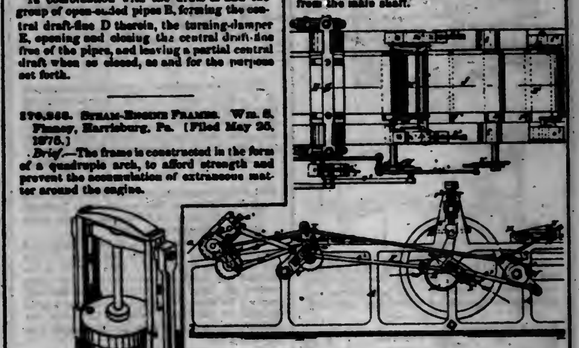
170,938.



In combination with the drum A and the group of open-ended pipes E, forming the central draft-flue D therein, the turning-damper K, opening and closing the central draft-flue free of the pipes, and leaving a partial central draft when so closed, as and for the purpose set forth.

170,939. STEAM-ENGINE FRAMES. Wm. S. Pinney, Harrisburg, Pa. [Filed May 20, 1875.]

Brief.—The frame is constructed in the form of a quadruple arch, to afford strength and prevent the accumulation of extraneous matter around the engine.



170,940. DRILLING-MACHINES. J. S. Fleming, Steubenville, Ohio. [Filed Apr. 17, 1875.]

Brief.—The drill-frame can be lengthened or shortened, adapting it to vessels or cases of various of different dimensions. The drill shaft and tool are carried upon the frame within an adjustable tubular screw passing through a socket, which hold adjustably in position by means of clamps.

1. The vertically adjustable and oscillating tubular screw threaded socket F, adjusting tubular screw G, socket I, shaft *d*, and crank-arm *a*, combined and arranged substantially as specified.

2. The combination of a detachable clamp, J, and connecting-rod *d*, with a vertically-adjustable and oscillating socket, F, and a frame supporting the same, substantially as specified.

3. In a drilling-machine, the threaded tubular adjusting-screw G, having upon one end the hand-wheel *f*, in combination with the screw-threaded socket F and boring-auger shaft *d*, operating substantially as herein described.

170,941. CRACKER-MACHINES. C. S. Fowler, Brooklyn, N. Y. [Filed Dec. 28, 1874.]

Brief.—The apron delivering the dough to the cutters is caused to travel somewhat faster than the apron upon which the dough falls from the feed-rolls, in order to remove the "crawl" from the sheets of dough. The fingers at the foot of the scrap apron are pivoted to a rod, which is secured at its ends to jointed links pivoted to the edge bar, over which the scrap-apron passes. The dough-rollers receive a double intermittent motion by means of ratchets and pawls, operated by crank arms, receiving motion, through suitable mechanism, from the main shaft.

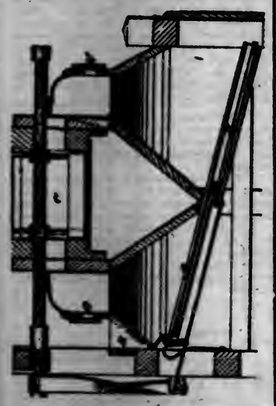
1. In a dough-cutting machine, the combination of the apron D and apron F, the former traveling faster than the latter, as described, for the purpose specified.

2. The combination of the pivoted fingers M, the rod m^1, and the jointed bars m^2, pivoted to the ends of the edge bar, over which the scrap-apron is carried, substantially as shown and described.

3. The combination of the adjustable crank-arm U, and its three connecting-rods r^1 r^2 r^3, the two arms V, the two pawls v^2, and the ratchet-wheels v^3, with the adjustable crank T attached to the driving-shaft Q, and with the journal of one of the dough-rollers B, to give a double intermittent motion to the said dough-roller, substantially as herein shown and described.

170,861. MIDDLINGS-PURIFIER. John F. Goodale, Dubuque, Iowa. [Filed July 17, 1875.]

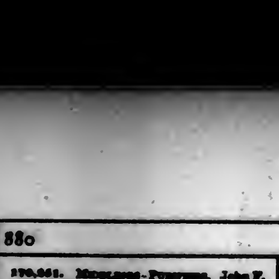
Brief.—As middlings pass first over a fine sieve, thence upon coal over a coarse sieve, they are subject to a current of air through coal bed, which carries off the impurities.



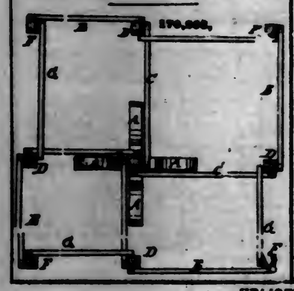
The combination of the successive inclined sieves A B—the former fine, the latter coarse, and both covered by hoods—with a fan, C, a finishing-shoe at head B, and valves D G, all arranged substantially as and for the purpose specified.

170,862. HOMINY-PULVERIZER. Geo. W. Gordon, Beverly, Ohio. [Filed Apr. 21, 1874.]

Brief.—The main shaft revolves continuously, the weight raised being lowered by the disengagement of the drum from the shaft, while a brake is applied to prevent too rapid descent.



The combination, with the rotary cross-shaft A, having arm F, of the adjustable weighing-drum C, having cords E, the brake-lever I, the rod H, and lever I, all constructed and arranged to operate as shown and described.



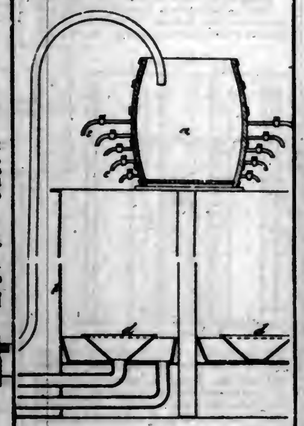
170,863. CLOTHES-DRIERS. Geo. W. Green, High Point, N. C., assignor of one-third his right to O. S. Causey, same place. [Filed Oct. 8, 1875.]



The combination of the pivoted bars E, posts F, and pivoted notched locking-bars G, with the posts D, pivoted bars C, central post B and pedestal A, all constructed and relatively arranged as herein set forth and shown, for the purpose specified.

170,864. APPARATUS FOR THE MANUFACTURE OF STRAWS. Patrick Griffin, Cork, Ireland. [Filed June 5, 1874.]

Brief.—The whisky falls in drops from the taps in the vat on top of the tower down through the latter to the receivers at the bottom. Air is admitted to the tower through openings in the side.



The herein-described apparatus, consisting of a supply-vessel, a, with outlet-passages therefrom, provided with cocks for regulating the dropping of the liquid drop by drop, surmounting and combined with a high column or tower, b, and a receiver at the bottom of the tower, as and for the purposes set forth.

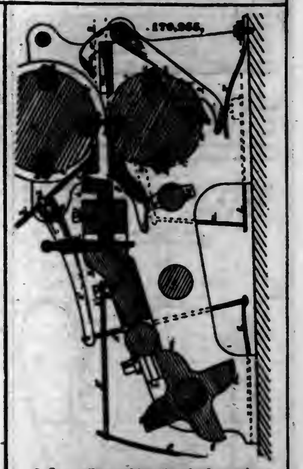
170,865. SPIKE-MACHINES. Worcester Haddock, Pittsburg, Pa., assignor to himself, Henry Gording, and Thomas Johns, same place. [Filed Apr. 6, 1875.]

Brief.—The face of one of the finishing and pointing rolls is cut away just back of each pointing-die, so that the head will be turned, to permit of the finishing of one spike before the rolls again catch on the bar and carry it forward. A griping-lever is arranged in front of the rolls to hold the bar while one spike is finished, and until the rolls again bite upon the bar.

1. In a spike-machine, the combination of the pointing and covering rolls B and C, having a continuous motion, the stationary die g, gripers E and F, and the header D, arranged and operating with relation to each other, so that the iron is fed into the machine, the blank for the spike pointed and severed from the bar, and bar and blank held in a fixed position during the operation of forming the head upon the spike, substantially as herein described.

2. The yielding and adjustable stripper and guide h, in combination with the roll B and stationary die g, substantially as herein described, and for the purpose set forth.

3. In a spike-machine, the cams m, spring-rod f, and header D, in combination with the rolls B C, stationary die g, and gripers E F, substantially as herein before described and set forth.



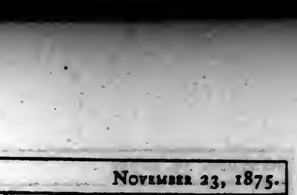
4. In a spike-machine, the wheel e, spring r, and griper E, in combination with the rolls B C and header D, substantially as and for the purpose herein before described and set forth.

5. In a spike-machine, the griper F, operated through the medium of the cams s, lever v, rod v, and spring t, in combination with the stationary die g, header D, and rolls B C, substantially as and for the purpose herein before described and set forth.

6. In a spike-machine, the griper E, in combination with the roll C, having recesses w and dies x, and the roll B having dies g, said rolls having a continuous motion, substantially as and for the purpose herein before described and set forth.

170,866. FURROW-GAGES FOR PLOWS. R. B. Haven, Morrisville, Vt. [Filed Sept. 20, 1875.]

Brief.—Devices for vibrating the draft of a side-hill plow from side to side, and for holding and releasing it from the handles.

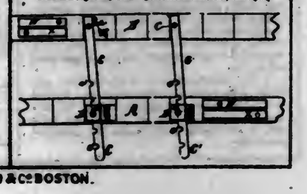


1. The combination, with the V-shaped plate C, having rags c, curved arm h, and box E, of the vertically-movable plate D and operating-lever B, substantially as specified.

2. In combination with a horizontally-vibrating draft-rod, F, the vertically-movable plate D, and slotted box E, substantially as specified.

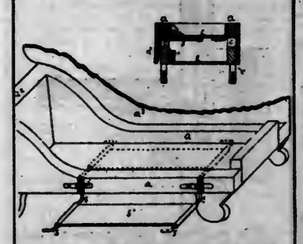
3. The V-shaped plate C, having slots c, lugs a, slotted arm h, and the rectangular box E, open in front and rear, and slotted at top and bottom, substantially as specified.

170,867. PARALLEL RULERS. John D. Hall, New York, N. Y., assignor to H. L. Hall, Philadelphia, Pa. [Filed Mar. 13, 1875.]



The pieces A B of a parallel rule, connected together by the parallel rods O O', having notches g in their edges, to indicate and fix the exact distance the edge of the rule B is set out from the rule A, the said rods O O' being pivoted to the rule B by the pin e, and to the rule-piece A by the spring-latch D d d', as described and set forth.

170,868. SOFA-BEDSTEAD. W. R. Hamilton, Pittsburg, Pa. [Filed May 5, 1875.]



1. The herein-described two halves of a folding sofa, connected together by a bent book-hinge constructed as described, and rendered separable from each other by means of the adjustable connection of said hinge with one of the said halves, substantially as shown, and for the purpose set forth.

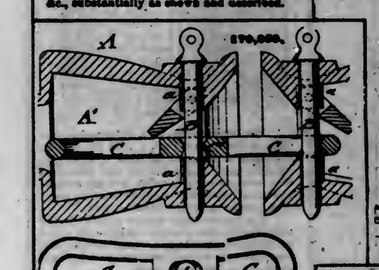
2. In combination with the herein-described two halves of a folding sofa-bed, the connecting-hinge, constructed with bent arms e and brace-plate e', the shorter arms of said hinge being removably connected with frame c, and bent in place by removable stop f, substantially as and for the purpose specified.

3. The combination of the herein-described folding frame with the stationary frame, having its foot and head boards a' a'' raised somewhat above the side rails c, whereby the space c is left between said frames when folded together, for the purpose of bolting bedding, &c., substantially as shown and described.

170,869. ELECTRICAL LOW-WATER AND HIGH-PRESSURE ALARMS. Theodore Hess, New York, N. Y. [Filed Nov. 16, 1872.]

1. The circuit-closer for low-water indicators or alarms, consisting of the two conductors f and d, one of which is terminated in a spring, a, lying over and adjacent to the top of the other, and the ball disc g, arranged within a gage-tube, substantially as above set forth.

2. The combination, with the low-water alarm circuit $a f d b i$, passing through the low-water indicator, of the branch circuit m n, connecting through the pressure-indicator needle, and operating an alarm independently of the water-alarm circuit, substantially as and for the purpose set forth.



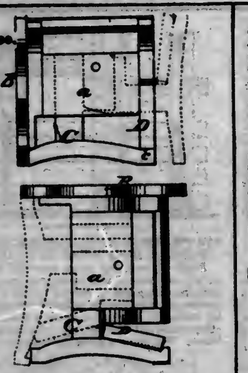
170,870. GAGE-COUPLINGS. Davenian Harper, Houston, Tex. [Filed Oct. 9, 1874.]

Brief.—The link, with a central stay, rests upon the projecting bean, and is held by the pin.

The link C, having the central stay C', with perforation b to receive the pin B, in combination with the draw-head A, having the bean projection a, upon which said link is supported, as shown and described.

170,871. CONVERTIBLE SOFAS AND TABLES. Charles C. Harris, Washington, D. C., assignor of one-half his right to L. C. Heth, and said Harris and Heth assignors of one-third their right to R. A. Boyd, same place. [Filed Mar. 20, 1875.]

Brief.—The legs of the sofa are pivoted in the ends thereof in such a manner that they can be turned on their pivots, and adjusted at right angles to their former position, where they are held by latches. The whole structure is then turned over on the legs in their new position, thus changing the seat of the sofa from a vertical to a horizontal position, and making a table thereof.

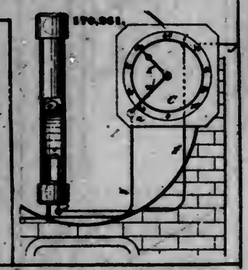


The legs O O, pivoted between pieces c c at the ends of the sofa body A, and notched at e e, in combination with the latches D D and the board B, substantially as and for the purpose described.

170,872. ELECTRICAL LOW-WATER AND HIGH-PRESSURE ALARMS. Theodore Hess, New York, N. Y. [Filed Nov. 16, 1872.]

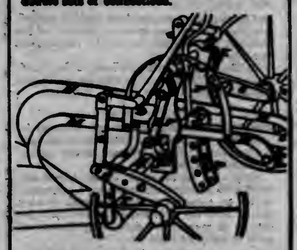
1. The circuit-closer for low-water indicators or alarms, consisting of the two conductors f and d, one of which is terminated in a spring, a, lying over and adjacent to the top of the other, and the ball disc g, arranged within a gage-tube, substantially as above set forth.

2. The combination, with the low-water alarm circuit $a f d b i$, passing through the low-water indicator, of the branch circuit m n, connecting through the pressure-indicator needle, and operating an alarm independently of the water-alarm circuit, substantially as and for the purpose set forth.



170,873. GANG-PLOWS. Frank A. Hill, San Leandro, Cal. [Filed Aug. 19, 1875.]

Brief.—Crank-axle and rock-shaft with double sets of connections.

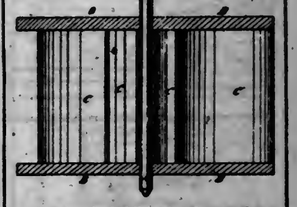


1. The standards F F, which support the axle D, and to which the beams E E are secured, having the slots h, through which the axle A passes, in combination with the cranks K K, connecting-bars I I, shaft D, and lever L, substantially as and for the purpose set forth.

2. The lever L, crank-shaft D, link e, and crank-axle A d d, in combination with the slotted standards F F, cranks K, links I, and plow-beams E E, all constructed and arranged substantially as and for the purpose described.

170,874. SUPERIMPOSED TIRE AND CURRENT WHEELS. John J. Hill, Hayden's Ferry, Ariz. [Filed July 24, 1875.]

Brief.—The inner ends of the buckets do not extend quite to the center of the shaft, so as to leave a clear space around the shaft, which enables the water to enter at one side of the wheel, and escape at the other side, giving it an impulse both times, and rotating the wheel in the same direction that the water is moving.



A water-wheel, B C, having the curved vertical buckets tapered toward the outer edge, and having the thicker inner edge coming short of the shaft, a space being thus left around the shaft, as and for the purpose specified.

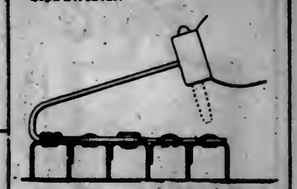
170,875. BILLET-LOOPS. Kirk W. Holmes, Winona, Minn. [Filed Sept. 30, 1875.]



1. The combination of the bifurcated shank A, for a buckle or analogous article, and plate B, having latch g, substantially as described.

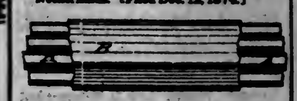
2. The combination of the bifurcated shank A, plate B, having latch g, and the removable billet-loop D, substantially as described and shown.

170,876. COMET-COMBS. C. H. L. Holmes, New York, N. Y., assignor to the Lawrence Curry-Comb Company, same place. [Filed Sept. 27, 1875.]



The metallic connection extending from the handle to the curry-comb, attached to the comb at the forward part, bent upward and backward over the comb, and leaving space for the user to grasp such metallic portion immediately at the back of the comb, substantially as specified.

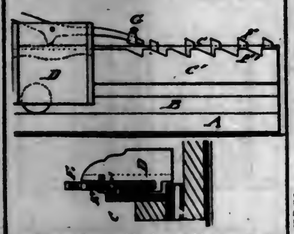
170,877. HEATING CABLES AND CONDUCTORS. Geo. W. F. Hoogeveen, Haarlem, Netherlands. [Filed Dec. 13, 1874.]



A flexible cable-cover, B, permeated with a mixture of paraffine and glycerine, provided on the outside with a coat of coal-tar and rubber, and having on the inside a coat of rubber varnish and bunting, all as and for the purpose specified.

170,967. GAGE ATTACHMENTS TO WOOD-BORING MACHINES. George S. Hudson, Hamburg, N. Y. [Filed Sept. 4, 1875.]

Brief.—In a wood-boring machine the material can be fed side or edge wise, at regular and irregular intervals, to the boring-tool by means of a table provided with a vertical back piece, having two grooved ways attached thereto, one of which is provided with adjustable lugs, and the other with rack-teeth. A head block adjustable in either direction longitudinally in said ways, and a double spring-pawl fulcrumed to the head-block, and provided with detachable end sleeves, for engagement with the lugs or rack-teeth of the ways, as may be required.

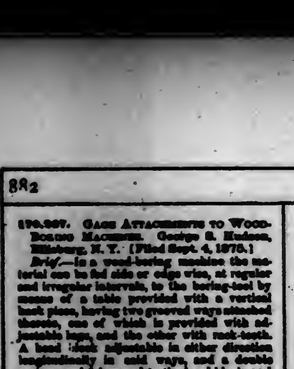


1. A gage for wood-boring machine, constructed of table A B, grooved ways C C', with lugs F and ratchet F', sliding head-block D, with double spring-pawl E, and detachable side projecting sleeves G, to guide the articles in an certain manner to the boring-bit or auger, substantially in the manner and for the purpose set forth.

2. The grooved ways C C', of which one has adjustable lugs F, the other rack-teeth F', in combination with the double spring-pawl E, being adjustable to either way and direction, substantially in the manner and for the purpose set forth.

170,968. WASTE-PIPE TRAPS. T. Hudson, Brooklyn, N. Y. [Filed Feb. 7, 1874.]

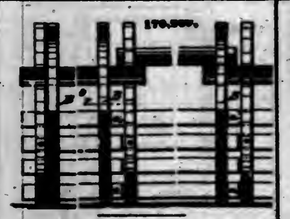
Brief.—A conical valve is suspended from the arm of a lever within an opening made in the top of the trap. The outer arm of the lever is provided with an adjustable weight, so as to allow instant admission of air to prevent the gurgling sound or siphonic action.



The combination, with a steam-trap, A, provided with top vent-hole E, of the conical suspended valve J, and the pivoted lever M and adjustable weight N, all constructed and arranged as shown and described, to operate as specified.

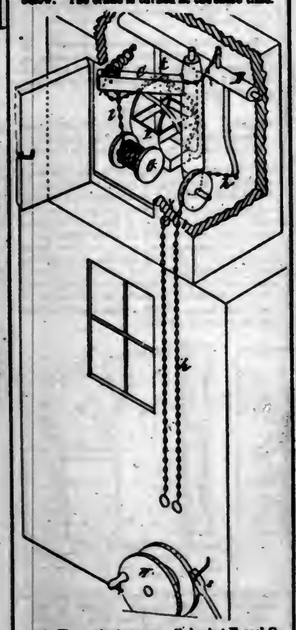
170,969. PIPING. John D. Ryberger and Frank Ryberger, Timber Ridge, Tenn. [Filed Oct. 1, 1875.]

In combination with the post A, the external bars B of the panel-boards C, cut to form lap-joints a, substantially as and for the purposes set forth.



170,970. FIRE-ESCAPES. Thine-the-Jingren, Fall River, Mass. [Filed Oct. 16, 1875.]

Brief.—A swinging crane provided with a pulley, and hooked in a housing on top of the building, supports a basket or crib. The basket and rope are swept out of the housing by means of arms secured to a roller, said roller being operated by ropes or chains from below. The crane is turned at the same time.



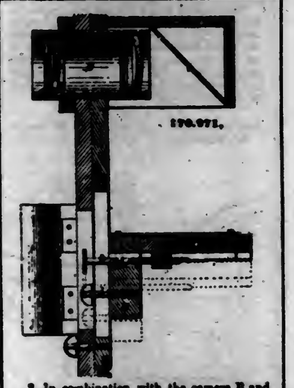
1. The swinging crane C, basket F, rod G, and chain I, in combination with a throwing-out mechanism, actuated by a chain, J, accessible from the various floors or bottom of the building, substantially as and for the purpose described.

2. The drum H, with its brake a, in combination with the crane C, basket F, rod G, and chain I, as and for the purpose specified.

170,971. CAMERA-OBSCURAS. Thomas A. Kellett, Wells, Minn., assignor of one-half his right to T. S. Fellows, same place. [Filed Sept. 23, 1875.]

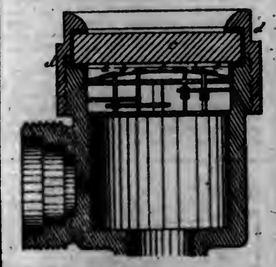
Brief.—A combination of an adjustable table with a camera and reflector, by means of which an enlarged image of a small picture placed upon the table will be thrown upon the canvas in rear of the camera by the aid of solar or artificial light.

1. The combination of a table, a mirror or reflector, and a camera, by which a direct image of any desired size for painting, of any photograph or other picture placed on the table, may be thrown upon a canvas placed at a correct focal distance behind the lens, substantially as herein set forth.



2. In combination with the camera B and reflector D, the adjustable table G, bracket E, slide H, and set-screws a b d, whereby the table may be adjusted in any direction, as herein set forth.

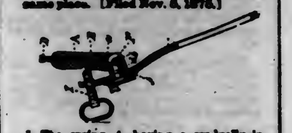
170,972. REGISTER-DIALS FOR WATER-METERS. John C. Kelley, Pearsall's, N. Y. [Filed Apr. 16, 1875.]



1. The combination, in a water-meter, of a glass or transparent dial, c, with the indicating-hands c in positions back of said dial, whereby mud and sediment are prevented from settling upon the dial, and the relative positions therewith of the hands thereby easily read, substantially as herein set forth.

2. The combination, with a glass dial, c, of a plain white face-plate or background, e, and the indicating-hands c, working between said face-plate and a front transparent dial, substantially as herein set forth.

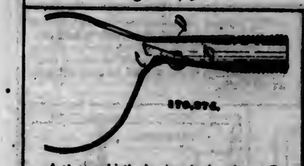
170,973. TROUSERS. Hiram A. Kimball, Philadelphia, Pa., assignor to Benj. C. Everett, same place. [Filed Nov. 6, 1875.]



1. The spring A, having a gradually-increased lateral curvature from its ends to the middle thereof, whereby to gradually increase the stiffness of the spring as the point a is drawn the strength of the leverage of the spring by the change of curvature, substantially as set forth.

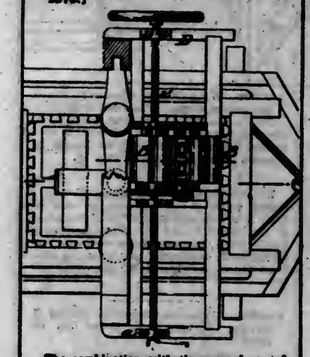
2. The combination of the pad-holder C, slide B, pins F and f, and set-screws H and I, for an inward, outward, and a lateral adjustment of the pad-holders, substantially as set forth.

170,974. STEAM-WHISTLES. Henry B. King and Christopher McElheran, Paterson, N. J. [Filed Sept. 23, 1875.]



A steam-whistle having in its throat B a detachable plate, D, for conveniently inserting or removing the gage C, as shown and described.

170,975. CORN-SHELLS AND PLANTERS. Henry Kruesicke, Monticello, Ill. [Filed Sept. 11, 1875.]



The combination, with the press-box and main posts or standards of a cider-press, of a detachable supporting-frame, on which the mill and operating crank-shaft are placed, to be worked directly in connection with the press, substantially in the manner and for the purpose set forth.

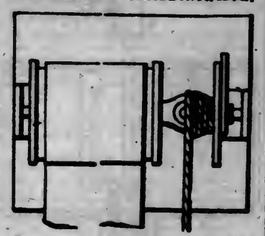
170,976. ENVELOPE-OPENERS. John Le Blanc and Xavier St. Pierre, Ogden City, Utah. [Filed June 19, 1875.]



1. The combination, with an arm A, of the elastic guides B B, to receive envelopes of different thicknesses.

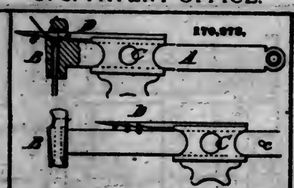
2. The guides B, eraser-head C, and attaching-socket D, constructed of rubber, and arranged substantially as specified.

170,977. CURTAIN-FIXTURES. R. B. Lake, Tom's River, N. J. [Filed Dec. 14, 1874.]



The weighted curtain, angle-cord pulley, single cord, pearl, and stop combined, said pearl being pivoted to the cord-pulley, substantially as described, and for the purpose specified.

170,978. WRINGER-TUBS. Peter R. Lambert, New Orleans, La. [Filed Apr. 27, 1875.]



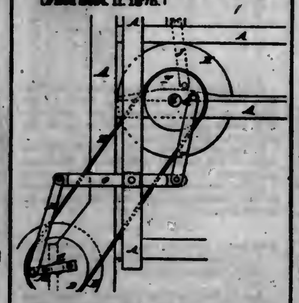
A suds-thrower, composed of the steam-A, provided with the stop a and perforated cone portion B, having elastic jaws, in combination with the slide C, having the turned upper D, substantially as and for the purpose set forth.

170,979. WASHING-MACHINES. John D. Lawler, Montreal, Canada. [Filed Oct. 12, 1875.]



In a washing-machine, constructed as herein before described, the spring-rod a', constructed with a screw-thread on its upper end, provided with the thumb-screw K, and connected at its lower end to the block in which the shaft B of the washing-roller is journaled, substantially as and for the purpose set forth and described.

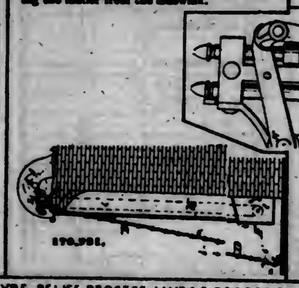
170,980. MECHANICAL MOVEMENTS. Hiram Leslie, Brown's Cross-Roads, Ky., assignor to himself and G. W. Hunt, same place. [Filed Sept. 11, 1875.]



The combination of the cranks M G, the pitmen N P, and the lever O, with the pulleys D F and belt E, that connect the power-shaft with the working shaft, substantially as herein shown and described.

170,981. FIRE-ESCAPES. John H. Lindlau, New York, N. Y. [Filed Oct. 25, 1875.]

Brief.—A flexible chain ladder, the rounds of which are iron tubes, is secured to a roller in a housing on top of the building. The roller is operated by rag-wheels and a chain. The chain is inclosed in the conductor-pipe of the crane. In the bottom of the conductor-pipe is a lock-box, in which is located one of the rag-wheels, and other devices for operating the ladder from the sidewalk.



170,981.

1. The combination of the shaft A, hung on the roof of a house, with the flexible fire-ladder attached thereto, and with the operating band or chain A, shaft I, and hooked strap-bar F, all arranged as that in case of fire the ladder can be let down by persons on the sidewalk, without requiring their admission to the house, substantially as specified.

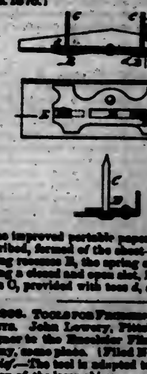
2. The flexible fire-proof ladder D, constructed of tubular rungs b b and chains a, substantially as described.

3. The combination of the endless belt or chain A, shaft A of a fire-ladder, an winding-shaft I, and bent F, with the gutter H, within which said chain is inclosed, substantially as specified.

4. In combination with two or more flexible fire-ladders, D D, that are fastened to the same shaft A, the bottom bar b connecting the lower ends of all said ladders, substantially as herein shown and described.

5. In a fire-escape, the combination of the stand-box, F and connecting chain A with the shaft I, pronged wheel n, spring-stopper o, and gong P, all combined within said box, substantially as herein shown and described.

170,982. TEMPORARY BINDERS. Charles D. Lindsay, Cincinnati, Ohio. [Filed Apr. 26, 1875.]



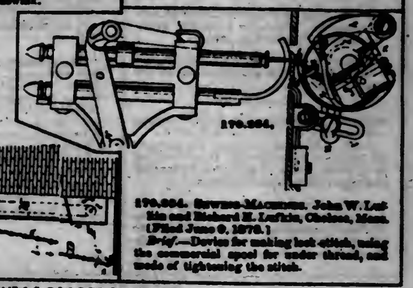
The improved portable paper-holder, herein described, formed of the sheet-metal plate A, having recesses B, the spring clamping-plate, having a closed and open slot, E, and the fasteners G, provided with toes d, as set forth.

170,983. TOOLS FOR FIRMING LAMP-CHIMNEYS. John Lowery, Pittsburg, Pa., assignor to the Keystone Flint-Glass Company, same place. [Filed Nov. 6, 1875.]

Brief.—The tool is adapted to open or turn the top of the lamp-chimney, and at the same operation form or curl up the edges thereof.



A tool for opening and forming lamp-chimneys, said tool having a series of radiating and curved knife-edges, substantially as described.



170,984.

170,984. SEWING-MACHINES. John W. Loftin and Richard H. Loftin, Chelsea, Mass. [Filed June 9, 1875.]

Brief.—Device for making lost stitch, using the commercial spool for under thread, and mode of tightening the stitch.

1. The carrier *g*, rotary shaft C, the disk *d*, yoke *e*, and bracket *f*, constructed, combined, and arranged to operate together, as and for the purposes specified.

2. The combination, with the spool-carrier *g* and its two supports, *e* and *f*, of the rotary shaft C, disk *d*, clamping-lever *h*, and operating mechanism, as described, whereby the said carrier is held in proper relative position to be presented through the loop of the needle-thread, and be intermittently clamped and released, as and for the purposes set forth.

3. The carrier *g*, constructed as described, and provided with the ovelits *n* and *n*, arranged relatively thereon, as and for the purposes set forth.

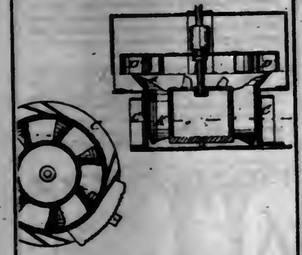
4. The combination, with the rotary thread-carrier *g* and bracket *f*, of the thread-guard *l*, arranged as shown, whereby the under thread is prevented from entering the path of the said thread-carrier *g* during its rotation, and entangling with the upper thread, as described.

5. The zipper-lever *h*, combined with the rotary plate *d*, eccentric *k*, and connecting mechanism, as described, whereby a rotary and rocking movement is imparted to the clamping-lever, as and for the purposes specified.

6. The carrier *g*, with its thread-guard *l*, in combination with take-up arm O and intermediate mechanism, as described, whereby said carrier and arm are made to move relatively to each other, as and for the purposes specified.

170,866. WATER-WHEELS. S. C. Lyons, Bennington, Vt. [Filed May 6, 1875.]

Brief.—The water enters through the tangential chutes of the gate directly to the inside of the wheel-surrounding case, and then on the buckets of the wheel. The buckets are curved to pass the water readily upward, and are provided at their upper ends with outwardly extending lips, to which an inverted conical rim is attached, which confines the upper edge of the case. In case of high heads of water, auxiliary top wheels may be employed on the main shaft, and transmitting the power by belt, gearing, or otherwise.



1. The buckets of the wheel, having outwardly-extending lips at upper ends, in connection with a conical wheel-case encircling rim, for conveying water to auxiliary top wheel, substantially as specified.

2. The combination of a water-wheel, provided with conical rim at upper ends of buckets, with one or more floating auxiliary top wheels, having arc-shaped buckets for utilizing power of issuing water, substantially as and for the purpose set forth.

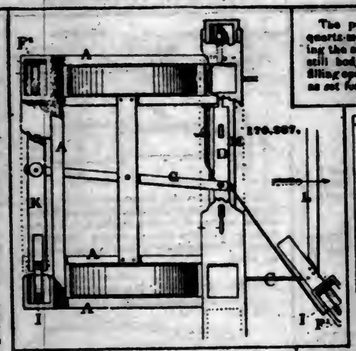
170,868. COMPOSITIONS FOR BEVERAGES AND INVIGORANTS. Waldemar A. Martin, Pittsburg, Pa. [Filed Oct. 6, 1875.]

A composition containing figs and the fruit of the cervantia, substantially as and for the purposes described.

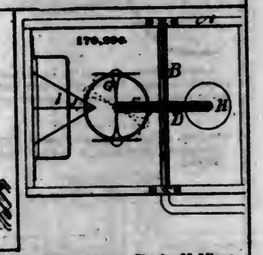
170,867. CORN-MARKERS. John McGregor, Princeville, Ill. [Filed July 17, 1875.]

Brief.—Additional boxes are secured upon the frame, to mark the hills of corn planted by a white substance deposited by notched plates operated from the seed-slide.

The combination, with the corn-planter frame A, of the rear powder or fertilizing boxes F, slides I, connecting-bar K, connecting-lever G, attached to the corn-dropper bar D, substantially as described.



170,867.



170,868.

The process of concentrating tailings of quartz-mills, consisting essentially in conducting the stream containing the tailings over a still body of water, the same standing in or filling openings in the conduit for said tailings, as set forth.

170,869. COMBINED TOILET-CASES AND TOWEL-ROLLERS. Danl. Miller, Marietta, Ohio. [Filed Apr. 21, 1875.]



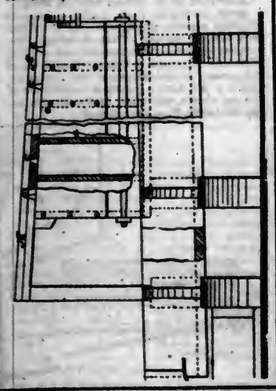
1. As an improved article of furniture, a toilet-case, consisting of the frame-work A, the tilting comb and brush case B, and towel-roller C, constructed and combined as and for the purpose set forth.

2. The combination of the box B with the catch *b'* and ledge *b'*, arranged as described and shown.

3. The combination of the split roller *c* and *c'*, with the ring D and securing-staples, as described.

170,870. METHODS OF CONCENTRATING TAILINGS FROM QUARTZ-MILLS. Francis B. Mills, Virginia City, Nev. [Filed Mar. 20, 1875.]

Brief.—The material passes in suspension in water into a broad shallow trough, which has slits cut through its bottom, and is seated on a water-tank, the water from which rises through the slits. The heavy material drops through these slits into the tank below. Any valuable material which passes out of the shallow trough is conducted into a deep narrow sluice, in which it settles to the bottom.



170,871. WELL-CURBS. Charles M. Miner, Bridgeport, Conn. [Filed Oct. 8, 1875.]

Brief.—The curb is provided with the triangular tipping-rod shown. When the cam-shaped bail strikes said rod, the basket assumes a proper position for emptying.

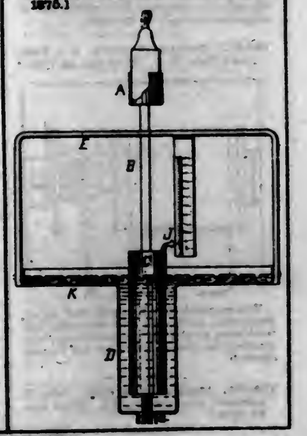
In a well-curb, the combination of the V-shaped pulley D with the common rope or chain E and the cam-shaped bail G, attached to the basket F, and the triangular-shaped tipping-rod J, attached to the curb over the trough I, all constructed and arranged substantially as shown, and for the object set forth.

170,872. GARDNER-CURTAINS. Henry C. Moody, Oswego, N. Y. [Filed Oct. 16, 1875.]



The combination of the curtains E, provided with a fastening-cord, C, with the bow A, having studs D, as and for the purpose set forth.

170,873. PHOTOMETERS. Peter Munninger, Philadelphia, Pa., assignor to Morris, Tasker & Co., same place. [Filed July 6, 1875.]

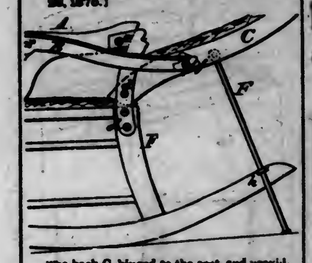


1. In a pneumatrust apparatus the combination of a float-chamber, D, a guide-tube, G, and a float, K, as shown and described.

2. The combination of a rod, B, float C, frame E, rod F, and guide-tube G, as shown and described.

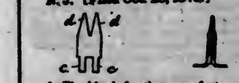
3. The combination of a socket, A, rod B, float C, chamber D, seats I, and leaden J, as shown and described.

170,890. RECEIVING HOOKING-CHAINS. J. B. Newman, Franklin, Pa. [Filed Aug. 28, 1876.]



The hook C, hinged to the seat, and provided with the pivoted support F, and the pivoted catch-brace B, having projection *a*, in combination with the arms A, having ratchet-plates *a*, substantially as and for the purpose set forth.

170,891. PAPER-FASTENERS. William H. Peck and Joseph S. Voorhees, Jersey City, N. J. [Filed Oct. 23, 1875.]



1. The blank for the manufacture of paper-fasteners, having the main body or web, as shown, provided with the two sharpened tips *d*, projecting from one end of said web, and two tips, *e e*, projecting from its other end, and in the opposite direction.

2. The described tubular binder, formed from a blank such as described, and having its main body or web bent longitudinally into the form of a tube, and its blunt tips adapted to be bent outward when applied to use, and its sharpened tips adapted to be bent inward toward each other to receive the papers, and to be bent outward to bind and retain them, all as set forth.

170,892. KITCHEN UTENSILS. T. S. Pope, Toledo, Ohio. [Filed Nov. 8, 1875.]



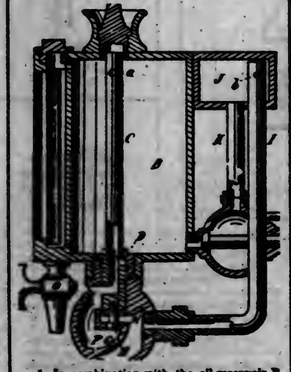
A kitchen utensil consisting of the vessel A and top D, in combination with the rack B, provided with the legs *c c*, and shelves *d d*, and the shell C, all constructed to operate substantially as and for the purpose set forth.

170,893. LUBRICATORS. Chas. H. Parshall, Detroit, Mich. [Filed Oct. 28, 1875.]

1. In combination with the stem A, constructed with partitioned bulb G G' G², and hand-valve *e* F, the steam-pipe I, closed at top, and provided with opening *h*, communicating from steam-stem A G to top inside of condensing-chamber J, at the top outside of oil-reservoir B, as and for the purpose described.

2. In combination with the stem A G, reservoir B, and steam-pipe I, communicating from stem A G to top of condenser J, the condensing-chamber J, provided with hand-valve L, placed at the outside top portion of reservoir B, and communicating therewith at the top edge through opening *d*, as and for the purposes described.

170,894. LUBRICATORS. Chas. H. Parshall, Detroit, Mich. [Filed Oct. 13, 1875.]



1. In combination with the oil-reservoir B and stem A, the independent separate condensing-chamber J, placed upon the outside of the reservoir, at the top edge thereof, and communicating with the stem A through steam-pipe I, and with the bottom of reservoir B through water-pipe K, as and for the purposes described.

2. In combination with the condenser J and stem A, the steam pipe I, closed at top, provided with discharge-openings *b* below the end thereof, and connecting from chamber H in stem A to condenser J, as and for the purpose described.

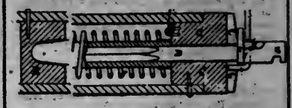
3. In combination with the reservoir B and independent separate condensing-chamber J, placed at the outside top portion thereof, the water-pipe K, with hand-valve L, communicating from bottom of condenser to bottom of reservoir, as and for the purposes described.

4. In combination with the reservoir B and pipe O, closed at top, and provided with openings *a*, the stem A, with an enlarged or bulbed upper portion, constructed with chambers F H, partition G, and automatic valve E, as and for the purposes described.

5. In combination with the stem A, constructed with chambers F H, partition G, and automatic valve E, the guide-block D, curved down into the stem A, and tube O secured thereto, as and for the purposes described.

6. The improved lubricator, consisting of reservoir B, stem A, oil-tube C, closed at top, and provided with openings *a*, independent condensing-chamber J, placed at the outside top portion of reservoir, steam-pipe I, closed at top, and communicating from stem A to top of condenser, and water-pipe K, with hand-valve L, communicating from bottom of condenser to bottom of reservoir, as and for the purposes described.

170,895. CURTAIN-FIXTURE. George W. Faires, Arlington Heights, Mass. [Filed Sept. 9, 1876.]



1. In a curtain-fixture, the combination of the spring F, cylinder A, slotted head C, perforated hub H, and key K, substantially as and for the purposes set forth.

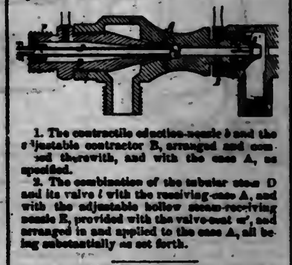
2. In a curtain-fixture, the combination of the spring F, spindle D, slotted head C, perforated hub H, and bent key K, substantially as and for the purposes set forth.

3. The combination of the slotted head C, bent key K, and flanged hub H I, substantially as set forth.

4. In a curtain-fixture, the combination of the tube A, head C, spring F, and staple N, arranged and operating substantially as set forth.

170,896. INJECTORS FOR STEAM-BOILERS. Wm. Randall, Salem, Mass. [Filed Oct. 12, 1875.]

Brief.—The slit nozzle is controlled by the cover-collar shown. The rear nozzle may be made to move endwise within the case, and, together with the valve of the hollow stem, to cut off wholly or partially the steam in the space around the stem.

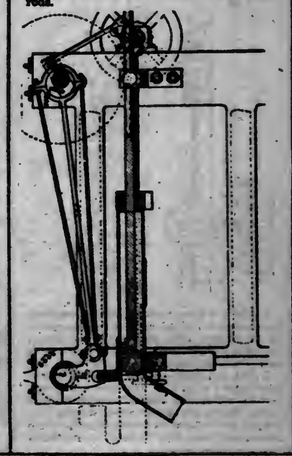


1. The constructile ejection-nozzle *b* and the adjustable contractor B, arranged and combined therewith, and with the case A, as specified.

2. The combination of the tubular stem D and its valve *i* with the receiving-case A, and with the adjustable hollow steam-receiving nozzle B, provided with the valve-seat *a'*, and arranged in and applied to the case A, all being substantially as set forth.

170,899. MACHINES FOR BENDING METALLIC TUBES. John M. Reid, Montreal, Canada. [Filed May 19, 1876.]

Brief.—The swaging die-block is actuated by rod-pieces below to journal-bearings that are free to move vertically in guides, and above to arms that are suspended from journals *i*, adjustable as to height by eccentric sleeves, and which are vibrated by eccentrics on shaft, through the medium of connecting rods.

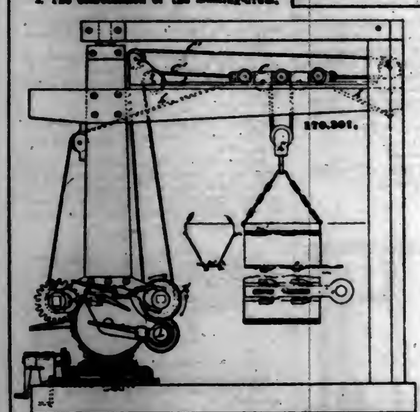


A compressing-die, swinging upon trunnions or centers corresponding, or nearly so, with the center from which the bend of the pipe is described, in combination with a mandrel to support the tube while being compressed and bent, and mechanism substantially as set forth for actuating the swinging compressing-die, as specified.

170,891. CRANES, Robt. B. Robison, Pittsburg, Pa. [Filed Oct. 5, 1875.]

1. In combination with the crane-post, the mechanism for operating the jib-truck, provided with a series of fast and loose pinions or sliding gearing, whereby the travel of the truck may be arrested or reversed without arresting or reversing the power mechanism.

2. The combination of the bottle-drum,



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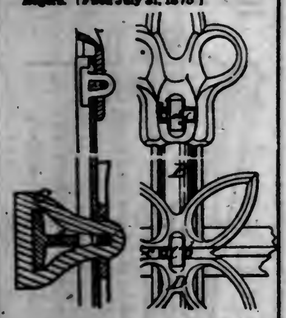


170,894.

the drum and mechanism for causing the travel of the truck, the power mechanism, and the intermediate fast, loose, and sliding pinions, whereby the hoisting mechanism and jib-truck may be operated simultaneously or alternately, substantially as specified.

3. The combination of the barrel power-gearing C E, the latter pivoted or journaled to the crane-post, the winding-drum I, and the intermediate sliding pinion, substantially as and for the purpose specified.

170,892. IRON FENCES. Robert Rogers, Mount Vernon, Ohio, assignor to Timothy Rogers. [Filed July 31, 1875.]



1. The iron fence, substantially as described, comprising a vertical concave-convex picket on its concave side, supporting a T-shaped rail by a bracket keyed on the convex side of said picket, substantially as set forth.

2. The iron fence comprising a vertical concave-convex picket on its concave side, supporting a T-shaped rail by a bracket keyed on the convex side of said picket, having combined with it a boss on the convex side of the picket, said boss, held by said key, resting in a horizontal groove in the face of said boss, and passing through the staple and of the bracket, said staple and forming in relief the center of the boss, substantially as described.

170,893. ELECTRIC GAS-LIGHTERS. Octave A. A. Bouillon, Brooklyn, N. Y. [Filed Oct. 29, 1875.]

Brief.—Movement of handle allows gas to flow, at same time causing a closure of circuit with a rubbing contact through the roughened platinum wires.

The combination, in an electrical circuit, of corrugated or otherwise notched or ridged platinum wires A C, or their equivalents, said wires being arranged for one to be moved along the other crosswise when making contact, substantially as specified.

170,894. BLOW-PIPES. Charles Stanley, Helena, Mont. [Filed Sept. 25, 1875.]

Brief.—This blow-pipe has a globe or chamber, having a diametrical plate or diaphragm for collecting moisture, and an exit-opening for expelling the same.

A blow-pipe made with induction and eduction pipes, projecting into a globe part or chamber, having a diametrical strip or diaphragm and an exit-opening, for collecting and expelling the moisture, substantially as specified.

170,895. WATER-PIPES. Wm. H. Sampson, Chicago, Ill. [Filed July 15, 1875.]

Brief.—The sections of the supply-pipe are made with double walls, and a chamber between the walls. The barrel of each of the cocks is also made with double walls, and a chamber between the walls. The pipe and cocks are charged with alcohol and then sealed, so that there will be no loss from evaporation. The charging of the chambers with alcohol causes the whole interior wall of the cocks and pipes, as far as practicable, to be surrounded by alcohol, which does not freeze under extreme temperature.

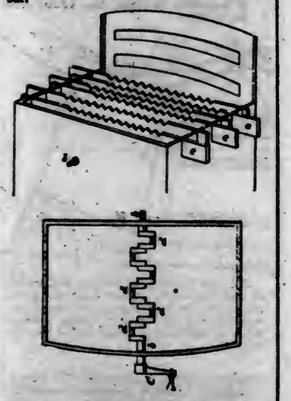
1. The street supply-pipe, having a charging-head, and its main cock, shut-off cock, and the house-cock, which is covered into the supply-pipe, constructed with double walls and communicating chambers between the walls for holding alcohol, substantially as described.

2. A water-pipe and its connected cock, made with double walls, and communicating chambers between the walls, substantially as and for the purposes described.

3. The charging-head of the supply-pipe, made with double walls, and a chamber between its walls, in combination with the house-cock, shut-off cock, main cock, and the gage, substantially as and for the purpose described.

170,896. GRATES. John Schroeffel, Jr., Allegheny, Pa., assignor to O. D. Lewis and W. A. Conklin. [Filed Apr. 12, 1875.]

Brief.—The bars are supported by the frame, and alternate reciprocating motion is imparted to them by the compound crank-bar.



The transverse shaft b, provided with a series of short cranks, *d d d*, and winch C, in combination with the serrated and slotted grate-bars *a a a*, substantially in the manner shown, for the purposes set forth.

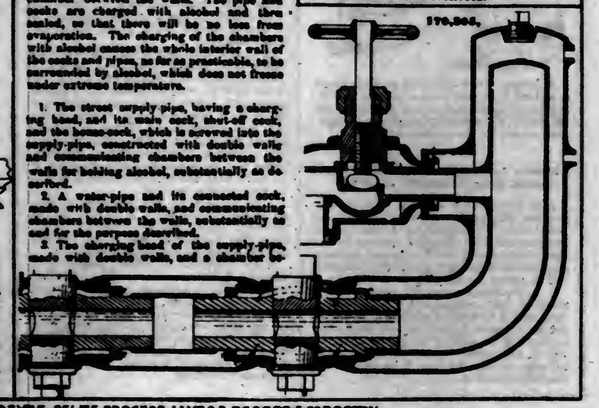
170,897. PROCESSES OF DYEING FABRICS. Alexandre Schmitz, Paris, France. [Filed Sept. 10, 1875.]

Brief.—The fabric is printed with a mixture of indigo-white, oxide of tin, and gum-senegal, and is then steamed to fix the color.

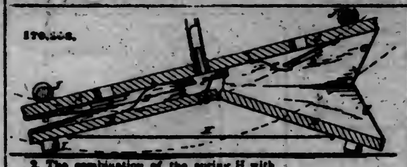
The within-described process of dyeing vegetable fiber, which process consists, first, in treating the fabric with indigo-white and oxide of tin, in the proportions substantially as named, and then subjecting the so-treated fabric to the action of live steam.

170,898. BELLOWS ATTACHMENTS FOR ROCKING-CHAIRS. Edgar B. Bell, Charleston, S. C. [Filed Sept. 17, 1875.]

1. A bellows attachment for rocking-chairs formed by the combination of the double bellows A B C D E F, the flexible tubes G, and the cross-bars J with each other, substantially as herein shown and described.

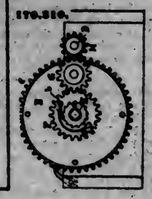


170,898.



170,899.

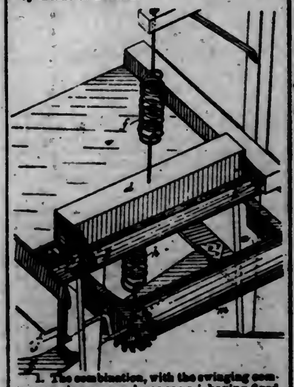
2. The combination of the spring H with the movable plates B of the bellows A B C D E F, substantially as herein shown and described.



170,910.

170,900. GRAINING-MACHINES. William G. Sharp, Vineland, N. J., assignor to himself and Joseph B. Sharp, same place. [Filed Aug. 12, 1875.]

Brief.—The compressing-block swings upon fixed fulcrums, and is actuated by a treadle and springs. The take-up roller is operated by means of a crank.

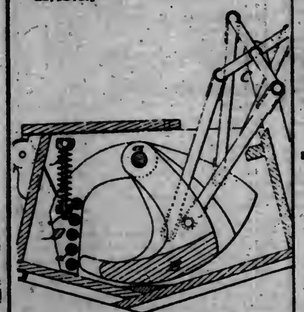


1. In a washing-machine, a series of alternately-swinging plungers, operated by a revolving crank-shaft, in combination with a swinging and spring-acted roller-rock, substantially in the manner, and for the purpose set forth.

2. The combination of the swinging roller-rock, having lateral brass-plate, with the sliding rods and springs of a pivoted top plate of the tub, to produce constant spring-action on rock, substantially as specified.

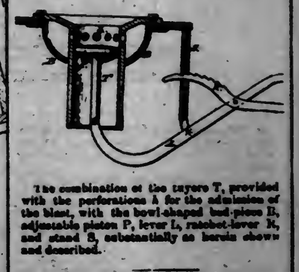
3. The combination of the swinging spring-rock with a cord and center pivot-lever and fastening-hook for locking the spring-rock to wall of tub, and facilitating the handling of the clothes in the same, substantially as shown and described.

170,911. WASHING-MACHINES. John I. Shotwell, Welland, Canada. [Filed Oct. 20, 1875.]



170,912. TUYERES. Philander H. Standish, Jefferson City, Mo. [Filed June 16, 1875.]

Brief.—The circulation of the air from the blast-pipe in the annular chamber prevents the tuyere from being burned by the fire. As fast as the cinders and coke accumulate, so as to interfere with the fire, the ratchet-lever connected with the piston is let down a notch.



The combination of the tuyere T, provided with the perforations A for the admission of the blast, with the bowl-shaped tool-piece B, adjustable piston P, lever L, ratchet-lever N, and stand S, substantially as herein shown and described.

170,913. IRONING. Friederich Teudt, New York, N. Y. [Filed Sept. 25, 1875.]

Brief.—A fixed inclined washer, centered near the middle of the plate, is interposed between the sleeves or knuckles of the hinge, in such manner that by means of the correspondingly-inclined sleeve a door or shutter is raised when being opened, and automatically closes when the hinge returns to normal position.

170,914. CHURNS. Frederick Teudt, New York, N. Y. [Filed Sept. 25, 1875.]

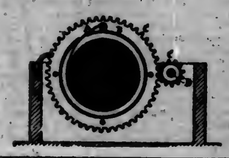
Brief.—A fixed inclined washer, centered near the middle of the plate, is interposed between the sleeves or knuckles of the hinge, in such manner that by means of the correspondingly-inclined sleeve a door or shutter is raised when being opened, and automatically closes when the hinge returns to normal position.

170,915. CORN-HARVESTERS. Joseph Townsend and John H. Parr, Bainbridge, Ind. [Filed Oct. 7, 1875.]

Brief.—The receiving-table is made adjustable by its shaft revolving within a bolster-slotted shaft, to adapt it to cut 1 different heights. The dropper has a section hinged and operated by lever and strap.

170,916. MACHINERY FOR SEPARATING SUBSTANCES OF DIFFERENT SPECIFIC GRAVITY. Albert B. Stanberrie, Philadelphia, Pa. [Filed Feb. 24, 1875.]

Brief.—The streams of water through the inclined of the screen cause a separation of the lighter from the heavier particles of ore, &c. The lighter particles are washed over the dam into the interior buckets of the wheel, while the heavier pass through the gate E into the exterior buckets.



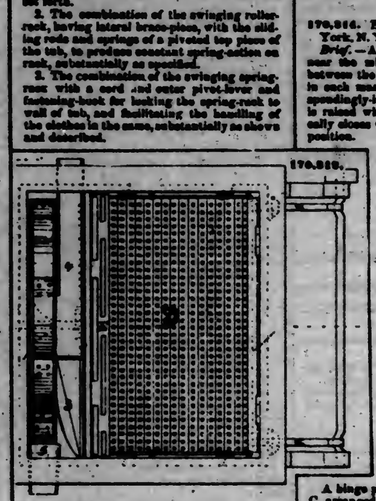
170,917. VOLUTE-SPRING MOTORS. Wm. H. Shelmer, Baltimore, Md., assignor of two-thirds his right to Sydney C. Long, same place. [Filed Nov. 4, 1875.]

Brief.—The spring operates the shaft on which it is wound, and the drum to which its outer end is attached, and, by gear-wheels respectively connected therewith, imparts the combined motion to the driving-shaft.

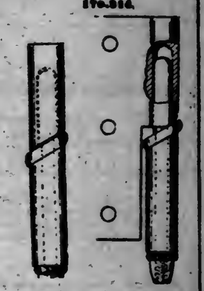
1. The spring A, the two ends of which are connected by means of gearing to the shaft D and moved in the unwinding of the said spring in such manner as to revolve the said shaft D in a common direction, substantially as described.

2. The spring A and shaft E, with the ratchet-wheel a thereon, in combination with the pawl A, gear-wheels F, G, and E, and shaft D, substantially as and for the purposes specified.

3. The wheel C and casing B connected therewith, spring A, having its ends secured, respectively, to the wheel C and shaft E, in combination with said shaft E, wheel F, idler-wheel G, and shaft D, having thereon the pinion O and wheel N, substantially as and for the purposes herein specified.



170,919.

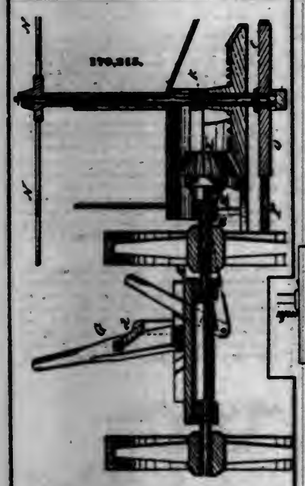


170,916.

A hinge provided with an inclined washer, C, arranged on the pintle between the correspondingly-inclined surfaces of the stationary and movable sleeves, as and for the purpose specified.

170,918. CORN-HARVESTERS. Joseph Townsend and John H. Parr, Bainbridge, Ind. [Filed Oct. 7, 1875.]

Brief.—The receiving-table is made adjustable by its shaft revolving within a bolster-slotted shaft, to adapt it to cut 1 different heights. The dropper has a section hinged and operated by lever and strap.



170,315.

1. The combination, in a stalk-cutter, of the box D, drop bottom E, strap *d*, and hinged lever G, substantially as and for the purposes herein set forth.

2. In a corn-stalk-cutter, the combination of the hollow slotted shaft A, interior shaft *k*, disk O, with knives P, and rod N, all constructed and arranged to operate substantially as and for the purposes herein set forth.

170,316. SUPERHEATERS FOR STEAM-BOILERS. Tinsley Vernon, Charleston, Mo. [Filed Oct. 26, 1875.]

Brief.—Steam is superheated in a coil of pipe located in a chamber formed on the bed of the fire-door. The temperature of the steam may be regulated by the admission of either fire-flame or cold air.



1. The shield E, in combination with the coiled tube D, substantially as described.

2. The combination of the dampers G and *e*, the shield E, and coil D, substantially as described and shown.

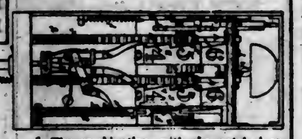
170,317. IMPLEMENTS FOR SETTING COAL-ARMS. John Waldron, New Bedford, Mass. [Filed June 4, 1875.]



The inclined and fixed slave A, provided with spindle B', in combination with the sleeve E, provided with the stirrers C C C C, and the removable handle D' D', constructed and arranged substantially as shown.

170,318. YARN-REGISTERS. W. S. Watson and A. Knowlton, Boston, Mass. [Filed Nov. 11, 1874.]

Brief.—A register to be used by persons in charge of public conveyances, which registers the receipts of fares taken from the passengers on a dial at the side of the case; at the same time numbers are thrown opposite an opening in the front part of the case, by which the passengers can see whether the person in charge has recorded correctly.



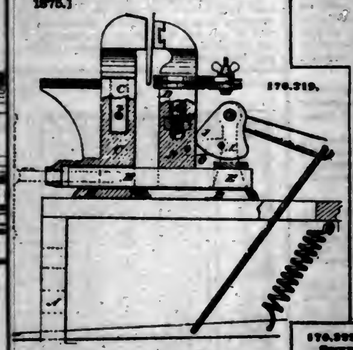
1. The combination, with the notched or toothed display or indicator wheel, of the sliding rack-bar for, operating the same, the dog or detent which engages the notches or teeth on said wheel, and the slide-bar and stud for releasing the hold of the dog on the wheel, substantially as shown and set forth.

2. The wheels B D, mounted on their supporting-shaft, as explained, in combination with rack-bars *e e'* and their retracting-springs, dogs *f f'*, and the slide-bar and stud for actuating said dogs, arranged and operating substantially as shown and set forth.

3. The combination, with the independent wheels D E F, mounted on shaft C, and operated as herein described, of the register-wheel P, and mechanism by which the several wheels, when moved, are caused to operate the register-wheel to register the amounts displayed by the wheels, substantially as herein shown and set forth

4. The bar *o'*, in combination with the sliding bars *s* or *e'*, to constitute a stop to the movement of such bars, substantially as and for the purposes stated.

170,319. HORSESHOE-CALKING VISES. W. Weaver, Greenwich, N. Y. [Filed May 22, 1875.]

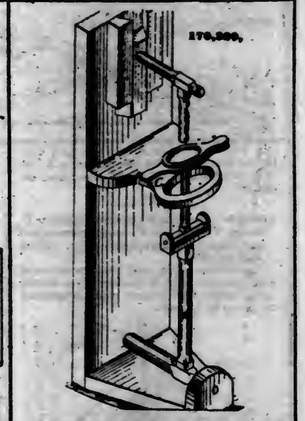


170,319.

The combination, with standard D, foot to slide E, of the cam J, connected with said standard by pivoted straps O O, and pivoted in rigid uprights I, as and for the purpose described.

170,320. MACHINES FOR FORMING BROOM-HANDLES. Washington Wendell, Orange, Mass. [Filed Aug. 16, 1875.]

Brief.—The oval grooving surface on broom-handles and similar articles can be formed by means of an upright semi-conical area, the sections hinged together at right angles to each other and to the main frame, and a platform, upon which the handle is placed, and which is provided with two handles for operating in connection with a suitable cutting-tool and guide-plate.



170,320.

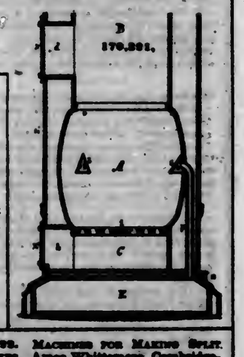
The upright arm, hinged to the frame, and made in two parts, that are hinged together, the two hinges being placed at an angle to each other, so as to give a universal motion, in combination with a guiding plate and a cutter, substantially as shown and described.

170,321. SAFETY CAR-HEATERS. Charles A. West, Richmond, Va. [Filed Mar. 22, 1875.]

1. The water-reservoir E, in combination with the removable securing-straps *a* and the base D, substantially as specified.

2. The heads *b* of the fire-chamber A, in combination with the pipes F, the base D, and the detachable water-reservoir E, substantially as specified.

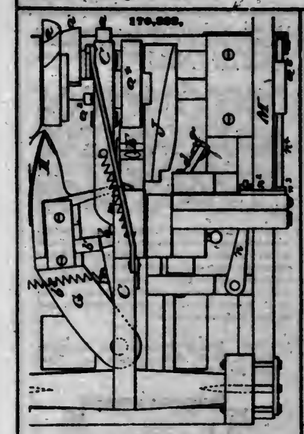
3. The covering-jacket G, provided with the doors *s s'*, in combination with the base D, the securing-cover *c*, and the pipes F of the water-reservoir E, substantially as and for the purposes specified.



170,321.

170,322. MACHINES FOR MAKING SPLIT SPOKES. Amos Whittemore, Cambridgeport, Mass. [Filed Dec. 28, 1874.]

Brief.—The machine consists, essentially, of the following parts, viz: a table, upon which the rod is placed, and over which it is fed into the die; a cutter, which severs a blank from the rod; a bender, which is thrown (laterally) in front of the die at the same time the feed-table is carried (laterally) out of its way, and is advanced to bend the blank; a holder or clamp above the die; a cutting or shearing mechanism at one side of the die, which is vertically reciprocated to cut one side of the spike, and point and split it to form the prong, which prong is carried below the face of the die by the splitting shear, cut diagonally at the point by another cutter, and replaced by a replacer below; and a receding gage at the rear of the die, to determine the length of the blank.



170,323.

1. The receding feed-gage K, against which the end of the spike abuts, in combination with the levers *b* C, rod *b'*, lever *b²*, and cam *a²*, substantially as and for the purposes set forth.

2. The shearer C', having an inclined cutter, 2, a supporting-flange, 3, and an angular cutting-edge, 4, in combination with the die F, substantially as and for the purpose set forth.

3. The combination, substantially as described, of the die F, the table J, provided with mechanism for laterally moving it, and the bender K, provided with mechanism for moving it longitudinally and laterally, as set forth.

4. The cutter *d*, operating in a diagonal direction by appropriate mechanism, in combination with the die F and shearer C', substantially as described.

5. In a spike-splitting machine, a horizontal laterally-movable lever, G, carrying the plunger *b'*, which moves forward the bending-tool *k*, and also the tool which cuts the spike-blanks from the spike-rods, in combination with the cams *a a'*, substantially as described.

6. The spring-arm H, applied on the free end of the lever G, in the manner and for the purpose described.

7. The spike-holder E, having its fulcrum in lugs attached to the main frame, in combination with the cam *a²*, lever M, and rod *r*, substantially as and for the purpose set forth.

8. The reciprocating prongs *s s*, arranged at a suitable distance apart, and pivoted to the arm *a'*, in combination with the cam *a²*, angular lever *n²*, connecting-rod *n³*, lever *n⁴*, and grooved die-bed F, substantially as set forth.

9. The replacer N, pivoted at one end to the die-bed F, and having its opposite end connected to link A, in combination with the vertically vibrating lever C, substantially as described.

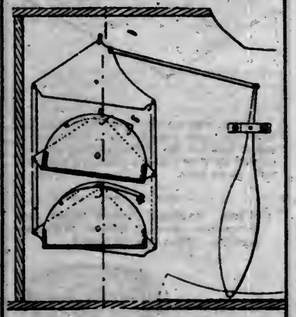
10. The die F, having the angle 5, in combination with the bending-tool *k*, pivoted to the lever G, lever G, and cams *a a²*, substantially as described.

11. The combination, substantially as described, of a bender for forming one side of the point of the spike-blank, a cutter for forming the other side of the same, a shear for splitting the blank to form a prong thereon, a diagonally-operating cutter for beveling the point of said prong, and a replacer for replacing said prong, as and for the purposes set forth.

170,323. CARPET-RAG LOOPERS. William H. H. Wyckoff, Lemon Cross Roads, N. J. [Filed Aug. 21, 1875.

The improved carpet-rag looper herein described, consisting of the triangular blade A, having the vertical slot *a*, side projecting arms *c c'*, and the reduced shank *b*, the U-shaped plate B, having attached at its upper end the blade A, and at its lower end the adjusting-screw *e*, for the purposes set forth.

170,324. SWINGING SHIPS' BERTHS. Edwd. F. S. Andrews, Lisbon, Me. [Filed May 22, 1875.]



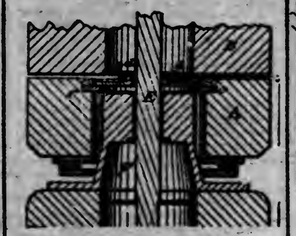
1. As an improvement in ships' berths, the combination of one or more pivoted berths, with jointed end plates, swinging on the same pivots by the action of a reformed governing-weight, to retain level position during motion of the vessel, substantially as and for the purpose set forth.

2. The combination of the end piece of a berth, having pivoted and recessed hook-lever, with a fastening device of the end plate and of the cabin-wall, for admitting the swinging of any berth either with weight or ship, substantially in the manner and for the purpose described.

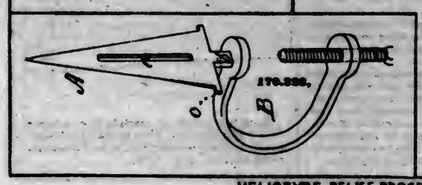
170,325. OSCILLATING END-STOPPERS. Edwd. Armitage, Philadelphia, Pa. [Filed Sept. 6, 1875.]

Brief.—The wings or cleaners of the plate throw the grain or flour out toward the periphery of the bed-stone.

The cap or dust-excluder D, provided with the projecting wings or cleaners *f*, substantially as and for the purpose herein shown and specified.



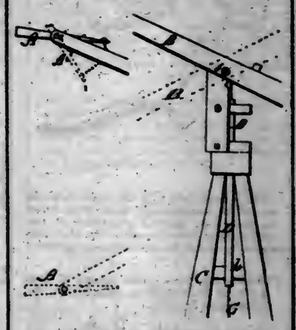
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170,326.

170,326. WIND-POWERS. John M. Armour, Northwood, Ohio. [Filed Apr. 20, 1875.]

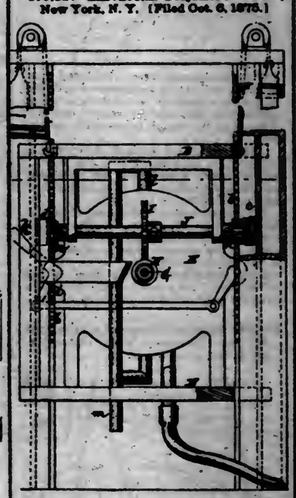
Brief.—A fan or a wind-moving surface which has a reciprocating motion up and down, being mounted on one end of a vibrating beam or lever properly balanced on its fulcrum support, so that the wind may act upon the fan with full effect in both the upward and downward movement.



1. A pivoted vibratory fan, A, mounted on an oscillating lever, B, arranged to act in both directions of the lever oscillations, and self-adjusting to the wind at the close of each oscillation, substantially as and for the purpose herein specified.

2. In combination with the fan A and fan-lever B, the pivot-tube D at the top of the support C, and the swiveled fulcrum-rest E, substantially as and for the purpose herein specified.

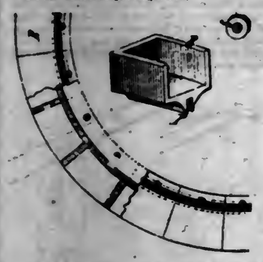
170,327. ELEVATORS. Benjamin T. Babbitt, New York, N. Y. [Filed Oct. 6, 1875.]



1. The combination, with the car or platform B, of the rotary engine E, the screw H on the engine-shaft G, the worm-wheel I on the hoisting-shaft J, and the pinions *n n*, all carried by said car or platform, for operation in connection with the racks *b b* of the hoistway, substantially as specified.

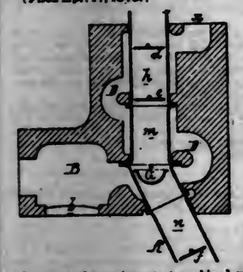
2. The guide-rollers *d d*, which operate in the guideways *c c* of the hoistway, arranged on the hoisting-shaft J, which is carried by the car or platform, whereby not only the car is guided and steadied in its course, but the hoisting-shaft also is steadied and directed in its up-and-down motion with the car, essentially as shown and described.

170,820. BUCKET-WHEELS FOR ROTARY BUCKETS. Benjamin T. Babbitt, New York, N. Y. (Filed Apr. 16, 1875.)



The combination, with the plate A, of the buckets B, constructed of rectangular boxes, provided with grooved projections P, constructed to overlap the edge of the plate, substantially as and for the purposes described.

170,829. AMALGAMATORS. Joseph W. Bancroft and Thos. Walker, Philadelphia, Pa. (Filed Apr. 17, 1875.)



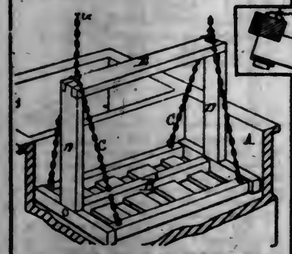
1. An amalgamating-retort combined with a furnace, and having a movable valve, G, for superheating a charge of ore while it is being subjected to the vapor of mercury, and for discharging the ore, all substantially as set forth.

2. The cup-shaped valve G, hung within the retort, in combination with the pipe J, through which mercury may be introduced into the receptacle of the valve, all substantially as set forth.

3. The combination, in the retort, of a tight-fitting ore-supporting valve, G, with valves *e* and *f*, for supporting the ore without obstructing the outward passage of the vapor of mercury, as specified.

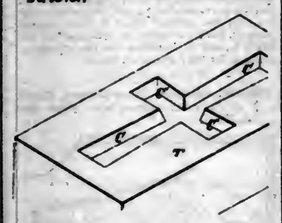
4. The combination, in the retort, of the valves G and *f*, and a stopper or cap detachable from the lower end of the retort, as set forth.

170,830. VATS FOR TANNING LEATHER. Otis W. Bean, Tecumseh, Mich. (Filed Oct. 27, 1873.)



The combination of the platform B', end posts D D, top cross-bars E, binding-chains G G, and hoisting-chains O O, as arranged, in connection with one or more tan-vats, substantially as and for the purposes herein set forth.

170,831. BUILDING-BLOCKS. B. A. Berryman, St. Louis, Mo., assignor, by mesne assignments, to himself, W. H. Heath, and W. H. Barclay, same place. (Filed July 24, 1875.)



A brick, with cruciform cavities C C' on the upper and under sides B T, so as to retain the mortar and lock the bricks together, whatever may be their relative positions, substantially as set forth.

170,832. COMBINED RUBBER SHOES AND STOCKINGS. John M. Bibbins, Williamsport, Pa. (Filed Nov. 16, 1875.)



1. As a new article of manufacture, a combined rubber shoe and water-proof stocking, substantially as set forth.

2. The combination, with a rubber shoe of otherwise ordinary or suitable construction, of a stocking made of elastic and water-proof material, substantially as set forth.

3. The combination, with a rubber shoe of otherwise ordinary or suitable construction, of a stocking or top made of an elastic and water-proof material, whose exterior is formed of knit goods or other suitable fabric, substantially as set forth.

170,833. FRAMES FOR WOVEN-WIRE MATTRESSES. William J. Bode, Dayton, Ohio, assignor of one-half his right to Abia E. Bode, same place. (Filed Aug. 23, 1875.)



1. In combination with the sections of the frame shown, the blocks B and B', provided, respectively, with the sleeve *b* and bar *b'*, and with the legs *b'''* and *b'''*, and the screw D passing through said leg *b'''* and impinging upon said leg *b'''*, said parts being arranged to operate in the manner and for the purpose substantially as specified.

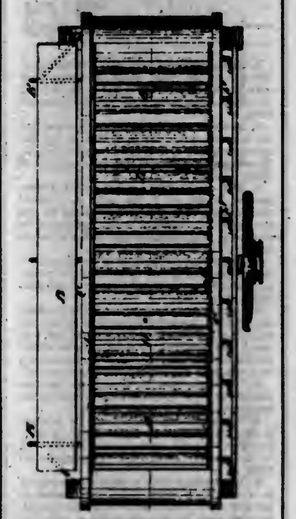
2. The hereinbefore-described extensible frame, consisting of the rails A and A, blocks B and B', provided, respectively, with the sleeve *b* and bar *b'*, and the cross-rails C and C, extending between the outer ends of said rails A and A, all arranged in the manner shown, so as to form an inverted arch, substantially as and for the purpose set forth.

170,834. WOVEN-WIRE MATTRESSES. Abia E. Bode, Dayton, Ohio, assignor of one-half his right to William J. Bode, same place. (Filed Aug. 23, 1875.)



As a new article of manufacture, a woven-wire mattress composed of spiral coils A and A, which are connected together at suitable points by rings or links E and B, that engage with contiguous coils, and are placed with reference to laterally-adjacent links, so as to break joints therewith, substantially as and for the purpose specified.

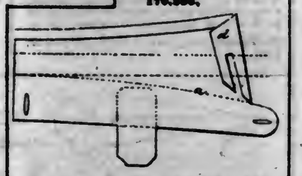
170,835. STAGE PLANKS AND CARRIERS. Wm. S. Booth, Baton Rouge, La. (Filed Sept. 20, 1875.)



The frame C, having connected rollers D, movable boards A B, and brackets E E, arranged, as shown and described, for transferring cotton.

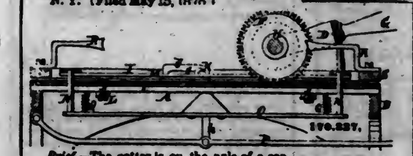
170,836. PAPER COLLARS. E. F. Bradford, Boston, Mass. (Filed June 24, 1875.)

1. In combination with the frame shown, the blocks B and B', provided, respectively, with the sleeve *b* and bar *b'*, and with the legs *b'''* and *b'''*, and the screw D passing through said leg *b'''* and impinging upon said leg *b'''*, said parts being arranged to operate in the manner and for the purpose substantially as specified.



As a new article of manufacture, a paper collar, provided with loops in the folded parts *d*, substantially as described, to hold the neckti in position, as set forth.

170,837. MACHINES FOR PERFORATING PAPER. William Braidwood, Mount Vernon, N. Y. (Filed May 15, 1875.)



Brief.—The cutter is on the axle of a carriage, the wheels of which run in grooved tracks, and may be lifted by adjustable cams on the tracks. The paper is held down by a slotted guide, which is operated by treadle, and rises and falls vertically without losing its horizontal position.

1. A hand-perforator, constructed of the carriage D, wheels E, cutting-tool F, handle G, and shaft H, in combination with the supporting-platform A and its parallel knives O O, substantially as described.

2. In combination with the hand-perforator D E F G H, the clamp M, substantially as and for the purpose described.

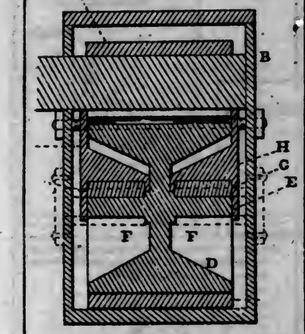
3. The clamp M, having the longitudinal slit *g* for the passage of the cutting-tool, in combination with the pins N attached at the ends of the clamp, the beam O carrying the pins and clamp, the treadle P, connected with said beam, and the springs Q arranged between the beam and the frame of the machine, substantially as and for the purpose described.

4. The hand cutting-tool or perforator, constructed of the carriage D, flanged wheels E, shaft H, and rotary cutter F, in combination with the vertically-adjustable guide-rails I, constructed to receive the flanges of the wheels E, all substantially as and for the purpose described.

5. The combination of the rotary perforator and the grooved guide-rails, having cams J for elevating the said perforator to bring it out of contact with the paper, substantially as and for the object specified.

170,838. CAR-AXLE BOXES. Louis Brauer, Philadelphia, Pa. (Filed Jan. 8, 1875.)

Brief.—Plate for preventing escape of oil is made to set into depressions in ends of lubricating wheel or cylinder, so as to occupy but little space.



1. The combination of axle-box, lubricating-wheel bead, and supporting-frame, interposed between the journal A and axis of the wheel D, substantially as and for the purpose set forth.

2. The wheel D, with rotary axial pin E and side depressions F, in combination with the frame H, interposed between the journal A and the axial pin E, and with bearings set in the depressions F, substantially as and for the purpose set forth.

170,839. PROCESSES OF ANNEALING GLASS. Jas. M. Brookfield, Brooklyn, N. Y. (Filed Nov. 3, 1875.)

The within-described process for annealing glass, consisting in the immersion of the hot glass in a bath of melted metal or alloy of metal, substantially as set forth

170,840. SLATE-CLEANING BLOCKS. A. H. Bryant, Chicago, Ill. (Filed Nov. 1, 1875.)



As a new article of manufacture, a slate-eraser consisting of the thin flat body or block A, having a central rib or handle, H, at right angles to said body, and in one piece with the same, and an erasing-cushion, B, of skin, felt, or cloth, attached to the under side of said body, and presenting a set edge flush with the sides or edges of the block, substantially as described.

170,841. WATCH-CASE SPRINGS. Ansel S. Buckalew, Colusa, Cal. (Filed Sept. 18, 1875.)



As a new article of manufacture, the improved spring for watch-case, consisting of the longitudinally-adjustable plate A, spring-ing *a*, and diminutive vertical supports *s s'*, said supports being located, respectively, near the middle and near the rear end of the plate, substantially as shown and described, and for the purpose set forth.

170,842. ROTARY FORCE-PUMPS. Asa Carlin, Stone's Prairie, Mo. (Filed June 10, 1875.)

Brief.—A horizontally-rotating cylinder provided with radial pistons, recessed to pass the water within the said cylinder, and up through discharge-pipe. A fixed abutment in the outer cylinder bears upon the inner cylinder, the pistons receding as they pass it. The pump is submerged, and receives supply through an aperture in the side of the cylinder.

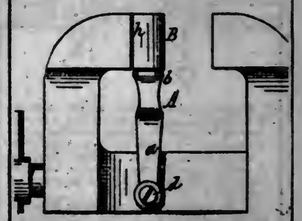


1. The submerged rotary pump, as described, consisting of the cylinder A, provided with cam *a* and water-inlet O in the side thereof, and the wheel C formed with water-passages *f*, and carrying valves N, with recesses *h*, and check-valves *b*, substantially as and for the purpose set forth.

2. In combination with cylinder A the drive-wheel C, provided with recessed valves N, passages *f*, check-valves *b*, discharge-tube D, and nozzle K, connected thereto in a manner that will admit of the rotation of the tube without affecting the position of the nozzle, substantially as and for the purpose specified.

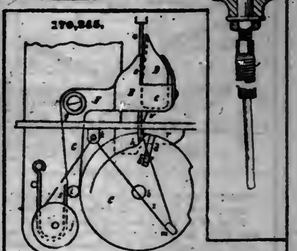
170,844. VISES. Ezra Caswell, Lyons, N. Y. (Filed Apr. 19, 1875.)

Brief.—A bifurcated upright or support strides the connection between the jaws, and has pivoted on its top a reversible intermediate jaw of plane-convex form.



A vise attachment, consisting of the standard A, having forks *a a*, adjusting-screws *d d*, block *f*, and screw *g*, in combination with the reversible head B, substantially as and for the purpose set forth.

170,845.



170,843. SEWING-MACHINES. Frank Chase, Boston, assignor of one-half his right to Berlin Leavitt, Melrose, and Jas. M. Peant, Weymouth, Mass. (Filed Nov. 15, 1874.)

Brief.—The shuttle and barbed needle are both above the cloth-plate. The needle descends through the material to be sewed, and takes an under thread from the hook below, carries it up through the cloth, and as the needle starts on its downward movement, the thread slips over the nose of the shuttle, and is drawn down by the revolving guide. The shuttle is situated longitudinally with the needle, on a bell-crank lever, the lower end of which is vibrated slightly by the cam, thus tilting the shuttle away from the needle, to allow the thread to pass over.

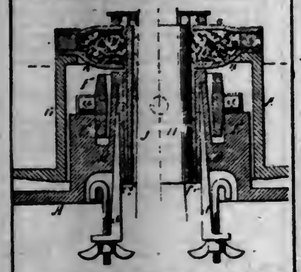
1. The combination of the disk and cam C, lever G F, provided with the socket C, substantially as and for the purpose hereinbefore set forth.

2. The combination of the hook *h*, finger *d*, extension *p*, stop *r*, needle *a*, and guide *m*, substantially as and for the purpose hereinbefore set forth.

3. A sewing-machine, having a bowed needle, *a*, and a shuttle, D, set longitudinally with the needle, both needle and shuttle being located on the same side of the table B, and arranged to operate as set forth.

170,840. BEARING FOR MILLSTONES. O. Ouster, Philadelphia, Pa., assignor of one-half his right to C. K. Bullock, same place. [Filed Oct. 20, 1875.]

Brief.—The universal bearing within the eye of the lower stone about midway secures a minimum of lateral vibration of stone at its upper surface, and the ring on the upper stone excludes dust and acts as a suction-fan.



1. The combination described of the lower non-revolving stone of a mill with a universal bearing arranged within the eye of the stone, substantially as and for the purpose set forth.

2. The combination of the foundation-plate A and its lugs E E, and the bush B and its blocks G G, with the ring F and its trunnions a a and b b.

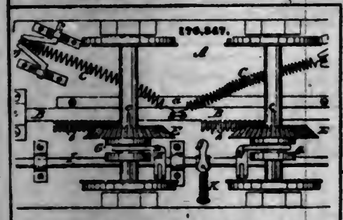
3. The sleeve or collar H, having grooves c extending throughout its entire length, as and for the purpose set forth.

4. The revolving ring I, provided with radial plates m, and arranged in line with the space between the upper and lower stones, as and for the purpose described.

5. The receptacle L, attached to and moving with the bush B, and filled with elastic packing material, in combination with the fixed sleeve H, as set forth.

170,847. CAR-STARTERS. August Dahler, New York, N. Y. [Filed Oct. 15, 1875.]

Brief.—The bevel-toothed wheels keyed to axle slide longitudinally thereupon, into or out of position for the bevel-cogs on the draw-bar to reach with them, and so turn the axle.



1. The continuous draw-bar extending from one end of the car to the other, and having bevoled teeth b, in combination with the internally-cogwheeled bevoled gear-wheels E, as and for the purpose described.

2. The combination, with the draw-bar B, having teeth b of the internally-adjustable gear-wheels F, and the symmetrically-arranged springs C C', of independently-adjustable tension, substantially as and for the purpose described.

3. The combination of the draw-bar B, having teeth b', the springs C C', the gear-wheels E, collars G, shaft H, and the rock-shaft I, provided with arms L and hand-levers M.

170,848. STEAM-BOILERS. Robert Dumpster, Buffalo, N. Y., assignor of one-half his right to Jno. M. Comstock, same place. [Filed Oct. 6, 1875.]

The removable steam-chamber A, provided with the opening C, taken or pipes D D', in combination with the annular water-chamber B, forming the body of the boiler, connecting-pipes G G, annular water-chamber, and fire-box F, pipes or connections J J', and partition M, all arranged substantially as and for the purpose described.

170,849. HAND PLANING-MACHINES. Wm. H. Doane and Geo. W. Pennel, Cincinnati, Ohio, assignors to J. A. Fay & Co., same place. [Filed July 17, 1875.]

Brief.—In a hand planing-machine where the cutter-head operates on the bottom of the stuff, between two tables which are independently adjustable, horizontally and vertically, the spindle of the cutter-head is supported in two bearings—one fixed and the other an axially-removable bearing-block, for the purpose of removing or replacing the cutter-head without interfering with the adjustment of the tables. One of the bearings is constructed so that the height of said bearing from the center to the base will admit of the largest-sized cutter-heads being used.

The combination of the both vertically and horizontally adjustable independent tables H and O, cutter-head F, spindle B, fixed bearing C, and axially-removable bearing-block D, substantially as and for the purpose specified

170,849.



170,850. COAL-SHELLING DRILLS. P. O. Donohoe, Peru, Ill. [Filed Oct. 26, 1875.]

Brief.—The screws in the opposed ends of the drills engage underneath the ledge of rock to be drilled, or in the upper part of a cavity dug for the purpose.

1. In a rock-drill, the combination, substantially such as hereinbefore described, of screws with the opposed ends of the drills.

2. The combination, substantially as hereinbefore described, of the drill-stock, the supporting-arches, and the drills.

170,851.



In combination with a conductor's or collector's alarm, register, or punch, a series of surfaces provided with signs, figures, or letters, so arranged within the case or cover of the instrument as to be operated by and record any movement or opening of the door, cover, or case.

170,852. COMPOSITIONS FOR SIZING. Samuel B. Dorian, Upper Uwchlan Township, Dorian's Mills P. O., Chester County, Pa. [Filed Mar. 20, 1875.]

Brief.—Treats the stock with bleaching-powder, and, without washing it out, adds sulphuric acid, together with the other substances mentioned.

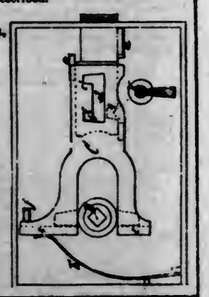
1. In sizing paper-pulp, the process of treating it with chloride of lime and sulphuric acid, substantially as and for the purpose set forth.

2. The complete process of sizing paper-pulp by treating it with chloride of lime and sulphuric acid, in conjunction with clay or other fibrilous paper filling, soap, starch, hyposulphite of soda, alum, and oil, substantially as and for the purpose set forth.

170,853. LOCKING-LATCHES. Julius Druckluh, Jersey City Heights, N. J. [Filed Apr. 29, 1875.]

The combination of the latch-bolt, having the stud b and recess g, with the two-armed tumbler C, constructed with recesses e e', to receive the stud b, and with lips c, for engaging with the arms of the hub D, and the spring E, arranged to act directly upon one of the tumbler-arms, so as to throw out the bolt and hold the tumbler in position, substantially as shown and described.

170,854.

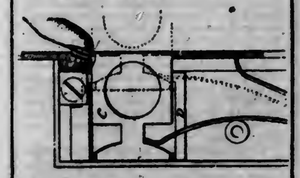


170,854. TOOLS FOR PUTTING BARBS ON WIRE FENCES. William Dulin, Big Grove, Iowa. [Filed Oct. 21, 1875.]



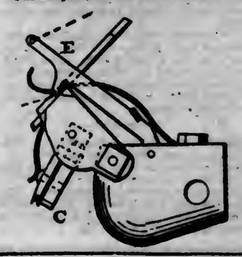
As an implement for putting barbs on wire fences, the rods A A, having flattened ends, with holes through the same, substantially as herein set forth.

170,855. SLIDING-DOOR PULLS. Henry H. Hyatt, Norwalk, Conn., assignor to the Norwalk Lock Company, same place. [Filed Oct. 20, 1875.]

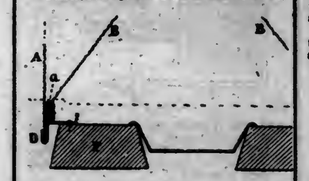


In combination with the face-plate and case, the slide C, working through said face-plate, with suitable guides to control its movement, and a spring to return or hold the said slide within the case, substantially as specified.

170,856. CORRUGATED BURNISHERS AND SEAT-WHEELS FOR BOOTS AND SHOES. Alonzo C. Haworthy and Thomas T. Haworthy, Philadelphia, Pa. [Filed Oct. 26, 1875.]



170,855. FLY-TRAPS. H. B. Baring, Peoria, Ill., assignor of one-half his right to H. C. Ouster, same place. [Filed June 14, 1875.]



1. The cylinder A, having its rim D provided with shoulder a, in combination with the rim c of the cone B, substantially as and for the purpose set forth.

2. The combination of the cylinder A, having the rim D provided with shoulder a, adapted to rest upon the rim c of the cone B, arms f, and base F, as described.

170,856. FIRE-LIGHTERS. George Elberg, Cincinnati, Ohio. [Filed May 10, 1875.]

Brief.—The sliding ping serves to protect the head, and also to close the mouth of the can, into which the body of the lighter is to be dipped.

1. The combination of three-part casing a b c, handle A with shoulder X, and extending through the casing to form a rivet or receive a nut, substantially as and for the purpose specified.

2. In combination with the handle A and casing a b c, the sliding plug C, substantially as and for the purpose specified.



170,857. SLIDING-DOOR PULLS. Henry H. Hyatt, Norwalk, Conn., assignor to the Norwalk Lock Company, same place. [Filed Oct. 20, 1875.]

In combination with the face-plate and case, the slide C, working through said face-plate, with suitable guides to control its movement, and a spring to return or hold the said slide within the case, substantially as specified.

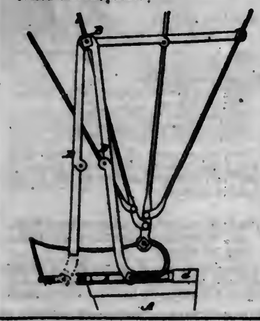
170,858. VEGETABLE PARCHMENT. A. O. Pell, New York, N. Y., assignor to himself, Wm. H. Phelps, and Wm. H. Smith, same place. [Filed Mar. 31, 1875.]

Brief.—Treat paper with sulphuric acid. Wash. Bathe for three hours to bath (heated to 180°) of water, eight hundred parts; glue, eighty parts; tungstate soda, two to four parts; acetate lead, eight parts; glycerine, five parts. Immerse suddenly in pyroxyline solution at normal temperature. Dry and calender.

1. As a new article of manufacture, artificial parchment, consisting of gelatinized and colloidinized fiber, substantially as described.

2. The process hereinbefore described for treating vegetable parchment with a solution of glue, tungstate of soda, acetate of lead, and glycerine, and with a solution of pyroxyline, in the proportions and in the manner substantially as and for the purpose described

170,859. SHIFTING CARRIAGE-TOPS. Henry M. Gillespie and Virgil Tyne, Leadeo, Mo. [Filed Oct. 26, 1875.]



1. The combination, with a buggy-seat having a groove near the top, of a detachable top having a horizontal rail adapted to slide into said groove, as and for the purpose described.

2. The combination, with the buggy-top, having rail b, and the buggy-seat having a groove, a, with flanges c c' of the spring-locking key C, as and for the purpose described.

3. The combination, with a buggy-top, of the two knuckle-jointed props, D D, bending in opposite directions, as and for the purpose described.

170,860. WASHING-MACHINES. P. Gittere, Buffalo, N. Y. [Filed Mar. 11, 1874.]



The combination, with the tab A, of the hinged cover B', attached to transverse pieces B'', constructed to slide in guides B''' to render the cover removable, substantially in the manner set forth and described.

170,861. REGISTERS. Thomas B. Doolittle, Bridgeport, Conn. [Filed Aug. 26, 1875.]

Brief.—In this register cases a train of gears having numbers or letters marked upon their surfaces, and actuated by a pawl placed upon the sliding door of the case. The said door, when moved, allows the pawl to engage with the teeth of one of the gears belonging to the train, and move it one point, each movement being indicated by the change of numbers or letters upon the faces of all the gears.

170,862. DEVICES FOR REFITTING VALVE-SEATS. Chas. P. Hall, Skaneateles, N. Y. [Filed Feb. 16, 1875.]

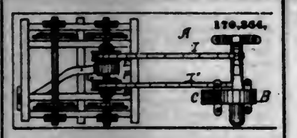
The combination of the stock A, with differential screw-threaded facets, feed-screw H, jam-nut K, and the refitting-tool E, shank L, and collar M, substantially as specified.

170,863. VENTILATING CARS. Edward B. Hargreaves, Sarnia, Canada. [Filed Oct. 5, 1875.]

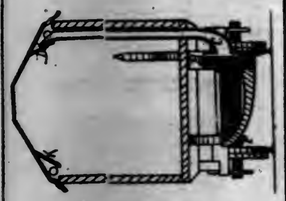
Brief.—By means of the two clutch-pulleys, and their connections with the shaft of the exhaust-fan, the latter may always be operated in the same direction, no matter which way the car is moving.

The axle F, clutch-pulleys E E, rigid pulley G, belts I I', and exhaust-fan B, when combined with the platform or door A of a railway-coach, substantially as set forth.

HELIOTYPE RELIEF PROCESS JAMES R. OSGOOD & Co. BOSTON.



170,864.



170,865. ROTARY ENGINES. Wm. Haven, Clymer, N. Y. [Filed Mar. 24, 1875.]

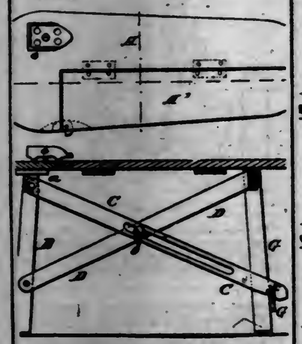


1. In a rotary engine having two cylinders and pistons, the combination of the two chambers m n, each of which communicates with both cylinders, substantially as shown and described.

2. The space 3 around the rear side of the abutments f, for the purpose of allowing the steam to press it against the piston, as described.

3. The opening t through the shell, whereby the reservoir m supplies both cylinders with steam, as specified.

170,866. IRONING-TABLES. Joseph S. Hays, Annapolis, Md., assignor to J. S. Hays and D. W. Dorsey, same place. [Filed Nov. 3, 1875.]



1. The ironing-board A, cut to form a longitudinal leaf, A', hinged to the board, capable of being turned under the same, for the purposes herein set forth.

2. The combination, with an ironing-board, of the legs B B, braces C C, having slots s s, braces D D, and legs G G, with cross-bar G', substantially as and for the purposes herein set forth.

170,867. MILLS. I. A. Hedges, St. Louis, Mo. [Filed June 9, 1873.]



1. The cone having teeth K, vertical at their upper ends and curving in lines so as to approach more and more nearly to the horizontal as they descend, substantially as and for the purpose set forth.

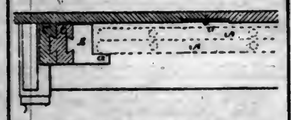
2. The concave having teeth L, vertical at their upper ends and curving in lines so as to approach more and more nearly to the horizontal as they descend, substantially as and for the purpose set forth.

3. The supporting-head D, of the runner or cone, having annular concave bearing d, in combination with driving-frame E, having convex rib e, substantially as and for the purpose set forth.

170,868. PRESERVE COMPOSITIONS FOR MACAROONS. Henry Heide and C. Wirtz, New York, N. Y. [Filed Jan. 29, 1875.]

The preserve composition for macaroons, composed of almonds, dried white of egg, sugar, and water, in the proportions specified, the proportion of water being less than necessary for baking, substantially as set forth.

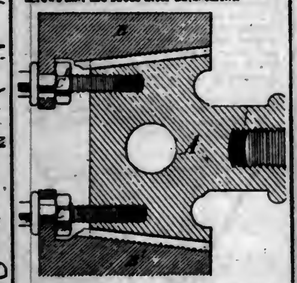
170,869. EXTENSION-TABLES. Geo. Heyl, Newark, N. J. [Filed Sept. 8, 1875.]



An extension-table in which flanges a a' are arranged upon the permanent sides B, to support the folded extra leaves, all as set forth.

170,870. CROSS-HEADS. John W. Hill, Dayton, Ohio. [Filed July 31, 1875.]

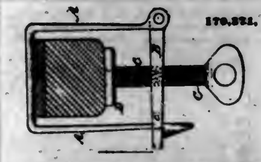
Brief.—The jam-nuts interposed between the cross-head and the ears of the adjusting-shoes on the set-screws are to lock the set-screws and the shoes after adjustment.



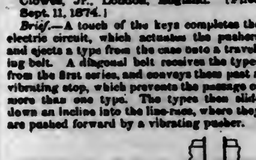
The combination of the tapering head, wedge-shaped or tapering shoes, set-screws, and jam-nuts, substantially as and for the purpose specified.

170,871. CLIPS FOR SPLICING BROKEN TIRES. Jno. W. Reddinott, Baltimore, Md. [Filed Oct. 26, 1875.]

The combination of a spring-clip, A, hinged plate B, thumb-screw C, and pad, D, constructed substantially as shown and specified.

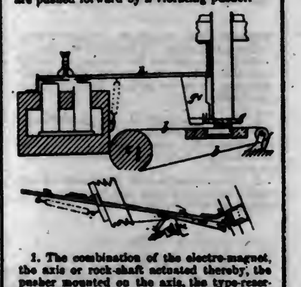


170,872.



170,872. TYPE-SETTING MACHINES. John Hooker, Islington, assignor to W. Moore, Beccles, and W. C. K. Clowes and Wm. Clowes, Jr., London, England. [Filed Sept. 11, 1874.]

Brief.—A touch of the keys completes the electric circuit, which actuates the pushers and ejects a type from the case onto a traveling belt. A diagonal belt receives the types from the first series, and conveys them past a vibrating stop, which prevents the passage of more than one type. The types then slide down an incline into the line-rules, where they are pushed forward by a vibrating pusher.



1. The combination of the electro-magnet, the axis or rock-shaft actuated thereby, the pusher mounted on the axis, the type-reservoir, across the mouth of which the pusher vibrates to move one type at a time, and the endless apron which receives the type, these members being constructed and operating in combination, substantially as and for the purpose set forth.

2. The combination, substantially as herein-before set forth, of the traveling tape, the guide, the spring which presses the type against the guide as it is carried forward by the tape, and a stop, whereby, in case of the attempt of two type to pass simultaneously into the receiver, the outer one would be held by the stop until the inner one had passed, and then be pushed into line by the spring to follow the other.

3. The combination, substantially as herein-before set forth, of the traveling tape, the guide, the spring, the stop mounted on the vibratory lever, and a crank-pin on the tape-roller, whereby a backward movement is given to a type out of position to accelerate its return into line.

4. The combination, substantially as herein set forth, of the inclined chute, the type-receiver, inclined downward at right angles to the chute, and the pusher working at right angles to the chute, and at such a distance from its lower end that type coming from the chute into the receiver and striking against the side of the pusher can drop clear of the end of the chute, whereby two or more type may enter the receiver when the pusher is in its forward position.

5. The combination, substantially as herein-before set forth, of a traveling tape, the chute on which it delivers the type, the type-receiver, the pusher acting on the type, and the plate bearing on the type as they pass into the receiver.

6. The combination, substantially as herein-before set forth, of the chute over which the type pass, the vibrating plate under which the type pass, and the vibrating circuit-breaking lever, whereby the machine is thrown out of action by the too rapid collection of the type in the receiver.

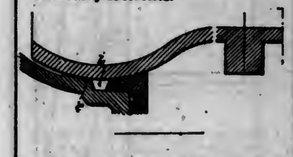
170,873. PIPE-JOINTS. Joseph Hyde, Wilmington, Del. [Filed Sept. 10, 1875.]

Brief.—When the spherical end of one pipe is inserted in the corresponding recess of the other, and the follower is fastened on, a flexible water-tight joint is formed. The space between the inward projection and the follower forms a groove for the packing.



170,873.

The within-described pipe-joint, consisting of the spherical end a of the pipe A, and the bearing d in the socket of the pipe B, in combination with the follower D, adapted to the socket b, and the intervening packing-space c between the said follower and bearing c, all substantially as set forth.



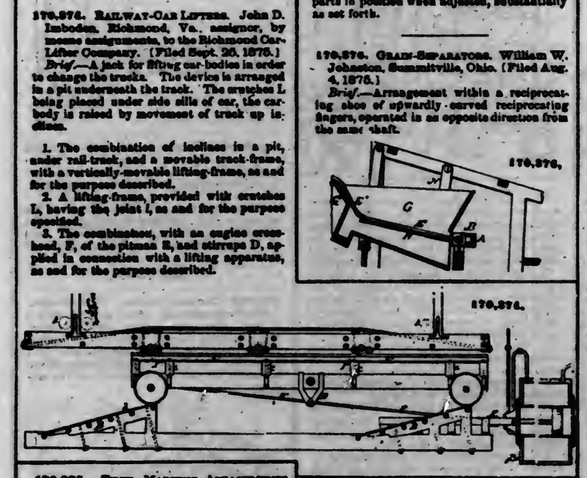
170,874. RAILWAY-CAR LIFTERS. John D. Imboden, Richmond, Va., assignor, by mesne assignments, to the Richmond Car-Lifter Company. [Filed Sept. 20, 1875.]

Brief.—A jack for lifting car-bodies in order to change the trucks. The device is arranged in a pit underneath the track. The crutches L being placed under side sills of car, the car-body is raised by movement of crank up in-clines.

1. The combination of inclines in a pit, under rail-track, and a movable truck-frame, with a vertically-movable lifting-frame, as and for the purpose described.

2. A lifting-frame, provided with crutches L, having the joint l, as and for the purpose specified.

3. The combination, with an engine cross-head, F, of the pitman E, and stirrups D, applied in connection with a lifting apparatus, as and for the purpose described.



170,874.

170,875. TUCK-MARKING ATTACHMENTS FOR SEWING-MACHINES. Allen Johnston, Ottumwa, Iowa. [Filed Oct. 18, 1875.]

Brief.—The gage and marker are connected together, so that the movement of the gage adjusts the marker also, the latter moving twice as fast as the gage.



1. In combination with the shoe C, riddle H, and reciprocating bar B, the fingers E, bent in an upward direction at E', so as to cover and clean the tail-board G', substantially as herein shown and described.

2. In a threading-machine, the combination of the riddle-cleaner, consisting of the reciprocating bar B and fingers E, with the rod D, eccentric C, shaft M, disk, I, rod J, and shoe G, when said parts are arranged for operation in the manner and for the purpose herein shown and described.

170,876. GRAIN-SEPARATORS. William W. Johnston, Summitville, Ohio. [Filed Aug. 4, 1876.]

Brief.—Arrangement within a reciprocating shoe of upwardly-curved reciprocating fingers, operated in an opposite direction from the main shaft.

170,876.

1. In a tuck-marking attachment for sewing-machines, a marker and a gage combined, substantially as described, to move simultaneously in opposite directions, the marker twice as fast as the gage.

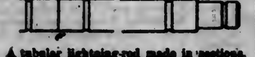
2. The combination, with the gage, of a marker, adjustable independently of said gage to regulate the spacing, but connected therewith, so that a movement of the gage in one direction will cause the marker to move twice as fast in the opposite direction, substantially as set forth.

3. The combination, with the base-plate and sliding gage and marker, of the main lever, pivoted to the base-plate, and connected on one side of its pivot with the gage, and on the other side with the marker, substantially as described.

4. The base-plate, sliding gage, and marker, in combination with the main lever, connecting-rods, and set or bending screws, for joint operation, substantially as set forth.

5. The combination, with the main lever, pivoted upon the base-plate, and connected with the gage and marker, substantially as described, of fixed scales of division for determining the adjustment of the gage and marker, and fastening devices for maintaining the parts in position when adjusted, substantially as set forth.

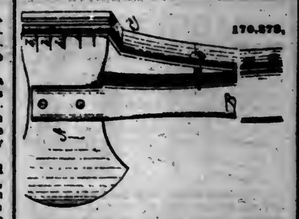
170,877. LEGETHING-BOOTS. Isaac Johnson, Chicago, Ill. [Filed Jan. 19, 1876.]



A tubular lightning-rod made in sections, and indented, substantially as described, in combination with the hollow and correspondingly-indented coupling-pieces B B, open at both ends, and arranged as shown with relation to the sections, substantially as and for the purposes set forth.

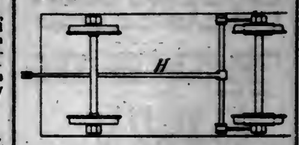
170,878. MEAT-MANGLERS. C. C. Kerr, Springfield, Mo. [Filed June 22, 1875.]

The combination of the blade A, handle B, and forked spring-guide C, all constructed substantially as and for the purposes herein set forth.



170,878.

170,879. CAR-BRAKES. Paul Klemmgw, Bellinzona, Switzerland. [Filed Oct. 8, 1875.]



In a railway-brake apparatus, a lever, H, or a system of levers, H H', pivoted to the under side of the car-frame, and also to the truck-frame or axles, with a free end adapted to be raised by the brakeman upon the car, for the purpose of employing the weight of the car, when the free end of the lever is released, to apply the brake-blocks to the wheels, substantially as described and shown.

170,880. ORNAMENTAL FABRICS FOR SKIRTS AND OTHER ARTICLES. Albert Kemp, New York, N. Y. [Filed Oct. 7, 1875.]



An improved fabric for the manufacture of ladies' skirts and other articles, composed of muslin and felt, or other textile or fibrous materials, which are united by gutta-percha or other cement, and ornamented with mosaics, produced by the combination of pieces of cloth of different colors inlaid in the felt and united with the muslin, substantially as described.

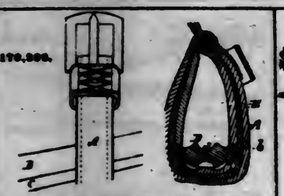
170,881. PLAYING-CARDS. R. R. Landis, Chicago, Ill. [Filed Sept. 6, 1875.]



A pack of game or playing cards, comprising a champion or advantage card, a Philistine or disadvantage card, and forty-eight or other suitable number of cards containing Bible or other stories, said story-cards being arranged to be readily converted into reward-of-merit cards, substantially as shown and described.

170,882. HARNESS-TUGS. R. S. Leonard, Sharon, Mass. [Filed Oct. 5, 1875.]

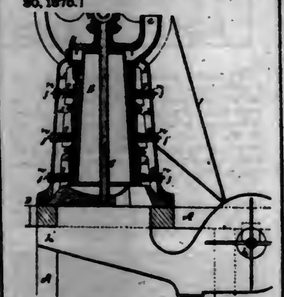
170,886.



1. In combination, with the harness tug A and the friction-roller D, arranged therein as set forth, the two separate or disconnected metallic ribs or collar and tug supporters E E, arranged with the said roller and in the tug, substantially as specified.

2. The combination of the curved guard or shield C, and the grooved friction-roller D, with the tug A and the thill or shaft B, all being arranged and to operate as specified.

170,887. COFFEE-HULLERS. Daniel Lombard, Boston, Mass., assignor to himself and Livarus Hall, same place. [Filed Sept. 20, 1875.]



1. The combination of the rotary corrugated or fluted center B and the casing I, composed of the series of segmental elastic plates d, substantially as described.

2. The combination, with the bars F, of the series of plates d, hinged thereto, and provided with guide-rods f, springs g, and nuts e, substantially as shown and described.

3. The combination, with the corrugated center B and the series of elastic plates d, of the fan or blower, as and for the purpose set forth.

4. The improved coffee-hulling machine, as described, the same consisting of the corrugated core B, provided with the shaft C and means, substantially as described, for putting the latter in rotation, the series of elastic plates d, the bars F, the hopper a, arranged and operating together, substantially as set forth.

5. The improved coffee-hulling machine, consisting of the corrugated core B, provided with a driving-shaft, C, the series of elastic plates d, the bars F, hopper a, and fan or blower H, arranged and operated together, substantially as set forth.

170,888. RAILROAD-RAIL JOINTS. Richard Long, Pittsburg, Pa. [Filed Aug. 4, 1875.]

Brief.—A rail-joint consisting of fish-plates provided with a central re-enforcement, and of different thicknesses along its length, whereby different degrees of rigidity are obtained.

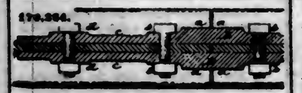
1. A fish plate, constructed with a heavy re-enforcement at its central portion, and extending from the top edge to the bottom thereof, substantially in the manner and for the purposes set forth.

2. A fish-plate, constructed of varying thicknesses, as described, whereby different degrees of rigidity are obtained therein, and capable of being rolled in their manufacture, as stated, substantially in the manner and for the purpose set forth.

3. The fish-plates B B, having the depressions c c formed in the flats thereof, in combination with the rails A A, as described, whereby the rails are allowed to yield, in the manner and for the purposes set forth.

4. The fish-plates B B, constructed with the re-enforcements c c, b b, and d d, and the depressions c c, substantially in the manner and for the purpose set forth.

170,889.



170,889. FAC-SIMILE TELEGRAPHS. John C. Ludwig, San Francisco, assignor of part of his right to Wm. H. Hall, Martin Corcoran, B. D. Murphy, James V. Tisdal, Chas. W. Ashelm, and David B. Moody, San Jose, Cal. [Filed Nov. 27, 1874.]



1. In an autographic telegraphic instrument, the combination, with a suitable conducting-surface, of an oscillating traverser, arranged to move back and forth over the paper passing between the said traverser and conducting-surface, as substantially described.

2. The method of preparing the message-paper by saturating it with a mixture of ferrocyanide of potassium and coal-oil, for the purpose of rendering the same capable of conducting the current through a lead-pencil mark, substantially as described.

3. The combination, with the pivoted oscillating traverser, having an armature upon its axis, and a retracting-spring for the same, of the electro-magnets and a suitable contact-breaker, substantially as described.

4. The traverser H, having a spring-seated contact-point *f'*, in combination with a spring-seated conducting-plate, K, and suitable feed-rollers, substantially as described.

5. The combination of a slide, operated by an arm of the traverser, with the feed-roller, having a ratchet-wheel, and the contact-points, through which the circuit is formed that operates the traverser, substantially as described.

6. The combination, with the traverser H and armature T, having arm *f'*, of the releasing-magnets E E and the spring-mounted armature M, having a catch, substantially as described.

7. The combination, with the magnets D D and the main line circuit, of the spring-mounted armature *o* and the contact-points *r s*, to insure the passage of the main-line current through the paper while the traverser is being moved by spring-power, substantially as described.

8. The combination of the relay-magnets, the induction-coil, the magnets D D, the releasing-magnets E E, the traverser H, and armature T, having arm *f'*, the spring *p*, and the slide for feeding the paper and breaking the second local circuit, substantially as described.

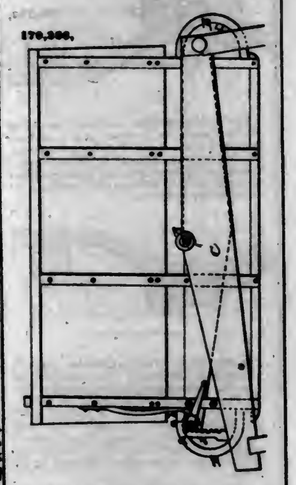
9. The combination of the hook or pawl *b* with the fluted or channeled feed-roller *g*, having a ratchet-wheel, *h*, and the roller *a*, journaled in springs *d d*, substantially as described.

10. The combination, with the second local circuit, of the non-conducting post X, wires *b' b''*, contact-plates *l l*, and the circuit-closing plate *i*, substantially as described.

170,890. HOSES-POWER. A. D. Manley, Washington, Mich. [Filed May 6, 1875.]

Brief.—The main body of the horse-power, being on center hollow bearings within the outside frame, is provided with means of adjusting it to any angle desired.

170,890.

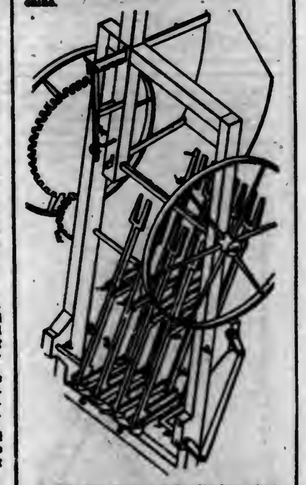


1. The combination, in a horse-power, of the body A, having hollow gudgeons B B, frame C, shaft D, cross-bar C', segments E E, shaft *b*, pinions *c c*, and rack-bars *d d*, all substantially as set forth.

2. The bodies A, in combination with the pinions *c* and rack-bars *d*, arranged with a centrally-suspended horse-power body, substantially as and for the purposes herein set forth.

170,891. POTATO-DIGGERS. W. P. Martyn, San Francisco, Cal. [Filed May 26, 1875.]

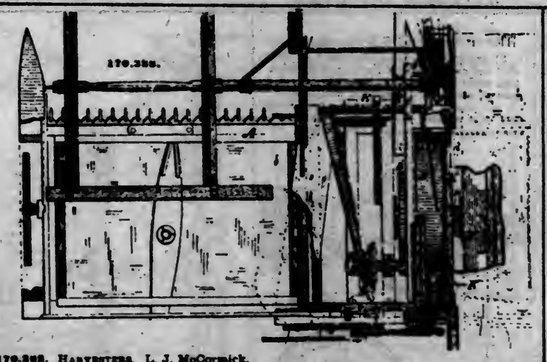
Brief.—Two sets of lifting-forks, operated by two double cranks, work with a digging motion close in rear of the lifting-share. The arms of the forks form a double inclined plane, to convey the potatoes to one side of the machine.



1. The arrangement of the digging-forks *b b* and reciprocating-rakes *e e*, to form a double inclined plane, substantially as and for the purpose described.

2. The reciprocating digging-forks *b b*, having the pins or projections *c c*, substantially as and for the purpose described.

170,892.



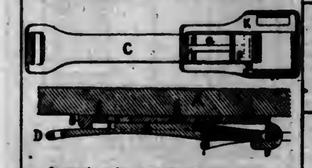
170,892. HARVESTERS. L. J. McCormick, Chicago, Ill. [Filed July 19, 1875.]

1. The binding-frame, constructed substantially as hereinbefore set forth, pivoted upon the main frame, and connected therewith by link-connections, whereby the binding-frame may be adjusted to keep it level upon the main frame

2. The combination, substantially as hereinbefore set forth, of the driving-wheel, the grain wheel, the main frame mounted thereon, the tongue pivoted on the frame, the lifting-lever, and crank-shaft, the link connecting the crank-shaft and tongue, the binding-frame pivoted on the main frame, and the link connecting said frame with the crank-lever, whereby the binding tables and platform are kept horizontal while the cutting apparatus is being raised and lowered.

3. The combination, substantially as hereinbefore set forth, of the overhung reel-shaft, the cranked rock-shaft, in which it is mounted, the arm projecting from the rock-shaft, and the adjustable end-wise-moving lever, pivoted thereto, whereby the reel may be raised and lowered.

170,893. HOSES-DETACHERS. Daniel H. Owen, Cambridge, Mass., assignor of one-half his right to Danl. B. Frazier and A. K. Smith, same place. [Filed Mar. 10, 1875.]



In combination with the shaft A of a vehicle, the grooved plate B, draw bar C, provided with projection E, loop D, hook F, and slot I, hinged lever G, and spiral spring H, constructed to operate with the cross-bar J of the loop K, as described, so as to form an automatic trace-fastener, substantially in the manner as and for the purposes set forth.

170,894. OVERSTITCH SEWING-MACHINES. William A. Palmateer, Johnstown, N. Y. [Filed July 26, 1875.]

1. In an overstitch sewing-machine, the loop-hook H, having the shank *s*, the curved heel *w*, and hook-point *h*, as described, and for the purpose specified.

2. The combination of the needle-bar B, carrying the needle *n*, having plate *c*, irregular groove *d*, and crank-pin *b*, with collar *e*, the loop-hook H, lever L, compound cam G, coil-spring *k*, bar D, fork F, and eccentric E, as described.

3. The combination, with the needle-bar B and needle *n*, carrying thread *t* of the tension T, adjustable guide-loop *m'*, guide-loop *n'*, tension-spring *k'*, pin *p''*, plate *c*, and tension-spring *A'*, as described.

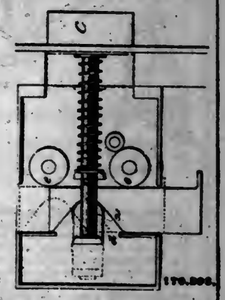
4. The combination of the upper feed-roller R, lower feed-roller R', brake leaf-spring *l*, clutch *o'*, clutch-lever *P*, oscillating cam *G'*, coil-springs *S'* and *s'*, short shaft *b'*, lever *G'*, and spring *D'*, as described.

170,895. REVERSIBLE LATCHES. H Sterling Pomeroy, New Haven, Conn., assignor to the Blake Brothers Hardware Company, same place. [Filed Oct. 6, 1875.]

1. The combination, in a latch-case, of the bolt C, with its tail D, provided with a shoulder, *d*, the vertical slide F, working through the edge of the case, and constructed with an incline or cam shape, substantially as described, and so that the vertical movement of the slide imparts a horizontal movement to the latch-bolt.

2. The combination, in a latch-case, of a horizontal latch-bolt, a vertical slide working in connection with the said bolt, so that the vertical movement of the slide imparts a horizontal movement to the bolt, the said case constructed with an opening to receive the said slide from either edge, substantially as described, and for the purpose of adapting the latch to either a right or left hand door.

170,895.



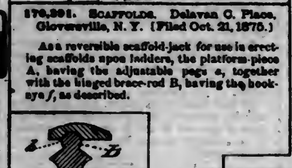
170,896. MACHINES FOR SLOTTING AND DRILLING CLOTHES-CLAMPS. Milton Pratt, Deep River, Conn. [Filed Aug. 30, 1875.]

Brief.—The jaws of clothes-pins can be slotted and bored for the reception of springs and pivots by means of a reciprocating bed-plate, upon which the blanks are presented to the slotting saw, a boring-tool, which is moved alternately toward or from the work, and an automatic device for clamping and releasing the blank during the movement of the bed-plate, in connection with suitable operating mechanism.

1. In a machine for slotting and drilling clothes-clamps, and for similar purposes, the combination, with a reciprocating bed-plate, which presents the work to the slotting device of a drilling or boring shaft attached to said bed-plate, and having a rotary motion and a longitudinal motion, whereby, during the movement of the bed-plate, the drill or boring-tool is fed to the work, substantially as herein described.

2. The combination and arrangement of the reciprocating bed-plate I, the shaft I, provided with the grooved collar P, and shaft M, provided with the forked arm *n*, said shafts being mounted on, and carried by, said bed-plate, the lever N, connected to the shaft M, and the switch F, attached to the table A, whereby the boring-tool is moved alternately toward and from the work during the movement of the bed-plate, substantially as herein described.

170,897.



170,897. SCAFFOLDS. Delavan C. Place, Gloversville, N. Y. [Filed Oct. 21, 1875.]

A reversible scaffold-jack for use in erecting scaffolds upon ladders, the platform-piece A, having the adjustable pegs *c*, together with the hinged brace-rod B, having the hooks *e f*, as described.

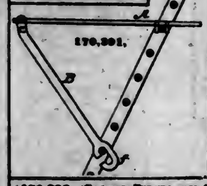
170,898. CORNER-PIECES AND CLAMPS FOR PICTURE-FRAMES. Charles P. Poinier, Boston, Mass., assignor of one-half his right to Geo. S. Bryant & Co., same place. [Filed July 24, 1875.]

As a new article of manufacture, an ornamental corner-piece and clamp for picture-frames, consisting essentially of the plate A, having a right-angular groove, *b*, upon its under side, adapted to receive the upper bead of a picture-frame, substantially as described, and for the purpose set forth.

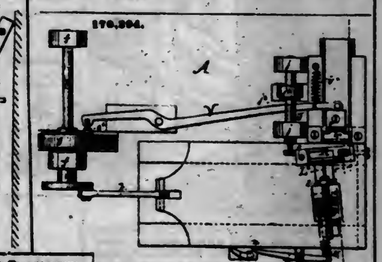
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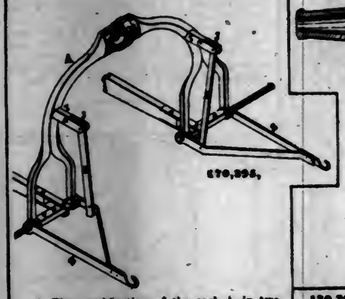


2. The combination and arrangement of the reciprocating bed-plate I, the shaft I, provided with the grooved collar P, and shaft M, provided with the forked arm *n*, said shafts being mounted on, and carried by, said bed-plate, the lever N, connected to the shaft M, and the switch F, attached to the table A, whereby the boring-tool is moved alternately toward and from the work during the movement of the bed-plate, substantially as herein described.

3. The combination of the table A, reciprocating bed-plate I, work carrier K, clamping-dog N, spring e, and set-screw or projection e', for automatically clamping and releasing the work during the movement of the bed-plate, substantially as herein described.

170,395. CULTIVATORS. Thomas J. Price and Almon Hunt, Macomb, Ill. [Filed July 22, 1875.]

Brief.—Devices for a sectional arch and draft attachment, allowing independent longitudinal motion.



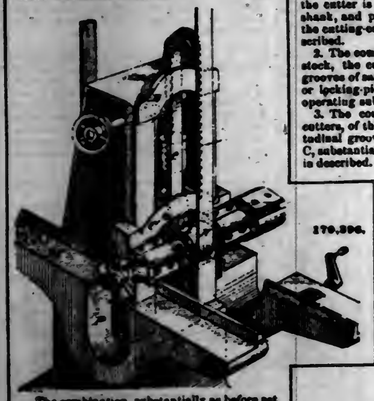
170,395.

1. The combination of the arch A, in two parts, and swiveled to or near its center, with the draft frames S S, rods I I, and pivoted links J J, as and for the purpose set forth.

2. The lock-plate C, with circular grooves d, and overlapping flange c, in combination with the rod a and the sectional arch A, having face-plates and studs d, all constructed substantially as shown and described.

170,396. THROTTING-MACHINES. Edward H. Rees, Mansfield, Ohio, assignor to J. A. Fay & Co., Cincinnati, Ohio. [Filed Dec. 21, 1873.]

Brief.—The rotating cutters, which form the tenons, are made vertically adjustable, passing downward below the table face, so that tenons may be cut on both ends of the material without reversing it.



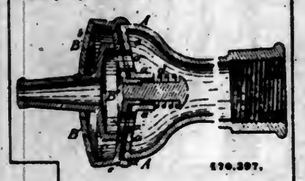
170,396.

The combination, substantially as before set forth, of two tables, with a rotating cutter adapted to be reciprocated between said tables in the manner stated, so that it may cut through the stuff from either side.

170,397. HOSE-PIPE NOZZLES. Saml. Reid, Chicago, Ill. [Filed Apr. 9, 1875.]

Brief.—This nozzle has a revolving head, as also a chamber within it with openings, besides a central flanged opening, in combination with a pipe having the enlarged part and plate provided with posts. The head and pipe are connected together by a screw-bolt and spring, to form a yielding joint.

The revolving head B B', having chamber C B'' and concave plate c, provided with ports c' c'' and central flanged opening, in combination with the pipe A, having the enlarged part A' and plate a, provided with ports a''' a'', and central flanged opening a'', the head and pipe secured together by screw bolt D and spring d, substantially as described.



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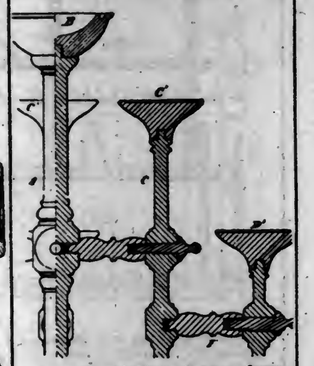
170,398. SCREW-TAPS. Edwin Reynolds, Providence, R. I. [Filed Oct. 30, 1875.]

Brief.—The cutters, after having had imparted to the face of each of them a curvature forming an arc of a circle drawn from the center of the stock, are removed from the longitudinal grooves and tempered, and are then placed again in said grooves, (being secured therein by wedges,) with their projecting edges overhanging the surface of the stock, in consequence of which the shanks of the cutters are brought nearer to a radial line with relation to the axis of the stock, and their cutting-edges placed a little beyond the original circle, of which their faces formed arcs, each cutter thus presenting a sharper cutting-edge with a greater amount of clearance.

1. A cutter for screw-taps, provided with an overlapping edge, d, whereby the face of the cutter is made wider than its body or shank, and provision is made for sharpening the cutting-edge, substantially as herein described.

2. The combination of the grooved cutter-stock, the cutters laterally movable in the grooves of said stock, and the reversible keys or locking-pieces, the whole combined and operating substantially as herein described.

3. The combination, with the removable cutters, of the stock A, provided with longitudinal grooves B and a transverse groove, C, substantially as and for the purpose herein described.



As a new article of manufacture, a flower-stand, consisting of the vertical parts or standards A C D, the crook-supports C' D', and the horizontal parts or connecting-pieces E F G, the said parts being more or less in number, and adapted, by means of male and female screws forming a part thereof, for attachment to each other for the purposes set forth.

170,399. POSTABLE FLOWER-STANDS. D. M. Reynolds, Chicago, Ill. [Filed Apr. 24, 1875.]

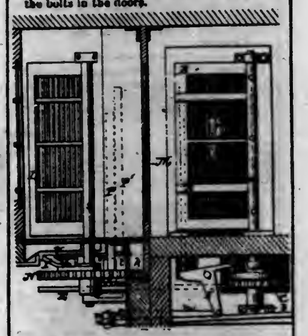
Brief.—The stand is made up of vertical and horizontal pieces, screwed together in a radial form from a common center-piece, the upper end of the vertical posts having disks for the support of flower-pots.



170,399.

170,400. OPERATING PRISON-DOORS. R. Richter, Indianapolis, Ind., assignor of one-half his right to J. R. Thomas, same place. [Filed Oct. 21, 1875.]

Brief.—The doors of prisons are operated, singly or simultaneously, by a horizontal rack-bar and pinions operated from the guard-room. Suitable tripping mechanism, connected by shafts and levers to vertical racks, and operated by cogged levers, release or close the bolts in the doors.



1. The combination, with the door B, having mortised projections k, of the vertical bolt K, with hooks y, for fastening the door, and for detaching the door from the operating mechanism by its weight upon the lever I, substantially as herein set forth.

2. The combination of the door B, shaft a, disk D, pin d, with beveled flange c, and cog-wheel C, with hole n, as and for the purposes herein set forth.

3. The combination, with a series of doors, B, and mechanism for connecting the same with the cog wheels C, of the rack-bar E, wheel G, shaft f, and hand-wheel H, substantially as and for the purposes herein set forth.

4. The combination, with the door B, shaft a, disk D, and pin d, of the lever I, connections m n, rack-bar J, and cogged lever K, substantially as and for the purposes herein set forth.

5. The combination, with the doors L M, of the rack-bar p, cog-wheel N, shaft r, with arm O and pin d', lever O, sliding bars P P', and rocking bar v, with arms t u, substantially as and for the purposes herein set forth.

170,401. WINDOW-SHADE ROLLERS. Anthony Reckoth, Philadelphia, Pa. [Filed Mar. 6, 1876.]

170,402.

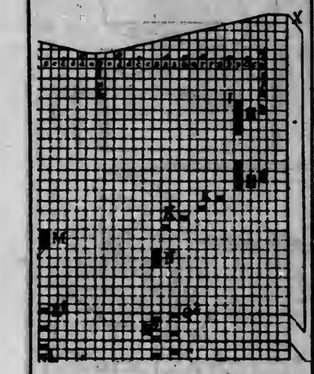


1. The combination of a window-shade roller, having a central opening, b, and an end piece or pulley having a central ribbed pin, a, of uniform diameter throughout its length, and adapted to the said opening, as set forth.

2. The within-described ribbed pin a, of uniform diameter throughout its length, and combined with, and forming part of, the end piece or pulley of a window-shade roller, as set forth.

170,403. ELECTRIC MUSIC-SHEETS. Wm. F. Schmoele and Henry Schmoele, Jr., Philadelphia, Pa., assignors of one-third their right to Chas. Schmoele, same place. [Filed May 15, 1875.]

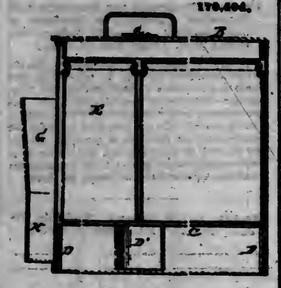
Brief.—Provides for each tune two or more columns removed from one another, whereby long notes may be divided, and those that would otherwise come near together may be scattered, thus obviating in the one case continuous long perforations, and in the other narrow and weak division-strips. Makes a lap or fold along the edge of the sheet, excepting at the points where the sections overlap, so as to present at all points the same thickness of paper to the rollers.



1. The electric music-sheet provided with twin or multiple columns for the superposition of perforated musical notes for electrical performance, substantially as and for the purpose described.

2. The electric music-sheet provided with the flap and joint, substantially as and for the purpose set forth.

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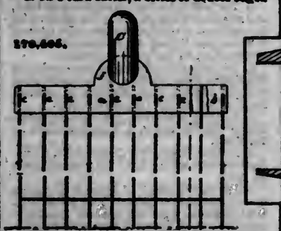
170,405. CURD-CUTTERS. Alonzo Sedgwick and Edwin H. Sedgwick, Poughkeepsie, assignors to themselves, R. S. Whitman, W. W. Whitman, and D. H. Burrell, Little Falls, N. Y. [Filed Aug. 23, 1875.]

Brief.—The cutter is formed of a series of parallel double-edged knives, secured to the head-bars by means of lugs, and braced by double-edged transverse knives.

1. As a new article of manufacture, a curd-cutter, constructed of a series of parallel blades sharpened on both of their edges, and with transverse blades sharpened in like manner, combined with one or more metallic head-plates, substantially as and for the purpose described.

2. In a curd-cutter, a series of double-edged

170,406.



knives constructed with lugs, combined with slots formed in one or more metallic head-plates, substantially as and for the purpose described.

3. In a curd-cutter, formed of a series of parallel double-edged knives, one or more double-edged transverse knives, secured thereto, substantially as and for the purpose described.

170,407. DEVICES FOR ATTACHING BOLSTER-FRAMES TO FOLDING LOUNGES. W. Seng, Chicago, Ill. [Filed Apr. 20, 1875.]

Brief.—The plates, constructed as set forth in the claim, are designed to hold the ends of the bolster-frame in position, and to prevent them from wearing the wood of the side rails of the lounge-frame.



The combination of the plates E F, constructed with slots T, stops F, and lugs S, with the bolster-frame D C, constructed with notched ends, as and for the purpose set forth.

170,408. SOFA-BEDSTEADS. John Schoen, Chicago, Ill. [Filed Oct. 8, 1875.]

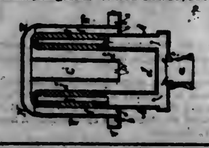


The notched rest-frame C, provided with notch p upon the under side, in combination with the plates B, provided with slots s, to engage with the curled ends of the frame, and the upwardly-projecting rib b, to engage with the notches c, for the purposes specified.

170,409. STEAM-COOKERS. Geo. H. Serfass, Reno, assignee of one-half his right to London F. Terrill, Underhill Centre, Vt. [Filed Nov. 4, 1875.]

The combination of the boiler A, having exterior pipe H and funnel G, with the perforated false bottom C, having supports D D', the vessel E, with perforated bottom, and the lid B, with valve c, all constructed substantially as and for the purpose herein set forth.

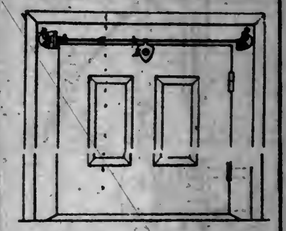
170,410. GAS-BURNERS. Albert M. Silber, London, England. [Filed Oct. 19, 1875.]



1. The gas-burner, in which air-feeding passages C d' f are combined, substantially in the manner and for the purposes described and shown, respectively, in the figures, inclusively.

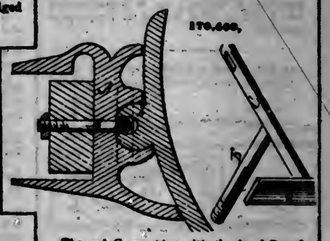
2. The combination, with air-feeding tubes or passages, disposed as described, of a cap or dome, H, of conical, semi-spherical, or other convex shape, in the manner and for the purpose described.

170,411. DOOR-ALARMS. David H. Spoor and Edwd. P. Searle, Medina, N. Y. [Filed Aug. 26, 1875.]



A wire or string alarm, arranged in such relation to the door as to be vibrated by a stud or projection thereon in the act of opening or closing the door.

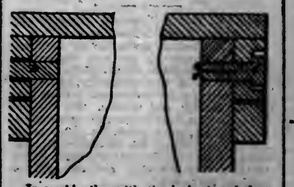
170,412. CAR-BLAKE SHOES. Henry Steets, Harrisburg, Pa. [Filed July 10, 1875.]



170,412.

The rod C, provided with the head D and bolt-arm E, in combination with the brake-shoe A and removable rubber B, substantially as and for the purposes herein set forth.

170,413. BOX-LID FASTENINGS. John L. Stevens, Chicago, Ill., assignor to Billings, Coburn & Co., same place. [Filed Oct. 20, 1875.]



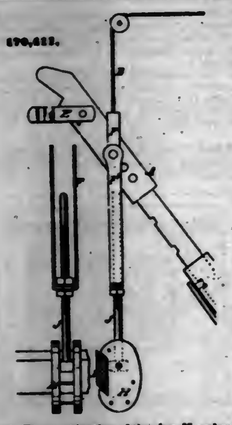
In combination with the body A and cleat C' of the cover, the spring-pressure fastening-pin F, substantially as and for the purpose specified.

170,414. BALE-BAND STRETCHERS. James S. Stocker, Charleston, S. C. [Filed July 2, 1875.]

Brief.—An extensible lever, with a hinged jaw at one end, has, just below each jaw, a hanging stirrup, with a hook and screw-threaded rod therein, for connection with some portion of the press-frame—the whole suspended by a cord and weight; also, a wedge with a cam-wheel recessed in it.



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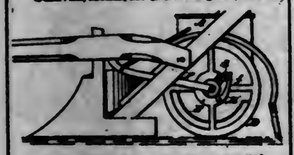


1. The combination of the claw H and catch E with the lever A and rigid bar, as and for the purpose specified.

2. The lever A, suspended by a cord, having a counter weight, in combination with the strap F, extensible rod J, and claw H, as and for the purpose specified.

3. The slotted wedge I, provided with serrated cam M, having a slot, *a*, in combination with a sliding rod, K, as and for the purpose specified.

170,413. CORN AND SEED PLANTER. H. P. Sullivan, Xenia, Ill. [Filed Aug. 30, 1875.]



In a seed-planter, constructed as hereinbefore described, the combination of the driving-wheel D, having tilt-lug *a*, operated by the springs *f* and *g*, with the seed-cylinder C, provided with the recess *c* in its inner circumference, said cylinder C being arranged upon the hollow axle of the driving-wheel, substantially in the manner as and for the purpose specified.

170,414. AUGER-HANDLE. James Swan, Seymour, Conn. [Filed Mar. 9, 1875.]

Brief.—A central socket, having a vertical central perforation, is provided with a mortise at right angles to said perforation, for the reception of a correspondingly perforated plate, having a screw-threaded portion projecting through said mortise. The tang of the auger is secured in position by turning a thumb-screw, which draws the plate against the tang and across the perforation, thereby clamping the tang between one angle of the perforation in the plate and the opposite angle of the socket.

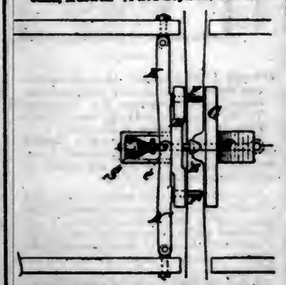


As an article of manufacture, the hereinbefore-described auger-handle, consisting of the socket A, constructed to receive the handle B, and with the perforation C, combined with the transverse perforated plate D, constructed with the screw E extending through one side of the socket, and provided with the nut G outside the socket, substantially as set forth.

170,415. PROCESSES FOR PREVENTING OR REMOVING NAPHTHALINE DEPOSITS IN GAS-CONDUITS. Joseph C. Tiffany, Cozzaukie, N. Y. [Filed Nov. 19, 1875.]

In the manufacture of illuminating-gas, the within-described process for preventing and removing deposits of naphthaline and other similar condensable constituents of gas, and for utilizing such constituents, which consists in introducing into the gas, after it leaves the retorts, gas from paraffine or paraffine oils, for the purpose of absorbing and combining with such naphthaline or other similar condensable products, substantially as herein set forth.

170,416. CAR-PLATFORMS. Emil Tilp, Vienna, Austria. [Filed Sept. 15, 1875.]



1. The bolt E, having a wedge-shaped head, and attached to and carried by the platform A, in combination with the notched rigid bracket or cross-piece D, and the platform B, as herein described, for the purpose specified.

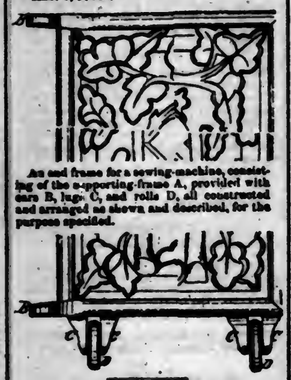
2. The pins F F', sliding in the bracket or cross-piece H on platform A, in combination with the bracket G on platform B, substantially as and for the purpose set forth.

3. The bolt E and the pins F F', in combination with the levers K K', substantially as described.

4. The bolt E, pins F F', levers K K', in combination with spring S, for the purpose herein set forth.

5. The bolt E, pins F F', levers K K', spring S, rod and bracket or cross-piece H on platform A, in combination with the notched bracket or cross-piece G on platform B, substantially as and for the purposes herein set forth.

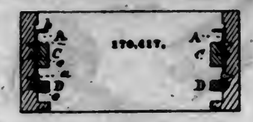
170,417. SEWING-MACHINE TABLES. Harriet Ruth Treat, New York, N. Y. [Filed Mar. 6, 1875.]



An end frame for a sewing-machine, consisting of the supporting-frame A, provided with ears B, lugs C, and rolls D, all constructed and arranged as shown and described, for the purpose specified.

170,417. WINDOW-SASH-BEAD FASTENERS. John W. Tripp, Bellaire, Ohio. [Filed May 22, 1875.]

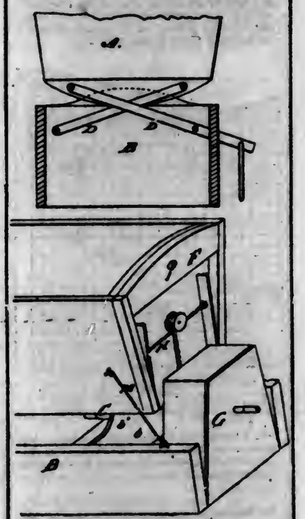
Brief.—The parting-beads of the sash are secured in place by a double-headed sliding bolt and staples, so that when the bolt is disengaged the beads can be withdrawn and the sash removed.



The sliding bolts *A*, constructed to fasten both beads C D, in combination with eyes or staples, *c c*, attached to the beads, substantially as set forth.

170,418. CRADLES. Wm. V. Van Dervort and Nicholas W. Van Dervort, New Antioch, Ohio. [Filed July 15, 1875.]

Brief.—The vibrating lever, by which motion is imparted to the cradle, has a cord-pulley at its upper end, around which the rope attached to two springs at the head of the cradle passes. As the cradle is thrown out of level by motion of the child, the rocking lever automatically adjusts itself on the rope without stopping the mechanism. The springs serve to take up the sharp motion of the lever. One of the cross-braces, pivoted to the cradle and the frame, is extended to serve as a treadle.



1. In combination with the cradle A, having the arms D D' pivoted to the rockers and bars, and intersecting the treadle, formed of an extension of the arm D', substantially as shown and described.

2. In combination with a cradle rocked by automatic mechanism, the lever *g*, cord H, and spool *g'*, for regulating the leverage according to the position of the cradle component, substantially as described.

3. In combination with a cradle and automatic mechanism for rocking the same, an intermediate regulator to automatically adjust the rocking-lever to the position of the cradle, as the latter is varied by the motion of the child, substantially as described.

4. The springs I and connection H, in combination with the cradle A and the cradle-motor G, substantially as described.

5. The combination, with the cradle A and motor G, of the cord H, spool *g'*, stem *g*, rock-beam *d'*, pinions *d'*, and crank *e*, substantially as specified.

170,419. EXTENSIBLE JAMBS. M. J. Walsh, New York, N. Y. [Filed Oct. 6, 1875.]

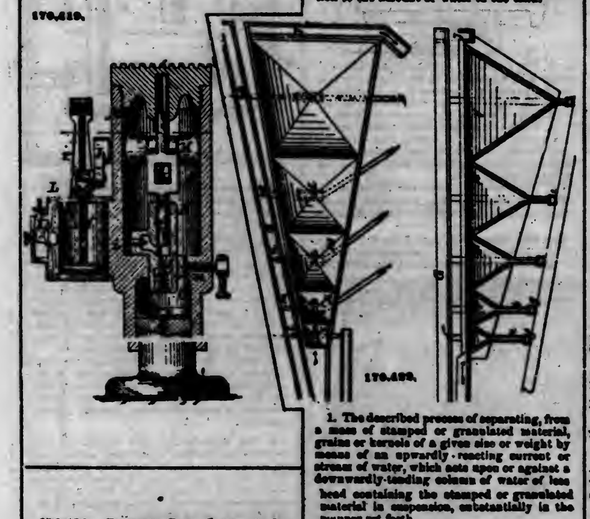
Brief.—The screw-pump is operated by a small engine attached to the head. The piston-rod connects directly with the rocker-arm by slot and pin.

1. The combination, with a hydraulic jack, of an engine mounted directly thereon, and connected with its pump, substantially as herein described.

2. The combination, with the pump-operating rock-shaft H and its attached arm G, of the slotted crank or arm J, the pin *m*, and the piston-rod M, substantially as herein described.

Brief.—Ore is conducted with a stream of water into a series of inverted pyramidal tanks, through the bottom of which a stream of pure water flows upward. The heavy mineral falls in spite of this current, and is conveyed away by the surplus water. The cross-section of the upward stream being for each pan the same, its force and effect is in proportion to the amount of water in the tank.

170,420.

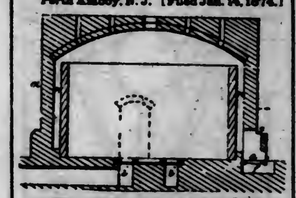


1. The described process of separating, from a mass of stamped or granulated material, grains or barrels of a given size or weight by means of an upwardly-reacting current or stream of water, which acts upon or against a downwardly-tending column of water of less head containing the stamped or granulated material in suspension, substantially in the manner set forth.

2. The method of classifying, with a view to the final concentration, low-grade ores and tailings, by passing the same, mingled with water, through a series of vessels or tanks, in which the downwardly-tending columns of water are acted on by upwardly-reacting currents or streams of water of superior head, whose reacting force is diminished in each succeeding vessel or tank, substantially in manner and for the purposes set forth.

3. The classifying apparatus, consisting of a series of vessels or tanks arranged to communicate, as described, in combination with the feed-pipes, sluices or gates, and pure-water conduits, for operation substantially as shown and set forth.

170,421. BRICK-KILNS. Wm. N. Waldner, Perth Amboy, N. J. [Filed Jan. 14, 1876.]



1. The mode herein described of setting a kiln—that is to say, arranging the articles to be burned in the form of an annular wall between the central outlet-flue and the inlet-flues in the wall of the kiln—whereby the heated gases are caused to pass upward outside of said wall, and downward at the opposite side.

2. A kiln consisting of a circular permanent wall, *a*, a series of furnaces, *b*, communicating with the interior of the kiln near the base thereof, a central outlet on a level, or thereabout, with the base, and an inclosed flue between the inlet and outlet openings, as set forth.

170,422. METHODS AND APPARATUS FOR CLASSIFYING ORES. Robert M. Wengler, Freiberg, Saxony, assignor of one-half his right to Francis A. Lowe, Washington, D. C. [Filed Oct. 20, 1875.]

170,423.

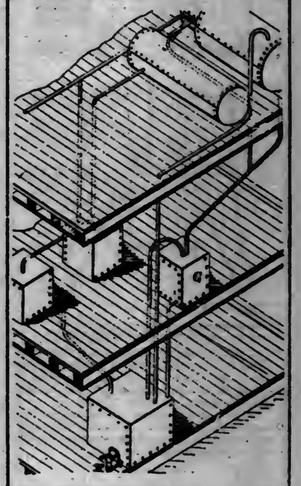
170,424. REFINING CAST-IRON. Arthur Warner, Westbourne Crescent, Hyde Park, England. [Filed Aug. 27, 1875.]

Brief.—The soda-ash, being readily fusible, prevents the powdered lime from baking to the bottom of the receiver. Intimate contact with and rapid purification of the iron thought to be effected.

The within-described process of purifying or refining molten cast-iron by treating it in a deep vessel, without extraneous heat, with pulverized limestone and soda-ash, mixed in or about the proportions herein specified, for the purpose set forth.

170,425. APPARATUS FOR THE USE AND RECOVERY OF VAPORIZED SOLVENTS. James E. Whiting, New York, and William A. Lawrence, Springfield, L. I., N. Y. [Filed Aug. 14, 1876.]

Brief.—By means of the supplemental condenser vapors of the solvent liquid are collected and saved from the extractor and the holding-reservoir.



In combination with the apparatus for making extracts by use of vaporizable solvents, a supplemental condenser, G, connected with either or both the extractor A and holder E, substantially as and for the purpose specified.

170,426. SUBMARINE ROCK-CHISELS. A. J. Whitney, Sandusky, Iowa. [Filed June 20, 1873.]



1. In a chisel for channeling, securing the detachable point to the stock by a collar shrunk over the joint and below a shoulder on the stock, and abutting upwardly against said shoulder, substantially as described and shown.

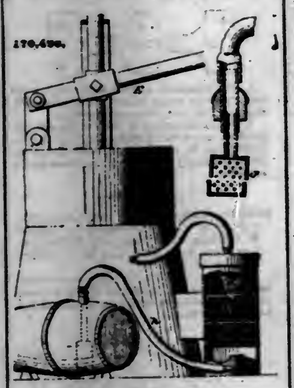
2. In a chisel for channeling the combination of the wrought-iron socket A, steel bit B, transverse pin *a'*, collar C, and shoulder *a*, when the several parts are constructed and arranged substantially as described and shown.

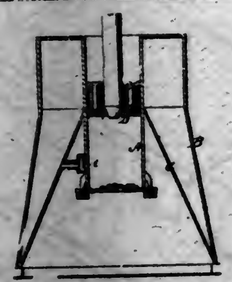
170,427. BRASS-PUMPS, &c. David S. Whitman, Reading, Pa. [Filed July 10, 1875.]

Brief.—The air passes from the pump and receiver to a purifier, thence through a flexible pipe and perforated distributer to the liquid in the cask, &c.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

170,496.

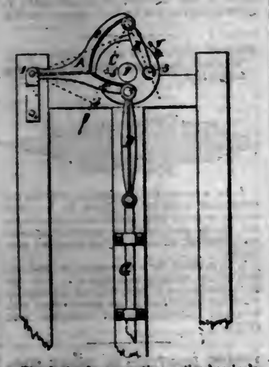




1. The combination of the pump A and receiver B with interior shell C, surrounding the pump, and connected together by a pipe, *k*, having valve *i*, substantially as and for the purposes herein set forth.

2. The combination of the air-pump A D, receiver B C, purifier G, and air-distributer J, constructed and arranged substantially as and for the purposes herein set forth.

170,497. DEVICES FOR CONVERTING MOTION. Montgomery Crossman, Marshall, Mich., assignor of one-half his right to P. A. Spicer, same place. (Filed Oct. 25, 1875.)



The device for converting motion herein described, consisting of the link B and Y-shaped lever A, in combination with a revolving crank or wrist-pin, 3, and pitman-rod D, when arranged substantially as shown and described.

170,498. WICK-RAISERS FOR LAMPS. Albt. Albertson, Jersey City, N. J., assignor to Philip Corrigan, New York city. (Filed Feb. 3, 1875.)

Brief.—The annulus receives the outer wick-tube between its walls, the outer of which is provided with studs, engaging with studs upon the cone, and the inner with screw threads.

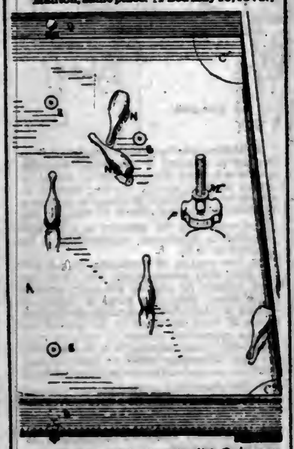


1. The internally screw-threaded sleeve C, carried by the supporting-annulus B, working in the guide *a* of the base A, in combination with the inner and outer wick-tubes D E, substantially as and for the purpose set forth.

2. The internally projecting studs *f* on the removable cone G, in combination with the radial stud *g* on the annulus B, carrying the threaded sleeve C, substantially as and for the purpose set forth.

3. The non-conducting ring H, concentric with and attached to the removable cone G, substantially as and for the purpose set forth.

170,499. GAME-BOARDS. John G. Thurber, Jr., Providence, R. I., assignor to Jos. P. Manton, same place. (Filed May 10, 1875.)



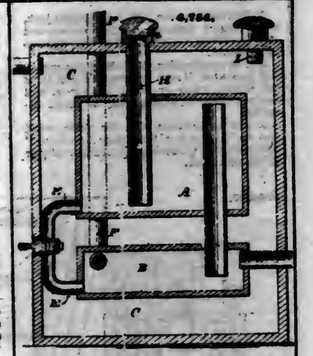
1. The lever E, having the disk D, in combination with the rod G, spring H, and bell F, substantially as and for the purpose set forth.

2. The radially-disposed rods G, operated by the levers and springs, as described, in combination with the bell F, as and for the purpose set forth.

3. The top P, having an irregular or eccentric perimeter, in combination with a game-board provided with pins or bell-ringing device, substantially as and for the purpose specified.

4. The top-holder K, placed as described, and having the slotted arms I J and sheath V, in combination with a game-board, A, having the groove V', substantially as and for the purpose set forth.

4,755.



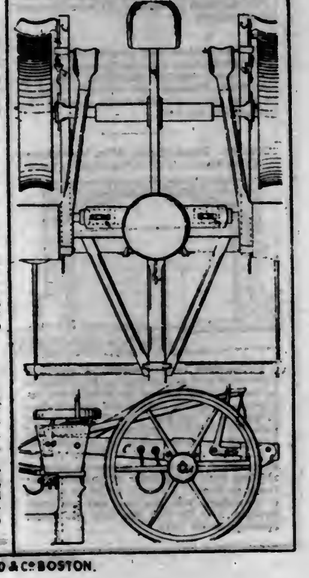
1. In gas-carburetors, an automatic feed between the chambers A and B, said chambers being surrounded on all sides by water contained within a water jacket or case, for the purposes set forth.

2. In gas carburetors, the chambers A and B, connected together by means of the pipe E, in which pipe is contained a closing device, *c*, combined with the pipes D, F, G, and H, the whole being surrounded by the case or jacket C, filled with water, said case or jacket having its supply-opening I, the whole constructed, arranged, and combined in the manner and for the purpose herein described.

3. The within-described method of controlling the temperature and latent heat of the carbureting fluid, which consists in surrounding the hydrocarbon-fluid tank A and carbureter on all sides with water, substantially as specified.

4. The hydrocarbon-fluid chamber A and vaporizing-chamber B, entirely surrounded by water, and provided with inlet and outlet pipes, having all their joints, cocks, and plugs water-sealed, in combination with a water-tight case or jacket, C, in the manner and for the purpose herein described.

4,755. SEED-PLANTERS. George W. Brown, Galesburg, Ill. Patent No. 99,266, dated Feb. 1, 1870. (Filed Jan. 2, 1875.)



REISSUES.

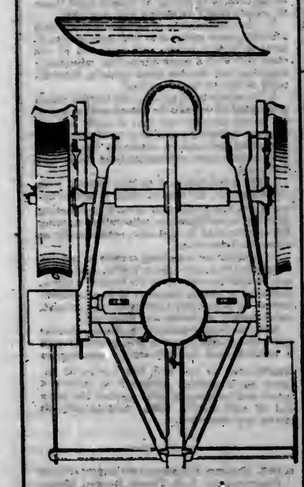
4,756. AUTOMATIC FEED AND ABSORPTION CARBURETERS. Jonathan Austin, New York, N. Y., assignee of E. Hall Covel, administrator of William H. Covel, deceased. Patent No. 91,213, dated June 15, 1869. (Filed Nov. 13, 1875.)

Brief.—The supply-reservoir and carbureter are surrounded on all sides by water, within a water-tight jacket. All the joints, cock, and plugs upon the connecting-pipes are water-sealed. An automatic feed-pipe extends from the supply-reservoir to the carbureter.

HELIOTYPE RELIEF PROCESS JAMES R. OSGOOD & Co. BOSTON.

In combination with a seed-planting machine, having a rear main frame and supporting-wheels hinged to a forward frame carrying the seed-hoppers and runners, foot-bars F F, secured at their forward ends to the forward frame and projecting in rear for the purpose of raising and lowering said frame by upward and downward pressure from the rear frame by the driver's feet, substantially as and for the purpose specified.

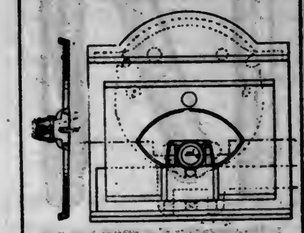
4,756. SEED-PLANTERS. George W. Brown, Galesburg, Ill. Patent No. 99,266, dated Feb. 1, 1870. (Filed Jan. 2, 1875.)



The corn-planter wheel-rim blanks C, constructed, as described, of concave-convex strips of wrought-iron, substantially as described, and for the purpose specified.

4,757. SEED-PLANTERS. George W. Brown, Galesburg, Ill. Patent No. 99,266, dated Feb. 1, 1870. (Filed Jan. 2, 1875.)

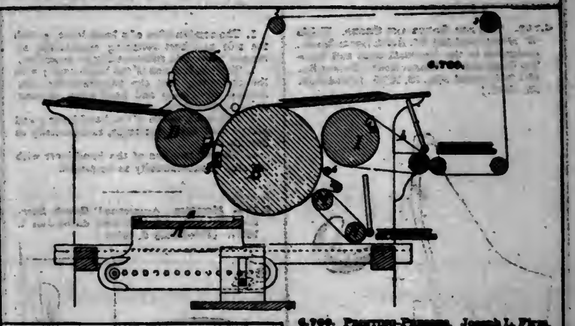
Brief.—Horizontal vibrating seed-disk and yielding oscillating seed cut-off.

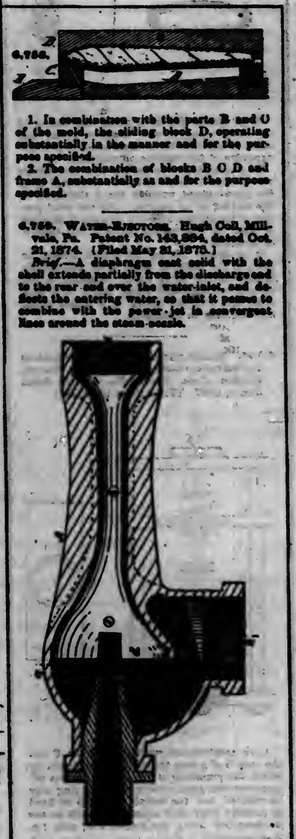


In a seed-planting machine, the combination of a seed-cup plate, through which the seed passes, with a spring cut-off having an oscillating as well as yielding movement, substantially as and for the purpose set forth.

4,758. GRAIN-MOLDS. John Chester, Sterling, Ill. Patent No. 110,620, dated July 11, 1871. (Filed Apr. 14, 1875.)

Brief.—The mold in which the cigar is formed is divided horizontally, and the parts held together by hooks and staples. Sliding in the lower half-mold is a plunger, which compresses the bunch, after which it is removed by opening the half-mold.

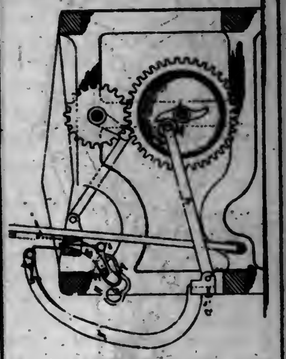




1. A water-ejector, having an inside diaphragm, cast in one piece therewith, which extends back from the front end of the head, partially across the lower portion of the chamber, forming a solid wall, without opening or communication between the two portions of said chamber at that point, as described.

2. The shell *d*, having a diaphragm, *e*, which, with the upper portion of the shell, forms a circular discharge-chamber, tapering forward of the jet-pipe, down into a discharge-nozzle, substantially as described.

4,759. WAVE-STOP MECHANISMS FOR LOOMS. Thos. Blackwood and Wm. Nuttall, Westerly, R. I., assignors, by mesne assignments, to the National Woolen-Loom Stop-Motion Company, same place. Patent No. 158,808, dated May 12, 1873; reissue No. 6,010, dated Aug. 11, 1874. (Filed May 26, 1875.)



1. The combination, with the lathe, of the wires A and mechanism, substantially as described, for presenting them behind the weft and withdrawing them, said wires being arranged to comb the weft forward toward the cloth, in the manner set forth.

2. The reciprocating wires A and their operating mechanism, as set forth, said wires being adapted to support and carry forward the weft, in combination with the weft-fork and shipping mechanism, substantially as described.

3. The combination of the rock-lever O, arm Q, cam R, and finger and latch with the lever H, for operating the shipper-lever, all arranged to operate in the manner described.

4,760. PRINTING-PRESSES. Joseph L. Firm, New York, N. Y., assignor of one-half interest to Calvert B. Cottrell and Nathan Babcock. Patent No. 146,441, dated Jan. 13, 1874. (Filed July 24, 1873.)

Brief.—Offset sheet is taken by a second set of grippers, and carried round several times, if desired, when it is thrown off upon its verso.

1. The combination, with an impression-cylinder and reciprocating form, of an auxiliary impression-cylinder and curved form, the whole operating together to print both sides of the sheet during its passage through the machine, substantially as set forth.

2. The described method of printing the slip-sheets on the impression-cylinder—that is to say, by feeding them directly into the grippers of the impression-cylinder by hand.

3. The described method of removing the slip-sheets from the impression-cylinder after they shall have been used any desirable number of times, as herein before set forth.

4,761. WEFT-STOP MECHANISMS FOR LOOMS. Thos. Blackwood and Wm. Nuttall, Westerly, R. I., assignors, by mesne assignments, to the National Woolen-Loom Stop-Motion Company, same place. Patent No. 158,808, dated May 12, 1873; reissue No. 6,010, dated Aug. 11, 1874. (Filed May 26, 1875.)

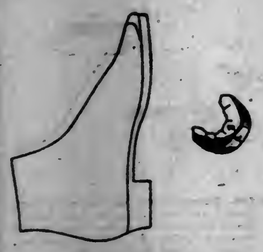
1. The combination, with the lathe, of the wires A and mechanism, substantially as described, for presenting them behind the weft and withdrawing them, said wires being arranged to comb the weft forward toward the cloth, in the manner set forth.

2. The reciprocating wires A and their operating mechanism, as set forth, said wires being adapted to support and carry forward the weft, in combination with the weft-fork and shipping mechanism, substantially as described.

3. The combination of the rock-lever O, arm Q, cam R, and finger and latch with the lever H, for operating the shipper-lever, all arranged to operate in the manner described.

HELIOTYPE RELIEF PROCESS JAMES R. OSGOOD & Co. BOSTON.

6,703. TIPS FOR SHOES AND SHOES. Hollis W. Merrill and Jos. W. Hoitt, Lynn, Mass., assignors to the National Boot and Shoe Tip Company of Connecticut. Patent No. 160,283, dated Mar. 16, 1875. [Filed Nov. 18, 1875.]

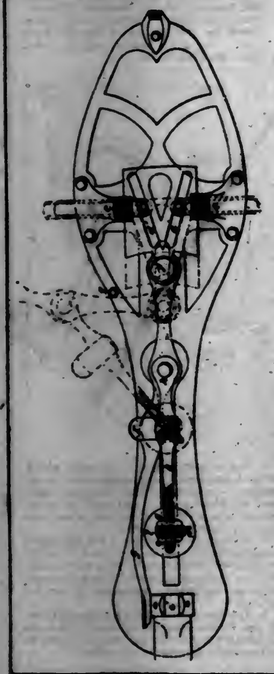


1. A boot or shoe tip composed of rawhide permeated with a suitable color, substantially as and for the purpose specified.

2. As a new article of manufacture, prepared rawhide, thoroughly permeated with a suitable coloring material, substantially as herein described.

3. A rawhide shoe-tip dyed black throughout its substance, and molded or formed to present an upwardly-projecting lip to guard the toe of the upper, and an inwardly-bent horizontal flange, adapted to extend between the upper and outsole to receive fastenings adapted to confine the upper, lip, and outsole, substantially as herein described.

6,704. SKATES. Edgar Murray, New York, assignor to Charles W. Dunlap, Brooklyn, N. Y. Patent No. 46,674, dated Dec. 27, 1864. [Filed Oct. 1, 1875.]



1. The combination of a head-lever, g, with the axle and heel clamping mechanism, arranged to operate substantially as described.

2. The combination of the head-lever g with the heel-clamp and the adjustable bar connecting said clamp and head-lever, substantially as described.

3. The combination of the head lever g and plate c with the axle-clamps, substantially as described.

4. The combination of the head-lever with the stud q, substantially as described.

6,705. MITTENS. Augustus P. Smith, Sterling, Ill. Patent No. 60,949, dated Jan 1, 1867. [Filed July 6, 1875.]

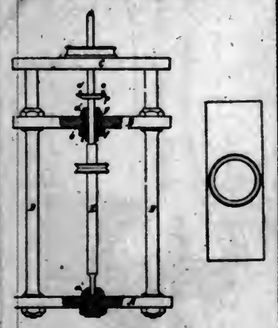


1. A mitten, the back, palm, and lining of the hand being formed in three parts, and attached together by a single seam, to prevent exposure of the stitches, specified.

2. A mitten having the inside of the thumb wholly formed from the material taken from the thumb-space, without being detached in the cutting of its junction with the hand portion of the mitten, whereby no seam is exposed to strain or wear on the inside of the thumb, as specified.

3. A mitten having the thumb formed, in part, of the material taken from the thumb-space, without being wholly detached in the cutting, all the parts being united with each other and with the lining by a single seam, substantially as described.

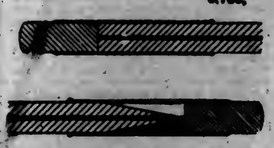
6,706. MEANS FOR ADJUSTING SPINDLES IN RING SPINNING-MACHINES. F. A. Sherry, Boston, Mass. Patent No. 60,302, dated Jan. 1, 1867. [Filed June 15, 1875.]



1. In combination with the bolster F and the step G of a ring spinning-frame, means by which the plumbing of the spindle and its adjustment into concentricity with the ring may be effected, and the bolster and step be fixed in position after such adjustment, such means as described being the screws *b b'*, nuts *f f*, and shoulders *d d'*, and holes *e e* of the bolster and step, all as and arranged as set forth.

2. In combination with the bolster and the step of the spindle of a ring spinning-frame, means or devices for adjusting them, so as to bring the spindle into concentricity with the ring.

6,707. BRAIDER-HOLDERS AND PENCIL-POINT PROTECTORS. L. L. Tower, Boston, Mass., assignor to O. Cleveland, Jersey City, N. J. Patent No. 163,272, dated Sept. 28, 1874. [Filed Nov. 6, 1875.]



1. A pencil-point protector and eraser-holder combined, consisting of a tube adapted at one end to receive an ordinary lead-pencil, and provided at the other end with a screw-thread for adjustably retaining an erasive head thereon, substantially as shown and described.

2. The combination of an erasive head, with a holding-tube adapted at one end for attachment to a lead-pencil, and provided at the other end with a screw-thread for adjustably retaining the erasive head thereon, substantially as shown and described.

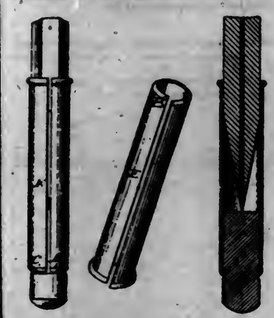
3. An eraser-holding tube, the body of which is adapted at one end for attachment to a pencil, and at its other end bent or upset so as to form an inwardly-projecting spiral or screw thread for adjustably retaining an erasive head in said tube, substantially as shown and described.

4. The combination of an erasive head, with a holding-tube, the body of which is bent or upset at one end to form an inwardly-projecting spiral or screw thread for adjustably retaining the erasive head in said tube, substantially as shown and described.

5. A holder for attaching erasers to pencils, consisting of a split tube or barrel, having one end shaped to conform to the butt of a pencil, and bent or turned inwardly to form a screw-thread for adjustably holding an erasive head, substantially as shown and described.

6. A pencil-point protector and eraser-holder combined, consisting of a tube provided with a screw-thread for adjustably securing an erasive head in one end, and having an interior surface, which adapts it to receive a pencil and cushion its point against the inner end of said erasive head, substantially as shown and described.

6,708. BRAIDER-HOLDERS AND PENCIL-POINT PROTECTORS. L. L. Tower, Boston, Mass., assignor to O. Cleveland, Jersey City, N. J. Patent No. 163,273, dated Sept. 28, 1874. [Filed Nov. 6, 1875.]



1. The combination of an erasive head with a holding-tube divided longitudinally, and having one end provided with an inwardly-projecting flange, which may be distorted into a spiral form to propel the erasive head within said tube, substantially as shown and described.

2. The combination of an erasive head with a pencil-point protector and eraser-holder combined, consisting of a tube split to adapt it to be held upon a pencil, and provided with means, substantially as shown and described, for receiving said erasive head therein, said tube being adapted to receive a pencil and cushion its point against the inner end of the erasive head.

HELIOTYPE RELIEF PROCESS JAMES R. OSGOOD & CO. BOSTON.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 22. TUESDAY, NOVEMBER 30, 1875. PRICE { $5,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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NOTICE TO MANUFACTURERS AND OTHERS.

UNITED STATES PATENT OFFICE,
Washington, D. C., October 5, 1875.

The COMMISSIONER OF PATENTS respectfully requests manufacturers of and dealers in engines, machines, apparatus, tools, and appliances of whatever kind, to send to this Office duplicate copies of all catalogues and circulars which they have issued or may issue from time to time.

R. H. DUELL, *Commissioner.*

COMMISSIONER'S DECISIONS.

INDIA-RUBBER COMB COMPANY.—*Reference.*—*Trade-Mark.*

[*Reference to the Commissioner. In the matter of the application of the India-Rubber Comb Company, of New York, for registration of Trade-Mark.—Decided November* 24, 1875.]

While the rule obtains that no trade-mark may consist of the mere name of a person, place, or article, or a word indicating kind or quality, which any person might employ with equal justice, it is not intended that the name or mark should be a new creation, or require invention.

It is sufficient that it should have an original and distinctive signification as appertaining to the article.

Held, That Congress intended no new definition of a trade-mark. Also, that a name accompanied by a mark sufficient to distinguish it from the same name, when used by other persons, may be a lawful trade-mark.

When a court of competent jurisdiction has declared that a name first adopted by a firm, and used to denote the origin and ownership of a particular article, is a lawful trade-mark, and has enjoined its use by others, even though the name be unaccompanied by other distinguishing mark,—this Office is concluded in its action.

Under the circumstances of the case, and various cases cited, the words "The India Rubber Comb Company" constitute a lawful trade-mark.

SPEAR, *Acting Commissioner:*

June 2, 1875, the India-Rubber Comb Company, of New York and College Point, State of New York, filed a petition for the registration of a trade-mark consisting of the words and letters—

The India Rubber Comb Company, of New York. I. R. C. Co. Goodyear.

Subsequently the letters "I. R. C Co.," and the word "Goodyear," were stricken out.

The application was rejected and an appeal taken to the Commissioner. August 14, 1875, the Commissioner affirmed the action of the Examiner. In his decision the Commissioner considered the question in the light of the matter set forth in applicant's *fac simile* which contained the following words:

The India Rubber Comb Co.,
New York.
Sole Manufacturers of
Goodyear's
India Rubber and Gutta Percha Combs,
Under
Meyer's Patents, April 4th, 1854, reissued
August 16, 1859, extended April 4, 1868.
1 Doz. Medium S. Fine Goods, No.
Assorted Fancy Patterns.

A copy of a preliminary injunction had been filed by applicant with his petition granted on motion by the superior court of the city of New York on the 15th day of March, 1875, in the case of "*The India Rubber Comb Company* vs. *Isaac T. Meyer.*" This injunction restrained the defendant from using the words "The India Rubber Comb Company" on any combs, or cases, or packages containing combs, &c. No mention was made in the order of the fact that the words in question constituted the plaintiff's trade-mark. The Commissioner, therefore, did not regard the action of the court as an adjudication of the matter in dispute. The conclusion of his decision was as follows:

In the absence of any evidence that the words found in the *fac simile* have ever been declared, by any court, a lawful trade-mark, the Commissioner must be controlled by the specific language of the statute, which certainly and unmistakably prohibits a registration of such a mark as this. The *fac simile* is simply a label, and may be registered as such, but not as a trade-mark.

Since the above decision of the Commissioner the case in court came on for final hearing and disposition. A copy of the final decree has been filed, and, in view

of the matter therein contained, and upon request of counsel, the Examiner of Trade-Marks now refers the case to the Commissioner for review.

There can be no doubt upon the reading of this decree that, in the opinion of the court rendering the same, the words "The India Rubber Comb Company" constitute a lawful trade-mark. The decree sets forth that the suit was brought by the plaintiff against the defendant "for his infringement of plaintiff's trade-mark," and the nature of the previous proceedings, and after further stating that "the suit having been brought on for hearing upon the pleadings and proof, and the said counsel having been heard for the respective parties, and due deliberation being had thereon," proceeds to enjoin and restrain the defendant from infringing the said trade-mark—to wit, "The India Rubber Comb Company," &c.

The question now recurs, whether the words "The India Rubber Comb Company" can be received and recorded by the Commissioner of Patents as a trade-mark under the provisions of the present law. Sec. 4939, Revised Statutes, enacts—

> The Commissioner of Patents shall not receive and record any proposed trade-mark which is not and cannot become a lawful trade-mark, or which is merely the name of a person, firm, or corporation unaccompanied by a mark sufficient to distinguish it from the same name when used by other persons, or which is identical with a trade mark appropriate to the same class of merchandise, and belonging to a different owner, and already registered, or received for registration, or which so nearly resembles such last-mentioned trade-mark as to be likely to deceive the public. But this section shall not prevent the registry of any lawful trade-mark rightfully in use on the eighth day of July, eighteen hundred and seventy.

It was settled law long before the enactment of the present statute, and the year 1870, that no person had the right to appropriate or have the exclusive use of any words, letters, figures, or symbols which, from the nature of the fact they were used to signify, others might employ with equal truth, and therefore have an equal right to employ for the same purpose. (*Amoskeag Co.* vs. *Spear*, 2 Sandford's Supreme Court, 599; *Canal Company* vs. *Clark*, 13 Wallace, 311, and the many cases there cited.) Therefore, the mere name of a person, name of a place, name of the article, or a word simply indicating the kind or quality of an article, and other similar names or words, being those which any person might employ with equal justice, and unaccompanied by some peculiar distinguishing mark, were never allowed to be appropriated exclusively by any particular person or set of persons.

This rule, however, was never construed to mean that the name or mark should be a new creation; that its adoption should evince the exercise of the inventive faculty. It was only necessary that the name or words should have been appropriated for the first time to the article, so that it had a distinctive original signification, or, if not so appropriated for the first time, should have become distinctive by association. (*Canal Company* vs. *Clark*, ante.)

It is in accordance with these elementary principles that the section of the present law, above quoted, must, in my opinion, be construed. It does not appear that it was the intention of Congress to make any radical change in the properties of a trade-mark, and to set up a new definition, but simply to set forth those qualities which had already been regarded as essential by the adjudications of the courts. Now, it is clear from the very language of the section itself that it was not the intention of the law-makers to declare that under no circumstances whatever could the name of a person, firm, or corporation be received as a trade-mark. Its language is that such a name shall not be received and recorded "unaccompanied by a mark sufficient to distinguish it from *the same name when used by other persons.*"

Now, if the Commissioner is convinced by unquestionable proof—such, for instance, as the final adjudication of a court of competent jurisdiction—that such a name was first adopted by the party seeking to record it as a trade-mark, that it has been used as such for many years, that it has come to denote to all the world the origin and ownership of the particular articles to which it has been applied, that no one else can use that name for the same purpose without perpetrating a fraud, and that parties making such an attempt have been restrained by the courts on the ground that they were unlawfully using another's trade-mark, then the reason of the rule falls in that particular instance, for if other persons cannot use it, then it is unnecessary to accompany it with another mark to distinguish it. Itself is the mark. A name which the courts have decided to be the lawful trade-mark of a particular person, the Commissioner, in my opinion, cannot lawfully refuse to record.

I take it that the meaning of the statute simply is that the mere name of an individual, or a firm, or the name of a corporation, as that of some town, cannot, as a general thing, be recorded as a trade-mark, because the names of those individuals or firms may be rightfully used by others who have come rightfully by the same names, or that all persons within the bounds of a corporation have the same natural right to the use of the corporation name.

But in numerous instances have the courts held such names lawful trade-marks, their action therein, of course, resting upon the peculiar circumstances of each case, and which rendered them exceptions to the elementary principles above set forth. In the cases of *Sykes* vs. *Sykes*, 3 B. & C., 541, *Croft* vs. *Day*, 7 Beav., 84, Norvill 5 Man. Gr. & Scott, 109, *Howe* vs. *Howe Machine Co.*, 50 Barb., 236, it was held that parties might be enjoined and restrained from using their *own proper names* which had been previously adopted by others as trade-marks, and which had become such by long association. Many cases could be cited where the name of a firm has been adopted as a trade-mark, and the right to use it as such sustained.

In *Howe* vs. *Howe Machine Co.*, (ante) the court held:

> It is equally clear that the plaintiff could adopt and appropriate the word "Howe" as a trade-mark as *against* Elias Howe, Jr. The plaintiff had a right to adopt and appropriate his surname as a trade-mark, and it cannot be said that Elias Howe, Jr., though his surname was the same, had the right to use his own surname *in such a way* as to deceive the public, and deprive the plaintiff of the benefit of the notoriety and market which his machines had gained. (See the conclusion of the opinion of the Master of the Rolls, in *Croft* vs. *Day*, supra.)

Names of incorporated companies have been in many cases decided to be valid trade-marks. In the case of *Newby* vs. *The Oregon Central R. Co., et. al.*, Deady's Reports, 609, suit was brought to enjoin the defendants from using the name "The Oregon Central Railway Co.," and from issuing bonds bearing said name. A company with the same title had been incorporated at an ealier date. The court held that—

> The corporate name of a corporation is a trade-mark from the necessity of the thing, and upon every consideration of private justice and public policy deserves the same consideration and protection from a court of equity.

But a case more nearly analogous to that of the applicants is that of the *Brooklyn White Lead Co.* vs *Masury*, 25 Barbour, 416. The plaintiffs had been engaged in the manufacture of white lead for more than twenty years, and had been in the habit for that period of marking their kegs with their name, adding the words "premium lead, warranted pure." For a number of years the defendant had been engaged in the same business, at the same place. He at first labeled his kegs "Brooklyn White Lead, pure, 100lbs." To that the plaintiffs did not, and could not, object. But the defendant subsequently changed his mark to that of "Brooklyn White Lead & Zinc Company." The conclusion of the court was that

> the defendant should be enjoined from the use of the word "Company" or "Co." He says others are interested with him in the business. That would justify him in calling his paint by the name of Masury & Co's., but not by a title as of an incorporated company, strongly resembling the plaintiffs. He has within a few years added to his business the making of zinc paint. He may, therefore, continue to use the title of Brooklyn White Lead and Zinc, only omitting the name "Company" or "Co."

The judge had premised—

> *It is to protect the plaintiff's right of selling his own that the law of trade-marks has been introduced.*

In conclusion, the doctrine of the common law is thus summarized in *The Amoskeag Co.* vs. *Spear*:

> The principle is well settled that a manufacturer may, by priority of appropriation of names, letters, marks, or symbols of any kind, to distinguish his manufacture, acquire a property therein, as a trade-mark, for the invasion of which an action for damages will lie, and in the exclusive use of which he may have protection when necessary by injunction. * * * * In all cases where names, signs, marks, brands, labels, words, or devices of any kind can be advantageously used to designate the goods or property, or particular place of business of a person engaged in trade or manufacture, or any similar business, he may adopt and use such as he pleases, which are adapted to that end, and have not been before appropriated, and no other person can lawfully imitate them, and by that means sell his own goods or property, or carry on his business as the goods, property, or business of the former.

To better protect these common law interests in the courts of the United States, and to extend its privileges to citizens of those foreign countries which afford the same protection to citizens of our country, constitute the principal objects of the present law of trade-marks.

But, admitting that the common law definition of a trade-mark has been restricted in meaning by the Act of 1870, so that the words "The India Rubber Comb Company" cannot be recorded as a trade-mark by reason of its being the name of a corporation, I think it clear from the language of the last clause of the section above cited that it can be recorded as being "a lawful trade-mark, rightfully in use on the eight day of July, 1870."

In the complaint filed in the suit in equity, and which was the basis of the decree rendered by the court, the applicants set forth that they were the first to design and adopt the title in question, and which has been in constant use by them for the past twenty-two years, impressed upon combs manufactured by them, and on the boxes, cases, labels, notices, and other devices used by them in connection with the sale of said combs; that the said trade-mark was well known and recognized by the trade, and by the public, who had long acquiesced in the use of the same, and that all importers and dealers throughout the United States had invariably desisted from infringing the same.

The former action of the Office is, therefore, reversed, and the applicants will be allowed to record the trade-mark in question.

GALT AND TRACY.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Thomas A. Galt and George S. Tracy for letters patent for* "IMPROVEMENT IN CORN-PLANTERS."—*Decided November 24, 1875.*]

A corn-covering wheel having raised rims occupying a portion of its peripiery, and serving on hard ground to fill the seed-furrow, while in softer ground the plain surfaces of the wheel prevents the wheel from sinking too deeply into the soil: *Held*, not to be anticipated by a concave-faced wheel, which, by the addition of "supplementary rings" filling the concavity, might be converted into a plain-faced wheel.

SPEAR, *Acting Commissioner:*

The invention set forth by this applicant and made the subject of the first claim is an improvement in corn-planters, consisting of wheels provided with raised rims, which occupy a certain part of the periphery of the wheel, corresponding to the width of the apparatus, which is immediately in front of these raised rims, for the purpose of making the furrow in the earth to receive the seed. These rims serve in hard ground the purpose of filling the furrow without the aid of the broader portions of the rims, which constitute the smaller diameter of the wheels; but in soft ground, where the raised portions would sink too deeply, were the entire wheel only of their thickness, these convex or concave portions of smaller diameter come down to the surface and serve as support to prevent the wheel sinking too far in the soft earth. Now, although in Vandiver's patent there is a wheel shown corresponding in appearance to this, I find no trace of exactly this invention in Vandiver's patent. What Vandiver was aiming at, as he himself states, was to make a wheel which could be used as a concave wheel, or, by the addition of supplementary rings, afford a plain surface. Following his specification, the workmen would make such a rim as would fill the grooved wheel up to form a plane periphery like an ordinary wheel. This is not the invention set forth and claimed by Galt and Tracy, and I think the first claim may be allowed.

The second claim is for the scrapers in combination with their wheel; but there is nothing new in the scrapers or their arrangement. They serve the same purpose precisely, and bear the same relation to the wheel as the scrapers in Vandiver's patent do to his wheel. So far as the scrapers and wheel are concerned the inventions are precisely the same, and in my opinion the claim was rightfully rejected.

I must, therefore, reverse the decision of the Board upon the first claim and affirm it upon the second.

WILLIAM WACHS.—*Appeal.*

[*Appeal from the Examiners-in-Chief in the matter of the application of William Wachs for letters patent for* "IMPROVEMENT IN BAKERS AND ROASTERS."—*Decided November 24, 1875.*]

Baking-pans, having been made with closely-fitting covers, and griddles having been made double and hinged, it is yet—*Held*,—that a baking-pan made in two parts, which are hinged together so as to form one covered pan, or two uncovered pans, which equally rest upon the bottom of the oven,—is a patentable invention.

SPEAR, *Acting Commissioner:*

The device which is the subject of this application is a sheet-iron baking-pan made in two parts, which are

hinged together in such a way that when the pan is open the two parts rest equally on the bottom of the oven, so as to form a double pan, for the purpose of baking bread or any other article not needing to be covered while baking. Further, this pan is so constructed that, when used for the purpose of baking meats or any other article needing to be covered while baking, one part may be closed over upon the other, fitting down with an elastic flange, so as to shut tight and make a closed vessel. There are ribs on the section which forms the bottom of the compound pan, keeping it from contact with the bottom of the oven, and the pan is so hinged and arranged that the upper half rests, as before stated, evenly with the bottom half.

It appears from the record that griddles have been made double and hinged, and also that bake-pans have been made with closely-fitting covers to prevent the escape of the flavors of the roasting meats and the burning of the parts exposed.

The invention under consideration, however, differs from these in this respect, that a single article is made to answer two distinct purposes, and this by a peculiarity of construction not shown in either. It is true there is the hinging in the griddle, and the cover and flange in the bake-pan, but neither can be used in the same way as applicant's device. It does not matter how slight the change which may be made by an inventor, provided the result be new and useful. It is new and useful in this case, in my judgment subserving the purpose of economy and convenience in use.

The claim in the amendment filed September 14, 1874, appears to be limited to the device, distinguishing it from anything shown in the references, and I think should be allowed.

The decision of the Board of Examiners in-Chief is therefore reversed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, DISTRICT OF MASSACHUSETTS.

BAXTER D. WHITNEY *et al.*, COMPLAINANTS, *vs.* ROLLSTONE MACHINE WORKS *et al.*, DEFENDANTS.

[*In equity.—Before* SHEPLEY, *J.—Decided October* 27, 1875.]

A preliminary injunction will not be granted where defendants have manufactured under the sanction of a patent of prior date to those held by complainants, which prior patent has expired, and no proceedings having at any time been instituted by complainants to secure or protect their rights under their patents.

The Kilburn invention embraces all the substantial elements and combinations of the Whitney invention, and the evidence shows that the invention of Whitney antedates that of Kilburn, although the patent granted to the latter is prior in date to that of Whitney.

[*Rice* and *Pratt* for complainants.
D. H. Merriam and *T. L. Wakefield* for defendants.]

SHEPLEY, *J.*:

Complainants claim under Letters Patent granted to William D. Sloan, March 31, 1857, No. 16,936, extended for the term of seven years from March 31, 1871, and also under Letters Patent to Baxter D. Whitney, August 7, 1860, No. 29,534, extended for the term of seven years from August 7, 1874. Defendants are manufacturing automatic lathes for turning and finishing irregular forms like those described in Letters Patent granted to Cheney Kilburn, dated November 22, 1859, No. 26,192.

Complainants, having commenced proceedings in equity for an injunction and account, now ask for a preliminary injunction.

The patent of Cheney Kilburn has expired by limitation, and has not been extended. It was prior in date to the patent of Baxter D. Whitney, but from the affidavits and other documentary evidence it would appear that application of Whitney and the invention of Whitney each antedated the invention and application of Kilburn.

The defendants manufactured machines under the Cheney Kilburn patent, during the term for which the letters patent were granted, and have continued to manufacture the same machine since the patent expired. During the original term of the Kilburn patent no proceedings were instituted by Whitney or his assignees against Kilburn, or the defendants, or any other persons manufacturing, vending, or using the invention described in the specifications of his patent. More than five years since one of complainants notified a party making use of the Kilburn machine that he should treat it as an infringement of the Whitney patent, and should at some then future time endeavor to put a stop to the manufacture. This notice appears to have been communicated to the defendants. They continued the manufacture openly under a claim of rights, and published circulars with an engraved cut of their machine, and a claim that the Kilburn patent antedated the complainants, and have continued, with the knowledge of the complainants, to advertise and manufacture the same machines. No attempts have been made by the complainants to enforce their supposed rights against the defendants until the filing of the bill in this case.

From the evidence to be found in the *ex parte* affidavits, and from a comparison of the two machines, I am satisfied, for the purposes of this hearing, that the Kilburn invention embraces all substantial elements and combinations of the Whitney invention, and that the Whitney invention antedated that of Kilburn; but upon the state of facts exhibited in the record in this case, after the complainants have submitted for so long a space of time to the manufacture and use of the Kilburn machine without enforcing their rights by proceedings at law or in equity, they have lost the right to invoke the summary process of the court by an injunction *pendente lite*, but must await the decree of the court upon a final hearing, when the rights of the parties can more accurately be determined, before summarily putting a stop to a manufacture, which, commenced under the sanction of letters patent, has so long continued without interruption. The complainants do not show any adjudication sustaining the validity of their patent, nor, as against the Kilburn patent or these defendants, do they prove any such public acquiescence or exclusive possession, or any such diligence on their own part, as would entitle them to invoke the *festinum remedium* of a preliminary injunction.

Motion for preliminary injunction overruled.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date November 30, 1875.]

8,811, and **8,812.—Sleeve-Buttons and Studs.**—THOMAS G. BROWN, Newark, N. J.—Cases A and B. Applications filed November 6, 1875. Term of patents 3½ years.

8,813 to **8,815**, inclusive.—**Show-Cases.**—JOSEPH LEHNBEUTER and CASPAR CLAES, St. Louis, Mo.—Cases A, B, and C. Applications filed July 22, 1875. Term of patents 7 years.

8,816.—Tobacco-Bags.—WILLIAM J. CUSSEN, Richmond, Va., assignor to G. W. GAIL and CHRISTIAN AX, Baltimore, Md. Application filed November 5, 1875. Term of patent 14 years.

8,817.—Table-Cutlery.—JAMES D. FRARY, New Britain, Conn., assignor to LANDERS, FRARY & CLARK, same place. Application filed November 2, 1875. Term of patent 7 years.

8,818 and **8,819.—Casing of a Soda-Water Apparatus.**—FRANK H. SHEPHERD, Boston, assignor to JAMES W. TUFTS, Medford, Mass.—Cases E and F. Applications filed November 13 and 18, 1875. Term of patents 14 years.

TRADE-MARKS REGISTERED DURING THE WEEK

[Each certificate bearing date November 30, 1875.]

3,172.—Lamp Chimneys and Shades.—RICHARD DOUGLAS & CO., New York, N. Y. Application filed September 23, 1875.

"a cock or rooster."

3,173.—Furniture-Polish.—ABRAHAM B. DUMM, Zanesville, Ohio. Application filed September 4, 1875.

"A picture of a dressing-case, with female figure, however disposed or arranged, with the words underneath, 'Le Grand's French Furniture Polish.'"

3,174.—Medicated Whisky.—FRANCIS M. EPPLEY, Newark, N. J. Application filed November 13, 1875.

"words 'Eppley's Medicated Whiskey,' in conjunction with the letters 'E. M. W.,' inclosed within the star-like figure."

3,175.—Canned Oysters, Fruits, and Vegetables.—FICK & CHASE, Baltimore, Md. Application filed November 17, 1875.

"representation of the coat-of-arms of the State of Maryland, surrounded by a border supported at its dexter and sinister sides by oysters exposed in the open shell, the said border being surmounted by the representation of an eagle. The motto conceals the bottom of the border, as shown. Over the whole are arranged, in an arch, the words 'Maryland Brand.'"

3,176.—Canned Oysters.—SIDNEY C. JOHNSON, Detroit, Mich. Application filed August 7, 1875.

"words 'Johnson's Oysters,' and an arrow-head."

3,177.—Bottles.—ANDREW KOCH, New York, N. Y. Application filed October 20, 1875.

"representation of the American shield and the letter 'K,' the shield being embellished with stars and stripes."

3,178.—Paints.—NATIONAL MIXED PAINT COMPANY, New York, N. Y. Application filed September 13, 1875.

"word and letters 'National Mixed Paint Co.,' in connection with the words 'Semper Paratus,' and the monogram composed of the letters 'D.' and 'H.'"

3,179.—Spices.—PACKARD & JAMES, New York, N. Y. Application filed September 13, 1875.

"words 'NATIONAL MILLS.'"

3,180.—Cream of Tartar.—PACKARD & JAMES, New York, N. Y. Application filed September 13, 1875.

"words 'NATIONAL MILLS.'"

3,181.—Fertilizers.—CHAUNCEY PERRY, Rochester, N. Y. Application filed November 8, 1875.

"word 'ONODON.'"

3,182.—Manufactured Leather or Rawhide.—HERMAN ROYER, San Francisco, Cal. Application filed August 23, 1875.

"a picture representing an ox or other bovine pursued by a man on horseback."

3,183.—Clothes-Pins.—R. WARNER & Co., Boston, Mass. Application filed November 16, 1875.

"words 'MAMMOTH CLOTHES-PIN.'"

3,184.—Harvesting-Machines.—WHITELEY, FASSLER & KELLY, Springfield, Ohio.—Case A. (Re-registration.) Application filed February 1, 1873.

"word 'Champion.'"

3,185.—Self-Rakes, Droppers, Reels, &c., of Harvesters.—WHITELEY, FASSLER & KELLY, Springfield, Ohio.—Case B. (Re-registration.) Application filed February 1, 1873.

"word "Champion.'"

3,186.—Guard-Fingers, Knife-Sections, &c., of Harvesters.—WHITELEY, FASSLER & KELLY, Springfield, Ohio. Case C. (Re-registration.) Application filed February 1, 1873.

"word 'Champion.'"

3,187.—Grain-Separators.—O. K. WOOD & Co., West Chazy, N. Y. Application filed November 11, 1875.

"words 'KING OF THE HARVEST.'"

3,188.—Grain-Separators.—O. K. WOOD & Co., West Chazy, N. Y. Application filed November 11, 1875.

"words 'QUEEN OF THE HARVEST.'"

3,189.—Plows.—WILLIAM K. HARRELL, THOMAS B. CHAMBERLAIN, and DEWITT C. CHAMBERLAIN, Clarinda, Iowa. Application filed November 1, 1875.

"words 'CLARINDA BREAKER.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date November 30, 1875.]

399.—Title: "**De Bense's Spanish Fever-Drops.**"—D. BENSE, Brooklyn, N. Y. Application filed November 20, 1875.

400.—Title: "**Colby's Asthma! Remedy.**"—LEONIDAS H. BUSH, Des Moines, Iowa. Application filed November 20, 1875.

401.—Title: "**Elixir Peruvian Bark with Protoxide of Iron.**"—BILLINGS, CLAPP & CO., Boston, Mass. Application filed November 15, 1875.

402.—Title: "**Elixir Peruvian Bark with Protoxide of Iron.**"—BILLINGS, CLAPP & CO., Boston, Mass. Application filed November 20, 1875.

403.—Title: "**Elixir Peruvian Bark with Protoxide of Iron.**"—BILLINGS, CLAPP & CO., Boston, Mass. Application filed November 15, 1875.

404.—Title: "**Elixir Peruvian Bark with Protoxide of Iron.**"—BILLINGS, CLAPP & CO., Boston, Mass. Application filed November 20, 1875.

405.—Title: "**Elixir Peruvian Bark with Protoxide of Iron.**"—BILLINGS, CLAPP & CO., Boston, Mass. Application filed November 15, 1875.

406.—Title: "**Calendulene—a glycerine jelly for the toilet.**"—FREDERICK A. BROWN, Indianapolis, Ind. Application filed November 20, 1875.

407.—Title: "**Champion Violet Copying and Record Fluid.**"—LEVISON & BLYTHE, St. Louis, Mo. Application filed March 18, 1875.

408.—Title: "**Vats and appliances for using Jerome Marble & Co.'s Patent Indigo Blue Dye—Worcester, Mass.**"—JEROME MARBLE & CO., Worcester, Mass. Application filed June 11, 1875.

409.—Title: "**Corded End Suspenders—Each pair will be stamped.**"—NATIONAL SUSPENDER CO., New York, N. Y. Application filed November 13, 1875.

410.—Title: "**Hopeful Tobacco, Manufactured by The Merchants' Tobacco Co., Boston, Mass.**"—MERCHANTS' TOBACCO CO., Boston, Mass. Application filed November 12, 1875.

411.—Title: "**Sisters—Sisters' Tobacco, Manufactured by the Merchants' Tobacco Co., Boston, Mass.**"—MERCHANTS' TOBACCO CO., Boston, Mass. Application filed October 30, 1875.

412.—Title: "**Rival—Rival Tobacco, Manufactured by the Merchants' Tobacco Co., Boston, Mass.**"—MERCHANTS' TOBACCO CO., Boston, Mass. Application filed October 30, 1875.

INDEX OF INVENTIONS PATENTED NOVEMBER 30, 1875.

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Bee hives, moth trap for, W. H. Spurlin	9	170,601
Billiard table, F. E. Held	113	170,557
Biscuit cutter, A. P. Ashbourne	88	170,460
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Pomeroy, J. V., Ore concentrator	170,642
Pope, W. S., Air shaft for pneumatic caissons	170,588
Port, H., Wrench	170,493
Porter, B. S., Thill coupling	170,491
Powell, A. N., Bale tie	170,589
Pratt, D. R., Rubber spring	170 590
Putnam, J. E., assignee	170,554
Putnam, S. W., Metal drilling machine	170,591
Rath, E., Perfume fountain	170,592
Reese, N. I., Hat ventilator	170 450
Richards, A. C., Type setting machine	170,593
Richardson, G., Apparatus for treating carbonic acid for hardening cement, &c	170,594
Richter, D., assignee	170 651
Rinek, J., Tube for forming ropes	170,595
Ritchie, E. S., Lantern	170,451
Ropes, A., Child's carriage	170,493
Rose, R. M., Machine for embroidering fabrics	170,596
Roy, J., Horseshoe nail machine, (reissue)	6,776
Rugg, N., Potato digger	170,452
Russell, W. W., assignee	170,592
Ryder, J. F., Camera screen	170,453
Sacc, F. H. L. C., Preserving eggs	170,494
Saint, T. G., drier	170,495
Schartan, E. O., and J. H. Gardner, Bale tie	170,597
Schneider, B. B., assignee	170,522, 170,523
Schols, W., assignee	170,568
Schumacker, F., assignee	170,536, 170,560
Sergeant, W. E., Millstone driver	170,454
Sharer and Betteley	170,509
Shay, J. H., assignee	170,554
Shearer, G. H., Log turner for saw mills, (reissue)	6,777
Sheldon, F. P., Machine for threading screws	170,496
Shields, J. R., Hinge	170,598
Simonson, M. L., Curry comb	170,455
Small, A. J., Barrel lifting machine	170 599
Smith, A. R., Hair switch	170,497
Smith, F. D., Scroll sawing machine	170,456
Smith, F. W., and F. Egge, Blasting cartridge	170,600
Smith, G., Cartridge	170,643
Smith, J. B., assignee	170,490
Spurlin, W. H., Moth trap for bee hives	170,601
Staughton and Gard	170,545
Steel, R., and T. P. McCadden, Toy chromatrope	170 603
Steinway, C. F. T., Grand piano forte action	170,645
Steinway, C. F. T., Piano forte agraffe	170,646
Steinway, C. F. T., Metal frame for piano fortes	170,647
Stevens, B. A., Refrigerator	170,602
Stevens, C. B., assignee	170,439
Stewart, J. W., Spectacle frame	170,644
Stringer, W. and W. H., assignees	170,506
Sweetland, A., assignee	170,497
Swett, D., assignee	170,513
Talcott, W. A., assignee	170 468
Toomey, J., Hose nozzle	170,604
Toner, E. C., Freezing apparatus	170 498
Tubbs and Brown	170 518
Tucker, W., Engine lathe	170,605
Turner, A., Elastic fabric	170,606
Tyer and Farmer	170,540
Underhill, W. M., Lamp pendant	170,607
Upham, N., Stop cock	170,648
Vannice, J. W., Dumping device for filling graves	170,649
Vincent, M., Draw bridge	170,650
Voigt, F., Water wheel	170,499
Waehner, J., Neck tie fastener	170,651
Wagner, H. G., Guard for screw propellers	170,608
Walker, J. T., Horseshoe blank	170,609
Wallace, W. W., Cotton press	170,610
Ward, F. O., Boot and shoe	170,611
Warner, A., assignee	170,566
Wasserman, B., assignee	170,544
Weber, H., Rail joint	170 652
Welles, R. J., Countersink	170 653
Wellhouse, G., Grate	170,612
White, S., Hose coupling	170,457
Whitehouse and Hunt	170,441
Whiteley, W. N., Harvester rake	170,613
Whiting, J. L., Apparatus for securing handles to brushes	170,500
Wiestling, G. B., Dumping cart	170,654
Williams, D. T., Grist alarm	170 614
Witter, H. M., Loom for weaving webbing	170,458
Wolfy, L., Car starter	170,459
Young, J. A., Ventilating and heating furnace	170,615
Zimmerman, P., Machine for flaring and crimping lamp chimneys	170,616

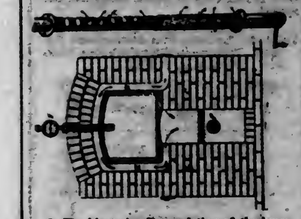
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED NOVEMBER 30, 1875.

170,480. FURNACES FOR HEATING STEEL IN THE PROCESS. John H. Armstrong, Guelph, Canada. [Filed Apr. 6, 1875.]

Brief.—The blast-pipe consists of an inner and outer tube, the former being perforated spirally, while in the outer tube like perforations are in a right line. By rotating the latter the blast is regulated. Flame conduct the heated products of combustion around the central chamber.



1. The blast-pipe F, consisting of the inner pipe F', perforated with the spirally-arranged holes *f'*, in combination with the outer pipe F', perforated with the holes *f*, arranged and operating substantially as described, and for the purpose specified.

2. The frame H, consisting of the frames H', constructed to leave a margin of brick-work between the inner edge of the furnace and retort openings, and the rim-floor H², fitted in with fire-brick A, arranged and operating substantially as described, and for the purpose specified.

170,481. TOOLS FOR FLANGING AND CHANGING LAMP-CHIMNEYS, &c. Thos. B. Atterbury, Pittsburg, Pa., assignor to Dilbridge & Co., same place. [Filed Nov. 13, 1875.]

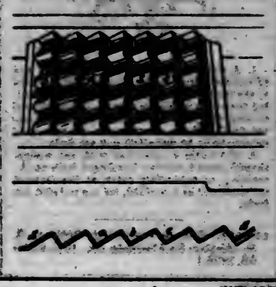
Brief.—To obviate the crushed formation of the article by the ordinary flanging further on one side of the mold than the other, the bottom edge is scalloped.



1. The former A, made with a step, *b*, for shaping tubular glassware, substantially as described.

2. The former A, made with separated projections, which form a step, *b*, for forming and shaping tubular glassware, constructed and adapted, to operate substantially as described.

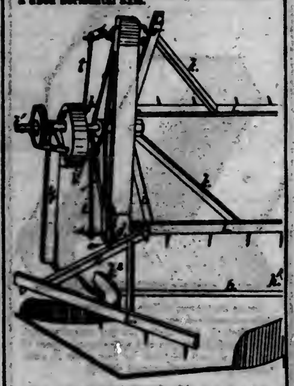
170,482. WASH-BOILER. Wm. H. Berger, Pittsburg, Pa. [Filed July 17, 1875.]



A new article of manufacture, consisting of a wash-board having its metallic covering or rubbing-surface formed to constitute a series of transverse angular grooves, *a b c*, the sides of said grooves being inclined and projected to each other so as to represent two sides of a tuniform triangle, the broad side *c* of which is stamped or pressed into a series of curved elevations and depressions, *d*, extending completely across the side, producing therein a wavy surface, leaving the surface of the opposite or narrow side *f* of each groove smooth and plain, substantially as shown and set forth.

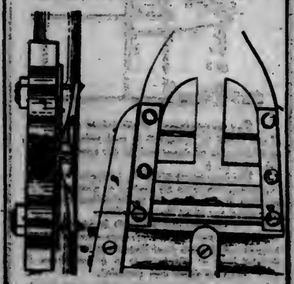
170,483. HARVESTER-RAKE. Harry H. Bettendorf, Jr., Latrobe, Pa. [Filed Aug. 4, 1875.]

Brief.—A horizontal curvilinear motion is communicated to the rake, whereby the grain is swept from the platform by means of an oscillating crank operated by a cam and link. The oscillating crank and another link, governing the motion of the rake, revolve about a fixed horizontal axis.



The combination of the cam-groove plate 6, rods 1 4, arms *d*, links 5, rock-shafts *f*, swinging arms 7 E, and rakes 14, substantially as and for the purposes herein specified.

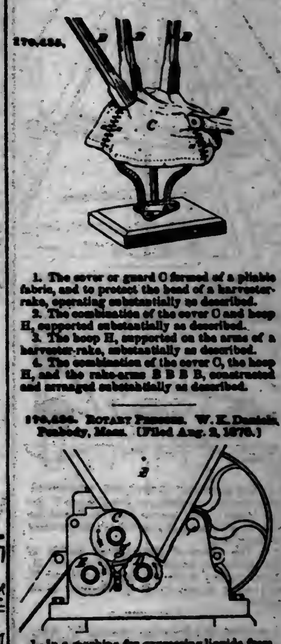
170,484. TONGUE-SUPPORTS. H. H. Briggs, Olmsted, Ohio. [Filed Aug. 4, 1875.]



In combination with the tongue C and bands D of a wagon, the bent spring I, bolts G, bottom 6, and lugs 5, as shown and described, and for the purpose set forth.

170,485. HARVESTERS. Samuel P. Gamble, Pennsylvania, assignor to John F. Adelman, Poughkeepsie, N. Y. [Filed July 31, 1875.]

170,486. [illegible]



1. In a machine for expressing liquids from solids the combination, with the bridge F, of a fluting-in roll or rolls constructed with longitudinal grooves or corrugations, serving to force and keep an even feed, and with transverse or spiral seams or grooves, serving to allow the escape of the expressed liquids between the rolls and bridge, substantially as shown and described.

2. In a machine for pressing liquids from moist or wet substances, the combination with the solid bridge H, located as described with reference to the feeding-roll D, and to the upper discharging-roll B, of the rolls C, D, and E, having the described relative differences in circumference, and the described relative position of their axes, but having each the same surface velocity when in action, all as and for the purposes set forth.

170,487. RADIUS-BOARDS APPARATUS. John R. Davis and James R. Mills, Bloomfield, Iowa. [Filed May 6, 1875.]

Brief.—The folding derrick is of ladder form, and carries adjustable parallel bars, which sustain a rotating collar in two parts for guiding the auger-shaft. The tubular shaft-guide is double, so that a very long auger-shaft can be used by one coupling only.

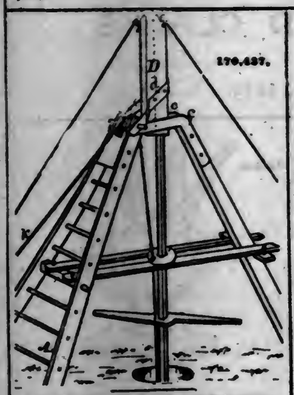
1. The folding derrick for well-augers, composed of ladder-form part A A, carrying the adjustable parallel bars *f f* on the shaft *g*, and the post C, carrying the bar L, and hinged to the inner of the part A A by means of the elbow-form plates *z z*, substantially as and for the purposes shown and described.

2. The tubular double-barreled shaft-guide D, in combination with a derrick for well-augers, substantially as and for the purposes shown and described.

3. The sectional and divisible rotating collar and shaft-guide G, having dowel-pins 14, carrying anti-friction rollers *r r*, substantially as and for the purposes shown and described.

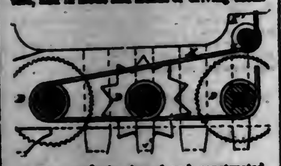
170,488. [illegible]

170,437.



170,438. HARVESTERS. Jean P. Dubuysson, Milton, Cal. [Filed Sept. 1, 1875.]

Brief.—Improvement in bars for rotary cutters, and in mode and means of driving them.



1. The peculiarly shaped and constructed cutter-frame, consisting of lower frame C, the top frame I, with narrow recesses F, and the slide L, with holes H', the whole substantially as described.

2. The means of transmitting motion to the cutters D, consisting of endless belt M, driving-pulley B, the pulleys B, B', E, and F, and spring O, the whole substantially as described.

170,439. TOY PISTOLS. George W. Eddy, New Britain, assignee of one-half his right to Chas. B. Stevens, Granby, Conn. [Filed May 14, 1875.]



1. In a toy pistol the hammer C, having the projection h, in combination with the trigger G, so arranged that the trigger is thrown forward by the cocking of the pistol, substantially as and for the purpose specified.

2. The trigger or bar G, extended above the bolt, in combination with the barrel B, substantially as and for the purpose herein set forth.

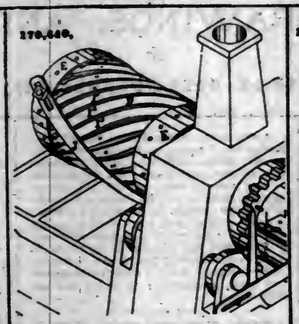
3. The combination of the barrel B with interior anvil i, and the extended trigger G, with nipple A, constructed to operate substantially as and for the purposes herein set forth.

4. The combination, in a toy pistol, of the hammer C, having projections d h, the spring D, and extended trigger G, provided with projections i e, all substantially as and for the purposes herein set forth.

170,440. SEEDERS. L. Fitzpatrick, Wheeling, W. Va. [Filed July 14, 1875.]

Brief.—The body of the sower is made up of slats, which are pivoted at their ends to rings or supports, adjustment of the relative position of which regulates the escaping spaces between the slats. A bar extended across the sower, and pivoted at one end, and slotted and screw-bolt at the other, governs the sower in adjusting.

170,440.



A cylinder-sower, D, composed of adjustable slats F F F, pivoted to end rings E E, and operated by hand or brace J, substantially as shown, and for the purposes herein set forth.

170,441. LOOM-BOXES. Francis W. Hunt, East Orange, and William A. Whitehouse, Newark, N. J. [Filed Mar. 3, 1875.]



As an improved article of manufacture, the herein-described lunch-box, consisting of the receptacle B, provided with the compartment F, adapted to receive the cylindrical vessel C and cup p, and covered by the slide S, substantially as described and shown.

170,442. GIN-HOUSES. G. W. Hunt, West New Brighton, N. Y. [Filed Apr. 10, 1875.]



1. The arrangement of the joints of motion of the trunk H, bracer B B, and cross-piece F, substantially as described in my specification, viz., in Fig. 4.

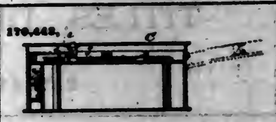
2. The projecting trunk H, swinging or turning horizontally on an axis at or near the supporting frame-work, in combination with the traveling car C or the equivalent.

3. The support and hinge O, in combination with the trunk H, the arrangement of these hinges being such that lines from the vertical axis of P to P' and from O to P and from P to P' shall be equal and parallel.

170,443. WATCHMAN'S TIME-DETECTOR. Wm. Inbusch, Brooklyn, N. Y. [Filed Aug. 14, 1875.]

Brief.—To guard against dishonest watchmen, who open the case and mark the dial without going their rounds. Provides the time-detector with an additional blacker, which marks the dial whenever the case is opened.

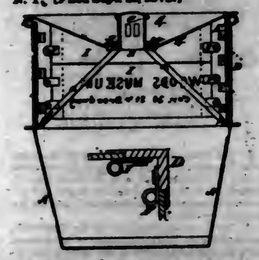
170,443.



1. In a watchman's time-detector, the combination of the lid C with the stationary pin e and rotary dial B, all arranged so that the pin e will mark the dial whenever the lid is opened and closed, to detect the picking of the lock that closes the lid, substantially as specified.

2. The spring-rod d, carrying the pin e, and combined with the catch g on the lid C, to operate substantially as herein shown and described.

170,444. ILLUMINATING APPARATUS. William A. Lillendahl, New York, N. Y. [Filed Sept. 21, 1872.]



1. The reflecting-flaps G, hinged to the center-piece E, and resting at their outer edges upon the bars E, substantially as and for the purpose specified.

2. The illuminating-reverberating device, provided to frame A of the lamp, and comprising the rabbeted corner-pieces, the battered glass panes, the buttons F, and the reflecting-flaps G, hinged to the center-piece E, substantially as and for the purpose specified.

170,445. WELL-AUGERS. Francis A. Montgomery, Baton Rapids, Mich. [Filed Aug. 21, 1875.]

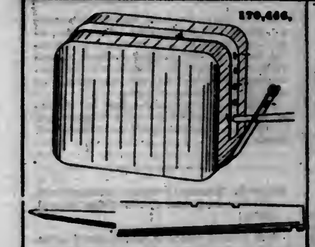


1. A well or earth auger composed of the cylindrical casing A, provided with the cutters b, the central tube B, the spiral flange D, having the valve G' hinged thereto, and a straight cutting-edge, the spiral leaf E, and easy auger-bit drill-point I, all arranged and operating substantially as described and set forth.

2. The worm J, provided with the wedge-shaped point f, curved downward with an increasing or expanding pitch, in the manner substantially as described, for the purpose set forth.

170,446. DEVICE FOR RAISING CATTLE. S. H. Murphy, New Orleans, La. [Filed Oct. 28, 1875.]

170,446.

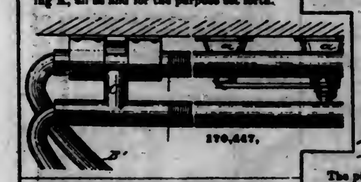


The mode of tightening bands on bales by means of slots on each end of the band, and a lever notched on opposite sides, inserted with its slots on said band, and constructed in the manner described.

170,447. CALENDER-ROLLERS. Chas. Mudsey, New York, N. Y. [Filed May 12, 1875.]

Brief.—Levers to which the operating mechanism is connected are reciprocated by the expansion and contraction of metallic tubes.

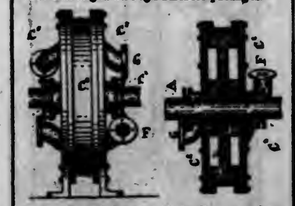
The pipes A B and connection C, in combination with the lever-connection D, and the levers and the pipes, provided at one or both ends with the flexible tubes V D' and covering E, all as and for the purpose set forth.



170,447.

170,448. ROTARY PUMPS AND BLOWERS. R. Patrick, Brockton, Canada. [Filed Aug. 17, 1875.]

Brief.—The cylinder or disk, mounted on a revolving shaft, has sliding blades parallel with its axis, which blades, acting in combination with cams projecting from the inner faces of the disk-containment, produce a perfect or partial vacuum in the chambers between the blades. Into these the fluid or gas is forced by a law of nature. As the disk revolves, the fluid, &c., is carried forward by the blades, and discharged through suitable passages.



The flanged disk or cylinder B, mounted on the revolving shaft A, and provided with the radially-placed sliding blades E, in combination with the side plates C', provided with the inwardly-projecting alternately-arranged cams D, inlet-ports F F, and discharge-ports G G, arranged and operating substantially as and in the manner set forth.

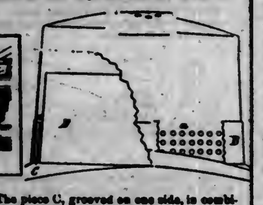
170,449. ROLLER-MILLS. C. H. Perkins, Providence, R. I. [Filed Jan. 13, 1874.]

Brief.—The guards are placed so as to bridge over and inclosure on all sides, with the exception of an opening for the passage of coals, the space between any two contiguous pairs of rolls placed alternately vertical and horizontal, and the cap and screws are for adjusting the roll centres.

1. The combination of the guards a with rolls having rolling faces or grooves in a portion thereof, which is of greater diameter than that of their shafts, arranged in pairs alternately horizontal and vertical, substantially as described.

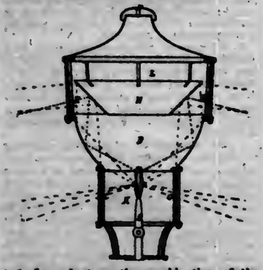
170,450. HAT-VENTILATORS. N. I. Rose, New York, N. Y. [Filed Jan. 13, 1875.]

Brief.—Perforates the band and portion of side crown covered by it, so as to admit air into the grooved piece interposed between the side crown and imperforate sweat-leather.



The piece C, grooved on one side, in combination with the hat band B, perforated body A, and imperforate sweat-leather D, as and for the purposes specified.

170,451. LANTERNS. Edward S. Ritchie, Brookline, Mass. [Filed May 22, 1875.]



1. In a lantern, the combination of the paraboloidal or bowl-shaped or conical reflector D and the auxiliary reflector H, or reflectors, arranged to operate together and with the burner A, substantially as specified.

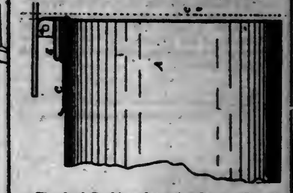
2. The lantern provided with separate light-diffusive chambers K L, the intermediate paraboloidal or bowl-shaped reflector D, and the auxiliary reflector H, all arranged as, and, with the burner A, substantially as, explained.

170,452. POTATO-DIGGERS. Nathan. Rose, Richmond, Mich. [Filed Aug. 4, 1875.]

Brief.—The machine, as usual, is mounted upon two wheels. The digger is vertically adjustable, and delivers the potatoes and soil upon an endless revolving sieve, whereby the soil is separated and the potatoes delivered into a box.

1. In a potato-digger, the combination of the driving-wheels B, provided with half-clutch boxes, the gears C, provided with half-clutch boxes, the spring D, the lever E, the arms F, the horizontal lever e, and the pinions H upon the transverse shaft h, all operating together as and for the purposes described.

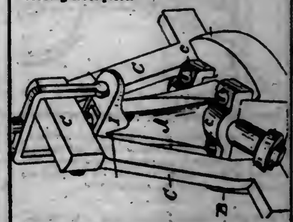
170,453. CAMERA-SCREENS. Jas. F. Ryder, Cleveland, Ohio. [Filed Oct. 4, 1875.]



The leaf B, hinged to the fingers C and spring E, in combination with a camera-tube, A, substantially in the manner as described, and for the purpose set forth.

170,454. MILLSTONE-DRIVERS. Wells B. Sergeant, Pine Island, Minn. [Filed Sept. 18, 1875.]

Brief.—The bail is hung on a pivot and locked to the driving-shaft, between rigid shoulders and a bent shaft, so as to make the stone self-adjusting. The damsel-shaft is also made self-adjusting, by having its forked end provided with shoulders, and resting on a rocking cross-piece.

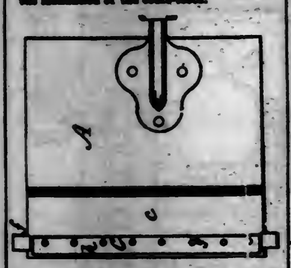


1. A millstone-driver, consisting of the body or stem A, provided with the shoulders B, and having the shaft D, with or without the roller c, mounted thereon, in combination with the bail C, all constructed to operate substantially as described.

2. The spindle A, provided with the shoulders c, in combination with the cross-bar I, arranged to rest and rock on the shoulders c, in combination with the forked spindle B, provided with the shoulders f, and loosely connected to the bar I, all constructed and arranged to operate substantially as described.

170,656. COMBS-COMBING. M. L. Simonson, East Bush, N. Y. [Filed Feb. 11, 1875.]

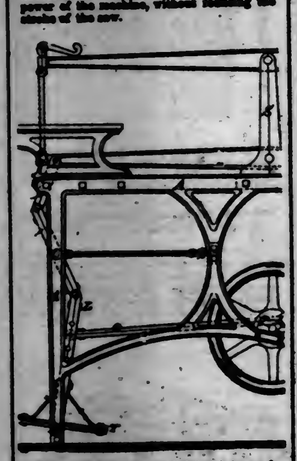
Brief.—The back of the comb is provided with an offset, upon which is a pivoted comb for combing the mane. This offset changes the inclination of the comb-teeth.



The back A of a curry-comb constructed with an angular offset, a, and blocks f f at the sides of the same, in combination with the tooth-bar C, pivoted in the blocks f upon the said angular offsets, substantially as herein shown and described.

170,657. SCROLL-SAWING MACHINES. Fred. D. Smith, Davenport, Iowa. [Filed May 12, 1875.]

Brief.—The pitmen, which forms a direct connection between the treadle and the inner end of the lower arm of the saw-frame, is composed of three toggle-jointed levers, the middle one connected to the main frame by a rocking lever, and the lower one to a crank-shaft carrying two fly-wheels by a connecting-rod, for the purpose of reducing the angle of deflection of the levers, and increasing the power of the machine, without reducing the stroke of the saw.

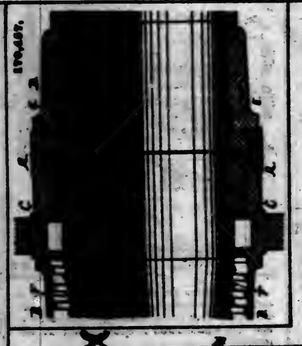


The combination of toggle-jointed levers I, D', and D in combination with the rocking lever c, treadle T, connecting-rod e, and crank-shaft c, substantially as and for the purpose set forth in the above specification.

170,657. HORSE-COUPLERS. S. White, Providence, R. I. [Filed Feb. 27, 1875.]

Brief.—Couplers inner expansible hooks for checking the lines made with outer hooks and with the male and female parts of the coupling-cover.

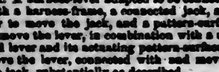
In a horse-coupling, the combination of the following instrumentalities: the collar D and male screw C, cast in one piece, the swivel A and collar B, cast together, and the hooks H and F, all constructed and arranged for operation, substantially as and for the purpose specified.



170,659.



170,658. LOOMS FOR WEAVING WIRE-CLOTH. Henry M. Witter, Worcester, Mass., assignor to George Crompton, same place. [Filed Oct. 6, 1875.]



1. A harness-lever adapted to be connected with a harness-frame, a connected jack, a lever to move the jack, and a pattern-cam to move the lever, in combination with a second lever and its actuating pattern-cam to move the lever, connected with and moving the jack, substantially as described.

2. A harness-lever, adapted to be connected with a harness-frame, a connected jack, two jack-operating levers, and two cams or pattern-cams for actuating the jack-levers, in combination with a lever-controlling pattern, substantially as described.

3. A lever and pins or protuberances on a pattern-surface, for actuating it, in combination with a second lever, provided with a slotted end, and adapted to raise the former lever, and with pins or protuberances for raising, and a pattern-surface for controlling, the slotted end of the latter lever, substantially as described.

4. The combination of harness-operating mechanism controlled by pattern-surfaces adapted to form spaces in warps to receive a tubular fabric, with harness-operating devices adapted to move a harness-frame provided with binding-warp, and with mechanism to move the lever controlling such binding-warp harness-frame, whereby a binding-warp may be introduced into one or both sides of the tubular part, to permit the fabric to remain as a tube, or to connect the regularly-woven sides to form a solid fabric, substantially as described.

170,659. CAR-STARTERS. Lewis Wolfley, New Orleans, La. [Filed Dec. 17, 1873.]

1. In combination with ratchet B, upon a car axle, O, a draw-bar, D, provided with pawls a c, which, with a motion of the bar in one direction, ride freely over the ratchets, and drop by gravity into such a position as to engage with the ratchets when the bar is drawn forward, substantially as set forth.

2. The bar D, provided with flexible pawls a c, secured in sections b b, adjusted to permit the pawls to yield in one direction by turning, and to prevent yielding motion in the opposite direction by the shoulders of the sections against which they bear, substantially as and for the purposes set forth.

3. The combination of the draw-bar D bearing the engaging-pawls a c, the chain or cord J, and shaft F, substantially as set forth and shown.

170,660. BREAST-CUTTERS. Alexander F. Ashbourner, Oakland, Cal. [Filed May 12, 1875.]

The molding-board A and recessed cross-bar C, in combination with the hinged cutter-holder B and cutters D, provided with pivots e and spring F, all constructed to operate substantially as and for the purpose set forth.

170,660.

170,661. STRAIGHTENING-MACHINES. Jas. S. Atkinson, Pittsburg, assignor to Benj. F. Jones, Allegheny, Pa. [Filed Aug. 2, 1875.]

Brief.—The rests are adjustable up and down in the rest-blocks through the means of sliding wedges, which are connected with the head and move therewith, as do the rest-blocks. The shaft is tested resting upon the rollers, one set of which is adjustable upon the frame.

170,662. GAMES. Erastus B. Bartow, New York, N. Y., assignor to E. and H. T. Anthony & Co., same place. [Filed Nov. 8, 1875.]

The combination, with the plate-holder carriage and ledge or sill a, of the rollers e below that sill, and the rollers f at the back of the carriage, substantially as and for the purposes set forth.

170,663. TROUSERS. Stephen M. Bayard, Louisville, Miss. [Filed Apr. 7, 1875.]

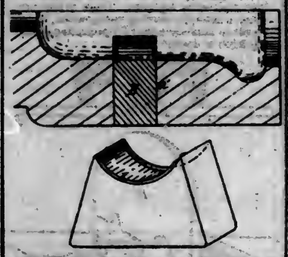
Brief.—A peculiarly-arranged compression-buckle adjusts the pressure of the pad.

1. The combination and arrangement of the flexible belt A with elastic web B and the compression-buckle K, substantially as described, and for the purposes set forth.

2. A compression-buckle of the form described, when used in combination with elastic webs, for the purpose of increasing and applying its force upon a buttock pad, substantially as described.

170,664. MOLDS FOR GLASSWARE. Benj. Bakewell, Jr., Pittsburg, Pa. [Filed Nov. 5, 1875.]

Brief.—The plug for producing words, figures, &c., upon the glass article is countersunk or recessed at the inner junction formed by it and the mold, so that a border is produced on the lines where the mold-mark would otherwise occur.



The combination of the mold and interchangeable plug, recessed upon the inner surface at the junction of the two parts, substantially as and for the purpose specified.

170,665. BOOT-TREES. George W. Badger, Malden, Mass., assignor to George P. Cox, same place. [Filed Oct. 26, 1875.]

In a boot-tree for vulcanizing rubber boots, the foot-piece A, provided with the nut A, secured within the foot, and surrounded with wood on all sides, as and for the purpose described.

170,666. MILKING-PAILS. Alfd. M. Bailey, Middlefield, Conn. [Filed Mar. 2, 1875.]

Brief.—A milk-pail of telescopic construction, the inner and upper section carrying the cover, upon which an inclined induction-spout is seated, a window near its upper end, and a filter at its delivery into the pail.

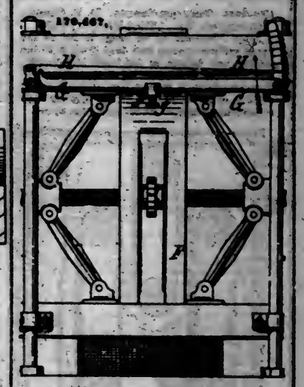
1. The hood C, inclined as shown, to shield the milk from falling dirt, having the vertical induction-port K, in combination with, the cover B and pail A, as and for the purposes herein specified.

2. The window d, in combination with the hooded attachment B C and pail A, as described.

3. The hooded attachment B C, the former having the deep rim b, adapted to slide within the pail A, as and for the purposes specified.

4. The milk-pail cover herein described, consisting of the part B, the hood C, with its vertical induction-port K and window d, the strainer a f g, and the extended flange b, as and for the purposes specified.

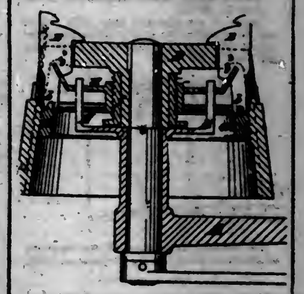
170,667.



2. The combination, with the lever G and the head or foot block A, of the bearing f and adjusting-screw g, for the purpose of adjusting the pointer to the zero-mark, as herein described.

170,668. KNITTING-MACHINES. Wm. W. Burson and John Nelson, Rockford, Ill., assignors of one-third (both right to Ralph Emerson and Wm. A. Talcott, same place. [Filed June 10, 1874.]

Brief.—The hooks, which alternate with the needles, and serve to prevent the loops from moving therewith, and obviate the necessity of a weight upon the fabric, are successively swung radially by an adjustable cam as the needles reciprocate, so as to prevent undue strain upon the yarn. The cam which operates the hooks is self-adjusting, so that the latter shall operate in proper relation to the needles, whichever way the machine turns.



1. A series of swinging hooks alternating with the needles of a knitting-machine, and operated concentrically for the purpose of keeping the fabric from being carried forward or back by the needles, and of pressing the loops down close to the needles and causing the same to be properly shed when the needles are drawn back.

2. The swinging hooks B, alternating with the needles in a knitting-machine, in combination with cam R, with inclined sides d, to adjust the pressure of the hooks upon the yarn, the whole operating and constructed as shown and described.

3. The swinging hooks B, combined with cam R, provided with slots d' d, to enable the projection c to retain its position relatively to yarn-carrier in whatever direction the machine may be moving.

4. The swinging hooks B, in combination with the adjustable ring C and cam R, constructed as shown, and for the purposes described.

5. The flapping-cam I, when constructed and arranged as described and shown, and for the purposes specified.

1. In combination with the frame of a straightening-machine a head, adjustable thereon, a plunger, and two rests, substantially as and for the purposes set forth.

2. In combination with a head, D, a rest, a, on each side, both simultaneously adjustable up and down by a single motion, substantially in the manner and for the purposes set forth.

3. The rest-blocks a', each adjustable on a frame, A, to and from the head D, and connected with the head, so as to be moved therewith, substantially as and for the purposes set forth.

4. The combination of vertically-adjustable rests a and rollers r r', arranged on the same frame relatively to each other and to the shaft to be straightened, substantially as and for the purposes described.

5. In combination with a sliding head, D, and endless chain a cam or eccentric, arranged between the lengths or folds of the chain to lead either way, and thereby reverse the motion of the head-block, substantially as set forth.

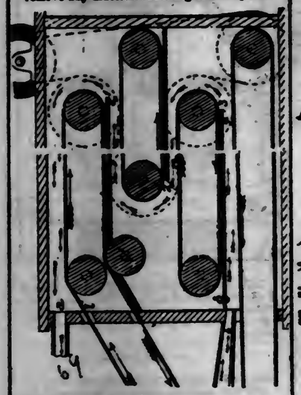
6. In a straightening-machine the bearing-rollers r r, adjustable lengthwise of the machine and along the shaft which drives them, substantially in the manner and for the purposes described.

7. The head-wheel c', in combination with a shaft to transmit motion to the rollers r, and a line of gearing to drive the chain, substantially as set forth.

HELIOTYPE RELIEF PROCESS JAMES R. OSGOOD & Co. BOSTON.

170,469. TOBACCO-DRIERS. D. B. Chezin, Covington, Ky. (Filed Mar. 31, 1875.)

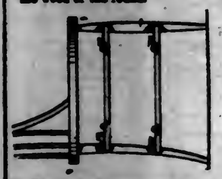
Brief.—Tobacco to be dried is fed to the upper endless apron, and falls from it to the second, and thence to the third and fourth, which carries it out of the drier. The partitions constitute a zigzag flue, through which a blast of air is driven. They also serve to remove any material adhering to the aprons.



The combination, in a tobacco-drier, of the series of alternating horizontal partitions *e*, *f*, and *g*, the alternating endless traveling aprons, the upper feed-apron passing through the casing of the drier, and the lower carrier-apron passing through the casing of the drying-chamber, the whole being constructed for operation substantially as described.

170,470. CHAIR-FASTENINGS. Leo D. Craig, Oakland, assignor of one-half his right to Charles Miller, San Francisco, Cal. (Filed July 24, 1875.)

Brief.—A wrought-iron loop, with a bent end, to be laid in the mortise before the round is inserted, when its outer end is driven into the wood of the round.



The fastener A, constructed and operated substantially as and for the purposes set forth.

170,471. POLE-STRAPPING. S. B. Crocker, Fitchburg, Mass., assignor to himself and S. S. Dow, same place. (Filed Sept. 21, 1875.)



As an improved manufacture, the described single-plate pulp-screen, having each series of its slots to extend at a right angle with each of the bordering or bounding ends without opening into such, whereby fibers of pulp, &c., by extending across a slot or slots of one series, may be prevented from being removed, and, after passing upon the next series of slots, so much thereof as is readily to be screened through, all being substantially as represented.

170,472. FASTENERS FOR THE MEETING-RAILS OF SASHES. Jos. R. Dowson, Dayton, Ohio. (Filed May 11, 1875.)

Brief.—A pair of semi-elliptical or cam-shaped bearing-plates are attached, one to the top of each meeting-rail, and combined with them is a pivoted and notched swinging latch, which, when turned, overlaps the edges of the plates, acting as a clamp to draw and bind the sashes together. There is also provided a laterally-moving spring-catch, which serves to hold the upwardly-projecting swinging latch in desired position.

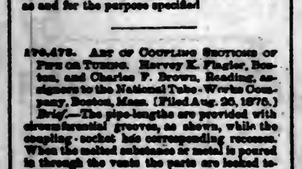


The pivoted and notched swinging latch B, arranged as described, in combination with the semi-elliptical or cam-faced bearings A and B, and the spring-latch G, substantially as and for the purpose specified.

170,473. ARC OF COUPLING SECTIONS OF PIPE OR TUBING. Harvey K. Flagler, Boston, and Charles F. Brown, Reading, assignors to the National Tube-Works Company, Boston, Mass. (Filed Aug. 26, 1875.)

Brief.—The pipe-lengths are provided with circumferential grooves, as shown, while the coupling-socket has corresponding recesses. When the melted substance or metal is poured in through the vents the parts are locked together.

In a pipe-coupling, the annular molds C C, located between the socket A and the inclosed peripheries of the lengths B B on each side of the joint of the lengths, each mold being composed of an annular recess or half-mold, 1, made in the interior of the socket, and a coincident annular recess or half-mold, 2, made in the inclosed periphery of one of the lengths, the molds being provided with vents D, and rendered tight by the contact of the socket with the peripheries of the lengths on each side of the molds, and thus adapted to receive and retain a fused substance when the pipe is laid horizontally.



170,474. CORNICE-FASTENER. Alex. Hearst, Peoria, Ill. (Filed Sept. 7, 1875.)



1. The frame F, provided with the ledges *g* and openings A, in combination with the sashes and valves a, constructed and operating substantially as set forth.

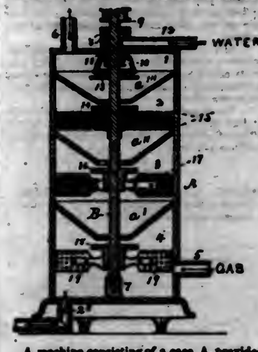
2. The combination of the frame F, provided with the ledges *g* and cup B, provided with the opening *f*, with the valves a, substantially as specified.

3. The combination of the cup B, provided with the pins or studs *c* and valves a, provided with the pins or studs *d*, with the springs *p*, substantially as and for the purposes specified.

4. The combination and arrangement of the frame F, valves a, cup B, and springs *p*, with the box A, plate D, and slide C, and bed-plate B, all constructed and operating substantially as set forth.

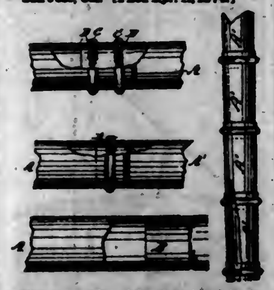
170,475. COMBINED SCRUBBERS AND CONDENSERS FOR ILLUMINATING-GAS. Thos. C. Hopper, Philadelphia, Pa. (Filed Nov. 8, 1875.)

Brief.—The wash-water enters at the top through a seal-cup, and passes down through the perforated disks and beaters, while the gas passes up. The disks and beaters are secured to a central shaft and revolve with it.



A machine consisting of a case, A, provided with inlet and outlet pipes, for gas and water, respectively, and a series of communicating chambers, separated by partitions *a' a'' a'''*, in combination with a rotary shaft, B, carrying several series of beaters, 10 17 18, and disks 13 14 16 18, substantially as and for the purposes hereinbefore described.

170,476. PIPE-JOINTS. Byron Jennings, San Jose, Cal. (Filed Apr. 11, 1874.)



The combination of the pipes A and A', the former provided with corrugations C C, and the latter with corrugations D D, forced into the corrugations C C, for the purpose of forming a joint, substantially as shown and described.

170,477. COVERS FOR WATER-COOLERS, &c. Edgar B. Jewett, Buffalo, N. Y. (Filed Nov. 1, 1875.)

As an improved article of manufacture, a combined cover, waste-water receptacle, tumbler-stand, and drain-pipe, consisting of the cover-top A, having the knob B centrally in its apex, surrounded with an annular depression or gutter, C, of a curved or concave transverse section, provided with perforations D, and the bottom E, having its rim sunk below its horizontal edge, the parts being united substantially as described.



170,478. CORN-SHELLS. Michael Kelly, New York, N. Y. (Filed Oct. 28, 1875.)

Brief.—A ring of soap is covered with oil-silk. A piece of the silk also extends across the central opening of the pad.

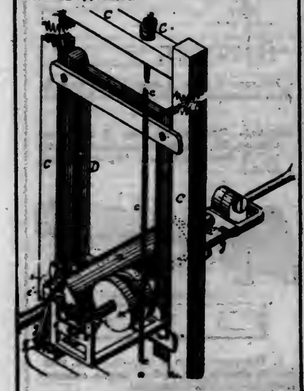
1. An annular pad, having a body of soap or other plastic or semi-plastic material, and having a covering envelope of oiled silk entirely inclosing the same, substantially as set forth.

2. A pad, having a rim of soft material, A, and a thin extension or webbing across the central space, and an envelope, B, entirely covering the material A, as herein specified.

3. The within-described pad of soap or analogous semi-plastic material, completely enveloped in strong and adhesive tissue or covering, with the stitching, gluing, or analogous confining means C, as herein specified.

170,479. ROCK-DRILLING MACHINES. A. Kirk, Pittsburg, Pa. (Filed Nov. 12, 1875.)

Brief.—Within the main frame is pivoted a secondary frame, the lower end of which has freedom to swing toward and from the rock to be drilled, and within said swinging frame is arranged a sliding frame, which carries the drilling apparatus.



1. In combination with a drill, the derrick B, swinging frame C, and adjustable frame D, provided with the friction-pulley and rope, or similar device for operating the frame, substantially as specified.

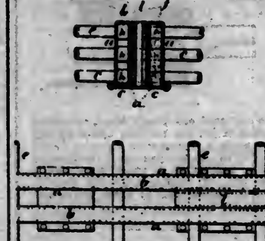
2. In combination with the drill-cylinder and its swinging and sliding frames C D, a friction-roller, *d'*, substantially as and for the purpose specified.

3. The combination of the frame D, rod *g* and its crank-arm, pinion *e'*, and pawl *a*, substantially as and for the purpose specified.

4. The combination of the spool or drum *e'*, rope *c*, and spring C', or equivalent weight, substantially as set forth.

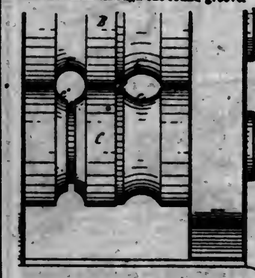
170,480. GAS-PLATFORMS. R. J. La Motte, New York, N. Y. (Filed Oct. 11, 1875.)

The transom-beam of a car-platform, made of plate-iron, with the metal tubes or rods *a* of the platform running through the sides *a a* of such transom-beam, substantially as set forth.



170,481. MANUFACTURE OF CLEVIS-PINS. William J. Lewis, Pittsburg, Pa. (Filed Oct. 23, 1875.)

Brief.—The rod is first passed through the oval and then through the round groove.



1. As an improvement in the manufacture of clevis-pins, the combination of the following steps: first, rolling a rod or bar with a longitudinal web or fin; and, secondly, shearing up the blank to form the head of the pin, and cutting off or swaging in those portions of the web not required in finished article by means of suitable dies, substantially as specified.

2. The rolls B C, provided with the grooves *b c d*, substantially as specified.

3. The rolls B C, provided with the grooves *b' c' a*, substantially as and for the purpose specified.

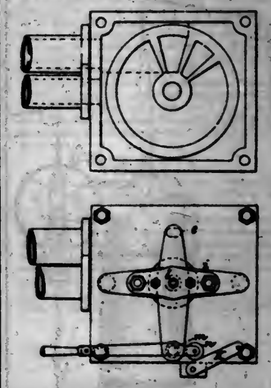
170,482. HEATING-DRUMS. John S. Lewis, Bluport, Iowa. (Filed Oct. 7, 1875.)

Brief.—The air from the ovens can be drawn down through the central openings.



170,483. CUT-OFF VALVES. W. F. Martin, Philadelphia, Pa., assignor of one-half his right to S. Gilbert, same place. (Filed July 14, 1875.)

Brief.—The valve is attached to the connecting-rod of the engine through intermediate mechanism, which is arranged with reference to an arm, the position of which is controlled by the governor to cut off steam at any desired point of the stroke of the piston.



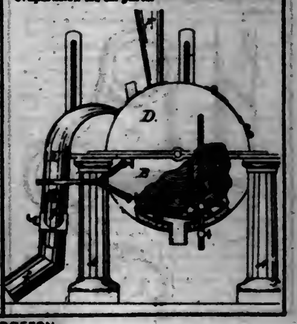
1. In combination with the valve B, as described, the stem F, to which is attached the cross-arms G H, connected by the bars *e f*, and the independent stem *g*, supported by the frame h, clamp i, and set-screws k and l, substantially as shown.

2. As means for supporting the independent stem *g*, the frame h and clamp i, provided with the set-screws k and l, substantially as specified.

3. In combination with the bar *f*, in which is formed the pin *n*, the rod I, fitted with the roller *n*, and movable finger K, actuated by the governor, substantially as and for the purpose set forth.

170,484. EVAPORATING-PANS. Alfred W. J. Mason, New Orleans, La. (Filed Apr. 26, 1875.)

Brief.—The pan is steam-jacketed, with pipes to carry off the vapor of condensation. Either hot or cold air is injected. Revolving disks operate within the pan to keep the juice from carbonization, and to admit of equal evaporation for all parts.

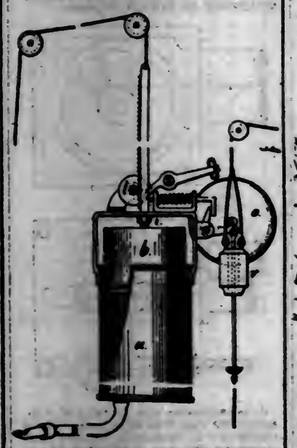


1. In combination with an evaporating-chamber, a pipe, E, having its mouth fastened to provide a narrow discharge, the width of which is nearly equal to the length of the vessel, and an escape-tube, F, the whole being constructed for delivering currents of air into an evaporating-pan for escaping the exciban of the liquid and expelling the evaporations thereof, substantially as described.

2. The pipe E F, cover D, pan B, provided with pipes a b, and revolving disks d, the whole being constructed and combined to operate, substantially as described.

3. The cover D of an evaporating-pan, pipe E, and air-entrance c f g, the whole being combined to operate substantially as described.

170,686. CHECKED PIPE AND BUNGLAR ALARM. Chas. A. Maxfield, New York, N. Y. (Filed May 10, 1875.)



1. The air-cylinder a and weighted piston b, in combination with the whistle c and the alarm-ball e, operated by the movement of the piston, substantially as set forth.

2. The combination, with the air-cylinder, weighted piston, and alarm, of a cord, g, weight e, and disconnecting mechanism, as set forth, so that the alarm is given by the weight, if the string or cord is turned off, as set forth.

170,687. SELF-CLOSING HINGE. Charles A. Miller, Urbana, Ohio. (Filed Aug. 30, 1875.)

Brief.—A metal ball is introduced into and confined within an enlarged head or knuckle of the hinge, and a spirally-grooved plate passing through the grooved and chambered knuckle, a channel or way is formed, up which the ball rolls; the construction being such as to insure friction, and provide for automatically self-closing hinge by the force of gravity alone.

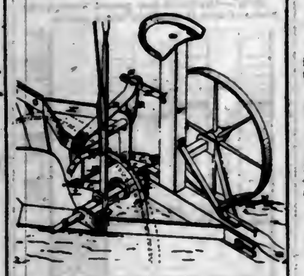




An improved self-closing hinge, consisting of plates H H', one carrying the projecting pin or plate A, having a spiral groove, C, and the other an enlarged and spirally-chambered head or knuckle, E, in which is confined a metal ball, D, running upon the grooved plate, all substantially as herein shown and described.

170,688. SULKY-PLOWS. George Moor, La Fayette, Ore. (Filed June 18, 1875.)

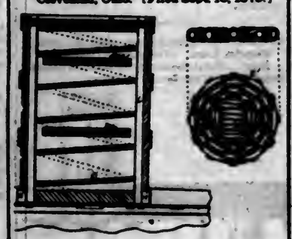
Brief.—The plow is held in a horizontal position at any depth in the ground or when raised. In connection with the yoke, devices for leveling the plow.



1. In a sulky-plow, the branched and curved plow-beam E, having the slots J' L, in combination with the rods J and K and the sleeve or spreader I, substantially as shown and described.

2. In combination with the axle and frame, the branched beam E, curved hangers D, pivoted bar F, arms G, and rigid lever A, whereby the plow is held or raised in a horizontal or level position, substantially as shown and described.

170,689. OIL-FURNACE. G. L. Morehouse, Cleveland, Ohio. (Filed Sept. 18, 1875.)



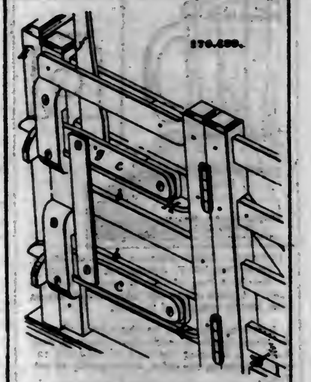
1. The spiral spring O, in combination with the cylinder N, substantially in the manner as and for the purposes specified.

2. The screw follower o', in combination with the solid follower m, spring O, and cylinder N, for the purposes herein specified.

3. In oil-furnaces, the toggle-joints or lever mechanism of the press, in combination with the cylinder N, spring O, disk m, and follower o, substantially as set forth.

170,690. FARM-GATES. Harold E. Mayers, Wythesville, Va., assignor to himself and Thomas L. Mayers, same place. (Filed Sept. 6, 1875.)

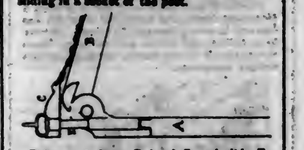
Brief.—Guards are secured to the under edge of the cross-bars, to which the latches are attached, and extend out flush with the outer surface of the latches, to prevent them being elevated by stock.



The guard H, in combination with the lifting-latch c of a gate, substantially as and for the purpose described.

170,690. CAR-STARTERS. James D. Pierce, Milwaukee, Wis., assignor of one-half his right to John B. Smith, same place. (Filed Sept. 10, 1875.)

Brief.—The raising of the end of a lever hinged to the top of the fulcrum-post has the effect of thrusting against the car a block sliding in a socket of the post.



Fulcrum A, lever B, head C, and slide E, all in combination, substantially as described.

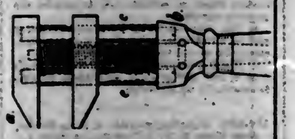
170,691. TELL-COUPLINGS. R. S. Porter, Ottawa, Ill., assignor of one-half his right to J. G. Gay, same place. (Filed Sept. 20, 1875.)



1. The combination of the axle-clip A, thill-iron D, strap G, and shaft or tongue, substantially as shown and described.

2. The combination of the thill-iron D, having shoulder d and notch c, with thread-strap G, substantially as shown and described.

170,692. WHIFFLETREE. Henry Fort, Stapleton, N. Y. (Filed Jan. 4, 1875.)



The round parallel rods c, uniting the socket b and jaw a, and open within the jaw d slides, in combination with the screw f, that passes through the socket b and jaw d, and the handle g that receives and is united with the top of the screw, as and for the purposes set forth.

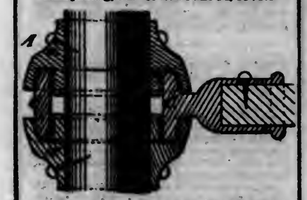
170,693. CHILDREN'S CARRIAGES. A. Rogers, Montpelier, Vt. (Filed Mar. 26, 1875.)

A carriage with adjustable top A, attached to the end of a jointed rod, C, by means of a ball-and-socket joint, substantially as and for the purposes set forth.

170,694. PROCESSES OF PRESERVING EGGS. Frederic H. L. O. Esco, Neuchatel, Switzerland. (Filed Nov. 4, 1875.)

The process of preserving eggs by coating them with siccative oils, substantially in the manner set forth.

170,695. CLOTHES-DRIERS. Thos. G. Saint-Sharpsburg, Pa. (Filed June 14, 1875.)



The combination of a clothes-drier hinge, A, provided with collars c c', lips d d', having groove b b', said groove being of a V or other shape, as above b, with circular or semicircular ring C, all constructed, arranged, and operating as shown and described.

170,696. MACHINES FOR THREADING SCREWS. Frank P. Sheldon, Providence, R. I. (Filed June 8, 1875.)

Brief.—Fingers on the end of a rocking and laterally-shiftable lever carry the blank up against a revolving screw-driver, which catches into the nick and turns the blank until the nick stands at right angles to the faces of the griping jaws, into which, by subsequent movements of the fingers, the blank is inserted. The revolving die is brought up to the blank, against the constant force of a spring, by a cam operating indirectly on the die-holder, and the latter carries a collar, adjustable, which, as it is carried backward and forward by the holder, strikes alternately two lugs that depend from a slidable bar, whose collar is, by means of levers, to alternately raise and lower two pins that pass through a cloth-lever blank, and that are acted on alternately by opposite sides of a double-faced cam, the effect being to throw the cloth to contact with oppositely revolving gear wheels, that impart rotation to the holder, and then reverse its motion.

1. The combination of the following instrumentalities for causing the nick in the head of a screw blank to be set in a given position before presentation to the holding jaws, viz: a suitable feeding mechanism for selecting blanks one by one, b, holding jaws E E, and a revolving blank turner, c, substantially as described.

2. The combination of the spring-fingers b, arranged to be capable of a sidewise movement, as described, with a revolving blank-turner, c, for enabling the screw-blank to become engaged with the blank turner, and afterward be disengaged therefrom, as specified.

3. The combination of the following instrumentalities for changing the backing-off motion, after the threaded screw is clear of the die, to the motion for threading the next blank, viz: an adjustable collar, M, partaking of the longitudinal movement of the die-holder, a shifting-clutch, I, operated by suitable mechanism, as described, and the revolving gear H', indexing, by suitable gearing, the requisite rotation for cutting the thread, substantially as specified.

4. The combination of a sliding bar, K, having one pinion F' L, as described, an adjustable collar, M, partaking of the longitudinal motion of the die-holder, a shifting-clutch, I, operated by the cam F, and alternately engaging pins o o' at the times determined by the said sliding bar and collar, and gears H H', revolving in opposite directions, substantially as described, for the purpose of automatically changing the direction of rotation of the die-arbor, as specified.

5. The combination of the sliding bar K, constructed as described, the levers S N', and the spring-latches n n', substantially as specified.

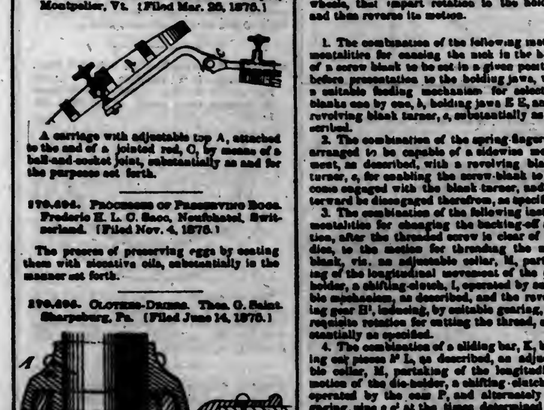
6. The combination of the adjustable collar M, partaking of the longitudinal motion of the die-holder, with the system of cams on the hollow shaft O, by means of a vibrating clutch-gear connecting such shaft with the source of motion, and the lever U, controlling a stop-catch, u t, whereby the said cam-shaft may be stopped while a blank is under the action of the cutting-die, and be started again after a blank has been discharged from the jaws, or in case a blank has not been presented to the die, substantially as described.

7. In combination with the gears J J', whose direction of rotation is alternately changing to reverse the motion of the die-arbor, the friction-pulley V, and double-acting spring-brakes, described, for giving an easy initial movement to the gearing for changing direction, substantially as specified.

8. The combination, in an automatic screw-threading machine, of the bifurcated die-charger, the griping-jaws, and the feeding-fingers, arranged and operating together substantially as described, whereby the finished screw is ejected from the jaws, and the way cleared for the advance of the fingers with a blank, as set forth.

9. The combination, substantially as described, of the feeding-fingers b b, with the stationary holding-jaws E E, when the latter are arranged to open in a plane which is intersected by the path of movement of the fingers, whereby the blank can be presented so as to be gripped by the jaws without the requirement of any sidewise movement on the part of the fingers.

170,696.



170,697. HAIR-SWITCHES. Annie B. Smith, Gaston, assignor of one-half her right to Alvah Sweetland, Memphis, N. Y. (Filed Feb. 5, 1875.)

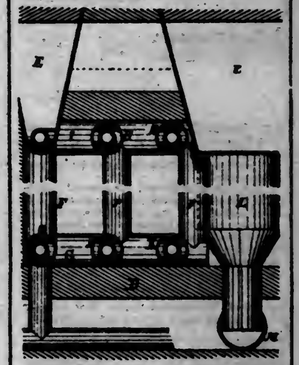


1. The process of bending hair for switches and other similar articles for personal wear, consisting, essentially, in first spreading out the hair, as shown at A, in the drawing; then sewing it in two or more rows of stitching, as at A', and then doubling the hair and sewing it, as at B, and again doubling it in the center and sewing as before, by which it is brought into the form represented at C, substantially as and for the purpose set forth.

2. As a new article of manufacture, a hair-switch or similar article for personal wear, formed of a bending constructed as above specified, and twisted and sewed substantially as described, and represented in Fig. 3 of the drawing.

170,698. FREEZING APPARATUS. Edmund C. Teare, Newcastle, Canada. (Filed Mar. 10, 1875.)

Brief.—The pipes for receiving and conducting the freezing-mixture are surrounded by larger perforated pipes, for collecting and conducting away the products of condensation to a pipe between the lower double walls, which leads to the outside of the walls.



1. The horizontal double pipes H I under the ceiling, in combination with troughs E, as and for the purposes set forth.

2. The horizontal double pipes J K near the door D, in combination with horizontal pipes O, substantially as and for the purposes set forth.

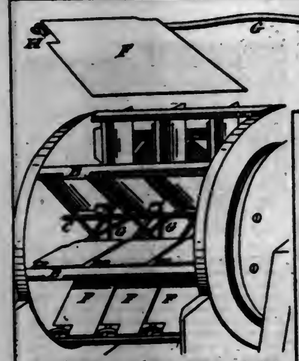
3. The waste-water pipe M beneath the floor D, in combination with the horizontal pipes O, vertical pipes F, and cylinder or cylinders L, and ventilating-pipes E, as and for the purposes set forth.

4. The combination and arrangement of troughs E, vertical pipes F, horizontal pipes O, double pipes H I J K and cylinders L with a preserving or freezing chamber, as set forth.

170,699. WATER-WHEELS. P. Velat, Jeffersonville, Ind. (Filed Nov. 6, 1875.)

Brief.—The buckets are made of iron, and hinged at right angles to the ends of round bars of iron extending across the entire wheel. The ends of the bars are made to work in bearings on the cross-pieces at the verge of the wheel, and they constitute the shafts to which the buckets are attached and hang in the wheel.

170,499.



The oscillating buckets F F F, with their shafts G G G, as above described, in combination with the bearings H H H, in which they work, and the cross-pieces I I I and bars C C C, on which the buckets rest, when arranged, constructed, and operated substantially as and for the purpose hereinbefore set forth.

170,500. APPARATUS FOR SECURING HANDLES TO BRUSHES. John L. Whiting, Boston, Mass. [Filed Aug. 24, 1875.]

Brief.—The bristles are clamped between two grooved blocks, while the handle is driven into the ferrule as it rests upon the blocks.



1. The combination of the clamps a a' with one or more grooves, b b', having projections c c and recesses d d on each side, and the holder handle e, substantially as and for the purpose set forth.

2. In combination with the grooved clamps a a', with their grooves b b', projections c c, and recesses d d, the adjustable perforated plate e, as and for the purpose set forth.

3. In combination with the clamps a a' and their grooves b b' and plate e, the holder handle e, as and for the purpose set forth and described.

170,501. BUTTER-PACKAGE. H. P. Adams, Cleveland, Ohio. [Filed July 31, 1875.]



As a new article of manufacture, the butter-package, constructed of the casing A, with metallic lining C, terminating in the flange c, in combination with the lid B, clamps E c, and interposed pasteboard packing, substantially as and for the purpose described.

170,502. MANUFACTURE OF FIRE-BRICK. J. Park Alexander, Akron, Ohio. [Filed July 12, 1875.]

Brief.—The pulverized pebbles are mixed with from one to twenty per cent. of lime, melted, subjected to great pressure, thoroughly dried, and then burned in an intense heat.

The compound for the manufacture of fire-brick, consisting of pure pulverized white pebbles and lime, prepared and compounded in the proportions substantially as and for the said purposes described.

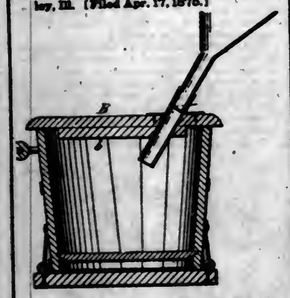
170,503. RECLINING-CHAIRS. Charles M Alexander, Washington, D. C. [Filed Oct. 4, 1875.]



1. A serrated or notched metallic shoe upon the base of a folding or reclining chair, in combination with a metal tip of plate upon the moving bar of said chair, the tip having a ling or suitable device to engage with the shoe, as is her— fully set forth, for the purpose specified.

2. The square base A A of an adjustable folding and reclining chair, in combination with the bars B B and C C, the bars C being pivoted or hinged to the base, and bars B adjustable in notches or mortises in same, substantially as and for the purpose set forth.

170,504. MILK-PAILS. John Amole, Bushley, Ill. [Filed Apr. 17, 1875.]



In combination with a milk-pail, the elliptical cover B, having the downward circular projection b, adapted to be used with pails of different sizes, and to serve as a seat for the operator, substantially as described and shown.

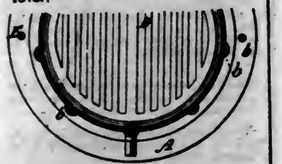
170,505. ANT-EXTERMINATORS. M. Berthel, Milpitas, Cal. [Filed June 12, 1875.]

Brief.—A mixture of sugar and cobalt is placed in the bottom of the box, and a sponge or other absorbent (saturated with water) placed upon the mixture to keep it soft. The ants enter the holes in the sides of the box.



In combination with the box A, with its openings c, arranged to contain a poisonous compound, the absorbent material E, substantially as and for the purpose specified.

170,506. HEATING-STOVES. Robert S. Bay, Munnsville, N. Y., assignee of two-thirds his right to William Stringer and William H. Stringer, same place. [Filed Sept. 23, 1873.]



The exterior drum or cylinder B, which is composed of a series of vertical staves, having spaces b between them, in combination with the base A, top C, and tie-rods E, substantially as specified.

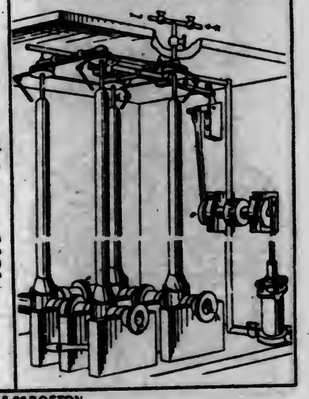
170,507. MANUFACTURE OF CHROME-STEEL. Julius Baur, Brooklyn, N. Y. [Filed May 19, 1875.]

1. The process herein described of manufacturing chrome steel, the same consisting in mixing a quantity of graphite and borax with the chrome-ore and also iron to be converted into steel, substantially in the manner and for the purpose specified.

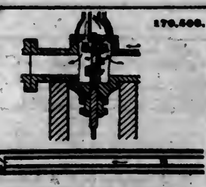
2. A compound from which to manufacture chrome-steel, consisting of an alloy produced from chrome-ore, borax, graphite, and metallic iron, substantially as and for the purpose described.

170,508. ICE-MACHINES. John M. Booth, San Francisco, Cal. [Filed Aug. 5, 1874.]

Brief.—Liquid refrigerant admitted directly from the lower or liquid portion of the condenser into the top of any of the vertical congealers, and thence into a supply-pipe common to each of a series of vertical congealers, and having diaphragms with ports increasing oversally in area. Thus liquid refrigerant is more or less gasified in the first congealer, and the more volatile part of the refrigerant passes through congealers, while the remainder continues along the horizontal supply-pipe. Valves may cut off each congealer from supply pipe. Each successive congealer may be of larger sectional area. Ports may be adjusted in size by a movable gate. Ice may be loosened on the congealers by admitting gas from upper part of condenser downward through any one of the congealers. Water to be frozen pumped up and conveyed into pans, rotated horizontally and intermittently by the connections with the pump-shaft. Ice detached from congealers by passing gaseous refrigerant of high temperature from upper part of condenser down into any congealer.



170,508.



1. In a congealing apparatus, a series of vertical congealing-pipes, in combination with and connected to a supply-pipe which is common to all of the congealing-pipes, and which delivers the liquid and gaseous ammonia to each of the congealing-pipes, and receives the same after circulating therein, substantially as described.

2. The combination, with a refrigerant-supply pipe, having diaphragms and ports, of vertical congealers, having double connections with the supply-pipe, substantially as described, whereby the refrigerant will be partially diverted from its direct course through the congealers, and return to the supply-pipe.

3. In a volatile refrigerant-supply pipe, one or more diaphragms or partitions, provided with openings of less area than the sectional area of said pipe, substantially as described, whereby the gaseous and fluid portions of the refrigerant may be brought into close relation with each other by their passage through such opening, as specified.

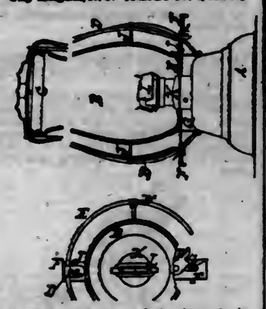
4. The vertical congealers, having independent interior passages for conducting the refrigerant, the supply-pipe, and the diaphragms or partitions with ports, combined to operate substantially as described.

5. A vertical congealer for artificial ice manufacture, composed of an exterior casing, having a closed end, an interior condenser with an open end, located adjacent to the closed end of the casing, and a refrigerant-supply pipe connected with pipe and casing, substantially as described, whereby the refrigerant will be conducted into the congealer by way of the interior pipe, and from the congealer to the supply-pipe, for the purposes specified.

6. In a congealing apparatus, having vertical congealers immediately supplied from a pipe common to them all, the combination, with the congealers and supply-pipe, of a cock or cocks for controlling the passage of ammonia to each congealer, and a diaphragm in the supply-pipe opposite each congealer, provided with a port or ports, which are thus guarded by valves or cocks, substantially as described.

7. The combination of a cylindrical vertical congealer, having plates fronting cavities, with a revolving water-distributer, substantially as described.

170,510. LANTERNS. Henry Backe, Jersey City Heights, N. J. [Filed Nov. 4, 1875.]



1. The combination of the base A, its pierced and slotted arms F F, the vertical branches D D of the lantern-guard, and the globe E, substantially as described.

2. In combination with the base A, its pierced and slotted arms F F, the vertical branches D D of the lantern-guard, and the globe E, the latch J, substantially as described.

3. The brass J, in combination with the lantern-guard D D D' D' E E, and with the globe E, substantially as described.

170,509. CAR-BRAKES. Joseph H. Setterley and Thomas Sharer, London, England. [Filed Dec. 30, 1873.]



The continuous brake-bar G and cross-bar G', in combination with the bevel-wheels H' and H H, the lever E, attached to the beam S, and the threaded bar T, for throwing either of the wheels H H into contact with the wheel H' to automatically shift the brakes, substantially as described.

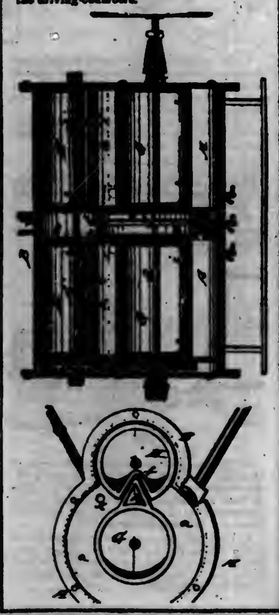
170,511. BOWS FOR ANIMAL-POKES. Erwin G. Beckwith and Harriet W. Brown, (administratrix of Geo. B. Brown, deceased,) Stronsville, assignors to J. G. A. Oliver and Eldred H. Phillips, York, Ohio. [Filed Sept. 4, 1875.]



The herein-described bow for animal-pokes, in two pieces, united at their upper extremities by the hinge C, while their opposite ends engage with the pin B, in combination with the coiled and angular catch D, the whole constructed substantially as described, whereby the bow may be adjusted to the animal without removing the bow-pin.

170,512. ROTARY ENGINES. J. W. Hodgett, Nashville, Tenn. [Filed Mar. 30, 1875.]

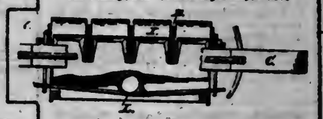
Brief.—The cut-off wheel is provided with a concentric passage on one side near the periphery, which extends half-way round, and a smaller passage on the other side around the other half, to change the steam alternately in the driving-chambers.



170,513. INK-POWDERS. William A. Bonney, Hyde Park, assignee to Daniel Sweet, Wakefield, and Samuel D. Miles, Reading, Mass. [Filed Aug. 6, 1875.]

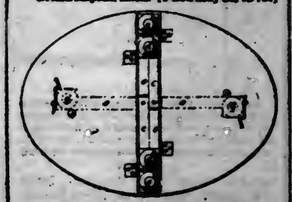
An ink-powder, composed of extract of logwood, bichromate of potash, prussiate of potash, gum-arabic, and copperas, in or about the proportions herein set forth.

170,514. HORSE-YOKES. Jacob Boyer, Boyal Valley, Pa. [Filed Apr. 20, 1875.]



The above-described horse-yoke, provided with the bow C, star-shaped hasps D, the guard I, and spring i, all arranged substantially in the manner and for the purposes set forth.

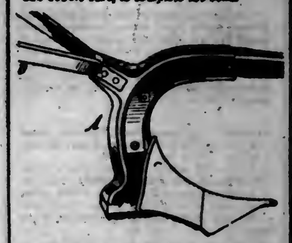
170,515. FOLDING TABLES. John Brookfield, Grand Rapids, Mich. [Filed May 21, 1875.]



A folding table consisting of the narrow top a, leaves A, the supports c c, having the legs secured to their ends, and catches to hold the legs in position, substantially as described.

170,516. PLOWS. Thomas R. C. Brisly, Louisville, Ky. [Filed July 31, 1875.]

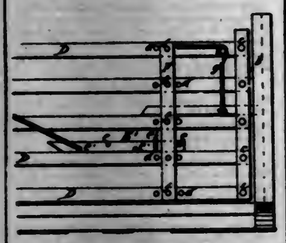
Brief.—The rear section of the beam is cast with flanged parts or seats, to receive the working parts of the plow, and the handles and double bars, to complete the beam.



A plow combining in its construction the curved cast-iron halve A, having flanges on the edges forming recesses on each side, to receive the beams, the correspondingly-curved parallel beams E, and handles D bolted in the recesses formed to receive them, substantially as set forth.

170,517. SWINGING AND TILTING GATES. Amos Brinkerhoff, Golden Corners, Ohio. [Filed Sept. 3, 1875.]

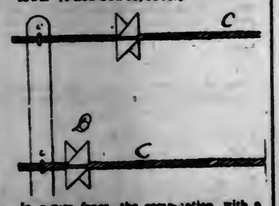
Brief.—The latch end may be elevated, a spring holding the latch in a groove in the post from base to top. A sliding bar, adjustably fixed to the gate, is connected with a gir-brace secured to the top of the rear stile, its inclination being variable with the ascent and descent of the latch end.



1. The combination of the sliding bar E', the gir-brace E, the pin e^2, and the stop-bars F, substantially as set forth.

2. The combination of the adjustable stop-bars F with the rails D, substantially as set forth.

170,518. WIRE-FENCE RAILS. Warren L. Brown and Laurence G. Tubbs, Dunlap, Iowa. [Filed Oct. 16, 1875.]



In a wire fence, the combination, with a twisted wire cable, C, of the four-pointed barbs D, formed of two flat plates, d, of the forms of an isosceles triangle, and having the slot e, substantially as and for the purpose set forth.

170,519. DUST-CLOTH HOLDERS. James M. Brown, Salem, Mass. [Filed Feb. 27, 1875.]



In a wooden tongs or dust-cloth holder, the pivoted levers A A', having enlarged obcordated heads c upon the grappling arms b', and a strap, d, cut away from their inner edges, whereby angular grappling-edges are formed, and the handles b' of the said levers are made to coincide, substantially as and for the purpose set forth.

170,520. CIRCULAR-SAW GUIDES. John Bryce and Otto Gronberg, Grand Haven, Mich. [Filed Oct. 20, 1875.]

Brief.—The lateral vibration of a circular saw is prevented, and the lateral strain resisted, by means of a guide, in which either one or both of the guide-arms can be adjusted to the size of the saw or the nature of the work.

1. The guide-arms C C', carrying F F', worm-wheels d^2, worm-screws e^2, and shafts D S, combined and operating in the manner and for the purposes described.

2. The retaining-plate f and latch e, in combination with worm-wheels d^2, and guide-arms C C', as and for the purposes described.



170,520.

170,521. HAME-COUPLINGS. J. H. Carlisle, Craigsville, Va. [Filed Oct. 20, 1875.]

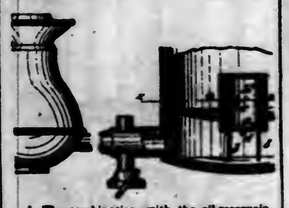


1. The combination in a hame-fastening apparatus, substantially as described, of a footed lever and curved bar with a friction-plate and a bar, formed square at one end and round at the other, to work over the same.

2. The footed lever A, secured to the plate D by the hinged bar C, and adapted to operate substantially as described.

170,522. LAMPS. J. W. Carter, Brooklyn, N. Y., assignor to B. B. Schneider, New York city. [Filed Nov 10, 1875.]

Brief.—The rotation of the oil-reservoir covers and uncovers the apertures through which oil passes toward the burner.

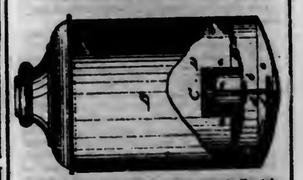


1. The combination, with the oil-reservoir D, of the concave bottom D^1, inverted cup D^2, with apertures e, and hollow cylindrical valve E, with apertures e^1, constructed as shown and described, to register from the side, substantially as herein set forth.

2. The combination of the valve E, arranged in the bottom of the oil-reservoir D, and provided with the arms b b, and the pin or wire d in the cup C, substantially as and for the purpose herein set forth.

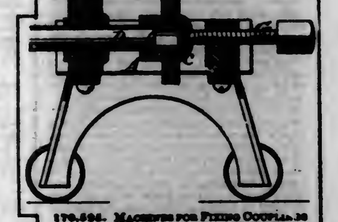
170,523. LAMPS. J. W. Carter, Brooklyn, N. Y., assignor to B. B. Schneider, New York city. [Filed Nov. 10, 1875.]

Brief.—When the oil-reservoir is raised the piston is drawn below the apertures in the cup, which prevents escape of oil. By rotating the reservoir, the hook is disengaged, and the reservoir may be entirely removed.



The combination of the oil-reservoir B with inverted cup C, having apertures e, the piston D, and rod d with hook e^1, with the hook f in the bottom of the cup A, substantially as and for the purposes herein set forth.

170,524.



170,524. MACHINES FOR FIXING COUPLINGS TO SHAFTS. George A. Chapman, Woonsocket, R. I. [Filed Oct. 20, 1875.]

1. In combination with clamping-blocks C C or their equivalent, the clamping-cap F and the screw G mounted in a frame, substantially in the manner described.

2. In a machine for forcing couplings on shafts, the cap F in combination with a clamping device and a screw, G, substantially as described.

170,525. MOP AND BRUSH HOLDERS. Chas. B. Clark, Buffalo, N. Y. [Filed Nov. 10, 1875.]

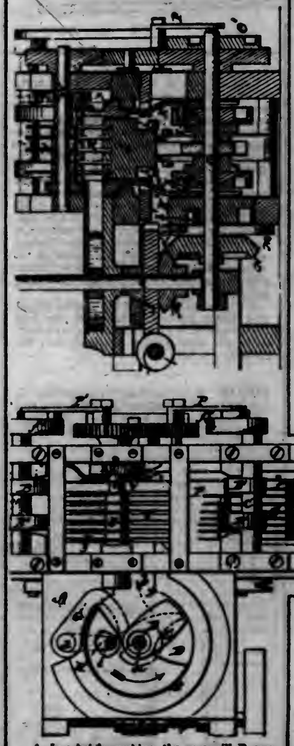
Brief.—The two rows of teeth upon the jaws alternate to interlock and clamp the mop-cloth. The movable jaw has a single plain edge, and a short bent tenoning within the operating-nut, so that the jaw can be readily opened to any extent, or clamped upon each other.



1. The mop and brush holder herein described, consisting of the fixed jaw A, thumb-nut F, and the movable jaw B, having on arm connected with a single plain bearing-edge, G, so that by the action of the nut on one and the same bearing-edge the jaws can be closed for holding either a mop or a brush, the whole being constructed and operating substantially as shown and described.

2. The jaws A B, each having a series of teeth, a, alternating with each other, and with a series, d, so that the former permit the latter to close upon each other, substantially as described.

170,526. BRICK-MACHINES. John Crabtree and Wm. H. Meleher, Philadelphia, Pa., assignors to themselves and Wm. Crabtree, same place. [Filed Nov. 4, 1875.]



1. In a brick-machine, the pug-mill B, provided with the segmental false bottom D and the die or mouth-piece b, in combination with a mold placed against said mouth-piece, so that the clay is forced on a horizontal line directly from the pug-mill into the mold, substantially as herein set forth.

2. In a pug-mill for brick-machines, the combination of the pusher E and step G, constructed and operating substantially as and for the purposes herein set forth.

3. The combination of the step G, vertical rod d, arm H, with roller e, and the cam I, having semicircles e^1 e^2 and straight parts f^1 f^2, substantially as and for the purposes herein set forth.

4. The molds E E upon the ends of the movable carriage F, said molds being open on one side, a solid abutment, f, on the opposite side, and the ends and bottom slotted and grooved, substantially as and for the purposes herein set forth.

5. A series of knives, Y, attached to a revolving shaft, W, and operating in combination with the slat-work V and slotted molds E E, substantially as and for the purposes herein set forth.

6. The combination of the carriage P, having notches t, and the pointed bars K I, provided with studs and rollers s, and operated by means of the cams J', having quarter-circles f^3, curves h^1, and straight parts f^4, all substantially as and for the purposes herein set forth.

7. The combination of the cam L', having segmental and irregular grooves h^2 m^2, the pivoted hook w, with stud and roller x, and the pin v on the side of the carriage I', substantially as and for the purposes herein set forth.

8. The combination of the grooved follower S, with pins i i projecting from its sides, and the cams T, attached to a rocking shaft, p, and provided with eccentrically-curved flanges s^2 s^3, substantially as and for the purposes herein set forth.

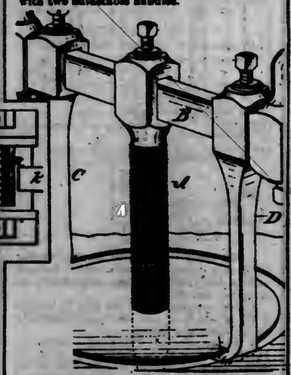
9. The combination of the cam N', having curved and straight grooves n^2, s^2, and s^3, as described, the levers M', with studs and rollers S^1, rods s^1, and arms x on the rocking shafts p, for operating the cams T, substantially as and for the purposes herein set forth.

10. The combination of the cross-bar Z, sliding heads A', links A, and arms B', attached to the rocking shaft C, substantially as and for the purposes herein set forth.

11. The combination of the cam O', having segmental groove f^5 and inclined groove n^3, the elbow-levers F', with studs and rollers s^4, the links s^5, and arms f^7 on the rocking shafts O', substantially as and for the purposes herein set forth.

170,527. EXPANSIBLE TOOLS FOR CUTTING HOLES OF DIFFERENT SIZES. Christopher Cranmer, Turner's Falls, Mass. [Filed Sept. 9, 1875.]

Brief.—For cutting circular holes of various sizes in wood, a central screw-stem is slotted at its upper end to receive a transverse bar, on which are secured two adjustable cutting-tools, said bar being provided with two adjustable handles.



The herein-described tool for cutting circular holes of various sizes, the same consisting of the bar B, having the screw-stem A, cutters C D, and handles H, adjustably secured thereto, substantially as shown.

170,528. CORRUGATED HOSE-BLANKETS AND FELT-SKIRTS. Louis S. Crittenden, Angelica, N. Y. [Filed Oct. 20, 1875.]



The blanket A, provided around its edges with a fringe, B, and constructed with a head and a body section, which are combined by means of the elastic webbing A', substantially as and for the purpose specified.

170,529. BOTTOM PLATES FOR PUDDLING-FURNACES. Samuel Dallar, Parkesburg, Pa., assignor to himself and H. A. Beale, same place. [Filed Mar. 1, 1875.]



A tool-plate consisting of a group of hollow sections, D, closed at the outer edges, excepting where air, water, or steam is admitted and discharged, and rabbeted at the joints, as set forth.

170,530. HAMES. Abram F. Davis, Lacomb, Iowa. [Filed May 3, 1875.]



The same A, having the cavity B, the perforated plate or metal strap a a, covering the cavity B, the plate b b, having the series of projecting pins 1 2 3, and the concealed spring c, when arranged and combined substantially as and for the purposes shown and described.

170,531. CONVERTIBLE MOTIONS. William Darwen, Leeds, England. [Filed Sept. 1, 1875.]

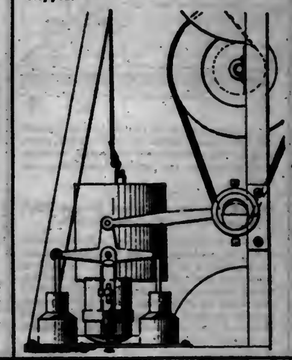
Brief.—Each of two elastic connecting-rods attached to a treadle is, at its other end, pivoted to an arm oscillating on the center of and inside the pulley. The other extremity of each arm covers elastic bafts, which grips the inner periphery, to revolve the pulley in one direction of its movement, being free in the reverse movement.

1. The combination, with a wheel, of the pivoted levers a a, and rollers or balls d, operating in the manner described and shown.

2. The combination, with a wheel, of the pivoted levers a a, rollers or balls d, and elastic connecting-rods c c, operating in the manner described and shown.

170,532. PORTABLE WATER-WORKS. John M. Danielson, Newark, N. J., assignor of three-fourths his right to J. Danielson, R. E. Johnson, and Wm. W. Russell. [Filed Oct. 9, 1875.]

Brief.—The pump is operated by a wright and power-transmitting mechanism. Connected to the pump is a chamber having induction and eduction pipes. When the stop-cock of the eduction-pipe is turned off, the pump as well as the flow of water is at once stopped.

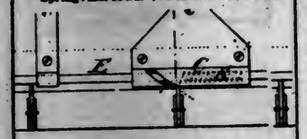


In combination with a pump or pumps, and a spring or weight power, a chamber, connected to the pumps, which is provided with an induction and an eduction pipe, the eduction pipe being provided with a regulating stop-cock, substantially as herein set forth, for the purpose specified.

170,585. FIRE-PROOF PAINTS. Jas. Dewitt, Kansas City, Mo., assignor to himself, J. S. McCrum, B. S. Henning, H. J. Fisher, and S. Dewitt. [Filed Oct. 8, 1875.]

The described composition of coal tar, lampblack, gum-copal, turpentine, salt, lye, and hydraulic cement, substantially in the proportions and compounded as set forth.

170,586. WEATHER-STRIPS. Daniel Dean, Springville, Iowa. [Filed Oct. 30, 1876.]



1. In a weather-strip, the combination, with a tubular obliquely-slotted sheath, C, of the rotating and endwise-movable shaft E supporting the weather-strip, substantially as specified.

2. In combination with an endwise-movable and axially-rotating rod, E, and the obliquely-slotted sheath C, the spring S, arranged in the said sheath, substantially as specified.

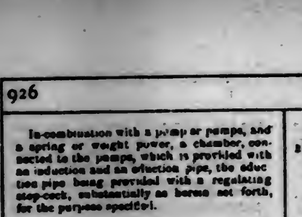
3. The combination, with the rotating and endwise-movable shaft C, having arm *b'*, of the sheath C, having oblique transverse slot *b*, substantially as specified.

170,587. PROCESSES FOR TREATING ORES. H. H. Hames, Oakland, and Abel Patchen, San Francisco, assignors to American Mill and Metallurgical Company, San Francisco, Cal. [Filed Aug. 27, 1875.]

1. The process of treating ore-pulp with the protochloride of iron and the dichloride or subchloride of copper simultaneously in the same pan, tub, or vessel, substantially as above specified.

2. The process herein described of treating ore-pulp by grinding the ore with the protochloride of iron and dichloride of copper, substantially as and for the purpose described.

170,588. OATMEAL-MACHINES. Andrew J. Harrisheam, Akron, Ohio, assignor to F. Schumacher, same place. [Filed Sept. 11, 1876.]

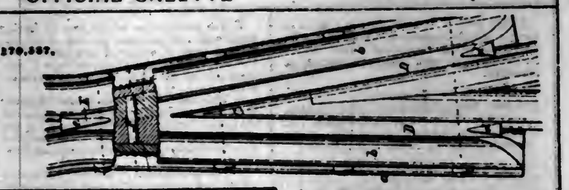


The combination of the perforated plate O and horizontal knives D, or their equivalents, both or either adapted to be moved, substantially as and for the purpose herein before set forth.

170,589. RAILWAY-FROGS. George Elliot, St. Louis, Mo. [Filed Feb. 2, 1876.]

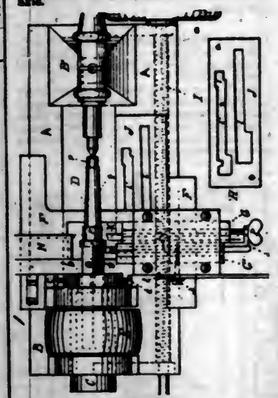
The V-frame D D E, having inclined grooves *d' d'*, the said frame being constructed in one piece, adapted to fit in the side chairs of the rails, and extending lengthwise of the frog, wholly supported by and rigidly secured to said rails by transverse bolts, and the said grooves adapted to guide the flanges of the wheels on the frame, substantially as and for the purpose set forth.

170,590.



170,590. MACHINES FOR TURNING CARRIAGE-AXLES. Jos. W. Hits, Philadelphia, Pa., assignor of one-half his right to J. H. Armbruster, same place. [Filed Mar. 10, 1875.]

Brief.—Two sliding stocks or holders, each having a cutter placed side by side on a carriage fed by a rotating screw, and a double pattern plate for guiding the stocks, in such manner that the two cutters are, by means of a hand-lever, so manipulated as to cause them to turn successively different members of the axle.



1. The combination, with a metal-turning lathe, of a carriage, tool-box, cutter-holders, cutters, and pattern-plates, substantially as described and shown.

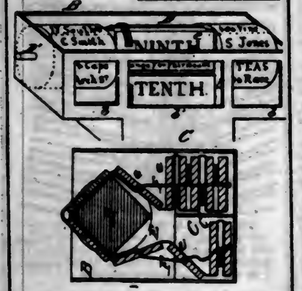
2. The combination of the box H, holders O O', cutters K K', and lever L, substantially as described and shown.

3. The combination of the cutter-holder O', having an arm, O, in combination with the cutter-holder O, having an adjustable screw, P, for giving outward and inward movements to the latter, substantially as set forth.

4. The swivel N, having gages M and M', in combination with the carriage F and cutters K and K', for adjusting the same, substantially as set forth.

170,591. STATION-INDICATORS. Clarence A. Evans, Upland, Pa. [Filed Apr. 28, 1875.]

Brief.—A cylinder carrying cards for station-indicators, and advertisements on its ends, is inclosed in a box having windows for each advertisement.



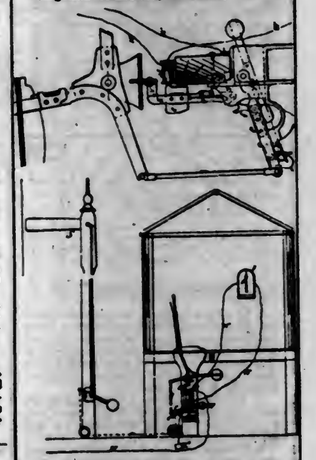
1. In a street or station indicator, a horizontal roller, displaying at different points upon its periphery, respectively, the names of streets or stations and advertisements, in combination with a box, B, having separate openings or windows *b'*, through which the streets and advertisements are, respectively, exhibited, substantially as described.

2. The elastic ribbon or cord F, in combination with the folding cards, as described.

3. The combination, with the indicator-rollers D, arranged horizontally within a car, and displaying the names of streets or stations, of the mechanism for imparting motion thereto, consisting of the pulleys *f*, attached to the roller-shafts, the intermediate pulley *f'*, cords *g*, and crank-shaft, substantially as shown and described.

4. The roller D, having the central polygonal portion holding the indicator-card, and the cylindrical end portions displaying advertisements, substantially as shown and described.

170,592. ELECTRIC RAILWAY-SIGNALS. J. S. Farmer, Canterbury Road, Kilburn, and Edward Tyer, No. 4 Old Street, Finsbury, England. [Filed May 24, 1875.]



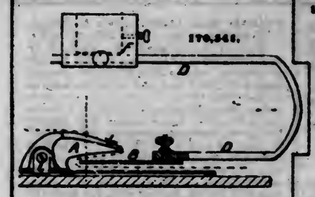
1. The combination of the counterweighted semaphore and hand-lever with an interposed mechanism, consisting of the levers C D E, catches *e* and *f*, connections *l* and *p*, magnet M, and wire W, as and for the purposes described.

2. The combination, for effecting the connection or disconnection of the lever and signal, of the levers C D E and catches *e* and *f* with the electro-magnet M, and wire W, and make-and-break indicator I, substantially as herein described in reference to the accompanying drawings.

3. The combination of the spring-contact T with the lever E, for the purpose of economizing the electrical force, substantially as herein described.

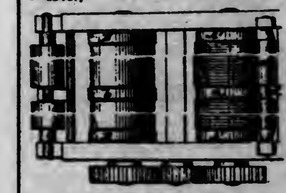
170,593. PLAITER AND TUCKER ATTACHMENTS FOR SEWING-MACHINES. John J. Fennessden, Boston, Mass. [Filed May 7, 1875.]

170,594.



The curved arm D, provided with the adjustable pivoted guide E, and adjustable clutch F, in combination with the pivoted guide A and plate C, substantially as and for the purpose described.

170,595. ROTARY PERFECTING-PRESSES. J. L. Firm, New York, N. Y., assignor of one-half his right to C. B. Cottrell and N. Babcock, Westerly, R. I. [Filed Sept. 28, 1870.]

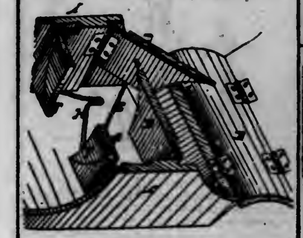


1. The combination of two or more independent paper-supply cylinders or rolls arranged side by side in an axial direction at the same end of the press, and serving to feed two or more independent webs side by side, a form-cylinder, having two or more circular forms side by side in direction of its length, and an impression-cylinder, having a corresponding number of impression-surfaces similarly arranged, substantially as described.

2. A form-cylinder, constructed as described, with one or more intermediate annular bearings, *a*, between its forms, in combination with an impression-cylinder, constructed with one or more intermediate and similarly-arranged annular bearings, *b*, between its impression-surfaces, for operation the one against the other, essentially as herein set forth.

3. The combination of one or more lever supporting-rollers, *s s'*, with the intermediate annular bearings *a* or *b* of the form and impression cylinders, substantially as specified.

170,596. VEHICLE-SEATS. J. H. Franklin, Avoca, Wis. [Filed Oct. 20, 1876.]

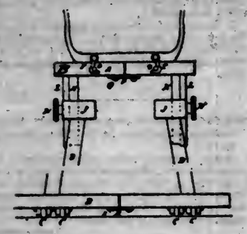


1. The buggy or vehicle body, having the hinged section B, to which is hinged the seat C, by which a single or two-seated vehicle may be formed, substantially as and for the purpose set forth.

2. In combination, with the buggy or vehicle body A, having the hinged section B, provided with the hinged seat C, the hinged folding sections D D, and fastenings E *e d*, substantially as and for the purpose set forth.

3. The convertible single and double seated vehicle or buggy body, consisting of the body A, hinged folding sections F F, seat C, hinged folding sections D D E, seat C, and fastenings E *d* and H A, substantially as shown and described.

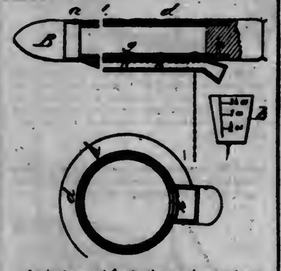
170,597. BAND-WARMERS. Jane Garcia, New York, N. Y., assignor, by mesne assignments, of one-half his right to Benoit Wasserman. [Filed July 20, 1876.]



1. The vertically-divided breast-piece A and vertically-divided foot piece B, in combination with the cross pieces J J and legs D D, and provided with the pivots H H and fastenings P Q and R S, substantially as and for the purpose herein described.

2. A combined baby-walker and chair, embodying in its construction a removable seat, E, provided with fastenings F, a vertically-divided breast piece, A, having studs G G, vertically-divided foot-piece B, cross-pieces J J, and legs D D on pivots H H, and fastenings P Q and R S, the whole being constructed and arranged to operate in the manner and for the purpose as shown and described.

170,598. GRAIN-TESTERS. William J. Gard and Neville Staughton, Winona, Minn. [Filed Oct. 20, 1876.]



An instrument for testing grain, consisting of the perforated tubes *a a*, and wire-cloth covering the perforations A, in combination with a condensor, substantially as described.

170,599. CAR-STARTERS. Ezra G. Goddard, East Saginaw, Mich. [Filed Sept. 4, 1876.]

Brief.—Sliding weight acts so as to resist draft after strain on ratchet ceases, and thus prevents any sudden release and shock.

1. The combination of the ratchet-wheel C, secured upon the car-axle, the rocking frame D, provided with the sliding weight F, and the pawl G, pivoted in the frame D, and connected with a movable draft-bar, substantially as shown and described.

2. The combination of the wheel C, frame D, sliding-weight F, pawl G, bar H, lever J, draw-bar K, and spring M, substantially as shown.

3. The combination of the frame D, pawl G, bar H, and pivot-pin, passing through the bar and the dog, and having its ends extended longitudinally in the frame.

170,600. MACHINES FOR SEWING BOOTS AND SHOES. Charles Goodyear, Jr., New Rochelle, and Benj. H. Radley, Brooklyn, N. Y., assignors to the Goodyear Boot and Shoe Sewing-Machine Company. [Filed July 20, 1873.]

Brief.—Improvement upon machine patented July 11, 1871, No. 116,947. The main object in view is to bring the chain-stitch on the outside of the seam, or next to the upper or welt, instead of laying it in the inside channel, as in the case in the above mentioned patented machine. The needle is reversed, so that it points outwardly, and the positions of the needle guard or brass and barb shield are correspondingly changed. The looper is mounted on a bracket, and a device similar to a cast-off is added, which is, however, used solely to prevent the needle from catching the lining of the shoe.

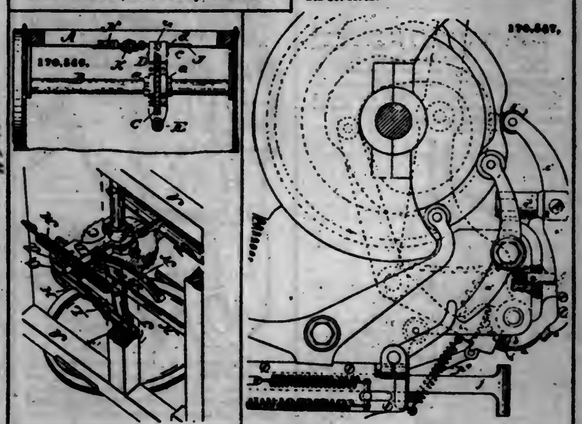
1. A sewing mechanism for boots and shoes, in which the channel-gage and back gage are combined with and arranged relatively to a circularly-curved needle, substantially as set forth, so that the operation of sewing therewith places the loop or chain stitch on the outside of the seam, instead of in the channel in the sole.

2. In combination with the circularly-curved needle, the channel-gage, and the back-gage, or welt-guide, arranged together for operation as set forth, we claim the looper arranged and mounted relatively to the needle and guiding devices, as herein shown and set forth.

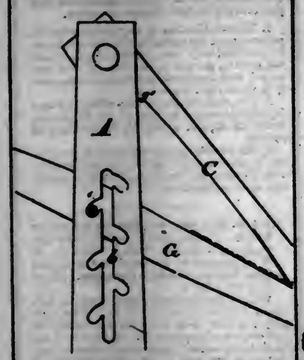
3. The combination, with the curved outwardly-pointed needle, operating substantially as described, of a vibratory work-protector, moving to and from the work at proper intervals, as set forth, the same being placed close to the needle on the barbed side thereof, and arranged to press upon the work at the time the needle is retreating, and until the needle-barb is fully withdrawn therefrom, substantially as and for the purpose shown and set forth.

4. The work-protector carried by an independent toothed segment mounted on the axis or shaft of the needle-segment, in combination with a lever-segment, cam, and spring, for operating the same, substantially in the manner set forth.

170,600.

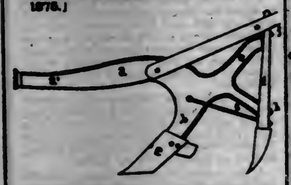


170,546. WAGON-JACK. Charles Gray, Greene, N. Y. [Filed Nov. 18, 1875.]



In a wagon-jack having standards A A, slotted and notched as described, the lever C and pawl G, formed so that they can be folded in between the said standards, as shown in Fig. 2.

170,547. CULTIVATORS. Herman D. Green, Ithaca, N. Y., assignor to Freeman, Valentine & Green, same place. [Filed May 27, 1875.]



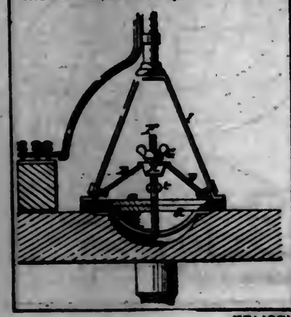
1. The beam a, cast in one piece, and consisting of the extensions or parts a', b, c, and g, as shown and described.

2. The beam e, constructed as shown and described, in combination with the crown beam f and h, standards i i, and handles k k', as and for the purpose set forth.

3. In a shovel-cultivator, the beam a' b and arm c, cast in one structure, in combination with the front shovel-plow, and the two rear beam and their standards l, the arm c supporting said rear standards near their top, as set forth.

170,548. MILLSTONE TRAMS AND STAFFS. Miller T. Grandstaf and Frederick Kruse, Quincy, Ill. [Filed Sept. 18, 1875.]

Brief.—By means of the set-screws the plates are adjusted, regulating the stem and cross-bar to an exactly vertical position, by which the spindle may be kept true, and the stone dressed with accuracy.



1. The bean q, cast in one piece, and consisting of the extensions or parts a', b, c, and g, as shown and described.

2. The beam e, constructed as shown and described, in combination with the crown beam f and h, standards i i, and handles k k', as and for the purpose set forth.

3. In a shovel-cultivator, the beam a' b and arm c, cast in one structure, in combination with the front shovel-plow, and the two rear beam and their standards l, the arm c supporting said rear standards near their top, as set forth.

170,549. MILLSTONE TRAMS AND STAFFS. Miller T. Grandstaf and Frederick Kruse, Quincy, Ill. [Filed Sept. 18, 1875.]

Brief.—By means of the set-screws the plates are adjusted, regulating the stem and cross-bar to an exactly vertical position, by which the spindle may be kept true, and the stone dressed with accuracy.

1. The bean q, cast in one piece, and consisting of the extensions or parts a', b, c, and g, as shown and described.

2. The beam e, constructed as shown and described, in combination with the crown beam f and h, standards i i, and handles k k', as and for the purpose set forth.

3. In a shovel-cultivator, the beam a' b and arm c, cast in one structure, in combination with the front shovel-plow, and the two rear beam and their standards l, the arm c supporting said rear standards near their top, as set forth.

170,550. MILLSTONE TRAMS AND STAFFS. Miller T. Grandstaf and Frederick Kruse, Quincy, Ill. [Filed Sept. 18, 1875.]

Brief.—By means of the set-screws the plates are adjusted, regulating the stem and cross-bar to an exactly vertical position, by which the spindle may be kept true, and the stone dressed with accuracy.

1. The beam q, cast in one piece, and consisting of the extensions or parts a', b, c, and g, as shown and described.

2. The beam e, constructed as shown and described, in combination with the crown beam f and h, standards i i, and handles k k', as and for the purpose set forth.

3. In a shovel-cultivator, the beam a' b and arm c, cast in one structure, in combination with the front shovel-plow, and the two rear beam and their standards l, the arm c supporting said rear standards near their top, as set forth.

1. The plates or rim wheels a d, one of which is provided with the pawls D D, and the set-screws f f, in combination with a device for transmitting milestones erected thereon, substantially as set forth.

2. The hooked screw-rod F provided with the flanged collar H, and nut G, in combination with the pawls D D, and rims a d, with the transmitting device thereon, substantially as set forth.

170,551. SODA-WATER FOUNTAINS. Chas. Greiner, New York, N. Y. [Filed Nov. 2, 1874.]

Brief.—Securing to the cylinder portion or main body of the fountain, at each end, a metallic ring or collar by brazing or otherwise, which may be removed and renewed when worn, said ring having on its periphery the threads for holding the heads.

170,551.



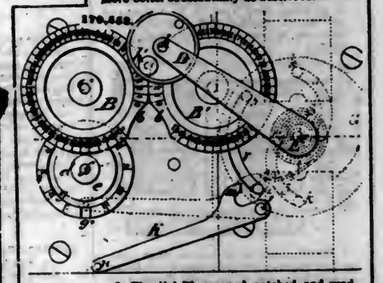
The combination of the screw ring C with the head and body of a soda-fountain, said screw-ring being interposed between the head and body of the fountain, substantially as herein shown and described, for the purposes specified.

170,552. DEVICES FOR PREVENTING HORSES FROM RUNNING. Charles Gmelicher, Newark, N. J. [Filed Sept. 20, 1874.]



The blinders D D', provided with the studs d d', in combination with the strap E, provided with the rings F G, and straps H, H', and I, the whole constructed, arranged, and operated in the manner set forth

170,553.



2. The dial F', grooved, notched, and graduated, in combination with the studded and hooked arm K, and the pin p on spring-plate O, substantially as described.

3. In a time-lock, the circular plates G G', cam-slots j j, pins h h, and spring S, as and for the purposes described.

170,554. SEAT-GUARDS FOR HARVESTERS. Edward Hale, Jr., Chicago, assignor, by mesne assignments, to John H. Shay and J. E. Putman, Beardstown, Ill. [Filed Aug. 12, 1875.]

Brief.—A driver's seat for harvesting-machines, provided with an arm extending from one side partially across the seat, and a short distance in front of it, which permits the driver protected by it to enter and leave the seat without difficulty, and to stand upon the frame without danger of falling.



The guard-arm B, arranged substantially as shown and described with relation to the driver's seat A, for the purposes set forth.

170,555. TIME-LOCKS. Lewis A. Haines, Westminster, Md. [Filed Oct. 16, 1875.]

Brief.—Two graduated dials, actuated by time mechanism, and having notches in their peripheries, which will, at the proper time, release a weighted arm, and allow the bolts to be unlocked by the turning of a cam-plate. An auxiliary graduated dial, having a groove and notch in its face, combined with a gravitating-arm having a pin on one end, adapted to enter the groove in said dial, and a hooked extension on its pivoted end, which, with a stud on a spring cam-plate, will hold the bolts unlocked, and, at the expiration of a given time, will release the said stud, and allow the bolts to be locked by the recoil of the cam-plate.

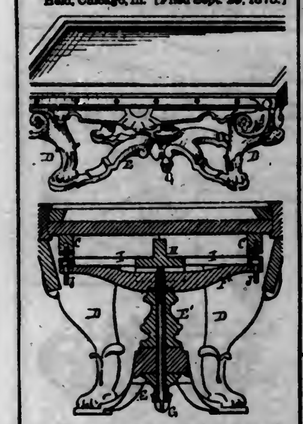
1. Graduated and numbered dials B B', adjustable on shafts C, and notched as described, in combination with weight W, pin h', arm D, shaft E, plates G G', spring S, and one or more bolts, substantially as described.

170,556. TIME-LOCKS. Lewis A. Haines, Westminster, Md. [Filed Oct. 16, 1875.]

Brief.—Two graduated dials, actuated by time mechanism, and having notches in their peripheries, which will, at the proper time, release a weighted arm, and allow the bolts to be unlocked by the turning of a cam-plate. An auxiliary graduated dial, having a groove and notch in its face, combined with a gravitating-arm having a pin on one end, adapted to enter the groove in said dial, and a hooked extension on its pivoted end, which, with a stud on a spring cam-plate, will hold the bolts unlocked, and, at the expiration of a given time, will release the said stud, and allow the bolts to be locked by the recoil of the cam-plate.

1. Graduated and numbered dials B B', adjustable on shafts C, and notched as described, in combination with weight W, pin h', arm D, shaft E, plates G G', spring S, and one or more bolts, substantially as described.

170,557. BILLIARD-TABLES. Frederick H. Held, Chicago, Ill. [Filed Sept. 29, 1875.]

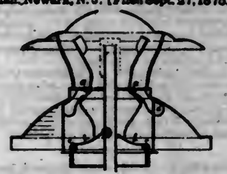


1. The combination, with the legs of a billiard-table, of the frame C binding rigidly the upper ends of the said legs, and the vertically-adjustable frame C, connecting with the said frame C by set-screws, and supporting the cushion-frame and bed, substantially as described and shown.

2. The combination, with the legs of a billiard-table, of the frame F, connecting rigidly the lower ends of the said legs, the frame C connecting rigidly the upper ends of said legs, the vertically-adjustable frame C supporting the cushion-frame and bed, substantially as described and shown.

3. The pillar E', cross-brace F, screw G, center-block H, levers I, and screws J J', in combination with the frames C C' E and legs D, for leveling the bed of a billiard-table, substantially as described.

170,558. LAMP-EXTINGUISHERS. F. Hartman, Newark, N. J. [Filed Sept. 27, 1875.]



The combination, with the spring-arms a, hung to the burner and closing over the wick, of secondary arms b b, operated by shafts c, provided at their outer ends with arms or tips e, extending downward, as and for the purpose specified.

170,559. PAD-SADDLES. Simon Herr, Bluffton, Ohio. [Filed Nov. 6, 1875.]

The flexible pad-saddle, having the separated upwardly-flanged metallic plates for the reception of the back strap or band, and held in place as herein shown and described.



170,560.



170,560. OATMEAL-MACHINES. W. Heston, Akron, Ohio, assignor to F. Schumacher, same place. [Filed Sept. 11, 1875.]

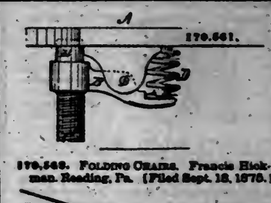
1. The bars D, applied in relation to the plate G and knives C, substantially as and for the purpose herein before set forth.

2. The combination of the bars D with the knives C and plate G, substantially as and for the purpose herein before set forth.

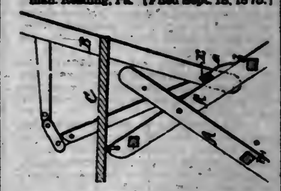
170,561. TILTING CHAIRS. Levi Heywood, Gardner, Mass. [Filed Jan. 7, 1875.]

In a revolving tilting chair, the combination of the arm B, step B, and swivel C with the spring D and spider A, said spider and arm being secured together at f by jointed ears, and provided with steps, constructed substantially as described.

170,561.



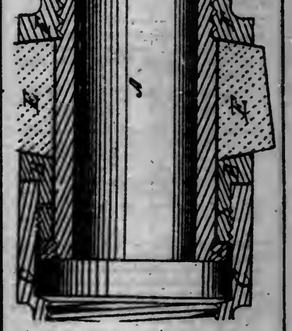
170,562. FOLDING CHAIRS. Francis Hickman, Reading, Pa. [Filed Sept. 18, 1875.]



The combination of the legs A', having catching devices a, and connected by links to the front of the seat C, the legs A hinged to the bars B, the seat C pivoted to the back-bars B, and the extended back-bars B having brace E, for engaging with the catches a, all substantially as set forth.

170,563. OIL-WELL PACKINGS. J. L. Hoffman, Oil City, Pa., assignor to R. R. Armor, same place. [Filed Apr. 17, 1875.]

Brief.—A rubber packing-ring applied upon a short section or joint of pipe connecting two sections of an oil-well tubing at a point intermediate to the oil and water springs, which ring is supported from below by an annular ledge, and is compressed by a suitable sliding coupler on the end of a tubular section above, actuated by the weight of the sections above, whereby the said ring is forcibly thrust against the wall of the bore, effectually closing the space between it and the tubing.



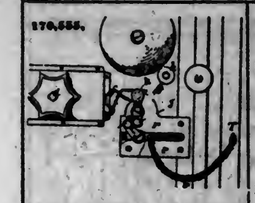
The combination of the tube A, screw-threaded at its ends, and provided with a screw-threaded flange, a, the screw-threaded annular ledge F, having an upper inclined face, packing-ring E, with inclined faces, the screw-threaded sleeve B, having an inclined flange on its lower end, and screw-threaded coupler C, all constructed and arranged as shown and described.

170,564. WINDMILLS. A. N. Hollenbeak, Genoa, Ill. [Filed Oct. 2, 1875.]

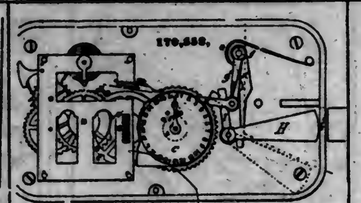
Brief.—The wheel is brought to the wind by the guide or tail vane. To stop or decrease the ordinary force or speed of the wheel, the lever or pedal is operated, which, by a chain, draws the tail-vane around, and causes the wheel to turn around and present an oblique face to the wind, thus decreasing its speed.

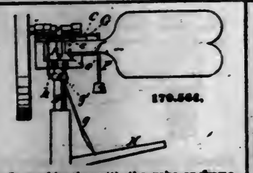
1. In combination with the brace C and friction-rollers e thereon, the chain G, united at one end to the head-operating mechanism, and at the other to the tail-vane and gravity-lever, as and for the purposes described.

170,555.



170,552.





2. In combination with the yoke or frame C O', the bent arm or brace O', secured at each end in the top part of the yoke, and provided with friction-rollers e and bearing r for the tail-vane, as described.

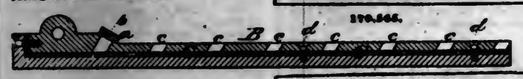
3. In combination with the frame or yoke C, the arm f', secured to the frame C, forming the lower pivot-bearing r' for the tail-vane and pivot-bearing for the gravity-lever F W, as described.

4. The controlling or guiding mechanism, consisting of lever H, connection g, yoke f', arms h, chain G, connected to tail-vane and gravity-weight, and pivoted lever gravity-weight F W, all constructed, arranged, and adapted to operate substantially as described.

5. The combination, in a windmill, of yoke C, brace O', and arm f', for supporting the tail-vane and wind-wheel upon its support, as described.

170,565. HARNESS-CUTTERS. P. Howell, Buena Vista, Pa. [Filed Oct. 2, 1875.]

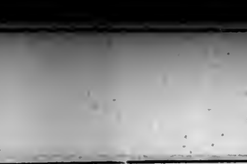
Brief.—Improved means for detachably securing the knives to the bar.



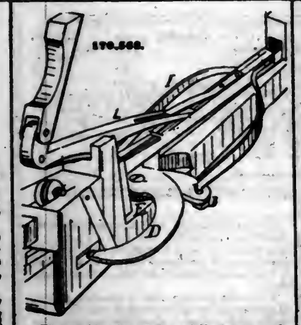
1. In combination with the bar A, constructed with inclined legs c, the locking-bar B and blades C, substantially as described.

2. The adjusting-screw f and fastenings e b d, combined with the bars A B, substantially in the manner and for the purpose described.

170,566. WHEEL-HUBS. John Hyman, Belvidere, N. J., assignor of two-thirds his right to Almon Warner, same place. [Filed Oct. 26, 1875.]



The wooden hub or box A, having the wedge-shaped partitions a a a, embraced by the spokes C, in combination with the band B, having the wedge-shaped partitions b b b, uniting with the partitions a a a in securing the spokes in place, substantially as and for the purpose set forth.



170,568.

The combination of the rod K, three-armed lever L, springs l, spring m, and levers D D', as described.

170,569. FODDER-CUTTERS. T. B. Lamb, Lowell, Mich. [Filed Sept. 16, 1875.]

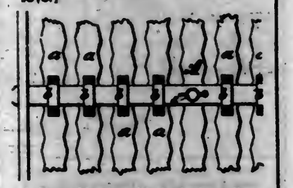
1. The combination of the hook-plates c, pin f, L-shaped pawl p, pawl h, and spring t, when the several parts are constructed and arranged substantially as described and shown.

170,569.

2. The braces s s' s'', their adjusting-bolts r, and spring-catch v on the wheel D, in combination with the loops v v' v'' on the knife F, for securing the latter to said wheel, substantially as described.

3. In a fodder-cutter, substantially as described, the combination, with the frame A and box B, of the following elements: the shaft C, journaled on one side of the frame and having the cutter-carrying wheel on its outer end, the cross-shaft a, the adjustable crank e, attached to one end of the said cross-shaft, the rod f, the rocker h, and the rods j, when the several parts are constructed and arranged to operate substantially as described and shown.

170,570. GRATES FOR FURNACES. John B. Larkin, Pittsburg, Pa. [Filed Aug. 26, 1875.]



1. In combination with the horizontally-reciprocating bars of a grate, having openings formed therein, as described, the detachable vibrating and retaining lever B, passing through said openings from the front.

2. The combination of the fulcrum-bar A, horizontally-reciprocating bars a, having openings b, and the vibrating and retaining lever B, pivoted to the bar A, passing through the openings b from the front, and detachable from the grate, substantially as described.

170,572. BLASTO FANNER. Moses H. Leonard and John H. Buckley, East Hampton, Mass. [Filed Nov. 1, 1875.]

Brief.—By dispensing with the ordinary terry warp-threads over the selvage-cord, it is held more securely by the weft-threads, and a corded edge on the fabric is avoided.

A fabric having its central elastic cords covered by auxiliary warp-stock, substantially as described, and its edge-cords by weft-threads only, substantially as described.

170,569.

170,571. BED-CLOTHES HOLDERS. James Lamb, Warren, Pa., assignor of one-half his right to R. Dennison, same place. [Filed Aug. 27, 1875.]

170,567. VAULT-COVERS. J. K. Ingalls, New York, N. Y. [Filed Nov. 2, 1875.]

In a vault-cover composed mainly of metal and glass, the combination of the lenses B B, having a concave upper surface, and the safety-rings b b, surrounding said lenses, and rising above their level, as shown, to protect them from abrasion, and prevent the loosening of the cement, substantially as specified.

170,573. CAR-COUPLERS. Chas. Johnson, Leesburg, Iowa, assignor of one-half his right to Wm. Schuls, same place. [Filed Aug. 21, 1875.]

Brief.—The sliding rod works the spring-jaws.

170,574. GAGES FOR SHEARS. John Lamb, Jeffersonville, N. Y. [Filed Jan. 16, 1875.]

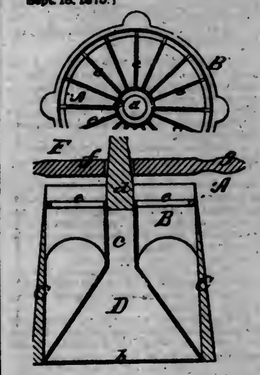
1. The within-described gage, consisting of the double bar A, having graduations on its upper surface, and a groove at one end, substantially as and for the purpose set forth.

2. The graduated double bar A, provided with the slide D and spring-jaw E, substantially as shown and described.

170,575. BED-CLOTHES HOLDERS. James Lamb, Warren, Pa., assignor of one-half his right to R. Dennison, same place. [Filed Aug. 27, 1875.]

The improved device hereinbefore described, consisting of the elastic band A, rings a a', tapes or cords B, and spring-guard hook C, said parts being connected for use in the manner set forth.

170,576. APPLE CORERS AND SLICERS. H. W. Little, Limestone Farm, Va. [Filed Sept. 18, 1875.]



1. The forcing implement F, consisting of a flat centrally-perforated portion, f, and the operating-handles g, adapted for use substantially as set forth.

2. In combination with a stand, B, having radial cutting-blades c, the conical deflector D, provided with stem e d, substantially as specified.

3. The combination of the tubular stand B, having notched annulus A, and the conical deflector D, having grooved stem d, with the radial blades c, substantially as specified.

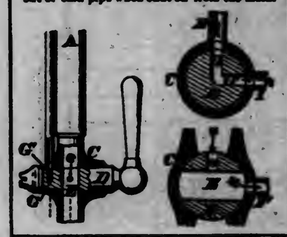
170,578. LOCKS FOR SEWING-MACHINES. Chas. Oppen, &c. John B. Logan, Baltimore, Md. [Filed Apr. 30, 1875.]



In a lock, the combination of the bent plate a and countersunk plate b, forming the latch-case, with the lever-bolt d, cam f, and screw k, said screw forming the pivot of the lever-bolt, uniting and holding in position the parts of the lock, securing it to the article upon which it is used, and regulating the action of the bolt, substantially as specified.

170,579. STOP AND WASTE COCKS. Robert J. Malcolm, Cincinnati, Ohio. [Filed Oct. 6, 1875.]

Brief.—The cock is provided with a waste-opening and with a vent leading to the upper part of the pipe, so that the water may flow out of said pipe when shut off from the main.

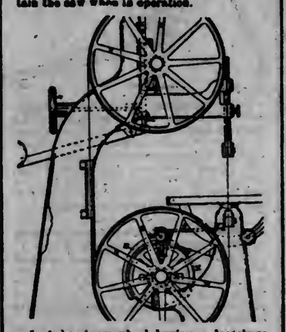


The combination, with a common water-pipe, A, of the stop, vent, and waste valve or cock C D E a G G', exits F and I, and air-passage H, the whole being adapted to operate as set forth

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170,577. BAND SAWING-MACHINES. Wm. O. Margedant, Hamilton, Ohio, assignor to Bentel, Margedant & Co., same place. [Filed Nov. 16, 1875.]

Brief.—One of the pulleys of the band-saw is provided with a loosely-revolving ring, upon which the saw is carried, and a brake bearing upon the outer and inner sides of the pulley is attached to and is operated by the belt-shifter. The saw guide is provided with a series of spherical bearing-surfaces, which sustain the saw when in operation.



1. A band saw wheel having a loosely-revolving face, periphery, or rim, as and for the purpose described.

2. The combination, with the driving-pulley and actuating mechanism of a band-saw, of the double-acting brake F, arranged to clamp the wheel upon opposite sides of its periphery to avoid straining the shaft, substantially as described.

3. The combination, with the brake F and the lever f', of the link G, band-shifter E', and rod E, as and for the purpose described.

4. The combination, with the band-saw blade, of one or more spherical back-thrust guides, for the purpose described.

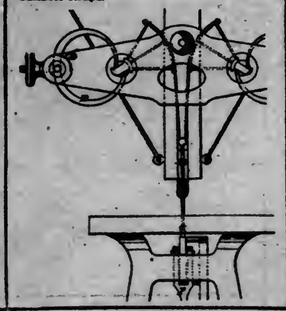
5. The combination, with spherical back-thrust guides i, of the eccentrically-located book screws, as and for the purpose described.

6. The combination, with the spherical guides i and the eccentrically-located back screws, of perforated intermediate washers K, as and for the purpose described.

7. The combination of the idler band-saw wheel-shaft with the sliding carriage a', the toothed plate O, and the worm or screw b', as and for the purpose described.

170,580. SCROLL-SAWING MACHINES. Wm. O. Margedant, Hamilton, Ohio, assignor to Bentel, Margedant & Co., same place. [Filed July 28, 1875.]

Brief.—The saw is strained by means of springs, the connection between the springs and saw being made by vibrating levers and suitable straps.



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1. In a scroll-saw, a straining or spring device consisting of a bar of steel or other suitable material, bent in such a form that both ends of the spring are in close proximity, in combination with a lever of suitable form inserted between the ends of the spring, as described, so that the action of the spring is transmitted to the lever, and transformed thereby into a reciprocating motion, substantially as described.

2. In a scroll-saw, a spring formed of a bar of steel or suitable material, bent as described, so that the ends of the bar come in close proximity, in combination with a lever which swivels on an independent fulcrum, while one end of the spring is active in front, and the other end of the spring is active on the opposite side of the fulcrum of the lever, substantially as described.

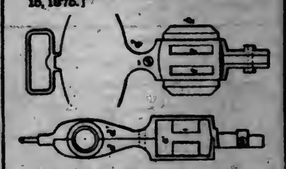
3. The slides formed of plates M M', in combination with the hollow pitman-pin, having holes a, the washers O, and screws X', as arranged, and for the purpose specified.

170,582. CLOTHES-PINS. Henry H. Mann, Springfield, Vt. [Filed Oct. 4, 1875.]



The herein-described clothes-pin, having the recessed parts A combined with a V-shaped spring, B, by means of pins passed through said parts A, and fitting in indentations in said spring, the whole constructed substantially as shown and described.

170,583. LOOM-PICKERS. Henry McManus, New York, N. Y., assignor to himself and C. H. L. Holmes, same place. [Filed May 15, 1875.]



1. The beating-block for pickers formed of paper or paper composition, as set forth.

2. The paper beating-block b, detachable from the shell, as set forth.

3. The shell consisting of sections d d', inclosing sockets e e', as described.

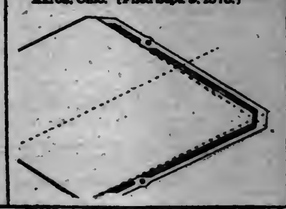
4. A bearing-block consisting of paper or papier-maché, adapted to the ends or shell of a picker, as specified.

5. A picker in which the bearing or beating block, or both, consist of paper or paper composition, as described.

170,581. LUBRICATING COMPOUNDS. John F. Mendonca, Springfield, Ill. [Filed Oct. 11, 1875.]

The lubricant, prepared in the manner and consisting of pure soft water, lye, borax, tallow, fire-clay, sulphur, black lead, and rock-salt, substantially in the proportions named.

170,582. TILES. Calvin J. Merrill, Upper Alton, Ill., assignor to Henry R. Merrill, Akron, Ohio. [Filed Sept. 9, 1875.]



An earthenware roofing-tile, the lower half whereof, with reference to a central transverse line, has a flange projecting downward along its edges, and a corresponding upward flange along the edges of the upper half, the sides of the lower half projecting downward at a certain angle with said central transverse line, and meeting in a point at the bottom, forming a triangle, and the sides of the upper half project upward at a greater angle with said central line, so that they do not meet at the top, but form a triangle truncated at its summit, for the purpose described.

170,582. TIRE-TIGHTENER. E. I. Moore, Niles, Ohio. [Filed Oct. 23, 1875.]

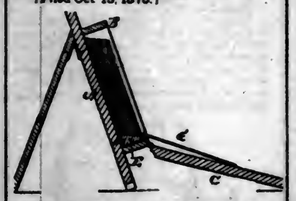


1. The combination of the jaws A A', adapted to be clamped around the spoke of a wheel, with the jack-pins D' D', adapted to set under the edges of the felly, and cam-levers F F, for operating the same to raise the felly for the purpose of applying a washer to the spoke, substantially as described.

2. The combination of the stationary and movable jaws A A', the ways B B, the removable cross-head C, and screw D for the purpose of clamping the apparatus to the spoke, substantially as described.

3. The combination of the jaws A A', the ways B B, the cross-head C, and screw D, the jack-pins D' D', and the cam-levers F F, the whole constructed and arranged to operate substantially as described.

170,583. PICTURE-HOLDER. Francis P. Perkins and Walter S. Dodds, Elgin, Ill. [Filed Oct 13, 1875.]



1. In a photograph or other picture receptacle, the triangular block or bar E, having the leaves O attached to the inclined top thereof by means of flexible hinges *e*, substantially as and for the purposes herein set forth.

2. The combination of the back A, box B, front C, triangular block E, flexible hinges *e*, and leaves O, all constructed substantially as and for the purposes herein set forth.

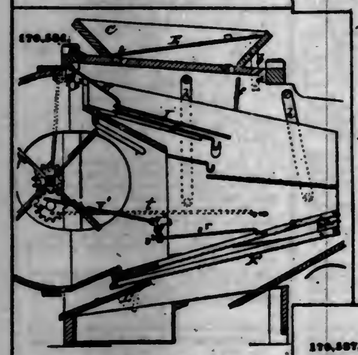
170,584. SAW-HOLDER. Henry C. Perry, Wilkesbarre, Pa. [Filed July 14, 1875.]

Brief.—A suitable case contains a presser-bar, having a notched shank and an operating-lever, and is provided with a sliding key, which works in a mortise or carved slot in the outer shell of the case, serving as a ready means of locking the device.

The combination, with the presser-bar D, having the shank *f* and notch *g*, and the lever A, of the plate *c*, having chamber *d*, the cap *b*, having mortise *e*, and the sliding key E, all arranged and operating substantially as and for the purpose set forth.

170,585. GRAIN-SEPARATOR. Charles B. Nichols, Troy, Pa. [Filed Oct. 20, 1875.]

Brief.—Improvement in the feeding devices, and means for actuating the moving parts of a grain-separator.



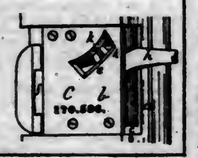
1. In a grain-separator, the hinged hopper C, provided with front and rear discharge-openings *d d* and hinged bars *b b*, in combination with the plate *a a*, substantially as and for the purposes herein set forth.

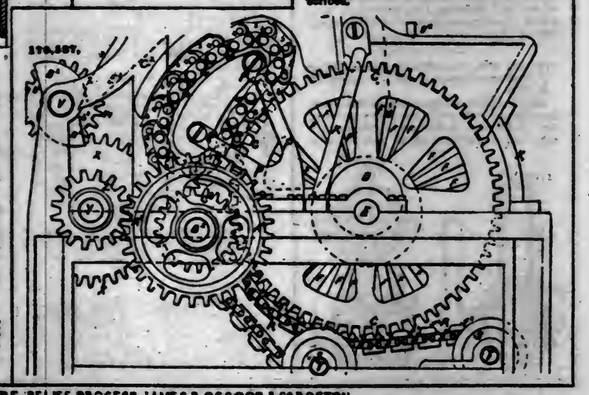
2. The reversible inclined false bottom E, having opening *e*, in combination with the hinged hopper C, having front and rear discharge-openings, substantially as and for the purposes herein set forth.

3. The combination of the screw K K', rocking arms *o o* connecting the same, rod *o'*, rocking shaft *p'* with arms *r' r'*, pinion *r'*, and plates *q*, all substantially as and for the purposes herein set forth.

4. In a flouring-mill, the combination of the fan-shaft *n* and the bar N, provided with a central tube, *k*, placed loosely on the shaft and movable and when thereon, for the purposes herein set forth.







170,587. MACHINES FOR MAKING COAL-DUST, &c., INTO BLOCKS. Moses M. Potter, Worcester, Mass. [Filed July 15, 1875.]

Brief.—Molds are arranged in lateral series around the periphery of a drum revolved by tooth-gearing. An inner eccentric operates the plungers. The material, received from the hopper, passes under a tilted presser to places on an endless chain revolving round a block, to resist the outward pressure of the plungers, and is finally expelled into troughs carried by another endless chain.

1. The combination, with a continuous rotating mold-wheel, of a driver for filling its molds, which is arranged for a reciprocating movement toward and away from the mold-wheel, and without contact with and entrance into the molds of the mold-wheel, all substantially as described.

2. The combination, with a continuous rotating mold-wheel, in the molds of which plungers are arranged to act, substantially as herein described, of an endless series of pans or troughs E, for receiving the molded blocks as discharged from the mold-wheel by the plungers, which series of pans is arranged to lie about the wheel, and to move continuously along and in the same direction therewith, substantially as herein described.

3. Blades *d'*, arranged to channel the material in the hopper in advance of walls or partitions *e'* therein, substantially as and for the purpose described.

4. A continuous rotating mold-wheel, in combination with plungers adapted to move through its molds, and to be operated by the eccentric rotation of their carrier relatively to the axis of rotation of the mold-wheel, substantially as and for the purpose specified.

5. The combination, with a continuous rotating mold-wheel, of a continuous rotating carrier for the plungers of the mold-wheel, which rotates about an axis eccentric to that of the mold-wheel, and is connected with its mold-wheel by an interlock, constructed and arranged substantially as herein described, and for the operation of the plunger-carrier relatively to the mold-wheel herein described, for the purpose specified.

6. The combination, in one machine, of a continuous rotating mold-wheel, B, which has plungers F arranged to travel in its molds, a driver, I, an endless series of pressure-plates, *c*, and an endless series of pans or troughs, E, each and all arranged together for a co-operative action, substantially as described, for the purpose specified.

7. The rolls *o*, extending across the width of the pressure-plates *c*, and interposed between each plates and blocks *c*, around which the plates travel, substantially as described, and for the purpose specified.

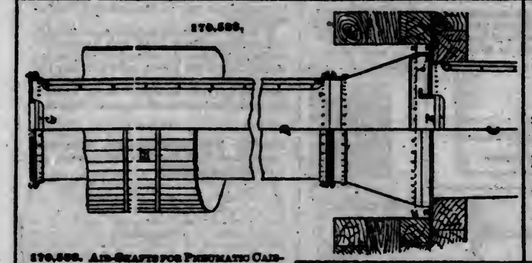
8. The pressure-plates *c*, having the extensions or legs for an interlock, by which to drive them about the block or form, substantially as described.

9. The angular working-faces *o* of the plunger, substantially as and for the purpose specified.

10. The beveled edges *g* of the plungers, substantially as described, for the purpose set forth.

11. The cam D' and lever F', in combination with a driver, I, substantially as described.

170,588.



170,589. AIR-SHAFTS FOR PNEUMATIC CAISSONS. Willard S. Pope, Detroit, Mich. [Filed Nov. 19, 1875.]

1. The combination of the exterior enveloping tube or barrel H with the air shaft or lock, substantially as and for the purposes set forth.

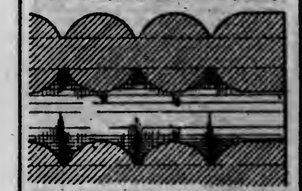
2. The combination of an air shaft or lock, D, provided with a cap-plate having a man-hole and gate, G, with an exterior barrel, H, the several parts being constructed and arranged substantially as described and shown.

170,590. BALE-TIES. Amos N. Powell, Alvarado, Tex. [Filed Oct. 23, 1875.]



A pair of hooks, *b b'*, attached to the respective ends of a hoop-iron band, E, so as to project on opposite sides at the extremities of the same, in combination with slots *c c'* behind the respective hooks in both ends of the band, substantially as herein shown and described, for the purposes set forth.

170,590. RUBBER STRAINER. Daniel B. Pratt, New York, N. Y. [Filed Nov. 8, 1875.]



1. As a railway-car spring, the double ribs or projections *a a* and *a' a'*, of circular or spiral form, when constructed or arranged in the manner and for the purpose herein described.

2. As a car-spring, the combination of the ribs *a a a' a'*, with the web *a''* operating the two, in the manner and for the purpose herein described.

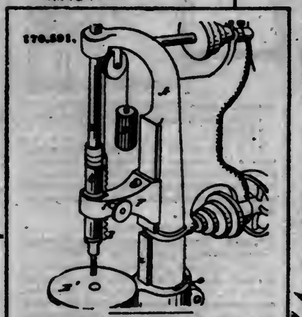
170,591. METAL-DRILLING MACHINES. S. W. Putnam, Fitchburg, Mass. [Filed Oct. 12, 1875.]

Brief.—The bearings for the pulley-shafts are split, and are adjusted to take up wear by screws. A flexible wedge is placed between the split portion of each bearing, and said wedge being an absorbent, it will set, when compressed, so as automatic lubricator to the shaft. Adjustable gibs are provided to take up wear between the post and the bearing to the work-holding table.

1. In an upright drill the combination, with the spindle, of a balancing device, consisting of the collar C and weight B, connected by a cord, the collar *c* and nut *b*, whereby the drill is prevented from dropping, substantially as above described.

2. The drilling-table E', provided with the supporting-arm F', in combination with the frame A and gibs *e e'*, substantially as and for the purpose set forth.

3. The split boxes *m*, in combination with the flexible wedge *n*, substantially as and for the purpose set forth.



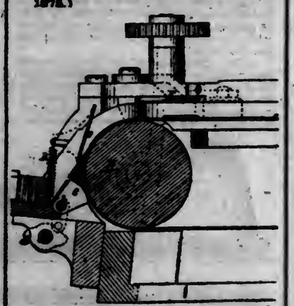
170,592. PERFUME-FOUNTAINS. Emil Roth, Hoboken, N. J. [Filed Nov. 4, 1875.]

Brief.—The circumferential groove and the outlet shown permit the liquid ascending between the plunger and the barrel to return to that in the bottle.



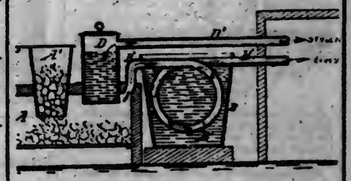
The combination, with a bottle, A, of the barrel B, provided with a waste-hole, F, the plunger C, spring H, suction-pipe K, discharge-spout G, and valves L K, all constructed and operating substantially as described.

170,593. TYPE-SETTING MACHINES. A. C. Richards, New York, N. Y. [Filed Feb. 9, 1875.]



The combination, with the type-receiving channel F, of the oscillating finger *e*, inclined plane *b*, and vibrating stop *c*, for preventing the type sliding down the inclined plane while the oscillating finger is delivering the type received into the type-channel, substantially as and for the purpose described.

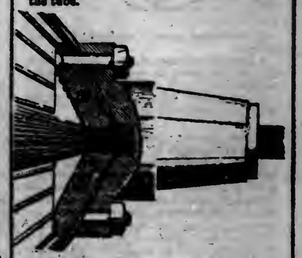
170,594. APPARATUS FOR TREATING CARBONIC ACID FOR HARDENING CEMENT, &c. Geo. Richardson, Milwaukee, Wis. [Filed Aug. 3, 1871.]



In an apparatus for hardening or curing artificial stone, the tank or vessel B, intervening between the gas-generating furnace A and the hardening-chamber C, and containing flowing water, in combination with the gas-conducting pipe D', in part immersed therein, substantially as and for the purpose specified.

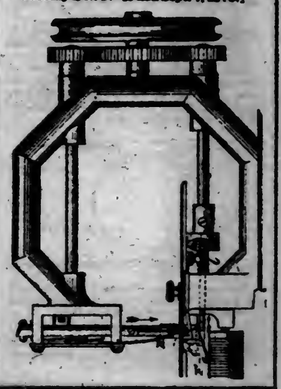
170,595. TUBES FOR FORMING HOSES. John Rimer, Easton, Pa. [Filed May 3, 1875.]

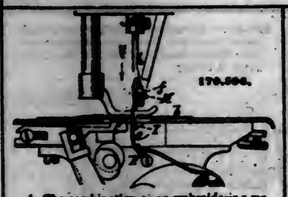
Brief.—In addition to the ordinary gage-plate provided with holes, there is combined with the condensing-tube of a rope-machine an annular plate, having its inner circumference corresponding in size to the bore of the tube. The outer strands pass over the periphery of this plate, while the inner ones pass through the central opening. The former are then prevented from winding upon the latter, as the same are twisted prior to entering the tube.



In combination with the condensing-tube A, having a flaring mouth, the annular plate D, arranged between the central and outer series of strands forming the cord, to prevent the outer series from winding upon the central strands as the same are twisted prior to entering the condensing-tube, as specified.

170,596. MACHINES FOR REMOVING FABRICS. Reuben M. Rees, Williamsburg, Brooklyn, N. Y. [Filed Sept. 7, 1875.]





1. The combination, in an embroidering-machine, of the pointed latch-needle, with the latch-opener H and latch-closer I, for catching and releasing the thread, substantially as described.

2. The combination of the needle G, provided with reversible latch, the latch opener and closer, and the reciprocating thread-guide F, the whole constructed to operate substantially as described.

3. The combination with the reciprocating latch-needle, and latch opener and closer, the reciprocating thread-guide F, and the feed device C, the whole constructed and arranged to operate substantially as described.

170,597. BALE-TIES. Elbert O. Schorten and John H. Gardner, New Orleans, La. [Filed Nov. 6, 1875.]



1. The slotted collar D, substantially as described.

2. The combination of the clamping-lever B with the collar D, substantially as described.

3. The measure gage E, combined with the collar D, substantially as described.

170,598. HINGES. John B. Shields, Norfolk, Va. [Filed Sept. 20, 1875.]

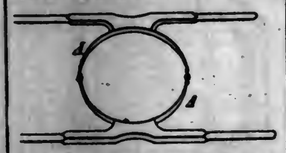
Brief.—A recess extending to the tip of one leaf receives a lug upon the pintle, and when this leaf is folded against the other one, the lug is held under a projection upon it. Thus the pintle is prevented from working up.



In a butt-hinge, the combination of the recess *e*, extending to the top of the leaf A, the lug *a* on leaf B, and the lug *p* on the connecting-pin, substantially as specified.

170,599. BARREL-LIFTING MACHINE. A. J. Small, Woodstock, Canada. [Filed June 21, 1875.]

Brief.—The hoop is hinged, as shown, allowing of motion toward the barrel on each side. The handles for leverage to the hoop hold firmly to the barrel below the bulge, and permit easy transportation.



The combination of the hinged hoop A and the handles A, substantially as described, and for the purposes herein before set forth.

170,600. BLASTING-CARTRIDGES. Friend W. Smith and Fredrick Egge, Bridgeport, Conn. [Filed Nov. 18, 1875.]

A blasting-cartridge, made of flexible material in tapering form, having an interior cup of rigid material formed down into the same, substantially as set forth.

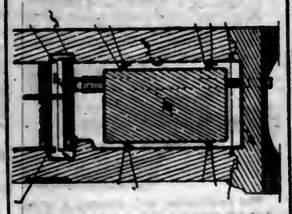


170,601. MOTH-TRAPS FOR BEE-HIVES. W. H. Spurlin, Hawkinsville, Ga. [Filed Oct. 17, 1873.]

As a new article of manufacture, a moth-trap to be attached to a bee-hive, consisting of the box A, provided with the downwardly-inclined moth-stop B and moth-entrance tubes *c*, the top of the box A being closed by a reticulated cover, *d*.

170,602. REFRIGERATORS. B. A. Stevens, Toledo, Ohio. [Filed Sept. 16, 1875.]

Brief.—Central partition and shelves removable, and detachable ice-pan set in recesses in the side, to catch drip therefrom, also removable downward through the casing and door. The lining turned into the joints, which are also rabbeted.



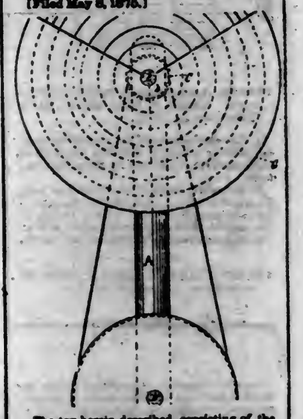
1. The combination, substantially as hereinbefore set forth, of the side walls, having recesses *f f*, and the removable ice-pan inserted in the recesses, and projecting therein beyond the surface of the walls, to catch the drippings.

2. The combination, substantially as hereinbefore set forth, of the recessed side walls, the ice-pan inserted in the recesses, the lips projecting downwardly from the recesses, the end walls, and the hoods overhanging the ends of the pan, whereby the drippings are caught, while allowing the air to circulate freely around the ends of the pan.

3. The combination of the box or case, its side walls, the ice pan supported thereby, the removable central partition, and the removable shelves, these members being constructed and operating substantially as set forth, whereby the ice-pan may be removed and inserted from below.

4. The refrigerator constructed, substantially as herein before set forth, with a bottom recessed on its upper side, a flanged lining resting thereon, side walls jointed upon the base, and the flanged lining secured upon the walls and abutting against the bottom lining, whereby the lining-joint is formed above the bottom.

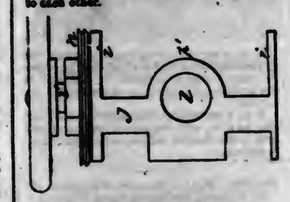
170,603. TOY CHROMATROPES. Robt. Steel and Thos. P. McCadden, Philadelphia, Pa. [Filed May 6, 1875.]

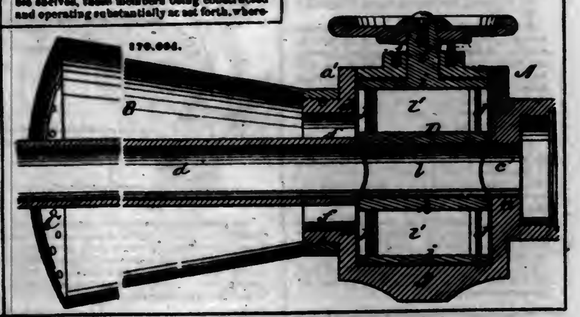


The toy herein described, consisting of the disk F, segmental disk G, pulley O, hub S, and band-wheel D, all constructed and arranged to operate substantially as and for the purpose set forth.

170,604. HOSE-NOZZLES. Jeremiah Toomey, Woonsocket, R. I. [Filed Sept. 20, 1875.]

Brief.—The body of this hose-nozzle consists of two tubular branches, crossing each other at right angles, and communicating. One of them is provided at one end with a female screw thread, by means of which it is coupled to a hose-pipe. To its other end is attached a rose-sprinkler and jet-pipe. Within the other branch is introduced a valve having openings at right angles to each other, and semi-cylindrical surfaces, also at right angles to each other.

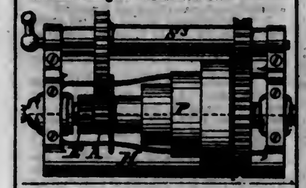




In a cut-off hose-nozzle the combination, with the body A, having inclined *o'*, induction-openings *p'*, and piped, and thereto chamber B, of the rotating valve D, having openings *l* and *l'* on equal angles to each other, and the semi-cylindrical surfaces *p p'*, also at right angles to each other, substantially as specified.

170,605. BOOTH-LASTER. William Tucker, Philadelphia, Miss. [Filed May 17, 1875.]

Brief.—The gear-wheel is fast to the spindle, and may, at will, be fastened to the cone-pulley. The gear-wheel A is integral with the cone-pulley, and the feed-gear B may, by virtue of pins projecting one from each side, be connected, at will, either to the pulley-gear A, or to a flange on a sleeve that is fast to the spindle. The gears are upon an eccentrically-journaled shaft, and may be removed from contact with gears when desirable.

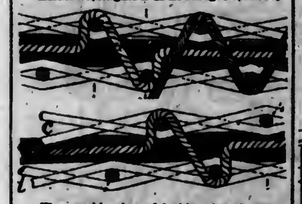


1. The feed-gear B, adapted to be attached at will either to the primary spindle or to the cone direct, substantially as described, for the purpose set forth.

2. The combination, in an engine-lathe, of a primary spindle, A, a cone or cone-pulley, F, back gears A B O D, and a feed-gear B, adapted to be attached at will either to the spindle or to the cone direct, as herein described, for the purpose specified.

3. The bushing F, having the perforated flange *b* and groove *g g'*, the spring *c*, having the detent-head *f*, the double-ended clutch-pin *e*, and the detent-hole *o* in the cone-gear A, in combination with the primary spindle, cone, and feed-gear of an engine-lathe, as herein shown and described, for the purposes set forth.

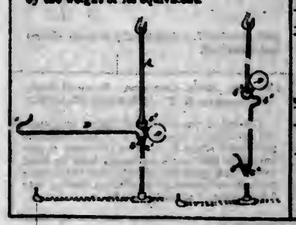
170,606. ELASTIC FABRICS. Archd. Turner, Leicester, England. [Filed Aug. 20, 1875.]



The combination of locking-threads with the binder warp-threads, the fine or back warp weft-threads, and rubber strands, as herein set forth, for the purpose of locking the rubber strands in their tubes, and preventing them from running up in the fabric when broken, as above described.

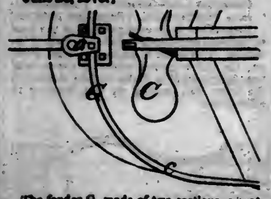
170,607. LAMP-PENDANTS. W. M. Underhill, Oconto, Wis. [Filed July 10, 1875.]

Brief.—The pendant may be pendent from either the loop or the hook. In the former case the rod is kept in a horizontal position by the weight or its equivalent.



The rod B, provided with an eye, *b'*, a head or loop, *b'*, a hook, *b'*, and a balancing-weight, D, or its equivalent, in combination with the stem A, by which it is suspended, and with the pendent C of a lamp, substantially as herein shown and described.

170,608. GUARDS FOR SCREW-PROPELLERS. H. G. Wagner, Georgetown, D. C. [Filed June 26, 1875.]



The feeder G, made of two sections, *e e*, attached at their outer ends to the lower end of the stern-post E, and at their inner ends to the lower part of the hull, and surrounding and guarding the screw-propeller C, substantially as described.

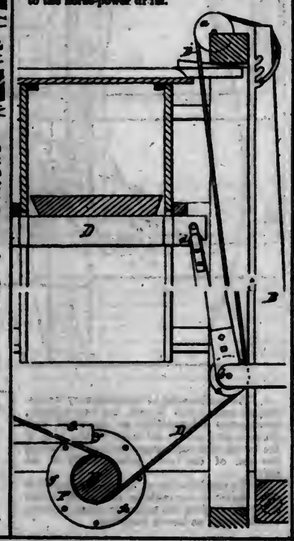
170,609. HORSESHOE-BLANKS. James T. Walker, Albany, N. Y. [Filed Aug. 20, 1875.]



A horseshoe-blank formed with a longitudinal raised projection at or near the center, longitudinally and transversely, to form a register to insure its proper position in the bending-machine, substantially as set forth.

170,610. COTTON-PICKERS. W. W. Wallace, Meshaneville, Tex. [Filed Nov. 3, 1875.]

Brief.—The fallower is raised by the ends of levers pivoted thereto, their other ends being pivoted to points below the center of other levers of the full height of, and pivoted to the bottom of the press. The winding-ropes, being attached to the top of these long levers, pass around pulleys on them at their intersection with the short levers, thence to the horse-power drum.



170,611. BOOTS AND SHOES. F. O. Ward, Philadelphia, Pa., assignor of one-half his right to L. Murr, same place. [Filed Nov. 15, 1875.]

Brief.—A small piece of elastic gore-cloth is inserted in the heel portion just above the counter, to prevent the breaking of the upper at that point.



The combination, with the upon A, of the elastic gore B inserted in the hind quarter at the top of the heel or heel-stiffening, as herein set forth, and for the purpose described.

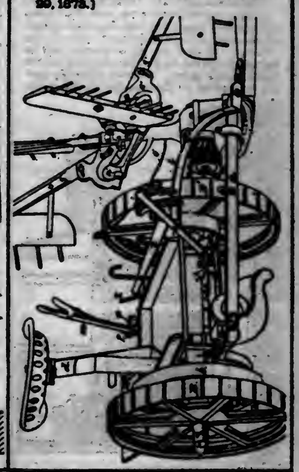
170,612. GRATES. Geo. Wellhouse, Akron, Ohio. [Filed Nov. 9, 1875.]

Brief.—The catch acts automatically to retain the drop plate or door when raised to a horizontal position.



The combination, in a stove-grate, of a rim adapted to rotate for shaking out the ashes, and having inwardly-projecting arms *f* and recess F, with the drop-plate B, pivoted in said recess, and having a rearwardly-projecting arm, and the pivoted gravitating-catch G, substantially as shown and described, for the object herein set forth.

170,613. HARVESTER-RAKES. William H. Whitsley, Springfield, Ohio. [Filed Dec. 20, 1875.]



1. The combination of the shaft *c* with the bevel-wheel *n*, and the column *r* provided with arched feet *t*, and the bridge-plate *q*, whereby the lower stop or bearing of said shaft is in said bridge-plate and below said bevel-wheel, as set forth.

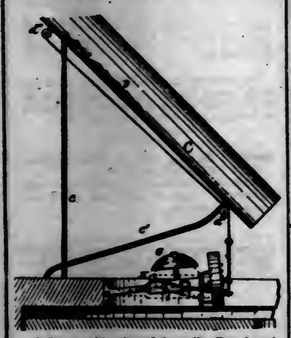
2. The switch *f* and the bridge *h* moving upon an oblique axis, which, if prolonged, would cut the orbit of the joint-bolt *f*, as and for the purposes set forth.

3. The switch *f* and the bridge *h*, constructed with a hinge-joint and mounted upon a single stud, as set forth.

4. The combination, with the bevel-wheel *n* and its bearings in the bridge-plate, of the bevel sprocket-pinion *p*, and its spindle *o'*, secured to and projecting laterally from the edge of said bridge, as set forth.

170,614. GRIST-ALARMS. D. T. Williams, Hennepin County, Minn. [Filed Oct. 12, 1875.]

Brief.—When grain ceases to bear on pallet in the conduit-pipe, the suspended wheel falls upon ratchet, and by contact therewith revolves and gives the alarm by means of a projecting staple and hammer of bell.

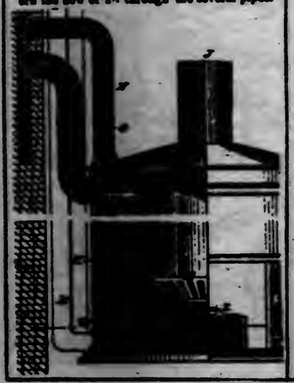


1. The combination of the pallet *D* and cord *d* with the wheel *E* on bisqued axle *F*, constructed to operate as described.

2. The combination of the pallet *D*, cord *d*, wheel *E*, with staple *c*, and millstone *A* with the hammer *H* and gong *G*, and their intermediate actuating parts, substantially as described.

170,615. VENTILATING AND HEATING FURNACES. John A. Young, St. Louis, Mo., assignor of one-half his right to Wm. F. Cozzens, same place. [Filed Sept. 9, 1875.]

Brief.—Air is drawn from near the bottom of the room, passes through the outer or foul-air chamber of the furnace, and thence to the chimney. In case the air be pure it may be delivered into the hot-air chamber, and thence to the rooms above. Suitable dampers govern the flow of air through the several pipes.



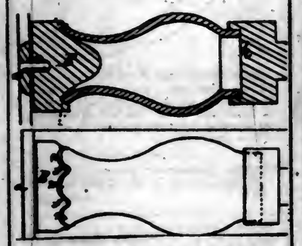
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1. The foul-air chamber K, surrounding wholly or in part the warm-air chamber G and fire chamber C, with its pipes M and N, in combination with the pipes H and J, substantially as and for the purposes set forth.

2. The combination of chambers G and K, air-pipes H J M N, and dampers I O U with a furnace, E B, substantially as set forth.

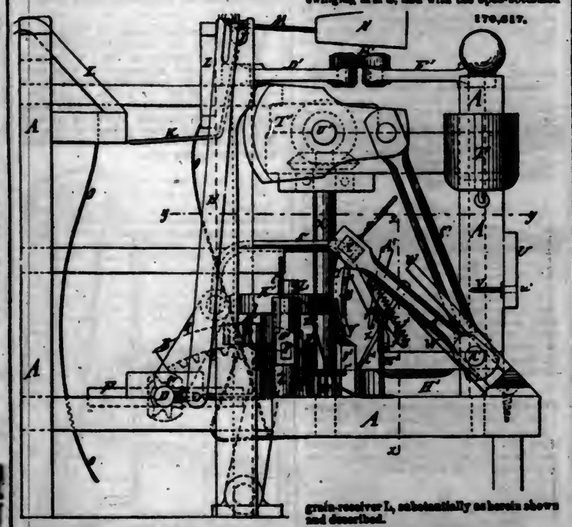
170,616. MACHINES FOR FLARING AND CURLING LAMP-ORNAMENTS. Paul Zimmerman, Pittsburg, Pa. [Filed Nov. 11, 1875.]

Brief.—The inner configuration of the head of the tool corresponds to the outer form of the article. This latter is made on a fluted mold, and the tool is passed onto it in a true axial line, by reason of a round handle thereon in the same line, resting on and working in guide-posts.



The combination of the snap or tool C, guide-frame A, and "former" or cone B, substantially as and for the purpose described.

170,617. GRAIN-BINDERS. John J. Atwater, Medford, Minn. [Filed Feb. 20, 1875.]



1. The combination of the stationary wedge-shaped rest or arm X with the twine-clamp, constructed substantially as described, and the swinging arm S, for inserting the body of the twine into said clamp without releasing the end of the twine, substantially as set forth.

2. The combination of the spring-stop P R with the revolving table or rock-shaft D and crank Q, carrying the twine-clamping devices, substantially as herein described.

3. The combination of the grooved standard Z, the plate A', the hook-bar L F, spring M', crank-wheel K', and gear-wheel F' with each other, for forming the loop in the twine, substantially as herein shown and described.

4. The combination of the clamp O', sliding bar E', and the eccentric J' with the grooved standard Z and the gear-wheel F', for holding the loop in place upon the standard Z, substantially as herein shown and described.

5. The slotted needle Y, and its stationary stop *p'* and spring *p'*, the needle-frame P' Q' R' S', the crank T', and the inclined guide-rock W, in combination with the grooved standard Z, for passing the ends of the twine through the loop, substantially as herein shown and described.

6. The combination of the spring S' with the grooved standard Z and with the needle Y, for pushing the loop from the said standard and holding the ends of the twine, substantially as herein shown and described.

7. The combination of the inclined guide-stop *p'* with the needle Y, and its stationary guard-stop *p'*, and spring *p'*, for uncovering the slot of said needle, substantially as herein shown and described.

8. The combination of the pivoted U-bar B' and the stops *b'* C' D' with the grooved standard Z, the clamp O', the needle Y, and the needle-frame P' Q' R' S', for withdrawing the ends of the twine from the eye of the needle, substantially as herein shown and described.

9. The combination of the rack B, the segmental gear-wheels B' H', the upright shafts C' G', the cranks D' F', and the connecting-rod E' with the gear-wheel I', for operating the hook-bar L' and the clamp O', substantially as herein shown and described.

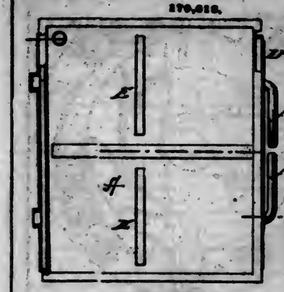
10. The combination of the segmental gear-wheel Y', the upright shaft X', the bevel-gear wheels W' V', and the horizontal shaft U' with the segmental gear-wheel H' and the crank T', for operating the needle-frame and needle, substantially as herein shown and described.

11. The combination of the cranks G I, the slotted connecting-rod H, the rock-shaft J, the weighted arm M N, and the heel arms K with the shaft D, that carries the crank Q and the swinging arm S, and with the open-bottomed grain-receiver L, substantially as herein shown and described.

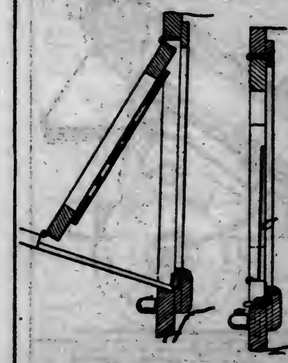
170,618. MILK-COOLERS. Bruno C. Bort, Chateaugay, N. Y. [Filed Oct. 28, 1875.]

The vat A, provided with hollow longitudinal partition O, reservoirs D D', and laterally-perforated strips B, whereby the water is permitted to flow down uniformly from its head to the feet, spreading evenly over the bottom surfaces, and passing out without leaving any "dead water," all substantially as set forth.

170,619.

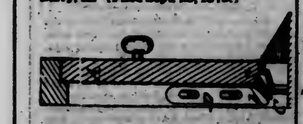


170,619. MUSIC-RACKS FOR UPRIGHT PIANO-FORTES. Stephen Brambach, New York, N. Y. [Filed Oct. 6, 1875.]



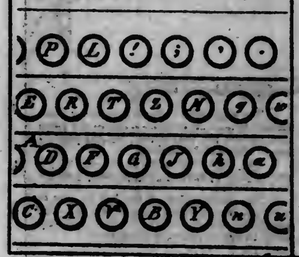
The swinging desk or stand at the front of an upright piano case, provided with a hinged base-strip and extension-legs for supporting jointly the music-book and holding-desk in inclined position, substantially as specified.

170,620. WEATHER-STRIPS. J. Chandler, Derry, Ill. [Filed Sept. 25, 1875.]



The combination of the hinged weather-strip with an adjustable stop-plate, having an inclined cam part at the door-casing for retaining the strip securely on the sill, substantially as described.

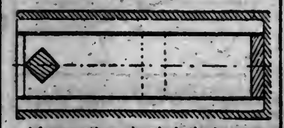
170,621. TYPE-WRITING MACHINES. Philander Deming, Albany, N. Y. [Filed May 22, 1875.]



1. The herein-described method of indicating the separate words written upon a type-writer, by substituting capital letters for the usual spacing, whereby the time usually consumed in spacing is saved, substantially as specified.

2. The combination and arrangement of the groups of lower-case letter keys and the capital-letter keys in the key-board of a type-writer, as shown and described, for the purpose specified.

170,622. HONEY-PACKAGES. L. Drake, New York, N. Y. [Filed Oct. 28, 1875.]



A honey-package, in which the honey, as originally deposited in its frame, is incased, with its frame, in a glass receptacle of appropriate dimensions and strength, substantially as and for the purpose specified.

170,623. PROCESSES OF PREPARING HIDES AND SKINS FOR TANNING. Homer Sly, Ballston Spa, N. Y. [Filed Apr. 23, 1875.]

1. The treatment of the hides or skins with an acid solution before liming, for the removal of salt or other matters, and for plumping the hide, as herein described and set forth.

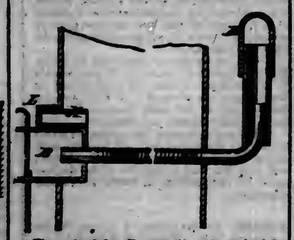
2. The treatment with the mixed sal-soda and soft-soap solution after the first use of sulphuric-acid solution, as herein described.

3. The treatment with the mixed sal-soda and soft-soap solution after the second treatment with the sulphuric-acid solution, as herein described.

4. The treatment with saltpeter, as herein described, and for the purpose herein set forth.

5. The process of preparing hides and skins for tanning by treating them with the ingredients named, in the order stated, substantially as and for the purposes herein described.

170,624. TOBACCO-DRYING. H. R. Farmer, Kinggold, Va. [Filed Aug. 21, 1875.]



The valved flue B, extending through the back of the furnace and into a tobacco-curing chamber, in combination with a cold-air passage, K, having the damper L, all arranged to regulate the temperature of a curing-room in the manner described.

170,625. APPARATUS FOR ROASTING GOLD AND SILVER ORES. Robert M. Fryer, New York, N. Y., assignor to the Fryer Noble Metal-Mining Company, of New York. [Filed May 20, 1875.]

Brief.—The fuel and quartz are fed in through the door. The heat of combustion generates steam in the jacket, which passes up and, issuing through the circular perforated pipe in the stack, causes a draft. The metallic vapors, as they issue from the furnace, are condensed by water falling from the cone, and are collected in the upper water-jacket. The movable bottom is lowered, and carries the reduced charge to any point desired.

The combination of furnace A, portable bottom B, contact condenser and chamber I, substantially as described and operated, for the purpose above set forth.

170,626. DYEING AND PRINTING TEXTILE FABRICS. James Harley, Lowell, Mass. [Filed Nov. 27, 1875.]

Brief.—Prints the aniline tints upon the fabric at the same time with the mordants, for the madder colors. The "carrier" solutions of the aniline colors are such as resist the action of the dye-baths, and thus prevent bleeding and blearing.

1. The improved process herein described for dyeing in madder and garancine styles, in combination with aniline purples and violets, consisting in first fixing the latter upon the cloth with the mordants, and then passing the cloth through the dye-bath, whereby it is then dyed up in madder and indigo styles, substantially as specified.

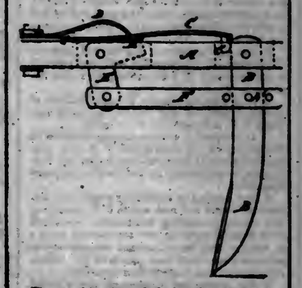
2. The combination of aniline greens and purples upon cloth with mordants suitable for dyeing up in madder colors, substantially as specified.

3. The new fabrics herein described, having an aniline purple, substantially such as described, in combination with one or more madder colors.

4. The combination of aniline purple upon fabrics with mordants suitable for dyeing with garancine, alizarine, and similar dye-stuffs, substantially as set forth.

170,627. SELF-LOOSING CULTIVATOR-TEETH. John Harris, Marquette, Wis. [Filed July 10, 1875.]

Brief.—Sufficient strain upon the teeth turns the elbow-lever, which throws up the spring-catch, releasing the teeth.

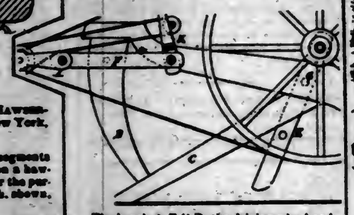


The combination of the catch-spring C *c*, the re-enforcing-spring D, the bent lever E, and the bar or beam F, with the beam A and the pivoted cultivator-teeth B, substantially as herein shown and described.

170,632.

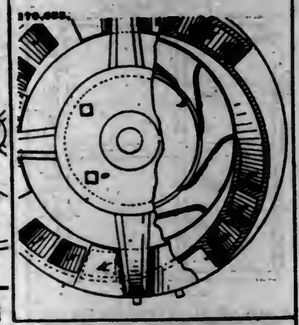
170,633. SPRINGS-WHEELS. John J. Kendall, Greensborough, N. C. (Filed Apr. 24, 1875.)

Brief.—To enable the driving-wheel and spindle to be raised or lowered, so that the operator may either stand or sit at work.



The bench A B C D, the driving-wheel and its standard E, the head F, having pivoted sections K L, the spindle I, and pulleys J, all constructed and combined substantially as and for the purpose specified.

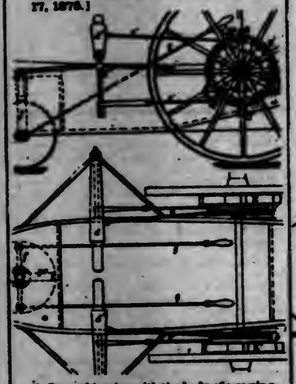
170,634.



170,635. COMBINED CLEATS AND HAWSER-CLAMPS. Purdind. W. Hobbie, New York, N. Y. (Filed July 31, 1875.)

A metallic cleat having clamps or segments B B pivoted thereon, and swing upon a hawser rope or cord, in the manner and for the purposes substantially as herein set forth. shown, and described.

170,636. HAND-PROPELLED VEHICLES. W. T. Howard, Baltimore, Md., and George H. Howard, Washington, D. C. (Filed Nov. 17, 1875.)



1. In combination with the body of a reversible wagon, having a seat suitably arranged for the occupant, the inclined end-bevers *d d* loosely pivoted to the respective sides of the wagon, substantially as specified.

2. In combination with the end-bevers *d d*, pivoted at the respective sides of the wagon-body, the cords *e e*, for communicating the motive force of the occupant to the rotating mechanism of the driving-wheels, substantially as herein described.

3. The inclined end-bevers *d d* and cords *e e*, combined with the seat-spools *b b*, shackles B B', dishes D D', and driving-wheels B B' and their axles, all arranged as parts of a reversible or convertible wagon, substantially as and in the relation herein specified.

4. The inclined shackles B B', combined with the spools *b b*, having the fingers *c c*, and adapted to operate upon the pins *d' d'* of the parts *b b*, substantially as and for the purpose set forth.

5. The combination of the flanged dishes D D', shackles B B', provided with the parts *b b*, and spools *b b*, substantially as herein described.

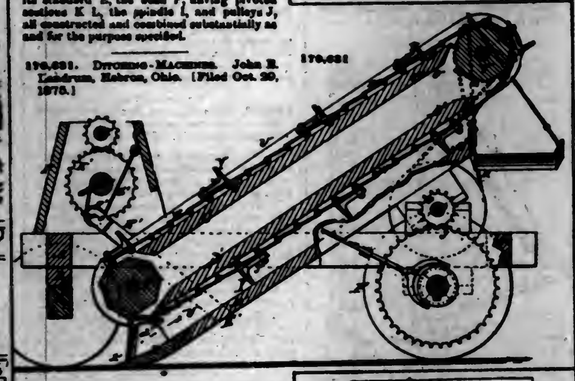
6. In a wheeled vehicle, the combination of the end-bevers *d d* and the contiguous or supporting F F, substantially as specified.

7. In a wheeled vehicle, the combination of the end-bevers *d d*, cords/guys F F', and spoke-connections between said bevers and cords/guys, substantially as and for the purposes specified.

8. In a reversible or convertible wagon, the inclined end-bevers *d d* and spools *b b*, operated by the rotary propelling mechanism, combined with endless propelling and steering cords *e e*, having their ends secured respectively to said end-bevers and fixed points in the wagon, substantially as hereinbefore described.

9. The pedestaled bottom of the wheeled vehicle, in combination with the steering-wheel F, vertical and inclined shaft *f*, and wheel-axle *f'*, adapted to receive the guiding-cords *g*, substantially as specified.

170,637. DITCHING-MACHINES. John R. Lenderman, Hebron, Ohio. (Filed Oct. 20, 1875.)



1. The box formed of the plate Y, provided with a slotted cheek, *y'*, and a socket, *y''*, and the perforated leg Z, provided with a socket, *z'*, in combination with rod adjacent links of the endless chain W, substantially as herein shown and described.

2. The combination of the straps E', pulley F', rope or chain O', chains H' M', gear-wheels K' L', and frame I' with the forward end of the elevator box or spout U A' B' C', and the forward end of the main frame A, substantially as herein shown and described.

3. The combination of the suspended spout O' and the suspended chains F' with the rear end of the elevator box or spout U A' B' C', and with the bars Y *y' y'* Z *z'* of the endless chain W, substantially as herein shown and described.

170,638. CULTIVATORS. T. J. Lee, Pender County, N. C. (Filed Oct. 8, 1875.)

Brief.—A surface-scraper attached to a plow-beam, to operate in advance of the tar-plow, and a hilling-scraper secured to the land-side.

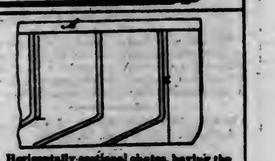
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In combination with an ordinary plow, C, the front and rear blades A and B, substantially as and for the purposes set forth.

170,640. WARM-WHEELS. James Mallory, Dryden, N. Y. (Filed Nov. 6, 1875.)

Brief.—Sectional cheese with mortise opening in the top of the wheel-cone, in combination with a horizontal rotating gate, with its adjusting bearing-ring and beehive continuous from top to bottom.

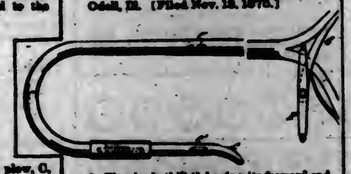


1. Horizontally-sectional cheese, having the mortise opening in the top of the wheel-cone, in combination with a horizontal rotating gate, substantially as specified.

2. The combination of the adjusting bearing-ring E and adjusting-screws O, with the horizontal gate, substantially as specified.

3. The combination of horizontally-sectional cheese, with a wheel having buckets, C, continuous from top to bottom, substantially as specified.

170,641. OPEN TRAIN. C. H. Middlemore, Odell, Ill. (Filed Nov. 10, 1875.)



1. The single thill C, having its forward end curved to pass around the breast of the horse and receive the thill-carrier, substantially as herein shown and described.

2. The joint formed in the free end of the curved thill C, substantially as herein shown and described.

3. The combination of the bar or arm G with the bracketed rear end of the open-side thill C, to receive the whiffletree F, substantially as herein shown and described.

170,642. RAISE-STOPES. John Manson, Scott, N. Y., assignor to himself, Morgan Manson, and Wm. D. Hunt, same place. (Filed Sept. 4, 1875.)

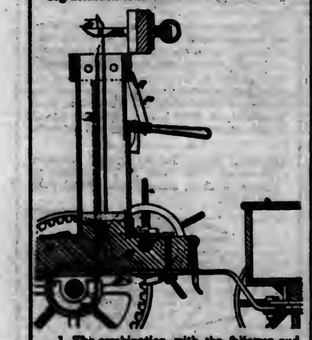


1. The combination of the flexible hose A, the strap B, and a suitable handle, said strap being attached substantially as described, so that it can be retained at either side of the hose, for using the same in a straight or curved form, for the purposes set forth.

2. The combination of the flexible hose A, the strap B, the ring C, the hook D, and the lever E, and its hooks *e'* and pivoting-bracket F, with each other, substantially as herein shown and described.

170,643. PORTABLE HAY-PRESSES. Michl. McCarty, Pueblo, Colo. (Filed Oct. 23, 1875.)

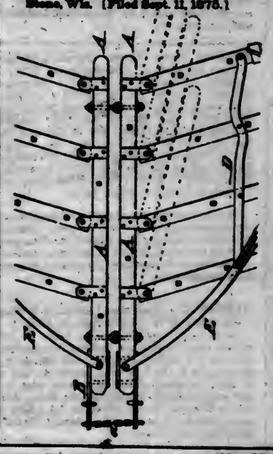
Brief.—The bars operating the follower are jointed to allow it to swing from over the press. A chain, provided with legs for bearing against the door, is held in position by a dog attached to a lever-arm.



1. The combination, with the follower and vertical press-case, of the bars D, jointed at L, as shown and described, to enable said follower to tilt, in the manner specified.

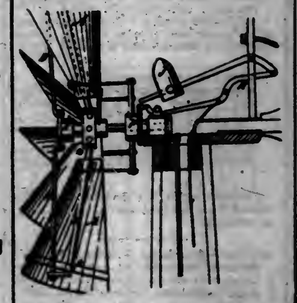
2. The chain M, legs M, lever O, and locking-bar P, combined and arranged with the door, substantially as specified.

170,644. HARROWS. Henry Moll, Yellow Stone, Wis. (Filed Sept. 11, 1875.)



170,645. HARVESTING. David L. Osborn, Ashland, Nebr. (Filed Aug. 21, 1875.)

Brief.—The vanes are hinged by straps to arms that are outwardly inclined from the hub, so that the vanes, being thrown a little back of the arms by their hinges, are made both tangential and inclined forward or toward the wind, and thus approximating the form of a screw to a greater extent than when arranged exactly radial, and in the transverse plane of the wheel.



1. The vanes A, hinged by straps to arms B, the latter being inclined outwardly from the hub, as and for the purpose specified.

2. The combination of the inclined arms B, rods D, and the extension E of the hub, substantially as specified.

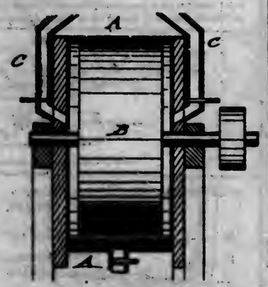
170,646. WINDMILLS. David L. Osborn, Ashland, Nebr. (Filed Aug. 21, 1875.)

Brief.—The vanes are hinged by straps to arms that are outwardly inclined from the hub, so that the vanes, being thrown a little back of the arms by their hinges, are made both tangential and inclined forward or toward the wind, and thus approximating the form of a screw to a greater extent than when arranged exactly radial, and in the transverse plane of the wheel.

1. The vanes A, hinged by straps to arms B, the latter being inclined outwardly from the hub, as and for the purpose specified.

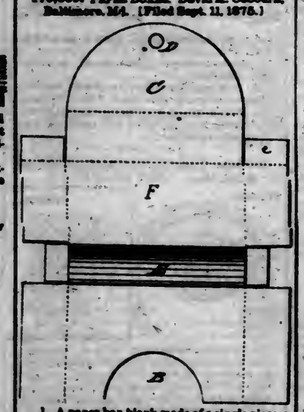
2. The combination of the inclined arms B, rods D, and the extension E of the hub, substantially as specified.

170,647. PEARL-BARLEY MILLS. Henry S. Northrup, Quasqueton, Iowa. (Filed July 31, 1875.



The combination of hopper D, having side channels C C, and stationary case A, having slots, raised edges, and bottom outlet, with the vertical grinder B, as and for the purpose specified.

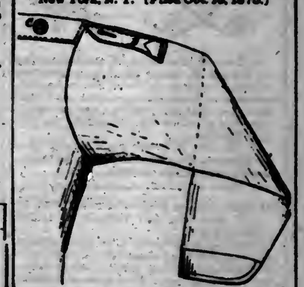
170,648. PAPER BOXES. David K. Osborn, Baltimore, Md. (Filed Sept. 11, 1875.)



1. A paper-box blank made of a single piece, having edge-lapped and bottom-connected parts F F', with aperture B on the latter, and extension C, having aperture D, on the former, all as shown and described.

2. A one-piece paper box provided with back-extension C D and bottom-stiffening-block E, as and for the purpose specified.

170,649. SLEEVE-ADJUSTERS. A. Perago, New York, N. Y. (Filed Oct. 16, 1875.)



The tab B, arranged at the top or shoulder of sleeve and fastening on the yoke of shirt, as and for the purpose specified.

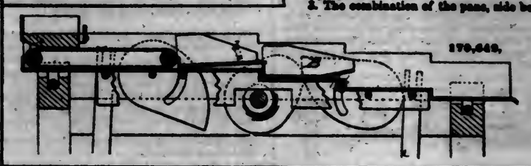
170,650. ORE-CONCENTRATORS. James V. Pomeroy, Boulder, Colo. (Filed Aug. 21, 1875.)

Brief.—Ore is delivered into a hopper, from which it is fed, upon raising the gate, upon an endless belt. This, in turn, delivers it to a series of step-like adjustable pans. The whole is mounted on standards, and receives motion from a cam upon the central shaft.

1. In reciprocating ore-concentrators, a step-shaped table, having a series of levels at different elevations, as and for the purpose described.

2. The combination in an ore-concentrator, with a series of levels at different elevations, of a head-level, made longer than the others, and provided with an endless belt, as and for the purpose set forth.

3. The combination of the pans, side belts,



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and nuts with the slotted side walls of the table, to adjust the pans to any inclination, substantially as set forth.

4. The standards pivoted to slide-beam, as and for the purpose specified.

5. The combination, with concentrating-table and endless belt, of the hopper, pivoted and moving gate, as and for the purpose specified.

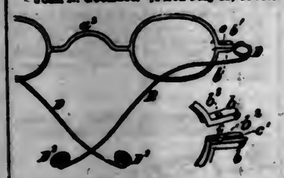
170,642. CARTRIDGE. Geo. Smith, Brooklyn, N. Y. [Filed Nov. 13, 1875.]

Brief.—The metallic wad at the outer end of the paper shell engages with the interior thereof, and thus the shell is expelled with it.



The combination, in a cartridge, of metallic wads B C and the paper shell A, substantially as specified.

170,644. SPECTACLE-FRAMES. John W. Stewart, Woodville, Tex., assignor of two-thirds his right to James K. Durham and John M. Goolsbee. [Filed July 15, 1875.]

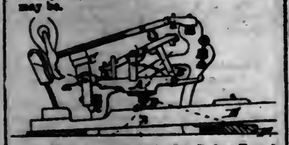


1. The bow D, coiled at D^1, and terminating in the end d, curved at d^1, in combination with the lens-loop A, having flanges b and b^1, provided with straight grooves c^1, and intersecting semicircular grooves c, and the clamping-cover a, substantially as and for the purpose specified.

2. The bow D, turned into a volute, D^2, at its extreme outer end, substantially as shown, and for the purpose set forth.

170,645. GRAND PIANO-FORTE ACTIONS. C. F. T. Steinway, New York, N. Y. [Filed Oct. 20, 1875.]

Brief.—The adjustable pilot bears against and supports the balance-lever at a point in line between the key-fulcrum and balance-lever pivot, to reduce the friction as much as may be.



1. The screw-threaded pilot D, key E, and balance-lever A, combined and arranged to operate substantially as described.

2. The adjustable pilot D, combined and arranged to operate with the pivot-pin of the key E, and the pivot a of the balance-lever A of a piano-forte action, substantially as described.

170,646. ATTACHMENT FOR PIANO-FORTES. C. F. T. Steinway, New York, N. Y. [Filed Oct. 20, 1875.]

Brief.—Besides the usual agraffe, there is an additional one mounted on the under side of a transverse bar of the metal frame, giving a duplex agraffe-bearing near the hammer-line.



1. A capodastro secured from below in a bar cast solid with the metal frame, in combination with agraffes secured in the wrest-plank, or in a portion of the metal frame bearing against said wrest-plank, substantially as shown and described.

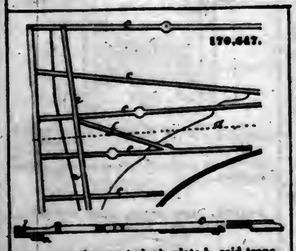
2. A capodastro made of a screw-shank, b^2, and head b^3, which is provided with a groove to give a hold for a screw-driver and to receive a steel face, b^4, substantially as set forth.

170,647. METAL FRAMES FOR PIANO-FORTES. C. F. T. Steinway, New York, N. Y. [Filed Oct. 20, 1875.]

Brief.—To increase the strength of the structure, and enable it to withstand the strain of the strings.

1. In a metal frame for piano-fortes, the combination of a transverse brace, c, with longitudinal braces a, and with a strengthening-rib, a, so as the wrest-plank plate b, said transverse brace running parallel, or nearly so, to the strengthening-rib, substantially as shown and described.

2. In a metal frame for piano-fortes, the combination of the oblique brace f with the hitch-pin plate d, transverse brace c, and longitudinal braces a, constructed and arranged substantially as set forth.



170,648. STOP-COCKS. Nehemiah Upham, Athol, Mass. [Filed Oct. 2, 1875.]

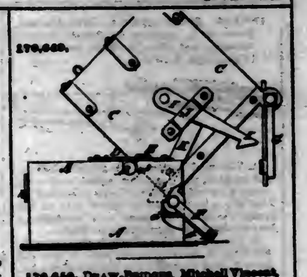


1. A valve, constructed of a valve-casing, a sector-shaped and pronged spindle slightly eccentric thereto, a sliding and pronged segment-valve, and an intermediate friction-roller between valve and spindle, arranged and operated substantially in the manner and for the purpose set forth.

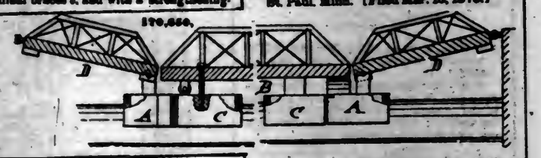
2. The spindle-extension, having lateral recess, and a spring or equivalent device for retaining the roller and sliding valve in partially open position, substantially as set forth.

170,649. DUMPING DEVICES FOR FILLING GRAVES. John W. Vannice, Crawfordsville, Ind. [Filed Oct. 23, 1875.]

The combination of the base A, made with close sides and back, and provided with the bottom a^1, the inclines a^2, the arms K, and the notches a^3, and the tilting box C, made with an open top and front, and provided with the shaft B, the two-part door F G, hinged to the upper and lower corners of its front, the catch-bars H, the latches I, and the bar and hooper I, M, with each other, substantially as herein shown and described.

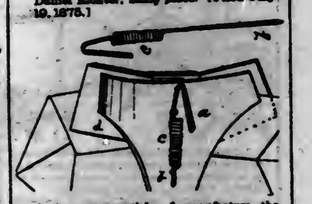


170,650. DRAW-BRIDGES. Mitchell Vincent, St. Paul, Minn. [Filed Mar. 18, 1875.]



The combination, in a pontoon draw-bridge, of the stationary pontoons A A, hinged self-adjusting approach-sections D, floating draw-section S, cam-bar and chain E, and supporting-pontoon C, the pontoon at one end of the draw-section serving as a pivot-pier, and the opposite pontoon being left free to float, so as to enable the draw to be opened and closed, in the manner herein described and set forth.

170,651. NECK-TIE FASTENERS. Johann Wehmer, New York, N. Y., assignor to Daniel Richter, same place. [Filed July 19, 1875.]



1. As a new article of manufacture, the elastic suspending-hook device composed of the parts a, b, and c, as described and set forth.

2. In combination with the shield d, the fastener composed of the parts a, b, and c, substantially as and for the purpose described and set forth.

170,652. RAIL-JOINTS. Hermann Weber, New York, N. Y. [Filed Oct. 23, 1875.]

Brief.—A rail-joint in which the fish-plates are secured to the rails by means of a slotted and toothed plate resting against one of the first bars; said slots in the plate bearing against a wedge-shaped slot in the bolt, the bearing-surface on plate being also wedge-shaped, whereby the rails are securely clamped by driving up the plate, which is prevented from jarring loose by a pawl on fish-plate taking into notches on sliding plate.

An improved railroad-rail coupling, formed by the combination of the notched bolts E, the slotted and toothed plate F, and the pawl G with the plates C D and the adjacent ends of the rails A B, substantially as herein shown and described.

170,653. CORN-PLANTERS. Richd. J. Weller, Kenosha, Wis. [Filed Sept. 11, 1875.]

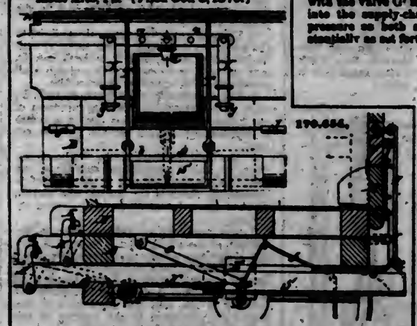
Brief.—The counterbalk is made in two parts, each having an interior longitudinal groove, and provided at the lower part with a cutting-bit in the form of a quarter-section of a cone, for clearing the chips and adapting the counterbalk to hills of various sizes. It is firmly clamped to the bit-shank by means of a set-screw on each side passing directly through each part.

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As improved countersink attachment herein described, clamped to a tool by a set-screw on each side, and passing directly through each part, whereby the shank of the tool is pressed from each side, and the sides drawn firmly together.

170,656. DUMPING-CARTS. G. B. Wiestling, Mont Alto, Pa. [Filed Oct. 6, 1875.]



1. The extra frame E, combined with the cart-body and the axle, and having the rear end of the body hinged to its rear end, substantially as specified.

2. The combination of the ratchet mechanism, shaft M, chain N, and toggle-bar with the cart-body, hinged at its rear end, as described.

3. The combination of the slide-beam K and a of the two gates with the suspended lever I, as shown, to fasten one door by one and the same movement that unfastens the other.

4. The loop d in the staple b, in combination with the chain B and suspending-rods T, substantially as specified.

5. The toggle-bar O, jointed to the cart-body, and arranged in combination with the chain B, to hold it steady by the chains N, substantially as specified.

170,657. WATER-SUPPLY FOR STEAM-BOILERS. Silas Chick, Marquette, assignor, by mesne assignments, to the Automatic Boiler-Feeder Company, Dubuque, Iowa. Patent No. 97,261, dated Nov. 30, 1869; reissue No. 6,276, dated Feb. 11, 1873. [Filed Aug. 12, 1875.]

Brief.—The water is raised from a tank to the heater, from which it flows into the heating-chamber, and raises a float. The movement of the float operates a weighted vessel, through which the movement is transmitted to the valves, shutting off steam from the lower tank, and equalizing the pressure between the heater and tank, and also opening communication between the feeder and the boiler, so that the water may flow by gravity into the boiler.

1. The valve E, operating substantially as described, to control the communication between the steam-pipe and the cistern, and also the communication between the steam-feeder and the cistern.

2. The combination, in a boiler-feeder, of the valve E and a float, F, operating substantially as described, to control the entrance of steam into the cistern or tank, and then automatically regulate the supply of water to the feeder, by opening it at regular intervals by the direct pressure of the steam, substantially as set forth.

3. The combination, in a boiler-feeder, of the steam-chamber B, the water-chamber D, and the float-chamber Y, substantially as described.

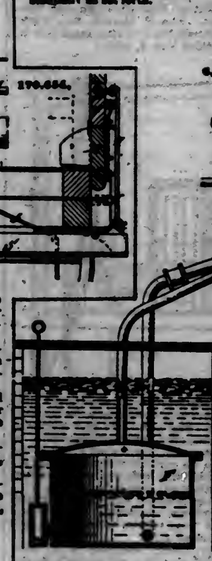
4. The combination, in a boiler-feeder, of a water-chamber and inclosing steam-space, and a waste-pipe for the relief of condensation, and waste-pipe connecting with the water-tank or cistern.

5. The combination of the steam-space B and the float-chamber Y by means of the valve V and ports f, f^1, substantially as and for the purpose set forth.

6. The float F, operated in the manner described, in combination with the arm J and the weighted wheel K, having pins r, r^1, r^2, r^3, S^1, and S^2 thereon, to operate the valve-gear, in the manner specified.

7. In combination with the pipe I' N, the intermediate valve G^1, actuated, in opening and closing for the admission of feed-water into the boiler, by the rise and fall of the float F', and the valve V simultaneously actuated with the valve G^1 for the admission of steam into the supply-chamber Y, to equalize the pressure on both sides of the valve G^1, substantially as set forth.

6,655. DUMPING-CARTS. G. B. Wiestling, Mont Alto, Pa. [Filed Oct. 6, 1875.]



1. The extra frame E, combined with the cart-body and the axle, and having the rear end of the body hinged to its rear end, substantially as specified.

2. The combination of the ratchet mechanism, shaft M, chain N, and toggle-bar with the cart-body, hinged at its rear end, as described.

3. The combination of the slide-beam K and a of the two gates with the suspended lever I, as shown, to fasten one door by one and the same movement that unfastens the other.

4. The loop d in the staple b, in combination with the chain B and suspending-rods T, substantially as specified.

5. The toggle-bar O, jointed to the cart-body, and arranged in combination with the chain B, to hold it steady by the chains N, substantially as specified.

6,700. ASPHALTO GAS-BURNERS. Charles D. Gervis, Williamsburg, N. Y. Patent No. 107,262, dated Dec. 1, 1874. [Filed Nov. 9, 1875.]

Brief.—The elastic bar holds the shoulder of the plug against the shoulder of the neck.

1. The combination of a burner, B, and a plug, E, having a shouldered lever and to fit beneath a shoulder in the neck d, and formed with one or more recesses, e, substantially as and for the purpose set forth.

2. The combination of a burner, B, a plug, E, and an elastic bar, C, constructed and operating substantially as and for the purposes described.

3. The combination of a burner, B, plug, E, and lever H, constructed and operating substantially as described, and for the purpose indicated.



6,700. PAPER WAGON-BODIES. John W. Jarboe, Green Point, N. Y. Patent No. 98,681, dated July 18, 1860. [Filed June 18, 1874.]

A body for wagons and other vehicles, constructed of stiff paper, with the ends secured by the dovetail-joints, as set forth and described.

6,771. PAPER WAGON-BODIES. John W. Jarboe, Green Point, N. Y. Patent No. 98,681, dated July 18, 1860. [Filed June 18, 1874.]

A wagon or vehicle body made in part or in whole of paper treated with water-proof material, substantially as described.

6,772. MOP-HEADS. Wm. H. Curtis, Chicago, Ill., assignor to Chas. B. Clark, John K. Clark, E. L. Ferguson, and H. B. Clark. Patent No. 140,966, dated Apr. 22, 1874. [Filed Nov. 10, 1875.]

Brief.—The stationary jaw has a trough-shaped face, into which a point upon the movable jaw enters to clamp the mop-cloth.



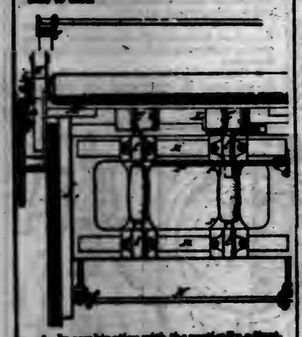
1. The combination of a fixed trough-shaped jaw, A', with a movable jaw, having an edge constructed to enter the angle of the fixed jaw, for clamping the mop, substantially as described.

2. The trough-shaped jaw A', having the openings a', in combination with the jaw A, having the projections a, constructed to enter said openings, substantially as and for the object specified.

3. The combination of the fixed trough-shaped jaw, having a slotted shank and a socket secured to the handle B, with the movable jaw A, pivoted in the slotted shank of the fixed jaw, and having a reservoir-projecting lever, constructed to be operated by a screw-rod for causing the movable jaw to approach and recede from the fixed jaw, and the said movable jaw having an edge constructed to enter the angle of the fixed trough-shaped jaw, for clamping a mop thereto, substantially as described.

6,772. COMBINED PLANING AND MATCHING MACHINES. Wm. H. Deane and Wm. B. Lenox, Cincinnati, Ohio, assignors, by mesne assignments, to J. A. Fay & Co., same place. Patent No. 96,502, dated Nov. 11, 1869. [Filed Nov. 11, 1875.]

Brief.—The matching cutter-heads are made vertically adjustable by means of screws operated by bevel-gears connecting them with a horizontal shaft crossing the machine from side to side.



1. In combination with the vertically-adjustable matcher-spindles O O', the cross-shaft H, as connected thereto as that an operator stationed outside of the frame of the machine is enabled to conveniently raise or lower said spindles, substantially as and for the purpose specified.

2. In combination with the vertically-adjustable matcher-spindles O O', operated by a cross-shaft, H, bearing in the outside of the frame of the machine, the cross-shaft H', arranged to be rotated also from the outside of the frame of the machine, and operating to laterally adjust the matcher-spindles relatively to each other, substantially as and for the purposes specified.

3. In a combined planing and matching machine, having fixed but A' A' and vertically-adjustable matcher-spindles, the main frame provided with removable sides or X X, for the convenient removal of fixed-rail B', substantially as and for the purposes specified.

4. The sliding guard-fence L and its spring *g*, arranged and operating substantially as and for the purpose specified.

5. The combination of the lever feed-roller F and its bracket, with devoted stud in close with the devoted grooved sector-bolts *d* and their nuts *e*, the whole arranged and operating substantially as and for the purpose described.

6. The arrangement of the checking-lever segment I I, constructed as described, in combination with the system of expansion-gearing for feed-rollers of a planing-machine, substantially as and for the purpose described.

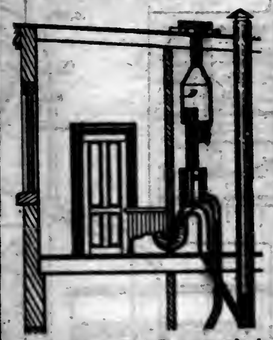
6,773. WHEELBARROW. Joseph P. Manton, Providence, R. I. Patent No. 169,182, dated Oct. 26, 1875. [Filed Nov. 19, 1875.]

Brief.—When great power is desired the worm-gear is used. When rapidity is desired the bevel-geared wheels are operated by the capstan and the worm-gear disengaged.

1. The combination of the worm *c* and worm-gear *b* with the windlass, consisting of the barrel C, the wild-cat *d*, and brake E, and the bevel-gear A and pinion *a*, substantially as and for the purpose specified.

2. The combination, with the windlass operated by means substantially as described, of the worm *c* and worm-gear *b*, as an auxiliary appliance, substantially as and for the purpose herein set forth.

6,774. WATER-TRAP SUPPLIES AND CONNECTIONS. John H. Morrell, New York, N. Y. Patent No. 168,400, dated Oct. 5, 1875. [Filed Nov. 6, 1875.]



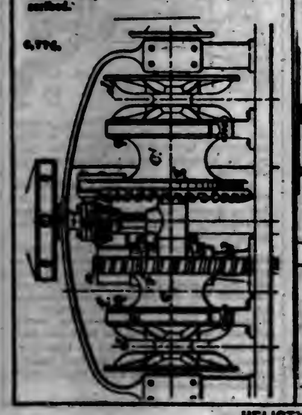
1. The water-reservoir D, constructed substantially as herein described, so as to serve as a storage-reservoir as well as a distributing-reservoir, provided with an injection, in combination with a pipe, leading to and opening through the roof, and another leading to and communicating with one or more traps below, substantially as specified.

2. The combination of said reservoir D with one or more traps, substantially as described, so that said traps will be both supplied and ventilated, as set forth.

3. The partitioned chambers K K', constructed and operating substantially as described.

4. In a water-supply, the combination of the water-supply pipe with the trap, so arranged that the former subserves the double purpose of a supply-pipe and ventilator, substantially as specified.

6,775. MACHINE FOR SETTING NAILS IN HORSESHOES. John Hall, Jr., Boston, Mass. Patent No. 168,401, dated Oct. 5, 1875. [Filed Nov. 6, 1875.]



1. In combination with the vertically-adjustable matcher-spindles O O', the cross-shaft H, as connected thereto as that an operator stationed outside of the frame of the machine is enabled to conveniently raise or lower said spindles, substantially as and for the purpose specified.

2. In combination with the vertically-adjustable matcher-spindles O O', operated by a cross-shaft, H, bearing in the outside of the frame of the machine, the cross-shaft H', arranged to be rotated also from the outside of the frame of the machine, and operating to laterally adjust the matcher-spindles relatively to each other, substantially as and for the purposes specified.

3. In a combined planing and matching machine, having fixed but A' A' and vertically-adjustable matcher-spindles, the main frame provided with removable sides or X X, for the convenient removal of fixed-rail B', substantially as and for the purposes specified.

4. The sliding guard-fence L and its spring *g*, arranged and operating substantially as and for the purpose specified.

5. The combination of the lever feed-roller F and its bracket, with devoted stud in close with the devoted grooved sector-bolts *d* and their nuts *e*, the whole arranged and operating substantially as and for the purpose described.

6. The arrangement of the checking-lever segment I I, constructed as described, in combination with the system of expansion-gearing for feed-rollers of a planing-machine, substantially as and for the purpose described.

6,776. MACHINE FOR SETTING NAILS IN HORSESHOES. J. Roy, Philadelphia, Pa. Patent No. 169,044, dated Oct. 19, 1875. [Filed Nov. 17, 1875.]

Brief.—To the brief that accompanies the original patent, it is only necessary to add that the fortress *g* is of peculiar construction, and adapted to the use of gas only as fuel.

1. In a nail-machine, the combination of the rod V, spool U, and rollers *x y* with mechanism for feeding the nail-rod to the fortress and hammers, for the purpose of passing on an uninterrupted feed, as specified.

2. The combination of the fortress or forebay *g*, the lever *f*, and mechanism for imparting to it a lateral oscillating movement, with the hammers E D and anvil H, as and for the purpose set forth.

3. The apparatus for feeding the nail-rod to the hammers, consisting of the lever T, with its fortress *s*, rod S, slide R, lever Q, cam P, with its stud, and the revolving clutch *t*, all constructed and operating as described.

4. The combination, with the hammers E D, anvil H, and laterally oscillating fortress *g*, of the stationary cutter *m* and revolving cutter *l*, substantially as and for the purpose set forth.

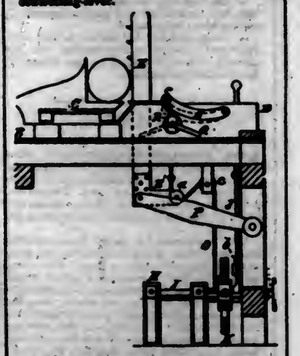
5. The combination, with the two hammers, the anvil, and the oscillating fortress, of the automatically-revolving and longitudinally-reciprocating clutch *t*, for turning and feeding forward the rod, as and for the purpose described.

6. The combination, substantially as described, of the sliding step *o*, hammer E, arm S, and cam *n*, as and for the purpose described.

7. The combination, with automatic mechanism for the manufacture of wrought-nails, of a fortress or other device for the reception and heating of gas, and the application of the heat thus generated to the heating of the nail-rod, substantially as set forth.

6,777. LOG-TURNERS FOR SAW-MILLS. Geo. H. Shearer, Bay City, Mich. Patent No. 147,128, dated Feb. 3, 1874. [Filed Apr. 20, 1874.]

Brief.—The lower end of the turning-bar is pivoted to and guided by radius-rods, and the friction-gear upon the upper end is so arranged as to be thrown out of gear with the driving-pulley, and into contact with a stationary brake, by a single movement of the controlling-lever.



1. In combination, the toothed bar R, with an angular foot, the radius-bars P P, pivoted to the angle of the foot, and the pulley *o* at the end of the foot, for the purpose of simultaneously raising and tilting the toothed bar, substantially as described.

2. In combination, the shaft Q, the eccentric K, the L-shaped bar S, and roller *t*, for the purpose of preventing the log from rolling toward the carriage, substantially as described.

3. In log-turning devices, the combination, with the wheel K, of the stationary brake L, substantially as and for the purpose specified.

4. The combination, with the pulled bar R, of the radius-bars P, shafts T U, friction-wheels G K, levers J M, brake L, rod or cable O, pulleys *o o*, constructed and arranged to operate substantially as described, and for the purpose set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 23. TUESDAY, DECEMBER 7, 1875. PRICE { $5.00 per year—single. $5.00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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NOTICE TO MANUFACTURERS AND OTHERS.

UNITED STATES PATENT OFFICE,
Washington, D. C., October 5, 1875.

The COMMISSIONER OF PATENTS respectfully requests manufacturers of and dealers in engines, machines, apparatus, tools, and appliances of whatever kind, to send to this Office duplicate copies of all catalogues and circulars which they have issued or may issue from time to time. R. H. DUELL, *Commissioner.*

COMMISSIONER'S DECISIONS.

O. E. MCMURRAY.—*Interlocutory Appeal.*

[*Appeal from the Principal Examiner in the matter of the application of Oscar E. McMurray for letters patent for* STOP-VALVES.—*Decided November* 3, 1875.]

Parts which, though shown as concerned in an operation, may be rendered unnecessary by a ready substitute, need not be explicitly cited in a combination claim.

SPEAR, *Acting Commissioner:*

I am not sure that the matter appealed is one of form. It seems to pertain to the patentability of the subject-matter, and to be properly appealable to the Board of Examiners-in-Chief; but as the matter has been brought before me, I am inclined to give applicant the benefit of the doubt, especially since looking into the case I am of the opinion that the Examiner's objection is not a valid one. The claim is as follows:

In stop-valves, the movable yoke or support D, with one or more valves, E, supported thereby, in combination with the stem B and nut C, operating, &c.

The Examiner's objection is, that this claim is not for an "operative combination." More specifically, the objection appears to be that levers shown in the central figure, and which, in accordance with the construction there represented, are necessary to the operation of the device, are not included in the claim. Now, the yoke or support D is represented by applicant as the central element of his invention. It carries the valves, lifting them as it rises and lowering them as it descends, at the same time holding them so that the final movement of the descending nut pushes them laterally into firm position upon their seats. This lateral movement is caused by the lower part of the nut pressing, in its descent, either against levers that transmit the lateral motions to the stems that support the valves, or else directly against the beveled ends of the stems themselves.

According to one modification, plainly shown, the levers are not needed at all, and the modification is a very obvious one. Since, therefore, these pivoted levers are not absolutely necessary, I do not think that any ambignity arises by the omission of this element from specific mention in the claim, nor that what would be understood as a statement of the invention from the terms of the claim would be in any respect inoperative. The claim, as it stands now, covers either the modification shown in the central figure or in that upon the right-hand side below, the figures not being numbered as they should be. It is always a very difficult and delicate question to determine how subordinate claims for an improvement in a mechanism of any considerable number of parts, or in any respect complicated, should be limited, and no exact rule can be laid down for such cases. Unquestionably, an applicant having made an improvement upon a previously existing machine may lay claim to the specific part which he has improved, or to any reasonably well-defined group of parts thus improved, even although that part or that group of parts do not alone operate to produce any beneficial result. No one is misled by any such claim, but understands readily, even if it be not specifically stated, that the improvement is upon a specified part of the machine to which it relates. To require the applicant to specify all the parts necessary to the complete operation would be to defeat the very object for which he seeks for patent, and would be plainly against

reason. But to how small a number of elements he shall reduce his claim is not so easy to determine; but each case must be judged in a great measure by itself, care only being taken that the claim do not mislead. I see no such tendency to mislead in the present case, nor any possible harm that could result from the allowance of it.

I must, therefore, reverse the decision of the Examiner.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

LEVI DECKER *vs.* WILLIAM H. GRIFFITH & CO. LEVI DECKER *vs.* CHARLES SILVERBRANDT.

[*In equity.—Before* BLATCHFORD, *J.—Decision rendered November* 5, 1875.]

The claim in this case is for "the catgut" or other cord E, partially or fully embedded, or otherwise attached at the angle *a* of the rubber cushion C, so as to protect said cushion against the impact of the ball, substantially as herein shown and described, and for the purposes set forth.

The manufacture and use by Winant, prior to the alleged date of invention by Decker of his device, of a strip of spring steel, or equivalent material, with holes in its lower edge, through which wires were passed and fastened to the under side of the rail, said strip being placed in a crease or groove cut in the upper face of the rubber near the angle thereof, and the manufacture by Stevens, prior to 1864, of india-rubber cushions for billiard-tables having a French clock-spring placed in a slot in the upper face of the rubber, parallel to and near the inner face of the rubber, bringing the upper edge of the spring near the upper corner of the rubber, are substantially the same arrangements of devices used by Decker.

[*William J. A. Fuller*, for the plaintiff.
Edward N. Dickerson, for defendants.]

BLATCHFORD, *J.*:

The patent sued on in these cases, being a reissue granted to the plaintiff, Levi Decker, March 9, 1869, on the surrender of the original patent granted to him December 18, 1866, for an "Improvement in Cushions for Billiard-Tables," has been heretofore the subject of consideration by this court in the case of *Decker* vs. *Grote*, (10 Blatchf. C. C. R., 331.) The invention set forth in the specification of the patent has reference to a cushion formed of india-rubber.

The specification says:

My invention has for its object the preservation of cushions for billiard-tables against the impact of the ball.

The nature of my invention consists in the employment or use of a catgut or other strong cord, located in or at the upper corner or edge of the cushion, and immediately at the point against which the ball strikes when the game of billiards is played. * * *

C is a body of rubber, which forms a cushion, against which the ball strikes. This said rubber cushion has its inner or face side beveled in such a manner that the ball strikes, at about its center, against the upper corner or point of the cushion, as clearly shown at *a*, Fig. 1. For the purpose of protecting the upper curve or edge of the cushion C against the impact of the ball I make a small concave or bed, immediately, or as near as may be, in the upper corner of the cushion, so that a suitable cord, E, or other support may be fitted longitudinally the whole length of the said cushion around the table, so that the cushion is fully protected on all sides of the table against the impact of the ball. For this cord and support of the cushion I usually employ catgut; or cord may be used for the same purpose, but experience proves that catgut is most suitable for the purpose, as it is best adapted to prevent the cushion from giving way or yielding under the impact of the ball, it being understood that the ball only comes in contact with the cushion at *a*, the bevel or inclination being given the face of the cushion in order that all other parts of it will be kept clear of the ball. This cord E may be more thoroughly secured in its position by molding it or embedding it entirely within the rubber near the corner, so as to perform the functions for which it is designed, or it may be secured by gluing a strip of cloth, *b*, over it when not fully embedded in the rubber, or it may be secured by any other well-known means. D is a strip of elastic cloth, which is cemented to the face side of the rubber strip or cushion C, and attached at its lower edge to the lower part of B, (elsewhere described as a strip or cleat behind C,) so as to support the upper edge *a* of C. It will be understood that the cord E is attached to D before the latter is secured to the cushion C and cleat B. To make the whole more secure I usually cover the whole with the cloth F, and after cover the whole again with the usual green cloth G. This cord E performs two very important functions—viz., it gives stiffness to the angle or corner *a* of the cushion C, so that it cannot yield or give way under the impact of the ball to allow the latter to pass over it, and it also gives prominence to the said angle, so as to present, under the yielding of the cushion, a stiff narrow line to the ball, thus obviating much friction, so as not to impede the motion of the latter, and still not interfering in the least with the elastic effects of the cushion upon the ball.

The claim is—

The catgut or other cord E, partially or fully embedded, or otherwise attached at the angle *a* of the rubber cushion C, so as to protect said cushion against the impact of the ball, substantially as herein shown and described, and for the purposes set forth.

In the case of *Decker* vs. *Grote* it was said in the decision of the court:

It is quite apparent that the invention set forth is the placeguard firmly securing, along the upper edge or corner of the rubber cushion, a strong narrow cord, to receive the impact of the ball and protect the cushion against such impact, by reason of its being placed at the fronts, against which, and against which alone, the ball strikes. When the impact comes, the stiff cord receives it in substantially a horizontal direction, and prevents the cushion from giving way under such impact, and allowing the ball to ride over it and leave the table, while at the same time there is little friction from the impact, and the elastic force of the rubber acts fully, through the cord interposed between it and the ball, to repel the ball in substantially a horizontal direction.

The arrangement used by the defendant in that case was to embed the cord in the rubber cushion at the upper edge of it, by placing it there while the rubber was plastic and before it was vulcanized, and by having a thin portion of the rubber interposed between the cord and the outside of the edge. It was held that such arrangement embodied the invention claimed in the patent, and had the same mode of operation in use.

The novelty of the invention was challenged in that case by the citation of an application for a patent filed by one Carpenter in January, 1858, and rejected in April, 1858, of a patent to one Sycher, granted in November, 1863, and of abandoned experiments made by one Delaney, in California, but the patent was sustained against these objections.

Subsequently, in the case of *Decker* vs. *Griffith* (10 Blatchf. C. C. R., 343) the use of a round metallic wire, in the manner in which it is used by the defendants in the suit secondly above entitled, was held by this court to be an infringement of the Decker patent.

The alleged infringement complained of in the first-above entitled suit consists in the use of a flat strip of metal fixing in a slot marked in the india-rubber cushion, and running from end to end thereof, and strained by a straining-key at its end. The strip is capable of moving in the direction of its length when strained, though it is held firmly endwise at all times. The strip lies parallel with the inner inclined face of the cushion and closely adjacent to it, and its upper edge is closely adjacent to the upper inner corner of the cushion.

The alleged infringement complained of in the second above entitled suit consists in the use of a round metallic wire, arranged in like manner with the flat strip of metal, and arranged in close proximity to the upper inner corner of the cushion.

It is contended, on the part of the defendants, that what they use, in so far as it is like that, is described and claimed in Decker's reissue, existed prior to Decker's invention—in other words, that a narrow cord or wire of metal, or other equivalent material, placed and firmly secured along and within and closely adjacent to the upper edge or corner of the rubber cushion, so as to receive the impact of the ball, existed before Decker's invention. Decker testified that he "got the idea" of his invention in the fall of 1864, he thinks in September. That he thinks he made cushions of tables complete, embodying the invention, in the fall of 1864, and that he is quite certain he did so before March, 1865.

The defendants introduce and refer to a patent granted to William K. Winant, August 10, 1858, for improvement in cushions for billiard-tables. The specification of that patent sets forth that the invention of Winant—

consists in the introduction of a strip of spring steel, or equivalent material, into a crease or groove cut in the upper face of the rubber, near the angle thereof, in such a manner that said steel is protected from injury by the rubber which thus intervenes between the steel and the ball, and the cushion is rendered sufficiently firm to prevent the ball embedding and injuring the correctness of the angle of deflection; and beside this, the strip is so narrow as not to be injured by the concussion, and is retained in place without requiring any attachment by screws, cement, or otherwise. * *

In the upper part of the cushion *d*, and near its edge, I make a long incision parallel to its edge, and at a slightly greater inclination than the face of the cushion, and into said crease or groove thus formed I introduce a narrow thin strip of steel, *i*, or equivalent material, and the covering *e*, of cloth or other material, as usual, completes the cushion.

It will be apparent that said strip *i* is retained in place by the rubber, and acts to prevent the ball embedding, and at the same time is itself protected from injury by the rubber on both sides.

There is one feature in this patent of Winant's which is unlike the arrangement of Decker. Winant describes his strip of steel as merely lying in the crease or groove cut in the rubber, and as being kept in place without being attached by screws, cement, or otherwise, whereas Decker describes his cord as being unbedded or embedded entirely within the rubber. The patent to Winant was considered, and very properly, by the Patent Office, where Decker's patent was reissued, as not having anticipated Decker's claim in his reissue.

It is shown by the evidence of Daniel D. Winant, the brother of William K. Winant, that prior to 1864 he made many billiard-tables constructed in accordance with the Winant patent, but with the added feature of an arrangement for tying down the steel to the cushion by means of holes in the lower edge of the strip, and wires put through them and fastened to the under side of the rail to keep the strip in place in the rubber. In that arrangement the steel strip was incorporated in the structure, so as to be incapable of dislodgment quite as effectually as if molded or embedded entirely within the rubber, as suggested in Decker's specification. It stiffened the angle or corner of the cushion, and prevented its yielding under the impact of the ball, and allowing the ball to pass over it. It presented substantially the same features and mode of operation shown in the defendant's arrangement in the first above entitled suit, where the flat strip of metal is used so far as there is anything in common between the plaintiff's arrangement and that of the defendants. The greater or less inclination of the strip to the face of the cushion, the greater or less proximity of the face of the strip to the inner face of the cushion, the greater or less width of the strip, and the greater or less proximity of its upper edge to the upper corner of the cushion, are questions of degree only so long as the effective feature of the defendant's arrangement is found in the earlier structure in connection with the use of the strip, which is shown to be the fact.

It is also shown that one Stevens, in Boston, prior to 1864 made india-rubber cushions for billiard-tables, which had a French clock-spring placed in a slot cut in the upper face of the rubber parallel to and near the inner face of the rubber, bringing the upper edge of the spring near the upper corner of the rubber. The spring was cemented into the slit, and cloth was glued or cemented over the slit. The spring was thus embedded entirely within the rubber. A portion of a cushion of such construction, made prior to 1864 by Stevens, is produced. It contains the features presented by the defendant's arrangement with the flat strip, so far as the latter is like the plaintiff's arrangement.

As to the defendant's arrangement with the round wire embedded in the rubber, it required no invention to substitute, in the Stevens arrangement, a round wire for the steel strip.

If the plaintiff's reissued patent can, in view of the Winant and Stevens arrangements above described, be upheld at all, because it is made to cover a cord embedded entirely within the rubber, and is not limited, as his original patent was, to a cord applied outside of the upper corner of the cushion, it certainly cannot be extended to cover arrangements which are substantially the same as the Winant and Stevens arrangements.

The bill must be dismissed with costs.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date December 7, 1875.]

8,820.—Toy Money-Box.—JOHN G. BAKER, Philadelphia, Pa., assignor to THE ENTERPRISE MANUFACTURING COMPANY OF PENNSYLVANIA, same place. Application filed November 13, 1875. Term of patent 7 years.

8,821.—Cassimere.—EDWARD C. CLARK, Rockville, Conn. Application filed November 22, 1875. Term of patent 3½ years.

8,822.—Stocking-Legs.—MARTIN LANDENBERGER, Jr., Philadelphia, Pa., assignor to JOHN LANDENBERGER and GEORGE W. LANDENBERGER, same place. Application filed October 14, 1875. Term of patent 7 years.

8,823.—Trimming.—CARL LINDENTHAL, New York, N. Y. Application filed November 19, 1875. Term of patent 7 years.

8,824.—Glassware.—FREDERICK S. SHIRLEY, New Bedford, Mass. Applications filed November 24, 1875. Term of patent 3½ years.

8,825 and 8,826.—Pattern-Sheet for Embroidery.—WILLIAM STEINHAUS, New York, N. Y., assignor of one-half his right to OTTO FRICKENHAUS, Brooklyn, N. Y. Applications filed October 20 and November 13, 1875. Term of patents 3½ years.

8,827.—Glass Dishes.—JAMES S. ATTERBURY and THOMAS B. ATTERBURY, Pittsburg, Pa. Application filed December 1, 1875. Term of patent 7 years.

8,828 and 8,829.—Embroidery-Pattern.—EMIL CREMARD, New Haven, Conn., assignor to HENRY ST. JOHN, same place. L L and K K. Applications filed November 30, 1875. Term of patents 3½ years.

8,830.—Inkstands.—EDWARD FINNEY, Philadelphia, Pa. Application filed September 22, 1875. Term of patent 3½ years.

8,831.—Inkstands.—GEORGE E. HATCH, East Cambridge, Mass. Application filed October 12, 1875. Term of patent 3½ years.

8,832.—Toy Chariot.—EDWARD R. IVES, Bridgeport, Conn. Application filed November 4, 1875. Term of patent 7 years.

8,833.—Inkstands.—HUGH S. KERR, Philadelphia, Pa. Application filed November 22, 1875. Term of patent 3½ years.

8,834.—Corner-Piece for Picture-Frames.—CHARLES P. POHNER, Boston, Mass.—Case 2. Application filed November 1, 1875. Term of patent 3½ years.

8,835.—Shirt-Fronts.—VICTOR H. ROTHSCHILD, New York, N. Y. Application filed November 3, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date December 7, 1875.]

3,190.—Wool-Oil.—AMERICAN LUBRICATING-OIL COMPANY, Cleveland, Ohio. Application filed November 16, 1875.
"words 'ACME WOOL.'"

3,191.—Soap.—R. W. BELL & CO., Buffalo, N. Y. Application filed November 17, 1875.
"word 'CZAR.'"

3,192.—Railway-Journal Bearings.—BOWLES & WILKINS, Chicago, Ill. Application filed November 23, 1875.
"a six-pointed star, having the words 'Trade-Mark, Established 1865' printed across the face of the star."

3,193.—Pumps.—COFFIN & WOODWARD, Boston, Mass. Application filed November 23, 1875.
"words 'OCEAN PUMP.'"

3,194.—Corset-Clasps.—COOLEY, BIGLOW & NICHOLS, New York, N. Y. Application filed November 18, 1875.
"words 'Serpentine Wire Corset Clasps.'"

3,195.—Bitters.—HENRY ERNST, New York, N. Y. Application filed November 19, 1875.
"words 'Modoc Vegetable Bitters.'"

3,196.—Lubricating-Oils.—GLOBE OIL COMPANY, Parkersburg, W. Va. Application filed November 19, 1875.
"large letter A and the lozenge and its inclosed letters J. A. S."

3,197.—Anti-Friction Metal.—GEORGE S. HUNT and BENJAMIN E. HUNT, St. Louis, Mo. Application filed November 23, 1875.
"word 'DIAMOND.'"

3,198.—Anti-Friction Metal.—GEORGE S. HUNT and BENJAMIN E. HUNT, St. Louis, Mo. Application filed November 23, 1875.
"a lozenge or diamond shaped figure."

3,199.—Lard.—V. W. MACFARLANE & CO., New York, N. Y. Application filed November 23, 1875.
"representation of a cock."

3,200.—Cotton Fabrics.—PINGREE, WOODS & CLARK, Boston, Mass. Application filed November 19, 1875.
"words 'SURREY SOUTH.'"

3,201.—Soap.—ROBINSON BROS. & CO., Boston, Mass. Application filed November 22, 1875.
"word 'Farina.'"

3,202.—Hydraulic Cement.—ROCK HAVEN CEMENT COMPANY, Louisville, Ky. Application filed October 23, 1875.
"square block printed in blue, with the letter B in white in the center, with the white points exteading from the corners nearly to the letter B in the center, and the ornamental designs to the right and left."

3,203.—Varnishes.—SEELER & STEVENS, New York, N. Y. Application filed November 22, 1875.
"word 'PELLUCIDITE.'"

3,204.—Flour.—SHAW, HAMMOND & CARNEY, Portland, Me. Application filed November 24, 1875.
"words 'Belle of St. Louis.'"

3,205.—Whisky.—SHIELDS, MAY & CO., Cincinnati, Ohio. Application filed November 13, 1875.
"words 'HUNTER'S OWN BOURBON.'"

3,206.—Whisky.—SHIELDS, MAY & CO., Cincinnati, Ohio. Application filed November 13, 1875.
"words 'Jefferson Pure Old Rye Whiskey.'"

3,207.—Flour.—T. G. STEWART & CO., Johnstown, Pa. Application filed November 24, 1875.
"word 'RECONSTRUCTION.'"

3,208.—Flour.—T. G. STEWART & CO., Johnstown, Pa. Application filed November 24, 1875.
"words 'GOLDEN CHARM.'"

3,209.—Whisky.—ADAMS & CO., New York, N. Y. Application filed December 3, 1875.
"words 'Monongahela Valley Whiskey,' and the monogram composed of the letters 'O. M. V. R. W.'"

3,210.—Washing-Soap.—FARRINGTON, CAMPBELL & CO., Detroit, Mich. Application filed November 23, 1875.
"words 'SNOW FLAKE.'"

3,211.—Soap.—CHARLES S. HIGGINS & CO., Brooklyn, N. Y. Application filed April 30, 1875.
"words 'GERMAN SOAP.'"

3,212.—Laundry-Soap.—CHARLES S. HIGGINS & CO., Brooklyn, N. Y. Application filed November 27, 1875.
"oval shaded configuration, which is about two and one-half inches in its longest diameter, and one a half inch across its shortest diameter—about the size of an egg."

3,213.—Thrashing-Machine.—KNAPP, BURRELL & CO., Portland, Oreg. Application filed November 10, 1875.
"word 'CHALLENGER.'"

3,214.—Bitters.—MOSES G. LANDSBERG, New York, N. Y. Application filed November 23, 1875.
"word 'Century,' in combination with the pseudonym 'Mosha Shnurrer,' in Hebrew."

3,215.—Soap.—LAUTZ BROTHERS & CO., Buffalo, N. Y. Application filed July 22, 1875.
"words 'Hamburger Seife' and the coat of arms of Hamburg."

3,216.—Kummel.—A. C. MEYER & CO., Baltimore, Md. Application filed October 19, 1875.
"coat-of-arms, medals, and the words 'Kümmel von A. C. Meyer.'"

3,217.—Lamp Chimneys and Shades.—PABST & ESCH, New York, N. Y. Application filed November 29, 1875.
"word 'STANDARD,' in connection with the representation of the flag of the United States."

3,218.—Shirts.—JOHN E. PAGE, Albany, N. Y. Application filed November 29, 1875.
"words 'THE CROWN SHIRT.'"

3,219.—Metal and Plated Ware.—FRANK W. ROGERS, Hartford, Conn. Application filed November 11, 1875.
"name, words, letters, or abbreviations 'Wm. Rogers' Son,' with the crescents, dashes, and rings."

3,220.—Clasps for Pocket-Books, Satchels, &c.—HENRY SILBERMAN, Philadelphia, Pa. Application filed November 17, 1875.
"figure of the Centennial Bell."

3,221.—Skates.—THE STARR MANUFACTURING COMPANY, Dartmouth, Canada. Application filed October 1, 1875.
"word 'ACME.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date December 7, 1875.]

413.—Title: **"Lexington Doeskin Jeans."**—APPLETON, LANCASTER & CO., Lexington, Ky. Application filed November 6, 1875.

414.—Title: **"Sunlight Stove-Blacking."**—GODFREY ASCHMANN, Philadelphia, Pa. Application filed November 16, 1875.

415.—Title: **"New York Patent Steam Slicing Co.'s 'Eureka' Smoked Beef."**—J. W. BEARDSLEY & SONS, New York, N. Y. Application filed December 1, 1875.

416.—Title: **"Royal Dietamia Medicinal Nutritive."** WILLIAM G. COOKE, New Haven, Conn. Application filed November 29, 1875.

417.—Title: **"Comfort's Conserve of Hollyhock for Colds, &c."**—CHARLES L. COMFORT, Philadelphia, Pa. Application filed November 13, 1875.

418.—Title: **"Dr. Comfort's Composing Cordial."**—CHARLES L. COMFORT, Philadelphia, Pa. Application filed November 13, 1875.

419.—Title: **"An Elegant and Fragrant Preparation for Cleansing and Preserving the Teeth—Orisena."**—THOS. J. COX, Jr., Orange, N. J. Application filed December 1, 1875.

420.—Title: **"The Poquet Cigar."**—AUGUST EMMERICH, New London, Conn. Application filed December 1, 1875.

421.—Title: **"Men's and Youth's Pants and Vest Patterns."**—JOHN D. HALL, Brooklyn, N. Y. Application filed December 2, 1875.

422.—Title: **"Dr. Kuhne's Stimulating Liniment."**—H. KUHNE, Cincinnati, Ohio. Application filed December 2, 1875.

423.—Title: **"Deutches Kindermehl—German Infant Meal."**—CHARLES MAYNC, New York, N. Y. Application filed 29, 1875.

424.—Title: **"Centennial Brace."**—NASHAWANNUCK MANUFACTURING COMPANY, East Hampton, Mass. Application filed December 3, 1875.

425.—Title: **"Carbolic Pocket Disinfectant."**—PARKER AND COMPANY, Brooklyn, N. Y. Application filed December 2, 1875.

426.—Title: **"Right and Left Acorn Butts."**—RICK BROTHERS, Reading, Pa. Application filed November 29, 1875.

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Finally, any matter believed to be of interest to inventors in their official intercourse with the Office, will receive in the GAZETTE the attention the subject warrants.

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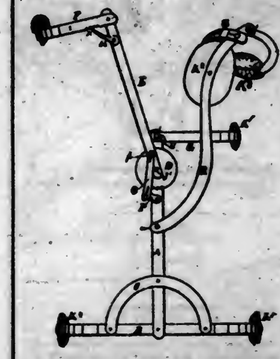
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED DECEMBER 7, 1875.

170,655. BACK AND SHOULDER BRACES. H. R. Allen, Indianapolis, Ind. [Filed Sept. 20, 1875.]

Brief.—An arrangement of bands, levers, pawls, and ratchets is placed around and upon the person, to straighten curvatures of spine, &c. The claims in detail fully set forth the invention.



1. The curved base-spring B, provided with pads K' K' and strap Y, in combination with the upright back and front bars A A' and curved braces C C', substantially as set forth and described.

2. The curved bar or arm R, pivoted as shown, and provided with a pad, K', substantially as set forth and described.

3. The combination of the upright front and back bars A A' with the circular ratchets D D', pawls P P', and upper front and back bars E E', substantially as and for the purpose set forth and described.

4. The upper front and rear bars E E' and the adjustable top spring-bar F and pad K, ratchets *a a*, and pawls H H, constructed and operated substantially as and for the purpose set forth and described.

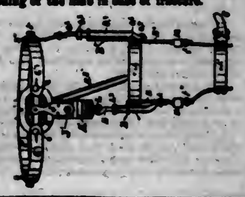
5. The adjustable curved side bar G, provided with the hooks L', or other means of fastening to the upper ends of the side bars A A' and pad K', substantially as and for the purpose set forth and described.

6. The shoulder-brace M, provided with a pad, K', strap S, and hook V, in combination with the arm R, substantially as and for the purpose set forth and described.

7. The braces, as above described, constructed so as to operate on both sides, as shown in Fig. 1, or separated at the line *a b* of Fig. 2 for one side, substantially as set forth and described.

170,656. HIP AND THIGH BRACES. H. R. Allen, Indianapolis, Ind. [Filed Sept. 20, 1875.]

Brief.—Several bands passing around the waist are connected at their sides by vertical bars, and the lower one furnished in front with a peculiarly-constructed spring-pad. Bands and vertical connections also are arranged to inclose the leg. A strap adjustment draws down the foot, to prevent shortening of the limb in case of fracture.



1. The curved padded spring-brace or seat-piece K, provided with an eyebolt, L, in combination with the adjustable screw L', substantially as and for the purpose set forth and described.

2. The combination of the curved padded spring-brace K and one or more curved spring-bars F F', provided with straps G G' G', substantially as described.

3. The adjustable hinged spring-bar J, provided with the adjusting-screw J', in combination with the curved padded spring-brace K and pad H, substantially as set forth and described.

4. The side bar O', in combination with one or more curved spring-bars, F F', and pivoted to the adjustable screw O', substantially as and for the purpose set forth and described.

5. The removable side bar B', constructed with an angle or clip, as described, in combination with the tube O', adjusting-screw O', and side bar O' of the body-brace F F' or thigh-brace T, substantially as and for the purpose set forth and described.

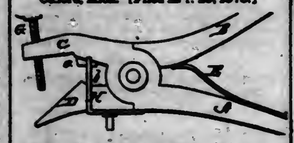
6. In combination with the leg and body parts of the braces, the adjustable screw B', tube B', hinged at the top and bottom to pieces N' N', and secured in sockets E' E', which are pivoted to the curved spring-bars F and E, or other parts, substantially as and for the purpose set forth and described.

7. The curved spring-bar E, provided with notches *c* and hooks *c'*, or attached in any manner with the curved spring-bar A, substantially as set forth and described.

8. The curved padded spring-brace or seat-piece K', in combination with the rocking springs R R' and adjusting-screw L', constructed and operated substantially as set forth and described.

9. The curved padded seat-piece or band T, in combination with the eyebolt L, adjusting-screw L', and adjusting-screw O', arranged to operate substantially as set forth and described.

170,657. SAW-SETS. Fernando C. Barber, Oxford, Mich. [Filed Mar. 20, 1875.]



1. The jaw D, having the inner surface, on which the saw is placed, inclined, and provided with the recess *b*, into which the tooth is set, substantially as and for the purposes set forth.

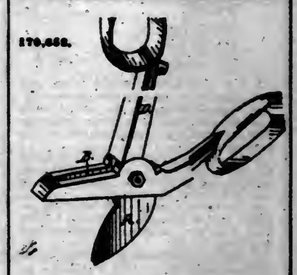
2. The combination of the pivoted handles A B, with spring E between them, the jaw C, with die *a*, and set-screw G, and the jaw D, provided with the recess *b*, and having the inner surface inclined, as shown, substantially as and for the purposes set forth.

170,658. SCRAPE FOR CHEST AND PLATE METAL. Thomas Berridge, Sturgis, Mich. [Filed Oct. 11, 1875.]

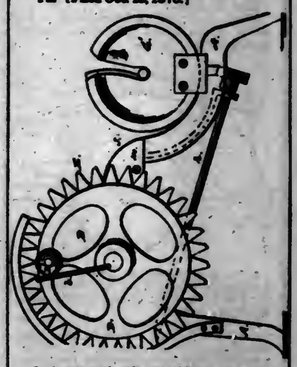
Brief.—Shears for cutting sheet or plate metal terminate, one arm or handle, in a blunt solid-point cutter, having a plain or concave upper surface with sharp edges. The other handle has a box-shaped extremity, in which is an elongated slot, with plane surface and rectangular edges, in which slot the cutter operates, playing steadily and freely in and out; the construction giving a double cut without injury to the cut edges or displacement, except the narrow strip cut out, and also permits the simultaneous cutting of two strips of equal or unequal width from a plate of metal.

The double-cutting shears for sheet and plate metal, consisting of cutter A, with plane or concave upper surface, and a rectangular slot, B, in which the cutter operates, thereby making a double cut, substantially in the manner and for the purpose herein shown and described.

170,659.



170,660. MACHINES FOR TRIMMING WALL-PAPER. Charles Bonar, Northumberland, Pa. [Filed Oct. 19, 1875.]



1. A paper-trimming machine, constructed with the rotating cutter and clamp G, or its equivalent, mounted upon, and secured to, the shaft or roller upon which the paper is wound while being trimmed, substantially as set forth.

2. The combination of the roller C, the disk-shaped or flanged wheel D, and the circular-saw cutter E, constructed and operating substantially as and for the purposes set forth.

3. The hinged standard B', in combination with the roller C, carrying cutter E, for the purposes set forth.

4. The hinged clamp G, with rod *a*, having handle *b* formed upon its end, in combination with the roller C, for the purposes set forth.

5. The combination of the movable carriage H, provided with stationary and movable standards G G' and rock-bar F, the plate *e*, shaft A, and hand-wheel I, substantially as and for the purpose set forth.

6. The combination of the frame A, having the raised corner part J, with steel plate *m*, standards B B', roller C, with clamp G, wheel D, with circular-saw cutter E, movable carriage H, with standards G G, and the shaft *d*, all constructed and arranged to operate substantially as and for the purpose set forth.

170,661. SEWER-BASINS. Patrick Brady and Geo. M. Ward, Newark, N. J. [Filed Apr. 7, 1875.]

Brief.—The opening of the sewer-basin extends from the wall to the front or curb, exposing the entire interior, and has a recessed front, into which the cover fits, the latter extending over the bed of the depressed throat. The throat has for its bed the recessed front of the head, and for its top the front of the cover. A removable trap is held on a dovetail projection, and is closed on three sides by a tight joint to form a water-trap.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

170,660.



1. In a sewer-basin, the head B over the wall of the basin, and open over the whole interior thereof, and cut to thin front or curb, and having the recessed front between the two sides, substantially as specified, and for the purposes set forth.

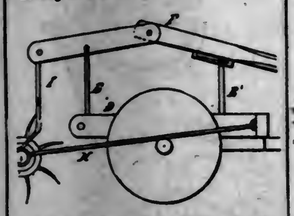
2. The cover B, over the whole interior of the basin, and extending to the curb-front over the bed of the throat, substantially as and for the purposes specified.

3. The throat, having for its bed O the recessed front of the head, and for its top the front of the cover, substantially as shown and described.

4. The adjustable trap K, substantially as shown, and for the purposes specified.

170,661. ROTARY SPADE-CULTIVATORS. D. W. Brabham, Sr., Rockdale, Tex. [Filed Sept. 20, 1875.]

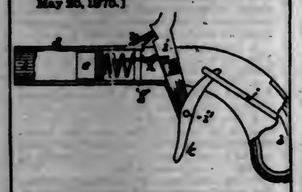
Brief.—Revolving spader attached to the rear of the vehicle, and devices for lifting and holding down the same.



1. The combination, with the frame D, with supporting-arches E E', of the compound lever F and yoke I, for raising the cultivator-wheel, as described.

2. The rotary spade-cultivator compound of frame D, supporting-arches E E', jointed hinged hand-lever F, yoke I, rods H, and wheel G, all constructed, arranged, and adapted to operate as and for the purposes described.

170,662. TOY PISTOLS. Thomas J. Carroll, Bridgeport, Conn., assignor of one-half his right to Chas. Whipple, same place. [Filed May 26, 1875.]



1. The combination of the pistol body *r*, the spring *f*, the wire *h*, hammer *i*, and cap-nipple *m*, all constructed and operating substantially as shown and described.

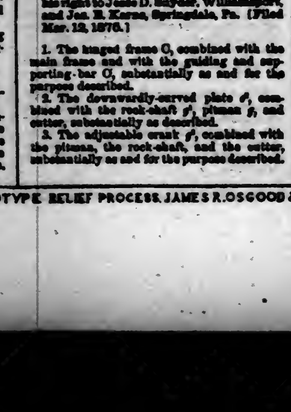
2. The combination of the hammer *i*, the spring-hook *j*, and the trigger-lever *k*, all arranged to operate substantially as shown and described.

3. The combination of the piston *o*, spring *f*, wire *h*, hammer *i*, spring-hook *j*, and trigger *k*

170,663. WINDMILLS. Mantzwill D. Commaker, Napoleon, Ohio. [Filed Oct. 15, 1875.]

Brief.—The frame of this windmill is composed of two upright posts connected by three horizontal bars, the lower ones forming the support for the mill, and the upper one the bearing. There are two upright parallel bars connected at both ends by castings. In the center of these bars are bearings for the crank-shaft, to which the pump-rod is attached. On one end of the shaft the wheel is secured so close to the crank and pump rod that no power is lost. The tail-vane is hinged to the side of one of the bars in such a manner that it can turn in but one direction. There is a regulating-vane; the shank of it forms at its inner end a cogged segment, which connects or gears with a short rack-bar, which is connected by a slide placed between the two bars. When the regulating-vane is turned, the segment raises the rack-bar and slide, and by these means the lever is raised, which causes the wheel and vane to turn toward each other, thus throwing the wheel out of the wind.

170,663.



1. The combination, with the frame C, wheel D, and vane E, of the pivoted regulating-vane H, with cogged segment *e*, rack-bar *f*, with rod *i* and slide *k*, rod *m*, weighted lever *l*, and rod *n*, substantially as and for the purposes herein set forth.

2. The stop-rod *p* and pivoted finger *t*, in combination with the slide *k* and its connections with the wheel D and vane E, substantially as and for the purposes herein set forth.

170,664. PAPER BOXES. E. W. Dennison, Boston, Mass. [Filed Aug. 6, 1875.]



A box in which the outer finishing-sheet formed with one or more openings, as described, in combined with an inner sheet, substantially as and for the purposes shown and set forth.

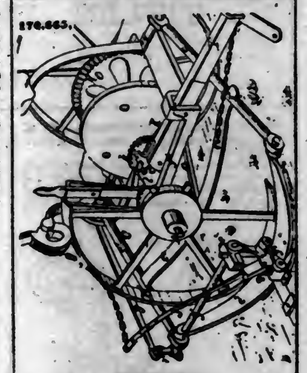
170,665. MOWING-MACHINES. William G. Deatherage, Springdale, assignor of part of his right to James D. Snyder, Williamsport, and Jos. B. Kerns, Springdale, Pa. [Filed Mar. 12, 1875.]

1. The hinged frame G, combined with the main frame and with the guiding and supporting-bar C, substantially as and for the purpose described.

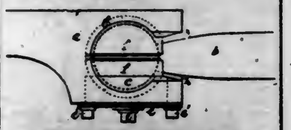
2. The downwardly-curved plate *s*, combined with the rock-shaft *g*, pitman *f*, and cutter, substantially as described.

3. The adjustable crank *g*, combined with the pitman, the rock-shaft, and the cutter, substantially as and for the purpose described.

170,665.



170,666. PITMAN-CONNECTIONS. Geo. H. Barnard, Springfield, Ohio. [Filed Jan. 4, 1875.]



1. In a pitman-connection, a double ball-joint, in which the outer ball consists of the two hemispherical shells *f f*, (divided vertically,) in combination with ball *b'* of pitman-rod *b*, ping-shell *c*, with its key *d* and stickle-head *e*, as shown and specified, as and for the purpose set forth.

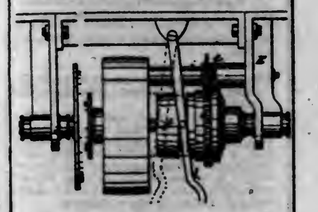
2. The combination of stickle-head *e*, hole *g*, with slot *h*, shell-ping *c* with its key *d*, bar *a*, screws *s'*, and set-screws *s''*, as shown and specified, for the purpose herein before set forth.

3. Parts *f'* of shells *f*, in combination with neck of ball *b'*, and slot *h* of stickle-head *e*, as and for the purpose set forth.

4. In combination, pitman-rod *b* with ball-head *b'* and shell-sections *f f*, stickle-head *e* with hole *g*, slot *h*, shell-ping *c*, and the securing and adjusting devices specified, arranged substantially as described.

5. In combination with stickle-head *e*, ball *b'*, shells *f f*, shell-ping *c*, bar *a*, screws *s'*, set-screws *s''*, and rod *i*, with ball *j*, gaps *i* and *i'*, wheel A, bolt *l*, pin *r*, and nuts *b b' b''*, as shown and specified, as and for the purpose herein before set forth.

170,667. COUPLER-SHAFTS. Wm. Frosh, Cincinnati, Ohio. [Filed July 19, 1875.]



1. In a counter-shaft, the gearing herein described, for the purpose of regulating the backward and forward motion by the use of one belt, substantially as described, and for the purposes set forth.

2. The combination, with the hangers and cross-bar, of the cloth, provided with two male cones, one on either end, substantially as described, and for the purposes set forth.

3. The driving-wheel *c*, cloth *f*, gear *e*, hangers B and *r*, pinions *b b*, and cloth A, in combination with the cloth *f*, substantially as described, and for the purposes set forth.

170,668. KEY-BOOKS. Julian H. Gates, Hartford, Conn. [Filed Oct. 2, 1875.]



A key-book, having pocket *b* and removable key-pin *d*, located as herein set forth, all substantially as described.

170,669. BEEHIVES - LOADING FEED - ARMS. Charles Green, Rochester, N. Y. [Filed Nov. 1, 1875.]



1. As an improvement in the construction of this class of fire-arms, the locking-lips *c* upon the shanks S and S', in combination with the head *b* and axial journal J, all constructed and arranged to operate substantially in the manner and for the purpose set forth.

2. In combination with the axial journal J and cross-tie *r*, the adjustable compensating-key *g*, hung in the wing E, so as to be operated, substantially as described, for the purpose of perfecting and securing the bearing at the journal J, cross-tie *r*, and between the end of the barrels and the front vertical face of the breech-block A, as set forth.

170,670. COMPOUNDS AS A SUBSTITUTE FOR SOAP. Joseph A. Griffin, Syracuse, N. Y. [Filed Nov. 9, 1875.]

The compound consisting of cream tartar, tartaric acid, alum, soda bicarbonate, sugar, gumma, gum-arabic, sulphur, and starch, in about the proportions above specified, as and for the purpose described.

170,671. BIRD-CAGES. Charles F. Holden, Boston, Mass. [Filed Oct. 19, 1875.]



In combination with a feed dish or receptacle, B, the guard-plate *f*, projecting from the interior of the cage, and so arranged as to form a cover for the feed-receptacle when in place, substantially as and for the purpose set forth.

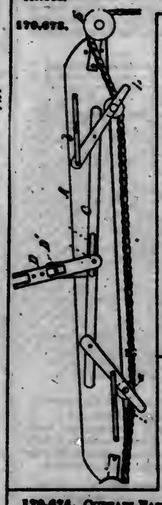
170,672. CHECK-ROW PLANTERS. William H. Johnson, Farmer City, Ill. [Filed Sept. 4, 1875.]

Brief.—Pivoted forked arms are connected (to operate together) by a bar having a central slot, for the attachment of a slotted arm, that communicates motion to the seed-slide. The check-row cord is provided with a double series of knots, to correct inaccuracies occurring in planting in opposite directions. The forked arms are provided with small grooved pulleys.

1. In combination with the connecting-arm C, slotted at its center, and pivoted slotted arm D, the trippers B B', pivoted at their center and ends to the arm C and frame A, and constructed with Y-shaped mouth and grooved pulleys *a*, as and for the purpose described.

2. In combination with the trippers B, with grooved rollers *a*, and frame A, with rollers B, the line E, with sets or pairs of separate knots *f f'*, for operating the seed-dropping devices in a forward and backward direction, as described.

170,672.



170,673. SPEAKING-TUBES. E. H. Hotzer, Washington, D. C. [Filed June 9, 1875.]



The receiver constructed as described, and consisting of the plates *a a'*, in combination with the curved or angular deflectors *b b* and division-plate B, all constructed to operate substantially as and for the purpose set forth.

170,674. CORNAIN-FASTENERS. T. B. King, Rockville, Conn. [Filed Nov. 4, 1875.]

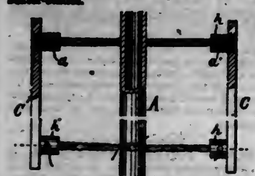


1. The combination of the pin C, consisting of a metallic cylinder, with a slit cut longitudinally through its outer part, *c*, and the eye D, to form a buttoning device, substantially as herein described.

2. The pin C, constructed, as herein described, with the slit *c* and the screw *c*, substantially as herein set forth.

170,675. BEATERS FOR COTTON-OPENERS. Richard Kitson, Lowell, Mass., assignor to Kitson Machine Company. [Filed June 21, 1875.]

Brief.—The beater-arms are formed of two or more strands of tempered steel wire, or other flexible metal, provided at their extremities with loops for securing them to the beater-blades.



1. The yielding beater-arm, constructed of two or more strands of tempered steel wire or other flexible metal, in combination with the shaft and blades of the beater, substantially as described.

2. The double beater-arm, provided with loops *a a'* at the extremities for securing them to the blade, substantially as described.

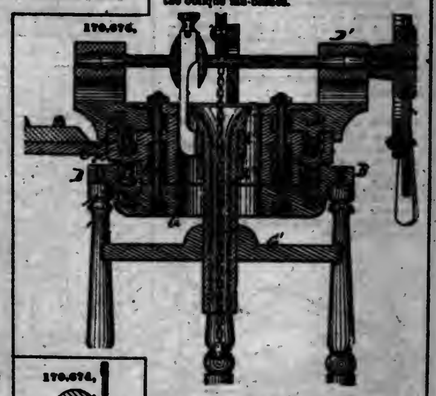
3. The combination of the beater blade C and the leg *b* with the beater-arm, provided with the loop *a'*, substantially as described.

4. The combination, with the beater-shaft A, of the twisted-wire beater-arm, whose strands are divided and encompass the shaft, substantially as described.

170,676. WINDMILLS. Daniel Lampson, Rockford, Ill., assignor of one-half his right to M. Pottinger, same place. [Filed Apr. 16, 1873.]

Brief.—The turn-tables carrying this wind-wheel and the vane consists of two or more independently-rotating annular plates, provided with annular grooves and friction-rollers, in combination with a grooved annular bed-plate, with rings and clamping-plate, and through-bolts. The angular hook-bolts, in combination with the ring, are for securing the oblique fan-blades.

170,676.



1. The turn-table carrying the wind-wheel and the tail or vane, consisting of two or more independently-rotating annular plates provided with the annular grooves and the friction-rollers, arranged and operating as described.

2. The grooved annular bed-plate B, in combination with the annular plates C and D, constructed, arranged, and operating substantially as and for the purpose described.

3. The combination of the annular bed-plate B, rings C, D, and G, clamping-plate F, and through-bolts, all constructed and operating substantially as described.

4. The angular hook-bolts *p*, in combination with the ring C, for securing the oblique fan-blades, substantially as described.

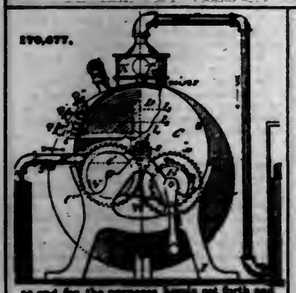
170,677. GAS-MIXING MACHINES. Louis Lesenwort, San Francisco, Cal., assignor of one-third his right to Bar Adler, same place. [Filed June 18, 1874.]

Brief.—Different gases are mixed in varying proportions, as desired. Two meter-wheels in separate chambers of different sizes, each provided with a number of filling-cocks, at different heights, and each filled with water to varying heights, proportioned to the amount of gas to be passed through each chamber. From each chamber the gas passes through a purifying-chamber to the mixing-chamber, provided with a fan-wheel.

1. In a machine for mixing gases, substantially such as herein described, the casings holding the several gases to be mixed, provided respectively with a graduated series of nozzles, through which they may be filled up to determined relative levels with a liquid, to regulate their respective capacities for gas, substantially as and for the purpose specified.

2. The cylinders *d d'*, fitted to the pipes *c c'* between the casings O O' and mixing-chamber X, filled with chloride of calcium and carbon, or their equivalents, for purifying the gases delivered by the drums D D' previous to their combination, substantially

170,677.



as and for the purposes herein set forth and specified.

13. The fan or blower F, provided in the mixing-chamber X, actuated by the clock-work W W' p E c f b V i M, for the more intimately mixing of the gases delivered by the drums D D' through the risers S S', and purifying-compartments d d described, substantially as and for the purposes herein set forth and specified.

170,678. SOFAS. Hall M. Mackenzie, Providence, R. I. (Filed Sept. 27, 1875.)

Brief.—The central portion of the back is adapted to a horizontal position to form a table, while the central portion of the seat is slid back, whereby the ends of the back form seats to the table. The central portions of the seats and backs can also be entirely detached from the ends, which latter can then be used as chairs.

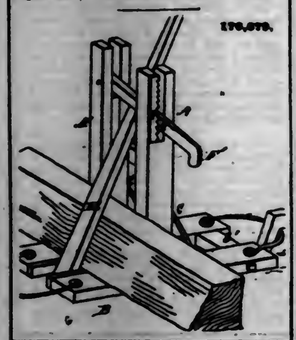


1. A sofa, the back of which is constructed with a central section, B, that can be drawn or slid up, and laid transversely across and above the seat in a horizontal position, substantially as and for the purposes set forth.

2. A sofa, having a seat provided with a central section, S, movable forward or backward, as described, and a back provided with a central movable section, B, substantially as set forth.

3. A sofa, composed of four principal parts, viz: the movable central back-section, the movable central seat-section, and the two end chairs or sofa sections, arranged together as described, and capable of separation, substantially in the manner and for the purposes specified.

170,679.



1. The adjustable shears F, fitted to the projecting neck N of the jack-clip J J by the bolt d, or its equivalent, and retaining-ring m, for steering the shaft-strap L, by the eye e and bolt r, to the axle A, substantially as herein set forth, and for the purposes specified.

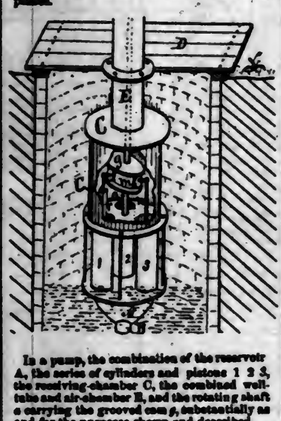
2. The combination of the adjustable shears F, strap L, and connecting-bolt r with the elastic packing O, arranged, as described, on the casting a a and lip l of the projecting neck N, forming part of the jack-clip J J, substantially as and for the purposes herein set forth and specified.

170,680. CLEANING COMPOUNDS. David McGugin, Jasper R. Lybarger, and Francis M. Hibbets, Knox County, Ohio. (Filed Sept. 16, 1875.)

The cleansing compound described, consisting of sal-soda, potash, borax, grease or oil, sulphate of soda, benzine, and ammonia, substantially in the proportions named.

170,681. TELL-COUPLINGS. T. McCaffery, San Francisco, Cal. (Filed Aug. 28, 1875.)

Brief.—Ears made in one piece separate from body of clip, but firmly attachable thereto and adjustable thereupon.

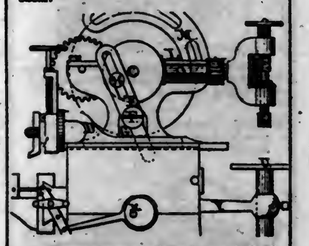


1. The adjustable shears P, fitted to the projecting neck N of the jack-clip J J by the bolt d, or its equivalent, and retaining-ring m, for steering the shaft-strap L, by the eye e and bolt r, to the axle A, substantially as herein set forth, and for the purposes specified.

2. The combination of the adjustable shears P, strap L, and connecting-bolt r with the elastic packing O, arranged, as described, on the casting a a and lip l of the projecting neck N, forming part of the jack-clip J J, substantially as and for the purposes herein set forth and specified.

170,682. COMBINATION OF LATHES, PLANERS, AND DRILLING-MACHINES. Jas. McLaren, Albany, N.Y. (Filed Sept. 3, 1874.)

Brief.—The lathe-arbor carries, on an extension back of the driving-pulley, a bevel-gear, through which motion is communicated to a drill-spindle and a crank-disk, which, through the medium of a slotted rocking lever, reciprocates a planer-tool. A table for supporting the metal to be drilled, and another for supporting the metal to be planed, are connected, respectively, to opposite sides of the lathe-shear.

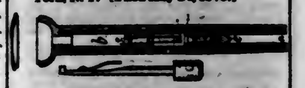


1. The combination of the lathe-spindle C with the sliding head D of the shaping-machine, when arranged substantially as herein described, so as to permit the simultaneous use of both machines, as herein set forth.

2. The combination of the lathe-spindle C with the drill-spindle S, when arranged to operate substantially as and for the purposes specified.

3. The combination of the lathe-spindle C, sliding head D, and drill-spindle S, when arranged to operate substantially as herein described, and for the purposes set forth.

170,683. CANE-GUNS. Chas. Melegy, New York, N. Y. (Filed May 24, 1875.)



The walking-stick gun made of the tubes a b, connected together and receiving the cartridge, in combination with the mouth-piece r, sliding hammer s, operated by the air expelled from the mouth, and the vent w, substantially as set forth.

170,684. PACKING-BOXES FOR FRUIT AND SEED. Joseph A. Miller, Providence, R. I. (Filed Jan. 14, 1874.)

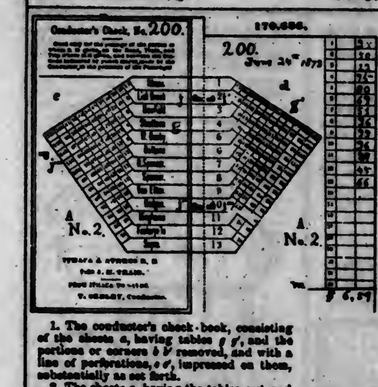
1. The parers d d, suspended and sustained at both ends by the bands a a, within a packing-case, substantially as and for the purpose described.

2. The combination of the parers d, suspended and sustained at both ends by bands a a, with ring C, substantially as and for the purpose described.

3. The combination of parers d, ring C, and elastic bands a, substantially as and for the purpose described.

170,685. TIRES. Ben Moses, Ithaca, N. Y. (Filed July 14, 1873.)

170,686.



1. The conductor's check-book, consisting of the sheets a, having tables g g', and the portions or corners b b' removed, and with a line of perforations, c c', impressed on them, substantially as set forth.

2. The sheets a, having the tables g g', and the portions or corners b b' removed, and with lines of perforations k c' and c' s impressed on them, thus being adapted to be bound into books for railway conductors' use, as set forth.

170,687. BED-LOUNGES. David J. Powers, Chicago, Ill. (Filed Oct. 20, 1875.)

Brief.—The frame supporting the fabric of the bed-bottom, and the braces connecting the front legs with the back of the lounge, are so arranged that, when the lounge is unfolded to form a bed, the central portion of the fabric does not come in contact with any portion of the frame when sprung down by the weight of the occupant.



1. The frame F and cross-rails B B, supporting the fabric I, constituting the bed-bottom, in combination with braces E E, as described.

2. The cushion M, hinged to frame F, as described, so as to allow it to drop away from the fabric forming the bed-bottom when unfolded, and to rest upon the fabric when folded, as specified.

170,688. TIRE-UPSETTERS. Matthias Schoo, Freehold, N. J. (Filed Oct. 20, 1870.)

Brief.—A spring-lever, (operated by a treadle,) with a curved bearing-face, is used to clamp the tire, and prevent it from buckling while being upset. The main lever, for operating the curved clamping-jaws, is fulcrumless, and from near its center a connecting-rod extends to one of the jaws, while the rod connecting it with the other jaw extends from near its end. The end of said lever is formed with a stop, which abuts against the anvil and arrests its movement. The cars of the anvil and movable jaw are formed with dovetailed grooves, which receive dovetailed projections upon the stationary clamping-jaws.

1. The independent fulcrumless lever or bar M, stop g, and levers or bars f f', in combination with the clamping-jaws L L', substantially as and for the purpose described.

2. The clamping-blocks provided with dovetailed projections, in combination with dovetail grooves in their supports, substantially as described.

3. The spring-lever N, constructed as described, in combination with the frame and anvil of a tire-upsetting machine, as specified.

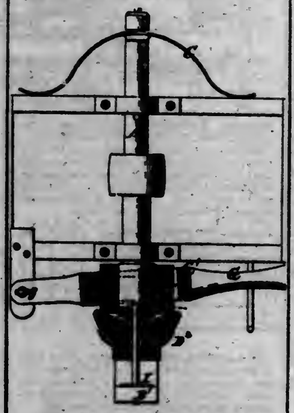
4. The lever H, having the hook-shaped end e, and hung in swinging bars J, in combination with the moving jaw E F, having the rounded projection h, whereby the lever and jaw operate in direct contact, substantially as specified.

5. The clamping-jaws L, secured to their plates or bushings c, having holes diagonally through them, and provided with wedge-shaped bases, substantially as and for the purpose described.

6. The combination of the frame B, anvil C, lever E, jaw F, the operating-lever and hangings, clamping-jaws and levers M f f', blocks I, and plate B, substantially as shown and described.

170,689. MACHINES FOR THREADING AND INSERTING WIRE. Samuel B. Shute, Jr., Richmond, Ind. (Filed June 3, 1875.)

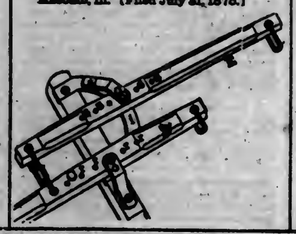
Brief.—The wire is inserted through mandrel A into die I, the lever G thrown down to cause the jaws D D' to grasp the wire, and the mandrel-jaws and wire rotated, causing the wire to advance through the die, the length threaded being limited by the throw of lever G. The rotation of the wire, in threading the second length, causes the first to enter the work, where it is cut off.



1. The combination, with a machine for threading and inserting wire, substantially as described, of the mandrel A, die I, lever G, and jaws D D', arranged and operating substantially as and for the purpose specified.

2. The combination, with the mandrel A, die I, lever G, and jaws D D', of the cam-groove d, arranged and operating substantially as and for the purpose specified.

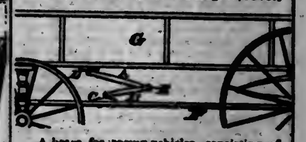
170,690. DRAFT-EQUALIZERS. L. F. Smith, Macomb, Ill. (Filed July 31, 1875.)



1. The combination of the frame B, sliding hollow mandrel A, griping-jaws D D', die I, and spring C, substantially as specified.

2. The herein-described chuck, composed of the griping-jaws D D', spring D', sleeve B, segments F and F', and yoked lever G G', substantially as specified, in combination with the hollow mandrel and die I, as set forth.

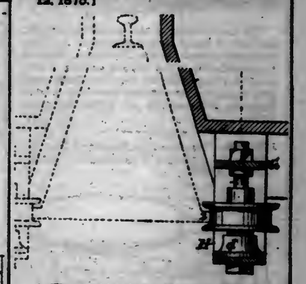
170,691. SPRING-EQUALIZERS. W. Smith, Independence, Ky. (Filed Aug. 17, 1875.)



The combination of the lever C and lever E, each provided with a series of holes, r r r and s s s, with the circling plate i and fulcrum-plate o o, as and for the purpose set forth.

A brace for spring vehicles, consisting of the two links A and B, of unequal length, and united together at E, said links being attached, respectively, to the body G and reach F by bearings D E' and C E, which bearings are located, with reference to each other, substantially as herein described and illustrated.

170,692. CARS FOR CRIB-RAIL RAILROADS. Roy Stone, Vandalia, N. Y. (Filed Nov. 12, 1875.)



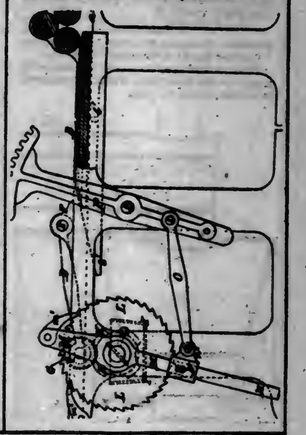
1. The combination, with a car adapted to one-rail railroads, of rubber-rimmed guide-wheels, substantially as herein set forth.

2. The combination of the plates G and H, secured to the frame of the car, with a stationary spindle carrying the guide-wheel, and screw, to secure the two plates together, as specified.

3. The within-described guide-wheel, consisting of the flanged body, removable flange, and intervening rubber ring q, as set forth.

170,693. DAMPING ATTACHMENTS FOR LITHOGRAPHIC PRESSES. Ernest Vidrin, Paris, France. (Filed Oct. 6, 1875.)

Brief.—The damping-roll receives a quantity of water from the trough-roll, and deposits it upon the stone as the latter passes under it.



1. The combination of the vibrating levers P and M, ratchet-wheel L, pawls n^1 n^2, connecting-bar O, and adjustable sleeve N, with the feed-roller H, substantially as and for the purpose specified.

2. The adjustable collar G and cams K K', in combination with the wetting-roller C, water-feed roller H, and wetting-table B, substantially as and for the purpose specified.

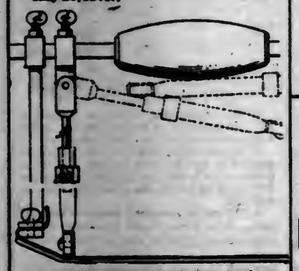
3. The combination of mechanism for producing the intermittent feed movement, consisting of the details P M O N L n^1 n^2 and feed-roller H, with the cam K or K', collar G, roller C, and reciprocating wetting-table B, substantially as and for the purpose specified.

170,694. HOLDERS FOR TOOLS. John A. B. Williams, Philadelphia, Pa., assignor to S. S. White, same place. [Filed Dec. 15, 1874.]



The combination of the slotted hand-piece, the slotted chuck revolving therein, the locking-latch pivoted in the chuck, the recessed tool-shank, the collar sliding on the chuck, and the spring acting on the collar, these members being constructed and operating in combination, substantially as hereinbefore set forth.

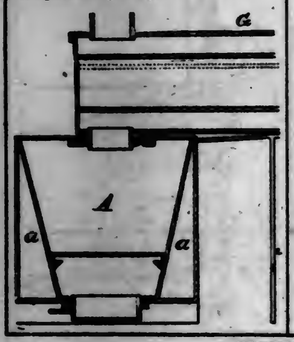
170,695. FRAMES FOR GRAINING-PLATES. Robert A. Adams, Pittsburg, Pa. [Filed May 20, 1875.]



A frame for holding elastic transfer-plates for graining, consisting of the bar, handle, adjustable arms, adjustable stems, joints, lateral projections, hooks, clamps, adjustable stretchers, and screws, the whole combined and arranged substantially as and for the purpose above described.

170,696. COOKING-STOVES. Jas. S. Adams, Olathe, Kans. [Filed Sept. 10, 1875.]

Brief.—The oven is made adjustable by means of the short pipe, which is connected to a plate sliding in ways.



The double-wall oven C mounted on the furnace A, and made adjustable thereon, in combination with the side supporting-rack J, substantially as described.

170,697. MAN-HOLE COVERS FOR OIL-TANKS. William H. Anderson, Brooklyn, E. D., N. Y., assignor of one-half his right to A. J. Pouch, same place. [Filed Nov. 12, 1875.]

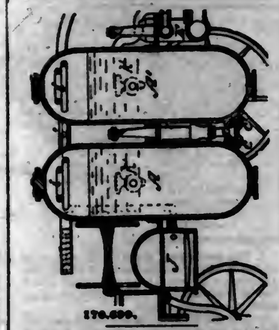
Brief.—The cover is seated by gravity. When forced open by sudden pressure within the tank, it comes in contact with an arm connected to a coiled spring, and is quickly closed.



The combination, with the cover B of an oil-tank, A, of the arm D, and coiled or helical spring C, the whole provided for use and operation, substantially as and for the purpose set forth.

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2. The air-heating pipe f, arranged inside of the air-spaces of the receivers A A', and communicating with a furnace, J, substantially as described.



170,700. PROCESSES OF PREPARING PRESERVED FRUIT. John F. Bamford, New York, N. Y. [Filed Oct. 16, 1875.]

The process of preparing preserved fruit for the use of bakers and others by bringing an equal quantity of fruit and water to a boil, and then adding one ounce of starch to each quart of the diluted fruit, as set forth.

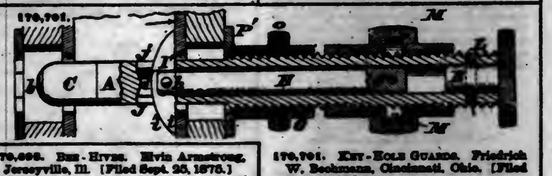
170,701. KEY-HOLE GUARDS. Friedrich W. Beckmann, Cincinnati, Ohio. [Filed Nov. 8, 1875.]

1. A key-hole guard or protector, consisting essentially of a barrel, A, containing a reciprocating shaft, H, to which is pivoted one or more detents, I or I', that are capable of being protruded or closed by the advance or retraction of said shaft H, substantially as herein described.

2. The combination of slotted screw-threaded barrel A e J J' L, shaft H h, detents I I', escape G, and interiorly-grooved propelling-nut K M, as and for the purpose stated.

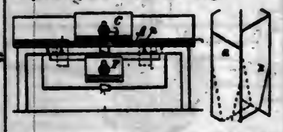
3. In combination with the barrel A L, having one or more opening and closing detents, the nut O, for locking the protector to the door, in the manner described.

4. A shaft provided with a detent or detents, in combination with barrel A, revolving tube O, and closing-nut O, substantially as and for the purpose set forth.



170,698. BEE-HIVES. Elvin Armstrong, Jerseyville, Ill. [Filed Sept. 25, 1875.]

Brief.—A rectangular tube, two sides of which act as springs to contract the passage, has one of the remaining sides shortened, so as to form a trap-passage for the capture of moths and drones. It is held in position and adjusted by means of a small wedge.



In a bee-hive, the combination of the tube h, provided with the short side e, with the fastening-wedge i and opening f, these parts being constructed and adapted for united operation, substantially as herein described.

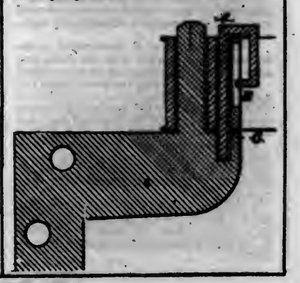
170,699. FIRE-ENGINES. George H. Barker, Waverly, N. Y., assignor of one-half his right to L. D. Stone, same place. [Filed Apr. 12, 1874.]

Brief.—Water is supplied by a force-pump to tanks by branch pipes provided with cocks. An air-forcing pump communicates with them in a similar manner. Chemicals are introduced into the tanks, and the air-pipes enter at the bottoms of the same, the incoming air thereby keeping the chemicals agitated and suspended in the water. By means of the cocks in the supply and discharge pipes, while one tank is being discharged the other can be recharged. A hot-air pipe leading from a small furnace extends through and is coiled within the upper part of the tanks, by expansion of the air to increase the force of discharge.

1. In a fire-engine, a common water-supply pipe, provided with cocks opening into two water-receivers, in combination with a pump forcing air into either of the receivers at pleasure, and a common discharge-pipe, whereby, while one of the receivers is being exhausted of its contents the other is being filled, and the water therein agitated to form a solution of carbonic-acid gas and the water therein, substantially as described.

170,702. SHUTTER-HINGES. F. Beckert, Jr., Allegheny, Pa. [Filed Mar. 26, 1874.]

Brief.—A simple form of bent pin, not easily detachable, dropping automatically, when in certain position, into a vertical aperture provided for it, and thence into a socket, thereby securely locking the hinge when the shutter is in open position.



The hereto-described bent pin A, in combination with a hinge provided with vertical aperture B, socket C, and guide E, wherein the said pin is arranged to operate substantially in the manner and for the purpose specified.

170,703. PAINT-CANS. Mallen Bray, Newton, Mass. [Filed Oct. 15, 1875.]

Brief.—A soft-metal packing provided with an annular slit, bent from the opposite side, so as to open the lips of the slit, is soldered to the inner upper side of the cover, to receive and clamp the top of the can when forced into the cover, so as to fasten the groove adjacent to the lips of the slit. The cover has locking-springs made by slits in its vertical side.



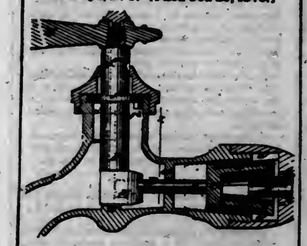
1. The flexible packing-ring b, constructed as set forth, and adapted to receive and engage with the top edge of the body of the can, as and for the purpose described.

2. A can-cover provided with two or more spring-catches, d', formed by cutting two or more openings through the vertical flange of the cover, and bending the upper edges of the stock below said openings inward, as set forth, in combination with a can having two or more recesses, e e, formed in its vertical sides, and adapted to engage with said spring-catches to lock the cover on, substantially as described.

3. The ring C, struck up from a flat sheet without seam, and provided with the vertical rib or lip C', in combination with the cylinder A, to which it is soldered, and the cover D, provided with the packing-ring b, all arranged and adapted to operate as and for the purpose described.

4. A soft-metal packing-ring, b, formed as set forth, fitted and soldered at its inner edge to the hub a of the cover D, substantially as described.

170,704. FAUCETS. Willis L. Brownell, Brooklyn, N. Y. [Filed Oct. 20, 1875.]



1. The combination, with a valve closing with the pressure of water, of a cam or eccentric stem, the latter restricted in its movement in such a manner that the pressure will always automatically close the valve and return the handle to its proper position for opening the valve, substantially as set forth.

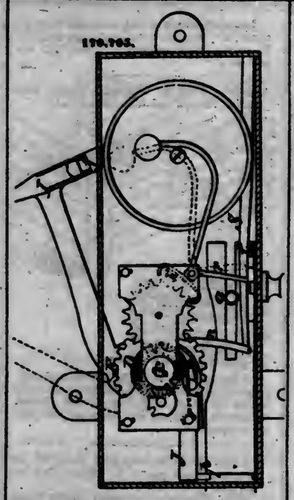
2. The combination of the hollow tapered valve C with the fixed tube B, the latter serving to deliver water within the valve, and also to support the same when opened, substantially as and for the purpose specified.

3. The valve-operating shaft F, provided with the disk f^3, having a projection, f^4, whereby said disk is adapted to act both as a packing and stop for arresting the movement of the shaft, as set forth.

170,705. BURGLAR-ALARMS. A. A. Budd, Indianapolis, Ind. [Filed Sept. 4, 1875.]

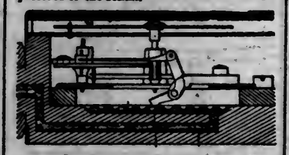
1. In combination with the bolt B, inclined plane p, and pawl J, the hammer I, substantially as described.

2. The combination of the spring D, hammer I, step i, spring S, arm r, and the movable bolt, whereby an alarm on the bell and an explosion can be obtained, substantially as described.



170,706. STEAM-PRESSURE GAGES. James Burden, Birmingham, England. [Filed Aug. 30, 1875.]

Brief.—Mercury interposed between the steam and diaphragm or tube receiving the pressure of the steam.



The described improvement in diaphragm and Bourdon gages, which consists in interposing between the diaphragm or measuring-tube and the steam or other moving agent, mercury or quicksilver, substantially in the manner and for the purposes set forth.

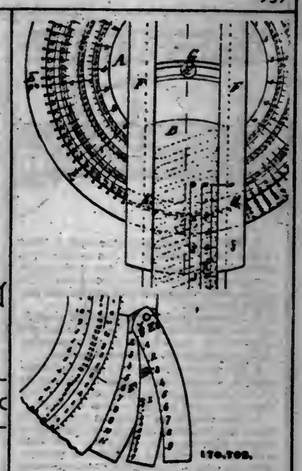
170,707. GAME APPARATUS. Melbourne C. Burr, Minneapolis, assignor of one-half his right to Frances Lee Williams, same place, and Miss E. Newport, Brainard, Minn. [Filed Nov. 1, 1875.]



In a game apparatus, the standards A A and cross-bar C, provided with the pivoted support E, ball B', and ball G, all combined and arranged to operate substantially as described and shown.

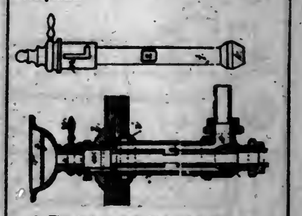
170,708. ADDING-MACHINES. D. L. R. Batt, Pilot Point, Tex. [Filed Nov. 30, 1874.]

The combination of the pieces B', B'', and B''' with the disk D, wheel A, frame F, and slide E, substantially as specified.



170,709. WASTE-VALVES AND OVERFLOWS FOR BATHS AND BASINS. William S. Catt, New York, N. Y. [Filed Oct. 21, 1875.]

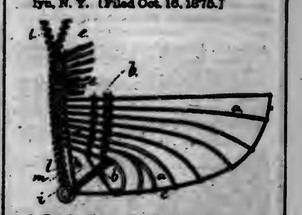
Brief.—The lock-nut and collar clamp the slab and sustain the outer tube, containing the valve mechanism. The inner tube may be lifted and locked in a suspended condition as long as desired. At the top is formed a soap-receptacle.



1. The tube e, provided with the collar f and lock-nut l, for clamping the slab m, in combination with the tubular stem f of the valve c, passing through the lock-nut l, and means for sustaining the tube when elevated, substantially as set forth.

2. The combination, with the overflow and waste-water valve, of a cup for soap at the upper end of the tubular stem, substantially as set forth.

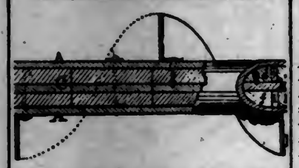
170,710. BUSTLES. Albert Carter, Brooklyn, N. Y. [Filed Oct. 16, 1875.]



1. The bustle made with the spring-wires, extending from the waist-band outward and downward in the form of loops, and connected together by cords, in combination with the bow b, passing diagonally from one end of the band to the other, and united with said spring-loops a, as set forth.

2. The bellows l and m, wound in opposite directions, set together, and combined with the loops a and the interior wire i, as set forth.

170,711. GRAIN-CONVEYER SHAFTS. Henry I. Chase, Philander F. Chase, and Edwin D. Chase, Peoria, Ill. [Filed Nov. 9, 1875.]



1. The hollow iron conveyer-shaft A, filled with a core of wood, C, or like substance, to strengthen the same, and form a solid basis for the nails or screws which secure the flights to the shaft, substantially as and for the purpose described.

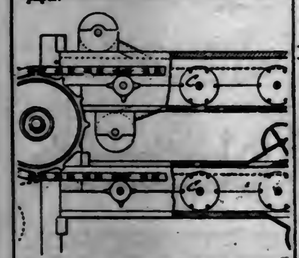
2. The combination, with the filled shaft A, of the iron band or ferrule d at either end of a shaft-section, applied and operating substantially as and for the purpose described.

3. The combination of the hollow conveyer-shaft A, wooden core C, made in sections d e f g, and ferrule d, arranged and operating substantially as and for the purposes described.

4. The wooden core-sections d e f g, split twice longitudinally through the center at or near a right angle to each other, and filled with wooden wedges h i, combined together with the pipe A, substantially and operating as and for the purposes set forth.

170,712. PAPER-DRYING MACHINES. Culver S. Clark, New York, N. Y. [Filed Nov. 6, 1875.]

Brief.—The surface of the drums and carriage is composed of a series of rods. The force of the blast assists the movement of the paper.

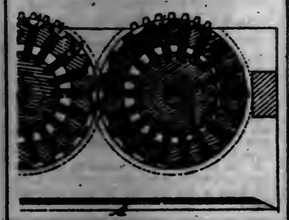


1. In paper-drying machines, the combination of paper-carrying cylinders and feeding-drums, made of lateral rods supported in side disks, with blowers above and below the same, to admit the unobstructed action of the air-blasts on one or both sides of the paper, substantially as set forth.

2. The combination of two end-open cases, A A, with drums, intermediate rotary carriers, and hot-air flues, delivering the air on opposite sides of the paper in the direction of the latter's motion, for the purpose specified.

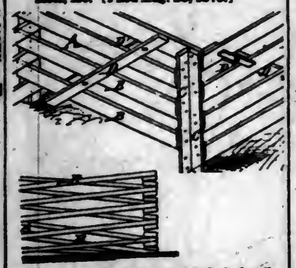
170,713. PRESSES FOR MOLDING ARTIFICIAL FUEL. Herbert Cottrell, Newark, N. J. [Filed May 31, 1875.]

Brief.—The plastic material is poured between the cylinder-molds, and as they come together they press it into blocks, which are ejected by plungers operated by cams.



The combination of the eccentric ring H, eccentric G, and plungers J with the cylinder E, substantially as herein shown and described.

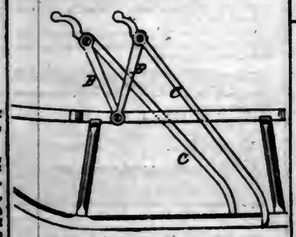
170,714. FENCES. William A. Couch, Hannibal, Mo. [Filed Aug. 26, 1875.]



In combination with the interlocked rail-panels A of the folding fence, the detachable tattes composed of the bar D and pivoted buttons D', as shown and described, to operate as specified.

170,715. SLED-PROPELLERS. David W. De Forest, Brooklyn, N. Y. [Filed Nov. 24, 1875.]

Brief.—The power is applied directly to the propelling-staff without leverage.

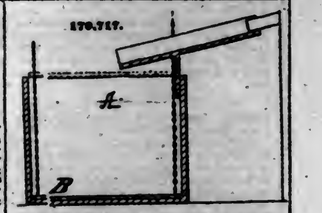


The staff C, constructed to be grasped by the hand of the operator, and the link B, pivoted at its upper extremity to the staff C, and at its lower extremity to the side of the sled, the whole constructed and combined for use and operation substantially as and for the purpose described.

170,716. PROCESSES OF PREPARING PHOTO-PLATES FOR PRINTING IN FATTY INKS. P. A. Desgenais, Paris, France. [Filed July 6, 1875.]

The method, herein described, of preparing gelatinous surfaces for photograph-printing in fatty inks by solarizing the gelatine from both sides until the solarization from the back meets the deeper solarizations of the image, so as to retain the image while being printed from, substantially as set forth.

170,717.

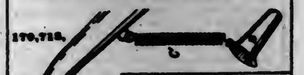


The combination, with the water-tank A, of the vertically-movable slab B, for the purposes herein set forth.

170,718. OIL-CAN SPOUTS. D. G. Dustin, Batavia, Ohio. [Filed May 12, 1875.]

As a substitute for the usual chain and other devices, the spiral spring C, connected and operated, in combination with the cap B and spout B, as shown and described.

170,718.



170,719.



170,719. COMBINED TWINE-CUTTERS, LETTER-OPENERS, AND STAMP-MOISTENERS. John Bital, Sacramento, Cal. [Filed Aug. 14, 1875.]

1. The combination, with a strong operating guard-spring, of a small pair of scissors, a letter-opening knife, and a pivoted sponge-holder, forming a combined twine-cutter, letter-opener, and stamp-moistener, substantially as and for the purposes set forth.

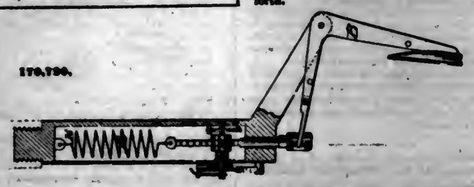
2. The combination of the guard-spring, with a pair of scissors, pivoted to the legs of the same, for operating the scissors by depressing the spring ends, substantially as described.

3. The combination, with scissors, of guard-spring B and pivoted spring C, arranged substantially as and for the purpose specified.

170,720. MARINERS' LOGS. G. B. Elliott, St. Andrews, Canada. [Filed Nov. 6, 1875.]

In mariners' logs, a sliding spring-governed rank, actuated by a concave pressure-disk, and combined, by transmitting-gear and carrier-dog, with a separately-turning and spring-actuated index-hand, provided with retaining-pawl and ratchet mechanism, for registering speed of vessel on dial of casing, substantially in the manner and for the purpose set forth.

170,720.



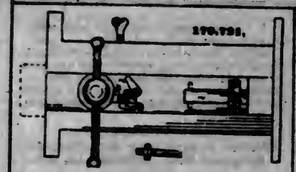
170,717. DESTRUCTIVE FURNACE-SLAG. Charles Diebold, Lebanon, Pa. [Filed Feb. 21, 1876.]

Brief.—The slag is run upon the slab, which is then lowered into the water-tank. After the slag is disintegrated, the slab is raised and the slag can be readily removed.

170,721. RENCH-VISES. George M. Brown, Pittsburg, Pa. [Filed Mar. 6, 1875.]

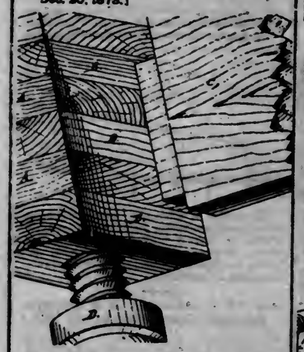
Brief.—To prevent the strain of the pivots upon the jaws from splitting or breaking them, the equalizers of a bench-vise are provided with solid fixed pivots, held in suitable recesses in the outer faces of the jaws by means of pivoted buttons.

170,721.



The equalizers a a, having solid pivots, in combination with the recesses in the outer faces of the jaws, and the buttons l l, substantially as and for the purpose hereinbefore described and set forth.

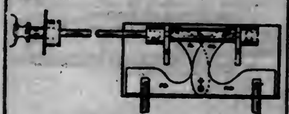
170,722. COMBING FOR TABLES. Robert Ewald, New York, N. Y., assignor to Geo. Brown and C. F. Sims, same place. [Filed Dec. 20, 1875.]



The corner-block A B constructed of two or more pieces of wood, with the grain crossing each other, as described, and adapted to the reception of the side and end pieces C, and the leg D, substantially as and for the purpose hereinbefore set forth and described.

170,723. SASH-FASTENERS. B. Fisher, Columbus, Ohio. [Filed Nov. 27, 1875.]

Brief.—Two inclosed crank-levers carry stops, which project through the metal box or casing, and engage in notches in the meeting-flanges upon a shaft within the case move the inner ends of the crank-levers, and the shaft is operated by a knob. Pushing the knob forward one crank, and pulling it releases the other one.



The combination, in a sash-lock for both sashes, of the two crank-levers m n, with their bolts E F, and a shaft, with flanges c c, overlying both levers, substantially as described.

170,724. PERFORATING ATTACHMENTS FOR PRINTING-PRESSES. Jonathan C. Forman, Cleveland, Ohio. [Filed June 26, 1875.]

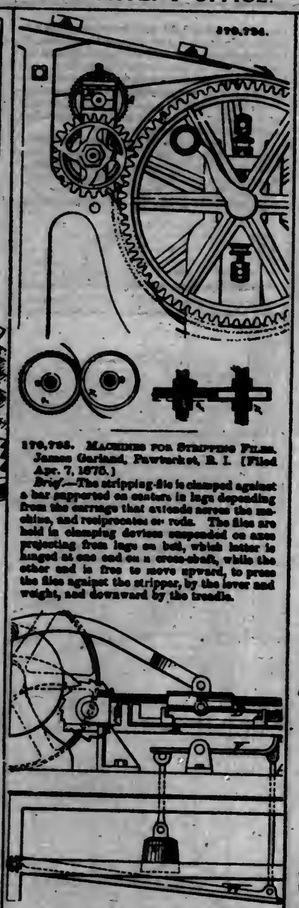
Brief.—The sheet is taken from the cylinder by rotary perforators, which are driven by gearing from the press. The drum of each perforator receives and confines the chips punched out of the sheet.

1. In combination with a printing-press, the herein-described perforating apparatus, consisting of the perforating-rollers F N and P P, sheets E L, and wheels G G, operating conjointly with said press, in the manner substantially as described, and for the purpose specified.

2. The combination of the roller F, carrying a series of removable punches, and roller e, constructed with a receiving-cavity, substantially as and for the purpose described.

170,725. MACHINES FOR STRIPPING FILES. James Garland, Pawtucket, R. I. [Filed Apr. 7, 1875.]

Brief.—The stripping-file is clamped against a bar supported on centers in lugs depending from the carriage that extends across the machine, and reciprocates on rods. The files are held in clamping devices suspended on axes projecting from lugs on bolt, which latter is hinged at one end on a cross-strut, while the other end is free to move upward, to press the files against the stripper, by the lever and weight, and downward by the treadle.



1. The combination of the stripping-instrument m, the leveling-holder H, and the rectangular carriage G, substantially as described.

2. The leveling file-blank holders, as described, in combination with the elevating-bed M, arranged and operating substantially in the manner described.

3. The combination, with the holders or cradles, to which the file-blanks and stripper-file are secured, of the center-points supporting the same, and placed on a line with the surfaces in contact, substantially as and for the purpose set forth.

4. The combination of the lever V, the rest q, the weight U, or spring, and the treadle W, arranged and operating substantially as described.

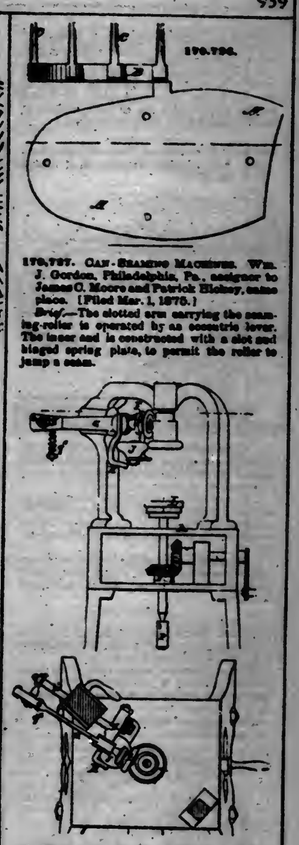
170,726. COMB-UNCOVERERS. Hugh H. Gilchrist, Swan Creek, assignor of one-half his right to John J. Worden, Youngstown, Ill. [Filed July 24, 1875.]

Brief.—An iron plate, of the form of a half-circle for shape or bend, has connected to one side a bar with lines like a four-tined fork. The device is secured in the bent of the plowman, who uses his foot in throwing clods from the growing plants.

The combination of the plate A, bar B, and prongs C with each other, substantially as herein shown and described, to adapt the device for attachment to the plowman's foot, as and for the purpose set forth.

170,727. CAN-SEAMING MACHINES. Wm. J. Gordon, Philadelphia, Pa., assignor to James C. Moore and Patrick Blaney, same place. [Filed Mar. 1, 1875.]

Brief.—The slotted arm carrying the seaming-roller is operated by an eccentric lever. The inner end is constructed with a slot and hinged spring plate, to permit the roller to jump a seam.



1. The combination of rod or arm G, roller F, and opening spring-section g^2, to permit the roller to jump a seam in the can, substantially as described.

2. The combination of roller F and eccentric H, substantially as and for the purposes described.

3. The combination of arm G, roller F, eccentric H, and the slotted joint on the head of the arm G, substantially as described.

170,728. CORN-PLANTERS. General Gardner (and Christoph Schoster, Dale, Wis. [Filed Aug. 26, 1875.]

Brief.—The axle is made in two parts, and provided with a double clutch at the center, so that seed may be planted from one or both of the seed-boxes. Within the seed-boxes are double slides, worked alternately by cams on disks secured to the bearing-wheels. One of the slides is provided with a scraper for carrying the seed to the discharge-orifice.

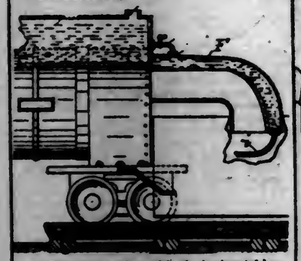


1. The combination, with the grain or seed box A, receptacle l, and spout p, of the double cut-off valves b and p, feeder r, and alternat-

ing cams or projections *a* and *a*, all constructed and arranged to operate substantially as and for the purpose specified.

2. The combination, with the grain or seed boxes A A, of the axle, formed in two parts, and the central coupling *i* sliding upon one portion thereof, arranged to operate substantially as and for the purpose specified.

170,720. LOCOMOTIVE FEED-WATER HEATER. Wm. Halsted, Trenton, N. J. [Filed Oct. 28, 1875.]



1. The combination, with the horizontal locomotive smoke-pipe, of a water-compartment located directly above and upon the same, substantially as shown and described.

2. The combination, with the horizontal locomotive smoke-pipe and with the water-compartment F, of a tank, O, connected with said compartment, substantially as shown and described.

3. The combination of the horizontal smoke-pipe, water-compartment F, and tube *i*, leading to the boiler, substantially as shown and described.

170,730. CONDENSERS FOR STILLS AND DISTILLING-CHAMBERS. Milo Morris, Jamestown, N. Y. [Filed Nov. 22, 1875.]

Brief.—Places an upper part of an evaporating-chamber a peculiar water-chamber, and catches and conveys away condensation by a line-shaped trough. Cover of the evaporating-chamber may be made with inlets to the water-chamber.



1. The combination, in an evaporating-chamber, of a spiral or ribbated condenser, having a longer vertical than horizontal diameter in its cross-section, and having its inlet and outlet outside of the chamber, with a correspondingly spiral or ribbated trough, to catch and convey the condensation, as and for the purposes set forth.

2. The combination of the evaporating-chamber A, spiral cup-condenser E, having outlet C, apertured cover D, and trough X, all arranged as and for the purposes set forth.

170,731. VULCANIZING APPARATUS. J. D. Haigus, York, Pa. [Filed Sept. 9, 1875.]

Brief.—The steam-chamber is inside of the sectional flask. The mold has an annular channel for waste exhibited.

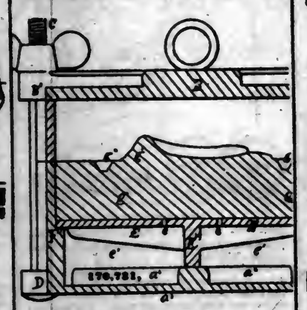
1. A dental flask constructed with sections *a*' *d*', the section *a*' being divided by a perforated plate or tray, B, and provided with an internal steam-generating chamber, *c*', beneath the plate or tray B, substantially as shown and described.

2. In a dental flask, the combination, with a section, *a*', provided with a steam-generating chamber, *c*', and perforated supporting plate or tray B, of the removable section *d*' and cover D, substantially as shown and described.

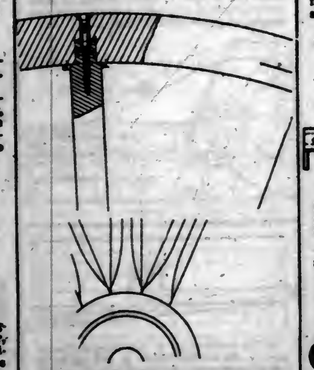
3. A dental flask embodying in its construction a section, *a*', provided with a steam-generating chamber, *c*', perforated plate or tray B, removable section *d*', and a top or cover, D, the whole being held and drawn together by external bolts or rods C C, working in grooved projections or guides F, and screw-nuts G G, substantially as shown and described.

4. The combination with a dental flask, constructed with an internal steam-generating chamber, of a filling, *g*, provided with a groove or channel, *g*', around the die *f*', substantially as and for the purposes described.

5. The combination with a dental flask, constructed with an internal steam-generating chamber, *c*', and perforated supporting-plate E, of a filling or mold, *g*, surrounding a die, *f*', and provided with a groove or channel, *g*', substantially as and for the purposes described.



170,732. SPOKE-SOCKETS. HENRY A. HALL, Wilton, N. H. [Filed Feb. 20, 1874.]



In a carriage-wheel, the combination of a rim, having spoke mortises or sockets bored only partly through the same, spokes having tenons bearing against the bottoms of their mortises, and their shoulders against the inner periphery of the rim, and screws driven through the outer periphery of the rim into the ends of the spokes, all substantially as and for the purposes set forth.

170,733. CURRY-COMBS. C. A. Hotchkiss, Bridgeport, Conn. [Filed Oct. 28, 1875.]

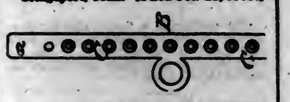
Brief.—The handle on the back of the comb is made in two pieces, one of which forms a brace for the comb, being firmly riveted to the comb. The back of the comb is made solid by means of filling-strip placed between the teeth-bars, and riveted to the end pieces and handle.



1. Filling-pieces D, combined with comb-bars A, substantially as described.

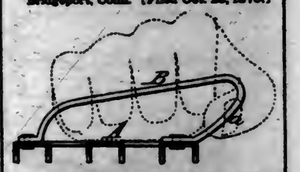
2. The handle to the back of a curry-comb formed of two pieces, C G, of which the piece C extends across the back of the comb to brace and strengthen the same, and is bent upward to form the thumb-rest *g*, substantially as specified.

170,734. CURRY-COMBS. C. A. Hotchkiss, Bridgeport, Conn. [Filed Oct. 28, 1875.]



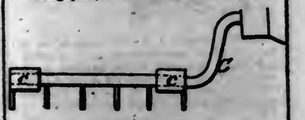
The mane-comb teeth C, the comb bar or back B, and the brackets *a*, formed entire, and adapted for the purposes herein specified.

170,735. CURRY-COMBS. C. A. Hotchkiss, Bridgeport, Conn. [Filed Oct. 28, 1875.]



The handle B, attached at both ends to the curry-comb frame, said handle being bent, as shown, to extend beyond the side of the frame, forming an obtuse angle with the frame, and also an inclined thumb-rest, *a*, substantially as specified.

170,736. CURRY-COMBS. C. A. Hotchkiss, Bridgeport, Conn. [Filed Oct. 28, 1875.]



In a curry-comb having cast-metal end pieces B B, the sub-brokers eyes C, formed on said end pieces in the cast and process of casting, as specified.

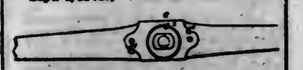
170,737. PUMP-VALVES. Lewis Hubbard and William A. Hart, Buffalo, N. Y. [Filed Nov. 19, 1875.]



1. A steel or other hard-metal valve-seat piece, C, provided with a wrench-section, E, valve-cams D D', and screws F F', adapted to screw into the body H on one side, and the cage B on the opposite side, substantially as described.

2. A removable reversible double-seated valve-piece, in combination with the parts B and H, as and for the purposes set forth.

170,738. WHIFFLETREE-FASTENERS. E. R. Jackson, La Fayette, Ind., assignor to himself and T. J. Beede, same place. [Filed Sept. 4, 1875.]



The plate A, having a reversedly-opening T-shaped groove, *a*', with enlarged ends, in combination with the plate C, having a stud or pivot, *c*', provided with a head, as and for the purposes described.

170,739. REFRIGERATORS. Edgar B. Jewett, Buffalo, N. Y. [Filed Nov. 6, 1875.]

Brief.—A cooling chamber, between the food-chamber and the ice-box, is sloped and perforated at its upper end, to retain water upon it, and has communications with the outside and inside of the refrigerator, for inlet of air and water to the food-chamber.



The combination, in a refrigerator and with the ice-chamber A thereof, of the inclined air-cooling chamber C, provided with air inlet and escape openings *c f* and overflow-aperture A, arranged near the highest point of the air-chamber, for retaining the ice-water in a body above the air-chamber, and then discharging the same through the latter, whereby both the upper and lower walls of the air-chamber are thoroughly cooled, substantially as hereinbefore set forth.

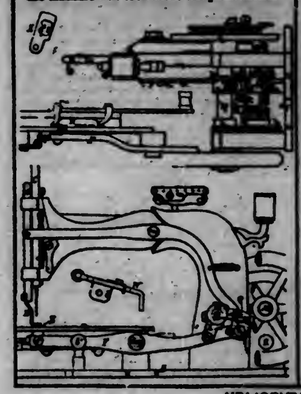
170,740. BRACKETS FOR UPSTAIR-ROLLERS. Hubert L. Judd, Brooklyn, N. Y. [Filed Sept. 27, 1875.]



The bracket, made with the wings *c*, point *d*, and narrow bar *e*, notched at its upper end to receive the staple *f*, as and for the purpose set forth.

170,741. SEWING-MACHINE. J. Keith, Providence, R. I. [Filed Sept. 9, 1875.]

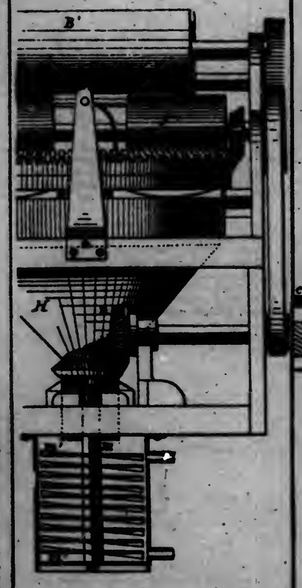
Brief.—The machine is capable of producing the plain and contrivering or button-hole stitch. The lever that carries the cloth is pivoted to the bed of the machine that it is capable of six motions. At the rear end of the lever there are attached two auxiliary levers, one of which is called the reverser. In addition to the driving-shaft provided with cams, there is an auxiliary shaft, also provided with a series of cams. When the outer ends of the levers are in contact with the cams on the auxiliary shaft, the embroidery or button-hole stitch is formed. The position of the levers is shifted by slipping the stud down into the lower notch of the bank, whereby the outer ends of the levers will be thrown into action with the cams on the main shaft, and the machine will then make the plain stitch.



In a sewing-machine, the combination of the auxiliary shaft R, its cams T Y Z A', the latch-lever X, stud *g*, reverser W, and lever Q, with the main shaft M, its cams S S', the presser D, and feeder E, and their operative levers P P', all being arranged, connected, and applied in manner and by means substantially as set forth.

170,742. CLAY-PULVERIZING MACHINES. J. N. Kerper, Washington, D. C., assignor of one-half his right to I. P. Childs, same place. [Filed Nov. 22, 1875.]

Brief.—The clay deposited in the hopper passes between the first set of rollers, being thereby partially pulverized, and falls upon the revolving grate, where it is further crushed by the heavy rollers, and forced through into the hopper, and conducted thence to the scraper-cylinders. A scraper at the point of feed is used to remove stones too large to pass through the rollers. A serrated scraper loosens up the clay on the grate.



1. The combination of the crushing-rollers B B', and the suspended scraper D, constructed and arranged to operate substantially as described.

2. The combination of the crushing-rollers B B' and the revolving grate, substantially as set forth.

3. The combination of the revolving grate and the rollers F and F', arranged to operate substantially as set forth.

4. The combination of the revolving grate, the rollers F and F', and the rake or agitator R, substantially as described.

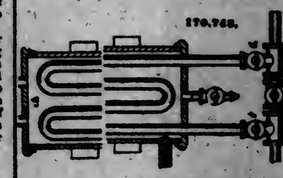
5. The combination of the revolving grate, the hopper H, the scraper-cylinder M, and revolving shaft *n*, with its arms *n'*, all combined and arranged to operate substantially as set forth.

170,743. PUMP-WATER HEATERS. Mahem W. Kirby, Indianapolis, Ind. [Filed Aug. 26, 1875.]

Brief.—The water-connections with the heater are such that water may be forced through or around the heater.

1. The feed-pipe D, leading from the tank, and provided with a cock, F, below the cylinder A, in connection with the exit-pipe D in the cylinder A, and the cock G below the cylinder, all in combination with the cylinder A, and connected with the pump of a locomotive by means of the pipe D', all constructed and operated so as to heat the feed water in its passage through the coil D in the cylinder A before it is drawn into the pump to be injected into the boiler, substantially as specified and set forth.

2. In combination with the cocks F and G, the cock H, arranged to operate, as described, between them, for the purpose specified.



170,744. MACHINES FOR FORMING COLLARS ON CARRIAGE-AXLES. Jacob Krisch, Cleveland, Ohio. [Filed Mar. 4, 1875.]

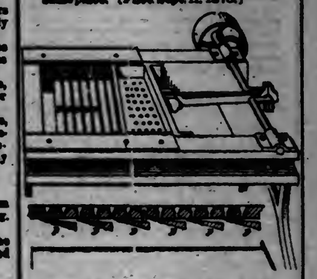
Brief.—The revolving center point is fixed immovably to the frame of the machine, while the other center point is fixed in a carriage, that is drawn inward to thrust the metal by eccentrics through the medium of a stirrup. The blocks in standard do not clamp, but merely prevent deflection of the bar, and blocks subserve the same purpose in addition to that of dies.



1. In machines for the manufacture of axles, the adjusting center-screws C' D, in combination with the guide-blocks *a a'*, stay I, guide-standards F, dies *e e'*, and carriage B, whereby the axle-blank is held at its extreme ends upon points or centers, and pressure applied thereto, thereby upsetting said blank, as described, and at the same time preventing deflection of the bar, substantially as set forth.

2. The combination of two centers, in line with each other, by and through which to apply the power required to upset the bar, and adjusting-guides or supporting devices intermediate between said centers, to prevent deflection of the bar while being upset, substantially as set forth.

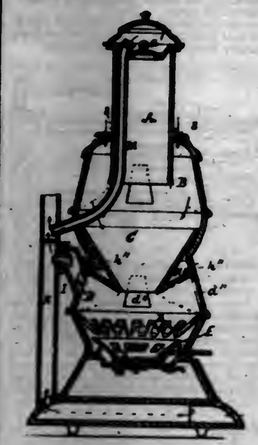
170,745. OATMEAL-MACHINES. H. Kruse, Akron, Ohio, assignor to F. Schumacher, same place. [Filed Sept. 11, 1875.]



In an oatmeal-machine, the beveled knives D D, applied, as set forth, in relation to plate G, serving both to cut the grain and as a gage to regulate the size of the particles of meal, substantially as described.

170,746. STOVES. Silas H. La Rue, Franklintown, N. J. [Filed Oct. 12, 1875.]

Brief.—There is a down-draft through a cooking-chamber to an annular illuminated combustion-chamber above the lower body of coal.



1. In a downward-draft magazine-stove for soft coal, the combination, substantially as shown and described, of the adjustable fresh-air openings 3 3, the illuminating-chamber B, cooking-chamber or fire-pot C, and the combustion-chamber D, provided with the mica windows b^5 b^6, the said parts being arranged in relation to each other substantially as and for the purposes described.

2. The combination, in a downward-draft magazine-stove for soft coal, substantially as described, of the magazine A and the illuminating-chamber B, constructed and arranged so that the walls of that portion of the magazine which projects above the top of the illuminating-chamber shall form the external wall of that part of the stove, while the lower end of said magazine extends down into the said illuminating-chamber, as shown and described, with the adjustable fresh-air openings or holes 3 3 in the upper portion or top of the said illuminating-chamber, the illuminating combustion-chamber D, and the exit-pipe I, leading from the combustion-chamber D into the flue K, constructed and arranged substantially as and for the purposes shown and described.

3. In a downward-draft magazine-stove for soft coal, the combination, substantially as described, of the fresh coal-air chamber H, provided with the entrance and exit openings h^3 h^4, with the cooking or fire chamber C, and the combustion-chamber D, all constructed and arranged substantially as and for the purposes specified.

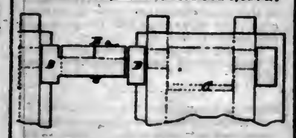
4. In a downward-draft magazine-stove for soft coal, the combination of the adjustable fresh-air openings 3 3, the cooking or fire chamber C, the combustion-chamber D, the exit-pipe I, and the grate R, substantially as and for the purposes described.

170,747. LUBRICATING MACHINE-BEARINGS. Lebbeus W. Lathrop and Thos. A. Weber, New York, N. Y. [Filed Nov. 2, 1875.]



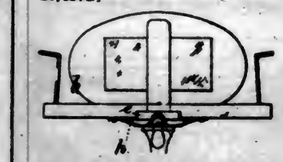
As a new article of manufacture, anti-friction cloth surfaced with a mixture of graphite and sugar, cemented thereto by heat and pressure, in the manner described.

170,748. CAR-COUPLINGS. J. T. A. Lewis, East Boston, Mass. [Filed Oct. 7, 1874.]



In combination with the grooved and recessed hooks R R, provided with abutments D D for the ends of the said hooks to bring up against in the act of coupling, all being arranged as specified and shown.

170,749. STEREOSCOPES. Wm. H. Lewis, New York, N. Y., assignor to R. and H. T. Anthony & Co., same place. [Filed Oct. 20, 1874.]



The guide and frictional detainer for the picture-slide of a stereoscope-instrument composed of the spring *b*, that is attached to said slide, and bears at its ends in a groove, or upon a rib at the under side of the bar *c*, to form a guide, as set forth.

170,750. HEMMER. David W. Long, Parkersburg, W. Va. [Filed Mar. 27, 1875.]

Brief.—An angular four-leaved hinge has supplemental lips formed or returned upon its shorter leaves, so arranged as to overlap the edge of a trunk, allowing the screws to be passed into the wood transversely, instead of directly into the edge; the construction preventing splitting, and at the same time strengthening the hinge.



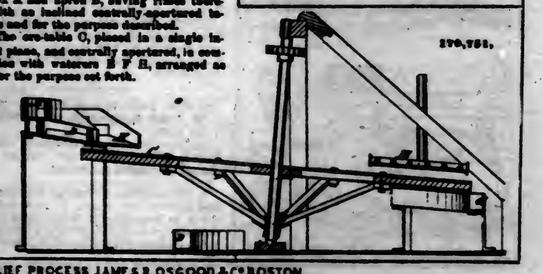
A hinge for trunks and other purposes, having angular leaves B and supplemental lips *a*, connected to the leaves A, substantially as described.

170,751. ORE-CONCENTRATORS. John Longmaid, Bingham, Utah. [Filed July 13, 1874.]

Brief.—The inclined revolving-round table receives the ore from the riffle-box at its upper side, which also spreads the ore over the table by the water with which it feeds the ore. The heavy particles go to the outer edge, and the light to the circular opening at the center. The water-pipe at the lower edge aids this separation. Bubble troughs at the outer and lower edges receive the separated ore.

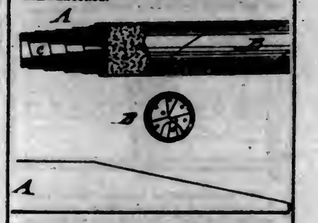
1. The combination of bottom-perforated ore-box A and apron B, having riffles thereon, with an inclined centrally-apertured table, as and for the purpose described.

2. The ore-table C, placed in a single inclined plane, and centrally apertured, in combination with waters E F H, arranged as and for the purpose set forth.



170,752. CIGARETTE MOUTH-PIECES. D. Marquis, New York, N. Y. [Filed Aug. 6, 1875.]

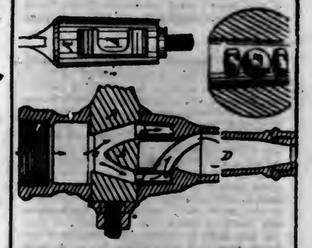
Brief.—The mouth piece is wound from a peculiarly-cut strip of paper, so that the central opening is flaring outward, and the outside of the mouth-piece tell tapering in the same direction.



A mouth-piece, A, for cigarettes, made from a strip or blank of spirally-wound paper, to form a central smoke-passage, C, decreasing in diameter from the tip toward the rear or butt end, as and for the purpose stated.

170,753. NOZZLE FOR HOSE. Ivra W. McGaffey, Chicago, Ill. [Filed Sept. 15, 1875.]

Brief.—The plug is perforated by a divided water-way, the divisions of which are separated by a partition, which, in turn, is furnished with a passage independent of the two branches of the water-way. The nozzle-pipe is made with a central through-bore, which, when the plug is removed, is a straight unobstructed passage-way, and provided with one or more lateral channels entering from the plug-chamber, and turning into the central bore between the plug-chamber and the point of the nozzle, in combination with the plug A, furnished with the V-shaped water-way, substantially as specified.



1. The plug A, perforated by a divided water-way, the divisions of which are separated by a partition, *b*, which in turn is furnished with a passage, *d*, independent of the two branches of the water-way, substantially as specified.

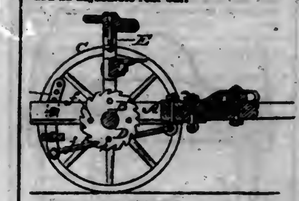
2. The nozzle-pipe, made with a central through-bore, which, when the plug is removed, is a straight unobstructed passage-way, and provided with one or more lateral channels, *d*, entering from the plug-chamber, and turning into the central bore between the plug-chamber and the point of the nozzle, in combination with the plug A, furnished with the V-shaped water-way, substantially as specified.

3. The nozzle-pipe, provided with a lateral diverging channel or channels, *d*, when said channels are constructed at their exit into the bore, for the purpose of accelerating the diverted current, substantially as specified.

4. The combination of the tapering barrel D, the plug A, provided with the V-shaped water-way, and the channels *d*, constructed and arranged substantially as specified.

170,754. PLOWING AND SHELLING MACHINES. Daniel McVey, Gallatin, Tenn. [Filed July 3, 1875.]

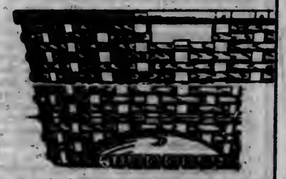
Brief.—A frame for the reception of several interchangeable devices, and provided with an arched bar, axle, bearing-wheels, fixed-wheel, with side pins and saw-like peripheral teeth, and an adjustable rear bar.



1. The frame A, provided with the axle B, wheels C, wheel D, arched bar E, and adjustable transverse bar G, in combination, as shown.

2. The wheel D, provided with the teeth for feeding cotton-seed, and the lateral pins for operating the wheat and corn dropping mechanism.

170,755. BASKETS. Bernard G. Meinikheim, Newtown, and William D. Chase, New York, N. Y.; said Chase assignee to said Meinikheim. [Filed Sept. 16, 1875.]

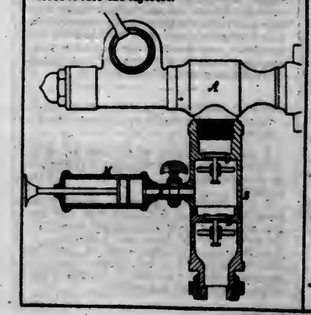


1. A basket constructed entirely of metallic uprights A A and wooden hoops B B, that are placed with reference to said uprights, substantially as shown and described.

2. The metallic bottom D, combined with and fastened to the metallic uprights A A of a basket-frame, substantially as specified.

170,756. STEAM-BOILER INJECTORS. Wm. T. Messenger, Boston, Mass. [Filed Sept. 21, 1875.]

Brief.—Between the injector and induction-pipe the force-pump is applied, as shown; said pump, together with its connections, serving to raise water in the induction-pipe, and force it into the injector.

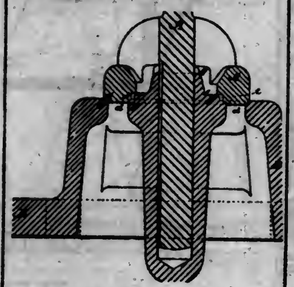


1. The combination of a steam-boiler injector, A, and a force-pump applied thereto and to the water induction pipe of said injector, all being substantially as and for the purpose specified.

2. The combination of a steam-boiler injector, A, and a force-pump applied to it and its induction-pipe O, as described, with a cock, M, arranged between the pump-barrel H and its valve-case B, and in their connecting-conduit K, as specified.

3. The combination of the pump-barrel H and valve-case B, connecting-conduit K and the stop-cock M, all being arranged substantially in manner, and for application to a steam-boiler injector and its induction-pipe, as described.

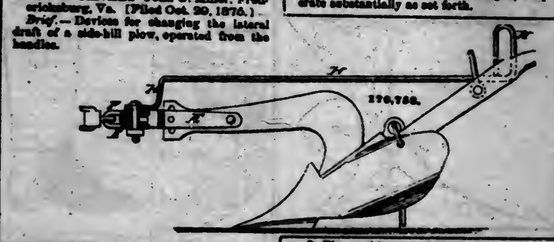
170,757. SAFETY AND RELIEF VALVES. J. Wm. Molling, Bristol Bank, Wigan, England. [Filed Nov. 3, 1875.]



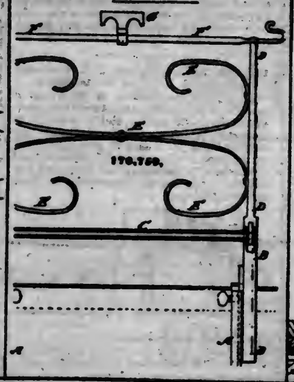
The valve and seat A B, having faces *a' b'* *a² b²* *d*, spaces *e f*, collar *f'*, and annular hole *g*, as and for the purpose described.

170,758. CULTIVATORS. John G. Miller, Fredericksburg, Va. [Filed Oct. 20, 1875.]

Brief.—Devices for changing the lateral draft of a side-hill plow, operated from the handles.



The combination of the adjustable notched clevis E, the adjustable double-tree clevis F, and the rod H with each other, and with the beam and handles of a plow, substantially as herein shown and described.



170,759. BRICK-HOLDERS. Geo. W. Miller, Constitution, Pa. [Filed Sept. 20, 1875.]

1. The combination of the springs *b'*, with the hinged side bars B D of a rain-rest, substantially as herein shown and described.

2. The combination of the slotted and grooved bars A, with the hinged bars B D of a rain-rest, substantially as herein shown and described.

3. The combination of the slotted and grooved bars A, the tongued bars B, the cross-rod *a*, the hinged bars D, the springs *b'*, the brace E, the cross-bar F, and the V or double hook G, with each other, substantially as herein shown and described.

170,760. DISTILLING ZINC FROM ITS ORES. C. E. Moore, Jersey City, N. J., assignor to the Passaic Zinc Company. [Filed Oct. 12, 1875.]

Brief.—Mixes with the manganiferous zinc ore and carbonaceous material, previous to charging the retorts, a quantity of iron scrap, ore, or silica, to prevent destructive corrosion of the retorts.

The improvement in the art of distilling metallic zinc from its manganiferous ores, consisting of the treatment of the manganiferous zinc ore, supplementary mineraling material, and carbonaceous matter simultaneously, in the distilling-vessel, by heat, substantially as before set forth.

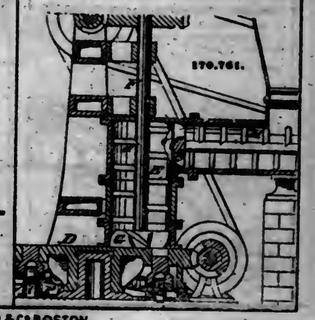
170,761. BRICK-MACHINES. A. Morand, Germantown, Pa. [Filed May 24, 1875.]

Brief.—The clay passes from the hopper into a horizontal tempering-cylinder, which communicates with the upper portion of a vertical receiving-cylinder (each having mixing and propelling blades) to a mold-table rotating on a hollow track, provided with perforations for the dirt to fall through.

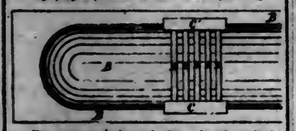
1. In a brick-machine, the combination of the mold-wheel D, vertical receiver E, and horizontal pugging-mill H, arranged substantially as shown, and provided with suitable shafts and pugging-blades, and the propellers G G', constructed as described and arranged, to operate substantially as set forth.

2. The combination of the vertical receiver E and horizontal pugging-mill H, arranged as shown, and provided with suitable shafts and pugging-blades, the mold-wheel D, the propellers G G', constructed as described, and the hollow way P, as and for the purposes specified.

3. The hollow cantway P, provided with openings *k k* in its upper face, and openings *l l* in the side, for the escape of obstructions to the rollers *i i*, in the manner substantially as shown and described.

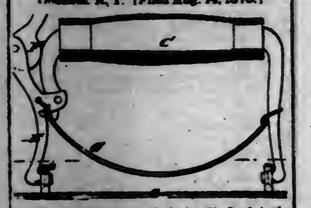


170,702. SHAVE FOR HAIR-TUBE. Jos. W. Nye, Lynn, Mass. [Filed Oct. 6, 1875.]



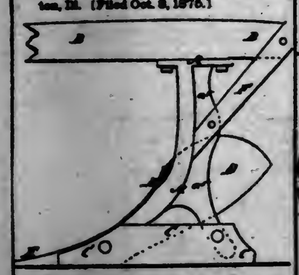
The open rack formed of the slats D, united at their ends to the boards A, having overhanging fingers C C, in combination with a bath-tub, B, arranged below the top edge of the tub, and adjustable longitudinally thereon, in the manner herein described, and for the purpose set forth.

170,703. SAD-IRONS. Albert L. Parcells, Oneonta, N. Y. [Filed Aug. 14, 1875.]



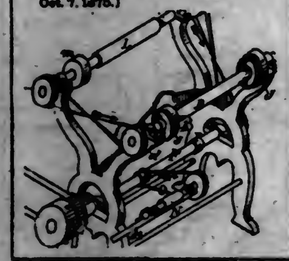
The combination, with the handle C, of rigid hook-standards D, standard E, a cam, F, pivoted to the upper end of the latter, and the spring G between the two standards, as shown and described.

170,704. PLOWS. Joseph Phillips, Smithton, Ill. [Filed Oct. 8, 1875.]



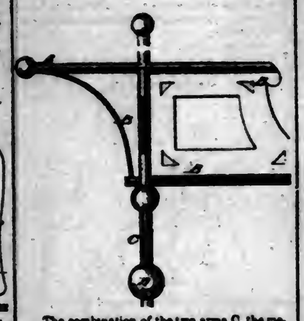
The plow-upright A, having a flange, *a'*, formed upon its upper end, having its lower end *a''* forked or widened, and a horizontal prong or arm, *a'''*, formed upon it, having a longitudinal rabbet, *a''*, formed upon the rear part of its land-side side, and two longitudinal flanges, *a' a'*, formed upon its mold-board side, substantially as herein shown and described, to adapt it to receive the beam B, the land-side C, the mold-board D, the share E, and the handles F G, as set forth.

170,705. POLISHING-MACHINE FOR BOOTS AND SHOES. Wallace Place and Robert Cunningham, Cambridge, Mass. [Filed Oct. 7, 1875.]



In a polishing-machine, substantially such as described, the shaft C, provided with the wheels I, m, the shaft D, provided with the wheels *k k*, having the rabbets J J, in combination with the counter-shaft N, provided with a fibrous covering, all constructed and arranged to operate substantially as set forth and specified.

170,706. WEATHER-VANES. W. H. Pinkerton, Boston, Mass. [Filed Nov. 13, 1875.]



The combination of the two arms C, the metallic ball D, and the frame and glass E F with a vane, B, substantially as herein shown and described.

170,707. RUBBER BOOTS. Joseph Pinnovi, Newark, N. J. [Filed Nov. 24, 1875.]

The longitudinal supports *a*, applied to the upper of an elastic boot, substantially as and for the purpose shown and described.

170,708.



170,709.

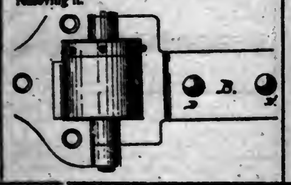


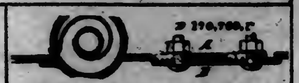
170,708. SCREW-CUTTING DIES. V. J. Reece, Greenfield, Mass. [Filed Nov. 6, 1875.]

A die made with split spring ends, set by spreading-pin and adjusting-screw passing at right angles to pin through one of the split ends of the die, substantially as and for the purpose set forth

170,709. STRAP-HINGE. J. G. Reynolds, Elizabeth, N. J. [Filed Oct. 20, 1875.]

Brief.—The longer strap or hinge-leaf is made in overlapping parts, which are corrugated saw-tooth fashion, and provided with elongated bolt-holes; the construction permitting the sag of a door or gate to be taken up by sliding the corrugated laps on each other, thereby shortening the strap, and giving the hinge lateral adjustability without removing it.





A strap-hinge the strap-leaf of which is made in two parts, the corrugated or rough-cored ends A and B overlapping each other, and provided with the elongated bolt-holes D and D', substantially as and for the purpose set forth.

170,710. BUTTER-CARRIERS. R. F. Roberts, Bennington, Vt. [Filed July 14, 1875.]

Brief.—The carrier has ice-box above and butter-shelves below, connected by standards, which act as legs, as guides to direct the carrier on and out of the pail. One of the standards has to it the drip-conduit, and between standards are conduits for descending cold air.



1. A butter-waiter having shelves C, one over another, an ice-chamber, D, over the shelves, and standards E supporting the shelves and ice-chamber, and having legs which sustain the waiter at its lower periphery, substantially as shown and described.

2. The combination, with the pail or vessel A, of a butter-waiter in and removable from the pail or vessel, and having shelves C, one over another, an ice-chamber, D, over the shelves, and standards E, supporting the shelves and ice-chamber, and having legs standing on the outer portion of the bottom of the pail or vessel, substantially as set forth.

3. In combination with the pail or vessel A, the removable butter waiter, having shelves C, an ice-chamber, D, over the shelves, and standards E, supporting and projecting laterally beyond the shelves and ice-chamber, substantially as shown, and as and for the purpose described.

4. In combination with the pail or vessel A, the removable butter-waiter, having shelves C, an ice-chamber, D, over the shelves, legs standing upon the outer portion of the bottom of the pail or vessel, and standards E, which support the ice-chamber and shelves, and of which standards one is tubular, and serves to conduct water from the ice-chamber to the bottom of the pail or vessel, substantially as shown and specified.

5. A butter-carrier, consisting of the pail or vessel A, having a removable cover, E, and a waiter in and removable from the pail or vessel, and having shelves C, ice-chamber D, over the shelves, and standards E, which support and project laterally beyond the shelves and ice-chamber, and of which standards one is tubular, and serves to conduct water from the ice-chamber to the lower part of the pail or vessel, substantially as described.

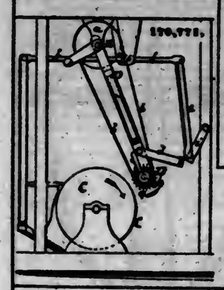
170,711. HUB-SCOOPING MACHINES. Carl Rose, New York, N. Y. [Filed Nov. 10, 1875.]

1. The combination of the rotary bed G, with the pendulum-frame D and scouring-roller G, substantially as herein shown and described.

2. The pendulum-frame D, carrying the scouring-roller, and combined with the system of levers *d e f g*, substantially as and for the purpose herein shown and described.

3. The rotary scouring-brush G, provided with series or tufts of elastic sheet-strips *f f*, set with their faces parallel to the axis of the roller, substantially as specified

170,712.



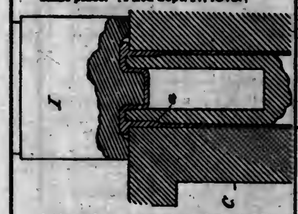
170,713.



170,713. CLOTHES-LINE PROPS. Christian C. Schwaner, Winterset, Iowa. [Filed July 24, 1875.]

The combination, with a line, B, of four props, A, open-slotted at their upper ends, and pivoted under said slots in opposite pairs, as and for the purposes specified.

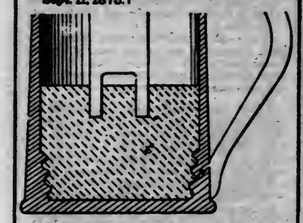
170,714. TOOLS FOR HEADING CARTRIDGE-SHELLS. George P. Salisbury and Charles S. Wells, New Haven, Conn., assignors to Winchester Repeating-Arms Company, same place. [Filed Sept. 17, 1875.]



1. As an improvement in tools for heading cartridge-shells re-enforced by a thickened portion at or near their closed ends, a mandrel or anvil, B, provided with a shoulder or equivalent taper to support the shell while being headed by its re-enforced or thick portion only, substantially as described.

2. The combination of a holding or female die, C, a bunter, I, and a mandrel or anvil, B, provided with a shoulder, *c*, or equivalent taper, all being constructed and arranged to operate substantially as and for the purpose set forth.

170,715. SHAVING-CUPS. Philipp Schenkle and Louis Dohm, Elizabeth, N. J. [Filed Sept. 11, 1875.]



A shaving-cup provided with an internal screw-thread, or other equivalent means for securing and retaining the soap when the cup is inverted, substantially as specified.

170,716. HARness-SADDLES. John W. Schwaner, New York, N. Y. [Filed Oct. 23, 1875.]

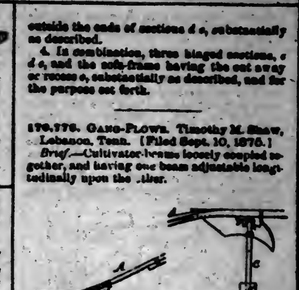
1. The wrought-iron bed-plate A, cut out into proper shape, struck up into proper form, and provided with the holes, the strengthening corrugations *a'*, and the recesses *a''*, for the bent-strap loops G, substantially as herein shown and described.

2. The wrought-iron seat-plate B, cut out into proper shape, struck up into proper form, and provided with the rib C, the square hole *b'*, and the countersunk hole *b''*, in combination with the bed-plate A, substantially as herein shown and described.

3. The salient angles *b'*, formed upon the side edges of the seat-plate B, to be bent down over the side edges of the wooden seat-block D, as herein shown and described.

170,717.

170,718.



170,717. SOFA-BEDSTEADS. Geo. N. Seidler, Hartford, Conn., assignor of one-half his right to Charles May, same place. [Filed Mar. 6, 1875.]

Brief.—The pawl-rail and pawls support the head-section of the bed in an inclined position, and the rigid legs support the foot and middle section when unfolded as a bed, and swing inside the sofa-frame when the parts are folded, and give a firm support to the section forming the seat of the sofa. A recess is formed in the rear portion of the sofa-frame, to permit the movement of the head-section when the parts are changed from a sofa to a bed.



1. The combination of the hinged pawl-rail *b* with the rear rail *b*, substantially as described.

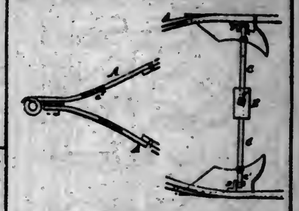
2. In combination, the rear rail *b*, hinged pawl-rail *b*, and hinged pawls *i*, substantially as described.

3. In combination, the sofa-frame, section *a*, section *d*, and section *c*, provided with rigid legs *f*, which fold inside the sofa-frame and outside the ends of sections *d e*, substantially as described.

4. In combination, three hinged sections, *c d e*, and the sofa-frame having the cut away or recess *e*, substantially as described, and for the purpose set forth.

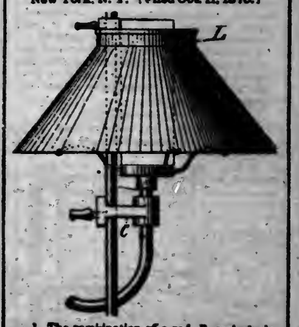
170,718. GANG-PLOWS. Timothy M. Shaw, Lebanon, Tenn. [Filed Sept. 10, 1875.]

Brief.—Cultivator-beams loosely coupled together, and having one beam adjustable longitudinally upon the other.



The combination of the handles B B and bars C, pivoted couplings *c'*, coupling-blocks E, and vertical movable bars D D with the plow-beams A, having the several bolt-holes specified, whereby the beams and handles may be adjusted to place the plows opposite or in advance of one another, in the manner set forth.

170,719. DROP-LIGHTS. Richd. M. Shouse, New York, N. Y. [Filed Oct. 11, 1875.]

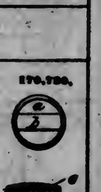


1. The combination of a rod, B, and shade C, the former passing through the latter, and an arm, C, to which the burner and elastic tube are attached, and by which they are supported, substantially as shown and described.

2. The combination of a shade, C, a vertically-adjustable ring, L, and rod B, substantially as shown and described.

3. The combination, with a shade, C, and an adjustable ring, L, of an adjustable arm, C, substantially as shown and described.

170,720.



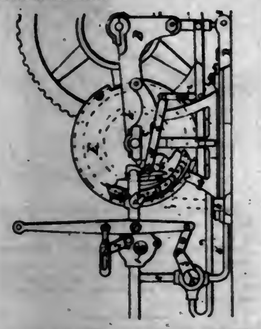
170,720. PRIMERS FOR CARTRIDGES. W. S. Smoot, Ilion, N. Y. [Filed Nov. 24, 1874.]

A primer for cartridges, consisting of the cup A, having the fulminate *a*, disk *a*, and bar-anvil *b* secured thereto, substantially as shown and described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

170,783. HYDRAULIC ELEVATORS. Timothy Graham, Boston, Mass. [Filed July 30, 1875.]

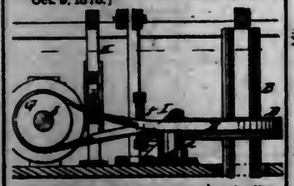
Brief.—The brake is applied by a cylinder and piston, to which the water is admitted when it is cut off from the motor. Communication of the cylinder and motor, the waste pipe, and pressure head with each other is by four-way cock. A slotted link permits said cock to be operated to let water on and off the cylinder without letting it into the motor. The frame in which the bearing drum rests swings on the shaft of the motor, and operates by intermediate mechanism an adjustable chute, which regulates the supply of the water to the motor.



1. The wheel E and pipe G, provided with the valve I, in combination with the pipe K, four-way cock N, exhaust-pipe n, cylinder J, piston M, piston-rod M', and brake P, substantially as and for the purpose specified.

2. The swinging frame E, provided with the yoke *b'* and drum A, in combination with the levers I and *b'* and automatic port G, all constructed to operate substantially as and for the purpose set forth.

170,782. POWERS FOR COTTON-GINS. L. B. Saith, Bennett's Cross-Roads, N. C. [Filed Oct. 9, 1875.]



1. The vertically-sliding frame L and roller A, in combination with the guides K P, pulley G, wheel D, and belt B, constructed and arranged substantially as described, whereby the roller and frame hold the belt in proper position by their own weight, substantially as and for the purpose set forth.

2. The combination of the angling-roller *d*, adjustable frame L, vertical rollers *f f'*, and horizontal roller A in the vertically-sliding frame L, all interposed between the drum D and pulley G, to operate upon the endless belt C, for the purposes herein set forth.

170,783. CAR-VENTILATOR. G. H. Storey, La Porte, Ind. [Filed Nov. 12, 1875.]

Brief.—A system of pipes, in combination with the exhaust of a locomotive, to effect the withdrawal of the impure air from passenger-cars, and a consequent ventilation.



The combination, with the exhaust of a locomotive, of a system of pipes, substantially as specified, leading to the cars, and causing a current from the cars to the engine, as described.

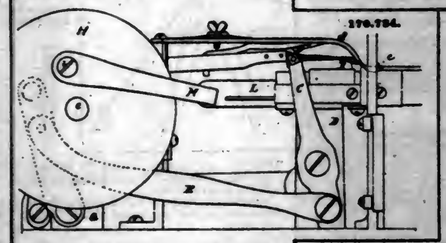
170,784. MACHINES FOR SEWING BUTTONS TO CLOTH, &c. Jerome C Taft, Providence, R. I. [Filed Aug. 10, 1875.]

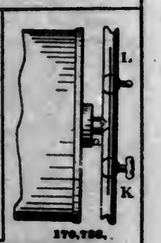
Brief.—The needle, shuttle, and looper are located beneath the cloth plate, and the button eye and cloth are pressed down through the aperture in the plate. The needle carries its loop through the eye and cloth, the shuttle passes through the loop, and the looper catches the shuttle thread, and carries a loop of it into the path of the needle in its next forward movement.

1. The combination of the stationary perforated work supporter A and the needle B, shuttle K, and the looper N, provided with mechanism for operating them, substantially as and for the purpose specified.

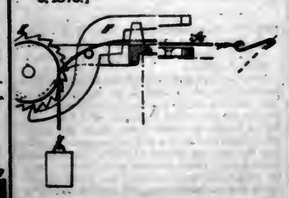
2. The combination of the cam wheel H, lever G, the connecting-rods E M, and the needle and shuttle carriers C L, all being applied substantially as specified.

3. The work supporter A, constructed, substantially as described, with the hole *a*, each being to receive the work and the button-eye, as specified.





170,785. LOOM-TEMPLES. John C. Thickins, Washington Mills, N. Y. [Filed Oct. 6, 1875.]



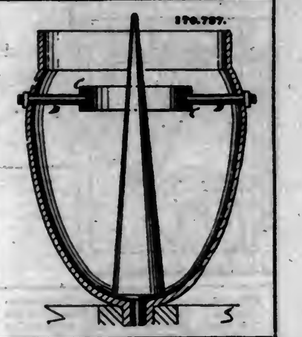
The ratchet E and lever F, combined with the cord and weight of a loom-temple, all arranged to hold the weight in place when the cord A is detached from the cloth, substantially as specified.

170,786. TIRES. Harry Thompson, Decatur, Ind., assignor to himself and G. W. McConnell, same place. [Filed Nov. 13, 1875.]



The combination of the open, concave, and flanged rim B, and the endless convex rim A, with the felly-rim C, substantially as specified.

170,787.



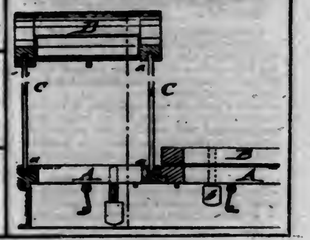
170,788. GAS-GENERATING APPARATUS. C. L. Vaquez, Philadelphia, Pa., assignor to Rue & Bickins, same place. [Filed Apr. 19, 1875.]

Brief.—An excessive pressure of air, or a heat pressure of gas in the outer chamber, forces part of the contained water into the inner chamber through its open lower end, and thus unseals the vent-pipe.

1. The combination, with a carburetor or gas apparatus, of a compensator, constructed of the cylinder A and inclosed cylinder C, with the connecting cones D between them, the conveying-tube *i'*, the upwardly-projecting tube B, and the downwardly-projecting tube G, all constructed and operating substantially as and for the purpose set forth.

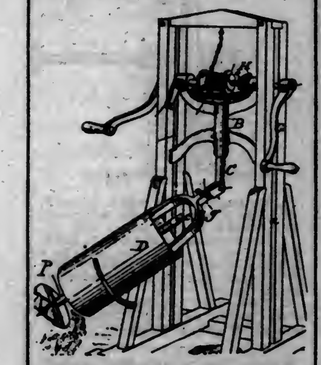
2. The combination, with the blower, of the warm and cold air pipes K L, continuous of each other, and having an outlet-pipe, e, common to both pipes, as set forth, and for the purpose described.

170,789. WINDOW-SHUTTERS. Sofio Victor, New York, N. Y. [Filed Nov. 6, 1875.]



170,790. MANTE-ADJUSTS. Martin Way and Thomas R. Way, Springfield, Ohio, assignors of one-half their right to G. W. Kelley, same place. [Filed Nov. 8, 1875.]

Brief.—The boring-cylinder is suspended from the shaft by a universal joint instead of a hinge-joint, so that when drawn out from the frame it may be laid upon the boat arm O without detachment. The portion of the shaft which carries the boring-plate is detached when the earth is discharged.



1. The earth-boring machine, consisting of the main frame A, the vertically-sliding frame B, provided with the vertical shaft C, and the gearing and hand-cranks for operating the same, and the boring-cylinder D, suspended from the shaft by means of a universal joint, the parts being combined and arranged to operate as shown and described.

2. In combination with the laterally-swinging boring-cylinder D, the arm O on the frame to support the cylinder while the earth is being discharged.

3. In combination with the boring-cylinder D, connected permanently to the shaft C, the movable bottom plate M, provided with the shaft P and guide-plate *j*, and secured in place by a pin, *g*, as shown, so that when the pin is removed the bottom will be forced outward by the pressure of the earth above it.

170,791. PROCESSES AND APPARATUS FOR MANUFACTURING SALT OR SUGAR. James R. Weaver and William S. Colwell, Pittsburg, Pa.; said Colwell assignor to said Weaver. [Filed July 2, 1875.]

1. The process of manufacturing salt or sugar, herein described—that is, heating the saline or saccharine liquor under pressure in a close chamber, and thence forcing it into an evaporating-boiler, from whence it is distributed in thin sheets and a current of air passed over it, substantially as herein before described and set forth.

2. The combination of the heater B, steam boiler or boilers A, boiler or boilers C, air-heater G, and evaporating-chamber F, substantially as herein described, and for the purpose set forth.

3. The combination of the boilers C, pipes *f*, distributing-pipe *f'*, evaporating-chamber F, and air-heater G, substantially as herein described, and for the purpose set forth.

4. The combination of the heater B, pipe *h*, and boiler or boilers C, substantially as herein described, and for the purpose set forth.

5. The combination of the pipes *a e f g f' l g'* and vats *c*, *w*, *x*, and *y*, substantially as herein described, and for the purpose set forth.

6. The combination of the boiler drums *e'* and steam-chambers *g''* with the vats *c y*, substantially as herein described, and for the purpose set forth.

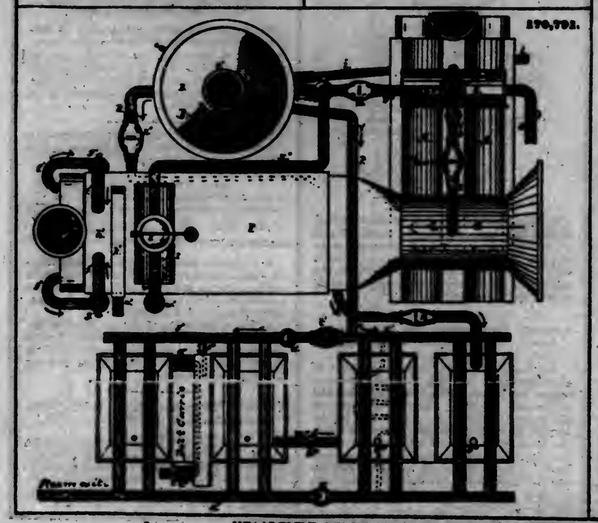
170,792. REGISTERS FOR STOVES. Leonard A. White and George W. Lewis, Dighton, Mass. [Filed Apr. 3, 1875.]

Brief.—A spiral spring surrounding a rod, and inclosed within the shell of the knob, keeps the register or slide in contact with the door, and yet allows its required movement.



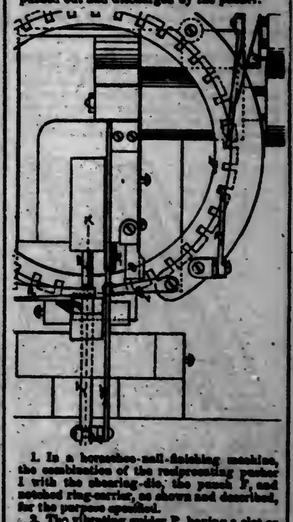
The bellow shank or casing A, the cap D, the rod C, and the spring S, when used together for the purpose and in the manner substantially as herein set forth.

170,793.



170,794. MACHINES FOR FINISHING HORSE-SHOE-NAILS. Henry A. Wills, Chicago, Ill., assignor to Julia A. Wills, same place, and Lucy S. Kingsland, Burlington, Vt. [Filed July 5, 1875.]

Brief.—An intermittingly-rotating wheel, with notches at its edge, in which the nails hang suspended by their heads; a die and punch for shearing the nail; a pivoted holder, between flanges of which the head of the nail is brought, which holds the nail suspended after it has been pushed out of the notch by the punch; and a pusher for pushing the nail back through the die, and into the notch again after it has been trimmed, in readiness to be taken to the bending-dies, where it is again held suspended by another holder until it is beveled, when it is finally pushed out and discharged by the pusher.



1. In a horseshoe-nail-finishing machine, the combination of the reciprocating pusher I, with the shearing-die, the punch F, and notched ring-carrier, as shown and described, for the purpose specified.

2. The vibrating guider P, having a slot or recess in its under side, in combination with the punch F, notched ring-shearing die, and pusher I, as shown and described, to operate as and for the purpose specified.

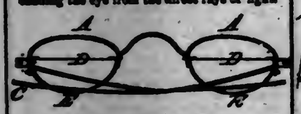
170,795. PHOTOGRAPHIC EYE-REST. S. M. Williams, San Francisco, Cal. [Filed July 13, 1875.]



A photographic eye-rest, as described, consisting of the box A, provided with the laterally-adjustable sliding doors, and containing an automatically-moving continuous picture, in combination with the vertically-adjusting support B, all constructed and arranged to operate substantially as and for the purpose set forth.

170,786. SPECTACLES. Frederick Veiner, Danville, Ky. [Filed Oct. 28, 1875.]

Brief.—The spectacle-glasses have a shade placed above the frames, for the purpose of shading the eye from the direct rays of light.

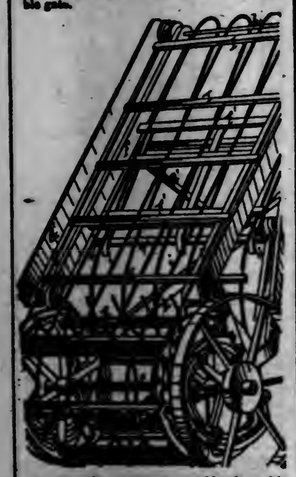


1. The arch-shaped shades A A, connected by a bridge, a, and provided with bows, substantially in the manner and for the purpose specified.

2. In combination with shades A A, lenses D and bows B B, secured to the shades, as described.

170,790. HAY-LOADERS. Chas. M. Young, Meadville, Pa. [Filed Sept. 13, 1875.]

Brief.—Spring gathering-teeth on rock-shafts, controlled by pivoted crank-arms operated by a fixed cam, and working in connection with an endless elevator, the tension of which is regulated by a pendent adjustable gate.



1. In a hay-loader, the combination, with the endless elevator, of the rotating and rocking gathering-heads B, provided with the crank-arms and the stationary frame-plates B B, provided with the cam-grooves b', actuating said rocking-heads, substantially as described.

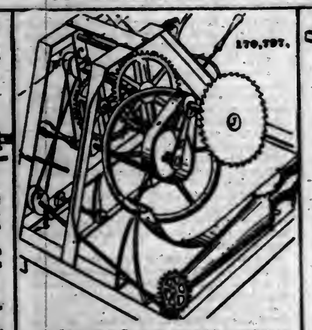
2. The crank-arms I, pivoted to the rotating and rocking heads B, and operating in combination with the grooved cam-plates B, substantially as described.

3. In a hay-loader, the combination, with the endless elevator, of the yielding or spring gathering-teeth applied to the rotating and rocking heads B, arranged and operating substantially as described.

4. The combination, with the endless elevator, of the pendent adjustable gate V, for regulating the tension of the elevator belt or apron, and controlling its return path, substantially as described.

170,797. SAWING-MACHINES. S. William C. Adams, North Lansing, Mich. [Filed June 8, 1875.]

Brief.—A circular saw is hung upon an arbor, which is driven in a sleeve-bearing at the end of a revolving arm keyed on the extreme front end of the main driving-shaft, so that in cutting a log of a given diameter the log can be cut by a saw revolving about the same of half the diameter of a stationary saw. The log is fed forward upon a spiked roller operated by worm-gear, in connection with a diagonally-journaled feed-shaft, which can be raised or lowered, to tighten the crank-belts, by means of a rock-shaft provided with a tappet not acted by the lower girt of pendulum-frame.



1. In a cut-off sawing-machine, substantially as described, a circular saw, whose arbor is rotated or driven in a bearing or sleeve at the end of a revolving arm, substantially as shown and set forth.

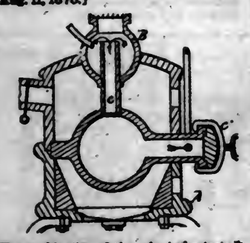
2. The combination, with the bed and pendulum-frame of the rest-carr, a means for raising and lowering it, the worm and the worm-gear for actuating the spiked roller which carries the log, substantially as described.

170,798. DEVICES FOR REMOVING THE BLOW-OVER FROM GLASSWARE. William Adams, Pittsburg, Pa. [Filed Oct. 18, 1875.]



A device for removing the blow-over from glassware, said device having a cone or similar shaped cavity, provided with corrugated or cutting surface, substantially as specified.

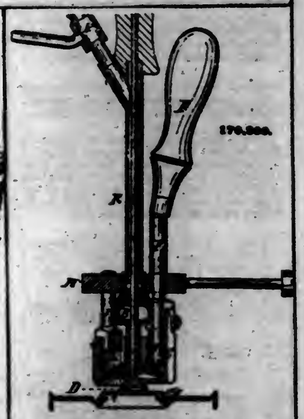
170,799. ILLUMINATING-GAS APPARATUS. Pierre Leon Allaire, Paris, France. [Filed Aug. 11, 1875.]



The combination of the spherical retorts B C with the connecting-pipes c, provided with a screw-thread on either end, whereby the position of the upper retort may be regulated in such a manner as to insure that it shall fit the aperture in the upper part or dome of the shell, substantially as specified.

170,800. SOLDERING-IRONS. Abraham Anderson and Leander W. Goldy, Camden, N. J. [Filed Sept. 20, 1875.]

Brief.—The soldering-surface is made of sheet-steel bent into ring form, and having a copper bit between its ends. The steel and copper are adjacently clamped to a disk, in the center of which is perforated the hollow handle, through which the gas and air enter, the flame being deflected to the ring by a convex disk. Through the handle and pipe passes loosely a rod, carrying at its lower end the cap-holding button. The disk which supports the ring is perforated to admit to the flame a separate soldering-iron.



170,800.

1. The combination of pipe K, burner B, rod d', foot D, disk E, bit C, and steel ring A, for the purpose described and set forth.

2. The combination of the burner B, disk E, soldering-ring A, and the plate H, having a perforation to admit the insertion and heating of a separate soldering-iron, substantially as herein described.

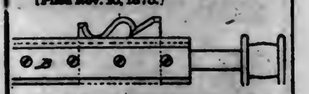
3. The steel ring A, in combination with the copper bit C, to form a soldering-iron, substantially as herein described.

170,801. PIER-PLATE HEATERS. James M. Atkinson, Pittsburg, Pa. [Filed Nov. 1, 1875.]



The herein-described combination of sectional spheroidal-shaped oven A, draft-apertures a' a', located at the top and sides, as specified, draft-passage B, extending entirely around said oven, and fire-place, having sloping and vertical walls b' b', substantially as shown and specified.

170,802. OUTSIDE-HEADS FOR PLANING-MACHINES. Halsey H. Baker, Fieldsfield, N. J. [Filed Nov. 10, 1875.]



1. A planing-machine cutter-head constructed with a recess or recesses under the main cutters, for the insertion or reception of the molding or short surfacing cutters, substantially as shown and described.

2. The combination of the molding or miter straight cutters C with the surfacing-cutters B, carrying an cape thereto, and the recessed cutter-head, substantially as and for the purpose specified.

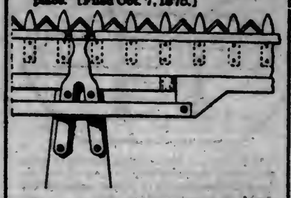
170,803. HYDRAULIC HOSE. S. W. Baker, Providence, R. I. [Filed Feb. 10, 1875.]

In hydraulic hose, the elastic cellular fabric, as described, combined with a water-proof lining, and the seam having scarfed edges D D, having a packing of india-rubber or other suitable cement united in tubular form, as described, as a new article of manufacture.



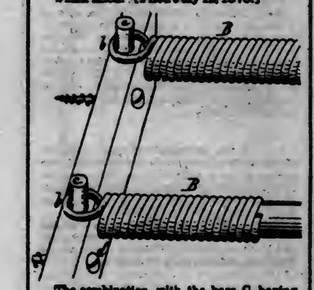
170,805.

170,804. SWAT-BAR GUIDES FOR HARVESTERS. William R. Baker, Chicago, Ill., assignor to C. H. & L. J. McCormick, same place. [Filed Oct. 7, 1875.]



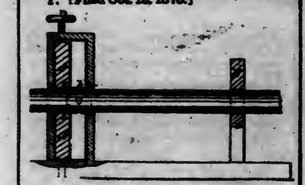
The combination, substantially as hereinbefore set forth, of the finger-beam, the recessed longitudinal guide-piece thereof, the supports projecting rearwardly from the finger-beam, and the strap or guide-bar secured to these supports in rear of the finger-beam and recess in the guide-piece, whereby an unobstructed space for the escape of clogging matter is provided in rear of the finger-beam in the sweep-bar guide.

170,805. SPRING BED-BOTTOMS. H. Barton, Flint, Mich. [Filed July 12, 1875.]



The combination, with the bars C, having vertical studs c on their tops, of the round wooden rods A, having their ends threaded, and the spiral springs B, adapted to screw onto the ends of the said rods, and provided with loops b, when the several parts are constructed and arranged substantially as described and shown.

170,806. DEVICES FOR FEEDING METALLIC TUBING. Henry R. Bennell, New York, N. Y. [Filed Oct. 18, 1875.]



A device for finishing the surface of tubes, consisting of a series of adjustable scraping-dies, combined with an annular burnisher, substantially as and for the purposes described.

170,807. FASTENERS ON BUSTLES. Robert Sterling, New York, N. Y. [Filed Oct. 1, 1875.]



1. A bustle each half of which is composed of suitable material, cut in substantially the form shown in Fig. 2, and provided with gores a a sewed thereon, as and for the purposes specified.

2. In a bustle, the combination and arrangement of the horizontal springs c c, side springs f f, oblique curved springs g g, and bent spring h, all substantially as shown and specified.

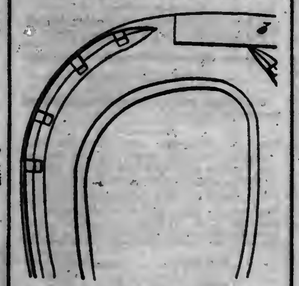
170,808. AIR-VENTS FOR STEAM-RADIATORS. George W. Blake, New York, N. Y. [Filed Nov. 16, 1875.]

Brief.—The pin is operated to clear the passage of any obstructions.



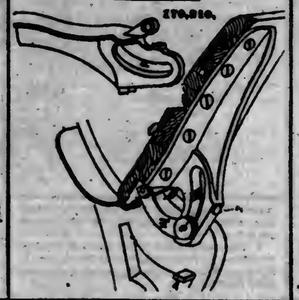
The combination of the longitudinally-movable clearing-pin B and its attached spindle b' with the socket A, provided with a stuffing-box, U, an outlet, g, and an escape-orifice or vent-opening, E, within which the clearing-pin works, substantially as and for the purposes herein set forth.

170,809. HORSESHOES. Nelson J. Blatherwick, Chicago, Ill. [Filed Oct. 20, 1875.]



A horseshoe enlarged upon the lower side at and near the point b, and formed substantially as specified, for the purposes set forth.

170,810.



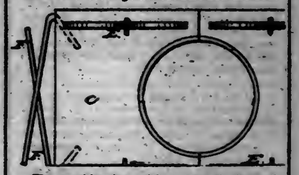
170,811. SCHOOL-SEATS. W. A. Bradford, Goshen, Ind. [Filed May 13, 1875.]

Brief.—The curved slotted seat-arms work between the frictional plates and the standards, whereby the movement of the seat-arms is controlled, and the cushioned stops hold the seat firmly in position when thrown down, and relieve the hinge-pivots of strain.

The curved slotted arms B, in combination with the bolts c, nuts c', and frictional plates F, substantially as shown and described.

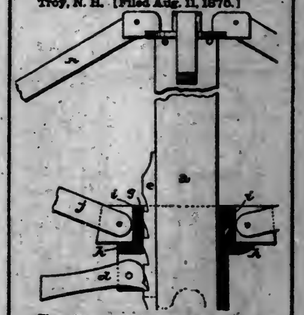
170,812. CAR-AXLE-BOX WASHERS. Chas. H. Brown, Richmond, Va. [Filed Oct. 6, 1875.]

Brief.—Double cut of springs for forcing the washer both against the axle and the box.



The combination, with a car-axle box, of the bisected backliner or washer C C, having upon one face the flat springs E E, and provided with the end springs F F, all substantially as and for the purposes herein set forth.

170,813. CLOTHES-DRIERS. H. J. Brown, Troy, N. H. [Filed Aug. 11, 1875.]



The collar c, made in one solid piece, having the shoulder h and vertical flange g, around which flange the collar f snugly fits, so as to hold the collar in position, in combination with the catch d, rack e, arms j, rods n, and cap o, substantially as shown and described.

170,814. COAL-OIL MOTORS. Frans Ruppe, Washington, D. C., assignee of one-half his right to Saml. N. Hoyt, same place. [Filed Nov. 16, 1875.]



1. The combination, with the cylinder of a hydrocarbon motor, of an oil-spraying apparatus and an independent air-inlet, whereby oil and air are commingled within the cylinder, substantially as set forth.

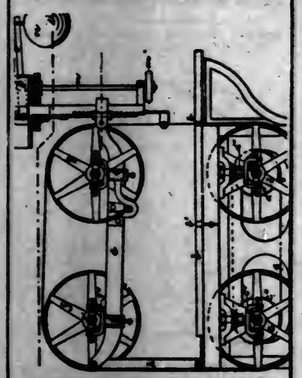
2. The combination of the open-end cylinder, the piston working in the same, the oscillating valve in the bottom thereof, and provided with a series-opening, and openings for the admission of air for the flame and exhaust, and the oil and air inlet pipes, all substantially as set forth.

3. The upward-opening valve *e* in the opening C in the bottom of the cylinder, in combination with the air-inlet pipe, the piston, the oscillating valve, and the lamp, all substantially as set forth.

4. The open-end cylinder, the water-jacket surrounding the same, the piston, the oscillating valve, with its openings *e f g*, the valve *d*, air and oil inlet pipes I J, lamp H, in combination with the shaft E, arm D, piston-rod C, cam O, crank-arm lever E, and rocker-arm M, having slot *m*, all constructed and arranged substantially as set forth.

170,816. BAND-SAWING-MACHINES. Wilson W. Carey, Lowell, Mass., assignor of one-half his right to G. W. Harris, same place. [Filed Oct. 9, 1875.]

Brief.—The saw is made to pass over a system of four pulleys, two of which are carried by a swinging frame, which may be adjusted vertically by the operator, through the medium of a screw and hand-wheel.



1. The combination, with the pulleys *c d*, below the work-plate A, of the adjustable pulleys *f g*, swinging arm *e*, its link h, and the stationary guide k, as and for the purpose set forth.

2. The combination, with the swinging arm *e* and its pulleys, of the stationary guide k, shaft *l*, the lever *o*, and the adjustable weight *n*, as and for the purpose set forth.

3. The combination, with the swinging arm *e* and its pulleys, of the screw-shaft *l*, gears *l m'*, shaft *m*, and hand-wheel *m'*, as and for the purpose set forth.

170,815. JELLY-CUPS. Evan F. Cash, Baltimore, Ohio. [Filed May 1, 1875.]

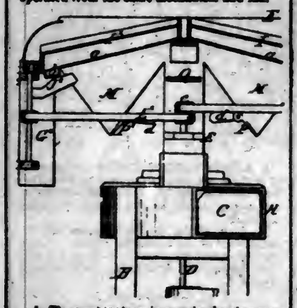


1. A jelly-cup having its top formed in the shape of an elongated circle, with a rim having rectangular recesses, substantially as described and shown.

2. In combination, a jelly-cup with an oval top, and a rim having recesses, and a strainer cover having flanges and cams, substantially as described.

170,816. GRAIN-SEPARATORS. Daniel H. Caswell, Nashville, Tenn. [Filed Sept. 20, 1875.]

Brief.—Double gravity-separator having two independent feeders and regulators, and operated from the same mechanism and fan.

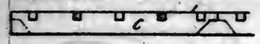


1. The combination, in a grain-cleaning machine, of a grain-cleaning trunk of two opposite open drop-trunks, G G^1, and a central section, E, with a suction-fan, C, and two oppositely-inclined separators, I I^1, from which the grain passes into the drop-trunks G G^1, whereby different kinds of grain may be cleaned at the same time and by the same blast within and through the opposite trunks.

2. The combination, in a grain-cleaning machine, having the opposite open drop-trunks G G^1, central suction-trunk E, suction-fan C, and oppositely-inclined separators I I^1 of the intermediate closed drop-chambers M, provided with pendent deflectors H and valves P P^1, substantially as and for the purposes set forth.

3. The combination, with the oppositely-inclined separators I I^1, outer and central trunk-sections G G^1 and E, and suction-fan C, of the slides Q Q Q, whereby the suction-currents in the outer trunk-sections may be regulated either together or independently of each other, substantially as herein set forth.

170,817. GRATE-BARS. Walter C. Childs, Pittsburg, Pa. [Filed Aug. 28, 1875.]



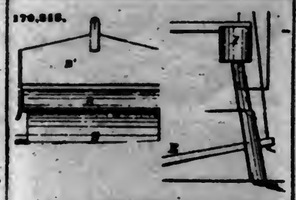
A Bessemer steel grate-bar, substantially as described.

170,818. WASHING AND WRINGING MACHINES. Ithiel J. Gilley, Lamont, and L. A. Wright and Theodore Nelson, Grand Rapids, Mich. [Filed Sept. 24, 1875.]

1. A washing-machine, above described, having frame K, with slots L for roller-slide A', and slot N for lower bearing, hinge C, and movable standard G, in combination with adjustable rollers A and D, roller-slide A', lever B, treadle B, and bench F I, for the purpose set forth.

2. The combination of the frame K, having the open slot or bearing N, with the rollers A B, adjusted by the slide A', as and for the purpose described.

170,819.



1. A self-righting suspendore, having a weight suspended within by rods or other devices depending from the top or throat, substantially as and for the purpose set forth.

2. A suspendore made self-righting by a weight suspended within the vessel and above its base, substantially as and for the purpose described.

3. A suspendore or other similar vessel provided with a suspended removable weight to self-right the same.

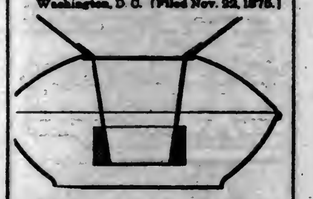
170,820. FIRE-EXTINGUISHING APPARATUS. Jos. H. Connelly, New Brighton, assignor to Jos. L. Hastings and Wm. H. Hastings, Pittsburg, Pa. [Filed Sept. 20, 1875.]

Brief.—From the generator the gas goes to a receiver, where it is held under pressure. In combination is shown an ejector. The gas passing through draws water from a suitable reservoir, and thus the gas and water, passing to discharge, commingle. When a portable apparatus is desired a series of holders are placed on a truck, and the suitable pipe-connections made.

1. In a fire-extinguishing apparatus, the combination of a carbonic-acid-gas generator, connected by a suitable pipe, with an independent holder or holders, an ejector arranged to be operated by such gas in drawing and forcing water, substantially as set forth.

2. The combination of a carbonic-acid-gas holder, an ejector-nozzle, a water-supply pipe, and a mixing-chamber arranged in the line of discharge, substantially as described.

170,821. CUSPADORES. Jos. B. Connolly, Washington, D. C. [Filed Nov. 22, 1875.]



1. A self-righting suspadore, having a weight suspended within by rods or other devices depending from the top or throat, substantially as and for the purpose set forth.

2. A suspadore made self-righting by a weight suspended within the vessel and above its base, substantially as and for the purpose described.

3. A suspadore or other similar vessel provided with a suspended removable weight to self-right the same.

170,822. FIRE-EXTINGUISHING APPARATUS. Jos. H. Connelly, New Brighton, assignor to Jos. L. Hastings and Wm. H. Hastings, Pittsburg, Pa. [Filed Sept. 20, 1875.]

Brief.—From the generator the gas goes to a receiver, where it is held under pressure. In combination is shown an ejector. The gas passing through draws water from a suitable reservoir, and thus the gas and water, passing to discharge, commingle. When a portable apparatus is desired a series of holders are placed on a truck, and the suitable pipe-connections made.

1. In a fire-extinguishing apparatus, the combination of a carbonic-acid-gas generator, connected by a suitable pipe, with an independent holder or holders, an ejector arranged to be operated by such gas in drawing and forcing water, substantially as set forth.

2. The combination of a carbonic-acid-gas holder, an ejector-nozzle, a water-supply pipe, and a mixing-chamber arranged in the line of discharge, substantially as described.

170,823. ASH-SIFTING ATTACHMENTS FOR STOVES. A. G. Cone, Troy, N. Y. [Filed Oct. 16, 1875.]



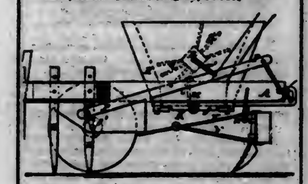
In combination with the vessel grate of a stove, an ash-lifting grate, pivoted at or near its transverse center within an inclosing frame, which parts are capable of a longitudinally-reciprocating motion in a horizontal plane, while said lifting-grate is capable of a partial revolution in a vertical plane within said frame, substantially as and for the purpose specified.

170,825. BAGGAGE-SEALS. John S. Carey, Washington, D. C. [Filed Oct. 28, 1875.]



In combination with the soft-metal disks A B, provided with seats and holes *a b*, the wire C, having its ends formed into loops, adapted to lie around the seats *a*, and secured in position, substantially as and for the purpose set forth.

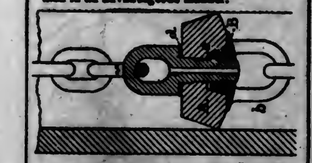
170,826. SEED-PLANTERS AND FERTILIZER-DISTRIBUTERS. Merideth P. Curlee, Corinth, Miss. [Filed July 17, 1875.]



The combination of the laterally-operating and detachable slides J K, having handles L, the hooked bolts M M, bars I I, and slide N, with the hopper and the operating devices, all substantially as and for the purpose set forth.

170,827. COUPLINGS FOR CHAIN-PUMP BUCKETS. Nelson D. Davis, Orion, N. Y. [Filed Oct. 12, 1875.]

Brief.—The rubber disk closely envelops a portion of the hollow bolt. The nut fits into a tapering recess, as shown, and expands the disk in an advantageous manner.

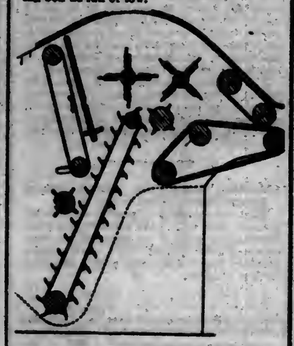


1. The elastic bucket A, having the tapering cavity *a* and solid intermediate portion perforated by the link-cavity, as shown, combined with the said link-cavity C, washer *d*, and tapering nut B, of less depth than said cavity, whereby elasticity is obtained between the bucket and its metal connections, and the bucket rendered capable of expansion, substantially as herein specified.

2. The tubular link-cavity C, combined with the elastic bucket A and lower link-nut B, whereby a central elastic connection and means for admitting air to, and draining water from, the tubing are obtained, as and for the purposes herein specified.

170,828. FEEDING APPARATUS FOR CARDING-MACHINES. John J. Dewey, Hartford, Vt., assignor to George S. Harwood and George H. Quincy, Boston, Mass. [Filed Oct. 16, 1876.]

Brief.—Improvement on Letters Patent No. 159,925, February 16, 1875. A regulating apron and shield to prevent the overfeeding of the lower feed apron, and serving to render the feed uniform, whether the stock in receiving-box be full or low.



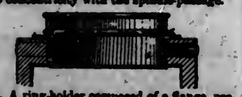
1. In feeding mechanism for carding-engines, the combination, with the spiked lifting-apron, of a regulating-apron, substantially as and for the purposes set forth.

2. The combination, with the lifting-apron, of a regulating-apron adjustable to and from the lifting-apron, substantially as set forth.

3. The regulating-apron and the shield, in combination with the lifting-apron and feed mechanism, substantially as set forth.

170,829. SPINNING-RING HOLDERS. George Draper, Hopedale, Mass. [Filed Aug. 5, 1875.]

Brief.—A tapering ring-holder of sheet metal provided with flange and ring-holding projections, in combination with a ring-rail and adjusting-screws, to bring and hold the ring into concentricity with the spindle-passage.



1. A ring-holder composed of a flange, provided with ring-holding ears or projections, and a shank, tapered and gradually enlarged from the flange to the lower end of the shank, substantially as described.

2. A ring-holder, composed of a flange provided with ring-holding projections, and of a shank tapered or enlarged from the flange toward the end of the shank, in combination with a ring-rail and adjusting-screws adapted to place the rings in concentricity with the spindle, all substantially as described.

170,830. INSTRUMENTS FOR AIDING ANIMALS IN GIVING BIRTH. William Dulin, Big Grove, Iowa. [Filed Oct. 21, 1875.]

Brief.—A spoon-shaped wire frame is passed over the head of the pig, and a wire slide is slipped up under the jaw, and traction applied by the handles, with which the frame and slide are furnished.



The combination of the spoon-shaped wire frame A, and the wire slide C placed thereon, each provided with a suitable handle, substantially as and for the purposes herein set forth.

170,831. HOSE AND TUBING. T. H. Dunham, Boston, Mass. [Filed May 21, 1875.]

1. Cloth hose or tubing made of metal and fiber threads, treated with tallow, tar, ochre, sulphate of ammonia, or its equivalent, and woven into a solid, compact tube, as stated.

2. Hose or tubing composed of threads of fiber and metal, permeated with tallow, tar, ochre, sulphate of ammonia, or its equivalent, and woven up into a compact tube, which is coated inside and out with cements, substantially as described.

3. The improvement in the process of forming hose, consisting in permeating the threads, prior to weaving, with tallow, tar, ochre, sulphate of ammonia, or other soluble salts of an alkali or infusorial earth, weaving them into a close, compactly beat-up tubing or fabric, and coating with clay, whiting, or chalk, or other cement, or its equivalent, the proportions being substantially as described.

170,832. PROCESSES FOR PRESERVING COTTON, HEMP, AND FLAX HOSE, BELTING, &c. T. H. Dunham, Boston, Mass. [Filed Dec. 7, 1874.]

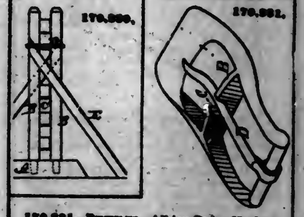
The hereinbefore-described process of treating cotton, hemp, and flax packing, hose, and belting, either before or after they are manufactured into proper shape for consumption, substantially as and for the purpose above specified.

170,833. FENCES. John Dwyer, Marion, Ohio. [Filed Oct. 21, 1875.]

Brief.—Single wires are wrapped around the upper ends of the vertical posts, which are notched at their base in sill-pieces; said wires also encircle the upper ends of the inclined braces, which pass on opposite sides of the vertical posts, and then bind the vertical posts, the inclined braces, and the rails firmly together.

The combination of the base A, upright posts B B, rails C, braces B E, and the wire D, all constructed and arranged substantially as and for the purposes herein set forth.

170,834. 170,835.



170,834. BUCKLES. Albion Dyke, Nashua, N. H., assignor of one-half his right to I. O. Woodward, same place. [Filed Oct. 20, 1875.]

In a buckle, substantially such as described, the cross-bar B, crowning near its center, and provided with the notch C, substantially as set forth and specified.

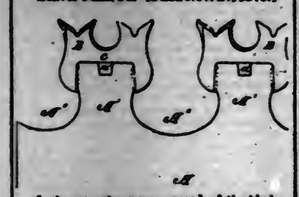
170,835. MATTRESSES FOR FORMING EMBANKMENTS. Jas. B. Eads, St. Louis, Mo., and Jas. Andrews, Allegheny, Pa. [Filed Aug. 19, 1875.]



1. A mattress for the formation of jetties or embankments formed of an upper and an under layer of poles or saplings E G, compressed so as to compound body, F, of brush by means of rails A C and pins B, as herein shown and described.

2. The combination, with the compressible body F G, rails A C, and pins B, of the wedges D, driven into the ends of the said pins in positions transverse to rails A C, as shown.

170,830. CROSSCUT-SAWS. J. B. Emerson, Beaver Falls, Pa. [Filed Nov. 27, 1875.]



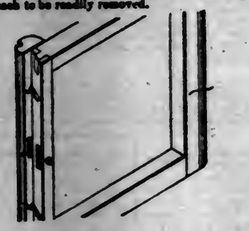
1. A crescent-saw composed of the blade A, having jag-projecting bases A' and spaces A² between them, and the removable plate B, having a series of cutting-points or teeth, b, substantially as described.

2. A crescent-saw constructed to have the teeth thereof attachable and removable, in the manner substantially as described.

3. The attachable and removable plate B, having two or more cutting-points or teeth, b, thereon, and forming a part of a crescent-saw, substantially as described.

170,831. WINDOW-SASHES. William W. Evans, Georgetown, assignor to himself and Wm. D. Baldwin, Washington, D. C. [Filed Nov. 6, 1875.]

Brief.—The side of the frame is beveled, and a beveled strip is attached thereto by staple-hinges and a lock, which enables the sash to be readily removed.



1. The sectional sash-frame composed of sections having their adjoining faces beveled, and provided with a locking device to unite them, as and for the purpose set forth.

2. The combination, substantially as hereinbefore set forth, of the sash-sections and hinges uniting the sections, for the purpose specified.

3. The combination of the window-casing, the sectional sash, and the locking device uniting the sections, these members being constructed and operating substantially as set forth, whereby the sash may be slid up and down and swung out horizontally.

170,832. GRATES. Michel G. Fagan, Troy, N. Y., assignor to himself and A. C. Cowe, same place. [Filed Sept. 6, 1875.]

Brief.—The grate-bars are loosely supported on the side bars, to allow expansion and admit of ready removal. A horizontal vibratory motion is imparted to the grate by means of the centrally-pivoted cross-bar.



1. The cross-bar A, constructed as shown, and provided with the transverse openings *d* and *c'*, substantially as and for the purpose specified.

2. In combination with the cross-bars A and A, provided with the transverse openings *c'* and *d'*, the side bars B and B, having the lugs *b b* separated by spaces or notches *b'* and *b'*, substantially as and for the purposes shown.

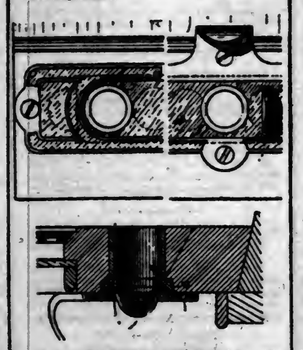
3. In combination with the side bar B, provided with mortises *b² b²*, the end bar C, having the tenons *c*, which fits into and is contained within said mortise, substantially as and for the purpose set forth.

4. In a stove-grate having separate bars, a cross-bar pivoted transversely to or upon a central supporting-bar by means of a vertical plate, which is secured to and projects downward from the lower side, near the longitudinal center of said cross-bar, substantially as and for the purpose shown and described.

5. The hereinbefore described grate, consisting of the cross-bars A and A, side bars B and B, and bars C and C, and center bar D, all constructed and combined in the manner and for the purpose substantially as specified.

170,833. VENTILATORS. John L. Frazo, Quincy, Mass. [Filed Nov. 4, 1875.]

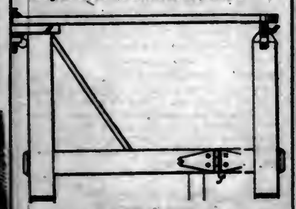
Brief.—A ventilator arranged in a sash, with a metal plate with tubes attached, the plate being on the inside of the sash, and the tubes on the outside. There is also a covering-plate provided with holes, which moves back and forth at pleasure.



1. A ventilator composed of a plate with projecting tubes, and with a sliding covering-plate, substantially as described.

2. The metal plate and projecting tubes, in combination with a holding-plate and lifting-hook, and with a perforated sliding covering-plate adapted to slide between the metal plate and holding-plate, all substantially as described.

170,834. IRONING-TABLES. John Finfrock, Piqua, Ohio. [Filed Oct. 26, 1875.]



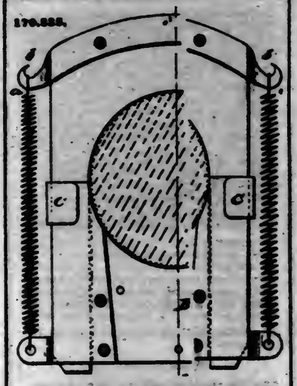
1. An ironing-stand consisting of two posts, provided with cross-bars *g* at top, and connected by a rail jointed at *f*, as shown and described.

2. The combination of a stand having cross-bars *g*, a clamp-screw, *h*, and an ironing-board having open-end slot, as and for the purpose specified.

170,835. WASHERS FOR CAR-AXLES. W. H. Fitz Gerald, Brooklyn, N. Y. [Filed June 1, 1875.]

Brief.—For preventing escape of lubricant from car-axle box.

170,836.



The two parts A and B, in combination with the metal straps C C, springs G G, eyelets *a*, and hooks *b*, all constructed and arranged as and for the purpose herein specified.

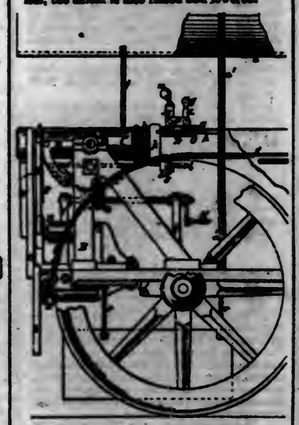
170,839. GLASS-MOLDS. H. Franz, Pittsburg, Pa., assignor to Campbell, Jones & Co., same place. [Filed Oct. 29, 1875.]



In molds for glassware, pockets or cavities formed between the mold and the ring, substantially as and for the purpose specified.

170,840. GUN-CARRIAGES. M. M. Frezzini, Naples, Italy. [Filed Oct. 6, 1875.]

Brief.—The segment, which moves in contact with the rest on the protecting-shield, is rigidly attached to the cannon and bed-piece, so that when the muzzle of the cannon is raised and lowered by the training mechanism, the shield is also raised and lowered.



1. In a gun-carriage, an adjustable shield covering a part of the front of the gun, and adapted to be raised and lowered by the raising and lowering of the cannon attached to the said carriage, for the purposes described.

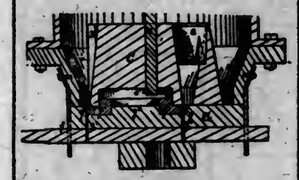
2. The combination of the shield U, rack P, and segment-gear Q, when the several parts are adapted to operate the said shield, in the manner substantially as described and shown.

3. The combination, with the carriage A, of the shields U X S and spring-buffers E E', all substantially as described and shown.

4. The combination, with carriage A and wheels B, of the metallic bands S, bearing upon the periphery or tires of the said wheels, and saw-rods t, substantially as described and shown.

5. The combination, with the carriage A, of the rods *a' b d f* and eyelets *f'*, forming a removable support for the covering *q*, substantially as described and shown.

170,841. FLUE-LININGS. Charles A. Freeman, New Cumberland, W. Va. [Filed Sept. 20, 1875.]

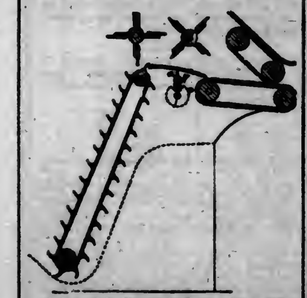


1. The die for forming flue-pipe, provided with two or more cores, arranged within said die in such a manner that the spaces intervening between the several cores and the die shall correspond to the web or walls of the article to be produced, substantially as described.

2. In a die for forming pipe, the combination of the cylinder-head A, central core, and one or more side or wing cores, substantially as set forth.

170,842. FEEDING MECHANISMS FOR CARDING-ENGINES. Josiah G. Freeman, Worcester, assignor to G. S. Harwood and G. H. Gaskey, Boston, Mass. [Filed Oct. 16, 1875.]

Brief.—Improvement on Letters Patent No. 43,925, August 23, 1864, and No. 159,822, February 16, 1875. A picker-bar provided with spikes or teeth, having a rising and falling motion through perforations in a metal shield or plate, by means of revolving cams, prevents the clogging of the material on its way from the lifting-apron and the lower feed-apron.



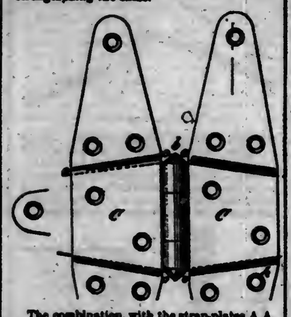
1. In card-feeding mechanism, substantially such as described, the combination of a series of opening teeth or spikes, and a shield or plate, through apertures or perforations in which the teeth or spikes are at intervals protruded and withdrawn, substantially as and for the purposes set forth.

2. The picker-bar and shield through which teeth or spikes of said bar work, as described, in combination with the lifting-apron, the feed-apron, and the spiked fan, substantially as set forth.

3. The combination, with the picker-bar shield and the picker-bar, of the revolving cams, arranged and operating substantially as described, to offset the rise and fall of the picker-bar at stated intervals, in the manner set forth.

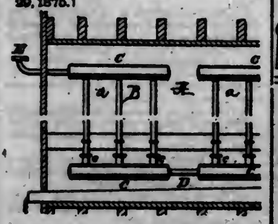
170,843. STRAP-HINGE ATTACHMENTS. H. Freeman, Parker's Landing, Pa., assignor of one-half his right to John Baton, Brooklyn, N. Y. [Filed Nov. 10, 1875.]

Brief.—The chain very fully points out the invention. A brace-plate or separate supplemental leaf readily attached to the ordinary strap-hinge, for relieving the strain, and strengthening the same.



The combination, with the strap-plates A A of the hinge, of the brace-plates C C, offset on the edges of the strap-plates, and serving as attachments and braces to the hinge, substantially as herein described.

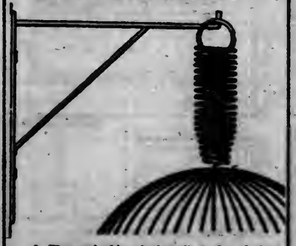
170,844. DEVAPORIZING APPARATUS. Levi K. Fuller, Brattleborough, Vt. [Filed Oct. 29, 1875.]



1. The combination of the vertical pipes a c, grouped as shown, with the elbows *a e* and cross-pipes O O, in the manner specified.

2. The combination of the pipes a c arranged in groups of two or more, with the pipes O O, D D, E, and F, substantially in the manner and for the purposes specified.

170,845. HARDING BIRD-CAGES. George W. Fuller, Boston, Mass., assignor of one-half his right to John B. Fitzpatrick, same place; said George W. Fuller and John B. Fitzpatrick assignors of one-half each of their rights to John McC. Perkins, Washington, D. C. [Filed Apr. 7, 1875.]

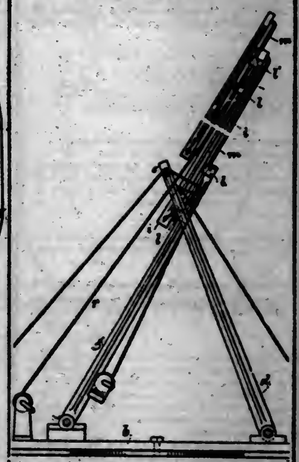


1. The method herein described of rendering a bird-cage elastic, or of giving it an oscillating or undulating motion, consisting in suspending the same from an elastic medium, substantially as described, and for the purposes set forth.

2. A helical suspension-spring, in combination with a bird-cage, substantially as shown and described, and for the purposes set forth.

170,846. PIER-SCAFFOLD LADDERS. John A. Groshon, New York, N. Y., assignor to himself and J. D. Bentbouse, same place. [Filed Oct. 16, 1875.]

Brief.—A derrick for raising the ladders is hinged to the platform, said derrick being raised and sustained in an elevated position by a drum and rope. The sides of the ladder are T-shaped in cross-section. On the front of each ladder-section are secured loops, which receive metallic rods, said rods being secured to the rear of the adjoining section.



1. The derrick-frame *d*, hinged at 3 to the platform, and the winch-barrel *f* and chain, to raise and sustain such derrick, in combination with the extension-ladders *g g*, connected to the platform and the winch-head *h*, and chains or ropes to the ladders to raise the same, as set forth.

2. The guide-rods *n n'* at the backs of the extension-ladders, in combination with the loops *l l* upon the respective ladders behind such guide-rods, and the winch and hoisting mechanism, substantially as set forth.

3. The extension-ladders formed of T-shaped side bars that taper toward the ends, with the cross-bars or rungs between the said side bars, substantially as set forth.

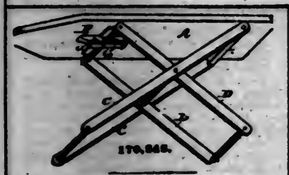
170,847. BIRD-CAGES. Gottlob Gunther, New York, N. Y. [Filed Oct. 4, 1875.]



The removable screen F, connected to the body of the cage, in combination with the mat B, supported by the bars or stand D, said parts being so arranged that the bird can reach the mat through the wire screen, all as described.

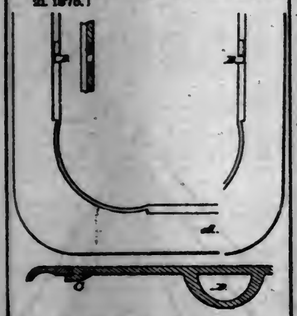
170,848. IRONING-TABLES. Wm. P. Hall, Greenville, Mich. [Filed Oct. 28, 1875.]

An ironing-table, A, provided with folding legs O D and rest R, said rest resting one leg of the table when in use by means of a button, G, clamping one round of the leg in the teeth of the rack, and releasing said round therefrom when it is desired to fold up the legs of the table, all as specified, for the purpose set forth.



170,848.

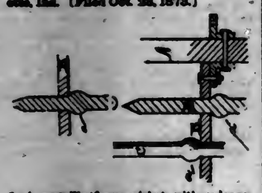
170,849. COOKING-STOVE. Farwell H. Hamilton, Bloomington, Ill. (Filed May 21, 1875.)



1. In combination with the stove-top, having the sides B placed out of the center line of said top, and tapering bearing for the pins C of the long section, as described, in combination with said section, having the said pins or projections C, substantially as and for the purpose specified.

2. In combination with the long section, having the pins or projections C, adapted to be slid under the stove-top, as specified, the curved support D, having a common longitudinal center with said pins C, and acting as a support by resting on the cross-plate of the stove, as described.

170,850. FENCE. Thos. Harding, La Fayette, Ind. (Filed Oct. 28, 1875.)



1. A metallic fence-picket, with enlargements or bosses a a, formed by "upsetting" the metal of the picket, as and for the purpose set forth.

2. In combination with metal pickets C, provided with bosses or enlargements a a, as described, the perforated rails B B upon the upper and lower sides of said bosses, respectively, and the posts A, to which the ends of said rails are secured to form a metallic fence, as set forth.

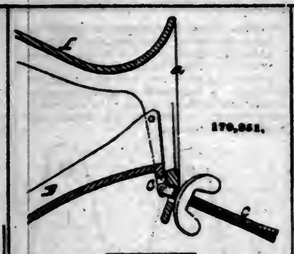
170,851. SPROUTLUMB. E. B. Harding, Northampton, and E. W. Higbee, Springfield, Mass. (Filed Nov. 2, 1875.)

Brief.—The flange of the short blade is extended to complete a circle, and in the lower side of it is a slot to receive the lug of the long blade when opened to its fullest extent. The extreme ends of the blades are wider than any other parts of the same.

1. A bivalve sprouter, having its blade A widened from its flange outwardly, substantially as shown and described, and for the purpose set forth.

2. The blade A having a broad circular flange or guard, a a, concentrically as shown and described, and for the purpose set forth.

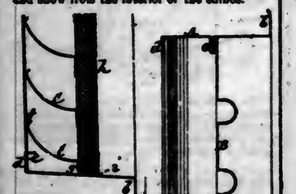
3. The elongated flanged blade A, having the slot or recess d, in combination with the blade B and screw C, substantially as and for the purpose set forth.



170,851.

170,852. VENTILATING-LOUVERS. George Hayes, New York, N. Y. (Filed June 29, 1875.)

Brief.—The exposed surface is of corrugated metal, with suitable perforations. Back of the perforated plate are gutters, to keep out rain and snow from the interior of the edifice.



1. The combination, in a ventilating-louver, of a reticulated covering and gutters at the back or across the interior surface of said covering, substantially as specified.

2. The perforated plate or reticulated covering E, formed with corrugations A, in combination with the gutters C and the frame or case A, essentially as described.

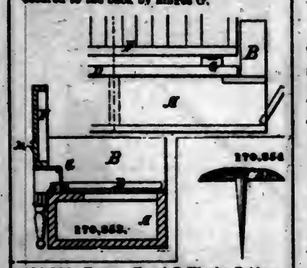
3. The case or frame A, constructed with double metal flanges c c on its sides, and intermediate of the width of the latter, substantially as specified.

4. The combination of the outer flange b with the inner flanges d of the louver frame or case A, essentially as described.

5. The gutters C, constructed with flanges f g, substantially as described, and for the purposes herein set forth.

170,853. SOFA-BEDSTEAD. G. J. Hambsch, Philadelphia, Pa. (Filed Sept. 28, 1875.)

A sofa-bedstead, consisting of the main frame-work or body A, having separate compartments therein, provided with end pieces hinged at their lower edge to the frame to form doors to said compartments, the back-frame F having bolts H, the end pieces E, sliding head and foot boards C, and seat D, secured to the back by hinges G.

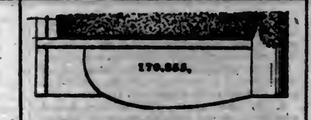


170,854.

170,854. TACKS. Enoch P. Hincks, Bridgeport, Conn. (Filed Oct. 4, 1875.)

As an article of manufacture a soft-rubber head, combined with a pointed shank, the rubber head being molded around the shank and took head, as set forth.

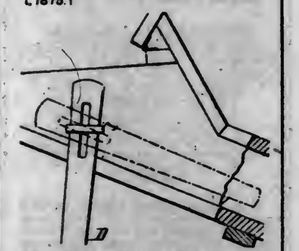
170,855. PROCESSES OF TREATING HIDES. Wm. H. Holman, Philadelphia, Pa. (Filed July 10, 1875.)



170,855.

The within-described process of treating hides or skins before they are subjected to the tanning operation—that is to say, subjecting them to the action of a rapidly-moving roughened surface, which will remove the adhering flesh, and break up the gristle of the hide or skin, as and for the purpose herein set forth.

170,856. PORTABLE COAL-CHUTES. Ralston S. Hoopes, West Chester, Pa. (Filed Nov. 1, 1875.)



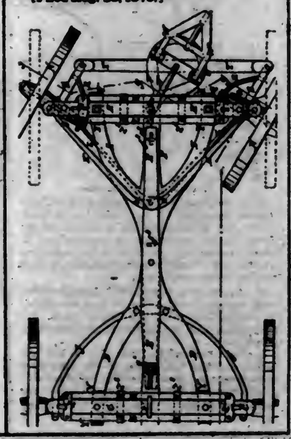
The within-described portable coal-chute, consisting of a box, A, having a shield or door, B, adjustable legs D, and otherwise constructed, substantially as and for the purpose set forth.

170,857. CURRY-COMBS. C. A. Hotchkiss, Bridgeport, Conn. (Filed Oct. 28, 1875.)



A curry-comb having frame A, handle B, thumb-rest a, and tang C formed of one piece, said thumb-rest being nearly on a vertical line with the wall of the frame, and said handle B being on the same line with tang C, substantially as specified.

170,858. RUNNING-GEARS. Lorenzo D. Hurd, Wellsville, N. Y., assignor of one-half his right to Thos. Fuller, same place. (Filed Aug. 28, 1875.)



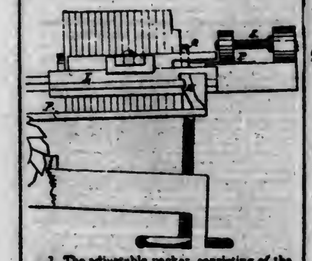
1. The combination of the rods Q and the brace-arms E and their nuts with the pivoted hollow axles O and the arms S, substantially as herein shown and described.

2. The combination of the plate or frame U and the pivoting-bolt V with the cross-bar T, the pivoted axles O, and the king-bolt passing through the bolster H, the head-blocks G, and the bar M, substantially as herein shown and described.

3. The combination of the reach made in two parts, E F, and provided with the eyebolt and lugs e' f' and the hook and eye e' f', with the rear bolster, axle, and bounds, and the forward bolster, head-block, and bounds, substantially as herein shown and described.

170,859. MACHINES FOR MAKING BOXES. Elias James, Tyngsborough, assignor to Benj. F. Stevens, Lowell, Mass. (Filed Oct. 6, 1875.)

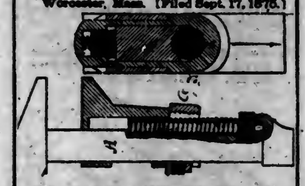
Brief.—The material is secured in a sliding clamp, which carries it over a series of revolving cutters, that form the tongues and grooves by which the pieces of the box are united.



1. The adjustable packer, consisting of the frame X, the guides M M', the piece P, and screw S, as and for the purpose specified.

2. The packer, in combination with the adjustable table F, as and for the purpose specified.

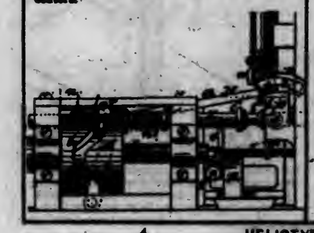
170,860. WRENCHES. Benjamin F. Joslyn, Worcester, Mass. (Filed Sept. 17, 1875.)



The combination of the stem A of the wrench, the movable jaw a, and the spring-yoke C, a portion of which is adapted to the screw, another portion projecting through and arranged to slide in the said movable jaw and embracing the stem A, all being constructed as set forth.

170,861. LASTING FOR TURNING SHOES. William R. Landfear, Brooklyn, N. Y., assignor to himself and Nathan R. Campbell, Hartford, Conn. (Filed July 1, 1875.)

Brief.—The upper-blanks are placed in a hopper, from which they are conveyed automatically by a set of spring-fingers, which seize the blank as it emerges from the lower end of the hopper, and convey it to the lathe-centers.



1. The combination, with the supply-tube A, of the spool-blank conveyor B, provided with jaws e and f, for holding and releasing the spool, and having its upper surface constructed to form a cut-off to the spool-supply tube, as and for the object specified.

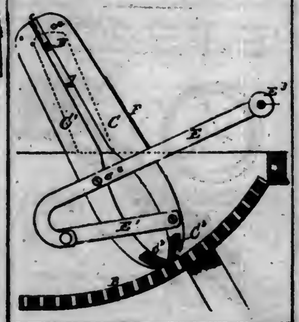
2. The sleeve n', in combination with the sliding spindle i, the stops or collars n n', the nut n', adjustable on said sleeve, and the grooved cam G, essentially as specified.

3. The combination of the eccentric pin s on the shaft I, with the sliding rod t, the spring u, the stop or nut v, and the knife carriage M, essentially as described.

4. The combination of the grooved cam G with the vibrating arm K, by which the spool-blank cut-off and conveyor B is operated, and the nut n', by which the sliding spindle i is actuated, substantially as specified.

170,862. WASHING-MACHINES. J. F. Lawson, Butler, Mo. (Filed July 26, 1875.)

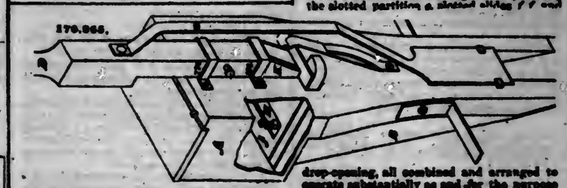
Brief.—The suds-box has a corrugated bottom. A swinging rubber is provided with jaws for grasping the clothes, which are opened and closed by the operating-lever.



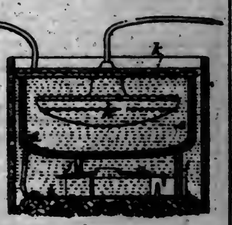
170,863. HAND SEED-PLANTERS. Thomas J. Hubbell, Napa City, Cal., assignor of one-half his right to George W. Cornwell, same place. (Filed Apr. 27, 1875.)

Brief.—The seed-slide is moved forward by a handle, the lower end of which is made wedge-shaped, for working through a slot, and is retracted by a spring-arm. To the handle is attached one end of a rod, the other end of which is made into a sliding plate, that moves vertically in ways, for retaining a charge of dropped seed until the plate is retracted by the upward movement of the handle.

The plunger D, with its wedge-shaped end K, and having the handle O of the sliding plate attached to it, in combination with the seed-box A and conducting-tube B, having the slotted partitions a, slanted ends f f, and drop-opening, all combined and arranged to operate substantially as and for the purpose described.



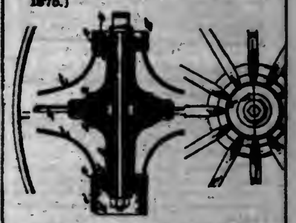
170,864. GALVANIC BATTERIES. Robert M. Lockwood, New York, N. Y., assignor to himself and E. W. Andrews, same place. (Filed Sept. 1, 1874.)



1. The porous cup, resting upon or sustained by a connection to the copper pole, and the zinc pole supported within the porous cup, so that the relative position of the poles is maintained, and they rest upon the sulphate-of-copper crystals in the cell, as set forth.

2. The copper pole, made of the funnel-shaped plate c and ring b, connected together and receiving the supports f, that sustain the porous cup a, as and for the purposes set forth.

170,865. GARDEN-WHEELS. Samuel W. Ludlow, Cincinnati, Ohio. (Filed Oct. 19, 1875.)



1. A carriage-wheel having its hub secured to it by flexible braces C, and its spokes to an annular plate, H, adapted to play laterally between the flanges of the hub, substantially as and for the purposes specified.

2. The combination of the hub A c, heads or rings E, and spring-braces C, the latter having bent ends e, fitting the pockets d', substantially as and for the purposes specified.

3. The rim G, composed of plates g g', formed and fitted together substantially as and for the purposes specified.

170,967. SASH-HOLDERS. Peter Lugenbell, Greensburg, Ind. [Filed Apr. 23, 1875.]

Brief.—The sides of the sash are tapering, and at each withdrawn corner, at top and bottom, a rubber roller is inserted. The sash rests against a rubber roller on each side, and upon its sharp projecting corner above and below each roller. A lateral pressure compresses the rubber roller, and frees the sharp corner of the sash from the frame, and allows the window to be readily moved.



The combination, with an ordinary straight window-frame, A, of the sash B, having its side rails tapering in opposite directions, and the flexible rollers C C inserted in the smaller or narrower ends of the side rails, substantially as and for the purposes herein set forth.

170,968. DROP-HAMMERS. Charles Lasted, New Orleans, La. [Filed Oct. 11, 1875.]

Brief.—Levers are pivoted to the frame, and, with links and levers, form lazy-tongs, which increase the distance which the hammer can be raised by an upright movement of the rod.



1. The levers *e f d d' m m' e e'* and hammer C, in combination with the frame A, provided with pin *b* and guide D, and the anvil-block E, as described, and for the purpose set forth.

2. The hammer C and levers *e f d d' m m' e e'*, in combination with the links *e e'*, lifting-rod *f*, nut G, and springs *i i'* the whole being arranged to operate, by means of the levers *g* H and connecting-rod F, as described, and for the purposes specified.

170,969. PLAITING-MACHINES. Manvill M. Macdonald, Syracuse, N. Y. [Filed Nov. 27, 1875.]



The combination, with the bed-plate A, of the spring-loops C, for supporting the wires or rods B, substantially as set forth.

170,970. HARNESS-SADDLES. John Mashure, Newark, N. J., assignor to E. R. Osborne, same place. [Filed Oct. 30, 1875.]

1. The metal plates *f f*, smaller than the jockey, and combined with each half of the jockey, substantially as and for the purposes set forth, making a jockey, as shown in Figs. 6 and 7.

2. The detachable skirting, having linings which form pockets for the reception of the tree, substantially as described.

3. The detachable housing V, provided with thin metal plates *u*, in combination with shoes *r s*, for the reception of the turret-nuts, substantially as set forth.

4. The combination and arrangement of the jockey, detachable flaps, and adjustable housing, all readily removable, and capable of being fastened out for packing, substantially as and for the purposes set forth.

170,970.



170,971. HARNESS-SADDLES. John Mashure, Newark, N. J., assignor to E. R. Osborne, same place. [Filed Oct. 19, 1875.]



1. The ridges *e e* on crown of the tree, substantially as and for the purposes set forth.

2. The long seats *d d*, with indentations, near ridges of the tree, substantially as and for the purposes set forth.

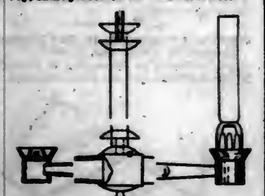
3. The holes *c c* in the tree below the turret, in combination with a metal backband-hook.

4. In a jockey-saddle, the jogs *g g*, forming square shoulders, extending across the entire width of the end of the tree, for the reception of the stiffener *h*, as described.

5. The metallic backband-straps *f f*, provided with loop and hook, substantially as and for the purposes set forth.

6. The adjustable socket-plates *j j*, in combination with a metal tree, having socket-hole *i*, a turret and turret-nut, constructed and operating substantially as and for the purposes shown in Figs. 1 and 2.

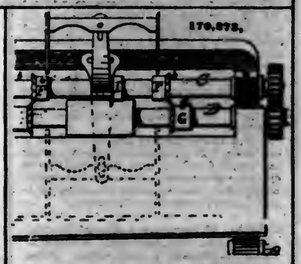
170,972. CHANDELIERS. John Mathews, Lawrence, Mass., assignor to S. B. Harvey, same place. [Filed Jan. 2, 1875.]



In a chandelier constructed as herein described, the combination of the supporting-rod A, with its covering for covering the screw-cap in the tank, in a manner substantially as herein described.

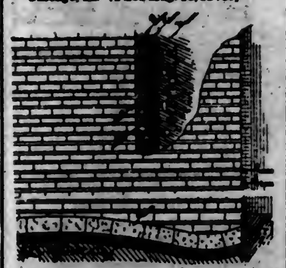
170,973. PAPER-PERFORATORS MACHINES. Philip McAleer, Washington, D. C. [Filed Sept. 14, 1875.]

170,973.



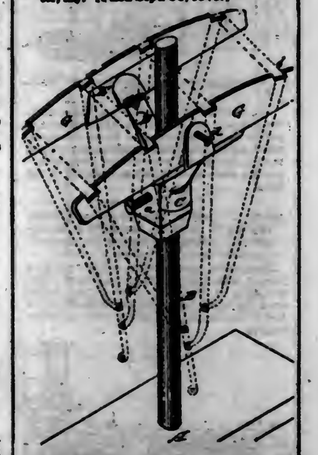
In a perforating-machine, the combination, with two parallel shafts, of one or more disk-knives adjustably secured to each shaft, and having their peripheries broken by radial slots and adapted to overlap, substantially as and for the purposes described.

170,974. STONE PAVEMENTS. John McBean, Chicago, Ill. [Filed Aug. 16, 1875.]



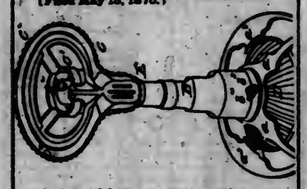
In combination with pavement-blocks of stone, cut purposely to a uniform size and made smooth on both sides and edges, a bed of sand and a filling composed of dry gravel and a compound of coal-tar and pitch, of about the proportions specified.

170,975. MACHINES FOR SETTING GARMENT-BOWS. James H. McClymont, Winchester, Ky. [Filed Sept. 20, 1875.]



The combination, with the base A, of a single vertical post, B, the adjustable collar C surrounding said post, and having the arms D D and holders E E at their outer ends, and the notched longitudinally-adjustable bow-in G G resting upon the holders, all constructed substantially as and for the purposes set forth.

170,976. STANDS FOR WATER-COOLERS, &c. William L. McDowell, Philadelphia, Pa. [Filed May 12, 1875.]



1. A stand for a water-cooler or flower-pots composed of the three parts A B C, each part being a single casting, and the part A being formed with the legs *a*, and having a connecting-ring at top and bottom, substantially as set forth.

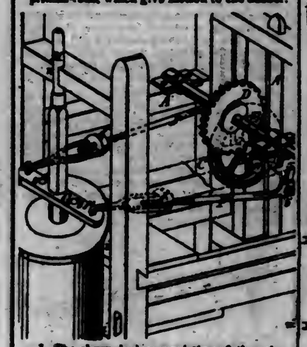
2. The pedestal A, having the legs *a a a*, ring *a'*, and disk *a''*, all cast in one piece, substantially as set forth and shown.

3. In combination with the hollow column B, having the internally-projecting ears *b'*, the casting C constituting a removable top to a water-cooler or flower-stand, and provided with the ring C' having the openings *c* and interlocking lugs *d'*, substantially as shown and described.

4. The rest C, composed of the ring C, ring C', and channeled arms *d' d' d'*, substantially as shown and described, to catch the overflow or drip from the water-cooler or flower-pots, substantially as set forth.

170,977. REciPROCATING CHURNS. William McKinley, Bellaire, Ohio. [Filed Apr. 30, 1875.]

Brief.—The churn is held in position by the pitman-rods, which give motion to the dasher.



1. The churn-dasher consisting of the spindle H, the horizontal arms I I' and strips n, and the gathering-arms n, substantially as described and shown.

2. The combination of the spindle H, with its cross-head, and the pitmen F F', journaled upon the shaft E, for the purpose of permitting the location of the churn outside of, and disconnected from, the gear-frame, substantially as described and shown.

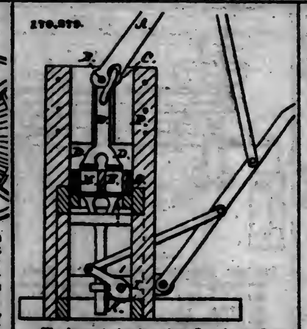
170,978. TONGUE-SUPPORTS. Jos. D. Meals, North Washington, Pa., assignor to himself, Andw. J. Jack, and Thomas G. Jack, same place. [Filed Oct. 23, 1875.]



In combination with the running-gear and pivoted tongue of a wagon, a spring for supporting the tongue, said spring having one fixed end and one free end, a yoke for confining the spring, and a set-screw bearing on the free end of the spring, for adjusting the tension of the spring, substantially as specified.

170,979. RAKE-MACHINES. J. M. Mitchell, Dunlap, and L. B. Kennedy, Keokuk, Iowa. [Filed Oct. 23, 1875.]

170,979.



The lever A, having pivot B and cam C, in combination with brick-press plunger D, having guideways, and the connections by which the lever A raises the plunger after driving it down, substantially as set forth.

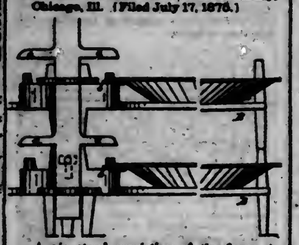
170,980. KITCHEN-VENTILATORS. Joseph V. Montgomery, Toledo, Ohio. [Filed Aug. 27, 1875.]

Brief.—The sleeve operates as a damper and as a support for the cone.



The slotted sleeve B and cone C, in combination with the slotted pipe A, substantially as and for the purpose set forth.

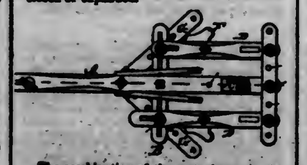
170,981. PIE-PLATE STANDS. Alex. Moody, Chicago, Ill. [Filed July 17, 1875.]



A pie-stand consisting of the frame A, shelves B, and a locking device, substantially as described, whereby the pie-plates can be securely locked in position, while the pies can be removed, substantially as and for the purpose set forth.

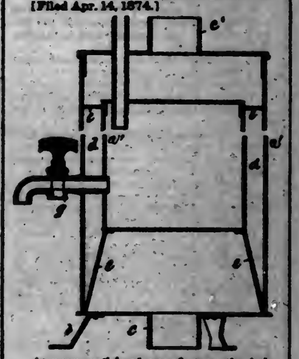
170,982. CULTIVATORS. Enos B. Moore, Bell's Mills, Ala. [Filed Aug. 20, 1875.]

Brief.—Harrow-frame in front of plows, with slotted bars to allow the whole to be closed or expanded.



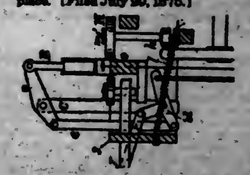
The combination of the main beam A, stationary slotted cross-beam B, adjustable cross-beam C, the slotted beams D D, carrying the plow feet and shares, and the adjustable harrow-bars, all substantially as and for the purpose herein set forth.

170,983. SMOKE-DRUMS AND WATER-HEATERS. Nelson A. Moore, Kensington, Conn. [Filed Apr. 14, 1874.]



As a new article of manufacture, the independent smoke-drum and water-heater herein described, capable of attachment and use in connection with any ordinary stove or heater, and consisting of the upright stove-like body *a*, having pipe-thimbles *c* and *c'*, respectively, at bottom and top, and the internal water-heating chamber *a'* centrally fixed therein by stays or supports *a a*, the entire body of said chamber directly in the line of the escaping products of combustion, so as to be wholly surrounded thereby, and having an induct-pipe, *f*, at top, and an educt-pipe, *g*, with suitable cut-off, at bottom, all substantially as and for the purposes set forth.

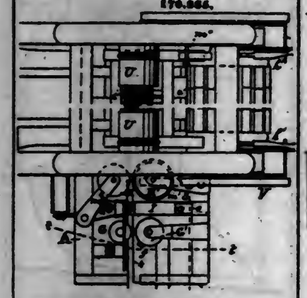
170,984. LOCKS FOR WRAPPED BANDS. R. R. Murphy, Parkersburg, W. Va., assignor to C. A. Wade and S. G. A. Burche, same place. [Filed July 20, 1875.]



1. The combination of a feed-pusher, B, and its actuating mechanism, sliding feed-block I, auxiliary feed-wheels G G', main feed-wheels H H', and center-beam K, substantially as and for the purposes set forth.

2. The combination of feed-pusher B and

170,866.



sliding feed-block I and mechanism for operating the same, substantially as set forth.

3. The combination of slot-adjuster J, constructed and operating as described, with the center-beam K, substantially as set forth.

4. The combination of an automatic slot-adjuster, J, and auxiliary feed-wheel G', connected and operating together substantially as set forth.

5. The auxiliary feed-wheel G', provided on its periphery with a rubber block, *f*, in combination with wheel G and slot-adjuster J, substantially as set forth.

6. Wheel H', provided on its periphery with a rubber band, in combination with the balance-wheel F and friction-wheel A, substantially as set forth.

7. An automatic feed mechanism consisting of a feed-pusher, B, sliding feed-block I, auxiliary feed-wheels G G', and main feed-wheels H H', constructed and combined to feed the shute into the warp-shed, substantially as set forth.

8. The combination of pusher-holder *a*, feed-pusher B, standard C, levers *b c*, double crank-lever *d*, rod D, treadle-bar E, crank-arm *e*, and balance-wheel F, substantially as set forth.

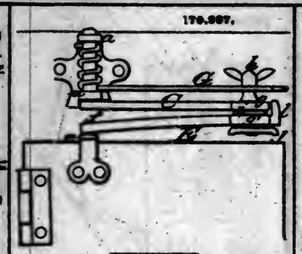
9. An adjustable bobbin-holder having apartments or recesses *f* to receive the thread, in combination with the warp-thread carriers *d* and center-beam K, substantially as set forth.

10. The rack Y, in combination with the bobbin-holder U and the center-beam K, provided with transverse slots, substantially as set forth.

11. The bobbin-holder U, having its bearings in sliding frames *b' b'*, and balanced by means of weighted levers V V, in combination with levers X X, connected with the toggle-jointed levers R R, substantially as set forth.

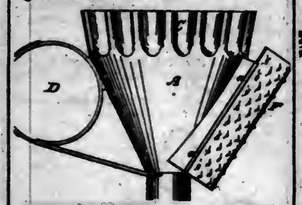
12. The combination of a wedge, l, lever W, and pin *m'* upon the sliding plate *b'* with the bobbin-holder, substantially as set forth.

170,867.



170,868. KITCHEN UTENSILS. J. C. Noble, Brooklyn, N. Y., assignor to himself and Mary Loveland, same place. [Filed Nov. 2, 1876.]

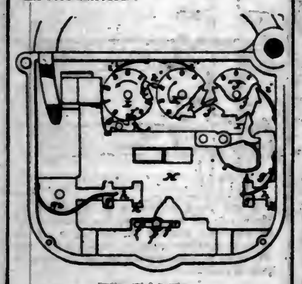
Brief.—Kitchen utensil consisting of a funnel with a removable grater, and inclined guides affixed to the funnel.



The combination of the funnel A and handle D with a removable grater, F, and the inclined guides *a a* affixed to the funnel in the manner shown and specified, and for the purpose set forth.

170,869. INDICATOR-LOCKS. L. R. Norman, St. Louis, Mo. [Filed Oct. 6, 1875.]

Brief.—A pawl attached to the lock-bolt is arranged to engage with a ratchet-wheel attached to a dial, so as to move the dial one figure every time the bolt is withdrawn, thereby indicating the number of times the lock has been unlocked.



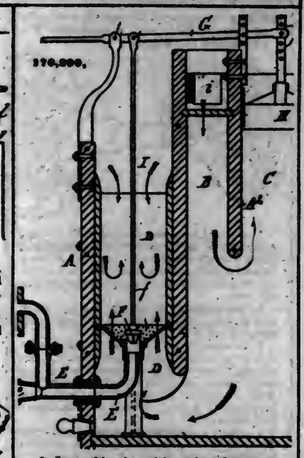
1. The lock-bolt H, having spring-pawl I, in combination with the dials J K L, and ratchet *j k l*, as and for the purpose set forth.

2. The spring-pawl or lever O, in combination with the dial L, and lock-bolt H, substantially as and for the purpose set forth.

170,870. ORE-SEPARATORS. Peter Ostergay, Mechernich, Prussia, assignor to Adolphus Meier & Co., St. Louis, Mo. [Filed Sept. 27, 1876.]

Brief.—Water is fed into a compartment connected with a sieve-separator, upon which the ore to be washed is placed. A conical plug, which closes an orifice in the center of the separator, is connected by a rod to a lever, which latter is raised or lowered by a float in the water-compartment. When a back pressure of water is created by the accumulation of heavy mineral in the meshes of the sieve, the float rises, carrying with it the lever and conical plug, and the heavy mineral is automatically discharged from the sieve.

170,889.



1. In combination with a mineral separator or washer, D, the water-compartments B C, the float H, connected to a lever, G, carrying the valve F, by means whereof the weight of the minerals suspended in the separator is utilized to produce a back pressure of the water-column in C, to automatically open the said valve, as and for the purposes set forth.

2. An operating automatic mechanism, consisting of the water-compartments B C, the latter having a float, H, connected to a lever, G, carrying a valve, F, the pipes E, trough F', all said parts being combined with a separator of the character herein shown and described, and by means whereof the alternate opening and closing of said valve F is accomplished, in the manner set forth.

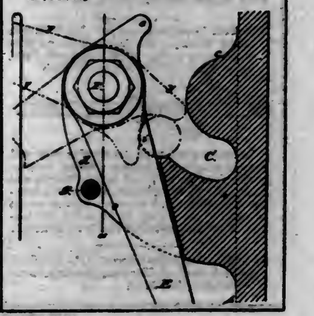
170,891. RAISED FRENCH-WIRES. Justin R. Page, Sycamore, Ill. [Filed June 26, 1875.]

Brief.—The horizontal wire, at each point for the barbs, returns back upon itself, and forms a loop. Through this loop passes a piece of wire, pointed at each end, which is then bent to clasp the horizontal wire, and point inwardly and outwardly

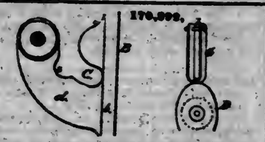


In combination with the wire B, having the eye or turn *a*, the double-pointed barb C, having a corresponding eye or turn therein, said wire and barb being thereby attached, as herein described, and for the purposes specified.

170,892. BOAT-DAVITS AND APPARATUS. J. Patterson, Washington, D. C. [Filed Oct. 20, 1875.]



170,893.



1. The bracket B, consisting of the base-plate *b*, the lugs *d d' a*, the recess *i*, and curved or inclined slot or recess C, in combination with the lever E, journaled at F, and provided with the cam-shaped nose *e*, all combined and operating substantially as and for the purpose described.

2. In combination with bracket B and lever E, constructed substantially as shown, the pin *f*, as and for the purpose described.

In testimony that I claim the foregoing as

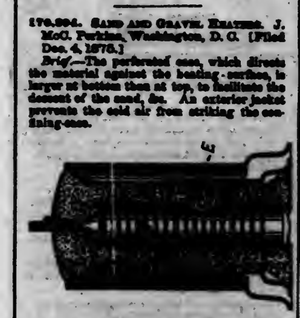
170,894. SCREW-PROPELLERS. Newton A. Patterson, Johnson, Tenn. [Filed Apr. 22, 1876.]



The concave-faced propelling-blade, formed with increased thickness toward one or more of its edges, to produce a flat or concave rear surface, substantially as and for the purposes set forth.

170,895. SAND AND GRAVEL SEATERS. J. McC. Perkins, Washington, D. C. [Filed Dec. 4, 1876.]

Brief.—The perforated case, which directs the material against the bearing-surface, is larger at bottom than at top, to facilitate the descent of the sand, &c. An exterior jacket prevents the cold air from striking the seating-case.



1. In a sand and gravel seater, the laterally-perforated cylinder, having a solid central top or cover, in combination with a tapering perforated exterior cylinder, elevated from the ground to allow the removal of the falling sand, and provided with a flaring collar, substantially as described, and for the purposes set forth.

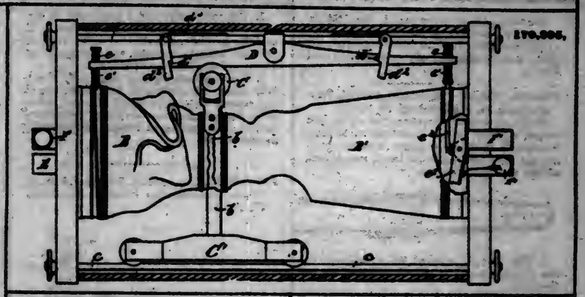
2. The combination of the hot-air jacket, elevated from the ground, as shown, and provided with perforations or slots near its top, and fitting closely to the top perimeter of the flange G, with the tapering perforated cylinder C, perforated cylinder B, cover H, and smoke-pipe J, substantially as described, and for the purposes set forth.

170,896. WATER-MOTORS. Frank. Philput, St. Louis, Mo. [Filed May 1, 1876.]

Brief.—Two flexible bags alternately fill and empty; the moving partition between them carrying a trunk, which traverses the lower side of a stationary one, which operates the inlet and discharge valves.

The combination of the bags B B', movable partition A, carrying-roller C, trunk C', the lifting-lever D, having stops *b'*, arms *d'*, and valve-actuating arms *b'*, with inlet and discharge pipes E F F', all arranged to operate in the manner and for the purposes set forth.

170,898.

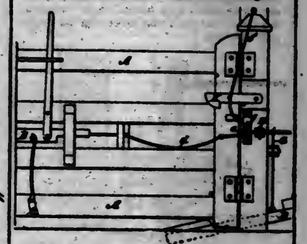


1. The combination, with a corn-sheller feeder, of the partitions A', of greater height than the intervening partitions, and alternating in position with the same, so as to divide the channels into sets of two each, substantially as and for the purposes described.

2. The combination, in a feeder, with the series of divisions, forming channels, of a single hinged equipoised bolt, B, as and for the purposes set forth.

170,899. AUTOMATIC GATES. R. S. Bledsoe, Mount Jackson, Va. [Filed Sept. 17, 1876.]

Brief.—The gate is opened by a weight, which is freed from a catch and allowed to work by a slight pull upon a cord by the person approaching. The gate swings back and is held in place by a catch. The vehicle, in passing, runs over the end of a lever, and raises the weight, which is caught by its proper catch and held in place. After passing through the gate a slight pull upon the cord on the road-side raises the catch, which holds the gate, and the gate swings shut by its own weight.



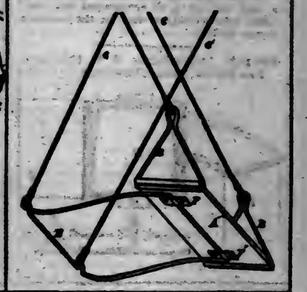
1. The combination, with the gate and suitable intervening mechanism, of a lever arranged transversely to the road-way, and pivoted, so that a vehicle passing upon the same raises a weight or bends a spring at the other end, to keep in store an available power for opening the gate for the next succeeding vehicle, substantially as described.

2. The combination of the weighted lever D, the elbow-levers G H, with connecting-rods, and the cord *d*, attached to the latch of the gate, as and for the purpose described.

3. The combination, with the arm *a* of the elbow-lever H, of the hooks J K, connected by a wire or cord, and operated by tripping-cords attached to posts on both sides the gate, substantially as described.

4. The combination of the weighted lever D, the elbow-levers G H, with connecting-rods, the hooks J K, with their tripping-cords, and the cord *d*, attached to the latch of the gate, substantially as described.

170,900. SWINGS. Wm. P. Rogers, Akron, Ohio. [Filed Oct. 26, 1876.]



170,902.

1. The bracket B, consisting of the base-plate *b*, the lugs *d d' a*, the recess *i*, and curved or inclined slot or recess C, in combination with the lever E, journaled at F, and provided with the cam-shaped nose *e*, all combined and operating substantially as and for the purpose described.

2. In combination with bracket B and lever E, constructed substantially as shown, the pin *f*, as and for the purpose described.

In testimony that I claim the foregoing as

170,904. SAND AND GRAVEL SEATERS. J. McC. Perkins, Washington, D. C. [Filed Dec. 4, 1876.]

Brief.—The perforated case, which directs the material against the bearing-surface, is larger at bottom than at top, to facilitate the descent of the sand, &c. An exterior jacket prevents the cold air from striking the seating-case.

1. In a sand and gravel seater, the laterally-perforated cylinder, having a solid central top or cover, in combination with a tapering perforated exterior cylinder, elevated from the ground to allow the removal of the falling sand, and provided with a flaring collar, substantially as described, and for the purposes set forth.

2. The combination of the hot-air jacket, elevated from the ground, as shown, and provided with perforations or slots near its top, and fitting closely to the top perimeter of the flange G, with the tapering perforated cylinder C, perforated cylinder B, cover H, and smoke-pipe J, substantially as described, and for the purposes set forth.

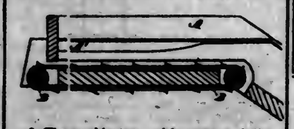
170,905. WHIFFLETREE-HOOK. Joshua Pierpont, Bushnell, Ill., assignor to Pierpont & Tuttle, same place. [Filed Nov. 8, 1876.]



The single-tree eye C, having the bent end *c'*, and straight end *c''*, and arranged to operate with the single-tree A and hook B, substantially as and for the purpose specified.

170,907. FENCING-BELTS AND PARTITIONS FOR CORN-SHELLERS. Wm. B. Quarton, Fremont, Iowa. [Filed June 26, 1876.]

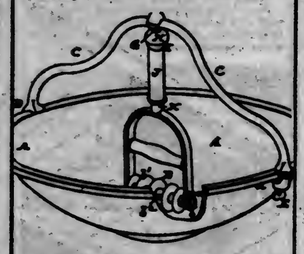
Brief.—A single belt provided with cleats, operating in connection with dividers, forming distinct channels, for use in connection.



1. The combination, with a corn-sheller feeder, of the partitions A', of greater height than the intervening partitions, and alternating in position with the same, so as to divide the channels into sets of two each, substantially as and for the purpose described.

2. The combination, in a feeder, with the series of divisions, forming channels, of a single hinged equipoised bolt, B, as and for the purpose set forth.

170,908. MEAT-CUTTERS. Geo. W. Bowers, Belleville, Ill., assignee of two-thirds his right to J. J. Piggott, St. Louis, Mo., and M. T. Baker, Belleville, Ill. [Filed June 21, 1876.]



1. The bowl A, having marginal rib *a*, and ball C, having clamping-jaws D and cut-covers E, in combination with the knuckle-joint H I, slotted arm J K, and roller B, all substantially as set forth.

2. The bowl A, roller B, and ball C, in combination with the ball-and-socket joint H I, hollow stem J, forming a bearing for the spring L, and spindle K, as and for the purpose set forth.

The combination of the seat A, the rigid upright B B', and hinged foot-rest K, supported by the rapes O O' G G', arranged to cross each other, and all substantially as described and shown.

170,901. CIGAR. Morris Rosenthal, Philadelphia, Pa. (Filed Aug. 10, 1875.)

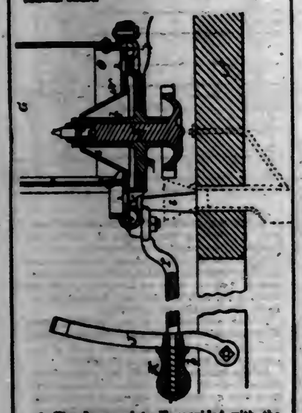
Brief.—A wooden stem inserted in the end carries a paper button that holds to the end, the outside of which is coated with the igniting-mixture; and a central band, roughened, affords the igniting agent.

1. The stem C, adapted for attachment to the lighting end of a cigar, substantially as described.

2. In combination with a cigar, the stem C and roughened band B, substantially as described.

170,902. GRAIN-DRILLS. John R. Buda, Squire R. Buda, and Geo. W. Buda, Liberty, Ind. (Filed Aug. 14, 1875.)

Brief.—The frame-plate is provided with a circular groove, having outlets for the dirt and chaff to escape. The hopper is mounted upon a pivoted frame, adjustable vertically by the handle or a lock-bar, and held by a spring working in the end of the handle. The dropping-plate is made conical in form, and is operated by a central shaft having a cog-wheel that gears with a worm on the longitudinal shaft.

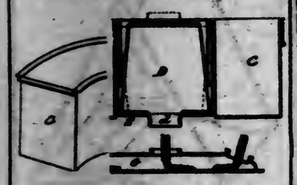


1. The frame-plate E, provided with the circular groove a, with outlets *y y*, substantially as and for the purposes herein set forth.

2. The combination of the conical drop-plate H with frame-head E, having the hollow central box I formed therewith, the shaft K extended through and above the drop-plate, covered by the lug *i*, and provided with the oil-chamber *n*, stopper *p*, and hole *o*, all substantially as and for the purposes set forth.

3. The hopper G, lever I, handle K, spring *h*, and lock-bar J, all constructed and combined substantially as and for the purposes herein set forth.

170,903. LOCOMPASS. E. W. Schmeider, New Haven, Conn. (Filed Sept. 10, 1875.)

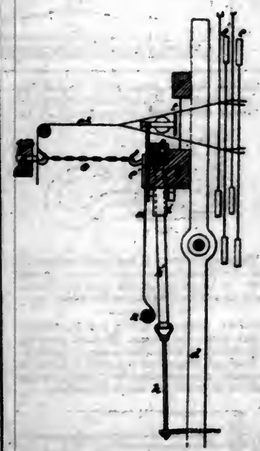


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1. The combination, in a lunch-pail, of several removable segmental compartments, C, and the central removable vessel D, with one or more burners beneath, and a supporting-frame, substantially as described.

2. The combination, in a lunch pail, of several removable segmental compartments, C, the central removable vessel D, with one or more burners beneath, and the pan-shaped cover I, all supported in a frame, substantially as described.

170,904. RIBBON-LOOMS. Philipp Schwartz, Gross Ammensleben, Prussia. (Filed Mar. 17, 1875.)

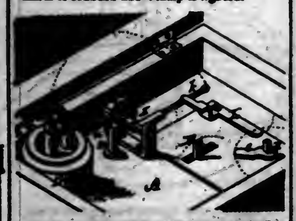


1. The combination of a shuttle, constructed substantially as herein described, and a shuttle-race, arranged to support or carry the shuttle wholly in front of its bobbin, whereby the shuttle is enabled to operate in the narrowest portion of the shed, with the bobbin occupying the rear of the shuttle and widest portion of the shed, substantially as and for the purpose set forth.

2. The combination of the shafts *a* and *b*, double cam *c' c''*, shoe *f*, flat spring attached to the shoe, the vertical rod *h*, attached to the flat spring, and provided with strap *h'*, attached to the ends of the picker-bar, the spring *m*, having a head, *l*, for engaging with the picker-bar to hold it stationary, and a chain, *c*, connected with the front beam *g'*, for releasing the head from the picker-bar, all substantially as shown and described.

170,905. BURGLAR-ALARMS. H. A. Sherman, Fremont, Ohio. (Filed Nov. 5, 1875.)

Brief.—The device is connected by a line or cord with a door or window, and any attempt to enter sets off the mechanism, by which an alarm is sounded and a lamp is lighted.



1. The combination, with a clock-work, B, and alarm-bell D, of the shaft *k*, rocker *d*, and arm *e* for operating a lever, L, a spring detent-holder, I, and hasp H, with cord *h*, substantially as and for the purposes herein set forth.

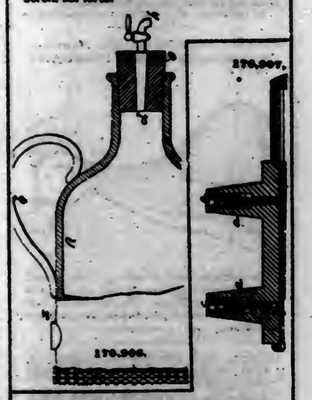
2. The combination of the journaled detent-holder I, spring *i*, and cams *J*, for the purposes herein set forth.

3. The post *m*, with adjusting-screw *n* in its upper end, in combination with the detent-holder I and spring *i*, substantially as and for the purposes herein set forth.

170,906. DRILLING FOR CONTAINING MALT LIQUORS. David H. Shourds, Philadelphia, Pa. (Filed Nov. 16, 1875.)

Brief.—By the device shown malt liquors can be supplied in families in quantities less than contained in ordinary barrels or half-barrels. Moreover, the freshness is retained, and the expense of numerous small bottles obviated. By placing the demijohn on its side it answers the purpose of a small cask.

The within-described demijohn, consisting of the vessel A, its handle A, cork *a* with faucet *b*, and vent-hole *n*, all being combined substantially in the manner and for the purpose herein set forth.



170,906.

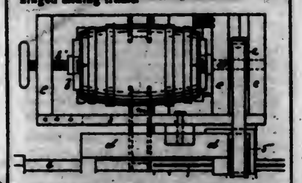
170,907.

170,907. LUBRICATING JOURNAL-BOXES. H. B. Smith, New York, N. Y. (Filed Nov. 4, 1875.)

The cover of the journal-box formed with the projection *c*, having the enlarged reservoir *b*, and the contracted channel *c*, with the wick and stopper arranged in position, substantially as shown and described.

170,908. BARREL-POLISHING MACHINES. Hezen S. Smith, Brooklyn, N. Y., assignor of one-half his right to A. T. Briggs and Wm. H. Thrall, New York city. (Filed Sept. 28, 1875.)

Brief.—The barrel is held and revolved in a pivoted frame, which is connected to a hinged sliding frame.



1. In a machine for dressing barrels, the combination of the endless belt or emery-surfaces with a pivoted frame for holding the barrel, that can be turned horizontally around, substantially as shown.

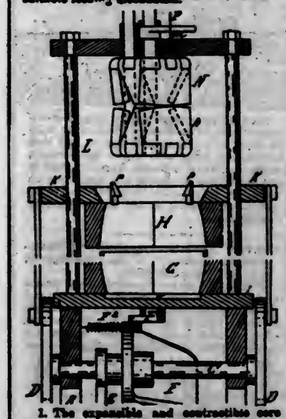
2. In combination with the frame *A*, pivoted so as to be turned around, the chocks for holding the barrel, and beam *d*, adapted to be moved back and forth on the chocks, as described.

3. The beam *d*, having both an endwise and swinging motion on the shaft *c*, and having the pulley *f* fastened to its end, the pulley being fastened on the shaft, so as to revolve with it, substantially as specified.

4. The combination of the shaft *c*, beam *d*, pulley *f*, frame *e*, pivoted on the said beam, chocks, pulley *l*, and belt, with the endless belt *k* and pulleys *i m*, substantially as set forth.

170,909. RAISING-SHAFTING MACHINES. Hezen S. Smith, Brooklyn, N. Y., assignor of one-half his right to A. T. Briggs and Wm. H. Thrall, New York city. (Filed Oct. 6, 1875.)

Brief.—Straight cylindrical shells for barrels, formed of a single sheet of wood or of a number of staves, are compressed and treated at the same time by means of an expansible and contractible core, made in two parts, each of which is formed of wide and narrow hinged plates. A shaping-die consisting of two compressing-jaws—an upper and a lower one—the lower one being stationary, and the upper having a vertically-reciprocating motion, and suitable feeding mechanism.



1. The expansible and contractible core herein described, that is made in two halves, each of which halves is expanded and contracted at the same time, substantially as shown.

2. A core for barrels made in two parts, each part being formed of wide and narrow hinged plates *a b*, in combination with the cam *d* and spring *e*, substantially as described.

3. In a barrel-shaping machine, a shaping-die, G H, made in two parts, one of which is stationary, and the other movable, in combination with an expansible and contractible core, and devices for operating the same, substantially as set forth.

4. The combination of the hinged or pivoted parts of each half of the die and the expansible core, herein described, with the mechanism for closing the dies and expanding the core simultaneously, substantially as and for the purpose set forth.

5. In a machine for shaping barrels, the expansible shaping-die, the expansible core, and the mechanism for operating them, all as herein described, in combination with a mechanism for moving the upper part of the die up and down, substantially as shown.

6. In combination with the core N, the cords or chains P P', pulleys Q R, lever S, and cam R, as described.

7. The combination of the cam F, crank F', spring F', shaft *f*, arms *g*, connecting-rods *h*, and dies G H, as specified.

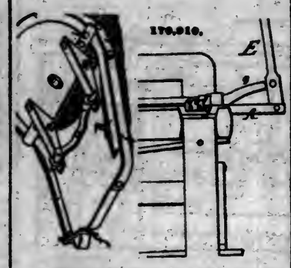
8. The combination of the shaft *f*, and its operating mechanism, with the crank *h*, connecting-rod *i*, crank *m*, and shaft *o*, substantially as shown and described.

9. The combination of the springs *p*, or their equivalents, with the die H for holding the truss up above the die, substantially as specified.

10. In combination with the dies G H, adapted to be opened and closed upon the barrel, the shaft *f*, arms *g*, and connecting-rods *h*, substantially as shown.

170,910. MACHINES FOR BENDING WOOD. Edward Q. Smith, Evansville, Ind. (Filed May 8, 1875.)

Brief.—Strips of wood for chair-backs can be bent in any desired direction by means of a steady and pressure applied to the strip during the operation of bending it on a rotating, sectional, and hinged former of any desired irregular shape.



1. The combination, in a wood-bending machine, of a rotating former with a traveling head, A, which has at one end a pivoted lever, B, connected, by means of a cord or wire, *c*, to a spring-arm, E', at the opposite end of the bed A, and provided with a shoe, *e*, as and for the purpose described.

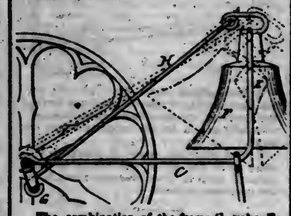
2. The combination, with the sections of a divided former for wood-bending machines, of levers *m*, attached to one section, and staples adapted to said levers on another section, all substantially as described.

170,911. HORSESHOES. Aaron W. Smith, Manchester, N. H. (Filed Feb. 1, 1875.)



The horseshoe constructed, as herein described, with a horizontal grooved base and parallel upper and lower surfaces, giving to its main body an equal thickness from the heel nearly to the toe, and with an abrupt upward projection or thickening, *f*, at the toe, as and for the purpose set forth.

170,912. TOY THUNDER AND BELLS. W. F. Story, East Hampton, Conn. (Filed Sept. 9, 1875.)



The combination of the frame C, yoke E, wheels B, rod H, and ball F, substantially as and for the purpose set forth.

170,913. AUTOMATIC LIGHTERS FOR GAS-BURNERS. Henry B. Stockwell and Albert R. Wolcott, Brooklyn, N. Y. (Filed Oct. 20, 1875.)

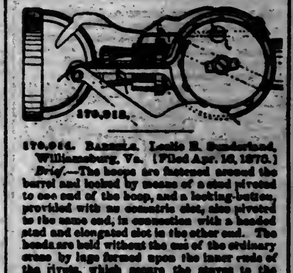
1. In automatic lighters for gas-burners, a slide-piece, operated by the gas-cock, and constructed to feed the fulminate-ribbon to the anvil, simultaneously with the raising and dropping of the spring-hammer, substantially as described.

2. The slide-piece, provided with boot and recessed shoulder, in combination with the correspondingly-bent spring-hammer for raising and dropping the same by the forward motion of the slide-piece, substantially as specified.

3. The combination of the recessed bottom slot of magazine, turned by the gas-cock, with the projecting lug of the slide-piece for moving the same in forward and backward direction, substantially as set forth.

4. The combination of the guide-piece, having guard-flange at the side adjoining the anvil, with the arm of the pivoted cover for guiding ribbon and slide-piece, substantially as described.

5. In automatic gas-lighters, the burner-socket, magazine, and guide, cast in one piece, substantially as set forth.



170,914. RAZORS. Leslie H. Sunderland, Williamsburg, Va. (Filed Apr. 16, 1875.)

Brief.—The heaps are fastened around the barrel and locked by means of a stud pivoted to one end of the heap, and a locking-button, provided with an eccentric slot, also pivoted to the same end, in connection with a headed stud and elongated slot in the other end. The heads are held without the cut of the ordinary straps by lugs formed upon the inner ends of the rivets, which secure the staves to the heaps, and which alternate upon opposite sides of the heads when the barrel is set up and the heads inserted.



1. The button D, pivoted to one end of the heap, and having an eccentric slot, *f*, in combination with the headed stud, *e*, attached to the other end of the heap, substantially as and for the purpose described.

2. The heap E, having at one end the slot *d* and headed stud *e*, in combination with the pivoted key *g* at the other end, and the pivoted button D, having an eccentric slot, *f*, substantially as and for the purpose described.

3. The device for holding the head of the barrel, consisting of the lugs *l*, attached to the inner sides of the staves, and when the barrel is set up alternating upon opposite sides of the inserted head, substantially as and for the purpose described.

170,915. PRESS-PLATES FOR DRYING AND BENDING WOOD. Samuel Swarts, Buffalo, N. Y., assignor to himself and Gilbert E. Swarts, same place. (Filed Dec. 2, 1875.)

Brief.—The boiler plates are heated by steam. The moisture of the wood escapes through the grooves and perforations.

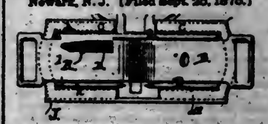


1. An apparatus for drying and bending wood, constructed with curved pressure-plates, heated by steam or other suitable means, and grooved or perforated to carry off the vapor from the wood, substantially as set forth.

2. The combination, in a pressure-plate, of grooves on the working face of said plate, communicating with the external air, to permit the escape of vapor, substantially as set forth.

3. The combination of the drying press-plates A B, constructed with chambers for the reception of steam, and with free-grooves H and perforations G, G', and F, to permit the escape of vapor, as explained.

170,916. HARNESS-SADDLES. Andw. Tee, Newark, N. J. (Filed Sept. 25, 1875.)



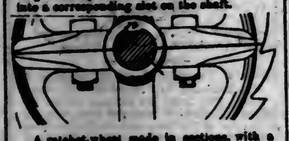
1. The tree A, transversely arched, with ribs B, substantially as and for the purposes set forth.

2. The continuous metal backband B in one piece, in combination with a harness-saddle, substantially as and for the purposes set forth.

3. The jockey J, provided with strips C, substantially as described, for the purpose of forming pockets for the tree to slip in.

170,917. RATCHET-WHEEL. J. P. Thomas, Elm, N. Y. [Filed Nov. 1, 1875.]

Brief.—Cast in two equal sections, united together when on the shaft. A key cast longitudinally on the inside of the hub drops into a corresponding slot on the shaft.

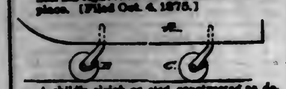


A ratchet-wheel made in sections, with a lug or key, *a*, cast thereon, substantially as shown and described.

170,918. MEDICAL COMPOSITIONS. Isaac T. Thresh, Griffin, Ga., assignor of two-thirds his right to John M. Williams and Dan'l S. Mann, same place. [Filed Sept. 12, 1874.]

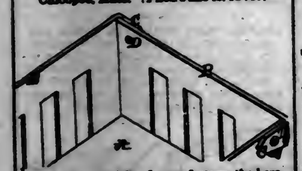
A composition of matter, consisting of pulverized or ranged bark's horn, water, bark of the root of button-willow, honey, and Jamaica rum mixed together, substantially in the manner and for the purposes set forth.

170,919. CHILDREN'S SLEDS. Horace N. Tucker, Stoughton, Mass., assignor of one-half his right to Francis Packard, 2d, same place. [Filed Oct. 4, 1875.]



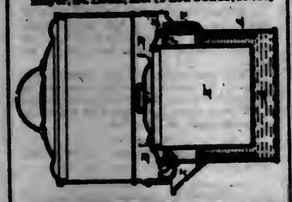
A child's sleigh or sled constructed as described, and provided with castors B, C, D, and E, in the manner and for the purpose set forth.

170,920. FRUIT-BASKETS. Nelson L. Tusk, Chicopee, Mass. [Filed June 11, 1875.]



As a new article of manufacture, the herein-before-described fruit-basket, consisting of the bottom A, sides B and B, and tongues C and C, formed of one piece, secured in position by means of the eyelets D and D, and coated exteriorly and interiorly with shellac, substantially as specified.

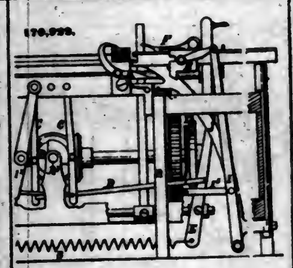
170,921. OCCUPIED DYNAMO. August Vishmeyer, St. Louis, Mo. [Filed Oct. 15, 1875.]



1. The water-vessel A, having top steam-chamber B, and orifices *b*, regulated by valve-ring C, in combination with the cooling-vessel K, having lid K', substantially as set forth.

2. The combination, with the cooling-vessel K K', of the water-vessel A, having drip-pipes H, for conveying the condensed steam, and the supply I, for conveying the cold water to a point near the bottom or heated part of the vessel A, substantially as shown and described.

170,922. LOOMS FOR WEAVING FILED FABRICS. William Webster, Norristown, and James Wade, New York, N. Y., assignors to Webster Loom Company. [Filed Oct. 6, 1875.]



1. The combination of the picker-lever C, cam B, picker-staff E, and spring S, all arranged in the same plane and operating together, as and for the purpose set forth.

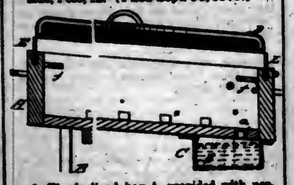
2. In combination, the spring S, picker-staff E, picker-lever C, and cam B of the pliable metallic picker-strap D, as and for the purpose set forth.

3. In combination with the wire box, constructed to hold the wire heads in position side by side, and the latch F, the rulcaser G, constructed and operating substantially as shown.

4. In combination with the wire bar M, the lever I, pivoted shaft K, and frame J, all arranged as and for the purpose set forth.

5. In combination with the picker-staff E, the actuating slide-lever I, levers O F, links P D, the cams B P, arranged upon the shaft A^1, as and for the purpose shown.

170,923. DISH-WASHERS. Maria E. Whiteside, Polo, Ill. [Filed Sept. 30, 1875.]

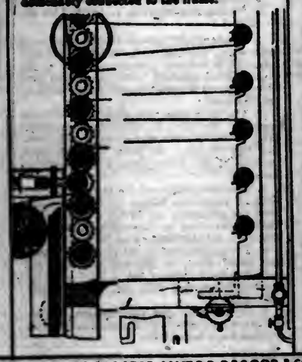


1. The inclined box A, provided with perforations *a*, cleats *d c*, and rings *f*, and having the receiver C attached to its under side, substantially as and for the purposes herein set forth.

2. The wire-cloth cover D, provided with sheet-metal rim E, in combination with the grooved sides of the dish-drainer box A, for the purposes set forth.

170,924. DRYING APPARATUS. A. Wilder, Augusta, Me. [Filed Dec. 1, 1875.]

Brief.—The frame carrying the lower rollers can be depressed by rack and pinion, to keep the fabric extended. The lower rollers are detachably connected to the frame.



1. The combination of the picker-lever C, cam B, picker-staff E, and spring S, all arranged in the same plane and operating together, as and for the purpose set forth.

2. In combination, the spring S, picker-staff E, picker-lever C, and cam B of the pliable metallic picker-strap D, as and for the purpose set forth.

3. In combination with the wire box, constructed to hold the wire heads in position side by side, and the latch F, the rulcaser G, constructed and operating substantially as shown.

4. In combination with the wire bar M, the lever I, pivoted shaft K, and frame J, all arranged as and for the purpose set forth.

5. In combination with the picker-staff E, the actuating slide-lever I, levers O F, links P D, the cams B P, arranged upon the shaft A^1, as and for the purpose shown.

170,925. DIET-WASHERS. Maria E. Whiteside, Polo, Ill. [Filed Sept. 30, 1875.]

1. The inclined box A, provided with perforations *a*, cleats *d c*, and rings *f*, and having the receiver C attached to its under side, substantially as and for the purposes herein set forth.

2. The wire-cloth cover D, provided with sheet-metal rim E, in combination with the grooved sides of the dish-drainer box A, for the purposes set forth.

170,926. DRYING APPARATUS. A. Wilder, Augusta, Me. [Filed Dec. 1, 1875.]

Brief.—The frame carrying the lower rollers can be depressed by rack and pinion, to keep the fabric extended. The lower rollers are detachably connected to the frame.

1. The combination, in an apparatus for drying sized or coated fabrics in continuous lengths, of an upper series of geared rolls with a car for carrying the roll of material, a lower series of rolls, and an adjustable stretching-frame, substantially as described.

2. In combination with the car for carrying the roll of cloth, the brake or depressing bar for confining the said cloth in position after it is delivered to the rolls, substantially as described.

170,926. METHODS OF CASTING CAR-WHEELS. William Wilmington, Toledo, Ohio. [Filed Oct. 22, 1875.]



The herein-described method of casting car-wheels by first introducing into the mold molten metal of a proper temperature, and then introducing metal of a higher temperature, which is allowed to escape from the mold in streams across the flange and tread portion while the intermediate sections are being cooled, substantially as and for the purpose described.

170,928. ELEVATOR-BUCKETS FOR CHAIN-PUMPS. Daniel W. Witmer, Springfield, Ill. [Filed June 9, 1875.]

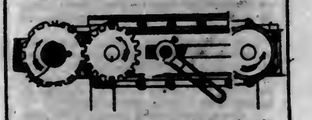
Brief.—A screw-threaded bolt passes through the center of one of the plates and the rubber packing, and engages in a screw-threaded hole in the opposite. This admits of the bucket being expanded without detaching it from the chain or twisting the latter.



1. The bucket for chain-pumps described, consisting of the plate A, having the screw-threaded hole *a'* and eye *a*, the plate B having the hole *b* and eye *b'*, the packing C and bolt D having a head, *c*, resting on the plate B, so that the said bolt can be turned independently of either of the said plates, substantially as described and shown.

2. The combination, with the plates A B and packing C, of the bolt D, having the shoulders *d'*, *c*, and the plate F, the several parts covering substantially as described.

170,927. MECHANICAL MOVEMENTS. C. B. Withington, Janesville, Wis. [Filed Nov. 22, 1875.]



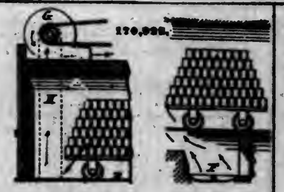
1. The combination, substantially as herein-before set forth, of a chain traversing over suitable pulleys, a shaft connected with said chain by a slotted link and a traversing carriage in which said shaft turns, whereby an intermittent reciprocation is imparted to the sliding carriage, and an intermittent semi-rotative movement imparted to the shaft carried by it.

2. The combination, substantially as herein-before set forth, of a chain traversing continuously in one direction over suitable pulleys, a shaft connected with said chain by a slotted link, a traversing carriage in which said shaft turns, a cam-way or cam-circular grooved plate on the shaft, and stop-pins on the frame, whereby the carriage is positively held while the shaft is turning.

170,929. BRICK-DRYER. R. P. Andrews, St. Louis, assignor of three-fourths his right to A. W. Esper, St. Louis, J. D. Kesbaugh, Glasgow, and S. J. Conley, Columbia, Mo. [Filed Feb. 1, 1875.]

Brief.—The draft-flue extends below the level of the floor, to receive the moist and heavy air.

170,930.

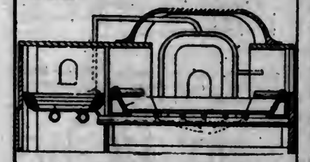


The combination, in a horizontal drier, of a furnace, F, arranged at one end of the drier, and which discharges its heat directly into the body of the drier, and fan H and exhaust-fan G, arranged at the other end of the drier, as and for the purpose set forth.

REISSUES.

3,779. PUDDLING-FURNACES. S. Caddick, Pembroke, Me. Patent No. 70,222, dated Oct. 29, 1867. [Filed Oct. 2, 1874.]

Brief.—Furnace-chill is made hollow, and is surrounded by a removable pipe. The furnace-doors are lined with fire-brick, the last brick keying the others into place. Fire-box is also furnished with a water-casing. Bed-plate rests upon hollow water-bearers. The stock is braced with L-shaped skeleton corner-irons.



1. In combination in a puddling-furnace, an air-blast box provided with a flange to support the bottom of the furnace, the furnace-bottom supported thereon, and hollow bearers upon which said bottom rests, all substantially as and for the purposes described.

2. In a puddling-furnace, the chill thereof provided with a water-pipe on its upper surface for cooling and protecting the same, separate from and independent of said chill, so that said pipe may be removed for repair without disturbing the chill, substantially as and for the purpose described.

3. The combination of the bed-plate water-pipes, suitably secured to or to the under side of the same, and water-pipes around the fire-box, substantially as described.

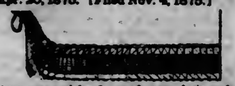
4. In combination, the tubular water-casing *b* of the fire-box and the hollow bearers *c*, substantially as described.

5. In combination with a furnace-chimney, the skeleton metallic corner-supports of the same, constructed substantially as described.

6. In combination, the bed-plate, and the hollow water-bearers *c* upon which it rests, substantially as described.

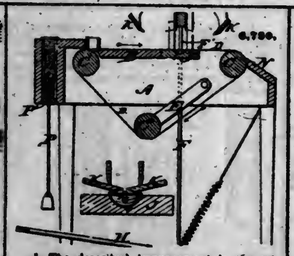
7. In a puddling-furnace, the doors thereof constructed with concave inner surfaces, and fitted with fire-brick having corresponding convex surfaces, in combination with angular flanges on the edges of the doors, substantially as and for the purposes described.

3,778. KNITTED BAGS FOR PACKAGES OF COMPRESSED VEGETABLE SUBSTANCES. J. D. Culp, Gilroy, assignor to the Consolidated Tobacco Company, San Francisco and Gilroy, Cal. Patent No. 162,363, dated Apr. 20, 1875. [Filed Nov. 4, 1875.]



As a new article of manufacture, knit sacks for packing purposes, substantially as described.

3,780. MACHINES FOR MAKING CUSHIONS FOR FINGER-RING BOXES. R. L. Dempiece, Brunswick, Me. Patent No. 161,466, dated Mar. 30, 1875. [Filed Oct. 12, 1875.]



1. The described improvement in the art of making cushions for finger-ring boxes, which consists in the process of piling the component parts of the cushion upon a bed or support, with the covering-strip at the bottom, and the backing-strip at the top, of the pile, coating the exposed surface of the backing with glue or other adhesive material, applying pressure to the backing in such manner as to compress the filling between the covering and backing, and folding both edges of the covering-strip simultaneously over upon the adhesive surface of the backing while the filling is compressed, substantially as and for the purpose specified.

2. In a machine for making cushions for finger-ring boxes, the combination of a supporting bed or table, a substantially horizontal pressure-bar, adapted to press upon a pile composed of layers of material supported on said bed or table, and suitable folding devices, whereby the projecting edges of the lower strip or layer of material are folded over upon the upper surface of the upper strip or layer of material while said pile is compressed, all constructed and arranged substantially as and for the purpose specified.

3. The combination of a supporting bed or table, a substantially horizontal pressure-bar, a removable bottomless holder, and a pair of swinging jaws, all substantially as and for the purpose specified.

4. An endless apron or carrier, in combination with a supporting bed or table, a removable bottomless holder, and suitable compressing and folding devices, substantially as described, for the purpose specified.

5. A supporting bed or table having a groove, *f*, combined with a removable bottomless holder, a pressure-bar, and a pair of swinging jaws, substantially as described.

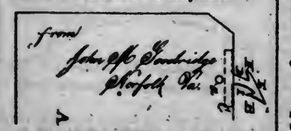
6. A supporting bed or table having a groove, *f*, combined with an endless apron or carrier, a removable bottomless holder, a pressure-bar, and a pair of swinging jaws, as set forth.

7. The jaws K, having the intersecting pivoted arms, in combination with the grooved bed and the removable bottomless holder.

8. In a machine for making cushions for finger-ring boxes, the receptacle O, having the sliding weighted bottom P and stops S S, combined with the table A, having suitable compressing and folding devices, substantially as described.

3,781. TAG-FASTENERS. John M. Goodridge, Norfolk, Va., assignor, by mesne assignments, to Wm. D. Reynolds, (trustee for Mary E. Humphreys,) same place, and Charles Harvey, Baltimore, Md. Patent No. 143,621, dated Oct. 14, 1873. [Filed Oct. 6, 1875.]

Brief.—A double-barbed hook, having a cross-bar at right angles to its shank, is passed through a tag near one end, the short end thereof being pasted to the body portion to hold the hook in position. Below the cross-bar of the hook, and through both body and cemented fold or lap of the tag, an aperture is formed, to admit of an attaching-string when the hook cannot be readily used.



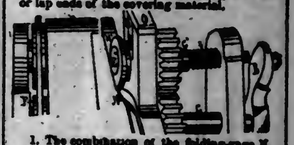
1. A tag combined with the double barbed hook B, having its points placed at angles with the shank D, substantially as and for the purpose specified.

2. The combination of a hook having the cross-bar C, with a tag, A, the two being connected, as shown and described.

3. The combination of a tag perforated at *a* with a fastening-hook, having the cross-bar C, substantially as specified.

6,782. MACHINERY FOR COVERING RIMS FOR HAT-TRIMMINGS. Geo. A. Shepard, Bethel, Conn., assignor to Jos. H. Davis, Boston, Mass. Patent No. 102,722, dated May 3, 1870. [Filed Feb. 6, 1875.]

Brief.—A sheet of sized covering material is fed by an endless apron to and between combined cutting and pressing rolls, which gage the width of the strip to be severed from the sheet. By means of a folding-gage located in front of the rolls, the strip, while being severed, is folded around an interposed reed or wire, and pressed about the same by the rolls, the latter also compressing the free or lap ends of the covering material.



1. The combination of the folding-gage N, placed in front of the pressing-surfaces *a b*, with the pressing-surface *b* of the receiving disk B', constructed upon the projecting end of the shaft C', and the pressing-surface *a* of the roller E, substantially as described.

2. The combination of the pressing-surface *b* of the disk B', constructed upon the projecting end of the shaft C', with the pressing-surface *a* of the roller E, the gage O holding the pressing-surfaces, and the folding-gage N, placed in front of the pressing-surfaces *a b*, to fold the material before it passes through between them, substantially as described.

3. The endless apron I, in combination with the folding-gage N, and the disk B' and roller E, having the flange *e* and the cutting-edges *a'* and *c'*, substantially as described.

4. The combination of the pressing-surface *b*, with the disk B', and the pressing-surface *a* of the roller E, with the groove C, and the folding-gage M, substantially as described.

5. The spring *f*, in combination with the cutting-edges *a'* and *c'* of the disk B' and roller E, and the folding-gage N, substantially as described.

6,783. DUMPING-WAGONS. Hamlin Bailey, Harrisburg, Pa. Patent No. 147,403, dated Feb. 17, 1874. [Filed Sept. 10, 1875.]



1. The coal-vehicle bed A B S, in combination with one or more extensible chute-sections, *a a'*, to supplement the discharge-spout *s*, when said sections are connectedly applied thereto as a suitable adjunct of the vehicle, and so arranged that the act of extending the sections *a a'* to the rear will secure the correct application of section *a* beneath the spout *s*, substantially as and for the purpose set forth.

2. In a coal-vehicle, having bed A, with rearward-inclined bottom B, a stirrup or hanger arranged beneath the bed, as a support and carrier for the extensible chute device, substantially as set forth.

3. In a coal-vehicle, the parallel guides *c c' c c'* arranged beneath the bed A, in combination with the extensible chute *a a'*, when the latter is provided with the compression-points *m m*, substantially as set forth.

6,784. BUNG-FUNNEL. [illegible] Bank, Baltimore, Md. Patent [illegible]27, dated Aug. 22, 1871. [Filed [illegible] 7, 1871.]

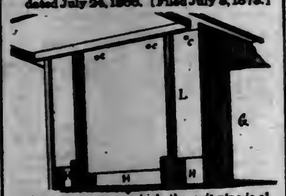
Brief.—As the liquid escapes air enters the air-tube, and preserves an equilibrium of pressure within and without the barrel; thus the contents flow freely. The device may also be used for filling purposes. When the barrel is tilted the bent tube extends above the level of the liquid.

6,784.



A tapering tube, A, adapted to be used either as a discharge or filling conduit, in combination with an air-pipe passing through the same, and bent to one side at a point beyond the smaller end of the said tapering tube, as and for the purpose specified.

6,785. COOKING-STOVES. E. Bussey, Troy, N. Y., assignor of one-half interest to C. A. McLeod, same place. Patent No. 86,686, dated July 24, 1868. [Filed July 8, 1875.]



1. In a stove, in which the exit-pipe is allowed to remain in the usual position over the ascending flue, the combination of the following elements: first, the exit-pipe; second, the intermediate plate in front of the vertical heating-chamber; third, the reservoir, substantially as described.

2. The combination of the following elements: first, the exit-pipe placed over the ascending flue; second, the vertical reservoir heating-chamber in the rear of the exit-pipe; third, the reservoir, as and for the purpose described.

3. The combination of the following elements: first, the reservoir heating-chamber located in the rear of the exit-pipe; second, the apertures communicating between the lower part of the chamber and the rear flues; third, the rear flues, as described.

4. The combination of the following elements: first, the reservoir heating-chamber in the rear of the exit-pipe; second, the apertures communicating between the upper part of the heating-chamber and the flue-space behind the oven; third, the flue-space behind the oven.

5. The combination of the reservoir heating-chamber, located to the rear of the exit-pipe, and the downward flues of the stove, as described.

6. The partition-strips in the hot-air chamber, behind the pipe-collar.

7. A hot-air chamber between the intermediate plate and the front side of the reservoir, in combination with the flue-strips in said chamber.

8. The combination of the following elements: first, the hot-air chamber in the rear of the exit-pipe; second, the water-reservoir; third, the partition-strips between the intermediate plate and the reservoir; fourth, the openings communicating between the hot-air chamber and the rear space.

6,786. HYDRAULIC JACKS. E. M. Dodgeon, San Francisco, Cal. Patent No. 162,044, dated Apr. 13, 1875. [Filed June 22, 1875.]

Brief.—Within a hollow ram is the pump-barrel. The plunger is hollow, and passes the water through itself to and from the reservoir. The lower end of it is contracted to extend through the lower valve-seat and open the valve, to return the water to the reservoir, and is bored out that the water-pressure in forcing may close the plunger-valve.

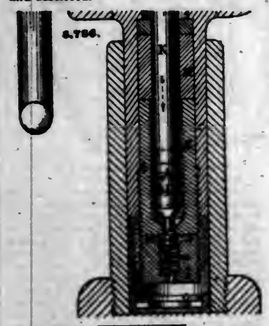
1. The combination, with the reciprocating ram, tube, or shell, C, working in cylinder A, of a tubular pump-plunger contained therein, whereby the operating fluid is passed through said plunger, in the manner described, for the purpose specified.

2. The combination, with the hollow pump-plunger K and pump-barrel B within the ram, packed as shown, of the valves L M, and the apertures or passages *f i a*, substantially as specified.

3. The hollow pump-plunger K, made to extend through the bottom of the pump-barrel, in combination with the lower valve M, essentially as and for the purpose herein set forth.

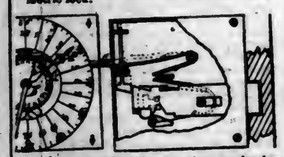
4. The valve-box J, having a central cavity with parallel sides to hold and guide the spring-valve *m*, and cut out or chambered at its upper end to form the water-space between said cavity and the pump-barrel, as shown and described.

6,786.



6,787. TIME-LOCKS. Stephen W. Hollen, Cincinnati, Ohio, assignor to Jas. Sargent, Rochester, N. Y. Patent No. 121,782, dated Dec. 12, 1871. [Filed July 9, 1875.]

Brief.—A lever-connection extends from the case of a time-lock over into the case of a non-chronometric lock, and governs the action of a dog, which dogs the bolt of the non-chronometric lock.



1. The combination of a time mechanism and a non-chronometer lock with a lever-connection operated by the time movement, said lever being constructed and located to hold a bar or dog for dogging the bolt of said lock and render it incapable of being unlocked, when locked, until the arrival of the appointed time, when the time mechanism causes its dogging action and admits of the bolt being operated.

2. The combination of a time mechanism and a non-chronometer lock, each arranged in its own casing, with a lever-connection operated by and extending from the time movement and from or through its casing into the casing of the non-chronometer lock, for operating means for preventing the bolt of said lock being unlocked, when locked, until a certain predeterminate time.

3. In combination with a non-chronometer lock, a time mechanism having a lever-connection operated by the time mechanism for dogging the bolt of the non-chronometer lock, with a mechanism for operating the lever to release the bolt for unlocking, and with a mechanism for automatically stopping the running action of the time mechanism when the bolt is so released.

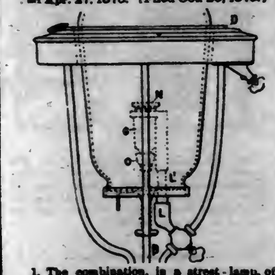
6,788. COMB-COMBS. Cyrus W. Saladee, Putnam, Ohio, assignor to Hotchkiss Sons, Bridgeport, Conn. Patent No. 45,640, dated Dec. 27, 1864; reissue No. 1,664, dated Jan. 24, 1865. [Filed Nov. 6, 1875.]

Brief.—Rigid bars are attached to the back of the comb, which serve as a handle, and also as a brace for the comb.



A carry-comb having an inflexible raised bar or bars rigidly secured to its back, serving the twofold purpose of a grasping-handle and a brace for strengthening the frame-back of the comb, substantially as specified.

6,789. STREET-LAMPS. Henry Wellington, New York, N. Y. Patent No. 162,728, dated Apr. 27, 1875. [Filed Oct. 20, 1875.]



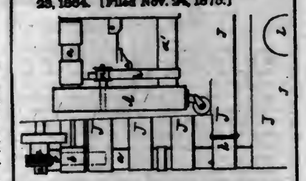
1. The combination, in a street-lamp, of the reservoir D, for holding the burning fluid, the glass globe C resting against the reservoir, a support, E, against which the base of the globe rests, and a hollow supply-tube leading downwardly from the reservoir, and forming part of the frame, substantially as described.

2. The vaporizing-chamber, consisting of a tube *l*, the socket *l'*, and the channel *f* communicating with the said socket and the burner, substantially as described.

3. The hinged perforated base, constructed and arranged substantially as and for the purpose specified.

4. The spring E for supporting in a yielding manner the disk E and globe C, as and for the purpose set forth.

6,790. INVALID-BEDSTEADS. Whittier Machine Company, Boston, Mass., assignee, by mesne assignments, of Josiah Crosby, deceased. Patent No. 43,900, dated Aug. 23, 1864. [Filed Nov. 24, 1875.]



1. A stationary frame, two rollers or drums provided with worm-toothed wheels, and contained therein, and a support adapted to sustain and elevate a person, and bands or suspensories connected with the rollers or drums and support, in combination with a shaft provided with worms to engage and rotate the rollers or drums, to wind or unwind the bands or suspensories, and elevate or lower the support, substantially as described.

2. A frame, two oppositely-arranged drums supported thereon, suspensories connected with the drums, and pulleys over which the suspensories pass to a movable support, in combination with worm-gears on the drums and a shaft mounted in the drum-frame, and provided with reverse worms to wind and unwind the suspensories, and raise and lower the support, the combination being and operating substantially as described, to avoid confusion, as set forth.

3. A frame adapted to support two rollers or winding-drums, each provided with two or more bands or suspensories and a worm-gear, and a second shaft supported on each frame, and provided with a right and a left worm-gear, to rotate the rollers and wind and unwind the suspensories, in combination with a movable support, to which the bands or suspensories are connected, substantially as described.

4. The combination of the frame A, rollers *e*, and devices adapted to operate them, as described, with the adjustable transverse straps J J and trundle-bed, all substantially as described, and for purposes described.

5. In combination, the bedstead and revolving rollers *e* and *e'*, adjustable bands J J, and the trundle-bed, adapted to be raised in contact with the bands J J, substantially as described.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 24. TUESDAY, DECEMBER 14, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1875 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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NOTICE TO MANUFACTURERS AND OTHERS.

UNITED STATES PATENT OFFICE,
Washington, D. C., October 5, 1875.

The COMMISSIONER OF PATENTS respectfully requests manufacturers of and dealers in engines, machines, apparatus, tools, and appliances of whatever kind, to send to this Office duplicate copies of all catalogues and circulars which they have issued or may issue from time to time.

R. H. DUELL, *Commissioner.*

COMMISSIONER'S DECISIONS.

ROBERT BRAGG.—*Interlocutory appeal.*

[*Appeal from the Principal Examiner in the matter of the application of Robert Bragg for reissue of Patent No.* 165,438, *for* "GONG-ATTACHMENT FOR ENGINE-HOUSES."—*Decided December* 21, 1875.]

The rule in regard to new matter construed more strictly as to reissue applications than as to original ones. In the former case new matter is expressly forbidden by law to be introduced into a specification, while in the latter case the question is left to the discretion of the Commissioner.

Where an inventor in his patent had stated the object of his invention to be "to provide a novel attachment, principally valuable and applicable to fire-engine houses," and had restricted his specification, drawing, and model to that one object: *Held*, that it was new matter to describe in the reissue application various other uses to which the attachment could be put, especially as those uses suggested something more than an equivalent arrangement and operation.

DUELL, *Commissioner:*

The Examiner rejects the application on the ground that new matter has been introduced into the specification.

Applicant in his patent states the object of his patent to be "to provide a novel attachment for gongs; and it is principally valuable and applicable to fire-engine houses, where the horses which draw the engines ought to be released at the very instant of the first stroke of an alarm, so that they can take their places at the engine and hose-carriage ready to be attached thereto by the first man who may arrive."

The rest of his specification and the claims relate to the means of accomplishing this one object.

The new matter objected to consists in mentioning other objects to be accomplished, as "for opening the doors or gates of the engine-house, for striking an alarm to awaken the engineer or fireman, for turning on the gas automatically at the moment the alarm strikes, and for various other purposes."

This certainly is a departure from a "novel arrangement for gongs."

The Examiner is right in saying that the practice in regard to new matter is notably more strict in the case of reissues than of original applications.

While an original application is pending, and open to amendments, such changes can be made therein which do not amount to a material or substantial variation of the invention, as held in the Carlock case, (8 OFFICIAL GAZETTE, 191,) cited by applicant. There is no regulation of law in such a case, and the question of new matter is left entirely to the discretion of the Office.

But the statute is explicit in regard to reissues. "No new matter shall be introduced into the specification" is the requirement, and the United States Supreme Court have held that under this restriction only that which "was suggested or substantially indicated in the specification or drawings which properly belonged to the invention as actually made and perfected" can be embraced by a reissue. "Interpolations," they add, "of new features, ingredients, or devices, which were neither described, suggested, nor indicated in the original patent or Patent Office model, are not allowed." *Seymour* vs. *Osborne*, (11 Wall., 516.) The same court had before, and has since, pointedly condemned the

practice of enlarging the specification, or inserting expanded or equivocal claims for the purpose of embracing new features not hinted at in the original patent. *Burr* vs. *Duryee*, (1 Wall., 531); *Carlton* vs. *Bokee*, (17 Wall., 463.)

Now, in the present case there is nothing in the patent to suggest or indicate that, besides loosening the horses from the stalls, the apparatus might be operated to simultaneously light the gas, and to open all the doors and gates. Something more, too, than equivalent features or modes of operation are here suggested. The applicant also adds that the apparatus may be used for "various other purposes," and we might expect that if this application is granted it will be followed by others setting forth those "various other purposes" as fast as the applicant may discover them.

The decisions of my predecessors are in harmony as to this practice, and while it is not the intention of the Office to abridge the right that inventors have to amend their original patents so as to fully protect their entire invention, yet it is also its duty to see that such amendments are restricted within the precise limits of the law.

The decision of the Examiner is affirmed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, DISTRICT OF NEW JERSEY.

GEORGE B. TURRELL *vs.* EDWARD SPAETH AND CHARLES GUELICKER.

[*In equity—Before* NIXON, *J.*]

Upon bill filed, charging defendants with infringement of reissued letters patent, and praying for an injunction, and account of gains and profits made by defendants: *Held*, that a subpœna *duces tecum* might be issued, requiring defendants to produce before the Examiner all books, papers, and documents whatsoever, that will show the number of "skates" made or delivered by the defendants, or their employés, since the date of the reissue of letters patent, and until the commencement of the suit.

[*Chas. F. Blake*, for complainant.
J. Van Santvoord, for defendants.]

NIXON, *J.*:

This suit is for the infringement of reissued letters patent, dated April 6, 1875, for "Improvement in Skates," of which the complainant became the owner by assignment on the 13th of April, 1875. The bill was filed July 6, 1875, charging the defendants with infringement, and praying for an injunction, and for an account of the gains and profits made by the defendants, and of all the damages sustained by the complainant from the said infringement.

The complainant is taking testimony to prove his *prima-facie* case, and has issued a subpœna *duces tecum* to one of the defendants, Edward Spaeth, requiring him to produce before the Examiner "all books, papers, and documents, whatsoever, that will show the number of skates made or delivered by the defendants, or their employés, since the 6th day of April, 1875."

The defendants complain that this is not an honest inquiry into their acts to sustain the charge of infringement, but an attempt, by an abuse of the process of the court, to ascertain the nature, extent, and direction of their business affairs. While they express themselves willing to make a full exhibit of all their manufacture and sale of skates from the date of the last reissue of the patent to the commencement of this suit, they protest that the complainant is not entitled at this stage of the proceedings, and before a decree against them for infringement, to compel an exposure of their business matters since the last-named date. They have accordingly applied for, and obtained, a rule upon the complainant to show cause before the court (1) "Why the subpœna *duces tecum* should not be modified by inserting the clause 'and until the commencement of this suit' after the words and figures '6th day of April, 1875;'" and (2) "Why the defendants should not be excused from disclosing to the complainant, in the complainant's *prima-facie* case, what defendants have or have not done since the commencement of this action."

The counsel for the complainant justifies the questions propounded, and the call for the books, exhibiting the amount and character of the business of the defendants since the filing of the bill, on the ground that the complainant's patent is for a combination; that it already appears in evidence that the defendants have a contract to manufacture the skates, which are sworn to be an infringement of the complainant's patent, and to deliver them to persons who are not licensees of the patentee; that a number of such skates are yet to be made and delivered under said contract; that it further appears that the defendants are accustomed to make large quantities of the parts of skates interchangeable, and to put them together afterward; that it is admitted in their testimony that some of these parts were manufactured before the commencement of the suit, and the object of the present inquiry is to ascertain whether the other parts of the skates have not been manufactured since, and whether the parts made before filing the bill have not since been united to form skates, so that what was done after the reissue and before the suit has been contributory to the infringement.

The reissued patent owned by the complainant, and for the infringement of which the suit is brought, is undoubtedly for a combination in the specifications. The inventor states that the nature of his invention consists in the combination, with a skate and the lateral-acting clamps, of mechanism that operates to move the clamps toward each other with sufficient force to cause them to grasp the sole, and hold the skate to the boot or shoe.

The first claim of the reissue is for—

The combination, in a skate, of clamps for grasping the sole, a plate or rest for the foot, and mechanism for moving and holding the clamps.

The second is for—

The clamps for grasping the heel and the clamps for grasping the sole combined with mechanism operating and holding both sets of clamps, substantially as specified.

And the law is well settled that such a patent is not infringed by the use of some of the parts which make up the combination, the other parts being omitted, unless the place of the discarded constituents is supplied by something substantially equivalent.

As was remarked by Mr. Justice Nelson in delivering the opinion of the Supreme Court in *Vance* vs. *Campbell*, (1 Black, 429:)

Unless the combination is maintained, the whole of the invention fails. The combination is an entirety; if one of the elements is given up the thing claimed disappears.

Hence, also, it was held in *Gould* vs. *Rees*, (15 Wall, 194,) that "where the defendant, in constructing a machine, omits entirely one of the ingredients of the plaintiff's combination, without substituting any other, he does not infringe; and if he substitutes another in the place of the one omitted, which is new or which performs a substantially different function, or if it is old, but was not known at the date of the plaintiff's invention as a proper substitute for the omitted ingredient, then he does not infringe."

The complainant seeks to establish his *prima-facie* case of infringement by putting one of the defendants on the stand as a witness, and proving by him what the defendants have done. He calls his attention to Exhibit No. 1, and asks whether he has made skates substantially like that. The witness admits that he has, and that the defendants have a contract to furnish such skates to the firm of Peck & Snyder. He is then requested to produce the contract, which he properly declines to do, alleging as a reason that he does not wish to disclose to rivals the price which they were to receive, nor the number to be manufactured; but he again admits that it was a contract to deliver skates very nearly like Exhibit No. 1 of complainant. The sole pertinent inquiry now is the fact of the infringement, and that fact will not be made any more evident by producing the contract than it has been by the admissions of the defendants. The extent of the infringement is a different question, and will only arise, if at all, upon a reference for an account after a decree for the complainant.

He then continues the defendants' examination as follows:

Q. 23. Do you keep books of account which show how many skates like Exhibit 1 you make; the deliveries of such skates, and the dates of such delivery?
A. Yes.
Q. 24. Will you produce those books of account at the next adjournment?
(Objected to, because complainant has no right to compel the witness to produce his books at this stage of the suit, and because he has not served any subpœna *duces tecum* upon him, and he has no right to such subpœna.)
A. I decline throwing our books open to the complainant.
Q. 25. In manufacturing skates under your contract has it been your practice to make considerable numbers of each of the different parts of the skates and keep them until such time as you may desire to put them together?
A. We always have made those parts at the commencement of the year, as that is work we keep boys on to fill up time when we are doing nothing else.
Q. 26. During the period of time between the reissue of the patent and the filing of the bill did you have on hand a considerable number of each of the parts constituting the clamping mechanism like that in Exhibit No. 1?
A. Yes; we always do have such parts in the factory.
Q. 27. Since that time have you used any of the parts that you then had in store in the construction of skates substantially like complainant's Exhibit No. 1?
(Objected to as immaterial and irrelevant to any issue in this suit; and because the question ought to be limited to the time of the commencement of this suit; and counsel instructs witness not to state what he has done since that time.)

The design of these questions is apparent. They are put on the theory that in a patent for a combination, he is an infringer who makes or sells only one or two of the parts of which the combination is composed, if done with the intent that the purchaser shall unite them with the other parts, procured either from the same or other sources, and at the same or at different times.

That seems to be the principle decided in *Wallace* vs. *Holmes*, (9 Blatch., 65,) on which the counsel for the complainant relies in support of his right to ask the question, and to call for the books of the defendants, exhibiting their business since the commencement of this suit.

In that case, where there was a patent for a new and useful improvement in lamps, which consisted of an improved burner in combination with a chimney, and the proof was that the defendants had manufactured and sold the burner alone, leaving the purchaser to supply the chimney—without which the burner was useless—the late Judge Woodruff held that the manufacture and sale of the burner by the defendants without the chimney was an infringement of the patent.

It cannot be [he says] that where a useful machine is patented as a combination of parts, two or more can engage in its construction and sale, and protect themselves by showing that, though united in an effort to produce the same machine and sell it, and bring it into extensive use, each makes and sells one part only, which is useless without the other, and still another person, in precise conformity with the purpose in view, puts them together for use. If it were so, such patents would indeed be of little value. In such case all are tort-feasors, engaged in a common purpose to infringe the patent, and actually by their concerted action producing that result. * * * * * Each is liable for all the damages.

Without thereby intending to intimate an ultimate opinion in regard to that case, or in regard to its relevancy to the pending one, I propose to adopt its spirit in the order which I shall make on the present motion.

Let the subpœna *duces tecum* be modified as the defendant requests, by inserting the clause "and until the commencement of this suit" after the words and figures "6th day of April, 1875;" but at the same time let the defendant, and any other witnesses, answer question 27, and all other questions tending to show the subsequent use of any of the parts of skates like Exhibit No. 1, which defendants had on hand when the suit was commenced.

This order is made upon the supposition that the answer to question 27 will serve the purpose of complainant as to present proof. If the evidence as to the fact of what the defendants have done since the commencement of the suit in the matter of uniting the constituents of the combination should not be satisfactory to the complainant, and it is supposed that the book of the defendants will shed more light on the subject, the court will hear an application hereafter, on notice to defendants, in regard to exhibition of the books of account.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date December 14, 1875.]

8,836.—Cooking-Stove.—NICHOLAS S. VEDDER, Troy, N. Y. No. 1. Application filed December 3, 1875. Term of patent 3½ years.

8,837.—Base-Burning Stoves.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, N. Y., assignors to said VEDDER. No. 6. Application filed December 3, 1875. Term of patent 3½ years.

8,838.—Cooking-Ranges.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, N. Y., assignors to said VEDDER. No. 3. Application filed December 3, 1875. Term of patent 3½ years.

8,839.—Illuminating Base-Burning Stoves.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, N. Y., assignors to said VEDDER. No. 7. Application filed December 3, 1875. Term of patent 7 years.

8,840 and 8,841.—Heating-Stoves.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, N. Y., assignors to said VEDDER. Nos. 9 and 5. Applications filed December 3, 1875. Term of patents 3½ years.

8,842.—Cooking-Stove.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, N. Y., assignors to said VEDDER. No. 2. Application filed December 3, 1875. Term of patent 3½ years.

8,843.—Parlor-Stoves.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, N. Y., assignors to said VEDDER. No. 4. Application filed December 3, 1875. Term of patent 3½ years.

8,844.—Cooking-Stoves.—NICHOLAS S. VEDDER and FRANCIS RITCHIE, Troy, N. Y., assignors to said VEDDER. No. 10. Application filed December 3, 1875. Term of patent 3½ years.

8,845.—Paper Box.—ISIDORE BIRGÉ, Philadelphia, Pa. Application filed March 13, 1875. Term of patent 3½ years.

8,846.—Handles of Table Cutlery.—EDWIN L. BRITTIN, Derby, Conn. Application filed November 27, 1875. Term of patent 7 years.

8,847.—Toy Balloon.—HUGH S. KERR, Philadelphia, Pa. Application filed November 24, 1875. Term of patent 7 years.

8,848.—Lamp-Chimneys.—FREDERICK S. SHIRLEY, New Bedford, Mass. Application filed September 17, 1875. Term of patent 7 years.

8,849.—Bottles.—BERNARD SIMON, Scranton, Pa. Application filed December 7, 1875. Term of patent 3½ years.

8,850.—Range.—NICHOLAS S. VEDDER, Troy, assignor to JOHN A. GOEWEY, Albany, N. Y. Application filed December 8, 1875. Term of patent 3½ years.

8,851.—Base-Burning Stoves.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, N. Y., assignors to said VEDDER. No. 8. Application filed December 3, 1875. Term of patents 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date December 14, 1875.]

3,222.—Thrashing-Machines.—ALTON AGRICULTURAL WORKS, Alton, Ill. Applications filed December 4, 1875.
"words 'Alton Pitts.'"

3,223.—Glue, Gelatine, and Sizing.—BARDER, ADAMSON & Co., Philadelphia, Pa. Application filed October 22, 1875.
"pictorial representation of the figures of a bull and a bear."

3,224.—Lamp-Wicks or Wicking.—ROBERT H. BURNS and CHARLES DREW, Boston, Mass. Application filed November 11, 1875.
"word 'FURLINE.'"

3,225.—Satinets or Woolen Cloths.—A. G. DEWEY & Co., Hartford, Vt. Application filed December 6, 1875.
"words 'CAMBRIDGE MIXT.'"

3,226.—Satinets or Woolen Cloths.—A. G. DEWEY & Co., Hartford, Vt. Application filed December 6, 1875.
"words 'QUECHEE MIXT.'"

3,227.—Cigars.—WILLIAM P. FARRINGTON, Providence, R. I. Application filed December 6, 1875.
"words 'THREE OLD CROWS.'"

3,228.—Mineral Paint.—FOUNDRY SUPPLY COMPANY, Boston, Mass. Application filed October 27, 1875.
"word 'KATANDIN.'"

3,229.—Wagons.—WILLIAM H. GARRETT, St. Louis, Mo. Application filed December 3, 1875.
"words 'GRANGERS' OWN.'"

3,230.—Soap.—CHRISTOPHER LIPPS, Baltimore, Md. Application filed December 2, 1875.
"word 'Jubilee.'"

3,231.—Whisky.—BENNO M. MAY, Cincinnati, Ohio. Application filed December 4, 1875.
"words 'MOUNTAIN RUN.'"

3,232.—Cigars.—LUCIUS C. PARDEE, Chicago, Ill. Application filed November 29, 1875.
"words and letters 'La Favorita de L. C. Pardee.'"

3,233.—Varnishes, Japan and Liquid Driers, Turpentine, and Benzine.—A. W. PRATT & Co., New York, N. Y. Application filed July 29, 1875.
"words 'HOUSEHOLD VARNISHES.'"

3,234.—Fertilizers.—RALSTON & KIRKE, New York, N. Y. Application filed November 27, 1875.
"form of a crescent and the words 'I increase.'"

3,235.—Flour.—THE EMPIRE MILLS COMPANY, St. Louis, Mo. Application filed December 3, 1875.
"French words 'FLEUR DE L'OUEST.'"

3,236.—Flour.—GEORGE C. THILENIUS, Cape Girardeau, Mo. Application filed November 13, 1875.
"words 'Orleans,' combined with 'Choice. G. C. Thilenius. Cape Girardeau, Mo.'"

3,237.—Flour.—GEORGE C. THILENIUS, Cape Girardeau, Mo. Application filed November 13, 1875.
"words 'Cape City Mills,' combined with 'Choice Family Flour, G. C. Thilenius, Cape Girardeau, Mo.'"

3,238.—Medical Preparation.—HENRY A. TILDEN, New Lebanon, N. Y. Application filed November 27, 1875.
"word 'FIRWEIN.'"

3,239.—Medical Preparation.—WEST, TRAFFORD & Co., Westport, Mass. Application filed November 24, 1875.
"words and letters 'R. A. West's Wonderful Discovery,' and a monogram composed of the letters 'W., T. & Co.'"

3,240.—Fertilizers.—WALTON, WHANN & Co., Wilmington, Del. Application filed December 1, 1875.
"word 'EAGLE.'"

3,241.—Washing-Powder.—LYDIA ANN WILLIAMS, Warren, Pa. Application filed October 26, 1875.
"words and letters 'McCall's Celebrated Washing Powder,' with the letters 'L. A. W.' in monogram."

3,242.—Druggists' Preparations.—JOHN GILBERT & Co., Philadelphia, Pa. Application filed October 28, 1875.
"a picture representing a chemist at work in his laboratory, seated in front of the furnace thereof."

3,243.—Axle-Grease.—WILLIAM A. JUVENAL, Philadelphia, Pa. Application filed December 6, 1875.
"word 'ACME.'"

3,244.—Buttons.—ALBERT B. LEWIS, Coventry, R. I. Application filed December 1, 1875.
"word 'CENTENNIAL,' and the representation of a button."

3,245.—Medical Compound.—OTTO F. LOHMANN, Cleveland, Ohio. Application filed November 24, 1875.
"words 'Bismarck's Life Invigorator,' in connection with a vignette portrait of Prince Bismarck."

3,246.—Food for Children.—CHARLES MAYNC, New York, N. Y.—Case A. Application filed November 29, 1875.
"word 'PAEDOTROPHINE.'"

3,247.—Food for Children.—CHARLES MAYNC, New York, N. Y.—Case B. Application filed November 29, 1875.
"words 'DEUTSCHES KINDERMEHL.'"

3,248.—Food for Children.—CHARLES MAYNC, New York, N. Y.—Case C. Application filed November 29, 1875.
"word 'INFANTMEAL.'"

3,249.—Lamp-Chimneys.—MOUNT WASHINGTON GLASS-WORKS, New Bedford, Mass. Application filed November 24, 1875.
"picture of a safe."

3,250.—Cigars, Cigarettes, Smoking and Chewing Tobacco.—JOHN A. POTTERS, New York, N. Y. Application filed November 16, 1875.
"words 'El Attila,' and the representation of the king of the Huns."

3,251.—Soap.—PROCTER & GAMBLE, Cincinnati, Ohio. Application filed December 10, 1875.
"words 'MOTTLED GERMAN.'"

3,252.—Stove-Polish.—CHARLES E. TEETS, New York, N. Y. Application filed December 6, 1875.
"word 'CENTENNIAL.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date December 14, 1875.]

427.—Title: **"Silver Shine—for Silver, Plated Ware," &c.**—JAMES A. BABCOCK, New York, N. Y. Application filed November 29, 1875.

428.—Title: **"White Rubber Cement."**—WILLIAM C. BYERS, Pittsburg, Pa. Application filed December 6, 1875.

429.—Title: **"H. G. Farrel's Celebrated Arabian Liniment."**—HIRAM G. FARRELL, Peoria, Ill. Application filed December 7, 1875.

430.—Title: **"Old Hermitage Bourbon Whiskey."**—W. A. GAINES & Co., Frankfort, Ky. Application filed December 4, 1875.

431.—Title: **"Old Hermitage Rye Whiskey."**—W. A. GAINES & Co., Frankfort, Ky. Application filed December 4, 1875.

432.—Title: **"Hamm's Pure German Mustard."**—HERBERT H. HAM, Boston, Mass. Application filed December 6, 1875.

433.—Title: **"Beware of Counterfeit Notes."**—HETSCH BROS., Newport, Ky. Application filed November 24, 1875.

434.—Title: **"Golden Medal."**—JULIUS JACOBSON, Boston, Mass. Application filed December 4, 1875.

435.—Title: **"Amusement, Novelty, and Variety.—The Seasons and Cassino."**—WILLIAM MCCONNELL, Philadelphia, Pa. Application filed November 27, 1875.

436.—Title: **"R. J. Owens, chemist, Carbolic Acid Family Salve."**—R. J. OWENS, Brooklyn, N. Y. Application filed December 9, 1875.

437.—Title: **"Russian Water-Proof Leather Preservative."**—CHARLES S. PIPER, Boston, Mass. Application filed December 7, 1875.

438.—Title: **"Tibbetts' Pile Ointment."**—LEWIS TIBBETTS, Augusta, Me. Application filed November 22, 1875.

439.—Title: **"Thomas' Specific Preparation, Nos. 1, 2, and 3, For the Hair."**—JOHN W. THOMAS, New Orleans, La. Application filed December 9, 1875.

440.—Title: **"Kriss Kringle."**—JOHN J. WILTSE, Ames, Iowa. Application filed November 13, 1875.

441.—Title: **"Dice Croquet."**—F. A. WRIGHT, Cincinnati, Ohio. Application filed October 25, 1875.

INDEX OF INVENTIONS PATENTED DECEMBER 14, 1875.

	Class No.	No. of Patent.
Acid, retort for concentrating sulphuric, J. Saunders	35	171,049
Alarm and indicator, combined burglar, J. Thorman	24	171,065
Animal power, W. P. Emmert	159	170,944
Antiseptic fluids, device for impregnating timber with, J. Huntington	35	171,135
Antiseptic fluids, device for impregnating timber with, J. Huntington	35	171,136
Auger, core, O. W. Townsend	29	171,194
Baker and roaster, W. Wachs	154	171,200
Bale tie and hoop lacer, L. I. Bodenhamer	7	170 932
Barrel, D. Wright	40	171,077
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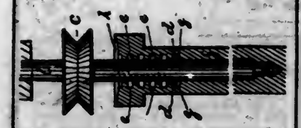
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED DECEMBER 14, 1875.

170,929. SPINDLES FOR SPINNING-MACHINES, John C. Arnold, Whitinsville, Mass. [Filed Aug. 30, 1875.]

Brief.—The spindle is provided with projections on opposite sides, which mesh with the interior screw-thread of the bolster and step combined, until the annular groove is reached, within which they move in an unvarying horizontal plane, when the spindle is revolved in one direction; but a reverse motion of the spindle will cause them to again traverse the screw-thread, raising the spindle out of the bolster.



In combination with the spindle *b*, provided with projections *d d*, the step and bolster combined, *f*, having screw-thread *e e*, and annular groove *g*, as and for the purpose set forth and described.

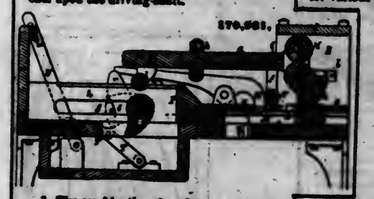
170,930. SAFETY REIN-HOLDS, L. Bailey, New Britain, Conn. [Filed Jan. 6, 1875.]



The combination of the ball *c*, weight *e*, and plate *d*, all substantially as shown and described.

170,931. HORSESHOE-MACHINES, Uriah Billings, Cambridgeport, Mass. [Filed Nov. 16, 1875.]

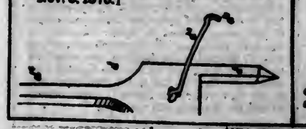
Brief.—The carrier of the former is partially retracted by means of the springs on the reciprocating jaws. The blank having been bent, the carrier carrying the creasers is brought forward and made to traverse it by a cam upon the driving-shaft.



1. The combination, for advancing the carrier F, of the former E, and partially retracting it, each consisting of the duplex cams *r r*, the projections *r' r'*, the two pairs of toggles T, and the slotted levers U U, all arranged and applied to the driving-shaft Q, and to the said carrier, substantially in manner as specified.

2. The combination for operating the creasers, each consisting in the vibratory center F, its shaft E, gears D D, and racks O O, the carrier G, and its retaining-cam *n*, all arranged and applied to the bending E and the driving-shaft Q, substantially in manner as set forth.

170,932. BALE-TIES AND HOOP-LACERS, I. I. Bodenheimer, Kernersville, N. C. [Filed Nov. 6, 1875.]



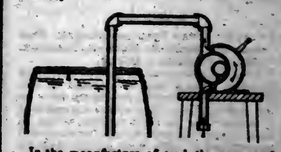
170,933. CORRUGATED IMPLEMENTS, Peter Broadbrooks, Batavia, N. Y. [Filed Dec. 18, 1874.]

Brief.—A number of different tools are united with a pocket-knife, in such manner that they not only perform their functions independently, but they can act in combination for various purposes.



As a new article of manufacture, the herein-described implement, composed of the parts substantially as shown and specified.

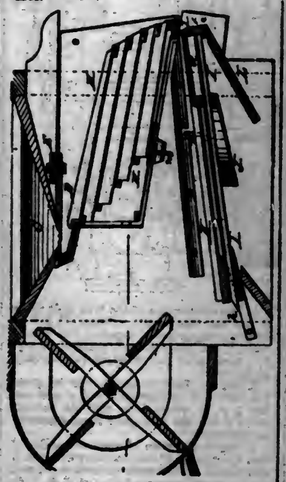
170,934. FIRING AND COOLING LARD IN CASES FOR TRANSPORTATION, Richard Bullymore, Buffalo, N. Y. [Filed July 24, 1875.]



In the manufacture of lard, the process of forcing a current of cold air through the liquid lard after it is filled into the barrel or cask for shipping or storing, whereby the lard is thoroughly agitated while cooling and congealing, thereby producing lard of fine and even grain, substantially as hereinbefore set forth.

170,935. GRAIN-SEPARATORS, Charles P. Butterfield, Garden City, Minn. [Filed Oct. 6, 1875.]

Brief.—Improved movement for a shaking-shoe.



1. The combination, with the frame I and its extension J K, of the support L, having its edges inclined as described, and the corrugated plates *e f*, substantially as and for the purposes herein set forth.

2. The frame I, and its extension J K and supports L, in combination with the conductor b, elevator B, spout p, and hopper C, all as and for the purposes herein specified.

170,936. SCREW-PROPELLERS, Horatio G. Cook and Reuben W. Barker, Portland, Me. [Filed Aug. 19, 1875.]



HELIOTYPE RELIEF PROCESS, JAMES R. OSGOOD & CO. BOSTON

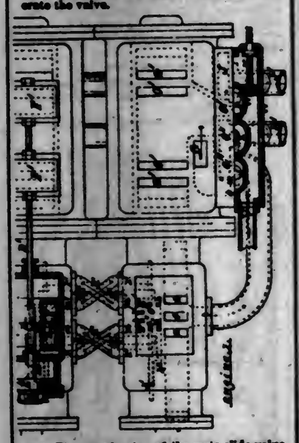
170,937.



In the propeller-wheel herein described, the combination of blades A A, attached to the shaft one after the other, each upon its individual socket, and each having at its outer end flanges $a' a'$, of uniform or nearly uniform width from end to end, projecting front and rear, substantially as and for the purposes set forth.

170,938. STEAM PUMPING-ENGINES. Hiro Cope and James R. Maxwell, Hamilton, Ohio. [Filed Oct. 2, 1874.]

Brief.—Both engines are compound, or both cylinders of each may be operated by live steam, by moving with a set-screw a valve on the large cylinder. The valves are operated by steam from the main cylinder acting on small pistons. The engines may act singly and independent of each other, or they may be made duplex by taking steam from each main cylinder, through crossed pipes, to the auxiliary cylinder of the opposite engine, to operate the valve.



1. The combination of the main slide-valve D and the master-valve cylinder F', cast or otherwise firmly united together, the master-valve F, and the ports and passages $c' g f f'$, constructed and arranged substantially as described.

2. The auxiliary piston F', with its stem, the ports and passages f, i, and i', and cylinder $f f'$, in combination with the master-valve F and the passages b b', substantially as described.

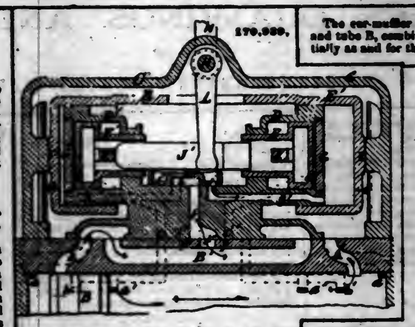
3. The combination of the master-valve f and its cylinder F', the auxiliary cylinder E and piston E', the main slide-valve D, and the ports and passages b, b', c, c', d, d', f, f', g, g', and h, substantially as described.

4. The combination of two cylinders of unequal areas with the steam-chest W, the valve W', cover X, ports and passages i, m, o'', o', o'', G, and f, and the pipes O, H', and g', whereby high or low pressure steam may be admitted to the larger cylinder, and its exhaust carried to the atmosphere, or to a condenser, substantially as described.

5. The combination of two steam-engines and their valves with the tubes T, three-way cocks B B', and passages a, c, c', c'', i, f, m, m', r, r', v, v', and o'', whereby the engines are convertible from independent acting to duplex, and vice versa, substantially as described.

170,939. STEAM-VALVES. Hiro Cope and Jas. R. Maxwell, Hamilton, Ohio. [Filed Sept. 17, 1875.]

Brief.—Steam from the main cylinder alternately enters back of the differential pistons. Said pistons operate the small valve which opens the exhaust from the main valve-pistons, allowing said valve and pistons to be moved by live steam, to admit steam to the main cylinder.



170,940.

The ear-muffler A, having the frames C C and tube B, combined and arranged substantially as and for the purpose set forth.



1. The tappet-pistons F F', constructed of two unequal areas, with a constant pressure of steam upon the smaller area, operated independently of each other, in combination with the cylinders D D' and the ports and passages a' a'' b b' c c' m m' n n' and the cavity o, arranged to operate together in the manner described.

2. The auxiliary cylinders E E', with their outer ends closed, and inner ends united by an overlapping joint, t, supported by the main slide-valve and cylinders D D', and held in place at the points l l' by lugs cast within the steam-chest, substantially as described.

3. The combination of the main slide-valve and cylinders D D', the auxiliary cylinders E E', the auxiliary slide-valve D'', the tappet-pistons F F', and the ports and passages a' a'', c c', g g', j j', f f' f'', and h h', arranged and operated substantially as described.

170,941. PROCESSES OF TREATING LEATHER TO MAKE IT WATER-REPELLENT. Emil F. Dieterichs, Philadelphia, Pa. [Filed May 11, 1875.]

Brief.—The leather is first treated to a compound of any fatty oil containing oleic, margaric, or other fatty acid, and what is termed alumina oil, then partially dried, when it is immersed in an alumina solution.

As an improvement in the art of waterproofing leather, the application of the compounds described, substantially as set forth.

170,942. RUBBER ARTICLES. Hiram P. Dunbar and Thos. G. Lothrop, Boston, Mass. [Filed Nov. 9, 1875.]



1. The improved process for the manufacture of rubber products, substantially as herein described—that is, the cutting, with a base or foundation of cheap material, a facing or series of strips or designs of finer material, susceptible of receiving colors and incorporated with the foundation, substantially as and for purposes stated.

2. The improved rubber product herein shown and explained, being a floor-cloth composed of a body of cheap material, with a series of parallel strips in colors or neutral tints composed of a finer quality of rubber compound, substantially as and for the purposes stated.

170,943. EAR-MUFFLERS. Butler Edgar, Bury, Pa. [Filed Oct. 26, 1875.]

Brief.—The frames are adjustable in the tube.

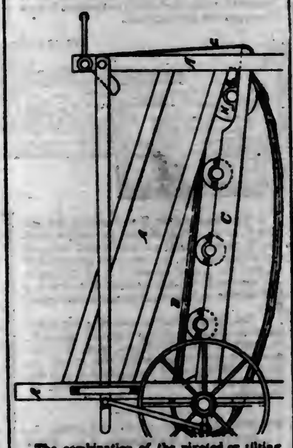


170,944. SEATER. Oliver Edwards, Florence, Mass. [Filed Sept. 4, 1875.]

1. In a spring-skate, formed at its front with an inclined riser, A', and spring-support B, constructed and arranged to transmit the weight of the skater in executing toe movements from the spring B in a direct line through the riser A', the runner A, made with a projecting point, A', and of a greater width or thickness between the points A' A' at the junction of the riser with the runner, as and for the purposes described.

2. The heel-plate E, constructed at its extreme rear edge or portion with slotted strock-up ears F, placed at an angle to the direction of the runner, and inclined downward and forward, as shown in Fig. 2, with a slight curve outward at their top edges, substantially as described, whereby the heel is relieved from pressure of the spur slotted ends of the ears, and the slots thereof are brought into a position parallel with the instep, in such a manner that the strap will, when in position, draw equally across its width upon the instep, and in an almost direct or straight line downward, yet rigidly from the back or heel of the skate, as described, and for the purposes specified.

170,945. ANIMAL-POWERS. W. P. Emmert, Freeport, Ill. [Filed June 14, 1875.]

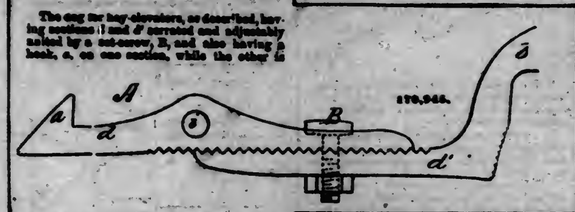


The combination of the pivoted or tilting web-frame C, the crank-shaft D, mounted in the frame A, and arranged above the frame C, the ratchet-wheel E, rigidly mounted on the said shaft, the counterweighted pawl or stop F, pivoted to the frame A, and arranged to engage the wheel E, and the flexible connections G G, attached to the said shaft and to the rear end of the frame C, substantially as and for the purposes specified.

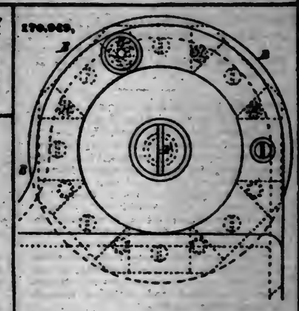
170,946. ADJUSTABLE LOCKS AND DOGS FOR HAT-BLOCKERS. Joseph B. Pitcheon, Centre Hall, Pa. [Filed May 6, 1875.]

Brief.—The catch-lever is formed of two pieces, adjustable as to length by interlocking serrated surfaces, a slot, and a clamp-screw.

The cog for hat-elevators, as described, having sections d and d' serrated and adjustably united by a set-screw, E, and also having a hook, a, on one section, while the other is



1. The combination of the endless sheets of fallers, their triangular tappets, the hollow beams on the tappets, in which the fallers are fixed, and the frame-guides, into which both the beams and tappets project, these members being constructed and operating substantially as set forth.



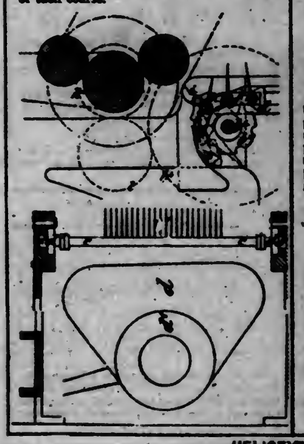
2. The combination of the two endless sheets of fallers, moving at different speeds, as set forth, and the rotating guides to control the inclination of the teeth of the first sheet at the moment of delivering the fiber to the second sheet, substantially as set forth.

3. The combination, with the frame, of the adjustable guides for the tappets and their beams, as set forth.

4. The triangular tappet d, constructed, as set forth, with rounded angles and a boss, d', for the purpose specified.

170,947. HEMP-HACKLING MACHINES. F. D. Frost, London, England. [Filed Mar. 4, 1875.]

Brief.—A hemp-heckling machine of that class in which the fiber, carried on an endless series of spurred fallers, is thence delivered to another endless series of spurred fallers moved faster than the first, revolving guides at the end of the first series facilitating the transfer, triangular tappets at the ends of the fallers, outside of their connecting-links, being controlled in their movement by guide-flanges above their bearings. Said flanges are inclined at their ends and horizontal the rest of their course.

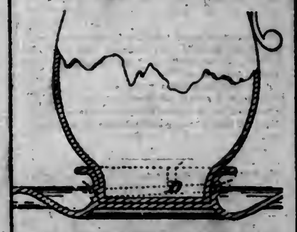


1. In a furnace for steam-boilers, the combination of a hollow arch-front and a hollow horizontal perforated air-flue, through which a portion of the air for the support of the combustion of the fuel passes, the air-spaces in the arch-front communicating with the ash-pit at their lower ends, and with the hollow horizontal flue at their upper ends, substantially in the manner and for the purpose set forth.

2. The combination of the hollow perforated arch-front A, the hollow perforated door, and the arch F, the parts being constructed and arranged with reference to each other, substantially as set forth.

3. The combination of the hollow perforated bridge-wall G, and the perforated flue F, the perforations in the wall being so arranged as to supply air to the gases after they have passed that point and those in the arch-flue, so as to supply air to the same while they are passing over the incandescent fuel upon the grates, substantially as shown and described.

170,948. COUPLING JOINT AND HANGING. Alcuin French, Philadelphia, Pa. [Filed Mar. 13, 1874.]



As a new article of manufacture, a combined jag or pitcher and metal cancer, secured together detachably, substantially as above described.

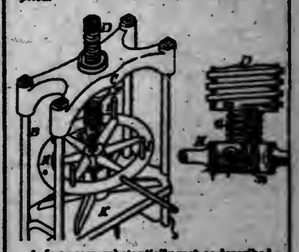
170,949. SCREW-CUTTING DIE HOLDERS. John J. Green, Hartford, Conn., assignor to the Pratt & Whitney Company, same place. [Filed Nov. 15, 1875.]

Brief.—The revolving and hollow cylinder is supported on trunnions, and the die-sockets are so placed that each shall be directly opposite another, in order that the rod that is being cut may pass unobstructed through the cylinder and out at the opposite side.

The revolving die-holder B, when provided with trunnions B B', which leave the center unobstructed, and an even number of openings, C, for holding the dies placed diametrically opposite each other on the barrel, substantially as and for the purpose herein described.

170,950. SCREW-PRESSES. A. Hathaway, Frostburg, Md. [Filed Sept. 28, 1875.]

Brief.—In rotating the hand-wheel to relieve the follower from pressure contact, the screws are caused to interlock, whereby the follower travels on the outer screw, having threads of course or "quick pitch." On removal of pressure contact, the screw-bolts unlock, and the pressure is administered by the screw-bolt having threads of fine or "slow pitch."



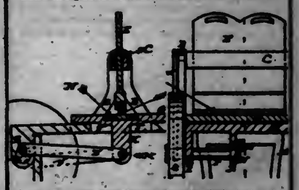
1. In a press, substantially such as described, the screw-bolts D G, combined to operate with the follower K, substantially as set forth and specified.

2. In a press, substantially such as described, the clutch a, arranged to operate in coupling the screw-bolts D G, substantially as specified.

3. In a press, substantially such as described, the follower K, provided with the socket E, in combination with the head S, wheel H, clutch a, and bolts D G, substantially as set forth and specified.

170,951. HAIR-HEARING MACHINES. Reuben Keogh, Brooklyn, E. D., N. Y. [Filed June 3, 1875.]

Brief.—A machine for arranging the root ends of hair. The hair is placed between the vibrating plate and bed, and as they rub against the heated surfaces of the latter, the hairs are pushed out head first on either side.



1. The combination of the elastic hair-bending rubber F described with the lower edge of the vibrating plate B, as and for the purposes set forth.

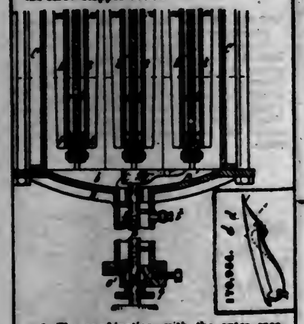
2. The combination of the vibrating bed G, having an elastic face, H, with the table-board of the frame A, shank K, connecting-rod I, crank H, and shaft F, substantially as described.

3. The combination of the vibratory plate B with the vibrating rubber bed G, said bed having a simultaneous and opposite vibratory mo-

tion to that of the lower end of the vibratory plate C by means of the crank H and T on the shaft F, arranged to operate in the manner and for the purposes substantially as described.

170,865. FRAMES FOR LOOMS HOLDING SOLID IMPLEMENTS. Elias S. Ruebhausen, Baltimore, Md. (Filed Nov. 12, 1874.)

Brief.—Partitions of wood or iron have vertical grooves, ending in horizontal grooves, for passage of filtered liquor. Partitions, clamped together by end plates and side bolts, may slide into grooves formed in side plates. Partitions covered with wire-cloth or perforated plate, a finer-meshed covering of the same material, and an outer filter-cloth, and outside of all a coarser perforated plate or wire-cloth. Scrapers work against outer wire-cloth. Matter scraped falls into depressed bottom, thence falls into the well, is then cast by pins on revolving shaft, and delivered through the center-stopped outlet.



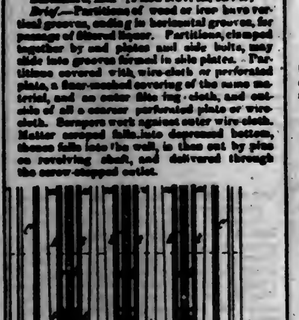
1. The combination, with the outer case, filtering-partitions, and scrapers *m*, of the bottom plate B, constructed with a depression, A, forming a receptacle for the solid matter detached from the filtering-partitions by the scrapers, substantially as hereinbefore set forth.

2. The combination, with the outer case and filtering-partitions, of a head provided with depressions *i* and scraper *j*, substantially as and for the purpose hereinbefore set forth.

3. The combination, with the bottom plate B and reservoir *a*, of the shaft *p*, scraper *p'*, and agitating-arms *p''*, substantially as and for the purpose hereinbefore set forth.

170,866. MEANS OF STRAPPING PACKAGES WITH WIRE. Rhinehart O. Hymes, New Orleans, La. (Filed Apr. 20, 1875.)

Brief.—For the purpose of preventing the breaking open of boxes and packages in transportation, a strap of metal wire of suitable size is coiled to surround the box or package in such manner that the ends lap, and each end terminates in a loop, which is secured to the box or package by any suitable fastening. The strap can be tightened by forming bends, curves, or loops in the same by means of an iron bar provided with a short bifurcated arm bent at a right angle at one end.





1. The metal wire strapping or bonging for boxes, barrels, cases, caddies, and other merchandise-packages, formed and applied substantially as described.

2. The means of tightening the strap after it is applied by means of loops, bends, or curves formed in the wire, in the manner substantially as set forth.

3. The wrench A, constructed in the manner and for the purpose described.

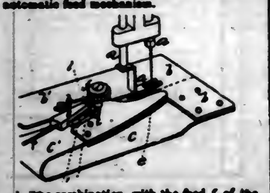
4. Wire strap F on the ends of the package, in combination with the straps surrounding the package, in the manner and form described, for the purpose of preventing the top and bottom of the package from separating.

170,864. FOUNTAIN-PENS. John Johnston, Boston, Mass. (Filed July 14, 1875.)

The improved fountain-pen described, consisting of the spring B, integral with the body A, in combination with the fountain C, provided with the integral journals *d d*, substantially as for the purpose set forth.

170,868. MACHINES FOR OUTTING AND BLACKING THE WELTS IN BOOTS AND SHOES. Thos. K. Keith, Haverhill, Mass. (Filed June 4, 1875.)

Brief.—A leather-sewing machine is provided with seam-welt trimming and blacking devices, which are made available by an automatic feed mechanism.



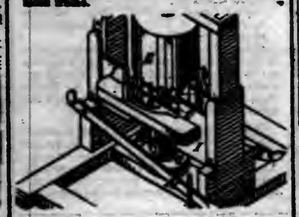
1. The combination, with the feed *f*, of the lever *g* and spring-pinch *d d*, substantially as and for the purpose described.

2. The combination of the blacking apparatus *a*, having the opening *a* open its under side, with the bar I, provided with openings *n* and *m*, substantially as and for the purpose herein specified.

3. The combination of the device *l*, *n*, *o*, with the spring *k*, substantially as and for the purpose hereinbefore set forth.

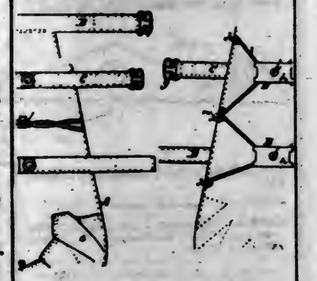
170,869. MACHINES FOR SAWING PELLETS. Thos. M. Kennedy and Eugene L. Willard, Keene, N. H. (Filed Sept. 20, 1875.)

Brief.—Two billets or staves can be cut at the same time by means of a drum-saw, vertically journaled, with the teeth downward in a suitable frame, and secured by the head which carries the main pulley on a shaft standing in a water-way in the lower part of the frame-work, in connection with two independently and vertically adjustable carriages, operated by hand-levers, the inner ends of which are pivoted to the standards of the main frame.



The saw E, mounted on the vertical shaft C, and the vertically-adjustable carriage I, provided with the bed K, guards *o n* and lever N, combined and arranged to operate substantially as set forth and specified.

170,867. GLOVE-PADDLES FOR SWEEPING. Edward G. Kinsley, Stoughton, Mass., assignor to himself and Luther Belcher, Jr., same place. (Filed June 18, 1875.)



1. A flexible glove-paddle, A, provided with the finger-pockets *a b c d e*, and one or more spiders, E, substantially as described, arranged as specified.

2. A flexible paddle provided with finger-pockets *a b c d e*, confining-straps B C D, arm-band *a*, and one or more spiders, E, all being as and arranged substantially as specified.

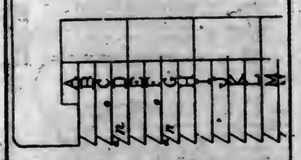
170,870. FIRE-ESCAPES. John R. Lefferts, New York, N. Y. (Filed July 2, 1875.)



1. The combination of two metallic flexible fire-link ladder G with revolving apron or band D and the winding-crank H, substantially as and for the purposes described.

2. The combination of a fire-ladder and hand with the rail and snap-hook, substantially as for the purposes described.

170,871. GAGES FOR CUTTING INDEX-TABS. Melvin H. Lovell, Erie, Pa. (Filed June 12, 1875.)



The device for cutting index-tabs, consisting of a sheet of thin metal notched at the edge, and having a slit extending inward from each notch, substantially as shown and described.

170,860. STEP-LADDERS. Melvin H. Lovell, Erie, Pa. (Filed Jan. 23, 1875.)

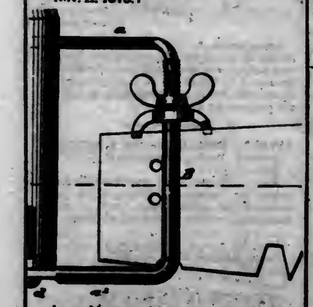
Brief.—The steps are notched, so as to fit over the two-part stile, and are secured in position by bolts, which pass through the ends of the steps and through the stiles. Cross-pieces are secured to the top portion of the ladder, and extend beyond the sides, between which the props are stowed, and by which the props are braced when the ladder is in use.



1. The steps D, in combination with the rivets R and stiles B B, substantially as shown, and for the purposes mentioned.

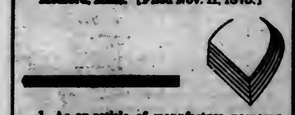
2. The combination of the cross-pieces M and P, having extensions *e* and *f*, with the brace C, for the purposes mentioned.

170,861. CROSSCUT-SAW HANDLES. Wm. Millspaugh, Middletown, N. Y. (Filed Nov. 11, 1875.)



In combination with a saw-handle, the slotted ball S, said ball being constructed with portions *a* and *a'*, connecting with the handle, and with suitable fastening device, whereby an open space is left between the end of the saw and handle, substantially as shown and described.

170,862. PREPARED LEATHER. O. Nichols, Medford, Mass. (Filed Nov. 11, 1875.)



1. As an article of manufacture, prepared leather composed of pieces or splits of real leather or fibrous material, with an intermediate filling of torn or shredded leather, and an alkaline-resin paste, substantially as described.

2. The process of manufacturing prepared leather, consisting in mixing, with torn or shredded leather or shavings, an alkaline-resin paste, then the application of such mixed leather and paste between layers of leather or cloth, and rubbing, drying, and compressing the same into a uniform layer, substantially as described.

170,863. QUADRUPLEX TELEGRAPH. Jos. Olmsted, Providence, R. I. (Filed Nov. 2, 1875.)

1. The combination, substantially as described, with four keys, four sounders, a line-wire, suitable main and local batteries, and suitable intermediate conductors, of means for separately directing the battery-forces to the line-wire in three separate and unequal powers; means, substantially as described, for

2. The combination, with a sounder and its local battery, of two relay-magnets, with armatures variously weighted and arranged to operate wholly neutralizing and none; and of means, substantially as described, for placing each sounder into communication with its key, whereby, with unchanged relations between the poles of the main batteries and the line-wire, messages or signals may be transmitted from two of the keys at the same time, over the same wire and in the same direction, while signals are being received from both of the other keys, as set forth.

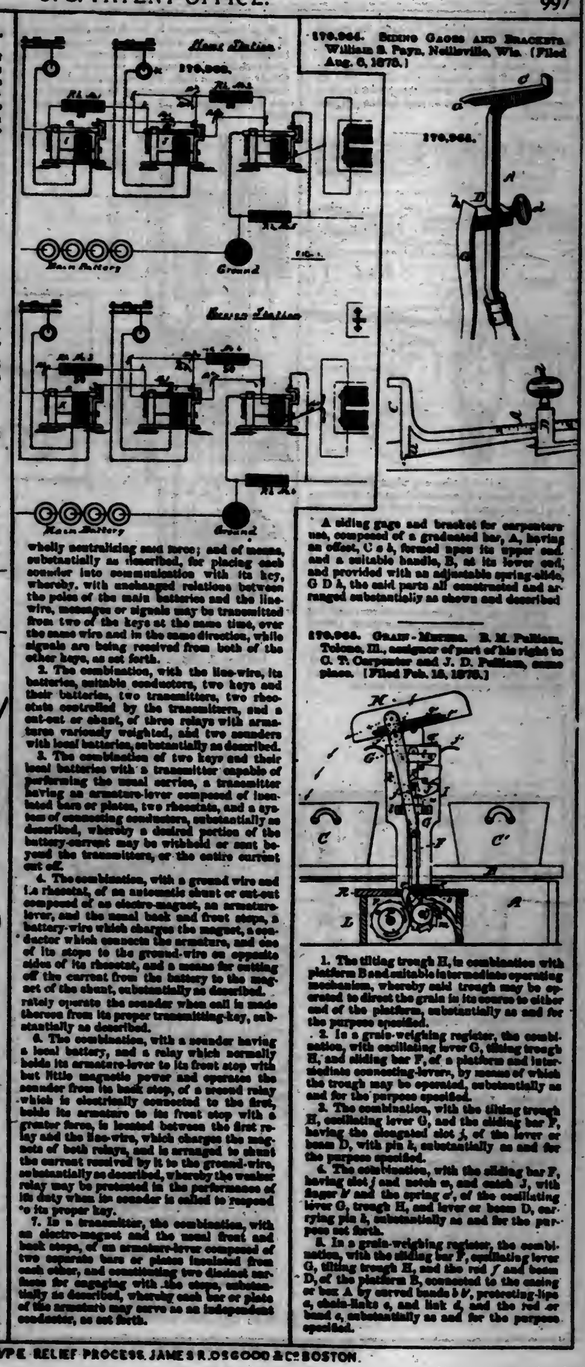
2. The combination, with the line-wire, its batteries, suitable conductors, two keys and their batteries, two transmitters, two rheostats controlled by the transmitters, and a cut-out or shunt, of three relays with armatures variously weighted, and two sounders with local batteries, substantially as described.

3. The combination of two keys and their local batteries with a transmitter capable of performing the usual service, a transmitter having an armature-lever composed of insulated bars or pieces, two rheostats, and a system of connecting conductors, substantially as described, whereby a desired portion of the battery-current may be withheld or sent beyond the transmitters, or the entire current cut off.

4. The combination, with a ground-wire and 1/4 rheostat, of an automatic shunt or cut-out composed of an electro-magnet, an armature-lever, and the usual back and front stops, a battery-wire which charges the magnet, a conductor which connects the armature, and one of its stops to the ground-wire on opposite sides of its rheostat, and a means for cutting off the current from the battery to the magnet of the shunt, substantially as described.

5. The combination, with a sounder having a local battery, and a relay which normally holds its armature-lever to its front stop with but little magnetic power and operates the sounder from its back stop, of a second relay which is electrically connected to the first, holds its armature to its front stop with a greater force, is located between the first relay and the line-wire, which charges the magnets of both relays, and is arranged to shunt the current received by it to the ground-wire, substantially as described, whereby the vanishing relay may be presented in the performance of its duty when its sounder is called to respond to its proper key.

7. In a transmitter, the combination, with an electro-magnet and the usual front and back stops, of an armature-lever composed of two separate bars or plates insulated from each other, and constituting two distinct surfaces for engaging with the stops, substantially as described, whereby each bar or plate of the armature may serve as an independent conductor, as set forth.



170,864. SEWING GAGES AND BRACKETS. William S. Payn, Neillsville, Wis. (Filed Aug. 6, 1875.)

A sliding gage and bracket for carpenters' use, composed of a graduated bar, A, having an offset, C a b, formed upon its upper end, and a suitable handle, B, at its lower end, and provided with an adjustable spring-slide, G D h, the said parts all constructed and arranged substantially as shown and described.

170,866. GRAIN-METERS. B. M. Pullman, Toledo, Ill., assignor of part of his right to G. T. Carpenter and J. D. Pullman, same place. (Filed Feb. 16, 1876.)

1. The tilting trough H, in combination with platform B and suitable intermediate operating mechanism, whereby said trough may be operated to direct the grain in its course to either end of the platform, substantially as and for the purpose specified.

2. In a grain-weighing register, the combination, with oscillating lever G, tilting trough H, and sliding bar F, of a platform and intermediate connecting-levers, by means of which the trough may be operated, substantially as and for the purpose specified.

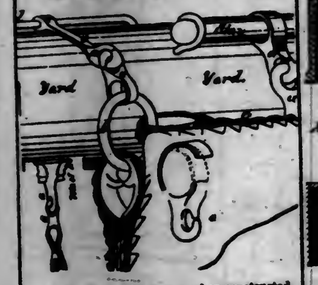
3. The combination, with the tilting trough H, oscillating lever G, and the sliding bar F, having the elongated slot *f*, of the lever or beam D, with pin *k*, substantially as and for the purpose specified.

4. The combination, with the sliding bar F, having slot *f* and notch *n*, and catch J, with finger *b'* and the spring *c'*, of the oscillating lever G, trough H, and lever or beam D, carrying pin *k*, substantially as and for the purpose set forth.

5. In a grain-weighing register, the combination, with the sliding bar F, oscillating lever G, tilting trough H, and the rod *f* and beam D, of the platform B, connected to the same at box A by curved hands *b b'*, protecting-lips *a*, chain-links *c*, and bar *d*, and the rod or band *e*, substantially as and for the purpose specified.

5. In a grain-weighing register, the combination, with a platform, intermediate operating-levers, and the sliding bar F and latchet r, of the registering mechanism, consisting substantially of the notched cylinders M N O, pin s, and drum P, with cross-bars p and finger q, constructed to operate as and for the purpose set forth.

170,966. SAIL-STRINGING HOOKS. Edwin D. Rankin, Cambridge, Mass., assignor to himself and John J. Hillman, same place. [Filed Oct. 7, 1875.]

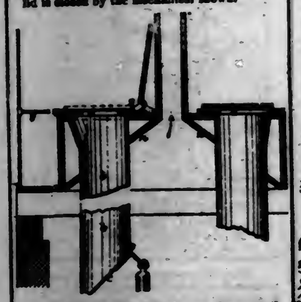


1. The pair of hooks a c, when constructed with the reversed points and means of attaching them to the rails, stays, and other parts requiring to be connected or hooked together by them, substantially as described.

2. The combined hook and grommet, constructed substantially as shown in Figs. 2 and 3.

170,967. PIPE-VISE. Gustav Schumacher, New York, N. Y., assignor of one-half his right to R. D'Hervenne, same place. [Filed June 26, 1875.]

Brief.—The course of the ventilation is upward from the vault and out of the air-chimney. When the closet-door is opened the seat-lid is closed by the mechanism shown.



1. The combination of the tube h, provided at bottom with valve c, the sink A, spout n, and air-chimney f, substantially as and for the purpose set forth.

2. The combination of the hinged lid i, rod g, and door k, substantially as and for the purpose set forth.

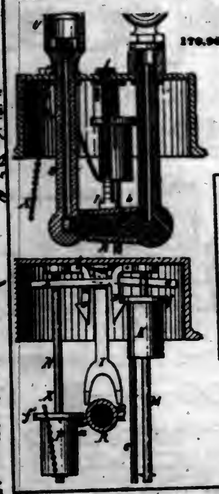
170,968. STEAM AND VACUUM PUMPS. L. D. B. Shaw, Boston, Mass. [Filed May 26, 1876.]

Brief.—When the cone is filled with water, a float trips a catch and releases a weight, which, in falling, strikes an arm attached to a rotary valve, and allows steam to enter and expel the water from the cone.

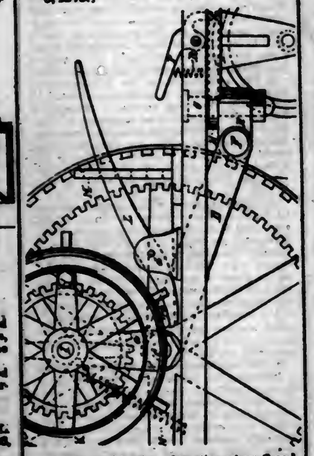
1. The combination of the steam-inlet pipe T, pressure-cylinder pipe S, cone C, and jacket R, provided with the openings b c, all constructed and operating substantially as specified.

2. The jacket R, provided with the lugs d d, in combination with the float W, chain X, pulley J, weights P K, hooks L O, and step I, all constructed and operating substantially as described.

3. A vacuum-pump in which the admission of steam and the relief of pressure are controlled by valve-mechanism operated by the alternate fall of two weights, which are alternately raised to their highest position by the rise and fall of a float resting on the water in the pump-cylinder, all substantially as set forth.



170,969. HAND-MOTIONS FOR STREET-CARS. Robert Steel and Samuel Austin, Philadelphia, Pa., assignors of one-third their right to Chas. J. Miller, same place. [Filed Nov. 6, 1875.]



1. The combination of traction-wheel S and pinions J J with the swinging frame D, substantially in the manner and for the purpose set forth.

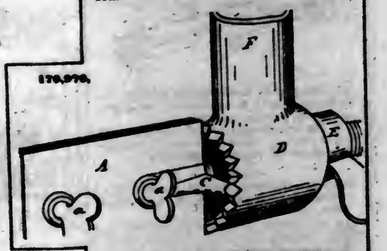
2. The combination of the levers L L with the swinging frame D and racks M M, for raising the wheel S above the road-bed and holding it in its elevated position, substantially as set forth.

3. The combination of the swinging frame D, swivel H, lever P, and spring R, whereby to give an oblique position to the traction-wheel S, substantially as set forth.

4. The combination of the steel bars S with the traction-wheel S, to prevent its slipping on lay road-beds, substantially as set forth.

170,970. CROSS-CUT-SAW HANDLES. Chas. M. Tanner, Defiance, Ohio. [Filed Nov. 1, 1875.]

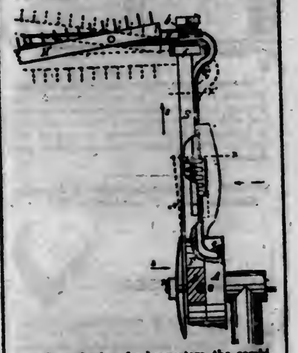
Brief.—The saw is attached to the handle by means of two metal plates, one of which is extended to form the shank, and recessed to receive the portion on the other plate, and teeth of which are provided with lugs, in connection with a sleeve-socket having its inner edge serrated. The handle is secured in position by turning a nut upon the outer end of the shank, which causes the lugs to engage with the serrations on the sleeve-socket, and can be adjusted to any desired angle by loosening the nut. The plates are attached to the saw-plate by thumb-screws passing through both.



The plates A A, one having a full-length shank, B, partly cut away to receive the portion on the other plate, and each plate having the ears C C, the sleeve D, having the socket F, and the nut E, all constructed as and for the purpose set forth.

170,971. RAKE-HEADS FOR HARVESTERS. Royal G. Taylor, Brockport, N. Y. [Filed Mar. 22, 1876.]

Brief.—Overhung rod provided with mechanism for causing its finger, which carry swivelled and pivoted rake-heads, to act as rakes, and serves a continental platform.



1. In rod-rakes for harvesters, the combination of the sweep-rake head H and sliding rod c, formed with arm e, with the fixed contract L, constructed and arranged to operate substantially as and for the purposes set forth.

2. In combination with the rotatably-adjustable rod c the revolving or reversible head H, rack r, and pinion b, substantially as and for the purposes set forth.

3. The pivoted head H', carried upon the primary reversible head H, which has its axis upon the horizontal arm of the rod c, as shown and described, for the purpose of permitting the former to adjust itself to the position of the platform when required to act as a rake, and to be inverted when only required to rod.

4. In combination with the sweep-rake head H and pinion b the fixed locking-teeth e upon the shank d, which is attached to the arc B for the purpose of preventing the rake-head from revolving upon its axial shaft when the pinion is carried out of gear with the governing-rack r, as when in the act of discharging a gavel.

6. In combination with the sweep-rake head H, rod c, and cam-track L, the retaining spring F, arranged to operate substantially in the manner and for the purposes set forth.

7. The spring-tension-regulating cap E, in combination with the springs F and rods c, as and for the purposes set forth.

8. The segmental head-lever M, in combination with the semi-cylindrical rack J upon the radially adjustable and rocking rod c, for the purposes set forth.

170,972. HATCHETS. John A. Thayer, Cambridgeport, Mass. [Filed May 11, 1876.]

Brief.—The improvement consists of a hatchet-blade, hammer-head, curved claw for extracting nails, and box-scraper formed in one solid piece of metal, and provided with a tubular socket to receive a suitable handle.



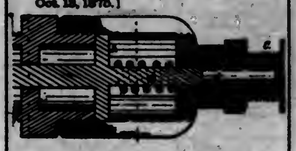
As my invention the implement, as described and represented.

170,973. SPRINGS. Erastus H. Tyler, Medway, Mass. [Filed Aug. 26, 1876.]



As a new article of manufacture, the cruciate spring A, having the body B, provided with the fibrous covering D, secured to the same by means of the cement coating C, the fibrous covering being outwardly varnished with a water-proof varnish, all substantially as set forth and specified.

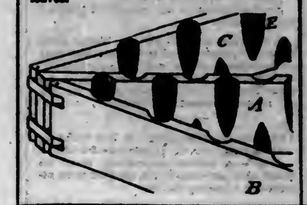
170,974. RELIEF-VALVES FOR CYLINDERS. William Westwater, Pittsburg, Pa. [Filed Oct. 19, 1875.]



In a safety-valve for steam-cylinders, the combination, with the spring-pressed valve D, having stems c e, of the valve-seat provided with guides, the longitudinally-slotted cap E, hollow screw C, and jam-nut f, all arranged to operate substantially as set forth.

170,975. SUPPORTS-MOLDS. Albert S. Wetmore, Cleveland, Ohio, assignor to J. B. Lowy, same place. [Filed Nov. 24, 1875.]

Brief.—The mold is conveniently arranged, with a central third hinged part. The central part has half-conical openings on each of its sides, to register with the same in the outer leaves.



The suppository-mold herein described, consisting of the leaves A B C, each having the half-cavities E E cut in their faces, and hinged together as shown, and for the purpose set forth.

170,976. CORE-POPPERS. C. F. Wiskirpe, Cortland, N. Y. [Filed Nov. 6, 1876.]



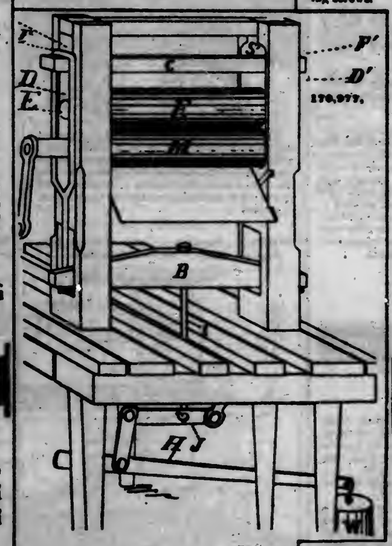
1. A core-popper having a body, A, of wire-cloth molded and bent to form at the lower edge a continuous fold or rim, c, as and for the purpose set forth.

2. The combination, with the body A and its rim c, of sheet-metal strips b, folded and clamped upon the rim c, as set forth.

3. The strap C, bent at the lower end, provided with a tongue or tongues, d, and combined with and applied to the body A, substantially as specified.

4. The combination of the plate C, bent to form a loop, e, a wooden handle slotted to receive the tang, and enlarged at its inner end, and a ferrule, g, as and for the purpose set forth.

170,977. WHEELBARROWS. Joseph A. Wilson, Chester, Vt. [Filed Feb. 26, 1876.]



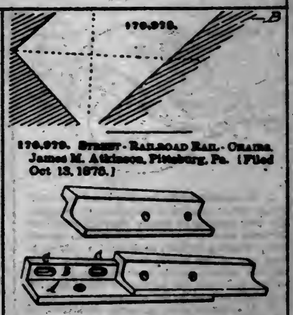
The combination of the rollers E H with the blocks D D', the cross-bar C, the rods F F', the cross-piece B, the rod I, the levers H J, and the weight W, all constructed and operating substantially as and for the purpose described.

170,978. OIL-WARMERS. Alphonse Allain, Paris, and Alfred R. Dejean, Alais, France. [Filed Feb. 26, 1876.]

Brief.—The cavity consists of a parallelogram, having at its base a triangle, whose sides have an angle of forty to fifty degrees with its base—*i. e.*, a mean of forty-five degrees.

The segmental and stationary table B, having in each segment one or more grooves, C, of angles, as specified, and reversed toward the fore part of the table, as and for the purpose described.

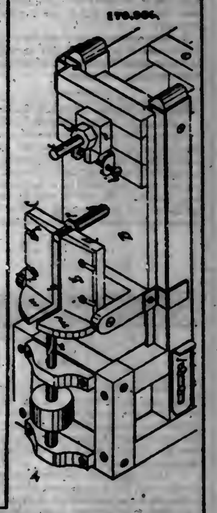
170,979. STREET-RAILROAD RAIL-CHAIRS. James M. Atkinson, Pittsburg, Pa. [Filed Oct 13, 1876.]



The shoe S, consisting of base-plate A and flange or side plate B, raised from the edge of said base, and provided with oblong longitudinal slots O, substantially as and for the purpose specified.

170,980. BORING-MACHINES. George W. Badger, Malden, Mass., assignor to Geo. P. Coe, same place. [Filed Oct. 20, 1876.]

Brief.—The machine is intended for boring the holes in boot-trees to receive the spreading screws.



1. The sliding carriage B, with its pivoted holder C, adjustable stop p, adjustable plates f f, and stop m, in combination with a cord-lug-bit and a stop or gage for regulating the forward movement of the carriage, operating substantially in the manner and for the purpose set forth.

2. The adjustable plates f f and stop m, in combination with the holder C, substantially as and for the purpose described.

3. In combination with the sliding carriage B, an adjustable stop or gage, and a projection for regulating its forward movement, and a boring-bit, two laterally-movable post or holders r', arranged in a plane at right angles to that of the boring-bit, substantially as and for the purpose set forth.

170,981. WOOD-BENDING MACHINERY. G. B. Bailey, Boston, assignor to E. A. Gillett, Boston, Mass., and O. S. Gillett, Buffalo, N. Y. [Filed Aug. 24, 1876.]

Brief.—Double or open curves are made in timber by means of two formers. The piece is then leached and taken out to dry or "set."

170,881.



1. In machinery for bending wood into double or reverse curves, or other irregular shapes, the two moving or rotary shaping-blocks or formers, arranged as herein described, so that their shaping-surfaces shall form a continuation one of the other, in combination with flexible straps, one for each former, between which the wood to be bent is confined, substantially as and for the purposes set forth.

2. The combination, as herein described, of the following elements, namely: two moving or rotary curved shaping-blocks, abutting end to end, and arranged so that their shaping-surfaces shall form a continuation one of the other; flexible binding-straps, one for each former, and clamping devices, which confine the straps and the fastened wood about the formers when the wood is bent, and combination being for operation as set forth.

3. In combination with the abutments I, the forming-blocks attached thereto by a dovetailed connection, substantially as and for the purposes set forth.

4. In combination with the former d, provided with the forward nose l, the hook f and key n, whereby the outer end of the wood and the flexible strap are confined to said former.

5. The combination of the forming or shaping blocks d, carried by the carriage B, with the abutments I and stops s, substantially as and for purposes stated.

170,882. VENTS. Edward B. Bohlers, St. Louis, Mo. [Filed Nov. 6, 1875.]

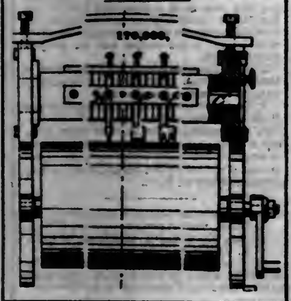
Brief.—The device consists of a rubber tube operated by an interior spiral spring; and said tube is fitted by a perforated knob into a receiving-tube, the latter having communication with the barrel by a downward-extending channel. The cliff in the rubber tube supplies air on the opening of the thumb, but closes tight when the thumb is closed.



1. The combination of a receiving-tube, being open at one end, and having a bottom vent-tube, with a rubber tube fitted by a spiral supporting-spring, and a perforated knob into the receiving-tube, and provided with a bottom slit, substantially in the manner and for the purposes set forth.

2. The detachable rubber tube or plug of a barrel-vent, being supported by a spiral spring attached to a perforated closing knob, and provided with a short longitudinal slit, substantially as specified.

170,883.



170,884. LEATHER-DRESSING MACHINE. Bert M. T. Blank, Jersey City Heights, N. J., assignor to Morris Rubens, New York city. [Filed Nov. 6, 1875.]

1. In a machine for creasing and polishing leather, the combination of a receiving feed-roller with a series of adjustable creasing and polishing dies, secured to a hollow heating tube or case, substantially in the manner and for the purposes set forth.

2. The combination of the heating tube or case, provided with front grooves, with suitable dies secured and adjusted by set and gage screws, substantially in the manner as set forth.

3. The combination of the heating tube or case, terminal-in sliding and spring-cushioned bearings, with a locking device, for holding the tube or case in fixed position while in operation, and adapted to swing in an inclined position for removing or inserting the dies, all substantially as and for the purpose set forth.

170,885. SCREW DIE-PRESSES. H. Blundell, Providence, R. I. [Filed Nov. 6, 1875.]

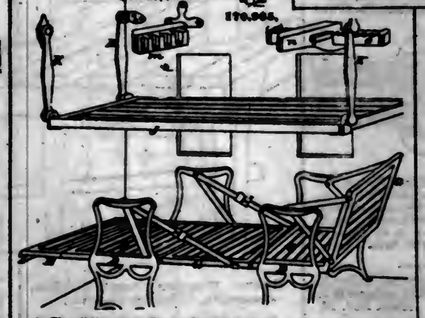
Brief.—A fine left-hand thread, to carry an adjustable stop, is cut on the ordinary large or coarse right-hand thread on the spindle of the ordinary fly-press or screw die-press.



The combination of the spindle *a*, provided with a right-handed screw of the usual pitch, and a left-handed screw of less pitch cut on the thread of the same at its upper part, with the stop *b* and clamp-screw *c*, arranged and operating substantially as and for the purpose described

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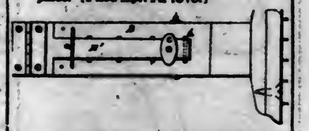
170,886. SLEEPING CARS. Joseph Bolt, Benicia, Cal. [Filed Oct. 4, 1875.]



1. The sliding seats B and C with their extensions B, in combination with the backs G, as supported as to lie between the seats and form a continuous bed-bottom, substantially as and for the purposes described.

2. The attachments, consisting of the stationary rest n and the adjustable rest n, for the purpose of supporting guns, substantially as described.

170,887. CARPET-STRETCHERS. Samuel S. Calhoon and John Kinnear, Millersburg, Ohio, assignors to Saml. S. Calhoon, same place. [Filed Apr. 14, 1875.]



The combination of the cross-pieces J J and their extension-slides H H', supporting bars b b, and buttons c c, with the frames A B, substantially as and for the purpose set forth.

170,888. SAFETY-LOCKS FOR FIRE-ARMS. F. Chillingworth, Providence, R. I. [Filed Nov. 24, 1875.]



1. In connection with a gun-trigger, a safety-bolt, E, substantially as and for the purposes described.

2. In a trigger-guard, the notch G, substantially as and for the purposes described.

170,889.



1. In combination with the ice-box S and steam chest F, the blower H and conduit J, substantially as and for the purpose set forth.

2. The receiver A, shelf B, and chute C, in combination with the conduit J, box S, and blower H, substantially as and for the purpose described.

170,890. AUTOMATIC FANS. Augustus F. Goodman, Brooklyn, N. Y., assignor of one-half his right to Jose Fernandez, same place. [Filed June 1, 1875.]

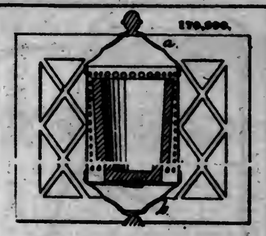
Brief.—Relates to the method of securing the fan-blades.

A fan-wheel consisting of the blades B, B, B', and B'', each curved so that its two edges are in different planes, and the under blade B' having the slot b to receive the edge of the upper blade B'', substantially in the manner and for the purposes described.

170,891. EVAPORATORS. G. F. J. Colburn, Washington, D. C. [Filed Nov. 24, 1875.]

Brief.—A pumice evaporating vessel inclosed by a perforated case, adapted to be attached to a heating device.

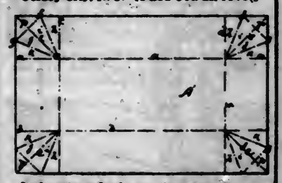
170,892.



1. The combination of a porous evaporator with a perforated exterior holding case or receptacle, substantially as and for the purpose set forth.

2. The perforated cylindrical case having inclosed ornamental ends *a b* and longitudinal opening or slot *c*, attached to the face of a hot-air register, for holding a porous vessel, substantially as set forth.

170,893. PAPER BOXES. S. B. Conover, Jersey City, N. J. [Filed Oct. 21, 1875.]

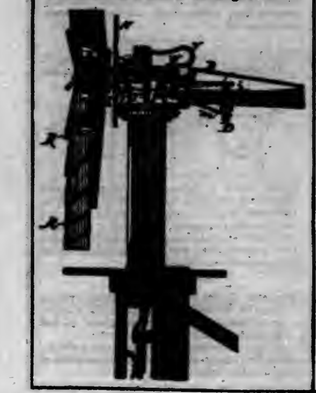


1. A rectangular box made with quadruple folds *h i j k* in the corner, substantially as herein shown and described.

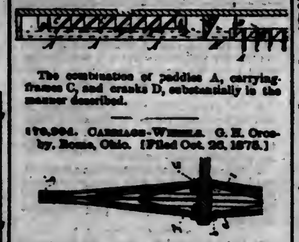
2. A rectangular box made with quadruple folds *h i j k* in the corner, and with the triangular look *p* folded over each corner, substantially as specified.

170,894. WHEELBARROW. Wilbur F. Corvallius, Muncie, Ind., assignor of one-half his right to P. F. Davis, same place. [Filed Sept. 20, 1875.]

Brief.—The main vase is fastened in a frame made of a single piece of timber, curved lengthwise each way nearly to the end, so that it makes four prongs. Two of the prongs are spread apart for the outside rim, and the other two are spread out to make the center-brace for the vase. The vase is pivoted on the cap, and held in position by means of a spring. Immediately back of the wheel is a sternvase, held forward by means of a spring. When the wind blows hard the vane is thrown back, turning the shaft, so that the wheel will mesh with a corresponding wheel on the back of the wind-wheel, causing the rotation of the shaft. When the two vanes are brought together a catch pivoted on the main vane will engage with a ratchet and hold the vane there, thus also holding the mill out of gear.



170,895. WIND-MILLS. Robert W. Davis, Flushing, N. Y., assignor to the Davis Metallic-Wheel-Manufacturing Company, New York city. [Filed Apr. 20, 1875.]



The combination of peddles A, carrying-frames C, and cranks D, substantially in the manner described.

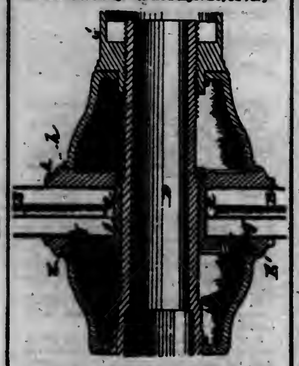
170,896. CARRIAGE-WHEELS. G. H. Crosby, Bonne, Ohio. [Filed Oct. 26, 1875.]

The herein-described wheel, consisting of the felly A, made of T-iron spokes D, having an eye in each end, whereby they are secured to the hub and felly by means of rivets, hub F, having flanges a, collars G, and bolts or rivets b', with or without the straps H'', substantially as described, and for the purpose set forth.

170,897. LAMP-WICKS. Aaron M. Daniels, Hartford, Conn. [Filed Oct. 20, 1875.]

A lamp-wick composed of a central part, consisting chiefly of cotton or vegetable fiber, with a covering of wool or animal hair felted onto it, substantially as herein specified.

170,898. WIND-MILLS. Robert W. Davis, Flushing, N. Y., assignor to the Davis Metallic-Wheel-Manufacturing Company, New York city. [Filed Apr. 20, 1875.]

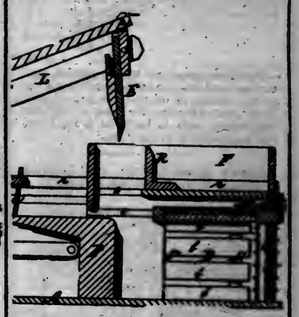


1. The combination of an axle-box, D, the bushing C applied thereto, the snake-receiving or center-piece portion *a*, carrying an enlarged opening, 4, in one of its sides, and a ring, H, adapted to said opening, for holding the spokes in place, substantially as described.

2. The combination of the metallic shells F, the center-piece A, having an enlarged opening, 4, the ring H, spokes E, having notches *g*, and the screw-cap G, all substantially as and for the purpose described.

170,899. BALING-PRESSES. P. K. Dederick, Albany, N. Y. [Filed Apr. 6, 1875.]

Brief.—Devices for feeding and heating the material into the press-box are used to increase the rapidity of feed and double up the material. The size of the opposite end of the press-box is regulated by adjustable plate and a roller.



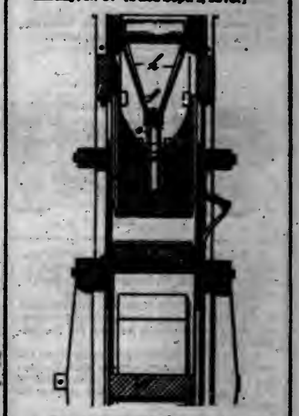
1. In a baling-press, the combination of the heater or feeder E with the lever L and rod *d*, for the purposes herein set forth.

2. The combination of the feed-box F and rake E with the counterweak rod *r*, extending throughout the entire length of the box, and projecting beyond both ends thereof, substantially as described, for the purposes specified.

3. In a press having its front end open, the side plate *b b*, secured in adjustable standards *p p*, substantially as and for the purpose described.

4. In a press having its front end open, the roller C, combined with an adjusting-brake, substantially as and for the purpose described.

170,900. BALING-PRESSES. P. K. Dederick, Albany, N. Y. [Filed Sept. 1, 1875.]



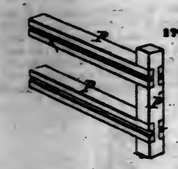
1. In a press having the bale-chamber smaller than the press-box, beveling the mouth of the bale-chamber, substantially as described.

2. The toggle-joint *e f*, in combination with the crank *l* and piston E, substantially as and for the purpose set forth.

3. The crank *l*, constructed to strike upon the piston E, when the latter is at a point where it cannot be driven toward the press-box by the action of the toggle-joint alone, in combination with the toggle-joint and the piston, substantially as and for the purpose set forth.

4. Hinged spring-seated retaining-pistes, in combination with the press-box of a baling-press for the purpose described.

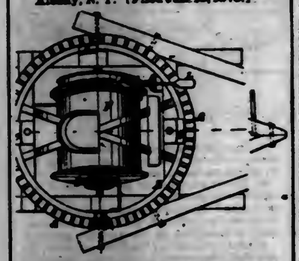
170,901. BALING-PRESSES. P. K. Dederick, Albany, N. Y. [Filed Sept. 1, 1875.]



170,999.

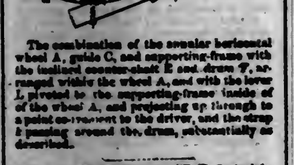
Partition-strips for baling-presses, constructed with one or more longitudinal grooves for the passage of the tie-wires, and adapted to be inserted between the bales through the longitudinal slots in the sides of the press-box, substantially as described.

171,000. HORSE-POWERS. P. K. Dederick, Albany, N. Y. [Filed Jan. 18, 1875.]



The combination of the annular horizontal wheel A, guide C, and supporting-frame with the inclined counter-shaft E and drum F, arranged within the wheel A, and with the lever L, pivoted to the supporting-frame inside of the wheel A, and projecting up through to a point convenient to the driver, and the strap k passing around the drum, substantially as described.

171,001. HORSE-POWERS. (P. K. Dederick, Albany, N. Y. [Filed May 28, 1875.]



1. The armless drive-wheel B, having two inside faces provided with cogs or teeth, in combination with the pinions *c c* and shaft C, substantially as shown and described.

2. The fixed ring A, combined with the shaft C, the outer rotating ring B, and the horizontal sweep, substantially as and for the purpose set forth.

3. The pulley D, mounted loosely upon the shaft C, in combination with the shaft E, gearing *d b b g*, double cog-rims *b b'*, and pinions *c c'*, substantially as and for the purpose described.

171,002. STOVE. William Donovan, New York, N. Y. [Filed Sept. 13, 1875.]

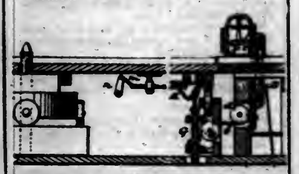
Brief.—A means for preventing escape of foul gases from stoke-hole when not in use.



In combination with a strainer-plate, *a*, provided with a threaded depression, *b*, the stopper *d*, provided with threads *e* and handle *f*, as and for the purpose described and set forth.

171,003. DRAW-BRIDGE GATES. Otto Roehe, Milwaukee, Wis. [Filed Dec. 6, 1875.]

Brief.—The vertically-sliding gate is connected by a rope and pulleys with a grooved sliding bar, provided with a friction-roller and guide-rollers, operated by an inclined sliding frame attached to the bridge. The frame is drawn off the friction-roller of the sliding bar by a hand-lever and connections, so as to permit the gate to rise before the bridge starts, if desired.



1. The combination of the vertically-sliding gate D, rope or chain *b*, pulleys *d d*, grooved sliding bar G, guide-rollers *c c*, and friction-roller *l*, for the inclined frame H to operate upon, substantially as and for the purposes herein set forth.

2. The combination, with a bridge-gate, D, and vertically-sliding bar G, connected therewith, of a sliding inclined frame, H, arranged to be moved off and on the sliding bar, for the purposes herein set forth.

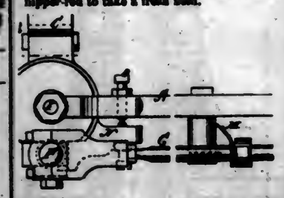
3. The combination of the sliding frame H, rod A, link *k*, shaft I, with arms or cranks *a a'*, connecting-rod L, lever J, and catch *p*, all substantially as and for the purposes herein set forth.

171,004. COMPOSITIONS FOR COVERING METALLIC SURFACES. James Ferguson, Bridgewater, Mass., assignor to Bridgewater Iron Company, same place. [Filed Nov. 16, 1875.]

For preventing the adhering of heated metallic surfaces, the composition consisting of graphite, chloride of sodium, and water, substantially as above described.

171,005. NAIL-PLATE FEEDERS. William H. Field, Taunton, Mass. [Filed Nov. 27, 1875.]

Brief.—The grapers are attached to an oscillating disk. The push-rod is connected to a cam-lever, which is caused, when the rod strikes the machine, to bear against a roller on the movable griper-jaw, and force said jaw against the nipper-rod. A spring retracts the push-rod and cam-lever, to release the jaw and allow the gripers to move back on the nipper-rod to take a fresh hold.



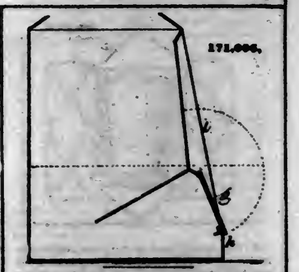
1. The combination of rod G and cam-lever F with jaws C and D, when said rod is arranged to be moved forward by the machine and backward by a spring, and jaw C is pivoted suitably for swinging forward and backward to feed the rod, substantially as specified.

2. The combination of bracket N and adjusting-screws O P with lever F and jaw C, substantially as specified.

3. The combination of supporting-bar A, actuating-rod G, cam-lever F, and the feeding-jaws, the latter being pivoted to the supporting-bar, substantially in the manner described.

171,006. CARRIERS. Jos. S. Field, Brooklyn, N. Y. [Filed July 12, 1875.]

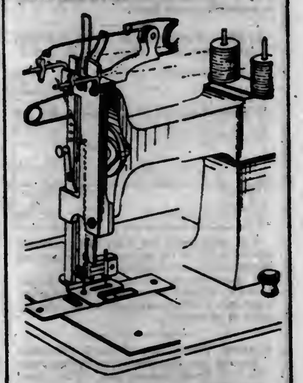
The canister made with the buttresses *f f* at each side of the front portion, and with the swinging flap *g* between and protected by such buttresses, and hinged at the top and closing at the bottom against the ledge *h*, as set forth.



171,006.

171,007. SEWING-MACHINES. S. W. Francis, Newport, R. I. [Filed Oct. 7, 1875.]

Brief.—The machine can be used as an ordinary single-seam shuttle-machine, or to make a number of seams.

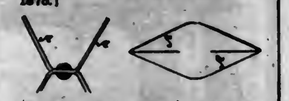


1. The combination, with the main shuttle-carrier, of the slotted arm, forming adjustable connection with the auxiliary shuttles, as described, so that the movement of the primary or main shuttle shall be directly transmitted to and partaken of by the auxiliary shuttles, as shown and described.

2. The combination, with the needle-bar, of the primary or main needle, of a slotted arm and adjustable auxiliary needle-clamps, as described, so that the auxiliary needle or needles shall be adjustable on said slotted arm, and the movement of the main needles shall be directly transmitted to and partaken of by the auxiliary needles, substantially as herein shown and described.

3. In combination with the adjustable auxiliary shuttles and needles, arranged and operated as described, the elongated feed and presser feet, substantially as herein shown and described.

171,008. WIRE-PIERCE RAZOR. Henry N. Frantzen, Dunleith, Ill. [Filed Sept. 25, 1875.]



The barbs A, formed by cutting thin sheet metal into diamond form, slitting them from the acute angles nearly to the centers, and bending the prongs at each end at an angle with each other to adapt them to be twisted into a two-strand wire-cord, substantially as herein shown and described.

171,009. HAND-PIERCER FOR DENTAL DRILLS. John W. Gilbert, Philadelphia, Pa., assignor to Samuel S. White, same place. [Filed Nov. 10, 1875.]

Brief.—A locking-slide closes the path by which the lug on the tool enters a shouldered recess in the socket.

171,009.



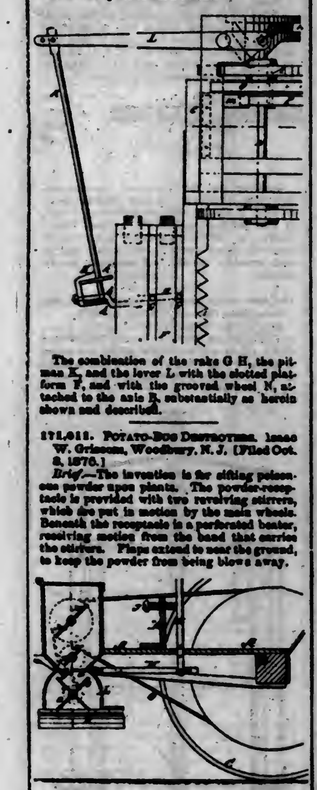
1. The combination of the slotted tool-socket, the interlocking slide movable endwise and externally on the tool-holder, and the locking-spring encircling the tool-holder.

2. The combination of the casing, the power-driven shaft rotating in bearings therein, and perforated and slotted to form a tool-holder, a tool provided with a radial lug on its shank, the spring encircling the shaft, and the locking-slide actuated by said spring, to lock the lug on the tool-shank in the slot in the tool-holder, substantially as herein before set forth.

3. The combination of a dental-tool socket, formed substantially as described, and a locking-slide operating to close the path by which the lug on the tool enters a shouldered recess of said socket, substantially as herein before set forth.

171,010. SELF-RAKES FOR REAPERS. Saml. B. Gilliland, Salisbury, Mo. [Filed Aug. 30, 1875.]

Brief.—The rake, whose head operates below the slotted platform, sweeps the grain therefrom by its inward stroke.



The combination of the rake G H, the pitman K, and the lever L with the slotted platform F, and with the grooved wheel N, attached to the axle B, substantially as herein shown and described.

171,011. POTATO-BUG DESTROYERS. Isaac W. Grissom, Woodbury, N. J. [Filed Oct. 8, 1875.]

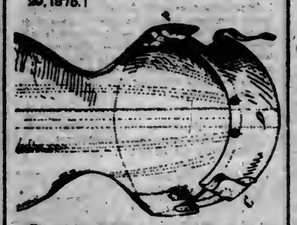
Brief.—The invention is for sifting poisonous powder upon plants. The powder-receptacle is provided with two revolving stirrers, which are put in motion by the main wheels. Beneath the receptacle is a perforated beater, receiving motion from the band that carries the stirrers. Flaps extend to near the ground, to keep the powder from being blown away.

1. The combination of the slide G, the bar H, the pivoted lever I, the adjusting-screw J, and the right upright K with the hopper E F and the platform or frame A, substantially as herein shown and described.

2. The combination, with discharge-chamber I, of a distributer, O, consisting of perforated blades or beaters, as shown and described, in order that the powder may be struck as it falls and atomize before it reaches the plants.

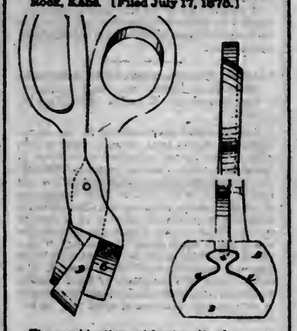
3. The combination, in a hopper having lower discharge-chamber, of stirrer M, feeder N, and distributer O, arranged substantially as and for the purpose specified.

171,012. ABDOMINAL CORSETS. Cathrine A. Griswold, New York, N. Y. [Filed Oct. 20, 1875.]



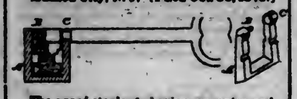
The abdominal supporter C, formed of a central band, D, and curved side bands D', the former attached to front of corset, and the latter to side stays or hip-bands, as shown and described, for the purpose of throwing the usual strain upon the hips and shoulders.

171,013. SHEARS FOR CUTTING HOGS' NOSES. William H. Grow and Crawford M. Sloan, Rock, Kans. [Filed July 17, 1875.]



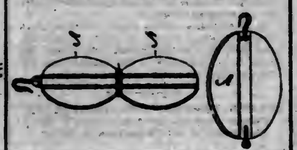
The combination, with plate B, of an oval-curved blade, C, having the middle offset *c'* wider on the upper than lower part, as and for the purpose specified.

171,014. KNIVES FOR LOCKS. W. H. Guthrie, Hudson City, N. J. [Filed Oct. 30, 1875.]



The guard-staple A, having an outer and inner key-hole-closing arm, provided, respectively, with a beveled outer surface, and inwardly-projecting lug B, and with a divided or split eye, C, in combination with a key having a socket and groove for journaling the guard, all constructed and arranged substantially as herein set forth and shown.

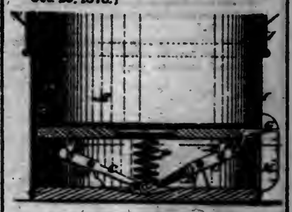
171,015. BONNET-FASTENERS. E. K. Hall, Boston, Mass. [Filed Oct. 20, 1875.]



1. As a new article of manufacture, a bonnet-fastener, consisting of the body A, provided with the hook *a* or its equivalent, for securing the fastener to the bonnet, and the eye or loop *c*, adapted to receive a hair-pin for securing it to the hair, as shown and described.

2. A bonnet-fastener, substantially such as described, with a hinged plate, A', arranged to fold against the body A, and clasp a ribbon or ornament, substantially as shown and described.

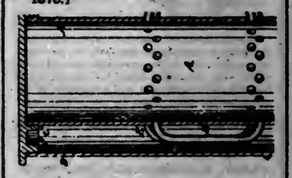
171,016. SPRING-SCALES. Abram Harper and L. W. Cross, Edgerton, Ohio. [Filed Oct. 20, 1875.]



1. The combination, with the measure A, of the knife-edge pivots B, levers C, spring F, pointer G, and scale H, substantially as specified.

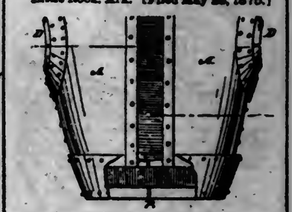
2. The combination of case I, measure A, and the weighing-levers and spring, substantially as specified.

171,017. UPRIGHT TUBULAR BOILERS. N. C. Heaton, New York, N. Y., assignor to W. B. Snyder, same place. [Filed Aug. 21, 1875.]



The combination of boiler A and case D, with cap C, having flanges *c' c''*, of which the former is threaded on the inside and works on the outside threaded edge of boiler while the latter rests against the inside edge of case, as shown and described, for the purpose specified.

171,018. LIFE-PRESERVERS. B. Hempstead, Little Rock, Ark. [Filed May 26, 1875.]



A life-preserver, made of wood, in sections, A, connected and hinged to each other by rubber strips B, and provided with a rubber band, C, around the waist, and with rubber D around the seat, waist, and arm-holes, substantially as herein shown and described.

171,019. CORN-HUSKING IMPLEMENTS. E. W. Hill, Decatur, Ill. [Filed Sept. 13, 1875.]

1. In a corn-husker, the bowl E, arranged to be adjusted on the bar A by means of the screw-thread, substantially as shown and described.

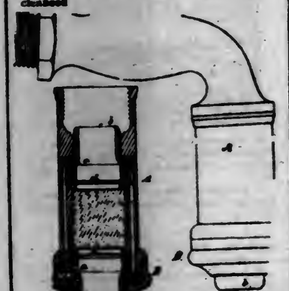
2. The bar A, when arranged with the button D on the inside of the bar, and with the said bar provided with holes *e e e e* for the adjustment of the strap C, substantially as shown and described.

171,019.



171,020. REVERSIBLE FILTERS. Edward C. Houghton, Cambridgeport, assignor to U. C. Walworth, Boston, Mass. [Filed June 10, 1875.]

Brief.—When the filter becomes clogged the shell or case may be removed and inserted in a reversed position: thus the filter will be cleansed



The improved reversible filter, as described, the same consisting of the body A, having a removable cap, B, the reversible case C, provided with removable bands a a, having sockets b b, the diaphragms d d, and a chamber to receive the filtering material, the whole being constructed, combined, and arranged in manner and so as to operate substantially as set forth.

171,021. HARVESTING-MACHINES. Wm. M. Howe, Austin, and Geo. H. Howe, Winnebago City, Minn. [Filed July 17, 1875.]

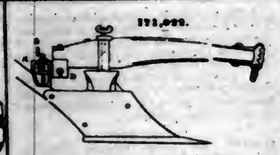


1. A revolving pasteboard, H, provided with a series of teeth or projections, h, and provided at its base with a circular serrated knife or series of blades, h', substantially as described.

2. The combination, with a revolving platform, H, having a series of teeth or projections, h, and a series of grooves or channels, h', and provided at its base with a circular serrated knife or series of blades, h', of the finger or arm I and plate M, substantially as and for the purpose set forth.

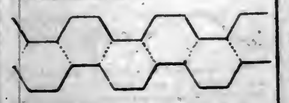
171,022. PLOWS. Henry H. Hahley, Central Manor, Pa. [Filed Oct. 30, 1875.]

Brief.—Two metallic bases with connected traversing screws for the vertical and lateral adjustment of the rear end of the plow-beam.



In combination with the plow handles and beam, the case A and its traveling screw R, for vertical adjustment, and the case D and traveling screw W, for lateral adjustment of the plow beam, the intervening nuts of each screw being connected by a rigid stem, the whole arranged and operated as and for the purpose specified

171,023. MANUFACTURE OF HEXAGONAL NUTS. Geo. Johnson, Haverstraw N. Y. [Filed Nov. 13, 1875.]



1. The method herein described of manufacturing hexagon nuts by forcing or shaping the bar by dies or rolls to form alternating semi-hexagonal projections and recesses, and admit the cutting-off of the nuts at one cutting plane only, substantially as and for the purpose set forth.

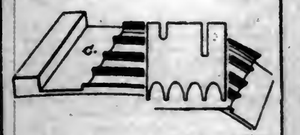
2. A blank or bar for making hexagon nuts, made with alternating semi-hexagonal projections and recesses at both sides, substantially as specified.

171,024. MANUFACTURE OF IRON AND STEEL. Ephraim A. Jones and Josh A. Jones, Middleborough, England. [Filed July 14, 1875.]

The described improvements in the manufacture of iron or steel, which consist in first effecting the partial reduction or removal of the carbon, silicon, and phosphorus, or a portion of any one of them, contained in the pig iron or metal in a cupola or other furnace by the means herein set forth, and then effecting a further reduction or removal of a further portion of the carbon, silicon, and phosphorus contained in such metal in a rotary or un chemical furnace, the iron or metal from such cupola or other furnace being charged, in a molten state, into the rotary or other furnace where puddling is effected by mechanical means in such manner that iron or steel may be obtained.

171,025. MANUFACTURE OF GRAIN-CRADLE FINGERS. Christopher P. Kelsey, Richmondville, N. Y. [Filed June 17, 1875.]

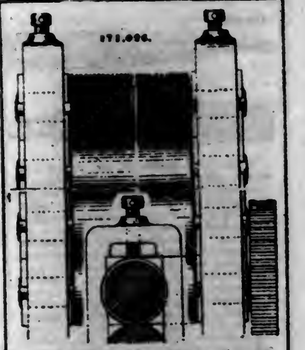
Brief.—The grain-cradle fingers are formed of a straight piece of timber, connected at the ends, and then bent to the desired shape upon a mold or crimping-iron provided with longitudinal flanges, which project up between the fingers, and hold them securely while being bent, whereby a whole set of fingers is formed at one operation, and from a single piece of timber.



1. The iron crimp or mold C, cast with longitudinal flanges, substantially as shown, and for the purpose specified.

2. The grain-cradle finger, formed of a straight piece of timber, attached at the ends, and then bent to the desired shape upon the mold C, substantially in the manner and for the purposes set forth.

171,026. PROCESSES OF ORNAMENTING DRY PAPER. Geo. La Monte and John H. Hall, New York, N. Y. [Filed Dec. 6, 1875.]



The process of ornamenting paper by passing it while dry between a pair of metallic rolls, one of which is figured, and afterward finishing its general surface between calender-rolls, substantially as shown and described.

171,027. SWING-JOINTS FOR ESCORE AND HANDLES. Edward M. Lockwood, Meriden, Conn., assignor to himself and Chas. Page. [Filed Sept. 20, 1875.]

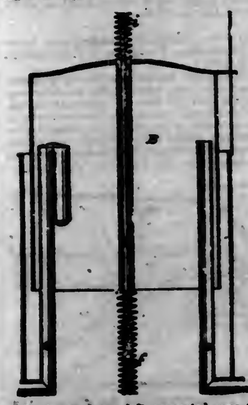
Brief.—The claim sufficiently points out the invention; the ball shaped end of the shank moving as a universal joint, and the cylinder-shaped only in vertical line, but both forming an inexpensive swing-joint by casting the socket in a single piece around them.



A swing-joint for hoobs and handles, consisting of the shank c, having a protuberance, c', upon or around which protuberance is cast, in one piece, the socket b, provided with a stem, a, so that the said shank and protuberance will swing freely in said socket and be held securely therein, substantially as described.

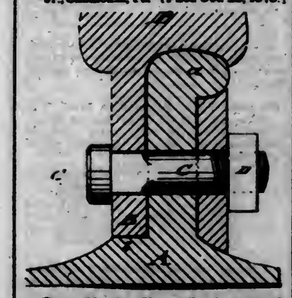
171,028. GAS-HOLDERS. Louis Marks, San Francisco, Cal. [Filed Oct. 9, 1875.]

Brief.—The holder is provided with a central tube, which slides on a guide-rod, around which, above and below the holder, are coiled spiral springs, for regulating the action of the holder, and thus preventing flickering or jumping of the lights.



The inverted vessel B, supported upon the central upright guide-post G between the spiral springs J J, substantially as and for the purpose described.

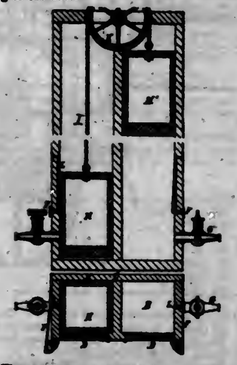
171,029. RAILROAD-RAILS. Geo. H. Mayer, Jr., Shamokin, Pa. [Filed Oct. 23, 1875.]



The combination of base-rail A, having head a and seat b, the correspondingly-constructed cap rail B, and the plate E, fitting closely under head a, and on feet of base-rail, all fastened together by bolts and nuts C D, as shown and described.

171,030. PIPE-ESCAPES. Wm. McAllister, Lawrence, Mass. [Filed Nov. 9, 1875.]

Brief.—Two counterbalanced chambers, connected by a winding rope, alternately rise and fall in an oblong vertical casing, divided longitudinally. A vertical series of doors extends along the front of each compartment, and a stop-cock at the bottom gives the compressed air the function of a cushion to the descending chambers, which finally strike and release an inner and outer catch, to permit the opening of the door.



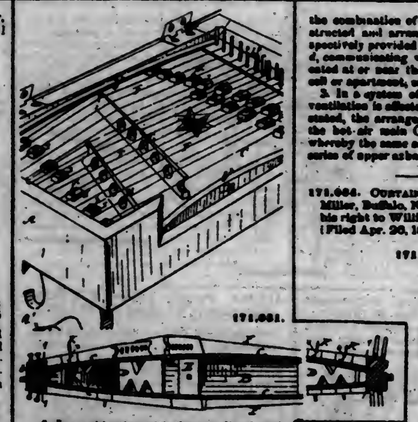
The air-escape, substantially as specified, composed of the two cars H H', connected by a rope, I, going over a wheel, K, as described, and of the two vertical chambers A B, their stop-cocks, doors D D, springs E E, latches F F, and latch-actuators L L, all arranged essentially in manner and to operate as set forth.

171,031. DULCIMERS AND SIMILAR MUSICAL INSTRUMENTS. James A. McKenzie, Minneapolis, Minn. [Filed Aug. 31, 1875.]

Brief.—Of the dulcimer kind; in this the strings are mounted above and below a sounding-board, and are arranged to be struck by a hammer in the hand of the player. The sounding-board and its frame can be turned upon end pivots, and the strings of both sides utilized.

1. A musical instrument constructed with a frame supporting two sounding-boards and two sets of strings or wires, and arranged to be reversed within a case or frame, substantially as described.

2. A musical instrument constructed with a grooved frame, B, supporting two sets of strings or wires, F F, on opposite sides, the sets of strings or wires being arranged to be played upon alternately, substantially as shown and described.



3. In combination with the sounding-board and strings of a musical instrument, the bridges C and H, all constructed and arranged to operate substantially as described.

4. An adjustable fret-block, f, having inclined upper surface I, in combination with the strings, and with an adjustable fret, K, substantially as set forth.

5. In a stringed musical instrument, the combination of the grooved frame B, sounding-board C, and stretchers D D and E, substantially as shown and described.

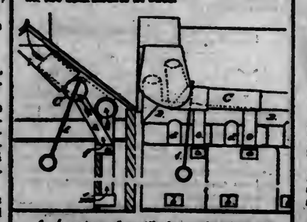
171,032. COMB-FOUNDS. Fredk. J. Meyers, Covington, Ky. [Filed Oct. 21, 1875.]



The helical wires M and F, of which one is adapted to receive the other, on the principle of a nut and screw, which constitutes parts of the popper and handle, respectively, and enable their nearer and easy attachment and separation, as explained.

171,033. VENTILATING PASSAGES AND OTHER BUILDINGS. Patrick Milan, Cambridgeport, Mass. [Filed Nov. 9, 1875.]

Brief.—The air passes from flues at the upper and lower part of the room through separate ducts, said ducts opening into independent mains, which have a common axis. The mains are made of an increasingly greater diameter from the outer to the inner extention end, as shown. The damper and rod enable the janitor to control the hot-air exhaust of all the apartments at once.



1. A system of ventilation, embracing a duplex (or upper and lower) exhaust, in which each exhaust is provided with separate independent pipes or ducts leading from the apartment to be ventilated, and connected with separate and independent main exhaust flues located above the apartments to be ventilated.

2. In a system of ventilation combining the principle of a duplex exhaust, as described, the combination of the mains C and D, constructed and arranged as set forth, and respectively provided with ducts or pipes c and d, communicating with register openings located at or near the top and bottom of each suit or apartment, substantially as shown.

3. In a system of ventilation to which the ventilation is effected by a fuel-or exhaust, as stated, the arrangement of a damper within the hot-air main C, substantially as shown, whereby the same serves to control the whole series of upper exhaust-openings, as set forth.

171,034. CURTAIN-FIXTURES. Charles H. Miller, Buffalo, N. Y., assignor of one-half his right to William Manning, same place. [Filed Apr. 20, 1875.]



The combination, with the curtain-roller and pulley B, provided with steps d, of the automatic safety-catch F, constructed with overhanging part f, and operating substantially as hereinbefore set forth.

171,035. WATCH-CLEANING FLUIDS. A. Monnier, Sacramento, Cal. [Filed Aug. 27, 1875.]

The compound herein described for cleaning watches, jewelry, and other articles, consisting of distilled water, pure castile-soap, and epsomite of potassium, the proportions being substantially as herein described.

171,036. TRIPOD DRAWERS. W. H. Moore, San Francisco, Cal. [Filed Feb. 10, 1875.]



The sliding drawer B, having the recesses O in its sides, in combination with the extended sides or legs d, and the strips f f and combination A, substantially as and for the purpose described.

171,037. SCREW-THREADING MACHINES. Edward Nugent, Brooklyn, N. Y. [Filed Nov. 22, 1875.]

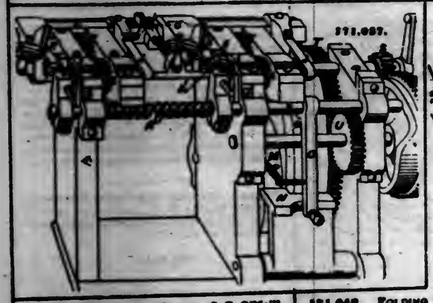
Brief.—Two mains on a rock-shaft movable longitudinally by a spring and a cam, and rotated by a cam through the medium of the former and arm. A reciprocating slide has arms that actuate screw-drivers, and with each cutter is arranged a movable die, which, co-operating with a stop, gripes the blank during the threading operation.

1. The shaft A, carrying two or more cutters, A', in combination with the arm O, spring F, and cams Q and M, substantially as and for the purpose set forth.

2. The feeding device B, having the spring H, in combination with the bar C, cam D, and slotted Y, substantially as and for the purpose set forth.

3. The feeding device B, thumb V, and bar C, in combination with the arm J and screw-driver I, substantially as and for the purpose set forth.

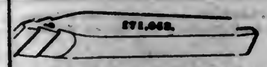
4. Two or more cutters, A', arranged up a straight line on a single shaft, in combination with two or more feeding devices, B, and two or more screw-drivers, I, all arranged and operating substantially as and for the purpose set forth.



171,037.



171,040.

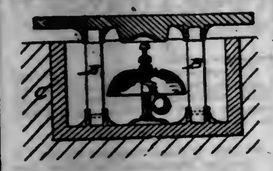


171,042.

A nail, having a toothed or indented head tapered or reduced to a point or edge at its out er end, as and for the purposes shown and set forth.

171,038. BASE-BALL BASES. J. C. O'Neill, St. Louis, Mo. [Filed June 10, 1875.]

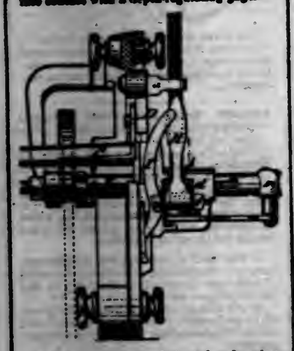
Brief.—To the base is attached a hidden ball, with mechanism to sound the same upon sudden and forcible pressure of its top.



An improved base for the game of base-ball, constructed with a case or box, elastic supporting-column, cap-plate, and a ball or other sounding device, arranged to be operated substantially in the manner and for the purpose set forth.

171,039. SAW-GUMMERS. John W. Parker and Thomas Parker, Chicago, Ill. [Filed June 10, 1875.]

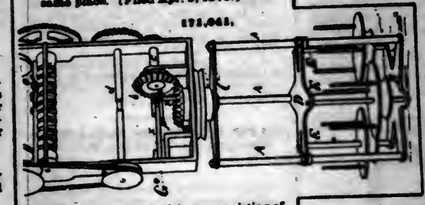
Brief.—The cutter-arbor and feed mechanism are supported in a sliding carriage upon an auxiliary frame, pivoted at its apex to the main frame, and adjustable, in virtue of a curved slot in its free end, to present the cutter to the saw-teeth at any desired angle. The lower end of the feed-screw is journaled in a sliding box, with a combining-spring attachment, and is provided with a worm-wheel and crank-disk. The worm-wheel is thrown into gear with the worm upon the cutter-shaft by a cam-lever, held down by a curved guard-arm, which is automatically tripped, to release the lever and stop the feed, by coming into contact with a depth-regulating gage.



1. The combination of pivoted and spring-acted cam-lever with fulcrumed guard-lever and depth-regulating gage for interrupting feed of cutter-shaft, in the manner described.

2. The combination of crank-disk of feed-screw, by pivoted connecting-link, with pivot-pin, socket-sleeve, and groove of cutter-shaft to produce reciprocating motion of shaft simultaneously with the revolutions of the same, substantially as set forth.

171,041. CORDAGE-MACHINES. John A. Peckham, New Haven, Conn., assignor of one-half his right to Charles A. Stoken, same place. [Filed Apr. 9, 1875.]



171,041.

1. The herein-described frame, consisting of the three posts indicated by the letter A, the two like plates B and D, constructed and arranged to hold the spindles denoted by the letter E, in the manner described, and the top plate C, all the said parts constructed and arranged substantially as described.

2. The piece c and frame C, in combination with the piece p and pin r, substantially as and for the purpose set forth.

171,042. FOLDING CHAIRS. F. A. Paine, New York, N. Y. [Filed Apr. 17, 1875.]

An improved folding chair, formed by the combination of the side bars A D, the arms E, the brace bars F, and the rounds $a' a^2 a^3 f$, that receive the back B and seat C, with each other, substantially as herein shown and described.

171,043. CORDAGE-MACHINES. John A. Peckham, New Haven, Conn., assignor of one-half his right to Charles A. Stoken, same place. [Filed Apr. 9, 1875.]

171,043.

1. The herein-described frame, consisting of the three posts indicated by the letter A, the two like plates B and D, constructed and arranged to hold the spindles denoted by the letter E, in the manner described, and the top plate C, all the said parts constructed and arranged substantially as described.

2. The piece c and frame C, in combination with the piece p and pin r, substantially as and for the purpose set forth.

171,044. FRUIT-PRESERVING JARS. T. J. Price, Macomb, Ill. [Filed Mar. 24, 1874.]

Brief.—Unglazed earthenware saturated with salt-brine, dried, and interiorly coated with lime.

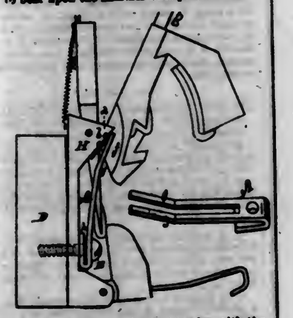
A porous fruit-jar, saturated with a solution of salt, and lined on the inside with lime, substantially as and for the purpose set forth.

171,045. TOY TRUNDLER. J. F. Robertson, Chester, N. Y. [Filed Sept. 22, 1875.]

The toy trundle herein described, consisting essentially of the handle A, velocipede-frame B, wheel C, with its crank-axle c, and the jointed toy figure D, all constructed and arranged to operate substantially as and for the purposes set forth.

171,046. UPRIGHT-PIANO ACTIONS. Chas. R. Rogers, Boston, Mass., assignor to the Rogers Upright-Piano Company, same place. [Filed Oct. 28, 1875.]

Brief.—Relates to the peculiar spring used to bear upon the hammer-butt pivot.



1. The springs f f, in combination with the hammer pivot-pin b and pivot-supporter H, provided with the oval bearings k, all constructed and arranged as set forth.

171,047. STRINGING AND TUNING DEVICES FOR PIANO-FORTES. Charles R. Rogers, Boston, Mass., assignor to the Rogers Upright-Piano Company, same place. [Filed Oct. 28, 1875.]

Brief.—The slack of the strings being first taken up on the pins, the strings are then brought to pitch by screws arranged to move the pins and the frames in which they are set.



1. The combination of the slotted slide E, its straining-pin F and operative screw G, all arranged as set forth.

2. The combination of the slotted slides E E, their straining-pins F F and screws G G, with the string-frame B and the lugs f f to extend from it, or a separate bar applied to it, as described.

3. The separate bar D, provided with the hook c, and the series of lugs f, all arranged as and for application to the string-frame B and the slides E, as specified.

171,048. FLOCK-WASHING MACHINES. Asa U. Russell, Great Barrington, Mass., assignor to F. A. Russell, same place, and C. E. Blake, New York city. [Filed Sept. 20, 1875.]

Brief.—The flock and water pass, through a spout in the "washer," into a screen situated below the latter, where the fibers are trapped, while the liquid flows off.



The flock washing or treating apparatus formed of the outer box C, made with an open top, and provided with a discharge-opening at its bottom, and the inner box D, made smaller than the box C, with open bottom and top, supported with its lower edge a little above the bottom, and its upper edge a little above the top of the said box C, having the space between it and the box C at one end separated from the spaces between the sides of said boxes, and provided with a screen, F, at said end, in combination with the discharge-spout B of the washer A, substantially as herein shown and described.

171,049. METORETS FOR CONCENTRATING SULPHUROUS ACID. Jos. Saunders, Brooklyn, N. Y. [Filed Nov. 10, 1875.]

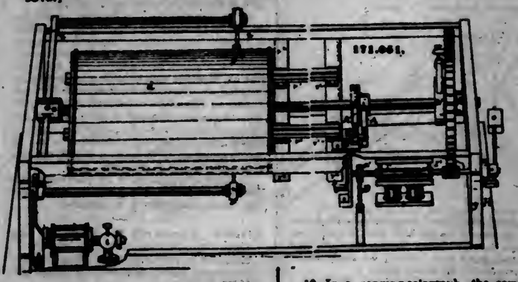
1. A glass retort for concentrating sulphuric acid, having a spout or nozzle, B, of the same thickness of the point of its attachment as the side of the retort to which it is attached, and an aperture, E, with inwardly-turned edges and smooth finish, as and for the purposes set forth.

2. In combination with the retorts A and funnels D, the adjustable tubes C, for connecting a series of retorts in the process of concentrating sulphuric acid, as set forth.

171,050. COPYING-TELEGRAPH. Wm. B. Sawyer, New York, N. Y. [Filed Nov. 6, 1875.]

In a copying-telegraph, the method of preparing a message for transmission, consisting in transferring the message to a metallic plate or metallic surface, sprinkling the transfer with an insulating material, subjecting the same to the action of moisture, and hardening the resultant raised surface by heat, light, or chemical action, as set forth.

171,051. AUTOGRAPHIC TELEGRAPHS. W. B. Sawyer, New York, N. Y. [Filed Nov. 6, 1875.]



171,051.

1. In a copying-telegraph, the combination, with transmitting or recording mechanism, having a less speed of motion than the actuating mechanism, of an electro-magnetic regulator, operated by a line-current, as set forth.

2. In a copying-telegraph, the combination, with transmitting or recording mechanism operated by friction, of driving mechanism having a greater speed of motion than the transmitting or recording mechanism, as set forth.

3. The method of operating a copying-telegraph, consisting in carrying the contact style or stylus transversely over or around a cylindrical surface, each style moving in one continuous direction, instead of moving back and forth, substantially as shown and described.

4. In a copying-telegraph, the combination, with a thread-shaft, of a transmitting or recording style or stylus and a semi-cylindrical surface, so arranged that the revolutions of the shaft shall both advance the semi-cylindrical surface longitudinally, and give the style or stylus a transverse circular motion in respect of the cylindrical surface, as set forth.

5. In a copying-telegraph, a semi-cylindrical car, moving upon a railway, substantially as shown and described.

6. In a copying-telegraph, a semi-cylindrical transmitting or receiving car, as set forth.

7. In a copying-telegraph, the method of keeping the instruments at different stations in synchronism, and maintaining the steadiness of their motion, consisting in the employment of friction to actuate the transmitting or recording mechanism, in combination with an electro-magnetic regulator, so that the motion of the transmitting or recording mechanism may be arrested without arresting the motion of the motive or driving mechanism, as set forth.

8. In a copying-telegraph, the combination, with transmitting or recording mechanism, of a friction-connection, situated between the same and the motive power, as set forth.

9. In a copying-telegraph, the combination, with transmitting mechanism operating in one direction, of recording mechanism operating in the opposite direction, or vice versa, substantially as set forth.

10. In a copying-telegraph, the combination, with a semi-cylindrical car, of a curved frame for holding the message-blank in place, as set forth.

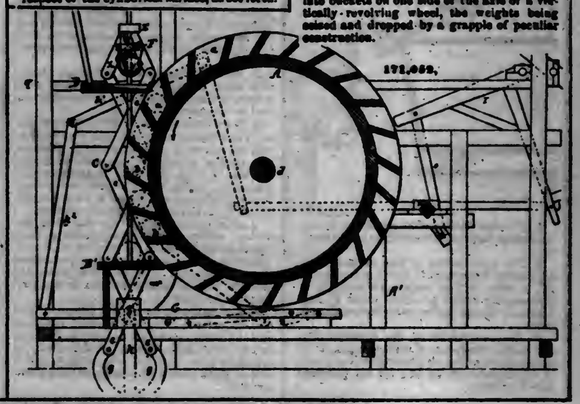
11. The combination, with the car d, of the point f', to engage in the thread of a shaft, as set forth.

12. In mechanism for maintaining synchronous motion of different instruments, a detent which yields to the force of advancing mechanism through neutralization by a line-current of the force which held the detent in the path of the mechanism, as set forth.

13. In a copying-telegraph, the combination, with transmitting or recording mechanism, of a magnet operated periodically by a local battery to change the circuit of the line, as set forth.

171,052. APPARATUS FOR TRANSMITTING MOTION. James L. Scott, Brooklyn, N. Y. [Filed Dec. 3, 1875.]

Brief.—Motion by hand, transmitted through a series of levers, operates a pair of lazy-tongs, which alternately raise and deposit weights into buckets on one side of the axis of a vertically-revolving wheel, the weights being raised and dropped by a grapple of peculiar construction.



171,052.

1. The extension-frame C carrying a grapple, F, combined with the platforms B B', and with the wheel A, as set forth.

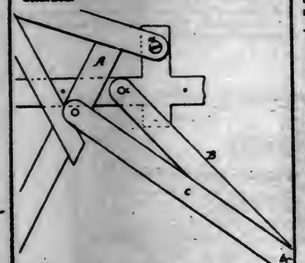
2. The combination of the extension-frame C, lever J, rock-frame I, and their connecting arms and rods, as specified.

3. The combination of the extension-frame C and the grapple, consisting of the bar N, arms f f, elastic arm f', and trigger w, substantially as set forth.

4. The combination of the extension-frame C, lever O, and curved arms g, and link h, as described.

171,645. MECHANICAL MOVEMENTS. James L. Scott, Brooklyn, N. Y. (Filed Nov. 6, 1875.)

Brief.—The operation of the pivotal levers produces a gradually increasing and then decreasing power as the frame to which they are attached.

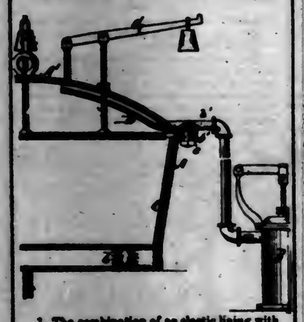


The combination of the pivoted arm A, the lever B, having its fulcrum near the pivot of the arm A, and the bar C, connected to both arm and lever and forming an acute angle with the latter, all as set forth.

171,646. REMEDIES FOR RHEUMATISM. Aug. Severin, New York, N. Y., assignor to himself and Frederick Ernshäuser, same place. (Filed Oct. 6, 1875.)

The composition of iodide of potassium, solid extract of conium, vine of colchicum, morphine, and compound syrup of sarsaparilla, substantially in the proportions herein described.

171,647. APPARATUS FOR FILTERING LIQUIDS. Thomas R. Sinclaire, New York, N. Y., assignor to Sinclaire Rectifying-Machine Company, same place. (Filed July 6, 1874.)



1. The combination of an elastic lining with a filtering-vessel, substantially as herein specified.

2. The combination of the automatically-adjustable diaphragm E with a filtering-vessel, A, either with or without the air-tight or hermetically sealed or closed cover A', substantially as and for the purposes herein specified.

3. The combination of the automatically-adjustable diaphragm F with an air-tight or hermetically sealed or closed filtering-vessel, A A', substantially as and for the purposes herein specified.

4. The combination of the adjustable diaphragms F and K with a tapering or conical filtering-vessel, A, substantially as and for the purposes herein specified.

5. The combination of the adjustable diaphragms F and K, either or both, with an air-tight or hermetically sealed or closed tapering or conical filtering-vessel, A A', substantially as herein specified.

6. The combination of lever mechanism with a diaphragm and a filtering-vessel, substantially as herein specified.

7. The combination of the following elements: the air-tight or hermetically sealed or closed tapering or conical filtering-vessel A A', the pipes or orifices D and M, (one or more of each,) and the adjustable diaphragms F and K, either or both, substantially as herein specified.

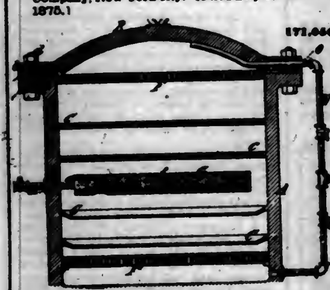
8. The combination of the following elements: a forcing apparatus, B, a filtering-vessel, A, with or without the air-tight or hermetically sealing or closing cover A', and the adjustable diaphragms F and K, either or both, substantially as herein specified.

9. The combination of springs with a diaphragm and a filtering-vessel, substantially as and for the purposes herein set forth.

10. An apparatus for filtering, clarifying, or rectifying liquids, consisting of the following parts: an air-tight or hermetically sealed or closed tapering or conical filtering vessel, with or without the lining C, an induction and an eduction pipe or orifice, a forcing apparatus, an adjustable diaphragm or follower, F, and an adjustable diaphragm or piston, K, whereby, when filtering under pressure, any channels formed between either the vessel or lining and the filtering material, or in the filtering material itself, may be closed up, substantially as herein set forth.

11. The combination of an adjustable diaphragm, K, with a conical or tapering filtering-vessel, substantially as specified.

171,648. APPARATUS FOR FILTERING LIQUIDS. Thos. R. Sinclaire, Brooklyn, N. Y., assignor to Sinclaire Rectifying-Machine Company, New York city. (Filed May 6, 1875.)



1. The combination of the following elements: a filtering-vessel, A, with or without the cover B, and with or without the forcing apparatus M, the receiver or distributer G, and the obstructing ledges, deflectors, or shelves C D E, any or all, substantially as herein specified.

2. The combination, with a filtering-vessel, of a cover or top diaphragm provided with ledges, shelves, or deflectors, substantially as and for the purpose specified.

3. The combination of a filtering-vessel, A, with or without the cover B, and with or without the bottom R, either or both, the obstructing shelves or ledges C, the receiver or distributer G, when the latter is arranged substantially parallel with the said obstructing-ledges C, all with or without a forcing apparatus, M, substantially as herein specified.

4. The combination of the following elements: a filtering-vessel constructed to filter liquid under pressure, the receiver G, the obstructing shelves or ledges C, the diaphragms F and F', all with or without the forcing apparatus M, substantially as and for the purpose herein specified.

5. The combination of the following elements: an air-tight or hermetically sealed or closed filtering-vessel, a receiver or distributer, bottom ledges, shelves, or deflectors, an induction pipe or orifice, a diaphragm, and a forcing apparatus, substantially as shown and specified.

171,649. FLOCKING CLOTH. H. N. Slater, Webster, Mass. (Filed Oct. 5, 1875.)

The improvement in the art of flocking cloth, such consisting in employing the flock within a bag or tube composed of the cloth in whole or in part, substantially as set forth, while the said bag or tube is being subjected to the action of the felting-mill, as specified.

171,650. REVERSIBLE CENTER-PIECES FOR WATCHES. Frank E Smith, San Jose, Cal. (Filed July 7, 1876.)



The U shaped spring e fitted in a mortise, c, in the arbor d, and having the projecting ends or points e i, in combination with the notches a a in the axial bore of the pinion B, substantially as and for the purpose described.

171,650. REVOLVING FIRE-ARMS. D. Smith, Springfield, Mass. (Filed Oct. 9, 1875.)

The extractor-plate a, provided with a projection, A, extending rearward of the front face of the recoil-shield a, and having a peripheral shoulder, c, in combination with a catch, t, upon the hammer, operating through the recoil-shield to draw the extractor-plate from its recess in the rear face of the cylinder, and extract two or more shells from the chambers of the cylinder simultaneously, substantially as described.

171,650.

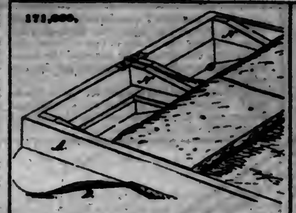


171,656.

171,652. FOLDING LOUNGES. C. Stockhan, Indianapolis, Ind. (Filed Jan. 24, 1874.)



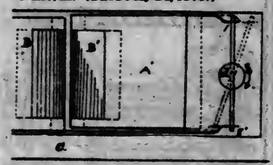
171,653.



1. A seat-post D of a lounge proper, supported by the springs E, and adjusted vertically by means of the knotted cord I, substantially as and for the purposes set forth.

2. The frame A, provided with the inclined blocks N, as described, whereby, when the hinged frame is opened or unfolded, the head sections of the mattress are supported by the inclined blocks, substantially as set forth.

171,654. STEREOSCOPES. John F. Steward, Plano, Ill. (Filed July 24, 1875.)



1. Stereoscopic glasses, made transversely adjustable, for the purpose specified, substantially as described.

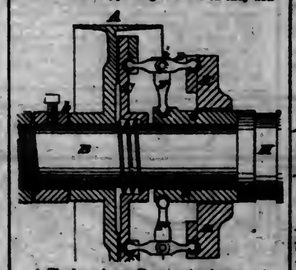
2. The intercepters B B', in combination with the glasses A A', for the purpose specified.

171,655. PROCESSES OF PRINTING PHOTOGRAPHS. Benjamin Sweezy, San Francisco, Cal. (Filed Dec. 20, 1874.)

The described process of printing photographic pictures with ornamental backgrounds by placing a background negative or film entirely over the picture or original negative and next to the collodion side thereof, substantially as and for the purpose set forth.

171,656. CLOTHES-DRIER. Alfred Burtonin, San Francisco, Cal. (Filed Oct. 20, 1875.)

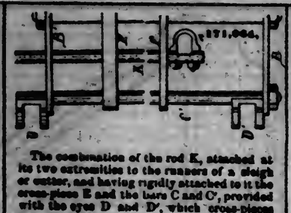
Brief.—The clutching-disk is moved by a double knee-lever or toggle closely against the side of the pulley, to cause the two to move together by friction. The knee-levers are made to stand at a small angle between the disk and the support against which they act.



1. The knee-levers D, operating between the cam U and the support E, in combination with the operating-arm F and the sliding clutching-ring H, substantially as and for the purpose herein described.

2. In combination with the loose pulleys A, disk C, and the support E, the levers D D, when placed in a line at an angle with the shaft, so as to force the disk against the pulleys as they are moved more nearly parallel with it, substantially as herein described.

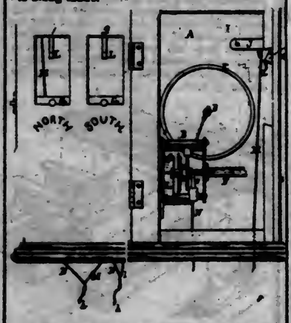
171,656. ADJUSTABLE DRAFT-BARS FOR CUTTERS. Jas. P. Thompson, Milwaukee, Wis. (Filed Apr. 27, 1875.)



The combination of the rod K, attached at its two extremities to the runners of a sleigh or cutter, and having rigidly attached to it the cross-pieces E and the bars C and C', provided with the eyes D and D', which cross-pieces are connected at their extremities by cross-pieces B and B' sliding at their centers upon cross-bar K.

171,658. COMBINED BURGLAR ALARMS AND INDICATORS. J. Thorman, Terre Haute, Ind. (Filed Oct. 10, 1875.)

Brief.—An attempt to open the door or window with which the apparatus is connected causes an alarm to be sounded, and also indicates the point at which the attempt is being made.



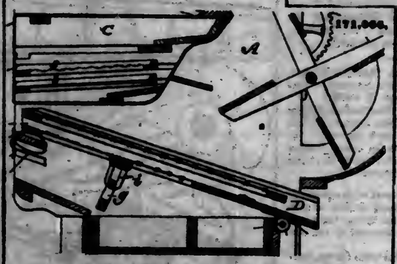
1. In combination with the case A, blinds G and catch c, the spring-hooks I, arms or wires K, and springs d, substantially in the manner as described, and for the purpose specified.

2. In combination with the spring-hooks L and catches a of the blinds G, the right-angled lever a e of the alarm mechanism B, put in connection with each other by the wires M N, whereby they are conjointly operated in the manner substantially as described, and for the purpose specified.

3. The spring-hooks L, blinds G, catches a, wires M N, and alarm mechanism B, arranged to operate in relation to, and in combination with, the nosh or lock thereof, of the windows of a building, substantially in the manner as described, and for the purpose set forth.

171,659. GRAIN-SEPARATORS. L. Theobald, Fishwell, Mich. (Filed June 5, 1875.)

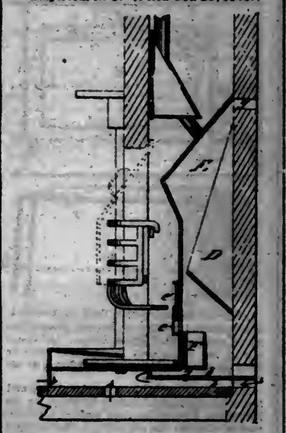
Brief.—Means of securing the screens of the upper shoe; adjustment for lower screens.



1. In combination with the grooved shoe C and its removable screens, the notched plates or bars c, secured to the rear end of the shoe, as shown and described.

2. The shaft or screen D, provided with the depending slotted arm f, in combination with the body A, provided with the notches n and adjustable bar k, and the rock-shaft g, engaging in the arm e, as shown, whereby a vertical adjustment of the upper end of the shoe is permitted without affecting its operation.

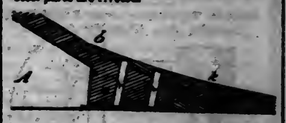
171,667. FIRE-PLACES. Robert Thompson, Stapleton, N. Y. (Filed Oct. 29, 1875.)



The combination of the angular shelf D and air-chamber E, the two respectively arranged in relation to each other, in a fire-place, as and for the purposes set forth.

171,668. PLOW-POINTS. Thomas S. Uria, Carson City, Mich. (Filed Apr. 24, 1875.)

Brief.—The steel point is split to receive the wedge-shaped point of an iron plow, and recessed for the end of the share-edge. The steel parts are riveted.

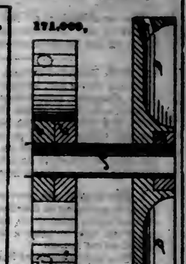


The casting A, having point a, rabbets b b, and the strengthening portion c, in combination with the angular steel point C, having upper branch k, and lower branch l, and rivets h h, constructed and arranged substantially as described, and for the purpose set forth.

171,669. CROSS-DAMPERS. John R. Underwood, Nelsonville, Ohio. (Filed Oct. 2, 1875.)

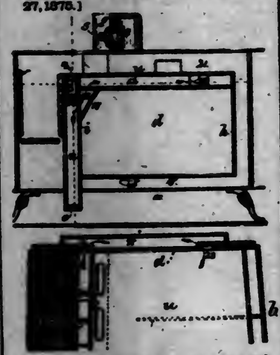
171,669.

171,669.



A sliver-damper, composed of cross-bars having the antipenult cavities D and lateral end holes E, as and for the purpose specified.

171,070. COOKING-STOVES. Isaac Van Benschoten, New York, N. Y., assignor to Jos. Christian, Shrewsbury, Pa., and S. Christian, Putnam Valley, N. Y. (Filed Oct. 27, 1875.)



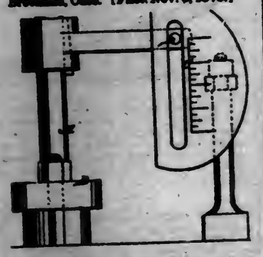
1. The air-flue a, between the fire-space and oven, passing through the bottom plate of the stove, and provided with a damper, and opening at the upper part through the front or back plate of the stove into the flue r, as set forth.

2. The air-space 12, between the plate a and top oven-plate g, and having an outlet for the heated air through the back plate d, in combination with the flue 16, plate 17, and opening into the air-flue a, as and for the purposes set forth.

3. The combination, with the air-space 12 above the top of the oven, of the flue r at the base of the stove, and the opening 23 through the back plate d, as set forth.

4. The combination of the flue r, at the back of the stove, with the flue s between the oven and fire-space, the damper 3, pipe 5, and branch pipe 8 to the smoke-flue t, for the purposes set forth.

171,071. VALVE-INDICATORS. J. B. Wallace, Brentland, Ohio. (Filed Nov. 6, 1875.)



The combination of the sliding rod A, pointer D, and indicator-scale C with a slide-valve, as and for the purpose set forth.

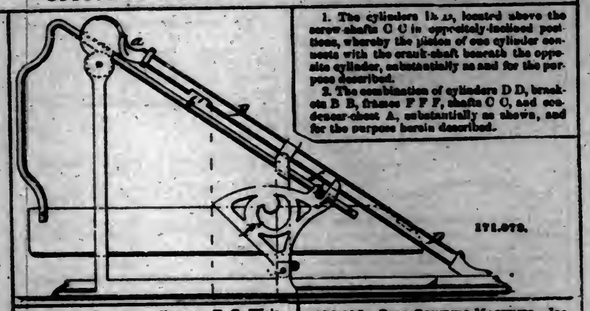
171,072. BREAD-CUTTERS. Maurice Walsh, Sillery Cove, and Maurice Ahearn, Ottawa, Canada. (Filed Sept. 11, 1875.)

Brief.—In front of the diagonally-sliding knife is a pivoted gage-piece, against which the loaf abuts as it is pushed forward. As the knife descends a pin on its frame strikes the gage, and turns it up out of the way, then allowing the cut slice to be removed.

1. The knife-frame, provided with a projecting arm engaging in the notch or fork of pivoted swinging gage-piece, for lifting the same out of the way, to allow a removal of the cut pieces, as set forth.

2. The inclined tube of the main frame, having longitudinal slot and end recess, in combination with the cross-head of the knife and, for introducing and retaining the knife in the guide-slot, substantially as set forth.

3. The middle guide-post of the triangular main frame, having a recess or slot for the passage of the gage-operating pin *f* on the knife-frame, substantially as specified.



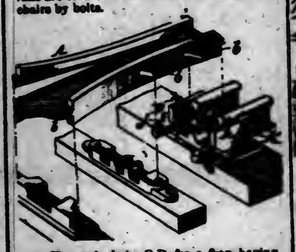
171,073.

1. The cylinders I and J, located above the screw-shafts C C in oppositely-inclined positions, whereby the piston of one cylinder connects with the crank-shaft beneath the opposite cylinder, substantially as and for the purpose described.

2. The combination of cylinders D D, brackets B B, frames F F F, shafts C C, and condenser-chest A, substantially as shown, and for the purpose herein described.

171,074. RAILWAY-FROGS. F. C. Weir, Cincinnati, Ohio. (Filed May 11, 1875.)

Brief.—A railway-frog which is reversible, and has a covered body with strengthening partitions, and a slot in the heel, into which takes a vertical flange upon the rear frog-chair. The sides of the front end of frog are parallel, and fit in between outer vertical flanges upon the front frog-chair, whereby lateral displacement is prevented. The track-rails are secured to the vertical flanges of the chairs by bolts.



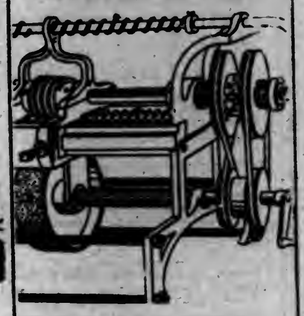
1. The end chairs C D for a frog, having the flanges *e h*, to overlap the joint between the frog and rails, and laterally support the frog, substantially as and for the purpose specified.

2. A reversible frog having coved compartments G and partition H, substantially as and for the purpose specified.

3. A frog having parallel side faces *e e* at one end, and a gap or slot, *d*, at the opposite end, for affording lateral support to the same, substantially as and for the purpose specified.

4. In combination with the chairs C D *e h* and rails J, the connecting-bolts K, connected and operating substantially as and for the purpose specified.

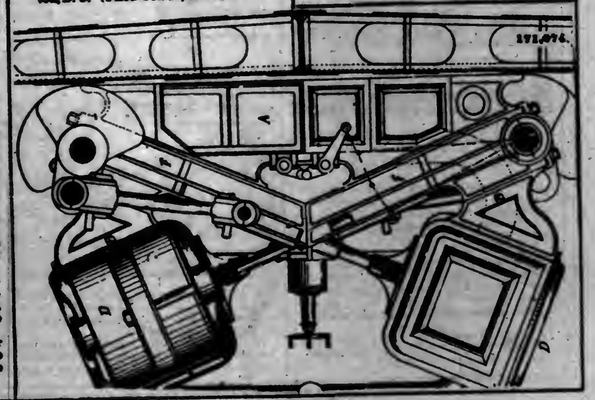
171,075. CARD-GRINDING MACHINES. Jos. P. Wicks, Providence, R. I., assignor to B. F. Chapin, same place. (Filed July 24, 1875.)



1. In a card-grinding machine, the combination of a grinding-wheel, its driving-shaft, and a grinding-wheel carriage mounted on a slide, with the stationary rack and the worm-gear, operated by a traversing shaft arranged to be reversed in opposite directions, and controlled by a clutch and an automatic shipper, substantially as described.

2. In a card-grinding machine, the combination, with a grinding-wheel carriage mounted on a slide and a traversing mechanism for moving the carriage on its slide, of a grinding-wheel mounted on a splined shaft controlled by the carriage, and located below the carriage and traversing mechanism, substantially as described, whereby the entire moving portions of the machine are so located with reference to the grinding-wheel that they are not liable to contact with abrasive matter thrown from the wheel, as set forth.

171,076. RESERVE FOR TWIN SCREW-PROPELLERS. George R. Whiting, Washington, D. C. (Filed Oct. 16, 1875.)



171,076. UMBRELLA TIP-CUPS. H. Winter, Jersey City, N. J. (Filed Nov. 18, 1875.)



In combination with the tip-cup a, tube b having flange c, and spring d, the shoulder f when formed upon the stick of the umbrella, as and for the purpose set forth.

171,077. BARRELS. David Wright, Auburn, N. Y. (Filed Dec. 8, 1875.)



A barrel containing a partition or division, dividing the same into two separate and distinct departments, with vacant spaces between the edges of the staves thereof, substantially as above described.

171,078. SCREWS FOR KNOBS. Wilbur F. Arnold, Winthrop, Conn. (Filed Oct. 26, 1875.)

Brief.—The wings prevent the knob from turning on the screw. The serrations prevent the withdrawal of the screw from the knob.

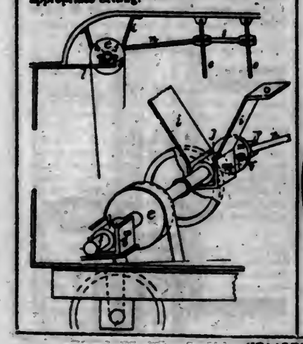


1. A headless pointed wood-screw, with wings *a a*, serrations *c c*, and reduced end *d*, as a new article of manufacture.

2. A headless screw, B, with wings *a a* upon the shank at the upper end of the thread, in combination with a knob, A, substantially as described.

171,079. DEVICES FOR COOLING AND VENTILATING RAILWAY-CARS. JAS. P. Babcock, Bangor, Me., assignee of one-half his right to Flavius O. Beal, same place. (Filed Sept. 27, 1875.)

Brief.—Fans are suspended from the upper part of the car, to which a swinging motion is communicated by a belt passing around the axle of the car-wheel, and over a shaft within the car. This shaft is so hung as to adapt itself to the motions of the truck-frame and car-body, and operates a series of fans, either by a connecting-rod eccentrically attached to said shaft by a universal or ball joint, or by appropriate belting.

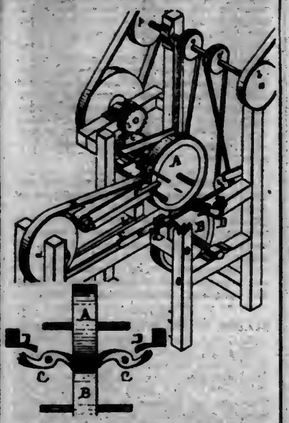


1. The combination of the driving-shaft *f*, hanger *i*, rocker-boxes *h j*, and spring-bearing *l* with the belt *o*, communicating motion to said shaft from the car-axle, all arranged substantially as specified, for the purpose set forth.

2. The combination of the driving-shaft *f*, hanger *i*, rocker-boxes *h j*, spring-bearing *l*, and belt *o* with the connecting-rod *n*, eccentrically attached to said shaft by a universal joint, and operating a series of fans, *o*, substantially as and for the purposes set forth.

171,080. MACHINES FOR PRESSING TAMPICO. Jonathan D. Baker, Burlington, Vt. (Filed Oct. 16, 1875.)

Brief.—The bolding-wheels have absorbing peripheries. The revolving combs upon each side are cleaned by stationary fingers. The carrying-belt delivers the material on a table, over the table, where it is fed into the machine.



1. The revolving wheels A and B, having their peripheries formed of cork, as and for the purpose described.

2. The combination of the wheels A and B, belt E, revolving cam-combs C, fixed combs D, and table c, as set forth.

3. The combination of the wheels A and B, feed-belt E, table c, gage e, vibrating batter G, cleaners D, and cam-combs C, substantially as described.

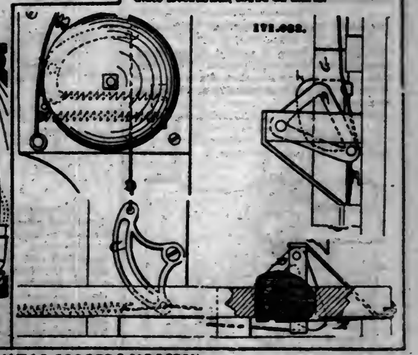
4. The combination of wheels A and B, feed-belt E, table c, and endless belt I with exhaustable side combs, substantially as described

171,081. LAMPS. Charles H. Ball, Philadelphia, Pa., assignor to C. S. Bradford, Jr. (Filed Nov. 16, 1875.)

171,081.



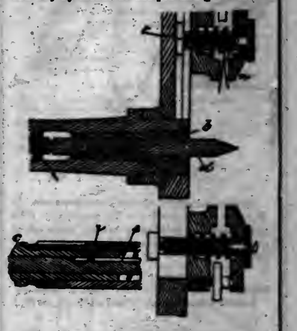
171,082.



The deflector for a gas-lamp, composed of the inclined plates U and E, attached to the wick-burner and gas-burner respectively, and terminating at their upper extremities in vertical walls to produce a more perfect union of gas and vapors at the point of combustion, and cause the flame to ascend in a straight line without veering to either side, substantially as shown and set forth.

171,082. CRUCES AND CRUTCHERS. George F. Ballou, Boston, assignor to H. W. Fisher and John M. Whitcomb, Waltham, Mass. (Filed Sept. 20, 1875.)

Brief.—The jaws are adjustable in radiating slots by means of screw-bolts, and are double, the outer piece being used to clamp an article to the inner. The pump-center is jointed, and held forward by a spring when projecting from the face-plate, and may be held back out of the way by means of the pin and groove.



1. The spindle a, in combination with bushing b, nut c, jointed pump-center d, longitudinal groove e, annular groove g, pin i, and spring k, substantially as above described.

2. The revolving spindle d, in combination with inclined tapering bushing b, and straight and jointed pump-center d, in the manner and for the purpose substantially as above set forth.

3. The pump-center d d, constructed in two pieces, and joined together by a socket or ball joint, in combination with the drawing-back arrangement and knob A.

4. The clamp of universal chuck, consisting of two jaws, n n', head-screw o, with spring r and corresponding recesses for the same, and tightening-screw p, with the milled heads in front of the face-plate, the upper jaw to swing independently from the lower jaw n', for the purpose and in the manner above set forth.

5. The universal chuck, consisting of the clamps n n, in combination with face-plate, spindle a, bushing b, pump-center d, nut c, substantially as above described.

171,083. RAILROAD-SIGNALS. J. H. Berger, Baltimore, Md. (Filed Nov. 4, 1875.)

Brief.—The car-wheels passing over the rail depress the spring, and, through the intermediate mechanism, sound an alarm.

The bar I, fastened to, and forming part of, the spring E, and working through a slot in the guard-bar G, in combination with the lever D, rods, and alarm, all substantially as set forth.

171,004. GALL-BELLS. Elijah G. Barton, East Hampton, Conn., assignor to the Gong-Bell Manufacturing Company, same place. [Filed Oct. 9, 1875.]

Brief.—The spring hammer is deflected by the finger, and when released its elasticity causes it to strike the bell.



The combination of the spring-hammer D E (with or without the finger-piece *b*) with the supporting-stand and bell or bell-shell of a table call-bell, substantially as herein specified.

171,005. FLY-TRAPS. William J. Bennett, Beaver Dam, Wis. [Filed July 22, 1875.]

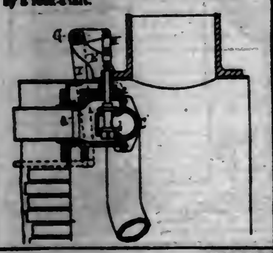


1. In a fly-trap, the bottom D, formed with the passages *a* and the outwardly-bent covering-lips *b*, substantially as and for the purposes herein set forth.

2. The combination of the cage A and the stiffening-wire G, formed in a single piece, attached to said cage by passing through the wire-gauze at two opposite points, and bent over to form the two half H, substantially as herein set forth.

171,006. THROTTLE-VALVES. R. Hester, Chicago, Ill. [Filed Oct. 6, 1875.]

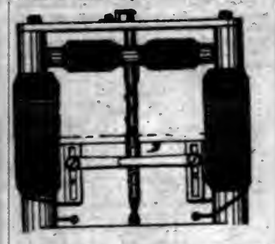
Brief.—The valve is located in the cross-head of the cylinder supply-pipes. The valve-stem passes through a stuffing-box in the shell of the boiler, and is attached to and operated by a rock-shaft.



The combination, with the shell A of the valve-chamber, of the valve B, the stem C, the stuffing-box *a*, and the rock-shaft D, arranged and operating substantially as and for the purpose set forth.

171,007. ELECTRO-MAGNETIC ENGINES. J. Bishop, Sugartown, assignor to Samuel S. White, Philadelphia, Pa. [Filed Aug. 6, 1873.]

Brief.—The commutator upon the spindle of the motor is in the form of a spiral, running in the direction of the axis, so that by shifting the contact-springs longitudinally along the axis the motor may be reversed.



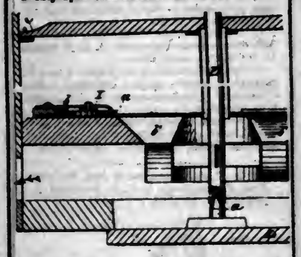
1. The combination of the spiral break and spindle of the armature, substantially as set forth.

2. The combination of the shifter-bar E, provided with pins and springs, as described, bar D, slotted plate *c*, and spiral break, substantially as set forth.

3. The combination of the spiral break and shifting mechanism with the electro-magnets and armature, substantially as set forth.

171,008. WATER-WHEELS. J. J. Bourgeois, St. Cloud, Minn. [Filed Oct. 30, 1875.]

Brief.—A particular arrangement of gates or cut-offs, in combination with the wheel and the detachable chutes and sleeve around the wheel-shaft. The gates are provided with rack-bars, and arranged to move in unison in opposite directions, so as to open and close evenly upon both sides of the wheel.

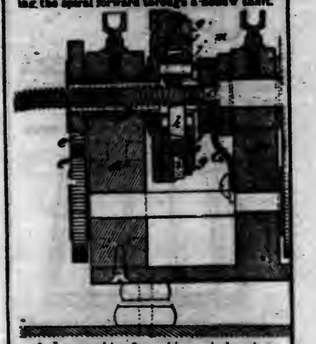


1. The combination, with the pinions I I of the sliding gates, provided with rack-bars *a a b b*, and arranged to move in unison in opposite directions, so as to open and close evenly upon both sides of the wheel, substantially as and for the purpose described.

2. The combination, with the wheel and its shaft, the partition D, the sleeve F, and the attached chutes, of the pinions I I and the oppositely-sliding gates, having rack-bars *a a b b*, substantially as described.

171,009. MACHINES FOR MAKING SPIRAL SPRINGS. Saml. L. Bower, Auburn, N. Y. [Filed July 3, 1875.]

Brief.—The wire is fed from a roll through a grooved guide-plate to a revolving mandrel, against which it is pressed by adjustable rollers journaled in elastic bearings on a revolving disk, the rollers having their faces arranged obliquely to the mandrel, and directing the spiral forward through a hollow shaft.



1. In a machine for making spiral springs, the combination, with the mandrel *c*, of the pressure-rollers *b b*, adjustably mounted in the revolving head H, with their surfaces arranged obliquely to the mandrel *c*, substantially as described, and for the purpose set forth.

2. The plate J, provided with a spiral groove *i*, gradually diminishing in depth from the periphery of the plate to its center, and provided with the pivoted segment *m*, in combination with the mandrel *c*, whereby the wire is fed and delivered to the mandrel, substantially as described.

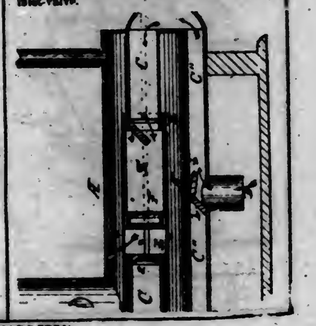
3. The plate J, having the groove *i* and segment *m*, in combination with the rolls *b b* and mandrel *c*, whereby the wire is spirally coiled and pressed around the mandrel, substantially as described.

4. The frame E, carrying the adjustable slide F and pulley P, in combination with the plate J, having the groove *i* and segment *m*, rolls *b b*, mandrel *c*, and rotary tubular shaft D, whereby the wire is fed, coiled, and pressed around the mandrel, and delivered from the machine, substantially as described.

5. The circular head H, provided with the tube *f f*, in combination with the slides *g g*, bifurcated bearings *b'*, rolls *b b*, spring *c*, and right and left screw-shaft, substantially as described.

171,010. DOUBLE-ACTING PUMPS. L. Bouvier, San Jose, Cal. [Filed July 21, 1875.]

Brief.—From the ends of a cylindrical vessel project inwardly two tubes. Over the tubes slide cylinders, connected together by rods, which rods also guide a loose piston-valve, which plays between the inner ends of the cylinders. The innermost ends of the tubes are provided with valves opening inward, the outer ends of the tubes communicating with external water-ways, controlled by a double inlet-valve.



1. In a double-acting pump, the combination, with the tubes B B, of the cylinders C C, the loose piston-valve D, and the double inlet-valve E, substantially as described.

2. The combination, with the cylinders C C, of the tubes B B, rigidly secured together at a short distance apart, and a loose piston-valve playing between the ends of said tubes, substantially as described and shown.

3. The combination, with the cylinder A, of the pipes O O, passages O' O', water-way O'', tubes B B, loose piston-valve F, and valves *a b*, when the several parts are arranged to operate substantially as described and shown.

171,011. GRAIN-GRATES. H. A. Boynton, New York, N. Y. [Filed Apr. 11, 1874.]

Brief.—The main grate may be rotated independently of the supplemental grate, and lower or supplemental grate may be moved horizontally without giving motion to the main grate.



1. In combination with a main grate provided with a central opening, and arranged to rotate around its axial center, a supplemental grate placed below said central opening, capable of being moved laterally in a horizontal plane beneath the same, and having between its upper surface and the lower surface of said main grate a horizontal clearing-space, substantially as and for the purpose specified.

2. In combination with a main grate provided with a central opening, and arranged to rotate around its axial center, a supplemental grate, placed below said central opening, capable of being moved laterally in a horizontal plane from beneath the same, said supplemental grate being entirely independent of the rotary motion of said main grate, substantially as and for the purpose shown.

171,012. WHEEL-HARROWS. F. Brunet, Little Falls, N. Y. [Filed Oct. 6, 1875.]

Brief.—A series of disks placed in gangs upon two shafts, each gang facing in opposite directions to prevent side draft. A series of cleaners attached to a single bar for each gang, and arranged to operate simultaneously by a lever.



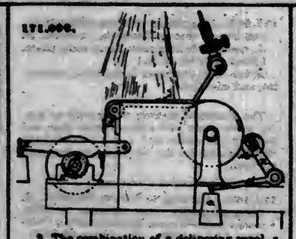
In combination with a gang or series of rotating harrow-disks, the cleaners or scrapers united to a reciprocating bar, adapting them to be operated simultaneously by means of a lever, substantially as and for the purpose set forth.

171,013. MACHINES FOR DAMPENING PAPER. Wm. Bullock, Philadelphia, Pa., (R. Voss, administrator.) [Filed June 20, 1866.]

Brief.—The paper is led from the dry-roll, the shaft of which is held by a friction-brake, over a table, where it is sprinkled; thence over the driving-roll, and wound upon a roll which leans against the driving-roll, and is held in contact therewith with a pressure adjusted by a weight upon an arm from the shaft from which extend the arms in which the damp-roll is journaled.

1. The combination of a spool for holding dry paper with a driving-roller and a spool for winding up damp paper; but this combination is claimed only where the axes of the arms which support the latter spool are mounted with reference to the driving-roller, substantially as described.

171,014.



2. The combination of a delivering-spool, a driving-roller, and a winding-up spool mounted on arms whose axes are arranged with reference to the driving-roll, as described, with an apparatus for throwing a spray of water upon the paper in its passage from the delivering spool to the winding-up spool, the combination being and acting substantially as set forth.

3. The combination of a delivering-spool, a driving-roller, and a winding-up spool mounted on arms whose axes are arranged with reference to the driving-roll, as described, with a table or platform located between the delivery-spool and the winding-up spool, the combination being substantially such as set forth.

4. The combination, substantially as described, of a delivering-spool, a table, a jet-nozzle, a driving-roll, and winding-up spool mounted on arms whose axes are arranged with reference to the driving-roll, as described.

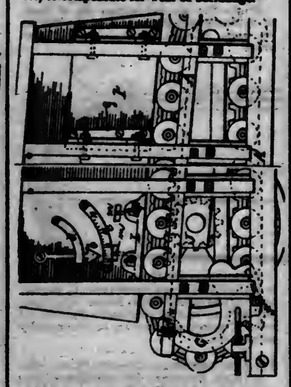
5. The combination of these elements, viz., a winding-up roll, weights to regulate the pressure thereof upon a driving-roll, and a delivery-roll, the combination being substantially such as described.

6. The combination of the following elements, viz., a winding-up roll, weights to regulate the pressure thereof upon a driving-roll, a delivery-roll, and nozzles or jet-pipes, the combination being substantially such as described.

7. The combination, substantially as described, of these elements, viz., a winding-up spool, a driving-roll, a delivery-roll, and weights to regulate the pressure of the winding-up spool on the driving-roll; but this combination is claimed only when the bearings of the arms for supporting the winding-up spool are arranged with reference to the driving-roll, as described.

171,015. HORSE-POWERS. Wm. H. Butterworth, Trenton, N. J. [Filed Aug. 11, 1875.]

Brief.—The curved portion of the track admits of minute adjustment of length of chain. Guard-plates for holding the links of endless chain in gear with pinions are made adjustable, to compensate for wear or shrinkage.



1. The combination, with the railway or track A A', of the curved adjustable section C, constructed substantially as and for the purposes herein set forth.

2. In an endless-chain horse-power, the links E, provided with the projections or bosses *b b*, through which the rods G pass, substantially as and for the purposes herein set forth.

3. The combination, with the links E, rods G, and wheels B, of the adjustable plates L, arranged to operate substantially as and for the purposes herein set forth.

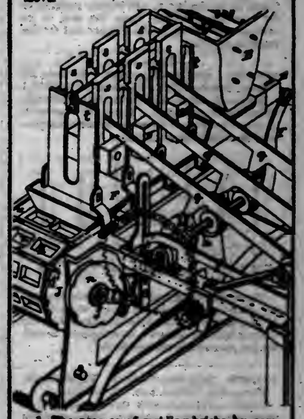
4. The combination, with the frame-post having a series of perforations, *c*, of the angular plate *a*, having bent arm *a* pivoted thereto, and said plate adjusted up or down within the post for holding the brake-lever to suit the different positions of the main belt, as set forth.

5. The indicator consisting of the pointer *b*, graduated plate *c*, and the protector or shield *d*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

6. The combination, in a horse-power, of the counter-bored wheels B, the rods G, turned to correspond with said counter-bores, and the L-shaped tract A A', substantially as and for the purposes herein set forth.

171,016. BRICK-MACHINES. Thomas B. Burridge, St. Louis, Mo., assignor of two-thirds his right to William E. Smith and Jeremiah Fruhe, same place. [Filed July 26, 1875.]

Brief.—The bricks are molded by compressing by plungers varying in face area. The intermittently-moving molds pass under the series of hammers or plungers, and have their bottoms formed by the trough over which they move.



1. The process of molding bricks by compressing the clay in the molds by the action of hammers (as M N O) of increasing face area, substantially as set forth.

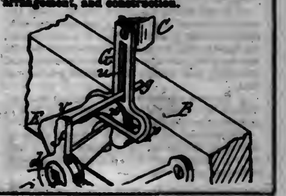
2. The combination of intermittently-moving molds H, hammers M N O, differing in face area, as described, and trough F, whose bottom G forms the bottoms of the molds while filling, substantially as set forth.

3. The combination of feed-block E, operating-lever T, provided with stops T', and mold-chain H, having joint-rods I, provided with projecting ends, as set forth.

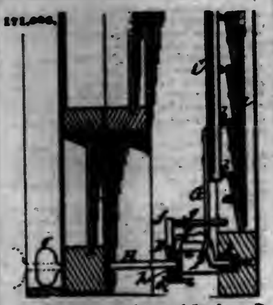
4. The combination of chain of molds H I, wheels J K *a*, pawl and pawl-arm *s t*, pitman *g*, arm *f*, and cam *b* with lug *a*, constructed and operating substantially as set forth.

171,017. BLIND-SLAT ADJUSTERS. Wm. W. Byam, Rochester, N. Y., assignor of one-half his right to E. C. Byam, Fort Dodge, Iowa. [Filed Oct. 12, 1875.]

Brief.—The claims very fully point out the invention. A mere novelty of combination, arrangement, and construction.



171,096.



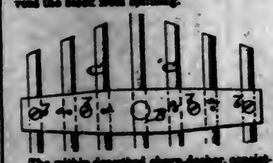
1. The device consisting of the frame D, with the guide-rod f, cam C, connecting-rod G, with stirrup p, and the movable shaft H, the whole combined to operate in the manner and for the purpose specified.

2. The cam E, constructed with the journals b i, crank portion c, spiral e, and eccentric s, in the manner and for the purpose specified.

3. The combination, with the cam E and frame D, of the bar h, and rubber packing n, for producing friction upon the cam to its turning movement, in the manner and for the purpose specified.

171,097. CHUCK-DAMPER. Rodney M. Cass, Auburn, N. Y. (Filed Nov. 6, 1875.)

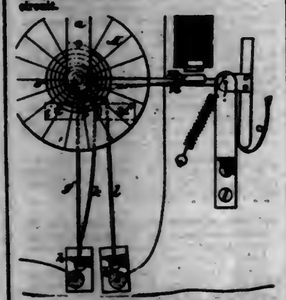
Brief.—A blank has perforations, through which wood rods pass. These rods are held in place by nuts. Screws are used to prevent the blank from splitting.



The within-described clamp-dasher, consisting of the perforated head B and wooden rods C, passed through the same and fastened by the nuts a and the screws b, substantially as and for the purposes herein set forth.

171,098. REGULATING CLOCKS. Elijah Clark, Paris, Ky. (Filed Apr. 26, 1875.)

Brief.—Armature-lever forked and used as escapement-lever. Balance-wheel controls circuit.



1. In the herein-described electric clock, the combination of the detent f, balance-wheel A, detent-spring p, and tongues h i, constructed as shown, and operating in connection with the magnets, for the purpose of making and breaking the circuit, substantially as specified.

2. The armature-lever a n, having one end forked, in combination with spring i, disk d, and pin c, constructed and arranged as shown.

3. The combination of the balance-wheel A, detent f, detent-spring p, tongues h i, and spring armature-lever a n i, constructed and arranged as shown.

171,099. PROCESSES OF COMPOUNDING PAPER-PULP. George Charleton, Paterson, N. J., assignor to Benjamin Kent, same place. (Filed May 18, 1875.)

Brief.—Ball the paper in the acids, neutralize, and add fiber.

The process of making paper-pulp by mixing waste paper with silk or cotton fiber, and treating the same with sulphuric and nitric acids, as and for the purpose described and set forth.

171,100. AUTOMATIC BOILER-FEEDERS. S. Cook, Magnolia, Iowa, assignor to Automatic Boiler-Feeder Manufacturing Company, St. Louis, Mo. (Filed Nov. 16, 1875.)

Brief.—Water flows into the tank, raising the float to operate an oscillating valve. Said valve admits steam to a valve-piston, which opens ports to admit steam above the water in the tank, and to allow the water from the tank to flow into the boiler.



1. In combination with the piston-valve P cylinder O, and weighted wheel, actuated by the rise and fall of the float, an intermediate oscillating valve, N, actuated by the movement of the wheel, and controlling the admission of steam to the piston-valve, substantially as set forth.

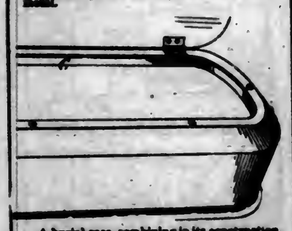
2. The cylinder O, and piston-valve, consisting of the parts P P' P'', constructed and arranged substantially as set forth.

3. The combination of the valve-piston P P'', with the induction-pipe X opening between them, and the ports H and F, substantially as set forth.

4. The cylinder constructed with ports O' O'', and ports leading to pipes F and H, G, I, and K, and X, substantially as set forth.

171,101. COFFINS. James M. Currier, Portland, Me. (Filed Nov. 24, 1875.)

Brief.—The top and bottom are of wood, as is also a strengthening-rim, upon which the top abuts. The sides and ends are of sheet metal.



A burial-case, consisting in its construction, a wooden bottom and frame-piece, C, parallel thereto, and sides or ends formed by extending sheet metal from the wooden frame to the wooden bottom, and a cover, E, substantially as set forth.

171,102. REFRIGERATOR-CASE FOR FILES. John C. Davis, Baltimore, Md., assignor of one-half his right to T. J. Maynard and R. L. Bartlett, same place. (Filed Nov. 6, 1875.)

Brief.—An extension-cap for repairing partially-decayed piles, constructed of metal, in two parts, to be clamped and firmly secured to the top of the piles, where the wood is sound, after the top has been sawed off below the point of decay.



171,103.

The divided or two-part extension-cap for piles, constructed and adapted for application in manner substantially as herein set forth.

171,104. HAT-VENTILATORS. J. B. Dilleway, Boston, Mass. (Filed Sept. 10, 1875.)

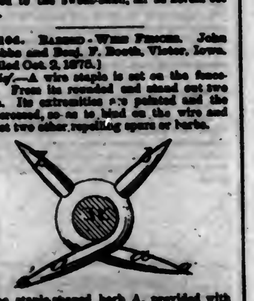
Brief.—The ends of the outer plate are clamped over and upon the inner plate, thereby connecting both. Flues are formed by flanging up the inner plate midway its length, in a vertical line, to aid the currents of air, and to keep the plates separated. The device is inserted between the sweat-band and side crown, and at the front, rear, or sides of the hat.



The hat-ventilator herein shown and described, the same consisting of the two metallic plates a and b, one of which is attached to the hat-body, and the other constructed with a series of partitions or flutes, d, and overlapped at its ends by the other plate and secured to the sweat-band, all as herein set forth.

171,105. RAISED-WIRE FENCES. John Dobbs and Benj. F. Booth, Victor, Iowa. (Filed Oct. 2, 1875.)

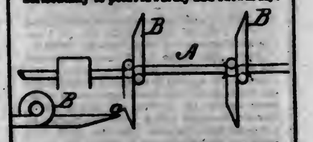
Brief.—A wire staple is set on the fence-wire. From its rounded and staid cut two spurs. Its extremities are pointed and the legs crossed, so as to bind on the wire and project two other repelling spurs or barbs.



The staple-shaped barb A, provided with spurs b b' and pointed legs a, adapted to be bent around a fence-wire, substantially as described, and for the purpose set forth.

171,106. RAISED FENCE-WIRE. John Dobbs and Benj. F. Booth, Victor, Iowa. (Filed Aug. 7, 1875.)

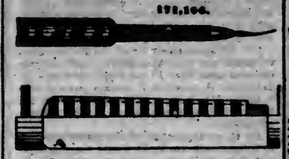
Brief.—The horizontal wire is deflected in each post, where a V-shaped or duplex wire barb is pressed upon it, and its legs crossed horizontally to point inwardly and outwardly.



The wire A, having a shoulder, b, formed on each of its sides, and opposite each other, in combination with the barb B, with its legs spread laterally, and clamped to the wire at its shoulders, in the manner described.

171,107. WELDING-BURNER HANDLES FOR DENTAL TOOLS, &c. R. B. Donaldson, Washington, D. C. (Filed Dec. 1, 1875.)

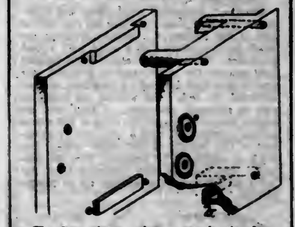
171,108.



1. The described method of making rubber handles for dental and other implements, by covering a body or core with strips or pieces of rubber of different colors, placing such rubber-wrapped core in a mold, tightening and compressing the mold upon it, and then submitting the whole to the action of superheated steam to vulcanize and harden the rubber, all substantially as set forth.

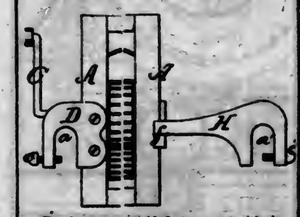
2. As a new article of manufacture, a handle consisting of a core covered with strips or pieces of vulcanized rubber of different colors or patterns, substantially as and for the purposes described.

171,109. LETTER-JACKS. Alex. Duncan, Duncan's Mills, Col. (Filed May 17, 1875.)



The face plates, when made in the form shown and described, and united together by means of the bolts and nuts, so that there will be a slot of quadrilateral shape at the top and bottom of the plates to form a bearing and support for the lifting-bar, as set forth.

171,110. CLAMPS FOR WASHING-MACHINES AND WRINGERS. Wm. A. Dunham, Syracuse, N. Y. (Filed Oct. 2, 1875.)



The frame A, provided at one end with the rigid arm D, having the recess a and cut-cover c, the opposite end of said frame being provided with a swinging arm, H, having a recess, c', and cut-cover c', whereby the frame is adapted to fit different-sized tubs, and at the same time to be held firmly in place, substantially as described.

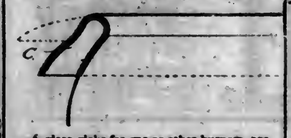
171,111. LAMPS. John A. Sturm, West Meriden, Conn., assignor to the Bradley & Hubbard Manufacturing Company, same place. (Filed Oct. 19, 1875.)



The combination of the socket B, constructed to be attached to the fixture, and with the central spindle O and internal projections f, with the lamp-feast constructed with the central rest D, corresponding to the said spindle, and with the annular flange notched to correspond to the said projections, substantially as and for the purpose described.

171,112. CHUCKS FOR BURNERS. B. Evans, Lynn, Mass. (Filed Nov. 23, 1875.)

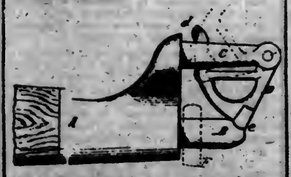
Brief.—The flange is coated to produce a reflecting-surface.



A glass globe for gas or other burners, provided with a projecting and prepared flange, C, substantially as herein described, and for the purpose specified.

171,113. WRENCH-STEMS. James R. Finley, Delphi, Ind., assignor of one-half his right to Jas. M. Watts, same place. (Filed Sept. 9, 1875.)

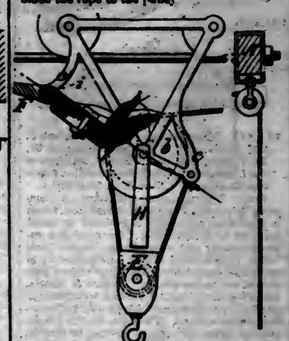
Brief.—A gravitating-latch secures the brace on whiffletree-hook.



In a brace-fastener, the combination, with the brace-pin, of a projection or lug, C, arranged above the pin, and a gravity-latch, D, pivoted to the projection or lug, and resting normally upon or near to the brace-pin, substantially as set forth.

171,114. HAY-ELEVATOR DOGS. J. B. Fimhouse, Indiana, Pa. (Filed May 28, 1875.)

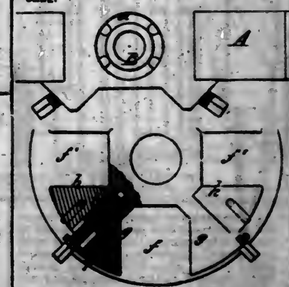
Brief.—A carriage with fall-catch attached, running on a rod in the roof of the barn, has a pivoted catch, holding it to one end of the rod canal the fork, reaching its full elevation, strikes and releases it. The butt-end of such catch, being cam-shaped and corrugated, then binds the rope to the pulley.



In a hay-elevator, and as an improvement upon my patent of September 1, 1874, the eccentric lock F, the corrugated heel of which is at right angles to its body, and the lower edge of the heel below a line drawn through the pivot i of the said lock, and pivot of hoisting-pulley b, substantially as specified.

171,115. MILLSTONES. Hans J. Fogh, Jodsted Molle, Denmark, assignor to Wm. H. Corlin and Laurits T. C. Fogh, Creston, Wyo. (Filed Oct. 28, 1875.)

Brief.—By means of screws the adjustable segments are made to press against the balance-rynd, which is itself regulated by screws passing against a cup placed within the balance-rynd, and resting upon the spindle, the whole to cause the stone to run without wabbling.



1. The segments g on plate C forming recesses f f, in combination with the adjustable segments A A, forming recesses f' f' to receive the lintrs of the balance-iron, substantially as specified.

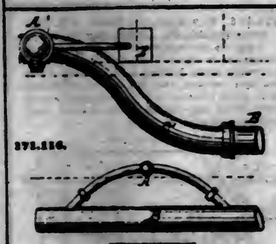
2. The adjustable segments A, on plate C, in combination with the adjustable cup B to the balance-iron A, substantially as described.

171,116. STREET-CONNECTIONS FOR HYDRANTS. Michael Pollard, Brooklyn, and Wm. T. Travis, Flat Bush, N. Y. (Filed Nov. 15, 1875.)

Brief.—The device shown allows of a free circulation from the main to and from the hydrant, thus preventing freezing, as the temperature of the water in the main and hydrant is practically the same.

The combination of a return-bend with the street-main B, and with a hydrant, A, situated either on the sidewalk or inside of a building, said return-bend being formed substantially in the manner herein shown and described.

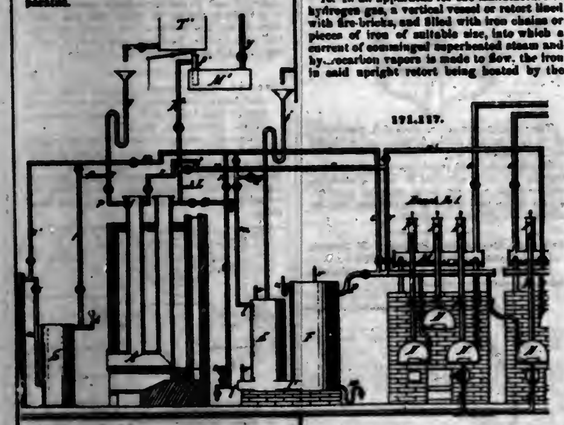
HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.



171,116.

171,117. MANUFACTURE OF GAS. Joseph P. Gill, Newark, N. J., assignor to Robert W. Butterfield and Joseph P. Gill, trustees of the Illuminating Gas Apparatus Construction Company. (Filed Nov. 20, 1874.)

Brief.—Hydrogen is manufactured continuously by passing steam over heated iron, which is decomposed as rapidly as oxidized by small amounts of hydrocarbon. The hydrogen enters an empty still or vaporizing-chamber, into which hydrocarbon enters simultaneously in regulated quantities. Resultant vapors pass into an expansion-chamber, thence to retorts, receiving on the way, if desired, an additional quantity of superheated steam and hydrocarbon, either or both. From the retorts the gas may be taken to holders for use, or may be taken to mains, where it is mixed hot with ordinary hot coal-gas, passing in either case through the usual purifying processes and apparatus.



171,117.

1. The process of manufacturing hydrogen gas continuously from superheated steam by the use of hydrocarbon to decolidize iron when in process of oxidation by contact with superheated steam, substantially in the manner herein described, and for the purpose set forth.

2. The process of manufacturing illuminating gas by combining hydrogen gas, and superheated steam, and the vapors of hydrocarbons, and then converting them in red-hot retorts into a final illuminating-gas, substantially in the manner herein described, and for the purpose set forth.

3. The combination of hydrogen gas, produced in the manner herein described, and gas made from coal, and gas from hydrocarbon liquids, substantially in the manner herein described, and for the purpose set forth.

4. The combination of illuminating-gas, produced from commingled hydrogen gas, superheated steam, and hydrocarbon vapors, as herein described, and coal-gas in the hydraulic main, substantially in the manner herein described, and for the purpose set forth.

5. In the apparatus for the manufacture of illuminating-gas, a duplex steam vessel or double still, wherein liquid hydrocarbon is vaporized, and the vapors commingled with hydrogen gas and superheated steam, no liquid of any kind being filled into or allowed to accumulate in said still, substantially in the manner herein described, and for the purpose set forth.

6. In an apparatus for the manufacture of gas, a movable dip-pipe with two floats and cap attachments to the bridge-pipe and movable lever, substantially in the manner herein described, and for the purpose set forth.

7. In an apparatus for the manufacture of hydrogen gas, the combination of the boiler B, pipes *a* and *a'*, superheater S, pyrometer h, pipe *p*, tank T, siphon-pipe J, retorts A A' A² A³ A⁴ A⁵ A⁶ A', stand-pipes B², floats and cap attachments, and movable dip-pipe and lever F¹, hydraulic main M', pipes *g g'* X Y Y', condensers Q, exhauster U, purifiers U², station-meter V, boiler K, substantially in the manner herein described, and for the purpose set forth.

8. In an apparatus for the manufacture of hydrogen gas, the combination of boiler B, pipes *a* and *a'*, superheater S, pyrometer h, pipe *p* (*s n q m*, branch pipes *s s'*, closed duplex vessel or double still E F, tank T, siphon-pipes *j*, steam-gage *t*, pressure-gages *u*, thermometers *v*, siphon-pipe *w*, pipes F' *r z*, retorts A A' A² A³ A⁴ A⁵ A⁶ A', stand-pipes B², floats and cap attachments, and movable dip-pipe and lever F¹, hydraulic main M', pipes *g g'* X Y Y', condensers Q, exhauster U, purifiers U², station-meter V, boiler K, substantially in the manner herein described, and for the purpose set forth.

9. The process of making a vapor of commingled superheated steam and hydrocarbon by introducing the hydrocarbon liquid in small quantities simultaneously with superheated steam into an otherwise empty duplex still, or vaporizing, commingling, and expanding chambers, for illuminating and heating purposes, substantially in the manner herein described, and for the purpose set forth.

10. In an apparatus for the manufacture of hydrogen gas, a vertical vessel or retort lined with fire-bricks, and filled with iron chains or pieces of iron of suitable size, into which a current of commingled superheated steam and hydrocarbon vapors is made to flow, the iron in said upright retort being heated by the combustion of the said superheated steam and hydrocarbon vapors, and then the said superheated steam being decomposed into hydrogen gas by the combined action of the heated iron and hydrocarbon, substantially in the manner herein described, and for the purpose set forth.

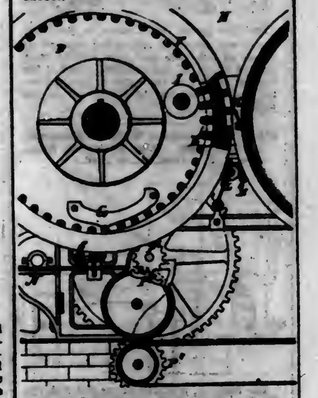
11. In an apparatus for the manufacture of illuminating-gas from a combination of hydrogen gas, superheated steam, and hydrocarbon vapors, the combination of boiler B, pipes *a* and *a'*, superheater S, pyrometer h, pipe *p*, tank T, siphon-pipe J, retorts A A' A² A³ A⁴ A⁵ A⁶ A', pipe *q*, pipes *i m n r*, tank T, siphon-pipe *j*, branch pipes *s s'*, double still E F, steam-gage *t*, pressure-gage *u*, thermometers *v*, siphon-pipe *w*, pipe F', pipe *c*, branch pipes *b*, retorts in bench No. 1, N', stand-pipes B², floats and cap attachments and movable dip-pipe and lever F¹, hydraulic main M', pipes *g g'* X Y Y', condensers Q, exhauster U, purifiers U², station-meter V, boiler K, substantially in the manner herein described, and for the purpose set forth.

12. In an apparatus for the manufacture of illuminating-gas from a combination of gas made from a combination of hydrogen gas, superheated steam, and hydrocarbon vapors with coal-gas in the hydraulic main, the combination of boiler B, pipes *a* and *a'*, superheater S, pyrometer h, pipe *p*, tank T, siphon-pipe J, retorts A A' A² A³ A⁴ A⁵ A⁶ A', pipe *q*, pipes *n s* (*r*, tank T, siphon-pipe *j*, branch pipes *s s'*, duplex still E F, steam-gage *t*, pressure-gage *u*, thermometer *v*, siphon-pipe *w*, upright retorts B², floats and cap attachments to the bridge-pipe and movable lever, substantially in the manner herein described, and for the purpose set forth.

13. In an apparatus for the manufacture of illuminating-gas, the combination of boiler B, pipes *a* and *a'*, superheater S, pyrometer h, pipe *p*, pyrometer h, pipe *i*, pipe *z*, tank T, siphon-pipe *j*, duplex still E F, pipes P *z*, steam-gage *t*, pressure-gage *u*, thermometers *v*, siphon-pipe *w*, upright retorts A', filled with iron and heated from within, pipe P', pyrometers F F', damper D, ensemble-stand W, discharge-pipe U to condensers, exhauster, purifiers, station-meter, and boiler, constructed substantially in the manner herein described, and for the purpose set forth.

171,118. BRICK-MACHINE. William A. Graham, Carlisle, Pa., assignor to William H. Philip, trustee for himself and others. (Filed Dec. 4, 1875.)

Brief.—A polygonal mold-wheel and cylindrical feed and pressure wheel are run close to each other in the bottom of a hopper, forcing the brick by compression in a mold with radial plungers. The pressure-wheel is adjustably held against the mold-wheel by a screw, and elastic bearings maintain a constant contact between the two. The wheels are made to run at different velocities. A cam with an elastic support engages the ends of the stems of the plungers, to give a preliminary pressure as the bottoms of the molds before the brick is completed by pressure from the outside. The faces of the plungers, after the brick is delivered, are cleaned by an elastic rubber.



1. In combination with the hopper, the polygonal mold-wheel D and cylindrical feed and pressure wheel C, having its adjustable bearings elastically mated, forcing the wheels together in the line of their axes, substantially as set forth.

2. In combination with the mold-wheel and radial plungers and pressure-wheel C, the cam I, giving an impact to the clay in the bottom of the mold from the center outward, and thereby completing its compression by pressure applied in the opposite direction, substantially as set forth.

3. In combination with the mold-wheel and radial plungers, the cam I, resting on an elastic bearing, substantially as set forth.

4. In combination with the mold-wheel and brush L, supported against the solid rim of the mold-wheel, substantially as set forth, an auxiliary knife, K, bearing on the said rim to clean it of clay and give a clean track to the friction-wheels of the former.

5. In combination with the mold-wheel, with radial plungers and cam for projecting the latter, a rubber, S, for cleaning the faces of the wheel and plungers, substantially as set forth.

6. In combination with the hopper, the mold-wheel D and feed and pressure wheel C, adapted to run with different peripheral velocities, substantially as set forth.

7. In combination with the knife L and its frame, the india-rubber spring M', adjustably held in position by the yoke N' and set-screws N².

8. The molds constructed in the rosette on the periphery of the flanged mold-wheel by inserting the steel plates O O', substantially in the manner set forth.

171,119. ELECTRO-MAGNETIC DENTAL PLUGGER. George F. Green, Kalamazoo, Mich., assignor to Samuel S. White, Philadelphia, Pa. (Filed Aug. 5, 1875.)

1. The frame A, composed of the steel-bars *a b*, the barrel B, and the electro-magnet C, substantially as described.

2. The combination, with the magnet C, of the armature, connected with the mallet, to serve as a counter-balance thereto, and pivoted upon the magnet, and vibrating between its poles, substantially as described.

3. The combination of the frame A, the barrel B, the casing, and the reciprocating spindle H, substantially as described.

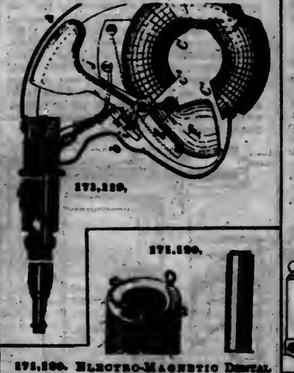
4. The combination of the frame, the barrel, the casing, the spindle, the mallet, the armature, and the magnet, substantially as and for the purposes described.

5. The combination of the hammer head, the combined counter-weight and armature, the mallet-shaft, and the magnet, substantially as described.

6. The cushioning-slide *h*, in combination with the hammer and spindle, substantially as described.

7. The combination, with the fixed barrel B, of the rotating section of the casing and the pistol-stock-shaped case A, substantially as and for the purpose described.

8. The combination of the mallet and armature, connected directly together, as set forth, whereby the armature forms the counter-balance for the mallet, for the purpose specified.



171,120.

171,120.

171,120. ELECTRO-MAGNETIC DENTAL PLUGGER. George F. Green, Kalamazoo, Mich., assignor to Samuel S. White, Philadelphia, Pa. (Filed Aug. 5, 1875.)

1. The combination of the electro-magnet, the mallet reciprocating therein, and the revolving reciprocating spindle carrying the tool, substantially as described.

2. The combination, with the casing of a dental plugging-instrument, of the helix, the fixed core, the reciprocating mallet, and the spindle carrying the tool, substantially as described.

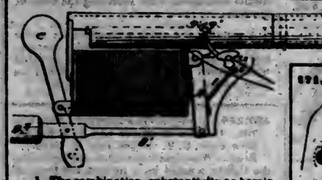
3. A circuit-breaker spring, actuated by the flange of the mallet, for the purposes described.

4. The combination of the shoulder in the fixed hollow grooved core, or its equivalent, with the collar *e* on the spindle, or its equivalent, and the coiled spring *f*, for the purposes described.

5. The combination of the helix, the flanged mallet, and the grooved fixed core.

6. A mallet for an electro dental plugger, provided with a flange, for the purpose of breaking the electric circuit, substantially as described.

171,121. ELECTRO-MAGNETIC DENTAL PLUGGER. George F. Green, Kalamazoo, Mich., assignor to Samuel S. White, Philadelphia, Pa. (Filed Aug. 5, 1875.)



171,121.

1. The combination, substantially as herein before set forth, of an electro-magnet and a mallet-plugger mounted directly thereon.

2. The combination, in one instrument, substantially as set forth, of an electro magnet, a mallet mounted thereon and vibrated thereby, and a reciprocating plugging-tool.

3. The combination, substantially as set forth, of a plugging-tool, an electro-magnet, a vibrating mallet, and a counter-balance, to insure malleting with uniform force in any position.

4. The combination, substantially as set forth, of a plugging-tool, a mallet, an electro-magnet, and an automatic circuit-breaker actuated by the mallet.

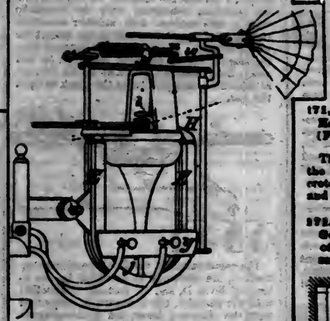
5. The combination, substantially as set forth, of an electro-magnetic dental plugger and circuit-breaking mechanism, actuated simply by pressure upon the point of the plugging-tool.

6. The combination, substantially as herein before set forth, of a rotating case-section and the electro-magnetic dental plugger, for the purpose described.

7. The combination of the electro-magnet and the two armatures C D, substantially as described.

171,122. ELECTRO-MAGNETIC FAN. Geo. F. Green, Kalamazoo, Mich., assignor to Samuel S. White, Philadelphia, Pa. (Filed Aug. 5, 1875.)

Brief.—Designed for use in dental operations. The fan is worked by an electro-magnetic motor, and the apparatus is so suspended from a bracket as to be easily adjustable to any position.



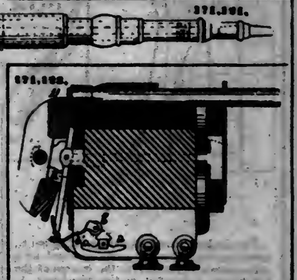
1. The combination, substantially as herein before set forth, of the rotating electro-magnet, its gearing, the fan-shaft, crow-bracket M, and the crooked pitman-connections between the fan-shaft and gearing, whereby the fan is vibrated by the rotation of the magnet.

2. The combination of the fan, the electro-magnet, and its adjustable supporting-bracket, through which the circuit passes; these members being constructed and operating in combination, substantially as herein before set forth.

3. The combination, substantially as set forth, of the electro-motor, the adjustable bracket, and the circuit-breaking lever, through which the current passes to the brushes.

4. The combination of the horizontally adjustable bracket, the electro-magnet, and the insulated vertically-adjustable joint between the bracket and magnet.

171,123.



171,123. ELECTRO-MAGNETIC DENTAL PLUGGER. George F. Green, Kalamazoo, Mich., assignor to Samuel S. White, Philadelphia, Pa. (Filed Aug. 5, 1875.)

1. The combination, substantially as set forth, of the duplex electro-magnet, the oscillating armatures, the plugging-tool, and the circuit-changing mechanism.

2. The combination, substantially as set forth, of the oscillating armatures, the rocking arm K, carrying the wheel *p*, and the circuit-breaker block, with the magnet.

3. The combination of the magnet, its frame, the bearings, the tool movable endwise therein, and the spring-cams which holds the tool and oscillating armature, substantially as and for the purpose described.

171,124.

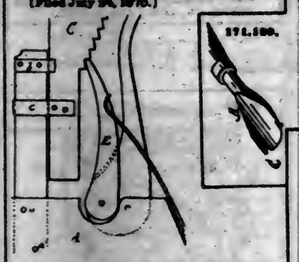
171,124. CORSETED SHIRTS AND DRAWERS. Henry H. H. Greenleaf, Philadelphia, Pa. (Filed Oct. 18, 1875.)

The combined shirt and drawers, having the rear flap C extending forward under the crotch and upward in front, substantially as and for the purpose set forth.

171,125. BALANCED VALVES AND CUT-OFFS. Gordon W. Hall, Havana, N. Y., assignor of one-half his right to A. C. Whittemore, same place. (Filed Oct. 16, 1875.)

The connected cut-off valves G G, combined with valve D and with false ports *r r* and vents *t*, substantially as described.

171,186. LETTUCE-JACKS. Harvey D. Hazeldon, Hartford, Vt., assignor of one-half his right to Curtiss S. Hamilton, same place. (Filed July 24, 1875.)

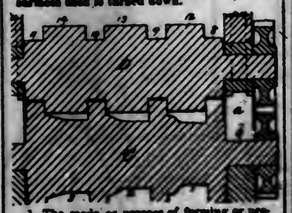


171,186.

The combination of the sliding lifting bar C, provided with a ratchet and operated by a spring-pawl, E, pivoted to the bottom of the hand-lever, fulcrumed to the base-block A, which is recessed to receive the end of the pawl, and divided to provide for the movements of the lever, substantially as shown and set forth.

171,187. MANUFACTURE OF CUTTER-STOCKS. L. Hardy, Worcester, Mass. (Filed Nov. 27, 1875.)

Brief.—The bar of steel is placed longitudinally upon the edge of the bar of iron and projecting therefrom. They are welded together by hand at one end, brought to a red heat, borax applied, then raised to a welding heat, withdrawn and placed between clamping-jaws to cause their surfaces to adhere, reheated, and passed through the different surfaces upon the rolls. To further reduce the steel edge the adjusting bolt nearest the last surfaces used is turned down.

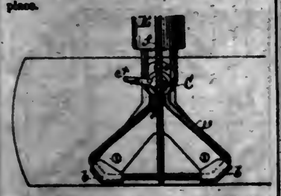


1. The mode or process of forming or producing a combined iron and steel bar (shown in Fig. 7) from iron and steel bars of the form shown in Figs. 3 and 4, by the mode or process shown and described.

2. The combination, with the rolls C, provided with projections 4, 5, 6, and 7, and peculiarly-formed recesses 1, 2, and 3, of rod D, provided with projections 12, 13, and 14, and recesses 8, 9, 10, and 11, substantially as and for the purposes set forth.

171,188. BRUSH-HOLDER. Isidor Heller, New York, N. Y. (Filed Oct. 30, 1875.)

Brief.—The handle is provided with a wire bent into triangular form, with a narrow neck near the handle. The back of a brush carries a plate with turned-up corners and a button, under which the wire fits and is clamped in place.



The plate or frame B, constructed with the slot d and enlarged opening e, and provided with a handle, E, in combination with the plate A, having the overhanging lips b b, and the swivel-button C, the whole constructed to operate substantially as shown and described.

171,189. TACK-EXTRACTORS. M. Hermann, Brooklyn, N. Y. (Filed Apr. 12, 1875.)

Brief.—The tack-extractor consists of a concave-convex metallic tool, converging to an edge at its outer end, and provided near each corner with notches for receiving the head of the tack.

A metallic tool made convex on its under side, and concave on its upper side, converging to a square or straight edge, and provided with notches or slots near each corner of its edge, as and for the purposes set forth.

171,190. ELECTRIC GAS-LIGHTING APPARATUS. Charles H. Hinde and A. T. Smith, New York, N. Y. (Filed July 21, 1875.)

Brief.—When gas is turned on and lighted at the burner, a small jet is lighted, the torch is then automatically carried around, lighting the remaining jets, the supply to the small jet being cut off as it completes its revolution.



1. In an electric gas-lighter, a traveling torch, K, adapted to operate in conjunction with electrodes B C, substantially as described.

2. A traveling torch K, combined with a gas-supply source and with electrodes B C, substantially as described.

3. The combination of a pawl, I, ratchet J, armature O, and electro-magnet H, with the traveling torch K, substantially as described.

4. In combination with the traveling torch K, a gas-supply source composed of the way *b*, groove *c*, and orifice *d*, substantially as described.

5. The cut-off *f*, constructed as described, in combination with the traveling torch K, the groove *c*, way *b*, and orifice *d*, substantially as set forth.

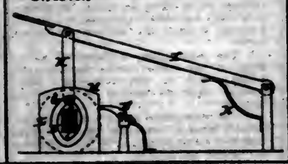
171,191. LIGHTING GAS BY ELECTRICITY. Charles H. Hinde and Adolph T. Smith, New York, N. Y. (Filed June 2, 1875.)

Brief.—Closing circuit of portion of battery through an electro-magnet throws a movable electrode connected with the armature thereof into contact with another electrode over gas-burner, thus establishing circuit for whole battery. Breaking circuit through electro-magnet throws movable electrode to fall away, thus breaking circuit of whole battery at electrodes, and producing the spark to light the gas.



The combination of the fixed insulated electrode C, the electrode B, mounted in the vibrating lever D, and in metallic connection with the gas-pipe, the armature O, connected with the vibrating lever, the electro-magnet H, the key K, and the galvanic cells L M, connected with the key K, the electro-magnet, gas-pipe, and insulated electrode C, substantially as and for the purpose described.

171,192. MECHANICAL MOVEMENTS. Wm. H. Hermann, New York, N. Y. (Filed Nov. 27, 1875.)



1. The shaft A, slotted disk C, lever I, or similar device, having reciprocating motion, and guide-plate N, combined and operating substantially as above described.

2. The combination of the ratchet-wheel C, mounted on the shaft A, and the spring-pawl E, with the lever I, or similar reciprocating device, substantially as described.

3. The adjustable guide-plate N, within the opening or slot in groove-plate M, substantially as and for the purpose set forth.

171,193. PAPER-REGISTERS. William H. Hermann, New York, N. Y. (Filed Nov. 27, 1875.)

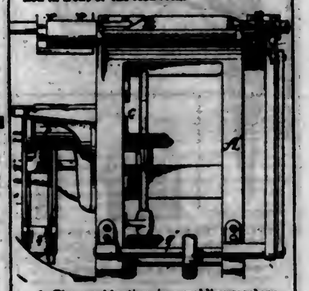


1. In a registering apparatus, the combination of two cylinders, A B, one working inside the other, and geared together to move at different velocities in a cylindrical case, C, with a slot, *s*, the inner cylinder A being divided off in hundred spaces containing figures, as shown, while the outer cylinder B is marked with the figures from 0 to 9, arranged on a spiral line alongside of apertures *g*, all constructed and operating substantially as shown and described.

2. The combination, in a registering apparatus, of the two cylinders A B, one working inside the other, with the supplemental registering mechanism composed of a worm, *j*, and wheels *k m n*, substantially as set forth.

171,194. MOLDING-MACHINES. L. Houston, Montgomery, Pa. (Filed Nov. 24, 1874.)

Brief.—A firm bearing is afforded for the outer end of the cutter-shaft, and the work-table is supported at a point immediately beneath the cutter by means of a slotted standard or curved arm, secured to the base of the main frame at its outer side, extending outside of the work-table, and provided at the top with an axially-removable bearing-block. The work-table is of a uniform height at both sides of the cutter, and the upper surface of said table is slightly depressed at or near its outer end below the level of the rest of the table, and extending to the center of the lower feed-roller, for the purpose of lessening the friction in front of the feed-rolls.



1. The combination, in a molding-machine, of the vertically-adjustable work-table E and the standard D, secured to the frame below the table, and provided at the top with a bearing for the spindle of the outside cutter-head, as set forth.

2. The work-table E, of a uniform height at both sides of the cutter, and depressed at and near one end, as and for the purpose set forth.

171,195. DEVICES FOR IMPREGNATING TIMBER WITH ANTISEPTIC FLUIDS. John Huntington, Cleveland, Ohio. (Filed Dec. 6 1875.)

Brief.—The entire cap is composed of cast-iron material, so that it may be plugged onto logs of different diameters, and it is formed into close contact by a clamping-bolt. The dogs or draw-rods are secured in lugs on the cap, and are provided with screw-threads and nuts.

171,196.



1. The combination of the elastic cap A and clamping-band B with tube B, the parts being constructed and arranged substantially as and for the purpose set forth.

2. The combination of the elastic cap A, clamping-band B, tube B, and dogs or draw-rods I, constructed and arranged substantially as and for the purposes set forth.

171,196. DEVICES FOR IMPREGNATING TIMBER WITH ANTISEPTIC FLUIDS. John Huntington, Cleveland, Ohio. (Filed Dec. 7, 1875.)

Brief.—The cap is provided with a clamp-nut. Draw-rods, provided with screw-threads and nuts, extend from the cap to the clamping-bolt, and are secured in lugs at each end. A rubber gasket is secured to the inside edge of the cap, to fit over the log to be treated.

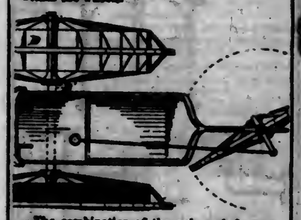


1. The clamping-band B and draw-rods I, in combination with the cap F and gasket E, substantially in the manner as set forth, and for the purpose specified.

2. The combination of the metallic cap C and the inner of packing E, secured thereto by a projection or projections, substantially as and for the purpose set forth.

171,197. VELOCIPEDE. Marsden Hurst, Penn Township. (Filed Nov. 23, 1875.)

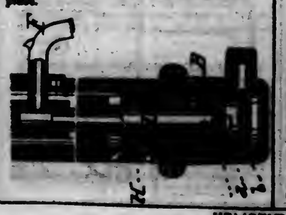
Brief.—Propelled by dogs working in cages within the wheels.



The combination of the axle and driving-wheels and their cages with the front wheel and seat or body of the vehicle, arranged together in the manner shown and described, to bring the greater portion of the weight of the vehicle and the occupant thereof directly over the axis of rotation of the driving-wheels and their cages.

171,198. HYDRANT-VALVES. Henry James Hudson, N. Y., assignor to Gilbert Brothers, same place. (Filed Aug. 28, 1875.)

Brief.—Above the spring in the tubular valve-case is the expansion-ring shown. When the valve is raised this is so compressed as to cut off the water from the waste-water ports; but the valve being seated, waste takes place.

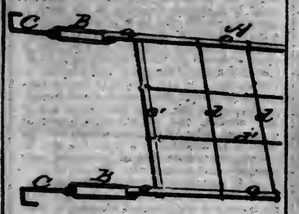


1. The combination, with the expansion-ring H, loosely arranged in the space between the valve D and valve-seating C, in combination with a washer and a compressing-spring, I, substantially as specified.

2. The combination of a compression-ring H, with spring J, valve D, seating C, and fluid cut K, substantially as specified.

171,199. PUNCHING FOR TYPE-WRITING MACHINES. Wm. O. Johnson, Newburyport, Mass. (Filed Oct. 23, 1875.)

Brief.—The fabric is attached to the frame of the machine, extending between the ink-ribbon and the paper, to prevent blotting and blurring.



The books C, elastic band B, and reticulated frame A, combined and adapted for use substantially as specified.

171,200. COAL-BURNING BOILER. Edwin H. Jones and Henry D. Bruce, Williamsburg, Pa., administrators of Ethelred Jones, deceased. (Filed Jan. 2, 1875.)

Brief.—The turned shanks of the teeth are made very nearly of the size of the barrel holes of the cylinder, may be tapering, and are driven into and out of the holes.



The within-described coal-breaking rod, consisting of a hollow cast-iron cylinder, combined with wrought-iron or steel teeth, the turned shanks of which are so driven into holes bored through the said cylinder that they will retain their places therein, but can be driven therefrom from the inside of said cylinder, all as set forth.

171,201. MANUFACTURE OF GUTTA-PERCHA. J. C. Klein, Pittsburg, Pa. (Filed June 24, 1875.)

Brief.—Blank first swaged in dies to thin out and centre the end; second, heat and welded; and, third, swaged in finishing-dies.

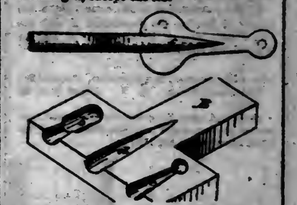


1. The herein-described improvement in the art of forming the plate and eye of grub-hoes, &c., consisting in, first, fastening the plate between dies A B; second, heating and welding the eye on block C; third, setting down the metal around the eye, and forming the ridge on the blade by means of dies E F, substantially as herein shown and described.

2. The dies A B, with recesses *a b*, for forming the fastened end C of the blank for grubbing-hoe, in combination with the plate D, provided with stud *d* and pin *e*, for fastening and welding the eye, and the dies E F, having hole *c* and punch *f*, for finishing the grubbing-hoe, as herein described and shown.

171,202. MANUFACTURE OF LATCHES. Simeon J. G. Klein, Pittsburg, Pa. (Filed June 17, 1875.)

Brief.—A round rod is upset in dies to form a collar; then placed in die to taper it; then in die to form a bulb on the end; and, lastly, in die, when the place mentioned is upset to fastening it, except the slit.

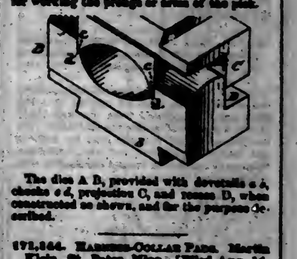


1. The herein-described improvement in the art of turning the tops of fire and other shovels, viz., first forming the collar on the bar; second, tapering the end and forming the bulb, and, finally, fastening and drawing out the end between dies, substantially as shown and specified.

2. The dies E F, with concavities *a b c d* for forming the taper, bulb, ridge, and flattened end, substantially as shown and described.

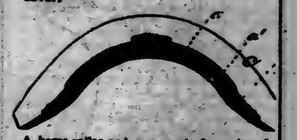
171,203. MANUFACTURE OF PICKS, &c. J. C. Klein, Pittsburg, Pa. (Filed June 17, 1875.)

Brief.—The lips *abc* for preventing the formation of fins, and the projection and recess for working the presser or arm of the pick.



The dies A B, provided with dovetails *a b*, cheeks *c d*, projection C, and recess D, when constructed as shown, and for the purposes described.

171,204. HARNESS-COLLAR PADS. Martin Klein, St. Peter, Minn. (Filed Aug. 14, 1875.)



A horse-collar pad composed of a series of metal leaves, *a a' a²*, riveted together and interposed between leather covers, substantially as shown and described.

171,205. PULLEY-TAKERS. R. M. Lanahe and George F. Gregson, New York, N. Y. (Filed Nov. 19, 1875.)



1. In a folding table, seat, or other article, the combination of the legs E, provided with pivots *b*, turning inwardly, and the plate or bar D, provided with sockets *d*, with the top A, substantially as herein described.

2. The socket G, having the cams or bear-

ing surfaces *g g*, in combination with the brace E and studs *c c* carried thereby, substantially as shown and described.

3. The arm F, formed on the brace E, and provided with the lips or loops *f f*, in combination with the hooper H and its depression A, constructed, arranged, and operating substantially as shown and described.

4. The combination of the spring-bolt I, the hooper H, having the depression A, and the arm F and brace E, substantially as and for the purposes shown and described.

171,146. STOVE-PIPE SHELVES. George W. Langdon, Geneva, N. Y. (Filed Apr. 6, 1875.)

Brief.—A cover hinged to the shelf, and supported in an upright position, when lifted, by arms attached to the hinges.

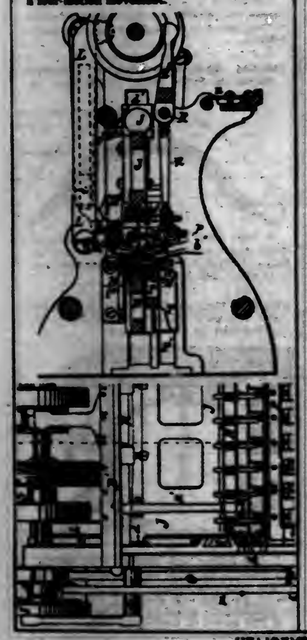


1. The combination, with the stove-pipe C, of the hinged cover D and the arms *f f*, projecting from the hinges thereof, substantially as and for the purposes herein set forth.

2. The combination of the hinged collar B D, provided with hooks *b b*, and perforated arm *d*, the shelf C, with pin *a*, hinged cover D, and arms *f f*, all substantially as and for the purposes herein set forth.

171,147. WAX-THREAD SEWING-MACHINES. Albert Leavitt, Boston, Mass., assignor to M. H. Simpson, same place. (Filed Aug. 20, 1875.)

Brief.—Several sets of needles, awls, presser-feet, and cast-offs, each set carried by a separate bar, are operated from the same shaft, to sew a number of seams at one time. The needles, awls, and cast-offs have an endwise and lateral adjustment, and the thread-carriers carry the thread around the needles with a four-motion movement.



1. The combination of a series of barbed needles, set in or mounted on, and operated by, a single horizontal bar or carrier, adapted to be reciprocated in a vertical direction by mechanism acting upon each end thereof, and a series of awls, also set in or mounted on a single horizontal bar, arranged in to reciprocated in a vertical direction by mechanism acting upon each end thereof, and automatically-operating mechanism, adapted to intermittingly feed the goods to be sewed in a right line, and at right angles to the motion of the needles, substantially as herein set forth and described.

2. The combination of a series of barbed needles, set in or mounted upon a single horizontal bar or carrier, adapted to be reciprocated in a vertical direction, as set forth, a series of cast-offs, also set in or mounted upon a single horizontal bar, adapted to be reciprocated in a vertical direction, as described, a series of thread guides or loopers set in or attached to a single horizontal bar, adapted to vibrate about an axis, and to be moved endwise to carry the thread in each of said thread-guides around the line of the path of one of said needles, and automatically-operating mechanism, adapted to intermittingly feed the material to be sewed in a right line, and at right angles to the motion of the needles, substantially as described.

3. The awl-carrier J, provided with a journal as either end thereof, in combination with the bases *d d* fitted to, and adapted to slide vertically in, slots *d'* and mechanism substantially as described, for imparting to said carrier a vibratory motion about said journals, and a reciprocating motion in a vertical direction, as and for the purposes set forth.

4. A series of awls, set in or mounted to a single horizontal bar or carrier, adapted to be vibrated about an axis, and reciprocated in a vertical direction, as set forth, in combination with a series of barbed needles set in or mounted upon a single horizontal bar, and a series of cast-offs, also set in and operated by a single horizontal bar, when said needle and cast-off bars are operated by mechanism acting upon each end thereof, substantially as described.

5. In combination with a series of barbed needles, cast-offs, and awls, each series attached to and operated by a single horizontal bar driven by mechanism acting upon each end thereof, a series of presser-feet attached to a single horizontal bar connected with and operated by the awl bar or carrier, substantially as described.

6. The combination of the cast-off bar P, having secured thereto a series of cast-offs, *l l*, the connecting-rod *n*, lever Q, and cam 1, all arranged and adapted to operate as and for the purposes described.

7. The combination, in a machine for sewing two or more seams at the same time, of the awl-bar carrier J, awl-bar J', bobbin-bolts *h h*, and cast-screws *g g*, all adapted to operate as and for the purposes described.

8. The combination, in a machine for sewing two or more seams at the same time, of the carrier-bar H, needle-bar H', bobbin-bolts *h h*, and cast-screws *g g*, all adapted to operate as and for the purposes described.

9. The combination of the cams B B, levers L L and K K, slides *f f* provided with the pins *f' f'*, awl-carrier J provided at each end with a journal, about which it may be vibrated, and a slot, *c*, by means of which, and box *d*, it is connected to the slide *f*, substantially as described.

10. The combination of the cam disk F, provided with the path *e*, formed in its side, the cylinder-cam G, having the path *g* formed therein, lever R' carrying at its upper end two cam-tracks, with their axes at right angles to each other, rocker-shaft R mounted in bearings in which it may be rotated and moved endwise, the depending arms R' R', horizontal bar R, and a series of thread guides or loopers, *p*, all arranged to operate as and for the purposes described.

11. In combination with a vibrating and reciprocating frame or bar, carrying a series of thread-guides, as set forth, one or more friction-brakes, S, applied thereto, and arranged to operate substantially as described.

171,148. PUNCHES FOR MAKING NUT-LOCK WASHERS. Kellogg H. Loomis, Philadelphia, Pa., assignor to Wm. A. Lightbody, Brooklyn, N. Y. (Filed May 19, 1875.)

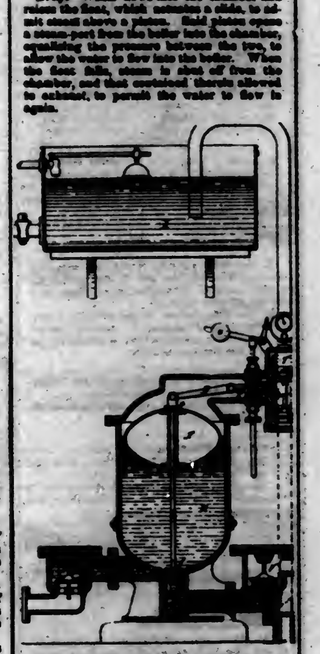
Brief.—The path for cutting the central hole is made excentric on the punch to give a more acute edge, and in combination with whgs (any desirable number) to cut radial slots.



The combination of the punch R, with excentric cutting-edge *c*, hub or disk-shaped shoulder O, and cutting-rings or edge-cutters D D, with the hollow mandrel A and fluting screw-sleeve G, substantially as and for the purposes herein set forth.

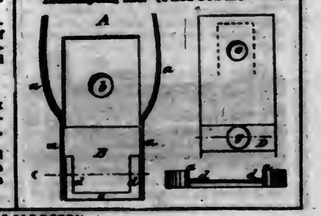
171,149. WARM-FURNACE FOR STEAM-BOILERS. P. H. J. Mandelon, Paris, France. (Filed Apr. 20, 1875.)

Brief.—Water flows into the chamber and raises the float, which actuates a slide, to admit steam above a piston. Said piston opens a steam-port from the boiler into the chamber, equalizing the pressure between the two, to allow the water to flow into the boiler. When the float falls, steam is shut off from the chamber, and that contained therein allowed to exhaust, to permit the water to flow in again.



The combination, in a water-feeder for steam-boilers, of the receiver B, inlet-valve F, outlet-valve V, the vertical rod *i*, provided with collars *s f*, the float F working freely up and down said rod, the steam-cylinder T, the valve G connected with the said rod *i*, a double piston, *a a'*, and slide-valve D, actuated by said pistons, and the passages *r* from the space between the pistons to the receiver, and alternately opened and closed to admit steam to and exhaust it from the said receiver, substantially as set forth.

171,150. COACH-PADS. Stephen A. Barber, Indianapolis, Ind. (Filed Oct. 28, 1875.)



The recessed ledge *f*, on the slide G, in combination with the guide-pin *c*, on the frame A, and with a cutter, D, all arranged as specified.

171,151. DIES FOR FORGING CARRIAGE-SHAFT EYES. William B. McElroy, West Meriden, Conn., assignor of one-half his right to Excelsior Manufacturing Company, same place. (Filed Aug. 9, 1875.)

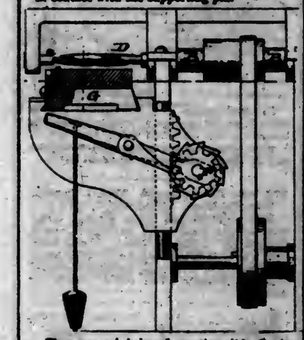
Brief.—Improvement on Letters Patent No. 136,262.



The shaping-die *c d*, constructed at the shank and with the abutments *c c*, substantially as described, whereby the shank is shaped for welding and nearly separated from the bar.

171,152. MACHINERY FOR MAKING CHAR-MOLDS. Thomas D. McGuire, Brooklyn, N. Y. (Filed June 12, 1875.)

Brief.—A pattern gage-board regulates the depth of cut for the rotary cutter by coming in contact with the supporting-pin.



The recessed ledge *f*, on the slide G, in combination with the guide-pin *c*, on the frame A, and with a cutter, D, all arranged as specified

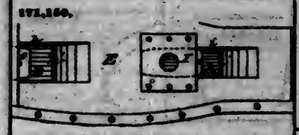
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171,153. CHILD'S-CARRIAGE HANDLE-SOCKETS. A. McLaughlin, Cambridge, Mass. (Filed Nov. 30, 1875.)

1. The handle-socket consisting of the parts A B B, combined to operate substantially as and for the purposes specified.

2. In a child's carriage the socket B, bracket A, and joint B, to operate in combination with the body *a*, spring *c*, and handles *e*, substantially as and for the purposes specified.

171,154.



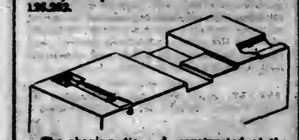
1. The herein-described device for securing the shirt to the pad-plate of a comb-pad, consisting of the clasps A, projecting from the body of the plate and united by the cross-plate *a*, so as to form an opening, B, having the interior shoulders or ventricle *d*, in combination with the shirt C, having the slide D secured thereto, all arranged and operating substantially as and for the purposes hereinbefore set forth.

2. The combination of the pad-plate B, constructed as described, with the hinge-plate A, perforated top plates H I, and removable nuts G, substantially in the manner and for the purpose herein before set forth.

3. The combination of the pad-plate A, having tenons L and pad-screw K, with the pad F, having the pad-plate E, recessed at *h* and *i*, plates H I, bottom plates J, and removable nuts G, all constructed and arranged for operation substantially in the manner and for the purpose herein shown and specified.

171,155. DIES FOR FORGING CARRIAGE-SHAFT EYES. William B. McElroy, West Meriden, Conn., assignor of one-half his right to Excelsior Manufacturing Company, same place. (Filed Aug. 9, 1875.)

Brief.—Improvement on Letters Patent No. 136,262.



The shaping-die *c d*, constructed at the shank and with the abutments *c c*, substantially as described, whereby the shank is shaped for welding and nearly separated from the bar.

171,156. MACHINERY FOR MAKING CHAR-MOLDS. Thomas D. McGuire, Brooklyn, N. Y. (Filed June 12, 1875.)

Brief.—A pattern gage-board regulates the depth of cut for the rotary cutter by coming in contact with the supporting-pin.

The recessed ledge *f*, on the slide G, in combination with the guide-pin *c*, on the frame A, and with a cutter, D, all arranged as specified

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171,157. CHILD'S-CARRIAGE HANDLE-SOCKETS. A. McLaughlin, Cambridge, Mass. (Filed Nov. 30, 1875.)

1. The handle-socket consisting of the parts A B B, combined to operate substantially as and for the purposes specified.

2. In a child's carriage the socket B, bracket A, and joint B, to operate in combination with the body *a*, spring *c*, and handles *e*, substantially as and for the purposes specified.

171,158.



1. The combination, with the handles A A', of the cup B and curved plate C, each provided with one or more colanding slots, *d*, substantially as and for the purposes hereinbefore set forth.

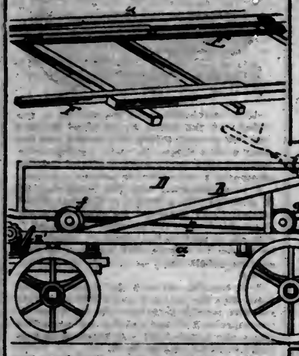
2. The combination, with the handles A A', cup B, and pressure-plate C, of one or more studs or spurs, *c*, formed on the inner surface of the cup, substantially as and for the purposes hereinbefore set forth.

171,159. STOVE-PIPE SHELVES. Andrew Jackson Mills, Scott, assignor of one-half his right to E. P. Smith, Seneca Falls, N. Y. (Filed May 6, 1875.)



The stove-pipe shelf herein described, consisting of the center-plates B, having circular convex ends *b* and pivotal lugs *c*, in combination with the collar A, provided with the groove *a*, lip *b*, and flexible tongues *p*, and spring fastening-band A, substantially as described, and for the purpose set forth.

171,160. DUMPING-WAGONS. James Mills, Wilmington, Del., assignor to himself and Philip Combs, same place. (Filed Sept. 28, 1875.)



1. A dumping wagon or cart in which a movable body, D, mounted upon wheels or rollers, is combined with inclined strips B at the sides, and with strips F at the rear, all substantially as and for the purposes set forth.

2. The combination of the sliding strips F with wags E, secured to the frame of the wagon within the side strips *c*, and with supplementary rollers *b* secured to the under side of the wagon at the rear of the same, all as set forth.

3. The combination of the body D and its wheels or rollers, the inclined strips B, the strips F, and the trestle H.

171,161. MODES OF MANUFACTURING PUTTY-SPREADERS. John Mitchell, Philadelphia, Pa. (Filed Nov. 20, 1875.)

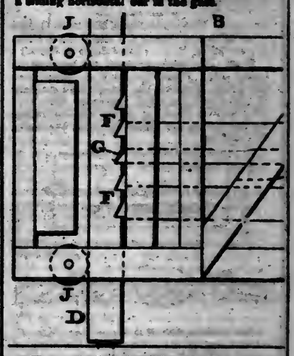


The mode herein described of manufacturing plates-springs—that is to say, first, forging a bar of steel to the shape, Fig. 1, and then coiling the bar, as set forth

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171,162. SWINGING GATES. Jas. A. Moore, Kewanna, Ind. (Filed Aug. 30, 1875.)

Brief.—This gate revolves upon and with a vertical post near its rear. It may be adjusted at any altitude by a ratchet to this post, and a sliding horizontal bar in the gate.

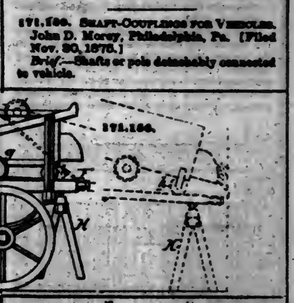


The vertically-adjustable gate B, carrying the rollers J, in combination with the serrated post D, formed with notches F, and the sliding bolt G, substantially as and for the purposes set forth.

171,163. SHAFT-COUPLINGS FOR VEHICLES. John D. Morey, Philadelphia, Pa. (Filed Nov. 30, 1875.)

Brief.—Shafts or pole detachably connected to vehicle.

171,164.



1. The combination of the shaft or pole of a vehicle connected to the same by open hooks *a* with the levers D and arms F, substantially as set forth.

2. The combination of the shafts, with their open hooks, the levers D, their arms F, and the curved bar E, with the spring-rod I, projecting into the vehicle, as set forth.

171,160. CHUCKS. George W. Moulton, Bridgeport, Conn., assignor of one-half his right to J. M. Bliss, same place. [Filed Oct. 20, 1875.]

Brief.—A plate having on top cam-grooves, into which the jaws project, and by which they are moved, and on the bottom spaced pins near the circumference, to engage with the worm-screw which rotates the plate.

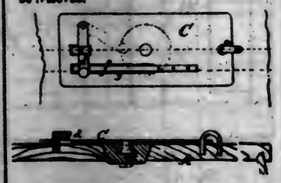


1. The disk B, having segmental recess *d* upon its inner side, provided with spaced pins *e*, and having eccentric cam-grooves *g* upon its outer face, in combination with an operating worm-screw, H, and griping-jaws U, having lugs adapted to engage with grooves of disk B, substantially as set forth.

2. In combination with rotating cam-plate B and shell A, the ring K and set-screws *d*, substantially as described.

171,161. FASTENINGS FOR BUNGS IN CASKS OR BARRELS. Jacob Ott and John Weller, New York, N. Y. [Filed June 11, 1875.]

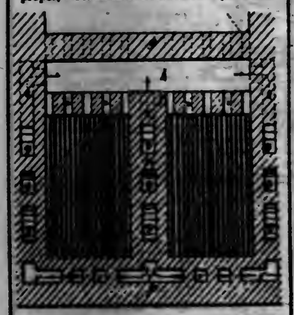
Brief.—The plate supports the bung on its under side. When the latch is passed over the spring, as shown, the bung is held securely in place, and the latch prevented from slipping back by a bend or shoulder in the spring. By depressing the spring the bung can easily be removed.



The combination of a supporting-plate, C, latch *d*, and spring-catch *f* with the bung of a cask or barrel, substantially in the manner and for the purpose herein shown and described.

171,162. GAS-FURNACES. Alex. Parkes, Gravelly Hill, Erdington, England. [Filed Nov. 4, 1875.]

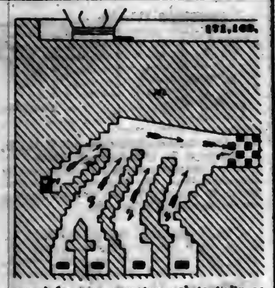
Brief.—The carbonic oxide resulting from the smothering combustion of the charges in the generators, and the heated air circulating through the passages in the furnace-sides, discharge into a common flue-chamber in front of and opening into the metallurgic furnace proper, wherein their combustion is perfected.



1. The combination of the generator or generators, in which the gaseous fuel is formed, with the hollow bridge *f g* A, forming one side of the generator or generators, and constituting a hot-air flue or combustion-chamber, in which the air is mixed with the gaseous fuel, and the combustion of the gaseous fuel is effected, said parts being constructed and arranged for joint operation substantially as and for the purposes described, and illustrated in the accompanying drawings.

2. In combination with the generator or generators and hot air flue or combustion-chamber *f h g*, arranged for operation as described, the retorted flues or channels in the walls of the generator or generators, for heating the air to be mixed with the gaseous fuel in the hot-air flue or combustion-chamber, substantially as and for the purpose described, and illustrated in the accompanying drawings.

3. In combination with the generator or generators and hot-air flue or combustion chamber *f h g*, forming one side of the said generator or generators, as described, the flues in the walls of the generator or generators, and the arched flues above the said generator or generators, for increasing the heat of the air supplied to the hot-air flue or combustion-chamber, substantially as hereinbefore described, and illustrated in the accompanying drawings.



171,163.

171,164.

171,165. LAMP-FILLING-CAN TOPS. Orson N. Perkins, West Meriden, Conn., assignor to Edward Miller & Co., same place. [Filed Nov. 30, 1875.]

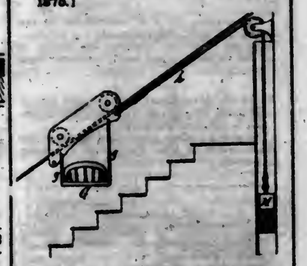
In combination with the air-vent of a lamp-filling-can top, the perforated trap D over the said vent, substantially as and for the purpose specified.

171,166. PLOWS. Norman G. Pinney, New Hudson, Mich. [Filed Oct. 8, 1875.]



The combination of a plow-point made of an imperforated bar of steel or iron, sharpened at both ends, and with parallel surfaces on all sides, with a slotted leg secured to or cast with the land-side, and a set-screw, by means of which the point is adjustably secured, and adapted to be changed end for end or side for side, as shown and described.

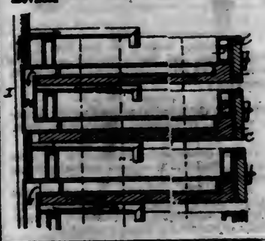
171,167. ELEVATORS FOR DWELLINGS. G. B. Potter, Buffalo, N. Y. [Filed Dec. 1 1875.]



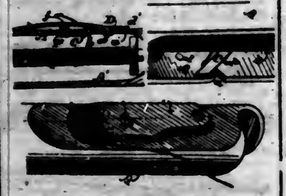
The combination, with the inclined rail or cable B, of the carriage F, suspended rest O, hangers *g*, and actuating weight and cord F A, constructed and operating substantially as and for the purpose hereinbefore set forth.

171,168. ICE-MACHINES. Thos. L. Rankin, Emporia, Kans. [Filed Nov. 4, 1875.]

Brief.—Refrigerant passes through tortuous passages beneath the water-pans, and is pumped up to the condenser. Water flows from a main to transit pipes over water-pans. Pans have non-conducting bottoms under refrigerant-chamber. One end of pan is removable



171,169. SEWING-MACHINE SHUTTLES. A. Pesler, Fort Dodge, Iowa, assignor to I. F. Oleson and E. A. Daring, same place. [Filed June 10, 1875.]



1. In combination with the shuttle A, provided with the recess *a'*, the wheel D, fitted into and pivoted within said recess, and provided with a flange, *d'*, which extends over the contiguous upper surface of said shuttle, substantially as and for the purpose specified.

2. In combination with the tension-spring E, provided with a recess, *e*, that has radial notches *e'* and *e''* around its sides, the screw F, provided, upon the periphery of its head *f*, with one or more radial points, *f'*, which may be caused to engage with any one of said notches, substantially as and for the purpose shown.

3. In combination with the shuttle A, provided with the diagonal slot *a*, the bar C, secured at one end to or upon the lower face of the upper wall of said shuttle, and extending diagonally across said slot, substantially as and for the purpose set forth.

4. In combination with the shuttle A, provided with the slot *a* and recess *a'*, the bar C, the flanged wheel D *d d'*, the spring E *e e'*, and the screw F *f f' f''*, said parts being constructed to operate in the manner and for the purpose shown and described.

171,170. CAR-COUPLINGS. Wm. Robinson, Bellefontaine, Ohio. [Filed Oct. 4, 1875.]



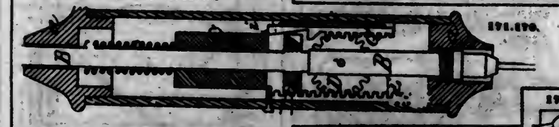
The tongue D, constructed as described, with front projection *e p p'*, curved slot *f*, and rest *a*, in combination with the two-mouthed draw-head B, provided with the chambers, as described, and with the recess *a'*, and the tongue loosely connected therein by the pin *b*, all as and for the purposes herein set forth.

171,172. SAW-MILLS. Alexander Rodgers, Muskegon, Mich. [Filed Mar. 20, 1875.]

Brief.—The necessity for an extra width of saw-frame is obviated by attaching to the stiles of the frame cutters, which, as the frame reciprocates, cut away all projecting parts of the log.

The combination, with the stiles or side supports of a saw-frame, of the cutters D, for removing knots or projections from the log, substantially as set forth.

171,173. DENTAL PLUGGERS. R. S. Rider, Cattlettsburg, Ky., (G. W. Rider, administrator.) [Filed May 28, 1875.]



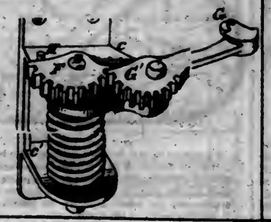
171,170.

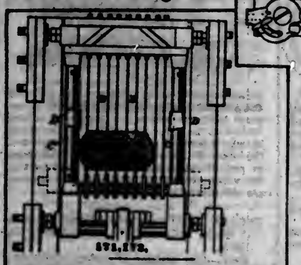
1. A dental-plugger, having a reciprocating shaft, an anvil, a hammer, and suitable mechanism, whereby a series of successive blows is given to the plugger by means of a continuous and even pressure thereon, substantially as described.

2. The hammer C, and wire movable on shaft B, and having annular lip *i*, in combination with an endwise-movable rock-bar, G, having projections *f' f'' f'''*, substantially as specified.

171,174. CHUCKS. Jas. A. Robbins, Boston, Mass., assignor to Nathaniel Corning, North Londonderry, N. H., D. W. B. Jackson, Boston, G. W. Hobbs, Uxbridge, and William Keach, Milford, Mass. [Filed Oct. 11, 1875.]

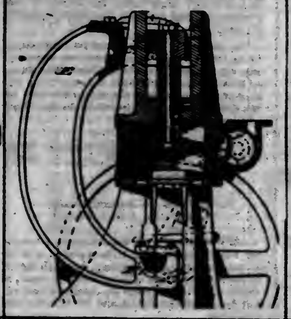
Brief.—A spiral spring, in a suitable frame, is fastened to the jamb, and operates on the door by means of a lever-arm, the two being connected together by two intermediate eccentric cogged segments—one attached to the stem of the spring, and the other formed on the inside end of the lever-arm; the combination and construction being such that the leverage shall be least when the door is closed, and increased as the spring is wound up in opening the same, the relative power of the spring thus increasing as the door closes, although its positive power decreases.





171,175.

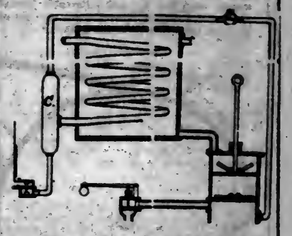
171,176. STEAM-ENGINES. John B. Root, New York, N. Y. [Filed Apr. 20, 1875.]



The crescent E, in combination with the piston, cross-head, and guides, when constructed substantially as described.

171,176. CONDENSERS. John B. Root, New York, N. Y. [Filed May 18, 1875.]

Brief.—The water of condensation is separated from the non-condensed steam, which is conveyed to a jet-condenser and air-chamber, which includes a combined air and lift pump, that supplies cold water to the condensing coil. A weighted valve controls the induction to the vacuum-chamber.



1. The combination of a jet-condenser with a surface-condenser and a combined air and lift pump, substantially in the manner and for the purpose described.

2. In a combined jet and surface condenser, the combination of a separating-chamber, C, with a combined air and lift pump and a feed-pump, substantially as and for the purpose described.

3. In a combined jet and surface condenser, the combination of a combined air and lift pump with an automatic valve fitted or placed in the pipe, through which is conducted the condensing-water, substantially as and for the purpose described.

171,177. PRESERVING HIDES. Frederic H. L. O. Secn, Neufchatel, Switzerland. [Filed Nov. 27, 1875.]

The process of preserving green hides by the employment of chromic acid, pure or combined, substantially in the manner and proportions set forth.

171,178. SHEET-DELIVERY APPARATUS FOR PRINTING-PRESSES. Albt. B. Sardo, Washington, D. C., assignor of one-half his right to John A. Ives & Bro., Baltimore, Md. [Filed July 26, 1875.]

Brief.—The sheet is clamped between the gripers and points on the sliding throw-off plate, which plate is operated by cams from the griper-shaft, so as to deliver the edge of the sheet under the curved guides as soon as it has passed the delivery-roll. Tapes are dispensed with, and the sheet receives a calender-press, after printing, between the cylinder and felt-covered delivery-roll.

1. The throw-offs M', attached to the plate M, in combination with the arms on the shaft F, by which they are projected, substantially as set forth.

2. In combination with the throw-offs, radially projected, the points N, which hold the make-ready sheets, and at the same time serve as guides for the throw-offs, substantially as set forth.

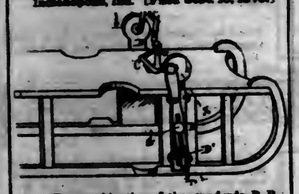
3. In combination with the shaft E' and pinion F, carrying the throw-off pinion, and plates to which they are attached, the lever F', for operating and releasing the make-ready sheets, substantially as set forth.

4. In combination with the sliding throw-offs, and arm for projecting them, the spring O, for instantly retracting them, substantially as set forth.

5. In combination with the cylinder, and with the sheet-delivering apparatus, the roller P, covered with hair or cloth, and acting against the surface of the sheets, substantially as set forth.

6. In combination with the roller, the guides Q, constructed so as to direct the sheet downwardly onto the fly, and adjustable jointed arms, which may be turned to one side out of the way, substantially as set forth.

171,178. SLED-PROPELLERS. C. Schweiger, Indianapolis, Ind. [Filed Sept. 16, 1875.]

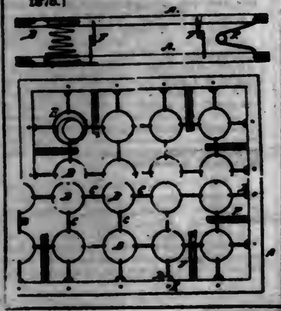


1. The combination of the standards B B, face-plates b b, reciprocating levers D D, and independent crank-shafts C C, when the several parts operate substantially as described and shown.

2. The combination of the standards B B, face-plates b b, reciprocating levers D D, independent crank-shafts C C, and standards c, when the several parts operate substantially as described and shown.

3. The yielding pitmen D', in combination with the levers D, as and for the purpose set forth.

171,180. LOOSE BED-BOTTOMS. Alonzo D. Seaman, Milwaukee, Wis. [Filed Aug. 12, 1875.]

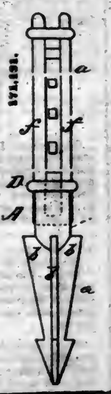


Combination of the frames A A, spring B, connected together by hooks C, and attached to the frames A A by loops D, and the springs F, substantially as and for the purpose set forth.

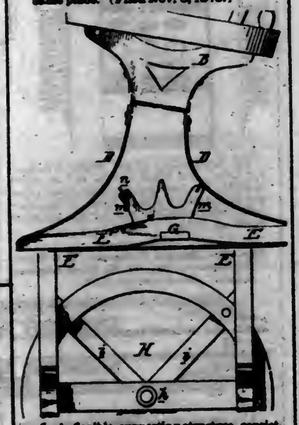
171,181. FENCE-POSTS. Ira L. Sherman, New Albion, N. Y. [Filed Aug. 28, 1875.]

The metallic fence-post A, having the perforated and longitudinally-grooved shank d, wings b b, and point a, in combination with the rod c and tie-bar D, substantially as described, and for the purpose set forth.

171,182.



171,183. CHARM. Asher B. Stevens, Philadelphia, Pa., assignor of one-half his right to Henry S. Hale, Artemus Kilburn, J. W. Hale, Chaney Kilburn, and Warren Hale, same place. [Filed Nov. 6, 1875.]



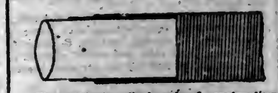
1. A flexible supporting-structure, consisting of two curved springs, D D', the hangers B B' attached to the object to be supported and secured to the upper ends of the springs and bars E, to which the lower ends of the springs are attached, all substantially as set forth.

2. The springs D D' made of one bent bar, in combination with the hangers B B' and re-enforcing-plates I, through the medium of which the said springs are secured to the hangers, all substantially as described.

3. The combination of the projections n n, secured to the bars E, and having rubber pads o, with the springs D D, substantially as described, and for the purpose set forth.

4. The combination of a chair, having spring-supports, with a base, H, having a ring, I, and a central pin or bolt, on which the chair can turn, all substantially as described.

171,184. INSULATING METAL WIRE. Henry Spitdorf, New York, N. Y. [Filed July 20, 1875.]



The within-described mode of constructing insulated wire by first coating the wire directly with shellac or other non-conducting gummy material, then winding silk or other thread on the wire, and finally heating the whole to unite the gummy coating and thread, substantially as described.

171,185. MANUFACTURE OF STEEL. Profit. J. Slade, Trenton, N. J. [Filed May 10, 1875.]

Brief.—The amount of carbon, chromium, titanium, or other steadier, is regulated by addition or subtraction to the amount required to sufficiently supplement the action of the phosphorus, and produce the desired quality of steel.

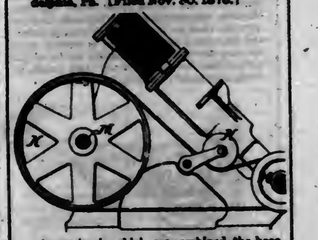
The process of forming steel by regulating, to an alloy of iron, manganese, and phosphorus, the quantity of carbon, silicon, chromium, or titanium to supplement the steadifying action of the phosphorus already in the steel to the desired extent, substantially as described and set forth.

171,186. NAILS FOR WIRE FENCES. E. S. Smythe, Aurora, Ill. [Filed May 31, 1875.]



As a new article of manufacture, a staple for wire-fences, having a short prong, c, with chisel end, and a long prong, b, which latter is provided with an elevated beveled heel, a chisel end, and rearwardly-inclined barbed notches, substantially as and for the purpose described.

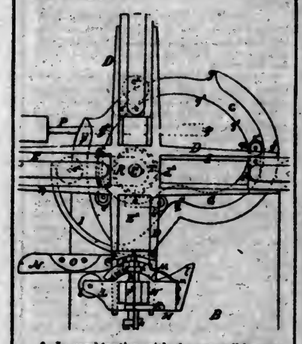
171,187. SCRAPE-HOOKERS AND DRIVING APPLIANCES. Samuel R. Upham, Jr., Philadelphia, Pa. [Filed Nov. 20, 1875.]



An engine in which are combined the base A, the two frames B and B', the downwardly-inclined double-cylinder engine, the crank-shaft H, its pulley J situated between the frames, and the shaft M, with its pulley K, all substantially as set forth.

171,188. COMBINED RIBBLE AND RAKER FOR HARVESTERS. Abraham Stoler, Philadelphia, Pa. [Filed June 12, 1875.]

Brief.—Devices for projecting the reel-fingers over the standing grain, and for giving the reel-rake the quadrantal sweep, and restoring it to resting position.



1. In combination with the extensible arms E E and segment I, the rollers e^1, for preventing the extension of said arms when rising from the platform, substantially as shown and described.

2. In combination, with the extensible arm E', bearing the segmental rack h^1, the pivoted cradle H, sustaining the shaft h, holding the pinion h^1, substantially as shown and described.

3. In combination with the cradle H', pivoted on the extensible arm E', the cam-guide N for holding down said cradle, and producing an extension of said arm, substantially as shown and described.

4. In combination with the pivoted cradle H, having the upwardly-projecting end F, the cam-guide O, for restoring the beam F to its transverse position with reference to the platform A, substantially as set forth.

5. In combination with the pivoted cradle H, pinion and fixed segmental rack h^1, formed with recess n^2, the spring M for holding the beam F in a position transversely to the platform A, substantially as shown and described.

6. In combination with the extensible arm of a harvester-reel, a rake, constructed and arranged substantially as described, so as to make a straight and quarter turn sweep over the platform, as set forth.

7. A combined harvester reel and rake, having extensible arms constructed and arranged substantially as described, so as to project over the standing grain and draw up to clear the platform in their transit over it, one of said extensible arms being provided with a rake-beam, so constructed and arranged as to make a straight and quarter turn sweep, substantially as shown and described.

8. In combination with the reel-rake shaft C, bearing the eccentric E, the weighted brake-lever F, substantially as shown and described.

9. In combination with the extensible arms E or E', the rollers e^1, borne on the transverse bars e out of true line of said arms, so as to afford leverage and prevent binding, as set forth.

171,189. ORE-JIGGER. Abraham Stroh, Manch Chunk, Pa. [Filed Nov. 20, 1875.]

Brief.—The pan is terraced and perforated at the side and bottom. Valve controls communication between side and bottom, and is vertically adjustable relatively to pan. Coiled spring assists in lifting jigging-pan. Coal passes over edge of pan, slate down through annulus. Water rising through perforations, when pan goes down, washes slate off the terraces. Carriers convey separated material to chutes.

1. In a jigger for separating coal, ore, &c., the ore-receptacle, consisting of the cylindrically-shaped walls T T, terraced and perforated, as explained, and the terraced perforated bottom Q, of a diameter less than that of the interior of said walls T, substantially as and for the purpose specified.

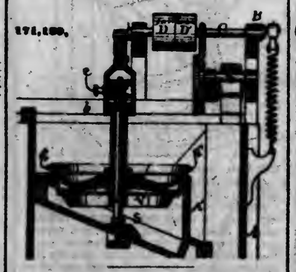
2. The combination, with the ore-receptacle T T Q, having terraced and perforated sides and bottom, of the slate-valve V, located immediately beneath said ore-receptacle, substantially as described, for the purpose explained.

3. The ore-receptacle T T Q, terraced and furrowed, and provided with water-apertures, as herein described, in combination with the slate-valve V and vertically-adjustable spindle E and its operating mechanism, substantially as set forth.

4. The combination of the shaft C, carrying the eccentrics E E', the hanger W, rod spindle E, with the ore-receptacle T T Q and slate-valve V, all substantially as specified.

5. The combination of the spring X with the shaft C, eccentrics E E', ore-receptacle T T Q, and intermediate operating mechanism, substantially as specified.

171,190.



171,190. HARNESS FOR FIRE-ENGINES, &c. Edward O. Sullivan, San Francisco, Cal. [Filed Aug. 4, 1875.]



1. The arrangement and combination together, in a harness, of the hinged collar A, with its hames f, the hinged breeching D, the inner trace B, and the divided outer trace C C', connected to the collar and the whiffletree, and provided with the buckle and spring-slip l m, as described, and for the purpose specified.

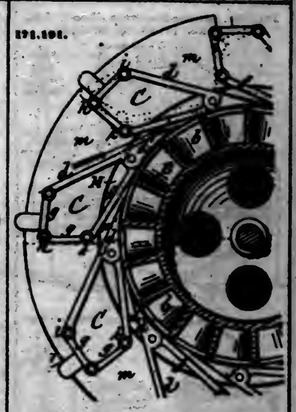
2. The hinged breeching D, with a hinge, a, to enable the outer side to open and be thrown back, as described and specified.

3. The combination, with the harness for a fire-engine or like apparatus, of a device for suspending said harness above the place occupied by the horse when attached to the apparatus, substantially as and for the purpose set forth.

171,191. WATER-WHEELS. Thomas Tait, Rochester, N. Y. [Filed Oct. 18, 1875.]

Brief.—Trapezium or lozenge shaped guides or cut-offs constructed with the fixed plates, swinging plates, and jointed angle-plates, whereby the water-ways are of regular wedge shape under all degrees of opening, the narrow end of the wedges resting against the periphery of the wheel, so that the water will be discharged nearly at right angles. There is also a flange projecting from the periphery of the wheel at a point between the top and bottom, in combination with a ring set into the edge of the curbing, on a line with the floor of the water-way, and projecting over the flange, as shown and described, and for the purpose specified.

171,191.

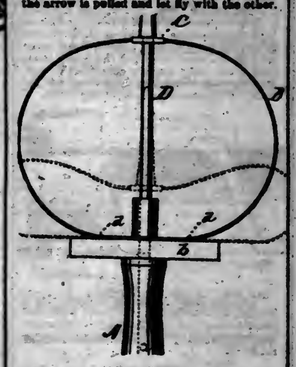


1. The trapezium or lozenge shaped guides or cut-offs C, constructed with the fixed plates d, swinging plates f, and jointed angle-plates f g, whereby the water-ways or arc of regular wedge shape under all degrees of opening, the narrow end of the wedges resting against the periphery of the wheel, the chute arranged as described, so that the water, under varying heads, or under different degrees of opening, will be discharged directly in contact with the buckets, and nearly at right angles thereto, as shown and described.

2. The flange p, projecting from the periphery of the wheel B, at a point between the top and bottom of the wheel, in combination with the ring M, set into the edge of the curbing on a line with the floor of the water-way, and projecting over the flange, as shown and described, and for the purpose specified.

171,192. BOWS AND ARROWS. C. F. Tood, Elmira, N. Y. [Filed Nov. 6, 1875.]

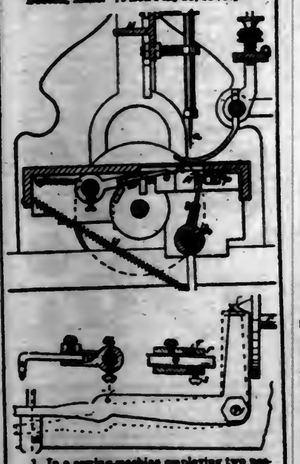
Brief.—One hand grasps the handle, and the arrow is pulled and let fly with the other.



The bow and arrow herein described, consisting of the tubular handle A, cross-piece b, spring B, having guide-loop C, and the arrow D with shoulder p, combined to operate substantially as set forth.



171,196. SEWING-MACHINE. Chas. F. Toll, Boston, Mass. [Filed July 16, 1875.]

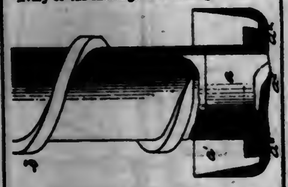


1. In a sewing-machine employing two needles, the upper one moving vertically and the under one horizontally, the combination, with the under needle and its operating-shaft, of a connecting mechanism between the two, whereby the said under needle can be moved and brought to and from the under side of the cloth plate of the machine into a convenient position to be threaded, substantially as described.

2. The take-up bar P and its spring *s*, in combination with the surface *d*, arranged and operating together to nip and free the under thread, substantially as described, for the purpose specified.

171,194. CORE-ADJUSTER. O. W. Townsend, Pond du Lac, Wis. [Filed June 2, 1875.]

Brief.—The cutter-head is provided with an inner and an outer ring, to which the knives or cutters are attached, and the lower inner side of the inner ring and the upper inner side of the outer ring are chamfered or bevelled, for the purpose of facilitating the delivery of the shavings and cutting a core.



The cutter-head A, having its inner ring *a* beveled or chamfered at its lower edge, and its outer ring *a'* at its upper edge, substantially as shown and specified, and for the purpose set forth.

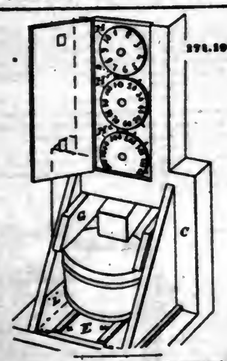
171,195. CRANE-TALLIER. Henry L. Townsend, Bath, N. Y. [Filed Nov. 9, 1875.]

1. The register, having the casing constructed with the hollow posts O, fastening the rods *p*, attached to the cross-rod *k*, the said rods *p* being connected with the casing by the springs *n*, and coupled to the hinged platform, as and for the purposes set forth.

2. In combination with the platform E and rods *p* and *d*, and springs *n*, the sheets G, as shown, for the purposes set forth.

3. The register, consisting of the three disks mounted upon the toothed wheels, as shown, the uppermost being on a ratchet-wheel, the pawl *i*, and detent *k*, the rods *k*, *p*, and *d*, springs *n*, platform E, the casing provided with the hollow posts O, and sheets G, all as and for the purposes set forth.

171,196. ROTARY PAPER-FOLDING MACHINE. Stephen D. Tucker, New York, N. Y. [Filed Sept. 7, 1875.]



Brief.—The sheets are supplied to a revolving drum, in which are journaled folding-blades, which, by their independent revolution, are protruded from the drum and press the doubled edges of the sheets into the bite of folding-rollers, whence they are carried to further folding devices or to delivery. Several modifications are described.

5. The combination of the vibrating sheet-controlling roller I, pulleys or roller s^3, guiding tapes *q*, and drum B, substantially as shown and described.

6. The combination of stationary gages J, vibrating sheet-controlling roller I, and feed-table Y, substantially as shown and described.

7. A revolving folder-carrying frame, a rotating single or double folding-blade, and devices into which the sheet is folded or doubled, combined and coacting substantially as shown and described.

8. A revolving folder-carrying frame, a rotating folding-blade, and stationary folding-rollers, combined as shown and described.

9. In combination with a rotating carrying-frame or drum, mechanism for alternately seizing and releasing the sheet, and a folding-blade having a part rotation to project it outward from the periphery of the drum or carrying-frame for folding the same, substantially as shown and described.

10. A folding-blade hung in or near the periphery of a revolving carrier or drum, and intermittingly rotated a part revolution to project it outward, to double or crease a sheet of paper, in combination with devices which receive said doubled sheet, substantially as shown and described.

11. A folding-blade hung in a revolving drum or carrier, and traveling in a circular path therewith, and capable of independent rotation therein, substantially as shown and described.

12. A folding-blade having intermittent part rotations in its revolving carrying frame or drum, in combination with a locking mechanism to retain it in its normal position during the intervals of time between its rotary movements, substantially as shown and described.

13. The combination of rotating folder-shaft, notched hub, and spring-detent, substantially as shown and described.

14. The method of causing the folding-blade to move in a circular path, and be projected outwardly from the periphery of the supporting-drum, by means of a flying-cam, substantially as shown and described.

15. The combination of flying-cam W, stationary cam V', and folding-blade, substantially as shown and described.

16. The combination of folding-blade, its rotating carriage or drum B, flying-cam, and stationary cam V', substantially as shown and described.

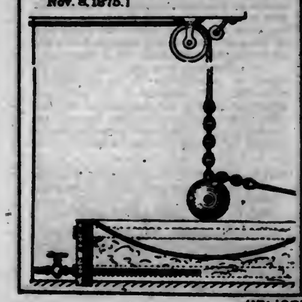
17. The combination of revolving sheet-supporting and folder-carrying drum, the independent rotating folding-blade, flying-cam, and stationary cam, substantially as shown and described.

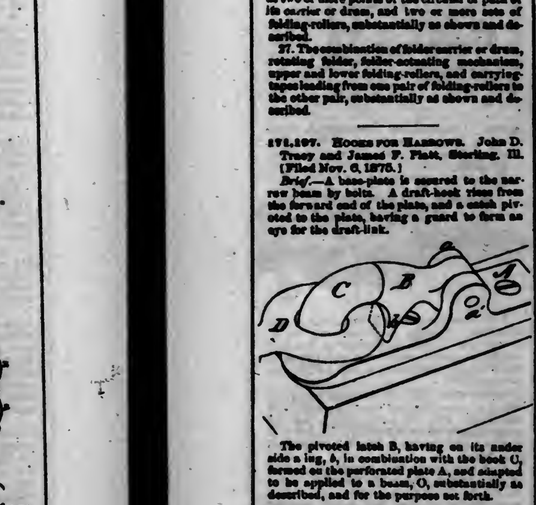
171,197. HOOKS FOR HARROWS. John D. Troxy and James P. Platt, Sterling, Ill. [Filed Nov. 6, 1875.]

Brief.—A metal plate is secured to the narrow beam by bolts. A draft-hook rises from the forward end of the plate, and a catch pivoted to the plate, having a guard to form an eye for the draft-link.

The pivoted latch B, having on its under side a lug, *b*, in combination with the hook C, formed on the perforated plate A, and adapted to be applied to a beam, O, substantially as described, and for the purpose set forth.

171,198. MAKING SHEET-METAL WARE. John Tregoner, New York, N. Y. [Filed Nov. 6, 1875.]





1. The method herein described of folding paper by means of a revolving drum, upon which a sheet is supported, a folding-blade rotated within and projected from said drum, and devices which receive said sheet, substantially as shown and described.

2. The method of folding paper by means of a revolving drum, upon which a sheet is supported, a folding-blade rotated within and projected from said drum, and a pair of rollers which receive the sheet, substantially as shown and described.

3. The method of folding paper by means of a revolving carrier, supporting a folding-blade rotated in and projected from it, and conducting devices, which carry the sheet within the range of action of the folding-blade and one set of folding-rollers, and, when once folded, convey it away from the one set and return it to a second set of folding-rollers, again within the range of action of the folding-blade, where it is again folded, substantially as shown and described.

4. The combination of sheet gages or stops, intermittingly-acting bronzing-roller, and endless tapes and pulleys s^3, substantially as shown and described.

18. The combination of revolving folder-carrying drum, independently-rotating folding-blade, flying-cam, stationary cam, and folding-rollers, substantially as shown and described.

19. The combination of revolving folder-carrying drum, independently-rotating folding-blade, folding-rollers, and sheet-carrying tapes, substantially as shown and described.

20. The combination of revolving folder-carrying frame, independently-rotating folding-blade, flying-cam W, stationary cam V', rollers s s', and sheet-delivering tapes, substantially as shown and described.

21. The female or stationary cam V', constructed with a divided face, whereby is provided a guiding-way for directing the movements of the folding-blade, and a recess for the passage of the point of the flying-cam, substantially as shown and described.

22. The combination of gear-wheels I I^1, flying-cam W, folding-blade U, drum B, stationary cam V', and folding-rollers s and s', substantially as shown and described.

23. In combination with the sheet-supporting drum and folding devices, the air-pipe F^1, substantially as shown and described.

24. In combination with the sheet-supporting drum and folding devices, the sheet-directing guards *u*, with or without the tapes r^1, substantially as shown and described.

25. A revolving carrier or drum, supporting a rotating folding-blade, and means for projecting said blade beyond the periphery of the carrier or drum at two or more points, substantially as described and shown.

26. The combination of a revolving carrier or drum, a folding-blade rotating therein, means for projecting it beyond the periphery at two or more points of the circular or path of its carrier or drum, and two or more sets of folding-rollers, substantially as shown and described.

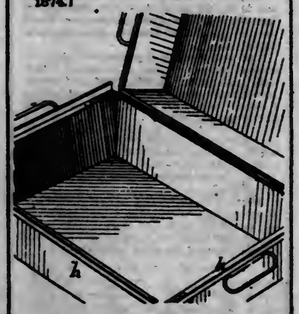
27. The combination of folder-carrier or drum, rotating folder, folder-actuating mechanism, upper and lower folding-rollers, and carrying-tapes leading from one pair of folding-rollers to the other pair, substantially as shown and described.

171,199. ATTACHMENTS FOR HEELS OF BOOTS AND SHOES. Robert S. Van Sandt, Williamsburg, N. Y. [Filed Mar. 12, 1875.]



A heel attachment or ice-creeper having a band, A, divided into two parts, A^1 A^2, connected together by a hinge, *b*, lugs a^1, and screw E, and having a series of projections, *c*, extending under and partially across its base, and provided with pins *d* beneath the under side of the heel F, as shown and described.

171,200. BAKING AND ROASTING. William Wache, Covington, Ky. [Filed June 12, 1874.]

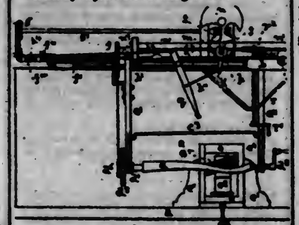


1. In a covered bake-pan, the flanges *h h h*, formed of the same piece of sheet metal as the lower part of the pan by bending the edges outwardly, so as to receive and incase the upper part or cover of the pan, substantially as and for the purposes described.

2. A covered sheet-metal bake-pan, the two parts of which are hinged together, and so adjusted relatively to each that they may be used either as a single covered or as a double open pan, substantially as and for the purposes described.

171,201. LATHES FOR TURNING IRREGULAR FORMS. George N. Westcott, Cortlandville, N. Y. [Filed Nov. 2, 1875.]

Brief.—The blank from which the article is to be turned is placed between centers in a swinging frame, which also has a reciprocating movement, its motions being governed by suitable guides, the cutting being done by a vertically-adjustable rotating cutter.



1. The oscillating supports or hangers s' and s'', for the cutting-lathe S^1 and the pattern-lathe S, in combination with a cam, *h*, running on ways, substantially as set forth.

2. The foot apparatus or device, composed of the cams *f*, wheel *j*, and shaft *m*, in combination with the rod *n* and cam *h*, as set forth.

3. The hand-feed, composed of the devices r, r^1, r^2, and r^3, in combination with the cam *b* and hangers s' s'', substantially as set forth.

4. The hand-lever *q* and rods b^1 b^2, in combination with the clutch f'' and eccentric *h*, for throwing simultaneously the feed and the lathe motions in and out of gear, as described.

5. The slide-rod and revolving shaft f', in combination with the tube f'' and cam *b*, as described.

6. The tube f', in combination with the cam *b* and hangers s' s'', as set forth.

7. The combination of saw-cutters, the hangers or supporting-arms s' s'', the oscillating tube f', and the adjustable tail-screw and center S^2, for cutting a taper in the blank either greater or less than that of the pattern, as set forth.

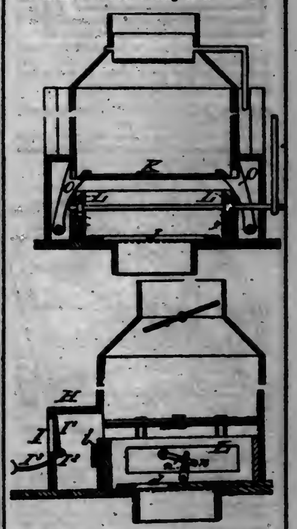
8. The sliding rest S''', adjustable on the rest *a*, in combination with the weighted guide S', for the purposes and uses set forth.

9. The car *k*, running on the rails or ways a', and moved by the screw and pinion f, in combination with the hangers s' s'', the lathe or pattern holder S, and the blank-lathe S^1, suspended from and beneath the car, in combination with the saw-cutters S^2 and pattern-guides f *i*, operating as one machine, substantially as set forth.

10. The oblique or drunken saws or cutters S^2 on the mandrel S^1, in combination with the adjustable frame s and set-screw s^2, whereby the saw or saws or cutters are adjusted to the blank *d* in the lathe S^1, as set forth.

171,202. FRUIT-DRIERS. Leo Whittlesey, Sturgis, Mich., and Franklin Whittlesey, Rochester, N. Y. [Filed Nov. 11, 1875.]

Brief.—The upper edges of the carrier is cut away or notched, so that it will not strike the detents. The extension affords room for the movement of the self-closing door.



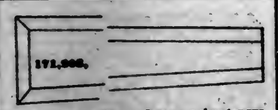
1. The combination, with the kiln, of detents O, and a reciprocating carrier, having notches or recesses arranged in respect to said detents, substantially as and for the purpose set forth.

2. The combination of the carrier L, rock-shaft M, having arms connected to the carrier, and operating-arm, as specified.

3. The combination of the kiln, its extension H, opening I, and self-closing door I' hung at the lower edge, and opening inward, substantially as and for the purpose set forth.

4. The trays K, constructed, adapted to, and combined with, the carrier L and detents, as described, so as to bear against the lowest tray of the column, and raise the latter before moving the detents, for the purpose set forth.

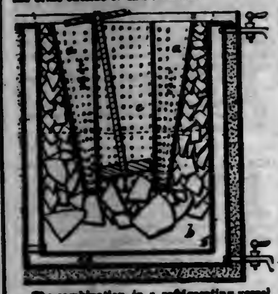
171,203. SHOE-TURNING. W. J. Washburn, Boston, Mass. [Filed July 9, 1875.]



As an improved manufacture, a shoe-tongue composed of two sheets of material, *a b*, cemented together, and having the outer one or both folded and fastened or pasted down upon the lining or lower one along the outer edge or edges thereof, all as described and shown.

171,906. REFRIGERATING APPARATUS. L. B. Woolfolk, Lexington, Ky. [Filed June 29, 1875.]

Brief.—Refrigerating-box is partly filled with brine, its annular part with salt, and ice is fed through the center, and pressed down by the dasher, in order that it may rise in the brine outside of salt-chamber.



The combination, in a refrigerating-vessel, of the salt-vessel *a*, having ice-passage *c*, the dasher *d*, ice and brine holder B, and waste-pipe C, substantially as set forth.

171,906. PLOWS. John Worrell, Clayton, Ind. [Filed Nov. 27, 1875.]

Brief.—Oscillating clamp for plow-beam upon a rack-bar, which is vertically adjustable at either end of the yoke.



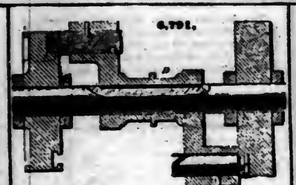
The pieces *c c*, secured to the plow-beam C by means of staples and nuts *d*, and having pivoted between them the oscillating bar *e*, in combination with adjustable bearings *f*, arched bar D, and arms E, pivoted to the vertical portions *a a'* of an arched axle, B, substantially as described.

REISSUES.

6,791. MACHINES-CLOTHING. Abt. B. Rent, New Haven, Conn. Patent No. 148,103, dated Mar. 3, 1874; reissue No. 6,215, dated Jan. 19, 1876. [Filed Nov. 23, 1875.]

Brief.—The movement of the looking-sleeve toward the wheel to be clothed causes the rotation of the bolt having the spiral groove by means of a pin engaging in the groove. This causes the nut in the number T-shaped groove to advance on the threaded end of the bolt, and clamp the flanges bordering said groove against the shoulders of the inner end of the bolt, and thereby clutch the wheel.

6,791.



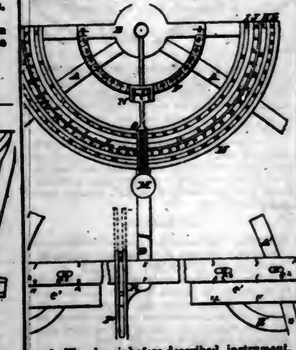
1. In a machine-clutch, a pulley constructed with a concentric groove or flange of substantially T shape in radial section, and loose upon the shaft, combined with mechanism, in connection with the shaft, whereby, through said groove or flange, the pulley is engaged with or disengaged from the said shaft, substantially as specified.

2. In combination with a shaft, and pulley loose thereon, and the sleeve D, in connection with said shaft, so as to revolve therewith, but free for longitudinal movement, the bolt or bar I, in connection with the pulley and with the sleeve, so that a longitudinal movement of said sleeve will impart a rotative movement to said bolt or bar, and thereby cause the said bolt to engage the pulley with or disengage it from the shaft, according to the direction of the movement of said sleeve, substantially as described.

3. A clutch-pulley constructed with a T-shaped groove or flange, L, combined with a bolt, I, and a nut, *f'*, in said groove, and means, substantially such as described, for imparting a rotative movement to said bolt, to engage or disengage said pulley.

6,792. SURVEYING-INSTRUMENTS. John L. Bogy, St. Genevieve, Mo. Patent No. 147,472, dated Feb. 17, 1874. [Filed Dec. 2, 1875.]

Brief.—Two converging arms are attached to a disk, from which is suspended a pendulum and two fixed graduated arcs. By means of the arcs the horizontal distance and difference in level between the arms is obtained.



1. The herein-before-described instrument, consisting of the head B, legs A A', main brace C, semicircle F, pendulum M, and square P, combined and operating substantially as described.

2. The herein-before-described instrument, consisting of the head B, legs A A', main brace C, semicircle H pendulum M, and square P, combined and operating substantially as shown.

3. The legs A A', head B, main brace C, semicircles F and H, pendulum M, and square P, combined and operating substantially as described.

6,793. SHEDDING MECHANISMS FOR LOOMS. Robert Elliott, Chester, Pa. Patent No. 110,040, dated Jan. 3, 1871. [Filed May 31, 1875.]

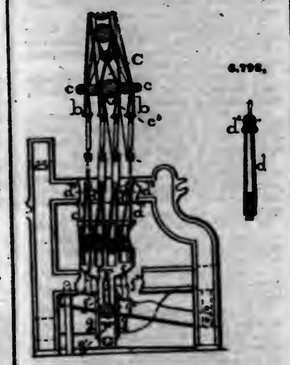
1. The pivoted frame C and guide-rollers *r s*, combined and connected with the heddles, straps, and upper rollers, substantially as and for the purpose set forth.

2. The combination, with the jack-bars, of the guides F with slots *f*, and shanks *f'* with slots *f''*, brackets G with flanges *g*, slots *g'*, and bolts *g''*, substantially as and for the purpose set forth.

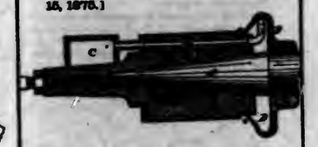
3. In combination with the heddle and jack-bars, the strap *d'*, which is formed into a loop, and provided with a headed pin, *d''*, whose stem projects from the looped strap, and its head is held secured between the folds of the strap, the stem of the pin being connected to the heddle-bar, and the loop of the strap receiving the jack-bar, substantially as and for the purpose set forth.

4. The jack-bar provided with the slot *e* and pin *e'*, in combination with the connection *d''* between the jack-bar and heddle, substantially as and for the purpose set forth.

6,793.



6,794. LUBRICATORS. Johannes A. Oesenbrunk, Hemelingen, Germany. Patent No. 126,274, dated Apr. 30, 1872. [Filed Nov. 15, 1875.]



1. In combination with the shaft A and stationary bearings B, a revolving oil or grease cup, D, that is secured to the said shaft, and made to revolve around the end of the bearing, substantially as and for the purpose specified.

2. The combination of a bearing or pulley, an oil or grease cup that revolves around said bearing, or with the pulley, and a pipe for gathering the oil or grease from the inside of the cup, and forcing it into the bearing, as specified.

3. In combination with a bearing, a revolving cup that is attached to the shaft, a pipe for forcing the oil through the bearing, and a stationary oil or grease box that is attached to or formed with the bearing, substantially as set forth.

4. The chambers *d*, channel-way *m*, and pipe *b* in the shaft-bearing, in combination with a centrifugal cup, D, fast to the revolving shaft, and pipe J, fast to the upper part of the shaft-bearing, and connected with the lubricating-cup *c*, substantially as described.

5. The chambers H in the loose pulley F, closed by suitable caps D, in combination with pipes V W, attached to the shaft, and connected through suitable holes or channel-ways with a groove, *s*, or with the internal bearing of said pulley, and operating in the manner and for the purpose set forth.

6,795. GARNET-LININGS. John M. Perkins, Asbury, N. J., assignor to R. R. Perkins, same place. Patent No. 76,342, dated Apr. 7, 1868. [Filed June 9, 1875.]

A lining, consisting of a sheet of aromatic wood, combined with textile fabric or paper applied to the surface or surfaces of said wood, substantially as and for the object specified.

6,796. COMBINED HAT HOLDERS AND ORNAMENTS. J. R. Smith, Waterbury, Connecticut, assignor to the Smith & Griggs Manufacturing Company. Patent No. 102,982, dated May 10, 1870. [Filed Oct. 28, 1875.]

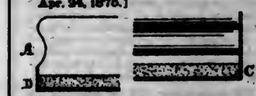
Brief.—A hat or other article is held between the jaws of the suspending-clamp by the sliding ring, the duplicate check thereof being first removed by the custodian and presented to the owner of the article.



1. The clasp made of a strip of metal, folded to form the loop *a*, and the ends bent toward each other to form the jaws *b*, in combination with the suspending-ring E and sliding ring B, substantially as set forth.

2. The removable check C, in combination with the clasp A *b*, and sliding ring B, substantially as described.

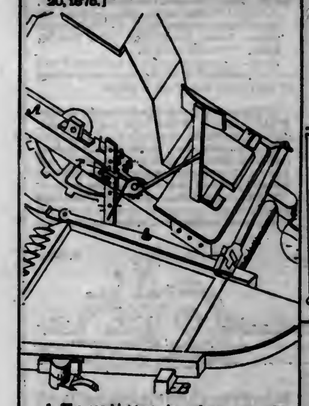
6,797. BLACKBOARD AND OTHER RUBBERS. Benj. Y. Conklin, Brooklyn, N. Y. Patent No. 152,622, dated Oct. 20, 1872. [Filed Apr. 24, 1875.]



1. The rubber, consisting of a body or handle, A, and a rubbing portion, B, composed of a sheet or sheets of felt gummed or otherwise secured to said body, substantially as and for the purpose set forth.

2. The rubber herein described, consisting essentially of a body or handle, A, provided upon its rubbing-face with a sheet of felt permanently secured thereto, and formed with sharp angular sides C D, substantially as and for the purpose set forth.

6,798. HARVESTERS. C. Crook, New Hope, Pa., assignor, by mesne assignments, to J. I. Hendryx. Patent No. 17,300, dated May 5, 1857; reissue No. 646, dated May 4, 1858; reissue No. 2,209, dated Apr. 30, 1869; extended seven years; reissue No. 5,420, dated May 27, 1873. [Filed Sept. 20, 1875.]



1. The combination, in a harvester, of a main frame, supported on a driving-wheel, without any front truck, and a separate cutter-frame loosely jointed thereto in rear of the driving-wheel, and being located or arranged wholly outside of the main frame, substantially as described.

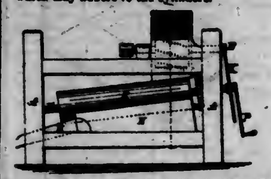
2. In combination with a cutter-frame, located outside of the main frame, and hinged loosely thereto in rear of the driving-wheel, a lever pivoted to the main frame, and connected to the cutter-frame, substantially as described, whereby the front end of the latter can be raised or lowered at will, as set forth.

3. The combination of a main frame, a hinged adjustable cutter-frame, an independent suspending device for suspending said cutter-frame, and a lifting device having a flexible connection to the platform, substantially as described.

4. In combination with a main frame and an adjustable cutter-frame, a suspending device independent of the lifting device, constructed to operate substantially as described, whereby the cutter-frame may be adjusted and held at any desired height, and be free to rise above and fall to its adjusted position without affecting the lifting device, as set forth.

6,799. CIDER-MILLS. Enos Curtiss, Finley, Ohio. Patent No. 160,307, dated Mar. 2, 1875. [Filed Nov. 24, 1875.]

Brief.—The drum is provided with teeth to grate the apples to a fine pomace, which falls upon the cylinders placed parallel and close together, and at an inclination, forming a trough, down which the cider runs to the spout. Metal scrapers remove any pomace which may adhere to the cylinders.

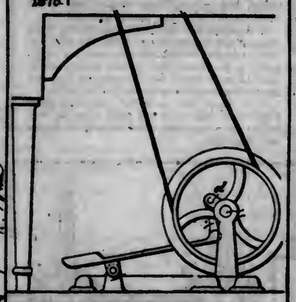


1. In a cider-mill, the inclined rollers E, geared together so as to revolve toward each other, and forming a trough, down which the cider runs to the receiver, as specified.

2. In a cider mill and press, the inclined rollers E, in combination with the shafts D, cog-wheels M, handle P, and spout H, substantially as shown.

3. The combination of the inclined rollers E and their shafts D with the frame A, toothed drum F, hopper I, pinion B, driving-wheel K, handle P, cog-wheels M, scrapers S, and spout H, substantially as described.

6,800. TREADLES. W. J. Demorest, New York, N. Y., assignor, by mesne assignments, to S. S. White, Philadelphia, Pa. Patent No. 60,976, dated Oct. 23, 1867; antedated Oct. 12, 1867. [Filed Nov. 27, 1875.]



1. The portable treadle-power herein-before described, consisting of the combination of the base or frame, adapted to be moved, its pedal, link, crank-shaft, and balance and driving-wheel, all constructed to operate in combination, substantially as herein-before set forth.

2. The combination, substantially as set forth, of the movable treadle-power, the driven pulley, and the driving-belt, whereby the relative position of the treadle-power and the machine driven by it may be varied.

6,801. PRINTERS' GAUGE. Alexander T. De Pey, New York, N. Y., assignor to R. Hoe & Co., same place. Patent No. 114,278, dated May 2, 1871. [Filed Nov. 24, 1875.]

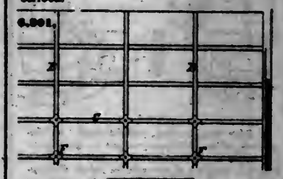
1. A type-case tie partitions of which are secured at their points of intersection by means of metallic ties, braces, clamps, or clasps, substantially as shown and described.

2. A metallic tie, brace, clamp, or clasp, for united the severed parts of intersecting partitions of a type-case, which is constructed so as to engage with the free part of one partition and secure it to the unbroken part of another partition, substantially as shown and described.

3. The combination of a metal tie, brace, clamp, or clasp, having one or more branches or arms adapted to engage with the free part or parts of a partition of a type-case, with a nail, for securing it to the solid or unbroken part of an intersecting partition, substantially as shown and described.

4. The metal fastening for securing the joints formed by intersecting partitions of a type-case constructed with depending ledges, whereby it is adapted to engage with the said partitions, substantially as shown and described.

6,801.



6,802. HEATERS AND FEEDERS. R. Garstang, St. Louis, Mo. Patent No. 152,360, dated June 23, 1874. [Filed July 20, 1875.]



1. The compartments H I J, tubes or pipes G, and filter L, combined and arranged, and having pipe-connections for operating substantially in the manner described.

2. The cast-metal ends A B, and cylindrical attachments O D, provided with tube-sheets *a d*, and forming the ash and sediment chambers, respectively, in combination with the metal cylinder K, forming an intermediate chamber, I, and tubes G, connecting the upper and lower chambers or reservoirs, substantially as set forth.

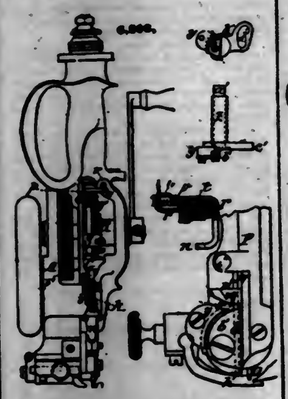
3. The combination of chamber J, filter L in lower part of same, water-induction pipes G beneath the filter, and outflow-water pipe in the lower part of chamber J, above the filter, and blow-off pipe T at the top of said chamber, all substantially as set forth, and for the purpose described.

4. The condensing-chamber I, surrounding the water-tubes G, and provided with steam-inlet N and water-outlet Q at bottom, and water-inlet P and steam-outlet O at top, as set forth.

6,803. PRODING-MACHINES. Louis Godde, Boston, Mass., assignor, by mesne assignments, to the American Cable-Screw-Wire Company, same place. Patent No. 97,302, dated Nov. 23, 1869. [Filed Nov. 27, 1875.]

Brief.—An oscillating nail block or transferrer, provided with a single nail-tube, receives the nail outside of the line of movement of the driving mechanism, and intermittently and alternately presents the tube in position to receive the nail, also to receive the action of the driver.

6,866.



1. The combination, substantially as described, of the stationary cutter c, the movable cutter a, the transferrer b', their eccentric fulcra or shafts e e', the slotted rails f f thereof, the movable T-piece M, and its operative cam-wheel R, the whole being applied to the stock or frame, and connected with mechanism for advancing the wire, severing it, and driving it, all substantially as specified.

2. The combination of the cable-gage r, as set forth, with the handle B of the stock A, and with the stop-pin o of the pawl-lever of the wire-feeding mechanism.

3. The combination of the cone-gage r, as set forth, its stops v v, and operative spring o with the stock A and its handle B, and the stop s, and operative lever o of the wire-feeding mechanism.

4. In machines in which nails are cut previous to being driven from a continuous wire in the manufacture of boots and shoes, the combination, with wire and work feeding devices and a vertically-operating driver, of an intermittently-oscillating and single-tube transferrer-block and a wire-severing device, substantially as herein set forth.

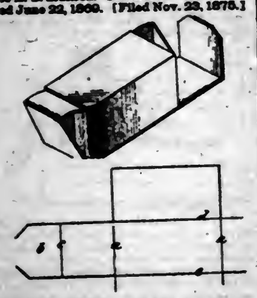
5. In combination with an intermittingly-oscillating and transferrer or block, which receives in a single tube the wire outside of the line of action of the vertical driver, and across the path of the cutters, and a work-feeding device, of an adjustable edge-guide for the nails, substantially as herein set forth.

6,866. CANDLE-HOLDERS. Chas. Kirchhof, Newark, N. J. Patent No. 72,508, dated Dec. 24, 1867. [Filed Nov. 19, 1875.]



As an improved article of manufacture, the candle-holder c, in combination with the hook a b and rod A, arranged to connect with a suitable weight, f, in the manner and for the purposes substantially as described.

6,867. PAPER BOXES. James L. Kober, Chicago, Ill., assignor, by mesne assignments, to R. B. Munson. Patent No. 91,666, dated June 22, 1869. [Filed Nov. 22, 1875.]



1. A paper box formed from a blank consisting of one piece, which is held together without the use of any fastening means other than tongues b, when it is folded into tubular box form, substantially as shown and described.

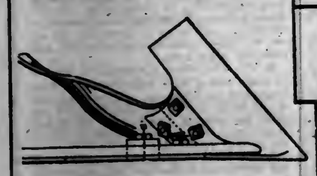
2. A paper box formed in one piece, which, when partially or wholly unfolded, is capable of being packed flat for storage or shipment, and provided with means for securing it in tubular form, substantially as shown and described.

3. Paper boxes formed from a blank consisting of one piece, and having the body, end pieces, and tucking-flaps shaped and folded substantially as shown and described.

4. A paper box the body and closing flaps thereof are formed in one piece, the said box being adapted to fold flat for storage or shipment, to be formed into tubular shape and to have its ends closed and fastened by the said flaps, substantially as shown and described.

5. A paper box provided with end flaps adapted to fold over and tuck into the box and to close the same, substantially as shown and described.

6,868. PLOWS. Wm. E. Harrell, Clarinda, Iowa, assignor to himself, T. B. Chamberlain, and D. C. Chamberlain. Patent No. 128,141, dated June 18, 1872. [Filed Nov. 1, 1875.]

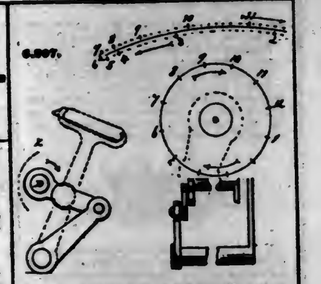


1. In a sod-plow, the fin extended above D, adapted to cut the sod and completely across the width of the furrow before it begins to turn or is turned over, substantially as set forth.

2. In a sod-plow, the narrow mold-board or turning device, adapted to turn the sod after it is cut without bearing upon its whole width, substantially as set forth.

3. The combination, in a sod-plow, of a fin extended above the furrow in advance of the mold-board, and a narrow mold-board or turning device which turns the sod without bearing upon its whole width, substantially as set forth.

6,869.



1. The combination, with the needle-carrier and the shuttle-driver, of crank mechanism, substantially as described, arranged for operation substantially as specified, whereby the needle is retarded in the cloth and forms a loop for the shuttle to enter, and the shuttle is advanced and passed through the loop while the needle's movement is retarded, for the purposes set forth.

2. The combination, with the needle-carrier and the shuttle-driver, of crank mechanism, substantially as described, arranged for operation substantially as specified, whereby the motion of the shuttle is extended after passing through the loop during the final upward motion of the needle, for the purposes set forth.

3. The combination, with the needle-carrier and the shuttle-driver, of crank mechanism, substantially as described, arranged for operation substantially as specified, whereby the movement of the needle after the passage of the shuttle through the loop is accelerated, while that of the shuttle is retarded, for the purposes set forth.

4. The combination, with the needle-carrier and the shuttle-driver, of crank mechanism, substantially as described, arranged for operation substantially as specified, whereby the motion of the shuttle when passing through the loop is accelerated, while that of the needle is retarded, for the purposes set forth.

5. The combination, with the shuttle, the carrier-lever H, and the primary shaft D, provided with a crank, of the connecting-link J, as and for the purposes described.

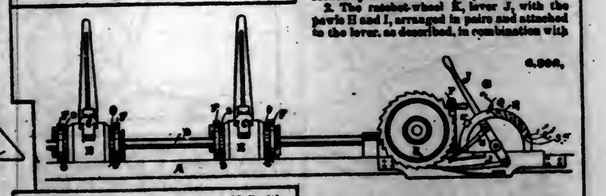
6,870. HEAD-BLOCKS FOR SAW-MILLS. F. J. Staley, Indianapolis, Ind., assignor, by mesne assignments, to H. O. Frink, same place. Patent No. 98,215, dated Dec. 21, 1869. [Filed May 19, 1875.]

Brief.—The setting lever is controlled by an arc so graduated as to regulate the thickness of the lumber cut by the machine.

1. The sleeve E, furnished with the flanges F and pawls S S', and keys e e, concentric piece E, furnished with cogs f f and ratchets O O, in combination with the setting-shaft D, furnished with the hand crank-wheel P and keeps C C, all constructed and arranged substantially as and for the purpose set forth.

2. The ratchet-wheel K, lever J, with the pawls H and I, arranged in pairs and attached to the lever, as described, in combination with

6,869.



6,907. SEWING-MACHINES. Davis H. Smith, New York, N. Y., assignor to Marguerite B. B. Smith. Patent No. 20,176, dated May 4, 1869; extended seven years. [Filed Sept. 9, 1875.]

Brief.—The shuttle-carrier and needle-arm are actuated positively by crank mechanism. The operation of the mechanism is such that the needle is retarded in the cloth, and forms a loop for the shuttle to enter, and the shuttle is retarded after passing through the loop during the final upward motion of the needle. The motion of the needle is accelerated during its final upward stroke, as is also the motion of the shuttle while passing through the loop.

the bevel-wheels L and M, cutting shaft D, and segmental arch Q, constructed and arranged to operate the knees of the head-blocks, substantially as specified.

3. The segmental arch Q, in combination with the lever J, pawls H I, ratchet K, and cutting-shaft D, constructed and operated substantially as and for the purpose set forth.

4. The segmental arch Q, having holes properly spaced and drilled therein, in combination with the lever J and stops B' and E, pawls H and I, constructed and operated as herein specified, for the purpose of putting frictional parts of an head, substantially as described and set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & CO. BOSTON.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 25. TUESDAY, DECEMBER 21, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1876 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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NOTICE TO MANUFACTURERS AND OTHERS.

UNITED STATES PATENT OFFICE,
Washington, D. C., October 5, 1875.

The COMMISSIONER OF PATENTS respectfully requests manufacturers of and dealers in engines, machines, apparatus, tools, and appliances of whatever kind, to send to this Office duplicate copies of all catalogues and circulars which they have issued or may issue from time to time.

R. H. DUELL, *Commissioner.*

COMMISSIONER'S DECISIONS.

CHAPMAN *et. al. vs.* MORRISON.—*Interlocutory Appeal.—Interference.*

[*Appeal from the Examiner of Interferences in the matter of the interference between the patent of M. T. and M. C. Chapman, granted March 4, 1873, and the reissue application of Jos. E. Morrison, filed November 30, 1874, for* ADJUSTABLE VALVES FOR BORED OR DRIVEN WELLS.—*Decided December 7, 1875.*]

An objection to a question based upon a patent which was not first introduced in evidence, nor a certified copy thereof, sustained.

Where testimony was taken by the defence to show that their opponents had not "manufactured, sold, or used" the invention during a certain time while the witness was employed at their establishment, on which point no testimony had been taken by the latter parties in their testimony-in-chief: *Held*, That testimony taken in rebuttal to show use of the invention at another place than at the establishment during the time mentioned was properly rebutting, and not direct evidence.

Objections to questions not made at the time considered as waived.

The Office, however, reserves the privilege of considering what testimony is or is not material to the issue.

The common law rules of evidence will be continued to be applied strictly in all practice before the Office.

DUELL, *Commissioner:*

This is an appeal from the decision of the EXAMINER of Interferences upon a motion to strike out certain testimony taken by the later applicants, the Chapmans.

First. The latter parties, in their testimony-in-chief, commenced to question a witness regarding the contents of their patent, when neither that patent nor a certified copy thereof was introduced, or attempted to be introduced, in evidence. The question was objected to for that reason, and the objection properly sustained by the Examiner of Interferences.

Second. Certain testimony was taken by Morrison tending to show that the precise invention in controversy was not "manufactured, used, or sold" by the Chapmans' between May 20, 1872, and August 10, 1872, the time he was in their employ. No testimony apparently had been taken, in their examination-in-chief by the Chapmans, showing the extent and character of use by them of this invention, so that the above testimony on the part of Morrison was upon a matter not previously touched upon. And by this course Morrison opened the door for rebutting testimony on the same point. This their opponents availed themselves of, and one Hayward was introduced to show that the Chapmans put substantially the same valve-seat now claimed by the parties into his well at his home in Aurora, Illinois, in July, 1872. This was in the nature of direct rebuttal of the above testimony on the part of Morrison.

The Examiner evidently overlooked the scope of the questions proposed to Morrison and his witnesses by his counsel, as in his decision he appears to confine his consideration of the adverse testimony of Morrison to the single fact of the *selling* by the Chapmans at their establishment of the device in controversy during Morrison's employment there. But it will be seen that this is a mistake. For instance, question 30, to Jos. E. Morrison, is as follows:

Were all the valve-seats *manufactured, used,* and *sold* by the Chapman Brothers during the time you were in their employment screw-threaded at the lower end, and screwed into the coupling, so as to compress the packing between the shoulder on the valve-seat and upper end of the coupling as the valve-seat and coupling were screwed together?

A. They were all screw-threaded, and screwed into the coupling, as far as I know. I did not see them all put in.

Other questions of the same tenor had been previously asked.

Now, Hayward's testimony tends to show that in his case at least a valve-seat was used of a different character than what Morrison mentions, and one like the device in dispute, thus directly rebutting the testimony of Morrison as to the use of that device by the Chapmans during the time mentioned. The exhibit "E" introduced by Hayward confirms his statements. On this point, therefore, the Examiner of Interferences is overruled, and Hayward's testimony will be considered, and all other rebutting testimony, on the part of the Chapmans, tending to show use, sale, or manufacture by them of the device in controversy during the time above set forth.

Third. The Examiner refuses now to consider objections to certain questions not made at the time the questions were propounded. In this he is right, as he but follows a well-known rule of evidence that objections to questions not made at the time are to be considered waived.

The Office, however, also reserves the privilege of considering what testimony is material, and what immaterial, to the issue, as the case is considered by the various tribunals before which the case may pass.

It is here remarked that as the law gives the power to the Commissioner to establish rules for the taking of testimony in contested cases before the Office, and also prescribes that the regulations for the conduct of proceedings before the Office shall not be inconsistent with law, the only proper course left for him to do in matters of evidence is to adopt the common law rules relating to the same, as expounded in the standard textbooks and the decisions of the courts. And, in my opinion, no better course could be pursued for the maintenance of the rights of all parties in these disputes.

Rule 116, therefore, which prescribes that the well-established rules of evidence will be applied strictly in all practice before the Office, will continue to be observed.

The case is returned to the Examiner of Interferences for his further consideration, in view of the above rulings.

JESSE JOPLING.—*Interlocutory Appeal.*

[*Appeal from the Primary Examiner in the matter of the application of Jesse Jopling, for letters patent for an* "IMPROVEMENT IN SUBMARINE TORPEDO-BOATS."—*Decided December* 22, 1875.]

In a submarine torpedo-boat, of the construction described, the lighting and ventilating devices constituted necessary elements in the production of the result, and without which the boat would be inoperative: *Held*, therefore, that these devices need not be the subjects of separate applications.

DUELL, *Commissioner*:

The invention of the applicant relates to the construction and arrangement of a submarine torpedo-boat. Part of the devices embraced by the application relate to the form of the boat and the means of propelling, and part to the means of lighting and ventilating the same.

The Examiner declines to act upon the case on the ground that the devices relating to lighting and ventilating comprise distinct inventions not necessarily connected with the form and general construction of the boat. He states that it is not uncommon to provide torpedo-boats of various forms and structures with valves, pumps, dead-lights, &c., for the purpose of ventilating and lighting the same; and he adds that it is not perceived there is any special adaptation of the means of lighting and ventilating more than is required in other vessels used for similar purposes.

The rule to be observed in the division of application has very recently been reiterated in the case of Noyes, 8 OFFICIAL GAZETTE, 818, coming from the same class as the present one. The general doctrine is there stated to be that where the devices are used in connection to subserve a common end, or adapted to each other, all co-operating to produce a given result, and the use of each device, or its equivalent, is necessary to that result, although each device, when considered by itself, may amount to a new invention, yet, when so combined, they constitute an exception to the general rule, that separate inventions should form the subjects of separate applications.

The Examiner cites the case of Abel Combs, C. D, 1871, p. 209, and also that of Franklin, 1873, p. 116. In the Combs case it was objected by the Examiner that the application embraced several distinct and separate improvements in watches, and the Commissioner, in sustaining this objection, added that he failed to see that there was any such connection between the improvements specified as to make any particular one of them necessary to the presence and successful operation of any or all of the others. But he also distinctly intimates that where several improvements have a community of operation, separate applications were unnecessary. And this, also, is the doctrine set forth in the Franklin case. These decisions clearly indicate the course to be pursued in the present case.

The submarine torpedo-boat of the form and construction, and to be operated in the manner described by applicant, would be inoperative and of no use or value whatever without the lighting and ventilating devices. They are essentially necessary to the accomplishment of the result proposed. If old in this case, and form the subjects of independent claims, they should be met with proper references, but unless so answered they should stand as essential elements in this application.

The decision of the Examiner is reversed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, EASTERN DISTRICT OF MISSOURI.

INTERFERING PATENTS.

ALFRED T. FOSTER *vs.* WM. M. LINDSAY.

[*Before* TREAT, *J.—Decided October* 28, 1875.]

INTERFERING PATENTS—SEC. 4918 OF REV. STATS. CONSTRUED.

Section 4918 of the Revised Statutes of the United States in respect of *interfering patents* construed, and held to vest the power in the circuit court to adjudge *either* of the interfering patents void in whole or in part, and upon proper issues and proof to authorize a decree that both patents are void.

TREAT, *J.*:

This is a suit in equity under sec. 4918 of the Revised Statutes of the United States, concerning alleged

interfering patents. The defendant's patent was prior in date to plaintiff's; also the application therefor. The plaintiff claims that the invention was by him; that he had, previous to any knowledge thereof by the defendants, not only invented the patented composition, but actually reduced it to a practical and successful test; that he had shown to the defendants the manufactured article, and when, as their foreman in the brick business, he was consulted thereafter about manufacturing fire-brick by means of which they could obtain a large and profitable order, he called their attention to the fact that he had exhibited to them before entering upon their service a specimen brick of the needed quality, that thereupon he, as their foreman, directed various experiments to be made at defendants' brick-yard; that when the defendants suggested subsequently that they proposed to obtain a patent for that mode of making an improved fire-brick he remonstrated against their doing so, claiming that he was the original inventor, and alone entitled to a patent, if one was obtainable.

On the other hand, the defendants claim that it was only after a series of experiments under their direction and supervision, in their own establishment, the success of the mode patented was ascertained.

Without analyzing the testimony with the view of determining whether the plaintiff, in his isolated experiment, prior to entering into the service of defendants, had invented the patented mode of securing the desired result, or had merely experimented so far as to ascertain that the use of sand-rock would furnish the needed glazing in his pottery business, and without inquiring further whether he had not abandoned all purpose of pushing his experiments to ultimate success for fire-bricks, and also without determining to what extent he and the defendants respectively suggested the experiments made in defendants' establishment which first resulted in an ascertained and definite value from the compound, whereby the rights of the respective parties as employer and employee would arise, we will first consider the true construction of the act of Congress. The language of the section is peculiar, and the object designed by it is not free from doubt. The section is as follows:

Wherever there are interfering patents, any person interested in any one of them, &c., may have relief against the interfering patentee and all parties interested under him, by suit in equity against the owners of the interfering patent; and the court, on notice, may adjudge and declare either of the patents void in whole or part, or inoperative or invalid in any particular part of the United States, according to the interest of the parties, &c. But no such judgment or adjudication shall affect the right of any person except the parties to the suit, &c.

So far as known this section has not received any express adjudication. In *Mowry* vs. *Whitney*, (14 Wall., 434,) an allusion is made to a somewhat similar provision in the act of 1836. The latter act in the section referred to covered two distinct classes of cases, viz: First, where there were interfering patents; and second, where the examiners refused to issue a patent applied for on the ground of interference with a prior patent. In each of those cases a bill of equity would lie at the instance of either of the parties, and the court could determine in the latter class of cases whether the applicant should have a patent issued to him; and, in the former, might adjudge either of the patents void in whole or in part, &c.

In ordinary cases, where a patentee brings suit for infringement, the defendant can assail the validity of the patent in the manner prescribed; and the decree of the court is binding on the parties. It is contended that, inasmuch as this suit is not for an infringement, the defendant must be confined to the respective merits or claims of the patentees *inter sese*, irrespective of the validity of either. The defendant in this case, among other defenses, has set up that the patented compound or process had been anticipated and in use before either of the interfering patents had been claimed or issued. The evidence fully establishes the fact. In a suit for an infringement, a defense for want of novelty would, under the evidence in this case, be successful, whether the one or the other of the interfering patents was the basis of the action. The case of *Mowry* vs. *Whitney* goes no further than to hold that if a patent is to be annulled *ab initio*, the proceeding must be at the direct instance of the Government, but it does not decide that the question between conflicting patents may not be fully and finally determined as to the parties to suit for interfering patents.

The plaintiff in this case contends that he has the prior and better right, although his application and patent are of subsequent date, and that the court is bound to adjudicate solely as between his and the interfering patent, leaving one of the patents to stand for subsequent adjudication when assailed in a proper suit.

The act of Congress provides for a suit in equity against the owners of the interfering patent for such relief as equity would furnish. If the act stopped there, would a court of equity grant relief to a complainant who had no equity? If it would not, could not the court inquire, through proper pleadings and evidence, into the equities of the complainant? But the section proceeds to authorize the court to adjudge *either* of the interfering patents void in whole or part. If it adjudged the plaintiff's patent void, should not a decree to that effect be entered, instead of a simple decree dismissing his bill? If it ascertains that the defendant's patent is void, and the plaintiff's also, must the decree be restricted to a judgment against the defendant's patent, leaving the plaintiff's patent as if in full force and of established validity; so that if a new suit were brought by the same plaintiff against the same defendant for an infringement of plaintiff's patent, the defendant would then for the first time be able to dispute the validity of plaintiff's patent for want of novelty, &c.? Why two suits between the same parties to adjust the controversies between them when one suit would accomplish the end according to the well-known purposes of equity proceedings? Unless the terms of the statute restrict the court, sitting in equity, so that it can not do full and complete justice between the parties and end the litigation between them, it would seem to be its duty to pass upon the whole controversy when fairly and fully presented. The statute says that the court may adjudge *either* void in whole or part. How can it do so consistently with law and equity, unless each of the patents is under consideration in all respects? It may conclude that in some respects there is an interference, and in others none, so that the decree would be only for an annulment in part; or it may decree that there is an interference *in toto*, and consequently annul one of the interfering patents, leaving

the other to stand as valid. But what would be the position of one who had previously used the patent declared void, when suit was subsequently brought against him by the other patentee for an infringement? Could he assail the validity of the patent which had already, as between the same parties, been adjudged at least impliedly to be valid? It seems that the suits in equity authorized in cases of interfering patents should not be restricted to the narrow limits urged. The controversy is between two patentees or those claiming under them. If neither has a valid patent, the court should adjudge both void, and thus end the strife. It is on this theory that the defendant was permitted to set up in his answer the lack of novelty, not of plaintiff's patent alone, but of his own. True, he might voluntarily have surrendered his patent, and contested the plaintiff's right in a suit for infringement; but why should he not, when sued, insist upon a full defense, whereby a second suit could be avoided. The power vested in the court to adjudge either of the interfering patents void, in whole or part, is held to confer full authority, where the evidence justifies, on issues fairly made, to decree, not one of the patents alone, but both to be void.

The court so adjudges in this case, and the decree will be accordingly at the costs of the plaintiff.—*St. Louis Central Law Journal, No.* 48, *page* 768.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date December 21, 1875.]

8,852.—**Gates and Panels.**—FRANCIS O. HANSON, Philadelphia Pa. Application filed November 15, 1875. Term of patent 3½ years.

8,853.—**Gates.**—FRANCIS O. HANSON, Philadelphia, Pa. Application filed November 15, 1875. Term of patent 3½ years.

8,854.—**Head of Stair-Carpet Fasteners.**—MORITZ KEICKL, New York, N. Y.—Case A. Application filed November 22, 1875. Term of patent 7 years.

8,855.—**Organ-Case.**—JOHN R. LOMAS, New Haven, Conn., assignor to B. SHONINGER, same place. Application filed November 30, 1875. Term of patent 14 years.

8,856 to 8,859, inclusive.—**Oil-Cloths.**—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Applications filed December 13, 1875. Term of patents 3½ years.

8,860.—**Collar and Cuff Boxes.**—LOUIS TIM, Philadelphia, Pa. Application filed November 22, 1875. Term of patent 3½ years.

8,861.—**Parlor-Stoves.**—NICHOLAS S. VEDDER and FRANCIS RITCHIE, Troy, N. Y., assignors to SWETT, QUIMBY & PERRY, same place. Application filed December 10, 1875. Term of patent 7 years.

8,862.—**Parlor-Stoves.**—GEORGE A. WELLS and EDMUND J. CRIDGE, Troy, N. Y., assignors to FULLER, WARREN & CO., same place. No. 1. Applications filed December 15, 1875. Term of patent 7 years.

8,863.—**Cooking-Ranges.**—GEORGE A. WELLS and EDMUND J. CRIDGE, Troy, N. Y., assignors to FULLER, WARREN & CO., same place. No. 2. Application filed December 15, 1875. Term of patent 7 years.

8,864.—**Cooking-Stoves.**—GEORGE A. WELLS and NICHOLAS S. VEDDER, Troy, and THOMAS S. HEISTER, Lansingburg, assignors to FULLER, WARREN & CO., Troy, N. Y. No. 3. Application filed December 15, 1875. Term of patent 7 years.

8,865.—**Pack of Playing-Cards.**—JOHN DAVID D. MORTIMER, Chicago, Ill. Application filed December 3, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date December 21, 1875.]

3,253.—**Gloves.**—M. BEEBER & CO., Gloversville and New York, N. Y. Application filed September 27, 1875.
"a bird reclining on a rose-bush."

3,254.—**Pantaloons and Coats.**—BROCK & WIENER, Buffalo, N. Y. Application filed December 10, 1875.
"word 'Centennial,' and figures '1776' and '1876.'"

3,255.—**Liniment.**—C. F. BROWN CHEMICAL COMPANY, New York, N. Y. (Re-registration.) Application filed April 18, 1872.
"words 'YOUNG AMERICAN.'"

3,256.—**India-Rubber Goods.**—JOHN M. CORWIN, Brooklyn, N. Y. Application filed November 16, 1875.
"word 'ZEPHYR.'"

3,257.—**Shovels and Spades.**—JOHN DUNN, Orange, N. Y. Application filed December 6, 1875.
"word 'Excelsior,' combined with the words 'Shovels and Spades' and 'New York.'"

3,258.—**Petroleum Distillates and Residues.**—WILLIAM H. LIBBY & CO., New York, N. Y. Application filed November 27, 1875.
"words 'LIQUID COAL.'"

3,259.—**Bread, Biscuits, Crackers, and Cakes.**—JAMES D. MASON & CO., Baltimore, Md. Application filed November 13, 1875.
"words 'Maryland Steam Bakery' and the Coat of Arms of the State of Maryland."

3,260.—**Stoves.**—MICHIGAN STOVE COMPANY, Detroit, Mich. Application filed April 6, 1875.
"the shield of the United States, having the figures '1776—1876' on the horizontal bar, and inclosed in a letter 'C,' which is enveloped in a wreath of laurel."

3,261.—**Hair-Producer.**—HARRIET A. MOORE, San Francisco, Cal. Application filed October 19, 1875.
"words 'Mrs. H. A. Moore's Hair Producer,' in conjunction with the portrait or figure."

3,262.—**Organs.**—E. P. NEEDHAM & SON, New York, N. Y. Application filed December 8, 1875.
"words 'SILVER TONGUE.'"

3,263.—**Split-Bottom Chairs.**—JOHN G. STRAIN, Delaware, Ohio. (Re-registration.) Application filed August 14, 1871.
"words and name 'J. G. Strain's Grecian-Post Split-Bottom Chairs, Delaware, Ohio.'"

3,264.—**Preparation of Cod-Liver Oil.**—EDWARD H. TRUEX, New York, N. Y. (Re-registration.) Application filed March 5, 1872.
"words 'COD LIVER OIL JELLY.'"

3,265.—**Italian Cloth and Farmer's Satin.**—FLEITMANN & CO., New York, N. Y.—Case A. Application filed December 11, 1875.
"words 'EAGLE BRAND.'"

3,266.—**Italian Cloth and Farmer's Satin.**—FLEITMANN & CO., New York, N. Y.—Case B. Application filed December 11, 1875.
"representation of a spread eagle."

3,267.—**Cigars and Tobacco.**—HOLZMANN & DEUTSCHBERGER, New York, N. Y. Application filed December 15, 1875.
"word 'INDISPENSABLE.'"

3,268.—**Manufactured Cigars and Tobacco.**—JONES BROTHERS & CO., Richmond, Va. Application filed December 11, 1875.
"word 'Stonewall,' and a pictorial representation of the Jackson statue at Richmond."

3,269.—**Playing-Cards.**—ISAAC LEVY, New York, N. Y. Application filed December 13, 1875.
"word 'SQUEEZERS.'"

3,270.—**Playing-Cards.**—ISAAC LEVY, New York, N. Y. Application filed December 13, 1875.
"representation of a human hand holding and displaying an open or spread quantity of playing-cards."

3,271.—**Crayons and Pencils.**—NATIONAL TALC (FRENCH CHALK) CRAYON AND PENCIL COMPANY, Monmouth, Ill. Application filed November 19, 1875.
"word 'NATIONAL.'"

3,272.—**Paper-Weights.**—F. A. PACKARD & CO., Boston, Mass. Application filed December 11, 1875.
"word 'CENTENNIAL.'"

3,273.—**Cigars.**—LUCIUS C. PARDEE, Chicago, Ill. Application filed November 29, 1875.
"words and letters 'Don Quixote de La Mancha' and 'Lucius C. Pardee.'"

3,274.—**Cigars.**—LUCIUS C. PARDEE, Chicago, Ill. Application filed November 29, 1875.
"words and letters 'El Dante. L. C. Pardee.'"

3,275.—**Bosom-Shirts.**—ROTHSCHILD BROS. & GUTMANN, New York, N. Y. Application filed November 5, 1875.
"word 'PROGRESS.'"

3,276.—**Wool-Oil.**—SECOMB, KEHEW & THAYER, Boston, Mass. Application filed November 2, 1875.
"words 'FRENCH OLEINE,' and the figure of a sheep."

3,277.—**Medical Preparation.**—THOMAS H. SMART, Philadelphia, Pa. Application filed November 27, 1875.
"words 'SELF CURE.'"

3,278.—**Poison and Poisonous Compositions for the Destruction of Squirrels, &c.**—JAMES G. STEELE, San Francisco, Cal. Application filed November 18, 1875.
"words 'Steele's Squirrel Poison,' and a cut representing a group of five squirrels."

3,279.—**Wine.**—M. WERK & SONS, Cincinnati, Ohio. (Re-registration.) Application filed February 21, 1871.
"words 'GOLDEN EAGLE.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date December 21, 1875.]

442.—Title: "**Animal Meal.**"—W. H. BOWKER, Boston, Mass. Application filed December 13, 1874.

443.—Title: "**Dunn's Elixir of Wild Cherry and Tar.**" FRANCIS DUNN, Brooklyn, N. Y. Application filed December 14, 1875.

444.—Title: "**A Certain Cure for Gonorrhœa and Gleet.**" BENJAMIN FALKENBERG, Philadelphia, Pa. Application filed August 5, 1875.

445.—Title: "**Sympathetic Writing Fluid.**"—LAURITZ FOSS, Chicago, Ill. Application filed December 11, 1875.

446.—Title: "**German Nerve Balm.**"—BELLS K. HOTT, Providence, R. I. Application filed December 13, 1875.

447.—Title: "**Dr. Martin's Ague Pills.**"—ISRAEL W. MARTIN, Irvin, Ind. Application filed December 10, 1875.

448.—Title: "**Moriarty's Vegetable Canadian Balm.**" E. J. MORIARTY, Clarence, Iowa. Application filed December 10, 1875.

449.—Title: "**Echo.**"—F. RATCHFORD STARR, Litchfield, Conn. Application filed December 11, 1875.

450.—Title: "**Dr. Henricus' Compound Santal Oil Troches.**"—HENRY SOHL, Boston, Mass. Application filed December 13, 1875.

451.—Title: "**Henry Tetlow's Blanc Illusion.**"—HENRY TETLOW, Philadelphia, Pa. Application December 14, 1875.

452.—Title: "**Dr. Gunn's Aromatic Elixir Bitters.**"—ALONZO VAN ALSTINE, San Francisco, Cal. Application filed December 16, 1875.

453.—Title: "**Lapalme's Fire Weed.**"—D. F. WARD & CO., Philadelphia, Pa. Application filed December 9, 1875.

454.—Title: "**Excelsior Dry Hop Yeast.**"—F. P. YEAWIRE, Keokuk, Iowa. Application filed December 13, 1875.

TO CORRESPONDENTS.

Persons ordering drawings of patents, or making inquiries in regard to patents, must always state the name of the inventor, subject-matter, and date. In making inquiries in regard to applications for patents letters must state the name of the applicant, subject-matter, and date of filing.

COPIES OF PATENTS ISSUED SINCE JULY 1, 1871.

For the convenience of manufacturers, the various subjects of invention have been classified, (Subject-Matter Index, 1871,) and a list is kept of all the patents issued since July 1, 1871, in the various classes, so that an order given for the patents of a class will be filled as to patents since the above date, and subsequent patents in the same class will be forwarded from week to week, (postage paid,) as they may issue.

Those desiring copies of patents under this arrangement should deposit a sum of money, not less than three dollars, with the Commissioners of Patents; when the deposit is exhausted they will be notified.

In ordering drawings by classes, under the subject-matter index of September, 1871, (furnished gratis on application,) it will be understood that the Office cannot take upon itself to make selections of certain lines of inventions, embracing portions only of the patents in the classes as specified. The number of classes has been made as ample as the conduct of the business in this Office will readily permit. An order should, therefore, embrace the entirety of a given class or classes. They cannot be subdivided unless ordered specifically by giving the number, name, and date of each patent.

The cheapness of the copies, (ten cents apiece when ordered in quantity or by the whole class,) and the comparatively small number of patents in each of the 176 classes, render an order by class by no means an onerous undertaking.

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Barrel machine, A. Wyckoff, (reissue)	49	6,813
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Boiler, steam, J. Shackleton	148	171,436
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Boot and shoe pegging machine, W. D. Orcutt	16	171,414
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Bottle stopper, S. S. Newton	1	171,304
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Young and McElroy	171,400

TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED DECEMBER 21, 1875.

171,206. HYDRANTS. Michl. Allen, Natick, Mass. [Filed Nov. 6, 1875.]

Brief.—The stock has the panel arrangement shown, for the purpose of lessening the weight. The waste-hole extends through the guide-pin and cross-bar of the valve.



1. The stock or open panel-section B, provided with grooved rib F, for the purpose hereinbefore set forth.

2. The combination, with the open panel-section B, of the curved staves or panel-covers G, for the purpose hereinbefore set forth.

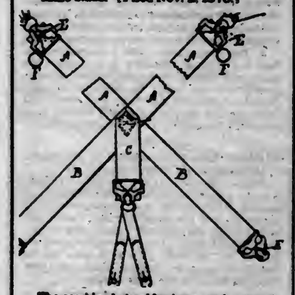
3. The combination of the sections A, B, and D, secured together by means of ordinary flanges and bolts connecting sections A and B, and by bored-headed bolts d connecting sections B and D through lugs e upon section d, and slots e in the panels of sections B, in the manner substantially as described, for the purposes hereinbefore set forth.

4. The detachable cross-web or guide-bar c, perforated for the guide-stems of the valve, and also with a waste-water passage or passages, o, in the manner substantially as described, for the purposes hereinbefore set forth.

5. The valve V, shaped substantially as described, and provided within its base with screw-threads for its screw-stems S, and with guide-stems g g, one or both perforated by a waste-water passage or passages, o, in the manner substantially as described, for the purposes hereinbefore set forth.

6. The combination of the guide-web or cross-bar c, valve V, and screw valve-stem S, all constructed, arranged, and operating substantially in the manner hereinabove described, for the purposes set forth.

171,207. CORRUGATED SHOULDER-BRACES AND SUSPENDERS. Horace S. Archer, Haverhill, Mass., assignor to G. W. Wentworth, same place. [Filed Nov. 2, 1875.]



The combined shoulder-brace and suspenders, composed of the straps A, A, B, B, and C, and fastenings E and F, combined and arranged substantially as described, and for the purpose set forth.

171,208. BARBED FENCE-WIRE. Frank Armstrong, Bridgeport, Conn. [Filed Oct. 11, 1875.]



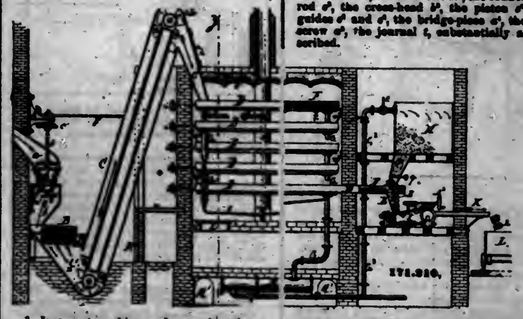
The metal-fence barb B, reduced in width, as at c, to form shoulders b, and split as at d, in combination with the two strands A' A' of the fence-wire A, in the manner and for the purpose described.

171,209. WATER-PROOF COMPOUNDS. A. Bernard, Cincinnati, Ohio, assignor to himself, W. H. Gettle, and J. Messenger, same place. [Filed June 2, 1875.]

A compound made of asbestus, paraffine, bees-wax or other wax, and coal-tar or pine-tar, substantially in the manner and in about the proportions herein specified, and for the purposes set forth.

171,210. PEAT-MACHINES. A. B. Barthel, Detroit, Mich. [Filed Sept. 27, 1875.]

Brief.—Peat is ground in the peg-mill; it passes through a bolting reel, drops into a receptacle, is conveyed into a chamber heated by hot air, distributed upon drying-pans, and when sufficiently dried it is molded into blocks.



1. In a peat-machine, and in combination, a grinding-mill, A, a bolting-reel, B, and an intermediate receptacle, b, constructed and arranged substantially as and for the purposes set forth.

2. In a peat-machine, and in combination, a grinding-mill, A, an intermediate receptacle, b, a bolting-reel, B, and a receptacle, b', connecting said reel with the entrance end of a conveyer-spout, the parts named being arranged one above the other, substantially as and for the purposes set forth.

3. The series of double-bottomed pans D, arranged one above the other, in combination with the conveyer F, the pipe G, substantially as and for the purposes set forth.

4. The combination of the mill A, bolting-reel B, the elevator C, the pans D, and conveyer F, substantially as described.

5. In combination, the conical hopper E, the conical endless screw E', and the conveyer F, substantially as and for the purposes set forth.

6. The combination of the mill A, the bolting-reel B, the elevator C, the drying-pans D, the conveyers F, with the conical hopper E.

7. The combination of the mill A, bolting-reel B, elevator C, drying-pans D, conveyer F, conical hopper E, with the conical endless screw E'.

8. The combination of the steam-pipe G', reservoir H, pipe g, with the conical hopper E and the conical endless screw E', substantially as described.

9. The combination of the swage-block K', the bed-piece c', the set-screw c', with the bridge-piece c', substantially as described.

10. The combination of the main shaft a', the eccentric a', the connecting-rod c', the cross-head b', the piston c', and the guides c' and c', substantially as described.

11. The combination of the swage-block K', the bridge-piece c', with the frame I and the bed-piece c', substantially as described.

12. The combination of the frame I, the swage-block K', the bed-piece c', the main shaft a', the eccentric a', the connecting-rod c', the cross-head b', the piston c', the guides c' and c', the bridge-piece c', substantially as described.

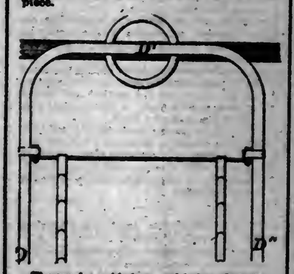
13. The combination of the conical hopper E, the conical screw E', with the swage-block K', the bridge-piece c', the main shaft a', the eccentric a', the connecting-rod c', the cross-head b', the piston c', and the guides c' and c', substantially as described.

14. The combination of the mill A, bolting-reel B, the elevator C, the drying-pan D, with the conveyers F, the conical hopper E, with the conical endless screw E', the main frame I, the swage-block K', the bridge-piece c', the bed-piece c', the main shaft a', the eccentric a', the connecting-rod c', the cross-head b', the piston c', the guides c' and c', substantially as described.

15. The combination of the mill A, bolting-reel B, the elevator C, the drying-pans D, with the conveyers F, the steam or hot-air pipes G', the hopper p, the conical hopper E, with the conical endless screw E', the main frame I, the swage-block K', the bridge-piece c', the bed-piece c', the main shaft a', the eccentric a', the connecting-rod c', the cross-head b', the piston c', the guides c' and c', the bridge-piece c', the set-screw c', the journal f, substantially as described.

171,211. REVERSING-GEAR FOR VEHICLES. Ezra Booth, Columbus, Ohio. [Filed Aug. 16, 1875.]

Brief.—The reach or side bars are in one piece.



The reach or side bars and bolster D D' D'', bent from a continuous piece of material or bars, and supported by the rear axle and fifth-wheel, substantially as and for the purposes set forth.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

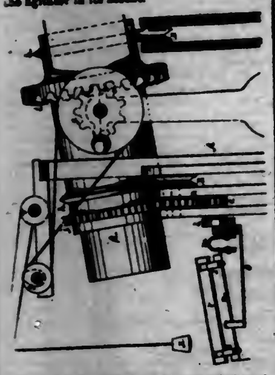
171,813. CHAIR-SEATS. Peter Buckley, Binghamton, N. Y., assignor of one-half his right to E. M. Fitz Gerald, same place. [Filed July 26, 1875.]



The combination of the warp-pin C, warp-channel B, consisting of separate pieces for each passage across the seat, and roof *b*, constructed as herein described, for the purpose set forth.

171,814. NAIL-SEPARATORS. Isaac N. Bumbaugh, Pittsburg, Pa. [Filed Oct. 18, 1875.]

Brief.—The plate-holding frames are adjustable on the frame of the agitator, which is provided with a cleat to restrict its movements, is suspended by means of springs, and has both a vertical and a horizontal movement. The weights are arranged to fall upon the agitator in its ascent.



1. A nail-separating machine consisting of a revolving cylinder, A', and a separator provided with V-shaped grooves, said separator having a shaking and agitating motion, substantially as herein described, and for the purpose set forth.

2. A nail-separator consisting of a revolving cylinder and a separating device provided with V-shaped grooves, and having a shaking and agitating motion, in combination with a nail-blowing device or cylinder, substantially as described, and for the purpose set forth.

3. The nail-separator consisting of the frame A, adjustable frames a, plates *l*, and sheet *c*, substantially as herein described, and for the purpose set forth.

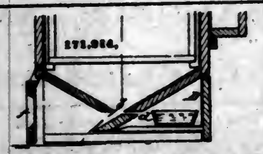
4. In a nail-separator, the separating device described, suspended by the springs *n*, substantially as herein described, and for the purpose set forth.

5. A nail-separating device having V-shaped grooves, suspended to operative mechanism which will impart to it a vertical and lateral movement, substantially as herein described, and for the purpose set forth.

6. A nail-separating device having V-shaped grooves, to which is imparted a vertical and lateral motion, in combination with moving weights or other shaking and jarring device, substantially as herein described, and for the purpose set forth.

171,815. BEE-HIVES. Daniel Coe, Kingston, Mo., assignor of one-half his right to A. F. McCray, same place. [Filed May 18, 1875.]

Brief.—A drawer placed beneath one of the inclined sides of the bottom of the hive communicates with the brood-chamber. The moth-entrance is through this inclined side, and below the bee-entrance, to prevent the moths entering the hive. The moth-entrance extends entirely across the hive.



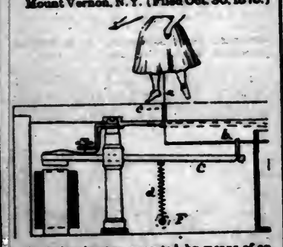
The drawer D, forming a moth-trap, in combination with the moth-entrance *d*, arranged below the bee-entrance *b*, and extending the entire width of the hive, all arranged and constructed substantially as and for the purpose set forth.

171,816. BALE-TIES. Peter K. Dederick, Albany, N. Y. [Filed Mar. 10, 1874.]



A wire band or tie constructed with a loop or eye at one end, and a double point or locking end at the other, substantially as described, and shown in Fig. 2.

171,817. DANCING TOYS. R. D. De Forest, Mount Vernon, N. Y. [Filed Oct. 20, 1875.]



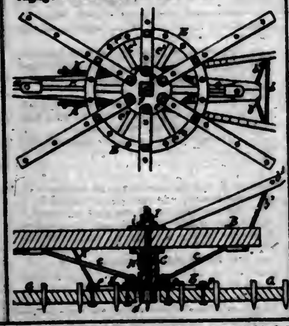
1. A dancing toy, operated by means of an electro-magnet, combined with a table or floor for the toy to vibrate or dance upon, substantially as described.

2. The combination of a wire-frame, having one or more upright arms, a, and provided with stem *b*, with vibrating lever C of an electro-magnet, and table E, having one or more guide-holes, *c*, substantially as described.

3. The combination of a regulating-shaft, F, and spiral spring *d*, with the vibrating lever C of an electro-magnet, substantially as and for the purpose set forth.

171,818. CONVERTIBLE REVOLVING HARROWS. Benjamin D. Dorcas, Kenton, and George E. Mason, Upper Sandusky, Ohio. [Filed Oct. 26, 1875.]

Brief.—To the centrally-pivoted disk are pivoted radial arms, provided with harrow-teeth. These arms are adjusted on an outer ring, to bring them closer together or farther apart. The harrow, when desired, is prevented from revolving by hooked arms, that engage with holes in the outer ring.

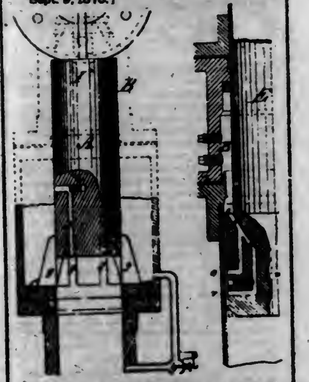


1. In a revolving harrow, the disk or rim E, constructed substantially as described, in combination with a series of removable and adjustable radial arms or beams pivoted thereto and secured in position in the manner and for the purpose specified.

2. The pole B and links K, in combination with the disk or rim E, substantially as and for the purpose specified.

3. The combination of the disk or rim E, having a recess formed in its lower face for the purpose described, the hub H and axle D, constructed as set forth, with the pole or beam B, pendent socket or sleeve C, and the brace-rods *c*, when constructed to operate as described.

171,819. HYDRAULIC CUSHION-VALVES. Charles B. Emery, Brooklyn, N. Y. [Filed Sept. 9, 1875.]



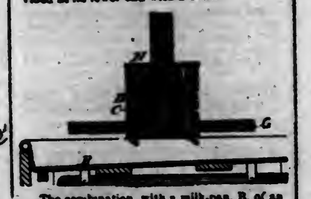
1. The combination of a hip-packing, turned toward a pressure-chamber, with a plunger constructed to reciprocate in and out of the packing, suitable guides being provided to direct the plunger within the packing, when said plunger is being moved toward the packing, substantially as and for the purpose specified.

2. The combination of a pressure-chamber, provided with packing at both ends thereof, with a plunger and attached cylinder, when the plunger is arranged to operate in and out of the chamber, and one of the packings, substantially as and for the purpose specified.

3. The combination, with a pressure-chamber, and plunger operating in and out of the same, of a channel or channels in the plunger, arranged to run inside the pressure-chamber, thereby regulating the escape of fluid, and bringing the plunger relatively to rest, substantially as and for the purpose specified.

171,820. MILK-COOLERS. N. D. Ferguson, Carthage, N. Y. [Filed Oct. 28, 1875.]

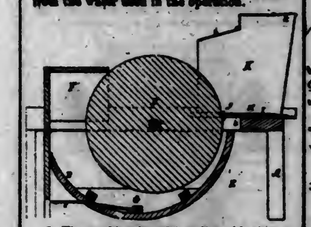
Brief.—The inner cylinder is filled with ice. The air passing down the tube is brought in contact with the ice and cooler, whence it passes up into the outer cylinder, thence out and through the perforated pipe, and in contact with the milk. The perforated pipe serves for heating the milk. The milk-pan has its bottom forming an inclined plane, and provided at its lower end with a tube.



The combination, with a milk-pan, B, of an ice-cooler, consisting of the concentric cylinders C D, perforated bottom and tubes G, cover H, with tube I, and valve or register *b*, all substantially as and for the purposes herein set forth.

171,821. MACHINES FOR POLISHING HORNS. Chas. B. Fish, Leominster, Mass. [Filed July 20, 1875.]

Brief.—A separator is provided which removes the debris of the article being ground from the water used in the operation.



1. The combination of the adjustable cleaner H with the wheel B and the trough D.

2. The bonnet K, provided with the air-discharge opening in its top, in combination with the wheel B and its trough D.

3. The adjustable arm-rest F, in combination with the trough D and the wheel B.

4. The mud-interceptor or guard-plate I, arranged and combined with the perforated cleaner H, and the bonnet K, the wheel B, and trough D.

5. The combination of the adjustable trough D and its rest F, the wheel B, the bonnet K, and the adjustable cleaner H, all arranged in manner, and in a frame, as specified.

171,822. SPADE-SUPPORT. G. P. Gordon, Brooklyn, N. Y. [Filed Nov. 10, 1875.]

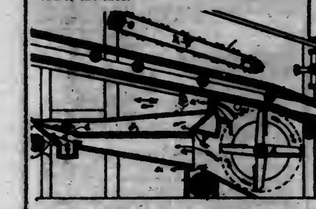


1. The combination, with one or more bars or rods, B, of a wing, C, or flat E, and hooked rod D, substantially as and for the purposes described.

2. The combination of one or more bars, B, a wing, C, or flat E, hooked rod D, and the corners or rollers *a*, substantially as and for the purposes indicated.

171,823. GRAIN-SEPARATORS. Lewis W. Hendelman, Indianapolis, Ind. [Filed Mar. 22, 1875.]

Brief.—Means for directing the blast upon the grain, &c., as it descends from the carrier-board to the shoe, and for adjusting the tail-end of the shoe.



1. The combination of the hinged adjustable floor-board F, having the inwardly-bent upper edge or angle board W, adjustable finger G, and adjustable tension-rod H, constructed and operated substantially as set forth.

2. The deflector F', in combination with the divider P, arranged and operating in connection with a fan, to separate and guide the currents of air, so as to bring it in contact with the grain and riddles, substantially as and for the purpose hereinbefore set forth.

171,824. WATER-WHEELS AND GATES. O. S. Hazard, Coventry, R. I. [Filed July 8, 1875.]

Brief.—An undershot wheel having buckets set at an incline (of the top of the bucket toward the gate) with the stream; an inclined gate operated by a screw; a flume and chest tailed by a tapering overfall-pipe.

171,825. TIME-UNDERTAKERS. Geo. D. Jacoby, Berwick, Pa., assignor of one-half his right to J. G. Jacoby, same place. [Filed Nov. 27, 1875.]

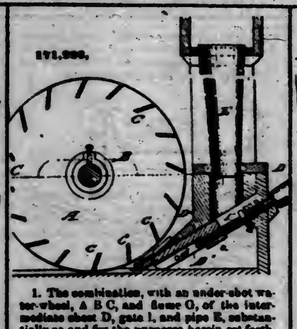
Brief.—The jaws are pivoted to a piece which has a lug to let into a hole in the blacksmith's anvil, and are forced together by a screw, the lug being slotted to allow play to the screw.

In a shrinking-machine, the standard A, provided with the jaws C C, pivoted at D, in combination with the corrugated connector E E, the corrugated legs F F, and the shaft G, provided with a cam-screw, and operating in the legs F F, substantially as described, and for the purposes set forth.

171,826. POTATO-DIGGERS. Robert Heydemann, Kroberg, and August Klinkmann, Grabowalde, Prussia. [Filed Oct. 2, 1875.]

Brief.—The digging apparatus is mounted upon four wheels, and consists of a share, which is adjusted as to depth by two swivel-screws. The separator consists of a series of longitudinal bars and an endless toothed belt, hinged to the share, and having a vertical jarring motion by means of a cam over the rear axle-tree.

1. The swinging plow of a potato-digging machine, steadied through adjustable screw-braces, in combination with an up-and-down shaking separator, E G, hinged to the plow.



1. The combination, with an under-shot water-wheel, A B C, and flume G, of the intermediate chest D, gate I, and pipe E, substantially as and for the purposes herein set forth.

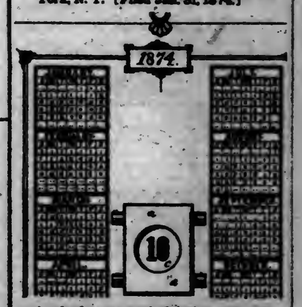
2. The combination of the chest D, gate I, and wheel A B C, the wheel having floats set at an incline, as shown and described, all as and for the purpose specified.

171,827. BRACKETS FOR SUPPORTING SHELVES. Melville D. Jones, Boston, Mass. [Filed July 20, 1875.]



The combination of the swinging brackets, each formed in two parts, united by vertical pivots, with the disks G, arranged to turn on vertical axes on the outer parts of the brackets, and the shelf F, supported and held by said disks, these parts being arranged for joint operation, as shown and set forth.

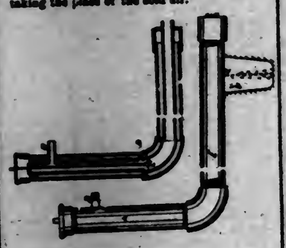
171,828. CALENDARS. John Keller, New York, N. Y. [Filed Jan. 21, 1874.]



A calendar composed of the box or receptacle *a*, for holding and operating the rotary dating-ribbon, constructed, arranged, and operating as described, in combination with the fixed printed calendar-card, substantially as set forth.

171,866. PREVENTING HYDRANTS FROM FREEZING. Breadth Kent, Binghamton, N. Y. [Filed Mar. 1, 1875.]

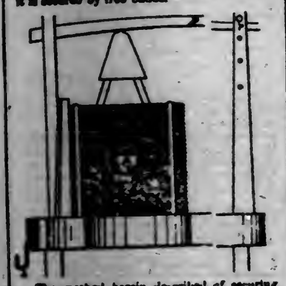
Brief.—A continuous current of warm air from the chamber below will be kept up, and as there is no outlet at the upper part of the shell, freezing is prevented by the warm air taking the place of the cold air.



The combination, with the inclosing-shell A, which is closed at the upper end and is provided with an opening, *d*, of the warm-air chamber *d*, substantially as set forth.

171,870. BALING BASKET-HEADINGS. John Kapple, Edwardsport, assignor to himself and Oliver R. Daugherty, Indianapolis, Ind. [Filed Aug. 6, 1875.]

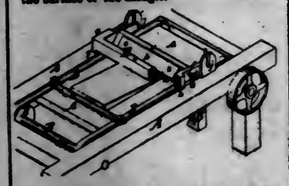
Brief.—The bands are placed in a press, and while the package is in a compressed state it is secured by iron bands.



The method herein described of securing together packages composed of barrel-heading, for shipping.

171,880. SHINGLE-PLANERS. W. A. Kitts, Corwin, N. Y. [Filed Apr 7, 1875.]

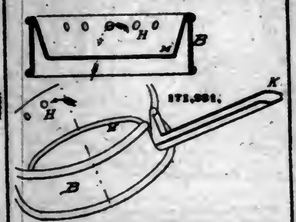
Brief.—The traveling carrier is provided with wedge-shaped guides, which govern the position of the shaving-knife while dressing the surface of the shingle.



In a shingle-planer, the combination of the endless belt or chain carrier B, provided with the lifting shoes or cams, and cross-bar W, the stationary knife *a* on the frame A, and the downwardly-pressed and self-adjusting knife-head H, bearing the knife *b*, all arranged and operating substantially as herein specified.

171,881. OILING UNDERLA. Walter Lacy, Milwaukee, Wis. [Filed Nov. 23, 1874.]

A combing utensil consisting of a double-walled annular horizontal shell, B, provided with a perforated cover, A, and with a handle, K, placed at the lower edge of a slot or notch set in the upper edge of shell B, and also provided with the perforations H and lower interior rim M, substantially as hereinbefore set forth, and for the purposes mentioned.



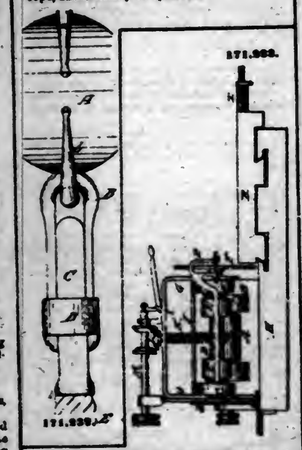
171,881.

171,889. TRACE-FASTENING. James K. Lake and Bernard McDevitt, Chicago, Ill. [Filed Aug. 9, 1875.]

1. The combination of the wedge-passes U, staple or eye B, and ring D with the rope or trace E, substantially as specified.

2. The plate A, provided with the hook *a* and hook *b*, or staple B, substantially as and for the purpose specified.

3. The wedge C, provided with corrugations or serrations to fit the strand of the rope, substantially as specified.



171,889.

171,888. MACHINES FOR CUTTING IRON. J. H. Lakey and J. G. Mills, Turner Junction, Ill. [Filed May 22, 1875.]

Brief.—Two horizontal bars, hinged at one end to a pulley-shaft, carry at their opposite ends an arbor, on which is a plain metallic cutting-disk and pulleys, all supported by and within a frame, and movable up and down therein by a screw. On the bed are two slides, movable in directions perpendicular to one another; and upon the upper slide is a rotatable table, provided with clamping devices for holding the bar to be cut at any desired angle to the cutting-disk.

1. The arms C C and shaft D, carrying the cutting-tool F, in combination with the supports O, bars I J, screw K, wheels L L' L'', and shaft M, substantially as and for the purposes set forth.

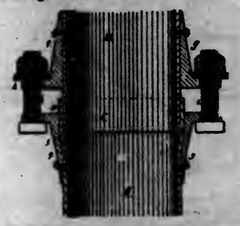
2. The cutting-tool F, having a central depression or recess upon its face, in combination with the shaft D and collars *e f*, substantially as and for the purpose specified.

3. In a machine for cutting metals, the rotating table U, in combination with the sliding tables T and R, substantially as and for the purposes specified.

4. The adjustable guide P, situated on the shaft carrying the cutting-tool F, whereby the guide swings on a circle corresponding with the outer edge of the cutting-tool, substantially as described.

171,894. JOINTS AND COUPLINGS FOR TUBES. Geo. Matheson, McKeesport, Pa. [Filed Sept. 20, 1875.]

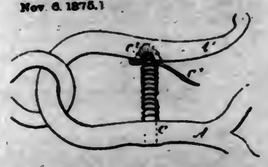
Brief.—The female part is made larger, as shown, for the entrance of the male portion. The lugs have slots, so that by slightly unscrewing the nut the bolt may be removed.



1. As an improvement in joints and couplings for tubes, the tube A, enlarged so as to receive the tube B, as hereinbefore described, in combination with the slotted lugs *g*, bolts *i*, and screw-nuts *j*, substantially as described and set forth.

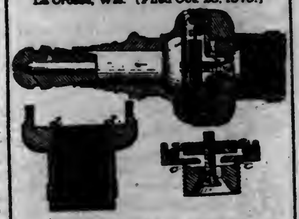
2. The combination of the slotted lugs *g*, bolts *i*, and screw-nuts *j*, with the tubes A and and B, substantially as herein described, and for the purpose set forth.

171,895. WHIFFLETREE-HOOKS. Ezra Maynard, North Washington, Ohio. [Filed Nov. 6, 1875.]



In combination with the hook A A', the latch-bar C, sliding in the shank A, and at right angles thereto, and carrying the thumb-piece and guide C', substantially as set forth.

171,896. GAS-REGULATORS. G McMillan, La Crosse, Wis. [Filed Oct. 28, 1875.]



1. In self-regulating gas-burners, arranged with flexible diaphragm and valve depending therefrom, the combination of metallic ring *a* with diaphragm *a a* and upper vertical wall of valve-section, for the purpose of holding the diaphragm and valve in place, as described, and for the purpose set forth.

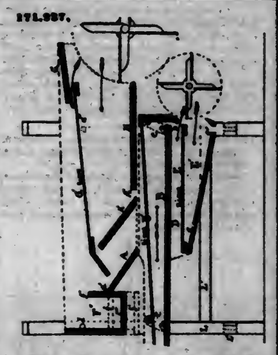
2. The gas-apertures *e e e e*, arranged in combination with internal screw *d*, as shown, so that by screwing the valve-section, Fig. 3, up or down, the apertures *e e e e* are enlarged or diminished, as described, and for the purpose set forth.

3. The combination of valve-section with base-section by means of screw *d*, as shown, so that a chamber for the transmission of gas is left between the two sections, and the gas-apertures *e e e e* may be enlarged or diminished, substantially as described.

171,897. CLOVER-SEPARATORS. George F. Metzger and J. P. Kohler, West Fayette, N. Y. [Filed Aug. 21, 1875.]

Brief.—Improvements in the internal arrangement of the upper and lower shoe of a "thrashing-mill" separator.

171,897.

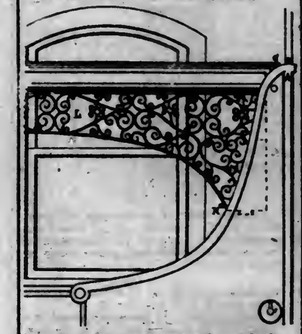


1. The spout A, in combination with the sleeve G', chute A', opening A'', bottom board H, and fan F', substantially as and for the purpose described.

2. In combination with the fan F' and upper separator-shoe, consisting of sleeve G', spout A, chute A', and bottom board H, arranged substantially as described, the sleeve B' arranged to receive the separated material from the upper shoe, substantially as set forth.

3. The combination, in a clover-separator, of the sleeve B', shaking-board B', arranged to leave the discharge-aperture *b* at the end nearest the blast, the sleeve E, chute E', and fan F, substantially as and for the purpose set forth.

171,898. SLEEPING-CARS. Jas. L. Mitchell, Pueblo, Colo. [Filed June 21, 1875.]



1. The brackets L, hinged to the seat-backs, as described, and combined therewith, and with the seat ends to form, when dropped down, a continuous front arch-support fastened together for the aisle side of the upper couch, and turned out of the way when the seat-backs are lowered, as herein set forth.

2. The brackets L, hinged to the seat-backs, as described, in combination with the fastening device H P', by which said brackets are held in place when folded.

3. The brackets L, hinged to the seat-backs, as described, in combination with the seat-fastening device, as shown and described.

4. The brackets L, hinged to the seat-backs, as described, each having a boot-extension provided with a bolt, M, which serves as the means by which the brackets are both secured in their arched and folded positions, as described.

5. The combination with the vertical sliding panels C D of the crank-shaft E F, and the cords and pulleys *a' a''* connecting said panels with the winding and unwinding shafts, whereby the panels are raised and lowered from the floor of the car.

171,899. SLEEPING-CARS. Jas. L. Mitchell, Pueblo, Colo. [Filed Nov. 27, 1875.]

1. The upper berth N, having a sliding hinge-connection with the side of the car, substantially as shown and described, whereby it is adapted to be raised and assume a horizontal position, or to be lowered and maintain a vertical position against or parallel to the wall, as shown and described.

2. The detachable partition-sections J, having the hinged and folding parts, and provided with fastenings, as described, whereby it is adapted to be secured in a vertical position as a partition, or horizontally alongside the upper berth, to form a panel-protector for the same, as shown and described.

3. The combination, with a lower seat-section having a rabbet along the front edge, and studs *s'*, set vertically therein, of a detachable part, T, having folding legs, and provided with holes in its ribs X, to receive said studs when in either of its allotted positions, as shown and described.

4. The combination, with the upper berth, arranged to fold down against the side of the car, of the side rail N, forming the ledge below the window, and the section J, forming the side panel of the car-body, substantially as specified.

5. The combination of the hooks C, having the parts *b a d*, and the slotted plates D, having upper wide notch E, with the upper berth and the car-body, substantially as specified.

6. The combination of convex plates on the seat-legs with cavity-plates O in the car-floor, substantially as specified.

7. The combination, with movable seats having a slide-bolt and spring-catch in the leg, of a catch-plate in the floor, substantially as specified.

171,900. BOTTLING MINERAL WATERS, &c. John B. Newbrough, New York, N. Y. [Filed Oct. 29, 1875.]

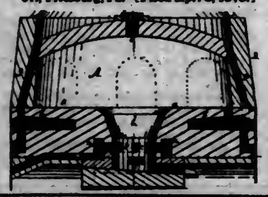
Brief.—As the cork leaves the plunger, it strikes a thin patch of rubber placed over the bottle's mouth. Both enter the neck, and, from the quickness of the movement, that portion of the elastic film below the bottom of the cork and that which covers the lower portion of said cork expand sufficiently to cover the bottom and sides of the stopper. The film is so thin that the liquid does not become impregnated with a rubber taste; yet it is sufficient to protect the cork from deleterious action.



1. The mode described of bottling mineral waters, &c.—that is to say, applying a sheet of flexible or elastic material to the mouth of the bottle, and then carrying the cork to a position above the sheet, and forcing it downward against the sheet, and into the mouth, so as to stretch the material over the inserted portion of the cork.

2. The combination of the bottle, the cork, and the intervening independent sheet of rubber distended upon that portion of the cork within the bottle during the process of bottling, as set forth.

171,941. GLASS-FURNACES. J. Nicholson, Jr., Pittsburg, Pa. [Filed Apr. 6, 1875.]

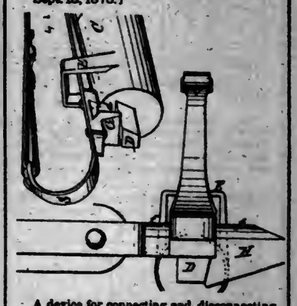


1. In a melting-furnace for the manufacture of glass, the combustion-chamber *f*, provided with air-openings *r*, and surrounded with the air-space *s*, in combination with the pot-chamber and fire-chamber, substantially as and for the purpose hereinbefore described and set forth.

2. In a melting-furnace for the manufacture of glass, the crown D, provided with the opening *e* and valve *f*, in combination with the stack and pot or melting chamber, substantially as and for the purpose hereinbefore described and set forth.

3. In a melting-furnace for the manufacture of glass, the flues *b c d* under the melting-pots, so arranged that the heat passes from the chamber A through flue *b*, circulates under the pots through the flues *c d*, and escapes through the flue *g*, substantially as described and set forth.

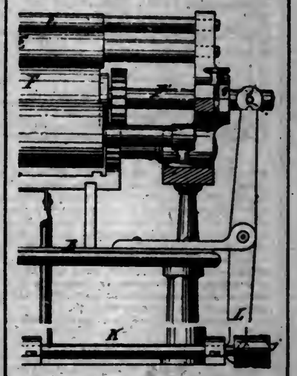
171,942. HORSE-DETACHING APPARATUS. James H. O'Brien, Pittsburg, Pa. [Filed Sept. 18, 1875.]



A device for connecting and disconnecting traces from a whiffletree, consisting of the flanged hook H, pin D, and spring-block G, constructed with an opening, *d*, having guides for the flanges of the hook, whereby said hook is raised and disconnected from the pin of the whiffletree, substantially as shown and specified.

171,943. INKING APPARATUS FOR PRINTING-PRESSES. Charles Potter, Jr., and James F. Hubbard, Plainfield, N. J. [Filed Feb. 23, 1875.]

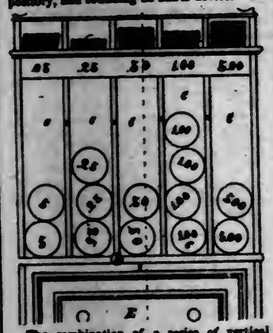
Brief.—The reciprocating bed, through a telescopic lever, rocks a shaft which is journaled in the lower part of the frame, and carries on one end a grooved cam, engaging a pin on the lower end of a pivoted lever, the upper end of which is jointed to the shaft of the distributing-roller, which thus receives longitudinal reciprocation.



In combination with the reciprocating bed C, and a lever connecting the same with the rocking shaft K, the grooved cam J, fixed on the shaft E, the lever L and its connections, and the distributing-roll F, as herein specified.

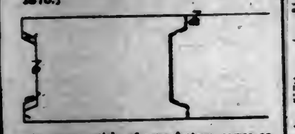
171,944. COMBINED CHECK-BOXES AND CASH-INDICATORS. William I. Ripley, Indianapolis, Ind. (Filed May 10, 1875.)

Brief.—The checks are held within the several receptacles until impressed through the transparent front, when a spring-slide is operated, precipitating them into the locked depository, and sounding an alarm device.



The combination of a series of vertical ticket or check receptacles, C, provided with transparent fronts and orifices F, spring-slide K, alarm device J, and the depository E, as and for the purpose set forth and described.

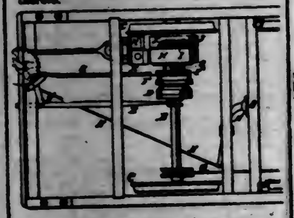
171,945. DRAIN AND SEWER PIPE. De Witt C. Sage, Cromwell, Conn. (Filed Nov. 18, 1875.)



As a new article of manufacture, sewer or drain pipe sections, having their ends constructed with tongues and recesses to receive the tongues, substantially as described.

171,946. CAR BRAKES AND STARTERS. W. Scott, Chicago, Ill. (Filed July 9, 1875.)

Brief.—Spiral spring wound when brakes are applied, and by its expansion operating to start car. Improvements in details relative thereto.



1. In combination, the clutch D, sleeve F, teeth F' F', drum H, and ratchet J', all mounted on the same axis, stop-pawl G, push-pawl I, and spring s', all operating together, substantially as described, in connection with the shoe K and a clutch-lever, the said shoe, stop-pawl, and lever being connected to the same rod M.

2. The combination of the yielding shoe K, spring-drum H, ratchet J', pawl I, a fixed wheel, and a friction-shoe, the latter and the shoe K being connected to the same brake-rod or shaft, for the purpose set forth.

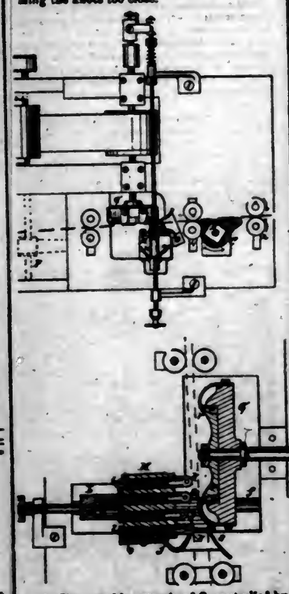
3. The combination of the drum H, provided with a groove in one end, and the sleeve F, carrying the pawl e projecting into the said groove, the said drum and sleeve being connected by a spring, s', substantially as and for the purposes specified.

4. In combination, the clutch-block D, sleeve F, provided with the teeth F' F', stop hook or pawl G, drum H, provided with the push-pawl I, spring s', attached at one end to the drum and at the other to the sleeve, shoe K, ratchet J', clutch-lever E, push-bar L, and brake-rod M, substantially as and for the purposes specified.

5. The combination of the wheels C C, brake-shoes P P, actuated by means of a lever connected to the brake-rod M, yielding shoe K, also actuated by means of an arm connected to the rod M, and the spring drum H, substantially as specified, whereby the starting mechanism may be controlled either independently or simultaneously with the brakes P P.

171,947. MACHINES FOR SHAVING HALF-ROUND HOOPS. George B. Golden, Rochester, N. Y. (Filed Feb. 20, 1874.)

Brief.—The movable cutter head, which shaves the flat side of the hoop, is controlled in its action by a series of elastic pressure-rollers, forming a knot passer on the bark side, which are supported in a pivoted frame, yield sufficient for the passage of knots without thinning the hoop, and cause the cutter-head to conform to the curves of the stock. The knots are trimmed by a movable cutter-head held against the bark side of the hoop by a spring, and controlled in its operation by a yoke-frame swiveled about the head, and provided with adjustable rests before and after the head, for preventing the cutter from trimming the knots too close.



1. The movable cutter-head G, controlled by the yielding knot-passer M on the bark side of the hoop and the supporting-rest q, traveling with the head G, in combination with the stationary rest s, substantially as described.

2. The movable cutter-head G, when provided with the ring r, in combination with the yielding knot-passer M on the bark side, operating substantially as described.

3. The knot-cutter C, in combination with the movable cutter-head G, provided with the internal ring r and the knot-passer M on the bark side, operating substantially as and for the purposes set forth.

4. The movable cutter-head G, provided with the internal ring r and knot-passer M on the bark side, in combination with the angular feed-roll 2 or 3, either or both, operating substantially as described, for the purposes set forth.

5. In combination with the movable cutter-head G, controlled by the yielding knot-passer M on the bark side, the supporting-rest q traveling with the head.

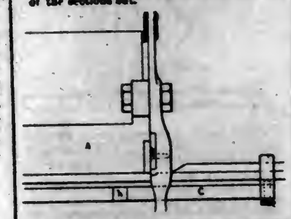
6. The combination of the movable cutter-head G, controlled from the bark side by the knot-passer M with the rest s.

7. In combination with the movable cutter-head G, provided with the ring r, the pivoted knot-passer frame M, containing a series of rollers, k l, operating to control the head and pass the knots, substantially as described.

8. The movable cutter-head G, when provided with the internal ring r, in combination with the yielding roll R on the bark side of the hoop, operating substantially as described.

171,948. MACHINES FOR CUTTING PRINTERS' LEADS. H. J. Stone, New Haven, Conn. (Filed Apr. 12, 1875.)

Brief.—The gage in front of the cutter, which supports the lead being cut, is connected with a gage in the rear of the cutter, which contains a sample lead, to determine the length of the sections cut.



The combination, with a lead-cutter, A, of an extension-rest, B, and adjustable gage C, substantially as and for the purposes set forth.

171,949. SASH-LIFTS. John Sweet, Providence, R. I. (Filed Sept. 13, 1875.)

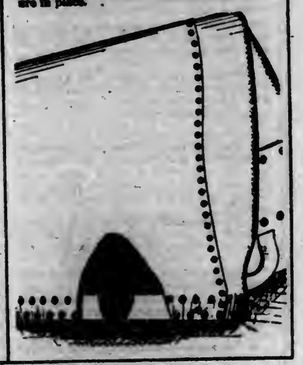
Brief.—A curved fishtail-shaped projecting arm, with suitable base-plate, is secured to the side of the sash, carving, with or without any suitable lock, as a convenient reversible right or left hand sash-lift.



As a new article of manufacture, a reversible sash-lifter, consisting of the base b and projecting arm a, adapted for attachment to the side of a window-sash, substantially as herein described.

171,950. MAIL-BAGS. P. S. Thomson, Jersey City, N. J. (Filed Nov. 17, 1875.)

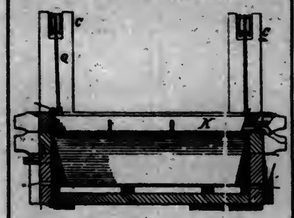
Brief.—A struck-up bottom is secured by a double row of rivets to the body of the bag, to prevent abrasion when the bag is dragged along the ground, and to hold the whole structure in place.



A mail-bag having a bottom with turned up circumferential flange, and having sides overlapping said flange, and secured thereto by two or more rows of metal-headed rivets, substantially as described.

171,951. MILK-COOLERS. Isaac H. Warner, Elgin, Ill. (Filed June 9, 1875.)

Brief.—Water flows out of a perforated pipe through the covering-pan into a hopper communicating with the water-vats, which incloses the milk-pan, and throughout that pan. The covering water-pan is vertically adjustable.

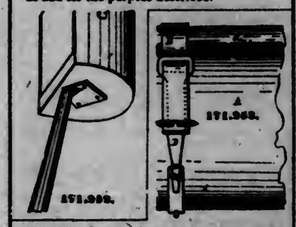


1. A cooling pan or vat, provided with a perforated pipe at one end, one or more ventilators at its bottom, and a discharge-pipe regulated by a stop-cock at the other end, as a cover for, and in combination with, a milk or cheese vat, surrounded by a water-space having an inlet-pipe, an overflow-pipe, and a pipe through which the water may be wholly withdrawn from the said water-space, substantially as and for the purposes set forth.

2. In a milk-cooler or cheese-vat, the upright C, provided with the pulleys D, in combination with the pan K, provided with the cords Q and weights R, substantially as and for the purposes set forth.

171,952. SUGAR-SCOOPS. Geo. W. Woodward, Fayetteville, N. C., assignor of one-half his right to G. P. McNeill, same place. (Filed Sept. 10, 1875.)

As a new article of manufacture, the scoop C, provided with a pointed metallic handle, A, as and for the purpose described.

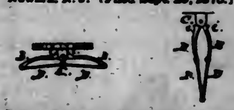


171,953. RAVEN-TROUGH HANGERS. J. P. Abbott, Cleveland, Ohio. (Filed Nov. 20, 1875.)

1. The bar D, gains or notches c, and ring H, in combination with the strap B, in the manner as described, and for the purpose set forth.

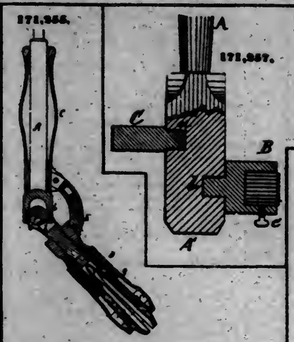
2. Flange F, gain c, point b, and button C, in combination with the bar D and trough A, substantially in the manner as described, and for the purpose set forth.

171,954. SLEEVE-BUTTONS. Geo. A. Allen, Newark, N. J. (Filed Sept. 29, 1875.)



In a sleeve-button, the curved spring-arms B, having the shoulders i, and pivoted to the shank C, in combination with the straight arms D, jointed at E, so that when closed the arms D are drawn out of the horizontal line, and the joint E forced up against the shank, as and for the purpose set forth.

171,955.

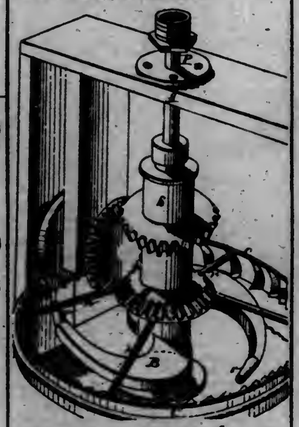


171,956. ANGULAR BIT-STOCKS. James W. Anthoine, Miller's Falls, Mass. (Filed Oct. 20, 1875.)

In the described angular bit-stock or brace, in combination with the furcated tubular shanks A B, connected by a universal joint, as described, the bifurcated tubular handle C and shaft-supporter D, hinged together at their prongs, and provided with slotted curved arms, and a clamp-screw and nut therefor, all substantially as set forth.

171,957. CENTRIFUGAL WATER-WHEELS. Oscar J. Backus, Newark, N. J. (Filed Aug. 20, 1875.)

Brief.—Water is introduced through the supply-pipe into the revolving chamber, and passes directly into the hollow arms, from whence it is thrown, with all its weight and centrifugal force, out of the jets against the curved linear buckets, which causes the wheel to revolve in opposite directions.



1. The hollow arms B, revolving inside of the wheel C, to operate said wheel in an opposite direction by the force of the discharging water from the jets r r r upon the buckets 1 and 2, thereby offsetting a double sum of the water as a motor-power.

2. A reversible centrifugal water-wheel, C, provided with adjustable buckets 1 and 2, operating by means of centrifugal revolving hollow arms B, substantially in the manner and for the purpose set forth.

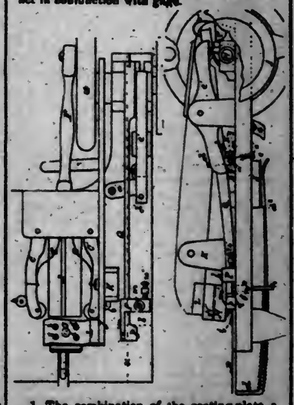
3. The combination of hollow arms B upon the water-cylinder S, revolving in opposite direction to the wheel C, which rotates upon the stationary bearing of and around the adjustable cylinder S, arranged substantially as specified.

171,958. MARKING-STAMPS. L. Ballinger, Trenton, Mo. (Filed Aug. 30, 1875.)

The combined post-office marking and canceling stamp herein described, consisting of a handle, A, having the head A', which is provided with screw-thread recesses a and b, arranged opposite to, but not in a line with, each other, and the elastic canceler C, and type-bar or marker B fitted into said recesses, all combined and operating substantially as and for the purpose herein before set forth.

171,959. HORSESHOE-MACHINES. Hiram J. Batchelder, Fitchburg, assignor to himself and Theodore S. Very, Boston, Mass. (Filed Apr. 23, 1875.)

Brief.—The blanks are cut and ends reduced at the same time; then bent, creased, "seated," and discharged, to be afterward punched. The separate mechanisms for forming and punching are operated by the same driving-shaft. The creasers are made expansible by attachment to carrier at one end only. The punch-stock is provided with a flange to act in combination with gage.



1. The combination of the seating-plate c and sliding former D with the creaser-carrier M and its creasers g g, substantially as shown and described.

2. The expanding creasers g g, formed and applied to their carriers substantially as shown, and for the purpose set forth.

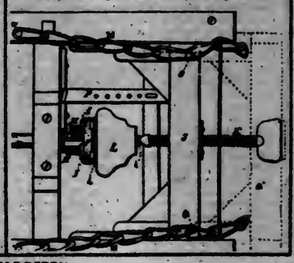
3. The combination, with the head-block L and the creaser-carrier M, of the intermediate adjustable block N, substantially as and for the purpose set forth.

4. The combination, with the movable head-block F, provided with a fixed shear or cutter, a, of the head p, provided with a shear, a', and having the inclined shoulders g g' disposed on opposite sides thereof, substantially as shown and described, and for the purpose set forth.

5. The combination, with the adjustable head-block F, of the holding set-screw a', as and for the purpose set forth.

6. The combination, with the gage s', the spring-plate a', and fixed punch c', of the movable punch-stock, provided with a punch, d', and flange g', the whole being arranged in manner and for the purpose set forth.

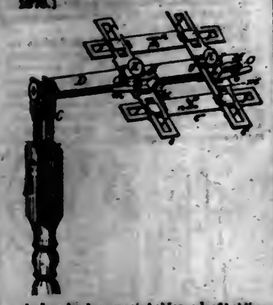
171,960. LATHES FOR TURNING SPOKES. S. L. Beebe and H. A. Beebe, North Ridgeville, Ohio. (Filed Nov. 8, 1875.)



1. The carriage or feed block J, screw center K, and chuck M, in combination with the frame A, mandrel C, and chuck F, substantially in the manner as described.

2. The chuck herein described, consisting of the head F, provided with radial grooves e, adjustable blocks G, screws H, and nuts I, in the manner substantially as described, and for the purpose specified.

171,869. HOOP AND HOUSE SUPPORTER. L. Berg, Minneapolis, Minn. (Filed June 10, 1875.)



1. In a hoop or mesh holder, a leaf holding device consisting of the upright L, having the perforation M, bracket N, and spring O, the latter arranged so as to operate the sharp or thumb-lever n, substantially as and for the purpose herein before set forth.

2. A hook or mesh support consisting of the upright A, sliding standard C, revolving horizontal arm D, hook-bearing frame a, c', c'', and c''', hooks p, clamps I, thumb-levers n, and leaf-holders n', all constructed and arranged substantially as and for the purpose herein-before set forth.

171,870. MORTISING-MACHINES. J. Johnson Berger, Cannon Valley, Minn. (Filed June 10, 1875.)

Brief.—Mortises or gains of varying dimension to cut by means of a square cutter-head, provided with rear adjustable side cutters, and a bit or drill for cutting deeper than the side cutters, which is inserted and adjustable in a vertical tubular shaft, and operated by suitable mechanism, the whole mounted in a laterally-adjustable supporting-frame, which is longitudinally adjustable upon the main guiding-frame. The length and width of the mortise or gain are regulated by pivoted spring-catches, and the depth of cut of the bit by a sliding catch.

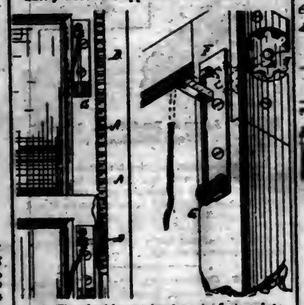
1. The combination of the cog-wheel F, pinion H, vertical tubular shaft G, bit R, having the screw-thread R', and cutter-head P, having the cutters P' P' P', substantially as and for the purpose herein-before set forth.

2. The combination of the bit R, having a screw-thread, R', with the clamps r r and wedge b, substantially as and for the purpose herein-before set forth.

3. The combination of the slotted cross-piece O with the sliding plate K, united by the standard I with the sliding shaft i, to the head of which, g, is pivoted the clamps r r, substantially as and for the purpose herein-before set forth.

171,909. SASH-FASTENERS. James Hittenbender, Beaver Valley, Pa. (Filed Oct. 12, 1875.)

Brief.—A double ratchet-bar within the window-frame serves for both the upper and lower sash, by its peculiar combination with a toothed wheel and spring, and a suitable gear-wheel, the spring being arranged on the surface or side rail of each sash, and a suitable cord from inside the room operating alternately either the upper or lower sash.

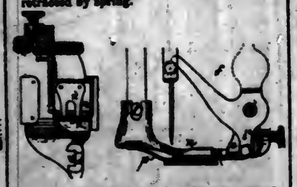


1. The double ratchet-bar A, fastened to the window-frame B, in combination with the gear-wheel D upon the sash, substantially as set forth.

2. The toothed wheel F and spring-catch G, in combination with the gear-wheel D and double ratchet-bar A, substantially as specified.

171,868. RUFFLING FOR SEWING-MACHINES. James Bolton, Chicago, Ill., assignor to Singer Manufacturing Company, New York, N. Y. (Filed Sept. 11, 1875.)

Brief.—The ruffling-blade has positive movement forward, imparted by needle-bar, and is retracted by spring.



1. The combination, in a ruffler, of the standard, the three-armed lever embracing the standard, and the ruffling-blade and its retracting-spring, with the presser, the forked holding-pieces n, and its supporting projection, the separator, and an adjusting device, all substantially as described.

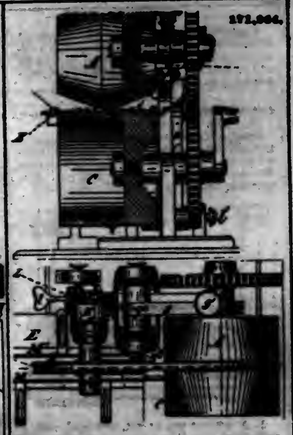
2. The combination of the lever, its attached ruffling-blade, and a separator, with a spring to retract the blade as the needle-bar descends, the lever being adapted to be operated positively to form a fold in the material to be ruffled as the needle-bar is completing its operation, substantially as described.

3. The frame A, adapted to be secured to the presser-bar and the presser p, in combination with the separator, the lever adapted to be operated by the needle-bar, and the spring to retract the blade, all substantially as described.

4. The presser, the lever f, and its attached ruffling-blade, in combination with a spring to retract the blade as the needle descends, and a screw to regulate the descent of the arm f of the lever, and the movement backward of the blade with reference to the point of the needle, substantially as described.

171,864. MACHINERY FOR CHEMICALLY PLOTTED PAPERS. John H. Brown, New York, N. Y. (Filed Sept. 9, 1875.)

171,864.



1. The endless bands A A and d d in combination with the presser-roller A and cylinder C, and the wheels B and D, when constructed and arranged to operate substantially as and for the purpose set forth.

2. In a machine for crossing dotted fabric the combination of the cylinder C with the presser-roller A, mounted upon a movable center and controlled by a spring for the purpose of varying the pressure, as desired, substantially as described.

3. The band-rollers B and D, mounted on opposite ends of a vibrating beam, for the purpose of equalizing the tension of the bands, substantially as described.

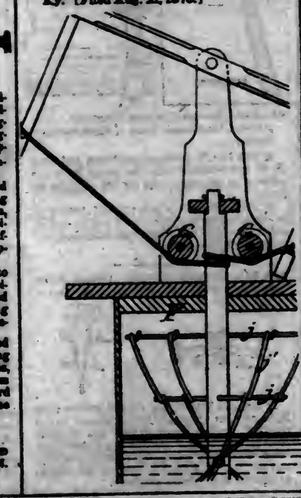
4. The band-wheels B and D with the lever L and the screw l, combined and arranged substantially as described.

5. In a machine for crossing dotted fabric the combination of the presser-wheels A and C, geared with the band-wheels B and D, substantially as described.

6. In a machine for crossing dotted fabric the combination of the table E with the band-wheels B and D, substantially as described.

7. In a machine for crossing dotted fabric the combination of the table E with the guides M M', substantially as described.

171,866. CRUTCHES. Daniel McCarty Dennison Dandridge Brown Cropper's Depot, Ky. (Filed Aug. 21, 1875.)



A dasher consisting of a revolving perpendicular shaft, having transverse, horizontal, and spirally-arranged arms, of equal length, passing through its axis, and two pairs of wires near the periphery, forming, with the transverse beam, a semicircular elevator on each side of the axis, substantially as described, and for the purpose set forth.

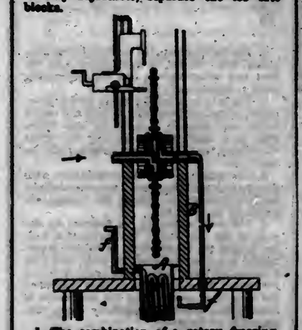
171,866. WASHING AND WRINGING MACHINE. William Cord, Ripley Township, Huron County, Ohio, assignor of one-half his right to William Lewis, same place. (Filed Aug. 10, 1875.)



The combination of rollers C C C' C', spring-bearings E e, and gearing D D, with the movable shaft f and gearing H, wringer-rollers G' G, spring L, and follower K, substantially as and for the purpose set forth.

171,867. ICE-MACHINES. Thomas Cook, New York, N. Y., assignor of one-half his right to James H. Nuttman, and said Cook and Nuttman assignors to the Union Ice Company. (Filed July 2, 1875.)

Brief.—The volatile refrigerant passes from one port in the axis through the wheel, and out at the other port, and through coil in water-tank. Water is sprayed onto wheel. Tank is movable vertically. Its water washes ice on wheel. Cutters, vertically and horizontally adjustable, separate the ice into blocks.



1. The combination of a rotary freezing-wheel with a vertically-adjustable tank, in which the lower edge of the wheel rotates, substantially as described.

2. The combination of a rotary freezing-surface with an adjustable horizontal cutter, substantially as and for the purpose described.

3. The combination of a rotary freezing-surface with an adjustable vertical cutter, substantially as and for the purpose described.

4. The combination of a rotary freezing-surface with an adjustable horizontal and an adjustable vertical cutter, substantially as and for the purpose described.

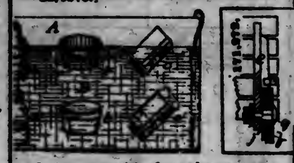
5. The combination of a rotary freezing-surface with spray-pipes arranged to spray water upon such surface, substantially as described.

6. The combination of a rotary freezing-surface with spray-pipes arranged to spray water upon such surface, and with a tank into which the lower edge of the wheel dips, for the purpose of wetting such surface, substantially as described.

7. The wheel A C, composed of a hollow shaft, a suitable central support or hub, and a pipe or pipes arranged in convolutions around the hub, substantially as described.

8. In a freezing-wheel, the pipe C, having the convolutions through which the refrigerant returns from the periphery of the wheel arranged between the convolutions through which said refrigerant moves outward from the hub, substantially as described.

171,868. DEVICES FOR TRACING DRAWING. Egbert L. Orull, Ashtabula, Ohio. (Filed Oct. 22, 1875.)



1. As a new article of manufacture, a copy-book for teaching free-hand drawing, consisting of sheets of drawing-paper A, having the designs a b c to be copied by the pupil printed at the top, alternated with transparent sheets or vurishers B, having fac-similes of figures a b c printed upon them, substantially as and for the purpose herein shown and specified.

2. As a new article of manufacture, a correcting or verifying plate for free-hand drawing, consisting of a plate of clear glass having cemented upon it a sheet of thin tracing-paper or tracing-cloth, imprinted with a duplicate copy or fac-simile of the figure or design from which the drawing is to be made, substantially as and for the purpose herein shown and described.

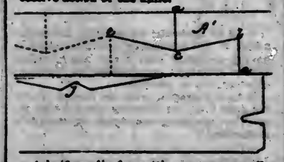
171,869. LAMP-FILLERS. William C. Cross, Boston, Mass. (Filed June 11, 1875.)



In a lamp, the oatch-funnel A, provided with the slot a, in combination with the feed-tube B, provided with the stud b, substantially as and for the purpose set forth.

171,870. KNIVES FOR CUTTING PAPER-COLLAR BLANKS. Abednego Dower, Brooklyn, N. Y. (Filed Nov. 3, 1875.)

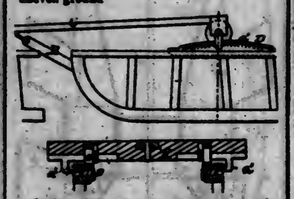
Brief.—By reason of the peculiar arrangement of the cutting-edges, two complete blanks are severed from the strip at each successive action of the knife.



A knife or die for cutting out paper-collar blanks from a strip or sheet of paper, the edges of which form three similar, equal, acute angles, a b c, b c d, and d e c, whereby two complete collar-blanks are cut from the strip or sheet of paper at each successive action of the knife thereon, substantially in the manner described and specified.

171,871. BOB-SLEDS. Francis Dillon, Walcott, N. Y. (Filed May 15, 1875.)

Brief.—To prevent strain in passing over uneven ground



In bob-sleds, the plate D, having curved trunk a and flanges a', both curved upward correspondingly with the plane of the trunk, in combination with the axle H, forming a bearing for the roller G, and provided with a rectangular hook, c, substantially as and for the purpose set forth.

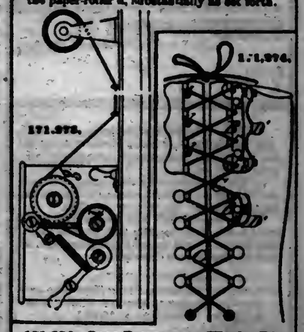
171,872. SCHOOL-DESKS. James A. Dole, Bangor, Me. (Filed Oct. 16, 1875.)

The improved hinge for school desks and seats, formed by the supports b b, having the square hole g and circular grooves h h therein, in combination with the arm a, provided with the circular hole i and the lugs j j, and the bolt l, having the square head and tip, and rounded center and wash. r o, all constructed and operating substantially as and for the purpose set forth.

171,873. TELEGRAPH APPARATUS. Thomas A. Edison, Newark, N. J., assignor to himself and George Harrington, Washington, D. C. (Filed Feb. 16, 1875.)

1. The combination, with the rollers g h, actuated by a train of gearing, of guides for a strip of telegraphic paper, and a table or rest contiguous to such strip, upon which the message is transcribed, as set forth.

2. The combination, with the rollers g h and the removable winding-roller l, of the guides for the strip of telegraphic paper, and the paper-roller a, substantially as set forth.



171,873.

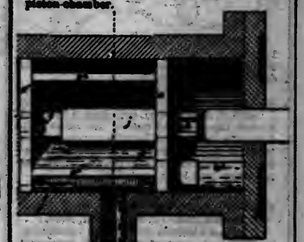
171,874. SHOP-FASTENINGS. Warden Bemister, Hunt's Station, Ohio. (Filed Oct. 20, 1875.)

Brief.—The shoe may be put on and taken off the foot by disengaging the hooks from the eyes, without untying the lacing.

In a boot or shoe fastening, the combination of a clasp, B B', and a lacing, C, operating substantially as described.

171,875. STEAM-ENGINES. Joseph S. Foster, Salem, Mass., assignor of one-half his right to Chester L. Johnson, Utica, N. Y. (Filed May 18, 1875.)

Brief.—The piston is hollow and divided by a longitudinal partition. One chamber receives live steam through the side of the cylinder, and admits it alternately to opposite sides of the piston through a valve which is opened by striking the cylinder-head. The exhaust takes place in the same way through the other piston-chamber.



1. In combination, the cylinder, the inlet and exhaust passages formed in the cylinder, and the piston and its sliding stems and exhaust ports j k, constructed and adapted to operate substantially as described.

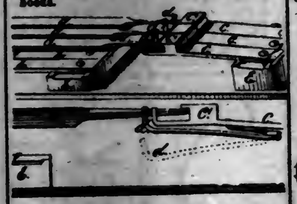
2. The combination of the cylinder and piston, provided with steam ports and spaces f k, with the pipe e, for equalizing the pressure of the steam on the piston, substantially as described.

171,976. PROCESSES FOR UTILIZING TIN-SCRAP. Hermon French, Philadelphia, Pa., assignor to himself, Henry Thomas, and Chas. B. Spregell, same place. [Filed July 24, 1875.]

The within-described process of utilizing tin-scrap, which process consists in, first, treating the scrap with hydrothionous acid, (or hydrogen disulphide,) evaporating the thus-formed tin solution to dryness, and, finally, reducing the tin by means of carbon, substantially as described.

171,977. FILE-BLANK HOLDERS FOR GRINDING. James Garland, Central Falls, R. I. [Filed Nov. 6, 1875.]

Brief.—The file-blanks are arranged on elastic supports, and held in place by [illegible] hooks.

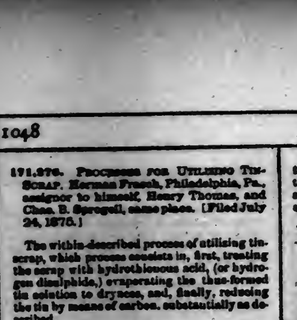


1. The combination of the spring *d* for holding the file-blank, with an elastic support for the file-blank, substantially as and for the purpose described.

2. The combination of the springs *b b* and the springs *c c*, with the springs *d d*, substantially as and for the purpose specified.

3. The combination, with the springs *b b* and springs *c c*, of the bolsters E E, provided with the screws *f f* and raised bearing-surfaces, as and for the purpose described.

171,978. HYDROCARBON-BURNERS AND GAS-GENERATORS. Alvah J Griffin, Lowell, Mass. [Filed Nov. 9, 1875.]



1. The retort having the transverse partitions P P P of its chambers arranged relatively to the longitudinal partitions *a b*, as described and represented.

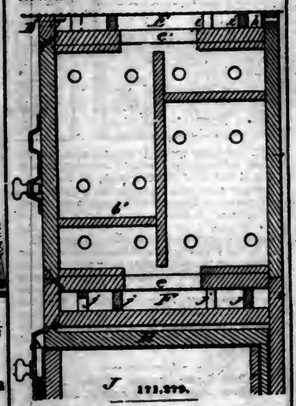
2. In combination with the retort, the steam and gas pipes H and I, arranged to discharge [illegible] with it, as described, said pipe H K being situated on the sides and ends of the retort, substantially as shown, so as to be exposed to the flame of the combined jets of steam and vaporized petroleum, as explained, when the apparatus may be in operation.

171,979. PROTECTOR-SAFES. C. D. Hart, Anderson, Ind. [Filed Sept. 11, 1875.]

Brief.—An interior double-wall ventilating partition. A meat-cutting board, connected with a scrap-drawer by a hatch, so that the two are drawn out together, or disconnected at pleasure.

1. In a meat-chest, the subdivided double-wall partition, communicating with the compartments A A, and also with air-circulating chambers B F, substantially as described.

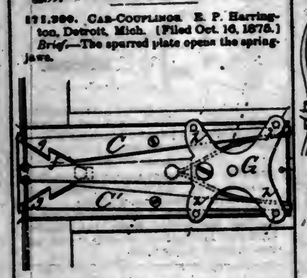
2. In combination with the chest mounted on the horizontal wire G, a sliding box, the top of which serves as a cutting-board, H, and the drawer J, provided with a latch, operated substantially as described, and for the purpose set forth.



171,979.

171,980. CAR-COUPLINGS. E. P. Harrington, Detroit, Mich. [Filed Oct. 16, 1875.]

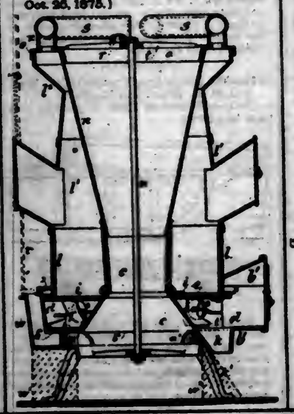
Brief.—The sparred plate opens the spring-jaws.



1. In an automatic car-coupling, the combination of the pivoting or oscillating plate G, having operating pins *p*, with the vibrating hooked arms C C', embraced by the said pins, substantially as specified.

2. In combination, with the hooked vibrating arms C C', the vibrating sparred plate G, and their operating mechanism, substantially as specified.

171,981. HOT-AIR FURNACES. Thomas F. Hemrich, Reading, Pa., assignor to himself and Elias Fritz, Sr., same place. [Filed Oct. 25, 1875.]

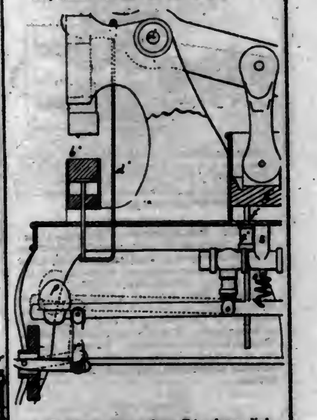


1. The annular channel *d* and ring-frame *f*, in combination with the grates *e*, scrapers *f'*, and means for revolving the grate, substantially as set forth.

2. The ring *o*, tubes *r*, and annular flue-pipe *s*, in combination with the central air-casings *c n*, and external casings *l P P*, as set forth.

3. The base *w*, with a central opening for atmospheric air, and provided with flanges or supports *x* for the furnace, in combination with the annular fire-space and pots, substantially as set forth.

171,982. PRESSES. Charles H. Harvey, Boston, Mass. [Filed Oct. 25, 1875.]



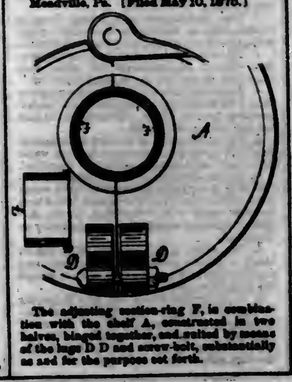
1. The bar or stamp, the walking-beam, link, piston, and cylinder, in combination with the inlet and outlet valves, and valve-operating lever *n*, substantially as described.

2. The lever *n*, pivoted directly on the valve-stems, in combination with the inlet and outlet valves, and adapted to move on each valve-stem as a fulcrum when moving the other valve-stem, and to operate substantially as described.

3. The mold and die *b'*, in combination with the stamp *b*, walking-beam, and connected piston and cylinder, to operate the stamp, substantially as described.

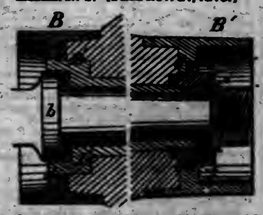
4. The lever *n*, having its fulcrum on the stem of the inlet-valve, in combination with the stem of the outlet-valve, to which it is connected at a point between its ends, and with a connected lever adapted to operate it, and with a weight or spring to depress the end of the lever most remote from the inlet-valve to retain the outlet-valve partially open, substantially as described.

171,983. STOVE-PIPE SHELVES. G. Hilbirt, Mendville, Pa. [Filed May 10, 1875.]



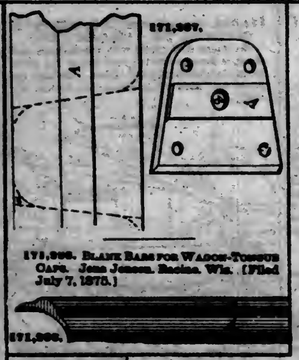
The adjusting suction-ring F, in combination with the shelf A, constructed in two halves, hinged together, and united by means of the lugs D D and screw-bolt, substantially as and for the purpose set forth.

171,984. VEHICLE-HUBS. D. O. Holmes, Adams, N. Y. [Filed Nov. 27, 1875.]

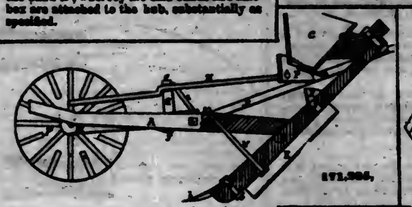


In a vehicle-hub, the combination, with band B, having inner annular flange *a*, and band B', having a similar flange, *a'*, of the axle-box D, having cylindrical enlargement D' with annular flange *d* and a screw-threaded end, *e*, and the clamp-nut R, having exterior flange *f*, abutting against flange *a'* of the band B', whereby the said bands and axle-box are attached to the hub, substantially as specified.

171,985. BLADE BARS FOR WAGON-TONGUE CAPS. Jens Jensen, Racine, Wis. [Filed July 7, 1875.]



171,986.



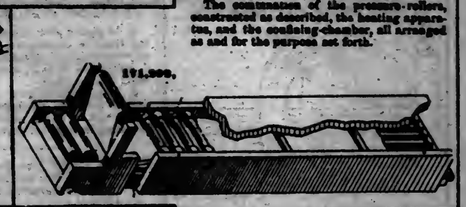
171,985.

171,987.

171,988. MACHINES FOR MAKING CARPET-LININGS. Willard Lewis, Walpole, Mass. [Filed Sept. 4, 1875.]

The combination of the pressure-rollers, constructed as described, the heating apparatus, and the cooling-chamber, all arranged as and for the purpose set forth.

171,989.



171,990. VEHICLE RUNNING-GEARS. Jacob W. Little, Cedarcoon, Iowa. [Filed Nov. 19, 1875.]

In the running-gear of vehicles, the cross-reaches H H', having raised stops or shoulders *s*, substantially as and for the purpose herein shown and described.

171,991. SPITTOON-MATS. John Lee, San Francisco, Cal. [Filed Oct. 12, 1875.]



A spittoon-mat consisting of a central portion, A, surrounded by a margin or rim, provided with cells, cavities, or depressions *b b*, substantially as and for the purpose described.

171,992. MACHINES FOR MAKING CARPET-LININGS. Willard Lewis, Walpole, Mass. [Filed Sept. 4, 1875.]

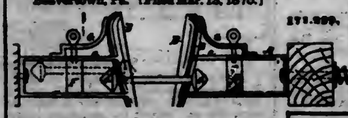
The combination of the pressure-rollers, constructed as described, the heating apparatus, and the cooling-chamber, all arranged as and for the purpose set forth.

171,993. GUARD-DISTRIBUTERS. James T. Horton, Wilcoxen's, S. C. [Filed July 31, 1875.]

Brief.—To the plow-beam is pivoted a forked wheel-shank, in which is journaled a ribbed bearing-wheel, for giving vibratory motion to the seed-trough.

The pivoted wheel-shank M and block K, both constructed as set forth, in combination with the ribbed wheel F, standard B, provided with the tube E, and plow-point I, funnel R, shoe P, hopper C, and lever N, substantially as described, and for the purpose set forth.

171,994. CAR-COUPLINGS. Jos. W. Klingler, Daniel Bolender, and Samuel H. Shoen, Reevertown, Pa. [Filed Mar. 13, 1875.]



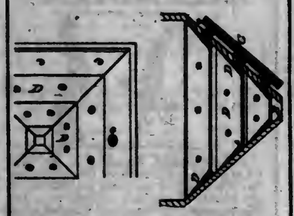
171,994.

1. In combination with the draw-bar A, provided with the concussion-block F, adapted to receive and hold the coupling-pin, the sheet-metal buffer-head B, made in form described, and secured to the draw-bar, as specified.

2. In combination with the buffer-head B and draw-bar A, the brace G, as specified.

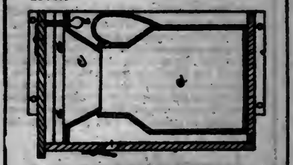
171,995. APPARATUS FOR STORING AND PRESERVING GRAIN. Hans P. C. Lassen, Chicago, Ill. [Filed Nov. 2, 1875.]

Brief.—This bin has the form of a funnel. On one of the sides there are a series of three or more perforations, arranged in a line from the top of the chute to the bottom, through which pipes are inserted for introducing air for cooling and drying the grain.



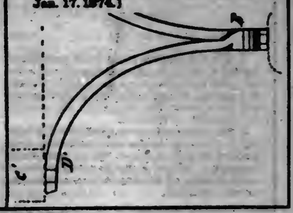
In a bin for storing grain, the combination of the chute B with the slats D, forming air-chambers *a*, pipes *c*, and main pipe C, constructed and arranged substantially as and for the purpose hereinbefore set forth.

171,996. MILK-CAN RECEPTACLES. Hobson Littlefield, Portland, Me. [Filed Dec. 2, 1875.]

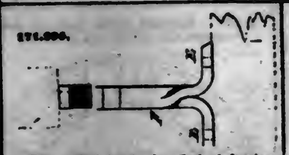


In an ordinary letter-box for doors, &c., the combination of the adjustable tunnel-shaped conductor *c*, grooves *d*, set-screw *f*, lid *b*, and can *a*, substantially as and for the purpose herein set forth.

171,997. MANUFACTURE OF SLEIGH-KNEES. W. H. Lloyd, Spring Valley, Minn. [Filed Jan. 17, 1874.]



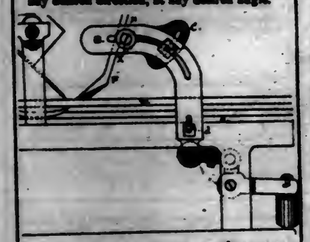
171,890.



The welted herein described of forming wrought-iron sleigh-bases, consisting in first welding together at F the curved wrought metal bars D D', and then bending and twisting the upper ends of the latter while in a heated state, so as to form the horizontal arms E E at right angles to the arms D D', substantially as described.

171,892. ADJUSTABLE PRESSURE-FOOT OF MOLDING-MACHINES. John B. Loomis, Brooklyn, N. Y. [Filed Nov. 2, 1875.]

Brief.—The pressure-foot has slotted shank, pinned to a slotted head-block, which works in slotted curved arms, with slotted braces, to aid the free movement of the pressure-foot in any desired direction, at any desired angle.



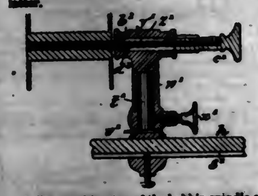
The pressure-foot F, with slotted shank R, operating at different angles upon the screw-pin X, in combination with the slotted transverse head H and arms B, with the supporting-brace C, all arranged and operating in the manner and for the purpose set forth.

171,897. ANTI-INCRUSTATION COMPOUNDS. Lewis N. Lye, Allen County, assignor of one-half his right to Francis J. Lye, Delphos, Ohio. [Filed Nov. 19, 1875.]

A composition, to remove and prevent incrustation and foaming in steam-boilers, compounded of crude coal-oil, concentrated lye, coal-oil, lime-wax, and stearine, substantially as directed, and for the purpose set forth.

171,898. SPRING-MACHINES. H. Marshall, Plattsburgh, N. Y. [Filed Oct. 28, 1875.]

Brief.—By advancing or rounding the screw, and then compressing or relaxing the spring in the first classes of the claim, the friction or drag of the spindle is regulated. The "arm" of the second classes has a die on its inner end, that runs in the grooves of a double-threaded screw, whereby the standard and bobbin are traversed to guide the yarn properly on the bobbin.

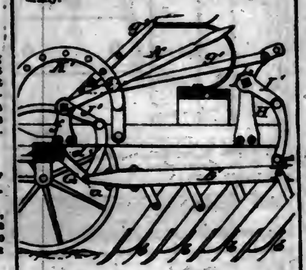


1. The combination of the bobbin-spindle d^3, having a collar, F, spiral spring S, and tubular screw C, which serves the twofold purpose of a bearing for one end of the bobbin-spindle and of a means for regulating the tension, substantially as specified.

2. The combined standard and bobbin-bearing f e f', in combination with the fixed grooved shaft b c, arm c', die c^2, and revolving nut C, having a double-reversed thread c^3 c^4 thereon, all substantially as and for the purpose specified.

171,899. GANG-PLOWS. J. R. McCormick, Georgetown, Tex. [Filed Oct. 9, 1875.]

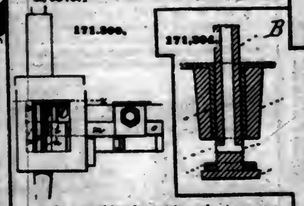
Brief.—A rock shaft, with crank-arms and lever, is attached to the rear end of the plow-beams, and another at the front. On both the plows and their connections may be slid laterally.



1. In a gang-plow, the beams B, pivoted to the rod a, in combination with the bifurcated connections G, adjustable as rod d, links J, adjustable arms J', and lever K, substantially as described.

2. In combination with the front adjusting devices described, the links I, adjustable arms I' on shaft I^2, arm g, connecting-rod g', and adjusting-lever g^2, substantially as specified.

171,900. BOOT AND SHOE NAILING MACHINES. Gordon McKay, Cambridge, and H. P. Fairfield, Boston, Mass. [Filed Nov. 11, 1875.]



1. In a machine for uniting soles to uppers, a stationary cutter and two movable cutters, adapted to serve the nail, and to hold and carry the nail beyond the stationary cutter, substantially as described.

2. The tube-bar of a nailing-machine, a stripper, and a stationary cutter, in combination with two cutters to sever and move a nail past the stationary cutter and hold it, substantially as described.

3. The tube-bar of a nailing-machine and a stationary cutter, in combination with the movable nail severing and holding cutters and the head-cutter, substantially as described.

4. The head-cutter, in combination with a cutter adapted to be held in a fixed position during the action of the heading-cutters, and to be then released, substantially as and for the purpose set forth.

171,901. SHOE-FASTENINGS. W. J. McKee, Pittsburg, Pa. [Filed July 28, 1875.]



A shoe-fastening, consisting of the loops c c, attached to the inside of the front quarters of a shoe, and the straps c c, attached to the outside of the boot quarters in a line slightly above the loops, and adapted to operate substantially in the manner and for the purpose specified.

171,902. HALE-TIES. Richardson Mumford, Butler, Ga. [Filed Nov. 27, 1875.]

171,902. B

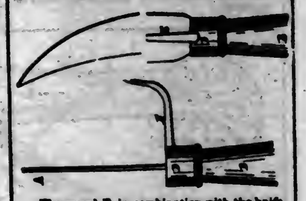


1. The bale-tie buckle A, having hexagon-shaped slot a, and downwardly-bent lips b, having slot C, substantially as specified.

2. In combination with wire binder B the buckle-plate A, having slot a, downwardly-bent ends b, and slots c, substantially as and for the purpose specified.

171,903. CORN-STALK KNIVES. Peter C. Moore, La Fayette, Ohio. [Filed Nov. 8, 1875.]

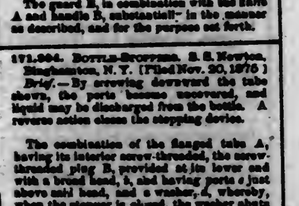
Brief.—A knife for cutting down corn-stalks is provided with a suitable guard, projecting from the former at right angles to the side of the blade, the entrance end curving upward and slightly outward, to protect the hand and assist somewhat in holding the severed corn-stalks together.



The guard B, in combination with the knife A and handle B, substantially as and for the purpose set forth.

171,904. BOTTLE-STOPPERS. S. S. Newton, Binghamton, N. Y. [Filed Nov. 20, 1875.]

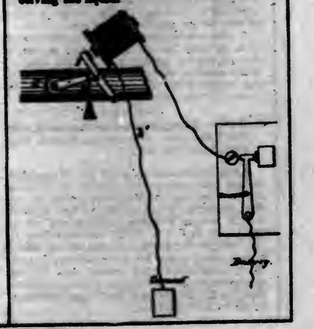
Brief.—By screwing downward the tube shown, the parts become unscrewed, and liquid may be discharged from the bottle. A reverse action closes the stopping device.

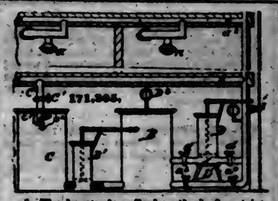


The combination of the flanged tube A, having its interior screw-threaded, the screw-threaded plug B, provided at its lower end with a bound head, b, and having ports c just above said head, and a washer, d, whereby, when the stopper is closed, the washer abuts against the lower end of the tube and the ports lie within the bore of the tube, substantially as described.

171,905. REINFORCEMENT FOR FIRE-HOSE. S. S. Newton, Binghamton, N. Y. [Filed Sept. 17, 1875.]

Brief.—The pipes are first filled with compressed air; then the water in the supply-reservoir is put under pressure by the air-pump. A fire breaking out, the cutter of the sprinkling-cannula is pushed, the check-valve therein lifts, the air escapes, and water flows through the pipes and floods the room. The thermostat shown is to be placed so as to be readily acted upon by heat. In case of accident, or if desirable to empty the pipes or reservoir, a suitable tank is provided for receiving the liquid.





1. The herein-described method of restricting the discharge of water into the distributing-pipes by means of a valve, a^2, which is closed by compressed air, substantially as set forth.

2. The combination, with the distributing-pipes, of a receiving-tank, into which the water within such pipes may be discharged.

3. The combination of the valve a^2, its seat a, stem a', and springs F F', secured to each other to support the valve-stem a', substantially as set forth.

4. In combination with the supply-tank E, the pumps D' and D, and connecting-pipes, for filling the tank with liquid and compressed air, substantially as set forth.

5. In combination with the tank E and pipe A, and the check-valve a^2, the pressure-gage D' D², substantially as set forth.

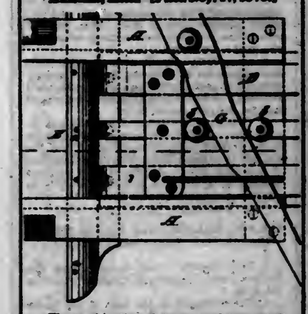
6. In combination with the distributing-pipes and sprinkler, an electric circuit, or a series of electric circuits, each provided with magnet m, armature, and with a circuit-closer provided with easily-fusible solder, whereby, when such solder is fused, the water shall be discharged through the pipes, substantially as set forth.

171,906. ENVELOPES. Ernest J. Hollis, Chicago, Ill. [Filed Apr. 27, 1875.]



As a new article of manufacture, the envelope or bag A, having in one side the horizontal opening a, arranged below the upper end thereof, and provided with the eyelets c' c', arranged in its upper end, and with the flap c arranged below the said eyelets and above the said opening, substantially as shown and described, and for the purposes set forth.

171,907. CALICO-STRETCHERS. L. Nelson, Hillsdale, Mich. [Filed Nov. 17, 1875.]



The combination of the grooved frame A B, with points C C, the sliding frame D, with toothed head E, the lever G, and pins b, substantially as and for the purposes herein set forth.

171,908. CALENDARS. Charles S. O'Neill, Boston, Mass. [Filed Nov. 2, 1875.]

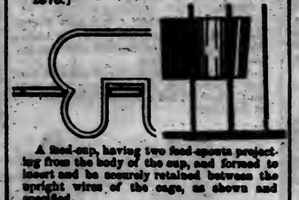


171,908.



A paper clasp or suspender made of one piece of metal, having the longitudinal edges of the plate curved toward each other to receive and retain the sheets of paper by the elasticity of the metal, and having the plate partially severed by two slits to form the aperture-tongue O, whereby a means of suspension is provided.

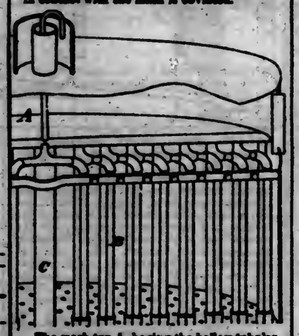
171,909. FUEL-CUPS FOR ROCK-GASES. G. B. Osborn, East Orange, N. J., and R. A. Drayton, New York, N. Y. [Filed Oct. 12, 1875.]



A fuel-cup, having two fuel-spouts projecting from the body of the cup, and formed to insert and be securely retained between the upright wires of the cage, as shown and specified.

171,910. MASH-ATTEMPERATORS. William Peddicord, San Francisco, Cal. [Filed Oct. 9, 1875.]

Brief.—The steam, passing up the central shaft, courses through the tubular rotating rake, and then exhausts in open air. Thus the disadvantage of having the steam come in contact with the mash is obviated.



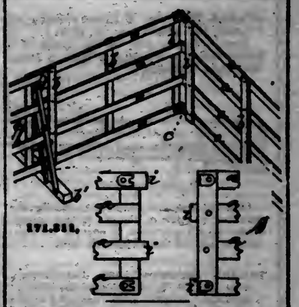
The mash-tun A, having the hollow tubular tube B, which is arranged to take steam from the upright hollow central shaft C, and exhaust it through the exhaust-pipe f into the open air, substantially as and for the purpose described.

171,911. PORTABLE FENCES. Isaiah W. Pelmount, Libertyville, Iowa. [Filed Aug. 14, 1875.]

Brief.—The rails of the corner panels alternately project beyond their respective end battens, so that the panels, which are hinged together, are prevented from turning beyond a certain extent.

In a portable fence, the corner panels A A', hinged together at a, and having the ends b of battens b, alternately on and panel and on the other, projecting beyond the end battens, and abutting against the short cross-boards of the panels, whereby the panels are prevented from turning with each other a greater angle than a right angle, substantially as specified.

171,912.



171,912. FABRIC BRAIDS. J. W. Partridge, Boston, Mass. [Filed Nov. 9, 1875.]

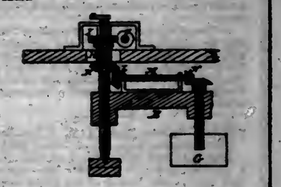
Brief.—Interposes between the folds of the strands one or more sized strengthening threads or strips.



As a new article of manufacture, the herein-described paper braid, consisting of a series of folded flat strands, each of which being provided within its folds with one or more strengthening threads or strips, substantially as and for the purposes set forth.

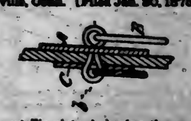
171,913. STEERING-PROPELLERS. Ira T. Payne, Essex, Conn. [Filed Aug. 16, 1875.]

Brief.—The paddles are fastened by a train of gearing leading from a collar on the central shaft. The paddles revolve around their own centers, as well as around the central shaft.



The devices K L M N O in combination with the revolving arm E and the steering devices H I J, for altering the position of the wheel K, substantially as and for the purpose herein described.

171,914. CLASPS. Joshua Purkiss, Danielsonville, Conn. [Filed Jan. 20, 1875.]



The metallic plate A, having the eyes a b in front and rear, in combination with the ring E, washer C, and the split ring E, substantially as described, and for the purpose set forth.

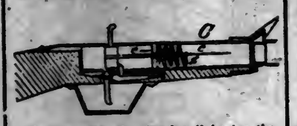
171,915. COMBS FOR BOTTLING BEER AND SIMILAR LIQUORS. Charles Pfannenstiel, Memphis, Tenn. [Filed Oct. 27, 1875.]

Brief.—The cork is saturated with oil to render it elastic. Corks so treated fit in closed ears to forced into the bottles filled to the top without bursting them.

As a new article of manufacture, a cork saturated with olive or other sweet oil, in order to render it sufficiently elastic to be forced in the neck of the bottle and the beer or other similar liquids, substantially as and for the purpose described.

171,816. TOY GUNS. C. Albert Pilinsky, St. Louis, Mo. (Filed Aug. 30, 1875.)

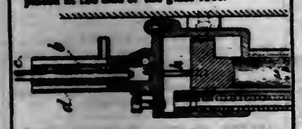
Brief.—The weapon, by the thrust of a spring-needle, is arranged to ignite a fulminate wafer or missile.



In a toy gun, the chamber C, having the partition c, needle c, plunger A, and spring-detent E, all combined to operate substantially as and for the purpose set forth.

171,817. PRESSURE-GAUGE. John Powers, New York, N. Y. (Filed Mar. 20, 1875.)

Brief.—A pressure-gage consisting of the small plunger, moving upward or downward in the chamber by the action of the pressure of steam against the end in the steam-chamber. The other end acts against a cross-bar, which carries two rods, leading down to another plunger which is floated in mercury or other liquid, in a lower chamber. The action of the plunger, rising and falling, causes the liquid to do the same, thus indicating the pressure, which is noted on a graduated scale placed at the side of the glass tube.



1. The combination, in a pressure-gage, of a direct-acting weight and a column of mercury, that contains the same at the zero or point of no pressure, with a sliding plunger, cross-head, and rings connected to said weight, and acting to lift the same out of the mercury as the pressure increases, substantially as set forth.

2. The plunger c, sliding in the guides 2 and 3 of the cylinder b, to which the pressure is admitted by the cock a, in combination with the cross-head i, sling-rods k, and weight f, which is progressively counterpoised by a hydrostatic column as it descends, substantially as set forth.

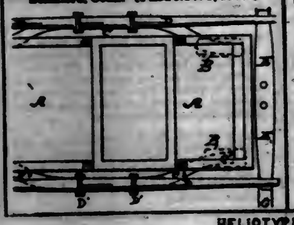
171,818. PAVING-BLOCKS. W. F. Preston, Northampton, Mass. (Filed June 7, 1875.)

Brief.—An iron paving-block consisting of a top bearing-surface with four legs—one at each corner—the interior of the frame being filled with a concrete filling, which is secured thereto by a central bolt having a nut on the lower end.



A paving-block formed of the metallic frame B, constructed and united, substantially as described, to the filling D.

171,819. VEHICLE-SPRINGS. M. Provost, Stamford, Conn. (Filed Nov. 6, 1875.)



1. The springs C, having the straight part C^2 and the end C^3 curved sidewise under the body A, substantially as and for the purpose described.

2. The combination, with the box or body A and the thorough-braces D, of the springs C, having the straight part C^2 and the end C^3 curved sidewise under the body A, constructed substantially as described.

3. The combination, with the box or body A, thorough-braces D, and springs C, having the straight part C^2 and the end C^3 curved sidewise under the body A, of the semi-elliptic springs E, constructed and operating substantially as shown and described.

171,820. HORSESHOE-MACHINES. David I. Prosser, McVeytown, Pa. (Filed Nov. 6, 1875.)

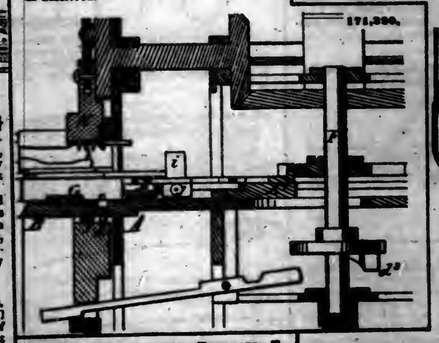
Brief.—The jaws advance upon guides curved to give a dip to the creasers, which are attached to said jaws projecting from the inner sides thereof. The blank severed from the rod is fed up in a channel, from which it is freed at the proper time by lifters.

1. The creasers f and jaws E, combined with the curved guides h and means, substantially as described, for bending the shoe-rods about a former.

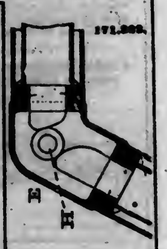
2. The guide-channel c and gage c', combined with the shear O, lifters d d, and devices for bending the shoe-rods about a former, substantially as described.

3. The follower H, having punches K fixed into its lower end, in combination with creasers f, benders e, and a former, G, substantially as described.

171,821. HORSE-POWERS. Friedrich Schmemann, Philadelphia, Pa. (Filed Nov. 6, 1875.)

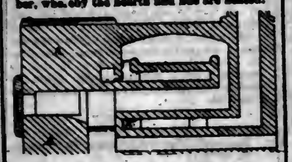


171,822.



171,823. METALLURGICAL FURNACES. R. Savage, West Meriden, Conn. (Filed Sept. 13, 1875.)

Brief.—A flue extends from the first combustion-chamber through the second combustion-chamber to the smelting-chamber. A second air-flue passes through the walls of the furnace, and opens, by perforations, into the second combustion-chamber below the hearth of the smelting-chamber. The products of combustion which pass to the smelting-chamber are principally carbonic oxide, and are fully burned in the second combustion-chamber, whereby the hearth and flue are heated.

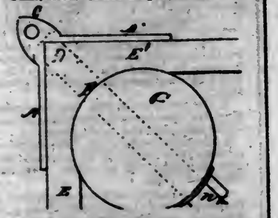


1. The combination, substantially as hereinbefore set forth, of the flue for conducting the heated gases from the first combustion-chamber to the smelting-chamber, and the second combustion-chamber for heating said flue.

2. The combination, substantially as hereinbefore set forth, of the flue for conducting the heated gases from the first combustion-chamber into the smelting-chamber, and the second combustion-chamber for heating said flue with a flue for admitting air into said second combustion-chamber.

3. The combination, substantially as hereinbefore set forth, of the flue for conducting the heated gases from the first combustion-chamber into the smelting-chamber, and the second combustion-chamber for heating said flue with a flue for admitting air into said second combustion-chamber.

171,825. DEVICES FOR FASTENING THE LEGS OF A TABLE. William K. Sawyer, Three Oaks, Mich. (Filed Aug. 6, 1875.)



The combination of the clamp-plate A A', having shelf D and perforated leg C, the rails E E', leg C, and bolt F, having nut a, as described, and for the purpose set forth.

171,826. INDIA TRUSS-BANDAGE. Friedrich Schmemann, Philadelphia, Pa. (Filed Nov. 6, 1875.)

171,827. DRAG-RAKE HANDLES. Hugh Smith and Walter Galbraith, Pennsgrove, N. J. (Filed Apr. 6, 1875.)

Brief.—The handle of the rake is made of two distinct rods, which are united at the tail-end, the branches entering the head by means of bolts or otherwise. A sliding clamp, having a supplemental handle, is affixed to the rods at a convenient position, and is secured by a bolt and nut.

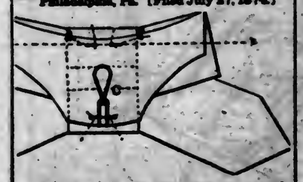
1. The adjustable clamp and handle, in combination with the limbs r r of the rake, as and for the purposes set forth.

171,828. CORNER-JOINTS FOR BOXES. Geo. G. Stearns, Chelmsford, Ohio. (Filed May 11, 1875.)



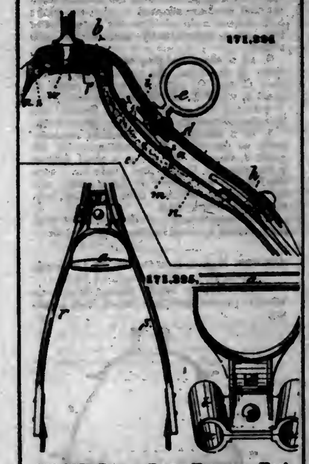
A corner-joint for boxes and drawers, consisting of pieces a b with beveled ends c, fines d f, and dovetail tongue and groove, all substantially as described.

171,829. NECK-TIES. George G. Strother, Philadelphia, Pa. (Filed July 27, 1874.)



A neck-tie formed of straps or scraps of textile material, united and secured to each other, and to the supporting shield at two points only—that is to say, top and bottom—by means of a single metallic clasp at each point, and common to the fabric and shield, substantially as and for the purpose described.

4. The bearing for the harness-pad made of leather stiffened by a metal plate, over the edges of which the leather is drawn, and between which plate and the leather is a layer of card-board or similar material, substantially as set forth.

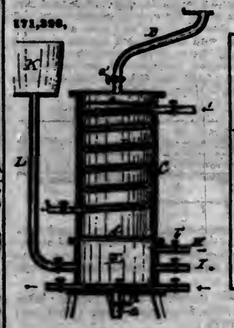


171,824.

171,825.

171,830. APPARATUS FOR TREATING TALLOW, OILS, &c. Jules Tardos, Jr., New Orleans, La. (Filed Nov. 6, 1875.)

Brief.—Material to be filtered flows from an elevated tank into a filtering-vessel containing charcoal or bone-black, which is heated by a steam-pipe. As the material to be filtered flows through the bone-black it falls into a tank, which is heated by a steam-pipe, to maintain the tallow in a fluid state, until ready for discharge. An elevated water-tank and pipe, entering at the bottom of the filter, serve to cleanse it when the process is over.



171,830.

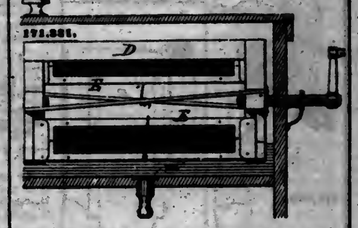
1. The filtering-vessel C, provided with strainers a b, and filled with charcoal or bone-dust between said strainers, the charcoal or bone-dust having passed through its mass the steam-pipe or worm D, to heat the same, substantially as described, as and for the purpose specified.

2. The combination, with the filtering-vessel C, of a reservoir, A, and pipe E, and of a receiving-tank, B, the latter provided with a steam-pipe or worm, F, direct steam-pipe I, air-exit pipe H, and discharge-pipe G, as described, and for the purpose specified.

3. The combination of the filtering-vessel C, receiving-tank B, steam-pipe I, worm F, supply-tank K, pipe L, and exit-pipe M, the whole arranged to operate substantially as described.

171,831. CHURNS. James Watson, Port Colborne, Canada. (Filed May 11, 1875.)

Brief.—A horizontal dasher having cross-arms at each end, each pair carrying, near the outer end, a horizontal dash-board. Intermediate between these dash-boards are set others of reticulated material, which may be drawn from the dasher, and the whole dasher, by drawing out the journals, may be withdrawn from the barrel.

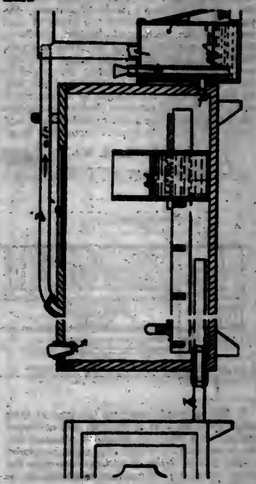


171,831.

In a churn, the attachable and detachable wire sieves or perforated plates, in combination with a dasher, D, operating substantially as herein described.

171,832. APPARATUS FOR PRESERVING CORPSES AND OTHER ORGANIC MATTER FROM DECOMPOSITION. James Whelan, Zanesville, Ohio. (Filed June 5, 1875.)

Brief.—Generates chlorine gas, washes it by passing through water, dries it by passing it over sulphuric acid, and admits it into a holder containing quicklime. Light may be admitted to holder to actinize the gas. From holder gas is admitted under natural or artificial pressure to the casket, where it is retained, displaced air passing through upper pipe. To empty casket of chlorine gas, open vent in top, and the communication with atomized ammonia-vessel, when the ammoniacal vapors carry the gas to the air outside of the apartment.



A gas-receptacle for the preservation of organic substances, provided with a glass-covered opening, in combination with an apparatus for manufacturing chlorine connected with said receptacle, and an apparatus for carrying off the gases contained in the latter, substantially as described, and for the purpose set forth.

171,833. PORTABLE FENCES. Horace Tell, Bristol, Md. (Filed Oct. 18, 1875.)



The combination, with the panels A A, made to collapse, and provided with a vertical brace at each end, of the cross-braces, framed together as shown and described, and passed between and binding on the top and second bars of the panels, for the purpose specified.

171,834. WATER-ELEVATORS. Leslie H. Thompson, Cedar Rock, Neb. (Filed Apr. 24, 1875.)

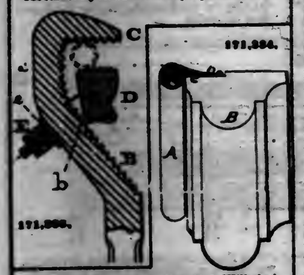
Brief.—A chain-bucket having the form of the segment of a circle, and provided at one of its corners with a discharge-tube, in combination with a chute and an open side guide.



171,883. FUR-WRINGER. J. A. White, Dorlon's Mills, Pa., assignor of one-half his right to S. B. Dorlon, same place. [Filed Aug. 26, 1875.]

Brief.—A diagonal corrated stock with fixed jaw and a movable jaw, provided with an engaging-tooth, said movable jaw being pivoted to a spring-yoke embracing the stock.

The diagonal corrated stock B, with fixed jaw C, and the adjustable jaw D, having the teeth a, in combination with the yoke E, pivoted to the adjustable jaw, and carrying the plate c and pin d, and the spring e, interposed between said plate and the back of the yoke, substantially as and for the purpose set forth.



171,884.

171,885.

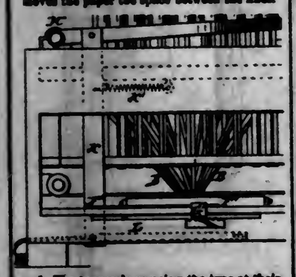
171,884. WEATHER-STRIP. C. A. Wilhelmi, Boston, Mass. [Filed Dec. 2, 1875.]

1. A weather-strip, having its elastic strip A attached by one edge, c, to the edge of the molding-strip B, and by the other edge, b, to the inner side of the said molding-strip, substantially as and for the purpose herein specified.

2. A weather-strip, having its elastic strip A attached to the molding-strip B, as described, and one edge, c, thereof projecting beyond the edge of the molding-strip, substantially as and for the purpose specified.

171,885. TYPE-WRITING MACHINE. Robt. T. P. Allen, Portsdale, Ky. [Filed Aug. 14, 1875.]

Brief.—The radiating type-rods are provided with offsets, so that as they approach the paper they move in vertical lines. Depressing a key to operate the typered also depresses the perforated hinged platform, which is connected to the ball-crank carrying the double pawl, which acts on the rack-bar, and allows the table carrying the paper to move one notch at each depression of the key. As the carriage is returned to commence a new line, the arm attached thereto operates a ratchet-wheel on the paper-cylinder shaft, and moves the paper the space between the lines.



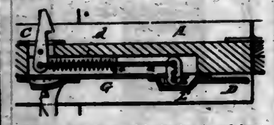
1. The type-rods carrying the type at their lower ends, bent as described, and arranged radially and obliquely around a common center, in supports in which they slide, in combination with a series of vertical key-rods, the whole arranged to operate substantially as and for the purposes set forth.

2. The combination, as hereinbefore described, of the central type-key mounted on the rod F, the sliding plate G, rock-shaft H, levers K and M, rocker P, and spring R, attached to the traveling carriage O, for the purpose of shifting said carriage and moving the paper.

3. In combination with the movable carriage, as herein described, the rollers U V, the latter arranged to slide on a rectangular shaft, W, the toothed wheel mounted on said shaft, and the finger D', arranged on and moving with the sliding frame, for engaging with the wheel A' and cord S, attached to the traveling carriage, the whole arranged to operate substantially as and for the purposes set forth.

171,886. SHUTTER-FASTENING. J. Arnold, Newark, N. J. [Filed Nov. 20, 1875.]

Brief.—A recessed spring-controlled rod, connecting at one end with the outside catch, and at the other by means of a plate or connecting-link with an L-shaped handle, serves to disengage the catch from inside the room, the right-angular movement of the handle permitting it to be used either to push or pull in opening or closing the shutter.



The combination, with shutter A and bent C, of the rod a, spring d, plate b, and handle D, together with the box E and covering-plate G, all as and for the purposes herein set forth.

171,887. CHECKOUT-SAW HANDLES. Elias C. Atkins, Indianapolis, Ind. [Filed June 30, 1875.]

Brief.—A detachable tang or shank, for ornament or rip saws, is formed with two slotted or forked projections, for the insertion of the inner upper corner of the blade of the saw, and provided with two separate handles, for the purpose of operating the saw by either handle alone, or by using both at the same time.



The detachable tang or shank B, furnished with handles D D, and arranged in connection with a saw-blade, substantially as and for the purposes set forth.

171,888. MACHINERY FOR HEDGING SHINGLES. James B. Austin, Ionia, Mich., assignor to the Ionia Shingle-Machine Manufacturing Company, same place. [Filed Aug. 4, 1875.]

Brief.—Shingles of various widths can be trimmed so that their sides will be parallel at right angles with their lower edges, and both sides of the shingle will be edged and planed from the under side of the table by means of a stationary circular saw and a laterally-adjustable circular saw, both of which are mounted upon the same arbor, and provided with planing-cutters formed in their plates, in connection with suitable feeding mechanism.

1. In a shingle-edging machine, substantially as described, the combination of a stationary circular saw and a laterally-adjustable circular saw mounted upon the same arbor, each of the said saws having plane-cutters formed in the plate, set inwardly toward the other saw and beveled from the outside, when the said saws are adapted to edge and plane both sides of a shingle from the under side of the table, substantially as described and shown.

2. In a shingle-edging machine, substantially as described, the combination of the slide O, arm O', sleeve P, rod Q, pedal R, shaft S, sector T, arm U, and connecting-rod V with the feed-roll for carrying forward the shingles, substantially as shown and set forth.

3. In a shingle-edging machine, substantially as described, the combination of the guide d, sleeve b, bar c, arm e, shaft f, lever g, bell-crank i, link h, and guide-bar j with the frame A and shaves of the movable saw for adjusting the latter upon its arbor, substantially as described.

4. The combination of the pointer F with the bar-slide i, as and for the purposes set forth.

171,889. MACHINERY' OILERS. O. J. Backus, Newark, N. J. [Filed Sept. 27, 1875.]

Brief.—Rubber bands resting in grooves serve to protect the glass vessel from breaking.

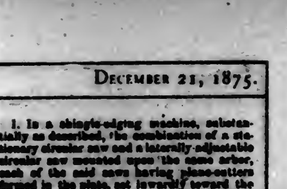


1. In combination with an oiler for sewing-machines and other purposes, constructed as herein described, the rubber bands a, for the purposes set forth.

2. The herein-described oiler, consisting of the transparent body A, provided with the rubber bands a, spring-bottom C, and needle B, the several parts being arranged substantially as and for the purposes set forth.

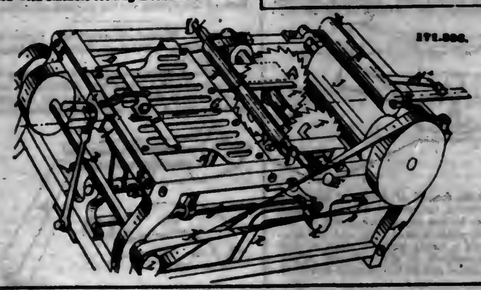
171,890. WAGON-BRAKES. Owen T. Baker, Wamego, Kans., assignor of one-half his right to Oscar M. Gay, same place. [Filed May 19, 1875.]

Brief.—On going down hill backward the wheel is locked by the lever end of the brake-block.



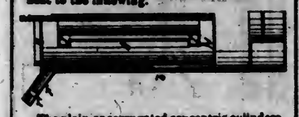
The combination, with the pivoted brake-beam C C, of the shaft or rod b with lever D and arm d, and the links e e, connecting the arm and lever directly to the top of the shoes, substantially as and for the purposes herein set forth.

171,891.



171,841. APPARATUS FOR ADDING LIQUORS. John B. Bauz, Oakland, assignor to James M. Curtis, San Francisco, Cal. [Filed Oct. 30, 1875.]

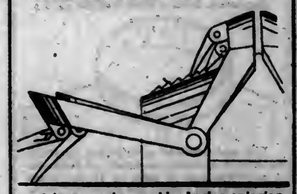
Brief.—The flue passing centrally of the boiler, and the flues surrounding the boiler, admit of regulating the direction of the products of combustion and heating the liquid uniformly. The inflowing and outflowing wines pass through an exterior chamber in such a manner that the outgoing wine gives up its heat to the inflowing.



The plain or corrugated concentric cylinders g h, with their reservoir I I, in combination with the heater A, with its centrally-arranged stack D, side flues F F, and pipes K l, all combined and arranged as and for the purpose above described.

171,842. BROOM-SEWING MACHINES. Henry Behrea, Columbus, Ohio. [Filed June 6, 1875.]

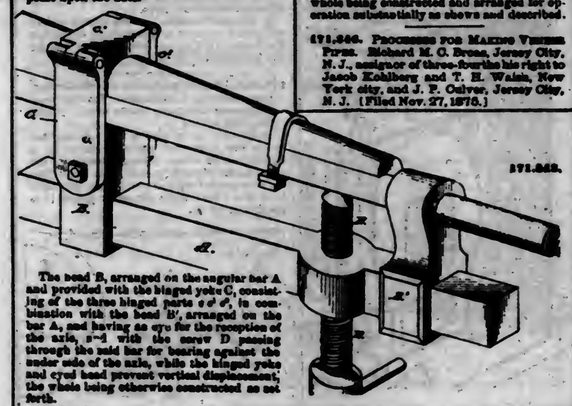
Brief.—The several pairs of jaws that grasp the broom are arranged over each other, and are held against the broom by saws, which take into ratchets in the rear.



A broom-sewing machine having swinging jaws provided with pivoted parts of different lengths, and rack-plates at both sides of the rear end, hereof, for securing the jaws in position for sewing the seams of the broom, substantially as specified.

171,843. APPARATUS FOR SETTING METAL AXLES. Frederick Bee, Washington, D. C. [Filed Sept. 18, 1875.]

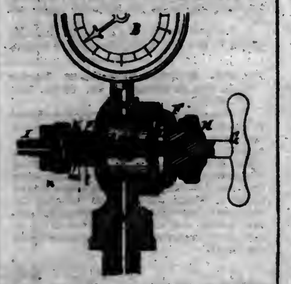
Brief.—Metallic axles that have become bent can be set by means of a metal bar of suitable form, provided at one end with a longitudinally-adjustable yoke formed of three hinged parts, and at the other with a longitudinally-adjustable head, having an opening in its upper part to receive the end of the axle, and a screw operating through a threaded part of the bar between the yoke and the head, and which can be brought to bear at any desired point upon the axle.



The bend B, arranged on the angular bar A and provided with the hinged yoke C, consisting of the three hinged parts c c' c², in combination with the head B', arranged on the bar A, and having an eye for the reception of the axle, a-2 with the screw D passing through the said bar for bearing against the under side of the axle, while the hinged yoke and cross head prevent vertical displacement, the whole being otherwise constructed as set forth.

171,844. STOP-COCKS. J. G. L. Scottcher, Brooklyn, N. Y. [Filed Nov. 27, 1875.]

Brief.—The concave plate over the flexible valve is prevented from turning by having recesses formed in it, which engage with projections in the cap. In the discharge spout is placed a pressure-relieving valve, which can be regulated according to the pressure in the supply reservoir, and thus avoid undue pressure on the pipe connected with said spout.

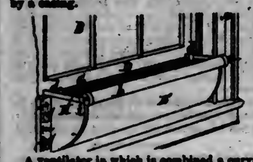


1. The combination of the valve C, the flexible washer E, confined between the cap F and the valve-chamber A, the supporting guide-plate D, having the screw-shank f and recesses g', fitting over ribs h in the cap F, and the handle G, having a screw-socket fitting over the screw-shank of the guide-plate D, all substantially as shown and described.

2. The valve-chamber A, provided with the passages a and b, and cylindrical extension l, in combination with the pressure-relieving valve m, arranged in said cylindrical extension of the valve-chamber, the valve C, its operating devices, and a pressure-gage, B, substantially as and for the purpose described.

171,845. VENTILATORS. Thos. W. Bracher, New York, N. Y. [Filed Sept. 20, 1875.]

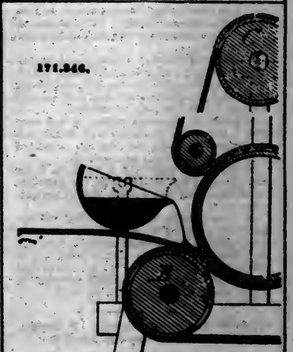
Brief.—A window-ventilator having a top screen, which may be partially or entirely covered by a curtain, whose roller is hidden by a casing.



A ventilator in which is combined a curved deflector, E, a perforated plate, G, extending across the upper part of the deflector, a curtain, H, a casing, J, and a roller, I, arranged in said casing, and having finger-piece i, the whole being constructed and arranged for operation substantially as shown and described.

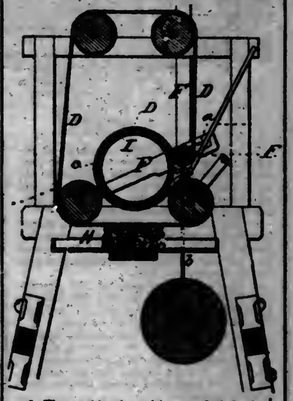
171,846. PROCESSES FOR MAKING VENEER PIPES. Richard M. C. Breen, Jersey City, N. J., assignor of three-fourths his right to Jacob Kohlberg and T. H. Walsh, New York city, and J. P. Culver, Jersey City, N. J. [Filed Nov. 27, 1875.]

171,846.



The described improvement in the art of making tubes or pipes, consisting in applying the liquid asphaltum to the blank or form at the point of contact between the form and the mandrel while the former is being wound upon the mandrel.

171,847. MACHINES AND PROCESSES FOR MAKING VENEER PIPES. Richard M. C. Breen, Jersey City, N. J., assignor of three-fourths his right to Jacob Kohlberg and T. H. Walsh, New York city, and J. P. Culver, Jersey City, N. J. [Filed Nov. 27, 1875.]



1. The combination, with a mandrel, I, of an endless belt, D, nearly surrounding said mandrel, substantially as and for the purpose set forth.

2. In combination with a mandrel, I, the endless belt D, nearly surrounding the said mandrel and passing over bearing-rollers E, and a guide or guide-roller, C, substantially as specified.

3. In combination with the spaced bearing-rollers E, and a guide roller or rollers, C, the detached mandrel I, and the single endless belt D passing over the said rollers and nearly inclosing the said mandrel, substantially as specified.

4. In combination with a mandrel, I, bearing-rollers E, a guide roller or rollers, C, and an endless belt, D, the automatically-adjustable tension-roller R, for taking up automatically the slack of the belt and allowing the blank to be wound about the mandrel, and at the same time continuing an equal pressure, substantially as specified.

5. In combination with a mandrel, I, the detachable textile covering *s* adapted to be wound around the said mandrel, substantially as specified.

6. In combination with the detached antifrictional mandrel I, the lateral guides F, for holding the same against endwise displacement, substantially as specified.

7. In a machine for forming veneer and asphalt pipe, the combination, with the operating-bolt D, of a scraper-bar, K, substantially as specified.

8. The combination, with the bolt D, operating the forming and bearing rollers, of a pipe-forming machine, the water-pan H, and sponge material I, placed beneath the said bolt for wetting it, substantially as specified.

9. In combination with rollers B C, a mandrel, I, and a loosely-applied belt, D, the tension-roller E, having its bearings in slotted guides F, substantially as specified.

10. In combination with a mandrel, I, for rolling veneer and asphalt pipe, the flame-jets *f f*, substantially as specified, and for the purpose set forth.

11. The process herein described of constructing pipe, by winding, by means of a damp endless belt, a blank around a mandrel, first covered with a wet textile band, to prevent adhesion, and drying the surface of said blank, and heating the asphalt covering by jets of flame, substantially as set forth.

171,845. CARRIAGE-WHEELS. E. Brown, Greenville, Pa. [Filed Oct. 26, 1875.]

1. In combination with the axle A, threaded at its forward end, the open-ended ferrule B, provided with an interior screw-thread, the ferrule extending beyond the end of the axle to form an oil-receptacle, and being adjustably secured to the axle, substantially as and for the purpose set forth.

171,846.



2. In combination with the ferrule B, secured to the axle, the box D, open at both ends, and adapted to receive screw-nuts O P, to secure the box in place upon the ferrule and afford access to the oil-receptacle, substantially as hereinbefore set forth.

3. The box D, provided with the screw-threads A, in combination with two screw-ring flanges, P I, screwed up against the spokes from opposite directions, substantially as and for the purposes set forth.

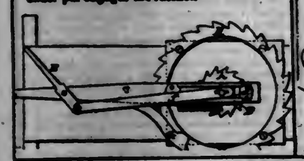
4. The ferrule B, constructed with a receptacle, B B', in combination with the disk-nut F, having a central screw-plug, G, substantially as and for the purposes set forth.

5. In combination with the ferrule B, having its rear end formed, as described, with an annular bridge, *d*, the nut C, constructed, as described, with its flanged forward end, to prevent the passage of oil and dirt, as hereinbefore set forth.

6. In combination with the ferrule and nut C, constructed as described, the spool-groove *a b* on the spindle or axle A, as and for the purposes hereinbefore set forth.

171,849. COTTON AND OTHER PRESSES. H. E. Barnard, Poughkeepsie, N. Y. [Filed Nov. 16, 1875.]

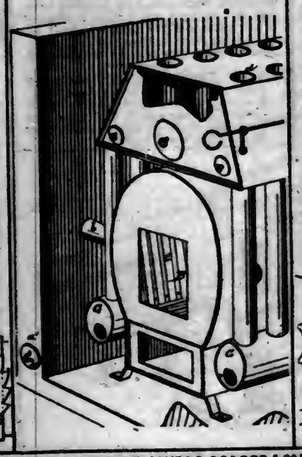
Brief.—On the top of a vertical winding-drum is a circular ratchet, outside of which, and concentric therewith, is another, operated by a pawl on the sweep, which latter lies on both, and has a slot in its end, through which passes loosely the drum-shaft. A connecting-rod connected to the chain, and to a hand-lever pivoted on the sweep, adapts the latter to be locked to the ratchet by sliding it endwise under pin engages the ratchet.



1. The combination, with the spring-casted abutting contact-arms C and the insulated plate F, of the sections of wire B, connecting alternately the arms upon opposite sides of the trunk, and the insulated plates G G' electrically connected with the opposite poles of the instrument upon the car, substantially as described.

2. The combination of the spring E, the insulated bent arms C, and the insulated metallic plate F, as and for the purpose described.

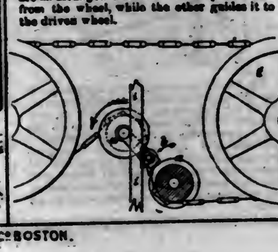
171,851. HOT-AIR FURNACES. Chas. Clark, Minneapolis, Minn. [Filed Oct. 22, 1875.]



1. In a hot-air furnace, the fire-box B, provided with the horizontal semi-cylindrical perforated air-chambers *c c*, in combination with the grate-lining C and air-pipes *b b*, substantially as and for the purposes set forth.

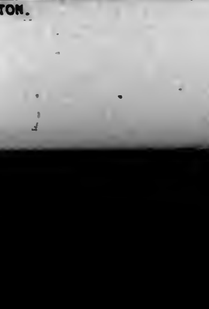
2. The fire-box B, provided with the semi-cylindrical perforated air-chambers *c c*, grate-lining C, and air-pipes *b b*, in combination with the radiator D, provided with vertical flues *d d*, the diaphragm E, provided with the damper *e*, and the flues *f f*, horizontal drums G, and tubes H H, all constructed to operate substantially as and for the purposes set forth.

171,852. SHAVE-FRAMES. Henry Converse, Sandusky, Ohio. [Filed Aug. 28, 1875.]



As a new article of manufacture, the shirt-band front consisting, essentially, of the bosom A and neck-band B, made to fit the breast and neck of the wearer, and permanently connected together, said front being otherwise constructed and arranged to be combined, incorporated with and form part of a complete shirt, substantially as described and shown, and for the purpose specified.

171,853. WRENCH-NUTS. James Conway, Baltimore, Md. [Filed Dec. 8, 1875.]



1. The wrench-nut having the external configuration of a nut, and formed with an oblong tapering opening, one or both sides of which are serrated or equivalently formed, substantially as set forth.

2. The combination, with the wrench-nut, of soft-metal washers or projections, applied to the faces of the nut, substantially as and for the purposes set forth.

171,854. BELT-TIGHTENERS. Orville Cooley, Brockport, N. Y., assignor to the Johnston Harvester Company, same place. [Filed Mar. 29, 1875.]

Brief.—The lower part of the belt runs between two connected rollers actuated by a spring, one of which passes downward; the other passes upward upon it. The two rollers are so arranged that one will strip the chain from the wheel, while the other guides it to the driven wheel.

1. The combination of two connected and pivoted pulleys, with a belt or chain passing between them and pressed in opposite directions by them, and a spring for applying the pressure to said pulleys, in the manner herein shown, for the purposes specified.

2. The combination of two connected and pivoted pulleys, with a belt or chain passing between them and pressed in opposite directions by them, and an adjustable spring for applying the pressure to said pulleys, substantially as described, for the purposes set forth.

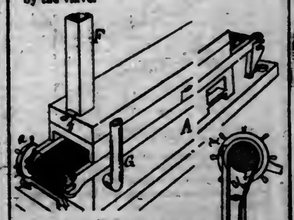
3. The combination of the support *a b*, the forked arm *b b'*, and the pulleys *c c*, with the torsional spring *d*, in the manner and for the purposes substantially as shown and described.

4. The notched ring *e*, combined with the support *c b*, the spring *d*, and the pulleys *a c*, mounted on the arm *b b'*, substantially as described, for the purposes specified.

5. The combination of a pulley, *c*, arranged to strip the chain from the driving-wheel, a second pulley, *c*, arranged to raise the chain and guide it to the driven wheel, with a chain passing between the pulleys, and a spring, or its equivalent, for applying the pressure and taking up the slack of the chain, substantially as and for the purposes set forth.

171,855. DRYER. Isaac H. Cottrell, Bridgeville, Del. [Filed Aug. 7, 1875.]

Brief.—The supply of cold air is regulated by the valve.



1. The furnace A, covered with cone or its equivalent, bed B, covers C D E, E being provided with the vapor-chimney F and valve *f*, substantially as described, and for the purposes set forth.

2. The valve *g*, in combination with the drums *a a* and the endless apron.

171,856. HEAD-BLOCKS. Henry C. Cushman and George T. Cockburn, Logansport, Ind. [Filed Sept. 25, 1875.]



1. The head-rest fastenings, consisting of the hooks E E', straps *h h*, and buckle K, or equivalent fastening, constructed and designed to operate as specified.

2. The upper hook E, having the sleeve or bearing D, and spring-pin *a* for the guide-arm and adjustment of the rest-bar, substantially as specified.

3. The adjustable socket L, adapted to be secured to the strap for the reception of the foot of the rest-bar, substantially as specified.

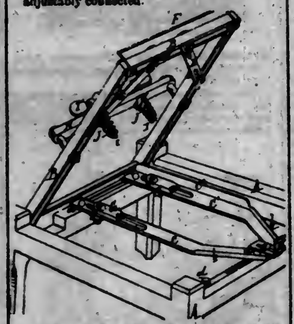
171,857. PROCESSES FOR PREPARING VEGETABLE FIBER FOR UPHOLSTERING. James S. Cutter, Brooklyn, N. Y., assignor to J. M. Davis, Plainfield, N. J. [Filed Sept. 2, 1875.]



As an improvement in the preparation of palmetto or other vegetable fiber, for the purposes set forth, the process herein described, consisting of the dampening of the fiber, the passage of it in this condition through a stripping or picking machine, and, finally its passage through heated or cold fluted rollers, substantially in the manner and for the purpose specified.

171,858. MACHINES FOR TRIMMING AND PUNCHING ROOFING-SLATES. E. R. Davis, Detroit, Mich. [Filed Oct 19, 1875.]

Brief.—The main frame carries a hinged frame, to which the punches and cutters are adjustably connected.



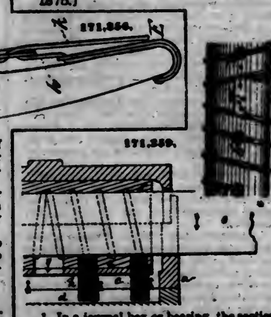
1. In a machine for cutting and punching roofing-slates the combination of the adjustable cutters and punches secured to a single hinged frame, substantially as described and shown.

2. In a machine for cutting and punching roofing-slates the combination of the frame A, carrying adjustable bearers and punch-holes, with the hinged frame B, carrying adjustable cutters and punches, and adapted to be operated by hand, in the manner substantially as described and shown.

3. In a machine for cutting and punching roofing-slates the combination of the frame A, carrying the adjustable bearers C C', adjustable guide D, and adjustable anvils G of the hinged frame B, carrying the adjustable cutters E, adjustable punches I, springs J, and handle F, all substantially as described and shown.

171,859. BEARINGS FOR JOURNALS. George Draper, Hopedale, Mass. [Filed Oct. 23, 1875.]

171,860.



1. In a journal box or bearing, the sections *e f*, provided with oil-supplying and delivery openings, and with groove or spiral passages adapted to carry the oil from the supplying-openings toward the center of the bearing and to the delivery-opening, and with diagonal grooves, substantially as described.

2. In a journal-bearing, the grooves *j k* and intersecting diagonal grooves *x*, to carry the oil from the ends of the bearing into the grooves *j k*, substantially as described.

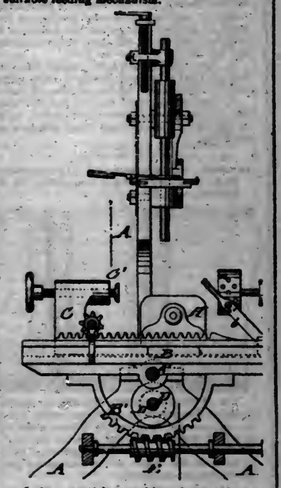
3. The combination, with a bearing, of friction to conduct oil or other lubricant to the inner side of the bearing, substantially as described.

4. The combination, with the bearing, grooved sections, and oil-chamber, of the tubes and bristles connecting the grooves and oil-chamber, and adapted to conduct oil to the grooves, substantially as described.

5. In a journal-bearing, the sections *e f*, provided with spiral grooves intersecting at *n*, and with an outlet, I, and an enlarged space, *m*, to allow the oil carried to the center of the bearing to pass to the oil-chamber, substantially as described.

171,860. MORTISING-MACHINES. Simeon Duck, Victoria, British Columbia, assignor to himself and Joshua Davies, same place. Filed Sept. 4, 1875.]

Brief.—Square and angular mortises, of any desired inclination, can be cut by means of a tilting and movable bed, adjustable on a rock-shaft in longitudinal direction by a segmental cog cylinder and worm-shaft, and adjustable laterally by a screw shaft arranged below and transverse to the worm-shaft, and provided with a spool that engages with an interior projection on the bottom of the bed, and a vertically-operating tool, in connection with suitable feeding mechanism.



1. In a mortising-machine, the combination of a tilting bed-frame, having segmental cog-cylinder, with a worm-shaft for adjusting the bed in longitudinal direction to any inclination, substantially in the manner and for the purpose set forth.

2. The combination, in a mortising-machine, of the tilting and laterally-movable bed-frame or table B, longitudinally-adjustable frame C, fixed shaft A', screw-shaft D, collar D', cog-cylinder B', and worm-shaft E, as and for the purpose set forth.

171,861. SNAP-HOOKS. Chas. Dudley, New Haven, Conn., assignor to O. B. North & Co., same place. [Filed Nov. 23, 1875.]

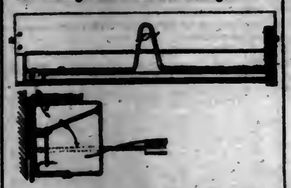


1. The combination, in a snap-hook, of the two parts D E, pivoted together, one forming a hook, the other an opposing surface, the one inclined inward upon its outer surface toward the other; one of the parts constructed with a loop or other means of attachment, and combined with a spring operating to close the two parts together, substantially as described.

2. In a snap-hook, the two sides O D, forming the U-shaped mouth, one of the sides open in the plane of the body, combined with a second part pivoted to the first within the said open side, and so as to lie against the other as the opposing surface, the said second part curved inward toward the pivot to form a hook shape, substantially as described.

171,865. FLY-TRAPS. T. C. Dunn, Fremont City, Iowa. [Filed Nov. 12, 1875.]

Brief.—An implement for catching flies resting on ceilings and walls, having a sliding spring-door, which is held open by an elbow-lever coming in contact with the wall, over which the brush is swept, dislodging the flies, and causing them to fall into the cage.

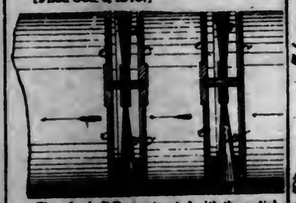


1. A fly-trap made of a box or receptacle, pivoted to the arms of a handle, and partially open at the top, in connection with a swinging and spring-acted lid, placed below the level of the top, and provided with an inclined lever for opening or closing the box as the lever comes in contact with the ceiling or is detached therefrom, substantially in the manner and for the purpose set forth.

2. The swinging and spring-acted lid, having inclined lever and brush at front edge, substantially as and for the purpose set forth.

3. The flanged front edge of the box having corner recess, in combination with a lip of the lid, for readily emptying the box, as specified.

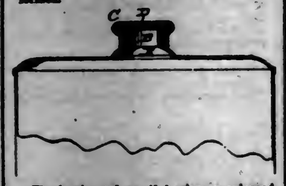
171,866. CONDENSERS FOR ILLUMINATING-GAS. George W. Ridge, Jersey City, N. J. [Filed Oct. 4, 1875.]



The wheels B B, constructed with the radial spiral vanes, and arranged transversely within, and completely spanning the diameter of, the pipe leading from the retort to the purifiers, as shown and described, to admit of their rotation by the force of the current of gas, as shown and described.

171,867. POWDER-CANS. Fredrick Rowe, Bridgeport, Conn., assignor to P. A. Oliver, Williamsburg, Pa. [Filed Oct. 9, 1875.]

Brief.—The screw-cap is constructed of a sheet-metal shell, formed to retain a soft-metal lining, in which the screw-thread is formed.



The hard-metal cap C, having an enlarged head, and provided with a soft-metal lining, D, having interior screw-threads cut therein, in combination with the neck B of the can, having exterior screw-threads, substantially as and for the purpose herein set forth.

171,868. SPOOL-HOLDERS. Jas. J. Elliott, Renovo, Pa. [Filed June 10, 1875.]

1. In a spool-holder, the hollow spindle G, constructed substantially as and for the purpose described.

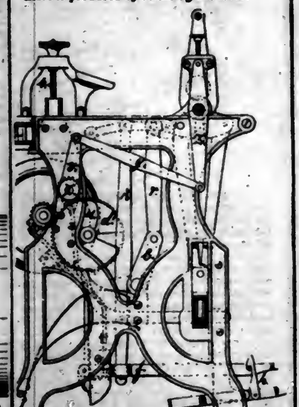
2. The bobbin-holders K L N, when constructed and arranged substantially as set forth.

2. The combination of the needle-holder E, spool-holders G and I, and shuttle-bobbin holders K L N, substantially as set forth.

4. In combination with a spool-holder, the tension-guide O, constructed and arranged to operate substantially as herein shown and described.

171,869. BOOK-BACKING MACHINES. John B. Coffin, Mystic River, Conn. [Filed Sept. 8, 1875.]

Brief.—Depressing the foot-lever clamps the book, brings the roller down upon it, and sets the machine in motion, while the reverse effect is produced by releasing the lever.



1. The combination of the driving-wheel, the pinion, and the book holding jaws with a foot-lever and intermediate mechanism, substantially as described, whereby the machine is started and the jaws closed by one movement of the lever, and the reverse effect produced by its return movement, as set forth.

2. The combination, with the roller *p*, mounted in a hinged frame for inducing downward pressure, of the crank *u*, rod *y*, and arm *z*, substantially as described, whereby the roller is oscillated while pressed downward on the back of the book, as set forth.

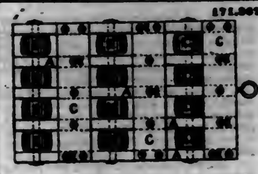
3. The combination, with the revolving cam *a*, of the arm *i*, crank *s*, and bar *r*, connected with the cheek-piece *g*, constructed to operate so as to press the roller *p* against the book-back, substantially as and for the purpose described.

4. The combination, with the shifting-rod *c'*, of the segmental rib secured to the gear *d'*, and the clutch *b'*, arranged to operate together substantially as and for the purpose described.

5. In combination with the adjustable jaws *e* and *n*, the oscillating roller-frame secured to the cheek-pieces *g g*, and the automatic mechanism, substantially as described, by which the roller is pressed against the back of the book, as and for the purpose set forth.

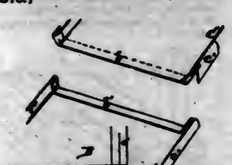
6. In a book-backing machine driven by power, the combination of the following elements: a foot-lever, by which the jaws are forced together, and the machine is set in motion; a cam, operating a combination of levers, by which the roller is forced against the back of the book held in the jaws automatically; and a rotating crank with intermediate mechanism, by which oscillating motion is imparted to the roller-frame, the whole operating together substantially as and for the purpose specified.

171,870. TRUCKS. Wm. A. Bates, Chino, Me. [Filed May 3, 1875.]



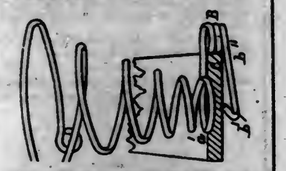
The series of parallel bars A, cross bars or pieces C, in combination with the anti-friction wheels L L' L'' L''', the two central series being on a line with each other, furnishing a steady bearing for the device when in a level position, and the two outer series being on a line above the central series, whereby a support for the ends of the device is furnished, and whereby there are two series of wheels on the ground all the time, all constructed and arranged as and for the purpose specified.

171,872. SHEET-METAL ROOFS. Chas. W. Evans, Cincinnati, Ohio. [Filed Nov. 17, 1875.]



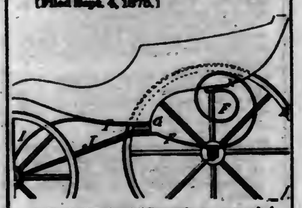
In a sheet-metal roof, the sheets B, having folds *b b'*, ridges C C', and ridge-lap *c'*, when formed from a sheet having notches *c''*, substantially as described, and for the purpose specified.

171,873. FURNITURE-SPRINGS. John Filan, Philadelphia, Pa. [Filed Oct. 11, 1875.]



The coiled-wire spring, having the tangential extension of the wire of the bottom coil *a'*, the horizontal coils B, the clamping-bar *b''*, and the hooked end *b'*, the said parts being constructed and arranged in relation to each other, substantially as and for the purpose described.

171,874. CHILDREN'S CARRIAGES. Thomas Gelt and James Hazlehirst, Rock Island, Ill. [Filed Sept. 4, 1875.]



1. The body of a child's carriage, suspended on cross-bars between springs F F, and balanced over the rear axle, as shown and described, so that a slight pressure will tip it either forward or backward, and thus enable the vehicle to be easily operated by a child.

2. In a child's carriage, the double reach J J, with forward ends attached to front axle, and the rear crossed ends fastened to crossbar G, as shown and described.

171,871. COKE OVENS. Emil S. Gobiet, Mahrisch Ostrau, Austria. [Filed Nov. 27, 1875.]

Brief.—The products of the combustion of the coke pass from the upper part of each oven through a horizontal series of flues into two similar sets of flues on the further side of the oven from the chimney. Each of these flues begins at the center of the ends, goes to the end, returns below to the middle, joins two horizontal flues leading to a bottom flue, which leads from center to end of oven, and returns to center. Thence the products pass through two horizontal flues to the side of the oven nearer the stack, up it (as on the other side they descended) into a vertical flue at the center of the ends, and finally into the main oven and flue, connecting with the chimney.

The improved corner-clamp A, made with corrugated wings *a a*, and with a flat and plain corner that will rest flush against the body of the trunk, substantially as specified.

171,875. SAW-SETS. Geo. N. Gere, Fond du Lac, Wis. [Filed Nov. 8, 1875.]

Brief.—The body of the teeth rests upon the inclined face of the anvil, while the point of the same rests upon, and projects slightly over, the sloping surface. The anvil at the point is cut away, so that when the hammer (the face of which is inclined to correspond with said surface) is brought down, the extreme end of the teeth will be bent into space, and all danger of its being swaged or flattened avoided.



1. The combination of side fines *b b' d d''* and bottom fines *f f'*, the fines *a*, with ends other and with an oven A, substantially as shown and described.

2. The combination of a series of ovens A, with side fines *b b' d d'*, bottom fines *f f'*, ascending fines *e*, the fines *a*, and a common main flue, *p*, substantially as set forth.

3. The combination of air-channels *r r* with the side fines *b b' d d'*, the fines *a*, and with an oven A, said channels serving to admit the requisite quantity of oxygen to support combustion, substantially as described.

171,876. SAFETY ATTACHMENTS FOR FOCE-ENTS. Daniel Goldy, Philadelphia, Pa., assignor of one-half his right to J. M. Goldy, same place. [Filed Nov. 22, 1875.]



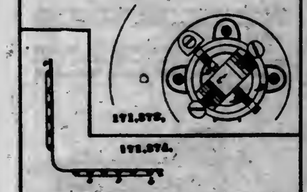
The within-described retaining device, consisting of the casing B, having one side open. In combination with the hook D, carrying a stud, *a*, and arranged to slide over the opening in said casing, as set forth.

171,878. BALANCING MILLSTONES. William Gombora, Waterloo, Pa. [Filed Apr. 24, 1875.]

Brief.—A millstone having bad adjustable by means of screws within eye of stone, and provided with band-sections or weights, arranged within the eye of the stone, and adjustable from the outside.

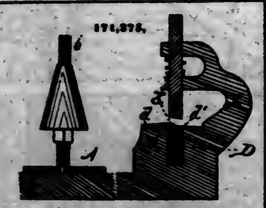
1. The adjustable bail C, having eookeye or point of suspension, and arranged within tube B, all within the eye of stone, as and for the purpose described.

2. The band-sections G made vertically adjustable from the outside, and arranged in the stone's eye about the tube B, as and for the purpose specified.



171,878. CORNER-CLAMPS FOR TRUNKS. William B. Gould, Montrose, N. J. [Filed July 17, 1875.]

171,875.

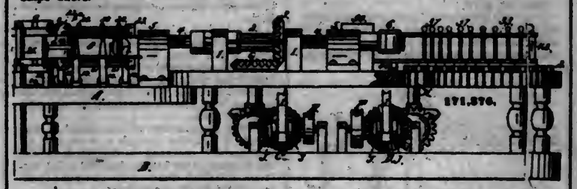


1. In a saw-set, substantially as herein described, the anvil D D' of otherwise ordinary construction, having on its top surface the rabbet or offset and the short bevel *d''*, substantially as and for the purpose set forth.

2. The combination of the hammer F, anvil D, formed with the beveled surfaces *d d' d''*, slide A, cone C, screw *b'*, substantially as herein shown and described.

171,876. MACHINES FOR BENDING WOOD. John W. Griffiths, Brooklyn, N. Y., assignor to H. M. Griffiths, H. E. Griffiths, O. F. Griffiths, Mary Susan Griffiths, and Buster Griffiths. [Filed Oct. 19, 1875.]

Brief.—The machine is designed for bending ship-timber and other large pieces of wood, and has a special attachment for bending ships' knees.



171,876.

1. In combination with the hinged cap 33 and removable bolts 37, the holders or clamps 35, the set-screws 41 and 42, and boy 36, as and for the purposes described.

2. The compressor 43, mounted upon centers 44, and constructed with friction-rollers 45 at the back, as and for the purposes described.

3. In combination with the compressor 43, with friction-rollers 45, the bulk-head 30, with treat 29, for bearing for the compressor, as described.

4. The hydraulic press 45 in the end of compressors 43, as and for the purposes described.

5. In combination with the compressors 43, the removable straps 46 and bolts 47, for securing the timber in place in the compressor, as described.

6. The combination, in a wood-bending machine, of revolving table 29, removable adjustable clamps 35, and compressor 43, as and for the purposes described.

7. The combination with the clamps or holders 33 and compressor 43, the straps b, placed outside of the timber, being bent within the clamps, and constructed to hold the timber while moving around the form, and to prevent breaking the outside surface thereof, as described.

8. In a timber-bending machine, the hollow curved fixed thrust-form 7, adjusted in the end of plunger 4, and constructed with a removable top and stationary bottom flanges, substantially as and for the purposes described.

9. The combination, in a timber-bending machine, or driving machinery C H, and 2, plunger 4, thrust-form 7, and roller 6, as and for the purposes described.

10. The knee compressors 9 9, mounted upon centers 10, and constructed of a long straight-faced trough, with lower projecting flange 15, as and for the purposes described.

11. In combination with the compressors 9 9 the sliding bars 19 and removable bolts 20, as and for the purposes described.

12. In combination with the compressors 9 9, the hydraulic pumps 17 17, situated in the head of each compressor, and adapted to operate against the timber contained therein, as described.

13. In combination with the compressors 9 9, the ribs 11 11, uniting the compressors at their inner ends, as and for the purpose described.

14. The central rib 12, with roller 13, working in a guide, 14, on the platform A, as and for the purposes described.

15. The cables 21 21, attached at top and bottom at each end to heads of compressors 9 9, passing through heads 11 11 at the inner ends thereof, and through top and bottom of ribs 11 11, uniting the whole together, as described.

16. The knee timber holding, bending, or forming devices or apparatus, consisting of compressors 9 9, mounted upon centers 10, ribs 11, central roller-rib 12, guide or way 14, hydraulic pumps 17 17, cables 21 21, and covering-bolts 20, all constructed and arranged as and for the purposes described.

17. The combination of knee-timber-holding devices, consisting of compressors 9 9, ribs 11 11, straps 18 19, and bolts 20, and thrust-form 7, as and for the purposes described.

18. The back brace or support for the compressors, composed of triangle-frame of four vertical rear shafts, 25 25, and short front shafts 26, resting upon the platform A and quadrants 24, mounted thereon, as and for the purposes described.

19. In combination with the frame or brace 25 26, the turn-buckles 27 and collars 28, uniting the parts, and for adjusting the angle of the quadrant, as described.

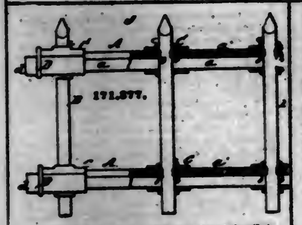
20. The double straps b, placed on opposite sides of the timber, studs 31, and links 32, for securing the straps in place when making compound bends, as described.

21. The combination, in a machine for bending timber, of knee bending and forming devices, consisting of compressors 9 9 and thrust-form 4, 7, and curved timber-bending mechanism, consisting of revolving table 29 30, clamps 35, and compressor 43, or their equivalents, each separate and distinct, but acting in connection, one with the other, as and for the purposes described.

22. The improved machine for bending timber, composed of the parts and constructed and arranged to operate substantially as and for the purposes herein set forth and shown.

171,877. INGOT FINGERS. Francis O. Hanson, Philadelphia, Pa. [Filed Nov. 6, 1875.]

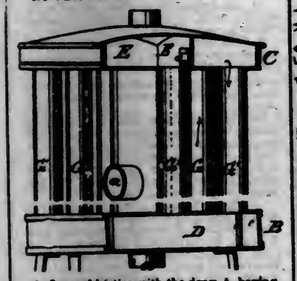




1. The combination of the horizontal rail A, made in long and short sections a and a', the notched vertical bars B, and the bands or loops holding the sections of said rail together, substantially as shown and described.

2. The fence-panel consisting of the sectional horizontal rails A, the vertical bars B B, loops or bands C, plates D, and nuts d d, the several parts being combined substantially as shown and described.

171,878. HEATING-DRUMS. John J. Hornbrook, Columbus Grove, Ohio. [Filed Nov. 20, 1875.]

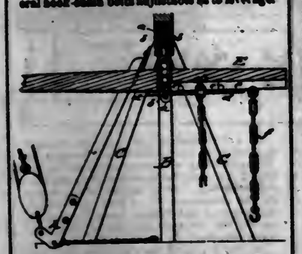


1. In combination with the drum A, having a damper, b, and opening c, the base B and cap C, having V-shaped partitions and damper-slides e in them, and communicating with each other by means of pipes G G' G², substantially as and for the purposes described.

2. The vertical V-shaped plates D E, arranged in reversed order in the base B and cap C, in combination with the vertical pipes G G' G², operating substantially as described.

171,879. STUMP-EXTRACTORS. J. A. Hart and Wm. A. Grove, Tionesta, Pa. [Filed Nov. 13, 1875.]

Brief.—A lever hung from a cross-beam supported on a portable frame has power-tackle attached to one end, and to the other two lateral hook-chain bolts adjustable as to leverage.



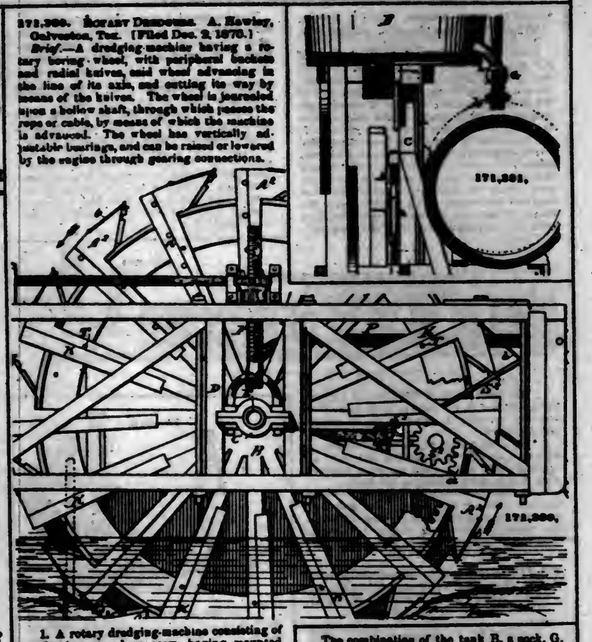
1. The combination of lever E, having slot e', the beam-connection, having link a passed through it, cross-pin b', and the cross-grooved plates d d, as and for the purpose set forth.

2. The combination of the pivoted V-braces, having chains at their lower ends, with the frame-connecting stiffening-chains, and the coupling double block, for connecting and disconnecting the braces as required, substantially as shown and described.

3. The combination of plates d d, detachable cross-pin e', and chain f, with a lifting-lever having the cross-holes b', as and for the purpose specified.

171,880. ROTARY DREDGING. A. Hawley, Galveston, Tex. [Filed Dec. 2, 1875.]

Brief.—A dredging-machine having a rotary boring-wheel, with peripheral buckets and radial knives, said wheel advancing in the line of its axis, and cutting its way by means of the knives. The wheel is journaled upon a hollow shaft, through which passes the rope or cable, by means of which the machine is advanced. The wheel has vertically adjustable bearings, and can be raised or lowered by the engine through gearing connections.



1. A rotary dredging-machine consisting of a floating vessel or scow, having mounted thereon a boring-wheel, provided with peripheral buckets and radial knives, said wheel jointed by an engine on board of the machine, boring in line of its axis by means of said knives as the machine is advanced by its motive power, all arranged and operating substantially in the manner herein before described, for the purposes set forth.

2. The combination of the pendent bearing C C with the adjusting-screws F F and shafting and gearing *e e e*, substantially in the manner herein before described, for the purposes set forth.

3. The hollow shaft E, forming the journals of the boring-wheel B, whereby said shaft is made to form a convenient warping-sheave or hawse-pipe, for the purposes herein before set forth.

4. A boring-wheel provided with radial knives, the said knives being attached to the arms of the wheel, and extending from the outward extremity of said arms to or near the hub of the wheel, for the purpose of cutting in the line of the axis of the wheel, in the manner herein before described, for the purposes set forth.

5. The combination of the wheel B and knives K with the buckets or scoops A², all arranged and operating as described, so that the contents of the knives shall fall to the bottom of the ditch and be elevated by the buckets, substantially as set forth.

6. The combination of the discharge-pipe P with the buckets A² and trough O, substantially in the manner herein before described, for the purposes set forth.

171,881. DEVICES FOR FILLING AND DISCHARGING LIQUID-PACKAGES. James M. Hopkins, Louisville, Ky. [Filed Sept. 10, 1875.]

Brief.—A lever is pivoted to the main frame, the inner end of which is connected by a link with the L-shaped frame. The outer end of the lever is held at any point desired by a ratchet plate or bar. The barrel or other package, being placed upon the horizontal part of the frame under the filling-cock, can, by this means, be raised and firmly held to it. A vent is made through the cock, communicating with a passage in the cut-off plug when the cock is open, and with a pipe reaching as high as the source from which the barrel is being filled, thus preventing loss by neglect or accident.

The combination of the tank B, a cock, C, provided with a vent, a, that reaches up to or above the highest level of the liquid in the tank, and an elevating-platform to raise the vessel to the cock, substantially as shown.

171,882. LIQUID-MEASURES. Jas. M. Hopkins, Louisville, Ky. [Filed Nov. 18, 1875.]



1. A measure having a cock for the inlet of liquids, that is provided with a passage for the outflow of displaced air, and a faucet for the outflow of liquid, that is provided with a passage, through which the air displaced from the cask into which the liquid flows from the measure is conducted to a pipe that communicates with the interior of the measure, as shown and described.

2. In a device for measuring liquids, the combination of the measure a, cock A, and faucet b with the gage and vent tubes d f, which enter the top of the measure, substantially as set forth.

171,883. CHUCKS FOR METAL-DRILLS. Theo. Hoppe, Lawrence, Mass. [Filed Nov. 29, 1875.]

Brief.—The flange serves to hold the jaws and prevent them from being moved in the direction of their length independently of the outer casing.



The outer casing B, with its flange f, in combination with the dovetail jaws d, provided with slots e, and fitting into inclined dovetail grooves in the spindle A, all constructed and arranged to operate substantially in the manner and for the purpose set forth.

171,884. VARNISHES. John L. Jenkins and Augustus W. Richards, Silver Run, Ala. [Filed Nov. 6, 1875.]

Brief.—When the other ingredients are mixed, the nitric acid and antimonial wine are added.

A varnish composed of copal varnish, coach varnish, japan varnish, dammar varnish, boiled oil, turpentine, gum-shellac, alcohol, litharge, nitric acid, and antimonial wine, substantially as set forth.

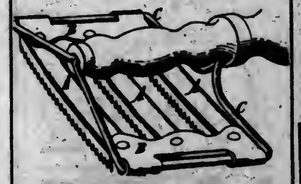
171,885. CURTAIN-FIXTURES. B. M. Judd, Brooklyn, N. Y. [Filed Aug. 21, 1875.]



A bracket composed of two parts, one of which is rigid and the other movable, the movable part being pivoted at c, and made to clamp the roller up against the rigid part by the spring f, substantially as shown and described.

171,886. CURRY-COMBS. Wm. P. Kellogg and John W. Trussell, Troy, N. Y. [Filed Nov. 16, 1875.]

Brief.—A raised wooden handle passes over the back of the comb, and is attached to the comb by wires, so as to form two griping-handles—one over the comb, the other at the side.

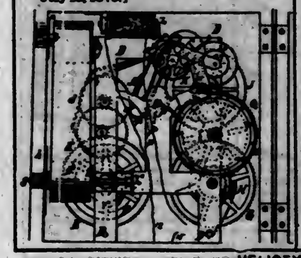


1. A curry-comb constructed with a continuous handle, D, placed at right angles to the bars above the back, and extended beyond the bars, so as to afford a double grasp, by which it may be raised immediately above the back, and also at the side, substantially as set forth.

2. In combination with the bars, a continuous handle, D, extending entirely across the back and to one side, so as to afford a double grasp, and a brace connecting the bars with the middle of the handle, in such manner as to perform the double function of a brace and a thumb-piece under the handle, substantially as set forth.

3. In combination with the bars and the elongated handle D, affording a double grasp, the shank-wires C C, extended to form also a brace attached to the middle of the handle, substantially as set forth.

171,887. ELECTRICAL STATION-INDICATORS. Jas. F. Estcott, Worcester, Mass. [Filed July 13, 1875.]

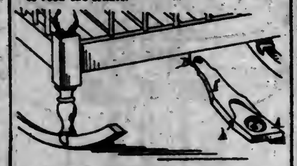


1. The combination of the electro magnet L and battery M with the axle of a car or other public conveyance, and with the release mechanism of a self-winding curtain of a station indicator, constructed substantially as and for the purpose set forth.

2. In combination with the release mechanism of a self-winding curtain, operating as a station-indicator, the dial-plate V, with its two graduated series, and the index-fingers U and X, substantially as and for the purpose set forth.

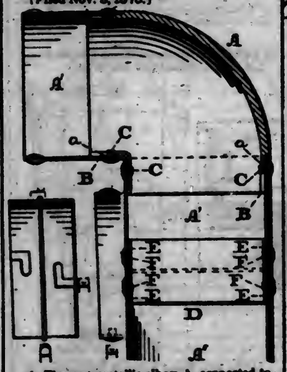
171,888. CRADLE-TREADLES. J. A. Kirchner, Chicago, Ill. [Filed Aug. 1, 1873.]

Brief.—The recessed part of the treadle is held by the heel of the nurse or attendant, while the hinged part is operated by the toe to rock the cradle.



The cradle-treadle described, consisting of the part A, provided with recess a, the part A', and strap B, in combination with a cradle, constructed and arranged substantially as described and shown.

171,889. STOVE-PIPE JOINTS. Daniel H. Klotz, Philadelphia, Pa., assignor of one-half his right to B. F. Dubois, same place. [Filed Nov. 3, 1875.]



1. The cast metallic elbow A, connected to the lengths of pipe by locking-joints, consisting of slots and engaging-studs, substantially as and for the purpose set forth.

2. The elbow A and pipe A', in combination with concealed fastenings, consisting of L-shaped slots B in the elbow, and studs C, projecting inwardly from the inner faces of the pipe, substantially as and for the purpose set forth.

3. The studs C, formed with shoulders a, and projecting inwardly from the pipe, in combination with elbow A, having attaching-slots B, substantially as and for the purpose set forth.

4. The locking-band D, in combination with the lengths of pipe, substantially as and for the purpose set forth.

5. The bead d, in combination with the locking-band D and lengths of pipe, substantially as and for the purpose set forth.

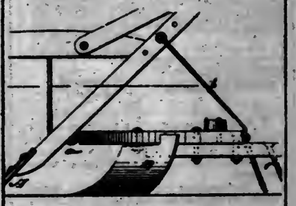
171,890. VALVES FOR STEAM PUMPING-ENGINES. Leonhe J. Knowles, Worcester, Mass. [Filed Oct. 26, 1875.]

1. The combination, with steam chest A, main steam-valve G, and the laterally-projecting cylinders a a, having steam ports l and exhaust-ports 2, of piston C, provided with slots c c, and parts being constructed and arranged substantially as and for the purposes set forth.

2. The combination, in a steam pump in which the main steam-valve is driven by a supplemental steam-operated piston, of an free piston, in combination with a thin cylinder made of brass or other similar sensitive and expanding metal, for the purposes stated.

171,891. HARROW ATTACHMENTS FOR CULTIVATOR-PLOWS. Fredk. D. Ledenberger, Glenbeulah, Wis. [Filed Sept. 17, 1875.]

Brief.—To the rear of an opening or shovel plow are hinged two diverging beams, that are made adjustable by a curved brace-bar. These beams each carry first a share, which throws the soil outward. The rear ends of the beams carry harrow-teeth, which level down the furrow made by the plow.



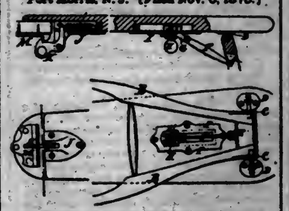
A combined implement, consisting of the shovel or breaking plow A, side plows B, and harrows C, the beams of the plows B and C being rigidly bolted together and made adjustable in width by a curved bar, D, and connected to the breaking-plow A by means of eyebolts a and brace-rods b, all constructed as and for the purpose specified.

171,892. CARBON PHOTOGRAPHS. Claude Leon Lambert, Paris, France. [Filed Jan 4, 1876.]

1. A compound consisting of eleven ounces of water, fifteen grains of sugar, one drop of liquid ammonia, and a few drops of permanganate of potassa, to form a bath in which a negative obtained from a transparent positive may be immersed, and then intensified.

2. The process of obtaining double-tinted prints in salts of chromium and on ordinary albumenized paper, by placing the sensitized paper in a press, the blank for the picture being covered with a black or yellow mask, and the whole being then precipitated by hyposulphite, as described.

171,893. IRONING-TABLES. L. P. Lawrence, Port Morris, N. J. [Filed Nov. 6, 1875.]



1. The combination of the air E, pivoted bar F, sliding block G, clamping screw H, and slotted plate I, with the board A and the hinged frame B, substantially as herein shown and described.

2. The combination of the plate J and the pivoted spring-latch K L, with the end of the board A, and with the flanged plate M, substantially as herein shown and described.

171,894. MANUFACTURED GLASS BUTTONS. Isaac Lehmaier and Gundebaut Lehmann, New York, N. Y. [Filed Dec. 7, 1875.]

171,396.



As an improvement in the manufacture of glass buttons, the formation of the button with a head or collar, *d*, produced by constructing the die in which the plastic glass is placed with a cylindrical receiving space or enlargement, *c*, in its mouth, for the surplus glass under pressure, substantially as shown and described.

171,396. FIRE-PLACES. James S. Lester, Atlanta, Ga. [Filed June 8, 1875.]



1. The combination, in a fire-place heater, of the adjustable deflecting-plate E, having legs *d d*, and the plate G, all constructed substantially as and for the purposes herein set forth.

2. The combination, in a fire-place heater, of the arched heating-chamber C, draft-flue *c*, the adjustable deflecting-plate E, having legs *d*, and the plate G, all constructed substantially as and for the purposes herein set forth.

171,396. TAKE-UP MOTIONS FOR LOOMS. James Lyall, New York, N. Y. [Filed Oct. 20, 1875.]



1. The sectional rollers *i*, provided with transverse needle-points, *r*, and each having a ratchet, *l*, and pawl *o*, in combination with the take-up hand *a* and its rollers *b c*, substantially as set forth.

2. In a take-up mechanism for weaving irregular fabrics, a sectional roller, having transverse needle-points, in combination with ratchet-wheels and holding-pawls applied to the respective sections, substantially as set forth.

171,397. SURFACE-PLANING MACHINE. W. C. Marquedant, Hamilton, Ohio, assignor to Daniel Marquedant & Co. [Filed Nov. 26, 1874.]

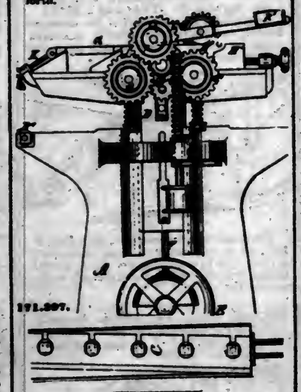
Brief.—The cutter-head, consisting of a triangular tapering shaft, provided with three straight knives of uniform transverse dimensions, having their ends advanced at the smaller end of the shaft to the same circumferential arc described by the higher ends, in vertically adjustable sleeve a lever stationary bed fixed on a given horizontal plane, and between two independently-adjustable beds, and the material can be fed above the cutter by suitable gearing, operated by a worm-screw, corresponding to the full vertical adjustment of the cutter-head, and carried by a shaft in concentric bearings.

1. In a surfacing machine, the combination, with a lower stationary bed or table, A', remaining at a given horizontal plane, of the cutter-head C, adjustable vertically above the table A' and the tables G H, rising and lowering with the cutter-head, and also independently adjustable thereto, as and for the purposes described.

2. A cutter-head, consisting of a triangular tapering shaft, in combination with three straight knives of uniform transverse dimensions, arranged with their ends advanced at the smaller end of the tapering shaft to the the same circumferential arc described by the higher ends, substantially as and for the purpose described.

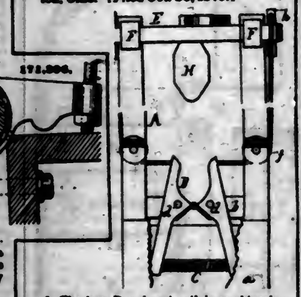
3. A worm-screw, corresponding in length to the full vertical adjustment of the cutter-head, and carried by a shaft in eccentric bearings, as shown and described, to allow worm-screws to be employed or disengaged, as set forth.

171,397.



171,398. BOOT-JACKS. Isaac Massie, Ironton, Ohio. [Filed Oct. 20, 1875.]

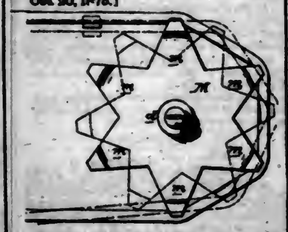
171,398.



1. The jaws B and spring C, in combination with the cords D, axle E, and lever I, substantially as specified.

2. The combination of the tongue H, axle E, lever I, cords D, and jaws B, substantially as stated.

171,399. MECHANICAL MOVEMENTS. Jas. F. McCormick, Philadelphia, Pa. [Filed Oct. 20, 1875.]



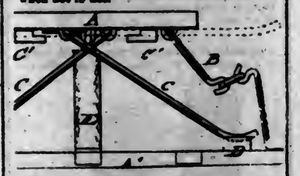
The within-described device, consisting of the revolving wheel M and its arms *m*, the oscillating hand K and the arm G, with its pin E, all being combined and operating substantially as set forth.

171,400. METHODS OF TREATING NATURAL GAS. John H. McElroy and Robt. Young, Pittsburg, Pa. [Filed Nov. 29, 1875.]

The process of preparing illuminating-gas from natural gas, which consists in heating the gas, thus converting the carbonic oxide into carbonic acid, which is afterward eliminated by lime purification, all substantially as set forth.

171,401. WAGON-SPRINGS. A. W. McKown, Shenandoah, Pa. [Filed Sept. 4, 1875.]

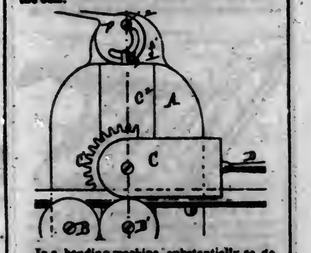
Brief.—Auxiliary springs adapted to be swung up and fastened to the body of vehicle when not in use.



The detachable torsion-springs C, arranged on the inside of outer springs B, as and for the purpose described.

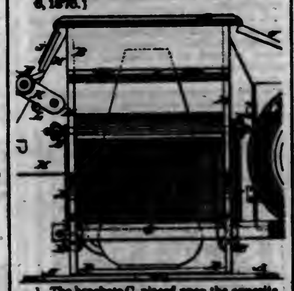
171,402. MACHINES FOR BENDING TUBES, &c. Michael McWilliams, Detroit, Mich., assignor to himself, Joseph McWilliams, and Edward Devine, same place. [Filed Oct. 9, 1875.]

Brief.—The block to which is pivoted the former, and the block carrying the sheave, move in the same groove, and the first mentioned, carrying the former, is forced up by the cam.



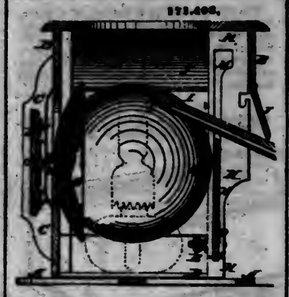
In a bending-machine, substantially as described, the combination of the grooved sheave pivoted to a sliding block, with the grooved former also pivoted to a block sliding in the same ways in the bed-plate, substantially as described.

171,403. SHOT-PROTECTORS. Marmaduke H. Mendenhall, Wabash, Ind. [Filed Nov. 6, 1875.]



1. The hasteners C, placed upon the opposite sides of a hole in the back or door of the shot-protector, the plate D, the head-screws B, and the slotted plate F, in combination with each other and with the said back or door, to support the conveyer reflector G adjustably, substantially as herein shown and described.

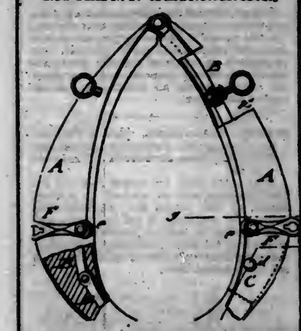
171,404.



2. The pivoted arms E and their stop-pins or screws L, in combination with the flanges H, for supporting the deflector I adjustably, substantially as herein shown and described.

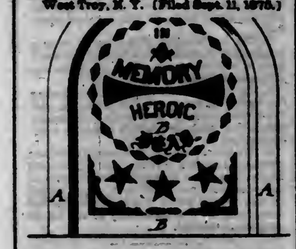
3. The combination of the notched and grooved bar O, made in two parts hinged to each other, the plate N of colored glass, and the head-screws B, with the slots M, formed in the flanges J that support the deflector I, substantially as herein shown and described.

171,405. HORSE-COLLARS. Joachim Meyer, New York, N. Y. [Filed Nov. 10, 1875.]



A horse-collar, stiffened by hinged metallic hames, and made to be closed and opened at the side of the neck, substantially in the manner and for the purpose set forth.

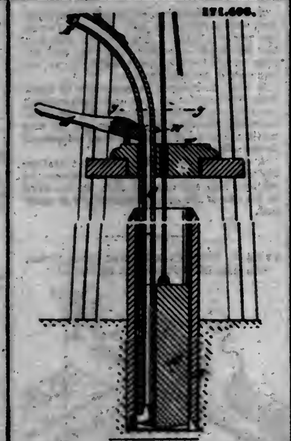
171,406. MOUNTAINTS. Lewis J. Millimen, West Troy, N. Y. [Filed Sept. 11, 1875.]



The combination, with a tomb or other memorial stone, of the plate B of finished glass, having a suitable inscription cut or otherwise engraved thereon, substantially as and for the purpose set forth.

171,407. GAS-METERS. Jos. Morgan, New Orleans, La. [Filed Nov. 20, 1875.]

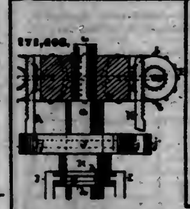
Brief.—A pendulum-stop is suspended in the rear of the case, which, if the meter be "tilted," swings forward and engages lugs projecting from the drum; and stops the meter and the flow of gas.



1. In a wet-meter, the combination, with the revolving drum, of a stop or catch, thrown into action or position by the forward tilting of the meter to positively arrest the rotation of the drum, substantially as set forth.

2. The pendulum stop or bar applied to the meter-case, as described, in combination with the meter wheel or drum, and one or more projections or shoulders on the back of the latter for joint operation, as shown and set forth.

171,408.



171,410.



171,409. TYPE-WHEELS. Geo. H. Morgan, Utchoville, Ohio. [Filed Nov. 2, 1875.]

1. A revolving wheel having a series of type-carriers, each carrying a single letter in different styles of type, and each made adjustable to receive a back-and-forth movement at the will of the operator, substantially as and for the purpose set forth.

2. An adjustable type-carrier, B, on which is formed or otherwise secured, in different styles or sizes of type, a single alphabetical character, sign, or numeral, either on the side or face of its periphery, substantially as and for the purpose set forth.

3. An adjustable type-carrier, B, having a single alphabetical character, sign, or numeral, in different styles or sizes of type, in combination with a revolving wheel, A, substantially as and for the purpose specified.

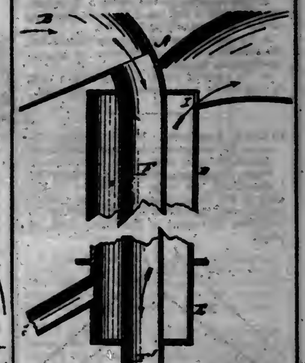
4. A series of adjustable type-carriers, B, each having a different single alphabetical character, sign, or numeral, in different styles or sizes of type, in combination with a revolving wheel, A, substantially as and for the purpose specified.

5. An adjustable type-carrier, B, in combination with a revolving wheel, A, and mechanism, substantially as described, for imparting a back-and-forth movement to the former, for the purposes set forth.

6. A series of adjustable type-carriers, B, in combination with a revolving wheel, A, and mechanism, substantially as described, for adjusting the type-carriers back and forth, substantially as and for the purpose specified.

171,410. VENTILATORS. Alex. L. Meyer, Sherman, Tex. [Filed June 16, 1875.]

Brief.—The funnel or vane has a tail, so that while air is descending for ventilating purposes, vitiated air is rising and passes through the tail to the open air.



The vane A, with flaring mouth and hollow tail, in combination with the cylinder D, and the induction-pipe F and the ejection-pipe G, as and for the purpose set forth.

171,410. BOTTLE-STOPPERS. Thomas W. Murray, New York, N. Y., assignor of one-half his right to Henry Von Derbeck, same place. [Filed Nov. 27, 1875.]

Brief.—In this device a toggle or elbow joint is used in combination with the wire and flange-stopper.

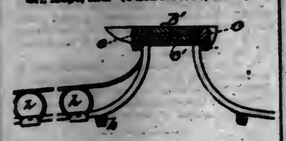
A stopper for bottles operating as herein described, in which a toggle or elbow joint is used, in combination with the wire P and the flange-stopper F, substantially as and for the purpose set forth.

171,411. COOKING APPARATUS. Reuben H. Murray, St. Paul, Minn. [Filed Jan. 27, 1876.]



The combination of the vessel A, having extended ears h h, side attachment H, curved exterior pipe F, openings e g, communicating with the pipes at the lower and upper parts of vessel A, and the tapering vessel E, having perforated false bottom D, leaving the annular steam-space e between the vessels, all constructed substantially as set forth.

171,412. BOOK-BOARDS. Charles Neligh, Sr., Hope, Ind. [Filed Nov. 13, 1875.]



1. In a book-board, the combination of the clasp-boards C C and bolts e e' with spring-stripe A B, recessed into a cent-board, B, substantially as specified.

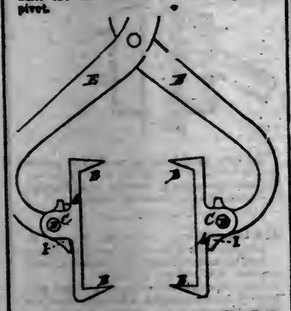
2. The separate curved stripe A B, in combination with a cent-board, B, and a clasping device, substantially as specified.

3. In combination with a spring back-board, the rendering or flexible metallic rail D, substantially as specified.

4. The metallic rail D, having spaced coils h, adapted for use substantially as specified.

171,413. ICE-TONGS. Niels P. Nelson, Chicago, Ill., assignor of one-half his right to Anson S. Piper, Beth Piper, and Thomas Piper, same place. [Filed June 28, 1875.]

Brief.—At the lower extremities of the arms of the ice-tongs are projections extending between the ears of the grapple-plate, to limit the movement of the latter upon its pivot.



The combination, substantially as described, of the arms B, provided with projections I I at their lower ends, and the frame A, provided with spurs B and lugs C, as and for the purposes set forth.

171,414. PEGGING-MACHINES FOR BOOTS AND SHOES. William D. Cornet, Boston, Mass., assignor to himself and Oscar L. Noble. [Filed Nov. 10, 1876.]



1. In a machine for pegging boots and shoes, the combination, substantially as specified, of the rotatable head, with a stationary horn, and a non-rotating pegging-head.

2. The combination, substantially as specified, with a stationary horn and a non-rotating pegging-bead, of the rotatory slide-bar, the lever connected therewith, and the ring which reciprocates vertically in an oblique cut in the said slide-bar.

3. The combination, substantially as specified, with a stationary horn and a non-rotating pegging-head, of the rotatory bevil, the slide-bar seated therein, the lever, and the ring which reciprocates vertically in an oblique cut in the said slide-bar.

4. In a pegging-machine, having a stationary anvil, into which the pegs are driven, the rotatory head moving the shoe on the anvil in the line of the pegs, substantially as specified.

171,415. INDEX CLIP-BOARDS. Thos. Orton, Chicago, Ill. [Filed Aug. 13, 1875.]



1. A series of index-sheets, provided at their inner edge with eyelets, and held to a clip-board by one or more rods passing through the eyelets, in combination with a clip, said clip clasping the sheets in front of the rods, thereby firmly holding the contents of the clip in place, substantially as shown and described.

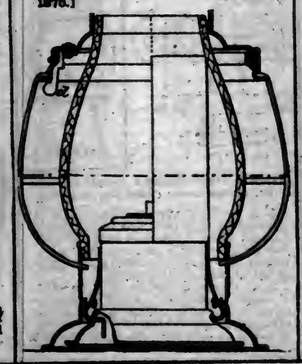
2. The combination of the clip-board A and clip B with the rods D, held by brackets C, or equivalent means, and index-sheets G, having eyelets h, or their equivalents, substantially as and for the purposes herein set forth.

171,416. LOOM SHUTTLE-GUARDS. William H. Parker, Medford, Mass. [Filed May 6, 1875.]



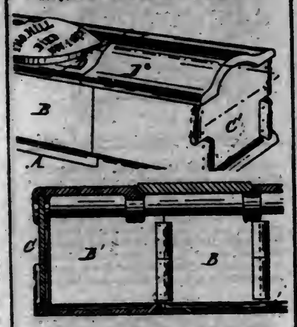
The combination of the reed-cap a, stationary arms b c d, catch-arm e, spring f, and guard-rod l, when the several parts are formed, arranged, and connected substantially as shown and described.

171,417. SIGNAL-LANTERNS. George F. Pashley, Brooklyn, N. Y. [Filed May 14, 1875.]



The combination, in a lantern, of a globe, divided into vertical sections, clear and colored or of different colors, and a rotatable reflector, by which the light may be shown through the desired color, and shut off from the others, in the manner and for the purpose described.

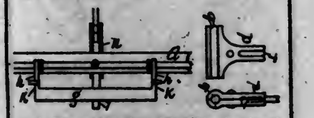
171,418. GRAVE-VAULTS. W. C. Peckham, Troy, Ohio. [Filed Nov. 9, 1875.]



The grave-vault described, consisting of the end sections A' and A², provided with grooves, the side panels B' B², having projections, the head and foot panels C and C', provided with projections, and the head and foot cover panels D' D², having grooves, with or without the central section, all substantially as described and shown.

171,419. HORSE-RAKES. Chas. B. Perkins, Kenduskeag, Me., assignor to himself and William Higgins, same place. [Filed Oct. 4, 1875.]

Brief.—The teeth are hinged to a rod behind the axle, and are secured by a clasp formed of two pieces, and provided with grooves for admission of rod and teeth, and held together by bolts or screws. The rake is lifted by ball-crank hand-lever, connecting with rake-head by means of an intermediate rod and a forked lever.



1. The combination of the lifting-bar f, and forked lever g, having arms h k; h k, and f, and hinged to the rod e, upon which the teeth are pivoted, as set forth, for the purposes specified.

2. The combination of the forked lever g, constructed as described, with the ball-crank lever n, and connecting-rod o, as and for the purposes set forth.

3. The improved clasp or jaw for securing the teeth, consisting of two parts, o p, provided with grooves q r and cavity s, and united and held in place by a bolt or screw, as herein specified.

4. The improved horse-rake, constructed and arranged as herein specified, having its teeth hinged to a rod, e, directly behind the axle A, and operated by a forked lever, g, also hinged to said rod by means of a ball-crank, n, and connecting-rod o, substantially as and for the purposes described.

171,420. CULTIVATORS. Joshua Pierpont, Bushnell, Ill. [Filed Nov. 6, 1875.]

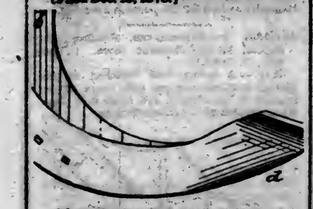
Brief.—An adjusting-plate upon a cultivator-standard, for holding the beam at various lengths.



1. The block G, constructed, as described, with legs g, series of holes g', and prongs h, substantially as and for the purposes specified.

2. The block G, having prongs h and legs g, with a series of holes, g', combined for operation with the brace E, pin e, standards B, and plow-beams A, substantially as and for the purposes specified.

171,421. HORSE-RAKES. Zachariah V. Purdy, Washington, D. C., assignor of one-half his right to James O'Hard, Pittsburg, Pa. [Filed Dec. 12, 1876.]



A horse-rake having the inclined flanges C C and the outward beveled surface b b, substantially in the manner shown, for the purpose specified.

171,422. STREET-RAILWAY TRACKS. John Quigley, St. Joseph, Mo. [Filed Nov. 10, 1875.]

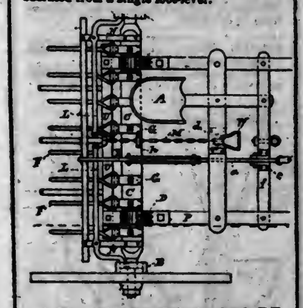
Brief.—A street-railway track in which the chairs and tie are of metal, and in one piece, the top of chair having dovetailed grooves, in which the rail and keys for securing the same are placed. The sides of the chair are bolted to better admit of being held by the ballast.



The combined metal tie A and chairs B D, constructed to fasten the rails by a key, and having the side recesses F, substantially as specified.

171,423. HORSE-RAKES. Wm. J. Rayner, Milwaukee, Wis. [Filed Mar. 20, 1875.]

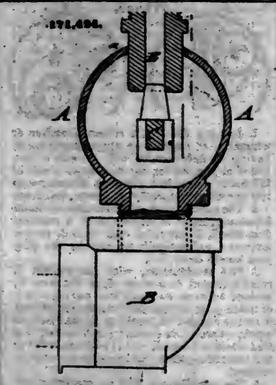
Brief.—Friction-clutch for each wheel, both operated from a single foot-lever.



1. The combination of the two bands B B, attached to the wheels of a hay-rake, the two levers L L, provided with the friction clutch or brake O at their outer ends, arms H N, to which levers L L are pivoted, axle O, chain M, and treadle W, substantially as and for the purposes described.

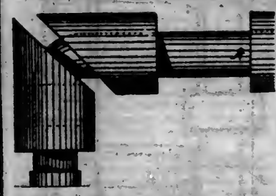
2. The combination of the teeth-bars formed of the notched sections G and H, teeth F F F, formed with the square-ended loop f', and axle O, substantially as and for the purposes described.

171,424. TRAPS FOR STEAM-PIPES. Charles A. Reed, Bridgeport, Conn. [Filed Nov. 13, 1875.]



In traps for steam-pipes, the globe A, made movable around the plug E, and in a threaded socket of elbow B, as shown and described, whereby the relative position of valve to seat may be gaged.

171,425. COVERINGS FOR STEAM BOILERS AND PIPES. John C. Reed, Millvale, assignor of one-half his right to Wm. Tegle and Andrew Johnston, Pittsburg, Pa. [Filed Oct. 15, 1875.]



As a new article of manufacture, a non-conducting covering composed of layers or wrappings of paper saturated with adhesive material, and compressed while being formed into tubular sections of a thickness of one-half inch, or more, substantially as shown and described.

171,426. APPARATUS FOR DISTILLING AND RECTIFYING LIQUIDS. Joseph W. Reford, New York, N. Y., assignor to Wm. Watt, same place. [Filed June 30, 1875.]

Brief.—The wash is pumped into heater, thence passes into charger, thence into stills. Each still is independent of the others. The vapors are gathered up and rise through the charger and heater. The doubler returns "low-wines" to the still. The drum-chest further rectifies, and the main condenser completes the process. A second return liquor-chamber returns "low-wines" from the safety-condenser attached to the heater, and from the drum-chest. The jacketed stills are treated by superheated steam, and the drum-chest by heated air.

1. In a liquor-distilling apparatus the combination of two or more copper stills, each having a perforated bolting bottom, and surrounded with a steam-jacket, and connected by pipes having suitable cocks, whereby each still may be operated independently or all in conjunction, substantially as described, and for the purposes specified.

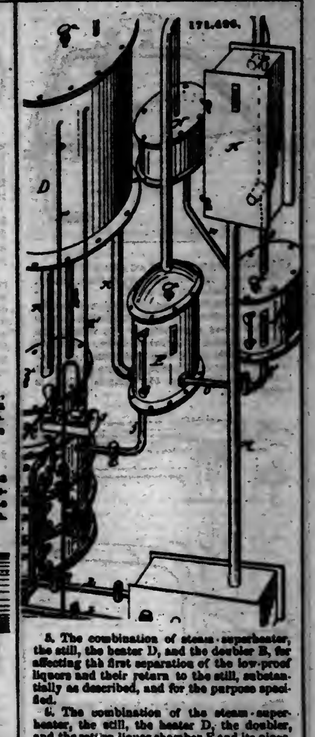
2. The combination, with a steam-superheater and connecting-pipes, of a series of independent jacketed stills, whereby the distilling capacity in actual use may be varied at pleasure, substantially as described, and for the purposes specified.

3. The combination of the still, the steam-superheater, the chamber H and mechanism therein, and the pipes K M, substantially as described, and for the purposes specified.

4. The combination of steam-superheater, the series of jacketed stills, the heater D, with the pipes K Q S, operating substantially as described, for the purposes specified.

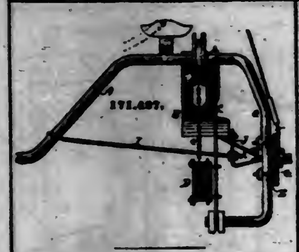
171,427. SULKY-PLOWS. H. Richardson, Janesville, Wis. [Filed Nov. 3, 1875.]

Brief.—The vertical rod, on which the plow-beam coupling slides, made adjustable laterally. Device for adjusting the tread of the right wheel.



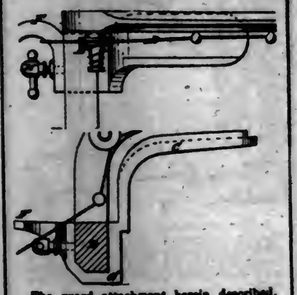
1. The adjustable rod C, running from the axle A to the plate B, and having the plow-coupling D placed thereon, substantially as and for the purposes herein set forth.

2. The plate B, carrying the spindle attachment C, and made movable on the axle, in combination with the adjusting-bolts, plate H, and axle A, substantially as shown and described.



171,426. SEWING-MACHINE THREAD-GUARDS. Lillian Roosevelt, Hempstead, Tex. [Filed July 31, 1875.]

Brief.—The two arms of the guard are for the purpose of causing the thread to proper position. One, extending in the rear of the machine, prevents the thread from running off the spool onto the spindle; the other, extending under the needle-arm, protects the thread from being struck by the material which is being sewed.



The guard attachment herein described, consisting of the clamp G, having the oppositely-extended arms C and F, as and for the purpose specified.

171,429. TICKETS. John M. Savin, Baltimore, Md. [Filed Nov. 4, 1875.]



A tipping ticket-drawback, consisting of a combination and a drawback coupon, and a sketch sheet, as printed in reverse that when folded the same names and numbers on the three coupons may be simultaneously punched, and then released and converted for the drawback-coupon may be destroyed, and the others retained as vouchers, substantially as set forth.

171,430. TOY PISTOLS. Jas. Edwd. Sherrod, New York, N. Y. [Filed Sept. 28, 1875.]





1. In a toy fire-arm, a ribbon chamber or magazine of circular or approximate form, having its axis parallel with the axis of the barrel to provide for the feeding of a coil of fulminate-ribbon in a direction transverse to the barrel, substantially as herein described.

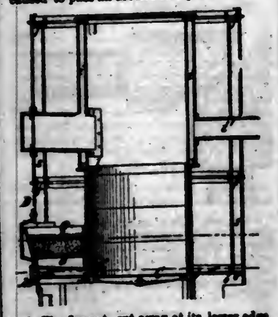
2. The combination, with a fire-arm, in which fulminate-ribbon is employed, of a rotating feed-wheel, H, provided with teeth or projections A, substantially as and for the purpose herein described.

3. The combination, with the rammer I, spindle O, and feed-wheel H, of the lever P, pivoted between its ends and having a fork or notch, p, at its rear end, and the pin or stud n on the hammer M, working in said fork or notch, whereby, on cocking the hammer, the feed-wheel is rotated, and the ribbon is fed to the point of explosion, as herein shown and described.

4. The combination, with the magazine and feed mechanism, of the removable cap C, forming a casing for the same, substantially as herein described

171,431. HOT-AIR FURNACES. B. C. Sayre, Montrose, Pa. [Filed June 14, 1875.]

Brief.—The evaporating pan rests upon strips upon the cover of the clinker-cleaning opening, whereby a current of heated air is caused to pass all around said pan.



1. The fire-pot, cut away at its lower edge, in the manner described and shown at N, in combination with the tube M, furnished with a door, and extending from the outer casing to the said passage, and with the section D of the hot-air furnace, in the manner and for the purpose described.

2. The evaporating-pan Q, constructed and arranged with a door, E, and within the section D of the outer casing, and supported upon ledges on top of the tube M, substantially in the manner described and shown.

171,432. VELOCIPEDES. A. Schmachtenberg, Cincinnati, Ohio. [Filed Oct. 13, 1875.]

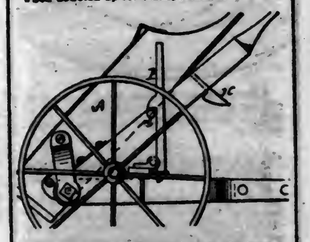
Brief.—The pressure on the saddle, causing it to rise and fall, imparts motion to the vehicle.

1. The combination of fixed stirrups M, vertically-reciprocating saddle O, lever H, pitman I, and propelling-wheel C, connected and operating substantially as and for the purpose specified.

2. The combination of lever or bar H, crank-shaft J, and pitmen I, the latter being connected to the horse's hand, and operating substantially as and for the purpose specified.

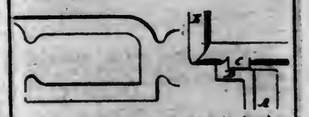
171,433. ROAD-SCRAPERS. Friedrich W. Schuis, Mount Pleasant, Iowa. [Filed Nov. 15, 1875.]

Brief.—A spring-hook attached to the tongue cross-bar engages with a pin on the handles of the scraper, and holds it in place when doubled up for transportation.



The spring-hook P, attached to the tongue cross-bar J, in combination with the handles D, pin f, scraper A, and hook H, substantially as and for the purpose herein set forth.

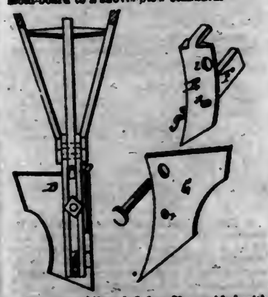
171,434. VEHICLE DASH-FRAMES. Moses Seward, New Haven, Conn. [Filed Nov. 26, 1875.]



As an article of manufacture, the herein-described carriage dash-foot, consisting of the shank or strap A, its upper and turned outward, and forming a cleat, C, from which the parts D E of the frame extend, substantially as described.

171,435. PLOWS. John Sewell, Bowdon, Ga. [Filed Sept. 10, 1875.]

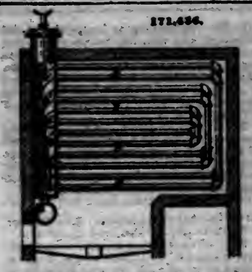
Brief.—Device for securing a removable mold-board to a shovel-plow standard.



The curved bevided bar M, provided with land-side bar F, pins b d, hole c, and projection e, in combination with the slotted plow-foot B, having perforated toe, the mold-board G, with holes x y, and the bolt k, with nut t, all substantially as and for the purpose herein set forth.

171,436. STEAM-BOILERS. Jos. Shackleton, Buffalo, N. Y. [Filed Oct. 26, 1875.]

171,436.



The combination of a series of return-tubes, having ascending branches, with an uptake and a deflector, D, the upper ends of all the said return-tubes being situated above, and their lower ends below, the deflector, as and for the object specified.

171,437. HANGING OR PORTABLE FOUNTAIN. Frank L. Shafer, San Francisco, Cal. [Filed June 25, 1875.]

Brief.—The pipe is connected with the supply, and the water led to the jets is thrown in spray and caught by the bowl, until the water-level rises high enough to lift the ball-float, when water flows up the pipe and charges the siphon, and causes it to draw off the water in the basin, until its level is reduced to a certain point. The float will then fall and close the valve, thus stopping the flow from the fountain. It thus acts automatically and without danger of overflow.

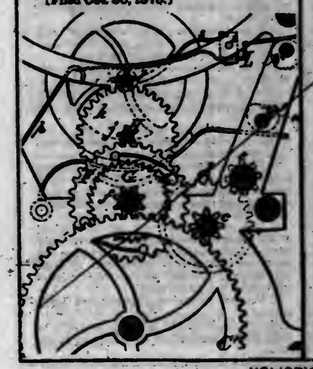


1. A hanging self-operating fountain, constructed as described, consisting of the supply and siphon discharge-pipes B D D E, provided with the valve e and opening f, and connected together by the pipe F, combined and arranged with the basin A and the jets c d, in the manner shown and described.

2. In combination with the self-operating fountain, as above described, the cone a and reflector b, within the basin, to hold and protect the light, as set forth and specified.

3. The combination and arrangement of the siphon-pipe D E with the pipe C, provided with the valve and ball-float e, and connected with the pipe F, operating in the manner and for the purpose set forth and specified.

171,438. SPRING-MOTORS. Minhe Shiver, Baltimore, Md., assignor, by mesne assignments, to William C. Dreyer, same place. [Filed Oct. 30, 1875.]



1. In combination with a motor, constructed substantially as described, the brakes L L1 and their arms n n', the brake L having a treadle-rod, p, attached to its free end, substantially as described.

2. The springs S, composed of two or more ribbons firmly united at both ends, and inclosed in a suitable case, substantially as specified.

171,439. PACKING FILTERS. T. B. Sinclaire, New York, N. Y. (Filed Apr. 6, 1874.)

Brief.—A method of packing by which liquid can be properly filtered in increased quantities, without increasing the pressure or the construction of the machine.

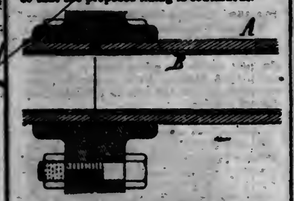


1. The method or process herein described of packing the chamber of a filtering-vessel, by interposing a vertical stratum or column (one or more) of coarser, or more permeable or less resisting, substance than the body of the filtering material proper between the vertical wall or walls of the filtering-chamber and the wall or walls of a receiver or distributer, arranged or projecting wholly or partially within the said filtering-chamber, substantially as herein specified.

2. The combination, in a filtering chamber or vessel, of a vertical stratum or column (one or more) of coarser, or more permeable or less resisting, substance than the body of the filtering material proper, interposed between the vertical wall or walls of the filtering-chamber and the wall or walls of a receiver or distributer, arranged or projecting wholly or partially within the said filtering-chamber, with a stratum (one or more) of like or similar substance interposed between the top and bottom walls, either or both, of the said chamber or vessel and the wall or walls of the said receiver or distributer.

171,440. WATER-PIPES. Reuben W. Smith, New York, N. Y. [Filed May 1, 1875.]

Brief.—A pipe unaffected by salt-water, and avoiding galvanic action. After the metallic pipe has been prepared, as described, there is inserted a pipe composed of one part tin and nine parts lead. The contact is made as shown. The ends of the pipes have couplings with recessed flange-pieces, as described, so that the proposed lining is continuous.



1. The lining-pipe composed of tin and lead, in the proportions specified, in combination with an inclosing-pipe, A, forming a composite pipe, having the qualities herein set forth.

2. The soft-metal pipe composed of an alloy of tin and lead, in the proportions indicated, for the purposes set forth.

3. The recessed flange-pieces a a on the iron pipe A, in combination with a soft-metal lining-pipe, B, with its turned-out flange b, as and for the purposes specified.

171,441. BLASTING-CARTRIDGES. Frisbie W. Smith and Fredrick Egge, Bridgeport, Conn., assignors to Paul A. Oliver, Wilkesbarre, Pa. [Filed Nov. 18, 1875.]



A blasting-cartridge, A, formed of a tube of paper, muslin, or other suitable material, and having its bottom held in place by means of a solid plug, B, forced in from the inside, and an exterior cap, C, all substantially as and for the purposes herein set forth.

171,442. BREECH-LOADING FIRE-ARMS. Chas. E. Spalder and Chas. W. Spalder, Baltimore, Md. [Filed July 24, 1875.]



1. The locking-lever eccentrically pivoted at d, and secured to the rear extension of the breech frame by means of a screw-stud and adjusting-nuts, said stud working in a transverse slot in the extension O, as described.

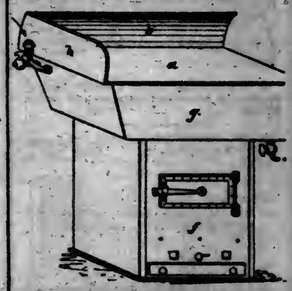
2. The combination of locking-lever E, spring l, rigidly secured thereto at one end, and the stud m, whereby the lever E is automatically thrown into engagement with the extension of the barrels, substantially as shown and described.

171,443. DENTAL CHAIRS. Eli T. Starr, Philadelphia, Pa., assignor to Samuel S. White, same place. [Filed Nov. 6, 1875.]



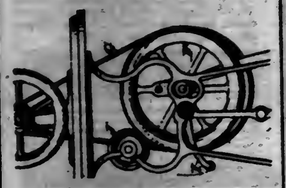
The chair-elevating apparatus herein before set forth, consisting of the combination of the base or frame, its collar, the nut fixed therein, the screw-spindle passing through the nut, and the slotted sleeve inclosing the spindle and moving endwise through the collar, as and for the purposes described.

171,444. STEAM CANDY-HEATERS. Bernhard Stern and Herman Stern, Chattanooga, Tenn. [Filed Oct. 15, 1875.]



The combination of the furnace f, the reservoir g on top of the same, the covering-plate e, heating-plate h, curved plate k, and the pipes c d i, all constructed substantially as and for the purposes herein set forth.

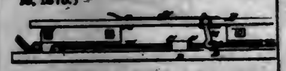
171,448. SEWING-MACHINE DRIVING MECHANISM. Roswell H. St. John, Springfield, Ohio. [Filed Nov. 27, 1875.]



1. A sewing-machine driving-wheel, F, mounted in bearings on a vertically-movable frame or lever, I, for the purposes of tightening the band by the depression and gravity of the wheel, substantially as set forth.

2. The combination of the vertically-adjustable driving-wheel F, the friction-pulley J, and the hand G, substantially as herein set forth, to admit of placing the said wheel in operative connection with either the friction-pulley or the hand at will, and out of such connection with the other.

171,449. FOLDING COOPS. Daniel M. Sullivan, Montgomery City, Mo. [Filed Aug. 16, 1875.]



1. The bottom D, provided with sides E, in combination with the top B, provided with ends A, said sides and ends being hinged, by means of eye-screws, to said bottom and top respectively, substantially in the manner described.

2. The eye-screws forming an adjustable attachment for said sides and ends, in combination with the bottom D, sides E, top B, and ends A, as set forth.

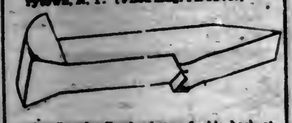
171,447. SPIKES. Theodore B. Timby, Tarrytown, N. Y. [Filed Aug. 14, 1875.]

Brief.—The longitudinal rib serves to impart strength and rigidity to the spike where stiffness is most needed.



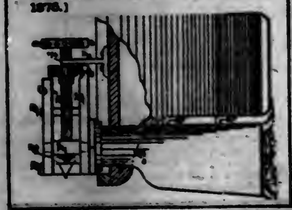
A railroad-spike constructed at its upper part with a longitudinal hook rib or fin, as and for the purposes specified.

171,446. SPIKES. Theodore B. Timby, Tarrytown, N. Y. [Filed Aug. 14, 1875.]



A railroad-spike having a double barb at or near its lower end, substantially as described.

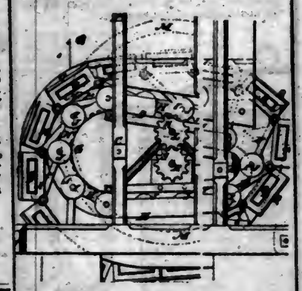
171,450. STEERING APPARATUS. M. Townsend, Fort Norris, N. J. [Filed Dec. 1, 1875.]



In combination with the rudder A, the segments B C, swiveled post F, shaft D, pinion H, and hand-wheel G, the several parts being constructed and arranged to operate substantially as shown and described.

171,459. HORSE-POWERS. Frederick Translader, Harmersville, N. J. [Filed Nov. 27, 1875.]

Brief.—Outer and inner endless chains are connected by bars pivoted to each, enable the horses to walk upon a level, and produce the same effect as when walking upon an inclined plane.



1. The combination of the platform-planks Q, the slotted links N, the two sets of cross-rods O I, the connecting-bars P, the toothed links H, and the wheels or rollers J, with the inclined and curved tracks D E F G, and the gear-wheels K attached to the driving-shaft L, substantially as herein shown and described.

2. The combination of the second shaft S, and its gear-wheels R, with the shaft and gear-wheels L K, connected with the toothed links H, substantially as herein shown and described.

171,451. TRUCKS. James Viall, John F. Townsend, and David W. Hill, Akron, Ohio. [Filed Oct. 26, 1875.]

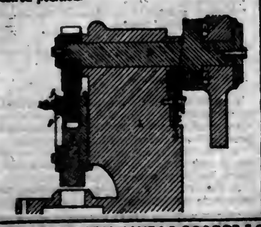


1. In combination with the truck, constructed as herein described, the turn-table consisting of the sides G, ends H, and sheet-metal trough I, substantially in the manner as described, and for the purpose set forth.

2. The combination of the platform of the truck having projecting tongues on the sides, and supporting the pipe-trough, with the side bearers of the truck provided with corresponding grooves, all substantially as and for the purpose described.

171,452. CUTTING AND PUNCHING PRESSES. Matthew Von Culin, Baltimore, Md. [Filed May 20, 1875.]

Brief.—A portion of the slide, into which the bolt screws for adjustment, is removed and a block inserted, which is pressed, by a set-screw, against the bolt to hold it in any desired position.

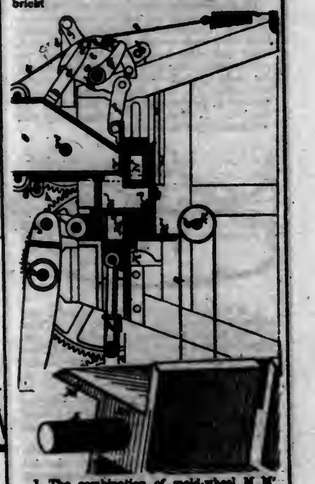


1. The combination, as herein shown and described, with the slide *c a*, the parts being screw-threaded exteriorly and interiorly, as shown, and the part *c* swiveled in the yoke, of the cap *f*, secured to the part *c*, the block *g*, having a screw-thread to correspond with that on the part *c*, and the set-screw *h*, as and for the purpose set forth.

2. The combination of the slide *a*, having the beveled side, as shown, with the frame of the machine, similarly shaped, and large enough to allow a clear space behind the slide, and the gibs and set-screws, as shown and described, and for the purpose set forth.

171,453. BRICK-MACHINES. R. L. Wagner, St. Louis, Mo. [Filed Sept. 10, 1875.]

Brief.—The receiving-chamber beneath the hopper is shut off at each stroke, from the hopper at one side and the mold at the other, by sliding plates, which regulate the amount of clay required. The molds consist of rectangular tubs turning between plates, which form the housing of the mold-wheel and the ends of the molds. The tubs have wings extending in the planes of their sides, thereby forming a rectangular recess with the next face, which forms two sides of the molds, the other two sides being formed by plungers, which move inward simultaneously upon the brick.



1. The combination of mold-wheel M M' and pressure-blocks G H, substantially as set forth.

2. The combination of the mold-wheel M M', bearing-plates K and plunger P, substantially as set forth.

3. The combination of the hopper *e* and plunger P and cut-off Y, working above the plunger and beneath the hopper, substantially as set forth.

4. In combination with the hopper *e*, plunger P, and cut-off Y, the falling gate X, substantially as and for the purpose set forth.

5. The combination of drop-gate X, cords or chains *c*, segments *c*, springs *c*, arms S' on rock-shaft S', spring-catches *g'*, and arms *d* to relieve the catches from arms S', substantially as set forth.

6. The combination of cut-off Y, rods *f*, segments *c*, springs *c*, arms S', catches *g'*, and shaft S', substantially as set forth.

7. The combination of mold-wheel having tangential wings M, ratchet-wheel A, oscillating plate *i* on wheel-shaft *l*, and pawls *l* and *l'*, giving intermittent motion to the mold-wheel.

8. The combination, with the mold-wheel M M', ratchet-wheel A, oscillating plate *i*, and pawls *l l'*, of the oscillating arm *n*, pawls *p r*, and ratchet-wheel *o*, giving motion to the off-bearing belt simultaneously with the movement of the mold-wheel, as set forth.

9. The combination of pressure-block G and plunger P, at opposite sides of mold-wheel, exerting simultaneous pressure at opposite sides of said mold-wheel, substantially as set forth.

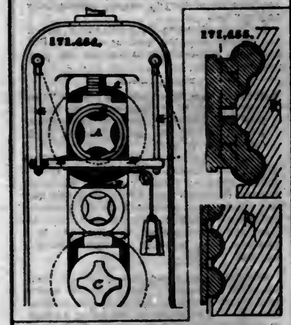
171,454. ROLLS FOR ROLLING IRON. Joseph H. Webster, St. Louis, Mo. [Filed Oct. 27, 1875.]

Brief.—The weight causes the beam to partially support the roll on its being raised by the insertion of the iron.

1. The bar B, having an inclined movement, in combination with the roll A, substantially as set forth.

2. The bars B and links G, in combination with the roll A, loose collar *c*, and weight F, substantially as set forth.

3. The bars E and links G, in combination with the roll A and weight F, substantially as set forth.



171,455. MODES OF DECORATING ENAMELED MOLDINGS. Albert G. White, Brooklyn, N. Y. [Filed May 8, 1875.]

Brief.—Enameled moldings are cut from their connecting wood base or backing, and the use of a hand-planer and sandpapering obviated in dressing the same, by placing the moldings in a bed-piece provided with corresponding grooves of equal width and length, and feeding them to a cutter-head provided with adjustable cutters, set to the exact thickness of wood required to be cut off.

The method herein described of dressing or planing off enameled moldings by passing them through a planer seated in correspondingly-grooved bed-pieces, and cutting off the connecting wooden back or base to the exact true base of the moldings, substantially in the manner and for the purpose set forth.

171,456. REFRIGERATORS. Jas. H. Wicher, New York, N. Y. [Filed Nov. 10, 1875.]

Brief.—Draws air from top of the preserving-chamber, and forces through an air-distributer in the center of the ice-chamber, and thence through the ice, and out of it at the bottom into the preserving-chamber.



The combination of the horizontally-zoned chamber A, ice-reservoir B, communicating with the same and located within it, the air-distributer D within said ice-reservoir, and the tubes *c* and *c*, leading from the flue C, and communicating, respectively, with the ice-reservoir and provision-chamber, substantially as described.

171,457. DIES FOR MAKING SPAT-HEELS AND OUTSOLES FOR CARRIAGES. Darius Wilcox, Birmingham, Conn., assignor of one-half his right to Isaac P. Howe, same place. [Filed Dec. 1, 1875.]

Brief.—Preliminary and finishing dies act successively upon the metal edgewise and then flatwise.

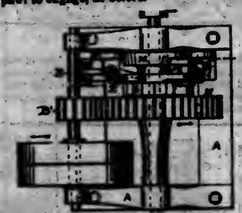


1. The combination of the dies *a a b b*, for the formation of stay-ends or offsets by swaging and striking, edgewise and flatwise alternately, substantially as explained.

2. The combination of the preliminary swaging-dies *a a b b* and the final die or dies, for completing the formation of the stay-ends or offsets, in the manner explained.

171,458. LIFTING DEVICES FOR DROP-HAMMERS. C. O. Wilder, Chicago, Ill. [Filed Nov. 3, 1875.]

Brief.—A fixed disk on the counter-shaft carries a small shaft, which is provided at one end with a lifter, and at the other with a pawl. When the weight has been elevated, the lifter comes into contact with a fixed cam-surface, which forces it up and disengages the pawl from the ratchet-wheel upon the sleeve. When the weight falls, the lifter slides off from the cam-surface, and allows the ratchet-wheel and pawl to engage, as before.



1. The pawl I, lifter F, disk B, and cam M, arranged to operate with the shaft C, and detent-catch N, substantially as and for the purpose specified.

2. The pawl I and lifter F, when carried on the same shaft, and arranged to operate with disk B, cam M, shaft C, crank D, ratchet G, and pinions H and E, and frame A, substantially as and for the purpose specified.

3. The combination, with the disk B, formed with its teeth or recess *c*, of the shaft *c*, lifter F', and pawl I, substantially as herein shown and described.

171,460. MILLSTONE-DRIVERS. Henry Wilhelm, Minerva, Ohio, assignor of one-half his right to Fremont D. Davis, same place. [Filed Aug. 31, 1875.]

Brief.—The bearing-points of the set-screws are nearly on a line with the point on which the balance-rynd is hung, reducing friction, and the side shoulders of the driver prevent the rynd from sliding off when the stone is rotated at unusual speed.

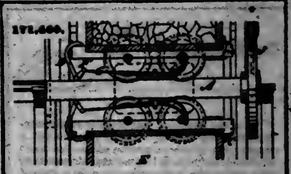


The combination of the driver B, recessed at *b*, and having the raised sides or shoulders D, with the set-screws *c* and ball C, when combined and arranged for operation as herein shown and specified.

171,461. CAR-DUMPING APPARATUS. Jeremiah Wiland, Sr., Myerstown, Pa. [Filed Oct. 20, 1875.]

Brief.—A section of the track has rails on the lower and upper sides. The frame is provided with means for holding a car on each side of said track, which, by half-revolutions, tilts the full car down to empty, and, at the same time brings the previously-emptied car to the upper side for reloading.

171,462. CAR-COUPLERS. George L. Whall, Beverly, N. J. [Filed Oct. 16, 1875.]



1. The combination of a revolving railway-track section, A, having bar C and hooks D for securing a car with a rail-track, substantially as specified.

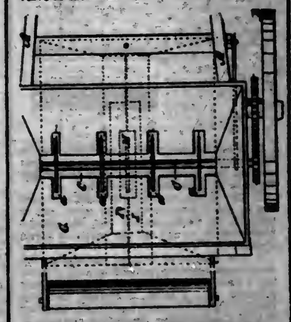
2. The combination of the spring-stops H and lever I, with said revolving section of a rail-track, substantially as specified.

3. The combination of the rotating guides I, with the rotating track-section, substantially as specified.

4. The combination of the rotating guides I and the stationary chute M, with the rotating track-section, substantially as specified.

171,463. DRILLS AND FERTILIZER-DISTRIBUTORS. Alsdon S. Wishart, Lumberton, N. C. [Filed June 7, 1875.]

Brief.—Upon the frame is adjustably attached a hopper provided with a slatted bottom, in which work toothed wheels for drawing out the fertilizer. When the hopper is placed longitudinally on the frame, a single wheel works in the bottom; but when placed transversely, all the wheels on the shaft revolve in the slots.

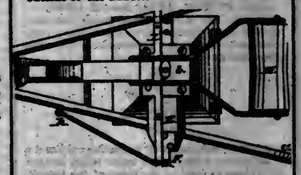


1. The combination, with the revolving shaft C carrying a series of wheels, of a reversible hopper having a slotted bottom, substantially as and for the purpose described.

2. The combination of shaft C carrying a series of wheels, the reversible hopper G having a single longitudinal slot, and also transverse slots *a*, and the adjustable slides I I and J J, substantially as and for the purpose specified.

171,464. CORN-PLANTERS. S. Wishard, Curley's Tank, Ala. [Filed Mar. 8, 1875.]

Brief.—The seed-box is mounted upon the rear end of the beam, and the seed-slide in the bottom of the seed-box is worked by means of a pivoted lever moving horizontally outside of the handle.



In a walking-planter, the combination of the slotted lever F with the slotted lever G, seed-valve H, and handle C, substantially as and for the purpose herein before described and set forth.

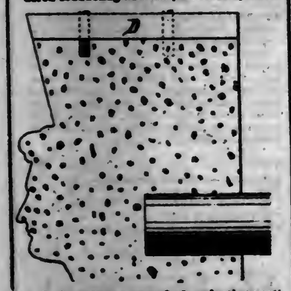
171,668.



As a new article of manufacture the herein-described can-opener, which is composed of a single piece of metal, and in which the point of the blade projects beyond the fulcrum-arm, and the latter terminates in a cam-shaped head standing in line with said blade.

171,669. ELECTROPLATING STATUETTES, &c. Wm. H. Worthen and Richd. S. Gillespie, New York, N. Y. [Filed Feb. 19, 1875.]

Brief.—The casting is composed of carbonaceous matter united by a bituminous cement, and having inserted in it a plug of wood for fastening. The recessed portions are first coated with a highly conducting paint, and immersed in the bath until the said parts are covered, when the rest of the figure is rendered conducting and the process completed.



1. A casting composed of conducting particles, united together with a non-absorbent cement, and covered with a close-fitting electroplate shell, as herein specified.

2. The conducting and non-absorbent casting A, in combination with the metal part or parts D, the whole covered with the electroplate shell a, as and for the purposes herein specified.

3. The process of forming electroplate figures herein described, consisting, first, of pouring a heated conducting and non-absorbent material into a mold, afterward inserting therein a mass of wood, and finally covering it with a tight-fitting electrotype coating, as herein specified.

4. The within-described process of electroplating figures by first applying only the partial coating M of conducting material, and, after subjecting the article to the bath with said partial coating on only the recessed and most difficult portions, to subsequently apply the coating on the projecting portions, and finally to allow the deposit to be received thereon, as and for the purposes herein specified.

REISSUES.

6,809. NURSING-BOTTLES. Milo S. Burr, Boston, Mass. Patent No. 69,295, dated Aug. 27, 1867. [Filed Nov. 11, 1875.]

Brief.—The mouth-guard has a continuation in both directions, with shoulders upon one end, to hold the suction-tube, and upon the other to hold the nipple.



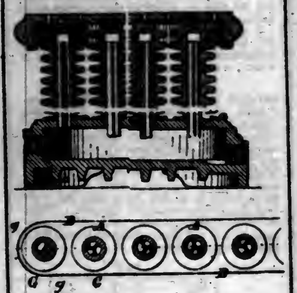
1. The combination of a mouth-guard and a shoulder for a nipple, the latter being located in a plane in front of the plane of the mouth-guard, and in continuation of the guard, substantially as described.

2. The combination of a mouth-guard, a shoulder for a suction-tube connection, and a shoulder for a nipple-connection, the latter located in a plane in front of the plane of the mouth-guard, and in continuation of the guard, substantially as described.

3. The combination of a mouth-guard, F, a shoulder, E, for a suction-tube, and shoulders *d d*, for nipples of different sizes, located in planes in front of the plane of the mouth-guard, and in continuation of the guard, substantially as described.

6,810. STEAM-RADIATORS. Albert L. Ide, Springfield, Ill. Patent No. 144,061, dated Nov. 25, 1873. [Filed Dec. 2, 1875.]

Brief.—The entering steam rises in two of the vertical passages, and, partially condensed, escapes in the third.



In a steam-radiator, a vertical pipe or column, constructed of cast or wrought metal, and divided exteriorly into three vertical passages, substantially as and for the purpose specified.

6,811. FLY-TRAPS. John Parker, Dubuque, Iowa. Patent No. 109,444, dated Nov. 22, 1870. [Filed Nov. 26, 1875.]



1. The wire-cloth cone A, closed at top and open at bottom, and supported by upright and horizontal stays, and provided with a wire cone, E, having an exit above its base, substantially as and for the purpose herein described.

2. The wire cone E', having an exit above its base, in combination with the wire cone E and wire cone A, supported by upright and horizontal stays, substantially as and for the purpose herein described.

3. The wire cone E, having an exit above its base and fastened to the inner side of the wire cone A, which is supported at its bottom by an annular stay, and from top to bottom by upright stays, substantially as and for the purpose described.

4. The wire-cloth fly trap A and E, provided with narrow extensions B' below the bottom of its outer cone A and its cone E, substantially as and for the purpose described.

5. The wire-cloth fly-trap A and E, the outer cone A having a truncated conical top, with a vertical neck, and provided with a removable cover, which fits over the neck of the top, substantially as and for the purpose described.

6. The wire cloth annulus G, in combination with the wire cone A, and wire cone E, substantially as and for the purpose described.

7. The annulus G', in combination with the annulus G, wire extensions B', cone A, and wire cone E, substantially as and for the purpose described.

6,812. CURE-BEATS FOR VIOLINS. Hiram W. White, Ostaloosa, Iowa, assignor to Lyon & Healey, Chicago, Ill. Patent No. 155,780, dated Oct. 6, 1874. [Filed Nov. 20, 1875.]



1. A violin chin-rest, provided with a yielding and self-adjustable clamp, for the purpose of thereby retaining the rest upon the instrument, and rendering the same applicable to instruments of varying depth, substantially as described.

2. The combination of the chin rest F, shank G, provided with the head or clamp H, and spring *f*, substantially as and for the purpose specified.

6,813. BARREL-MACHINES. Arculeus Wyckoff, Elmira, N. Y., assignor to the Seamless Keg and Can Company, same place. Patent No. 51,043, dated Dec. 19, 1865. [Filed Mar. 3, 1875.]

Brief.—A cylindrical shell of wood cut from a solid block can be compressed into the ordinary shape of a barrel, and the hoops applied at the same time, by means of two flaring cup-dies, one of which has a reciprocating rectilinear motion, in suitable guideways, toward and from the other, imparted to it by a powerful screw, to which the required force is applied.

The two flaring cup-dies B and B', each composed of two parts hinged together and a suitable guiding and supporting jaw, in combination with a device for imparting a reciprocating rectilinear motion to one die toward and from the other, substantially as and for the purposes set forth.



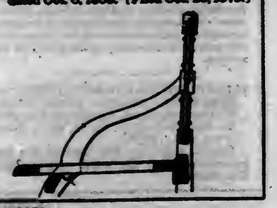
6,814. BARREL-MACHINES. Arculeus Wyckoff, Elmira, N. Y., assignor to the Seamless Keg and Can Company, same place. Patent No. 51,043, dated Dec. 19, 1865. [Filed Mar. 3, 1875.]

Brief.—The barrel is formed by annularly compressing both ends of its cylindriform portion by two flaring cup-dies, provided with recesses for hoops, so as to produce a progressively-increasing taper from the central portion toward the ends.



As a new article of manufacture, a barrel whose cylindriform part is annularly compressed in variable degrees from its central portion progressively to its ends, substantially as set forth.

6,815. FOLDING CHAIRS. Peter Born, New York, N. Y., assignor, by mesne assignments, to E. W. Vail. Patent No. 62,792, dated Oct. 6, 1866. [Filed Oct. 20, 1875.]



6,816. WEFTGRIPS. Jacob Brinkerhoff, Auburn, N. Y., assignor, by mesne assignments, to himself, Chas. M. Howlet, Elon C. Denio, and John I Brinkerhoff. Patent No. 122,230, dated Dec. 26, 1871; reissue No. 6,218, dated Jan. 7, 1873. [Filed Dec. 16, 1875.]



1. The combination of two rolls and suitable connecting mechanism with a counter-shaft, having a fixed journal at one side of the frame, and a sliding journal at the other.

2. The combination of the rolls C and D, arranged with gearing and sliding boxes and journals, to allow one or both ends of the rolls to be separated without changing the relative position of the gearing.

3. The combination of the train of gears *d e f* with the box B, so that they shall always move together, and consequently be always in gear with each other, while they move up and down with the upper or yielding one of the pair of rolls, substantially as described.

4. In combination with the train of gears and the under roll detached from the box B, the counter-shaft E and gears *h j*, for driving said under roll, substantially as described.

5. The upper roll C, driven from the crank and by a pinion of smaller size than the pinion upon the shaft of roll C, and the lower roll D, driven from the opposite end by suitable connecting mechanism to obtain the required purchase, substantially as and for the purpose set forth.

6. In combination with the rubber rolls C D, the purchase-pinion *d*, located opposite the end of the lower roll D, and revolving independently of said lower roll, with suitable mechanism for imparting motion to the rolls, for the purpose set forth.

7. The combination of the rollers C and D and the purchase-pinion *d*, arranged to accommodate itself to the up-and-down movement of either roll, for the purposes set forth.

6,817. DENTAL HAMMERS. James C. Dean, Chicago, Ill., assignor to Samuel S. White, Philadelphia, Pa. Patent No. 48,706, dated July 11, 1865. [Filed Dec. 2, 1875.]

Brief.—A tubular case containing an actuating-spring, a hammer with an elastic material on its face, and the shank of a tool-holder which is encircled by a spring. The hammer is raised by a lever which is automatically tripped, when the force of the actuating-spring forces it upon the tool-holder.



1. The combination, substantially as hereinbefore set forth, in a dental instrument, of a handle, a tool-holder, and a hammer actuating the tool-holder.

1. In a folding chair, the back and back legs forming one frame, in combination with the front legs extended above the seat and pivoted to the back, substantially as set forth.

2. The back and back legs forming one frame, a folding-seat frame, and front legs connected at their upper ends to the back frame, in combination with stops to hold the seat and front legs in position, when unfolded for use, substantially as set forth.

3. In a folding chair, a back and back legs in one frame, and front legs extending above the seat or seat-frame, and pivoted to the back, in combination with a folding seat and a cross-bar between the front legs that support the seat, substantially as set forth.

4. The combination, with the back legs and back of a folding chair forming one frame, and the front-leg frame connected at its upper end to the back frame, of a seat-frame hinged to the back and folding downwardly, and supports upon the front legs for the seat and for limiting the forward movement of the front legs when in use, substantially as set forth.

5. In a folding chair, the front legs extended upwardly above the seat and forming arm-pieces that are hinged directly to the back frame, substantially as set forth.

6,818. WEFTGRIPS. Jacob Brinkerhoff, Auburn, N. Y., assignor, by mesne assignments, to himself, Chas. M. Howlet, Elon C. Denio, and John I Brinkerhoff. Patent No. 122,230, dated Dec. 26, 1871; reissue No. 6,218, dated Jan. 7, 1873. [Filed Dec. 16, 1875.]

1. The combination of two rolls and suitable connecting mechanism with a counter-shaft, having a fixed journal at one side of the frame, and a sliding journal at the other.

2. The combination of the rolls C and D, arranged with gearing and sliding boxes and journals, to allow one or both ends of the rolls to be separated without changing the relative position of the gearing.

3. The combination of the train of gears *d e f* with the box B, so that they shall always move together, and consequently be always in gear with each other, while they move up and down with the upper or yielding one of the pair of rolls, substantially as described.

4. In combination with the train of gears and the under roll detached from the box B, the counter-shaft E and gears *h j*, for driving said under roll, substantially as described.

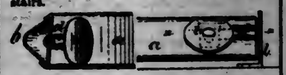
5. The upper roll C, driven from the crank and by a pinion of smaller size than the pinion upon the shaft of roll C, and the lower roll D, driven from the opposite end by suitable connecting mechanism to obtain the required purchase, substantially as and for the purpose set forth.

6. In combination with the rubber rolls C D, the purchase-pinion *d*, located opposite the end of the lower roll D, and revolving independently of said lower roll, with suitable mechanism for imparting motion to the rolls, for the purpose set forth.

7. The combination of the rollers C and D and the purchase-pinion *d*, arranged to accommodate itself to the up-and-down movement of either roll, for the purposes set forth.

6,819. STAIR-RODS. Hans Pearson, New York, N. Y. Patent No. 156,033, dated Sept. 15, 1874. [Filed June 21, 1875.]

Brief.—A hollow triangular-shaped rod has its face formed of a metal strip, folded backwardly, and the edges connected by the metal back, the edges of the front and rear strips interlocking with each other. There is also a bolt within the end of the stair-rod, and a button-head outside, connected to the bolt by a rivet passing through a mortise in the shoe, the construction giving an endwise-moving bolt, which serves to attach the rod, either to the casing at the sides of the stair or to metal eyes, so that the stair-rod can be, if desired, of even length with the entire width of the stairs.

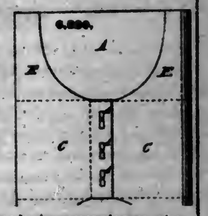


1. The hollow stair-rod, having a face, *a*, that is formed of a metal strip folded backwardly, and the edges connected by the metal back *b*, substantially as set forth.

2. The bolt *d* within the end of the stair-rod, and a button-head, *f*, outside the rod, connected to the bolt by a rivet passing through a mortise in the bolt, substantially as set forth.

6,820. ENVELOPES. Ralph S. Jennings, Philadelphia, Pa., assignor to himself and N. G. Kellogg. Patent No. 64,870, dated May 21, 1867. [Filed Mar. 13, 1872.]

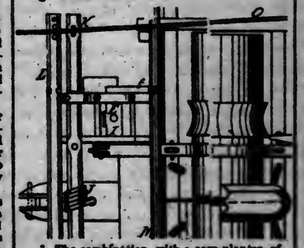
Brief.—By this construction the usual corners or ends beneath the top and bottom flaps are closed by wings or counter folds of the central flaps. Thus the possibility of introducing a wire or other instrument to abstract the contents without destroying the envelope is practically avoided.



An envelope having corner wings or extensions E, adapted for folding inward, substantially as and for the purpose specified.

6,821. CORN-PLANTERS. John Thomson and John Ramsey, Aledo, assignors, by mesne assignments, to Geo. D. Haworth, James W. Haworth, L. L. Haworth, and Mahlon Haworth, Decatur, Ill. Patent No. 44,472, dated Sept. 27, 1864. [Filed Nov. 23, 1875.]

Brief.—A knotted cord stretched from side to side of the field engages with forked arms of a rock-shaft upon the machine, for actuating the seed-slides.

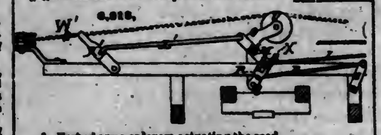


1. The combination, with a corn-planter, of a knotted cord for actuating the seeding devices.

2. In combination with the cord or its equivalent actuating the seeding devices of a corn-planter, guides or pulleys arranged to transfer said cord from one side of the machine to the other in its passage over the same.

6,822. SEED-PLANTERS. Geo. D. Haworth, Decatur, Ill. Patent No. 100,032, dated Feb. 22, 1870. [Filed Nov. 23, 1875.]

Brief.—Seeding devices actuated by a knotted cord stretched across the field, which engages with forked arms upon the machine.



1. Forked arms or levers actuating the seeding devices, in combination with the knotted cord or its equivalent, operating said arms or levers, whereby the cord is made to impart a positive movement in both directions to the seeding-slides.

2. The combination, in a seeding-machine, of forked arms or levers and an actuating-cord for operating the seeding devices, whereby the action of the cord upon one arm is made to set or move another arm into position to be acted upon by the cord.

3. In combination with the knotted cord for actuating the seeding devices, guides or pulleys arranged to direct the cord in its passage across the machine on the same line when moving in opposite directions.

4. Guides or pulleys over which the cord passes in being transferred from one side of the machine to the other, in combination with intermediate arms or levers operated upon by the cord in its passage between the guides or pulleys for actuating the seeding devices.

5. The arrangement of the guides or pulleys for transferring the knotted cord from one side of the machine to the other, and of the forked arms or levers acted upon by said cord relatively to the seeding devices, whereby each knot of the cord is made to deposit the seed in the same transverse row or rows when moving in opposite directions, as described.

6. The combination of the forked arms or levers with the seeding-slides and the intermediate connecting devices, adapting said forked arms to move both before and after the movement of the seeding-slides and also to hold said slides while at rest, substantially as described.

7. The combination of the guiding-pulleys for transferring the knotted cord from one side of the machine to the other, and the forked arms or levers and their connecting devices for actuating the seeding mechanism, with the detachable bar E, or its equivalent, adapting them to be readily applied to or removed from the machine, as specified.

8. The combination of the forked arms or levers K K', rocker-plate M, connecting-rods L L', forked arms P, rod R, crank S, shaft T, and hand-lever D, substantially as specified.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 8.—NO. 26. TUESDAY, DECEMBER 28, 1875. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1876 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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NOTICE TO MANUFACTURERS AND OTHERS.

UNITED STATES PATENT OFFICE,
Washington, D. C., October 5, 1875.

The COMMISSIONER OF PATENTS respectfully requests manufacturers of and dealers in engines, machines, apparatus, tools, and appliances of whatever kind, to send to this Office duplicate copies of all catalogues and circulars which they have issued or may issue from time to time.

R. H. DUELL, *Commissioner.*

COMMISSIONER'S DECISIONS.

SCLOTTERBECK AND KNEISLEY.—*Interlocutory Appeal.*

[*Appeal from the Principal Examiner in the matter of the application of Sclotterbeck and Kneisley, for letters patent for* "IMPROVEMENT IN BOILER-FURNACE."—*Decided December* 21, 1875.]

Where the original specification, drawing, and model described and showed the improvement as applied to but one kind of boiler furnace: *Held*, That an amendment showing that the apparatus could be adapted to other kinds of boiler-furnaces without making any change therein, except that of position, was not new matter.

DUELL, *Commissioner:*

This appeal is taken from a refusal of the Examiner to allow certain alleged new matter to be introduced into the amended specification.

The only issue, the Examiner says, is the objection made to the following matter attempted for the first time to be introduced into the specification:

We have shown our improvements as applied to an ordinary furnace, and to a two-flue boiler, but they are equally applicable to that type of boilers in which the fire-box forms a part of the same, the only change necessary being that the vertical pipes in the rear corners be caused to ascend within the furnace, instead of within the bridge-wall.

This paragraph, in the opinion of the Examiner, embraces matter opposed to the requirements of Office Rule 32.

The applicants in their drawing, model, and original specification show and describe but one kind of boiler, and this allusion to the adaptation of the invention to another kind of boiler the Examiner regards as an unwarrantable interpolation.

The gist of this invention consists in the combination and arrangement of certain pipes leading from the generator, and extending upward within the walls of the furnace at its four corners above the fire, for conducting steam from the generator to the furnace, and, by the jets of steam issuing from the elongated nozzles of the pipes, to drive the smoke and gases to the central portion of the furnace, where they are consumed—producing thereby additional heat.

The claim, to which the Examiner does not object, is as follows:

Vertical pipes arranged in the corners of a furnace, and having elongated discharge-orifices, two of which are vertical and two horizontal, in combination with supply-pipes, arranged under the grate-bars of a furnace, substantially as and for the purpose set forth.

The requisites of Rule 32 do not require that after an applicant has filed his specification he should allow it to remain in precisely the same condition as when filed, without any change in its language, or any addition thereto, which would make its terms clearer, or which would specify with more particularity certain alternate adaptations of his invention. The only object the Rule has, or can have, is to prevent applicants from making such substantial and material changes in their specifications, drawings, and models which would really amount to a new invention, or an additional improvement, not originally contemplated, and which might properly form the subject of a new application. To limit an applicant to the precise description which he has first adopted, and while the application is open to amendment, would be an arbitrary proceeding not warranted by law or good sense. In this case, the applicant had first made mention of a single kind of furnace to which his invention could be adapted, and that particular kind of furnace was represented by his model and drawing; but it will be seen that without the

slightest material change in the operation of the invention, or arrangement of its parts, the same can be adapted to other furnaces in precisely the same manner, to accomplish precisely the same result. The mere fact that the furnace shown in the model has a bridge-wall, through the chamber of which two of the pipes pass, does not, necessarily, limit him to that style of furnace, if the apparatus without any change in its arrangement can be placed in a boiler-furnace in which the fire-box forms a part of the same. The only difference being that in one case the pipes pass through an empty chamber, and in the other they pass through the water.

In the case of *L. J. Knowles*, (C. D., 1870, p. 161,) upon which the Examiner relies, the Commissioner held that, as a general thing, it was certainly sound practice that the party had no more right to make changes in his specification not based upon what was shown in the drawing and model, than he had to change the drawing itself in particulars not warranted by the model, and *vice versa*. And the Commissioner added that there was a special reason why the Rule should be applied in that case, which was that the amendment was proposed after the application had been pending for a period of more than two years, the presumption being in such case that the modification was material, and an afterthought.

It is not stated in the decision in what the modification consisted, and the case must be construed, in view of the principle here set forth, that the modification amounted to a material change in the invention, or a substantial improvement thereon.

It was stated by the applicant that the modification did not change the principle of the original invention, and the Examiner did not take issue upon this point; neither did the Commissioner comment upon it, but the decision rested alone upon the implication against the applicant arising from the length of time elapsing from the filing of the application and the proposed amendment.

The decision of the Examiner is reversed.

McCULLOUGH *vs.* WATKINS.—*Interference.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the interference between the application of Lewis H. McCullough, filed September 23, 1874, and the application of William B. Watkins, filed November 23, 1872, for Letters Patent for a* "COMBINED FIRE-ALARM AND POLICE TELEGRAPH.—*Decided November 1, 1875.*]

A substantial variance between the preliminary statement and the testimony throws strong suspicion upon the latter.

Sketches produced for the occasion, and in the absence of all contemporaneous tangible evidence of early efforts, of no value, except by way of explanation.

The allegation of one that he conceived the idea of an invention at a certain time, in absence of proof of its completion by him at that time, not sufficient to establish the fact of invention.

To constitute an invention or discovery, as defined by the Office and the courts, the idea must be embodied in a practical form.

SPEAR, *Acting Commissioner:*

Before the invention of the matter now in controversy two separate telegraph-lines were used to convey fire-alarms and messages to police-stations. The parties herein propose to use one wire only for both purposes. To accomplish this there is connected to a main metallic circuit, which includes within its course police-stations, with a single insulated battery and the necessary insulated instruments, and an additional, or, as it is called, an auxiliary battery with an earth-connection. One pole of the auxiliary battery is connected permanently with the earth, and the other with the complete metallic circuit.

Upon branch wires leading from the main circuit, at different points thereon, are located fire-alarm stations, each of which has an earth-connection. The metallic circuit-connection at the police-stations is normally closed, while the earth-connection at the signal-stations is normally open. An alarm of fire struck at any one of the signal-stations is conducted to auxiliary earth-battery at the main station, over that portion of the metallic circuit-wire presenting the least resistance, and without interfering with other messages transmitted over the same wire at the same time, and without regard to the fact whether the main wire is intact or not. A return current between the auxiliary battery and each of its branches is established by their earth-connections. These are the features common to both systems, and which, therefore, constitute the interference.

Considerable dispute has been had in regard to the proper construction of the issue, as declared by the Examiner, but in my opinion it clearly covers the features I have enumerated. The declaration is as follows:

> In combination with the battery and the main metallic circuit, the auxiliary battery connected with the main circuit and with the earth. In combination with the above a series of signaling instruments connected with the main-line circuit, one or more of which has an earth-connection.

In details of operation, and character of instruments employed, there are some differences which it is unnecessary for the purposes of this controversy to consider. Both the Examiner of Interferences and the Board found priority with Watkins. There is nearly two years' difference in the date of filing of the respective applications, Watkins's having been filed November 23, 1872, and McCullough's September 23, 1874.

In his preliminary statement McCullough alleges that he conceived the idea of this invention in November, 1867; that at the same time he exhibited it in practical operation to several persons; that the object of his experiments then was to have the earth-circuit for private messages, so that no operator but the one sending and the one receiving could get the same. Thinking it then impossible to get telegraph companies to adopt it, he says:

> I let the subject drop until September, 1869, when I commenced experimenting with earth-circuit for fire-alarm signals, using the earth-circuit for fire-alarm signals and the metallic circuit for common telegraph.

He concludes as follows:

> The duplex circuit, described and claimed in my application, said to interfere with Watkins's application, and which I use now, is substantially the same as I used experimentally in November, 1867. I explained the working of that duplex circuit, and showed it to a great number of persons.

The first inquiry to be made is, Does the testimony in behalf of McCullough sustain the allegations of his preliminary statement? No wiser rule has ever been adopted by the Office, in my opinion, than that requiring parties to an interference to file at the outset sworn statements setting forth the material facts which they intend to substantiate by proof. It was adopted for the purpose of putting an end to the practice which seems at one time to have prevailed to some extent of striving on each side to learn an opponent's date of invention, only to manufacture such proof as might be necessary to fix an earlier time. (*Schenck* vs. *Rider*, C. D. 1870, p. 135.) Ample time is given to the contesting parties to make these statements, and there is no reason why they should not agree substantially with the testimony subsequently adduced by the same party. A substantial variance, therefore, between the statement thus carefully made, under oath, and the subsequent testimony of the same party, gives rise at once to a strong suspicion of his integrity, and it requires very strong corroborative testimony of disinterested parties to produce conviction of his truthfulness.

Referring now to the testimony of McCullough I agree with the Examiner of Interferences, with whose opinion the Examiners-in-Chief concurred, that it does not sustain the allegations of his preliminary statement. First, as to his experiments in 1867, which he asserts were with substantially the same "duplex circuit" now claimed in his application, and which interferes with the application of Watkins.

On direct examination McCullough testifies that in November, 1867, at Richmond, Ind., he was experimenting with an electric engine for which he obtained a patent, and in using the battery for running the engine found it too weak. He then stretched two wires from the windows of a shop where he was working, and connected their ends to a telegraph wire running along a railroad from Chicago to Richmond, in front of the shop. The telegraph wire was about twenty feet from the shop, and the ends of the branch wire, where joined to the main wire, were about fifteen feet apart.

On cross-examination he makes a diagram showing the arrangement here mentioned, with an addition of a small metallic battery within the shop, and a key and sounder placed on each side of the room. This shop wire, together with the short space of the main Chicago wire, is represented as forming a short complete metallic circuit, and used by McCullough and his assistant, Moffit, in conversing with one another across the room. Finding, he says, on inquiry, that the Chicago line was in constant use the idea occurred to him of sending two circuits over the same wire. If by this he means the present invention, his idea certainly was not embodied in his first experiment made in November, 1867. He clearly admits this himself on cross-examination. There was no earth-connection on the circuit within the shop, and it was impossible to send messages into the shop from the Chicago and Richmond wire, or from the shop to either place. In short, the shop where McCullough was experimenting was not a branch station for any purpose whatever, and what was done there no more resembles the invention in controversy than if a mere metallic circuit had been established within the shop itself. Without the connection of wires from the shop to that along the railroad, the latter was as good a practical illustration of this invention as anything McCullough then did.

McCullough's counsel contends that the circuit established by him, the connection of the shop wires with the main telegraph wire, represents the main insulated metallic circuit as now claimed. The Richmond battery he calls "the battery with one end to the earth and the other in the metallic circuit," and the Chicago end, with its instrument, the "earth branch." This theory is entirely opposed to the requirements of the invention in dispute. It lacks the essential feature of *the same circuit-wire* for both batteries, and the further requisite of a normally open earth-battery in either the metallic circuit or the branch connections. The effect of such an arrangement thus renders the "metallic circuit" entirely independent of the earth-circuit, whereas they are claimed in combination. And if combined with a single wire, and with an open earth-connection within the metallic loop, the testimony of experts clearly shows that when such connection was closed it would destroy all communication between the other two stations.

It is unnecessary to discuss further the nature of McCullough's "Exhibit 1," as it is clearly proved by the testimony on both sides that it fails to show the invention in controversy. It is well here to remark that McCullough offers no contemporaneous tangible evidence of his early experiments. Sketches made at the time of the examination are offered, but sketches and all other similar exhibits produced for the occasion, and not even purporting to be copies of originals whose loss is accounted for, are of no more weight, of course, than oral statements made at the same time, and add nothing whatever to the value of those statements, except by way of explanation.

We have, then, nothing further than McCullough's allegation to show that he even conceived of the idea of this invention in 1867. Admitting that the idea did then occur to him it cannot be regarded as the date of his invention. Merely conceiving that a thing might be done does not constitute "invention" or "discovery," as defined by the Office and the courts in their construction of the statute. It is the embodiment of the idea in a practical form that is required, and in looking for this on the part of McCullough it is necessary to go further than his experiments in 1867.

Upon further cross-examination he testifies that in 1868 he used "substantially the same circuits" as above described in a room at the depot of the Indiana Central Railroad at Richmond, Ind. He is asked to make a diagram of that arrangement, and he accordingly draws another sketch, marked "Exhibit No. 2." But instead of representing "substantially the same experiment" he had previously made, it shows substantially the arrangement now in controversy.

There is some doubt as to the practical working of an arrangement, such as is shown by "Exhibit 2," in the manner now claimed by the parties, but on its face it shows the principal features of the invention, viz: a main metallic circuit, with which is connected an auxiliary battery with an earth-connection, and branches of the earth-circuit are also shown connected to the main metallic circuit. But McCullough refuses to give a positive answer to the question as to whether his "Exhibit 2" shows the identical arrangement he had in operation at the time and place mentioned. He answers that it was substantially the same, but all through his testimony very material changes and essential differences are covered by his use of the phrase "substantially the same." He names five persons whom

he alleges witnessed the operation of his circuit as represented by "Exhibit 2." Two only of these persons are subsequently called upon to testify, and they are entirely silent as to any such occurrence. One of them, (Moffit,) in answer to a question asking him to tell all he knew about McCullough's invention and experiments, testifies that he assisted McCullough in his experiments in 1867, and had seen the latter further experiment "off and on up to 1869;" and that "in September, 1869, he (McCullough) invented his fire-alarm to work with the earth-circuit." Moffit also makes a sketch, and this shows precisely the same arrangement as McCullough's Exhibit No. 1. He is not shown Exhibit No. 2, and makes no mention of having seen any such arrangement.

I agree with the Examiner of Interferences that the testimony of McCullough in regard to the devices represented by his Exhibit No. 2 is inconsistent with his preliminary statement, with his testimony on direct examination, with the testimony of Moffit, is entirely uncorroborated, and if any such experiments took place at the Indiana Central Depot in 1868, as he alleges, they were but a continuation of precisely the same experiments made in the shop in November, 1867. He mentions other experiments made from that time until 1874, and refers to the same persons as before as witnesses, but the witnesses called failed to describe them. He admits that the first public practical exhibition he made of the combined circuits was at the Cincinnati Exposition, in September, 1874. Both in his preliminary statement and in his testimony he states that he thought when he obtained his patent of January 20, 1874, for a fire-alarm telegraph he had covered the whole ground. This assertion, in connection with the lack of evidence as to the completion of the invention in controversy by him up to that time, convinces me that the patent referred to did actually embrace all that he had practically accomplished up to that date. The subject of that patent was a fire-alarm telegraph with ground-connections at the signal-boxes, between which and the main line the circuit was ordinarily closed, by the operation of which the starting of any box broke the continuity of the main line, cutting out all boxes beyond the first, and establishing a short ground-circuit with the battery at the main station.

The independent set of police-signals, and metallic circuit added thereto, make up the present invention; and I cannot believe upon the testimony adduced that the combination was practically made until after the date of said patent. It appears that McCullough exhibited the invention in operation at Cincinnati about the same time he filed his application for a patent. This, as has been shown, was nearly two years after Watkins had filed his application, and, as the evidence in behalf of Watkins shows, nearly three years after the latter had put it in successful practical operation.

I shall adopt as mine the conclusion of the Examiner of Interferences, which is as follows:

Watkins, except in the single item of alleging conception of the idea of invention at a later date than that at which McCullough attempts unsuccessfully to establish an embodiment of the invention in a working apparatus, is superior in diligence, superior in the character of his evidence, superior in the number and practical character of his experiments, and the first to apply for a patent by nearly two years. Priority of invention is, therefore, awarded to Watkins.

The decision of the Examiners-in-Chief is affirmed.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date December 28, 1875.]

8,866.—**Glass Shades.**—THOMAS B. ATTERBURY, Pittsburg, Pa., assignor to J. S. and T. B. ATTERBURY, same place. Application filed December 18, 1875. Term of patent 7 years.

8,867.—**Band-Combs.**—BENJAMIN F. BENTON, New York, N. Y. Application filed December 14, 1875. Term of patent 7 years.

8,868 and 8,869.—**Inkstands.**—BLOOMFIELD BROWER, New York, N. Y. Applications filed September 22 and November 4, 1875. Term of patents 3½ years.

8,870.—**Base for Inkstands.**—JOHN V. BROWER, New York, N. Y. Application filed September 20, 1875. Term of patent 3½ years.

8,871.—**Bead for a Necklace.**—SHUBAEL COTTLE, New York, N. Y. Application filed November 27, 1875. Term of patent 3½ years.

8,872.—**Band-Combs.**—EZRA M. DRAKE, New York, N. Y. Application filed December 14, 1875. Term of patent 7 years.

8,873.—**Flag.**—WILLIAM A. DUFF, Philadelphia, Pa. Application filed November 27, 1875. Term of patent 3½ years.

8,874 and 8,875.—**Carpets.**—HEINRICH F. GOETZE, Boston, Mass., assignor to THE ROXBURY CARPET COMPANY. Applications filed December 21, 1875. Term of patents 3½ years.

8,876.—**Printing or Weaving Silk or other Fabrics.**—STILES HUBER, Philadelphia, Pa., assignor of one-half his right to AARON LICHTEN, same place. Application filed December 15, 1875. Term of patent 3½ years.

8,877.—**Picture-Frame.**—RICHARD MINSHULL, Pittsburg, Pa. Application filed December 2, 1875. Term of patent 3½ years.

8,878.—**Breastpin.**—SIMON PFAELZER, Philadelphia, Pa. Application filed November 27, 1875. Term of patent 3½ years.

8,879.—**Group of Statuary.**—JOHN ROGERS, New York, N. Y. Application filed December 11, 1875. Term of patent 14 years.

8,880.—**Cigar-Lighters.**—FREDERICK R. SEIDENSTICKER, West Meriden, Conn., assignor to THE BRADLEY & HUBBARD MANUFACTURING COMPANY, same place. Application filed December 21, 1875. Term of patent 3½ years.

8,881.—**Casing of Soda-Water Apparatus.**—FRANK H. SHEPHERD, Boston, assignor to JAMES W. TUFTS, Medford, Mass.—Case G. Application filed December 2, 1875. Term of patent 14 years.

8,882.—**Coffin-Handle-Socket Bases.**—WILLIAM M. SMITH, West Meriden, Conn., assignor to MERIDEN BRITANNIA COMPANY, same place. Application filed December 21, 1875. Term of patent 7 years.

8,883.—**Carpets.**—THOMAS J. STEARNS, Boston, Mass., assignor to THE ROXBURY CARPET COMPANY, same place. Application filed December 21, 1875. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each certificate bearing date December 28, 1875.]

3,280.—**Cigars.**—GEORGE ALCÉS, New York, N. Y. Application filed July 21, 1875.
"words 'FLOR DE TOBACOS DEL SUR.'"

3,281.—**Fertilizers.**—BURKHOLDER & WILSON, Bendersville, Pa. Application filed March 17, 1875.
"figure of a five-pointed star and the word 'STAR.'"

3,282.—**Counter-Boxes for Spool-Cotton.**—J. & P. COATS, Paisley, Scotland. Application filed December 22 1875.
"symbol of a spool of cotton."

3,283.—**Steel Bar, Steel Plate, and Articles Made Therefrom.**—MILLER, METCALF & PARKIN, Pittsburg, Pa. Case A. Application December 13, 1875.
"word 'Crescent.'"

3,284.—**Steel Bar, Steel Plate, and Articles Made Therefrom.**—MILLER, METCALF & PARKIN, Pittsburg, Pa. Case B. Application filed December 13, 1875.
"symbol of a crescent."

3,285.—**Mowing and Reaping Machines and Grain-Binders.**—WALTER A. WOOD MOWING AND REAPING MACHINE COMPANY, Hoosick Falls, N. Y. Application filed December 13, 1875.
"a cut, design, picture, or print of a finger-bar, and of a sickle or cutter bar of a mowing or reaping machine, which said parts may be represented crossing or intersecting each other, and above them the words 'Walter A. Wood.'"

3,286.—**Tobacco and Cigars.**—V. MARTINEZ YBOR & Co., New York, N. Y. Application filed September 24. 1875.
"words and characters as follows, to wit: 'El Principe de Gales de Vicente Martinez Ybor & Co.,' in connection with the British coat of arms."

3,287.—**Cigars and Tobacco.**—V. MARTINEZ YBOR & Co., New York, N. Y. Application filed October 12, 1875.
"words 'EL PRINCIPE DE GALES.'"

LABELS REGISTERED DURING THE WEEK.

[Each certificate bearing date December 28, 1875.]

455.—Title: "**The Golden Bird Gravel.**"—EDWARD ALDON, Brooklyn, N. Y. Application filed December 18, 1875.

456.—Title: "**Davidson's Instant Tooth-Ache Cure.**"—HENRY M. DAVIDSON, Ogdensburg, N. Y. Application filed December 20, 1875.

457.—Title: "**Extension-Lip Spur Auger Bitts.**"—RUSSELL JENNINGS, Deep River, Conn. Application filed December 18, 1875.

458.—Title: "**Brilliant Signal Oil.**"—E. M. KELLOGG, New York, N. Y. Application filed December 2, 1875.

459.—Title: "**X X Engine and Spindle Oil.**"—E. H. KELLOGG, New York, N. Y. Application filed December 20, 1875.

460.—Title: "**Continental Brace, Manufactured by the Nashawannuck Manufacturing Company.**"—NASHAWANNUCK MANUFACTURING COMPANY, East Hampton, Mass. Application filed December 17, 1875.

461.—Title: "**Two Orphans—Cigar, Manufactured by M. J. O'Brien.**"—M. J. O'BRIEN, Binghamton, N. Y. Application filed November 3, 1875.

462.—Title: "**Mathis' Quarter Dollar Family Liniment.**"—CHARLES B. MATHIS, Tom's River, N. J. Application filed December 20, 1875.

463.—Title: "**T. R. Steel's Celebrated Apple Ginger.**"—THOMAS R. STEEL, Philadelphia, Pa. Application filed December 18, 1875.

464.—Title: "**Double-Sized Sample Sheet of the Byron Weston Premium Linen Record Paper.**"—BYRON WESTON, Dalton, Mass. Application filed December 20, 1875.

THE OFFICIAL GAZETTE.

The OFFICIAL GAZETTE of the United States Patent Office is published weekly by the Patent Office. It is printed by authority of an act of Congress, which provides for its gratuitous distribution to libraries at the rate of eight for each congressional district.

The GAZETTE contains the decisions of the Commissioner of Patents, and such decisions of the courts in patent causes as are believed to possess general interest to inventors and patentees.

The claims of all patents granted are printed in the GAZETTE, bearing the same date as the issue of the patent, accompanied by a brief synopsis of the invention and a portion of the drawing.

The illustrations are photographic reproductions on a reduced scale of the drawings accompanying the original application, and preserve their fidelity. The limited space permitted for each patent prevents, in many cases, an adequate representation, but the prominent feature of invention is usually shown. Disclaimers filed in the Office are nowhere else published.

Changes in the rules of practice of the Office are announced in the GAZETTE, which affords a much readier mode of communication with parties interested than to await a new edition of the Rules of Practice.

Finally, any matter believed to be of interest to inventors in their official intercourse with the Office, will receive in the GAZETTE the attention the subject warrants.

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COPIES OF DRAWINGS OF BACK ISSUES.

Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 13, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, (not the subject-matter classification elsewhere referred to,) governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)	6,500
SEWING-MACHINES and attachments	2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes	4,000
PRINTING; including presses, type, and printers' furniture.	2,500
FELTING and HATS; including caps, bonnets, flock, &c.	1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs	1,400
CARRIAGES and WAGONS	6,000
BRIDGES; including ferry-guards, girders and columns, piers	408
CARDING, CLOTH, CORDAGE, KNITTING, SILK, SPINNING, WEAVING	4,800
RAILWAYS	3,500
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REMITTANCES.

All money sent by mail, either to or from the Patent Office, will be at the risk of the owner. In no case should money be sent inclosed with models. All payments to or by the Office must be paid in specie, Treasury notes, national bank-notes, certificates of deposit, or post-office money-orders.

TO CORRESPONDENTS.

Persons ordering drawings of patents, or making inquiries in regard to patents, must always state the name of the inventor, subject-matter, and date. In making inquiries in regard to applications for patents letters must state the name of the applicant, subject-matter, and date of filing.

COPIES OF PATENTS ISSUED SINCE JULY 1, 1871.

For the convenience of manufacturers, the various subjects of invention have been classified, (Subject-Matter Index, 1871,) and a list is kept of all the patents issued since July 1, 1871, in the various classes, so that an order given for the patents of a class will be filled as to patents since the above date, and subsequent patents in the same class will be forwarded from week to week, (postage paid,) as they may issue.

Those desiring copies of patents under this arrangement should deposit a sum of money, not less than three dollars, with the Commissioners of Patents; when the deposit is exhausted they will be notified.

In ordering drawings by classes, under the subject-matter index of September, 1871, (furnished gratis on application,) it will be understood that the Office cannot take upon itself to make selections of certain lines of inventions, embracing portions only of the patents in the classes as specified. The number of classes has been made as ample as the conduct of the business in this Office will readily permit. An order should, therefore, embrace the entirety of a given class or classes. They cannot be subdivided unless ordered specifically by giving the number, name, and date of each patent.

The cheapness of the copies, (ten cents apiece when ordered in quantity or by the whole class,) and the comparatively small number of patents in each of the 176 classes, render an order by class a by no means onerous undertaking.

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Anti incrustation compound, A. Chavasse	148	171,599
Atomizer, H. R. Spencer	98	171,637
Bale band tightener, cotton, S. H. Gilman	7	171,560
Barrel heater, cooper's, W. N. Moore	154	171,489
Belt, power, S. M. Clark	81	171,505
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Blind stiles, machine for boring, J. Boe	30	171,546
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Bridle bit, J. Stanley	72	171,567
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Buckle, W. E. Aston	23	171,543
Bungs, machine for turning, E. Gunther	175	171,511
Bungs, machine for turning, E. Gunther	175	171,512
Burner, lamp, F. A. Taber	90	171,638
Butter, preserving, F. H. L. C. Sacc	58	171,532
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Car coupling, H. W. Chase	192	171,504
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Car, refrigerator, J. Turner	58	171,491
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Well, petroleum, W. L. Hardison	124	171,615
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INDEX OF PATENTEES TO WHOM PATENTS WERE GRANTED DECEMBER 28, 1875.

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Whitehead, W. E., assignee	171,519, 171,520
Williford, J. L., Middlings purifier	171,542
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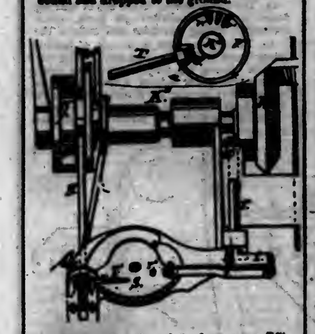
TITLES, DRAWINGS, AND CLAIMS

OF

PATENTS GRANTED DECEMBER 28, 1875.

171,466. GRAIN-BINDER. J. F. Appleby, Beloit, Wis. [Filed June 12, 1875.]

Brief.—The cut grain that falls upon the platform is moved backward by an extensible rake attached to the reel, and then by a laterally-moving rake to the binder, where it is bound and dropped to the ground.



1. The combination of the lever arms G'', the right arm G, connections I' F', rake-head H', and cam J, constructed, arranged, and operating substantially as and for the purposes specified.

2. The combination of the crank L upon shaft K'', the pitman L', fork-handle L', fork M m, and pivoted connections L'' L', substantially as and for the purpose specified.

3. The combination and arrangement of the arm E, finger f, tackle f', cord F, spring F', and arm F', and cam G, substantially as and for the purpose specified.

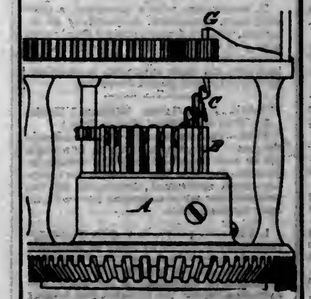
4. The combination of the engaged segment S, having two pins, r' r'', the notched pinion K, and pivoted blade r, substantially as specified.

5. The mechanism for producing an intermittent rotation, consisting of the flanged wheel V, having the teeth v', at which the flanges is cut away, in combination with the flanged pinion U u, substantially as specified and shown.

6. The combination and arrangement of the shaft K'', actuated from the driving-shaft, the flanged wheel V v v', flanged pinion U u, shaft T, crank 4, segment S, and notched pinion E, substantially as specified and shown.

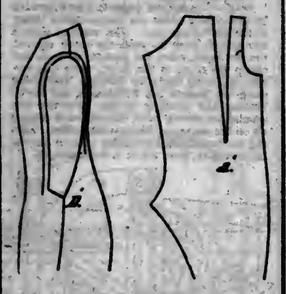
171,469. KNITTING-MACHINE. Charles J. Appleton, Elizabeth, N. J. [Filed Sept. 28, 1875.]

Brief.—The revolving guide carries the yarn in a circle around each needle, giving to each stitch a half-twist to prevent raveling.



The combination of needle-cylinder B, carrier A, needles C C, and revolving yarn-guide G, operating together substantially as and for the purposes described.

171,497. UNION-GARMENT. Lydia P. Bonney, Chicago, Ill., assignor to Agnes Ryan, same place. [Filed Dec. 29, 1874.]



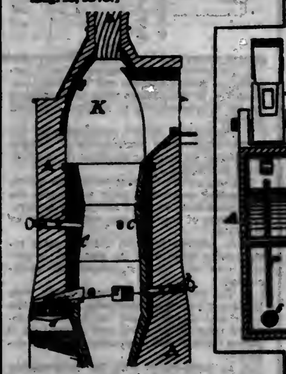
1. The patterns A' B' C', substantially as and for the purpose set forth.

2. The garment D', composed of the pieces A', B', and C', substantially as and for the purpose set forth.

3. The patterns A, B, C, D, and E, substantially as and for the purpose set forth.

4. The garment F, composed of the pieces A, B, C, D, and E, substantially as and for the purpose set forth.

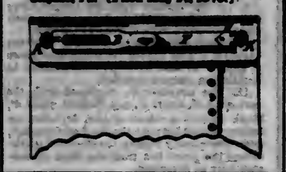
171,500. LAMP-LIGHTER. Henry Brockmann and Henry Steuve, Cincinnati, Ohio. [Filed Aug. 19, 1875.]



1. In combination with the furnace, the cupola K, and spiral flues L, for carrying the products of combustion spirally out of the kiln, substantially as described.

2. The combination of the furnace A, flues a a, kiln C, the cupola K, and spiral flues L, arranged to operate substantially as described.

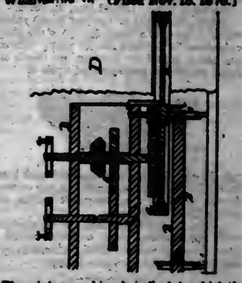
171,503. MAN-HAUL. Geo. O. Clark, Philadelphia, Pa. [Filed May 14, 1875.]



1. The combination, in a mail-bag fastening, of the swivel-studs A and A', buttons a and a', bloated label-case and loop B, leather strap F, and metallic strap and O, substantially as herein shown and described.

2. The swivel-studs A and A', provided with buttons a and a', in combination with openings f and f' in the body of the bag, substantially as herein shown and described.

171,470. MINING-MACHINE. A. Cromlish, Wilmington, Vt. [Filed Nov. 16, 1875.]



The mining-machine described, in which the cutting-wheel a rests on a step, s, in the body of the main frame B, on which it revolves by means of gearing, as shown, and having in combination with it the dust-shield p, all combined and arranged as and for the purposes set forth.

171,471. PADLOCK. George R. Cutbirth, San Francisco, Cal. [Filed June 16, 1875.]



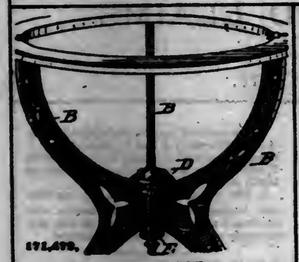
1. The circular bolt, consisting of the rod f, hollow end pieces G H, and spiral springs K, substantially as and for the purpose above described.

2. In combination with the case A the rotating cap Q and series of rotating disks r', each of which is provided with a key-hole, and the whole connected by pins and slots, substantially as above described.

171,472. GLOBE-STAND. Edrid G. Durant, Racine, Wis. [Filed Oct. 21, 1875.]

1. A stand for globes, consisting of the hollow standard A and a series of vertical supports or uprights, B, combined substantially as described, whereby the parts can be readily detached and packed flat for shipment, and be as readily connected again, as set forth.

2. The legs or supports B, provided with the central locking-guide, in combination with the cap D and rotary rod H, or equivalent locking devices, constructed to operate substantially as set forth.



171,470.

171,470. THUMB-PADS. Isaac M. Foote, Middletown, Ohio. [Filed Dec. 21, 1874.]

Brief.—The front of the pad is soft rubber, which, in process of manufacture of the pad, is vulcanized to the hard-rubber back. The soft pad has a recess for holding the shank of a small additional pad mounted upon it.



1. In combination with the solid back *b*, and its flexible adjustable cushion *a*, the orifice *f* for the shank of the removable button, substantially as described.

2. The solid-rubber back, in combination with the flexible-rubber cushion, united at their edges by vulcanization, substantially as described, for the purpose specified.

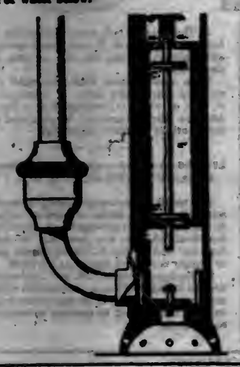
171,474. SKIRT-ADJUSTER. A. S. Gear, Boston, Mass. [Filed Nov. 22, 1875.]



As a new article of manufacture, a skirt-adjuster, consisting of an open flexible spring band to conform to the person, substantially as described and shown, and to nearly encircle the skirt of the wearer, as specified.

171,475. PUMPING OR FORCING FOR FORCE-PUMPS. George W. Gilmore, Webster, Pa. [Filed Apr. 28, 1875.]

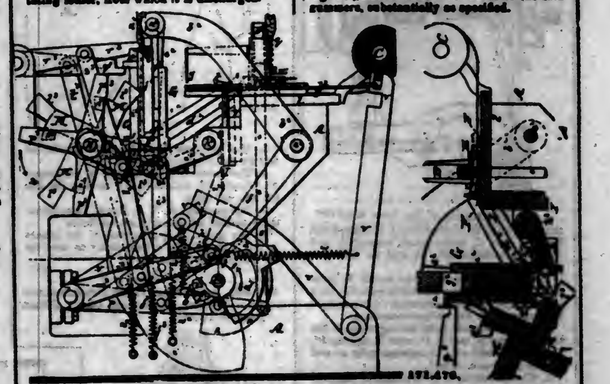
Brief.—The air supplied to the spectacle to the boiler plates, by the upper valve thereof, is retained, in the down-stroke, by the closing of said valve, and by the opening of the lower valve operates as an air-spring upon the column of water below.



A piston for force-pumps having the air-chamber F, air-inlets *a a*, openings *b*, and provided with the valves C C', which alternately open and close the said openings by the reciprocation of the piston, substantially as and for the purpose hereinbefore described and set forth.

171,476. PAPER-BOX MACHINES. Richard Grimm, New York, N. Y., assignor to himself and Henry Meyer, same place. [Filed Aug. 30, 1875.]

Brief.—The strip of paper is drawn forward by the grippers under the reciprocating cutter to the conveying-tool. The vertical slide is now raised, so as to press the blank against the conveyor, when the pushers advance and clamp the edges of the sheet, while it is carried to the die ready for folding. This being done, the pushers are withdrawn, and the vibrating and rotating folders form the box around the sleeve, when the sleeve is slipped up on the conveyer, which is then raised, leaving the completed box in the arms of the rotating folder, from which it is discharged.



171,476.

1. The vertically-reciprocating cutter B, carrying the cutting-blade *n* and the pressing-tools *a c*, in combination with the horizontal carrier F, substantially as herein shown and described.

2. The vertical slide I, combined with the horizontally-moving blank-carrier F, to raise the carrier against the conveyor G, substantially as specified.

3. The glue-box E, constructed with the reciprocating perforated viper *m*' beneath the perforated false bottom P and above the regular bottom of the glue-box, substantially as specified.

4. In combination with the perforated reciprocating viper *m*' of the glue-box, the pivoted rod *r*' and clamp *c*', substantially as described.

5. The combination of the glue-box with the loop *l*' suspended therefrom, and with the rod *r*' and clamp *c*', said rod having an inclined edge to be raised and lowered as it passes through said loop, substantially as described.

6. In combination with the reciprocating perforated viper *m*' and vibrating clamp *c*' of a glue-box, the rock-shaft *n*', all arranged for automatic action, substantially as specified.

7. The glue-box E, carrying the reciprocating perforated viper *m*', combined with the steam-jacket *s*', that has the pipes *p*' and *q*', substantially as specified.

8. The conveyer-blank *p*' of the paper-box-making machine, combined with the endwise-reciprocating sleeve *b*', substantially as herein shown and described.

9. In combination with the reciprocating sleeve *b*' and blank *p*', the reciprocating foot-pieces *f*', arranged to operate as set forth.

10. The combination of the blank *p*' of the conveyer G with the reciprocating side pieces *f*', applied to said blank *p*', substantially as and for the purpose specified.

11. The conveyer G, combined with the rock-shaft *n*', levers *b*', and inclined guide *d*', blank against a sleeve or bar, *b*', which its bottom is held between the die J and blank *p*', and subsequently raising the sleeve *b*' to discharge the paper box from the blank *p*', substantially as described.

12. The combination of the blank-conveyer G with the stationary die J, vibrating folder L, and intermittently-rotating cross-shaped folder M, substantially as herein shown and described.

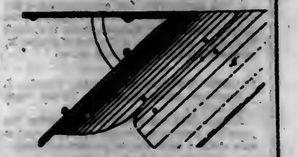
13. The rotary folder M, made with the upwardly-projecting cars F', and with the outwardly-projecting cars *f*, and arranged in the form of a cross, for constituting a combined folder and box-retainer, substantially as herein shown and described.

14. The improvement in the art of making paper boxes hereinbefore set forth, which consists in folding the sides and ends of the

15. The improvement in the art of making paper boxes hereinbefore set forth, which consists in placing the segmented paper blank against the under side of a conveyer, G, in subsequently moving the grommets *m*' *m*' over the ends of said blank, and in finally clamping the grommeted ends of the blank to the said conveyer, substantially as specified.

171,477. PLOWS. Asa Hall, Rockford, Ill., assignor to himself, John G. Elliott, and Edward D. Hall, same place. [Filed Sept. 13, 1875.]

Brief.—A reversible mold-board fitted to a fixed share.



In combination with a plow-share, a plow mold-board constructed substantially as described, with its opposite edges *d* fitted to the edge *f*' of share *A*, and its opposite edges *g* made to form a slide line with the face of the land-side, and made reversible, as described, for the purpose of greater durability.

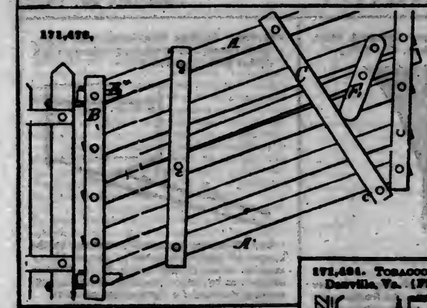
171,478. FARM-GATES. William J. Hollis, De Witt, Mo. [Filed May 3, 1875.]

Brief.—The hinges preserve their relation to the post. The gate is held thereto by a single pin for each hinge, admitting of a variable inclination, the rails flexible within the clamping-hinge, maintained horizontal by two perpendicular strips embracing the whole, all upon the same pivot.

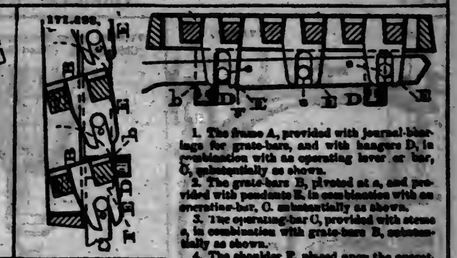
1. The combination, in a gate, of the upright strips B, jointed by pins *c* to horizontal strips A, and metal yokes or clamps D', embracing the strips A, fixing recesses in the strips B, perforated for the passage of the pins *c*', and extending beyond the uprights, and forming the loops of the hinges, all as set forth.

2. The combination, with the gate constructed as described, of the rods *r*, connected to the bolt O O, pivoted to the upper bar, and united below the lower bar, as set forth.

171,479.



171,482.



171,479. WINDOWS. Jan A. Holmes, Centerbrigport, Mass. [Filed May 1, 1875.]

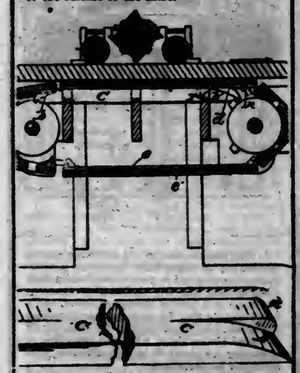


1. The combination, with a window-frame, B, constructed with a chamber O B and a rim or projection, *b*', extending across the sill thereof, of a sash, B, provided with extensions F', grooves *f*, guard A, and a weather guard or protector, *b*', and a sash, D, having extensions F', and a ventilator, G, all constructed and operating substantially as shown and described.

2. The combination, with a window-frame, constructed with a chamber, B, of a sash, B, having extensions F', guard A, and a weather guard or protector, *b*', constructed and operating substantially as shown and described.

171,480. FLEMING-MACHINES. L. Houston, Montgomery, Pa. [Filed Nov. 6, 1875.]

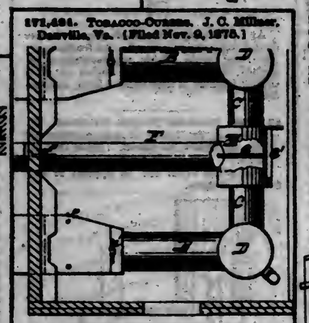
Brief.—Under the bed are rigid rests for the legs to slide upon. These bed-sliders are, at each end, divided longitudinally into two separate inclines. The under faces of each leg are provided at each end with a divided projection, which lifts the leg bodily horizontally, when the bed brings it to the level of the lumber, thus preventing any marring of the surface of the same.



1. The combination, in a pinning-machine, of the legs *a*, provided with the projections *a*', and the ways C, provided with the inclines *b c*, or their equivalents, said parts being constructed to operate substantially as and for the purpose set forth.

2. An endless-bed pinning-machine having the legs which compose its moving bed constructed and arranged to operate substantially as described, whereby they will assume a horizontal position before arriving at their highest point, and so that their edges or corners shall not come in contact with the lumber while turning to the horizontal position, as set forth.

171,481. TOBACCO-CUTTERS. J. C. Milner, Danville, Va. [Filed Nov. 6, 1875.]

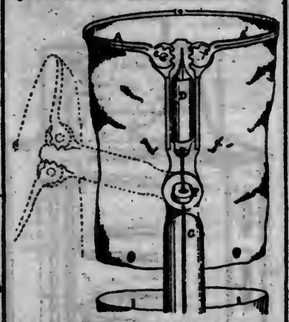


1. In combination with the graduated heaters B C F, the drums D D and E and furnaces A A, substantially as and for the purpose set forth.

2. In combination with the heaters B C F, the furnaces A A, drums D D and E, having the partition *c*, for equally distributing the heat from the several drums to the return-heater F, substantially as and for the purpose set forth.

171,482. FRUIT-PICKERS. John Mooney, Providence, R. I. [Filed Sept. 27, 1875.]

Brief.—A pair of semicircular jaws are mounted upon a staff, one end of each jaw being provided with pinion-teeth, and between them is placed a double sliding rack, which is caused to move up and down by means of a cord or rod running down the staff. A sack or bag to contain the fruit is attached to the jaws around their circumference.



In a fruit-picker, the combination of the jaws A A', having the cogged ends *a a*', with the sliding rack D, meshing with the cogged ends of said jaws, substantially as described and shown.

171,483. STOVE-GRATES. George R. Moore, Philadelphia, Pa. [Filed Dec. 6, 1875.]

Brief.—The grate-bars are pivoted at one side of their longitudinal center, and can be either shaken or dumped. When shaken their motion is limited by the cotch or projection on the shaking-bar.

1. The frame A, provided with journal-bearings for grate-bars, and with hangers D, in combination with an operating lever or bar, G, substantially as shown.

2. The grate-bars B, pivoted at *a*, and provided with pendants E, in combination with an oscillating-bar, C, substantially as shown.

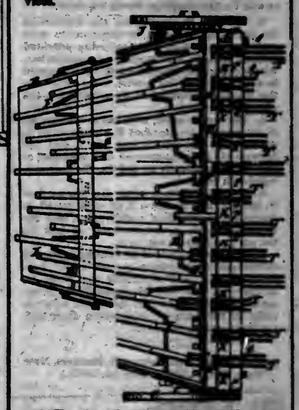
3. The operating-bar C, provided with stems *a*, in combination with grate-bars B, substantially as shown.

4. The shoulder F, placed upon the operating-bar C, and adjusted to shake its motion, substantially as and for the purpose herein set forth.

5. In combination, the frame A, bars B, pivoted as shown, operating-bar C, arranged to operate substantially as shown.

171,484. HAY-LOADERS. George H. Peck and Albert S. Peck, Geneva, Ill. [Filed Apr. 6, 1875.]

Brief.—Tipping bed with converging rakes working thereon. Improved gathering devices.



1. The pivoted rake-teeth K, provided with arms H projecting upward above the rake-head, substantially as and for the purposes set forth.

2. The combination of the gathering-rake and the toothed extension-pieces T, attached to the elevating-rakes I and projecting back between the teeth of the gathering-rake, substantially as and for the purposes set forth.

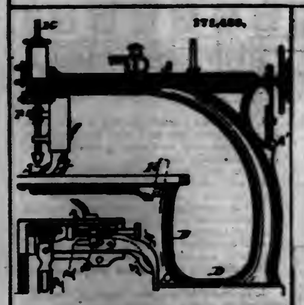
3. The sliding bar P, in combination with the springs O and pivoted rake-teeth, provided with arms H, substantially as described.

4. The tooth-roller U, in combination with the rake-teeth K, toothed pieces T, and elevating-platform A, as and for the purposes specified.

5. The combination of the shafts F, G, H, with the tipping platform A, the shafts F and H being bent at right angles to the side pieces of the platform, substantially as and for the purposes set forth.

171,485. SEWING-MACHINES. Adam Flom, Menomonee Falls, Wis. [Filed Oct. 6, 1875.]

Brief.—The table of the machine, provided with a longitudinal slot, is supported by the standard, and is hinged thereto, whereby it can be swung down out of the way, when it is desired to sew tubular articles on the projecting arm. The feeding-lever is actuated by mechanism contained in a box that swings about the needle-bar. The feeding-arm has a vertical and lateral motion. These motions are produced by a combination of levers with the needle-bar, as set forth in the claims. The needle-carrier is actuated by a rock and pinion, in combination with a crank-lever and an adjustable bent lever, all being operated from the driving-shaft by an eccentric.



171,689.

1. The combination, with the frame or stand A C D E, of the hinged work-table H, operated in the manner and for the purposes substantially as hereinbefore set forth.

2. The combination of the elongated hollow arm or box G, containing the shuttle, and the slotted top or table H, surrounding the same, and capable of being let down, substantially as and for the purposes herein set forth.

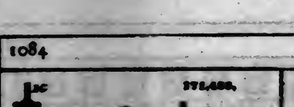
3. The box E, containing the mechanism for actuating the feed, in combination with cam I and hand E, said box being provided with an arm, K, surrounding the needle-bar, whereby the entire feed mechanism is adapted to swing around the needle, substantially in the manner hereinbefore described, for the purposes set forth.

4. The combination, with the needle-bar K, of the lever F, presser-foot F, slotted lever E, with pin *p*, feed-arm S, with pin *s*, and the fulcrum-pin *c*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

5. The combination, with the presser-foot F, lever E, and feed-arm S, all constructed as described, of the slide *t* with pin *s*, and the adjusting-screw *p*, substantially as and for the purposes herein set forth.

6. The combination of the centrally-pivoted shuttle-carrier C', pinion *c'*, rack-bar D', bell-crank lever B', and adjustable boat lever A', all operated from the driving-shaft by an eccentric and rod connected to said shaft, substantially in the manner hereinbefore described, for the purposes set forth.

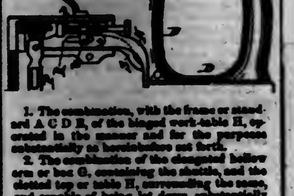
171,688. SPIKE. George H. Sanders, New York, N. Y. (Filed May 10, 1875.)



The improved spike A, herein described and shown.

171,687. COMBINED IMPLEMENTS. Levi Schaffer, Philadelphia, Pa. (Filed June 7, 1875.)

Brief.—The implement is cast in one piece, the body of which is provided with longitudinally-tapered slots, to act as a wrench, and having at one end a tack-extractor, and at the other a plate and lid-lifter, a reverse hook, lancetter, and can-opener.



The implement herein described, consisting of the handle A, provided with slots *b b*, plate and lid lifter B, reverse hook C, tack-extractor D, ice-cutter and can-opener E, having steps *e e* and inward curve *f*, constructed to operate as shown and set forth.

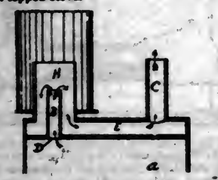
171,690. DOOR-SPRINGS. Lyman A. Stoll, Chicago, Ill. (Filed Sept. 27, 1875.)



As a new article of manufacture, a feather duster composed of a handle, the feathers prepared and made pliable, substantially as described, and a covering of ostrich or other similar feathers in their natural form, as specified.

171,691. COOPERS' BARREL-HEATERS. W. A. Strong, Jr., Joliet, Ill., administrator of Wm. H. Moore, deceased. (Filed Dec. 11, 1875.)

Brief.—The drum can be applied to any flat-topped stove.



The combination of the drum B, ring G, flues B C D E, and fire-box *a*, arranged substantially as and for the purposes set forth.

171,692. STOVE-POLISHES. Chas. H. Torts, New York, N. Y. (Filed Nov. 10, 1875.)

A paste stove-polish composed of hard soap, plumbago, resin, and varnish, as described.

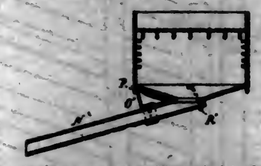
171,693. REFRIGERATOR-CARS. James Turner, Chicago, Ill. (Filed Dec. 1, 1875.)

Brief.—The drip cools the conduit for descending air, and, being retained in its coil by the final upward bend, directly aids in cooling the feed-chamber.



In a refrigerator, the ice-chamber D, and air-passages E, F, and *a*, in combination with the trough *c* and tube *f*, bent upward nearly or quite to the ceiling, all constructed substantially as and for the purposes specified.

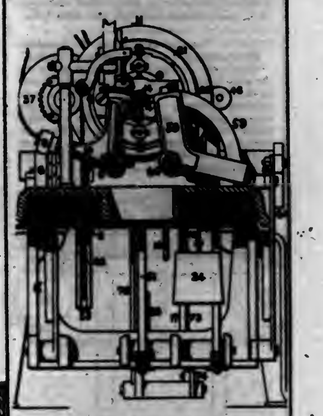
171,694. CLOVER THRASHERS AND HULLERS. Garet Jos. Utendorf, Ottawa, Ohio. (Filed Nov. 27, 1874.)



The discharge-trough N', attached to the hopper N² below the shoes by means of a triangular brace, O', and hook P' P, thereby adapted to be turned in other directions, substantially as and for the purposes set forth.

171,695. MACHINES FOR DRESSING THE HEADS AND POINTING AND THREADING THE SHANKS OF BOLTS. Wm. R. Ward, Port Chester, N. Y. (Filed Aug. 9, 1875.)

Brief.—A vibrating holder for receiving the blank from the railway-guide, and a follower-rod for pushing said blank out of the holder through a spring scroll-guide, (which rotates it axially, so as to insure the proper position of the squared portion under the head,) and into the revolving griping-jaws. Mechanism for closing said jaws upon the blank, and mechanism for automatically operating the holder, which carries the pointing and threading dies, so as to bring each of said dies into coincidence with the axis of the same at the proper time. A vibratory laterally-yielding stop between the head of the blank to project sufficiently to allow the shaving-tool to operate upon it. The finished bolt is discharged from the machine by a rod which works through the hollow spindle of the die-holder.



1. The combination of the following instrumentalities or organisms: revolving jaws or clamps constructed to receive and hold a bolt-blank so that both the head and the shank of the blank will project beyond the jaws, suitable threading-dies for cutting the thread on the shank, and a shaving-tool for dressing off the head of the blank while the operation of threading the shank is being performed, substantially as described.

2. Revolving jaws or clamps suitable for holding a bolt-blank, in combination with a pointing-tool and threading-dies mounted in the same holder, and arranged to be brought successively into coincidence with the axis of the blank, so as to first point and then thread the blank, substantially as described.

3. The combination of the following instrumentalities or organisms: revolving jaws or clamps constructed to receive and hold a bolt-blank, as described, a tool for pointing the end of the blank, dies for threading the shank, and a shaving-tool for dressing off the head concurrently with the operations of pointing or threading, or both, substantially as described.

4. The combination of a guide adapted to hold and conduct a row of blanks, a vibrating table, 3, and holder 4, as described, and a spring-check operating to cut off the undermost blank from the column of blanks in the guide by the movement of the vibrating table as the holder is about to receive a blank, the column of blanks at other times being sustained by the table, substantially as specified.

5. The combination of a blank-holder, 4, a follower-rod for pushing the blank into the holding-jaws, and a spring-scroll guide for turning the blank on its axis as it is entering the jaws, substantially as described.

6. In combination with the revolving holder in which the griping-jaws of a bolt-threading machine are mounted a ring, 21, or its equivalent, carrying a spring-pawl, and suitable mechanism for causing such pawl to engage with the holder and partially rotate the same to always bring the jaws to a given position.

7. The combination of revolving griping-jaws, adjustable to position, as described, with the mechanism substantially as described, for causing the bolt-blank to be rotated axially, as set forth.

8. In combination with revolving griping-jaws a vibratory gage, 27, to determine the distance measured from the under side of the head of the bolt-blank to which the latter shall project from the face of the jaws, substantially as specified.

9. The combination of a follower-rod for pushing the bolt-blank into the griping-jaws, with revolving griping-jaws for holding such blank, and a gage, 27, constructed to yield laterally to the thrust of the follower-rod, and recover itself as the follower retreats, substantially as described.

10. The combination of a burring-tool, 38, for pointing the end of the blank, and threading-die 37, for cutting the thread on the shank, when the same are mounted in a common holder, and arranged to be brought successively into coincidence with the axis of the blank, substantially as described.

11. The combination of the following-named organisms: machinery, substantially as described, for giving a forward movement to, with yielding pressure upon, the spindle, which carries the holder containing the burring-tool and the threading-dies; machinery, substantially as described, for causing the said threading-dies to be brought into the plane previously occupied by the burring-tool, and machinery, substantially as described, for causing the common holder for the burring-tool and threading-dies to retreat from the blank after the blank has been pointed and before the change in the relation of such tools to the blank to bring the threading-dies into action has been made, substantially as specified.

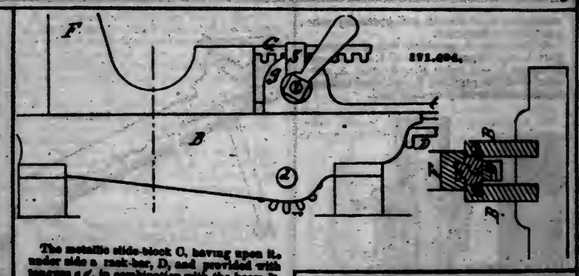
12. The combination of the spindle 23, a common holder, 2, for the burring-tool 38, and threading-dies 37, with the vibrating hinged journal-support for the same, substantially as described.

13. The combination of the longitudinally-moving spindle 23, the wiper-arm 46, and the expelling-rod 70, whereby the said spindle and its holder for the cutting-tools are made to perform the office of operating the expelling-rod from bunching when acting to expel the finished bolt from the holding-jaws, substantially as described.

14. The combination of a suitably-arranged spring-operated bolt-shipper bar, the vibrating table 3, and blank-holder 4, and the vibrating holder 50 for the head-dressing tool, substantially as described, for tripping the holding-latch of the bolt-shipper bar for stopping the machine.

171,696. HEAD-BLOCKS FOR SAW-MILLS. Samuel White, Eau Claire, Wis. (Filed Feb. 6, 1875.)

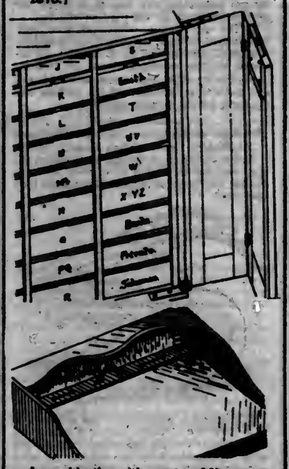
Brief.—The log can be adjusted so that a board of equal thickness throughout its length can be cut, or one with tapering or converging flat surfaces of any degree of variation from the parallel cut, by means of a metallic slide-block, provided upon its under side with a rack-bar, and having formed upon its edges tongues fitting in grooves in the beams or tracks of the carriage, and upon its upper front portion a dovetail tongue, adapted to a correspondingly-shaped longitudinal groove in the under side of the set-block, which is adjustable upon the slide-block by a suitable lever and pinion, and a rack-bar attached to the upper rear part of the slide-block, and held against vertical displacement by a U-shaped strap.



171,694.

The metallic slide-block C, having upon its under side a rack-bar, D, and provided with tongues *c c*, in combination with the beam B, provided with grooves A, the sliding dovetail set-block F, provided with the rack-bar G, and pinions I and E, all constructed to operate substantially as described, and for the purposes set forth.

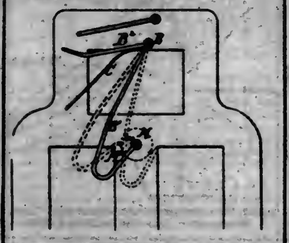
171,694. LETTER-FILE CABINETS. William A. Amberg, Chicago, Ill. (Filed July 24, 1875.)



In combination with a series of file cases or boxes, severally containing a self-indexing series of sheets, a cabinet adapted for the reception of such cases, and within which they are arranged in alphabetical or similar order, in accordance with any of the within-described systems.

171,695. LOCK-WORK ATTACHMENTS TO CLOCKS. Randal T. Andrews, Thomaston, Conn., assignor to the Seth Thomas Clock Company, same place. (Filed Dec. 7, 1875.)

Brief.—When the hands are turned backward a recess in the shaft receives the lifting-lever, thus releasing it from the action of the locking-pin.

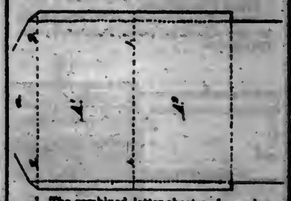


1. The shaft M, formed with a recess, *n*, in combination with the lifting-hook N', and lifting-piece P' and its connections, and arranged to serve relatively thereto, as herein specified.

2. The spring C, in combination with the lifting-piece P' and its connections, arranged and operated relatively to the recessed shaft M *n*, and to the lifting-hook M', as and for the purposes herein specified.

In testimony whereof I have hereunto set my hand this 4th day of December, 1875, in the presence of two subscribing witnesses.

171,697. COMBINED LETTER-SHEETS AND ENVELOPES. Richard W. Barnes, Brooklyn, N. Y. (Filed May 21, 1875.)



1. The combined letter-sheet and envelope A' A², consisting of a rectangular sheet, having a folding sealing-flap across one end, and having its two opposite sides or edges gummed and perforated, all substantially as described.

2. The combined letter-sheet and envelope A' A², consisting of a rectangular sheet, having a folding sealing-flap across one end, and having its two opposite sides or edges gummed and perforated with additional narrower fold or folds A², all substantially as described.

171,698. BOOTS AND SHOES. Wm. Biddle, Corvallis, Oreg. (Filed June 10, 1875.)



1. A boot or shoe having the rearwardly-projecting sheet-metal heel-spring C and toe-spring D, constructed substantially in the manner and for the purposes specified.

2. The combination, with the spring D and plate E, of the heel and sheet-metal cone *a a*, having notches *x* and projection *y*, as described, the loop or staple *d*, and cone-lever A, all substantially as and for the purposes herein set forth.

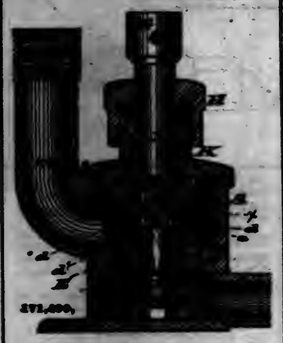
171,699. HYDRANTS. Stephen Hinkle, St. Louis, Mo., assignor to Robert Charles, same place. (Filed Oct. 9, 1875.)

Brief.—The working parts may be readily removed. The valve-seat can be removed, when desirable, without disturbing the adjacent portion. When the square portion of the stem is sufficiently elevated the waste-port becomes uncovered.

1. The valve-chest A, provided with the chamber *a*, pipe M, cap C, stem G, provided with the square I and round part J, and

waste-port K, combined and operating substantially as described.

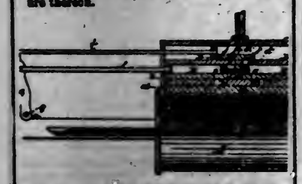
2. The steam C, provided with the square port L, cap C, port D, ties d d, fast, detachable seat R, and valve F, and chest A, provided with the partition E, combined and co-acting substantially as described.



171,600.

171,600.—VALVE-GEARS FOR STEAM-ENGINES. Charles H. Braid, Massillon, Ohio. [Filed June 28, 1875.]

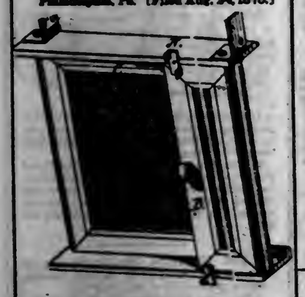
Brief.—Valve is constructed to admit steam to either side of the piston, to equalize pressure thereon.



1. In a valve-box, the combination of horizontal partitions D, having ports *d' d''*, bottom D', provided with ports and grooves, as described, slides E E', having ports *e e'*, and connected through the partition *d*, and slide I, having port *i* and grooves *j j'*, arranged to alternately coincide with escape-ports *e e'*, substantially as shown.

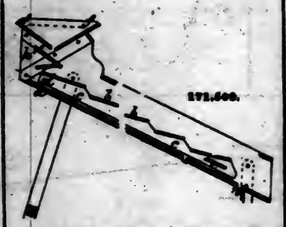
2. The valve E, having port *e*, in combination with bottom D', having ports *b c*, arranged to each receive half the flow of steam from port *a*, substantially as described.

171,601.—DOOR-SCREENS. Alvt. A. Carter, Philadelphia, Pa. [Filed Aug. 24, 1875.]



The hinged overlapping screen-frames B and C, combined with the cap E, as and for the purposes set forth.

171,602.—SAW-SWAGERS. Jno. L. Ostrander, Framingham, and Geo. F. Shldolph and Thomas F. Shldolph, Woodbridge, Great Britain. [Filed Sept. 20, 1875.]



171,602.

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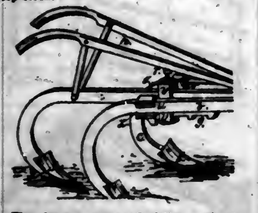
1. The combination, substantially as set forth, of the case, its inclined bottom, and the inclined shelves, arranged, as described, in a step-like series above the bottom of the case, and having vertical spaces between them, communicating with an inclined passage-way formed beneath the shelves upon the bottom, for the purposes specified.

2. The combination, substantially as hereinbefore set forth, of the hopper, the case, its inclined bottom, the inclined shelves, and the hinged adjustable side boards, to which the shelves are fixed, for the purposes specified.

3. The combination, substantially as hereinbefore set forth, of the case, its inclined bottom, perforated toward its lower end, the inclined shelves, arranged above the bottom, one below the other, with spaces between them, and the stop projecting from the bottom into the case, for the purpose specified.

171,603.—CULTIVATORS. Joseph W. Chase, Middleport, Ohio. [Filed June 26, 1875.]

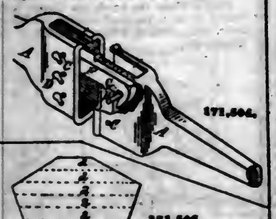
Brief.—A clamp in two parts, to adjust the width of the cultivator by sliding upon the beams, and permits vertical adjustment by a step-block.



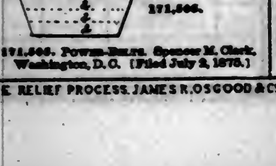
The clamp *c*, composed of the upper plate *c*, having the mortised lugs *w v w*, and the lower plate *c'*, having the central mortised lug *x*, in combination with the gib *g*, the set-screw *e*, and the plow-beams, as and for the purposes set forth.

171,604.—GAR-COUPLINGS. H. W. Chase, Sumner, Me. [Filed Oct. 7, 1875.]

The improved car-coupler described, consisting of the coupling-rod F, provided with the hooks G and the draw-bars A A, provided with the heads B, the series of holes C, buttons D, pins H, and elongated slots *s s*, all constructed and arranged to operate substantially as set forth and specified.



171,604.



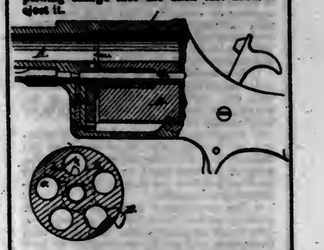
171,605.

171,605.—POWER-BELTS. Spencer M. Clark, Washington, D.C. [Filed July 2, 1875.]

A belt constructed of successive layers of belting material of different widths, which decrease in width from its widest point downward, forming an angle to fit the pulley, and from the same point upward to form a re-enforce or backing for the belt when under working tension, substantially as shown and described.

171,606.—EXTRACTING SHELLS FROM REVOLVING FIRE-ARMS. Otis F. Cole, Norwich, Conn. [Filed Nov. 20, 1875.]

Brief.—A shield or cover in front of the chamber containing a shell has a small groove in its face, which conducts gas from an exploding charge into the shell last fired, to eject it.



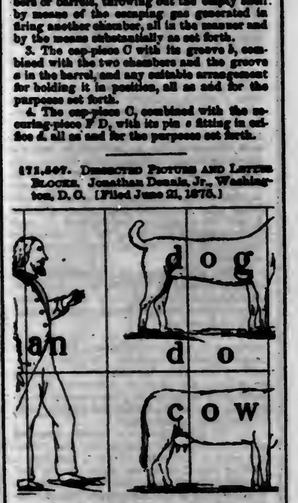
1. In a fire-arm having a plurality of chambers or barrels, throwing out the empty shell by firing another chamber, all in the manner and by the means substantially as set forth.

2. In a fire-arm having a plurality of chambers or barrels, throwing out the empty shell by means of the escaping gas generated in firing another chamber, all in the manner and by the means substantially as set forth.

3. The cap-piece C with its groove *b*, combined with the two chambers and the groove *a* in the barrel, and any suitable arrangement for holding it in position, all as and for the purposes set forth.

4. The cap-piece C, combined with the securing-piece F D, with its pin *e* fitting in orifice *d*, all as and for the purposes set forth.

171,607.—DISSECTED PICTURE AND LETTER BLOCKS. Jonathan Dennis, Jr., Washington, D.C. [Filed June 21, 1875.]



1. The dissected picture-blocks, having on each block a portion of the picture, and also a portion of the name of the object represented by the picture, substantially as and for the purpose described.

2. The dissected picture-blocks, having the letters which spell the name of the object represented placed or arranged within or across the face of the picture, substantially as described.

171,608.—LUBRICATING COMPOUNDS. Henry V. P. Draper, Hannibal, Mo., assignor of one-half his right to Peter B. Grout, same place. [Filed Oct. 4, 1875.]

1. The herein-described lubricating compound, consisting of petroleum, animal fat, and lime-water, substantially as described.

2. The herein-described process of manufacturing a lubricating compound from petroleum, animal fat, and lime-water, substantially as described.

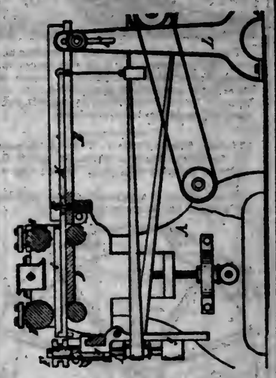
171,609.—LUBRICATING COMPOUNDS. Henry V. P. Draper, Hannibal, Mo., assignor of one-half his right to Peter B. Grout, same place. [Filed Aug. 26, 1875.]

1. The herein-described lubricant, consisting of petroleum and lime-water combined, substantially as described.

2. The herein-described process of manufacturing a lubricating compound by adding lime-water to petroleum, substantially as and for the purposes set forth.

171,610.—FLAMING-MACHINES. Andrew H. Frank and George Spire, Buffalo, N. Y. [Filed Feb. 10, 1876.]

Brief.—The bed and feed-table are hinged together and made vertically adjustable, to adapt them to lumber of different thicknesses.

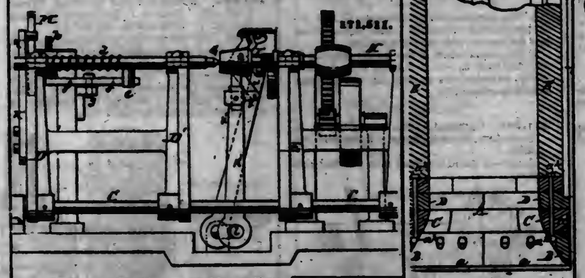


1. The combination, with the bearing of the adjustable matcher-cutterhead, provided with slot *a'*, of the weighted pressure-lever M, provided with stop-pin *a*, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the cutter-head A, feed-rollers B B, and vertically-adjustable bed D, of the feed-table E, hinged thereto, standards L, and adjustable connecting-bolt *l*, substantially as and for the purpose herein before set forth.

171,611.—MACHINES FOR TURNING BUNGS. Edward Gunther, New York, N. Y. [Filed Oct. 26, 1875.]

Brief.—The tool which finishes the bung is given a circular movement, so as to round the corners.



1. The center slide F, supported by oscillating head-stocks, in combination with an oscillating lever, *f*, and a cam, M, said parts operating in respect to the spindle H, and stock B, as described, for the purpose of automatically centering and securing the blanks to be operated upon, and to release the same when the head-stocks are in line with the axis of the blank, substantially as herein described.

2. In a machine for turning bungs, the lever-bar *b* (upon the shaft) operated by the cam *n*, in combination with the slide F G and spindle H supported upon head-stocks, substantially as and for the purpose specified.

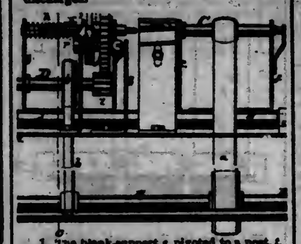
3. In a machine for turning bungs, the combination of a rounding-knife, *j*, with a beveling-knife, *i*, when the same operate upon the bung-blank secured between a slide and a spindle mounted in oscillating stocks D D' E E', substantially as and for the purpose described.

4. The cam M, provided with the sections *e f g*, as described, in combination with the tapper-lever K and beveling-knife *i*, substantially as described.

5. The slide F, provided with a retaining spring, *d*, and with a stud, *c*, in combination with the oscillating lever *f* and the stud *h*, as herein shown, for the purpose specified.

171,612.—MACHINES FOR TURNING BUNGS. Edward Gunther, New York, N. Y. [Filed July 31, 1875.]

Brief.—The bung-blank is automatically grasped by and centered between two spindles, and by them brought into contact with the cutters, and, when finished, automatically discharged.



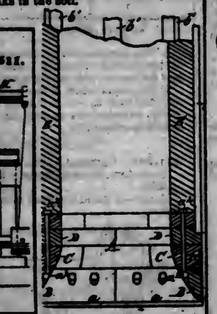
1. The blank-support *s*, pivoted to a post, *t*, and combined with the friction-spring *u*, to operate in combination with the shafts C and E, substantially as herein shown and described.

2. The vibrating posts *f f* and *g g* combined with the vibrating shafts C D E, support *s*, and stationary cutter *r*, substantially as herein shown and described.

3. The sleeve *i*, made in one piece with the wheel *j*, cam *n*, and cam-projection *p*, and fitted upon the reciprocating shaft E, which has the pin *q*, and combined with the spring *u*, all to operate substantially as specified.

171,613.—CONSTRUCTING WELLS. C. Holtz, St. Louis, Mo., assignor to H. A. French. [Filed May 26, 1875.]

Brief.—The wall is constructed with an earth-box, consisting of separate layers bolted together, and having a cutting-edge, and connected to upright strips, which permit the bricks laid upon the earth-box to keep clear from the earth. The bricks are laid on the box as it sinks in the soil.

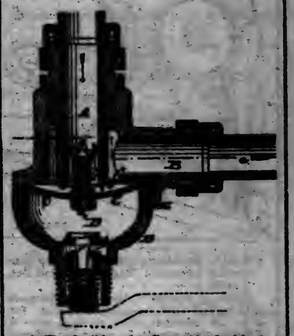


1. The uprights or strips *b'*, in combination with the offset *b*, of an earth-box, by means whereof the masonry is kept clear from the surrounding earth during the sinking of the well, and as herein shown and described.

2. The earth-box A to consist of separate layers B, C, D, &c., and formed with a cutting-edge, *a*, and bonded by rods *a'* and nuts *a''*, in combination with the upright strips *b'*, by means whereof the sinking of wells is done by the weight of masonry built top of said earth-box, substantially in the manner as herein shown and described.

171,614.—WATER-CLOSET VALVES. James P. Hyde, New York, N. Y., assignor to McMab & Martin Manufacturing Company, same place. [Filed Dec. 2, 1875.]

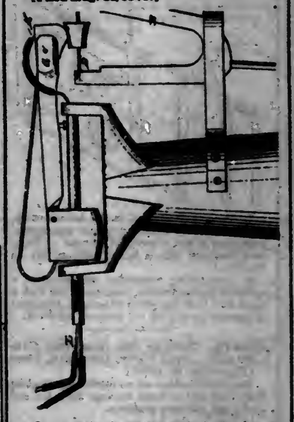
Brief.—When the valve in the cap is opened the water discharges, and the flexible valve is opened by pressure of water upon its face, and is closed by counter-pressure of water, which passes through the aperture in the valve and refills the cup.



1. The flexible valve C combined with the pipes A B and with the cup D, which has a discharge-opening below said valve, substantially as herein shown and described.

2. The combination of the valve F with the cup D, valve C, and pipes A and E, substantially as specified.

171,615.—HEEL-POLISHING MACHINES. Wm. Joint and George B. Dunham, Lynn, Mass. [Filed Aug. 31, 1875.]



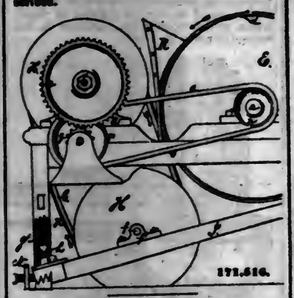
In a machine for polishing the heels of boots and shoes, the combination of a hollow rocking-shaft and polishing-tool with the steam-pipes L and K passing through the shaft and into the tool, as shown, for the purpose described.

171,616.—RICE-HULLING MACHINES. Joseph Jonet, New Orleans, La. [Filed Feb. 12, 1875.]

Brief.—The toothed steel bands are revolved in close proximity to the toothed drum, each division of which is fed from a division of the hopper. The tension of the bands is regulated by the adjusting-frame.

1. The drum B, having steel bands *d d*, having teeth secured around its periphery by means of steel rings *c c*, and the steel bands F F', endless belt G, pulleys H H', and hopper R, the whole being constructed, combined, and arranged to operate substantially as described.

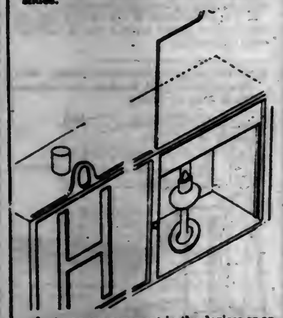
2. The drum B, having steel bands *d d*, provided with teeth secured around its periphery by means of steel rings *e e*, and the steel bands F F, having teeth, as shown, endless belt G, pulleys H H', and the adjusting-frame I, the whole being constructed, combined, and arranged to operate substantially as described.



171,516.

171,517. SIGNALING DEVICES. Henry Kinnersley, Liverpool, England. (Filed Oct. 6, 1875.)

Brief.—A number of transparent slides are used, each of which has a separate letter. The slides are interchangeable, so as to allow of different arrangements for conveying different signals. In day-time flags with letters on them may be substituted for the transparent slides.

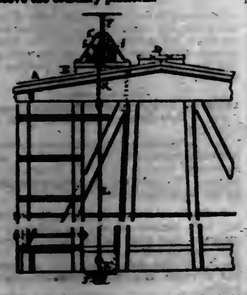


1. As an improvement in the devices or apparatus used for signaling in the commercial code used at sea, a series of screens or flags, each provided with a letter, substantially as described.

2. A signaling apparatus consisting of a series of compartments, each provided with a light, and with the slides or screens, arranged to operate as and for the purpose set forth.

171,518. DEVICES FOR OPERATING CAR-BRAKES. John Kirby, Cleveland, Ohio. (Filed Nov. 15, 1875.)

Brief.—Windlass set on platform projecting from roof, and at same distance from the end above the ordinary platform.

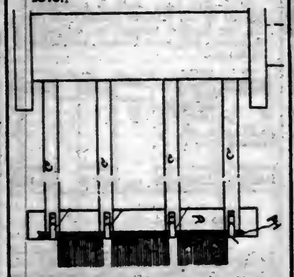


1. The platform B, in combination with a brake-windlass, F, secured thereto in position on the roof of the car some distance from the end, substantially as and for the purpose specified.

2. The combination of platform B, brake-windlass F, chains K K', pulleys J J', and rod L, substantially as and for the purpose specified.

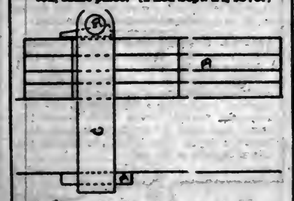
3. The platform D, in combination with the brake-windlass F, located on the roof of the car some distance from the end, substantially as and for the purpose specified.

171,519. WARP-BEAM APRONS FOR LOOMS. Leonard J. Labounty, Lowell, Mass., assignor to William E. Whitehead and Abel T. Atherton, same place. (Filed Oct. 21, 1875.)



The clamp-rod F, in combination with an apron or bands, C C C C, attached to the warp-beam of a loom for weaving textile fabrics, substantially as and for the purpose herein specified.

171,520. LOOM-PICKER FASTENINGS. Leonard J. Labounty, Lowell, Mass., assignor to Wm. E. Whitehead and Abel T. Atherton, same place. (Filed Sept. 24, 1875.)

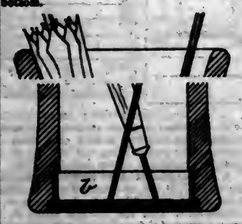


1. The combination of the strap C and eccentric D with the staff A and picker B, as and for the purpose herein specified.

2. The combination of the elastic packing E with the staff A, picker B, strap C, and eccentric D, substantially as and for the purpose herein specified.

171,521. UMBRELLA-STANDS. Charles A. Lawrence, Beverly, Mass. (Filed Nov. 20, 1875.)

Brief.—A stand provided with a detachable bottom.



In combination with the umbrella-stand A, the detachable bottom b, as and for the purpose herein shown and described.

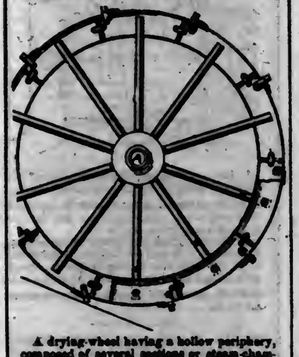
171,522. PROCESSES FOR LEVELING LAND. Thomas S. Lowe, Centreville, Cal. (Filed June 22, 1875.)



The process herein described of leveling uneven land and preparing it for easy irrigation, consisting of the application of a stream of water under pressure, in combination with the levees B, boxes C, and stationary gates D, substantially as herein beforedescribed.

171,523. STEAM DRYING-WHEELS. Horace J. Medbery, Henry A. Mann, Jr., and S. H. Drake, Ballston Spa, N. Y. (Filed July 8, 1875.)

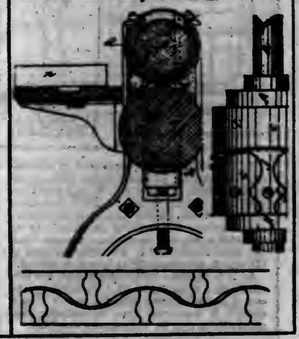
Brief.—There is a pipe-connection between the sections and valve in each.



A drying-wheel having a hollow periphery, composed of several sections or steam-chambers, substantially as and for the purpose described.

171,524. MACHINES FOR CUTTING PAPER COLLARS. Horace J. Medbery, Ballston Spa, N. Y. (Filed Nov. 22, 1875.)

Brief.—By the peculiar arrangement of the knives upon the detachable sleeves, two complete collar-blanks are cut out of the strip at each revolution of roll or drum, upon which the sleeves are secured. The knives, in cutting, act against a covered roll mounted in the frame immediately below them.



1. The mode of cutting collars, cuffs, cuffs, cuffs

The toy block, provided with equidistant projecting quadrangular prisms *d d*, which are formed by two sets of grooves, *c* and *b*, crossing each other at right angles, the grooves and prisms being of substantially the same width, as set forth.

171,636. REGISTERING APPARATUS FOR PRINTING-PRESSES. Reuben Sisco-wood, Providence, R. I., and Charles H. Bebee, Mont Clair, N. J. (Filed Sept. 9, 1875.)

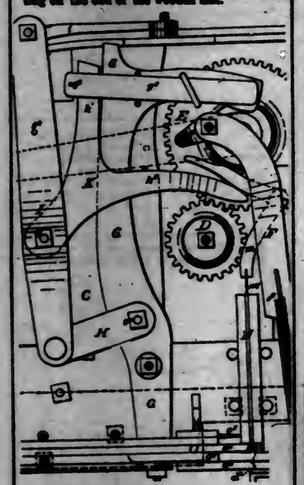
Brief.—The sheet is laid over the grooves in the table, and the pad is gradually dropped onto it and drawn back until the last drops down at the edge of the sheet, when the friction between the rubber pad and the surface of the paper serves to bring the sheet into proper position for the gripers of the press.



A pad, G, constructed to operate upon a sheet of paper, substantially as described, combined with a protecting head, arranged to drop at the edge of the sheet, in order that the pad may thereafter cause the paper to be moved to the point desired.

171,685. MACHINERY FOR FORMING METALLIC HEAD PIECES FOR BLIND-SLATS. Seeley M. Sherman, Fort Dodge, Iowa. (Filed Mar. 23, 1875.)

Brief.—A cutting-block having a tenon-like former at the end and an internal ejector. A bifurcated reciprocating cutting and bending device, and a swinging die or former hinged to the frame. The strip of metal is fed through a guide and projected into the end of the cutting-block. The cutting and bending device then moves up, cutting off a blank, and bending its edge down against swinging die, while the part of said device which is bifurcated, and passes outside over the former, bends the opposite edge of the blank, and bends the corners down against the swinging die. On the side of the table are two cutters, for cutting off the end of the wooden slat.



1. In a machine, substantially as described, the combination of a series of knives having a swinging motion, with a series of knives and punches having a reciprocating motion, substantially as described.

2. In a machine, substantially as described, the combination of a series of knives having a swinging motion, and a series of knives and punches having a reciprocating motion, with a stationary die, substantially as described.

3. The combination, with the stationary die, of the ejector *m'*, substantially as described and shown.

4. The combination, with the series of swinging knives, of the guide *S'*, for the purpose set forth.

5. The combination, with the series of swinging knives and punches, pivoted at a point, *S*, of the cog-wheel E, having a stud, *s'*, and a lever, *F*, for the purpose set forth.

6. The combination, with the reciprocating knives and punches O, of the cog-wheel E, having a stud, *s'*, and lever G, for the purpose set forth.

7. The combination, with the cog-wheel E, having a stud, *s'*, a V-shaped lever, K, and L-shaped lever G, and a strap, *f'*, for the purpose set forth.

8. The combination, with a lever, G, a lever, H, lever I, and rod *i*, for operating the knife *S'*, as described.

9. The combination with the cog-wheel E, having a stud, *s'*, a lever, M, having an arm, *m*, and an ejector, *m'*, for the purposes set forth.

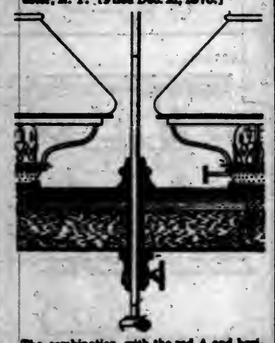
10. The combination, with the side *S'*, of the knives, the platform *l*, having stop P and spring *P*, having an arm, *P'*, operated as described.

11. The combination, with the swinging knives *d S' S*, carrying the guide-plate *S'*, of the reciprocating knives O and die N, having the ejector *m'*, substantially as described and shown.

171,686. REMEDIES FOR PULMONARY DISEASES. John O. Shoemaker, Pittsburg, Pa. (Filed Feb. 24, 1875.)

A medical composition composed of a mixture of oil of sassafras, oil of hemlock, alcohol, No. 6, tincture of lobelia, tincture of bloodroot, molasses, and water, with oil of anise and balsam-fir, substantially in the proportions and for the purposes set forth.

171,687. LAMPS. Chas. F. Spencer, Rochester, N. Y. (Filed Dec. 22, 1875.)



The combination, with the rod A and horizontal oil-reservoir, provided at each end with a burner, of the adjustable collar and its thumb-nut for holding the reservoir in any desired position on the rod, substantially as described.

171,688. PROCESSES OF PREPARING WOOD VENEERINGS. G. W. Spurr and Louis Prang, Boston, Mass. (Filed Oct. 28, 1875.)



The process of preparing wood veneering, backed or to be backed with paper, such process consisting in treating it with acid and glycerine, printing or painting upon it, and fixing it with shellac or other varnish, substantially as and for the purpose set forth.

171,689. HEAD-REST FOR DENTAL CHAIRS. Jill T. Starr, Philadelphia, Pa., assignor to Samuel S. White, same place. (Filed Nov. 6, 1875.)

Brief.—The bar attached to the head-piece is passed through a pin contained in the clamp-head, the latter being adjustable upon a bar rigidly secured to the chair. Both the pin and the clamp-head have a central bore, in which are fitted three pins—one bearing against the bar supporting the head-piece, and the two others clamping the bar on which the clamp slides. A turn of the screw forces the two latter together, and against the third, locking the head-rest firmly in place.



1. A head-rest mounted upon a supporting-bar, secured upon one side of its longitudinal center and rocking in a turning-post, whereby the head-rest is rendered reversible and a wide range of motion imparted to it, substantially as set forth.

2. The sectional adjusting-frame hereinbefore described, consisting of a lower section, a turning-post mounted thereon, and a clamp-screw, these members being constructed and operating in combination, substantially as hereinbefore set forth.

171,690. LAMPS. Granville M. Stevens, Deering, Me. (Filed Nov. 22, 1875.)

Brief.—The oil-receptacle and cover are removable.



A lamp made as described, and composed of the base *A*, stock *A*, the wooden cup or bowl *f*, the annular top *h*, and metal receptacle *c*, the said receptacle *c* being attached to the cover or top *b* by the metallic neck *a*, held suspended in the cup *f* from said wooden cover *b*, and removable from the cup *f* with said top, as herein set forth.

171,691. CHEST-REST FOR VIOLINS. Hiram W. White, Cedardown, Iowa, assignor to Geo. W. Lyon and Patrick J. Healy, Chicago, Ill. (Filed Nov. 20, 1875.)



In combination with the rest-plate A and chest-hook C, the chest R, provided with the corrugations a a, substantially as and for the purposes specified.

171,692. MIDDLINGS-PURIFIERS. Joseph L. Williford, Minneapolis, Minn., Assignee of one-half his right to Reuben Russell, same place. (Filed Oct. 6, 1875.)

Brief.—An middlings-post from hopper, having reciprocating bottom, over a series of overlapping reciprocating shelves to the screen, they are subjected to an exhaust-blast, which is deflected and regulated by a series of adjustable swinging valves. A cut-off between the two transverse conveyors is made in two parts, sliding together, to adapt it to different inclinations.

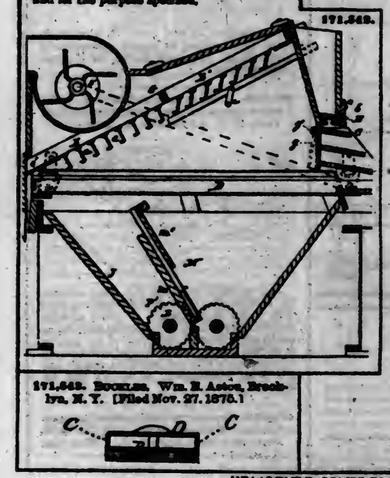
1. The combination, with the shaker D and suction-fan F, of the valves *c*, in two sections, E E', operated as described, and arranged at an angle, or inclined toward the tail of the shaker, substantially as and for the purpose specified.

2. The combination, with the shaker D and inclined overlapping shelves C, of the operating mechanism, consisting of the pivoted hangers *d*, rods *d'*, pivoted between the ends of frames *d'*, and eccentrics *e* on fan-shaft, all being arranged to operate in the manner substantially as shown and described.

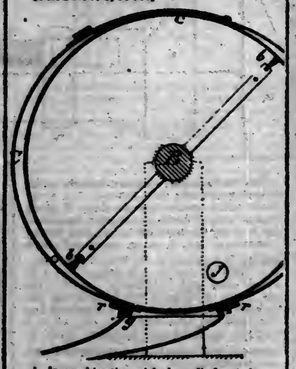
3. The combination, with shaker D and overlapping shelves C, of the transverse reciprocating bottom B of the hopper, operated through the medium of the shaker D, angular lever *b*, and connecting-rod *b'*, substantially as described.

4. The combination, with the transverse conveyors L L and shaker D, of the adjustable cut-off M, formed in two parts, *a* and *a'*, sliding together in the manner substantially as and for the purpose specified.

171,693. BUCKLES. Wm. B. Aston, Brooklyn, N. Y. (Filed Nov. 27, 1875.)



171,694. FEATHER-RENOVATORS. Alfred W. Ballard and Dan B. Wirt, Macon, Mo. (Filed Nov. 6, 1875.)

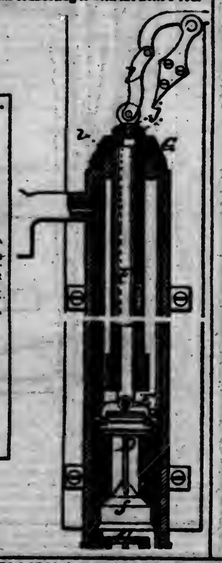


1. In combination with the cylinder A, having drying-chambers U C and a steam-inlet, J, the revolving shaft B, provided with brushes *b*, which serve a twofold purpose—to wit, to stir up the feathers and clean out the cylinder—substantially as described.

2. The combination, with a feather-renovator, of the flaring flange *p*, strips *r*, and keys *s*, substantially as and for the purpose herein described.

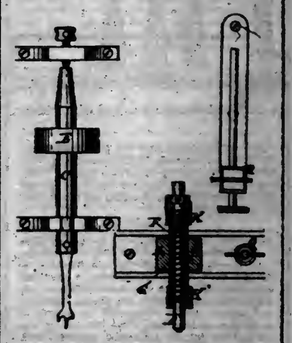
171,695. PUMPS. Wilson Barnes, Magnolia, Iowa. (Filed Sept. 11, 1875.)

Brief.—The operating-rod is made large and hollow, with a small vent at the top, the effect of which is to maintain constancy of flow. Action of the plunger is rendered free by a gimbal-joint connecting it with the hollow rod.



171,696. MACHINERY FOR BORING BLIND-SLATS. John Dee, Mount Vernon, N. Y. (Filed Oct. 13, 1875.)

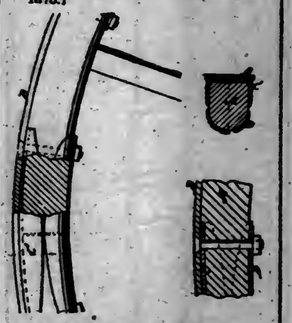
Brief.—In boring blind-slats the holes can be bored at a uniform distance apart from each other, and at an equal distance between the gage and the boring-bit, and the space between the holes varied at will by means of a laterally and longitudinally adjustable spring-gage, consisting of a pin having its lower end tapered, provided upon its rear end with an adjustable collar, and arranged in a tube, the ends of which are closed by flanged nuts, which serve as stops to determine the depth of hole desired, and containing a spiral spring, which controls the pin, in connection with a suitable boring-tool and its operating mechanism.



1. The combination of the spring-gage F, arranged as described, in the tube G, with a boring-bit, substantially as set forth.

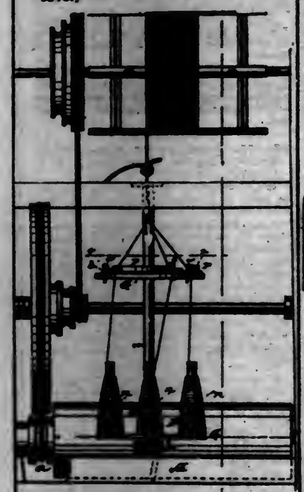
2. The combination of the spring-gage F, the adjustable tube G, having a stop, K, at its forward end, the stop F', and a boring-tool, substantially as described.

171,697. FELLY-JOINT CLIPS. D. T. Bowman, Middletown, N. Y. (Filed Oct. 2, 1875.)



The felly-joint support consisting of the upper clip C, having right-angular flanges overlapping each side of the felly-joint, the lower clip D, provided with overlapping flanges, and the two bolts *a a*, passing through the tire, felly, and clips, substantially as and for the purpose set forth.

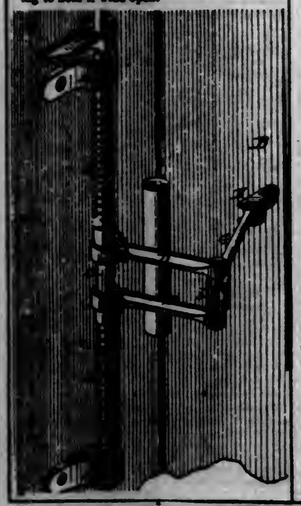
171,548. TWISTING-MACHINES. Jonathan Copeland, Barnville, Ohio. [Filed May 17, 1875.]



In a spinning-machine the tension-regulating device herein described, consisting of the rubber shoe *a*, spring *p*, pivoted plate or lever *t*, and button *n*, arranged as described, to operate on the thread in the slots *s y* of the disk G', as set forth.

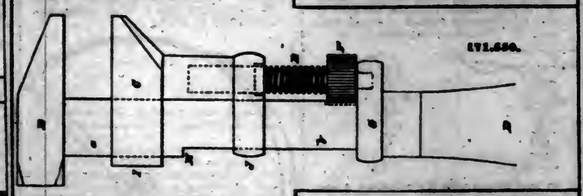
171,549. DRILL-STRINGS. A. B. Chambers, Anamosa, Iowa. [Filed July 10, 1875.]

Brief.—A spring-controlled rod, attached at its two ends to the door-frame, is provided near the middle with two loosely-fitting arms, which extend laterally over jointed handles, and connect with a bifurcated bar hinged to a bracket on the door. The two coil-springs around the rod are connected one with each of the parallel arms, and suitable means for buying up the same provided, the construction tending to hold the door normally closed, but the folding in of the bar between the parallel arms, when the door is opened, serving to hold it wide open.



The combination of the rod G, stationary in the boxes *a a*, loose arms D D, with connecting-bar *b*, springs *d d*, bar G, and bracket H, all constructed and arranged to operate substantially as and for the purposes herein set forth.

171,550. SCREW-WRENCHES. J. H. Coes, Worcester, Mass. [Filed June 15, 1871.]

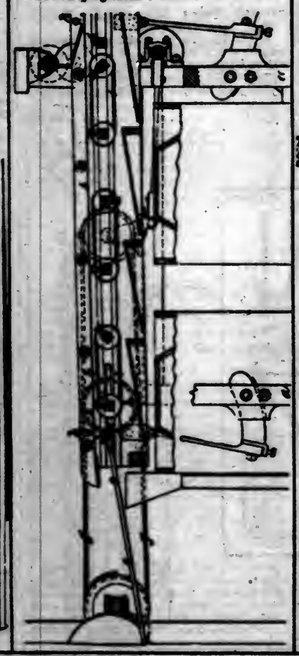


171,550.

The combination, in a screw-wrench, of the following elements, viz: a wrench-bar recessed on its back to form an offset, H, along that portion, *a*, over which the front clasp-bearing I of the movable jaw slides, and having a stationary jaw, B, on its front end, and a handle, D, attached to its rear end, the movable jaw C having clasp-bearings I and J, to fit and work upon the portions *a* and *b* of the bar, while the sides of the nook of the jaw between the clasp-bearings are supported and slide upon the front side of the bar, which is straight, the stationary operating-screw E, rounds F, and ferrule G, substantially as shown and described.

171,551. MIDDLINGS-PURIFIERS. Abraham Crabtree, Bacup, Great Britain. [Filed June 11, 1875.]

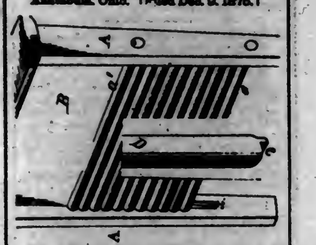
Brief.—The endless band which drives the sieve takes one turn around a pulley keyed on the axis of one of the brushes, which drives the rest, so that the brushes are rotated without interfering with the reciprocation of the frame carrying them.



1. The combination of the reciprocating carriage *d*, in which rotate a series of cleaning-brushes, *c*, communicating motion to each other, with the operating-pulley *h*, keyed on the axis of one of these brushes, substantially as described.

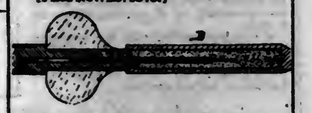
2. The combination of a cleaning-brush, *c*, rotating in the reciprocating carriage *d*, with the pulley *h*, driven by an endless band, *p*, making one turn round its periphery, as set forth.

171,552. WASH-BOARDS. Lewis M. Crosby, Ashtabula, Ohio. [Filed Dec. 9, 1875.]



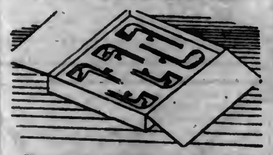
The combination of the side pieces A A, having longitudinal grooves *x*, the lower stationary round *c*, the movable rounds D, having tenons *e*, the upper stationary round *c'*, having grooves *y*, and the board B, all constructed and arranged substantially as set forth.

171,553. BOMB-LANCES. Patrick Cummingham, Newark, N. J., assignee of one-half his right to Bernard Cogan, same place. [Filed Nov. 20, 1875.]



A cartridge, A, and bomb B, when combined and arranged to operate substantially as herein set forth and shown, for the purposes specified.

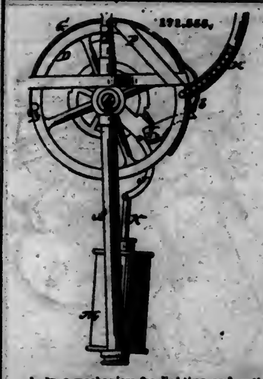
171,554. PACKAGES FOR TOBACCO-PIPES AND OTHER ARTICLES. Isaac Daniels, New York, N. Y. [Filed Nov. 18, 1875.]



In a package for pipes and other articles, the combination of a slotted receiving-plate with a box of pasteboard or other suitable material, the slots in the receiving-plate being cut to correspond to the shape of the articles to be packed, and being provided with tongues for supporting said articles when placed into the slots, substantially as shown and described.

171,555. APPARATUS FOR LIGHTING STREET-LAMPS. Matthew Palmer and David H. Ingalsbee, Bloomington, Ill. [Filed Dec. 8, 1875.]

171,556.



1. In a mechanism for lighting and extinguishing gas-lights by an increased pressure upon the gas in the pipes, a piston operating in a cylinder into which the gas is admitted, and the piston connected with the operating mechanism, substantially as herein set forth.

2. The combination of the burner B, with gas-cock G, wheel D, with chambers *y y*, and the roughened plate P, substantially as and for the purposes herein set forth.

3. The combination of the wheel D, with chambers *y y*, guard G, tubular chamber H, spring-pin *b*, and arm I, substantially as and for the purposes herein set forth.

4. The combination, with the gas-cock G, of the wheel D, rotary-wheel R, arm I, with spring-pawl *d*, connecting-link *d*, pinion-rod K, and pinion L, substantially as and for the purposes herein set forth.

171,556. ROTARY STEAM-ENGINES. Charles W. Fleeshler, Washington, D. C. [Filed Nov. 30, 1875.]

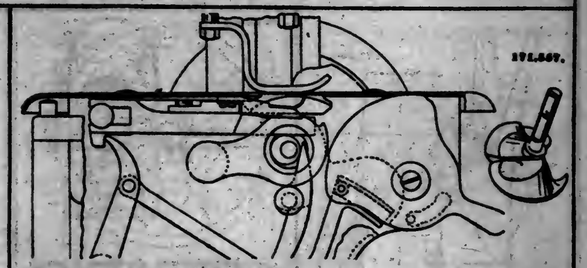


The sliding abutment D, having two steam-ports, *d d'*, and an auxiliary reversing-valve, E, arranged on its upper face, in combination with the drum B and its abutments O O' and the exterior cylinder A and steam-chest F, substantially as and for the purposes herein set forth.

171,557. SEWING-MACHINES. James R. A. Gibbs, Steele's Tavern, Va. [Filed May 26, 1875.]

Brief.—The receiving hook is formed with an enlarged groove in its rear, extending from the center of the same to its elevated point, and the rear side of this hook, from its point to the said groove, is beveled off from the supporting-stem to the periphery of the said hook, where, with the beveled edge of the front side, it forms a thin edge, so that the loop, after having been taken from the needle, instead of being carried around the hook in a revolution, as heretofore, is allowed to pass in front and rear of the same, maintaining a position diametrically across the said hook, or nearly so, during its entire revolution, and until the said loop is discharged therefrom. The bobbin-holder is pivoted to the frame of the machine in such a manner that, by means of a cam formed on the pusher and a spring on the pivot, it will be caused to move toward or away from the bobbin as the said holder is revolved either in the one direction or in the other.

171,557.



1. A bobbin containing hook rigidly mounted upon a revolving shaft, and constructed substantially as herein described, so as to carry the loop over the face and rear of the body of the hook that incloses the bobbin.

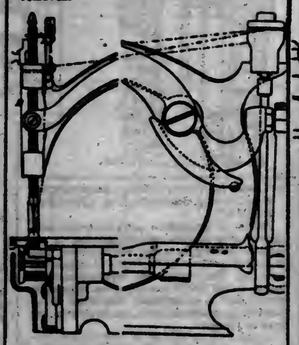
2. A bobbin containing hook rigidly mounted upon a revolving shaft, and constructed substantially as described, so that the loop taken from the needle shall be carried by the hook, while in the act of revolution, diametrically across the body of the hook, and held thereon thus diametrically until released by and upon completion of the revolution of the hook, as set forth.

3. The combination, with the rotary hook and bobbin, of a self holding and adjusting bobbin-holder pivoted to the body of the machine, substantially as set forth.

4. A bobbin-holder pivoted to the body of the machine, and combined with mechanism substantially as described, whereby simultaneously with its movement upon its pivot it is caused to move bodily toward or away from the face of the bobbin, substantially as set forth.

171,558. SEWING-MACHINES. James R. A. Gibbs, Steele's Tavern, Va. [Filed May 26, 1875.]

Brief.—On the upper end of the needle-bar, and projecting from its rear side, are two arms, in which are formed suitable eyes for the passage of the needle-thread. Between these eyes, and projecting from the head of the machine, is a vertical bar, having an offset on its rear side, in which is formed a narrow groove or slot, with a delicate spring arranged therein, so that as the thread is carried upward by the needle-bar in the act of the same, it (the thread) is carried into the said slot or groove, where, by the action of the said spring, it is held until the operation of needle-bar, when it is momentarily released, and on the descent of the needle-bar the thread instantly re-enters under the spring, where it is retained until the point of the needle reaches the surface of the cloth, when the thread is entirely withdrawn from the groove or slot, and the friction on the same thereby removed.



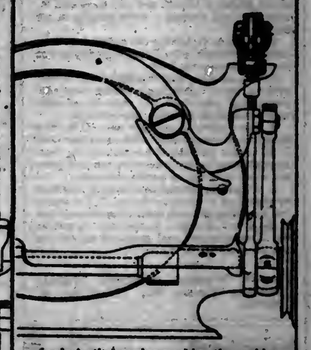
1. The combination, for the purpose of controlling the slack of the needle-thread, of a stationary auxiliary tension or friction pad and a thread-carrier which moves in unison with the needle, and operates to carry the thread into and withdraws it from said tension at the times and in the manner substantially as set forth.

2. The needle-thread controller or friction-pad tension, having a double intermittent action, by which the thread is controlled during a part of the descent of the needle, and is left perfectly free both during the latter part of the descent of the needle, and at the termination of the extreme upward stroke, substantially as and for the purposes described.

3. The friction-pad, constructed substantially as described, in combination with the needle-bar and the two thread-eyes thereon, arranged to move one on each side of the friction-pad during the reciprocations of the needle-bar, as and for the purposes set forth.

171,559. SEWING-MACHINES. James R. A. Gibbs, Steele's Tavern, Va. [Filed May 26, 1875.]

Brief.—A tension device similar to that shown in the patent to Wilson & Carleton, No. 116,221, is applied to a look-stitch sewing-machine, and is so timed with respect to the stitch-forming mechanism that the thread is held rightly until the needle has nearly reached the end of its upstroke, and until the under thread is drawn up into the cloth to the proper position to complete the stitch, when the said tension device releases the thread, allowing a sufficient amount of thread to be withdrawn from the spool to complete the succeeding stitch.



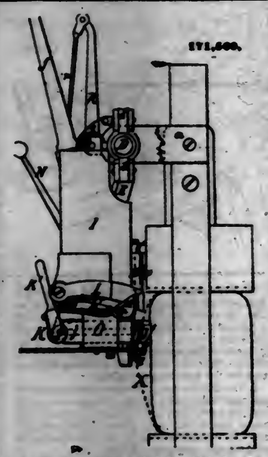
In a look-stitch sewing-machine, the combination, with the mechanism for delivery and interlocking the two threads, of a tension arranged to act on the under thread through the intermediary of the upper thread, at the times and in the manner set forth.

171,560. COTTON-BALE-BAND TIGHTENERS. Samuel K. Gilman, New Orleans, La., assignor to Louisiana Cotton-Tie Company. [Filed Dec. 14, 1875.]

Brief.—A frame descends from a shaft placed across the front of the press, along which it is adapted to slide. At its bottom another shaft is partially revolved by a lever at one end, to operate a disk at the other, working in two guide-frames that have adjustable clamps attached, the frames being forced apart and closed by rods on the disk acting as a toggle-joint. The lock being put on one end, the band is passed around the bale, and both ends clamped and drawn in opposite directions.

HELIOTYPE RELIEF PROCESS. JAMES R. OSGOOD & Co. BOSTON.

171,560.



1. The jaws L M and J J', which, by the operation of the lever *f* are simultaneously moved apart or together, substantially as and for the purposes set forth.

2. The sliding plates H and I, interlocked so as to form mutual and firm guides for perpendicular motion, constructed and operating substantially as and for the purposes described.

3. The sliding plates H and I, and flanges *h' i'*, whereby the operating crank-plate G and the connecting-rods *g g* are fastened, and prevent any lateral movement of the same, substantially as hereinbefore set forth.

4. The jaws L and M, constructed with re-verse directions, and arranged and operating as set forth.

5. The plate H, provided with the fixed jaw J, the movable jaw J', and the lever-arm K, combined and operating substantially as set forth.

6. The shoe O, having the flange *o*, in combination with the lever F, substantially as and for the purposes set forth.

7. The revolving and swinging frame E, carrying a band-tightening machine, and supported and guided on the shaft D, substantially as and for the purposes set forth.

8. The vertically-movable shoe O, having flanges *o*, to assemble-rollers with the upper jaws L M, for the purpose of preventing the band from slipping on the bale while the said jaws are being released, as herein set forth.

9. A band tightening and locking machine composed of a traversing frame, B, the eccentric operating-plate G, the sliding plates H and I, the jaws L M and J J', the shoe O, and lever F, constructed and operated as and for the purposes set forth.

171,561. WASHING-MACHINE. William Goforth, Windsor, Mo. [Filed Nov. 4, 1875.]

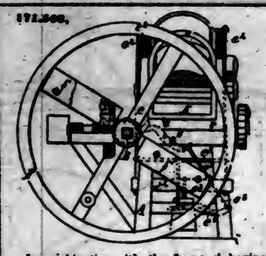


The combination of the box A with frame B, rollers *a*, and rings F, the frame C C C, having rubber D, cloth D, and rollers G G, and the pivoted bars H H, connected to the plate O by the springs H, all constructed substantially as set forth.

171,562. SEWER-OUTFALL. John Grimm, St. Louis, Mo. [Filed July 13, 1875.]

Brief.—A passive combination of a reservoir, counting-rods, and buoys, which brings a pressure upon the sewer at the moment the tide sets.

171,563.



In combination with the frame *c'*, having the return-spring *c⁵*, the connecting-rod *c⁶*, vibrating rod *c⁷*, rod *c⁸*, vibrating arm *c⁹*, and tappet *c¹⁰*, as described.

171,564. PETROLEUM-WELLS. Wallace L. Hardison, St. Petersburg, Pa. [Filed Nov. 23, 1875.]

Brief.—The object is to obviate the offset of paraffine deposit, and the action of steam on the slate-rock. The pumping-tube, the steam-pipe, protecting-jacket, and the steam or gas escape pipe are arranged as shown.

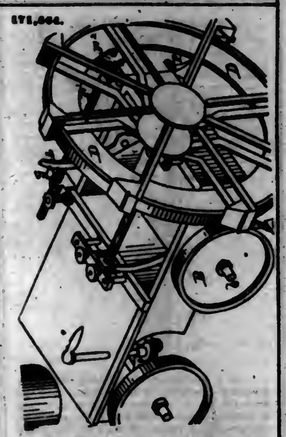
1. In a petroleum-well, the combination of a pumping-tube, a tube through which steam is admitted to the lower part of the well, a tube through which gas and steam may escape from the well, and a packer surrounding these tubes, substantially as set forth.

2. In a petroleum-well, the combination of a pumping-tube, a tube through which steam is introduced into the lower part of the well, and a protecting-tube, which surrounds the steam-tube, substantially as set forth.

3. In a petroleum-well, the combination of a pumping-tube, a tube through which steam is introduced into the lower part of the well, a protecting-tube, which excludes the water from the steam-tube, and a packer which surrounds the pumping and steam tubes, substantially as set forth.

4. In a petroleum-well, the combination of pumping-tube, a packer, a steam-tube, and a protecting-tube, all of which tubes extend through the packer, substantially as set forth.

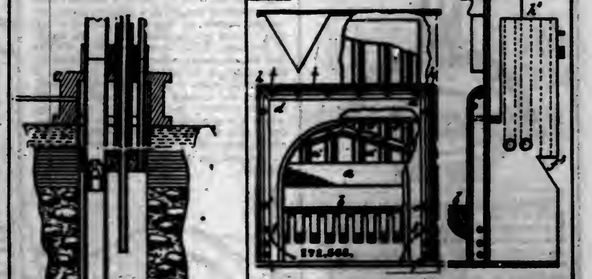
171,565.



2. The adjustable shaft E and its pinions F F', in combination with the driving-wheels B B, whereby either one of said wheels may be rotated alone, or both at the same time, at the will of an operator, substantially in the manner hereinbefore described, for the purposes set forth.

3. The adjustable driving-shaft F and its pinion F', in combination with the bering-wheel D, whereby said pinion is thrown in and out of gear with the bering-wheel, and adjusted to mesh into the gearing on said wheel at the varying elevations of the wheel, all substantially in the manner hereinbefore described, for the purposes set forth.

171,566. FIRE-PLACES. David Hagen, Chicago, Ill. [Filed Mar. 27, 1875.]



In a fire-place heater, the chamber provided with the cold-air openings *f f'* at its lower end, and heated-air tubes *h h*, in combination with the air-tubes *a' a'*, inclined air-tube *a*, and open fire-place *b*, having an inclined back, *c*, substantially as described, and for the purpose set forth.

171,567. LOCOMOTIVE EARTH-EXCAVATORS. Abel Hawley, Galveston, Tex. [Filed Dec. 9, 1875.]

Brief.—A locomotive earth-excavator consisting of a traction-engine, carrying in adjustable bearings a rotary bering-wheel, having radial cutters on its face and peripheral buckets. The cutting-face revolves at right angles to the line of traction. An adjustable plane shaft is so arranged that either one of the driving-wheels, or both, can be thrown into gear at pleasure.

1. A locomotive earth-excavator consisting of a traction-engine of any approved form, having mounted thereon, in adjustable bearings, a rotary bering-wheel carrying radial cutters and peripheral buckets, all arranged and operating substantially in the manner hereinbefore described, for the purposes set forth.

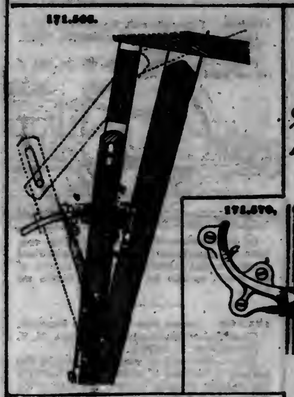
171,568. TELEGRAPHIC TRIPLEX SIGNALS AND ODUPLEXERS. Corydon P. Horwitz, Kingston, Wis. [Filed June 30, 1875.]

Brief.—The spring and toggle-arms are connected together by a sliding pivoted connection. Through the spring-arm passes a screw-bolt having two nuts—one above and the other below the arm—for adjusting the pitch of the teeth.

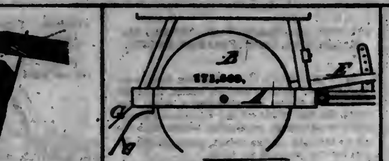
1. The spring-arm B and toggle-arm F, having a sliding pivoted connection, and adapted to be pivoted, respectively, to the beam-plate and standard, substantially as specified.

2. The combination, with the foregoing-described sliding pivoted arms B F, of the screw-bolt *c* and double nuts, one above and the other below the arm B, as and for the purpose set forth.

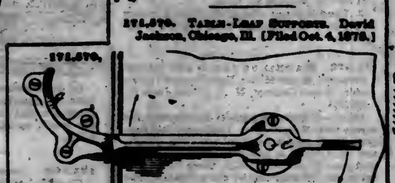
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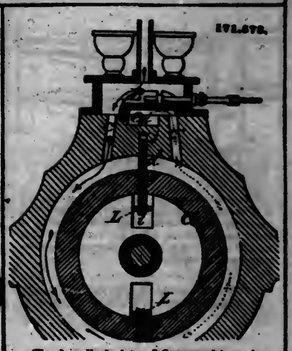


171,570. TABLE-LEAF SUPPORTER. David Jackson, Chicago, Ill. [Filed Oct. 4, 1875.]



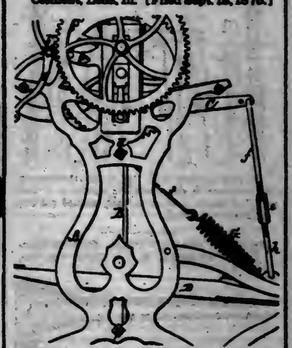
In combination with a table provided with a swinging leaf, the lever C, swiveled to a barrel, D, adapted to be attached to the under side of the leaf, and containing a convolute spring, connected to said lever, and provided with the segmental recess *d*, the pin *d'*, and curved hanger G, attached to the under side of the table, the whole constructed and arranged to operate substantially as described.

171,571.



The described pieces J J, secured to swing-follower rods L L, in combination with the cam-grooves *k*, substantially as described.

171,572. LEATHER-ROLLING MACHINES. Newton Linsley, John McCulloch, and W. Clement, Lena, Ill. [Filed Sept. 18, 1875.]



1. The combination of the side plates A A, having legs *a a* formed on their inner sides, the center-piece B, formed with slotted legs *b b*, and the bolts *d*, whereby the frame can be readily taken apart, all substantially as and for the purposes herein set forth.

2. The combination, with the levers C C and treadle-casting D', of the rods *f f*, hooked into the ends of the levers, the bent rod I, passing through the casting, and the elongated slots *e e*, connecting the rods, substantially as and for the purposes herein set forth.

3. The casting D', provided with a center, *r*, for securing the end of the treadle, and connected by the screw *s* and bolt *p*, as set forth.

4. The crank I, having the pinion *b'* formed thereon, and provided with a groove on the inner face, in combination with the perforated shaft *a'*, the pin *d'*, which passes through the shaft and lies in the groove in the pinion, and the nut *c'*, all as and for the purposes set forth.

5. The combination of the shaft *a'*, with shoulder *i'* and pin *b'*, the grooved pinion *f'*, balance-wheel J, having grooved hub, and the nut *b'*, all substantially as and for the purposes herein set forth.

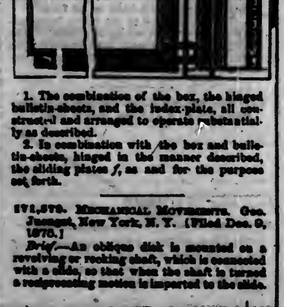
6. The combination of the slotted conveyer arm A' and the conveyer bar L, adjusted and fastened thereon, for supporting and adjusting the shaft *a'*, for the purposes herein set forth.

171,573. WASH-BOARDS. Aaron J. Hall, Sterling, Ill. [Filed Dec. 3, 1875.]



A rest-board of sheet metal formed with a series of raised diamond-shaped projections, B, and a series of narrow diagonal grooves, b, between the projections which cross each other, substantially as set forth.

171,574. RAILROAD BULLETIN-BOARD. W. T. Jacoby, Uniontown, Pa. [Filed Nov. 10, 1875.]

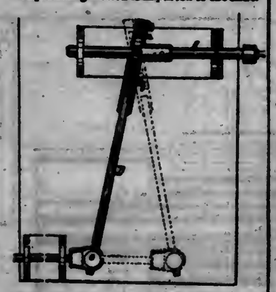


1. The combination of the box, the hinged bulletin-sheets, and the index-plate, all constructed and arranged to operate substantially as described.

2. In combination with the box and bulletin-sheets, hinged in the manner described, the sliding plates *f*, as and for the purpose set forth.

171,575. MECHANICAL MOVEMENTS. Geo. Jumpelt, New York, N. Y. [Filed Dec. 9, 1875.]

Brief.—An oblique disk is mounted on a revolving or rocking shaft, which is connected with a slide, so that when the shaft is turned a reciprocating motion is imparted to the slide.



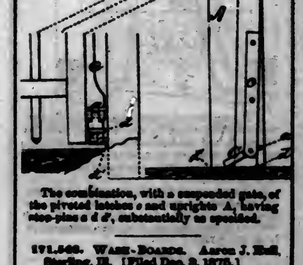
The combination of the shaft A, oblique disk B, lever D, slide E, and fulcrum-pin *c*, in which the lever D slides, substantially as set forth.

171,576. RAILROAD-SWITCHES. Samuel R. Linton, Charlotte, N. C. [Filed Sept. 11, 1875.]

Brief.—By a simultaneous movement in opposite directions, a double set of sliding rails are made to approximate at their adjacent ends, and form a continuous main line. By a contrary movement the same rails are brought into alignment with the siding, and also with the main line, thus avoiding discontinuity of main line in all positions of switch.

171,577. BOTANY BOXES. O. H. Kurtz, South Danville, N. Y. [Filed July 31, 1875.]

171,578. COMBINED WRENCH AND SCREW-DRIVER. Jonathan Lee, Jr., Bridgeport, Conn. [Filed Nov. 15, 1875.]



The combination, with a suspended gate, of the pivoted latches *c* and uprights A, having case-pins *c d d'*, substantially as specified.

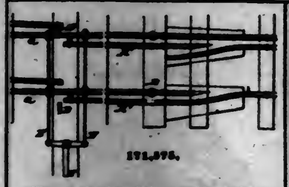
171,579. WASH-BOARDS. Aaron J. Hall, Sterling, Ill. [Filed Dec. 3, 1875.]

A rest-board of sheet metal formed with a series of raised diamond-shaped projections, B, and a series of narrow diagonal grooves, b, between the projections which cross each other, substantially as set forth.

171,580. LAMP MOLDERS AND MACHINES. James M. Hunter and George R. Hunter, Glenwood, Iowa. [Filed Oct. 2, 1875.]

Brief.—Three benches, carrying matrix-rollers, are rigidly attached to the rear beam of the roller-frame. An arm extends forward over the tongue from the forward beam. The tongue is pivoted to the frame, and a hopper rises from the tongue, and by means of a pin locks the arm at any desired position, thus causing the matrixes to press heavily or lightly upon the ground.

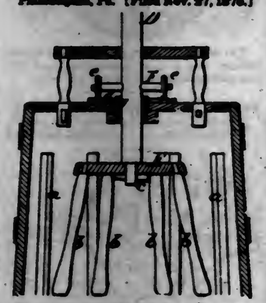
The frame A, carrying the band-rollers B and separate matrixes *f*, in combination with the arm E and standard *e*, whereby the matrixes are caused to press heavily on the ground, or raised above it, the roller operating as a lever, substantially as described.



171,576.

The combination of the movable sections *a a'*, swiveled to the main trunk of the road, and operated by the switch-rods E E, working in opposite directions, with the stationary side rails H and H', the whole arranged to operate substantially as described.

171,576. WASHING-MACHINE. D. Louis, Philadelphia, Pa. [Filed Nov. 27, 1876.]



In combination with the shaft D, carrying beater-arms b, the shaft F, wheels *c c*, and plug or sleeve J, substantially as and for the purposes described.

171,577. PAPER CUP-TUBE. John McCausland, Providence, R. I. [Filed Oct. 22, 1875.]

1. A tapered paper cup-tube, provided with a metal flanged base built up from or attached to the tube, substantially as described.

2. A tapered paper cup-tube, having an internally-constructed lip, substantially as described.

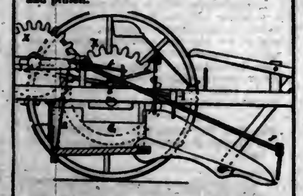
171,578. GAS-GENERATOR. William McKnight, Troy, Ohio. [Filed Sept. 10, 1875.]

1. A gas-retort, C, having the horizontal partition or shelf, *c*, and an outlet, E, below the closed end of the partition *c*, which contains the removable oil-pan F, in combination with an automatic mechanism which feeds the oil to the pan in the retort, substantially as and for the purposes set forth.

2. The condenser consisting of case I, sleeve K, pipes W P, and coal-box M, divided as described.

171,579. MACHINES FOR GATHERING STONES. Moses Miller, East Orange Township, Essex County, N. J. [Filed June 11, 1875.]

Brief.—Adjustable parallel fingers raise the stones from the ground. The frame that supports the fingers is mounted upon two wheels, and each wheel is provided with a cog-gear, that puts in motion a rake, there being two rakes, one on each side of the machine. The rakes haul the stones into a receptacle, each rake being put in motion by a separate crank and pinion.



1. The combination, in a stone-gatherer, of a pusher, A', receptacle G, and two independent rakes, each operated from one of the wheels, moving forward over the pusher, descending suddenly in front thereof, and traversing the pusher in moving backward, as set forth.

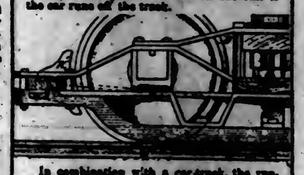
2. The combination of the rakes, independent crank-shafts carried by the frame of the machine, and cog-wheels K K, gearing with similar wheels on the crank-shafts, and adjustable, as set forth.

171,580. FRINGE-PADS. Bernard Morahan, Brooklyn, N. Y. [Filed June 3, 1875.]

The brass D, formed by a continuation of the handle down to the plane of the bottom of the pan, to form a firm bearing or fulcrum between the pan and handle, for the purposes set forth.

171,581. RUNNERS FOR RAILROAD-CARS. Lawrence O. Root, Minneapolis, Minn. [Filed Nov. 8, 1875.]

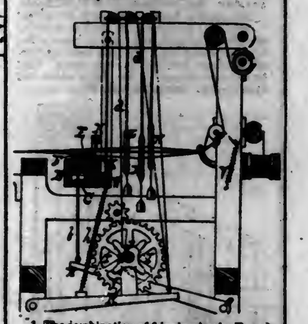
Brief.—The groove catches on the rail if the car runs off the track.



In combination with a car-truck, the runners A, constructed with the longitudinal groove *a*, and extending from end to end of the truck, as and for the object herein set forth.

171,582. LOCKS FOR WEAVING PURPOSES. Chas. Robert Sautermeister, New York, N. Y. [Filed Nov. 10, 1875.]

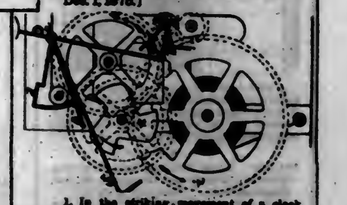
Brief.—The bullion warp is pleased by the harness in the path of a hook, which draws it the required distance to form the loop of the fringe, and a vertically-reciprocating lifter releases the warp from the hook.



1. The combination of fringing-hooks E, and reciprocating lifters X, (one or more,) with the batten B, and the harness L M N, each fringing-hook adapted to receive a reciprocating motion transversely to the warp, substantially as described.

2. The tension-spring V, in combination with the spool which carries the bullion with the fringing-hooks, the reciprocating lifters X, and the batten, and harness of a loom, substantially as set forth.

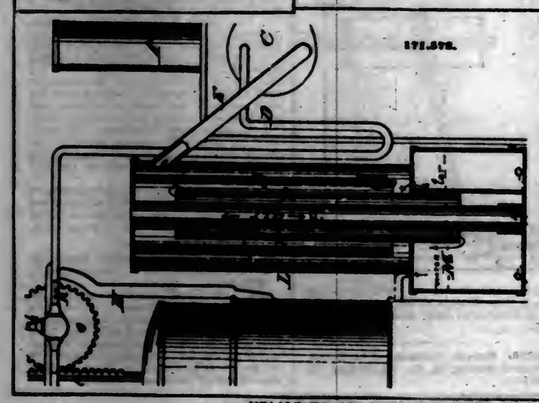
171,583. CLOCK STRIKING MECHANISM. Albert Schmidt, Brooklyn, N. Y. [Filed Dec. 1, 1875.]



1. In the striking-movement of a clock, the combination of a pin, *f*, secured in one of the arbors or wheels of the hand-movement, with the stop-pin *g*, the releasing-pin *e*, and with levers *b d e f*, substantially as shown and described, whereby the resting-power of the striking-movement, between the time of warning and striking, acts on the hand-movement in the direction of the motion of the hands.

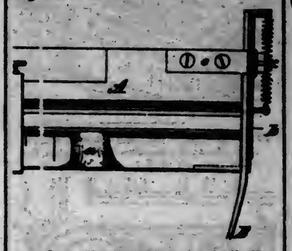
2. In the striking-movement of a clock, the combination of the levers *b d e f*, all connecting from one and the same rock-shaft *a*, with the pins *e f g* and wheels or plates *h i k*, all constructed and operating substantially as herein set forth.

171,572.



171,584. CHAIR-CUTTERS. Jackson Shepard, Allegheny, Pa. [Filed Nov. 15, 1875.]

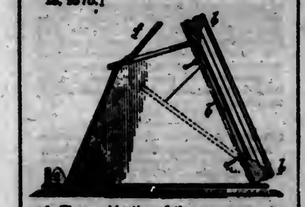
Brief.—The lever that operates the cutter is turned to one side, in front of the bed, to be operated by the same hand that holds the cigar to be cut.



1. In combination with the longitudinally-grooved base A and support *a*, the knife D, having its upper end curved to form a cutting-blade, and its shank slotted, the operating-lever E, having its short arm connected to said slotted shank, and its long arm projecting forward and laterally toward the bed, substantially as shown, whereby the hand that holds the cigar, or the wrist thereof, may manipulate the lever, as set forth.

2. The bed-block A of a cigar-cutting machine, having the recessed thumb-hole *a* and longitudinal cigar-channel, substantially as shown, and for the purpose specified.

171,585. PICTURE-REMOVERS. Lydia H. Sheppard, Philadelphia, Pa. [Filed Nov. 18, 1875.]

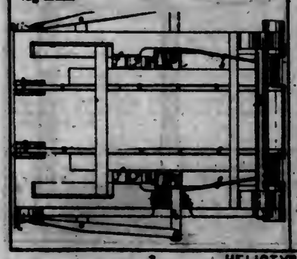


1. The combination of the case or receptacle B, arranged to turn on a support, A, with an exhibiting picture-frame, *f*, attached to said case, substantially as described.

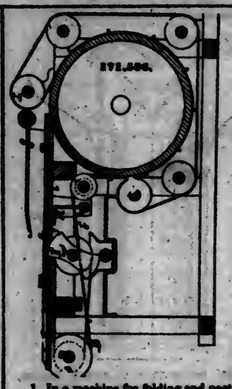
2. The combination of the case or receptacle B, having a hinged door, *f*, with the exhibiting picture-frame *b* and its hinged hook *b'*, as and for the purpose set forth.

171,586. MACHINES FOR LASTING AND FOLDING COLLAR-RIMS. Charles Spofford, Boston, Mass., assignor to James H. Hoffman, New York, N. Y. [Filed Nov. 4, 1875.]

Brief.—Improvement on applicant's Patent No. 161,533, dated April 6, 1875. The collars are placed crosswise the table, and fed along by chain-belts in and beneath guide-strips. When their ends are seized with paste by a roll beneath the table, struck down at right angles by a reciprocating arm above the table, and then pressed inward longitudinally to their body portion by a laterally-reciprocating arm beneath the table, after which they are fed between compressing-rolls and a heating-drum.



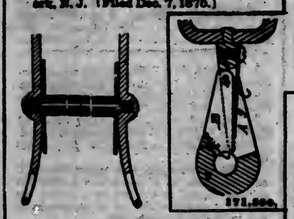
171,586.



1. In a machine for folding and pasting the ends of collars and other articles, the combination, with a folding-table, a paste-roller, and one or more carrying-chains, of a reciprocating depressor and a reciprocating folder, constructed and operating substantially as shown and described.

2. The combination, with a folding-table, a paste-roller, one or more carrying-chains, and a folding mechanism, of compressing-rollers, and a heating-drum, all constructed and operating substantially as set forth.

171,587. BRIDLE-BITS. Jos. Stanley, Newark, N. J. [Filed Dec. 7, 1875.]



171,588.

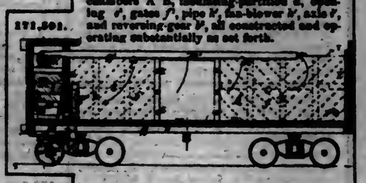
1. A bit for horses composed of a tubular mouth-piece and cheek-pieces combined therewith, and forming one solid piece, substantially as and for the purposes set forth and described.

2. A tubular mouth-piece and cheek-pieces combined, in combination with an adjustable bit, substantially as and for the purposes set forth and shown.

171,589. HORSESHOES AND SWAGES. Squire M. Stephenson, Richmond, Tenn. [Filed Aug. 6, 1875.]



171,591.



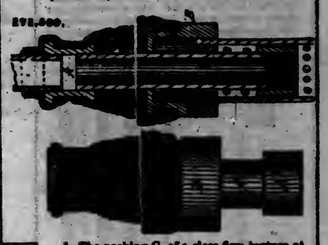
1. A horseshoe, having the edge *b* outside of the nail-groove thicker and heavier than the edge *a* inside said groove, by reason of an inclination and depression on the face toward the inner edge, substantially as described.

2. The horseshoe-swage B, having the groove *c'*, the ridge for forming the nail-hole groove, and the inclined part *b'*, substantially as and for the purpose described.

171,590. PACKERS FOR OIL-WELLS. Lyman Stewart, Titusville, Pa. [Filed Dec. 1, 1875.]

Brief.—The packer is woven tight at the ends and loosely in the middle. The tube and anchor-section form a telescopic joint. The packer may be inserted or withdrawn through a casing much smaller than the space desired to be packed. When the tube is to be used as a flowing-tube, the tube and anchor are perforated, as seen.

171,590.



1. The packing C, of a close firm texture at the ends, and loose in texture in the center, substantially as set forth.

2. The combination of the tube A and anchor B, united by a telescopic joint with the fibrous packing C, substantially as set forth.

3. The anchor B, provided with the perforations *b'*, in combination with the perforated tube A, substantially as set forth.

171,592. SNAP-HOOKS. J. B. Tainter, Menomonee, Wis. [Filed May 1, 1875.]

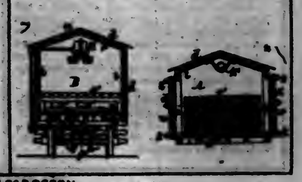
The snap-hook having the deep-slotted shank A and the inclined spring-seat *c*, forming an angle therewith, the straight spring C, having its tongue lying within the slot of said shank, and the broad sector-shaped plate-tongue B, having a beveled border, *b*, for the groove of the bank, a circular border, *i*, adapted to complete the circular eye, to substantially hold the ring in place thereon, and a straight border, *c*, lying wholly within said slot of the shank, as specified.

171,593. REFRIGERATOR-CARS. A. Thomas, Hoboken, N. J. [Filed Dec. 9, 1875.]

Brief.—A peculiar non-conducting wall or partition, outside painted a light color. Fan operated and reversed by gear attached to axle of car. Air is drawn from ice-chamber, forced out through perforated pipe into food-chamber, and thence is drawn through grated charcoal-box into ice-chamber. By ventilator food-chamber, closes between outflow of ice-chamber, and opens communication between ice-chamber and outer air and food-chamber and outer air. Drives the fan and sends a current of fresh air through ice-chamber and food-chamber.

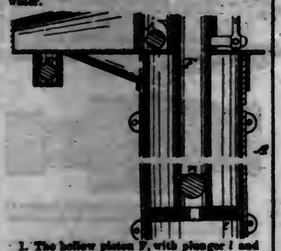
1. A non-conducting structure for the tops, bottoms, sides, or partitions of refrigerating apparatus, consisting of boards *d*, coated with an air and water tight varnish, a layer, *c*, of water and air tight paper, a layer, *f*, of felt, a layer, *f*, of boards, coated on both sides with water-glass, all combined substantially in the manner set forth.

2. The combination, in a railroad-car, of chambers A B, insulating-partition *a*, opening *a'*, gates *f'*, pipe *h'*, fan-blower *h'*, axle *l'*, and reversing-gear *k'*, all constructed and operating substantially as set forth.



171,592. DOUBLE-ACTING PUMP. Henry Van Doren, South Branch, N. J. (Filed Nov. 4, 1875.)

Brief.—The upper portion, comprising the double discharge and induction-chamber, is attached to a bottom plate provided with a downwardly-projecting flange, which fits upon (like a cover) the main cylinder. The induction-chamber on one side, and containing one of the induct-valves, prevents its acting as any impediment to the upward-discharging water.

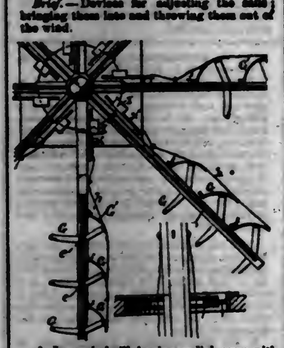


1. The hollow piston F, with plunger I and valve a, and the cylinder A, formed with opening h, in combination with tube D and cylinder E, and horizontal cylinder or water-passage C, with valve c, said passage or cylinder having opening g, the same forming a charger or supply for the main cylinder A, substantially as and for the purposes specified.

2. The base-plate B, with its water-passages C D E, said plate having formed thereon a downwardly-projecting collar or flange, f, for securely connecting the base-plate to the cylinder A, substantially as and for the purpose set forth.

171,593. WINDMILL. William F. Veber, Perrysburg, Ohio. (Filed Nov. 26, 1875.)

Brief.—Devices for adjusting the sails; bringing them into and throwing them out of the wind.



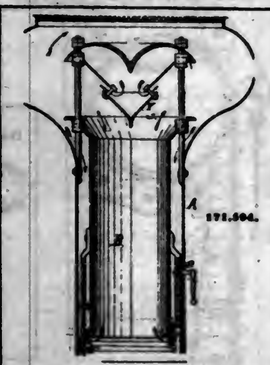
1. In a windmill having radial arms with vertical wings pivoted between them, the combination, with the wings E, of the levers G, having cross-bars G' with lips f, the connecting-cord h, and the elbow-lever H with adjustable weight I, substantially as and for the purposes herein set forth.

2. The combination of the wind-wheel shaft B, circular plates b A, with journaled rollers d between them, and the ring a in the tower-top C, substantially as and for the purposes herein set forth.

171,594. SPARK-ARRESTER. D. Allard, St. Albans, Vt. (Filed Mar. 8, 1875.)

Brief.—The > shaped ring attached to the lower end of the adjustable tube prevents exhaust steam and sparks in their ascent from entering the annular space between said pipe and the casing, and in the descent of the sparks in said annular space directs them upward through the inner pipe.

The combination, with the casing A and the vertically-adjustable tube B, having parallel sides, and the beveled ring F, attached to the latter, so that it may be adjusted therewith, as shown and described.



171,594.

1. A rotary plow, D, having the rotary vertical end-cutting edge d, and at right angles thereto a bottom-cutting edge, d', oblique to the axis of motion, as shown and described.

2. The combination, with rotary plows, of fingers B E, arranged behind each plow, and on the same shaft, as and for the purpose set forth.

3. The combination, with rotary plows F and receptacle H, of rotary bars g, arranged at intervals and in concave form behind the pickers and below the top of receptacle, as and for the purpose specified.

4. The wheel-frame N, laterally adjustable with respect to trunk, as and for the purpose described.

171,595. COMBINED MATTRESSES AND BEDSTEADS. John J. Bowen, Richmond, Va. (Filed Aug. 24, 1875.)



1. The mattress, shortened the width of the bolster and having a bolster attached thereto upon a level with its upper surface, in combination with the bedstead, having an elevated bolster-support, as and for the purpose described.

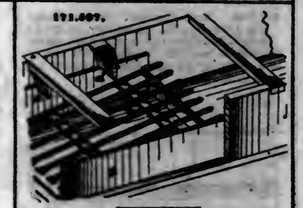
2. The combination, in a bedstead, of the cross-slats D', with the notched inclined bars C, arranged on the side boards above the level of slats and near the head of bedstead, as and for the purpose described.

171,597. GOLD-WASHING. John S. Calvert, Denver, Colo. (Filed July 9, 1875.)

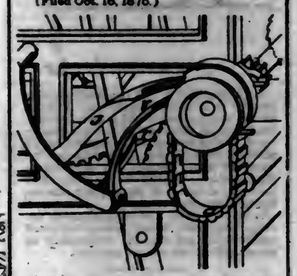
Brief.—The usual sluice-box is provided with wings to deflect the current and suspended gold through the riffle-bars.

The combination of the sluice-boxes A and C, the quicksilver-box B, having vertical sides b and an end piece, c; the inclined grate D resting upon the end piece c, and the flanges or projections e attached to the sides of the box A, and arranged above the quicksilver-box, as and for the purpose described.

171,597.



171,598. LOOM SHUTTLE-BOX MECHANISM. Isaac G. Chandlee, Philadelphia, Pa. (Filed Oct. 16, 1875.)



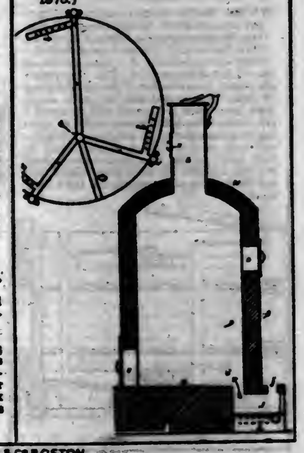
1. In combination with the shuttle-box of a loom, a chain having one or more of its links of greater length than the others, operated by mechanism, substantially as shown, to produce an intermittent movement of the chain, substantially as and for the purposes set forth.

2. In combination with a shuttle-box chain, constructed as described, driving-pawls J and V, gear-wheel E", pins S, and cam T, all arranged and operating together substantially as described.

171,599. ANTI-INCRUSTATION COMPOUNDS. Augusto Chevreau, Montreal, Canada, assignor of one-half his right to A. Rambouillet, same place. (Filed Nov. 10, 1875.)

A composition for removing boiler-scale composed of molasses of sugar, extract of cedar bark, and the whites of eggs, prepared and mixed in the proportions and for the purpose specified.

171,600. KILNS FOR FIRE-BRICK. William T. Christy, St. Louis, Mo. (Filed Sept. 10, 1875.)



The combination, in a fire-brick kiln, substantially as described, of a fire-brick lined metallic shell, with the arrangement of the blast-pipes passing under the heated kiln-bottom, with cock a regulating steam-valve for tempering the blast, and having also a many-perforated pipe under each fire-chamber for blowing air upward between the grate-bars, together with the up-draft and the cover-opening for the unimpeded passage of the consumed and exhausted air and gases.

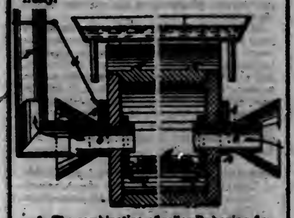
171,601. STRAINERS FOR COFFEE-POTS. E. H. Clark, Rossville, N. Y. (Filed Dec. 7, 1875.)



The implement for straining and extracting, consisting of the casing A, constructed with the chamber d, and provided with the removable perforated plate B, the hinged bail C, perforated bottom a, and rim b, all constructed substantially as and for the purposes set forth.

171,602. SNOW-MELTING MACHINES. John Cody, New York, N. Y. (Filed June 8, 1875.)

Brief.—The journals are cooled by dripping water. The flaring cups prevent snow entering the roller. The ribs elevate the roller slightly, as that the melted snow may run off freely.



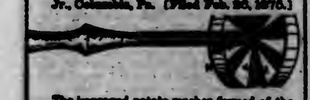
1. The combination of roller B, having grate suspended thereto, with open-ended journals b' b' and snake-chain F, as and for the purposes specified.

2. The vessel E, combined with roller B, and with end pipes opening downwardly and directly over the journals b' b', as and for the purposes described.

3. The combination, with roller B, of open-end journals b', provided with flaring cups H, as and for the purposes set forth.

4. A hollow snow-melting roll, B, having ribs b' b' on the outside thereof, as and for the purposes specified.

171,603. POTATO-MASHERS. Robert Crane, Jr., Columbia, Pa. (Filed Feb. 26, 1875.)



The improved potato-masher formed of the ring B, oblique cutting-blades A, and handle H, said parts being rigidly connected, as shown and described, to admit of the operation specified.

171,604. CIRCULAR-SAW TEETH. Albon F. Diamond, Pittsburg, Pa., assignor of one-half his right to Geo. W. Dowmeyer, same place. (Filed Dec. 20, 1874.)

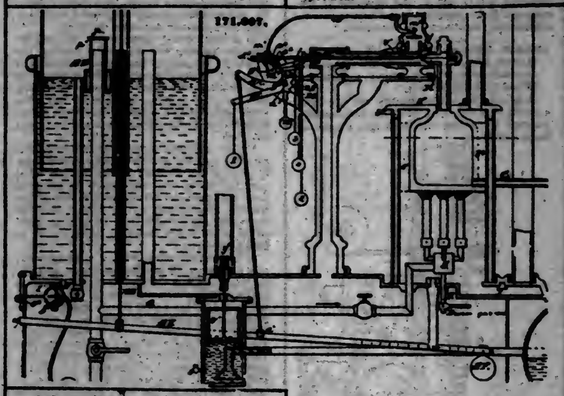
Brief.—An insertible saw-tooth is provided with two cutting portions, pointing in opposite directions, and operating in a grooved segment insertable in the body of the saw.

171,604.



The stopple A, the same consisting of the ordinary cork-wood body, the double sheet c' c' of the wire pull-loop C, and the disks c' c", the said parts being secured permanently together simply by bending the ears c' c' up against the lower disk c", substantially as described, for the purpose hereinbefore specified.

171,607.



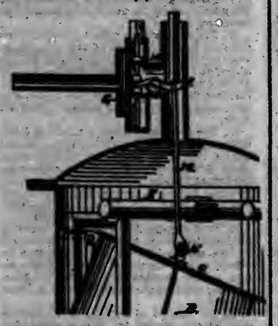
1. In combination with a circular saw a double reversible tooth, operating substantially as described.

2. As a new article of manufacture a reversible saw-tooth, for the purpose specified.

3. The combination of the double reversible tooth C, jaw-plate B, rivet-pins a a with the plate A, arranged and operating as described.

171,605. FEED-WATER APPARATUS. B. W. Feltheusen, Milwaukee, Wis. (Filed Sept. 14, 1875.)

Brief.—When the trap becomes filled with water of condensation, steam from the boiler is admitted, which forces the water through the siphon into the boiler. The tilter operates the valve in the steam-pipe.



1. Tilter B, water-spreader F, siphon C, rod M, stop K, lever I, and valves G and H, all in combination, substantially as specified.

2. Trap A, tilter B, siphon C, and water-spreader F, all in combination, substantially as specified.

171,606. CORK STOPPERS. J. I. Flanagan, Philadelphia, Pa. (Filed Nov. 30, 1875.)

Brief.—A stopple having its body made of the ordinary bark of cork-wood, combined with a wire stem bent and secured in said body.



171,607. GAS-MACHINES. T. B. Fogarty, New York, N. Y. (Filed Nov. 10, 1875.)

Brief.—The hydrocarbon oil is forced by air-pressure into the retort, where it is vaporized. The vapor, under pressure, escapes through the nozzle c of an injector-valve, and induces a current of air, which mixes with it, and the product passes to the holder. The injector-valve is operated by a novel system of weighted levers, having cams and projections, which permit their conjoined and consecutive operation. One of them is connected by a rod to a weighted horizontal bar, and this by a rod to the rising and falling gas-holder. Below the holder a carburetting drip-box is placed, provided with a float and valve. This box catches any condensed vapors, and, by forcing air through it, the first gas is here generated for supplying the burners under the retort, to start the machine. The retort and burners are inclosed in an air-tight case, supplied with air through a pipe leading to the outside of the building.

1. In automatically-working gas-machines, two weighted levers, B C and S, alternately opening and closing the vapor-valve A C and the air-valve a' a' of such machines, substantially as described.

2. A lever, A' H, furnished with one or more testers or cams, S', and one or more spurs, B D, and also with one or arms, a, substantially as described.

3. The combination of the levers B C S and A H with the gas-holder, of automatically-working gas-machines, substantially as described.

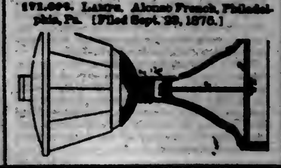
4. The combination of a weighted detent, a, and lever B C, substantially as described.

5. The combination of a weighted arm, f', with a lever, A H, and bracket, substantially as described.

6. The combination of the arm f', lever A H, and bracket a with a lever, S', substantially as described.

7. In automatically-working gas-machines, the combination of the carbureting-drip V, float f', and valve f', substantially as described.

171,608. LAMPS. Alcuin French, Philadelphia, Pa. (Filed Sept. 28, 1875.)



1. The combination of an intermittent vertically-moving wire-carrying spindle, and mechanism, with which it co-operates to cut and insert screws with solid heads from a continuous length of wire, for uniting the soles to the uppers of boots and shoes, with a rotating work-supporting horn, or other support, substantially as herein set forth.

2. In an organized machine, the combination of mechanism which cuts and inserts screws with solid heads from a continuous length of wire, for uniting the soles to boots and shoes, with an automatic vertically-adjusting work-supporting horn or work-support, substantially as herein set forth.

3. The combination of mechanism in a machine which cuts and inserts screws from a continuous length of wire with solid heads, for uniting the soles to the uppers of boots and shoes, with a rotating work-supporting horn, having an automatically-operating intermittent cutter for clipping off the inner ends of the inserted screws.

4. The combination of an automatically vertically-adjusting work-support, with an interior cutter operating automatically to clip the inner ends of the screws at whatever height or position the support may be with respect to the head, substantially as herein set forth.

5. The combination of a revolving wire-carrying spindle, D, with a continuously griping and holding device for the wire carried thereby, and an automatically-adjustable work-support, substantially as herein set forth.

6. A continuously griping and holding device for turning the wire while cutting the thread and inserting the screw, consisting of rolls *d d*, having annular seizing-edges, in combination with a continuously-revolving wire-carrying spindle, D, whereby the wire, while being griped, is free to be moved in the direction of its length, substantially as herein set forth.

7. The combination, with a work-support, of a wire-carrying spindle, having an automatic revolving and vertical movement, and a feeding device, of mechanism for determining the length of the screw by the descent of the spindle, substantially as herein set forth.

8. The combination, with a work-support and a revolving wire-carrying spindle, provided with a feeding device, of a yielding wire-passage extension, I, of the spindle D, and a stop-gage, K, with which it co-operates to effect the feed of the wire, substantially as herein set forth.

10. The combination, with a rotating work-supporting horn, and a revolving wire-carrying spindle, provided with a yielding extension, I, for operating the feed device, of an adjustable stop-gage, K, whereby screws of different lengths, without arresting the movement of the machine, may be inserted in the work, substantially as herein set forth.

11. The combination, with a wire-carrying spindle having both a rotating and vertical movement, and carrying the wire griping and holding device at its lower end, of a feed device at its upper end, consisting of a yielding wire-passage extension *l*, working by cog-connection *l'* and pawl-lever *i'*, and feed-rolls *d d*, operated thereby, whereby the wire is fed by the descent of each cogged extension, and left unaffected by its recent, substantially as herein set forth.

12. The combination, with a revolving wire-carrying spindle, its feeding and griping devices for cutting and inserting varying lengths of screws from a continuous length of wire, of automatically opening and closing arms N', carrying the screw-chaser N, and a wire support, substantially in the manner herein set forth.

13. The combination, with a revolving work-supporting horn and a wire-carrying spindle having both a revolving and vertical movement, of screw-chasing and wire-supporting devices, and the automatically-operating wire-severing knives L, co-operating to form and finish the screw, and cut it from the main length, substantially as herein set forth.

14. In a machine for cutting and inserting solid-headed screws from a continuous length of wire, the combination, with mechanism for effecting these results, of a work-feeding device, and an automatically vertically-adjustable and work support, substantially as herein set forth.

15. The method of forming and inserting solid-headed screws cut from a continuous length of wire by the intermittent vertical motion of the wire-carrying spindle and the co-operation therewith of intermittently chasing and severing devices, whereby the wire is fed forward at proper intervals, a screw-thread cut of proper length, a head formed, and the screw severed and inserted into the stock, substantially as herein set forth.

16. The process of uniting the uppers to the soles of boots and shoes by means of solid-headed screws automatically formed, cut and inserted successively from a continuous length of wire, substantially as described.

17. The combination, in a machine for uniting the uppers to the soles of boots and shoes, of mechanism adapted to form solid-headed screws, cut from a continuous length of wire, with knives L, which sever the inserted screw from the main length carried by the head, and a cutter for clipping the inner end thereof, substantially as herein set forth.

18. The curved horn-cutter *i*, provided with cogs, in combination with the cogged connection *l'*, the pivoted arm *j*, the central rod *f* and the device for operating the severing-knives L, with which the central rod is connected, and co-operates with mechanism for cutting and inserting screws with cut-*d* heads cut from a continuous length of wire, substantially as herein set forth.

19. The combination, with the treadle A', for supporting the rotating horn, of an auxiliary treadle, P, pivoted to the main treadle, and a knee-joint connection, l^{pc}, with mechanism for increasing the upward pressure of the horn.

20. The combination, with the rotating work-supporting horn, and the cutter carried thereby, of the connected pivoted arm *f'*, having its pivot-connection *f'*, with the cutter-operating devices coincident with the pivot P^{p} of the main treadle A', whereby the action of the horn cutter is kept wholly independent and unaffected by the vertical movement of the horn.

21. The combination, with the auxiliary treadle P, pivoted to the main treadle A', as described, of the pivoted socket-arm P^{s}, containing the spring-cushion P^{c} and the flexing knee-joint P^{pc}, operated by said treadle, whereby to effect the full descent of the horn.

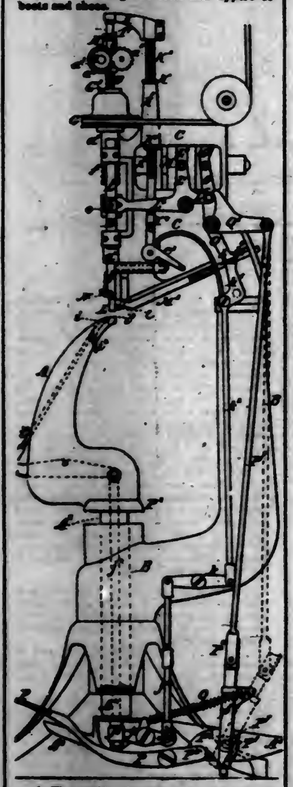
22. In a machine for uniting the uppers to the soles of boots and shoes from a continuous length of wire, the combination, with a spindle having a revolving and vertical movement, and carrying a wire-griping device, which has a continuous hold upon said wire, of a rotating work-supporting horn, having a nose-opening, *e*, in line with the inserted screw, and a cutter, *i*, to clip the screw end extending below the face of the horn-support.

23. The combination, in a machine for uniting the uppers to the soles of boots and shoes from a continuous length of wire fed through a spindle having an intermittent vertical movement, of a screw-chaser, N, and a wire-support, N', operated to close upon the wire and be carried therefrom by simultaneous movements produced in the manner herein set forth.

24. In a machine for uniting the uppers to soles of boots and shoes from a continuous length of wire, the combination of a spindle having a revolving and vertical movement, and in which the wire is continuously griped to turn it therewith, with a spool, E, for the wire, revolving to unreel the wire, and turned with and in the direction of the spindle, whereby the wire is prevented from being twisted, although the spool is separated from the machine.

171,610. PEGGING-MACHINE. Louis Godde, Boston, Mass., assignor to the American Cable-Screw-Wire Company, same place. [Filed Nov. 22, 1875.]

Brief.—Solid-headed screws are cut from a continuous length of wire, and successively inserted in uniting the soles and uppers of boots and shoes.



1. The combination of an intermittent vertically-moving wire-carrying spindle, and mechanism, with which it co-operates to cut and insert screws with solid heads from a continuous length of wire, for uniting the soles to the uppers of boots and shoes, with a rotating work-supporting horn, or other support, substantially as herein set forth.

2. In an organized machine, the combination of mechanism which cuts and inserts screws with solid heads from a continuous length of wire, for uniting the soles to boots and shoes, with an automatic vertically-adjusting work-supporting horn or work-support, substantially as herein set forth.

3. The combination of mechanism in a machine which cuts and inserts screws from a continuous length of wire with solid heads, for uniting the soles to the uppers of boots and shoes, with a rotating work-supporting horn, having an automatically-operating intermittent cutter for clipping off the inner ends of the inserted screws.

171,611. PEGGING-MACHINE. Louis Godde, Boston, Mass., assignor to the American Cable-Screw-Wire Company, same place. [Filed Nov. 22, 1875.]

Brief.—The uppers and soles are united by means of continuous screw-threaded wire. The head of the machine, which carries the wire feeding and inserting mechanism, has an independent vertical movement and an automatic lateral movement, in unison with a work-supporting horn, which latter movement constitutes the work-feeding movement.

1. In a machine for uniting the uppers to the soles of boots and shoes, the combination, with mechanism for feeding, holding, and inserting screws and severing them from a continuous wire, of a work-supporting horn, having a compound rotating and automatic laterally-reciprocating movement, substantially as and for the purpose herein set forth.

2. The combination, in a machine which inserts and cuts screws from a continuous wire, of a rotating work-support, having a compound rotating and automatic laterally-reciprocating movement, with a head carrying the feeding, holding, and screw-severing mechanisms, and having an automatic vertical and lateral movement, substantially as herein set forth.

3. The combination, in a machine for uniting the uppers to the soles of boots and shoes by screws cut from a continuous wire, of an automatically perfectly vertical adjusting head, E, with a rotating work-support, N, having an automatic lateral movement, and in which the vertical movement of the head is independent of the work-support, substantially as herein set forth.

4. The combination of mechanism by which screws are cut from a continuous wire and inserted in the stock of a heel, and a work-support having a simultaneous and equal automatic laterally-reciprocating movement, substantially as herein set forth.

5. The combination of a head which carries mechanism adapted to insert screws cut from a continuous length of wire with a horn carried thereby, and free to rotate on its axis at any point in its lateral movements with the head, substantially as herein set forth.

6. The combination, with a work-support, of an intermittent-griping device for the screw-threaded wire, whereby said device has a continuous feeding-grasp upon the threaded wire during the operation of the machine, substantially as herein set forth.

7. The combination, with a work-support, of a revolving wire-carrying spindle, D, having a vertical movement equal to that of the head, substantially as herein set forth.

8. The combination, with a work-support, of a revolving wire-carrying spindle, D, and an automatically-regulated slide-segment, J, for operating the intermittent pressing and griping device with the spindle, substantially as herein set forth.

9. The combination, with the wire-carrying spindle D, of feeding and griping rolls H, having annular screw-threaded recesses and projections *h i*, corresponding with the threads of the wire for receiving the same, and allowing the wire to pass between them in the direction of its length, so that pressure may be applied to grasp and feed the wire without injuring its threaded surface.

10. A pair of rolls for seizing and feeding screw-threaded wire, one or both of which has annular projecting screw-threaded edges *i i*, adapted to the threads of the wire, and into which they enter in passing between the rolls, whereby pressure is made upon the core or body of the wire at two or more separate and distinct points.

11. The combination, with the wire-carrying spindle D and its automatically-operating vertical slide-segment J, with its annular grooved guard-pinions *f*, the pawl *i*, and the ratchet *h*, whereby the descent of the slide-segment causes the feed-rolls to revolve, and feed the wire, while allowing the said slide-segment to move upward without giving motion to the feed-rolls.

12. The combination, with the revolving wire-carrying spindle D, of feeding and griping rolls H, constructed substantially as herein described, for feeding screw-threaded wire, with a rotating work-supporting horn.

13. A revolving wire-carrying spind'e, D, provided with a nose, D^{p}, in combination with the cutter-supporting arms *i*, between which it enters, and the rotating work-supporting horn, whereby the wire is supported at the point of the severance of the screw therefrom.

14. In combination with an automatic vertically-adjusting head, E, carrying the feeding, inserting, and severing devices, and a work-support, of an automatic vertically-adjusting edge-guide, o, for the work, substantially as herein set forth.

15. In combination with an automatic vertically-adjusting head, E, carrying the feeding, inserting, and wire-severing devices, of an edge-guide, o, for the work, having an intermediate vertical adjustment, and an adjustment at right angles to the line of the work, substantially as and for the purpose herein set forth.

16. The combination, with the revolving wire-carrying spindle D and an automatically-adjusting head, E, of a wire-coil-carrying reel, F, carried by said head and revolving with the spindle to deliver the wire thereto.

17. The wire-coil-carrying reel F, provided with pivoted curved fingers *n'*, whereby they may be folded to put on the coil and turned outward to hold it in place.

18. The combination, with a revolving wire-carrying spindle having an automatically-operating slide-segment, J, revolving therewith to operate the feeding and griping devices and a work-support, of means for automatically determining the proper feed of the wire for the varying thickness of the work by governing the movement of said slide-segment.

19. The combination, with a wire-carrying spindle having a slide, J, revolving therewith for operating the feeding and griping devices, of the vertical rod *a*, adjustable gage-stop *a*, lever K, operated by a cam, L, and a spring, *p*, acting upon said lever, whereby the relative height of the fixed stop, when it has compressed the stock, automatically determines the feed of the wire.

20. The combination, with the revolving spindle D and means for automatically determining the feed of the wire, of means for throwing out of action the feeding mechanism without arresting the revolving motion of the spindle, and without releasing the grasp of the feed-rolls upon the wire.

21. In a machine for inserting screws in the manufacture of boots and shoes, the combination, with an automatic vertically-adjusting head and a work-support, of means for holding the head at any point corresponding to the thickness of the work while inserting the screw.

22. In a machine for inserting screws in the manufacture of boots and shoes, the combination, with an automatic vertically-adjusting head, E, a revolving wire-carrying spindle, and a work-support, of means for automatically raising the head a definite height from the work, whether thick or thin, substantially as herein described.

23. In a machine for inserting screws cut from a continuous wire in the manufacture of boots and shoes, the combination, with an automatic vertically-adjusting head, E, and a work-support, of a looking device, which constitutes the medium through which the head is both raised and kept from being raised.

24. The combination, in a machine for inserting screws in the manufacture of boots and shoes, of a looking device, one end of which is attached to the head E, and the other end connected to a lever, V, operated by the cam V', whereby the looking device is brought in and out of action.

25. The combination, in a machine for inserting screws in the manufacture of boots and shoes, of a looking device for the head and a rod, T', connecting such device with the head, and having a yielding connection therewith, whereby the head is allowed to rise when the looking device is in force.

26. The looking device consisting of a fixed pin, T, pivoted clamping-blocks *s*, and a movable carrier, T', operating to clamp the pin T by the depression or elevation of either end of the clamp-carrier by the action of the operating-cam V', as described.

27. In combination with a rotating work-supporting horn and the looking device for the head, E, of an adjustable lever device, H V' *s'*, whereby the head is caused to be lifted more or less by the lever V, as described.

28. The combination, with the work-support and the vertically-movable head E, of an auxiliary yielding rod, W, connecting the head with the standard to increase the pressure of the head upon the stock to bring the work both together, substantially as herein set forth.

29. A revolving wire-carrying spindle with its feeding and intermittent griping-rolls and a vertically-moving slide-segment, J, for feeding screw-threaded wire, in combination with the worm G, operating the cam-shaft by the direct revolving motion of the spindle.

30. The combination, in a machine for inserting screws cut from a continuous wire in the manufacture of boots and shoes, of a treadle, R, for lifting the head E, with the automatically-moving work-support to place and remove the work.

31. The combination, in a machine for inserting screws cut from a continuous length of wire in the manufacture of boots and shoes, of a friction device operated by a treadle, T, with the vertically-adjustable head, substantially as described, for controlling the speed of the machine.

32. The combination, in a screw-inserting machine, of a vertically-adjusting head, which carries the driving-pulley for the spindle, and a driving-pulley, T^{p}, carried by the standard, with a take-up follower for making uniform the driving-power of the belt during the vertical movement of the head.

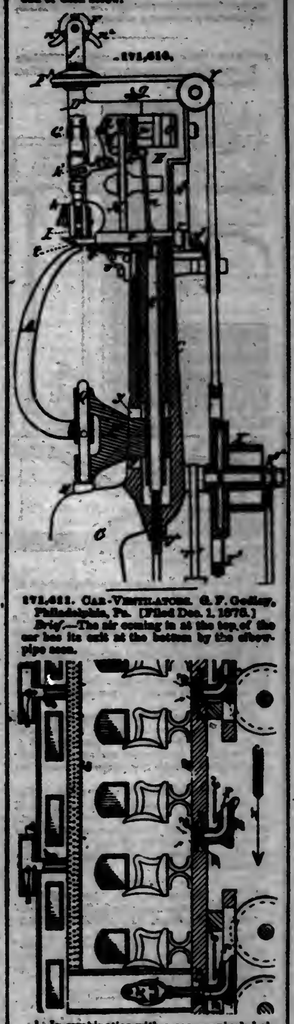
33. In a machine for inserting screws in the soles of boots and shoes cut from continuous screw-threaded wire, the combination of the following instrumentalities, viz: a revolving wire-carrying spindle, having the automatic feed device, the automatically operating screw-threaded griping-rolls for holding screw-threaded wire while being fed, a device for severing the wire close to the work, a work-support, and an edge-guide for the sole, which rises and falls with the wire-severing device, substantially as herein set forth.

34. The combination with a vertically-adjusting head, in a machine for inserting screws cut from a continuous length of screw wire, of a bracket, P, secured to the head above and surrounding a pivot-support, Q, for the work-support, such bracket having freedom for vertical movement with the head over the pivot-pin Q, and without disturbing the work-support, as herein set forth.

35. In a machine for inserting screws in the soles of boots and shoes to unite them to the uppers, the combination of a revolving wire-carrying spindle, uninterrupted griping-rolls, a wire-feeding mechanism, and a work-support with cutters having their cutting-edges approaching to oblique lines, whereby the wire is severed with a cutting-edge on the entering end of each screw.

171,612. CAR-VENTILATORS. G. F. Godley, Philadelphia, Pa. [Filed Dec. 1, 1875.]

Brief.—The air coming in at the top of the car has its exit at the bottom by the elbow-pipe seen.



1. In combination with a car, a swiveled elbow-pipe depending from the floor, as shown and described, whereby, through the motion produced by a moving train, said elbow-pipe will receive and expel the vitiated air from the interior of the car, substantially as set forth.

2. In combination with the car-door, having an opening or recess, D, the swiveled elbow-pipe B, having the collar or flange *c*, substantially as described and shown.

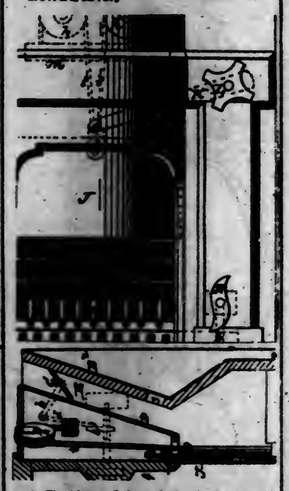
3. In combination with the swiveled elbow-pipe B, applied substantially as shown, an automatically opening and closing valve, *c'*, substantially as shown and described.

4. In combination with an air-pipe placed below the floor of a car, an automatically open-

ing and closing valve or valves, substantially as shown and described.

5. In combination with a perforated pipe, O, for admitting air to the air in the upper section, a pipe or tube for drawing off the vitiated atmosphere through the floor or sides, substantially as shown and described.

171,610. FIRE-PLACE HEATERS. William D. Cummins, Morgantown, W. Va. [Filed Nov. 24, 1875.]



1. The blower J, formed of a single sheet of metal, and curved from a horizontal line, counterbalanced by means of a weight, M, and operated by a lever, K, and knob I in front of the heater-frame, substantially as and for the purposes herein set forth.

2. The pulleys h h, set at an angle, as shown and described, in combination with the wire cords i, blower J, and counterbalancing-weight M, substantially as and for the purposes herein set forth.

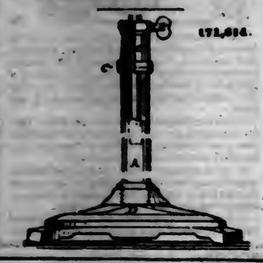
3. The combination of the inclined throat or flue B, centrally-pivoted damper O, with arm or crank h, connecting-rod d, arm e, shaft f, and knob I, all constructed and arranged substantially as and for the purposes herein set forth.

4. The combination, in a fire-place heater having a heater-frame, A, and open grate in the same, of the register P, under the grate and in front of the dust-door, operated by the knob R on the end of a shaft extending through the fire-place, substantially as and for the purposes herein set forth.

171,611. BREWING FARM. Halver Halverson, Cambridge, assignor to Joseph Boynton, Boston, Mass. [Filed June 8, 1875.]

The improved process of utilizing "scrap" described, consisting in treating the same with perchloride of iron, substantially as and for the purposes specified.

171,614.

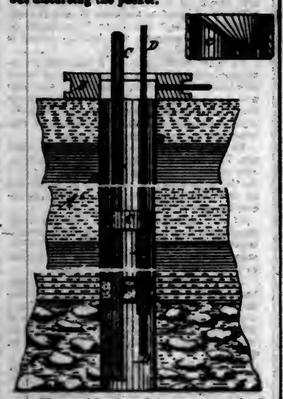


171,616. PHOTOGRAPHIC HEAD-REST STANDS. John J. Hayes, Green Point, N. Y. [Filed Oct. 11, 1875.]

In a photographic head-rest stand, the combination, with a base, D, of the tubular standard A, made of wrought-iron, provided at its lower end with a screw-thread, and at its upper end with a tip, C, of cast or other suitable metal, having a thumb-screw, E, for holding the sliding rod B at different heights, all constructed and arranged substantially as described.

171,615. PETROLEUM-WELLS. Wallace L. Wardlaw, St. Petersburg, Pa. [Filed Nov. 10, 1875.]

Brief.—The steam-pipe and protecting-tube are supported upon the pumping-tube by the device case, said device having a guide-flange for the interior of the protecting-tube and steam-pipe. The heat from the steam is confined below the packer, as the water above it would condense any that might pass up the tube. The steam-pipe can be withdrawn without disturbing the packer.



1. The combination of the pumping-tube C, the steam-tube D, and the protecting-tube E, supported upon the pumping-tube, substantially as set forth.

2. The combination of the guiding-flange C' with the protecting-tube E, substantially as set forth.

171,616. PACKERS FOR OIL-WELLS. Wallace L. Hardison, St. Petersburg, Pa. [Filed Dec. 3, 1875.]

Brief.—The cylinder and anchor-section form a telescopic joint. The flexible packer has tapering ends, and will not double back, so as to interfere with a proper condensation about the cylinder, because of the shape and thickness of the bag.



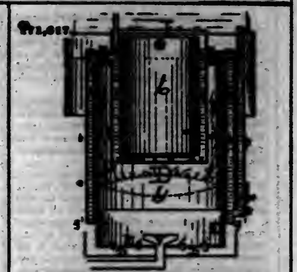
1. The cylinder C and tube D or tubes D D', sliding within the section B of the packer, in combination with a flexible packing compressed between the cylinder and the wall of the well, substantially as set forth.

2. The packing-bag E E, having its ends made tapering, in combination with the anchor B and the sliding cylinder C, substantially as set forth.

3. The cylinder I, Fig. 4, made in one piece, and provided with ribs i i, and a passage or passages, F, for the oil or oil and gas, substantially as set forth.

171,617. GAS-STOVES. Henry G. Hawley, Albany, N. Y., assignor to Gideon Hawley, same place. [Filed June 11, 1875.]

171,617



1. In a gas heating or cooking furnace, the combustion-chamber B, in combination with the double grates G, all constructed and operating substantially as set forth.

2. In a gas heating or cooking furnace, the combination of the plate d with the chamber B and double grates G, constructed and operating substantially as and for the purpose set forth.

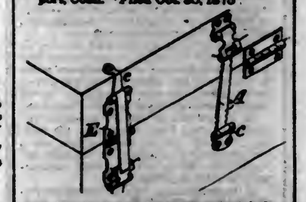
3. In a gas heating-furnace used for boiling water or generating steam, and having the combustion-chamber B and double grates G, the boiler placed within said chamber in the manner described, so that it will throw back the heat against the grates.

4. In the apparatus herein described, the hood H, constructed and operating substantially as and for the purposes set forth.

5. The double bottom E D, in a gas heating or cooking furnace, in which air is mixed with gas before combustion for the purpose of heating the air before it is so mixed.

6. In a gas heating or cooking furnace, the double grates arranged in a double curved form, substantially as described, for the purpose set forth.

171,618. TRUSSES. Jas. A. Rogers, Bridgeport, Conn. [Filed Oct. 30, 1875.]



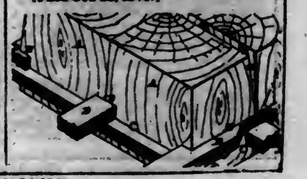
1. The back-stay for trunks, hereinbefore described, composed of a long and a short section, united by a hinge to form a joint near one end thereof, and provided with hinges at its ends, and adapted to be applied to the back of a trunk body and lid, with its long section crossing the joint between the two ...

2. The combination of the trunk-hinge and the jointed stay, pivoted at its ends to the hinge, substantially as set forth.

3. The combination of the trunk-body, its hinged lid, and the jointed hinged stay, composed of sections of different lengths, these members being constructed and adapted to hold the lid in position, substantially as set forth.

4. The combination of a trunk-body and its lid or cover with the hinge, provided with the pivoted back-stay, substantially as and for the purpose described.

171,619. WOOD PAVEMENTS. Saml. Houston, St. Louis, Mo., assignor of one-fourth his right to Lewis A. Clarke, same place. [Filed Oct. 28, 1875.]



The blocks A, fitting firmly together for some distance upward from the bottom, and beveled from that point upward, to form, when placed together, a recess transverse to the street, for the reception of cement, and to afford a hold for the feet of horses, in combination with the frame, consisting of longitudinal and transverse bars let into the sides of the blocks so deeply as to allow the blocks to stand closely together, substantially as set forth.

171,620. SALE-MAKERS' NEEDLES. Henry M. Jenkins, New York, N. Y. [Filed Dec. 9, 1875.]

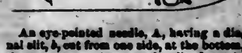


1. A cast-maker's needle, having its head formed with a ridge, c, corresponding with the front ridge c of the line, for the purposes herein set forth.

2. In a sail-maker's needle, the head a, constructed with the side grooves d d and top bevel f, substantially as shown and described.

171,621. SEWING-MACHINE NEEDLES. H. M. Jenkins, New York, N. Y. [Filed Dec. 7, 1875.]

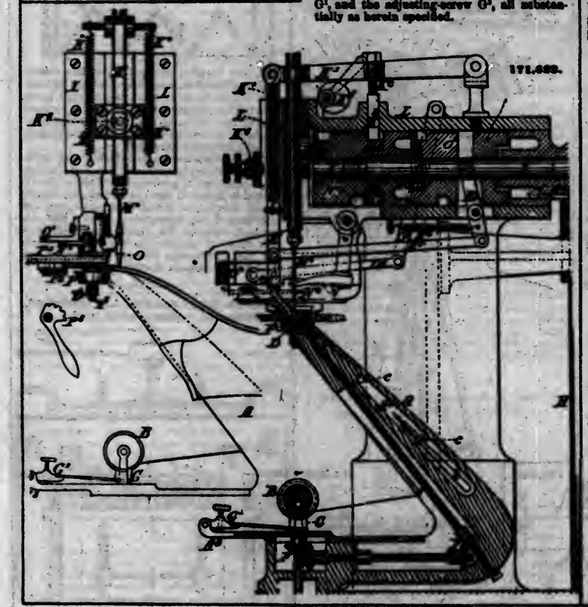
Brief.—From the bottom of the eye a slot extends downward in an oblique direction a short distance, and then at right angles to the outer edge of the needle. The sides of the slit extending downward from the slit abut against each other to give strength to the needle, and are sprung apart by the pressure of the thread in threading.



An eye-pointed needle, A, having a diagonal slit, *b*, cut from one side, at the bottom, of the eye *a* to a point, *x*, and a slit, *d*, cut from said point through the side of the needle, substantially as shown and described, and for the purposes herein set forth.

171,622. BOOT AND SHOE SEWING MACHINES. John Keats, Newcastle, Arthur Greenwood, Leeds, and Alphonso Keats, Newcastle, England. [Filed May 17, 1875.]

Brief.—The shoe rests on the horn, carrying a whirl rotating from left to right, winding the thread around the needle in the opposite direction to the usual mode, and on the up-stroke of the needle the shuttle carries its thread through the needle-loop, which has been opened by the spreader, and a twist or tied effect is made.



171,622.

1. In a sewing-machine arranged and organized for uniting the soles and uppers of boots and shoes by means of two wax-threads, making a stock-stitch, the combination, with a swivel arm or horn, A, of the following specially-timed instruments, viz: the hooked needle M', the whirl D, the shuttle O, the loop opener or divider N, the spreader N', and the bar K, which performs both the pressing and the feeding operations while sewing, all substantially as herein described.

2. The combination of the traversing cam M', the rotary cams N' O', and the sliding cam O', for giving a suitably-timed motion to the hook M, the divider N, the shuttle O, and the spreader N', the whole operating substantially as herein described, for the purpose set forth.

3. The horizontal guide-roller P, mounted on a vertical spindle supported by a spring, so as to be self-adjustable vertically, in combination with a notched cam-lever, P', and coiled spring P', substantially as herein described, whereby it may be adjusted horizontally to gage the required distance of the sewing from the edge of the inner sole, and of adapting itself to the inequalities of the material, and allowing also a definite margin on the welt-sole, as is usual in hand-made boots, to receive the outer sole.

4. The combination, in sole-sewing machines using two waxed threads, of the adjustable bar K, which performs the double office of holding and feeding the lever K', (which is capable of adjustment, by means of the screw K', to suit work of different thicknesses,) and arm K', with the rock-lever K', arm K', link K', substantially as herein described, for the purpose of holding firm the work against the pull of the hook, and feeding the same forward for the completion of the stitches, as set forth.

5. In combination with the bobbin E, arranged horizontally upon the swivel arm or horn, the brake-block G, bearing on both flanges of the bobbin, the spring G', the tipping-piece G', and the adjusting-screw G', all substantially as herein specified.

171,623. VELOCIPEDES. Geo W Marble, Chicago, Ill., assignor of one-half his right to Adolph Shoeninger, same place. [Filed Nov. 22, 1875.]



1. In a velocipede, substantially as described, the axle A, crank B, and collar C, cast in one piece, and the combination therewith of the loose collar C' and nut b, as and for the purpose set forth.

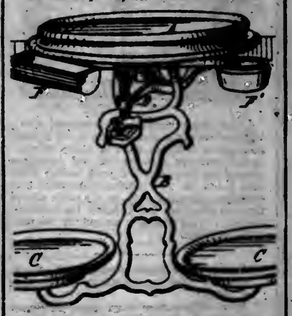
2. The castings G, G', G', and G', forming a connection for the top of the standard, the tiller, and a means for coupling the reach, substantially as set forth.

3. The combination of the socket-pieces I I, adapted to inclose and hold firmly together the ends of the reach-rods, the hooks d d on such pieces, and the castings G G' G', forming a connection between the reach-rods and the standard, all constructed and arranged substantially as described and shown.

4. A velocipede of the class described, having the reach and standard constructed of round rods, joined together by metallic plates, substantially as described and shown.

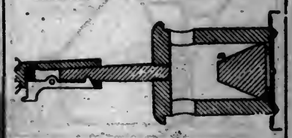
171,624. WAITERS FOR GAME-TABLES. G. W. Marble, Chicago, Ill., assignor of one-half his right to A. Shoeninger, same place. [Filed Nov. 22, 1875.]

Brief.—A device capable of being clamped to the side of a card-table, containing match-safe, wine-cup rest, &c.



The combination, with the plate A, of the pendent frame B, plates C C, lever D, curve E, box F, and cup F', substantially as and for the purpose set forth.

171,625. SOLDERING APPARATUS. Louis McMurrey, Baltimore, Md. [Filed Aug. 14, 1875.]



The combination of a cylindrical or hollow soldering-iron with a separate and inclosed weight, for steadying the one-cup during and after the melting of the solder, substantially as specified.

171,626. HORSE-RACKS. Alexander Moffit, Washington, D. C. [Filed Dec. 13, 1875.]

Brief.—The rocking plate is pivoted at or near the middle portion of the fixed plate.



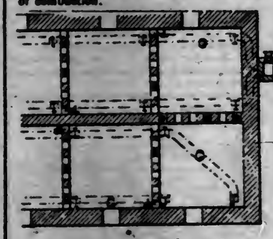
1. A horse-rack made in two parts, A and B, the former fastened to the roof and the latter pivoted to the stationary part, so as to form a rocking shoe, for the purposes herein set forth.

2. In a rocking horse-rack, made in two parts, as described, rubber or other springs inserted between the two parts, for the purposes herein set forth.

3. In a rocking horse-rack, made in two parts, as described, the inner or yielding part fastened to rubber, substantially as and for the purposes herein set forth.

171,627. BRICK-KILNS. Augustus Morand, Germantown, Pa. [Filed Dec. 2, 1875.]

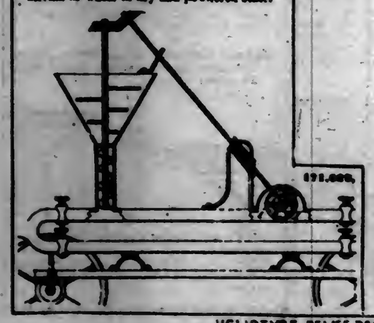
Brief.—The location of the draft-openings in the coal chambers, as shown, secures a more equally distributed passage of the products of combustion.



In a drying or burning kiln composed of two longitudinal series of chambers, A and B, communicating with each other by means of transverse apertures between the coal chambers thereof, the main flues G G, each having openings J J in the two diagonally-opposite coal chambers, arranged both on the same side of the coal chambers and opposite the draft-apertures *i i*, substantially as and for the purposes set forth.

171,628. FIRE-EXTINGUISHERS. Stephen S. Wooton, Binghamton, N. Y. [Filed Sept. 6, 1875.]

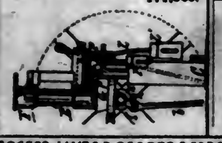
Brief.—The soda or other agent, after passing through the feeder, enters the passing stream of water in dry and powdered state.



171,629.



171,630.



In a fire-extinguisher, the combination, with the pipe through which a stream of water passes, of an apparatus adapted to inject into the flowing water bicarbonate of soda, or other similar material, in a substantially dry, pulverized condition, and adapted to be dissolved and diffused throughout the water and discharged upon the fire, substantially in the manner and for the purposes set forth.

171,630. PROCESSES OF PREPARING MOLDINGS FOR ENAMELING. Michael A Owens, Brooklyn, N. Y. [Filed July 1, 1875.]



1. The method herein described of preparing enameled molding by forming a recess or undercut under the lower edges of the same, leaving said moldings attached to the wood from which they are formed by a sheet to allow the moldings to be separated by cutting the sheet without defacing or cutting through the enamel, substantially as herein set forth and shown.

2. In moldings for enameling, the undercuts *b* on the strip below the grooves *d*, which separate the parallel rows, said undercuts extending underneath the base edges of the moldings, substantially as and for the purposes herein described.

171,631. WINDMILLS. Arthur T. Page, Germantown Prairie, Ill. [Filed Mar. 16, 1875.]

Brief.—Supplemental fan-blades connected by vertical pivots, for deflecting the wheel from the direct action of the wind, are made use of in combination with the racks and weighted arms, and eccentrically-located pivotal standard.

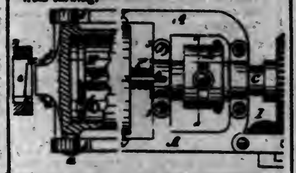
1. The supplemental fan-blades m, connected with the vertical pivot F, for deflecting the wheel from the direct action of the wind as the force of the latter is increased, in combination with the racks *f f* and weighted arm L, substantially as and for the purpose set forth.

2. The angular weighted lever P, in combination with the weighted arm L, arranged and operating substantially as described.

3. The combination, with the eccentrically-located pivotal standard C, of the weighted arm S and friction-roller *b'*, arranged and operating as described.

171,632. SAUSAGE-MACHINES. Hugh P. Rankin, Allegheny, Pa. [Filed June 12, 1876.]

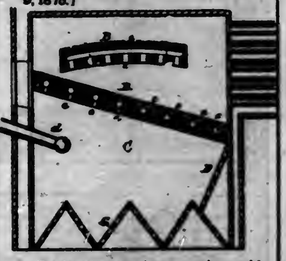
Brief.—By turning the sleeve a connection is thrown into and out of gear with the screw-thread cut on the piston-rod. When in gear the piston is driven home by means of the gear-wheels and revolving sleeve; when out of gear the piston is withdrawn by hand. A stud is attached to the frame-work, which works in a slot and prevents the piston-rod from turning.



1. The combination, in a sausage-stuffer, with a screw-threaded piston-rod, of a revolving sleeve and an adjustable connection, for gearing together or disengaging the same, as and for the purposes set forth.

2. The combination of the screw-threaded piston-rod, having a groove, *g*, the projection *h*, the revolving sleeve G, the threaded segment K, the eccentric collar L, and the gear-wheels, substantially as described, and for the purpose set forth.

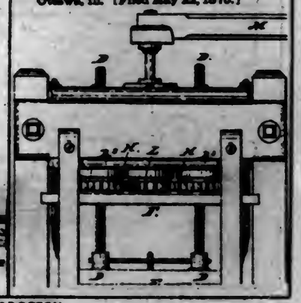
171,633. STEAM-BOILER FURNACES. Chas. H. Robinson, Brooklyn, N. Y. [Filed Dec 9, 1875.]



1. For burning petroleum-gas, the combination of the following elements: the furnace-box C, having no air-inlet save at the bottom thereof, the foraminous diaphragm E, extending across the same, and the steamer *d*, introduced or located beneath said diaphragm, all as shown and described.

2. The combination, in a furnace for burning petroleum-gas, of the bottom F of the fire-box, composed of perforated inclined plates G, joined together at top and bottom, the foraminous diaphragm E above the same, and the steamer *d*, all arranged as shown and described, whereby the gas is introduced into the space or chamber to which atmospheric air has access only through said bottom, as and for the purpose specified.

171,634. OIL-FURNACES. L. O. Rockwood, Ottawa, Ill. [Filed May 22, 1876.]



The vertical shaft F, to which the sweep is attached, in combination with the spur-pinion L, the spur-geared cam H, the flanged washers I, and the pressure-screws D, substantially as described, and for the purpose specified.

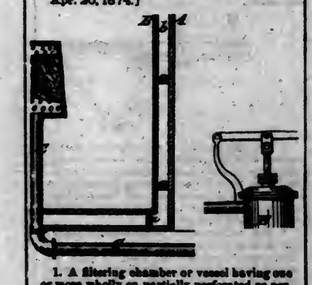
171,635. WIRE-ROPE. Ferdinand W. Roebling, Trenton, N. J., assignor to John A. Roebling's Sons. [Filed Oct. 12, 1875.]

Brief.—To prevent ropes used in mining, &c., from twisting or untwisting.



As an article of manufacture a wire rope, composed of strands, one or more of which strands have a right-hand twist, and the remainder a left-hand twist, said strands being laid up into a rope, in the manner and for the purposes set forth.

171,636. FILTERS. Thos. R. Sinclaire, New York, N. Y., assignor to Sinclaire Rectifying-Machine Company, same place. [Filed Apr. 20, 1874.]



1. A filtering chamber or vessel having one or more wholly or partially perforated or permeable side or lateral wall or walls, with wholly or partially perforated or permeable top and bottom walls, either or both, substantially as described.

2. The combination of a filtering-chamber or vessel having one or more wholly or partially perforated or permeable side or lateral wall or walls, with wholly or partially perforated or permeable top and bottom walls, either or both, and a distributer, all with or without an outer vessel, and with or without a forcing apparatus, substantially as described.

3. The combination of a filtering-chamber or vessel for containing charcoal or other filtering material, having wholly or partially perforated or permeable side or lateral wall or walls, provided with a permeable lining or covering, with or without wholly or partially perforated permeable top and bottom walls, either or both, the same being with or without a lining or covering, substantially as described.

4. The combination of an inner filtering-chamber, an outer vessel, and the side or lateral studs or projections, with or without the bottom or end studs or projections, substantially as described.

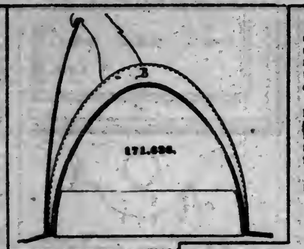
5. The vessel A, the wholly or partially perforated or permeable side, top, and bottom walls, the distributer D, the pipe C, the outlet F, space b, and a force-pump, B, all combined and arranged substantially as described.

171,637. HELMETS FOR FIREMEN. James B. Spear, Jr., Melrose, Mass., assignor to George W. Simmons & Son. [Filed Nov. 10, 1875.]

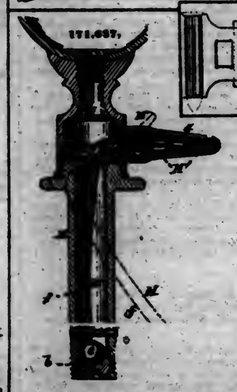
Brief.—The crown and brim are made of one piece of felt cemented with japan asphaltum, or like substance. The ribs are attached by cement or rivets to the crown.

1. A fireman's helmet with the crown made whole, and having the ribs B attached to it, substantially as described.

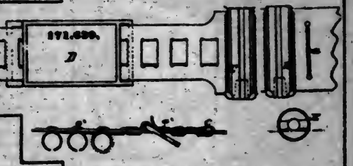
2. The improved helmet above described, having the rim and crown in one piece, and the ribs B attached to it, substantially as described.



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171,638.



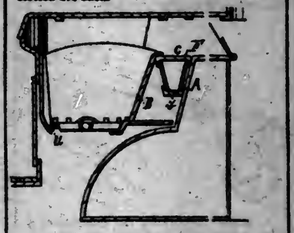
1. A cartridge-belt divided into sections, between which are made button-holes *c*, as and for the purpose described.

2. The combination, with reversed strap C and buckle D, of a belt provided with slots *c'*, loops *c'*, and clips E, as and for the purpose set forth.

3. The combination, with holding-strap, of clip E, having cuts *e* to give a better bearing for the cartridge.

171,639. STOVES. Samuel Wood, Quincy, Ill., assignor to Excelsior Stove-Works, same place. [Filed June 23, 1875.]

Brief.—The partition in the air-chamber prevents circulation of air entirely through it longitudinally. Air is discharged through apertures into the space in the rear of the slotted fire-back.

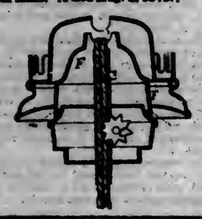


1. The air-chamber C, having the apertures *b*, partition H, and covering F, substantially as specified.

2. The fire-plate B, having the slots *i* and bars *n*, in combination with the air-chamber C, as described.

3. The combination of the air-chamber C, fire-plate B, and grate-rest N, as set forth.

171,640. LAMP-BURNERS. F. A. Taber, Boston, Mass. [Filed Aug. 9, 1876.]



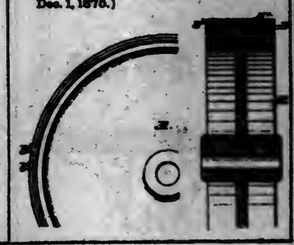
1. In a lamp-burner, the combination, with a slotted deflector and a flat wick-tube, of a sleeve whose sides extend a short distance above the wick-tube, and whose ends at the top are notched to permit expansion or spread of the flame, substantially as set forth.

2. The sleeve F, provided with air-admitting perforations, and having its sides extended a short distance above the wick-tube, in combination with the flat wick-tube and slotted deflector of a lamp-burner, substantially as set forth.

171,641. CARTRIDGE-BELTS. David Taylor, (U. S. A.,) Leavenworth, Kans., assignor to himself and Thos. Ewing, Tucson, Ariz. [Filed Aug. 30, 1875.]

REISSUES.

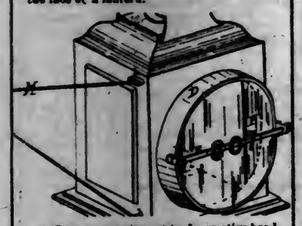
4,992. PULLEYS. Robert W. Bete and William Howie, Brooklyn, N. Y. Patent No. 169,702, dated Oct. 11, 1875. [Filed Dec. 1, 1875.]



A lining or covering of paper, applied, cemented, or glued to the drawing-surface of a pulley, for the purpose of keeping it from slipping and increasing its driving-power.

6,926. SIGNAL-LIGHTS FOR LOCOMOTIVES. Andrew Dick, Hamilton, Canada, assignor to himself, John Hall, and Wm. K. Muir. Patent No. 129,707, dated July 23, 1872. (Filed July 20, 1874.)

Brief.—The signal, which may be a number or any suitable device, is hung to a bar across the face of a lantern.



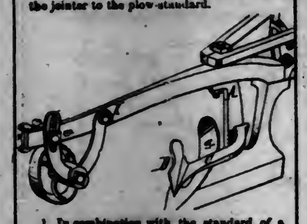
1. The combination, with a locomotive head light, of a stationary detachable signal, arranged at the front thereof, to indicate the name and number of the train, substantially as described.

2. The combination, with a locomotive headlight, of a movable or flashing cautionary signal, substantially as described.

3. In combination with a signal-lamp, a stationary signal to indicate the name or number of the train, and a removable cautionary signal, substantially as set forth.

6,927. PLOW-JOINTERS. Horatio Gale, Albion, Mich., assignor to the Gale Manufacturing Company. Patent No. 147,920, dated Feb. 17, 1874. (Filed Dec. 6, 1875.)

Brief.—A horizontal curved arm connects the jointer to the plow-standard.

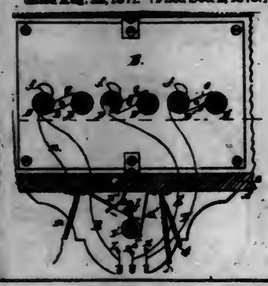


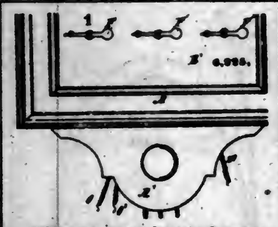
1. In combination with the standard of a plow, a horizontally-projecting arm carrying a jointer, for the purposes set forth.

2. In combination with a curved standard, A, the curved arm C, carrying the jointer D, substantially as and for the purposes set forth.

3. The combination, with a plow-standard, of the jointer D, having arm C, and vertically adjustable upon said standard, substantially as described.

6,928. ELECTRO-MAGNETIC ANNUNCIATORS. H. Gray, Chicago, Ill. Patent No. 119,261, dated Aug. 22, 1871. (Filed Dec. 2, 1875.)





1. The arrangement of circuits for operating the needle or armature s either forward or backward by the electrical current, substantially as and for the purpose set forth.

2. The commutator J of an electro magnetic annunciator, constructed and arranged to operate substantially as and for the purpose specified.

3. The springs G G', H H', and wires R S T, in combination with rings I and I' of the commutator J, the whole arranged substantially as and for the purpose described.

4. The spring h, in combination with points l, M, and N, arranged as described, whereby the electrical current is reversed, substantially as and for the purpose specified.

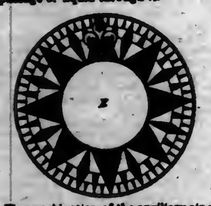
5. The combination, substantially as described, of a dial, bearing numbers or other characters corresponding to the designations of different rooms in a building, and movable indicating-pointers corresponding to the characters upon the dial, as and for the purposes set forth.

6,929. PAVEMENTS. William W. Hubbell, Philadelphia, Pa. Patent No. 159,410, dated Jan. 5, 1870. (Filed Oct. 27, 1875.)

The street-paving composition consisting of hydraulic cement and lime, with coal-cokes or sand, fine stone or gravel, or either, and tar or bitumen, with fine and coarse stone underneath, forming the most effectively-hardened concrete wearing-surfaced pavement, substantially as described.

6,930. MARINERS' COMPASSES. Edward S. Ritchie, Brookline, Mass. Patent No. 39,126, dated Apr. 7, 1863; reissue No. 6,607, dated Aug. 24, 1875. (Filed Oct. 5, 1875.)

Brief.—Compass-card perforated to allow free passage of liquid through it.



1. The combination of the auxiliary air-vessel or indicator E and the connecting-rod B with the magnet or magnets g, or the same and its or their air-tight or buoyant case D, the whole being arranged within the vessel or case A, to contain water or other proper fluid, and so as to operate together substantially as above specified.

2. The combination of either or both the buoyant air-vessels D E with their shaft or rod E by means of gimbals A, the shaft or rod B being arranged and supported within a case, A, substantially in manner and so as to operate as described.

3. The combination of an auxiliary buoyant vessel, c, with the rod or connector B, the magnet, or the same and its buoyant case D, and the auxiliary case or vessel A, containing water or other suitable fluid, so as to operate therein substantially as herein before specified.

4. The compass-card, having the cardinal divisions marked upon it, affixed to the external periphery of the float E, substantially as specified.

5. The combination of a hollow globe, F, open at top and bottom, and its supporting-gimbals, with the water case or vessel c, and the magnet buoyant air-vessel thereto.

6. The magnet air vessel, as made of an elongated form, and as having its magnet or magnets arranged lengthwise within it, substantially as represented in Figs. 6, 7, and 8 of Sheet 2, and as herein before specified.

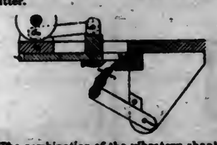
7. The combination of two or more buoyant radial floats or arms, c' c', with the elongated magnet-vessel, the said arms being for the purpose herein before stated.

8. The combination of a graduating-ring, f', with the radial-armed float E, its connecting-rod B, and the magnet-float D, when arranged and combined within a water-vessel, A, in manner and so as to operate substantially as described.

9. In or for a mariner's liquid compass, the card or indicator, perforated for the passage of the liquid of the bowl through it, in order to facilitate the settling of the card, as specified.

6,931. MACHINES FOR MAKING WOODEN SHANKS FOR BOOTS AND SHOES. Watson N. Sprague, South Framingham, assignor, by mesne assignments, to himself and W. W. Potter, Boston, Mass. Patent No. 157,424, dated Dec. 1, 1874. (Filed Nov. 16, 1875.)

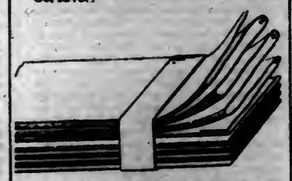
Brief.—The material from which the shank is made is held upon an inclined table, and subjected to the action of a curved reciprocating cutter.



1. The combination of the vibratory shank-holder with the cutting-blade, (having its cutting-edge curved in two directions, as specified,) and with the bed slanting or inclined to the plane of motion of the said blade, all being constructed and to operate substantially as shown and explained.

2. For supporting a shank-stiffener blank, and cutting it from its upper to its lower surface, concave and beveling along its edge, the combination of a bed, substantially as represented, with a knife curved in two directions on its cutting-edge, as described, and provided with mechanism to cause it to cut through the blank, down to and at an inclination to the blank-supporting surface of the bed without going through such bed, all being essentially as explained.

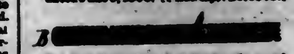
6,932. MEASURING PACKAGED FABRICS. S. C. Talcott, Ashtabula, Ohio. Patent No. 166,121, dated June 29, 1875. (Filed Sept. 30, 1875.)



1. The preparation of fabrics for sale and inventory by measuring, graduation, notation, and packaging, substantially as described.

2. In combination with the graduation and notation, transverse guide-lines, to facilitate the folding or severance of the fabric without bias, substantially as described.

6,933. TABLE-MATS. Charles Weber, West Meriden, Conn., assignor to the Newark Tea-Tray Company. Patent No. 55,402, dated June 9, 1866. (Filed Apr. 20, 1875.)



The heat-shield described, having the metal rim B, inclosing the edge of the round or oval body A, and extending smoothly inward on both faces, substantially as and for the purposes specified.

HELIOTYPE RELIEF PROCESS JAMES R. OSGOOD & Co. BOSTON.

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DIGEST OF DECISIONS.

[The names of court cases are designated by an asterisk, (*).]

ABANDONED APPLICATIONS.

1. The abandonment of an *application* for a patent, as provided for by sec. 4894 of the Revised Statutes, is a different thing from the abandonment of an *invention* to the public.

[W. H. Golding, 141.

2. When an *invention* becomes abandoned to the public it is no longer patentable. But an *application* for a patent being a legal proceeding to secure an alleged right, the abandonment of that proceeding does not necessarily amount to a surrender of the alleged right.

[Ibid., 141.

3. Where an applicant has abandoned an application for a patent by failure to prosecute it within two years after an action thereon, of which he was duly notified, he is not by that fact alone debarred from prosecuting a new application for patent for the same invention.

[Ibid., 141.

4. It having been decided by the courts that abandoned applications are no bar to the issue of a patent, they cannot delay that issue, and are not to be regarded at all.

[Casilear and McIntire, 474.

5. The statute and the decisions of the courts being sufficient notice to rejected applicants, they and not the Office must be held responsible for any injury resulting from the abandonment of their applications.

[Ibid., 474.

(See Construction of Statutes 1; Practice in Patent Office, 2, 9.)

ABANDONMENT OF INVENTION.

1. Although long neglect to file or prosecute an application may be a link in a chain of evidence going to prove abandonment of an invention, it is not sufficient for that purpose unless accompanied by proof of express acts of dedication, or by a clear acquiescence in the acts of others amounting to the same thing.

[W. H. Golding, 141.

2. Abandonment of an invention by sale for more than two years prior to the filing of an application for a patent not established by inferences or presumptions arising on the testimony in the absence of clear and explicit proof as to dates.

[Massey vs. Sawyer, 557.

(See Abandonment of Applications, 1, 2.)

APPLICATIONS.

(See Abandoned Applications; Division of Applications; Joint Applications; Joint Inventions, 3; Practice in Patent Office, 2, 3, 8; Reissues.)

APPEALS.

(See Practice in Patent Office, 10.)

ASSIGNEES.

(See Assignments, 1, 3, 4, 5, 7, 8.)

ARTICLES OF MANUFACTURE.

(See Construction of Claims, 5; Invention, 2.)

ASSIGNMENTS.

1. An *assignee*, under the patent act of 1836, is one who has transferred to him in writing the whole interest of the patent, or an undivided part of such whole interest, in every portion of the United States.

[*Meyer *et al* vs. Bailey *et al*., 437.

2. A *grantee* is one who has transferred to him in writing the exclusive right under the patent to make and use, and to grant to others to make and use, the thing patented, within and throughout some specified portion of the United States.

[*Ibid., 437.

3. If a part of the whole patent has been vested in another, so as to constitute him an assignee within the meaning of the statute, an efficacious surrender can be made only by the concurrence of both of the owners of the patent; but this may be manifested by the assignee by his direct co-operation in the surrender, or his subsequent ratification of it.

[*Ibid., 437.

4. The owner of an exclusive territorial right under a patent may ratify a reissue thereof in which he did not join, by making an assignment under such reissue.

[*Ibid., 437.

5. It is not essential to the validity of a reissued patent that a transferee of an interest in the original patent, who is not an assignee within the meaning of the statute, concur in the surrender.

[*Ibid., 437.

6. Nor is it necessary to aver in a bill brought under a reissued patent that the grantee of a territorial right acted with the patentee in the surrender of the original patent or concurred in the reissue thereof.

[*Ibid., 437.

7. M., the patentee, assigned the State of Pennsylvania to B., and afterward reissued the patent. Subsequently to the reissue B. assigned his title to an interest in the State of Pennsylvania, except as to certain counties, under the *reissued* patent, to the complainants, who, under the title thus acquired, filed a bill in equity against the defendants. Defendants demurred on the ground that B.'s interest was outstanding at the time of the surrender, and that he did not appear to have been a party to or to have assented to or approved of the surrender and therefore the reissue was void: *Held*, that B. was not an assignee within the meaning of the statute, and therefore it was not necessary for him to concur in the surrender in order to give validity to the reissue.

[*Ibid., 437.

8. The bill sets out complainant's title to the exclusive right, title, and interest under the patent, to the State of Pennsylvania, excepting certain counties, and then avers that the defendants "are *now* constructing, using, and vending" the infringing goods * * * "in the western district of Pennsylvania," concluding the averment as follows: "All of which acts and doings are in violation of the exclusive rights and privileges, *so as aforesaid* vested in your orators, under and by virtue of the said recited reissued letters patent." *Held*, that these averments, taken in connection with statement of complainants' title, necessarily import a charge of infringement *after the grant to the complainants*; and, also, *within* the *territory covered by the grant*.

[*Ibid., 437.

9. R. agreed with M. to apply for an extension of his patent, and to assign the same when procured to M. M. sold his interest in this contract to the U. P. B. Mach. Co. R. dying before the extension was had, his wife was appointed executrix of his will, applied for and procured the extension, and assigned the same to the U. P. B. Mach. Co., but the assignment described herself as "administratrix," &c. The assignment was duly recorded. Subsequently the widow resigned her trust as executrix, and L. was appointed administrator with the will annexed. L. executed an assignment of the extended term of the patent to N., and N. brought suit for infringement: *Held*, that the recorded assignment to the U. P. B. Mach. Co., notwithstanding the erroneous description of the party executing it, was constructive notice to N. of the claim of an adverse title in the patent, the nature of which he should have ascertained by inquiry; and that this alone was sufficient to defeat complainants title: *Held*, further, that, in fact, the assignment to the U. P. B. Mach. Co. was valid, notwithstanding the erroneous description of the representative character of the executrix.

[*Newell *et al*. vs. West *et al*., 508.

ATTACHMENTS.

(See Pleadings and Practice, 2.)

BOARD OF EXAMINERS-IN-CHIEF.

(See Practice in Patent Office, 10.)

CASES COMMENTED UPON.

1. Gorham Company *vs.* White, 14 Wall., 524.
[*Niedringhaus, 279.

2. Godillot, OFFICIAL GAZETTE, Vol., VI, p. 641.
[Orcutt and Son, 277.

3. Rouse and Stoddard, 7 O. G., 169.
[Casilear and McIntire, 474.

4. *Merrill and Carleton.
[Paris *vs* Bussey, 859.

CLAIMS.

1. The rule that it is admissible under proper restrictions for parties to put their claims in different forms, to prevent misconstruction of them by the public or the courts, reiterated and approved.
[I. Hahn, 597.

2. Broad claims give rise to the appearance of indefiniteness, but regard must be had to the specification as to their scope.
[Ibid., 597.

3. The doctrine of Perry *vs.* Lay, (C. D., 1869, p. 3,) that it is admissible under proper restrictions for parties to put their claims in different forms to prevent misconstruction, again approved.
[E. W. Shippen, 727.

4. Parts which, though shown as concerned in an operation, may be rendered unnecessary by a ready substitute, need not be explicitly cited in a combination claim.
[O. E. McMurray, 943.

(See Construction of Claims; Functional Claims.)

COMBINATION.

1. The third claim was for the combination of the shell-holder, the canister, and a ramming device. As these also were especially adapted to each other, all co-operated to produce a certain result, and the use of each was necessary to that result: *Held*, that they constituted a legitimate combination.
[Noyes, W., 612.

See Construction of Claims, 3, 13; Joint Invention, 1, 3 Reissues, 2.)

COMMISSIONER OF PATENTS.

See Mandamus, 1; Construction of Specifications and Patents, 2.)

COMPOSITION.

(See Patentability, 3)

CONSTRUCTION OF CLAIMS.

1. The new arrangement of the carbureter was patentable, and the claim—viz: "The arrangement of the carbureter with a motor-wheel, said wheel being driven by a descending weight or other equivalent mechanical power, applied to force the air through the carbureter to the burners, said carbureter being placed within a vault by itself, separate from the building to be lighted, the whole arranged and connected with pipes, substantially as herein described and set forth."—is valid.
*[Gilbert and Barker Manufacturing Co., *vs.* Tirrell, 2.

2. The claim of the patent—"The application to a shade-roller, provided with a spiral spring for automatically raising or rolling up the shade, of a pawl and a ratchet or a notched hub, so arranged that the former will engage with the latter at any point or height of the shade by simply checking the rotation of the roller and the upward movement of the shade under the influences of the spring, substantially as set forth" so construed as to include the use of a loose pin, which falls into the notch of the roller-hub by the force of gravity when the roller is revolved slowly, but which is raised from the notch and held up by *centrifugal force* when the roller is revolved rapidly, while the pawl of the patented device is raised and held up by a portion of the periphery of the hub.
[*Hartshorn *vs.* Almy *et al.*, 94.

3. The claim in the patent of George E. King, issued February 26, 1867, and reissued June 23, 1868, for an improvement in fluting-machines, which is for "the guide E, constructed with one or more curved or arched portions, *a'*, in combination with suitable fluting-rollers, substantially as herein set forth, for the purpose specified," construed.
[*Kursheedt *vs.* Werner, 146.

4. Where the word "barrier" was employed in a claim—referring to small wires to intercept and break up sound-waves: *Held*, that the propriety of its use depended on the fact of their accomplishing the result claimed for them.
[Carleck, W. B., 191.

5. The claim of letters patent for an "improvement in head-linings for barrels," granted to George A. Reed, May 14, 1872 viz: "As a new article of manufacture, barrel-head linings prepared in the manner specified, when bundled as shown and described"—is invalid.
[*Reed *vs.* Reed and Felts, 193.

6. The twelfth claim of the patent granted Otis Tufts, August 9, 1859, for improvement in elevators and hoisting apparatus for hotels, &c.—viz: "Passing the shipping-rods and the cord or rod that operates the friction-brake through the car or platform, for the object and purposes set forth"—if construed broadly as a claim for passing any rod or cord, by means of which the appropriate mechanism is operated to move the car up and down, or hold it at rest, *through the car or platform*, is void for want of novelty.
In view of the prior elevator of Hecker, in which a single chain passing through the car furnished the means for lifting a gravity-brake and operating a friction-clutch, the claim can only be sustained by giving it a construction strictly in accordance with the language used—viz., "passing *the* shipping-rods *and* the cord or rod," &c.
[*Tufts *et al. vs.* The Boston Machine Co., 239.

7. The first claim of the patent granted to Otis Tufts, May 22, 1861, for improvment in elevators—viz: "Constructing an elevator or hoisting apparatus with a series of two or more hoisting ropes or chains having independent attachments, and winding simultaneously upon the hoisting-drum for greater safety," &c.—is void for want of novelty.
The second claim of the patent being for "equalizing the strain upon the series of ropes or chains *x x x x* by automatic adjustment," &c., where it appeared that defendants used a different means of automatic adjustment from that described in the patent: *Held*, that, in the absence of proof that the device used by the defendants was, at the date of the patent, a known substitute for the devices described therein, the claim cannot be regarded as infringed.
[*Tufts *et al.*, *vs.* The Boston Machine Co., 2 9.

8. The claim of reissued letters patent No. 3,001, for "improvement in fluted puffing," granted Geo. E. King, June 23, 1868, (original February 26, 1867,) namely, "the within-described puffing as a new article of manufacture, the same being formed by crinkling, gathering, or irregularly waving one portion of the strip of muslin or other material simultaneously with fluting it along the edges of such portion, as at *g*, and forming flattened borders or portions *h* outside of the flutes, or between two next adjacent rows of them, to receive stitching, substantially as specified," claims the puffing without reference to whether it be made by hand, or by machinery, or how otherwise, and the claim held void in view of the prior existence of a puffing known as the Pipo puffing formed on a sewing-machine.
[*King *vs.* Werner, 362

9. The only proper construction of the word "simultaneously" in this claim is merely that, in the finished article, one portion is seen to be crinkled, and at the same time the parts at the edges of such portion are seen to be fluted, and the portions outside of the flutes are seen to be flattened borders.
To regard the word as referring to the idea that, in any given cross-section, the crinkled portion, the fluted portions, and the flattened borders are formed at one and the same time, is to introduce an element which has regard to something beyond the conformation, shape, and structure of the puffing as an article of manufacture, and which has to do with the process of making it. This would make the claim repugnant to the subject-matter of the patent.
[*King *vs.* Werner, 361.

10. The fact that the flutes of the Pipo puffing being made by the process of gathering were not as regular and uniform as are flutes made by fluting-rollers, raises a question of degree and of appearance, and not of conformation.
[*Ibid., 361.

11. The claim of reissued letters patent No. 3,000 for "improvement in fluting-machines," granted to George E. King, June 23, 1868, (original February 26, 1867,) namely, "the guide E, constructed with one or more curved or arched portions, *a'*, in combination with suitable fluting rollers, substantially as herein set forth, for the purpose specified, presents, as the main feature of the machine, the device for pulling away the fabric before the fluting-rollers grasp it too firmly, so as to get an increased width of fabric opposite the pair of plain zones, such device being an arched guide, the arch of which raises up the fabric, so that the fabric rides over it, and so is pulled away from the fluted parts of the rollers.
[*Ibid., 361.

12. The Werner machine uses a detent or finger and a platform opposite the plain zones of the rollers, the fabric being held back from the fluting-rollers by the pressure of the detent upon the platform. The detent and the platform form the two surfaces of a guide, between which the fabric passes, and they divert the fabric from what would otherwise be its course, so as thereby to pull out an extra width. The variation of construction is merely mechanical and not substantial.
[*Ibid., 361.

13. The interference being on the following claims of one of the joint parties: First, the combination of ascending and descending flues placed on the rear side of a stove, illuminating windows or doors in the draft-chamber, base-section, and the free open space R between the top surface of the grate or fire bed and the base of the fire-pot or combustion-chamber proper; and, third, the grate-frame constructed with legs, supported upon and in combination with a flange or projections upon the side wall of the draft-chamber base-section, substantially as described: *Held*, that, considered apart from the question of novelty, the claims were for two combinations of elements intimately related, accomplishing a new result when so combined, and forming an essential part of one complete organization. The case on this point distinguished from *Potter and Wilson*, (2 Flah., 102) and *Birdsell* vs. *McDonald et al.* (6 O. G., 682) cited in support.
[Carter and Dwyer *vs.* Perry and Dickey, 518.

14. The third claim of the patent of H. D. Stover—improvement in planing-machines, July 23, 1861—viz., "the arrangement of matching-cutters to be adjusted both laterally with each other and vertically upon the bed-piece, essentially as described, in combination with the platen, so that the planing and matching of the piece may both proceed at the same time, or either the planing or matching may be done separately, whether the platen be made movable with the piece secured thereupon, or the platen be fixed and the piece be made to move thereon," held valid.
[*Stover *et al.*, *vs.* Halsted and Merritt, 558.

15. The claim, though not expressed with accuracy, should be construed *ut res magis valeat quam pereat*.
The inventor intended to claim a surfacing and matching machine, in which the matching-cutters were adjusted laterally and vertically, in combination with the platen, and were so adjustable vertically that the matching mechanism could be mechanically dropped below the platen when surfacing alone was to be done.
[*Ibid., 558.

16. The movable or fixed character of the platen is not a necessary part of the improvement to which the third claim relates, and might have been omitted therefrom.
[*Ibid., 558.

17. The term "matching-cutters" in the claim signifies "matching mechanism;" and the claim is infringed by the Merriam machine, in which the matching-*spindles* alone are dropped below the bed, the heads with the cutting-blades having been first removed.
[*Ibid., 558.

18. A claim for "the improvement in the art of manufacturing wooden shoes by machinery, hereinbefore set forth, which consists in cutting, shaping, and boring the blank by submitting it successively to the operation of mechanism, substantially such as set forth," distinguished from a claim for a function, and construed as a certain well-defined order of mechanical operations, all adapted to each other, and, although requiring a peculiar set of instruments for their operation, yet the order of their performance is not inherent in the machinery.
[Shippen, E. W., 727.

19. The claim in this case is for "the catgut" or other cord E, partially or fully embedded, or otherwise attached at the angle a of the rubber cushion C, so as to protect said cushion against the impact of the ball, substantially as herein shown and described, and for the purposes set forth.
The manufacture and use by Winant, prior to the alleged date of invention by Decker of his device, of a strip of spring steel, or equivalent material, with holes in its lower edge, through which wires were passed and fastened to the under side of the rail, said strip being placed in a crease or groove out in the upper face of the rubber near the angle thereof, and the manufacture by Stevens, prior to 1864, of the India-rubber cushions for billiard-tables having a French clock spring placed in a slot in the upper face of the rubber, parallel to and near the inner face of the rubber, bringing the upper edge of the spring near the upper corner of the rubber, are substantially the same arrangements of devices used by Decker.
[*Decker *vs.* Griffith & Co., *et al.*, 944.

(See Claims, 1, 2, 3; Combination, 1; Functional Claims, 1, 2; Infringements, 1; Novelty, 5.)

CONSTRUCTION OF SPECIFICATIONS AND PATENTS.

1. The apparatus described in letters patent granted to Allen L. Wood, December 7, 1869, for an "improved apparatus for treating diseases by mechanical movement," is an infringement of the first, second, and fifth claims of Letters Patent No. 75,212, granted to George H. Taylor, March 3, 1868, for an "apparatus for exercise," and of the first and fourth claims of Letters Patent No. 77,933, granted to said Taylor, May 12, 1868, for an "oscillating rubbing-machine for medical uses," and of the first claim of Letters Patent No. 75,217, granted to said Taylor, March 3, 1868, for an "apparatus for exercise."
[*Taylor *vs.* Wood, 90.

(See Claims, 2; Construction of Claims, Infringements, Inventions, 1, 2.)

2. The bottle-stopper-fastening covered by the Putnam reissue of January 19, 1864, which consists of a piece of *wire* of U form with the ends *returned* and connected to the bottle, (in order that the pressure on the cork or stopper may cause the fastener to hold more securely,) is not anticipated by the *sheet-metal* U-shaped yoke of the Allender fastening of 1855.
The *wire* embeds in the cork, under pressure from within, and thus prevents the fastener from "tripping;" it also presents a change of form, which permits the fastener to be pressed off without injury to the thumbs of the operator or to the cork.
Consideration given to the fact that the Commissioner of Patents, in both granting and extending the patent, was aware of the nature of the Allender device, but held that the Putnam fastener contained something more than the mere substitution of a wire U-shaped yoke for a sheet-metal U-shaped yoke.
[*Putnam *vs.* Weatherbee, 330.

3. The process covered by the patent of John W. Jones, assignee of Isaac Winslow, May 13, 1862, for preserving corn in its green state, involves three distinct features, each of which is essential to the result: First, separating the kernels from the cob; second, placing them in their natural juices in cans; third, sealing the cans hermetically and subjecting them to heat by water or steam until the kernels are thoroughly cooked.
[*Jones *et al. vs.* Merrill, Soule *et al.*, 401.

CONSTRUCTION OF STATUTES.

1. Section 4894 of the Revised Statutes, (sec. 32, patent act of 1870:) *Held*, to comprehend the abandonment of applications only. It does not apply to the same class of cases, does not contain the same limitation, and has not the same effect as sec. 35 of the act of 1870.
*[W. H. Golding, 141.

2. The words in section 4937 of the Revised Statutes, "the class of merchandise and the particular description of goods comprised in that class," construed.
[F. Boehm & Co., 319.

3. Section 4918 of the Revised Statutes of the United States in respect of *interfering patents* construed, and held to vest the power in the circuit court to adjudge *either* of the interfering patents void in whole or in part, and upon proper issues and proof to authorize a decree that *both* patents are void.
[*Foster *vs.* Lindsay, 1032.

(See Abandoned Applications, 1; Designs, 3; Trade-Marks, 1, 6, 10.)

CONSTRUCTIVE NOTICE.

(See Assignments, 9)

CONTRACTS.

The inchoate right of an inventor to an extension of his patent may be the subject of a contract of sale, and such a contract may be enforced by a bill for specific performance.
[*Newall *et al. vs.* West *et al.*, 398.

(See Pleadings and Practice, 5.)

COPYRIGHT.

1. The rights and duties of compilers of books which are not original in their character, but are compilations of facts from common and universal sources of information, of which books, directories, maps, guide-books, road-books, statistical tables, &c., are the most familiar examples, are well settled.
No compiler of such a book has a monopoly of the subject of which the book treats. Any other person is permitted to enter that department and make a similar book; but the subsequent investigator must do so for himself from the original sources, which are open to all. He cannot use the labors of a previous compiler, "*animo furandi*," and save his own time by copying the results of the previous compiler's study.
[*Banks *et al. vs.* McDivett *et al.*, 860.

DAMAGES.

1. When a patentee claims and recovers, not only the actual gains and profits of the manufacture and sale of the infringing

machine, but all the damages which he has sustained therefrom, it is at least to be presumed that such recovery embraces all the profit which the patentee would have received had he made and sold the machine with the incidental and consequential right to use it.

[*Gilbert and Barker Manufacturing Co., *vs.* Bussing, 144.

2. The rule is settled that when the patent is for an improvement upon a machine, the damages for the infringement of such patent are confined to the profits made by the use of the improvement only, and not by the manufacture of the whole instrument.

The complainants, at the accounting, proved the expenses of making and selling the infringing pumps; that they were prepared and ready to fill the orders taken by the defendants, and the prices at which the pumps were sold by the defendants, and the master took the difference between such expenses and such prices (being $47.71 on each pump) as the measure of damages: *Held*, that as the patented invention was merely an *improvement* in pumps, being only a special construction of the side chamber, whereby the same is adapted to use with the valve-casings bolted on the outside, and constituting but a small part of the aggregate mechanism, this rule was erroneous, and that the damages could not exceed the profits upon such improvement.

[*The Gould's Manufacturing Co. *vs.* Cowing *et al.*, 277.

3. The burden of proof, to show the amount of damages or profits, is upon the plaintiff. Where he fails to show the profits or damages arising from the use of the patented improvement, as distinguished from the profits on the entire machine, nominal damages only can be recovered.

[*Ibid.*, 277.

(See Injunctions, 9; Pleadings and Practice, 5.)

DESIGNS.

1. A design consisting in a mere mottled appearance to be given to enameled iron ware is not patentable.

[*Niedringhaus, 279.

2. Mere exhibition of skill on the part of workers in enamel, in giving beautiful forms and colors to their productions, when they are the common efforts of persons ordinarily skilled in the art, is not the invention which is protected by the law.

[*Ibid., 279.

3. The use of an old design is clearly excluded from patent by the statute, and mere change "or double use" cannot receive its protection.

[*Ibid., 279.

4. The same degree of originality is required in both design and functional patents—that is, the claim must not comprehend what is already in existence.

[*Ibid., 279.

5. A beautiful appearance is not of itself entitled to a design patent. The design must also be new and original, and the result of invention and genius.

[*Ibid., 279.

DIVISION OF APPLICATIONS.

1. In the division of an application the various prerequisites cannot be dispensed with; *ergo*, a new oath must accompany the divisional portion of an application the same as if it were an original application. Case of *Whiteley* vs. *Swayne*, (4 Fisher, 117,) referred to.

[Heginbotham, 237.

2. The dictum that separate independent inventions must be the subjects of separate patents is not a mere Office rule, but is in consonance with the law.

[Ibid., 237.

3. It is the duty of the Office at the outset, in requiring the division of an application, to indicate clearly the nature and extent of the division required.

[Knott, 238.

4. Each part of this series of machines without the others, or some equivalents of the others, would be absolutely useless, and since the invention lies mainly in the series as a complete set, and not in an improvement upon separate parts of an old set, they ought to be allowed in one application, and in one only.

[Shippen, E. W., 727.

5. Where the subject-matter of an application consisted of a set of devices for charging cartridge cases, and the first claim was for a cartridge-shell holder, and the second for a canister: *Held*, that as the devices covered by these claims were in their operation especially adapted to each other, belonged to the same class of inventions, and were used in connection to subserve a common end, they formed an exception to the general rule that separate inventions should form the subject of separate applications.

[Noyes, W., 818.

6. In a submarine torpedo-boat, of the construction described, the lighting and ventilating devices constituted necessary elements in the production of the result, and without which the boat would be inoperative: *Held*, therefore, that these devices need not be the subjects of separate applications.

[Jopling, J., 1032.

DOUBLE USE.

(See Novelty, 1; Designs, 3.)

DRAWINGS.

(See Pleadings and Practice, 3; Practice in Patent Office, 6.)

ESTOPPEL.

The plaintiffs file their bill for an account and discovery under an agreement, contract, or license, granted by them to, and made with, the defendants, the latter admitting the validity of the patents owned by plaintiffs: *Held*, that defendants are estopped from denying the truth of their admissions, unless such agreement was obtained by fraud, surprise, or imposition.

[*Magic Ruffle Co. *vs.* Elm City Co., 773.

(See Injunctions, 7, 8, 9; License, 1.)

EVIDENCE.

1. An objection to a question based upon a patent which was not first introduced in evidence, nor a certified copy thereof, sustained.

[Chapman *vs.* Morrison, 1031.

2. Where testimony was taken by the defence to show that their opponents had not "manufactured, sold, or used" the invention during a certain time while the witness was employed at their establishment, on which point no testimony had been taken by the latter parties in their testimony-in-chief: *Held*, That testimony taken in rebuttal to show use of the invention at another place than at the establishment during the time mentioned was properly rebutting and not direct, evidence.

[Ibid., 1031.

3. Objections to questions not made at the time considered as waived.

The Office, however, reserves the privilege of considering what testimony is or is not material to the issue.

[Ibid., 1031.

4. The common law rules of evidence will be continued to be applied strictly in all practice before the Office.

[Ibid., 1031.

5. A substantial variance between the preliminary statement and the testimony throws strong suspicion upon the latter.

[McCulloch *vs.* Watkins, 1074.

6. Sketches produced for the occasion, and in the absence of all contemporaneous tangible evidence of early efforts, of no value, except by way of explanation.

[Ibid., 1074.

7. The allegation of one that he conceived the idea of an invention at a certain time, in absence of proof of its completion by him at that time, not sufficient to establish the fact of invention.

[Ibid., 1074.

(See Abandonment of Inventions, 1, 2; Damages, 3; Estoppel; Experimental Use; Injunctions, 5, 6, 7, 8; Novelty, 6; Priority of Invention, 1.

EXTENSIONS.

1. The wheel of applicant having fallen into the hands of another person, who added improvements of his own, the "statement" of the value of the invention should have distinguished how much of the value was due to the portions patented by applicant.

2. A general statement that *the* wheel "added one-twelfth to the power of former wheels," is not sufficiently definite when the merits due to the devices of the applicant, and those of the subsequent patentee, are not definitely ascertained.

3. Examination of the specific points of each, and the apparent disuse of some of the applicant's devices, considered as bearing upon the questions of novelty and of value to the public.

[Haseltine, 45.

(See Assignments, 9; Contracts, 1.)

EXPERIMENTAL USE.

A patent cannot be defeated by a single experimental machine, when the recollection of the mechanism that constituted it has passed away from the mind of the witness, who deposes to its existence thirty-five years before, so that it cannot from such recollection be reconstructed, and there being no other record of it.

[*Taylor *vs.* Wood, 90.

FORFEITED APPLICATIONS.

(See Abandoned Applications.)

FUNCTIONAL CLAIMS.

1. A functional claim is one that has for its subject the performance of an act merely, and not the means by which that act is executed. It is not for a substantive thing, but for a *result* which that thing accomplishes. Its language is usually in the participial form.

[I. Hahn, 597.

2. A claim for "The combination of two carriers, each capable of revolution around a central axis, and both capable of lateral movement in the main frame substantially as and for the purpose specified," held not to be functional, but as a claim for a particular arrangement of certain devices; and not for the motions of which they are capable when so arranged, nor for the subordinate means by which such motions are produced.

[Ibid., 597.

(See Construction of Claims, 18.)

GRANT AND GRANTEE.

(See Assignments, 2, 3, 6.)

INCHOATE RIGHTS.

(See Contracts, 1.)

INFRINGEMENTS.

1. Although in Patent No. 77,933 the "rubber" is described and claimed as having an external surface of corrugated India-rubber, the patent is infringed by a rubber the external surface of which is of cloth or leather, but corrugated, and which is stuffed so as to be but slightly elastic.

Both are more or less adhesive, and they are applied similarly and with substantially the same object.

[*Taylor *vs.* Wood, 90.

2. Although in Patent No. 75,218 the handle and the foot-holder are described as having an *oscillating* or *vibrating* motion communicated to them, the return movement being in the same path as the outward movement, yet the to-and-fro motion in defendant's machine, in view of the action on the hub, is equally oscillating or vibrating, although the parts describe an ellipse or a circle in passing out and returning.

[*Ibid., 90.

3. Where it appeared that the defendants subjected their corn to the direct action of steam, or otherwise "cooked" it, before canning it, but heated it again in a steam-bath after canning, a preliminary injunction under the Winslow patent was denied, although grave doubts were entertained as to whether that part of the defendants' process which was adopted prior to the canning was anything more than a colorable departure from the patented process.

[*Jones *et al. vs.* Merrill, Soule *et al.*, 401.

4. This patent would not be infringed by a process in which the corn, whether on the ear or removed therefrom, is thoroughly cooked by the direct application of steam before it is canned.

[*Ibid., 401.

5. The invention disclosed in letters patent for bale ties granted to Chas. G. Johnson as assignee of Charles Swett, October 23, 1866, held not to be substantially the same as that embodied in the "Eureka" tie, and that the making, using, and selling of the "Eureka" tie is no infringement of any exclusive privilege legally vested in the patentee by the reissue of said patent as made May 7, 1872.

[*Johnson *vs.* Board, 435.

(See Construction of Claims, 17; Injunctions, 1, 2; Interlocutory Decrees, 1; Pleadings and Practice, 6, 8.)

INJUNCTIONS.

1. A patentee cannot take compensation for an infringement, including manufacture, sale, and use, and thereafter enjoin that use for which he has taken compensation.

[*Gilbert and Barker Manufacturing Co. *vs.* Bussing, 144.

2. Where the complainants had obtained an interlocutory decree for an accounting of gains, profits, and damages against the manufacturer of the infringing machines, an unqualified injunction *pendente lite* against the purchaser and user of one of the machines was refused. The defendant, however, was put under bonds.

[*Ibid., 144.

3. On final hearing the complainants might become entitled to a perpetual injunction against such defendant, as they cannot be compelled, against their will, to permit the defendant to use their invention.

[*Ibid., 144.

4. Where a patent has been a long time in existence, has been renewed by the Patent Office after the expiration of the original term and in the face of opposition, and has been sustained by the adjudications of several of the federal courts, the patentee is entitled to protection by a preliminary injunction, at least until the adjudication of some tribunal shall decide the patent invalid.

[*Putnam *vs.* Weatherbee, 320.

5. An adjudication in favor of a patent at final hearing, after full consideration, must be held controlling upon an application for a preliminary injunction, unless cogent evidence is presented in addition to that which was found insufficient upon the final hearing.

[*Jones *vs.* Merrill, Soule *et al.*, 401.

6. While the fact that the defendant has obtained a patent for his process is not controlling in proceedings for an injunction, it is entitled to some weight.

[*Ibid., 401.

7. Where defendants claimed to cook their corn in the ear thoroughly before subjecting it to heat in the sealed cans, but the printed label on their cans, prepared when they had no interest to warp the facts, stated that the corn was "cut from the cob while fresh *and sealed at once*, and then prepared by an entirely new process," &c.: *Held*, that in proceedings for an injunction the defendants must be concluded by the statement they thus published to the world.

[*Jones *et al. vs.* Merrill, Soule *et al.*, 401.

8. Where complainants were chargeable with knowledge of defendants' acts, but permitted them to continue their manufacture, and in response to an inquiry as to whether they regarded defendants' process to be an infringement, returned an answer that led defendants to believe that they did not, an injunction was refused.

[*Ibid., 401.

9. It is a general principle of equity jurisprudence that the court will not lend its extraordinary aid, by way of preliminary injunction, to any claimant who has encouraged or acquiesced in an infringement of his right, or unreasonably delayed in prosecuting for its violation.

Compensation for damages accrued and protection from future damages is all such a complainant is entitled to. This provided for by a bond.

[*Ibid., 401.

10. A preliminary injunction will not be granted where defendants have manufactured under the sanction of a patent of prior date to those held by complainants, which prior patent has expired, and no proceedings having at any time been instituted by complainants to secure or protect their rights under their patents.

[*Whitney *vs.* Rollstone Works, 908.

(See License, 1; Pleadings and Practice, 1, 2, 6.)

INTERFERENCES.

1. Where an interference had been declared between an application for a reissue of a patent granted in 1873, and a patent of a subsequent date: *Held*, that the interference was without authority of law, and should be dissolved.

[Becker *vs.* Throop, 1.

2. The decision of the Supreme Court of the District of Columbia in *ex parte* Mayall in effect abrogates the last paragraph of Rule 51 of the Rules of Practice of the Patent Office; and hereafter Rule 51 may be regarded as amended, so that applications for reissue will, under no circumstance, be put in interference with patents granted subsequently to the date of original patents sought to be reissued.

[Ibid., 1.

3. An interference may be dissolved for reasons stated in rule 59, but should not be allowed to terminate by the abandonment of his application by one of the parties to the controversy, when the other party desires a decision upon the merits.

[Adler *vs.* Van Wagoner, 728.

4. It having been previously judicially determined that an interference cannot be legally declared between an application for reissue and a subsequent patent, (*Mayall ex parte* Supt., Ct. D. C.:) *Held*, that the same rule applies to an application for the

reissue of a prior patent and an application for the reissue of a subsequent patent.

The nature of the case is not affected by the attitude of the subsequent parties, whether simply as patentees or as applicants for reissue.

Case of *Merrill* and *Carleton* Sup. Ct. D. C. commented on.

[Paris *vs.* Bussey, 839.

(See Joint Invention, 1; Practice in Patent Office, 1, 3; Priority, 1.)

INTERFERING PATENTS.

(See Construction of Statutes, 3; Judgments and Decrees, 1.)

INTERLOCUTORY DECREES.

A mere interlocutory decree for gains, profits, and damages against the manufacturer of infringing machines, cannot operate as any defense in behalf of the purchaser of one of such machines.

[*Gilbert and Barker Manufacturing Co. *vs.* Bussing, 144.

(See Injunctions.)

INVENTION.

1. The chief feature of the improvement set forth in the patent granted to J. F. Barker and C. N. Gilbert, August 3, 1869, for an "improved apparatus for carbureting air," is the placing of the carbureter under ground in a vault separate from the building to be lighted, at any desired or convenient distance therefrom, while the power and the motor, by means of which atmospheric air is forced through pipes leading into the carbureter, are placed in an apartment in the building, or near thereto, conveniently accessible with or without a light, as occasion may require, whenever, for adjusting the motive power or the machinery thereof, it is desirable to do so.

Such isolation of the carbureter under ground prevents danger from explosion, secures an even, regular supply of the gas, unaffected by changes of temperature above ground, and effects a preliminary condensation of the gas before it enters the distributing-pipes.

This is more than a mere change in the location of an old device. By the new arrangement the patentees bring into contributory and effective co-operation, with a carbureter and the machinery for supplying air thereto, the earth and its even temperature below. This is more than merely making use of the natural state of the ground or the natural laws, which, operating below the surface, make such new location desirable, as a matter of mere judgment. It brings into conjoint operation new elements, working both actively and passively to produce the result, and to produce the ultimate and final result in a better manner—in a manner which combines safety with convenience and utility, as had never before been done.

[*Gilbert and Barker Manufacturing Co., *vs.* Tirrell, 2.

2. As both head-linings and hoops had been made by machinery, and were articles of trade, and as hoops had also been crimped by machinery, the patentee merely produced an article which was the result of more mechanical skill and care in its manufacture than that previously sold and used; but this result did not involve the faculty of invention.

[*Reed *vs.* Reed and Folts, 193.

3. Where an applicant avails himself of a portion of a plan and mechanism used to make one article, and supplies to it the steps necessary to constitute a complete and novel process for making another article, a patent should be granted.

[McMurray, L., 473.

4. To constitute an invention or discovery, as defined by the Office and the courts, the idea must be embodied in a practical form.

[*McCulloch *vs.* Watkins, 1074.

(See Construction of Claims, Construction of Patents and Specifications, Designs, 2, 3, 4, 5; Evidence, 7; Joint Invention, 1, 2, 3; Novelty, 1, 4, 5; Patentability.)

JOINT APPLICATIONS.

Rules relating to the right of parties to make a joint application will not be enforced more rigidly by the Office than by the courts. The oath, therefore, of the joint applicants will be considered as strong presumptive proof in their favor, and they will be given the benefit of all doubts.

[Carter and Dwyer *vs.* Perry and Dickey, 518.

(See Joint Invention, 1, 2, 3.)

JOINT INVENTION.

1. In a claim for a combination of devices, the only novel element therein being entirely separate and distinct from the others, and accomplishing in itself an entirely independent result: *Held*, that as this feature was not the joint invention of either of the respective joint parties to the record, neither party was entitled to a patent, and the interference must therefore be dissolved.

[Waters *et al. vs.* Yost and Wallace, 517.

2. It is well settled that if two inventors are on equal terms in respect to the invention, such as partners in the business, and both contribute to the essential parts of the organization regarded as a whole, the patent would be invalid if issued to one of them.

[Carter and Dwyer *vs.* Perry and Dickey, 518.

3. These combinations being the product of the mutual suggestions and joint efforts of the respective joint applicants, the origin of each of their mental conceptions, or the order of them in time, has no material weight, and their applications held to have been properly made.

[Ibid., 518.

(See Applications, 1; Construction of Claims, 13.)

JOINDER OF INVENTIONS.

(See Construction of Claims, 13; Division of Applications, 2, 4, 5, 6; Joint Applications; Joint Invention.)

JUDGMENTS AND DECREES.

Reissued Patent No. 5,328 to Wm. T. Garratt, issued March 18, 1873, for "improvement in lubricators," declared void by reason of their interference with Patent No. 111,881, issued to Nicholas Siebert, February 14, 1871.

[*Siebert *vs.* Garratt, 600.

(See Contracts, 1; Interlocutory Decrees, 1; Injunctions, 4, 5; Pleadings and Practice, 2.)

LABELS.

The superscription being in its main elements a *label*, the fact that it contains matter which, taken separately, might constitute a *trade-mark* is not fatal to its registration. (Case of *A. Godillot*, OFFICIAL GAZETTE, Vol. VI, p. 641, commented on.)

[Orcutt and Son, 277.

LICENSE.

W., the assignee of the extended term of the patent, entered into an agreement in writing, under seal, with T. & W., which recited that T. & W. were "desirous of obtaining a license to use the improvement secured by said letters patent, to the extent of the use of binders necessary to their business," and which granted to them for a nominal sum, as a "personal privilege," and "for and in consideration of, and in case of, the due and faithful keeping and performing of each and all of the conditions," &c., the license "to use the said improvement, to the said extent, for and during the space of one year," at their specified place of business, "and not longer, otherwise or elsewhere, without written permission of" W.; said agreement further providing that W. might revoke the license on the failure of T. & W. to perform any of the conditions therein contained, "in which case this license and all rights and privileges hereunder shall forever cease and determine."

After the expiration of the one year, T. & W. continued to use nineteen of the patented machines, claiming that they had them lawfully in use at the end of the first term of the patent, and that by virtue of section 67 of the act of July 8, 1870, they had a right to continue the use of them so long as they remained capable of use. On application for injunction to restrain such use: *Held*, that, whatever rights, in respect to the further use of the patented machines the defendants had when they took the license, they waived and surrendered by taking the license containing the conditions it did; and that, although the term of the license had expired, the defendants were bound and estopped by the recitals and covenants in it.

[*Wooster *vs.* Taylor and Woodbury, 644.

MANDAMUS.

On a rehearing, the doctrine is again affirmed that this court will not compel the Commissioner of Patents to issue a patent even in a case where the Examiners-in-Chief have rendered a decision in favor of the applicant.

[*Hull *vs.* Commissioner of Patents, 46.

MECHANICAL PROCESS.

Where the operation of a machine or a series of machines is supplemented by some new and useful method of operation not contemplated in the construction of the machine, and not the inevitable result of its operation, it may amount to a patentable process. Such was the process claimed in the *Voelter* patent sustained by the court, (5 Fish., 340.)

[Shippen, E. W., 727.

(See Construction of Claims, 9, 12.)

MODELS.

(See Pleadings and Practice, 3; Practice in Patent Office, 6.)

NEW APPLICATIONS.

(See Abandoned Applications, 3; Practice in Patent Office, 2, 3.)

NEW MATTER.

1. It is only those changes that effect the substance or materiality of an invention that are objectionable as new matter.

[Carlock, W. B., 191.

2. The rule in regard to new matter construed more strictly as to reissue applications than as to original ones. In the former case new matter is expressly forbidden by law to be introduced into a specification, while in the latter case the question is left to the discretion of the Commissioner.

[R. Bragg, 985.

3. Where an inventor in his patent had stated the object of his invention to be "to provide a novel attachment, principally valuable and applicable to fire-engine houses," and had restricted his specification, drawing, and model to that one object: *Held*, that it was new matter to describe in the reissue application various other uses to which the attachment could be put, especially as those uses suggested something more than an equivalent arrangement and operation.

[Ibid., 985.

4. Where the original specification, drawing and model described and showed in the improvement as applied to but one kind of boiler-furnace: *Held*, that an amendment showing that the apparatus could be adapted to other kinds of boiler-furnaces without making any change therein, except that of position, was not new matter.

[Sclotterbeck and Knelsley, 107.

(See Reissues, 1, 2.)

NOVELTY.

1. The change from a round to an oval cross section at different portions of a rake-tooth, compared with a similar construction in a hay-fork tooth. The construction and purpose being the same, the different use of the tool is immaterial.

[Holmes, J., 1.

2. Mere differences in the mode of constructing the carbureter held not to avoid the patent, so long as the moderate temperature of the earth and the underground passage of the gas are availed of.

[*Gilbert and Barker Manufacturing Co. *vs.* Tirrell, 2.

3. The claim of a patent held to be anticipated by a clear description in an English provisional specification which had been printed by Eyre & Spottiswoode.

[*Tufts *et al. vs.* The Boston Machine Co., 239.

4. A device used for fastening together sheets of paper, pamphlets, and other documents, is anticipation of a like device used for securing together the leaves of a book in lieu of the ordinary binder's stitching. The mere application of the device to books in the process of binding does not make it patentable.

[E. D. Averell, 400.

5. A claim covering the manufacture of solder-wire by cutting a cord from the periphery of a solder-disk, and compressing it into finished form between rollers, is not anticipated by a patent for manufacturing zinc wire, by cutting a cord from a zinc disk, rounding its corners by compressing-rollers, and then drawing it out through a draw-plate, because solder-wire could not be made by the zinc-wire process.

[McMurray, L., 473.

6. In order to defeat a patent on the ground of want of novelty, the proof of prior use or previous knowledge must be such as to establish the fact clearly and satisfactorily and beyond a reasonable doubt.

Where the proofs are contradictory, *mere* preponderance is not sufficient to sustain the allegation. The preponderance in such case must be such as to remove all reasonable doubt. * * *

To doubt in such a case is to solve the question in the negative.

Letters Patent No. 63,889, for a new and useful "hotel-register," granted to Charles L. Hawes, April 16, 1867, sustained.

[*Hawes *vs.* Antisdel, 685.

7. A corn-covering wheel having raised rims occupying a portion of its periphery, and serving on hard ground to fill the seed-furrow, while in softer ground the plain surface of the wheel prevents the wheel from sinking too deeply into the soil: *Held*, not to be anticipated by a concave-faced wheel, which, by the addition of "supplementary rings" filling the concavity, might be converted into a plain-faced wheel.

[Galt and Tracy, 907.

8. Baking-pans, having been made with closely-fitting covers, and griddles having been made double and hinged, it is yet: *Held*, that a baking-pan made in two parts, which are hinged together so as to form one covered pan, or two uncovered pans, which equally rest upon the bottom of the oven, is a patentable invention.

[Wm. Wachs, 907.

(See Construction of Claims, 6, 7, 8, 19; Invention, 1, 2; Patentability, 3.)

OATH.

(Division of Applications, 1; Joint Applications; Practice in Patent Office, 4.)

PATENTABILITY.

1. Although the crimped machine made head linings are an improvement upon the article used prior to their introduction, and, as such, have secured the approval of the trade, and become a valuable commodity of manufacture and sale, the improvement is not the proper subject of a patent.

[*Reed *vs.* Reed and Folts, 193.

2. The sole merit of *bundling* the head-linings is, that it renders the commodity more attractive to purchasers, and more convenient for the purposes of sale. There is nothing in this result that is patentable.

[*Ibid., 193.

3. A preserve compound consisting of old ingredients arranged in a new manner, and possessing the superior qualities of transportability, cheapness, economy, and convenience in use, and imperishability: *Held*, to be patentable.

[Heide and Wirts, 817.

(See Construction of Claims, 5, 14; Designs, 1; Invention, 3; Novelty, 4.)

PLEADINGS AND PRACTICE.

1. Where a motion for an injunction was heard outside the district where the suit was pending, the order withheld until the court should be sitting within the District.

[*Putnam *vs.* Weatherbee, 320.

2. A final decree in an equity suit awarded a recovery in favor of the complainants for a specified amount, and then proceeded to decree that the defendants pay to the master the sum of $500 allowed to him as his compensation, less such sum as the defendants had already paid him, and that the complainants have execution for the sum awarded to them.

The defendants appealed from the whole of the decree, giving to the complainants a bond to respond for the amount which the decree awards to the complainants as a recovery, and a citation was issued and served. The defendants, having previously paid the master $35, refused to pay more; and the master applied for an attachment against them for $465: *Held*, that the provision for the payment of the master was not subject to be stayed in its operation by proceedings such as are employed to stay the execution of a decree *inter partes*. The attachment was granted.

[*Myers *vs.* Dunbar and Hopper, 321.

3. Where it appeared that the drawing of a patent had been changed at the time of the reissue thereof, and the complainant in a suit under the reissue had introduced a duplicate of the Patent-Office model which conformed to the drawing of the reissue: *Held*, that the defendant ought to be permitted to show the condition of the model at the time when it was filed in the Patent Office and at the date of the original patent.

A motion to reopen a case for the introduction of such proofs, it being alleged that the testimony was newly discovered, was entertained at final hearing, and was allowed.

[*Johnsen *vs.* Beard, 433.

4. The corporate character of a corporation complainant being averred under oath in the bill of complaint, and the same not being denied in the answer, but simply proof thereof being called for: *Held*, that the fact of incorporation was in effect admitted by the pleadings.

[*Stover *et al. vs.* Halsted and Merritt, 558.

5. In this case it was competent for the complainants to take either one of the two remedies for the alleged injuries growing out of a violation of the agreement or license. They could bring a bill alleging an injury to their exclusive rights, or could bring a proper suit, setting up the breach of contract as the *gravamen* of their action.

Although the suit is upon the contract, the damage to complainants, if any, is the damage sustained from the injury to their patent rights.

[Magic Ruffle Co. *vs.* The Elm City Co., 773.

6. Upon bill filed, charging defendants with infringement of reissued letters patent, and praying for an injunction, and account of gains and profits made by defendants: *Held*, that a subpœna *duces tecum* might be issued, requiring defendants to produce before the Examiner all books, papers, and documents whatsoever, that will show the number of "skates" made or delivered by the defendants, or their employes, since the date of the reissue of letters patent, and until the commencement of the suit.

[*Turrell *vs.* Spaeth and Guelicker, 986.

7. Nor is it necessary to aver in a bill brought under a reissued patent that the grantee of a territorial right acted with the patentee in the surrender of the original patent or concurred in the reissue thereof.

[*Meyer *et al. vs.* Bailey, 437.

8. The bill sets out complainant's title to the exclusive right, title, and interest under the patent, to the State of Pennsylvania, excepting certain counties, and then avers that the defendants "are *now* constructing, using, and vending" the infringing goods * * * "in the western district of Pennsylvania," concluding the averment as follows: "All of which acts and doings are in violation of the exclusive rights and privileges *so as aforesaid* vested in your orators, under and by virtue of the said recited reissued letters patent." *Held*, that these averments, taken in connection with statement of complainants' title, necessarily import a charge of infringement *after the grant to the complainants;* and, also, *within* the *territory covered by the grant.*

[*Ibid., 437.

(See Contracts, 1; Construction of Statutes, 3; Damages; Injunctions; Interlocutory Decrees; Judgments and Decrees; Mandamus.)

PRACTICE IN THE PATENT OFFICE.

1. The Commissioner of Patents must be governed, in regulating the practice of the Patent Office, by the decisions of the United States courts, so far as they apply.

[Becker *vs.* Throop, 1.

2. The actual intention indicated by an applicant to sever the two proceedings, where he has abandoned one application and filed another in its stead, it is to be regarded, and notice will be taken only of his last application.

[W. H. Golding, 141.

3. Where, intermediate the two applications, another party has filed an application for patent for the same invention, the proper practice is to institute an interference between the second application and that of such other party.

[Ibid., 141.

4. The requirement of the statute that an applicant for the registration of a trade-mark shall make oath "*to the effect*" that he and no other has the right to use it, "either in the identical form *or having such near resemblance thereto as might be calculated to deceive*," is properly complied with by a declaration under oath that no other has a right to the use of said trade-mark, "*or of one substantially the same.*"

The statute does not require that the oath shall be in the exact words of the section, but only "*to the effect*," &c.

[Vidvard & Sheehan, 143.

5. When an error in the form of a certificate of registration occurs, solely on the part of the Office, it will be corrected without expense to the registrants.

[Ibid., 143.

6. That part which constitutes the improvement on a former machine must be shown by model and drawing; but an applicant for a patent need not furnish model and drawing of the whole of the machine which he claims to have improved, provided the machine is well known to the public, or a description of it readily accessible.

[C. C. Tracy, 141.

7. By neglecting to settle questions in their proper order when they arise, as the Office rules require, great confusion is caused, forming just ground for complaint.

[Carlock, W. B., 191.

8. In certain cases the signature to a petition by an applicant's attorneys may be received. *Vetter's* case (Commissioner's Decisions, 1870, page 84,) referred to.

[Heginbotham, 237.

9. The practice established in the Rouse and Stoddard case (7 OFFICIAL GAZETTE, 169) of suspending action upon an application, when that application is found to cover subject-matter embraced by a prior and rejected application, for the purpose of obtaining evidence from the prior applicant, if possible, of the abandonment of the invention by him by reason of public use or sale, abolished.

[Casllear and McIntire, 473.

10. The Board of Examiners-in-Chief is the judge of the sufficiency of the "reason of appeal."

The Primary Examiner may traverse or controvert, but cannot ignore them.

The "reasons of appeal" must form the basis of subsequent arguments submitted to the board, which will determine as well upon the pertinence as upon the validity of the arguments submitted.

[C. L. Young, 643.

(See Applications, 1; Abandoned Applications, 3, 4, 5; Claims, 1, 2, 3; Division of Applications; Extensions; Evidence; Interferences; Joint Invention; Labels; New Matter; Trade-Marks.)

PRELIMINARY STATEMENTS.

(See Evidence, 5.)

PRINTED PUBLICATIONS.

(See Novelty, 3.)

PRIORITY OF INVENTION.

The burden of proof is on the defendant to show a prior invention, and, if the evidence is too vague and unsatisfactory to establish affirmatively, as against the patent, that the patentee was later in time of invention, the patent must stand.

[*Taylor *vs.* Wood, 90.

(See Experimental Use, 1; Novelty, 6.)

PRIVATE USE.

(See Experimental Use.)

PROCESS.

(See Mechanical Process; Infringements, 3, 4.)

PROVISIONAL INJUNCTION.

(See Copyright, 1.)

PUBLIC USE.

(See Abandonment, 2; Novelty, 6.

REISSUES.

1. Where a patent covered a hermetically sealed vessel composed of two parts, the interior one of paper supported by internal hoops and the exterior one of wooden staves and heads, for the transportation of volatile liquids: *Held*, that the patentee could not lawfully modify his patent upon reissue by omitting the words "hermetically sealed," dispense with the exterior casing, and reform his drawings accordingly.

[Elisha Waters, 399.

2. A patent which covers merely the combination of a tight paper vessel and its casing cannot properly be expanded upon reissue to embrace paper barrels and vessels generally, with or without exterior coverings; nor can it be made to embrace paper packages "of any suitable shape or configuration."

The case of *Carlton* vs. *Bokee* (17 Wall, 463) cited.

[Ibid., 399.

3. If a part of the whole patent has been vested in another, so as to constitute him an assignee within the meaning of the statute, an efficacious surrender can be made only by the concurrence of both of the owners of the patent; but this may be manifested by the assignee by his direct co-operation in the surrender, or his subsequent ratification of it.

[*Meyer *et al. vs.* Bailey, 437.

4. The owner of an exclusive territorial right under a patent may ratify a reissue thereof in which he did not join, by making an assignment under such reissue.

[Ibid., 437.

5 It is not essential to the validity of a reissued patent that a transferee of an interest in the original patent, who is not an assignee within the meaning of the statute, concur in the surrender.

[Ibid., 437.

(See Assignments, 7; Interferences, 1, 4; New Matter, 1, 3; Pleadings and Practice, 3.)

REJECTED APPLICATIONS.

(See Abandoned Applications.)

RENEWED APPLICATIONS.

(See Abandoned Applications, 3; Practice in Patent Office, 2, 3.)

SALES.

(See Abandonment, 2; Contracts, 1; Injunctions, 1, 10; Pleadings and Practice, 6.)

TRADE-MARKS.

1. A carpet-cleaner is not, in the strict sense of the term, either a merchant or a manufacturer, and a mark used by him upon wagons with which he transports carpets back and forth, upon tags attached to the carpets, and upon his business-cards, circulars, bill-heads, &c., is not a trade-mark.

As carpets in the hands of a cleaner are not, as respects him and his purposes, merchandise or manufactures within the meaning of the statute, he cannot comply with the statutory requirements for registration. (*Smith* vs. *Reynolds*, 3 OFFICIAL GAZETTE, cited and followed.)

[Hankinson, 89.

2. Although he may have a proprietary interest in his mark for the particular use to which he has appropriated it, which the courts will protect, it does not follow that it is a trade-mark registerable in the Patent Office.

[Ibid., 89.

3. To be entitled to registration, the applicant must comply specifically with all the requirements of the statute.

[Ibid., 89.

4. A clear, full, and accurate description of a trade-mark, which distinguishes between essentials and non-essentials in the mark, is necessary before a trade-mark can properly be registered.

[Volta Belt Co., 144.

5. The word "centennial" was sought to be registered as a trade-mark, to be applied to that "class of merchandise containing alcoholic spirits," and it was held that it was not required that the trade-mark should be registered for each of these articles of the general class of alcoholic spirits.

[Boehm & Co., 319.

6. There appears to be nothing in the statute to prevent an applicant for registration of a trade-mark from including in his specification either a whole class of merchandise or several specified descriptions thereof. *Smith et al.* vs. *Reynolds and Jacobs*, (3 OFFICIAL GAZETTE, p. 214,) cited in support.

[Ibid., 319.

7. It is no objection to a mark sought to be registered as a trade-mark that it is appropriate to the article to which it is to be applied, or suggestive of good qualities, or peculiarly fit in any such way.

[Glines, G. E., 435.

8. The words "German Sirup" held to be a lawful trade-mark.

As a rule a geographical name cannot be a lawful trade-mark, but may become so when not descriptive, and when arbitrarily chosen and applied for lack of a better term.

[L. N. Green, 729.

9. While the rule obtains that no trade-mark may consist of the mere name of a person, place, or article, or a word indicating kind or quality, which any person might employ with equal justice, it is not intended that the name or mark should be a new creation, or require invention.

It is sufficient that it should have an original and distinctive signification as appertaining to the article.

[India Rubber Comb Co., 905.

10. *Held*, That Congress intended no new definition of a trade-mark.

[Ibid., 905.

11. When a court of competent jurisdiction has declared that a name first adopted by a firm, and used to denote the origin of ownership of a particular article, is a lawful trade-mark, and has enjoined its use by others, even though the name be unaccompanied by other distinguishing mark—this Office is concluded in its action.

[Ibid., 905.

12. Under the circumstances of the case, and various cases cited, the words "The India Rubber Comb Company" constitute a lawful trade-mark.

[Ibid., 905.

(See Construction of Statutes, 2; Practice in the Patent Office, 4, 5.)

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